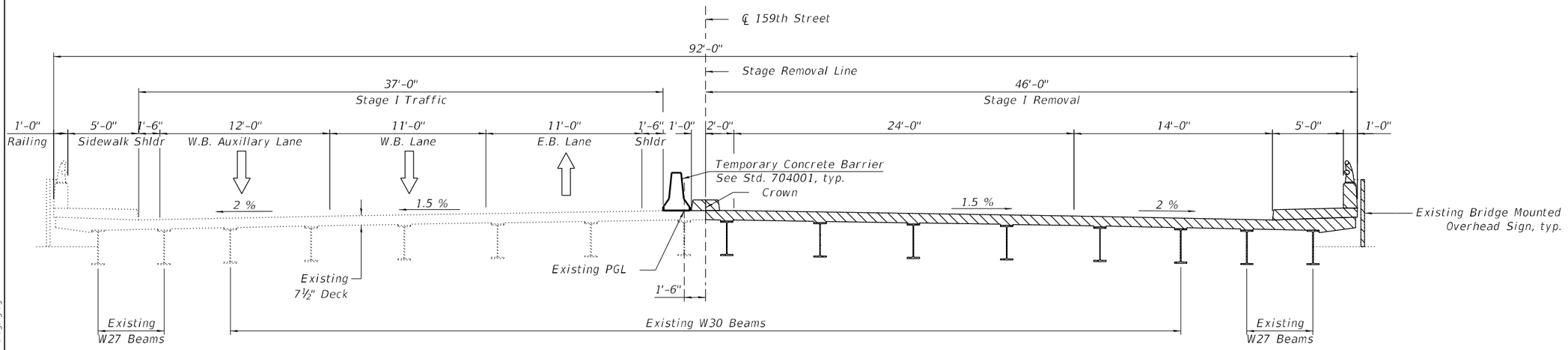
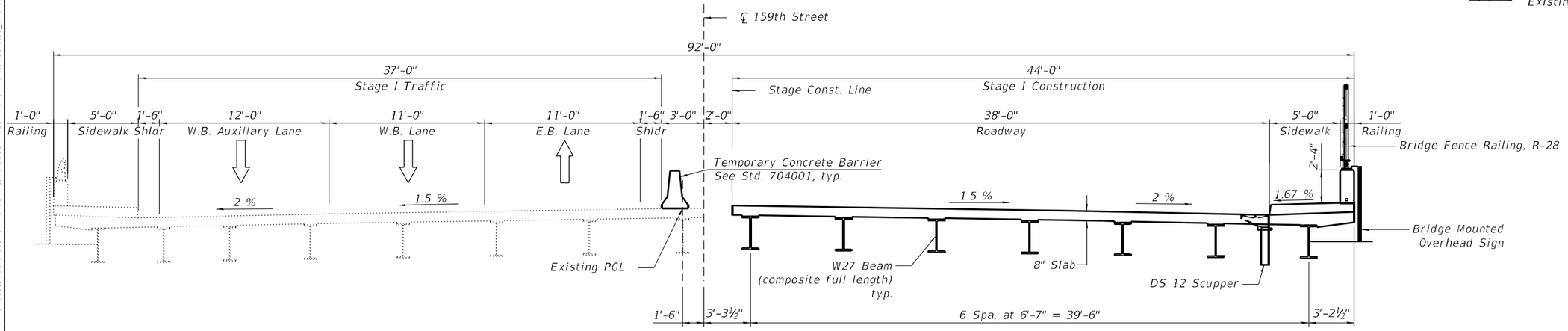


STAGE I REMOVAL

(Looking East)

LEGEND

Removal of Existing Superstructure



STAGE I CONSTRUCTION

(Looking East)

Notes:

For details of Temporary Concrete Barrier, see Sheet S10-05.

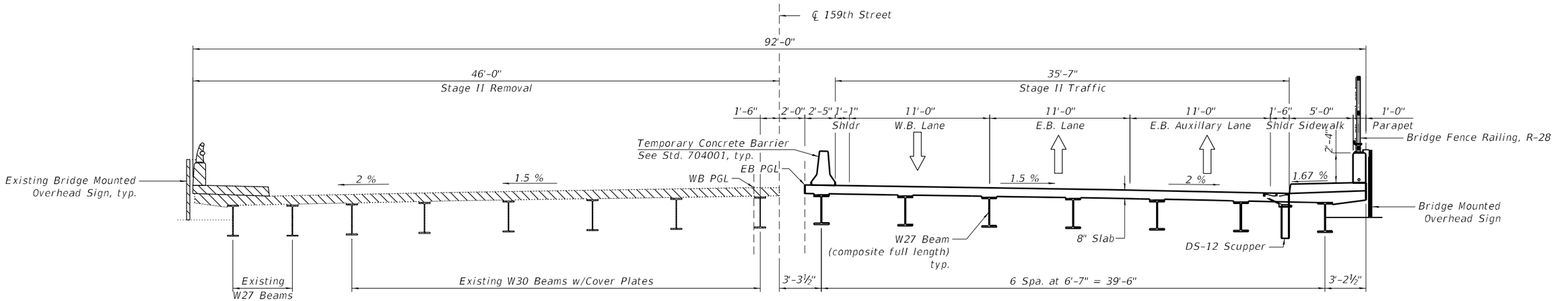
For quantity of Temporary Concrete Barrier, see Roadway Plans.

wsp	USER NAME =	DESIGNED - BJD	REVISED -
		CHECKED - MGH	REVISED -
	PLOT SCALE =	DRAWN - GM	REVISED -
	PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS - 1
STRUCTURE NO. 016-0388
SHEET S10-03 OF S10-37 SHEETS

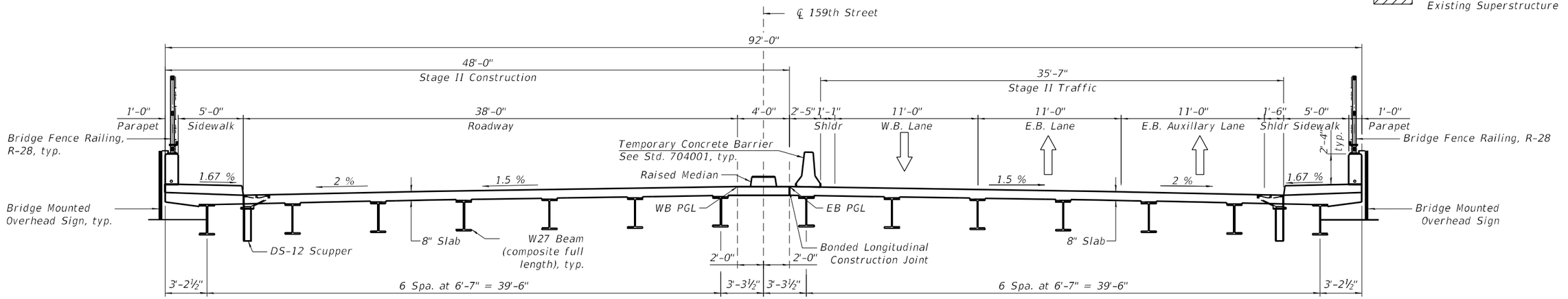
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	701
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



STAGE II REMOVAL
(Looking East)

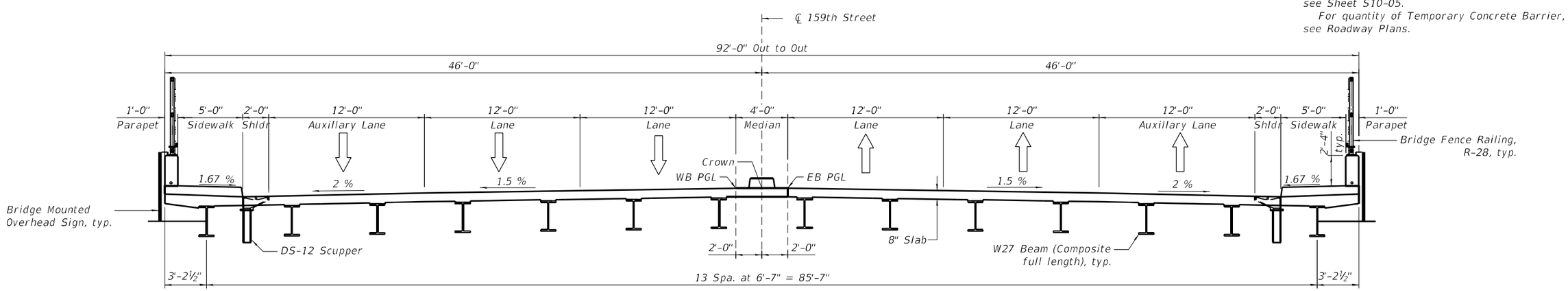
LEGEND

Removal of Existing Superstructure



STAGE II CONSTRUCTION
(Looking East)

Notes:
For details of Temporary Concrete Barrier, see Sheet S10-05.
For quantity of Temporary Concrete Barrier, see Roadway Plans.



FINAL CROSS SECTION
(Looking East)

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STAGE CONSTRUCTION DETAILS - 2
STRUCTURE NO. 016-0388
SHEET S10-04 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	702
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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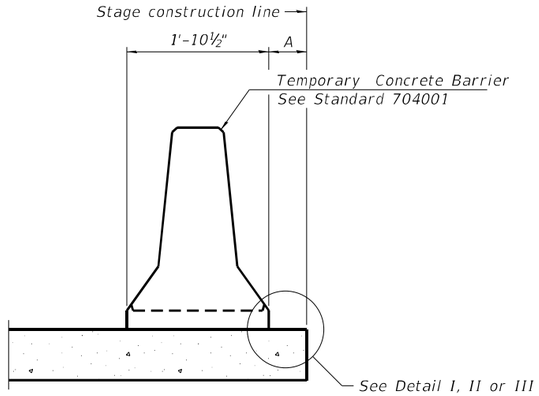
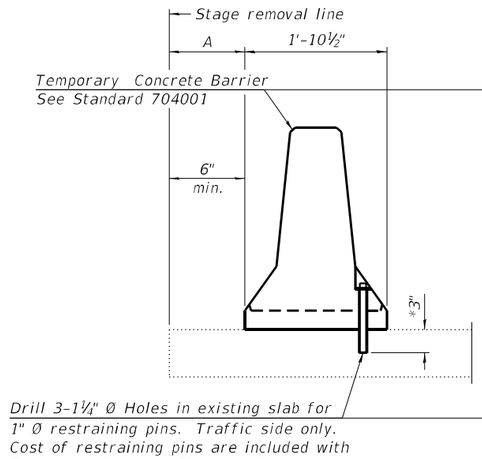


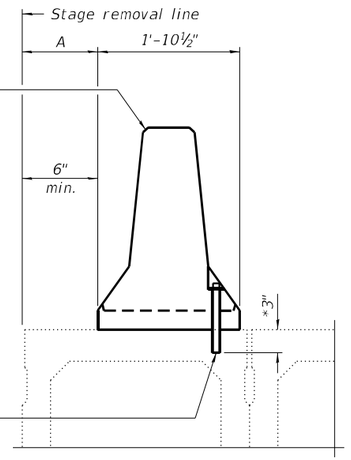
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

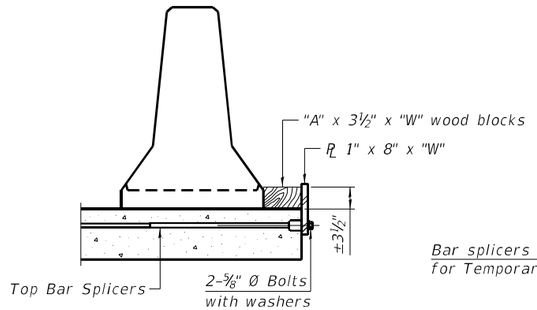
EXISTING SLAB



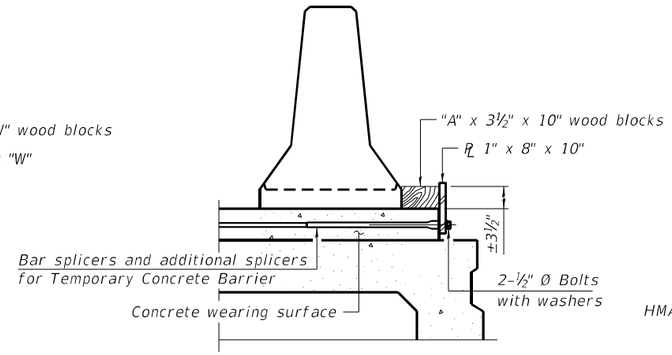
*When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

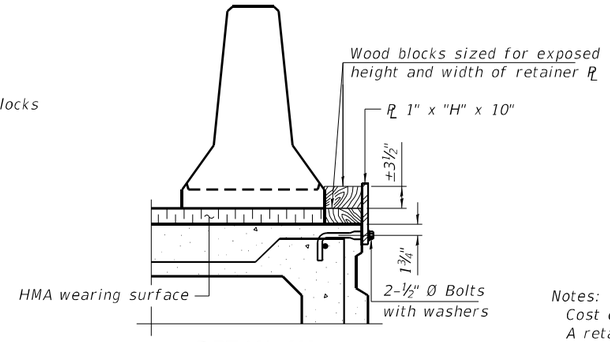
SECTIONS THRU SLAB OR DECK BEAM



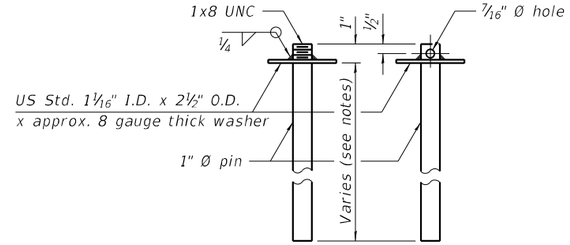
DETAIL I



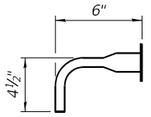
DETAIL II



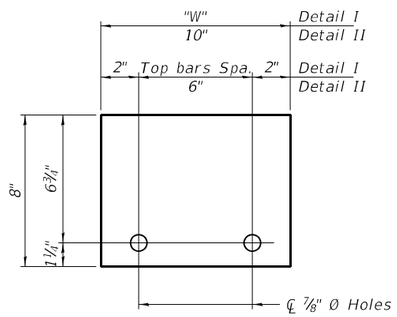
DETAIL III



RESTRAINING PIN

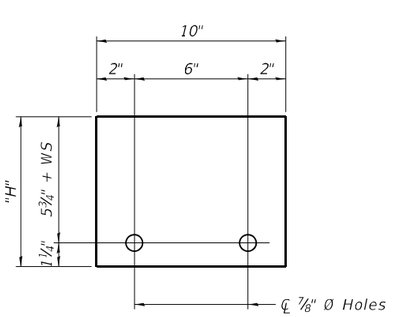


BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER ℄ 1" x 8" x "W"

(Detail I)



STEEL RETAINER ℄ 1" x "H" x 10"

(Detail III)

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

5-15-2023

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ 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 1½", 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.

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 016-0388

SHEET S10-05 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	703
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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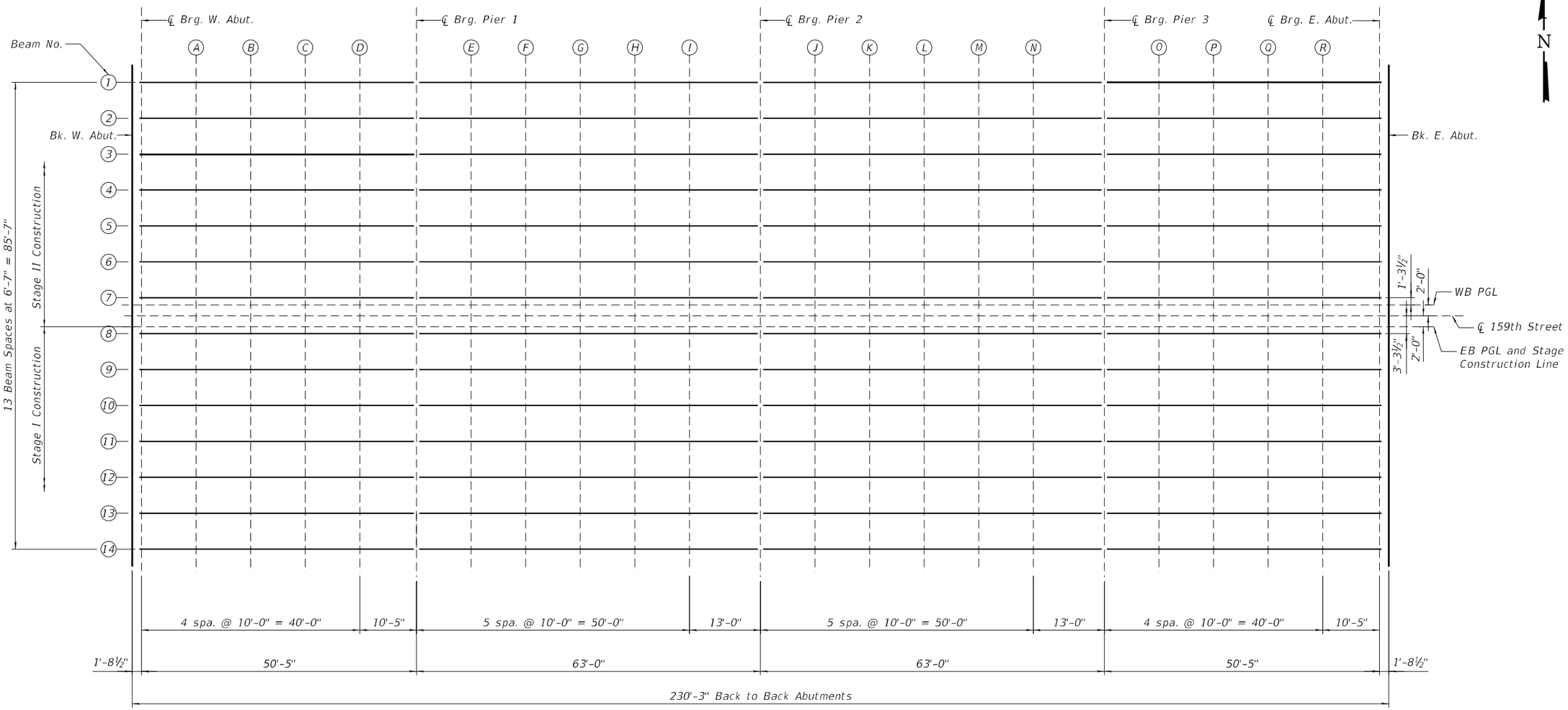
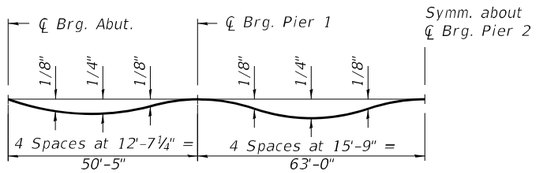


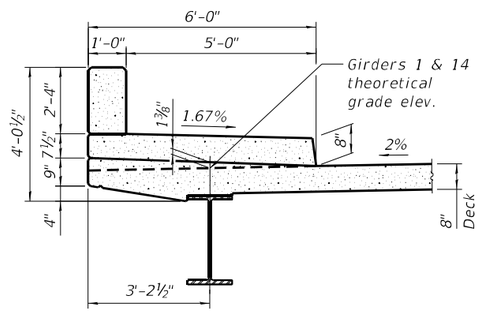
PLAN



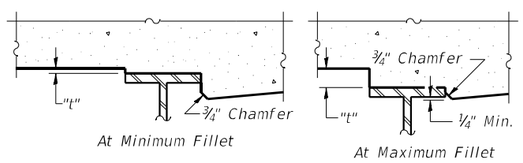
DEAD LOAD DEFLECTION DIAGRAM

(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 S10-07 to S10-09 of S10-37.



SECTION THRU SIDEWALK



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 S10-07 to S10-09 of S10-37, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF DECK SLAB ELEVATION LAYOUT
STRUCTURE NO. 016-0388

SHEET S10-06 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	704
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-42.79	614.45	614.45
CL Brg. W. Abut.	1342 + 62.00	-42.79	614.48	614.48
A	1342 + 72.00	-42.79	614.62	614.62
B	1342 + 82.00	-42.79	614.74	614.76
C	1342 + 92.00	-42.79	614.86	614.87
D	1343 + 02.00	-42.79	614.96	614.97
CL Brg. Pier 1	1343 + 12.42	-42.79	615.05	615.05
E	1343 + 22.42	-42.79	615.13	615.14
F	1343 + 32.42	-42.79	615.20	615.21
G	1343 + 42.42	-42.79	615.25	615.27
H	1343 + 52.42	-42.79	615.29	615.30
I	1343 + 62.42	-42.79	615.32	615.33
CL Brg. Pier 2	1343 + 75.42	-42.79	615.33	615.33
J	1343 + 85.42	-42.79	615.33	615.34
K	1343 + 95.42	-42.79	615.32	615.33
L	1344 + 05.42	-42.79	615.29	615.31
M	1344 + 15.42	-42.79	615.25	615.27
N	1344 + 25.42	-42.79	615.20	615.21
CL Brg. Pier 3	1344 + 38.42	-42.79	615.12	615.12
O	1344 + 48.42	-42.79	615.04	615.05
P	1344 + 58.42	-42.79	614.95	614.96
Q	1344 + 68.42	-42.79	614.84	614.86
R	1344 + 78.42	-42.79	614.73	614.74
CL Brg. E. Abut.	1344 + 88.83	-42.79	614.59	614.59
Bk. E. Abut.	1344 + 90.54	-42.79	614.57	614.57

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-36.21	614.58	614.58
CL Brg. W. Abut.	1342 + 62.00	-36.21	614.61	614.61
A	1342 + 72.00	-36.21	614.75	614.76
B	1342 + 82.00	-36.21	614.87	614.89
C	1342 + 92.00	-36.21	614.99	615.01
D	1343 + 02.00	-36.21	615.09	615.10
CL Brg. Pier 1	1343 + 12.42	-36.21	615.19	615.19
E	1343 + 22.42	-36.21	615.26	615.27
F	1343 + 32.42	-36.21	615.33	615.34
G	1343 + 42.42	-36.21	615.38	615.40
H	1343 + 52.42	-36.21	615.42	615.43
I	1343 + 62.42	-36.21	615.45	615.46
CL Brg. Pier 2	1343 + 75.42	-36.21	615.46	615.46
J	1343 + 85.42	-36.21	615.46	615.47
K	1343 + 95.42	-36.21	615.45	615.46
L	1344 + 05.42	-36.21	615.42	615.44
M	1344 + 15.42	-36.21	615.39	615.40
N	1344 + 25.42	-36.21	615.33	615.35
CL Brg. Pier 3	1344 + 38.42	-36.21	615.25	615.25
O	1344 + 48.42	-36.21	615.17	615.18
P	1344 + 58.42	-36.21	615.08	615.09
Q	1344 + 68.42	-36.21	614.97	614.99
R	1344 + 78.42	-36.21	614.86	614.87
CL Brg. E. Abut.	1344 + 88.83	-36.21	614.72	614.72
Bk. E. Abut.	1344 + 90.54	-36.21	614.70	614.70

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-29.63	614.71	614.71
CL Brg. W. Abut.	1342 + 62.00	-29.63	614.74	614.74
A	1342 + 72.00	-29.63	614.88	614.89
B	1342 + 82.00	-29.63	615.01	615.02
C	1342 + 92.00	-29.63	615.12	615.14
D	1343 + 02.00	-29.63	615.22	615.23
CL Brg. Pier 1	1343 + 12.42	-29.63	615.32	615.32
E	1343 + 22.42	-29.63	615.39	615.40
F	1343 + 32.42	-29.63	615.46	615.47
G	1343 + 42.42	-29.63	615.51	615.53
H	1343 + 52.42	-29.63	615.55	615.57
I	1343 + 62.42	-29.63	615.58	615.59
CL Brg. Pier 2	1343 + 75.42	-29.63	615.60	615.60
J	1343 + 85.42	-29.63	615.59	615.60
K	1343 + 95.42	-29.63	615.58	615.59
L	1344 + 05.42	-29.63	615.56	615.57
M	1344 + 15.42	-29.63	615.52	615.53
N	1344 + 25.42	-29.63	615.47	615.48
CL Brg. Pier 3	1344 + 38.42	-29.63	615.38	615.38
O	1344 + 48.42	-29.63	615.30	615.31
P	1344 + 58.42	-29.63	615.21	615.23
Q	1344 + 68.42	-29.63	615.11	615.12
R	1344 + 78.42	-29.63	614.99	615.00
CL Brg. E. Abut.	1344 + 88.83	-29.63	614.85	614.85
Bk. E. Abut.	1344 + 90.54	-29.63	614.83	614.83

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-23.04	614.83	614.83
CL Brg. W. Abut.	1342 + 62.00	-23.04	614.86	614.86
A	1342 + 72.00	-23.04	615.00	615.00
B	1342 + 82.00	-23.04	615.12	615.14
C	1342 + 92.00	-23.04	615.24	615.26
D	1343 + 02.00	-23.04	615.34	615.35
CL Brg. Pier 1	1343 + 12.42	-23.04	615.43	615.43
E	1343 + 22.42	-23.04	615.51	615.52
F	1343 + 32.42	-23.04	615.58	615.59
G	1343 + 42.42	-23.04	615.63	615.65
H	1343 + 52.42	-23.04	615.67	615.68
I	1343 + 62.42	-23.04	615.70	615.71
CL Brg. Pier 2	1343 + 75.42	-23.04	615.71	615.71
J	1343 + 85.42	-23.04	615.71	615.72
K	1343 + 95.42	-23.04	615.70	615.71
L	1344 + 05.42	-23.04	615.67	615.69
M	1344 + 15.42	-23.04	615.63	615.65
N	1344 + 25.42	-23.04	615.58	615.59
CL Brg. Pier 3	1344 + 38.42	-23.04	615.50	615.50
O	1344 + 48.42	-23.04	615.42	615.43
P	1344 + 58.42	-23.04	615.33	615.34
Q	1344 + 68.42	-23.04	615.22	615.24
R	1344 + 78.42	-23.04	615.11	615.12
CL Brg. E. Abut.	1344 + 88.83	-23.04	614.97	614.97
Bk. E. Abut.	1344 + 90.54	-23.04	614.95	614.95

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-16.46	614.93	614.93
CL Brg. W. Abut.	1342 + 62.00	-16.46	614.96	614.96
A	1342 + 72.00	-16.46	615.09	615.10
B	1342 + 82.00	-16.46	615.22	615.24
C	1342 + 92.00	-16.46	615.34	615.35
D	1343 + 02.00	-16.46	615.44	615.45
CL Brg. Pier 1	1343 + 12.42	-16.46	615.53	615.53
E	1343 + 22.42	-16.46	615.61	615.62
F	1343 + 32.42	-16.46	615.67	615.69
G	1343 + 42.42	-16.46	615.73	615.75
H	1343 + 52.42	-16.46	615.77	615.78
I	1343 + 62.42	-16.46	615.79	615.81
CL Brg. Pier 2	1343 + 75.42	-16.46	615.81	615.81
J	1343 + 85.42	-16.46	615.81	615.82
K	1343 + 95.42	-16.46	615.80	615.81
L	1344 + 05.42	-16.46	615.77	615.79
M	1344 + 15.42	-16.46	615.73	615.75
N	1344 + 25.42	-16.46	615.68	615.69
CL Brg. Pier 3	1344 + 38.42	-16.46	615.60	615.60
O	1344 + 48.42	-16.46	615.52	615.53
P	1344 + 58.42	-16.46	615.43	615.44
Q	1344 + 68.42	-16.46	615.32	615.34
R	1344 + 78.42	-16.46	615.20	615.22
CL Brg. E. Abut.	1344 + 88.83	-16.46	615.07	615.07
Bk. E. Abut.	1344 + 90.54	-16.46	615.05	615.05

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-9.88	615.03	615.03
CL Brg. W. Abut.	1342 + 62.00	-9.88	615.05	615.05
A	1342 + 72.00	-9.88	615.19	615.20
B	1342 + 82.00	-9.88	615.32	615.34
C	1342 + 92.00	-9.88	615.44	615.45
D	1343 + 02.00	-9.88	615.54	615.55
CL Brg. Pier 1	1343 + 12.42	-9.88	615.63	615.63
E	1343 + 22.42	-9.88	615.71	615.72
F	1343 + 32.42	-9.88	615.77	615.79
G	1343 + 42.42	-9.88	615.83	615.85
H	1343 + 52.42	-9.88	615.87	615.88
I	1343 + 62.42	-9.88	615.89	615.90
CL Brg. Pier 2	1343 + 75.42	-9.88	615.91	615.91
J	1343 + 85.42	-9.88	615.91	615.92
K	1343 + 95.42	-9.88	615.90	615.91
L	1344 + 05.42	-9.88	615.87	615.89
M	1344 + 15.42	-9.88	615.83	615.85
N	1344 + 25.42	-9.88	615.78	615.79
CL Brg. Pier 3	1344 + 38.42	-9.88	615.70	615.70
O	1344 + 48.42	-9.88	615.62	615.62
P	1344 + 58.42	-9.88	615.52	615.54
Q	1344 + 68.42	-9.88	615.42	615.44
R	1344 + 78.42	-9.88	615.30	615.31
CL Brg. E. Abut.	1344 + 88.83	-9.88	615.17	615.17
Bk. E. Abut.	1344 + 90.54	-9.88	615.15	615.15

Notes:
1. *Offsets are measured with respect to the Centerline.*
2. *Negative offsets are left of the centerline while looking upstation.*
3. *All Elevations and Offsets are in feet.*

E-S

2-17-2017

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS - 1
STRUCTURE NO. 016-0388
SHEET S10-07 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	705
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-3.29	615.13	615.13
CL Brg. W. Abut.	1342 + 62.00	-3.29	615.15	615.15
A	1342 + 72.00	-3.29	615.29	615.30
B	1342 + 82.00	-3.29	615.42	615.44
C	1342 + 92.00	-3.29	615.53	615.55
D	1343 + 02.00	-3.29	615.64	615.65
CL Brg. Pier 1	1343 + 12.42	-3.29	615.73	615.73
E	1343 + 22.42	-3.29	615.81	615.81
F	1343 + 32.42	-3.29	615.87	615.89
G	1343 + 42.42	-3.29	615.92	615.94
H	1343 + 52.42	-3.29	615.96	615.98
I	1343 + 62.42	-3.29	615.99	616.00
CL Brg. Pier 2	1343 + 75.42	-3.29	616.01	616.01
J	1343 + 85.42	-3.29	616.01	616.01
K	1343 + 95.42	-3.29	615.99	616.01
L	1344 + 05.42	-3.29	615.97	615.99
M	1344 + 15.42	-3.29	615.93	615.95
N	1344 + 25.42	-3.29	615.88	615.89
CL Brg. Pier 3	1344 + 38.42	-3.29	615.79	615.79
O	1344 + 48.42	-3.29	615.72	615.72
P	1344 + 58.42	-3.29	615.62	615.64
Q	1344 + 68.42	-3.29	615.52	615.54
R	1344 + 78.42	-3.29	615.40	615.41
CL Brg. E. Abut.	1344 + 88.83	-3.29	615.27	615.27
Bk. E. Abut.	1344 + 90.54	-3.29	615.24	615.24

WB PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	1342 + 60.29	-2.00	615.15	615.15
CL Brg. W. Abut.	1342 + 62.00	-2.00	615.17	615.17
A	1342 + 72.00	-2.00	615.31	615.32
B	1342 + 82.00	-2.00	615.44	615.46
C	1342 + 92.00	-2.00	615.55	615.57
D	1343 + 02.00	-2.00	615.66	615.67
CL Brg. Pier 1	1343 + 12.42	-2.00	615.75	615.75
E	1343 + 22.42	-2.00	615.83	615.83
F	1343 + 32.42	-2.00	615.89	615.90
G	1343 + 42.42	-2.00	615.94	615.96
H	1343 + 52.42	-2.00	615.98	616.00
I	1343 + 62.42	-2.00	616.01	616.02
CL Brg. Pier 2	1343 + 75.42	-2.00	616.03	616.03
J	1343 + 85.42	-2.00	616.03	616.03
K	1343 + 95.42	-2.00	616.01	616.03
L	1344 + 05.42	-2.00	615.99	616.01
M	1344 + 15.42	-2.00	615.95	615.96
N	1344 + 25.42	-2.00	615.90	615.91
CL Brg. Pier 3	1344 + 38.42	-2.00	615.81	615.81
O	1344 + 48.42	-2.00	615.73	615.74
P	1344 + 58.42	-2.00	615.64	615.66
Q	1344 + 68.42	-2.00	615.54	615.56
R	1344 + 78.42	-2.00	615.42	615.43
CL Brg. E. Abut.	1344 + 88.83	-2.00	615.29	615.29
Bk. E. Abut.	1344 + 90.54	-2.00	615.26	615.26

CL 159TH ST.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	342 + 60.29	0.00	615.11	615.12
CL Brg. W. Abut.	342 + 62.00	0.00	615.14	615.14
A	342 + 72.00	0.00	615.28	615.29
B	342 + 82.00	0.00	615.40	615.42
C	342 + 92.00	0.00	615.52	615.54
D	343 + 02.00	0.00	615.62	615.64
CL Brg. Pier 1	343 + 12.42	0.00	615.72	615.72
E	343 + 22.42	0.00	615.79	615.80
F	343 + 32.42	0.00	615.86	615.88
G	343 + 42.42	0.00	615.91	615.94
H	343 + 52.42	0.00	615.95	615.97
I	343 + 62.42	0.00	615.98	616.00
CL Brg. Pier 2	343 + 75.42	0.00	616.00	616.00
J	343 + 85.42	0.00	616.00	616.01
K	343 + 95.42	0.00	615.98	616.00
L	344 + 05.42	0.00	615.96	615.98
M	344 + 15.42	0.00	615.92	615.94
N	344 + 25.42	0.00	615.87	615.89
CL Brg. Pier 3	344 + 38.42	0.00	615.79	615.79
O	344 + 48.42	0.00	615.71	615.72
P	344 + 58.42	0.00	615.62	615.64
Q	344 + 68.42	0.00	615.51	615.53
R	344 + 78.42	0.00	615.40	615.41
CL Brg. E. Abut.	344 + 88.83	0.00	615.26	615.27
Bk. E. Abut.	344 + 90.54	0.00	615.24	615.24

