

CODE NO.	ITEM	UNIT	TOTAL QUANTITY URBAN	CONSTRUCTION CODE	
				90% FED/10% STATE	
				BRIDGE REHABILITATION 0013	
54262712	METAL FLARED END SECTIONS 12"	EACH	4		4
58600101	GRANDULAR BACKFILL FOR STRUCTURES	CU YD	10		10
59000200	EPOXY CRACK INJECTION	FOOT	126		126
60100945	PIPE DRAINS 12"	FOOT	354		354
60500050	REMOVING CATCH BASINS	EACH	4		4
60600605	CONCRETE CURB, TYPE B	FOOT	97		97
60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	825		825
61000050	CONCRETE THRUST BLOCKS	EACH	4		4
61000225	TYPE F INLET BOX, STANDARD 610001	EACH	4		4
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	288		288
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4		4
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	6		6
63200310	GUARDRAIL REMOVAL	FOOT	2,086		2,086
66400105	CHAIN LINK FENCE, 4'	FOOT	190		190
* 66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	190		190
* 66900530	SOIL DISPOSAL ANALYSIS	EACH	2		2
* 66901001	REGULATED SUBSTANCES PRE-CONSTRUCTION PLAN	L SUM	1		1
* 66901003	REGULATED SUBSTANCES FINAL CONSTRUCTION REPORT	L SUM	1		1
* 66901006	REGULATED SUBSTANCES MONITORING	CAL DA	4		4
67100100	MOBILIZATION	L SUM	1		1
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1		1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	123		123
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	274		274
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	4,752		4,752
70307120	TEMPORARY PAVEMENT MARKING - LINE 4" - TYPE IV TAPE	FOOT	11,404		11,404
70307130	TEMPORARY PAVEMENT MARKING - LINE 6" - TYPE IV TAPE	FOOT	1,900		1,900
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1,275		1,275
70400125	PINNING TEMPORARY CONCRETE BARRIER	EACH	108		108
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2,263		2,263

\* SPECIALTY ITEM



USER NAME = amalia.baymundo	DESIGNED - AMB	REVISED -
PLOT SCALE = 2.0000' / in.	CHECKED - MM	REVISED -
PLOT DATE = 2/4/2022	DATE = 01/31/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 3 OF 5 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	5
ILLINOIS FED. AID PROJECT			CONTRACT NO. 62P10	

REVISOR SHEET 4/11/2022

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**GENERAL NOTES:**

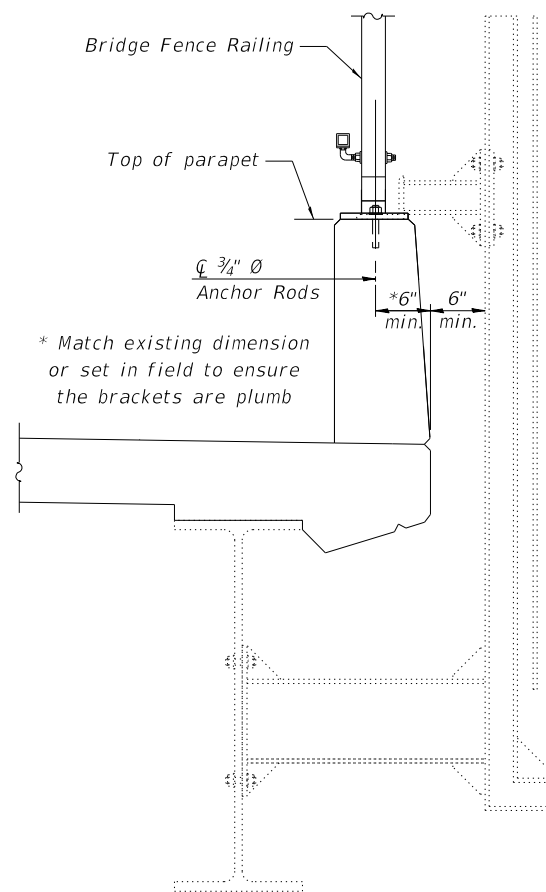
1. Reinforcement bars designated (E) shall be epoxy coated.
2. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless 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.
3. Plan dimensions and details relative to existing plans are subject to nominal 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.
4. Concrete Sealer shall be applied to the abutments and pier where structural concrete repair is performed.
5. Cleaning and field painting of structural steel shall be done under a separate painting contract.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. For the Vaulted Approach Spans, the Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for Vaulted Approach Spans shall be removed prior to placement of bridge approach slab.
8. Removal of the existing Vaulted Spans shall be included in the cost of Removal of Existing Concrete Deck.
9. Slipforming of the parapets is not allowed.

**INDEX OF SHEETS**

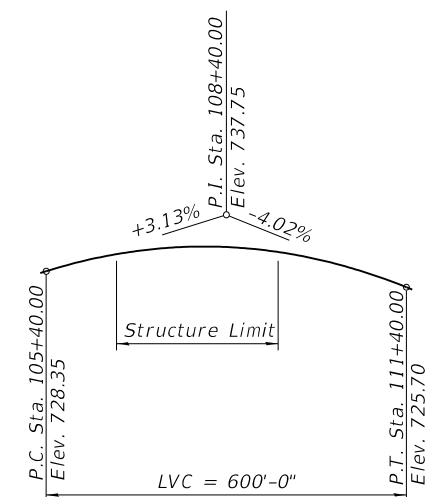
- 1 General Plan & Elevation
- 2 General Data
- 3 Construction Staging
- 4 Temporary Barrier for Stage Construction
- 5-8 Top of Slab Elevations
- 9 Top of West Approach Slab and Vaulted Span Elevations
- 10 Top of East Approach Slab and Vaulted Span Elevations
- 11 Superstructure
- 12-13 Superstructure Details
- 14 Vaulted Abutment Approach Spans
- 15 Vaulted Abutment Approach Span Details
- 16 Bridge Approach Slab Plan
- 17 Bridge Approach Slab Details
- 18 Bicycle Railing
- 19 Bridge Fence Railing, Parapet Mounted
- 20-22 Preformed Joint Strip Seal - Sidewalk
- 23 Structural Steel
- 24 Structural Steel Details
- 25 West Abutment Repair Details
- 26 East Abutment Repair Details
- 27 Pier Repair Details
- 28 Slope Walls Repair Details
- 29 Bar Splicer Assembly and Mechanical Splicer Details

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Protective Shield	Sq Yd	1,136		1,136
Concrete Structures	Cu Yd		46.2	46.2
Concrete Superstructure	Cu Yd	780.0		780.0
Bridge Deck Grooving	Sq Yd	1,642		1,642
Protective Coat	Sq Yd	3,163		3,163
Concrete Superstructure (Approach Slab)	Cu Yd	203.0		203.0
Furnishing and Erecting Structural Steel	Pound	22		22
Stud Shear Connectors	Each	5,472		5,472
Reinforcement Bars, Epoxy Coated	Pound	247,150	8,090	255,240
Bar Splicers	Each	1,044		1,044
Bridge Fence Railing	Foot	654		654
Parapet Railing	Foot	646		646
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	144		144
Anchor Bolts, 1"	Each	1		1
Granular Backfill for Structures	Cu Yd		10	10
Epoxy Crack Injection	Foot		126	126
Structural Repair of Concrete (depth equal to or less than 5 inches)	Sq Ft		250	250



**BRIDGE MOUNTED SIGN  
STRUCTURE RE-ERECTION**



**Notes:**  
 The Sign Structure Upper Bracket and Anchor Rods shall be installed before the Bridge Fence Railing is installed.  
 The cost of Anchor Rods to be included with the cost of Bridge Mounted Sign Structure removal and replacement. See Roadway Signing Plan for payment of Sign Structure removal and re-erection.  
 All-threaded rods shall conform to ASTM F1554 Grade 105, 3/4"  $\phi$  x 12" long, each with one plate washer and locknut and be hot dip galvanized per AASHTO M232. They shall be either cast into the concrete or epoxy grouted in accordance with Section 584 of the Standard Specifications. Minimum embedment in concrete shall be 9".

Entire sheet revised



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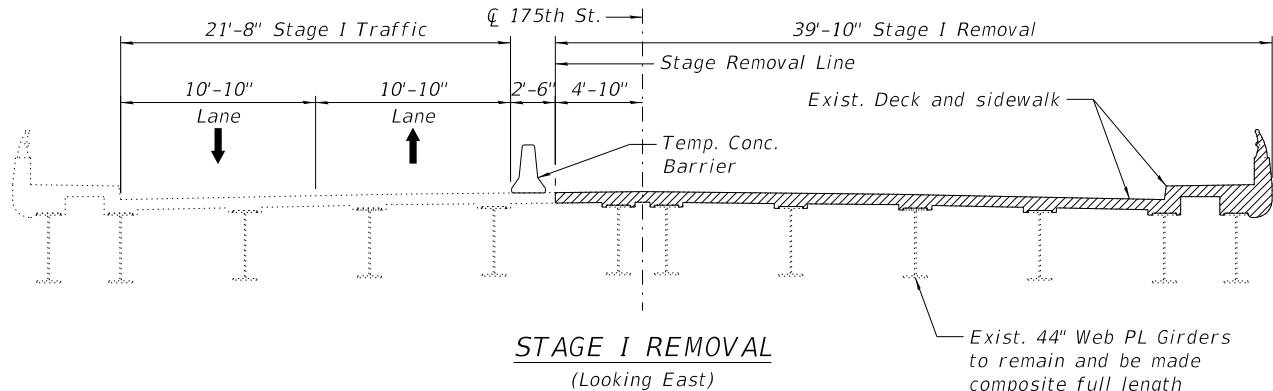
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA  
STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

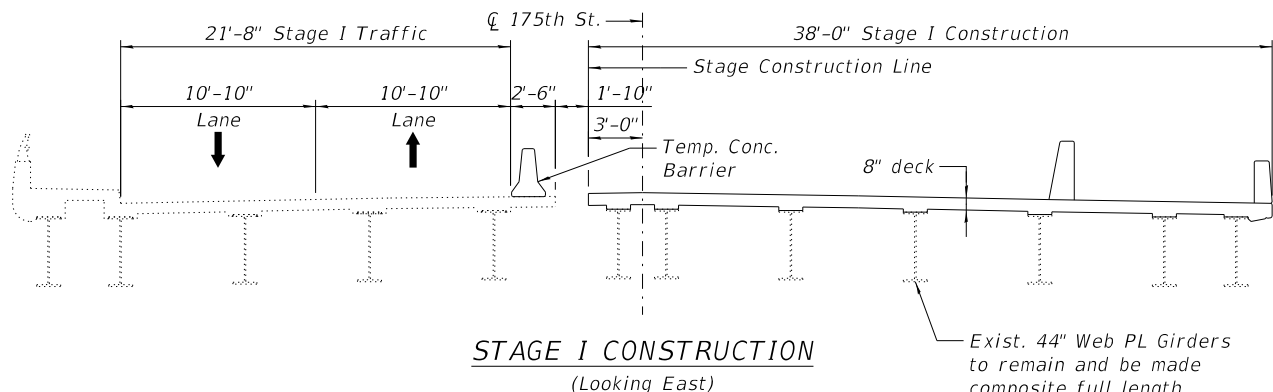
SHEET 2 OF 29 SHEETS

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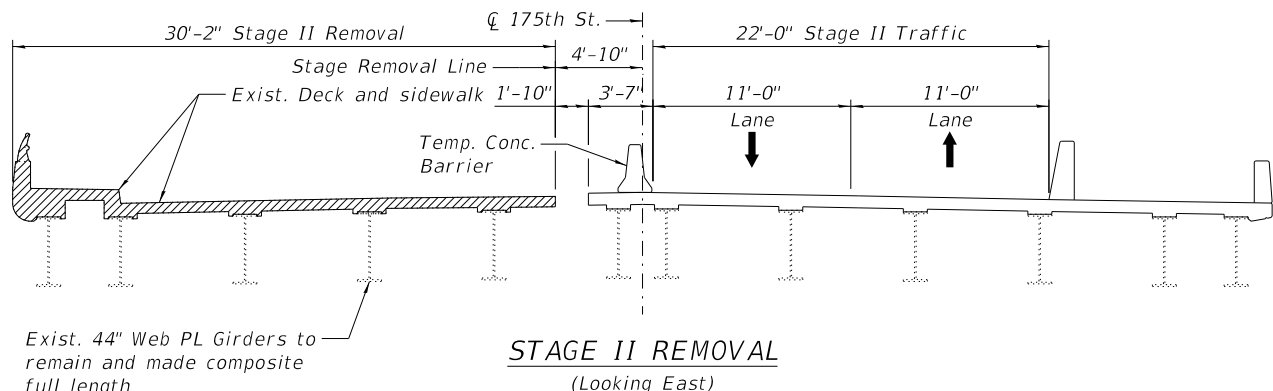
**STAGE I REMOVAL**  
(Looking East)

Exist. 44" Web PL Girders to remain and be made composite full length



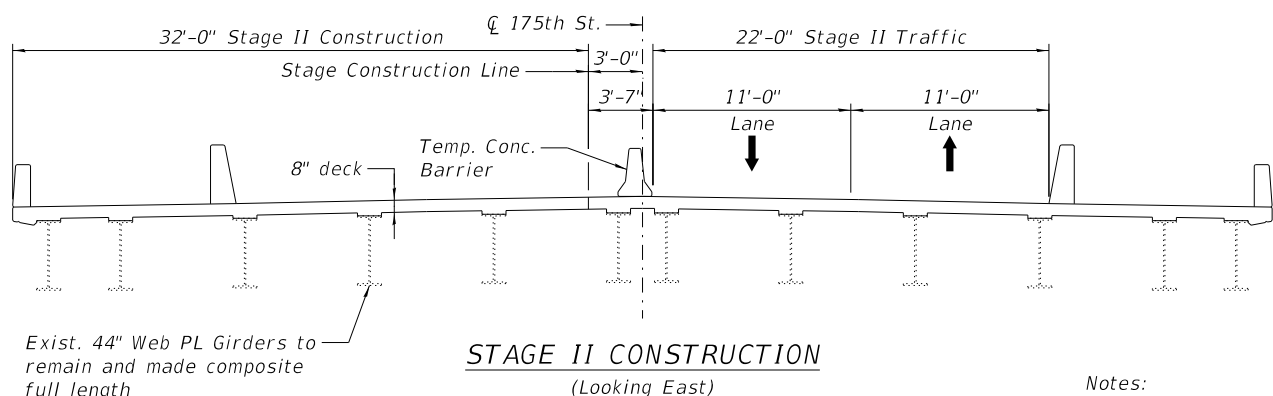
**STAGE I CONSTRUCTION**  
(Looking East)

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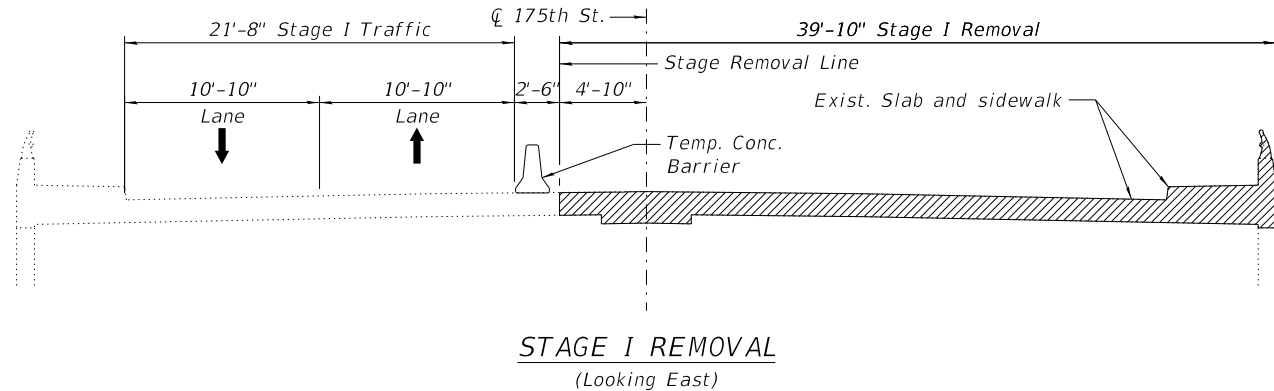
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(Looking East)

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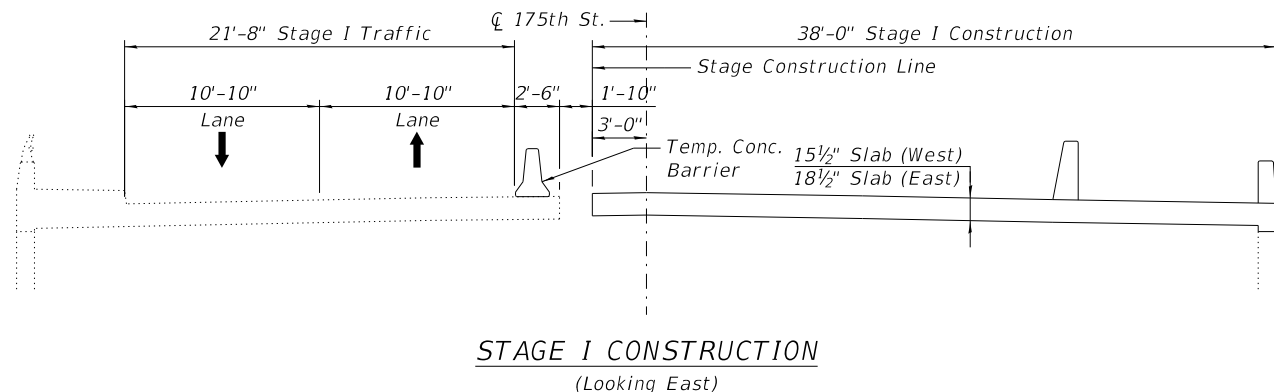


**STAGE II CONSTRUCTION**  
(Looking East)

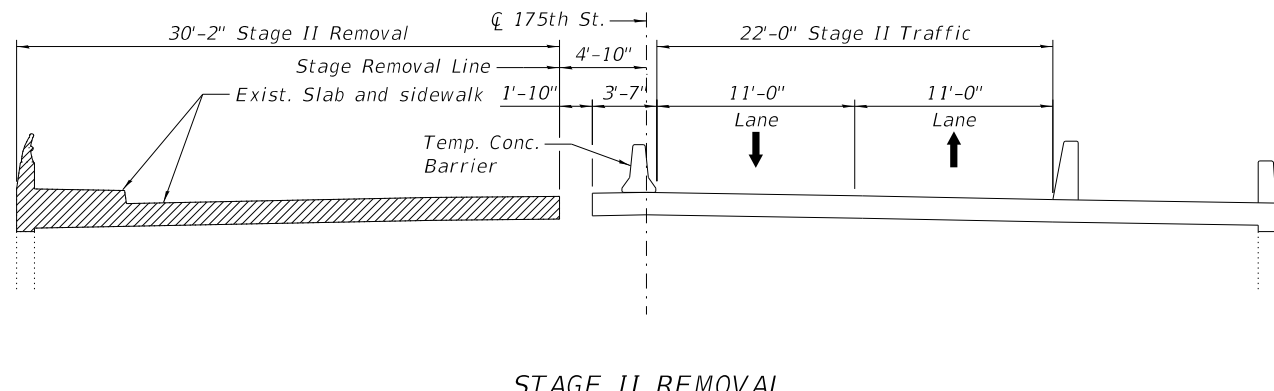
Exist. 44" Web PL Girders to remain and be made composite full length



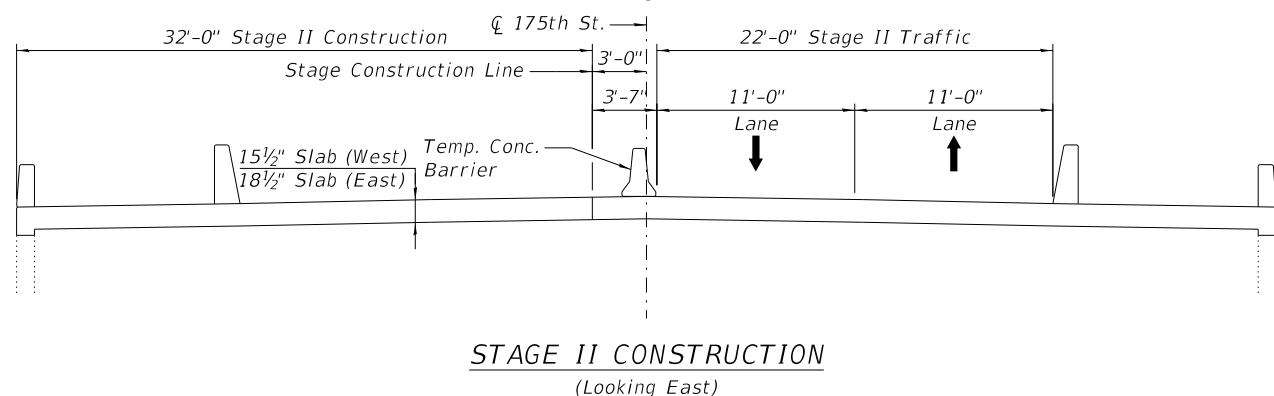
**STAGE I REMOVAL**  
(Looking East)



**STAGE I CONSTRUCTION**  
(Looking East)



**STAGE II REMOVAL**  
(Looking East)



**STAGE II CONSTRUCTION**  
(Looking East)

Notes:

For details of Temporary Concrete Barrier, see sheet 4 of 29.  
 For quantity of Temporary Concrete Barrier, see Roadway plans.  
 Hatched area indicates Removal of Existing Concrete Deck.