EB PGL AND STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	2.00	615.08	615.08
CL Brg. W. Abut.	2342 + 62.00	2.00	615.11	615.11
A	2342 + 72.00	2.00	615.25	615.26
B	2342 + 82.00	2.00	615.38	615.39
C	2342 + 92.00	2.00	615.49	615.51
D	2343 + 02.00	2.00	615.60	615.61
CL Brg. Pier 1	2343 + 12.42	2.00	615.69	615.69
E	2343 + 22.42	2.00	615.77	615.78
F	2343 + 32.42	2.00	615.84	615.85
G	2343 + 42.42	2.00	615.89	615.91
H	2343 + 52.42	2.00	615.93	615.94
I	2343 + 62.42	2.00	615.96	615.97
CL Brg. Pier 2	2343 + 75.42	2.00	615.98	615.98
J	2343 + 85.42	2.00	615.98	615.98
K	2343 + 95.42	2.00	615.96	615.98
L	2344 + 05.42	2.00	615.94	615.96
M	2344 + 15.42	2.00	615.90	615.92
N	2344 + 25.42	2.00	615.85	615.86
CL Brg. Pier 3	2344 + 38.42	2.00	615.77	615.77
O	2344 + 48.42	2.00	615.69	615.70
P	2344 + 58.42	2.00	615.60	615.62
Q	2344 + 68.42	2.00	615.50	615.51
R	2344 + 78.42	2.00	615.38	615.39
CL Brg. E. Abut.	2344 + 88.83	2.00	615.25	615.25
Bk. E. Abut.	2344 + 90.54	2.00	615.22	615.22

BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	3.29	615.06	615.06
CL Brg. W. Abut.	2342 + 62.00	3.29	615.09	615.09
A	2342 + 72.00	3.29	615.23	615.24
B	2342 + 82.00	3.29	615.36	615.37
C	2342 + 92.00	3.29	615.47	615.49
D	2343 + 02.00	3.29	615.58	615.59
CL Brg. Pier 1	2343 + 12.42	3.29	615.67	615.67
E	2343 + 22.42	3.29	615.75	615.76
F	2343 + 32.42	3.29	615.82	615.83
G	2343 + 42.42	3.29	615.87	615.89
H	2343 + 52.42	3.29	615.91	615.93
I	2343 + 62.42	3.29	615.94	615.95
CL Brg. Pier 2	2343 + 75.42	3.29	615.96	615.96
J	2343 + 85.42	3.29	615.96	615.96
K	2343 + 95.42	3.29	615.94	615.96
L	2344 + 05.42	3.29	615.92	615.94
M	2344 + 15.42	3.29	615.88	615.90
N	2344 + 25.42	3.29	615.83	615.84
CL Brg. Pier 3	2344 + 38.42	3.29	615.75	615.75
O	2344 + 48.42	3.29	615.67	615.68
P	2344 + 58.42	3.29	615.58	615.60
Q	2344 + 68.42	3.29	615.48	615.49
R	2344 + 78.42	3.29	615.36	615.37
CL Brg. E. Abut.	2344 + 88.83	3.29	615.23	615.23
Bk. E. Abut.	2344 + 90.54	3.29	615.20	615.20

BEAM 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	9.88	614.97	614.97
CL Brg. W. Abut.	2342 + 62.00	9.88	614.99	614.99
A	2342 + 72.00	9.88	615.13	615.14
B	2342 + 82.00	9.88	615.26	615.28
C	2342 + 92.00	9.88	615.38	615.39
D	2343 + 02.00	9.88	615.48	615.49
CL Brg. Pier 1	2343 + 12.42	9.88	615.57	615.57
E	2343 + 22.42	9.88	615.65	615.66
F	2343 + 32.42	9.88	615.72	615.73
G	2343 + 42.42	9.88	615.77	615.79
H	2343 + 52.42	9.88	615.81	615.83
I	2343 + 62.42	9.88	615.84	615.85
CL Brg. Pier 2	2343 + 75.42	9.88	615.86	615.86
J	2343 + 85.42	9.88	615.86	615.86
K	2343 + 95.42	9.88	615.85	615.86
L	2344 + 05.42	9.88	615.82	615.84
M	2344 + 15.42	9.88	615.78	615.80
N	2344 + 25.42	9.88	615.73	615.74
CL Brg. Pier 3	2344 + 38.42	9.88	615.65	615.65
O	2344 + 48.42	9.88	615.57	615.58
P	2344 + 58.42	9.88	615.48	615.50
Q	2344 + 68.42	9.88	615.38	615.39
R	2344 + 78.42	9.88	615.26	615.27
CL Brg. E. Abut.	2344 + 88.83	9.88	615.13	615.13
Bk. E. Abut.	2344 + 90.54	9.88	615.11	615.11

Notes:
1. Offsets are measured with respect to the Centerline.
2. Negative offsets are left of the centerline while looking upstation.
3. All Elevations and Offsets are in feet.

E-S

2-17-2017

wsp

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS - 2
STRUCTURE NO. 016-0388
SHEET S10-08 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	706
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-IL\Documents\Project IDOT 2050082201 - IDOT District 1 Various\Structures\Work Order 11016-0388 - 159th over I-94\Sheets\08_016-0388 - Top of Deck Slab Elevations 2.dgn

1/23/2025 11:44:41 AM

BEAM 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	16.46	614.87	614.87
CL Brg. W. Abut.	2342 + 62.00	16.46	614.89	614.89
A	2342 + 72.00	16.46	615.03	615.04
B	2342 + 82.00	16.46	615.16	615.18
C	2342 + 92.00	16.46	615.28	615.29
D	2343 + 02.00	16.46	615.38	615.39
CL Brg. Pier 1	2343 + 12.42	16.46	615.47	615.47
E	2343 + 22.42	16.46	615.55	615.56
F	2343 + 32.42	16.46	615.62	615.63
G	2343 + 42.42	16.46	615.67	615.69
H	2343 + 52.42	16.46	615.71	615.73
I	2343 + 62.42	16.46	615.74	615.75
CL Brg. Pier 2	2343 + 75.42	16.46	615.76	615.76
J	2343 + 85.42	16.46	615.76	615.77
K	2343 + 95.42	16.46	615.75	615.76
L	2344 + 05.42	16.46	615.72	615.74
M	2344 + 15.42	16.46	615.68	615.70
N	2344 + 25.42	16.46	615.63	615.65
CL Brg. Pier 3	2344 + 38.42	16.46	615.55	615.55
O	2344 + 48.42	16.46	615.47	615.48
P	2344 + 58.42	16.46	615.38	615.40
Q	2344 + 68.42	16.46	615.28	615.30
R	2344 + 78.42	16.46	615.16	615.17
CL Brg. E. Abut.	2344 + 88.83	16.46	615.03	615.03
Bk. E. Abut.	2344 + 90.54	16.46	615.01	615.01

BEAM 11

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	23.04	614.77	614.77
CL Brg. W. Abut.	2342 + 62.00	23.04	614.79	614.79
A	2342 + 72.00	23.04	614.93	614.94
B	2342 + 82.00	23.04	615.06	615.08
C	2342 + 92.00	23.04	615.18	615.19
D	2343 + 02.00	23.04	615.28	615.29
CL Brg. Pier 1	2343 + 12.42	23.04	615.38	615.38
E	2343 + 22.42	23.04	615.45	615.46
F	2343 + 32.42	23.04	615.52	615.53
G	2343 + 42.42	23.04	615.57	615.59
H	2343 + 52.42	23.04	615.61	615.63
I	2343 + 62.42	23.04	615.64	615.65
CL Brg. Pier 2	2343 + 75.42	23.04	615.66	615.66
J	2343 + 85.42	23.04	615.66	615.67
K	2343 + 95.42	23.04	615.65	615.66
L	2344 + 05.42	23.04	615.62	615.64
M	2344 + 15.42	23.04	615.59	615.60
N	2344 + 25.42	23.04	615.54	615.55
CL Brg. Pier 3	2344 + 38.42	23.04	615.45	615.45
O	2344 + 48.42	23.04	615.37	615.38
P	2344 + 58.42	23.04	615.28	615.30
Q	2344 + 68.42	23.04	615.18	615.20
R	2344 + 78.42	23.04	615.06	615.08
CL Brg. E. Abut.	2344 + 88.83	23.04	614.93	614.93
Bk. E. Abut.	2344 + 90.54	23.04	614.91	614.91

BEAM 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	29.63	614.65	614.65
CL Brg. W. Abut.	2342 + 62.00	29.63	614.68	614.68
A	2342 + 72.00	29.63	614.82	614.83
B	2342 + 82.00	29.63	614.95	614.96
C	2342 + 92.00	29.63	615.06	615.08
D	2343 + 02.00	29.63	615.16	615.18
CL Brg. Pier 1	2343 + 12.42	29.63	615.26	615.26
E	2343 + 22.42	29.63	615.34	615.34
F	2343 + 32.42	29.63	615.40	615.42
G	2343 + 42.42	29.63	615.46	615.48
H	2343 + 52.42	29.63	615.50	615.51
I	2343 + 62.42	29.63	615.53	615.54
CL Brg. Pier 2	2343 + 75.42	29.63	615.54	615.54
J	2343 + 85.42	29.63	615.54	615.55
K	2343 + 95.42	29.63	615.53	615.54
L	2344 + 05.42	29.63	615.51	615.53
M	2344 + 15.42	29.63	615.47	615.48
N	2344 + 25.42	29.63	615.42	615.43
CL Brg. Pier 3	2344 + 38.42	29.63	615.34	615.34
O	2344 + 48.42	29.63	615.26	615.27
P	2344 + 58.42	29.63	615.17	615.18
Q	2344 + 68.42	29.63	615.06	615.08
R	2344 + 78.42	29.63	614.95	614.96
CL Brg. E. Abut.	2344 + 88.83	29.63	614.81	614.81
Bk. E. Abut.	2344 + 90.54	29.63	614.79	614.79

BEAM 13

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	36.21	614.52	614.52
CL Brg. W. Abut.	2342 + 62.00	36.21	614.54	614.54
A	2342 + 72.00	36.21	614.69	614.69
B	2342 + 82.00	36.21	614.81	614.83
C	2342 + 92.00	36.21	614.93	614.95
D	2343 + 02.00	36.21	615.03	615.04
CL Brg. Pier 1	2343 + 12.42	36.21	615.13	615.13
E	2343 + 22.42	36.21	615.21	615.21
F	2343 + 32.42	36.21	615.27	615.28
G	2343 + 42.42	36.21	615.32	615.34
H	2343 + 52.42	36.21	615.37	615.38
I	2343 + 62.42	36.21	615.39	615.40
CL Brg. Pier 2	2343 + 75.42	36.21	615.41	615.41
J	2343 + 85.42	36.21	615.41	615.42
K	2343 + 95.42	36.21	615.40	615.41
L	2344 + 05.42	36.21	615.37	615.39
M	2344 + 15.42	36.21	615.34	615.35
N	2344 + 25.42	36.21	615.29	615.30
CL Brg. Pier 3	2344 + 38.42	36.21	615.20	615.20
O	2344 + 48.42	36.21	615.13	615.13
P	2344 + 58.42	36.21	615.03	615.05
Q	2344 + 68.42	36.21	614.93	614.95
R	2344 + 78.42	36.21	614.82	614.83
CL Brg. E. Abut.	2344 + 88.83	36.21	614.68	614.68
Bk. E. Abut.	2344 + 90.54	36.21	614.66	614.66

BEAM 14

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Back W. Abut.	2342 + 60.29	42.79	614.39	614.39
CL Brg. W. Abut.	2342 + 62.00	42.79	614.41	614.41
A	2342 + 72.00	42.79	614.55	614.56
B	2342 + 82.00	42.79	614.68	614.70
C	2342 + 92.00	42.79	614.80	614.81
D	2343 + 02.00	42.79	614.90	614.91
CL Brg. Pier 1	2343 + 12.42	42.79	615.00	615.00
E	2343 + 22.42	42.79	615.07	615.08
F	2343 + 32.42	42.79	615.14	615.15
G	2343 + 42.42	42.79	615.19	615.21
H	2343 + 52.42	42.79	615.23	615.25
I	2343 + 62.42	42.79	615.26	615.27
CL Brg. Pier 2	2343 + 75.42	42.79	615.28	615.28
J	2343 + 85.42	42.79	615.28	615.29
K	2343 + 95.42	42.79	615.27	615.28
L	2344 + 05.42	42.79	615.24	615.26
M	2344 + 15.42	42.79	615.21	615.22
N	2344 + 25.42	42.79	615.16	615.17
CL Brg. Pier 3	2344 + 38.42	42.79	615.07	615.07
O	2344 + 48.42	42.79	614.99	615.00
P	2344 + 58.42	42.79	614.90	614.92
Q	2344 + 68.42	42.79	614.80	614.82
R	2344 + 78.42	42.79	614.68	614.70
CL Brg. E. Abut.	2344 + 88.83	42.79	614.55	614.55
Bk. E. Abut.	2344 + 90.54	42.79	614.53	614.53

Notes:
1. *Offsets are measured with respect to the Centerline.*
2. *Negative offsets are left of the centerline while looking upstation.*
3. *All Elevations and Offsets are in feet.*

E-S

2-17-2017

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS - 3
STRUCTURE NO. 016-0388

SHEET S10-09 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	707
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	1342 + 30.54	-40.00	614.01
A1	1342 + 40.54	-40.00	614.19
A2	1342 + 50.54	-40.00	614.36
E. End of W. Approach	1342 + 60.54	-40.00	614.51

NORTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	1342 + 30.54	-38.00	614.07
A1	1342 + 40.54	-38.00	614.25
A2	1342 + 50.54	-38.00	614.42
E. End of W. Approach	1342 + 60.54	-38.00	614.57

WB PGL

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	1342 + 30.54	-2.00	614.65
A1	1342 + 40.54	-2.00	614.83
A2	1342 + 50.54	-2.00	615.00
E. End of W. Approach	1342 + 60.54	-2.00	615.15

CL 159TH ST

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	342 + 30.54	0.00	614.62
A1	342 + 40.54	0.00	614.80
A2	342 + 50.54	0.00	614.96
E. End of W. Approach	342 + 60.54	0.00	615.12

EB PGL AND STAGE CONSTRUCTION LINE

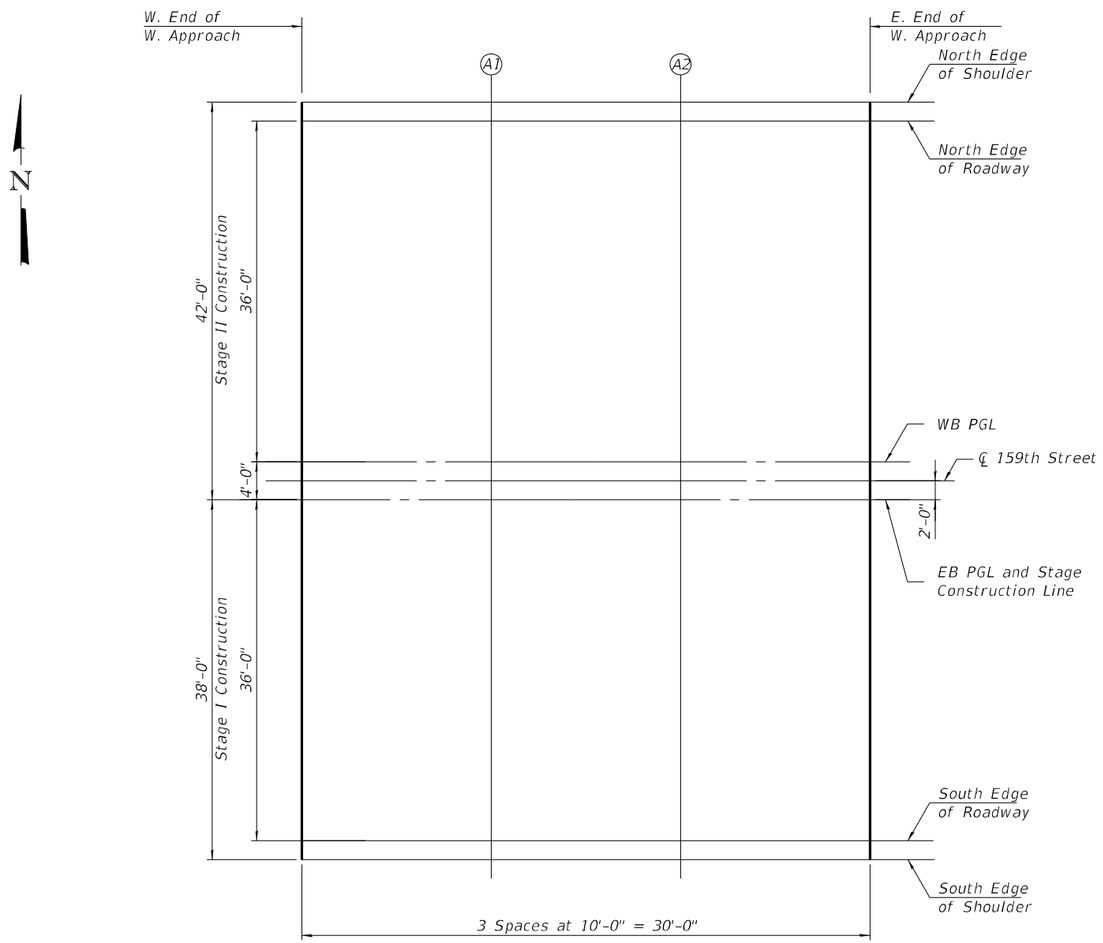
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	2342 + 30.54	2.00	614.58
A1	2342 + 40.54	2.00	614.76
A2	2342 + 50.54	2.00	614.93
E. End of W. Approach	2342 + 60.54	2.00	615.09

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	2342 + 30.54	38.00	614.00
A1	2342 + 40.54	38.00	614.18
A2	2342 + 50.54	38.00	614.34
E. End of W. Approach	2342 + 60.54	38.00	614.50

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Approach	2342 + 30.54	40.00	613.94
A1	2342 + 40.54	40.00	614.12
A2	2342 + 50.54	40.00	614.29
E. End of W. Approach	2342 + 60.54	40.00	614.45



PLAN

Notes:
1. Offsets are measured with respect to the Centerline.
2. Negative offsets are left of the centerline while looking upstation.
3. All Elevations and Offsets are in feet.

wsp	USER NAME =	DESIGNED - BJD	REVISED -
		CHECKED - MGH	REVISED -
	PLOT SCALE =	DRAWN - GM	REVISED -
	PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-0388
SHEET S10-10 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	708
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	1344 + 90.29	-40.00	614.63
A3	1345 + 00.29	-40.00	614.48
A4	1345 + 10.29	-40.00	614.33
E. End of E. Approach	1345 + 20.29	-40.00	614.16

NORTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	1344 + 90.29	-38.00	614.69
A3	1345 + 00.29	-38.00	614.54
A4	1345 + 10.29	-38.00	614.39
E. End of E. Approach	1345 + 20.29	-38.00	614.22

WB PGL

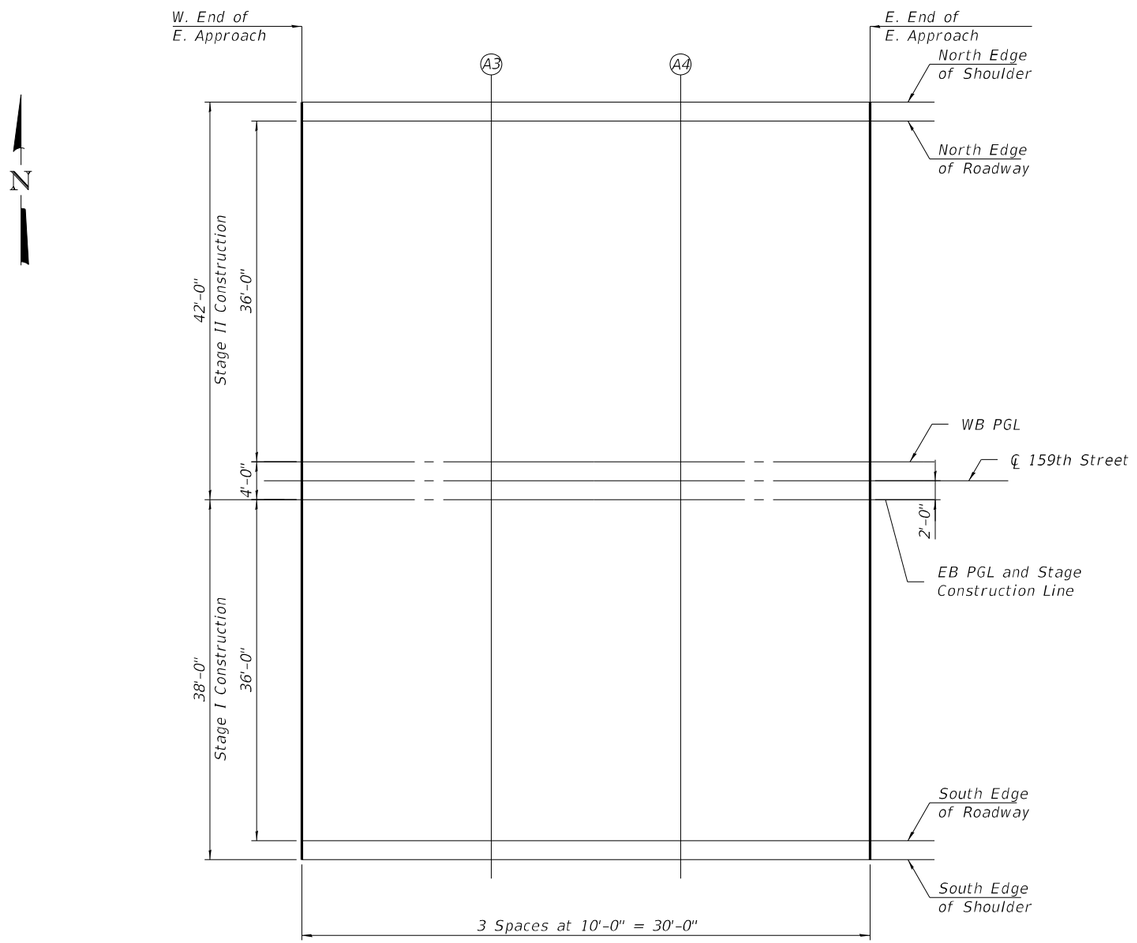
Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	1344 + 90.29	-2.00	615.27
A3	1345 + 00.29	-2.00	615.12
A4	1345 + 10.29	-2.00	614.97
E. End of E. Approach	1345 + 20.29	-2.00	614.80

CL 159TH ST

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	344 + 90.29	0.00	615.25
A3	345 + 00.29	0.00	615.10
A4	345 + 10.29	0.00	614.95
E. End of E. Approach	345 + 20.29	0.00	614.78

EB PGL AND STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	2344 + 90.29	2.00	615.23
A3	2345 + 00.29	2.00	615.08
A4	2345 + 10.29	2.00	614.93
E. End of E. Approach	2345 + 20.29	2.00	614.76



PLAN

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	2344 + 90.29	38.00	614.64
A3	2345 + 00.29	38.00	614.50
A4	2345 + 10.29	38.00	614.34
E. End of E. Approach	2345 + 20.29	38.00	614.17

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Approach	2344 + 90.29	40.00	614.59
A3	2345 + 00.29	40.00	614.44
A4	2345 + 10.29	40.00	614.29
E. End of E. Approach	2345 + 20.29	40.00	614.12

Notes:
1. Offsets are measured with respect to the Centerline.
2. Negative offsets are left of the centerline while looking upstation.
3. All Elevations and Offsets are in feet.

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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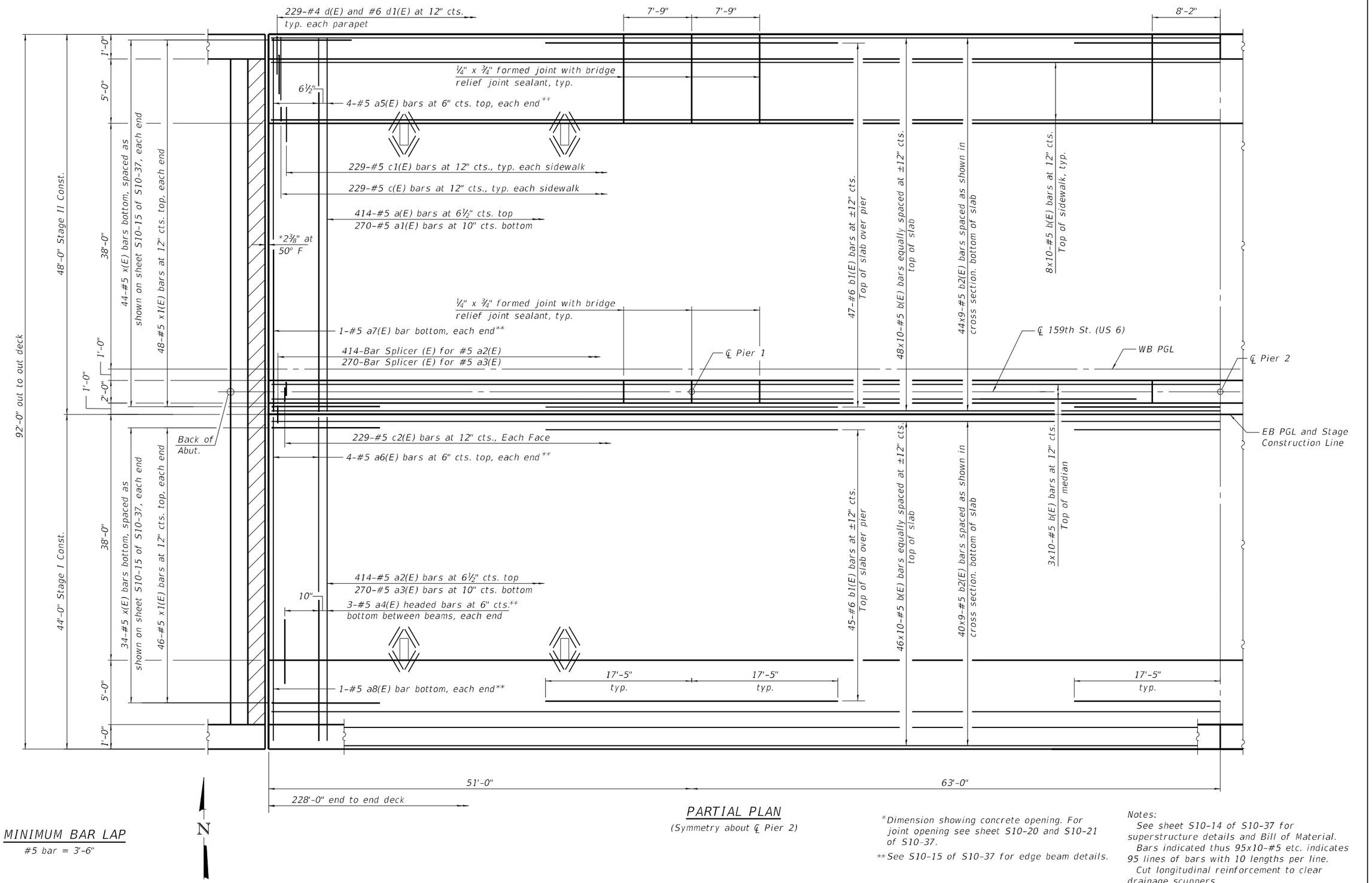
PLOT DATE =	CHECKED - BJD	REVISED -	

TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-0388
SHEET S10-11 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	709
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



MINIMUM BAR LAP

#5 bar = 3'-6"

PARTIAL PLAN

(Symmetry about ℄ Pier 2)

*Dimension showing concrete opening. For joint opening see sheet S10-20 and S10-21 of S10-37.

**See S10-15 of S10-37 for edge beam details.

Notes:
See sheet S10-14 of S10-37 for superstructure details and Bill of Material.
Bars indicated thus 95x10-#5 etc. indicates 95 lines of bars with 10 lengths per line.
Cut longitudinal reinforcement to clear drainage scuppers.

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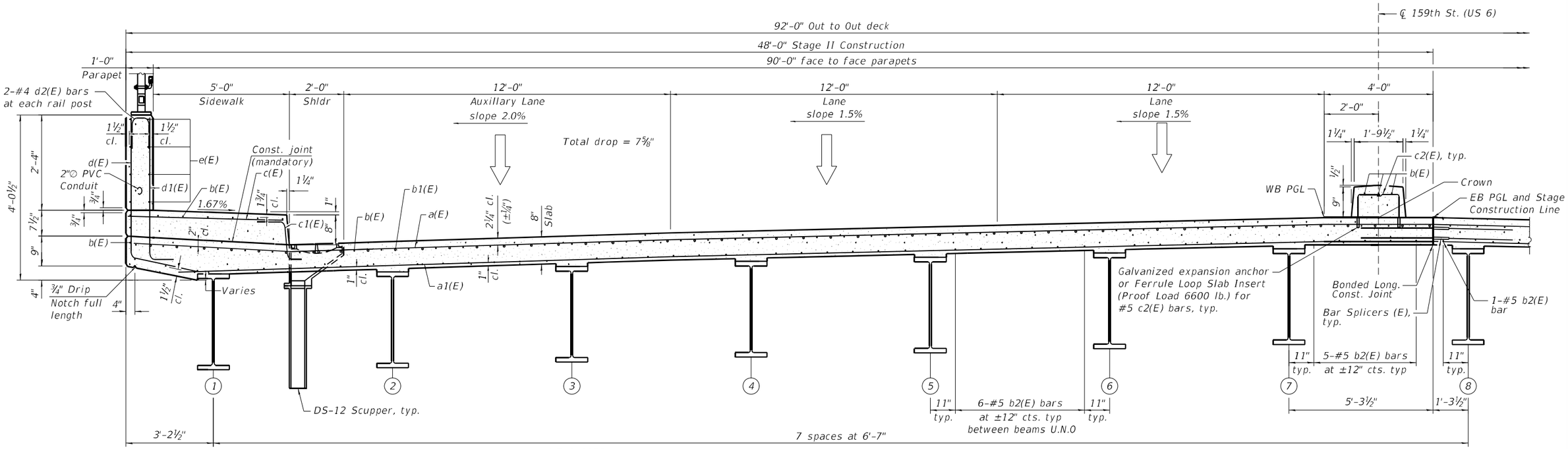
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

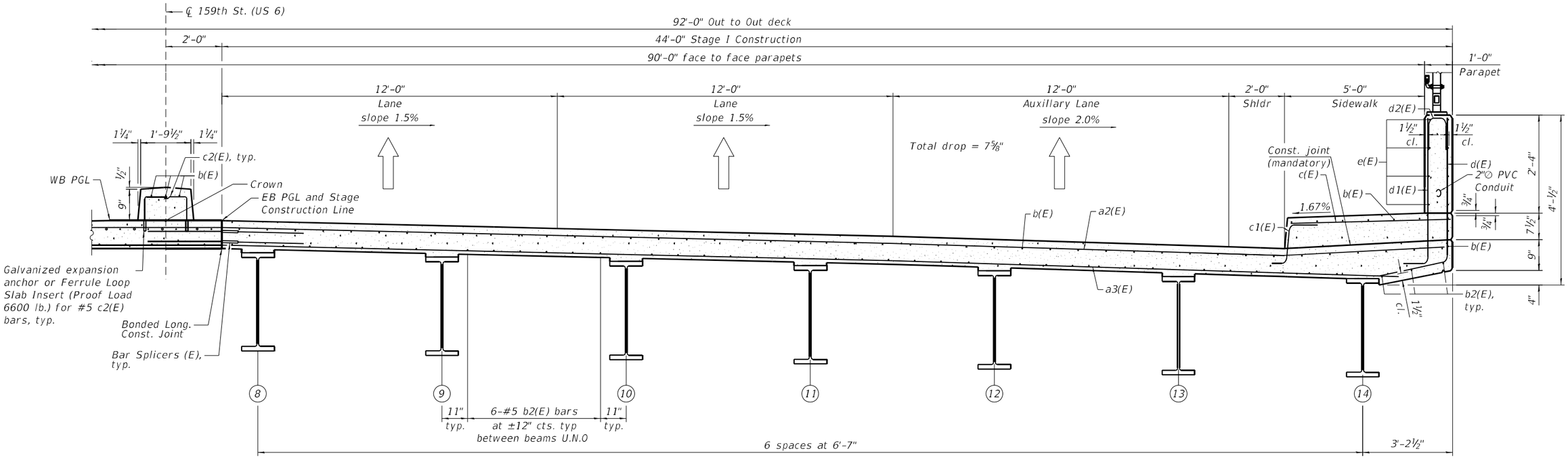
SUPERSTRUCTURE - 1
STRUCTURE NO. 016-0388
SHEET S10-12 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	710
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



NEAR PIER

CROSS SECTION
(Looking East)



NEAR MIDSPAN

CROSS SECTION
(Looking East)

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	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE - 2
STRUCTURE NO. 016-0388
SHEET S10-13 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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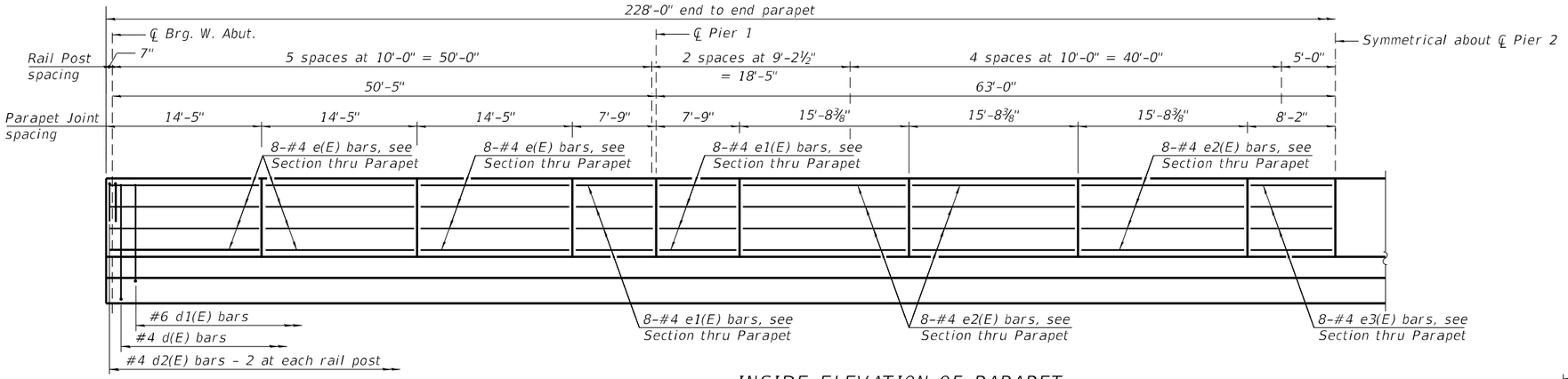
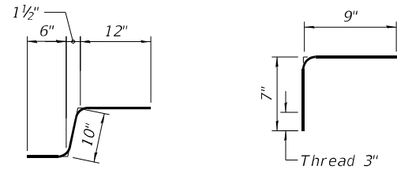
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



INSIDE ELEVATION OF PARAPET

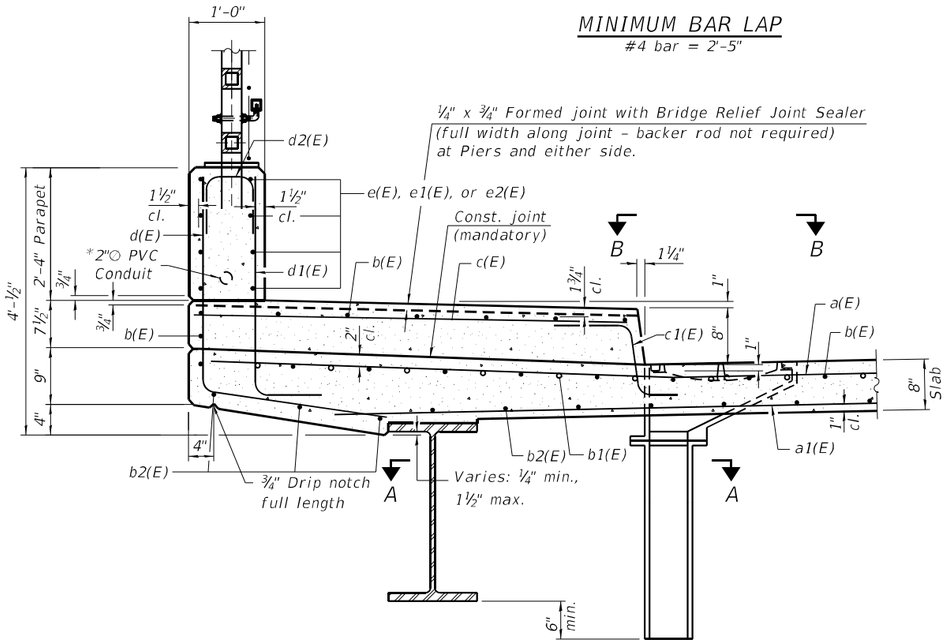


BAR c1(E)

BAR c2(E)

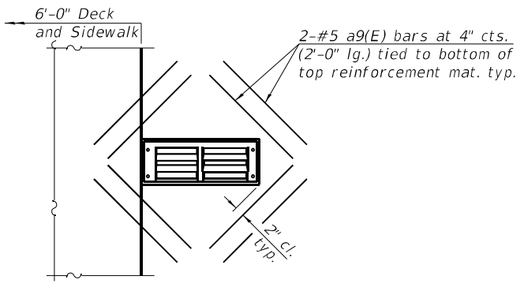
MINIMUM BAR LAP

#4 bar = 2'-5"

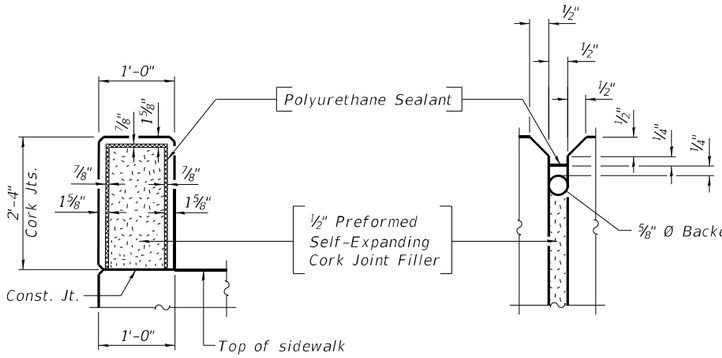


SECTION THRU SIDEWALK

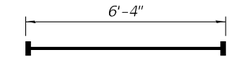
* For Conduit and junction boxes, see Rdwy Plan.
See IDOT Highway Standard 812001. Maintain 1½" cl. from reinforcement to conduit.



SECTION B-B

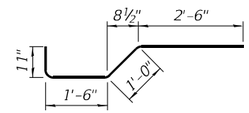


PARAPET JOINT DETAILS

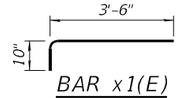


HEADED BAR a4(E)

(Headed 78-#5 a4(E) Bar terminators)



BAR x(E)



BAR x1(E)

Notes:

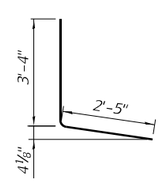
The Polyurethane Sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

Cut longitudinal reinforcement to clear drainage scuppers.

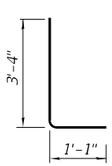
Bar Terminators paid for Separately. See Total Bill of Material.

SUPERSTRUCTURE BILL OF MATERIAL

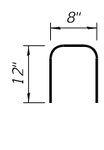
Bar	No.	Size	Length	Shape
a(E)	414	#5	47'-8"	
a1(E)	270	#5	46'-0"	
a2(E)	414	#5	43'-8"	
a3(E)	270	#5	42'-0"	
a4(E)	78	#5	6'-4"	
a5(E)	8	#5	47'-8"	
a6(E)	8	#5	43'-8"	
a7(E)	2	#5	46'-0"	
a8(E)	2	#5	42'-0"	
a9(E)	64	#5	2'-0"	
b(E)	1130	#5	26'-0"	
b1(E)	276	#6	34'-10"	
b2(E)	756	#5	28'-6"	
c(E)	458	#5	5'-8"	
c1(E)	458	#5	2'-4"	
c2(E)	458	#5	1'-4"	
d(E)	458	#4	5'-7"	
d1(E)	458	#6	4'-5"	
d2(E)	96	#4	2'-8"	
e(E)	96	#4	14'-9"	
e1(E)	64	#4	7'-5"	
e2(E)	96	#4	15'-4"	
e3(E)	32	#4	7-10"	
x(E)	156	#5	5'-11"	
x1(E)	188	#5	4'-4"	
Reinforcement Bars, Epoxy Coated		Lbs.	146,990	
Concrete Superstructure		Cu. Yds.	923.6	



BAR d(E)



BAR d1(E)



BAR d2(E)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 016-0388
SHEET S10-14 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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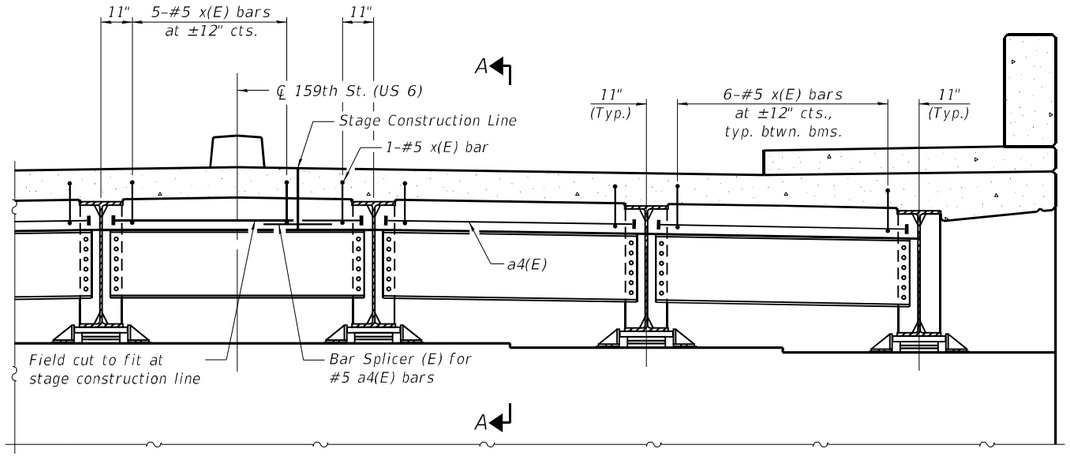
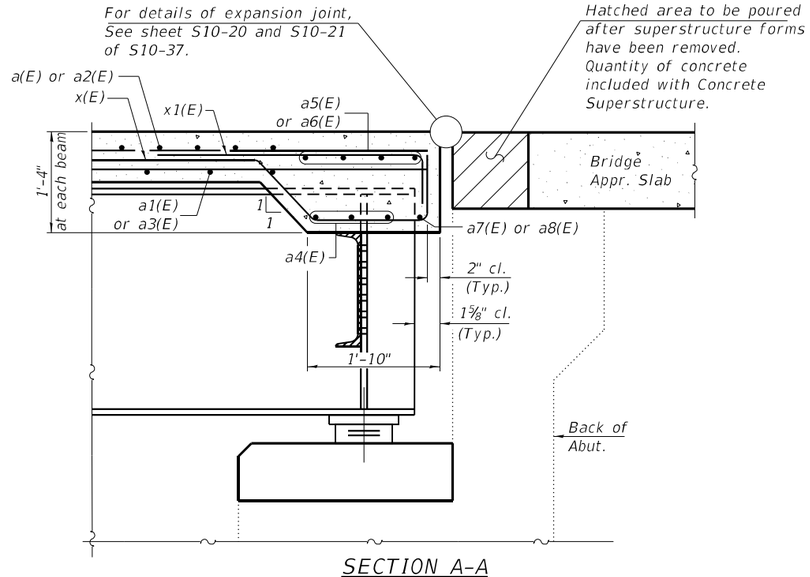
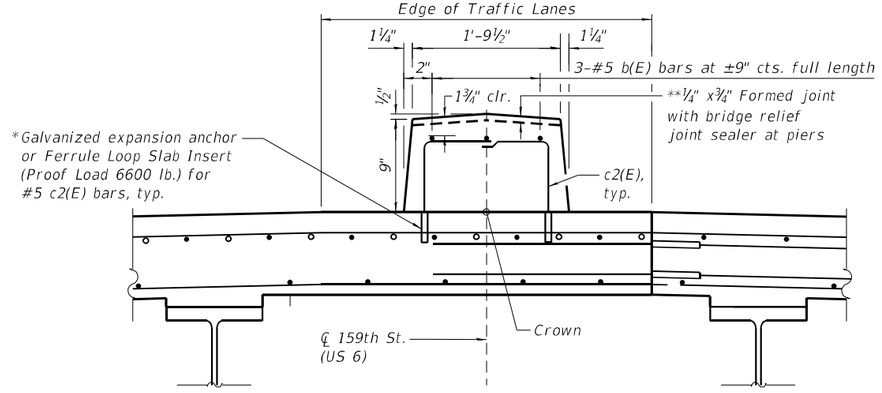
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



DIAPHRAGM AT ABUTMENT



SECTION A-A



SECTION THRU MEDIAN

* The cost of expansion anchors/inserts is included in the cost of Reinforcement Bars, Epoxy Coated.

** Full width along joint - backer rod not required.

Notes:
See sheet S10-14 of S10-37 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.

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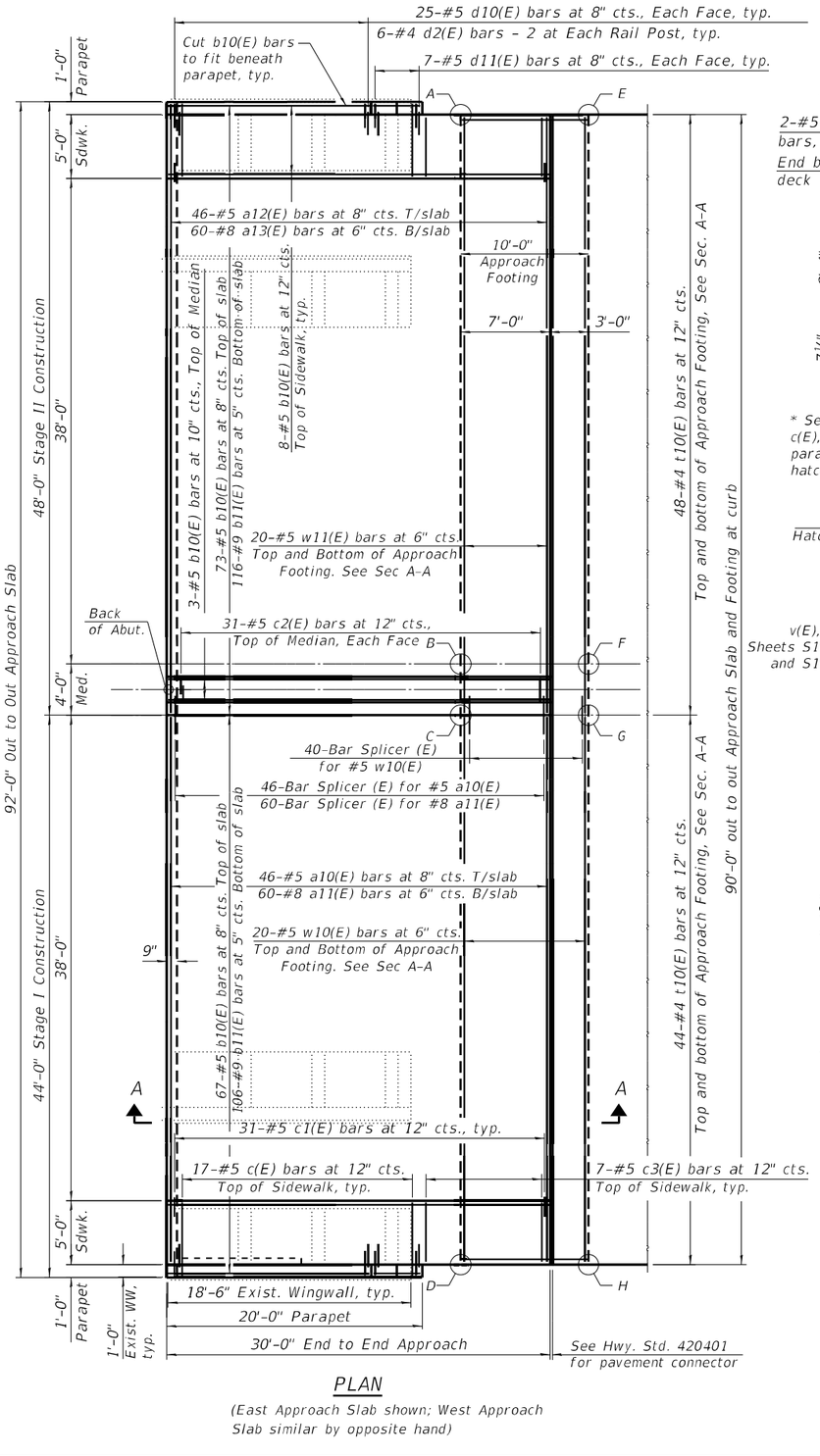
PLOT DATE =	CHECKED - BJD	REVISED -	

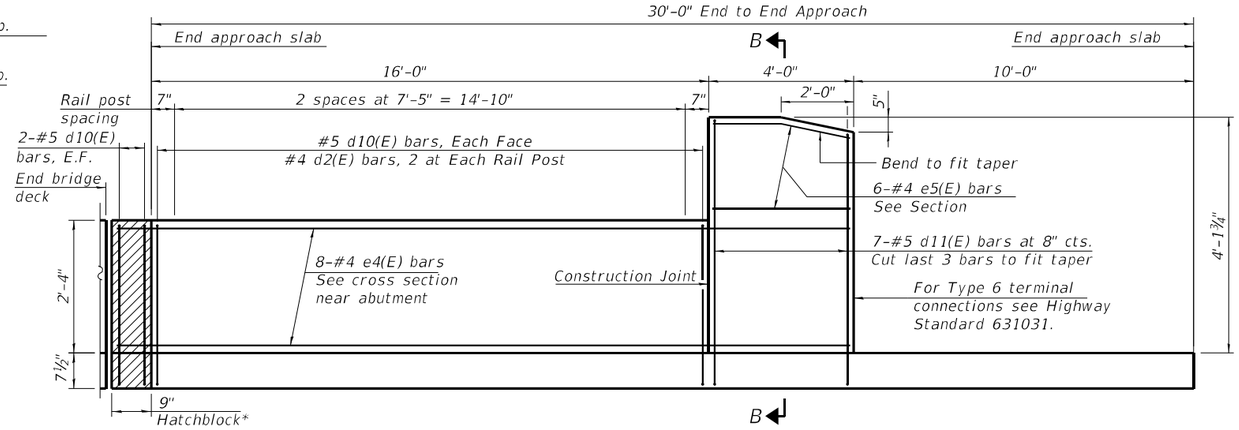
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 016-0388
SHEET S10-15 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	713
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



PLAN

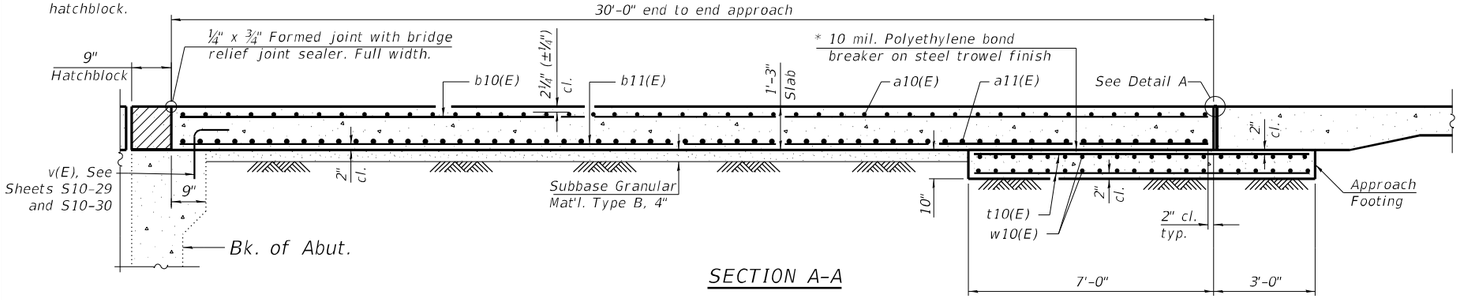
(East Approach Slab shown; West Approach Slab similar by opposite hand)



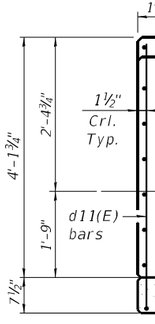
INSIDE ELEVATION OF PARAPET AND SIDEWALK

* See sheet S10-17 for layout of b12(E), c(E), c1(E), and d10(E) bars in the parapet and sidewalk over the hatchblock.

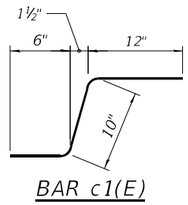
Notes:
See sheet S10-17 for notes.



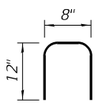
SECTION A-A



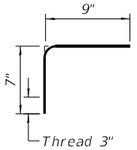
SECTION B-B



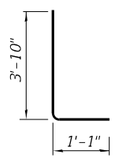
BAR c1(E)



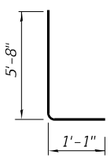
BAR d2(E)



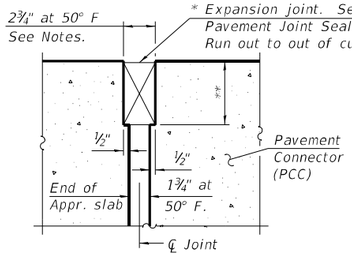
BAR c2(E)



BAR d10(E)



BAR d11(E)



DETAIL A

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

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

West Approach			East Approach		
Point	Top	Bottom	Point	Top	Bottom
A-SE	612.79	611.95	A-NW	612.93	612.09
B-E SL	613.53	612.69	B-W PGL	613.67	612.83
C-E PGL	613.46	612.63	C-W SL	613.63	612.80
D-NE	612.72	611.89	D-SW	612.89	612.06
E-SW	612.61	611.77	E-NE	612.76	611.92
F-W SL	613.35	612.51	F-E PGL	613.50	612.66
G-W PGL	613.28	612.45	G-E SL	613.46	612.63
H-NW	612.54	611.71	H-SE	612.72	611.89

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	92	#5	43'-8"	
a11(E)	120	#8	43'-8"	
a12(E)	92	#5	47'-8"	
a13(E)	120	#8	47'-8"	
b10(E)	318	#5	29'-8"	
b11(E)	444	#9	29'-8"	
b12(E)	32	#5	30'-5"	
c(E)	92	#5	5'-8"	
c1(E)	132	#5	2-4"	
c2(E)	124	#5	1'-4"	
c3(E)	52	#5	4'-8"	
d2(E)	24	#4	2'-8"	
d10(E)	200	#5	4'-11"	
d11(E)	56	#5	6'-9"	
e4(E)	32	#4	20'-5"	
e5(E)	24	#4	3'-8"	
t10(E)	368	#4	9'-8"	
w10(E)	80	#5	43'-8"	
w11(E)	80	#5	47'-8"	
Concrete Superstructure			Cu. Yd.	29.0
Concrete Superstructure (Approach Slab)			Cu. Yd.	253.8
Concrete Structures			Cu. Yd.	55.6
Reinforcement Bars, Epoxy Coated			Pound	213,900

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS - 1
STRUCTURE NO. 016-0388
SHEET S10-16 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	714
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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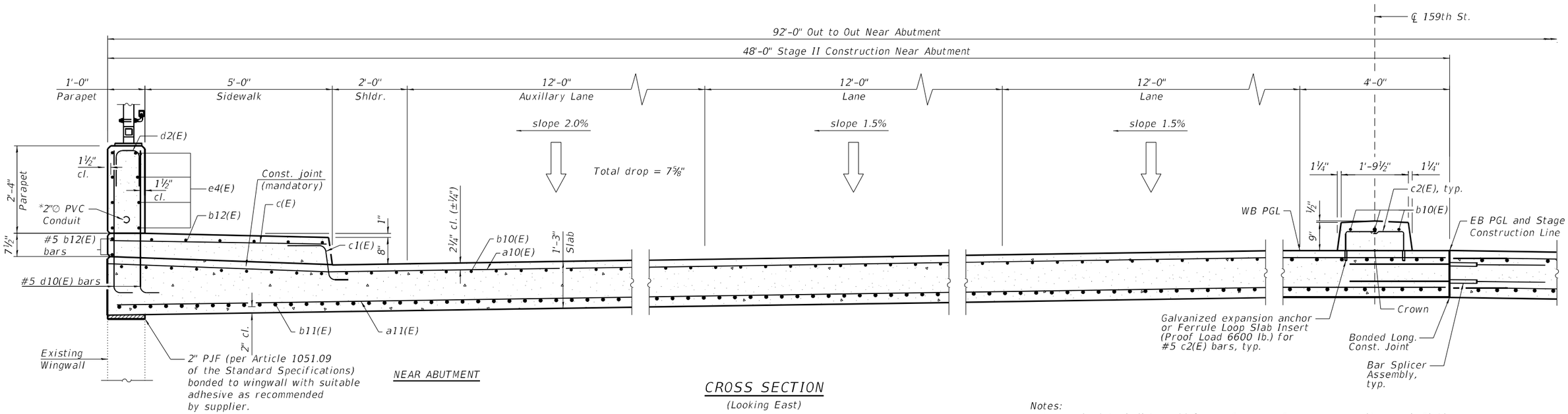


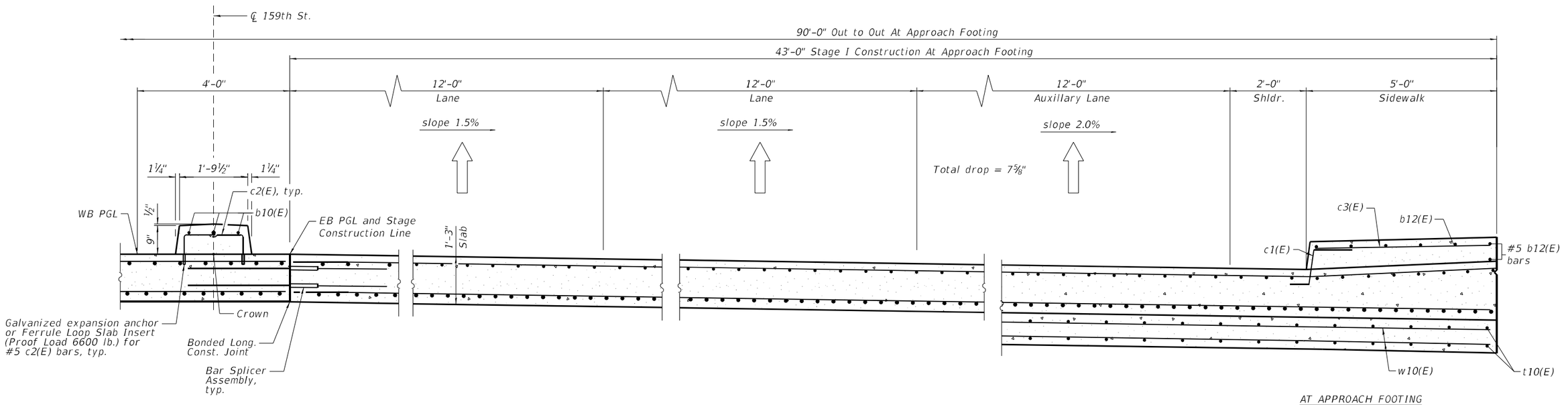
NEAR ABUTMENT

CROSS SECTION

(Looking East)

* For Conduit and junction boxes, see Rdwy Plans. See IDOT Highway Standard 812001. Maintain 1½" cl. from reinforcement to conduit.

Notes:
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
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.
See sheet S10-30A of S10-37 for hatched block details.



AT APPROACH FOOTING

CROSS SECTION

(Looking East)

USER NAME =	DESIGNED - BJD	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

BRIDGE APPROACH SLAB DETAILS - 2
STRUCTURE NO. 016-0388
SHEET S10-17 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	715
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
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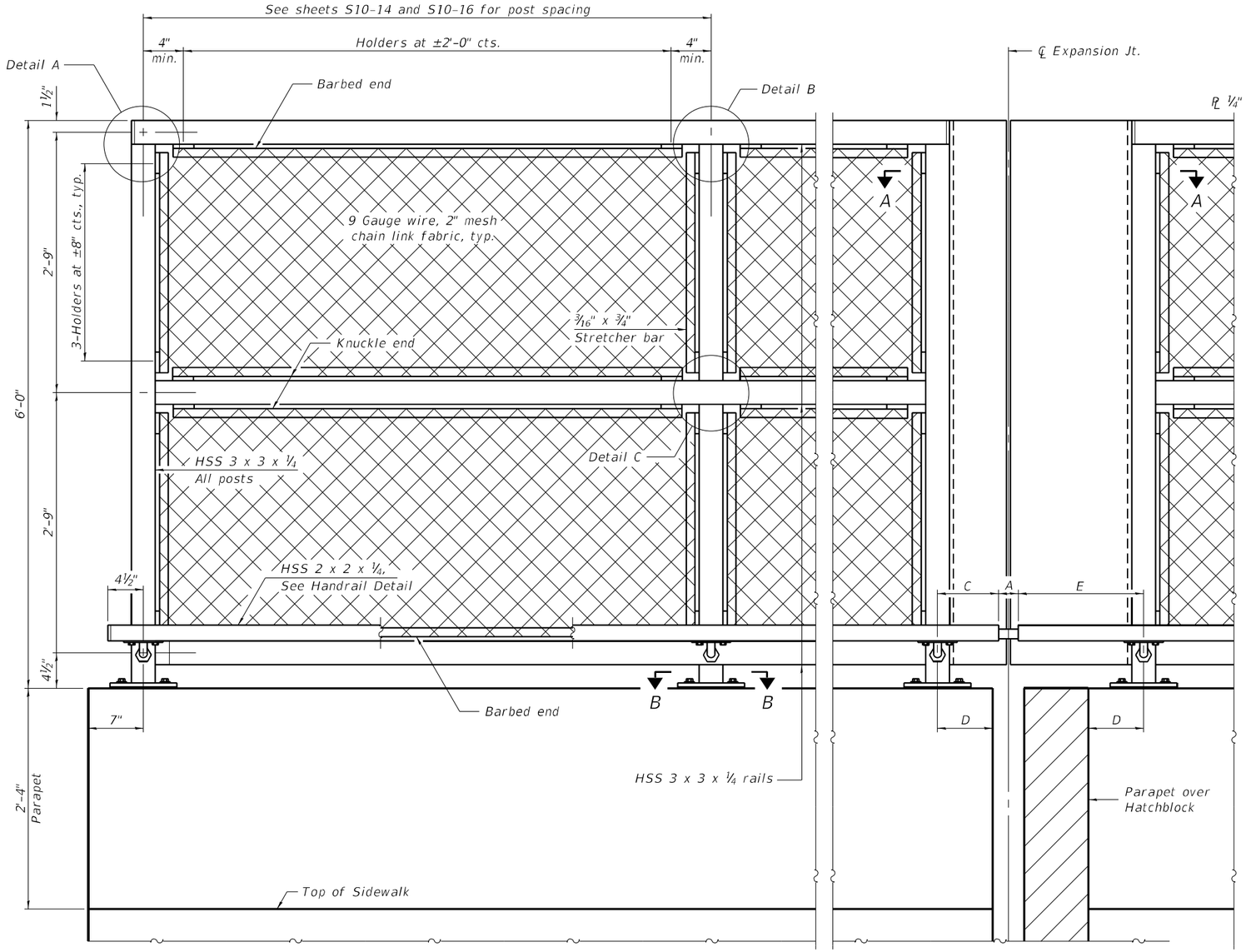
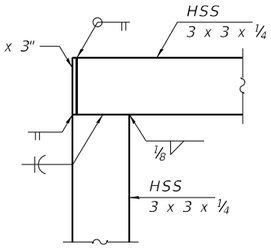
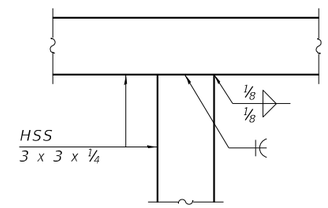


ELEVATION BRIDGE FENCE RAILING

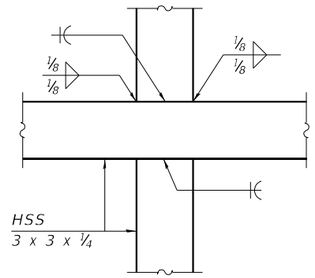
(Inside face)



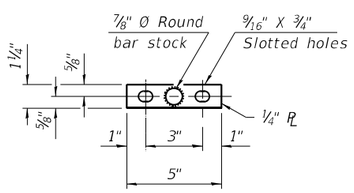
DETAIL A



DETAIL B

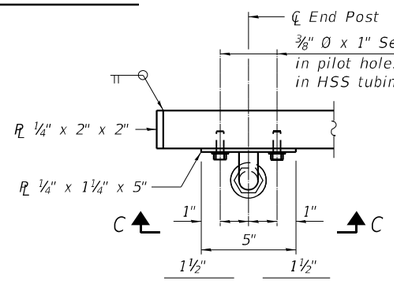


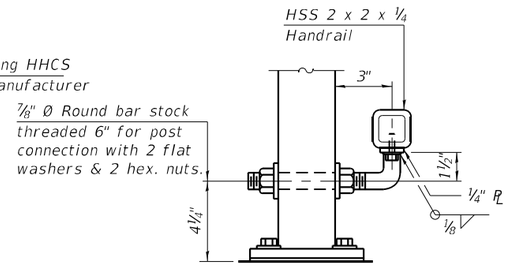
DETAIL C



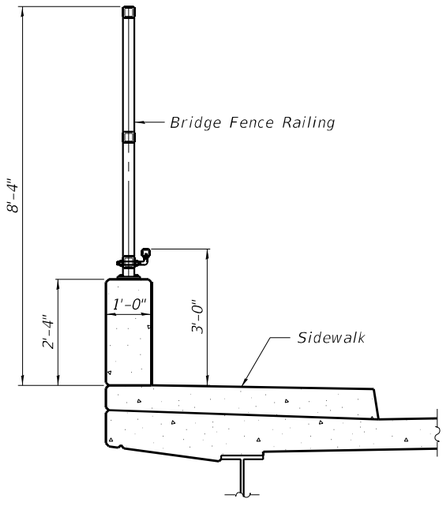
VIEW C-C

(Handrail)





HANDRAIL DETAIL



SECTION THRU DECK

RAILING CRITERIA

NCHRP 350 Test Level	4
Max Post Spacing	10'-0"
Railing Weight (plf)	50

(Sheet 1 of 2)

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING
STRUCTURE NO. 016-0388

SHEET S10-18 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	716
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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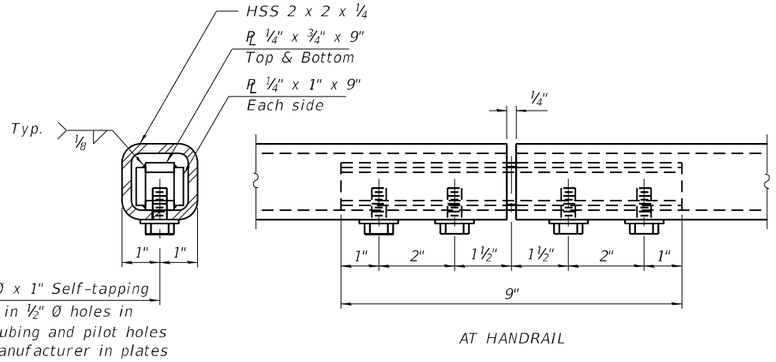
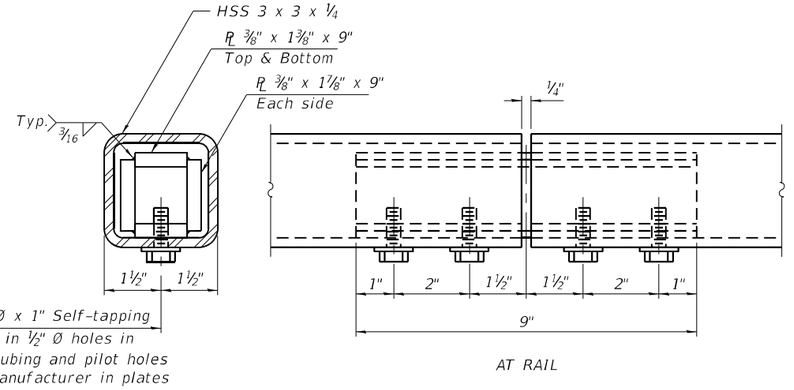


AT HANDRAIL



AT RAIL

MATERIAL SPLICE

Notes:

Place reinforcement bars to miss anchor rod locations.