STAGE CONSTRUCTION AT BRIDGE DECK

STAGE CONSTRUCTION AT VAULTED SLAB

**△** Entire sheet revised

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

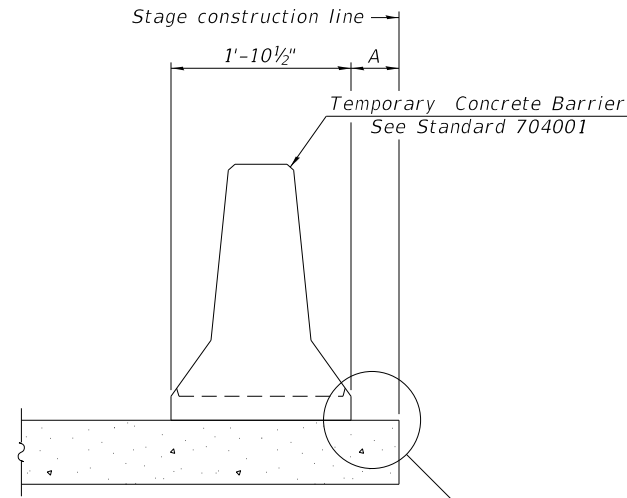
**CONSTRUCTION STAGING  
 STRUCTURE NO. 016-1095**

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57	2021-073-BDR	COOK	89	36
			CONTRACT NO. 62P10	
ILLINOIS FED. AID PROJECT				

**gke** GARZA KARHOFF  
 ENGINEERING, LLC

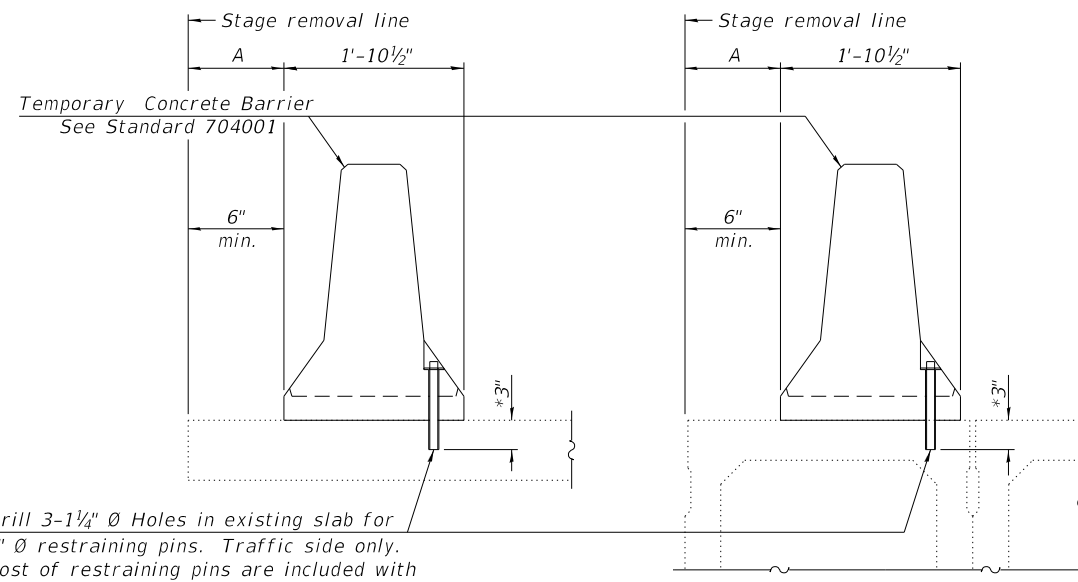
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When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



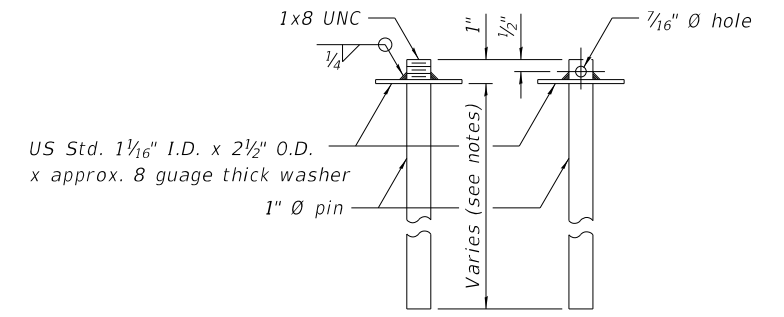
Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

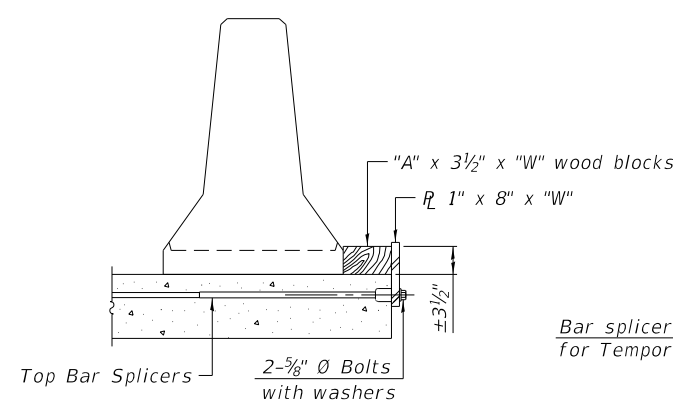
EXISTING DECK BEAM

\* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

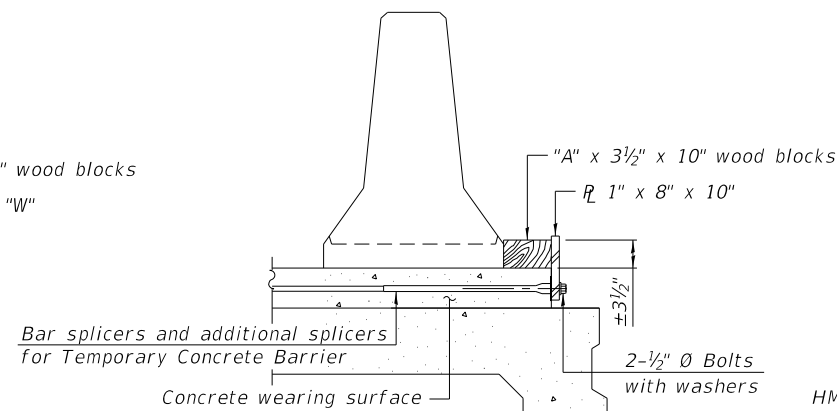
SECTIONS THRU SLAB OR DECK BEAM



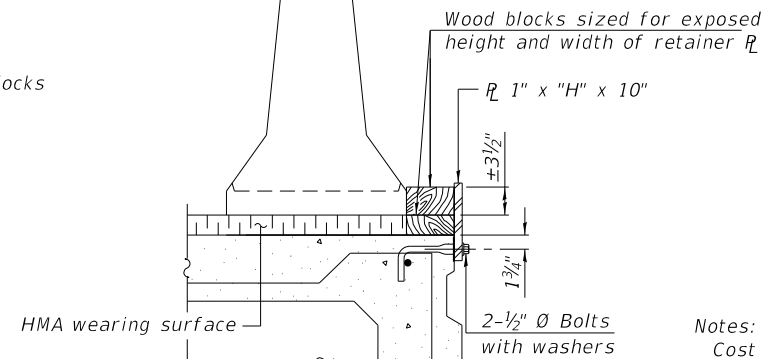
RESTRAINING PIN



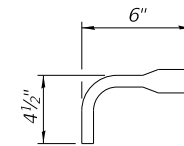
DETAIL I



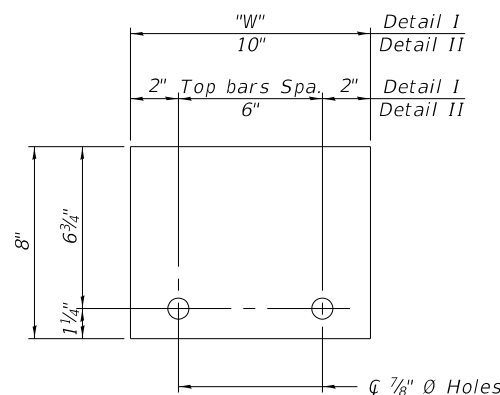
DETAIL II



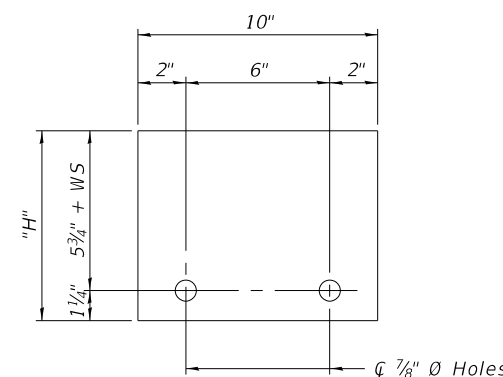
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER 1" x 8" x "W"  
(Detail I and II)



STEEL RETAINER 1" x "H" x 10"  
(Detail III)

Notes:  
 Cost of retainer assembly is included with Temporary Concrete Barrier.  
 A retainer assembly shall be located at the approximate center of each temporary concrete barrier.  
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.  
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

- Detail I - Installation for a new bridge deck or bridge slab.
- Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
- Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27

2-17-2017

Entire sheet revised



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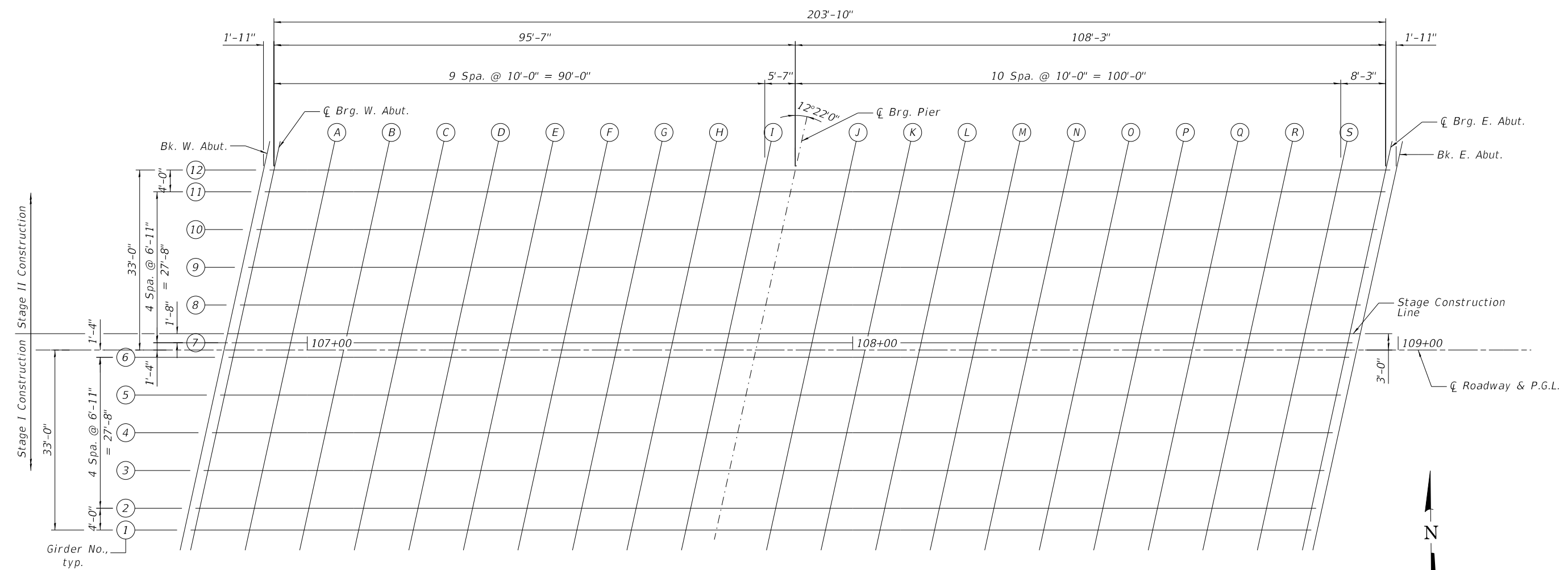
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION  
STREET NO. 016-1095

SHEET 4 OF 29 SHEETS

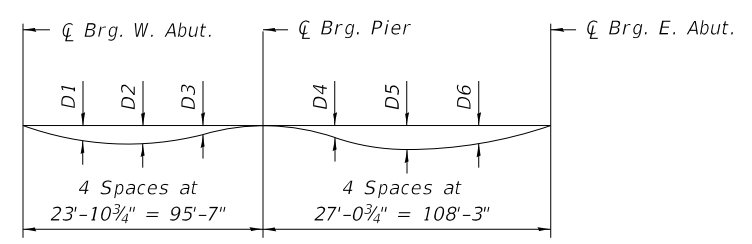
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57	2021-073-BDR	COOK	89	37
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

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PLAN

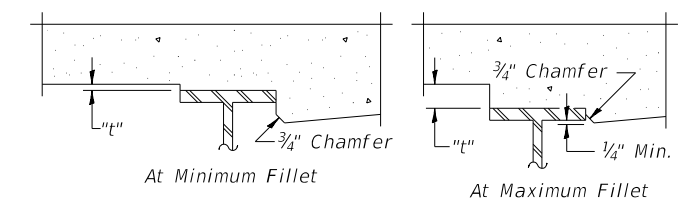
DL Deflections	D1	D2	D3	D4	D5	D6
Girders 1, 12	1/4"	3/8"	1/8"	3/8"	7/8"	3/8"
Girders 2, 6, 7, 11	3/8"	3/8"	1/8"	1/2"	1 1/8"	7/8"
Girders 3-5, 8-10	1/2"	1/2"	1/8"	3/8"	1 3/8"	1 1/8"



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:  
 The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 6, 7, and 8 of 29.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 6, 7, and 8 of 29, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

⚠ Entire sheet revised



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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS  
 STRUCTURE NO. 016-1095

SHEET 5 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	38
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				





BEAM 11

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	106+91.11	-29.00	731.24	731.24
CL Brg. W. Abut.	106+93.03	-29.00	731.27	731.27
A	107+03.03	-29.00	731.39	731.41
B	107+13.03	-29.00	731.51	731.54
C	107+23.03	-29.00	731.61	731.64
D	107+33.03	-29.00	731.70	731.73
E	107+43.03	-29.00	731.78	731.81
F	107+53.03	-29.00	731.84	731.86
G	107+63.03	-29.00	731.89	731.91
H	107+73.03	-29.00	731.94	731.94
I	107+83.03	-29.00	731.97	731.96
CL Brg. Pier.	107+88.61	-29.00	731.98	731.98
J	107+98.61	-29.00	731.99	732.00
K	108+08.61	-29.00	731.99	732.02
L	108+18.61	-29.00	731.97	732.03
M	108+28.61	-29.00	731.95	732.02
N	108+38.61	-29.00	731.91	732.00
O	108+48.61	-29.00	731.86	731.96
P	108+58.61	-29.00	731.80	731.89
Q	108+68.61	-29.00	731.73	731.81
R	108+78.61	-29.00	731.65	731.70
S	108+88.61	-29.00	731.55	731.58
CL Brg. E. Abut.	108+96.86	-29.00	731.46	731.46
Bk. E. Abut.	108+98.78	-29.00	731.44	731.44

BEAM 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	106+91.99	-33.00	731.20	731.20
CL Brg. W. Abut.	106+93.90	-33.00	731.22	731.22
A	107+03.90	-33.00	731.34	731.36
B	107+13.90	-33.00	731.46	731.48
C	107+23.90	-33.00	731.56	731.58
D	107+33.90	-33.00	731.64	731.67
E	107+43.90	-33.00	731.72	731.75
F	107+53.90	-33.00	731.79	731.80
G	107+63.90	-33.00	731.84	731.85
H	107+73.90	-33.00	731.88	731.88
I	107+83.90	-33.00	731.91	731.91
CL Brg. Pier.	107+89.49	-33.00	731.92	731.92
J	107+99.49	-33.00	731.93	731.94
K	108+09.49	-33.00	731.93	731.95
L	108+19.49	-33.00	731.91	731.95
M	108+29.49	-33.00	731.89	731.94
N	108+39.49	-33.00	731.85	731.92
O	108+49.49	-33.00	731.80	731.87
P	108+59.49	-33.00	731.74	731.81
Q	108+69.49	-33.00	731.67	731.72
R	108+79.49	-33.00	731.58	731.62
S	108+89.49	-33.00	731.48	731.50
CL Brg. E. Abut.	108+97.74	-33.00	731.39	731.39
Bk. E. Abut.	108+99.65	-33.00	731.37	731.37

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▲ Entire sheet revised



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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS  
STRUCTURE NO. 016-1095

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	41
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

SHEET 8 OF 29 SHEETS



### NORTH EDGE OF MULTI-USE PATH

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+35.78	-35.37	730.23
A1	106+45.78	-35.37	730.42
A2	106+55.78	-35.37	730.60
W. End of W. Vaulted Span	106+65.78	-35.37	730.77
V1	106+75.67	-34.88	730.94
V2	106+85.56	-34.38	731.09
E. End of W. Vaulted Span	106+93.23	-34.00	731.20

### INSIDE FACE OF NORTH PARAPET

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+32.98	-22.58	730.36
A1	106+42.98	-22.58	730.56
A2	106+52.98	-22.58	730.75
W. End of W. Vaulted Span	106+62.98	-22.58	730.92
V1	106+72.98	-22.58	731.08
V2	106+82.98	-22.58	731.23
E. End of W. Vaulted Span	106+90.72	-22.58	731.33

### NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+30.98	-13.50	730.51
A1	106+40.98	-13.50	730.70
A2	106+50.98	-13.50	730.89
W. End of W. Vaulted Span	106+60.98	-13.50	731.07
V1	106+70.98	-13.50	731.23
V2	106+80.98	-13.50	731.38
E. End of W. Vaulted Span	106+88.73	-13.50	731.49

### STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+28.68	-3.00	730.62
A1	106+38.68	-3.00	730.82
A2	106+48.68	-3.00	731.01
W. End of W. Vaulted Span	106+58.68	-3.00	731.18
V1	106+68.68	-3.00	731.35
V2	106+78.68	-3.00	731.50
E. End of W. Vaulted Span	106+86.43	-3.00	731.62

### ☐ 175TH STREET & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+28.02	0.00	730.65
A1	106+38.02	0.00	730.85
A2	106+48.02	0.00	731.04
W. End of W. Vaulted Span	106+58.02	0.00	731.22
V1	106+68.02	0.00	731.38
V2	106+78.02	0.00	731.54
E. End of W. Vaulted Span	106+85.77	0.00	731.65

### SOUTH EDGE OF PAVEMENT

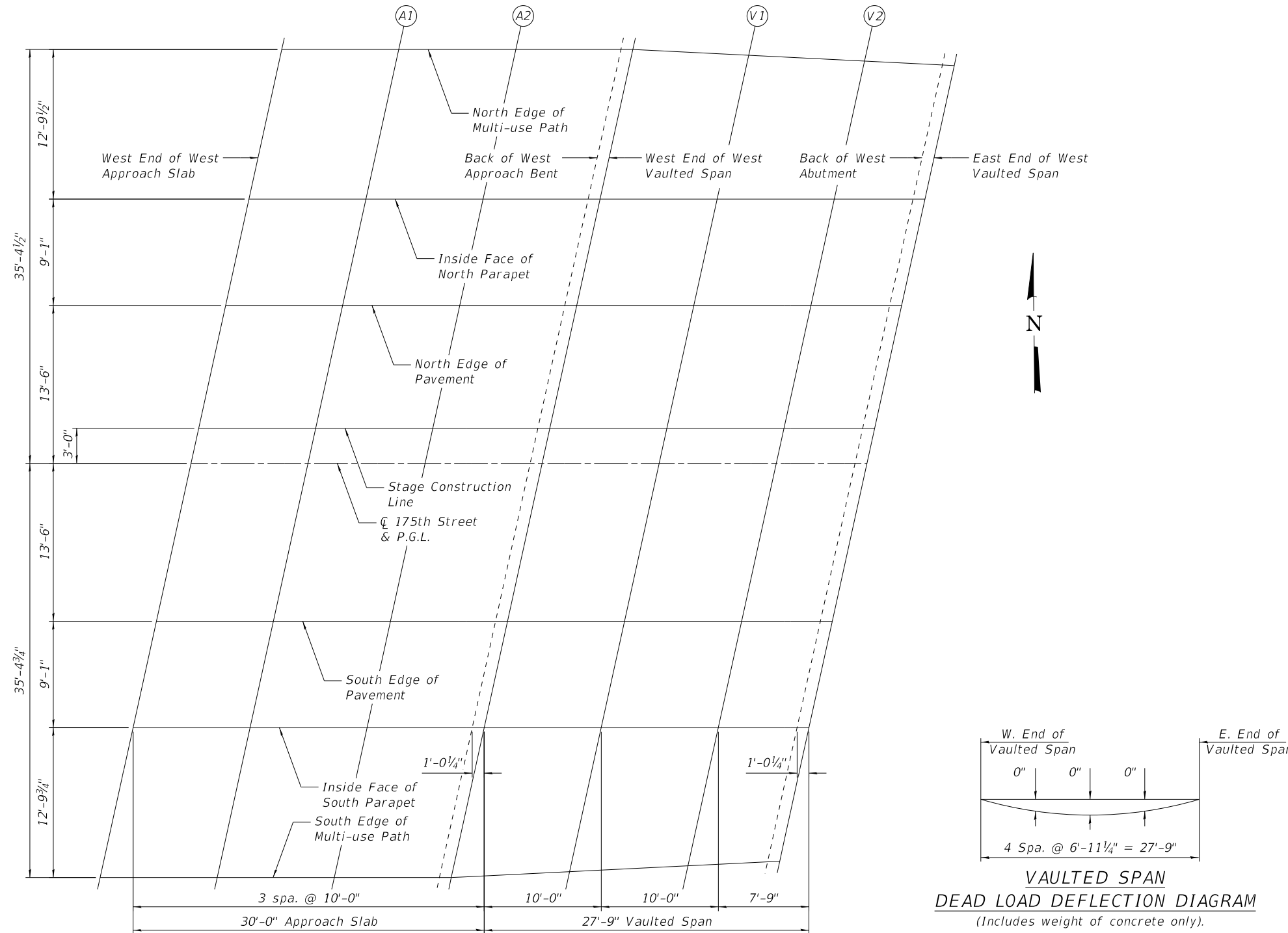
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+25.06	13.50	730.38
A1	106+35.06	13.50	730.59
A2	106+45.06	13.50	730.78
W. End of W. Vaulted Span	106+55.06	13.50	730.96
V1	106+65.06	13.50	731.13
V2	106+75.06	13.50	731.29
E. End of W. Vaulted Span	106+82.81	13.50	731.41

### INSIDE FACE OF SOUTH PARAPET

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+23.07	-22.58	730.16
A1	106+33.07	-22.58	730.37
A2	106+43.07	-22.58	730.56
W. End of W. Vaulted Span	106+53.07	-22.58	730.75
V1	106+63.07	-22.58	730.92
V2	106+73.07	-22.58	731.08
E. End of W. Vaulted Span	106+80.82	-22.58	731.20

### SOUTH EDGE OF MULTI-USE PATH

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Appr. Slab	106+20.26	-35.40	729.90
A1	106+30.26	-35.40	730.12
A2	106+40.26	-35.40	730.32
W. End of W. Vaulted Span	106+50.26	-35.40	730.50
V1	106+60.37	-34.90	730.69
V2	106+70.48	-34.39	730.86
E. End of W. Vaulted Span	106+78.32	-34.00	730.99



**PLAN**

Entire sheet revised

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

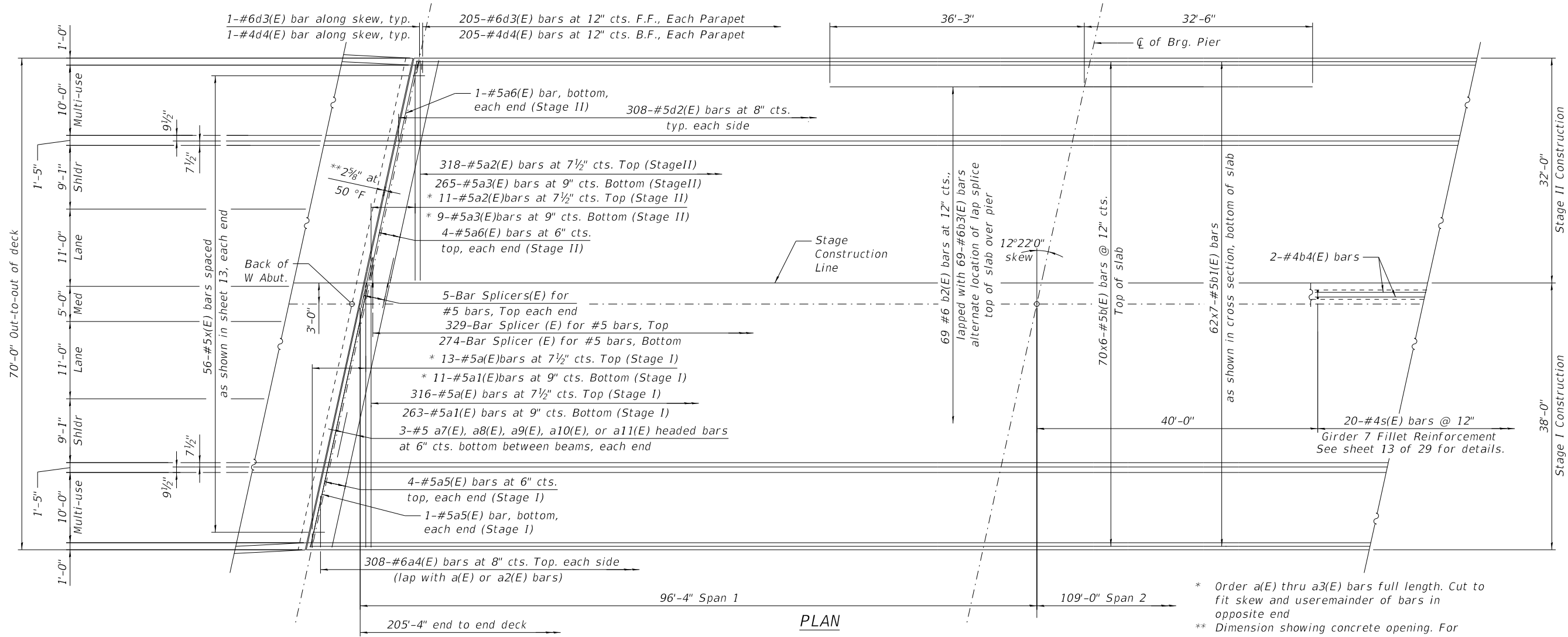
TOP OF WEST APPROACH SLAB AND VAULTED SPAN ELEVATIONS  
STRUCTURE NO. 016-1095

SHEET 9 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	42
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				



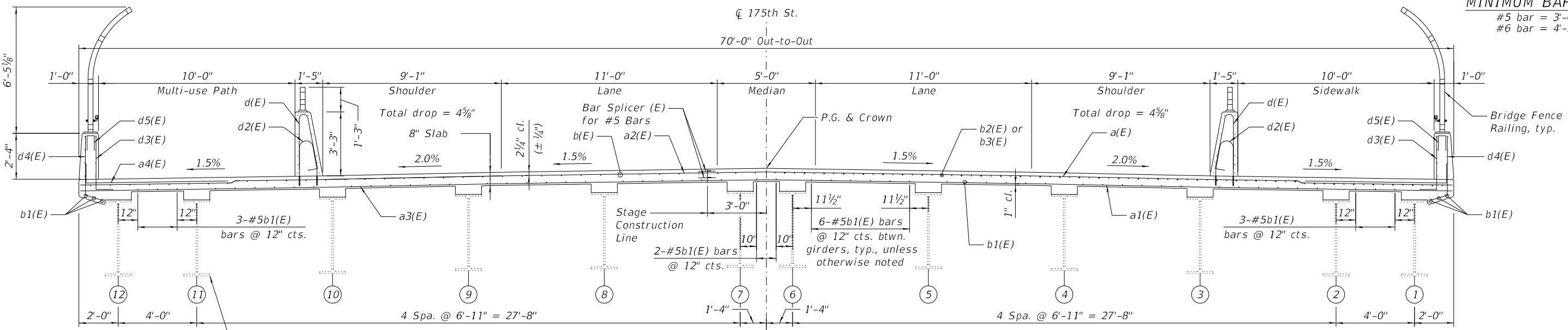
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**PLAN**

\* Order a(E) thru a3(E) bars full length. Cut to fit skew and use remainder of bars in opposite end  
 \*\* Dimension showing concrete opening. For joint opening see sheet 20 of 29.