CVN testing is not required for the HSS tubing used in the Bridge Fence Railing.

All HSS tubing used for the Handrail shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.

All heavy hex nuts shall be according to ASTM A 563 grade DH.

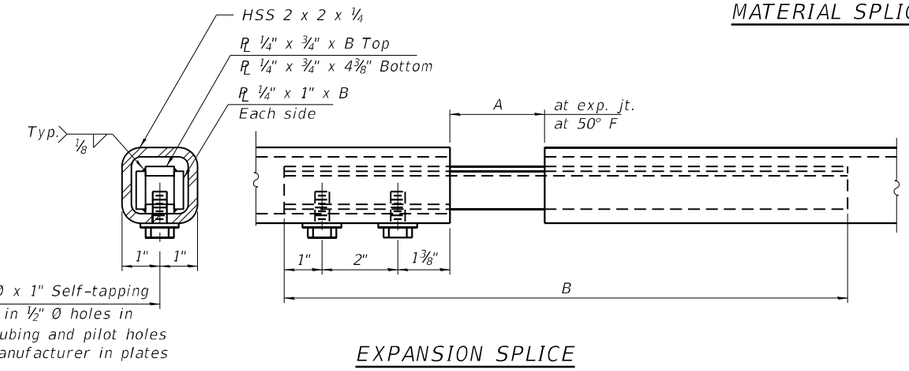
All fully threaded anchor rods shall be ASTM F1554 grade 105.

The post base plate shall be fastened to the curb snug tight and given an additional ⅛" turn.

Rail splice inserts may be built out of bent plates of the same thicknesses and outside geometry limits as the 4 plate rail splice inserts shown.

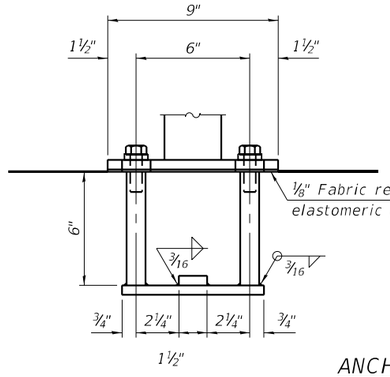
When the contract specifies a galvanized railing, all steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications. When the contract specifies a painted railing, all posts, rail, splices, anchor devices and plates of the railing shall be painted according to the paint system for railings as specified in the General Notes.

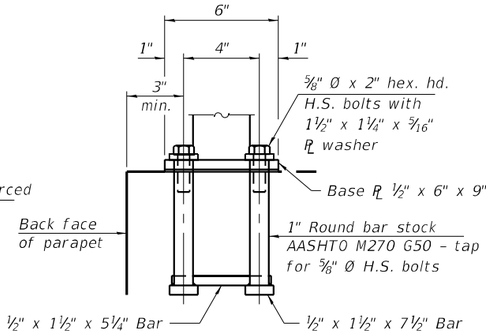
See sheet S10-12 of S10-37 for dimensions of concrete openings at expansion joints.



EXPANSION SPLICE

(Weld bottom plate on bolt side)

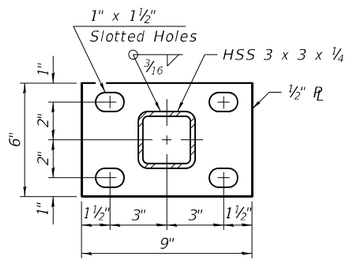




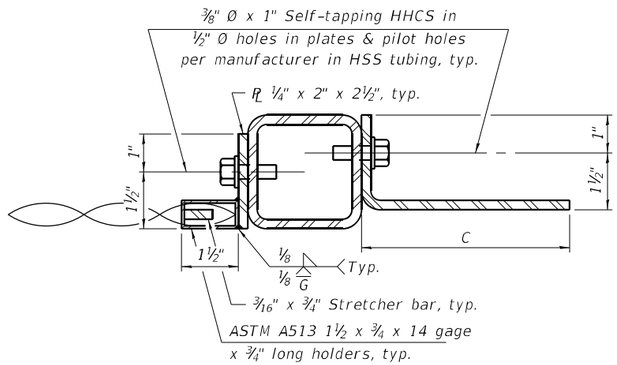
ANCHORAGE ASSEMBLY

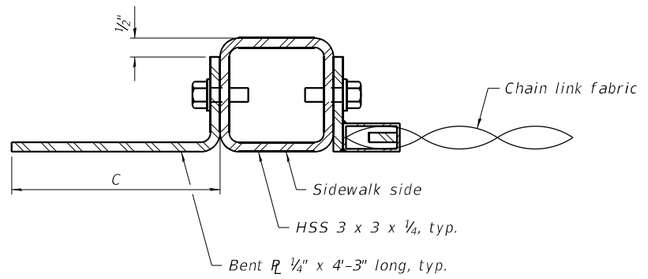
The Bridge Fence Railing fasteners for end posts near expansion joints may need to be installed prior to installing the bent plates.

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" Ø fully threaded anchor rods with the same plate washers as specified above and heavy hex lock nuts according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



SECTION B-B





SECTION A-A

TABLE OF DIMENSIONS

Location	T	A	B	C	D	E
Over Strip Seal Jt.	≤4"	2½"	1'-5⅞"	7¼"	7"	1'-4¼"

T= ; total movement based on total temperature range from -20°F to 120°F along centerline of roadway at expansion joint.

BILL OF MATERIAL

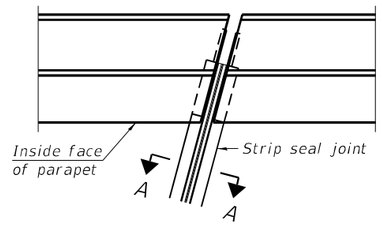
Item	Unit	Quantity
Bridge Fence Railing	Foot	524

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

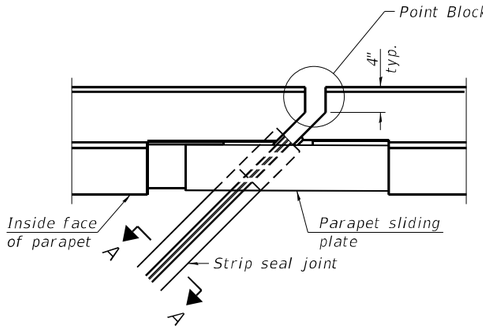
BRIDGE FENCE RAILING
STRUCTURE NO. 016-0388

SHEET S10-19 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	717
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

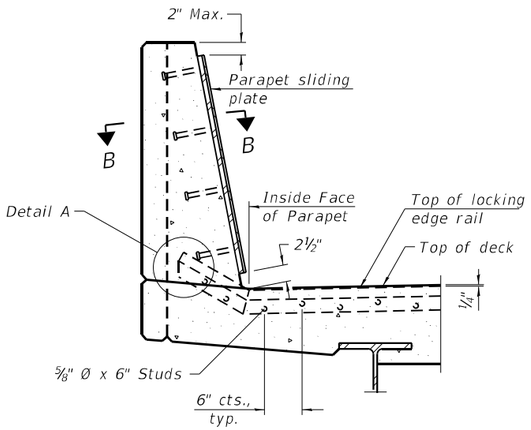


FOR SKEWS ≤ 30°



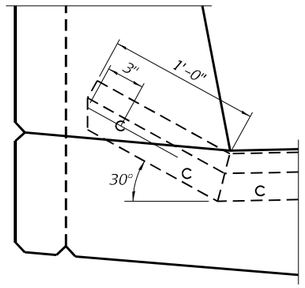
FOR SKEWS > 30°

PLAN AT PARAPET

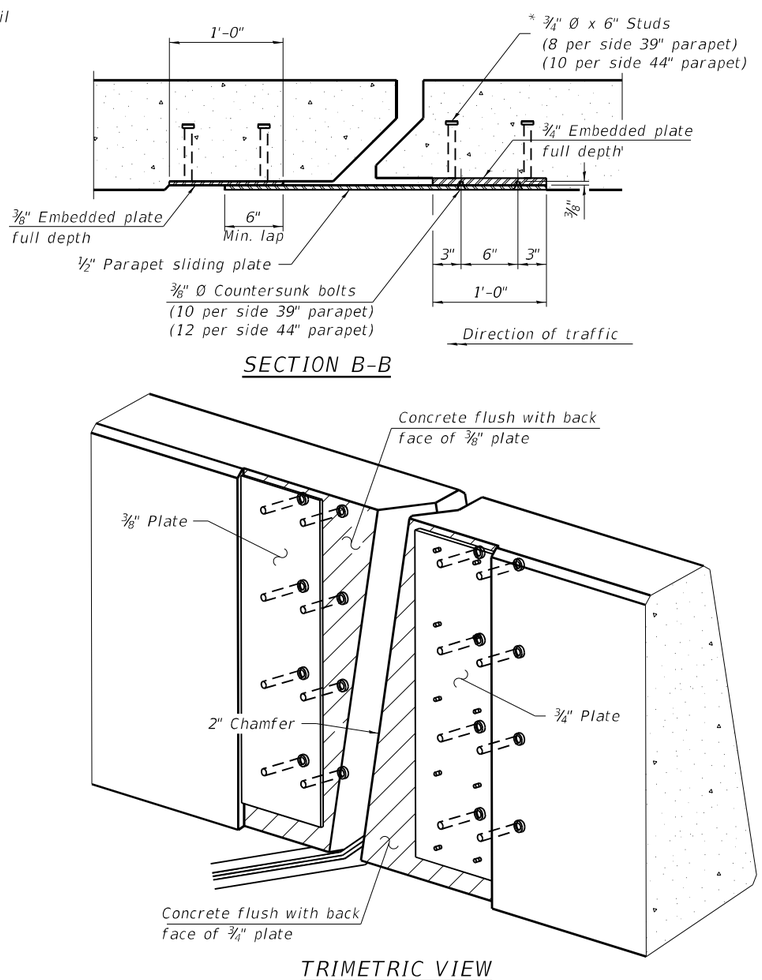


SECTION AT PARAPET

(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)



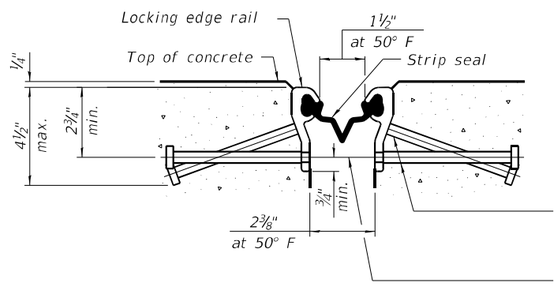
DETAIL A



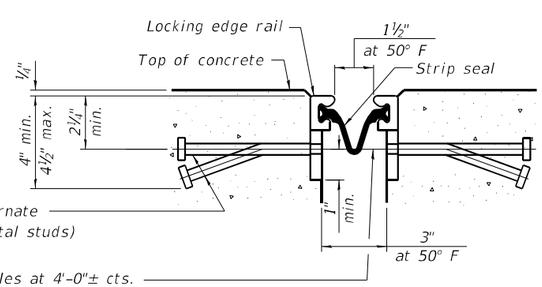
TRIMETRIC VIEW

(Showing embedded plates only)

SECTION B-B



SHOWING ROLLED RAIL JOINT



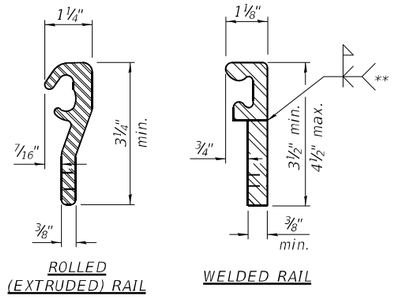
SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" Ø threaded rods in 7/16" Ø holes at 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.

SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

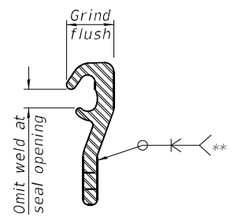


ROLLED (EXTRUDED) RAIL

WELDED RAIL

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.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

The top surface of sidewalk sliding plates shall have a raised pattern according to ASTM A786.

Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

39" constant slope barrier shown, 44" constant slope barrier similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	184

EJ-SS-S

5-15-2023

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-0388

SHEET S10-20 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	718
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: pw:\\wsp-us-pw.bentley.com:wsp-us-pw-11\Documents\Project IDOT 2050082201 - IDOT District 1 Various\Structures\Work Order 10\016-0388 - 159th over I-94\Sheets\20_016-0388-PreformedStripSeal.dgn

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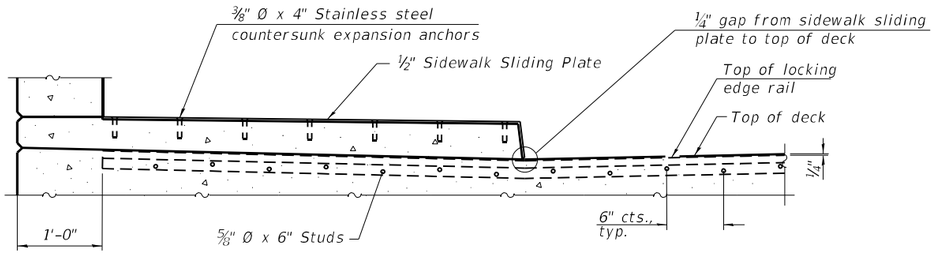
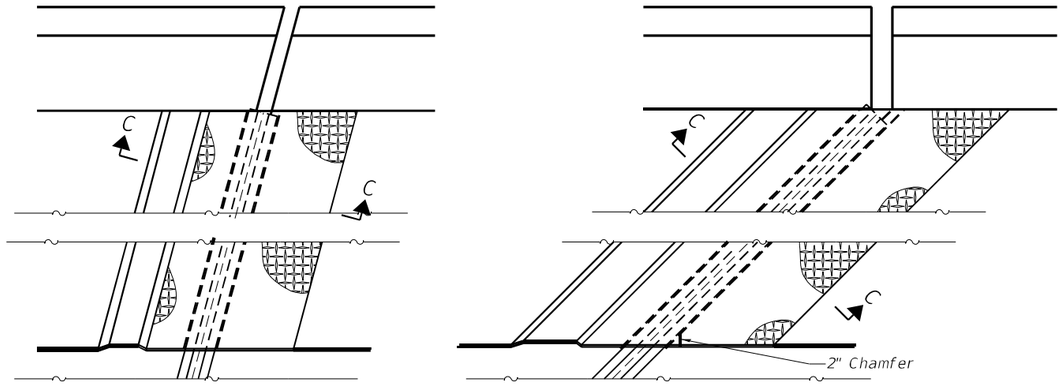


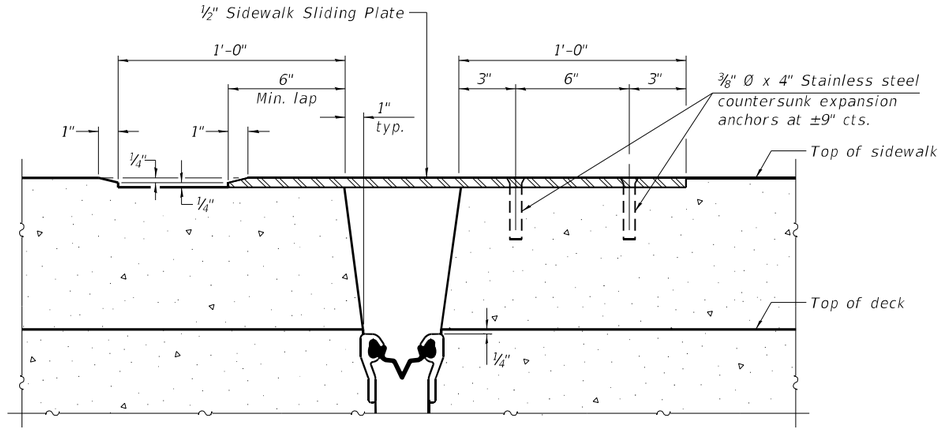
SECTION AT RAISED SIDEWALK



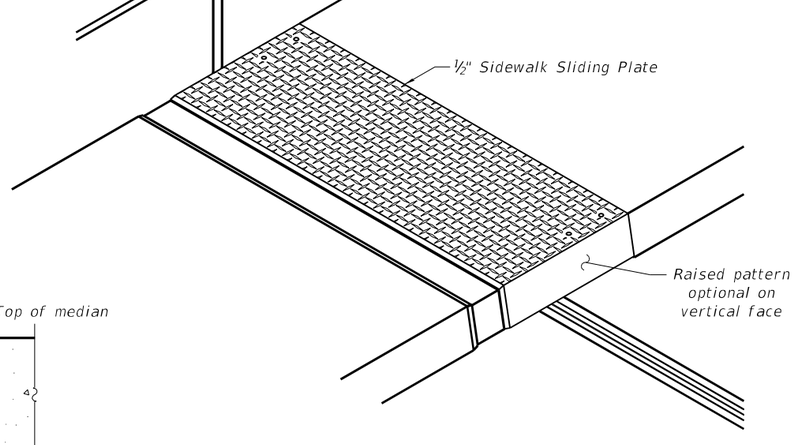
(FOR SKEWS ≤ 30°)

(FOR SKEWS > 30°)

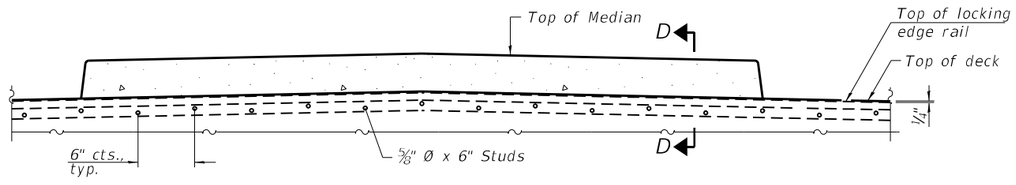
PLAN AT RAISED SIDEWALK



SECTION C-C

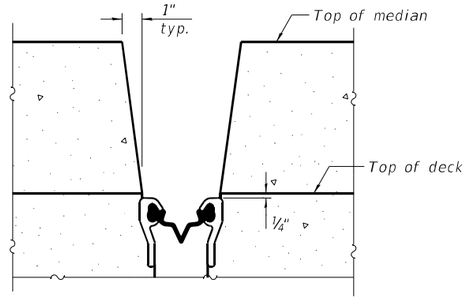


TRIMETRIC VIEW



SECTION AT MEDIAN

For skews > 30°, chamfer acute corners 2" similar to sidewalk.



SECTION D-D

(at Rt. ∠'s)

EJ-SS-S

5/15/2023

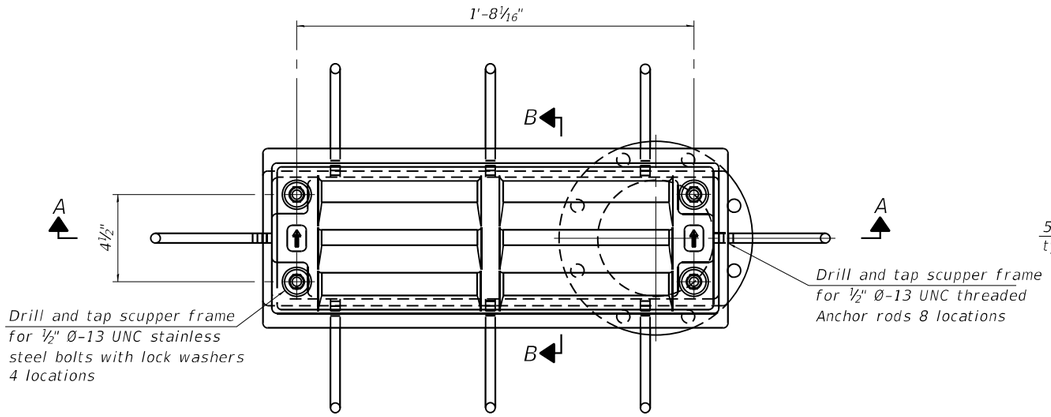
USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

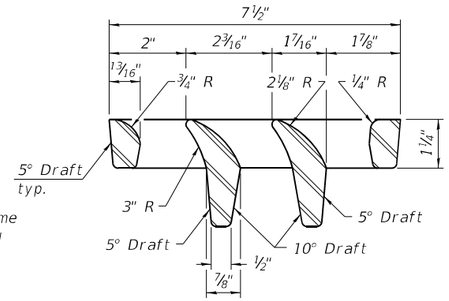
PREFORMED JOINT STRIP SEAL - SIDEWALK
STRUCTURE NO. 016-0388

SHEET S10-21 OF S10-37 SHEETS

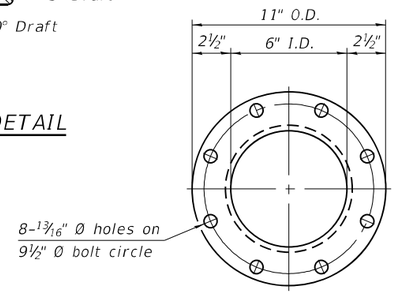
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	719
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



PLAN



VANE GRATE DETAIL



Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, anchor rods, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

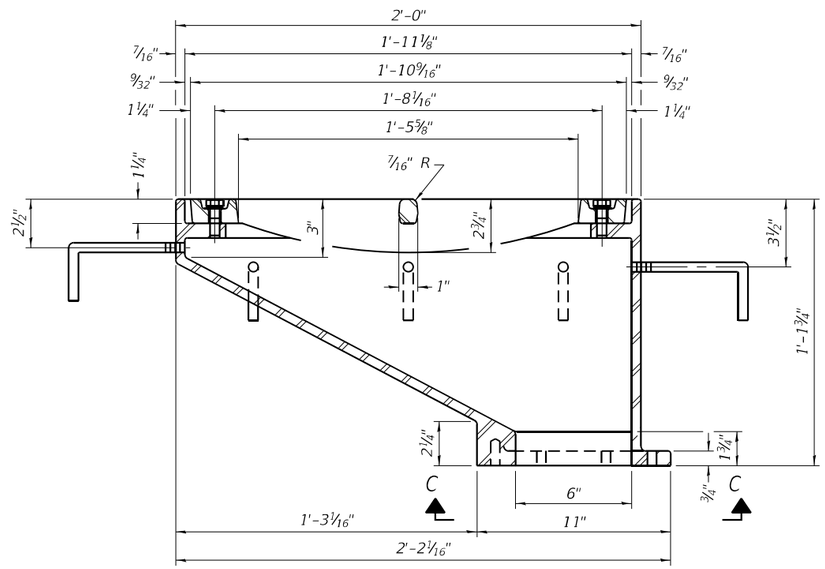
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

Exterior surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck shall be pigmented or painted to match the color of the adjacent beam.

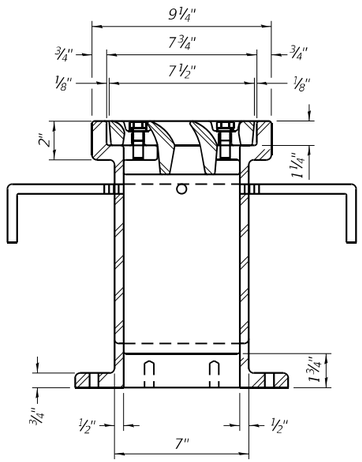
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the grate, frame, downspout, anchor rods, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scuppers, DS-12.

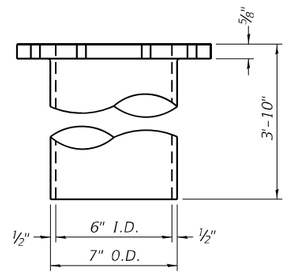


SECTION A-A

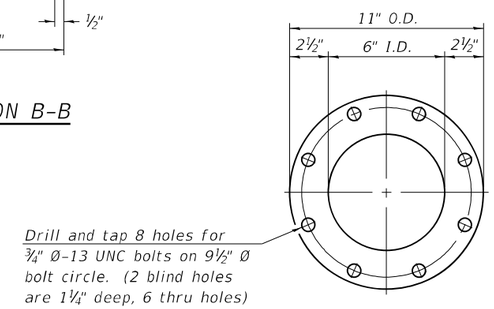
See sheet S10-14 of S10-37 for scupper location relative to the curb.



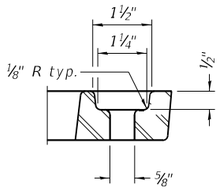
SECTION B-B



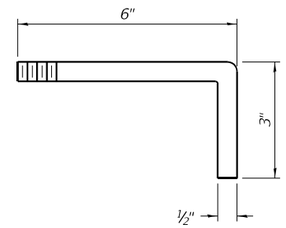
DOWNSPOUT



VIEW C-C



GRATE BOLT HOLE DETAIL



ANCHOR ROD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	8

DS-12

5-15-2023

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

DRAINAGE SCUPPER DETAILS
STRUCTURE NO. 016-0388
SHEET S10-22 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	720
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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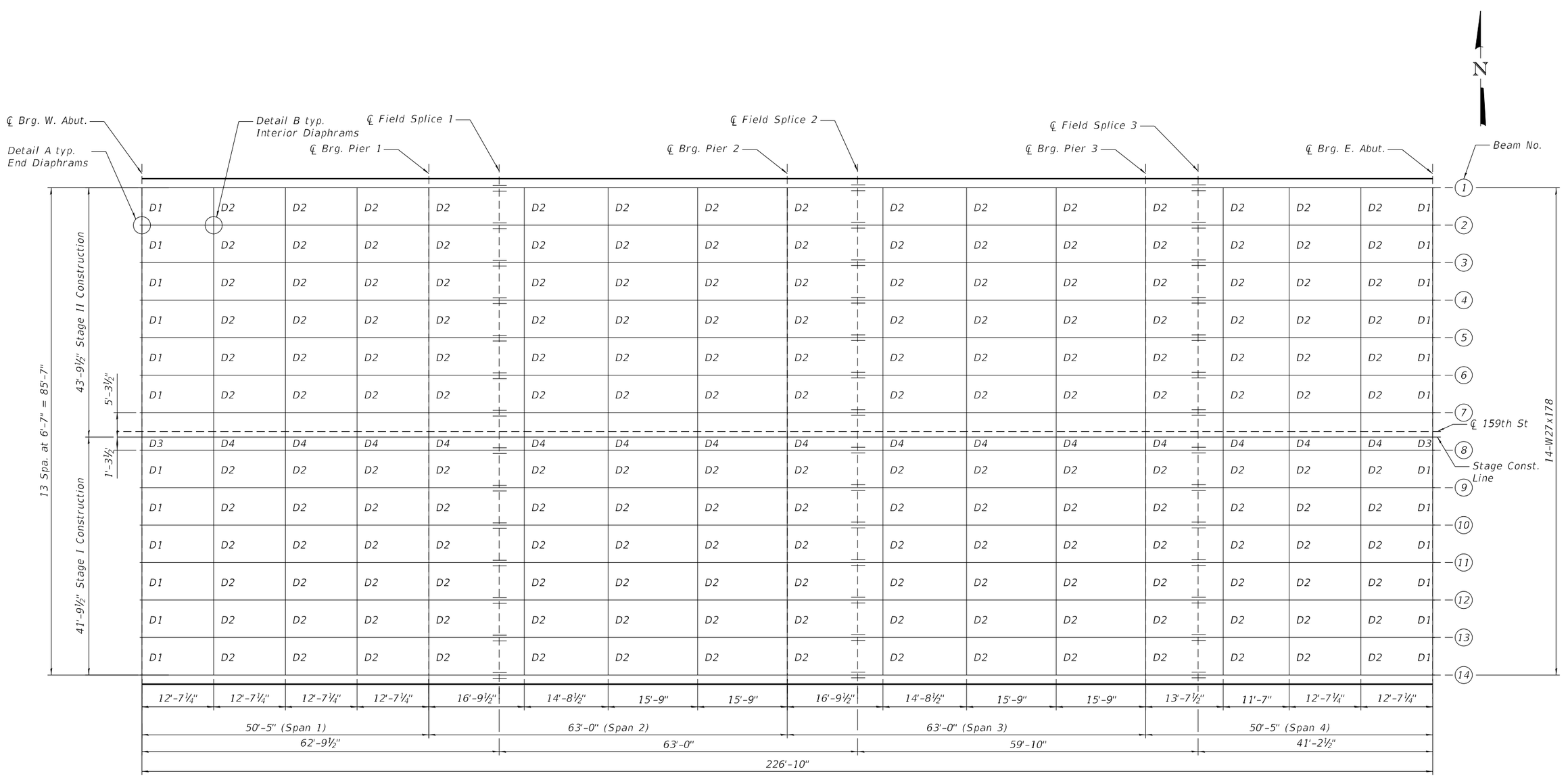

FRAMING PLAN

TOP OF BEAM ELEVATIONS

(For fabrication only)

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7	Beam 8	Beam 9	Beam 10	Beam 11	Beam 12	Beam 13	Beam 14
℄ Brg. W. Abut.	613.65	613.78	613.91	614.03	614.13	614.22	614.32	614.26	614.16	614.04	613.96	613.85	613.71	613.58
℄ Brg. Pier 1	614.22	614.36	614.49	614.60	614.70	614.81	614.90	614.84	614.74	614.64	614.55	614.43	614.30	614.17
℄ Splice 1	614.32	614.45	614.58	614.70	614.80	614.90	614.99	614.94	614.84	614.74	614.64	614.52	614.39	614.26
℄ Brg. Pier 2	614.50	614.63	614.77	614.88	614.98	615.07	615.18	615.13	615.03	614.93	614.83	614.71	614.58	614.45
℄ Splice 2	614.55	614.68	614.82	614.93	615.03	615.12	615.23	615.18	615.08	614.98	614.88	614.76	614.63	614.50
℄ Brg. Pier 3	614.29	614.42	614.55	614.67	614.77	614.87	614.96	614.92	614.82	614.72	614.62	614.51	614.37	614.24
℄ Splice 3	614.22	614.35	614.48	614.60	614.69	614.80	614.89	614.85	614.75	614.65	614.55	614.43	614.30	614.17
℄ Brg. E. Abut.	613.76	613.89	614.02	614.14	614.24	614.34	614.44	614.40	614.30	614.20	614.10	613.98	613.85	613.72

Notes:
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports maybe temporarily disconnected to install bearing anchor bolts.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-0388
SHEET S10-23 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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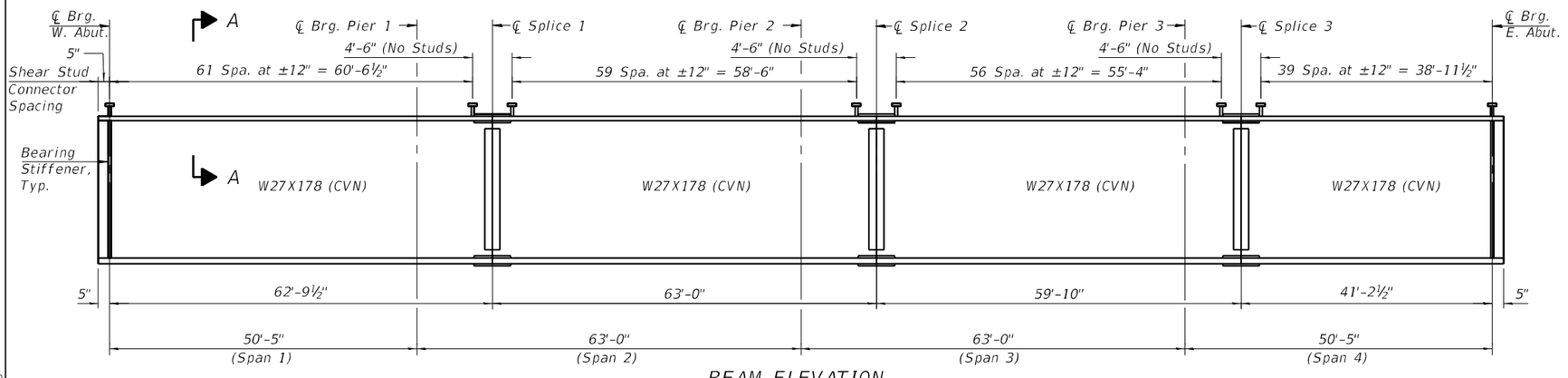
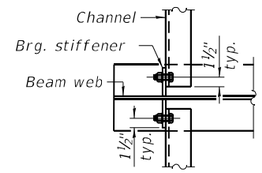
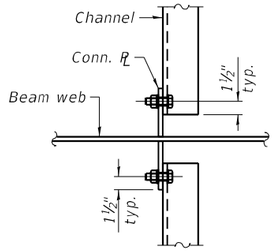
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



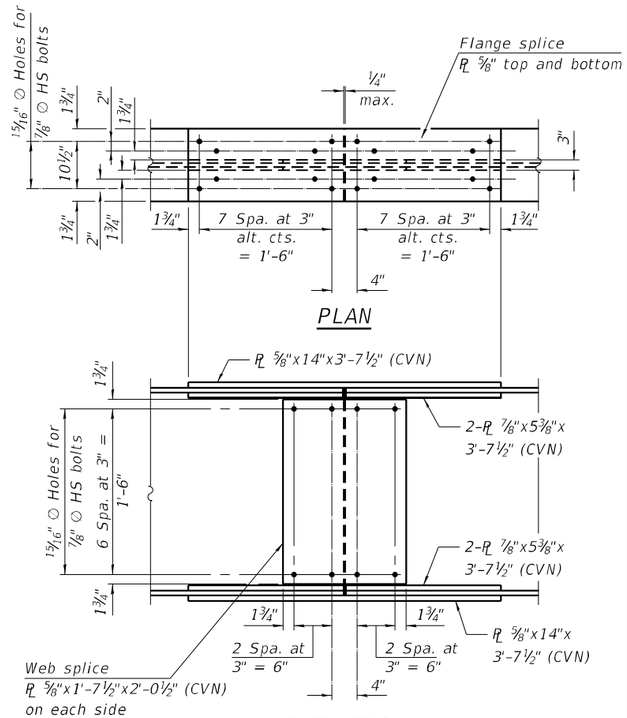
BEAM ELEVATION



DETAIL A



DETAIL B

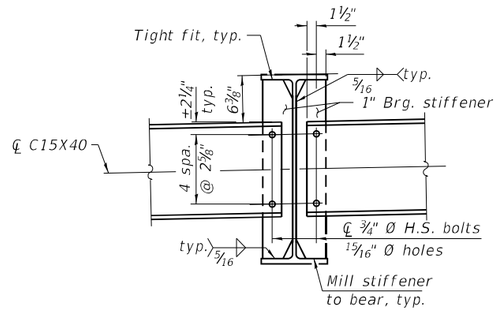


PLAN

ELEVATION

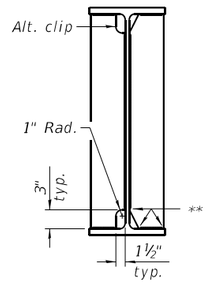
SPLICE DETAIL

(42 Required)



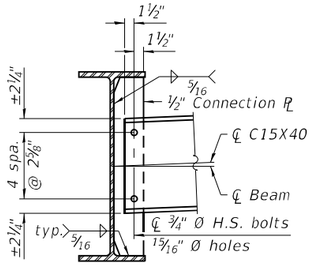
END DIAPHRAGMS

D1 (24 Required)



WELD LIMITS AND CLIP DETAILS

** Stop welds ¼" (±⅛") from edges as shown. Typical.



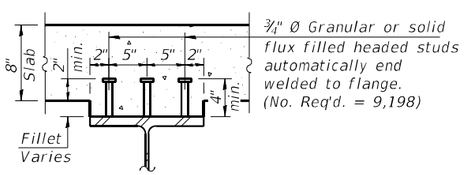
INTERIOR DIAPHRAGM

D2 (180 Required)
D4 (15 Required)

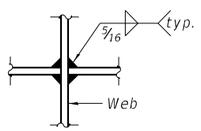
Notes:

Two hardened washers required for each set of oversized holes.

Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels, if utilized, shall be provided at no additional cost to the Department.



SECTION A-A



WEB WELD DETAIL

Notes:

See sheet S10-25 for moment tables and reaction tables.

All beams, splice plates, and bearing stiffeners shall be AASHTO M270 Grade 50.

All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise notes.

Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy, Zone 2.

All structural steel shall be metalized. Cost included with Furnishing and Erecting Structural Steel.

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	CHECKED - MGH	REVISED -	
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PLOT DATE =	CHECKED - BJD	REVISED -	

STRUCTURAL STEEL
STRUCTURE NO. 016-0388
SHEET S10-24 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	722
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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INTERIOR GIRDER MOMENT TABLE					
		0.4 Sp. 1 or 0.6 Sp. 4	Pier 1 or Pier 3	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2
I_s	(in^4)	7,020	7,020	7,020	7,020
$I_c(n)$	(in^4)	17,796	--	17,796	--
$I_c(3n)$	(in^4)	13,000	--	13,000	--
$I_c(cr)$	(in^4)	--	8,930	--	8,930
S_s	(in^3)	505	505	505	505
$S_c(n)$	(in^3)	715	--	715	--
$S_c(3n)$	(in^3)	647	--	647	--
$S_c(cr)$	(in^3)	--	562	--	562
S_x	(in^3)	505	505	505	505
DC1	(k/')	0.90	0.90	0.90	0.90
M_{DC1}	('k)	159	289	136	298
DC2	(k/')	0.31	0.31	0.31	0.31
M_{DC2}	('k)	54	100	46	104
DW	(k/')	0.29	0.29	0.29	0.29
M_{DW}	('k)	51	94	43	97
LLDF		0.586	0.569	0.553	0.553
M_{L+IM}	('k)	500	439	472	484
f_f (Strength I)	(ksi)	--	--	--	--
$M_u + 1/3 f_f S_x$	('k)	1,218	1,396	1,118	1,495
$\varnothing_f M_n$	('k)	3,408	--	3,408	--
f_s DC1	(ksi)	3.8	6.9	3.2	7.1
f_s DC2	(ksi)	1.0	2.1	0.9	2.2
f_s DW	(ksi)	0.9	2.0	0.8	2.1
f_s (L+IM)	(ksi)	8.4	9.4	7.9	10.3
f_f (Service II)	(ksi)	--	--	--	--
$f_s + f_f/2$ (Service II)	(ksi)	16.6	23.2	15.2	24.8
Service II Resistance	(ksi)	47.5	47.5	47.5	47.5
$f_s + f_f/3$ (Strength I)	(ksi)	--	30.7	--	32.8
$\varnothing_f F_n$	(ksi)	--	50.0	--	50.0
V_f	(k)	42.6	44.7	43.5	47.7

GIRDER REACTION TABLE				
		Abuts.	Piers 1 or 3	Pier 2
LLDF		0.7132	0.7132	0.7132
OCF		--	--	--
R_{DC1}	(k)	17.8	56.6	56.9
R_{DC2}	(k)	5.8	19.5	19.6
R_{DW}	(k)	5.5	18.3	18.4
R_L	(k)	50.6	80.1	81.4
R_{IM}	(k)	13.2	16.2	16.2
R_{Total} (Strength I)(Impact)	(k)	149.2	291.0	294.1
R_{Total} (Strength I)(No Impact)	(k)	126.2	262.7	265.8

Note:
M_L and R_L include the effects of centrifugal force and superelevation.

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total-Strength I, and Service II) due to non-composite dead loads (in.^{4} and in.^{3}).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.^{4} and in.^{3}).

$I_c(3n)$, $S_c(3n)$: 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-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.^{4} and in.^{3}).

S_x : Section modulus about the major axis of a section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.^{3}).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1} : Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2} : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW} : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.

M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u : Strength I load combination of factored design moments (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_f : Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).

$\phi_f M_n$: Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_s

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (L + IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
$M_{L+IM} / S_c(n)$ or $M_{L+IM} / S_c(cr)$ as applicable.

$f_s + f_f/2$ (Service II): Sum of stresses as computed below (ksi).
f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (L + IM) + $f_f/2$

Service II Resistance: Composite ($0.95R_h F_{yf}$) or noncomposite ($0.80R_h F_{yf}$) stress capacity according to Article 6.10.4.2 (ksi).

$f_s + f_f/3$ (Strength I): Sum of stresses as computed below on non-compact sections (ksi).
1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (L + IM) + $f_f/3$

$\phi_f F_n$: Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).

V_f : Maximum factored shear range in span computed according to Article 6.10.10.

OCF: Obtuse Correction Factor according to Article 4.6.2.2.3c or as further simplified by IDOT provisions.

R_{DC1} : Un-factored reaction due to non-composite dead load (kip).

R_{DC2} : Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).

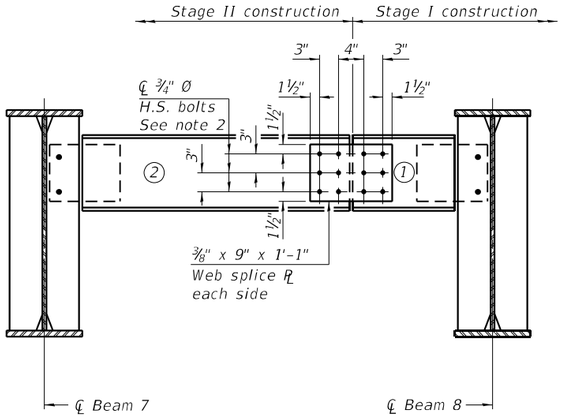
R_{DW} : Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).

R_L : Un-factored live load reaction (kip).

R_{IM} : Un-factored dynamic load allowance (impact) (kip).

R_{Total} (Strength I)(Impact): Strength I load combination of factored design reactions (kip).
$1.25\ (R_{DC1} + R_{DC2}) + 1.5R_{DW} + 1.75\ (R_L + R_{IM})$

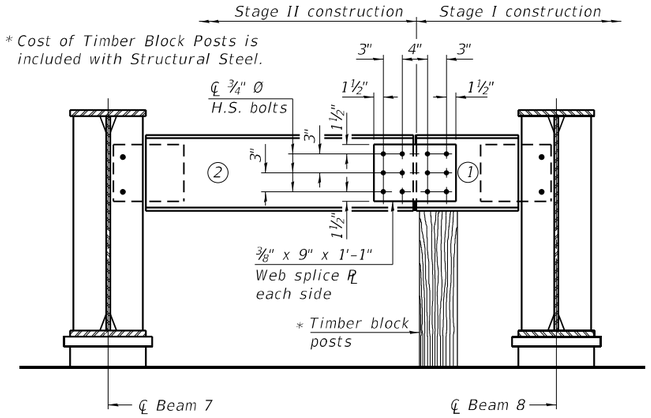
R_{Total} (Strength I)(No Impact): Strength I load combination of factored design reactions, not including dynamic load allowance (Impact) (kip).
$1.25\ (R_{DC1} + R_{DC2}) + 1.5R_{DW} + 1.75\ (R_L)$



INTERIOR DIAPHRAGM

INTERIOR DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

1.) Order diaphragm in two sections.
2.) Section (1) diaphragm to receive vertical $^{13}/_{16}$"x$1^{7}/_{8}$" long slots and section (2) diaphragm to receive oversize holes.
3.) Bolts shall be finger tight until the stage II deck pour is complete.
4.) Attach section (1) of diaphragm to beam 8.
5.) Attach section (2) of diaphragm to both beam 7 and section 1 of diaphragm during stage II construction with splice plates.



END DIAPHRAGM

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

1.) Order diaphragm in two sections.
2.) Attach section (1) of diaphragm to beam 8.
3.) Place timber block posts between section (1) of diaphragm and abutment bearing section.
4.) Attach section (2) of diaphragm to both beam 7 and section (1) of diaphragm during stage II construction with splice plates.
5.) Remove timber block posts.

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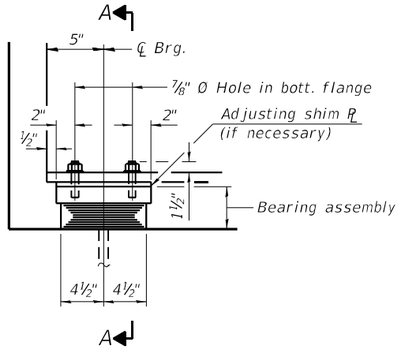
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

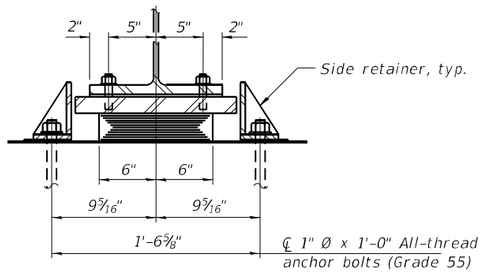
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 016-0388
SHEET S10-25 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	723
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



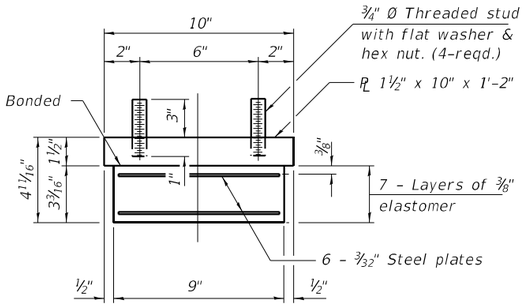
ELEVATION AT ABUT.



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. ASSEMBLY I FOR ABUTMENTS

(28 Required)



BEARING ASSEMBLY I

Note:
Shim plates shall not be placed under bearing assembly.

Notes:
Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

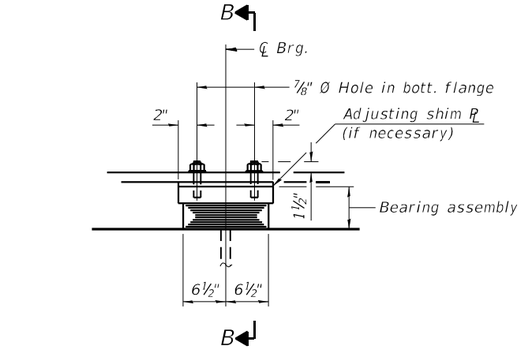
Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Two ⅛" adjusting shims shall be provided for each bearing in addition to all the other plates or shims and placed as shown on bearing details.

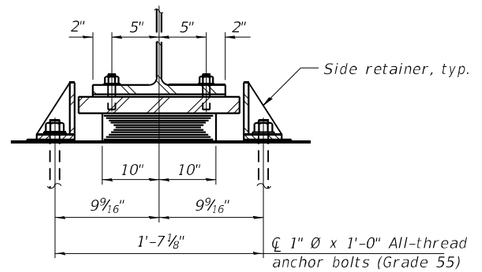
All bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.

The structural steel plates of the Bearing Assembly shall be AASHTO M270, Grade 50.

The structural steel plates and pintles of the fixed bearings shall be AASHTO M270, Grade 50.



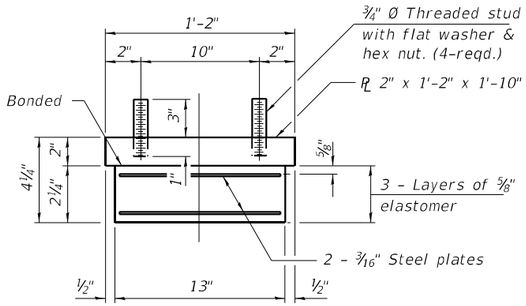
ELEVATION AT ABUT.



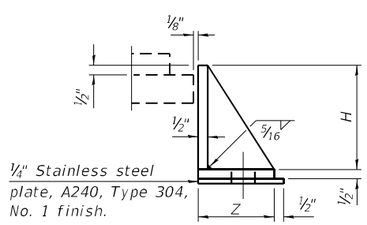
SECTION B-B

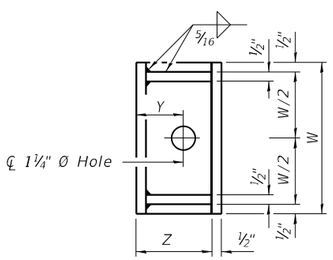
TYPE I ELASTOMERIC EXP. BRG. ASSEMBLY II FOR PIERS 1 AND 3

(28 Required)



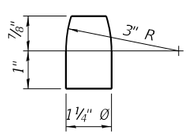
BEARING ASSEMBLY II



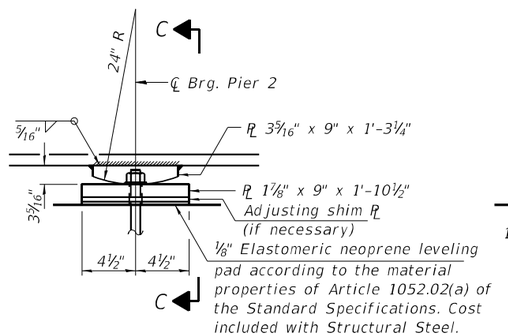


SIDE RETAINER

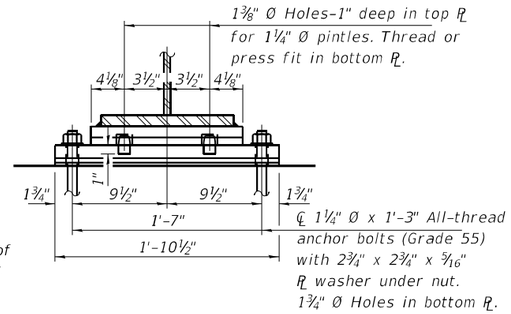
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



PINTLE



ELEVATION AT PIER



SECTION C-C

FIXED BEARING

(14 Required)

SIDE RETAINER DIMENSIONS

Item	Z	W	H	Y
Assembly I	5½"	8"	4¾"	2⅛"
Assembly II	7⅞"	12"	3¾"	2⅜"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	56
Anchor Bolts, 1"	Each	112
Anchor Bolts, 1¼"	Each	28

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

BEARING DETAILS
STRUCTURE NO. 016-0388
SHEET S10-26 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	724
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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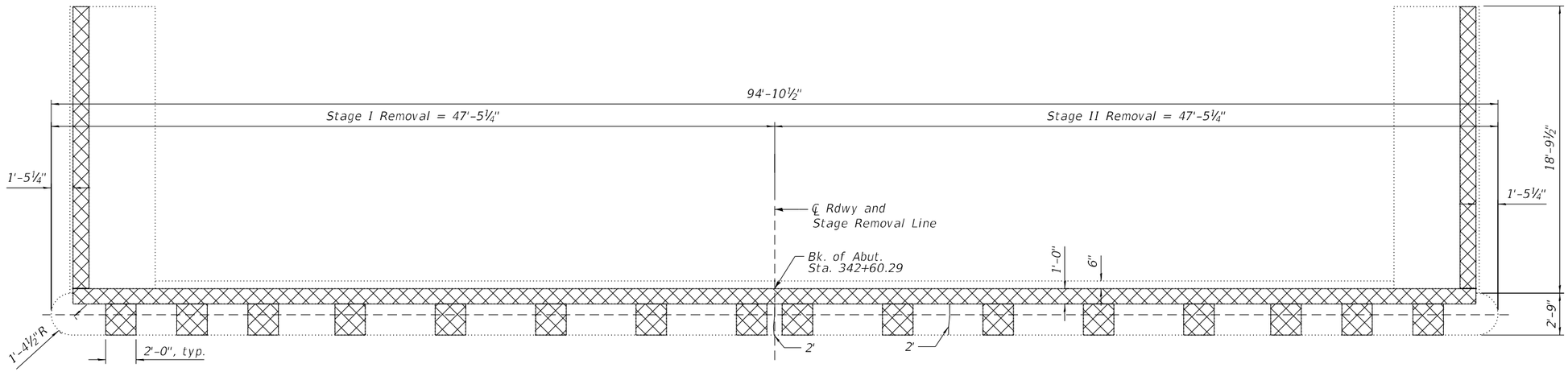

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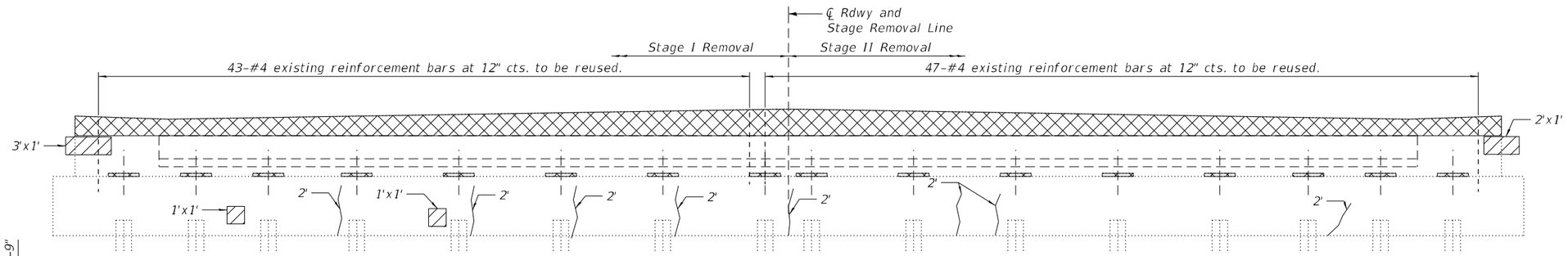
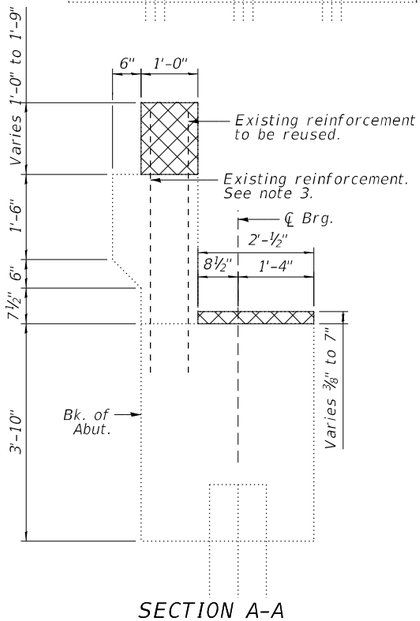
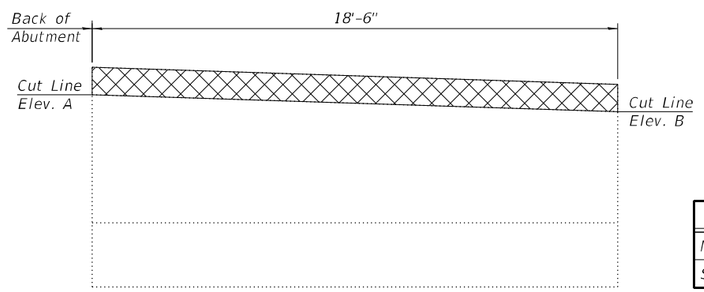


ELEVATION
(Looking West)

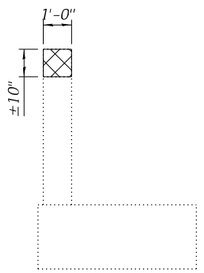


SECTION A-A



WINGWALL ELEVATION

ITEM	A	B
North Wingwall	612.97	612.65
South Wingwall	612.91	611.59



SECTION THRU
WINGWALL

Notes:
1. Cross hatched areas indicate the limits of Concrete Removal.
2. Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
3. Existing reinforcement not extending into new construction shall be cut flush and covered with a 2" layer of cement grout. Cost included with Concrete Removal.
4. The elevations shown above were calculated from the survey information provided by the district.
5. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".
6. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".

LEGEND:

Concrete Removal

Structural Repair Of Concrete
(Depth Equal To Or Less Than 5 In)

Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	7
Epoxy Crack Injection	Foot	20
Concrete Removal	Cu. Yd.	8.2

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REMOVAL AND REPAIRS
STRUCTURE NO. 016-0388
SHEET S10-27 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	725
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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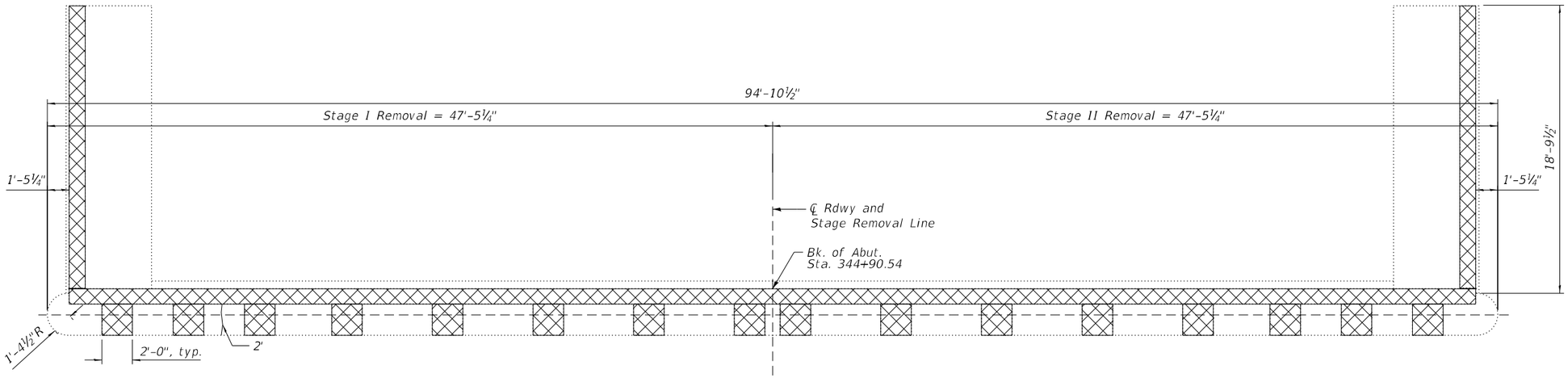

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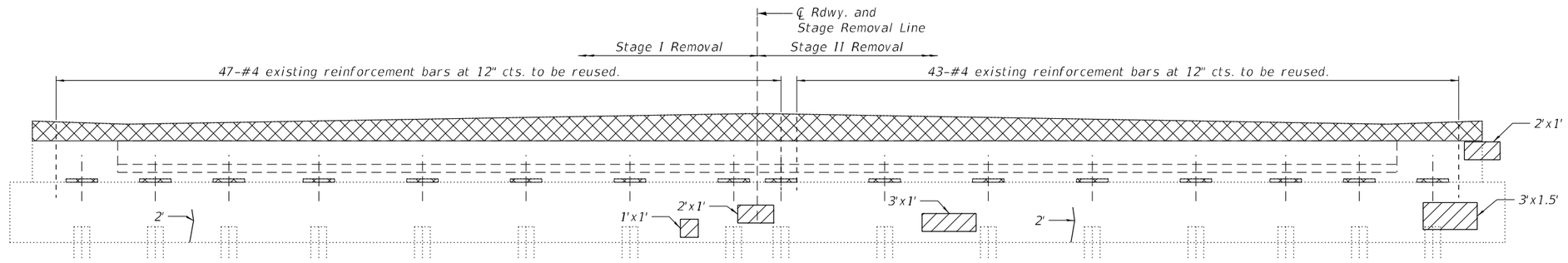
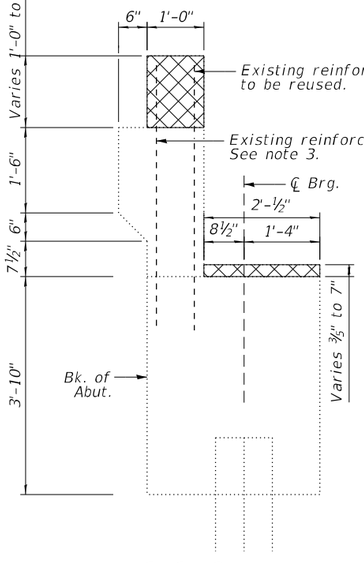
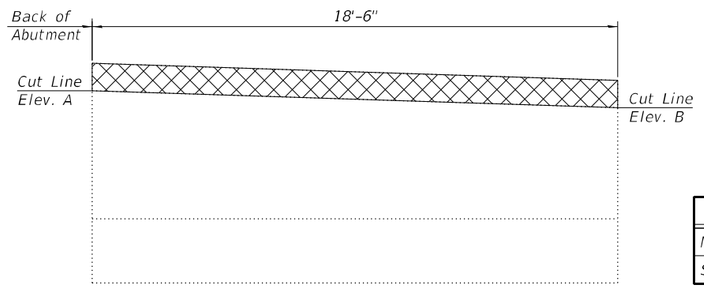


ELEVATION
(Looking East)

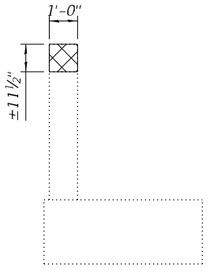


SECTION A-A



WINGWALL ELEVATION

ITEM	A	B
North Wingwall	613.09	612.79
South Wingwall	613.05	612.75



SECTION THRU
WINGWALL

Notes:
1. See sheet S10-27 for notes.

LEGEND:

- Concrete Removal
- Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)
- Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	13
Epoxy Crack Injection	Foot	6
Concrete Removal	Cu. Yd.	8.2

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REMOVAL AND REPAIRS
STRUCTURE NO. 016-0388
SHEET S10-28 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	726
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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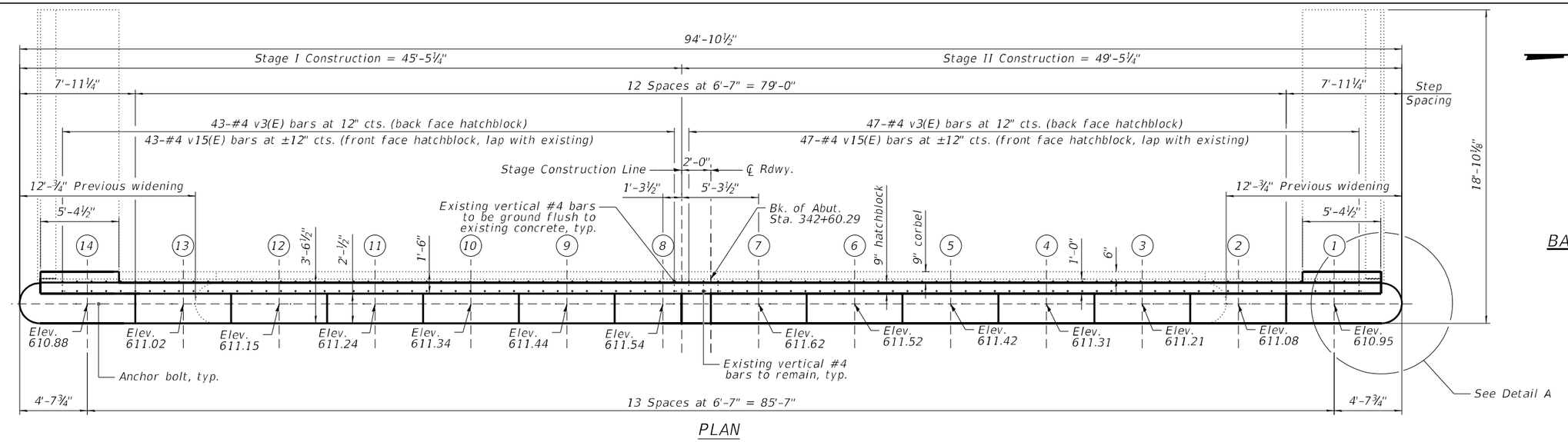

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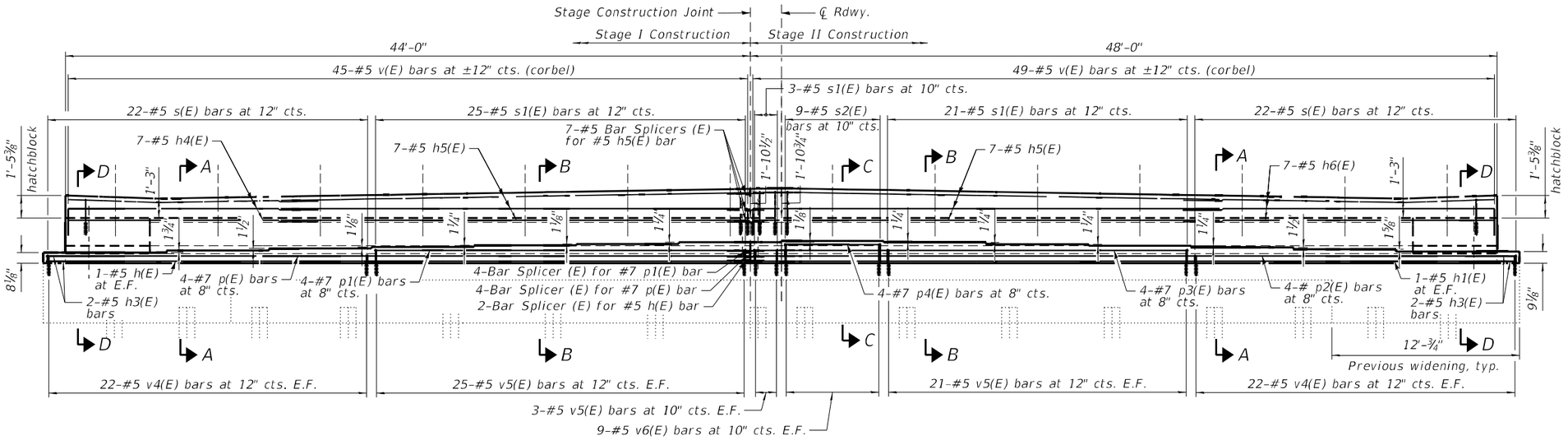


ELEVATION

Notes:

1. Cost of drilling and grouting reinforcing bars included in cost or Concrete Structures.

2. Bars shall be drilled and set according to Article 584 of the Standard Specifications. Bars shall have a 9" minimum embedment depth.

3. All construction joints between new and existing concrete shall be Bonded Construction Joints.

4. Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.

5. The elevations shown above were calculated from the survey information provided by the district.

6. Hatched area to be poured separately after superstructure falseworkhas been removed and after approach slab side formwork has been removed.

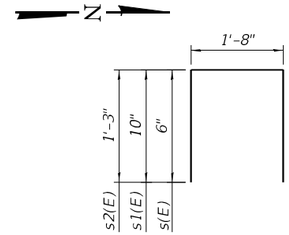
7. The top of back wall and approach slab seat shall have a constant slope determined from the control points shown.

8. Space reinforcement in steps to miss anchor bolts.

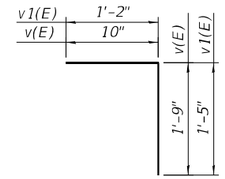
9. Pour steps monolithically with cap.