**MINIMUM BAR LAP**  
 #5 bar = 3'-6"  
 #6 bar = 4'-5"



**NEAR MIDSPAN**

**NEAR PIER**

**CROSS SECTION THRU BRIDGE DECK**  
 (Looking East)

Notes:  
 1. See sheet 13 of 29 for superstructure details and Bill of Material.  
 2. Bars indicated thus 70x6-#5 etc. indicates 70 lines of bars with 6 lengths per line.

Entire sheet revised



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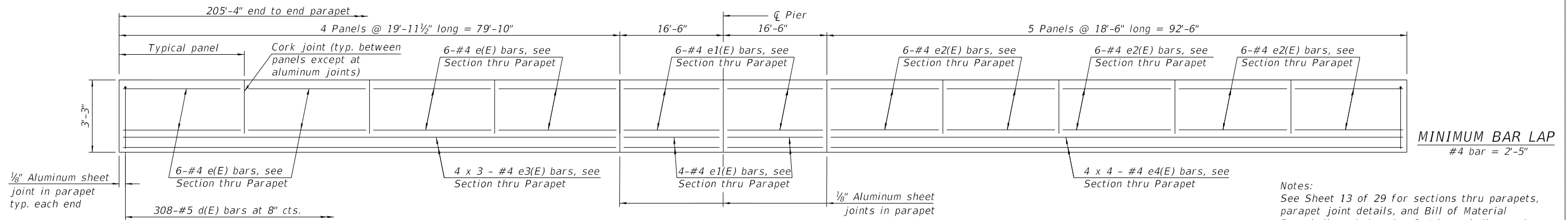
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE**  
**STRUCTURE NO. 016-1095**

SHEET 11 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	44
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

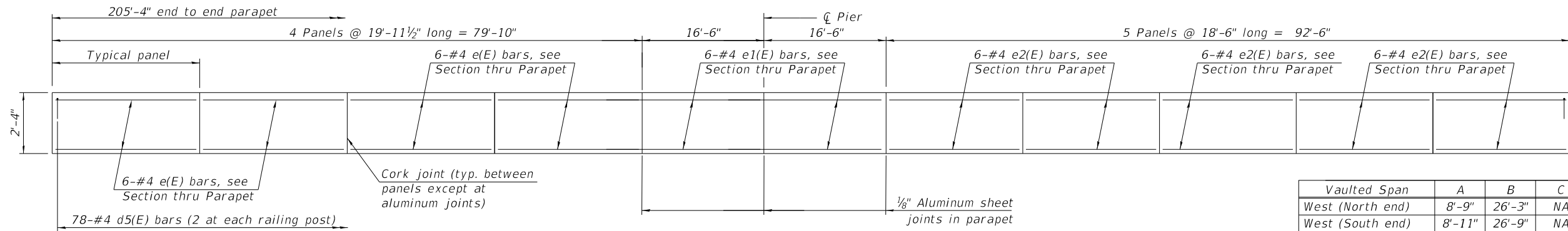
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**INSIDE ELEVATION OF 39" PARAPET**  
(North Parapet, South Parapet similar)

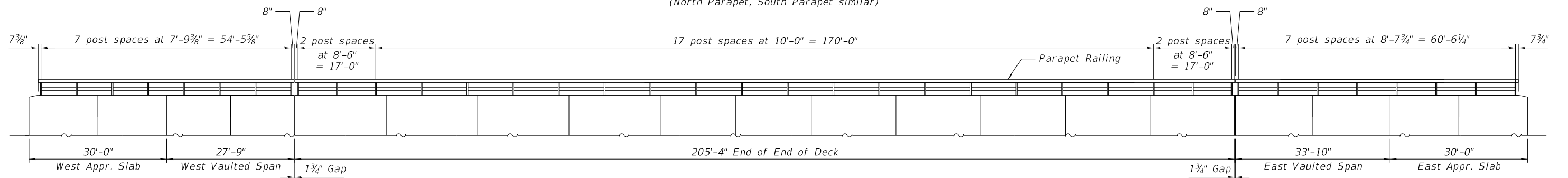
**MINIMUM BAR LAP**  
#4 bar = 2'-5"

**Notes:**  
See Sheet 13 of 29 for sections thru parapets, parapet joint details, and Bill of Material Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line. See sheet 18 and 19 of 29 for Parapet and Bridge Fence Railing details.

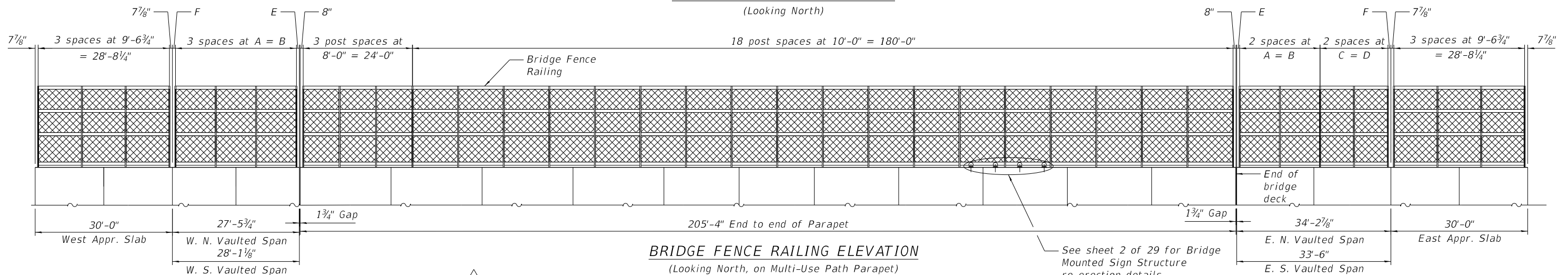


**INSIDE ELEVATION OF MULTI-USE PATH PARAPET**  
(North Parapet, South Parapet similar)

Vaulted Span	A	B	C	D	E	F
West (North end)	8'-9"	26'-3"	NA	NA	7 <sup>3</sup> / <sub>8</sub> "	7 <sup>3</sup> / <sub>8</sub> "
West (South end)	8'-11"	26'-9"	NA	NA	8"	8 <sup>1</sup> / <sub>8</sub> "
East (North end)	8'-9"	17'-6"	7'-8 <sup>3</sup> / <sub>8</sub> "	15'-4 <sup>3</sup> / <sub>4</sub> "	8"	8 <sup>1</sup> / <sub>8</sub> "
East (South end)	8'-11"	17'-10"	7'-2"	14'-4"	8"	8"



**PARAPET RAILING ELEVATION**  
(Looking North)



**BRIDGE FENCE RAILING ELEVATION**  
(Looking North, on Multi-Use Path Parapet)  
(Dimensions along face of parapet)

See sheet 2 of 29 for Bridge Mounted Sign Structure re-erection details.

Entire sheet revised



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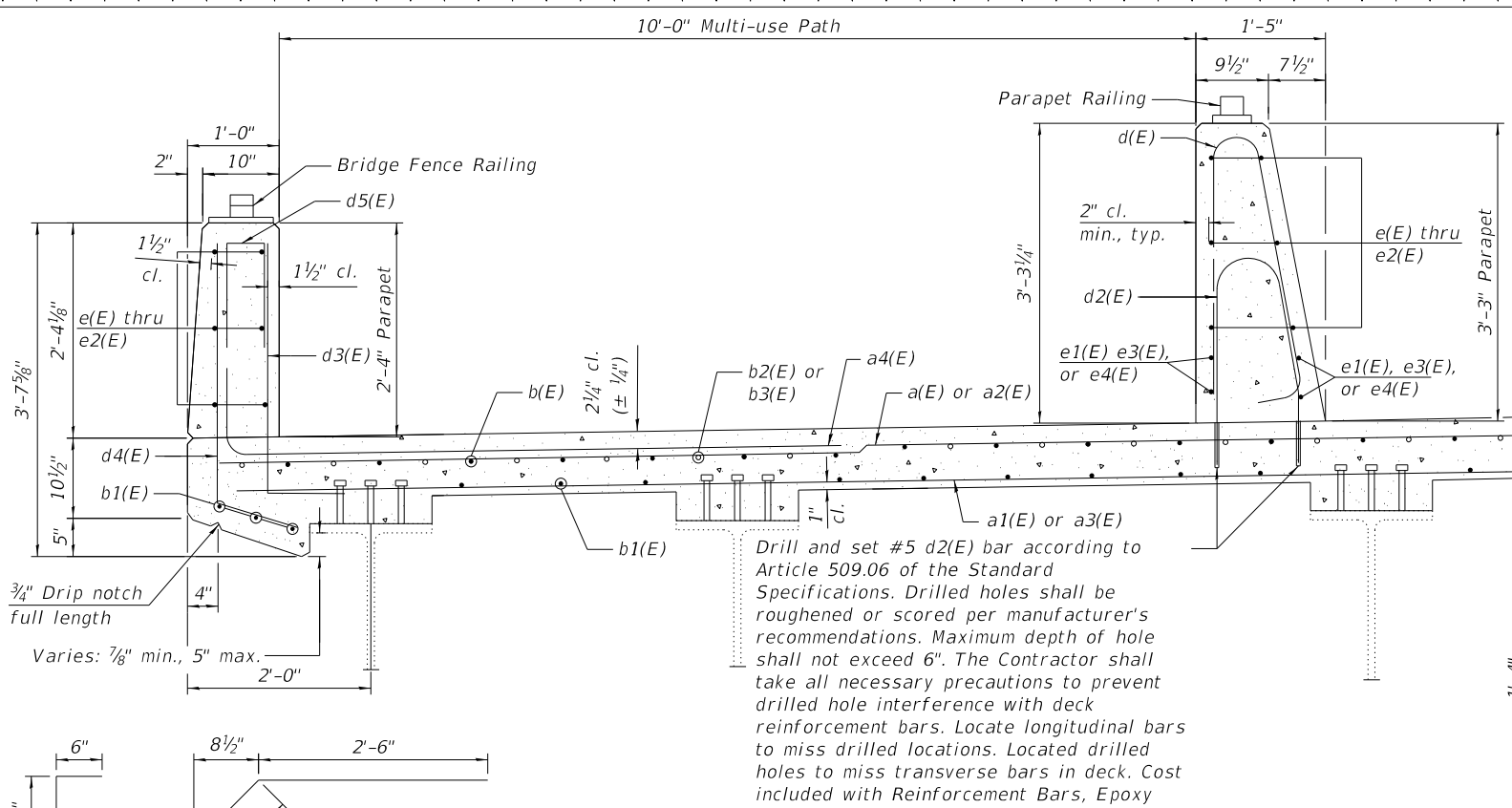
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS**  
**STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

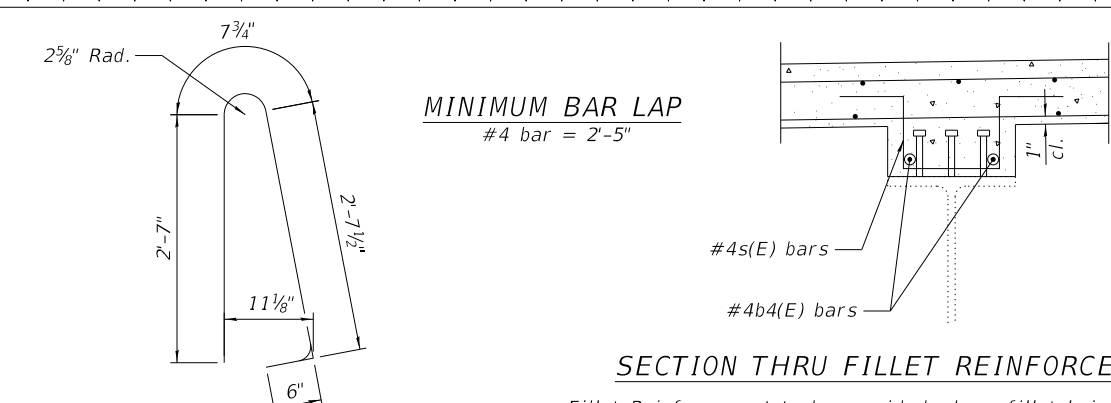
SHEET 12 OF 29 SHEETS

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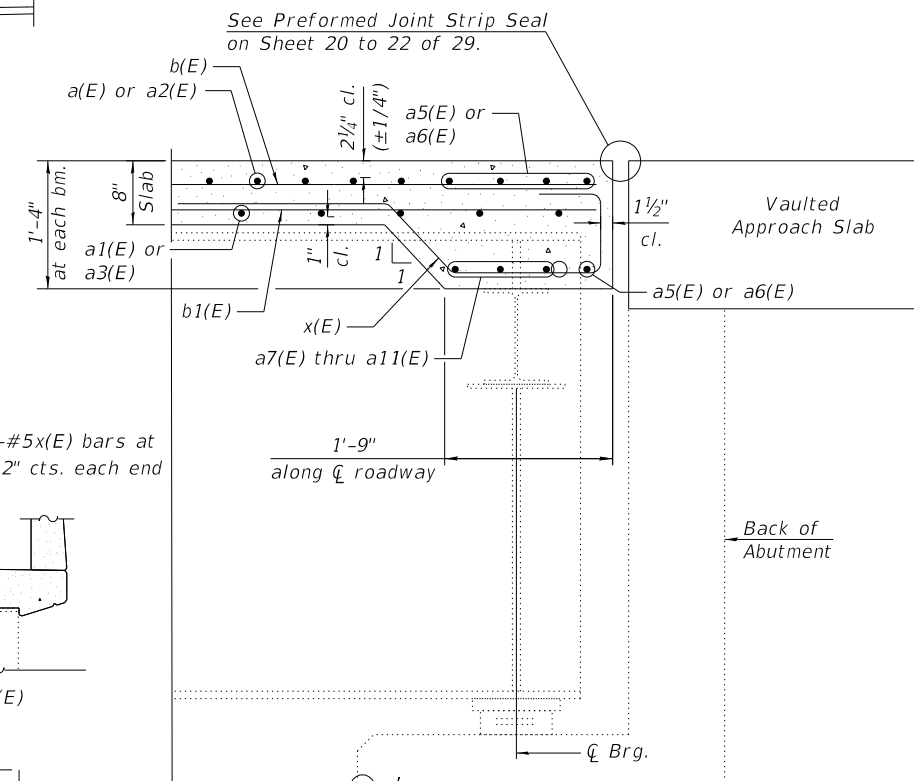
**SECTION THRU PARAPET AND MULTI-USE PATH**

Drill and set #5 d2(E) bar according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall not exceed 6". The Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Located drilled holes to miss transverse bars in deck. Cost included with Reinforcement Bars, Epoxy Coated.



**SECTION THRU FILLET REINFORCEMENT**

Fillet Reinforcement to be provided where fillet height exceeds 6". Proposed locations of fillet reinforcement are shown in the Plan on sheet 11 of 29 and shall be verified by the contractor in the field.

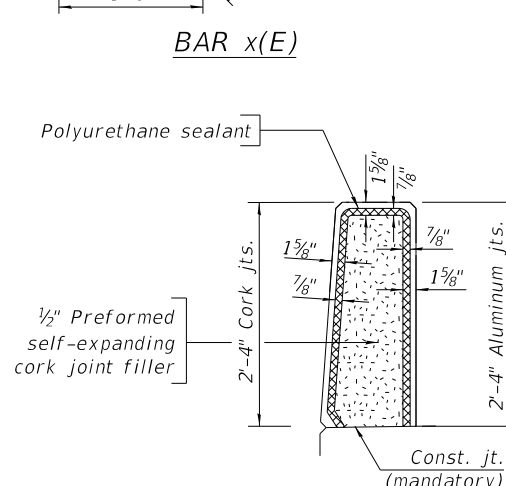


**SECTION A-A**  
(at Rt. L's)

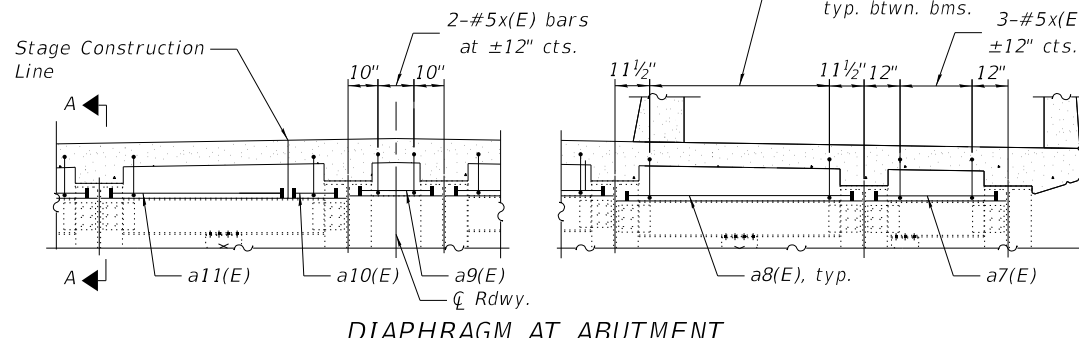
(Full cross frame not shown for clarity)

**SUPERSTRUCTURE BILL OF MATERIAL**

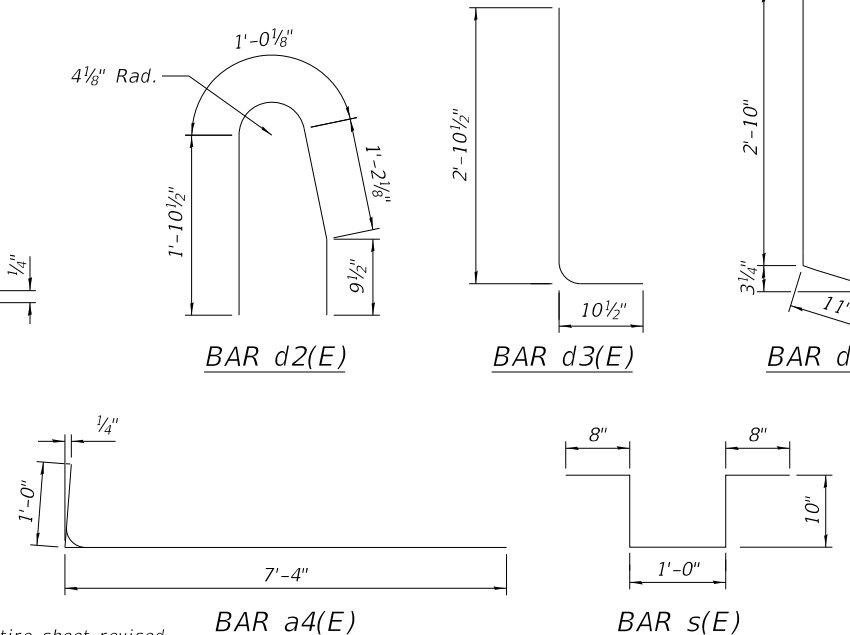
Bar	No.	Size	Length	Shape
a(E)	329	#5	37'-8"	—
a1(E)	274	#5	36'-8"	—
a2(E)	329	#5	31'-8"	—
a3(E)	274	#5	30'-8"	—
a4(E)	616	#6	8'-4"	└
a5(E)	10	#5	38'-6"	—
a6(E)	10	#5	32'-5"	—
a7(E)	6	#5	3'-7"	└
a8(E)	21	#5	6'-6"	└
a9(E)	3	#5	2'-3"	└
a10(E)	3	#5	1'-3"	└
a11(E)	3	#5	4'-10"	└
b(E)	420	#5	36'-8"	—
b1(E)	434	#5	31'-11"	—
b2(E)	69	#6	40'-0"	—
b3(E)	69	#6	33'-2"	—
b4(E)	2	#4	20'-0"	—
d(E)	616	#5	6'-5"	└
d2(E)	616	#5	4'-11"	└
d3(E)	412	#6	4'-1"	└
d4(E)	412	#4	3'-9"	└
d5(E)	88	#4	2'-0"	└
e(E)	96	#4	19'-7"	—
e1(E)	64	#4	16'-2"	—
e2(E)	120	#4	18'-2"	—
e3(E)	24	#4	28'-2"	—
e4(E)	32	#4	24'-11"	—
s(E)	20	#4	4'-0"	└
x(E)	112	#5	6'-3"	└



**PARAPET JOINT DETAILS**



**DIAPHRAGM AT ABUTMENT**



**BAR a7(E), a8(E), a9(E), a10(E) & a11(E)**  
(Headed)

Notes:  
 The 1/8" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.  
 The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.  
 The x(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.



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**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

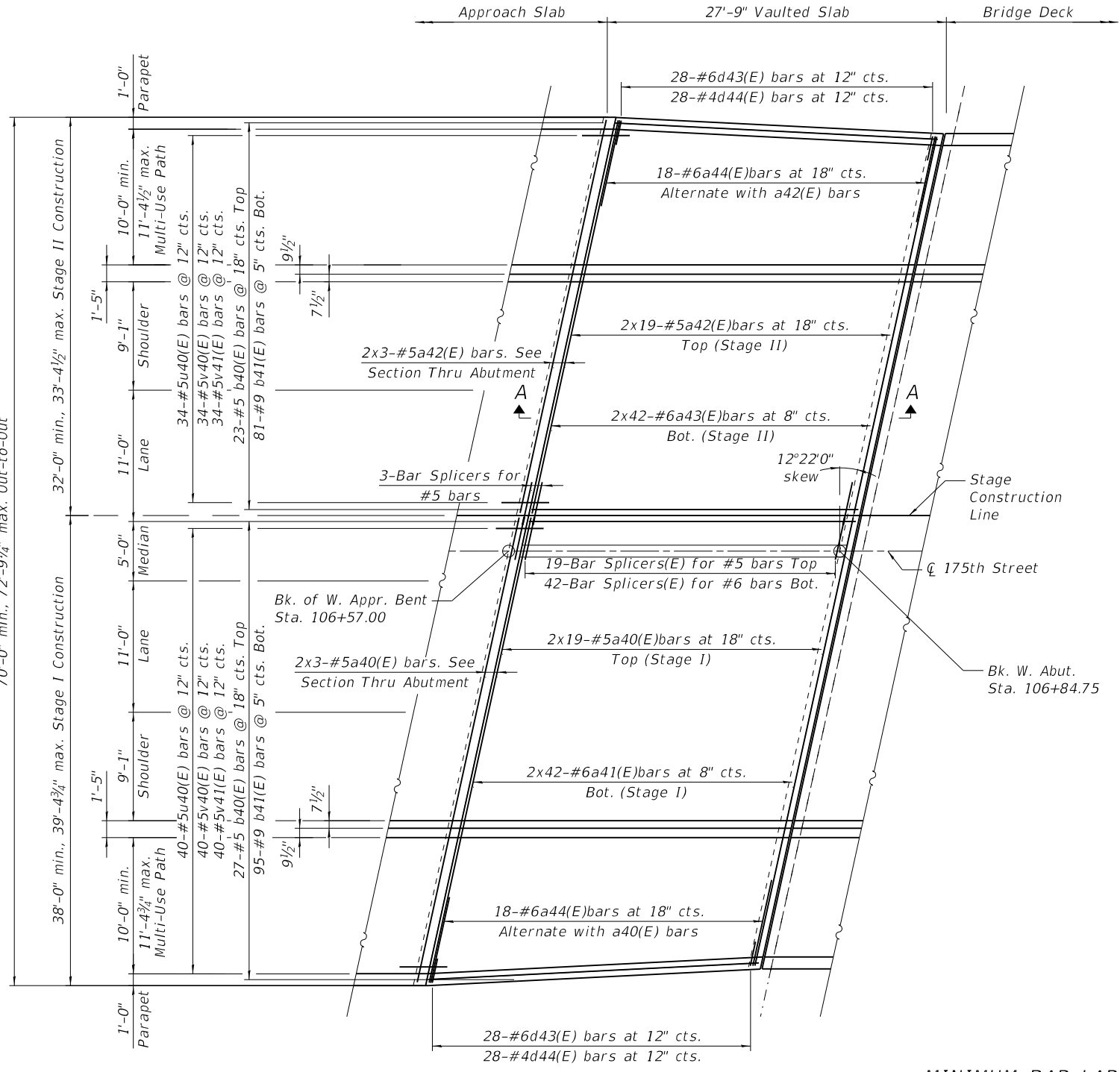
**SUPERSTRUCTURE DETAILS  
STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	46
CONTRACT NO. 62P10				

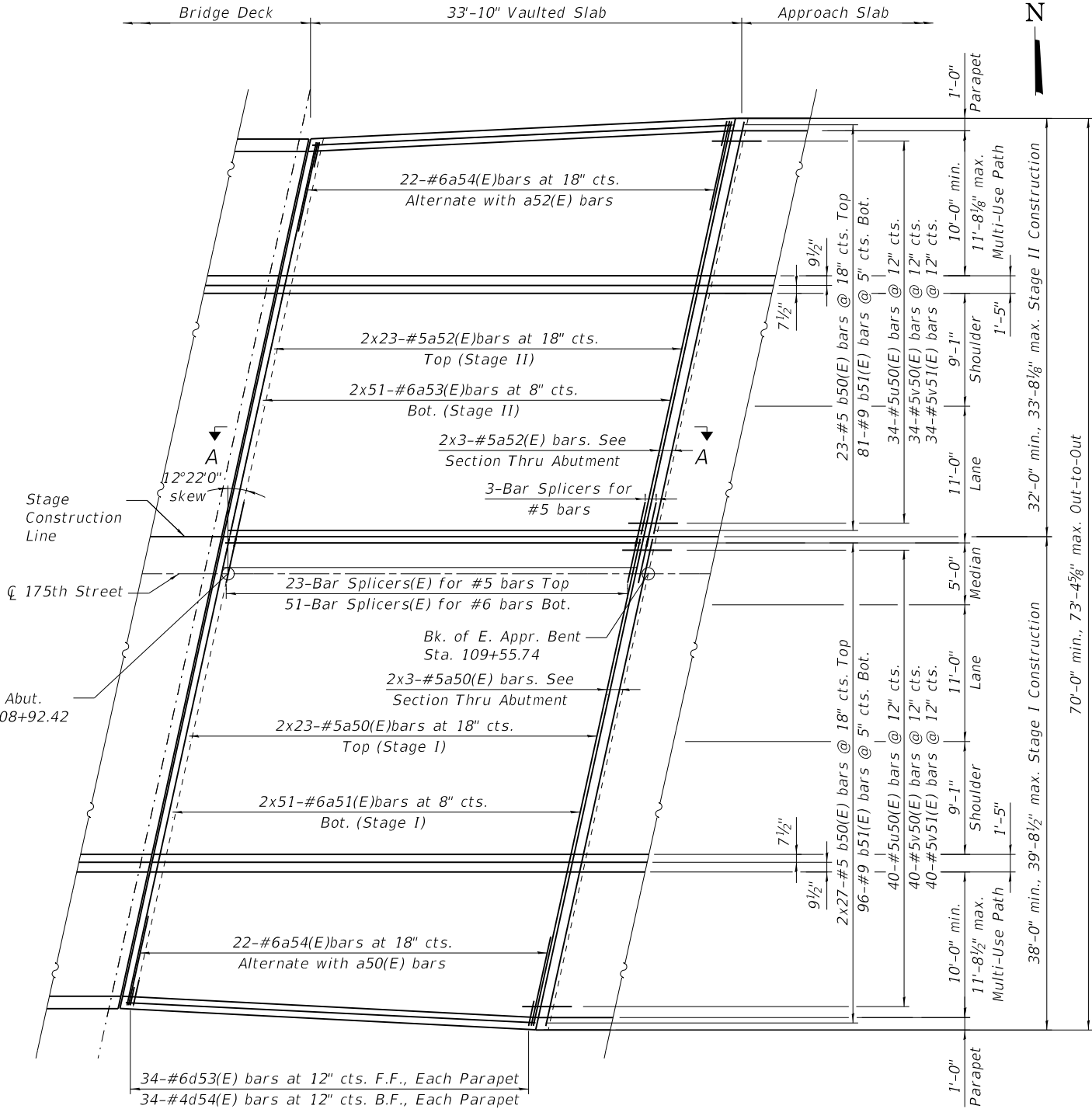
SHEET 13 OF 29 SHEETS

ILLINOIS FED. AID PROJECT

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WEST VAULTED SLAB



EAST VAULTED SLAB

MINIMUM BAR LAP  
 #5 bar = 3'-4"  
 #6 bar = 3'-7"

PLAN

Note:  
 See sheet 15 of 29 for Section A-A.