10. See sheet S10-37 for bar splicer details.

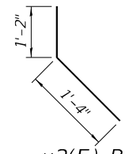
11. Concrete Sealer shall be applied to the top surface of new concrete bearing steps.



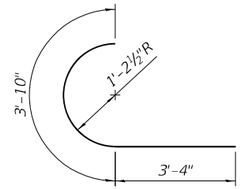
BARS s(E), s1(E) AND s2(E)



v(E) and v1(E) BARS



v2(E) BAR



h3(E) BAR

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	2	#5	45'-1"	
h1(E)	2	#5	49'-1"	
h2(E)	6	#4	7'-8"	
h3(E)	4	#5	7'-2"	
h4(E)	7	#4	16'-1"	
h5(E)	14	#4	30'-0"	
h6(E)	7	#4	20'-1"	
p(E)	4	#7	45'-1"	
p1(E)	4	#7	24'-0"	
p2(E)	4	#7	49'-1"	
p3(E)	4	#7	28'-0"	
p4(E)	4	#7	6'-3"	
s(E)	44	#5	2'-8"	
s1(E)	49	#5	3'-4"	
s2(E)	9	#5	4'-2"	
v(E)	94	#5	2'-7"	
v1(E)	12	#4	2'-7"	
v2(E)	12	#4	2'-6"	
v3(E)	90	#4	2'-2"	
v4(E)	88	#5	1'-3"	
v5(E)	98	#5	1'-7"	
v6(E)	18	#5	2'-0"	
v15(E)	90	#4	1'-10"	
Concrete Structures			Cu. Yd.	9.0
Reinforcement Bars, Epoxy Coated			Pound	6,300
Concrete Sealer			Sq. Ft.	194

USER NAME =	DESIGNED - BJD	REVISED -	
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PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT MODIFICATIONS
STRUCTURE NO. 016-0388
SHEET S10-29 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	727
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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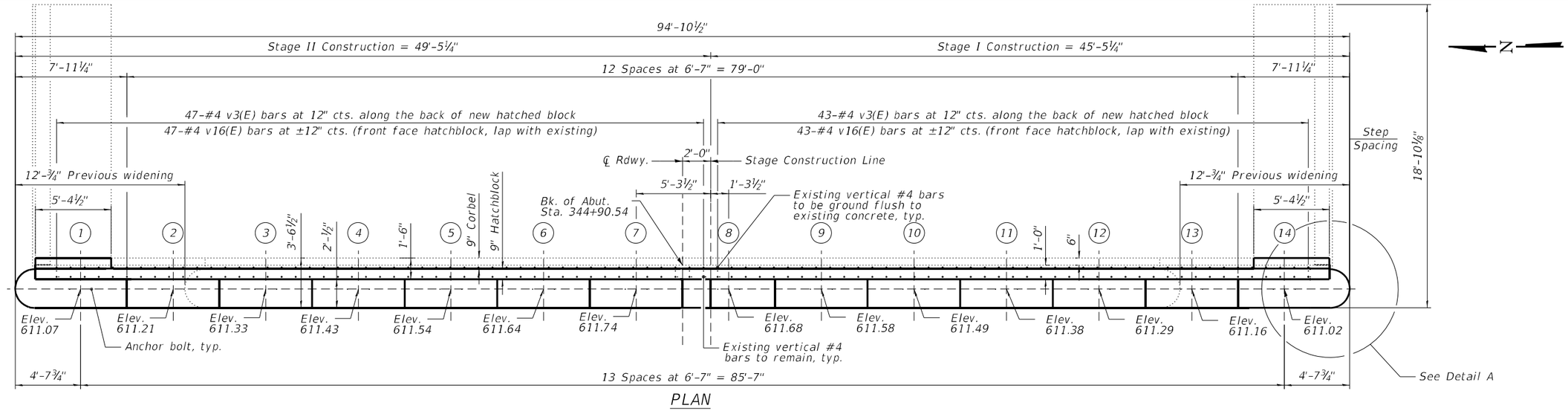

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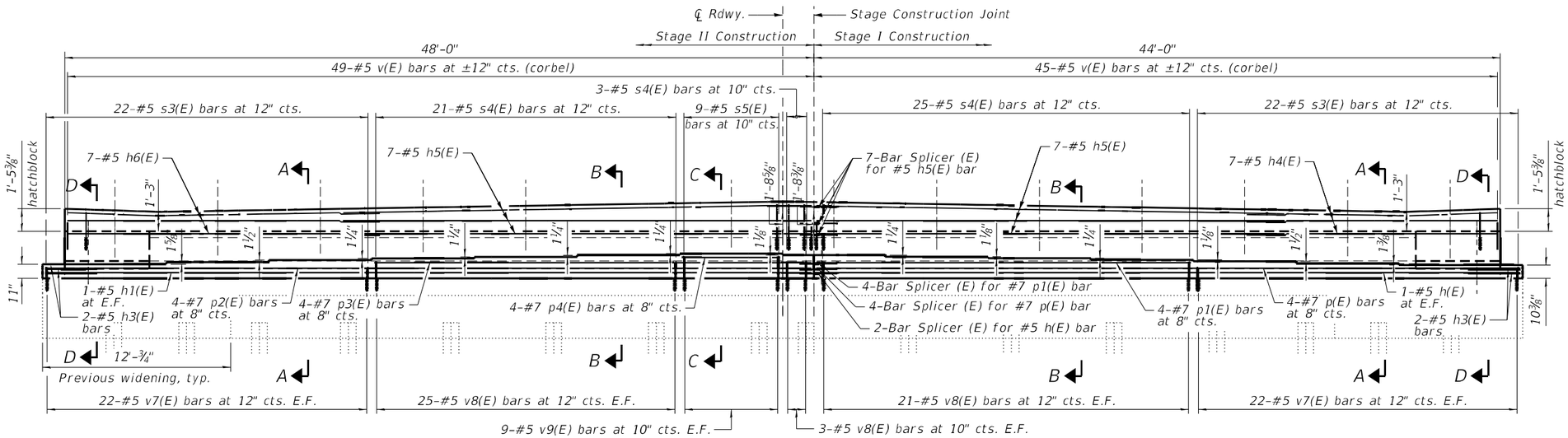
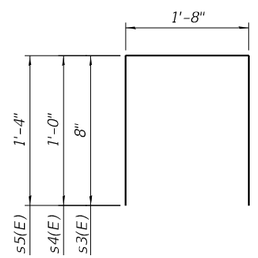


ELEVATION



BARS s3(E), s4(E) AND s5(E)

EAST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	2	#5	45'-1"	
h1(E)	2	#5	49'-1"	
h2(E)	6	#4	7'-8"	
h3(E)	4	#5	7'-2"	
h4(E)	7	#4	16'-1"	
h5(E)	14	#4	30'-0"	
h6(E)	7	#4	20'-1"	
p(E)	4	#7	45'-1"	
p1(E)	4	#7	24'-0"	
p2(E)	4	#7	49'-1"	
p3(E)	4	#7	28'-0"	
p4(E)	4	#7	6'-3"	
s3(E)	44	#5	3'-0"	
s4(E)	49	#5	3'-8"	
s5(E)	9	#5	4'-4"	
v(E)	94	#5	2'-7"	
v1(E)	12	#4	2'-7"	
v2(E)	12	#4	2'-6"	
v3(E)	90	#4	2'-2"	
v7(E)	88	#5	1'-6"	
v8(E)	98	#5	1'-10"	
v9(E)	18	#5	2'-4"	
v16(E)	90	#4	2'-0"	
Concrete Structures			Cu. Yd.	10.3
Reinforcement Bars, Epoxy Coated			Pound	6,490
Concrete Sealer			Sq. Ft.	194

Notes:
1. See Sheet S10-29 for notes.

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

EAST ABUTMENT MODIFICATIONS
STRUCTURE NO. 016-0388
SHEET S10-30 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	728
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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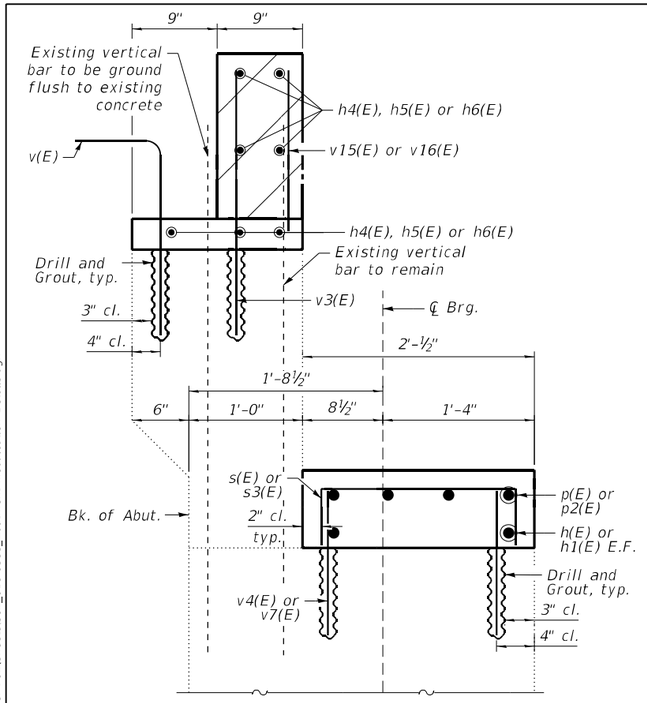
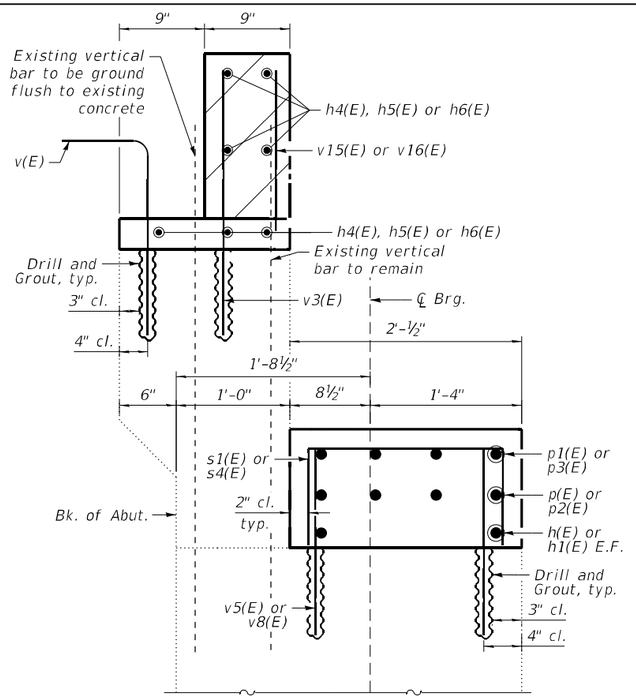
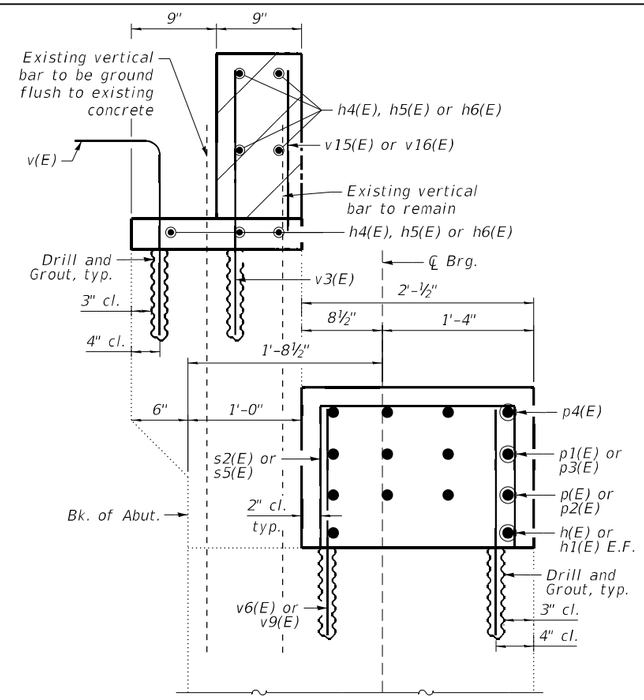


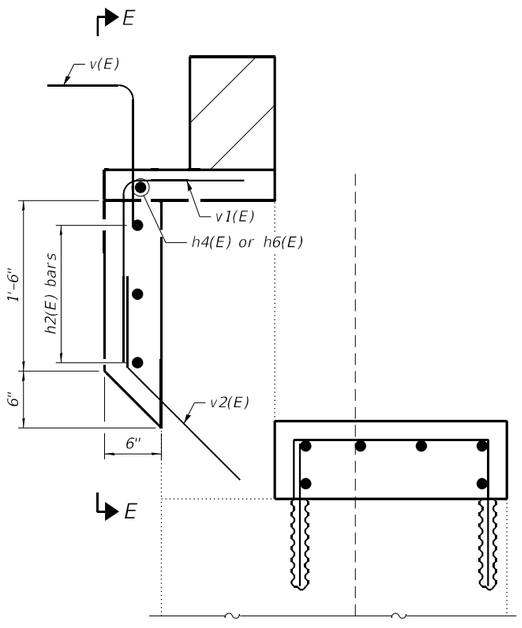
SECTION A-A



SECTION B-B



SECTION C-C



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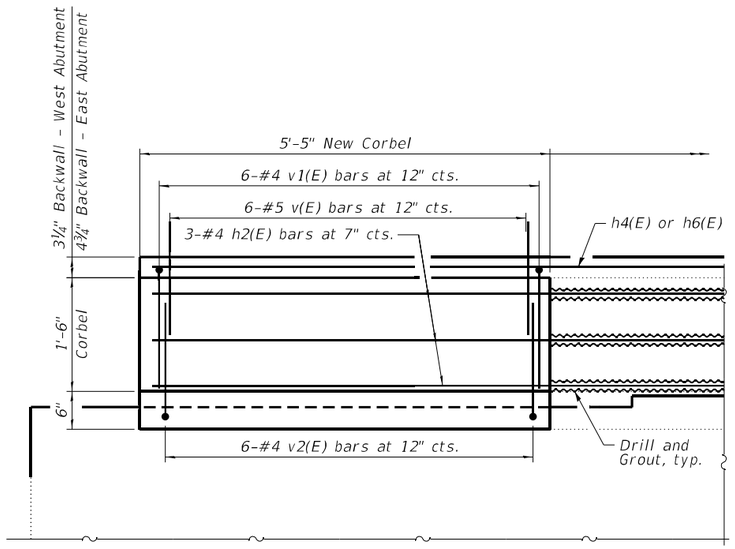
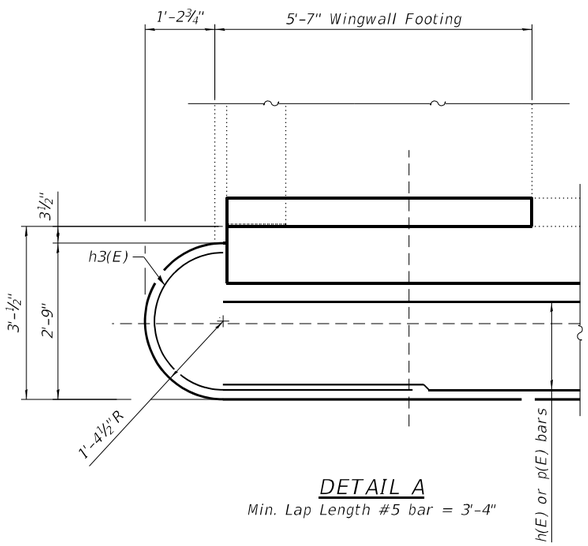


SECTION E-E

Min. Lap Length #4 bar = 2'-5"

Notes:
1. See sheet S10-29 for notes.



DETAIL A

Min. Lap Length #5 bar = 3'-4"

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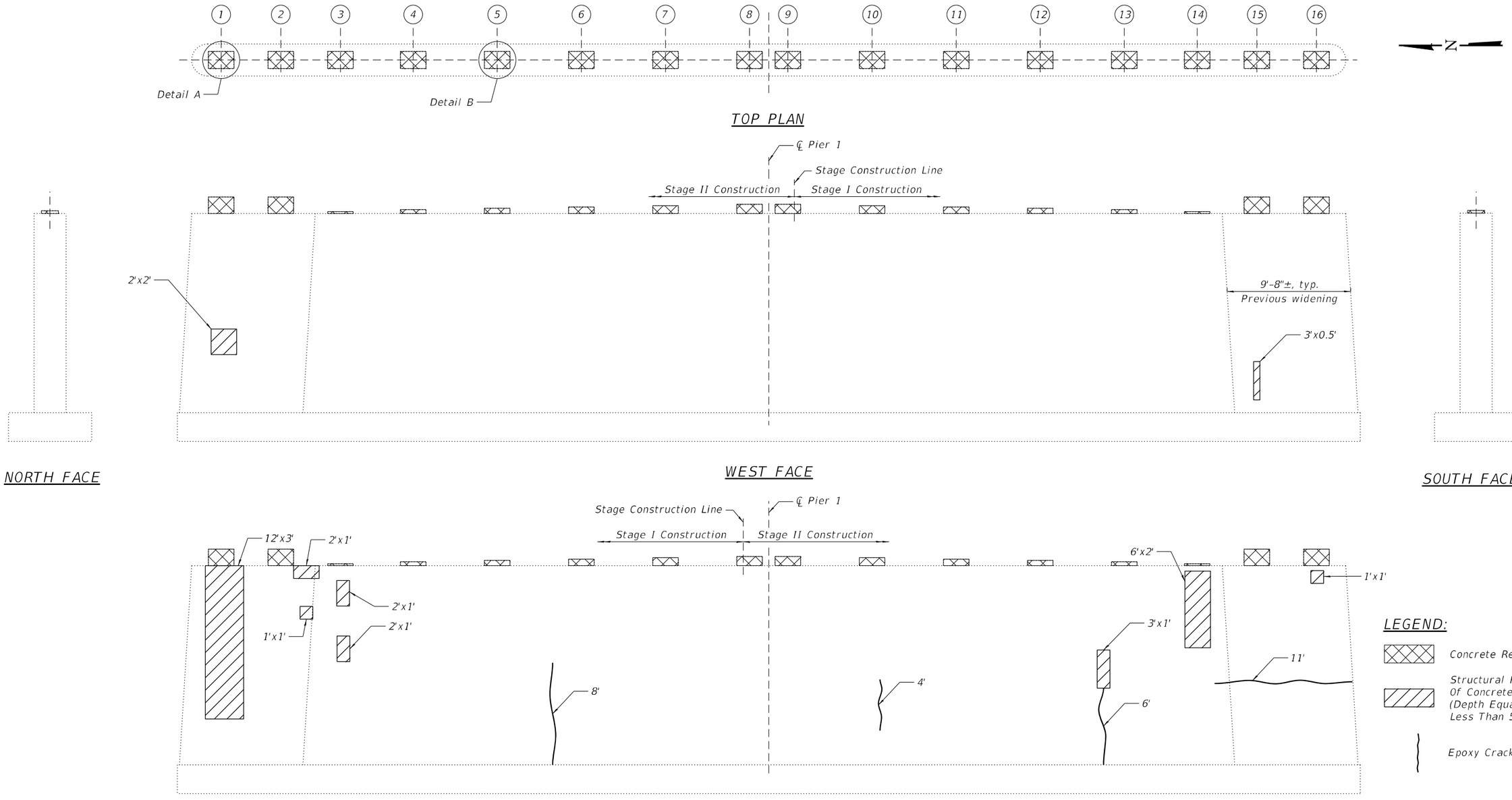
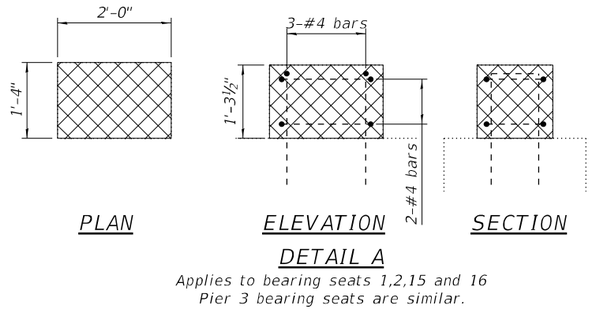
USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT MODIFICATIONS DETAILS
STRUCTURE NO. 016-0388
SHEET S10-30A OF S10-37 SHEETS

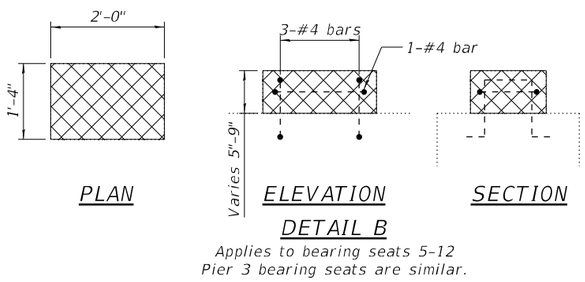
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	728A
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		





DETAIL A

Applies to bearing seats 1,2,15 and 16
Pier 3 bearing seats are similar.



DETAIL B

Applies to bearing seats 5-12
Pier 3 bearing seats are similar.

Notes:
1. See sheet S10-27 for notes.
2. Bearing seats 3,4,13 and 14 do not contain rebar per as-built plans.
3. For existing rebar in bearing seats, see note 3 on sheet S10-27.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	2.1
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	65
Epoxy Crack Injection	Foot	29

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 REMOVAL AND REPAIRS
STRUCTURE NO. 016-0388
SHEET S10-31 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	729
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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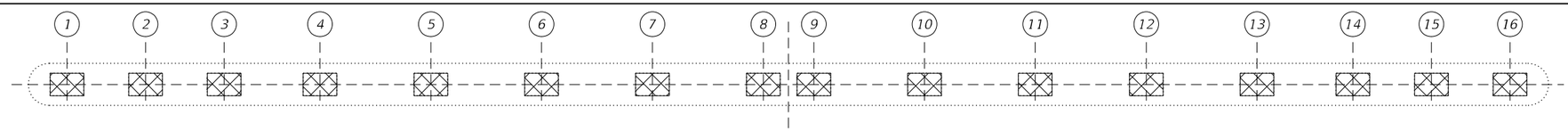
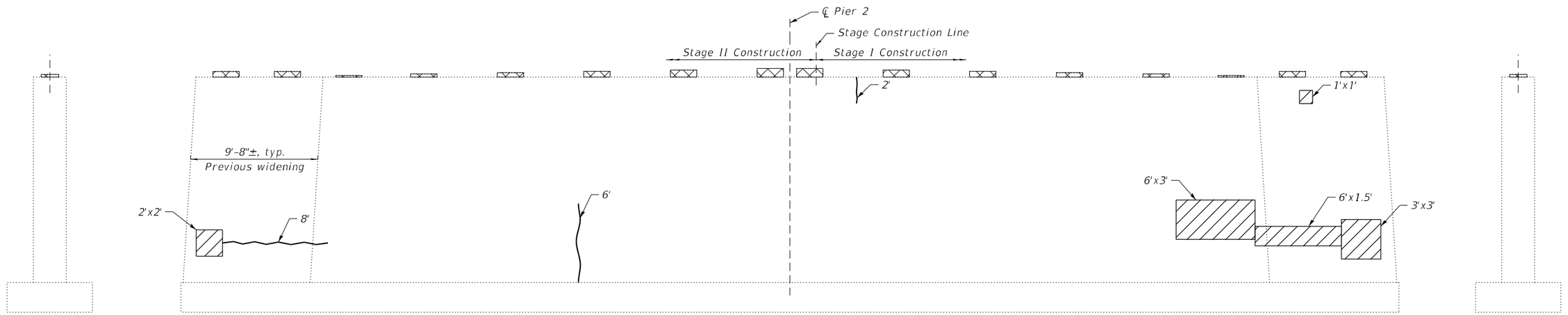


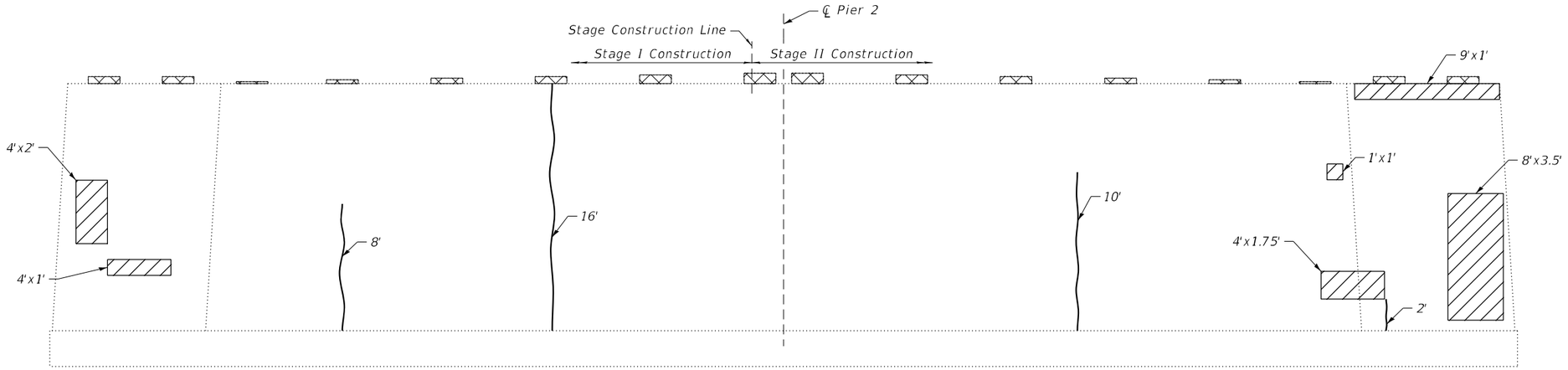
TOP PLAN



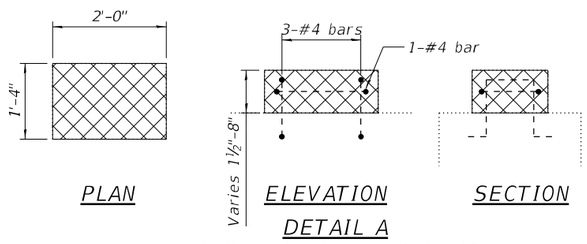
NORTH FACE

WEST FACE

SOUTH FACE



EAST FACE



PLAN ELEVATION SECTION

DETAIL A

Applies to bearing seats 1 thru 16

Notes:
1. See sheet S10-27 for notes.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	0.7
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	98
Epoxy Crack Injection	Foot	52

LEGEND:

- Concrete Removal
- Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)
- Epoxy Crack Injection

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 REMOVAL AND REPAIRS
STRUCTURE NO. 016-0388
SHEET S10-32 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	730
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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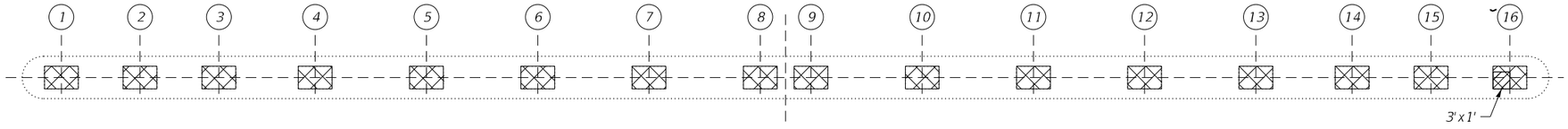
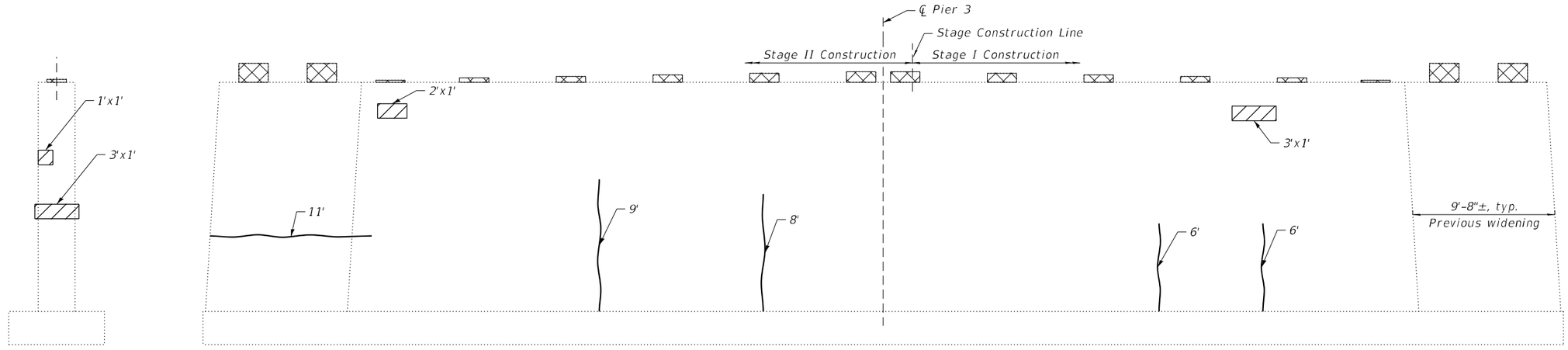


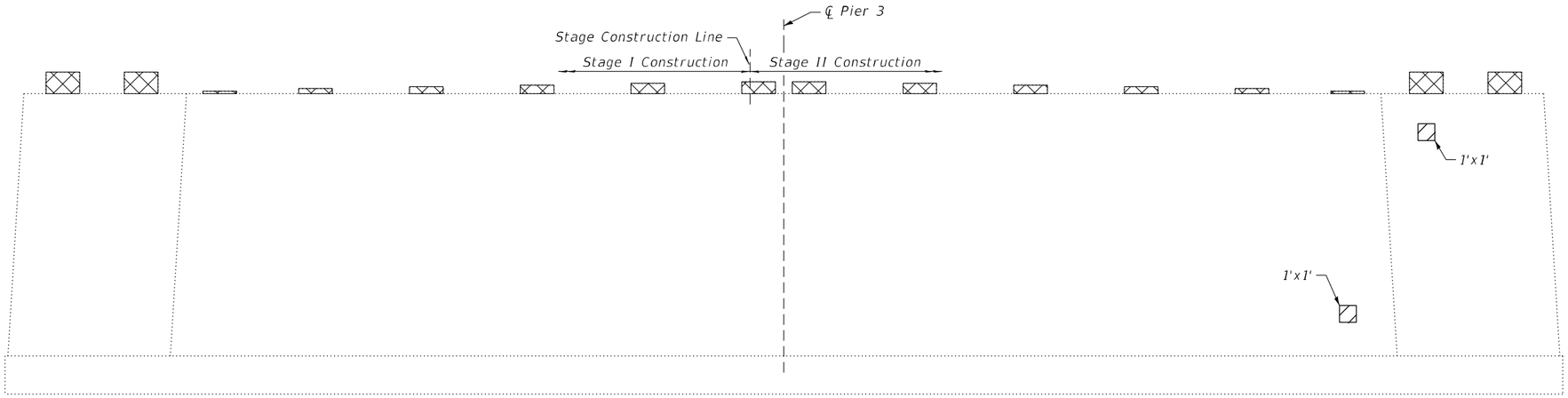
TOP PLAN



NORTH FACE

WEST FACE

SOUTH FACE



EAST FACE

LEGEND:

- Concrete Removal
- Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)
- Epoxy Crack Injection

Notes:
1. See sheet S10-27 for notes.
2. See sheet S10-31 for existing bearing seat details
3. Bearing seats 3,4,13 and 14 do not contain rebar per as-built plans.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	2.1
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 In)	Sq. Ft.	24
Epoxy Crack Injection	Foot	40

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 REMOVAL AND REPAIRS
STRUCTURE NO. 016-0388
SHEET S10-33 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	731
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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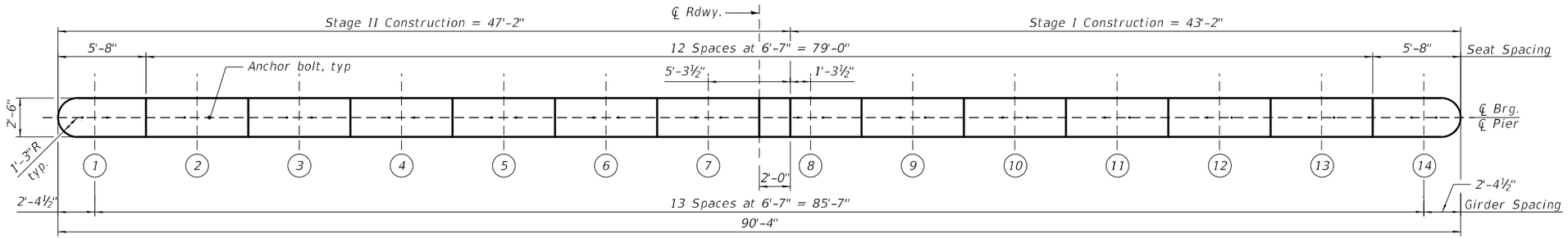
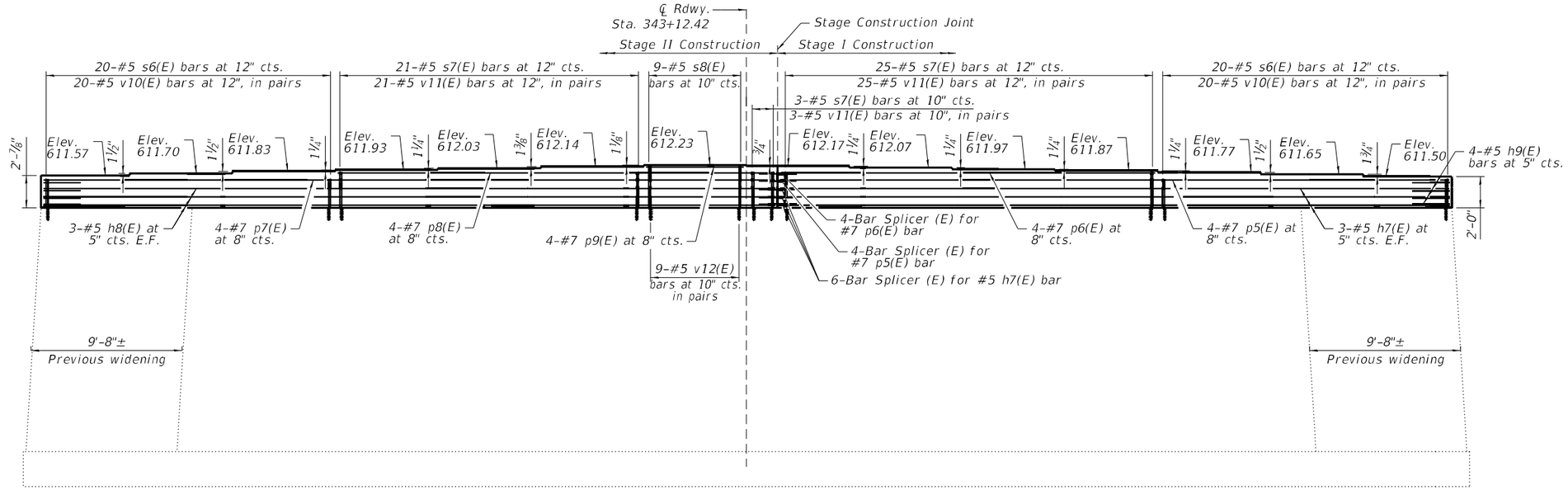
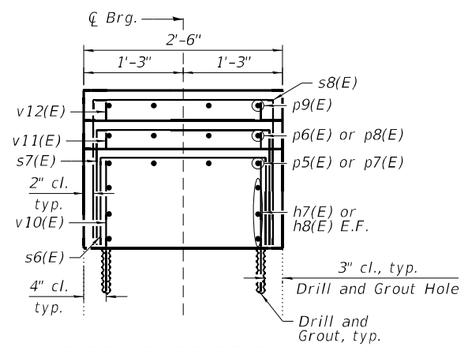


TOP PLAN

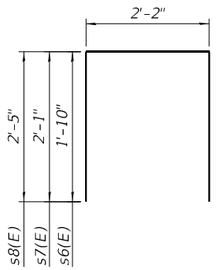


PIER 1 ELEVATION

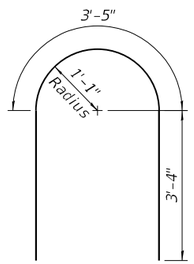
(Looking East)



PIER CROSS SECTION



BARS s6(E), s7(E) AND s8(E)



BARS h9(E)

PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	6	#5	41'-9"	
h8(E)	6	#5	45'-9"	
h9(E)	8	#5	10'-1"	
p5(E)	4	#7	41'-9"	
p6(E)	4	#7	24'-0"	
p7(E)	4	#7	45'-9"	
p8(E)	4	#7	28'-0"	
p9(E)	4	#7	6'-3"	
s6(E)	40	#5	5'-10"	
s7(E)	49	#5	6'-4"	
s8(E)	9	#5	7'-0"	
v10(E)	80	#5	2'-7"	
v11(E)	98	#5	2'-10"	
v12(E)	18	#5	3'-2"	
Concrete Structures			Cu. Yd.	20.1
Reinforcement Bars, Epoxy Coated			Pound	6,060
Concrete Sealer			Sq Ft	224

Notes:
1. See Sheet S10-29 for notes.
2. See Sheet S10-37 for Bar Splicer details.

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 MODIFICATIONS
STRUCTURE NO. 016-0388
SHEET S10-34 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	732
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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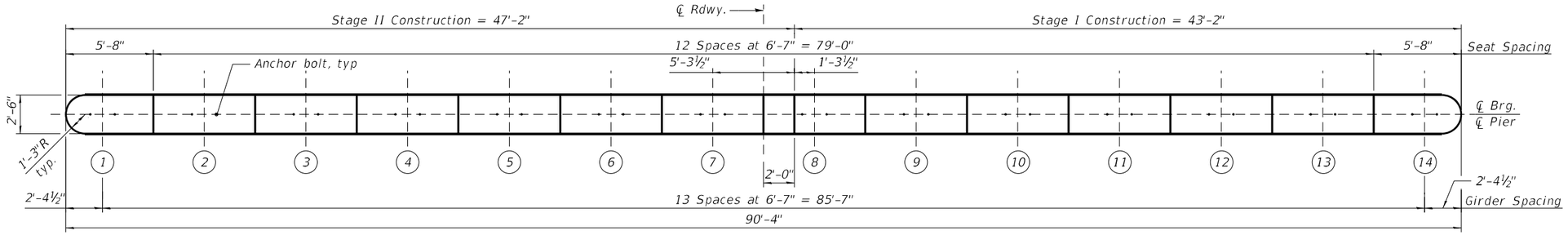
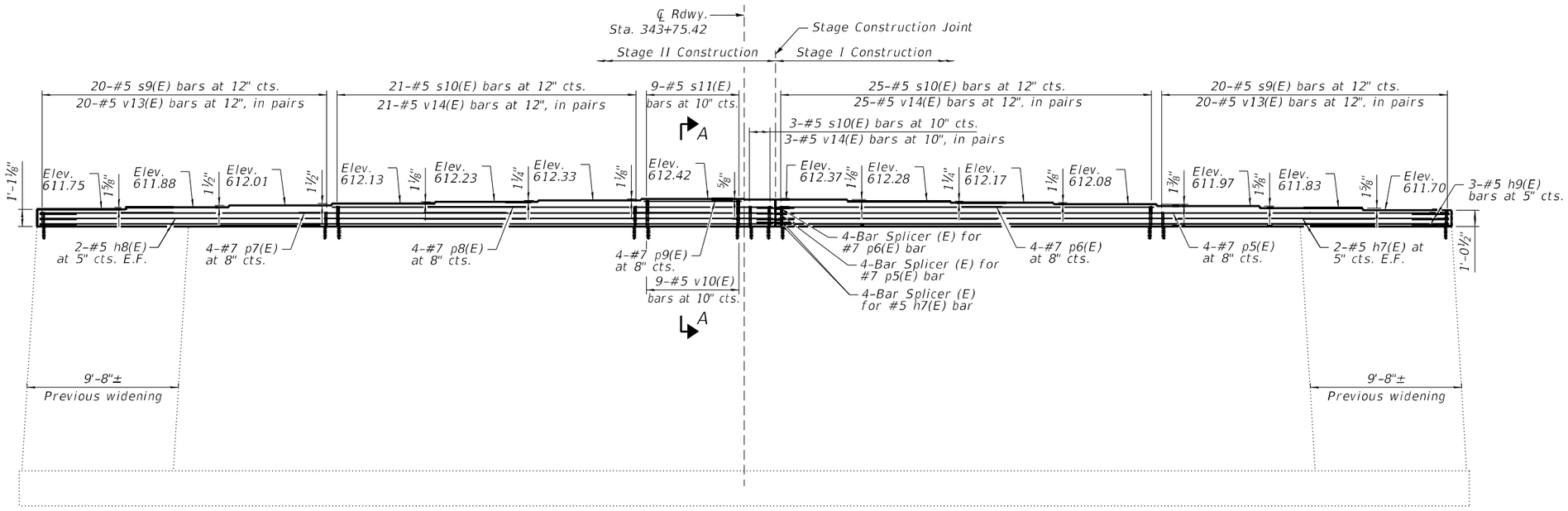


TOP PLAN



PIER 2 ELEVATION

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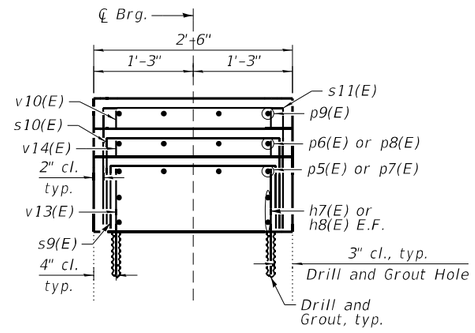
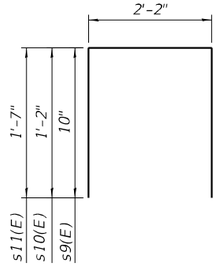
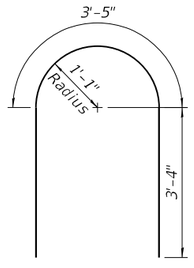


PIER CROSS SECTION



BARS s9(E), s10(E) AND s11(E)



BARS h9(E)

Notes:
1. See Sheet S10-29 for notes.
2. See Sheet S10-37 for Bar Splicer details.

PIER 2 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	4	#5	41'-9"	
h8(E)	4	#5	45'-9"	
h9(E)	6	#5	10'-1"	
p5(E)	4	#7	41'-9"	
p6(E)	4	#7	24'-0"	
p7(E)	4	#7	45'-9"	
p8(E)	4	#7	28'-0"	
p9(E)	4	#7	6'-3"	
s9(E)	40	#5	3'-10"	
s10(E)	49	#5	4'-6"	
s11(E)	8	#5	5'-4"	
v10(E)	80	#5	2'-7"	
v13(E)	98	#5	1'-11"	
v14(E)	16	#5	2'-3"	
Concrete Structures			Cu. Yd.	12.4
Reinforcement Bars, Epoxy Coated			Pound	5,010
Concrete Sealer			Sq Ft	224

USER NAME =	DESIGNED - BJD	REVISED -	
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 MODIFICATIONS
STRUCTURE NO. 016-0388
SHEET S10-35 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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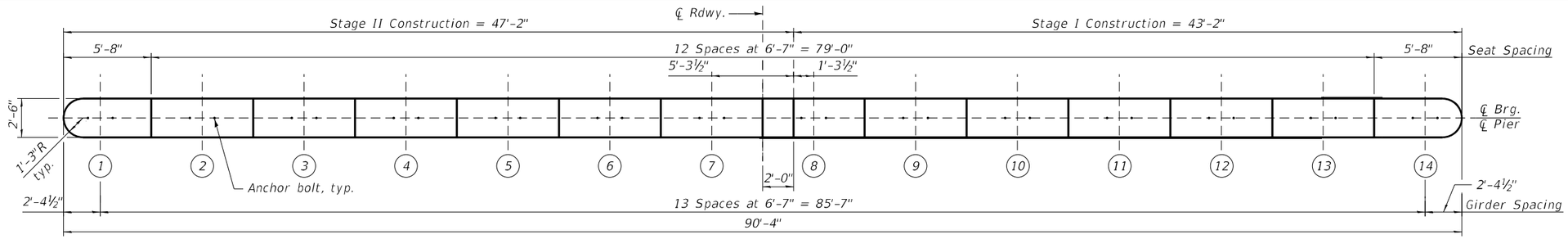
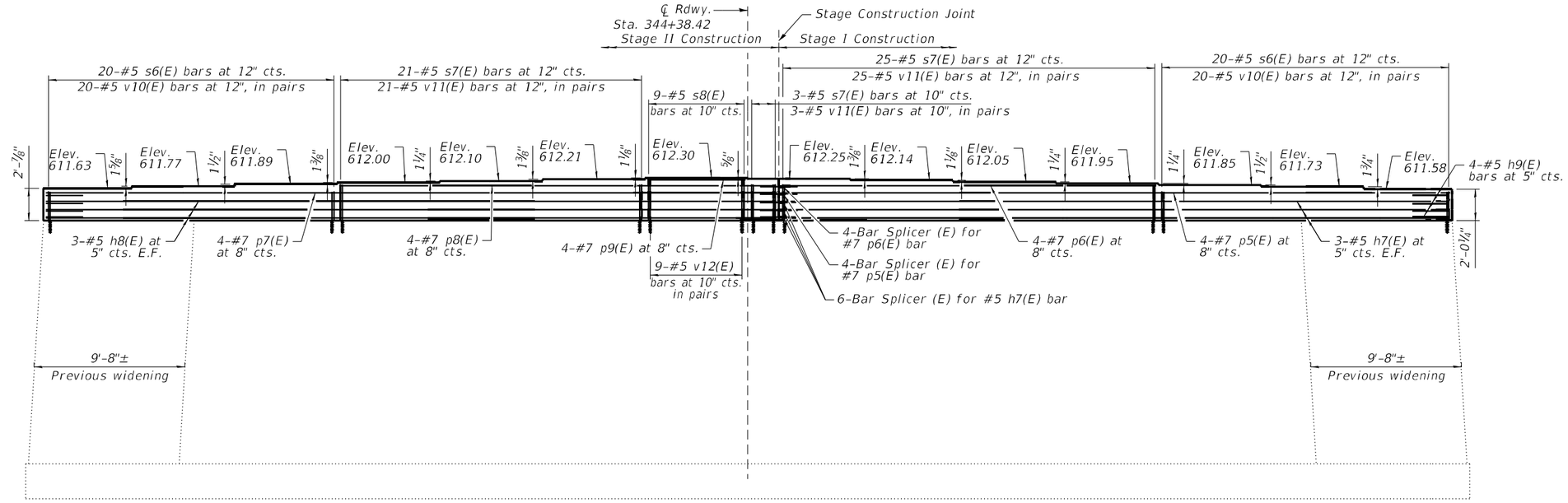
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

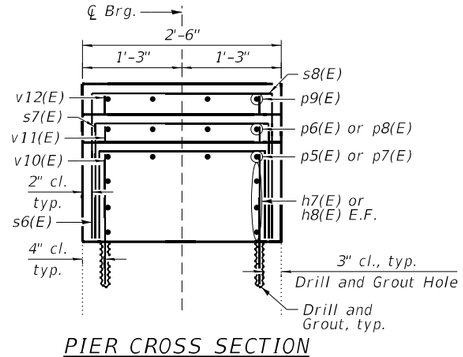


TOP PLAN

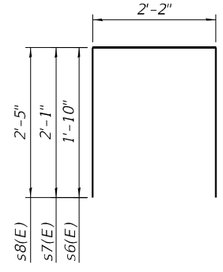


PIER 3 ELEVATION

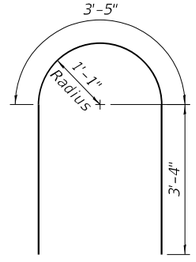
(Looking East)



PIER CROSS SECTION



BARS s6(E), s7(E) AND s8(E)



BARS h9(E)

Notes:
1. See Sheet S10-29 for notes.
2. See Sheet S10-37 for Bar Splicer details.

PIER 3 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	6	#5	41'-9"	
h8(E)	6	#5	45'-9"	
h9(E)	8	#5	10'-1"	
p5(E)	4	#7	41'-9"	
p6(E)	4	#7	24'-0"	
p7(E)	4	#7	45'-9"	
p8(E)	4	#7	28'-0"	
p9(E)	4	#7	6'-3"	
s6(E)	40	#5	5'-10"	
s7(E)	49	#5	6'-4"	
s8(E)	9	#5	7'-0"	
v10(E)	80	#5	2'-7"	
v11(E)	98	#5	2'-10"	
v12(E)	18	#5	3'-2"	
Concrete Structures			Cu. Yd.	20.2
Reinforcement Bars, Epoxy Coated			Pound	6,060
Concrete Sealer			Sq Ft	224

USER NAME =	DESIGNED - BJD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MGH	REVISED -	
PLOT SCALE =	DRAWN - GM	REVISED -	
PLOT DATE =	CHECKED - BJD	REVISED -	

PIER 3 MODIFICATIONS
STRUCTURE NO. 016-0388
SHEET S10-36 OF S10-37 SHEETS

FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	734
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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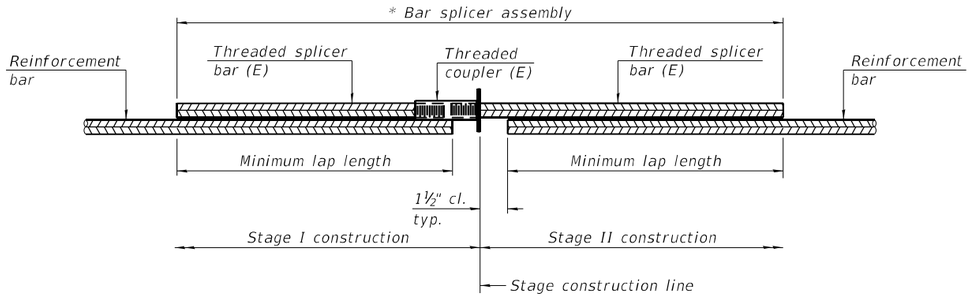


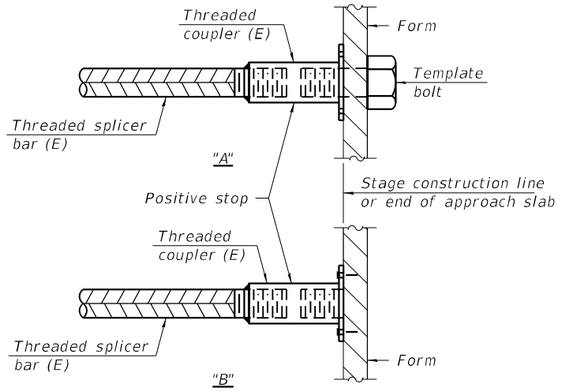
STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + 1½" + thread length

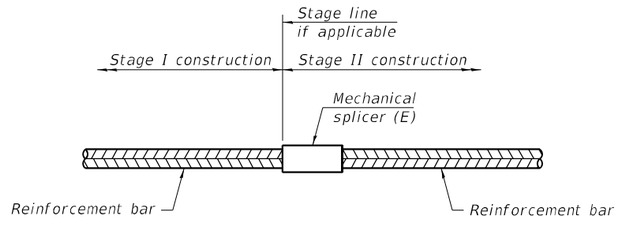
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	684	3'-6"
Approach Slab	#5	92	3'-4"
Approach Slab	#8	120	4'-9"
Approach Footing	#5	80	3'-4"
West Abutment	#5	9	3'-4"
West Abutment	#7	8	4'-8"
East Abutment	#5	9	3'-4"
East Abutment	#7	8	4'-8"
Pier 1	#5	6	3'-4"
Pier 1	#7	8	4'-8"
Pier 2	#5	4	3'-4"
Pier 2	#7	8	4'-8"
Pier 3	#5	6	3'-4"
Pier 3	#7	8	4'-8"



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.

BSD-1

5-15-2023

USER NAME =	DESIGNED - BJD	REVISED -
	CHECKED - MGH	REVISED -
PLOT SCALE =	DRAWN - GM	REVISED -
PLOT DATE =	CHECKED - BJD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-0388

SHEET S10-37 OF S10-37 SHEETS

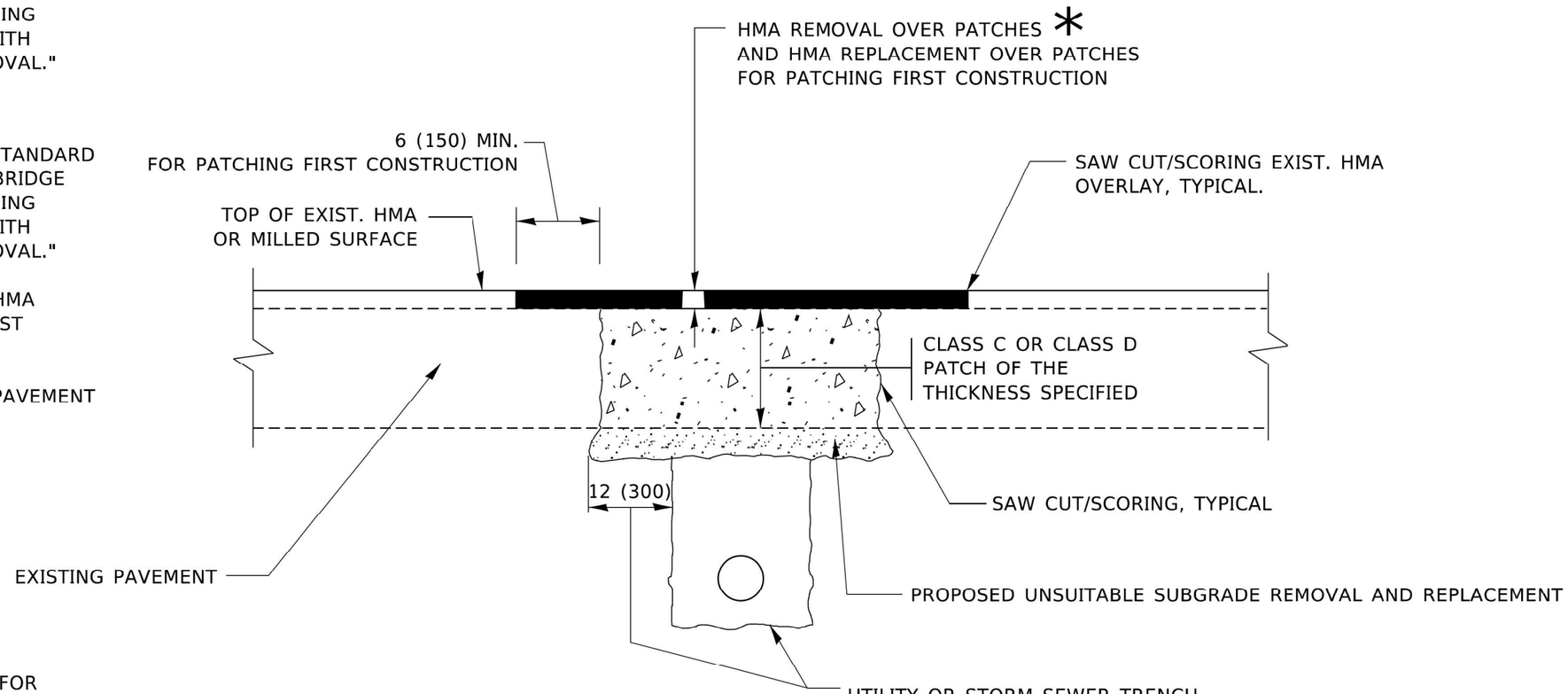
FAP RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
581	(42-B-11-1) BR, BJR 24	COOK	761	735
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

METHOD OF MEASUREMENT

REFER TO SECTION 442 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL."

BASIS OF PAYMENT

1. REFER TO SECTION 442 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL."
2. SAW CUT/SCORING OF EXISTING HMA OVERLAY IS INCLUDED IN THE COST OF PAVEMENT PATCHING.
3. SAW CUT/SCORING OF EXISTING PAVEMENT IS INCLUDED IN THE COST OF PAVEMENT PATCHING.



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

SEQUENCE OF CONSTRUCTION (PATCHING FIRST)

1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE WITH CLASS C OR D PATCH.
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

SEQUENCE OF CONSTRUCTION (MILLING FIRST)

1. MILL HMA FIRST IF THERE IS AT LEAST 4½ INCHES OR MORE OF HMA MATERIAL ON TOP OF THE EXISTING PAVEMENT OR IF THE PAVEMENT IS FULL DEPTH HMA. A MINIMUM OF 2 INCHES OF HMA MATERIAL SHALL BE IN PLACE AFTER MILLING.
2. REMOVE AND REPLACE WITH FULL DEPTH CLASS D PATCHES TO TOP OF MILLED SURFACE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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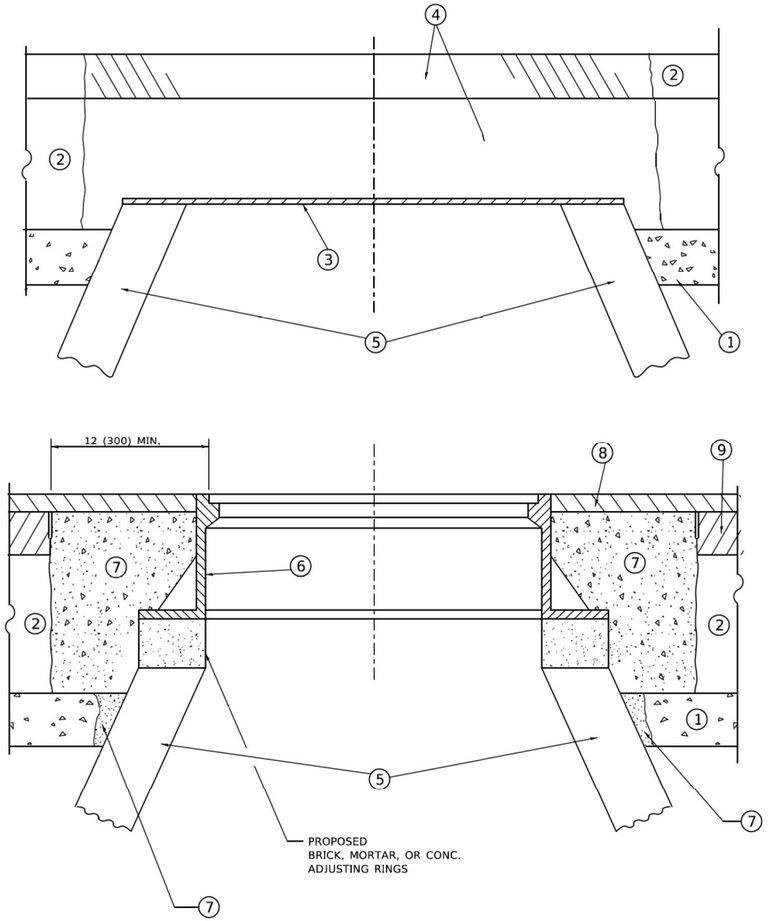
PLOT DATE = 11/18/2022	DATE - 10-25-94	REVISED - K. SMITH 11-18-22	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	735A
	BD400-04 (BD-22)	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

NOTES

1. EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.
2. IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.
3. CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.
4. THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES BY THE END OF EACH WORK SHIFT.

CONSTRUCTION PROCEDURES

STAGE 1 (BEFORE PAVEMENT MILLING)

A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.

B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.

C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.

D) BACKFILL WITH CRUSHED STONE AND HMA SURFACE MIX APPROVED BY THE ENGINEER. (MIN. 3 (80) HMA TO REMAIN AFTER MILLING).

STAGE 2 (AFTER PAVEMENT MILLING)

A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.

B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.

C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS PP-2* CONCRETE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

*UNLESS OTHERWISE SPECIFIED IN THE PLANS.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS EXCEPT THAT "THE CONTRACTOR SHALL ADJUST THE STRUCTURES TO THE FINISHED PAVEMENT ELEVATION NO MORE THAN 5 CALENDAR DAYS PRIOR TO PLACEMENT OF THE FINAL LIFT OF SURFACE UNLESS APPROVED BY THE ENGINEER."

LEGEND

1. SUB-BASE GRANULAR MATERIAL
2. EXISTING PAVEMENT
3. 36 (900) DIAMETER METAL PLATE
4. PROPOSED CRUSHED STONE AND HMA SURFACE MIX
5. EXISTING STRUCTURE
6. FRAME AND LID (SEE NOTES)
7. CLASS PP-2* CONCRETE
8. PROPOSED HMA SURFACE COURSE
9. PROPOSED HMA BINDER COURSE

LOCATION OF STRUCTURES

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

BASIS OF PAYMENT

1. REMOVING FRAMES AND LIDS ON DRAINAGE AND UTILITY STRUCTURES IN THE PAVEMENT PRIOR TO MILLING, AND ADJUSTING TO FINAL GRADE PRIOR TO PLACING THE SURFACE COURSE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)."
2. THIS WORK WILL NOT BE PAID FOR WHEN DRAINAGE AND UTILITY STRUCTURES ARE SPECIFIED FOR PAYMENT AS STRUCTURE RECONSTRUCTION.
3. NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.
4. WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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	DRAWN -	REVISED - R. BORO 12-06-11	
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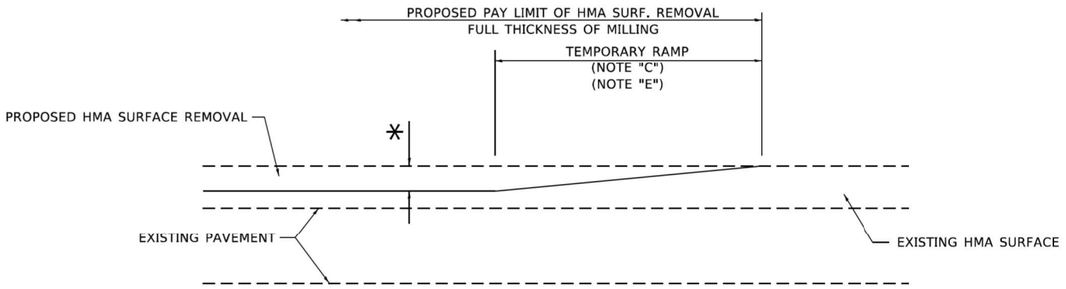
PLOT DATE = 9/15/2023	DATE - 10-25-94	REVISED - K. SMITH 09-15-23	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

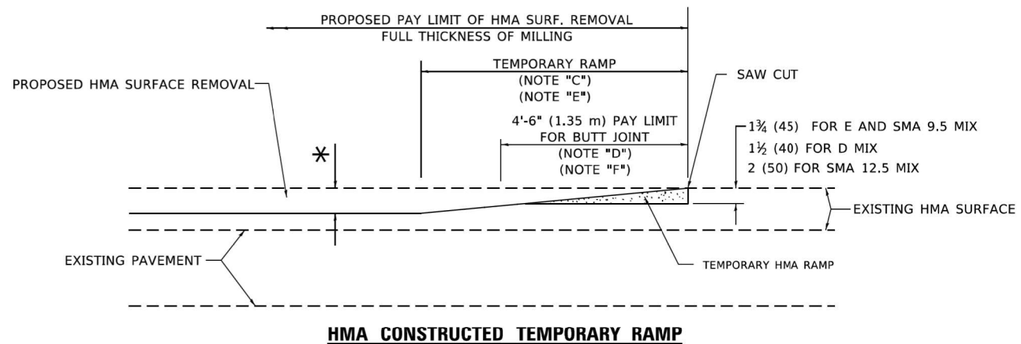
F.AL. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	736
	BD600-03 (BD-08)	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

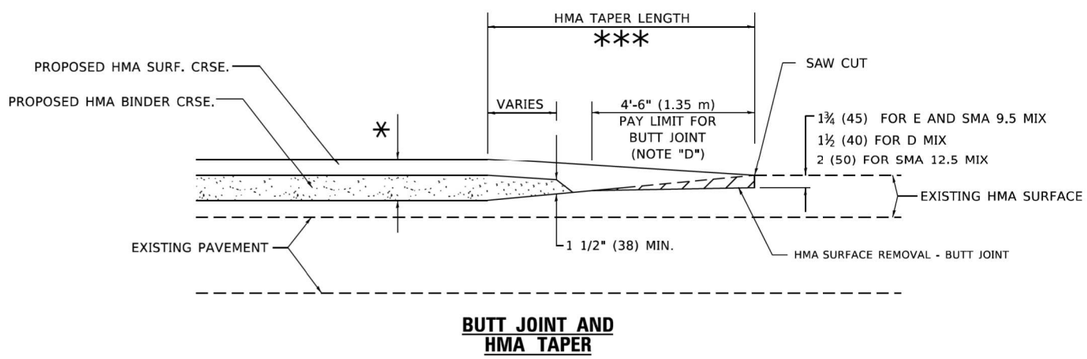


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

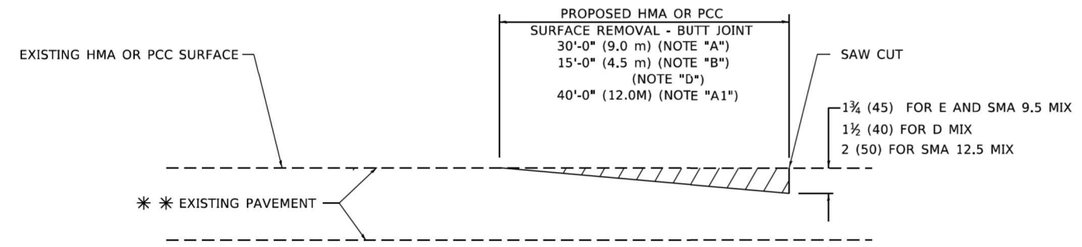
OPTION 2

TYPICAL TEMPORARY RAMP

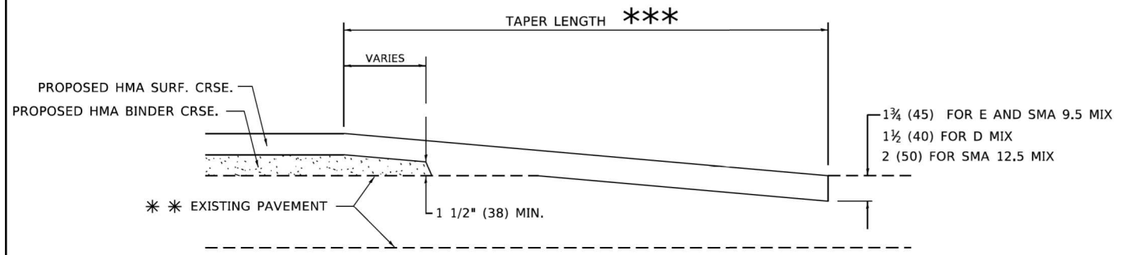


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

GENERAL NOTES

A. MAINLINE ARTERIAL ROADWAYS AND MAJOR SIDE ROADS.

A1. INTERSTATES

B. MINOR SIDE ROADS.

C. THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D. THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E. TAPER THE TEMP. RAMP AT A RATE OF 3' - 4" (1.02m) PER 1 INCH (25 mm) OF MILLING THICKNESS.