Entire sheet revised



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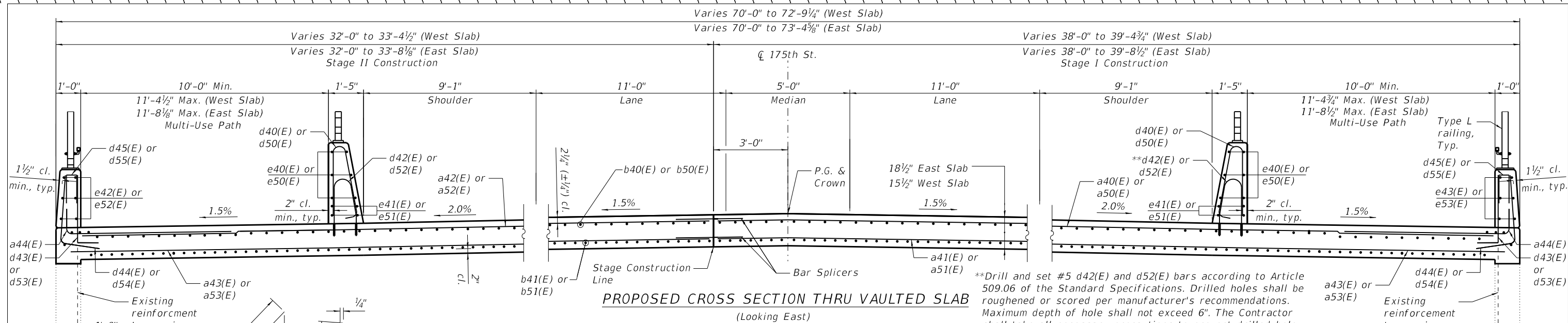
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

VAULTED ABUTMENT APPROACH SPANS  
 STRUCTURE NO. 016-1095

SHEET 14 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	47
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

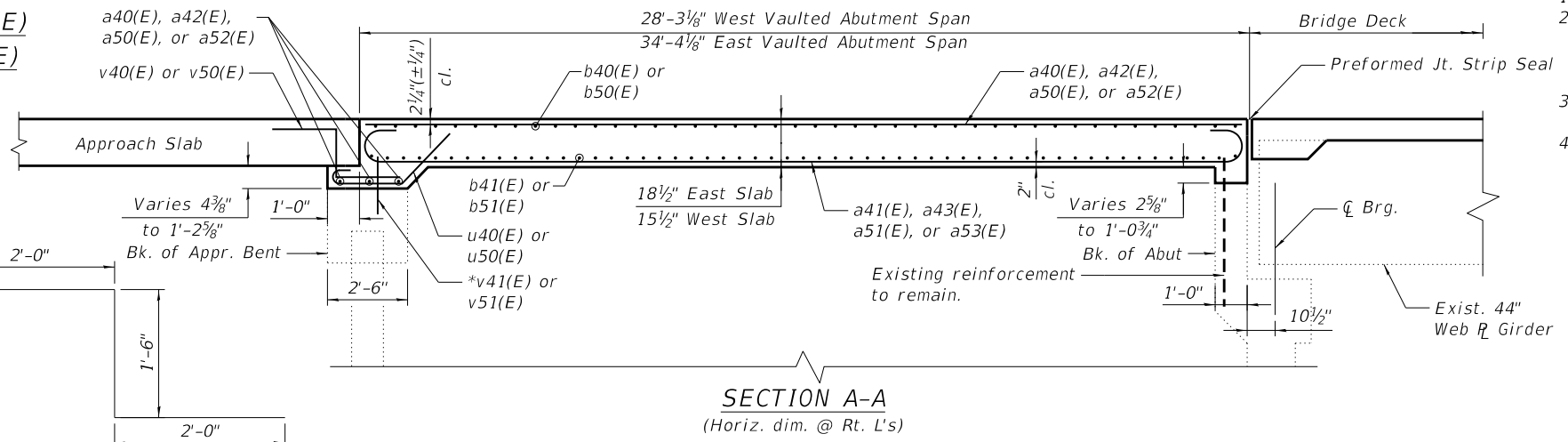
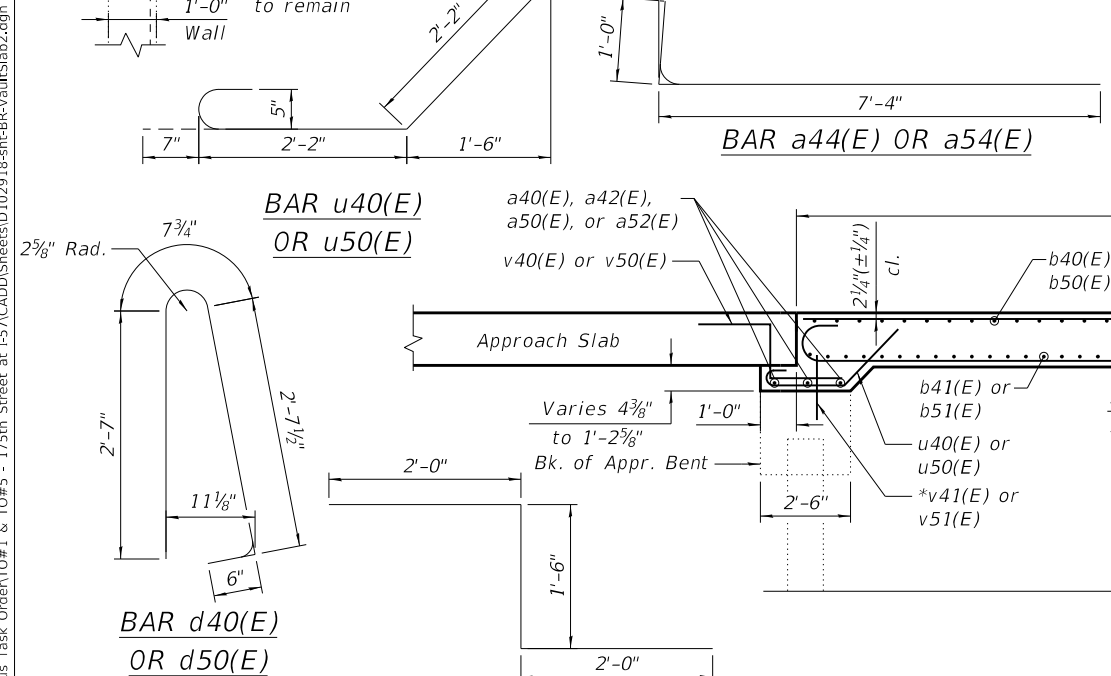
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**PROPOSED CROSS SECTION THRU VAULTED SLAB**  
(Looking East)

\*\*Drill and set #5 d42(E) and d52(E) bars according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall not exceed 6". The Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Located drilled holes to miss transverse bars in deck. Cost included with Reinforcement Bars, Epoxy Coated.

- Notes:
- The u40(E) and u50(E) bars shall be placed parallel to  $\bar{C}$  Roadway.
  - Existing reinforcement to remain shall be cleaned and incorporated into the new construction. Any reinforcement bars to remain that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with "Removal of Existing Concrete Deck".
  - The u40(E), u50(E), v40(E), and v50(E) bars shall be tilted where necessary to maintain minimum cover.
  - Falsework is required for vaulted approach span construction. Falsework shall be removed in accordance with Article 503.05 of the Standard Specifications.

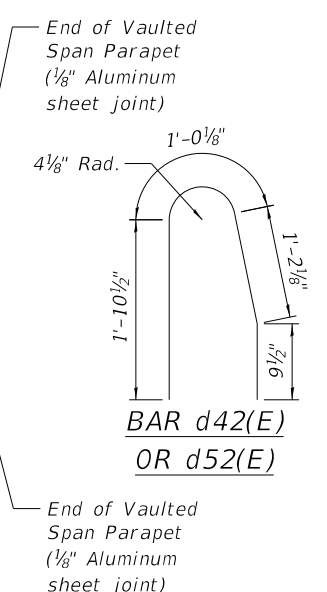
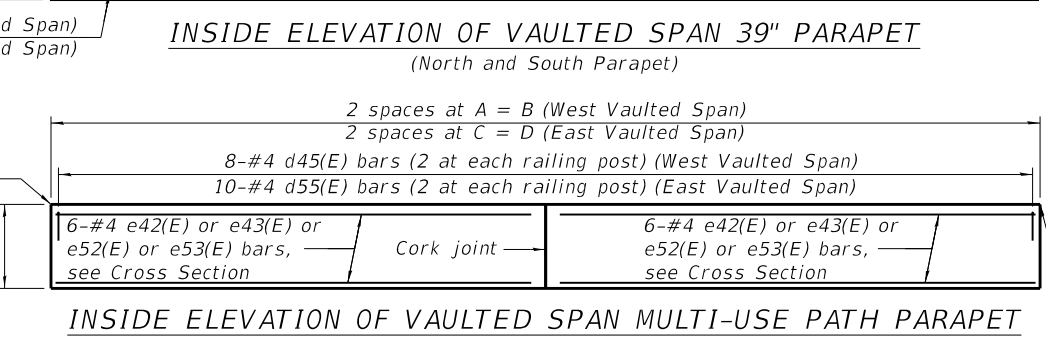
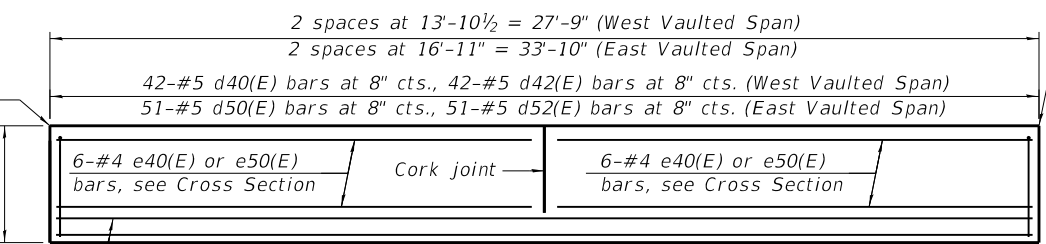


**WEST VAULTED SPAN BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a40(E)	38	#5	21'-8"	—
a41(E)	84	#6	21'-10"	—
a42(E)	38	#5	18'-7"	—
a43(E)	84	#6	18'-9"	—
a44(E)	36	#6	8'-4"	—
b40(E)	50	#5	27'-5"	—
b41(E)	176	#9	27'-5"	—
d40(E)	84	#5	6'-5"	∩
d42(E)	84	#5	4'-11"	∩
d43(E)	56	#6	3'-9"	∩
d44(E)	56	#4	4'-7"	∩
d45(E)	16	#4	2'-0"	∩
e40(E)	24	#4	13'-6"	—
e41(E)	8	#4	27'-5"	—
e42(E)	12	#4	13'-4"	—
e43(E)	12	#4	13'-8"	—
u40(E)	74	#5	4'-11"	∩
v40(E)	74	#5	5'-6"	∩
v41(E)	74	#5	2'-2"	—
Concrete Superstructure		Cu Yd	106.6	
Bridge Deck Grooving		Sq Yd	140	
Protective Coat		Sq Yd	272	
Reinforcement Bars, Epoxy Coated		Pound	28,050	

**EAST VAULTED SPAN BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a50(E)	46	#5	21'-10"	—
a51(E)	102	#6	22'-0"	—
a52(E)	46	#5	18'-9"	—
a53(E)	102	#6	18'-11"	—
a54(E)	44	#6	8'-4"	—
b50(E)	50	#5	33'-6"	—
b51(E)	177	#9	33'-6"	—
d50(E)	102	#5	6'-5"	∩
d52(E)	102	#5	4'-11"	∩
d53(E)	68	#6	3'-9"	∩
d54(E)	68	#4	4'-7"	∩
d55(E)	20	#4	2'-0"	∩
e50(E)	24	#4	16'-7"	—
e51(E)	8	#4	33'-6"	—
e52(E)	12	#4	16'-9"	—
e53(E)	12	#4	16'-5"	—
u50(E)	74	#5	4'-11"	∩
v50(E)	74	#5	5'-6"	∩
v51(E)	74	#5	2'-2"	—
Concrete Superstructure		Cu Yd	152.9	
Bridge Deck Grooving		Sq Yd	170	
Protective Coat		Sq Yd	332	
Reinforcement Bars, Epoxy Coated		Pound	34,180	



Parapet	A	B	C	D
North	13'-8 7/8"	27'-5 3/4"	17'-1 3/8"	34'-2 7/8"
South	14'-0 1/2"	28'-1 1/8"	16'-9"	33'-6"

△ Entire sheet revised

USER NAME =	SUSERS\$	DESIGNED -	EG	REVISED	4/8/2022 LM
CHECKED -	LM	REVISIONS -			
PLOT SCALE =	\$SCALE\$	DRAWN -	EG	REVISIONS -	
PLOT DATE =	\$DATES	CHECKED -	LM	REVISIONS -	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**VAULTED ABUTMENT APPROACH SPAN DETAILS**  
**STRUCTURE NO. 016-1095**

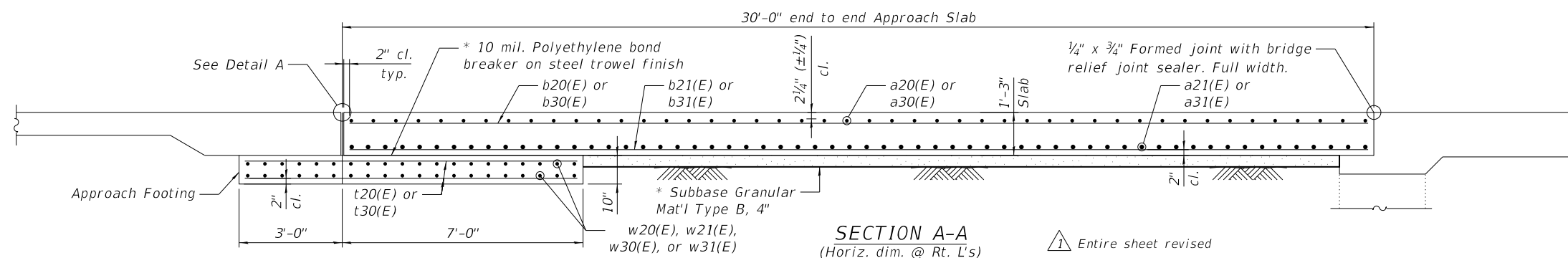
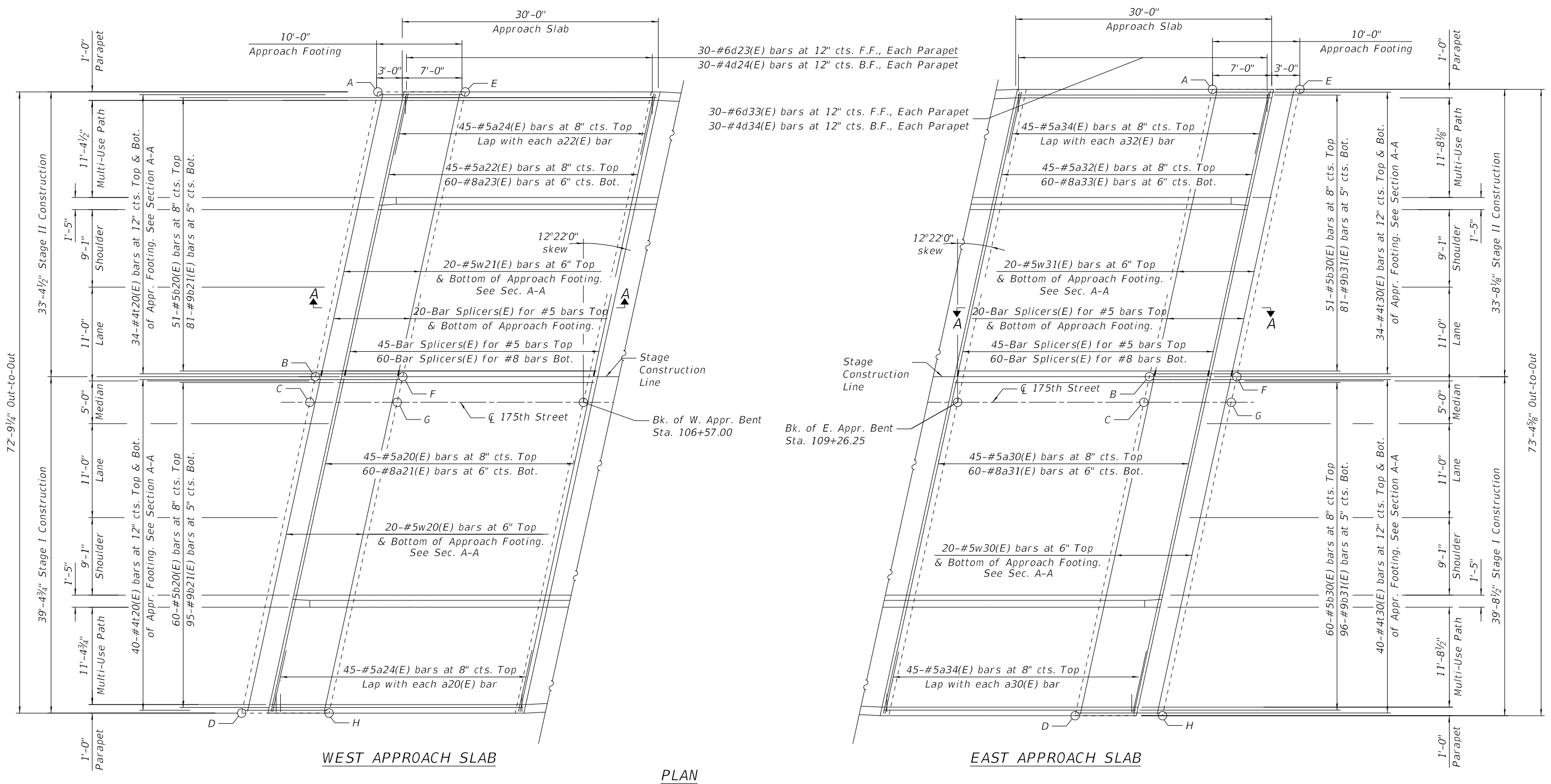
SHEET 15 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	48

CONTRACT NO. 62P10

ILLINOIS FED. AID PROJECT

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**TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING**

Point	West Approach		East Approach	
	Top	Bottom	Top	Bottom
A	728.91	728.07	729.23	728.39
B	729.30	728.47	729.91	729.07
C	729.33	728.50	729.96	729.13
D	728.57	727.73	729.50	728.67
E	729.11	728.27	729.03	728.20
F	729.51	728.68	729.72	728.89
G	729.54	728.71	729.78	728.95
H	728.79	727.95	729.33	728.50

\* Cost included with Concrete Superstructure (Approach Slab)



USER NAME =	SUSERS\$	DESIGNED -	EG	REVISED	4/8/2022 LM
PLOT SCALE =	\$SCALE\$	CHECKED -	LM	REVISED -	
PLOT DATE =	\$DATES	DRAWN -	EG	REVISED -	
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

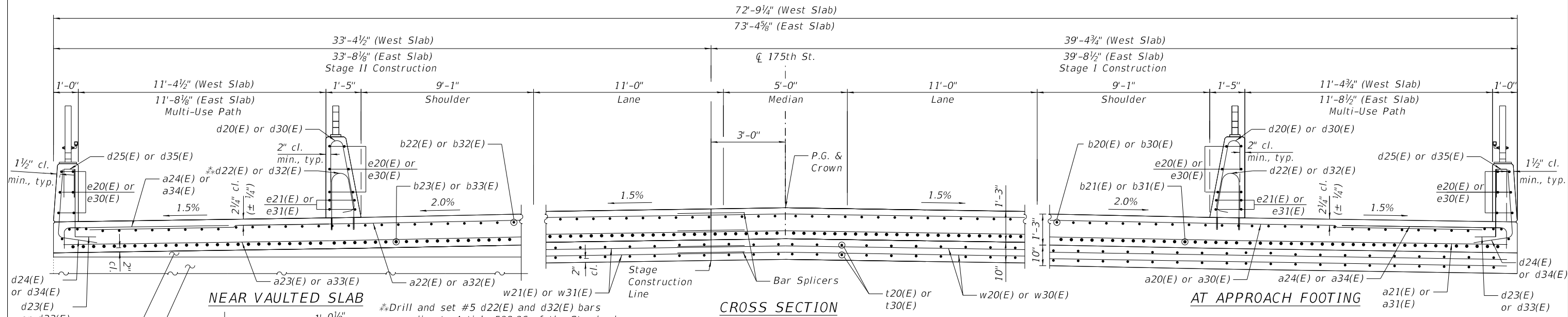
**BRIDGE APPROACH SLAB PLAN**  
**STRUCTURE NO. 016-1095**

SHEET 16 OF 29 SHEETS

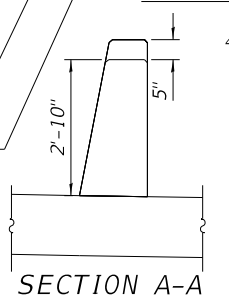
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57	2021-073-BDR	COOK	89	49
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				



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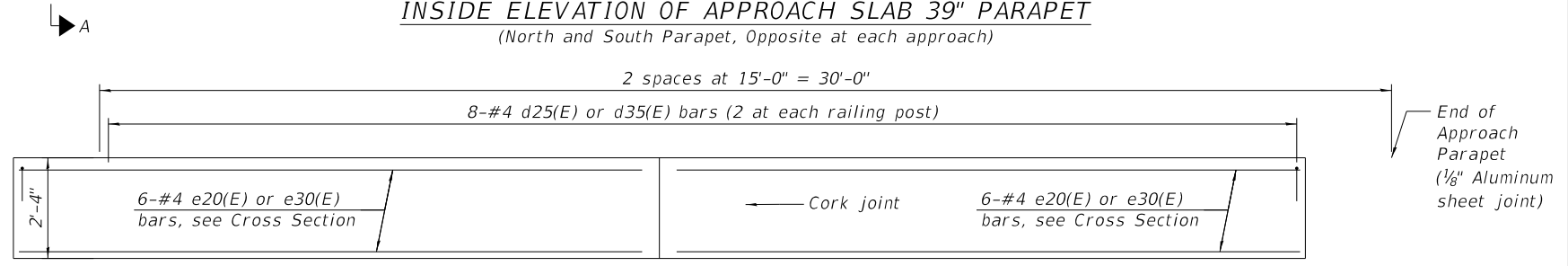
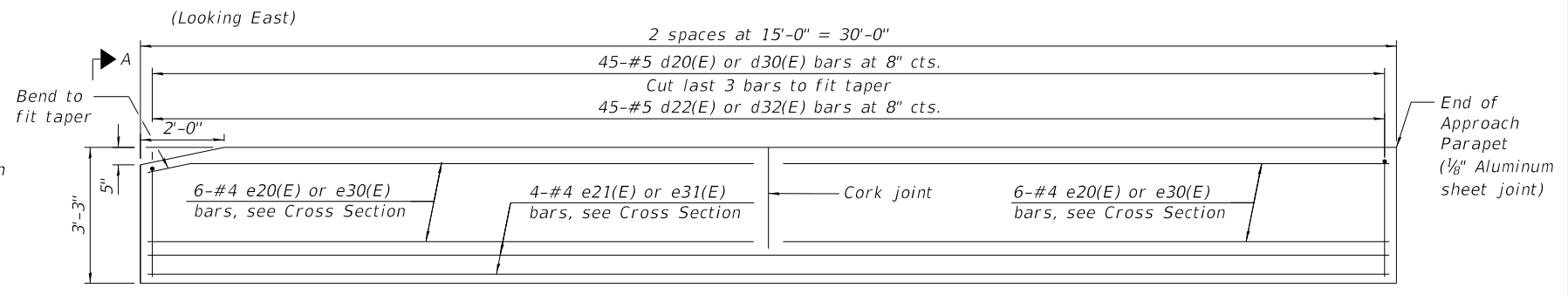


**NEAR VAULTED SLAB**



\*Drill and set #5 d22(E) and d32(E) bars according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall not exceed 6". The Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Located drilled holes to miss transverse bars in deck. Cost included with Reinforcement Bars, Epoxy Coated.

**CROSS SECTION**  
(Looking East)

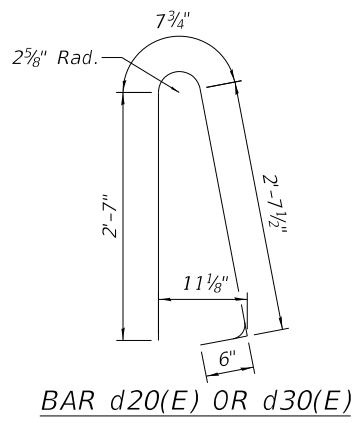


**WEST APPROACH SLAB  
BILL OF MATERIAL**

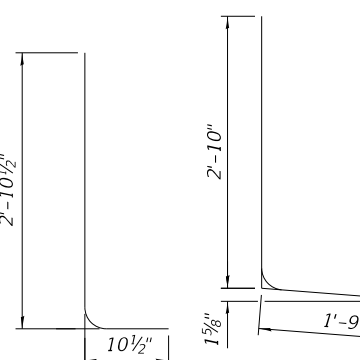
Bar	No.	Size	Length	Shape
a20(E)	45	#5	40'-0"	—
a21(E)	60	#8	40'-0"	—
a22(E)	45	#5	33'-9"	—
a23(E)	60	#8	33'-9"	—
a24(E)	90	#5	7'-4"	—
b20(E)	111	#5	29'-8"	—
b21(E)	176	#9	29'-8"	—
d20(E)	90	#5	6'-5"	⏏
d22(E)	90	#5	4'-11"	⏏
d23(E)	60	#6	3'-9"	⏏
d24(E)	60	#4	4'-7"	⏏
d25(E)	16	#4	2'-0"	⏏
e20(E)	48	#4	14'-8"	—
e21(E)	8	#4	29'-8"	—
t20(E)	148	#4	9'-8"	—
w20(E)	40	#5	40'-0"	—
w21(E)	40	#5	33'-9"	—
Concrete Structures	Cu Yd	23.0		
Concrete Superstructure	Sq Yd	12.7		
Bridge Deck Grooving	Sq Yd	151		
Protective Coat	Sq Yd	296		
Concrete Superstructure (Approach Slab)	Cu Yd	101.1		
Reinforcement Bars, Epoxy Coated	Pound	43,420		

**EAST APPROACH SLAB  
BILL OF MATERIAL**

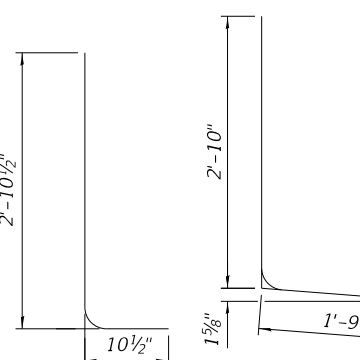
Bar	No.	Size	Length	Shape
a30(E)	45	#5	40'-3"	—
a31(E)	60	#8	40'-3"	—
a32(E)	45	#5	34'-1"	—
a33(E)	60	#8	34'-1"	—
a34(E)	90	#5	7'-4"	—
b30(E)	111	#5	29'-8"	—
b31(E)	177	#9	29'-8"	—
d30(E)	90	#5	6'-5"	⏏
d32(E)	90	#5	4'-11"	⏏
d33(E)	60	#6	3'-9"	⏏
d34(E)	60	#4	4'-7"	⏏
d35(E)	16	#4	2'-0"	⏏
e30(E)	48	#4	14'-8"	—
e31(E)	8	#4	29'-8"	—
t30(E)	148	#4	9'-8"	—
w30(E)	40	#5	40'-3"	—
w31(E)	40	#5	34'-1"	—
Concrete Structures	Cu Yd	23.2		
Concrete Superstructure	Sq Yd	12.7		
Bridge Deck Grooving	Sq Yd	151		
Protective Coat	Sq Yd	298		
Concrete Superstructure (Approach Slab)	Cu Yd	101.9		
Reinforcement Bars, Epoxy Coated	Pound	43,670		



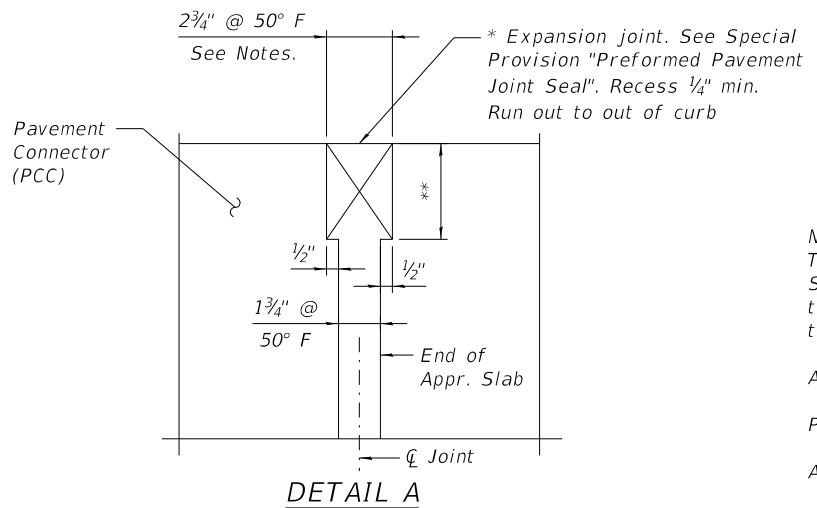
**BAR d20(E) OR d30(E)**



**BAR d23(E) OR d33(E)**



**BAR d24(E) OR d34(E)**



**DETAIL A**

\* Cost included with Concrete Superstructure (Approach Slab)  
 \*\* Per manufacturer recommendations

**Notes:**  
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Parapet concrete shall be paid for as Concrete Superstructure.  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.



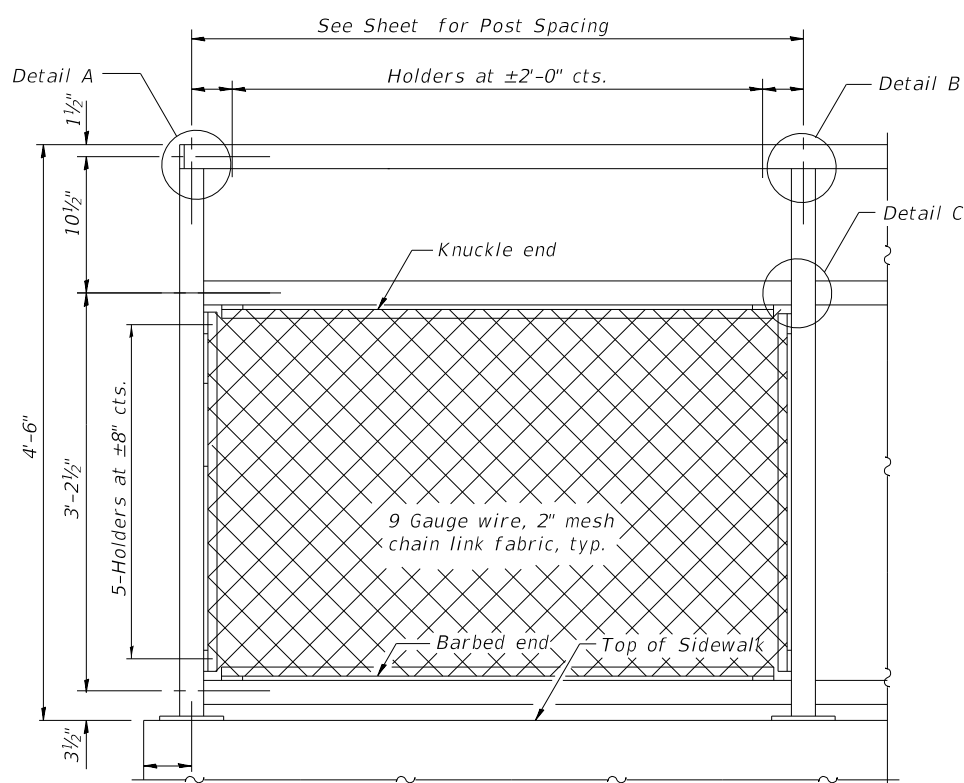
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

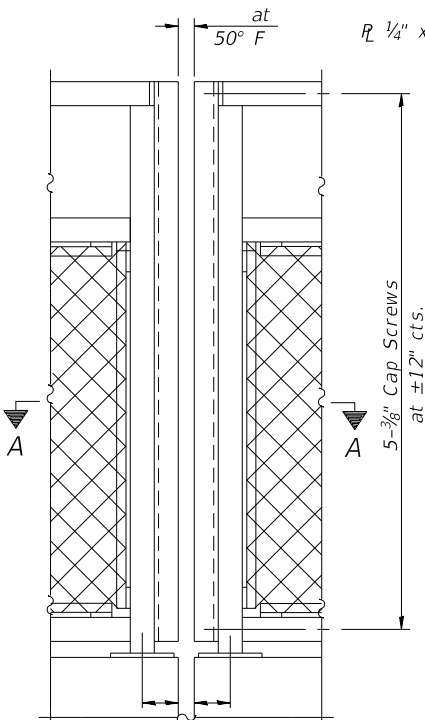
**BRIDGE APPROACH SLAB DETAILS  
STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

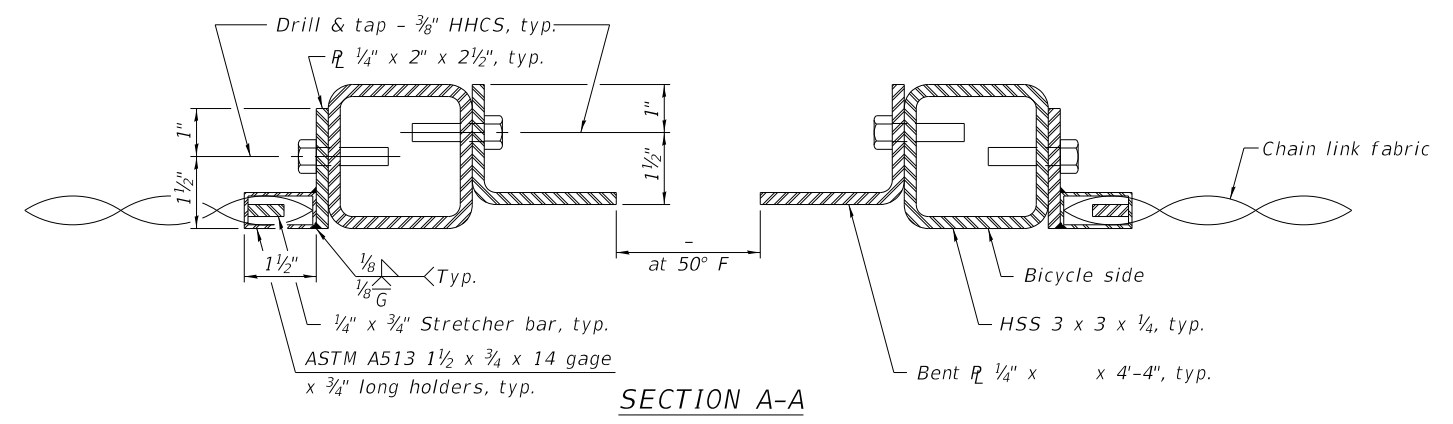
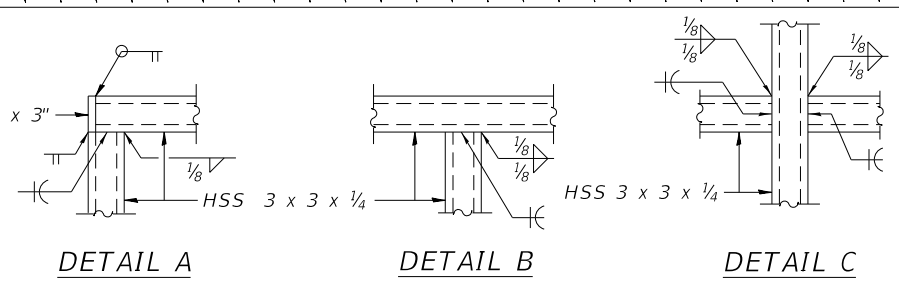
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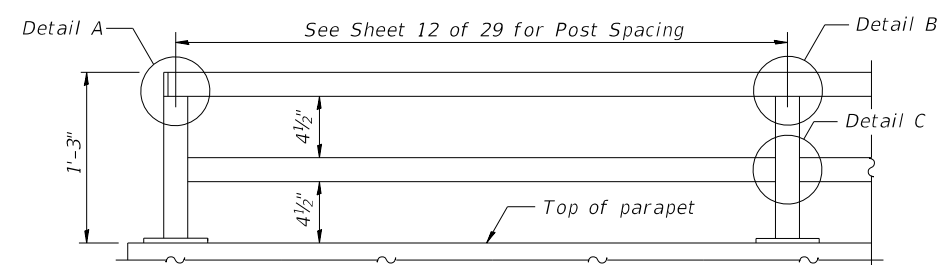
**BICYCLE RAILING**



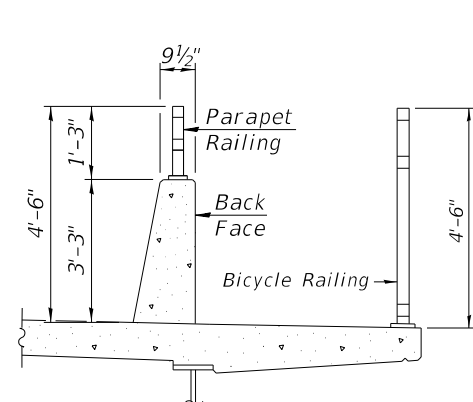
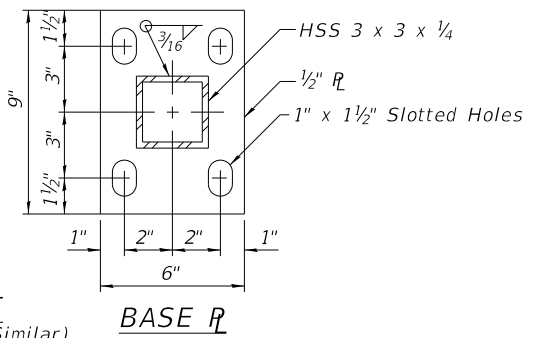
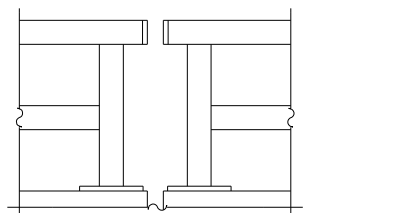
**BICYCLE RAILING**



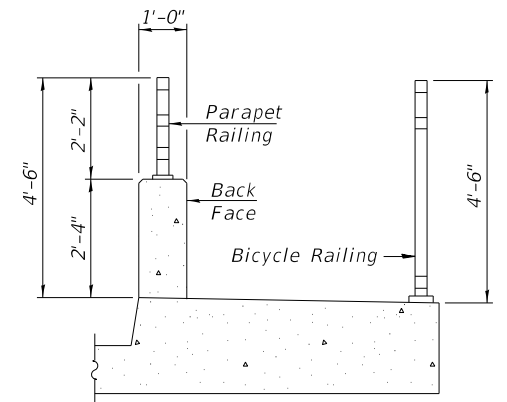
**SECTION A-A**



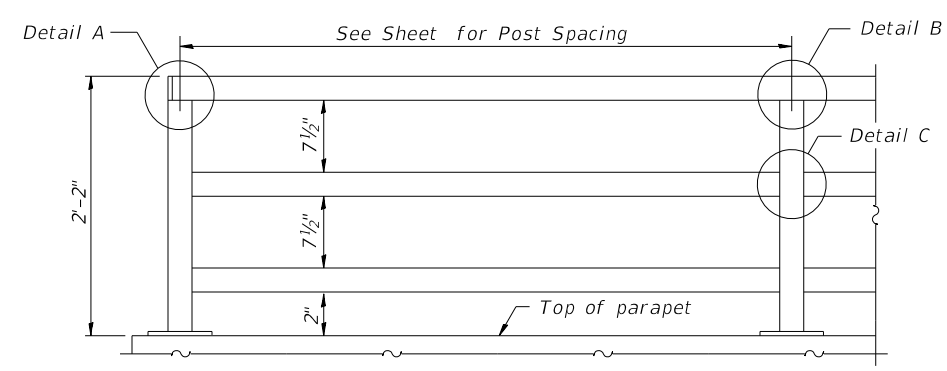
**PARAPET RAILING ELEVATION**  
 (Inside Face of Two Element Rail)



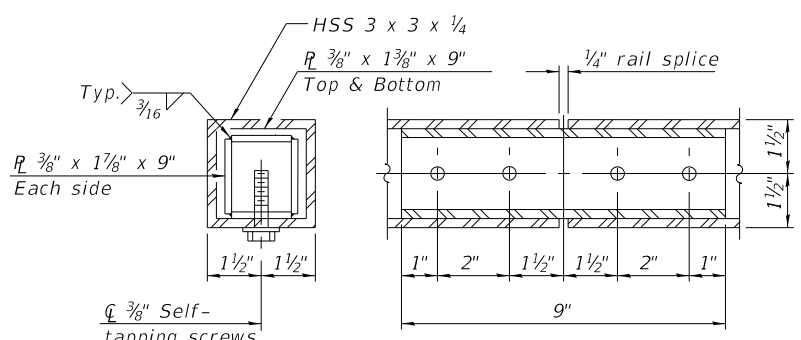
**SECTION THRU DECK**



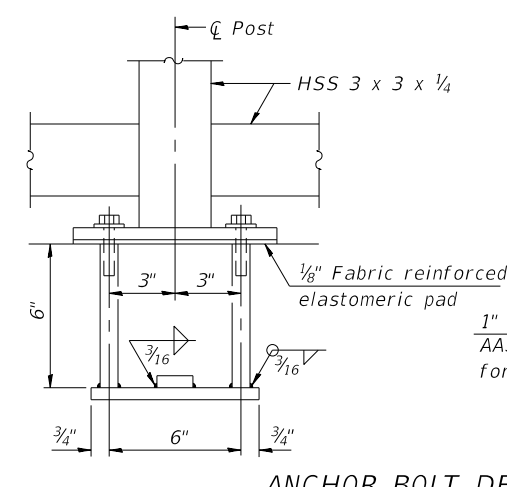
**SECTION THRU SIDEWALK**



**PARAPET RAILING ELEVATION**  
 (Inside Face of Three Element Rail)



**RAIL SPLICE**



**ANCHOR BOLT DETAILS**

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" Ø anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

**BILL OF MATERIAL**

Item	Unit	Quantity
Parapet Railing	Foot	646

**Notes:**  
 All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications. CVN testing may be omitted for the Bicycle Railing. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

R-29

1-14-2019 (10'-0" Maximum Post Spacing)

Entire sheet revised



USER NAME = SUSERS	DESIGNED - EG	REVISED - 4/8/2022 LM
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PLOT DATE = \$DATES	DRAWN - EG	REVISED -
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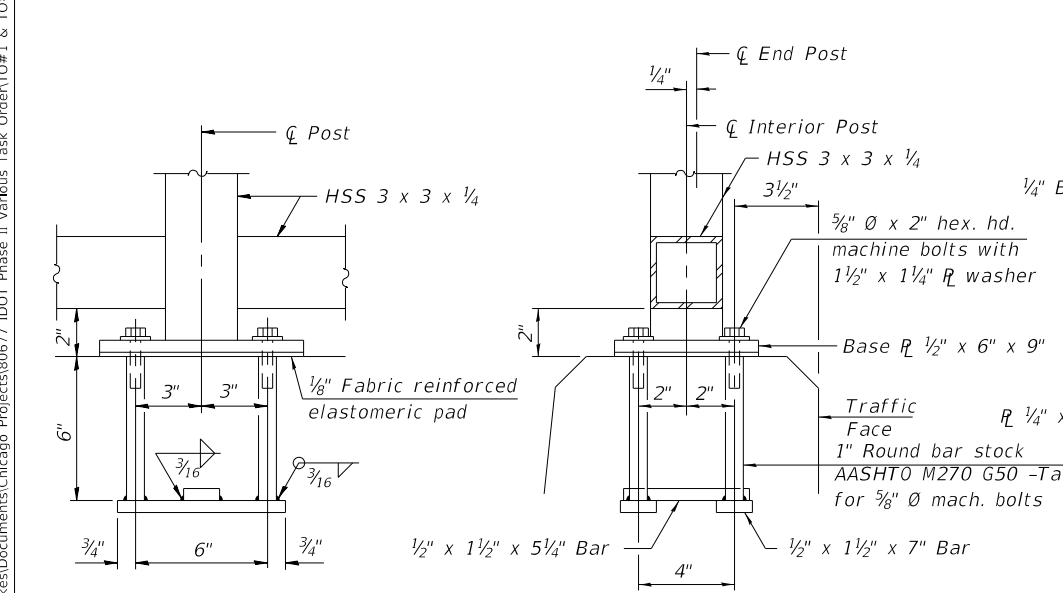
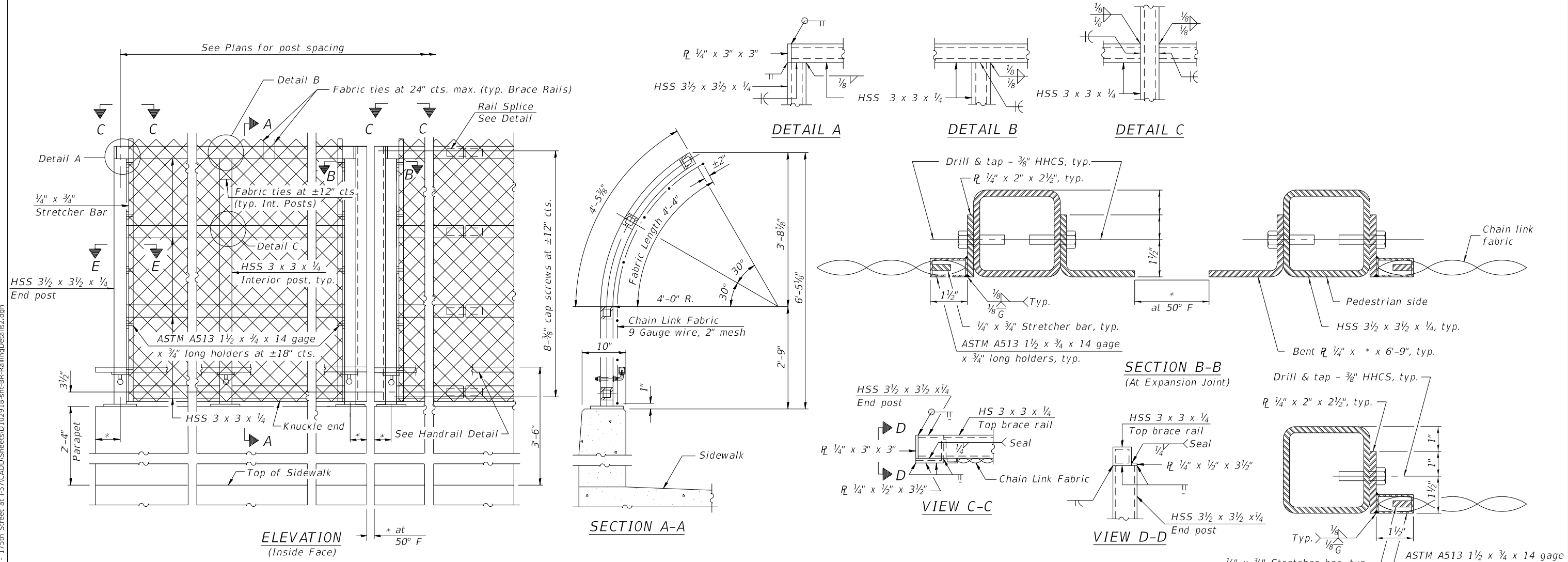
**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**BICYCLE RAILING STRUCTURE NO. 016-1095**

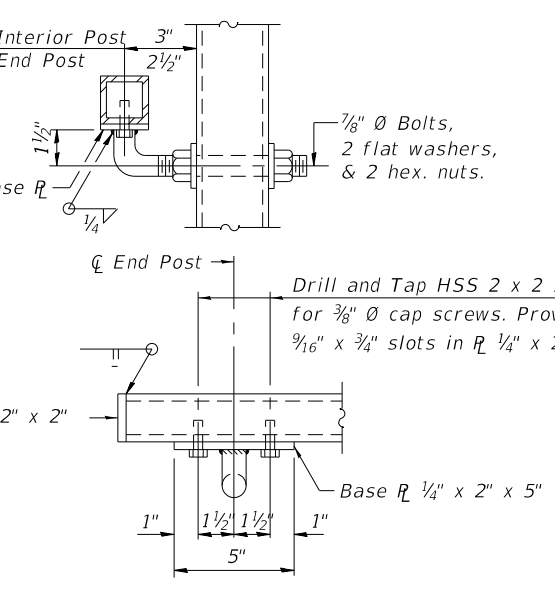
SHEET 18 OF 29 SHEETS

F.A.I. RTE. 57	SECTION 2021-073-BDR	COUNTY COOK	TOTAL SHEETS 89	SHEET NO. 51
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

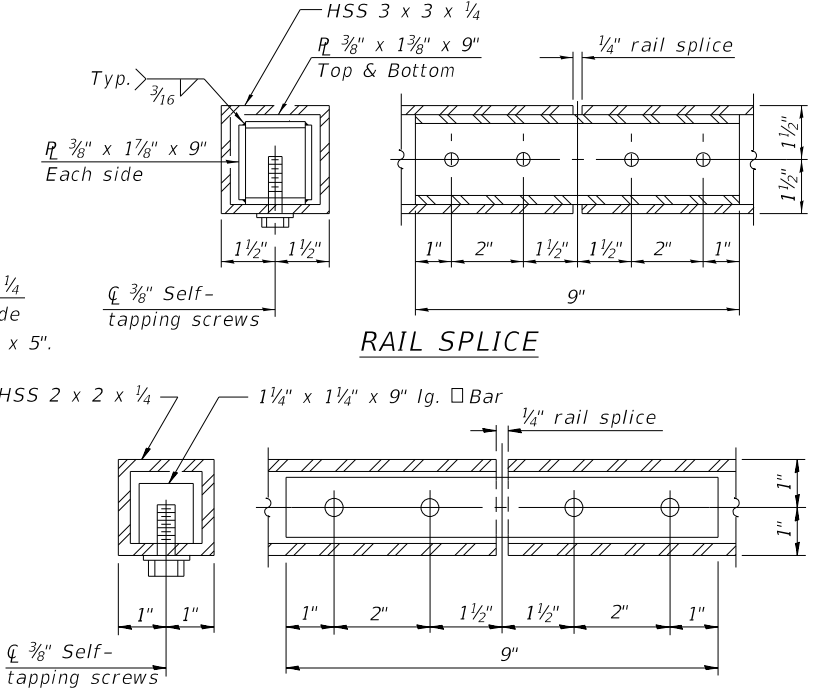
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**ANCHOR BOLT DETAILS**  
 In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" Ø anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

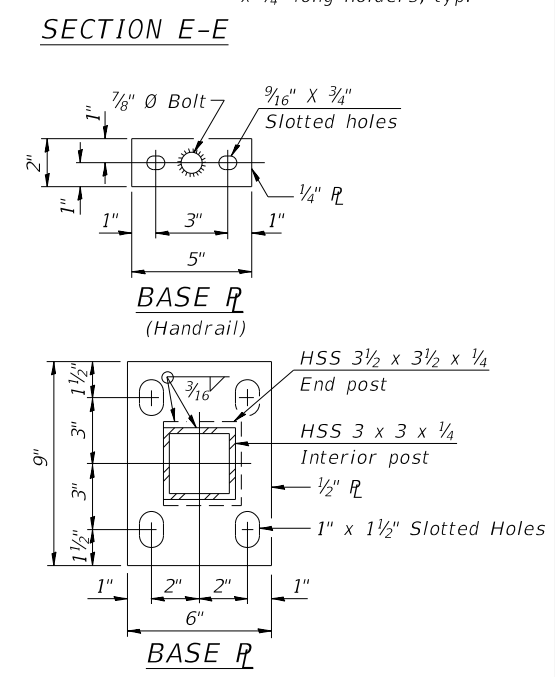


**HANDRAIL DETAIL**



**RAIL SPLICE**

**HANDRAIL SPLICE**



**BASE PL (Handrail)**

**BASE PL**

**BILL OF MATERIAL**

Item	Unit	Quantity
Bridge Fence Railing	Foot	654

R-32

1-14-2019  
 (10'-0" Maximum Post Spacing)

Entire sheet revised

USER NAME	DESIGNED	CHECKED	REVISION	DATE
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SSCALE	EG	LM		
SDATES	LM			

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

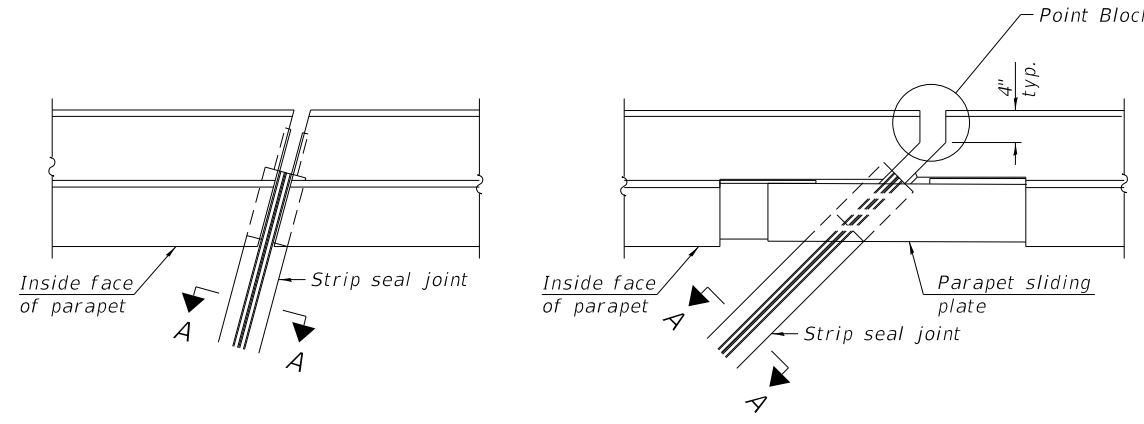
**BRIDGE FENCE RAILING, PARAPET MOUNTED  
 STRUCTURE NO. 016-1095**

SHEET 19 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	52
CONTRACT NO. 62P10				

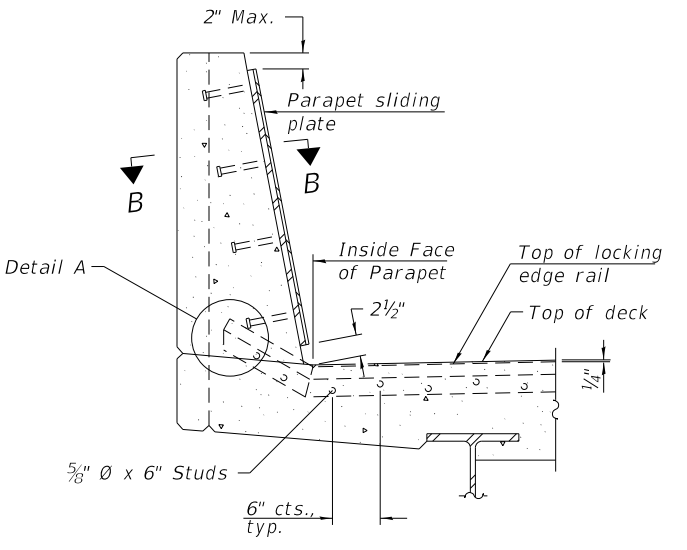
ILLINOIS FED. AID PROJECT

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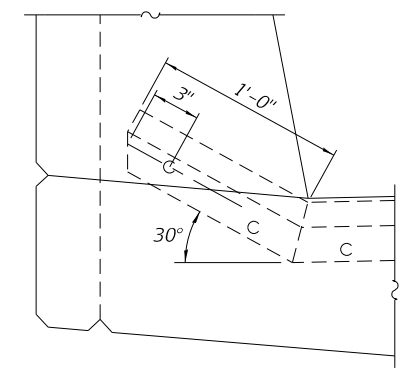
FOR SKEWS  $\le 30^\circ$

PLAN AT PARAPET

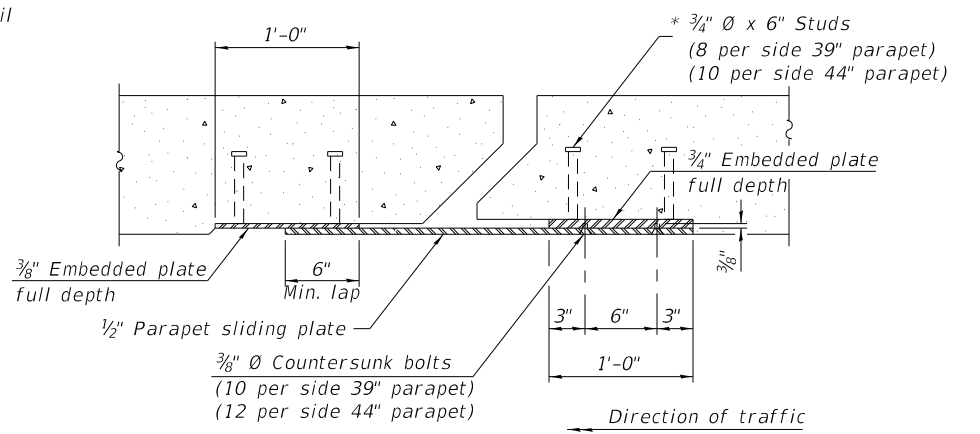


SECTION AT PARAPET

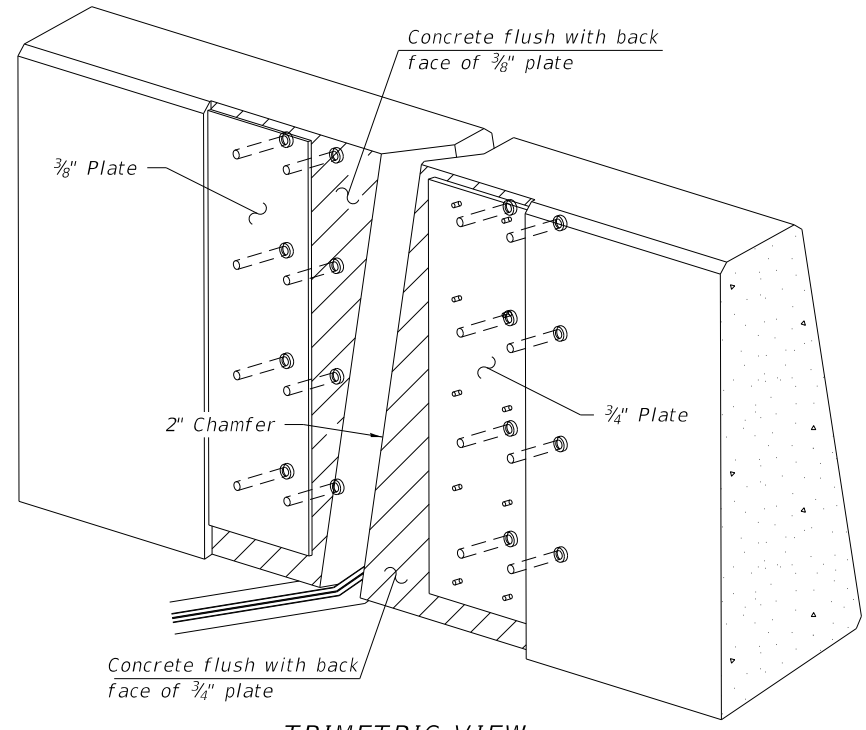
(Skews  $> 30^\circ$  shown. Skews  $\le 30^\circ$  similar except as shown in plan view.)



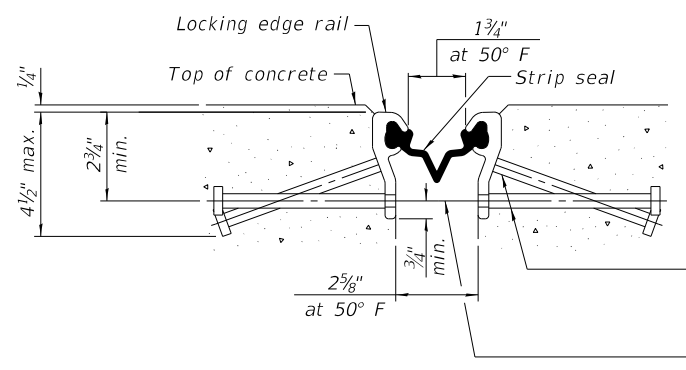
DETAIL A



SECTION B-B



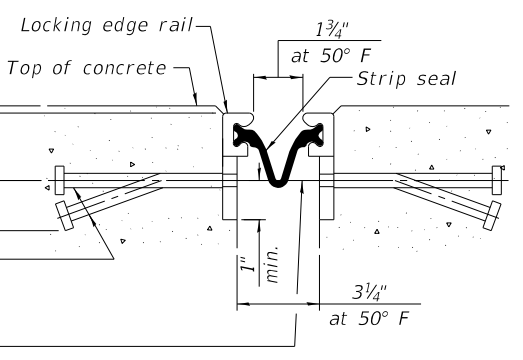
TRIMETRIC VIEW (Showing embedded plates only)



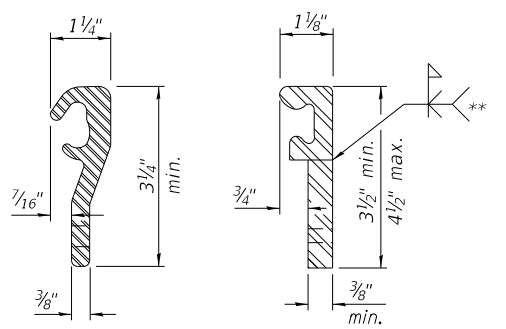
SHOWING ROLLED RAIL JOINT

\* 5/8"  $\phi$  x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

3/8"  $\phi$  threaded rods in 7/16"  $\phi$  holes at  $\pm 4$ -0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

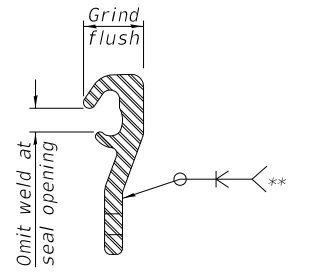


SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

\*\* Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	144

EJ-SS-S

1-1-2020

Entire sheet revised



USER NAME =	SUSERS	DESIGNED -	EG	REVISED -	4/8/2022 LM
CHECKED -	LM	DRAWN -	EG	REVISI	-
PLOT SCALE =	\$SCALE\$	CHECKED -	LM	REVISI	-
PLOT DATE =	\$DATES				

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL - SIDEWALK 1  
 STRUCTURE NO. 016-1095

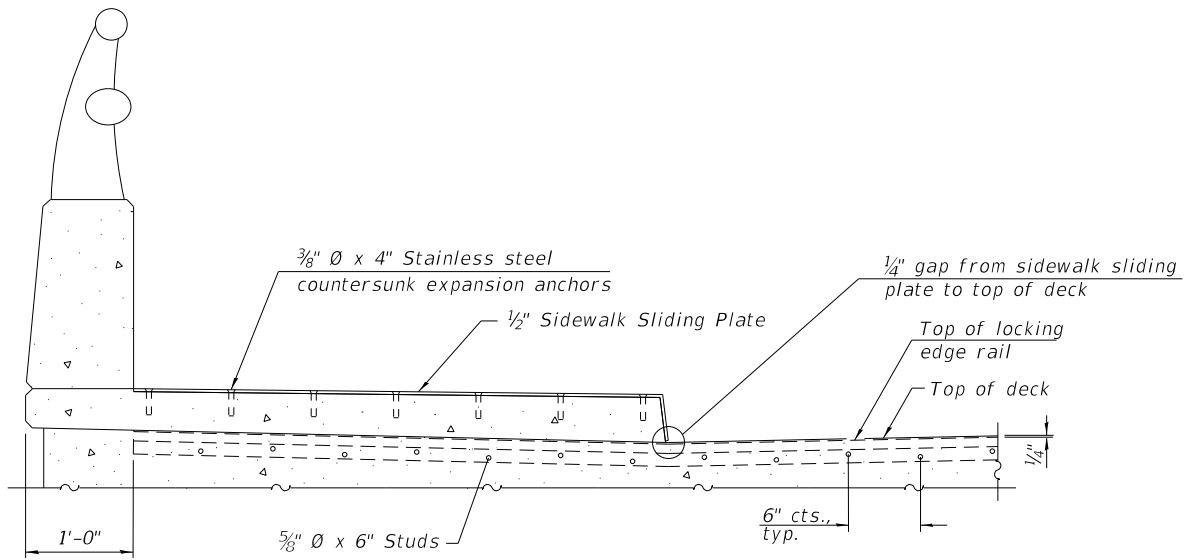
SHEET 20 OF 29 SHEETS

(Sheet 1 of 3)

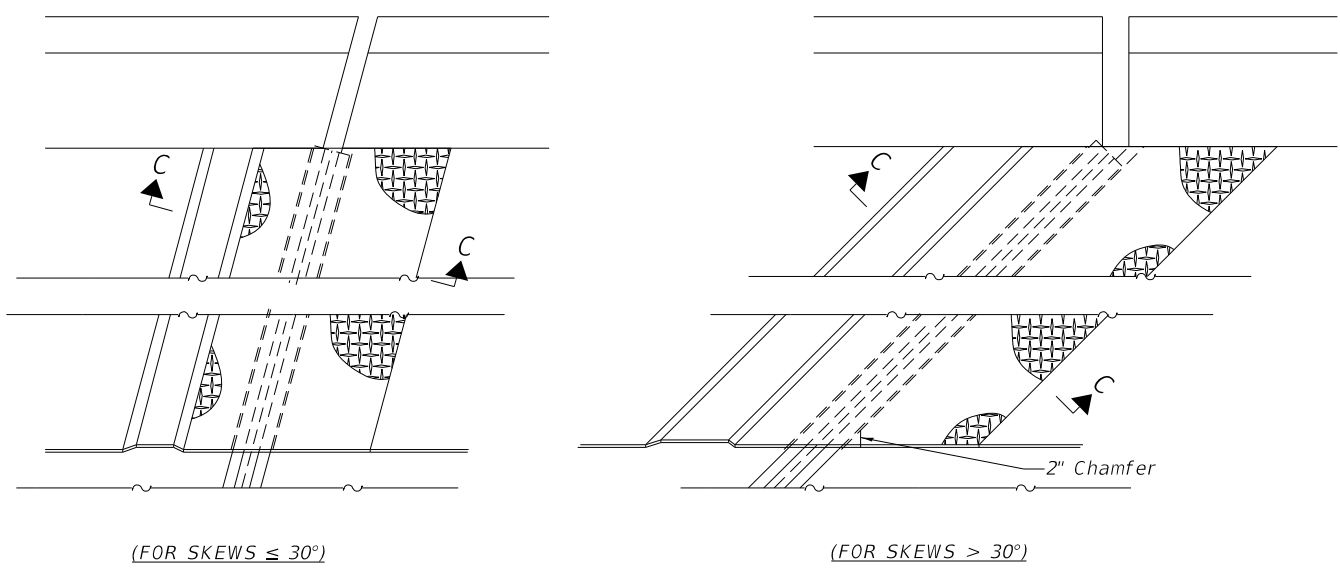
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	53
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

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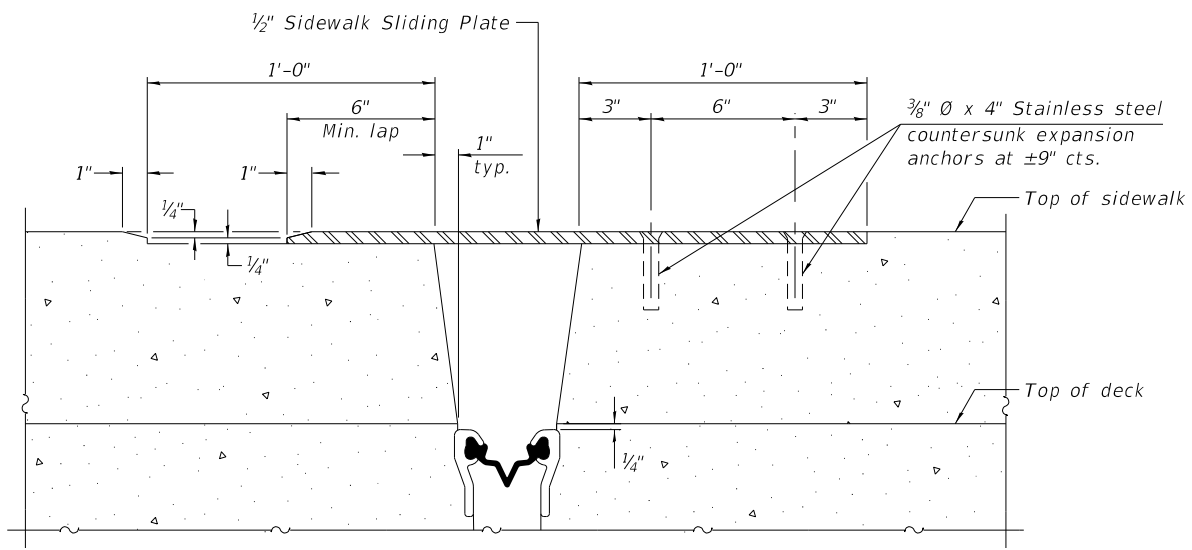
**SECTION AT RAISED SIDEWALK**



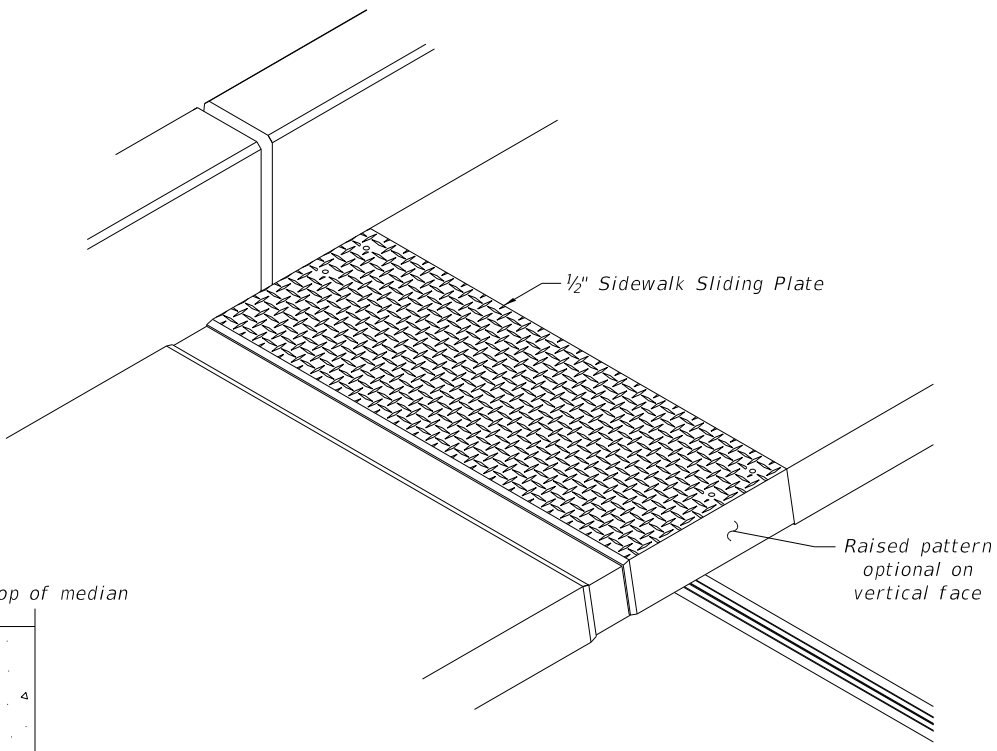
(FOR SKEWS  $\leq 30^\circ$ )

(FOR SKEWS  $> 30^\circ$ )

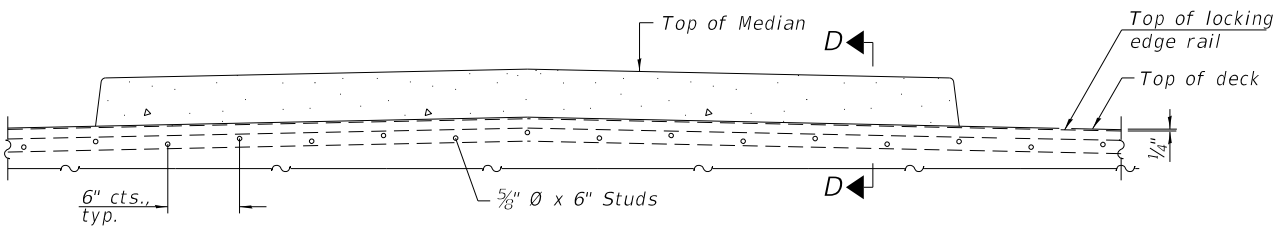
**PLAN AT RAISED SIDEWALK**



**SECTION C-C**

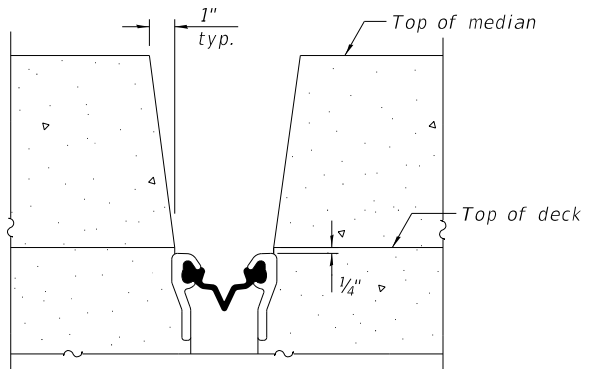


**TRIMETRIC VIEW**



**SECTION AT MEDIAN**

For skews  $> 30^\circ$ , chamfer acute corners 2" similar to sidewalk.



**SECTION D-D**  
(at Rt. L's)

EJ-SS-S

1-1-2020

Entire sheet revised



USER NAME =	SUSERS	DESIGNED -	EG	REVISED $\Delta$	4/8/2022 LM
CHECKED -	LM	DRAWN -	EG	REVISED -	
PLOT SCALE =	\$SCALE\$	CHECKED -	LM	REVISED -	
PLOT DATE =	\$DATES				

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL - SIDEWALK 2  
 STRUCTURE NO. 016-1095

(Sheet 2 of 3)

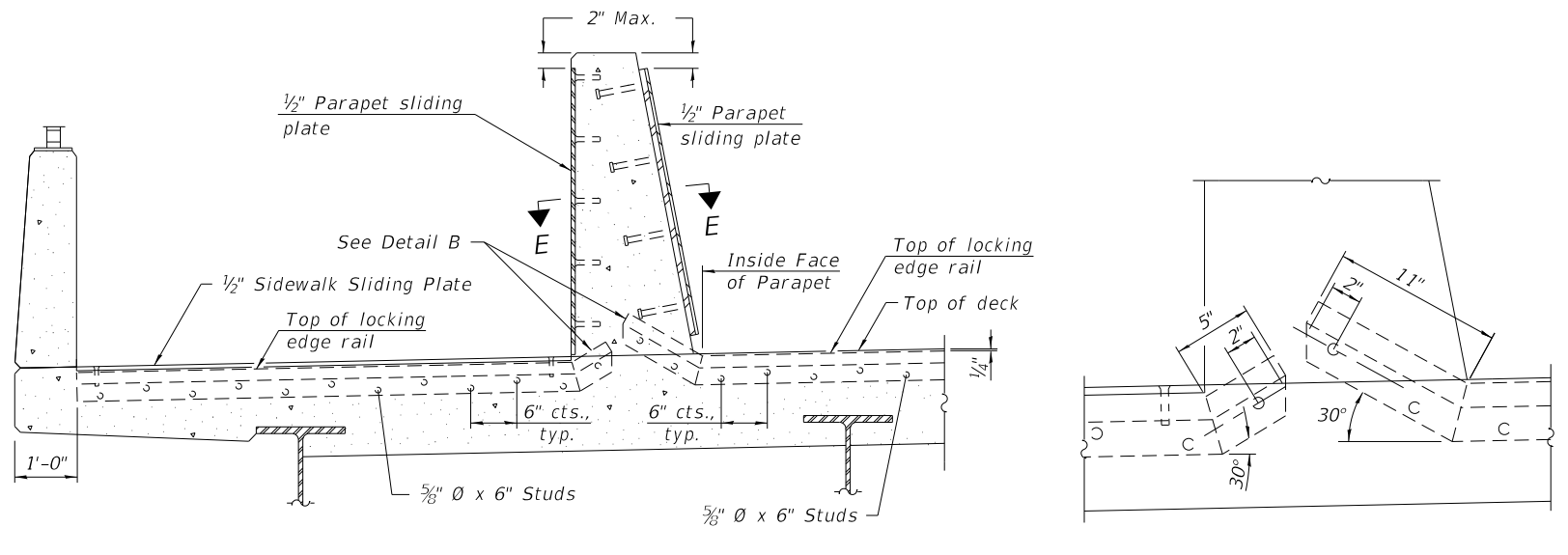
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	54
CONTRACT NO. 62P10				

SHEET 21 OF 29 SHEETS

ILLINOIS FED. AID PROJECT

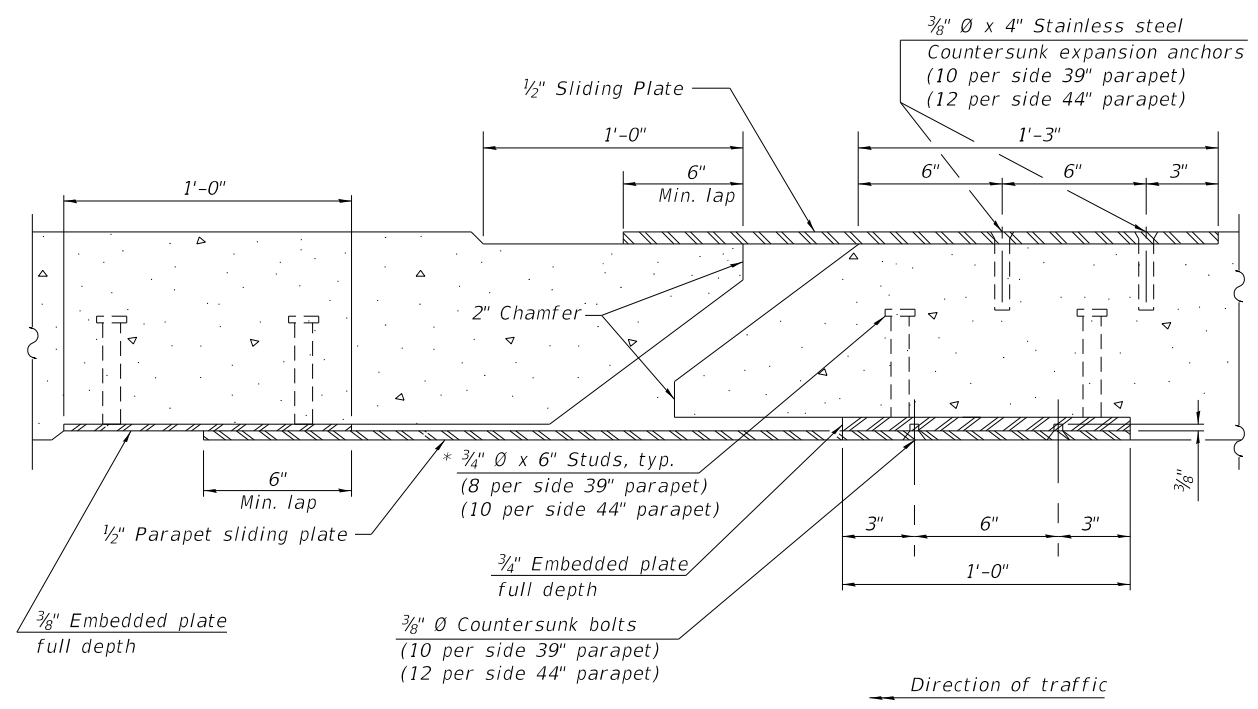
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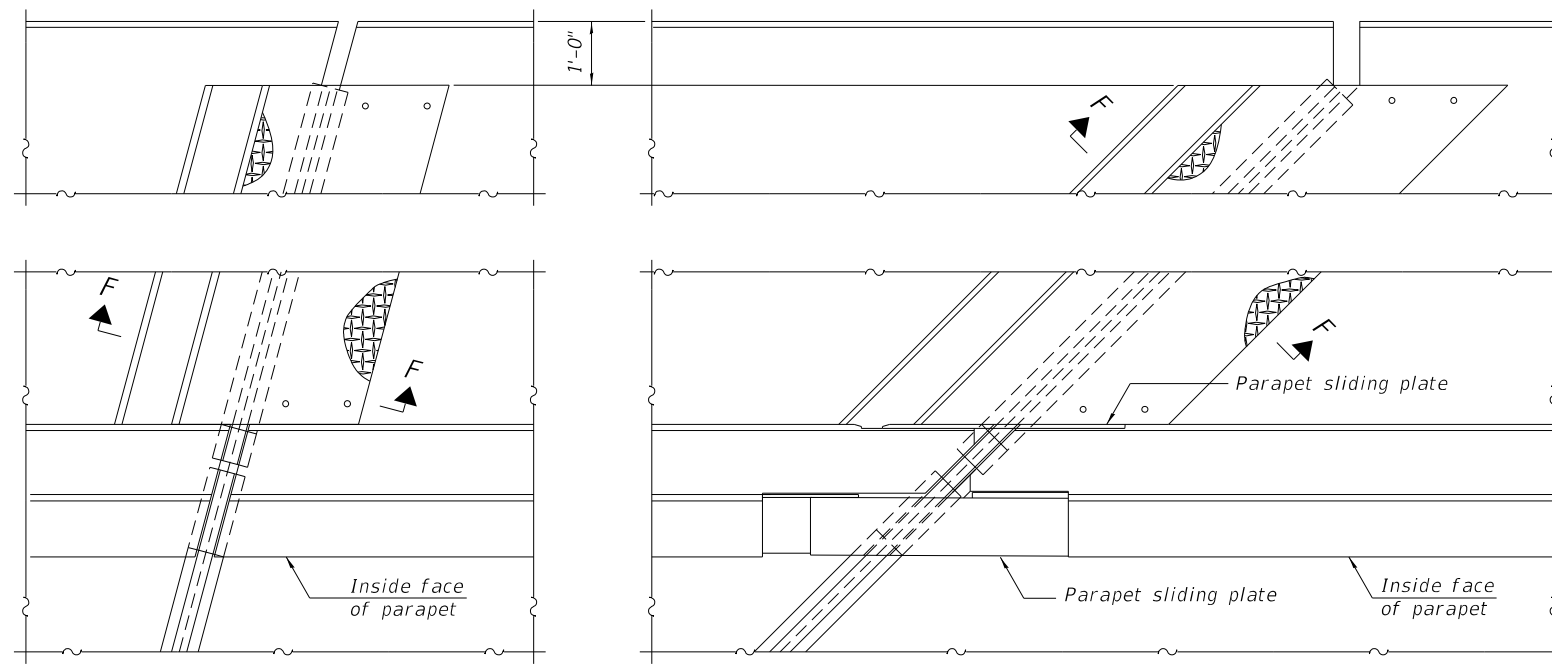


**SECTION AT DECK LEVEL SIDEWALK**  
 (Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)

**DETAIL B**



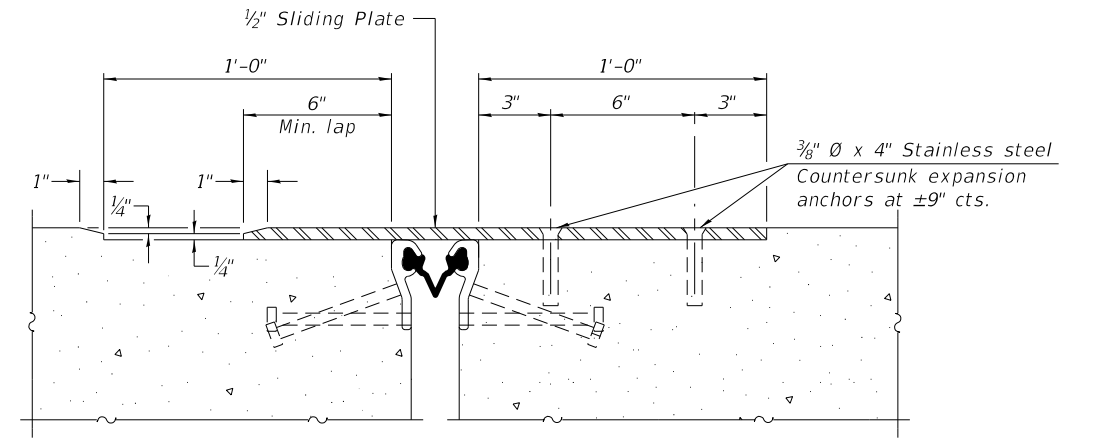
**SECTION E-E**



(FOR SKEWS ≤ 30°)

(FOR SKEWS > 30°)

**PLAN AT DECK LEVEL SIDEWALK**



**SECTION F-F**

EJ-SS-S

1-1-2020

Entire sheet revised

(Sheet 3 of 3)



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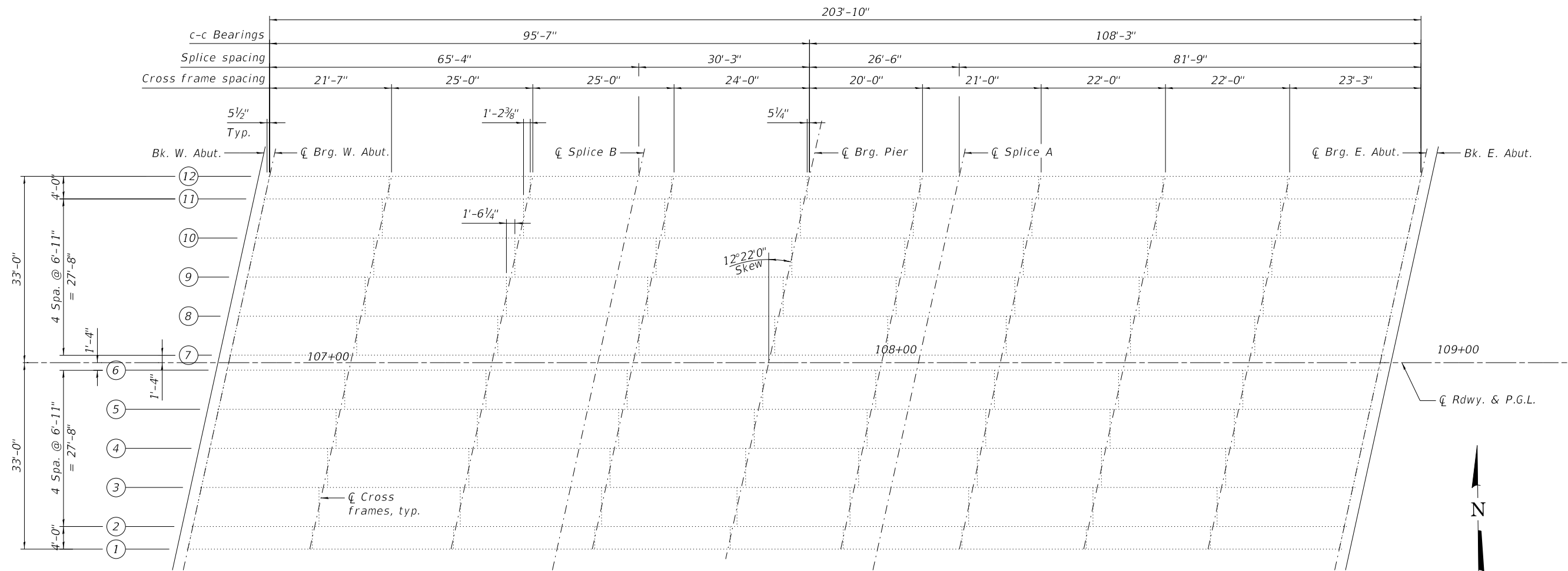
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PREFORMED JOINT STRIP SEAL - SIDEWALK 3  
 STRUCTURE NO. 016-1095**

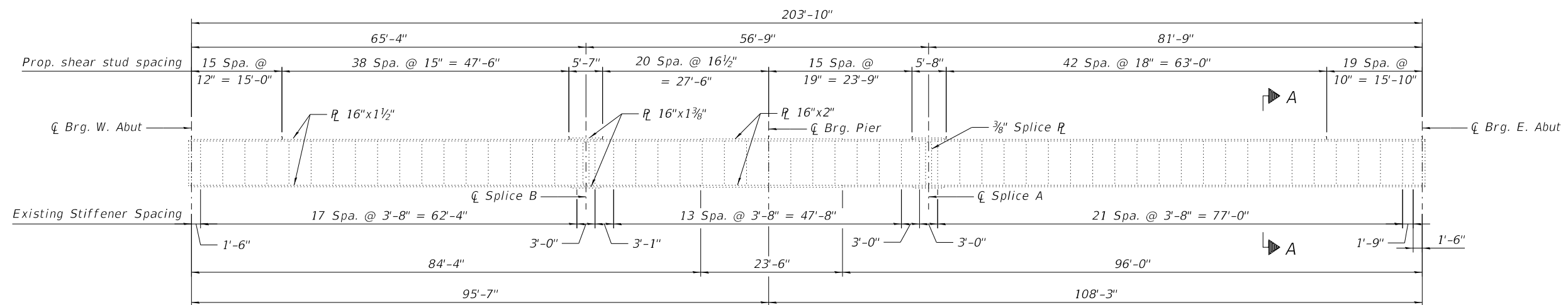
SHEET 22 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	55
CONTRACT NO. 62P10				

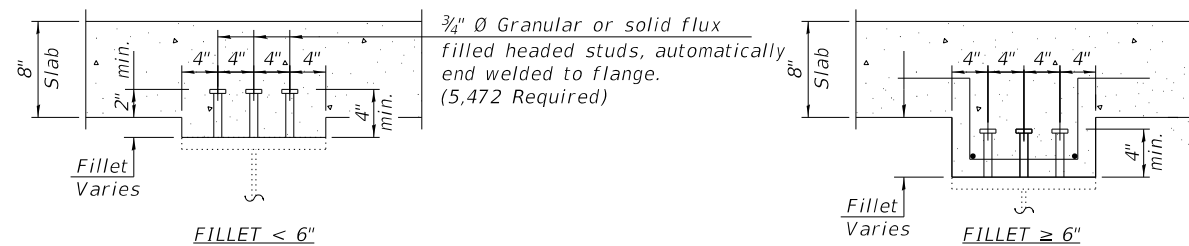
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**FRAMING PLAN**  
Existing



**GIRDER ELEVATION**  
Existing



**SECTION A-A**

See sheet 13 of 29 for fillet reinforcement details.

Entire sheet revised



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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**STRUCTURAL STEEL**  
**STRUCTURE NO. 016-1095**

SHEET 23 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	56
CONTRACT NO. 62P10				
ILLINOIS FED. AID PROJECT				

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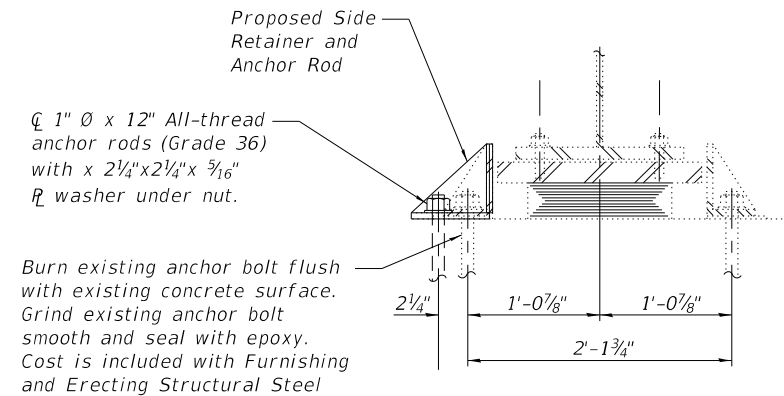
INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 Sp. 2
$I_s$	(in <sup>4</sup> )	27,514	36,539	27,514
$I_c(n)$	(in <sup>4</sup> )	55,405	41,522	55,405
$I_c(3n)$	(in <sup>4</sup> )	42,304	41,522	42,304
$S_s$	(in <sup>3</sup> )	1,171	1,522	1,171
$S_c(n)$	(in <sup>3</sup> )	1,422	1,587	1,422
$S_c(3n)$	(in <sup>3</sup> )	1,332	1,587	1,332
$\rho$	(k')	1.045	1.091	1.045
$M\rho$	(k)	563	-1,461	888
$s\rho$	(k')	0.159	0.159	0.159
$M_s\rho$	(k)	86	-220	136
$M_L$	(k)	736	-785	831
$M_I$	(k)	167	-173	178
$S_3 [M_L + M_I]$	(k)	1,505	-1,597	1,682
$M_a$	(k)	2,801	-4,262	3,518
$M_u$	(k)	4,575	---	4,594
$f_s \rho$ non-comp	(ksi)	5.77	11.52	9.10
$f_s \rho$ (comp)	(ksi)	0.78	1.66	1.23
$f_s S_3 [M_L + M_I]$	(ksi)	12.73	12.08	14.23
$f_s$ (Overload)	(ksi)	19.28	25.26	24.56
$f_s$ (Total)	(ksi)	---	32.84	---
VR	(k)	61.91	58.73	59.61

INTERIOR GIRDER REACTION TABLE				
		W. Abut.	Pier	E. Abut.
$R\rho$	(k)	40.93	157.18	50.62
$R_L$	(k)	44.55	68.21	45.05
$R_I$	(k)	10.10	10.37	9.66
$R_{Total}$	(k)	95.58	235.76	105.33

- \* Compact section  
 \*\* Braced non-compact and partially braced section

$I_s, S_s$ : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$  (Total and Overload) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).  
 $I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$  (Total and Overload) due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).  
 $I_c(3n), S_c(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$  (Total and Overload) due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).  
 $\rho$ : Un-factored non-composite dead load (kips/ft.).  
 $M\rho$ : Un-factored moment due to non-composite dead load (kip-ft.).  
 $s\rho$ : Un-factored long-term composite (superimposed) dead load (kips/ft.).  
 $M_s\rho$ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).  
 $M_L$ : Un-factored live load moment (kip-ft.).  
 $M_I$ : Un-factored moment due to impact (kip-ft.).  
 $M_a$ : Factored design moment (kip-ft.).  
 $1.3 [M\rho + M_s\rho + \frac{5}{3} (M_L + M_I)]$   
 $M_u$ : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).  
 $f_s$  (Overload): Sum of stresses as computed from the moments below (ksi).  
 $M\rho + M_s\rho + \frac{5}{3} (M_L + M_I)$   
 $f_s$  (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.3 [M\rho + M_s\rho + \frac{5}{3} (M_L + M_I)]$   
 VR: Maximum  $L +$  impact shear range within the composite portion of the span for stud shear connector design (kips).

⚠ Entire sheet revised

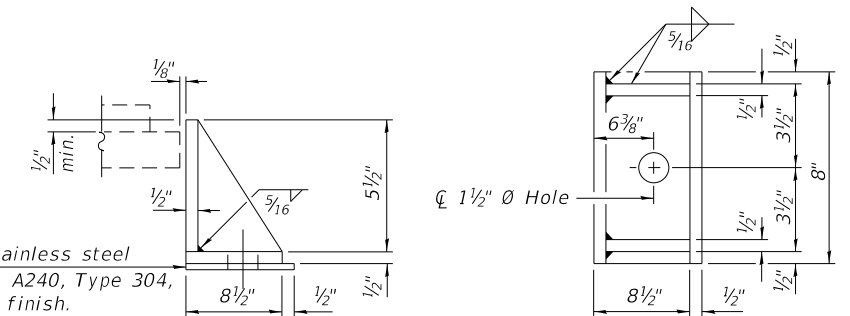


**EXPANSION BEARING SIDE RETAINER  
 REMOVAL AND REPLACEMENT**

(West Abutment - Girder 4 - South Retainer Only)

Burn existing anchor bolt flush with existing concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost is included with Furnishing and Erecting Structural Steel

All (embedded and separate) side retainers, anchor rods, nuts, and washers shall be galvanized according to AASHTO M111 or M232 as applicable.



**SIDE RETAINER**

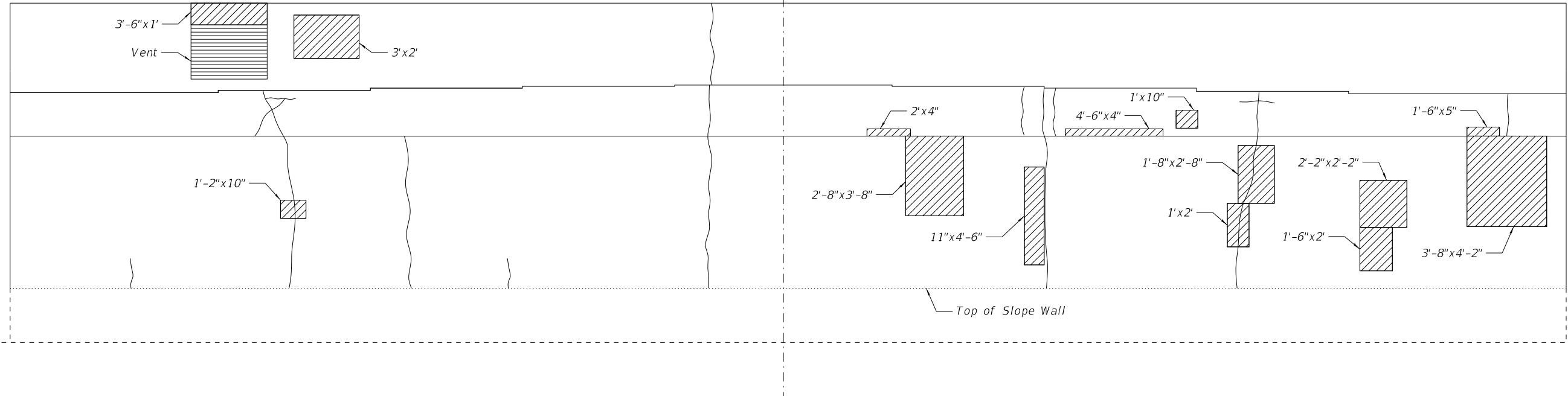
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Side Retainer to be paid per Pound as Furnishing and Erecting Structural Steel.

**BILL OF MATERIAL**

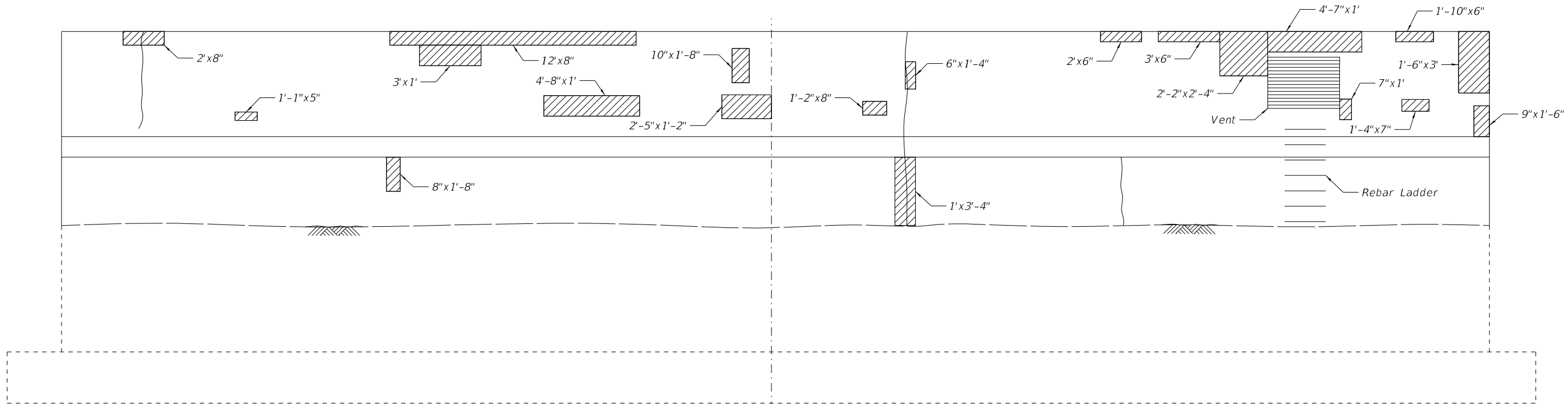
Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	22
Anchor Bolts, 1"	Each	1



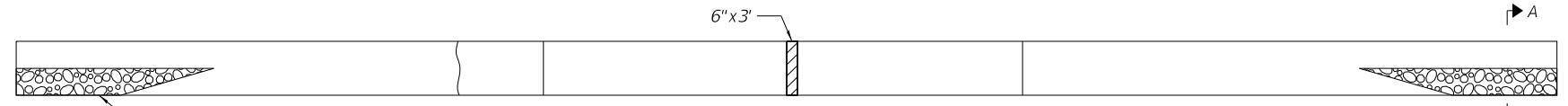
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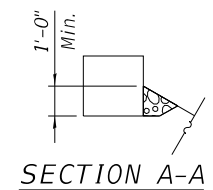
**ELEVATION**  
 (Looking West)



**ELEVATION**  
 (Looking East - Inside Vault)



**WEST VAULTED APPROACH BENT**  
 (Inside Vault Looking West)



**SECTION A-A**

**WEST ABUTMENT REPAIR BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq Ft	120
Granular Backfill for Structures	Cu Yd	5

Fill eroded slope with Granular Backfill for Structures as directed by the Engineer. Limits of backfill to be field verified, typ.

⚠ Entire sheet revised

**LEGEND**

- Hairline Crack - Not to be sealed
- Formed Concrete Repair Depth equal to or less than 5"



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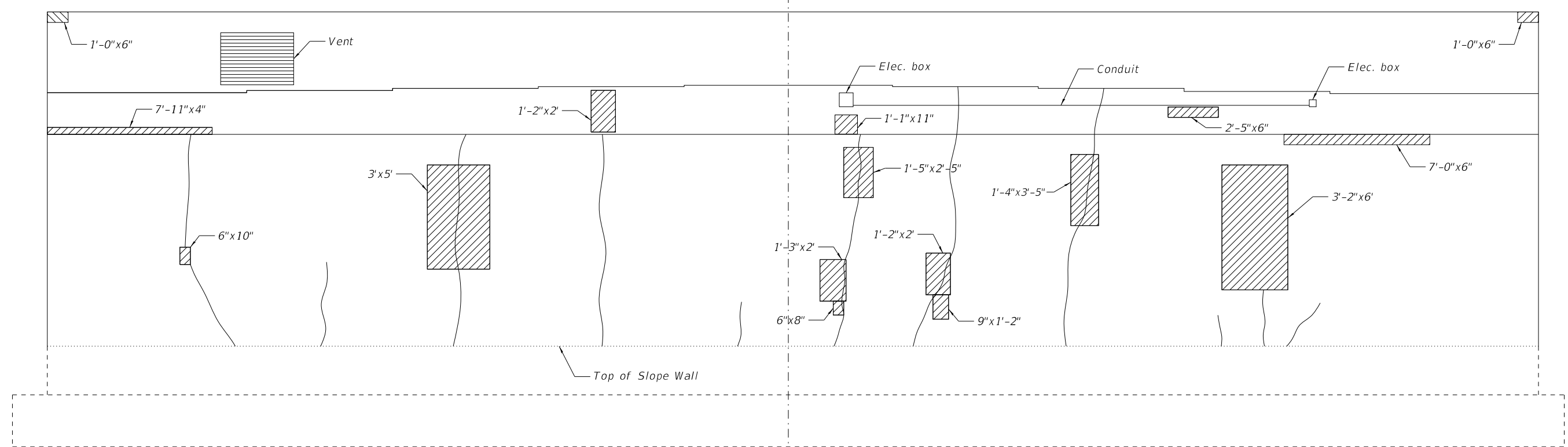
**WEST ABUTMENT REPAIR DETAILS  
 STRUCTURE NO. 016-1095**

SHEET 25 OF 29 SHEETS

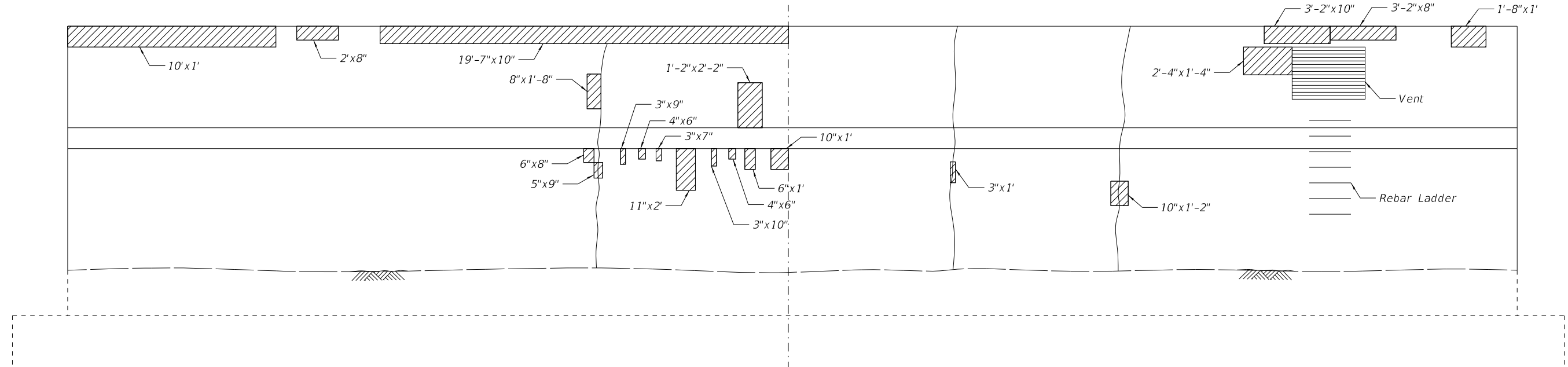
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	58
CONTRACT NO. 62P10				

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**ELEVATION**  
(Looking East)



**ELEVATION**  
(Looking West - Inside Vault)

**EAST ABUTMENT REPAIR BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq Ft	126
Granular Backfill for Structures	Cu Yd	5

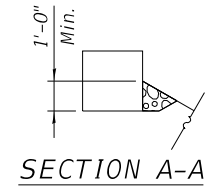
Fill eroded slope with Granular Backfill for Structures as directed by the Engineer. Limits of backfill to be field verified, typ.

**EAST VAULTED APPROACH BENT**

(Inside Vault Looking East)

**LEGEND**

- Hairline Crack - Not to be sealed
- Formed Concrete Repair Depth equal to or less than 5"



Entire sheet revised

USER NAME =	SUSERS	DESIGNED -	EG	REVISED	4/8/2022 LM
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**DEPARTMENT OF TRANSPORTATION**

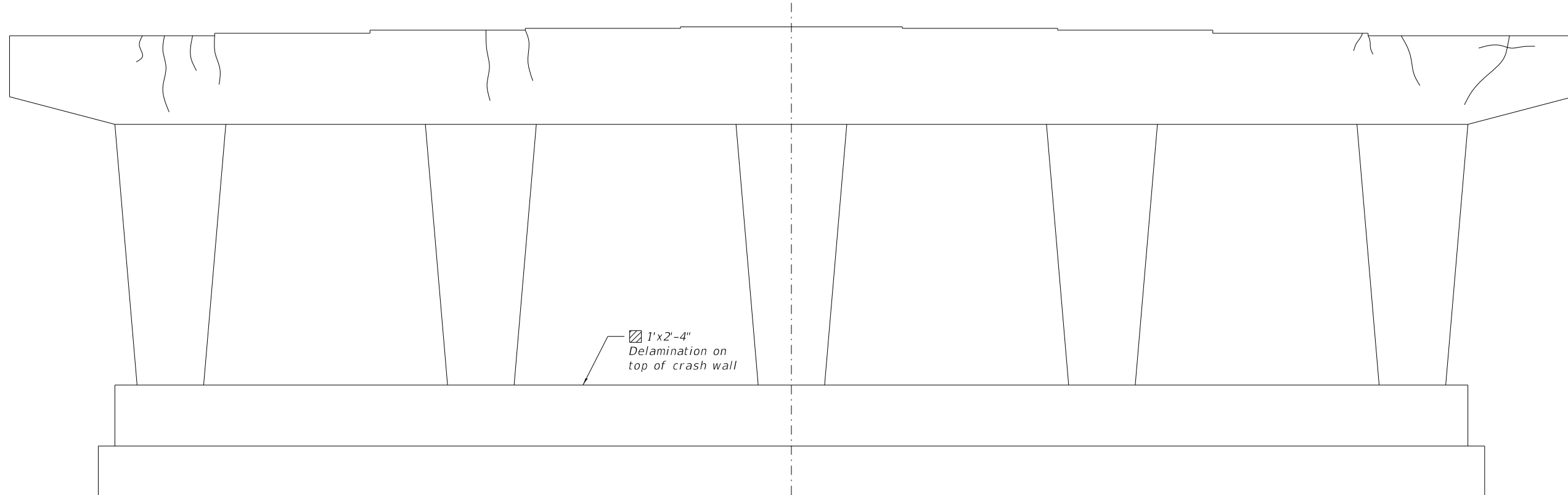
**EAST ABUTMENT REPAIR DETAILS**  
**STRUCTURE NO. 016-1095**

SHEET 26 OF 29 SHEETS

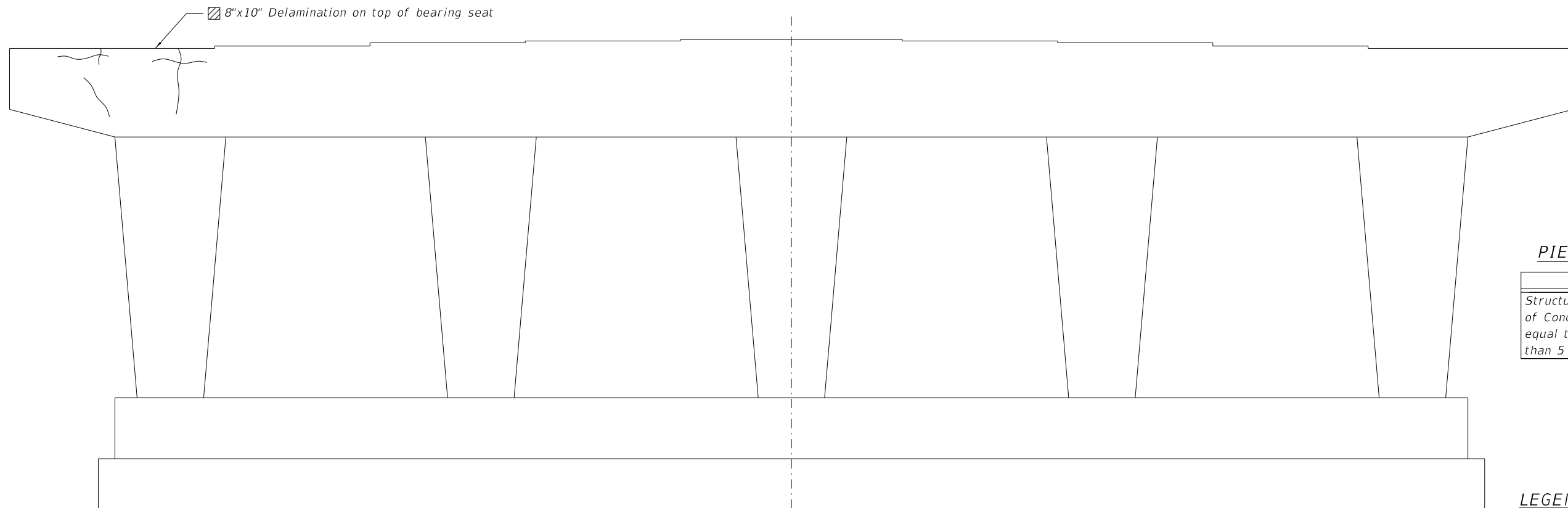
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57	2021-073-BDR	COOK	89	59
CONTRACT NO. 62P10				

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**ELEVATION**  
(Looking East)



**ELEVATION**  
(Looking West)

▲ Entire sheet revised

**PIER BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq Ft	4

**LEGEND**

- Hairline Crack - Not to be sealed
- Formed Concrete Repair Depth equal to or less than 5"



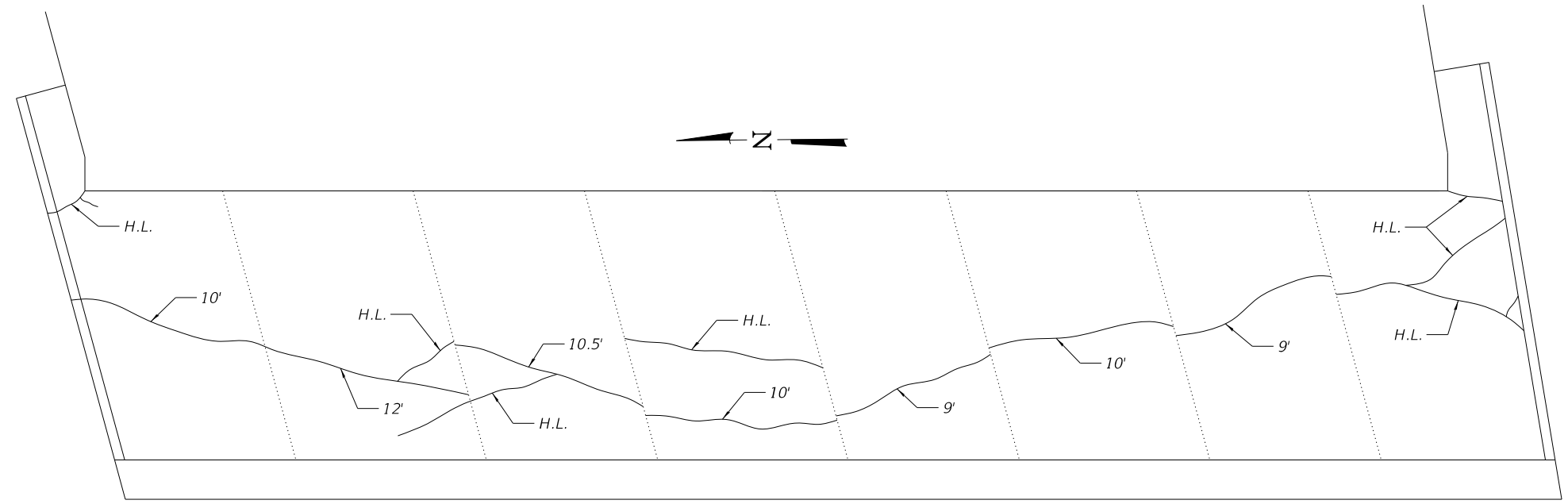
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DEPARTMENT OF TRANSPORTATION**

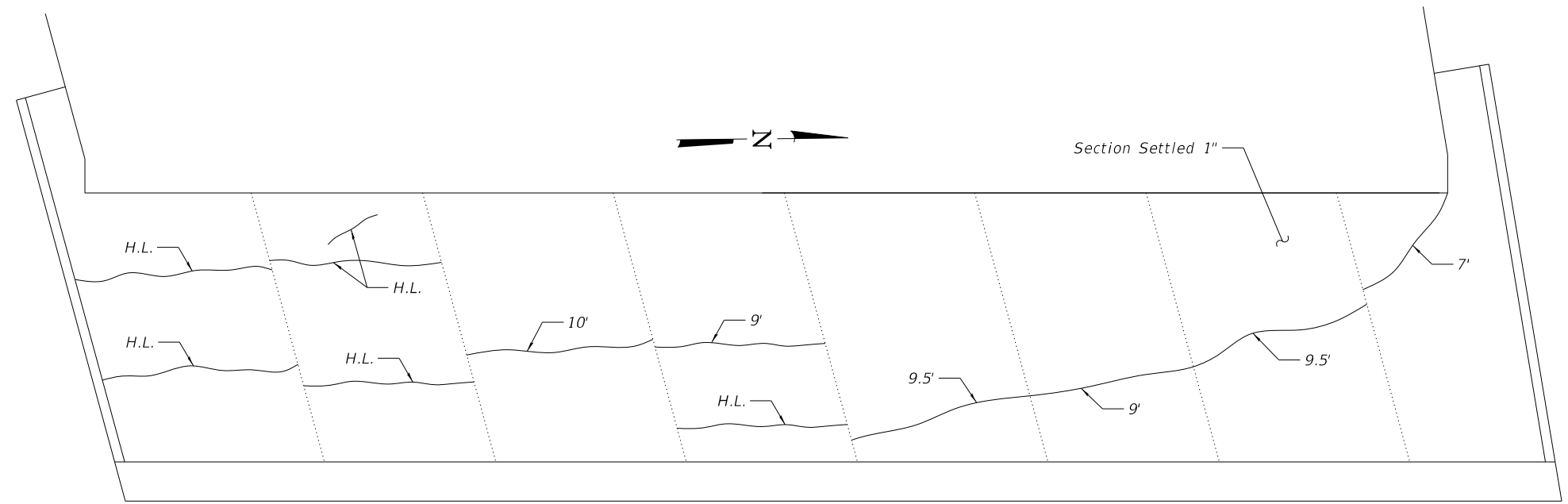
**PIER REPAIR DETAILS  
STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 62P10				

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PLAN  
 (East Slope)



PLAN  
 (West Slope)

**SLOPED WALL REPAIRS BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	FOOT	126

**LEGEND**

- 5' —| Epoxy Crack Sealing
- H.L. —| Hairline Crack - Not to be sealed

⚠ Entire sheet revised

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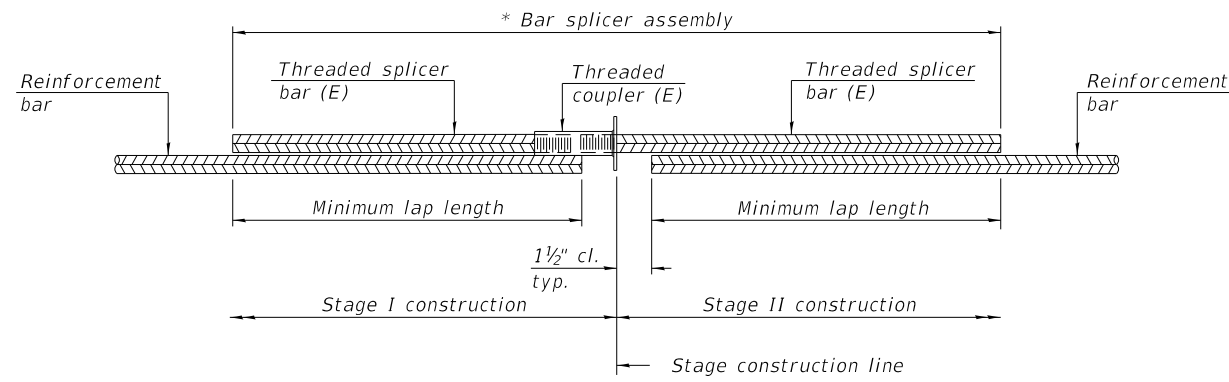
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SLOPE WALLS REPAIR DETAILS  
 STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	61
CONTRACT NO. 62P10				

SHEET 28 OF 29 SHEETS

ILLINOIS FED. AID PROJECT

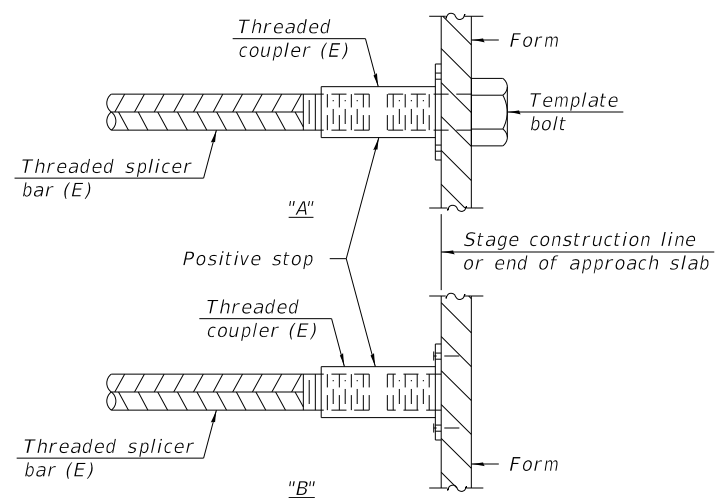


**STANDARD BAR SPLICER ASSEMBLY PLAN**  
 (All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

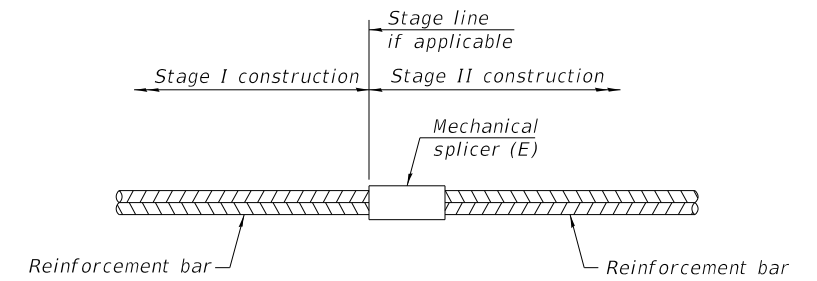
\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	613	3'-6"
W. Vaulted Span	#5	22	3'-4"
W. Vaulted Span	#6	42	3'-7"
E. Vaulted Span	#5	26	3'-4"
E. Vaulted Span	#6	51	3'-7"
W. Approach Slab	#5	45	3'-4"
W. Approach Slab	#8	60	4'-9"
W. Appr. Footing	#5	40	3'-0"
E. Approach Slab	#5	45	3'-4"
E. Approach Slab	#8	60	4'-9"
E. Appr. Footing	#5	40	3'-0"



**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.



**STANDARD MECHANICAL SPLICER**

Location	Bar size	No. assemblies required

**Notes:**

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.  
 All reinforcement shall be lapped and tied to the splicer bars.  
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.  
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BAR SPICER ASSEMBLY AND MECHANICAL SPLICER DETAILS  
 STRUCTURE NO. 016-1095**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	2021-073-BDR	COOK	89	62
CONTRACT NO. 62P10				

SHEET 29 OF 29 SHEETS

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