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

F. SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT

1. THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL- BUTT JOINT".

2. THE TEMPORARY RAMP AND SAW CUT SHALL BE INCLUDED IN THE UNIT COST FOR HMA OR PCC SURFACE REMOVAL-BUTT JOINT.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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	DRAWN -	REVISED - M. GOMEZ 04-06-01	
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PLOT DATE = 11/18/2022	DATE - 06-13-90	REVISED - K. SMITH 11-18-22	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

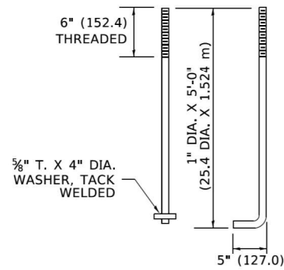
BUTT JOINT AND HMA TAPER DETAILS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

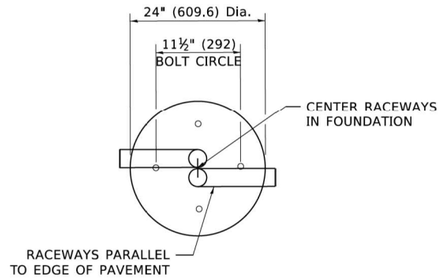
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	737
	BD400-05 BD-32	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

LIGHT POLE FOUNDATION DEPTH TABLE
30 FT. (9.144 m) TO 35 FT. (10.668 m) MOUNTING HEIGHT

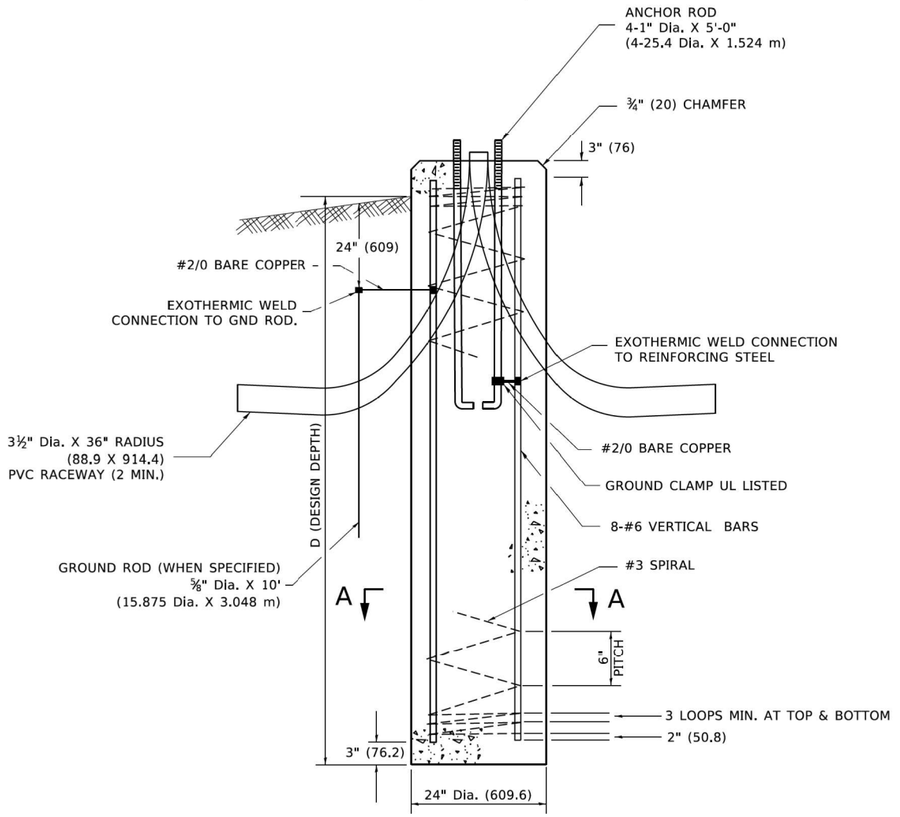
SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY Qu = 0.375 TON/SQ. FT.	11'-0" (3.35 m)	12'-8" (3.85 m)
MEDIUM CLAY Qu = 0.75 TON/SQ.FT	9'-0" (2.74 m)	14'-10" (4.52 m)
STIFF CLAY Qu = 1.50 TON/SQ. FT.	7'-6" (2.29 m)	8'-7" (2.61 m)
LOOSE SAND ∅ = 34°	9'-6" (2.90 m)	10'-7" (3.22 m)
MEDIUM SAND ∅ = 37.5°	9'-0" (2.74 m)	9'-10" (2.99 m)
DENSE SAND ∅ = 40°	8'-3" (2.51 m)	9'-7" (2.91 m)



ANCHOR BOLT DETAIL



TOP VIEW



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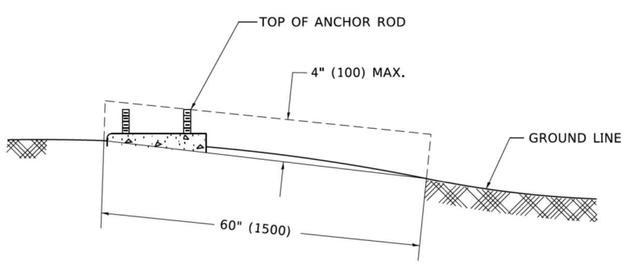

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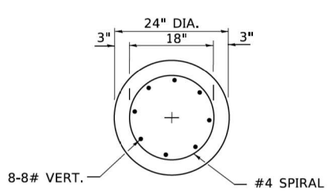

SECTION A–A

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IN PLACED.
3. THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 4 IN. (100 mm) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED, IN ACCORDANCE WITH AASHTO GUIDELINES. IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
4. THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
5. THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3#4-IN. (20 mm).
6. THE CONCRETE SHALL BE CLASS SI. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
7. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
8. ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM(6 MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
9. THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
10. ANCHOR RODS SHALL PROJECT 23#4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
11. THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
12. THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
13 THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHT POLE FOUNDATION
30' (9.144 m) TO 35' (10.668 m) M.H. 11 1/2" (292 mm) BOLT CIRCLE

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	738
	BE-300	CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

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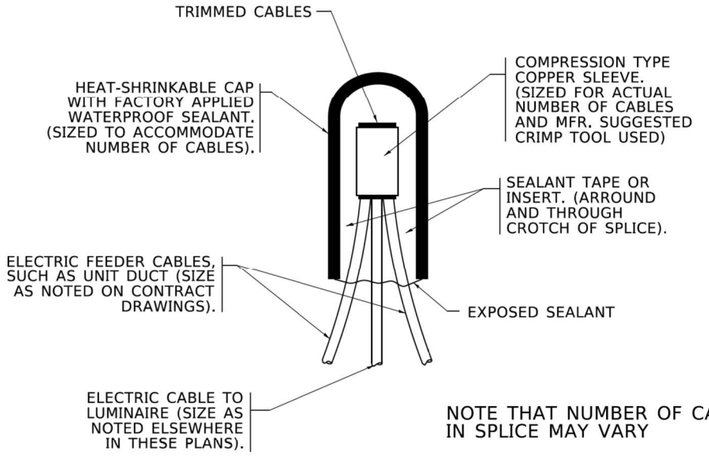

TYPICAL SPLICE DETAIL
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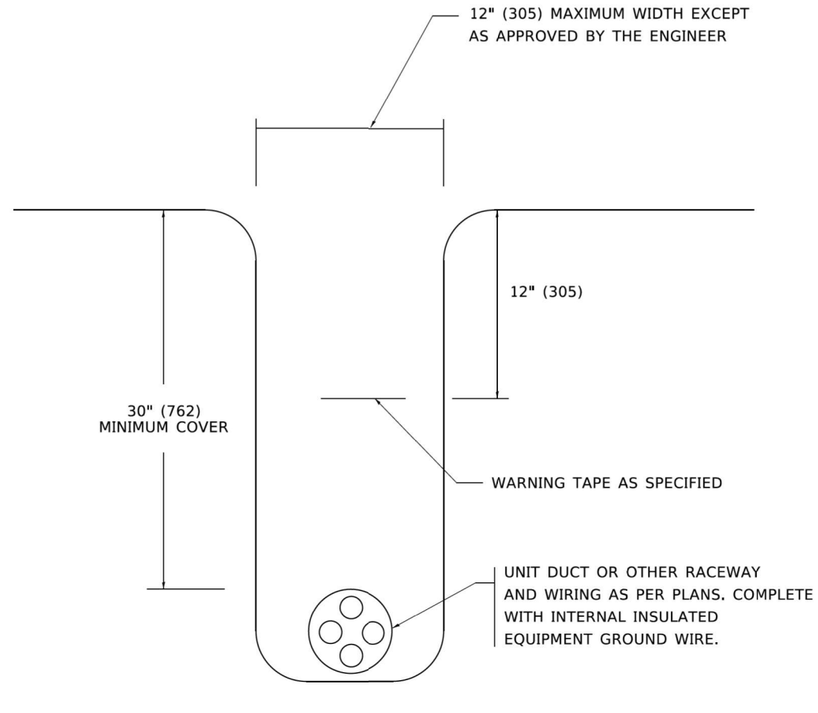

TYPICAL WIRING IN TRENCH DETAIL
N.T.S.

POLE WIRING DETAIL
N.T.S.

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PLOT DATE = 3/2/2020	DATE - 08/08/2003	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISC. ELECTRICAL DETAILS
SHEET A

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	739
	BE-702	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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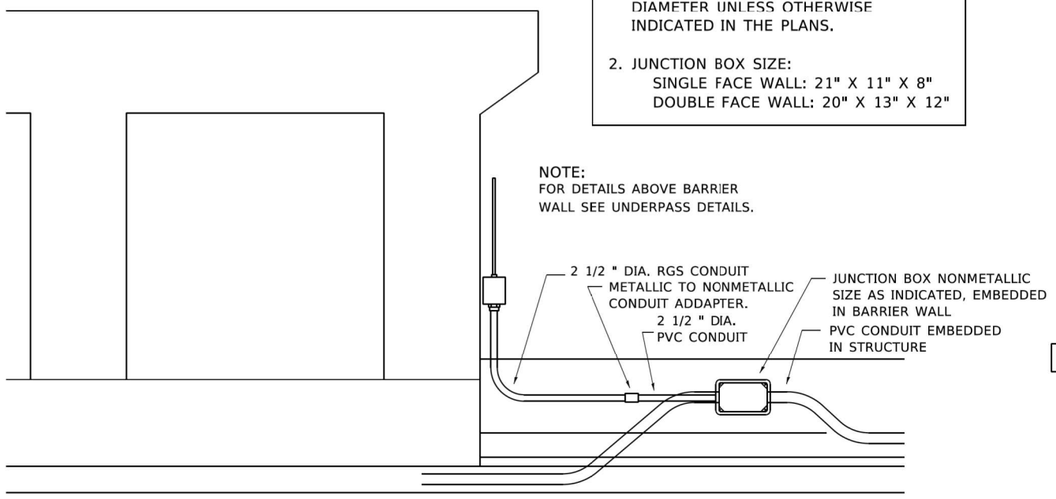
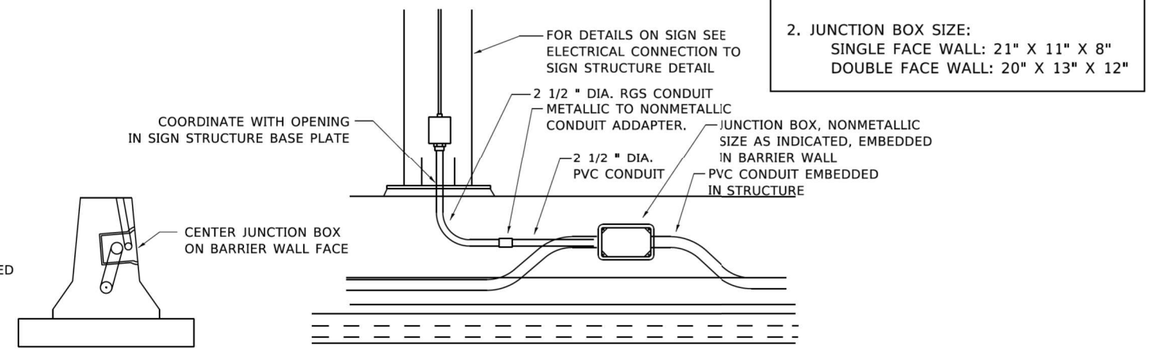


NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE:
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - BWD

ELECTRIC CONNECTION TO UNDERPASS LIGHTING

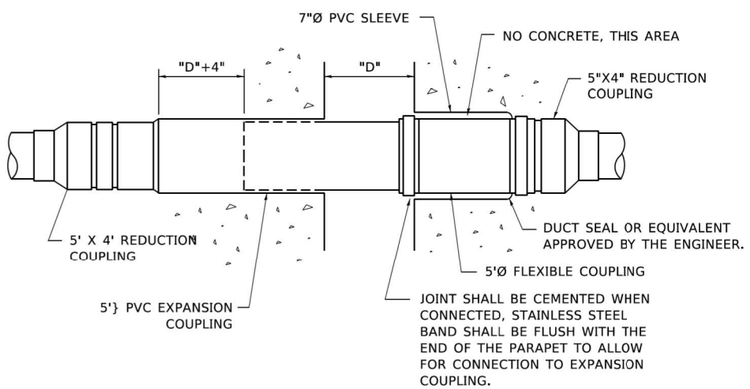


NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE:
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

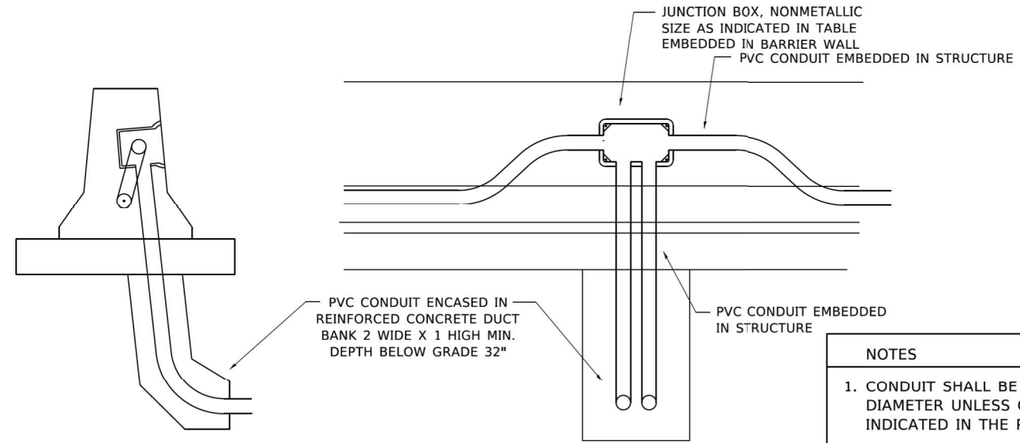
ED - SGN

JUNCTION BOX EMBEDDED IN BARRIER WALL FOR SIGN LIGHTING



INSTALLATION OF CONDUIT IN BRIDGE PARAPET EXPANSION JOINT

(N.T.S.)



NOTES

1. CONDUIT SHALL BE 4-INCH DIAMETER UNLESS OTHERWISE INDICATED IN THE PLANS.
2. JUNCTION BOX SIZE:
   SINGLE FACE WALL: 21" X 11" X 8"
   DOUBLE FACE WALL: 20" X 13" X 12"

ED - BW

JUNCTION BOX EMBEDDED IN BARRIER WALL

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS ELECTRICAL DETAILS, SHEET B
J BOX EMBEDDED IN BARRIER WALL – INSTALLATION OF CONDUIT IN BRIDGE PARAPET EXPANSION JOINT – ELECTRIC CONNECTION TO UNDERPASS LIGHTING

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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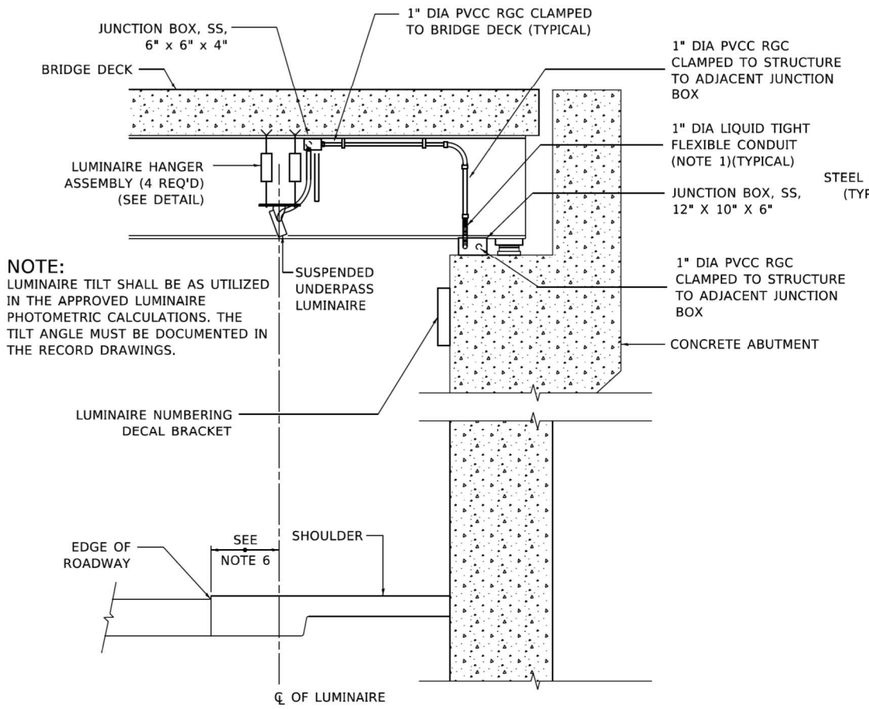
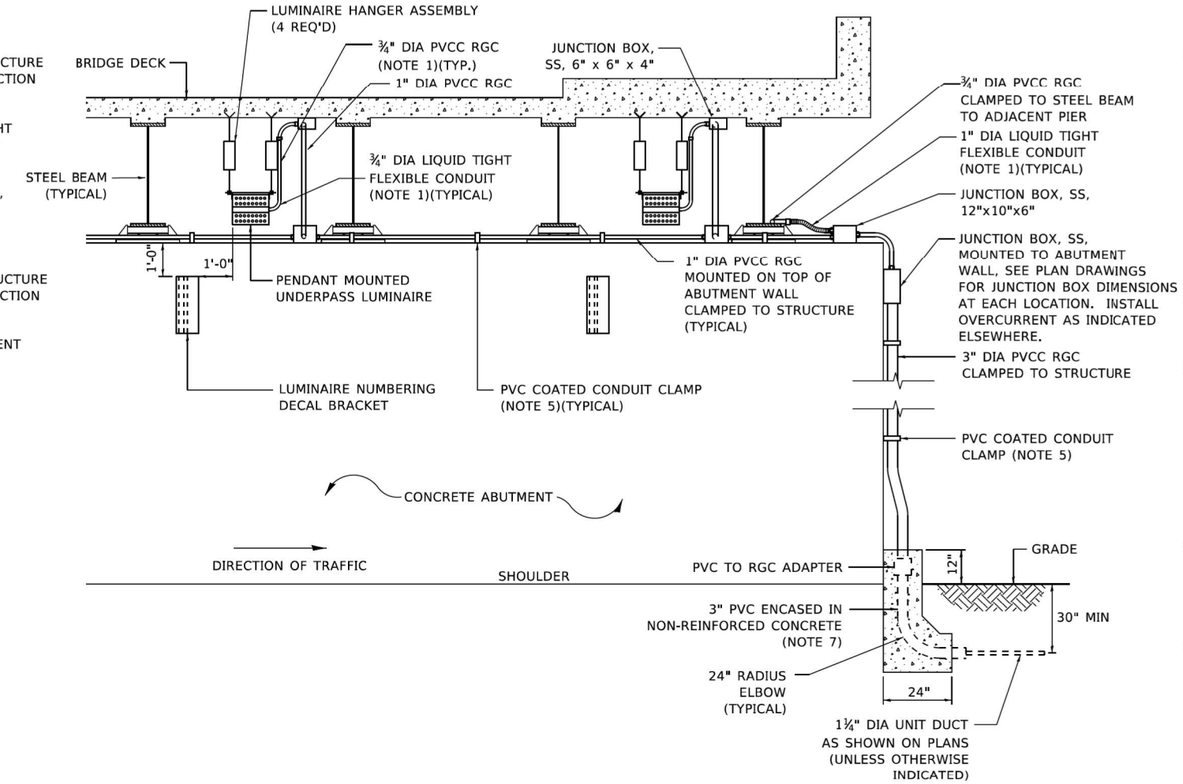
	BE-703	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

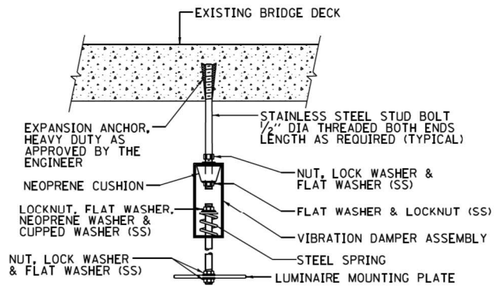


NOTE:
LUMINAIRE TILT SHALL BE AS UTILIZED IN THE APPROVED LUMINAIRE PHOTOMETRIC CALCULATIONS. THE TILT ANGLE MUST BE DOCUMENTED IN THE RECORD DRAWINGS.

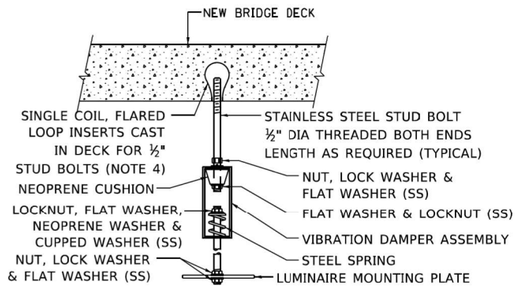


NOTES:

1. LIQUID TIGHT FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN. PROVIDE PVC COATED RIGID GALVANIZED STEEL CONDUIT AS REQUIRED NOT TO EXCEED 6'-0" OF FLEXIBLE LIQUID TIGHT METAL CONDUIT. LIQUID TIGHT FLEXIBLE METAL CONDUIT WILL BE INCLUDED IN THE COST OF THE CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED PAY ITEM EXCEPT THAT " DIA. CONDUIT AND " DIA. FLEXIBLE CONDUIT SHALL BE INCLUDED IN THE COST OF UNDERPASS LUMINAIRE INSTALLATION.
2. SEE UNDERPASS LIGHTING PLANS FOR INSTALLATION LOCATION OF UNDERPASS LIGHTING LUMINAIRES.
3. THE CONTRACTOR SHALL USE APPROVED SINGLE COIL FLARED LOOP INSERTS WHEN SUSPENDED MOUNTING AN UNDERPASS LUMINAIRE TO A NEW BRIDGE DECK. THE FLARED LOOP INSERTS MUST BE CAST INTO THE CONCRETE DECK. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND COORDINATING THE INSERT LOCATIONS FOR MOUNTING THE UNDERPASS LIGHTING SYSTEM AS SHOWN ON THE PLANS WITH THE BRIDGE DECK CONTRACTOR. SEE DETAIL.
4. THE UNDERPASS LUMINAIRE HANGER ASSEMBLY COMPLETE WITH HEAVY DUTY ANCHORS/INSERTS AND ALL APPLICABLE HARDWARE SHALL BE INCLUDED IN THE COST OF THE UNDERPASS LUMINAIRE PAY ITEM.
5. SECURE THE CONDUIT WITH PVC COATED CONDUIT CLAMPS OR CONDUIT BEAM CLAMPS AS SHOWN AT 5'-0" INTERVALS FOR LATERALS AND WITHIN 2'-0" MAXIMUM FROM ANY JUNCTION BOX, FLEXIBLE CONDUIT, OR CHANGE IN DIRECTION. ALL PVC COATED CONDUIT CLAMPS OR BEAM CLAMPS SHALL BE INCLUDED WITH THE COST OF THE "CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED" PAY ITEM.
6. ALL UNDERPASS LUMINAIRES MUST BE CENTERED IN THE BEAM SPACE AS INDICATED ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGR. LUMINAIRE SETBACK SHALL BE AS INDICATED IN PLANS FOR EACH SPECIFIC UNDERPASS
7. THE CONCRETE ENCASED CONDUIT TRANSITION SHALL BE INCLUDED IN THE COST OF THE GALVANIZED RIGID STEEL CONDUIT PAY ITEMS.
8. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE PVC COATED RIGID STEEL CONDUIT (PVCC RGC) TYPICAL.
9. IN NO INSTANCE SHALL ANY UNDERPASS LUMINAIRE OR ANY OTHER ELECTRICAL EQUIPMENT BE INSTALLED BELOW THE ELEVATION OF THE BOTTOM OF THE BRIDGE BEAM WHEN OVER ANY PAVEMENT (ROADWAY OR SHOULDER).

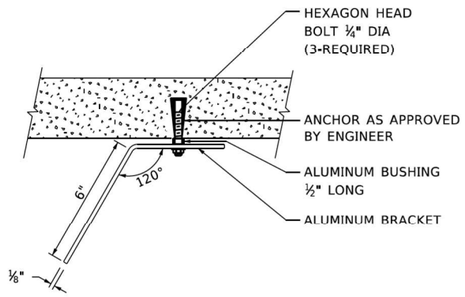


EXISTING BRIDGE DECK INSTALLATION

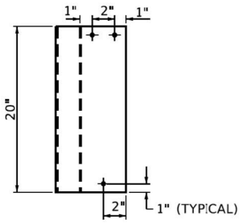


NEW BRIDGE DECK INSTALLATION

TYPICAL LUMINAIRE HANGER ASSEMBLY DETAILS



TOP VIEW

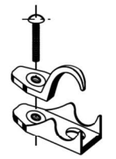


ELEVATION

LUMINAIRE NUMBERING DECAL BRACKET

NOT TO SCALE

PVC COATED CONDUIT BEAM CLAMP
NOT TO SCALE



PVC COATED CONDUIT CLAMP
NOT TO SCALE

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PLOT DATE = 1/15/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUSPENDED MOUNT LED UNDERPASS LUMINAIRE INSTALLATION DETAILS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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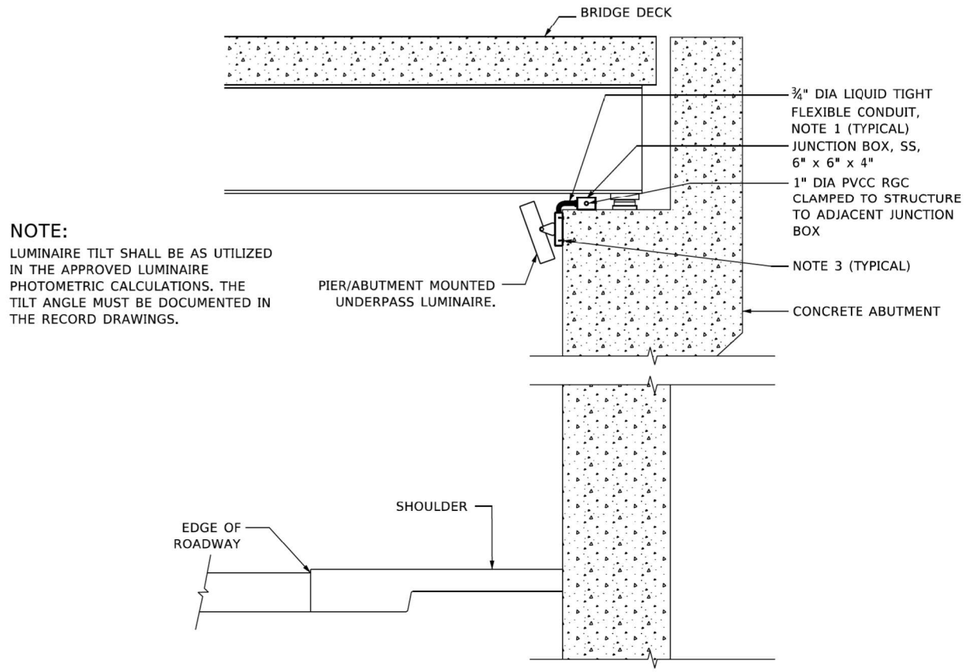
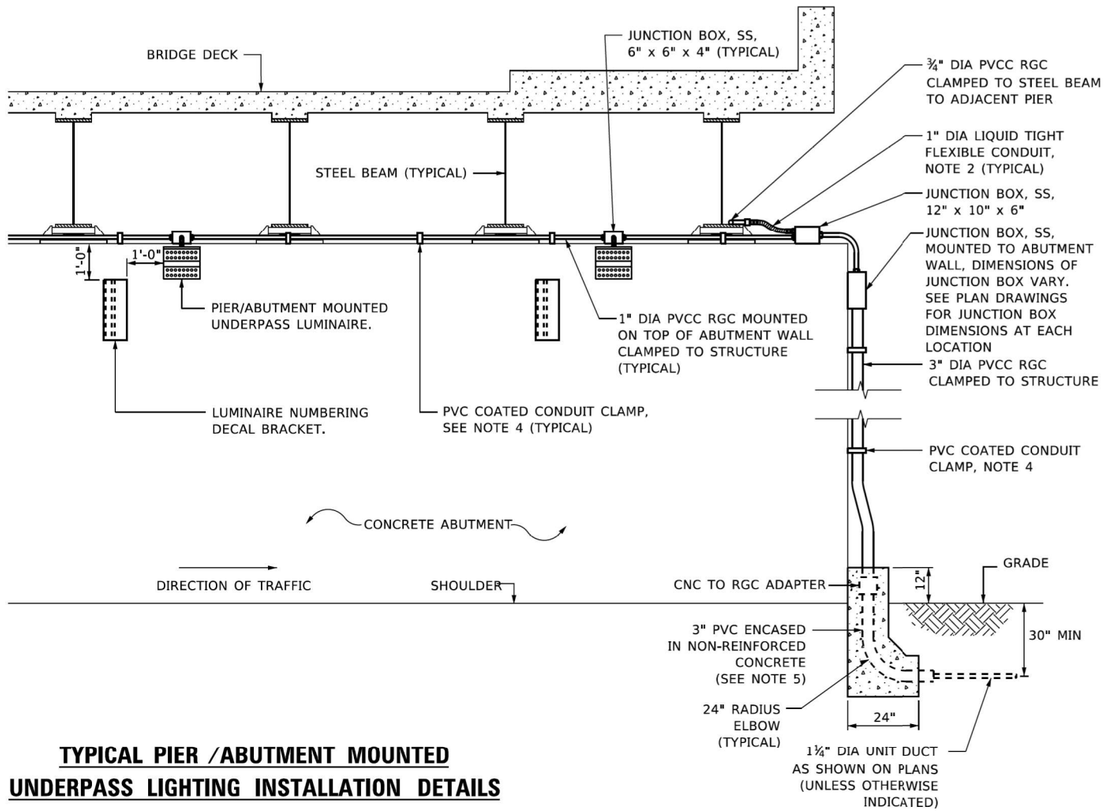
	BE-901	CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

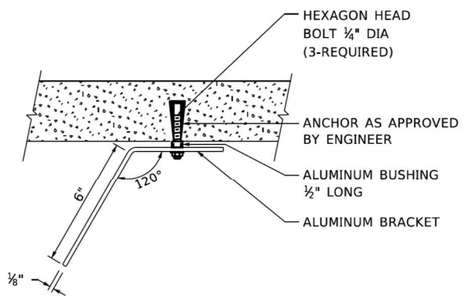


NOTE:

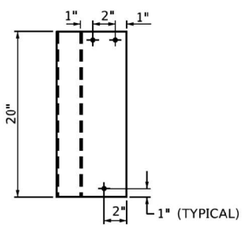
LUMINAIRE TILT SHALL BE AS UTILIZED IN THE APPROVED LUMINAIRE PHOTOMETRIC CALCULATIONS. THE TILT ANGLE MUST BE DOCUMENTED IN THE RECORD DRAWINGS.



TYPICAL PIER /ABUTMENT MOUNTED UNDERPASS LIGHTING INSTALLATION DETAILS



TOP VIEW



ELEVATION

LUMINAIRE NUMBERING DECAL BRACKET

NOT TO SCALE

PVC COATED CONDUIT BEAM CLAMP

NOT TO SCALE

PVC COATED CONDUIT CLAMP

NOT TO SCALE

NOTES:

1. LIQUID TIGHT FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN. PROVIDE PVC COATED RIGID GALVANIZED STEEL CONDUIT AS REQUIRED NOT TO EXCEED 6'-0" OF FLEXIBLE LIQUID TIGHT METAL CONDUIT. LIQUID TIGHT FLEXIBLE METAL CONDUIT WILL BE INCLUDED IN THE COST OF THE CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED PAY ITEM EXCEPT THAT THE COST OF THE " DIA. RIGID STEEL CONDUIT AND " DIA. FLEXIBLE CONDUIT SHALL BE INCLUDED IN THE LUMINAIRE INSTALLATION.
2. SEE UNDERPASS LIGHTING PLANS FOR INSTALLATION LOCATION OF UNDERPASS LIGHTING LUMINAIRES.
3. UNDERPASS LUMINAIRE MOUNTED TO FACE OF PIER OR ABUTMENT WALL WITH ½" ALUMINUM SPACERS. MOUNTING HEIGHT OF 1" BELOW THE TOP OF PIER OR ABUTMENT WALL TYPICAL FOR ALL PIER/ABUTMENT MOUNTED UNDERPASS LUMINAIRES UNLESS OTHERWISE NOTED.
4. EXPANSION ANCHOR, POWDER ACTUATED FASTENERS WILL NOT BE ALLOWED. EXPANSION ANCHOR MUST BE SIZED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
5. SECURE THE CONDUIT WITH PVC COATED CONDUIT CLAMPS OR CONDUIT BEAM CLAMPS AS SHOWN AT 5'-0" INTERVALS FOR LATERALS AND WITHIN 2'-0" MAXIMUM FROM ANY JUNCTION BOX, FLEXIBLE CONDUIT, OR CHANGE IN DIRECTION. ALL PVC COATED CONDUIT CLAMPS OR BEAM CLAMPS SHALL BE INCLUDED WITH THE COST OF THE "CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED" PAY ITEM.
6. THE CONCRETE ENCASED CONDUIT TRANSITION SHALL BE INCLUDED IN THE COST OF THE GALVANIZED RIGID STEEL CONDUIT PAY ITEMS.
7. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE PVC COATED RIGID STEEL CONDUIT (PVCC RGC) TYPICAL.

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PLOT DATE = 1/15/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER /ABUTMENT MOUNTED LED UNDERPASS LUMINARE INSTALLATION DETAILS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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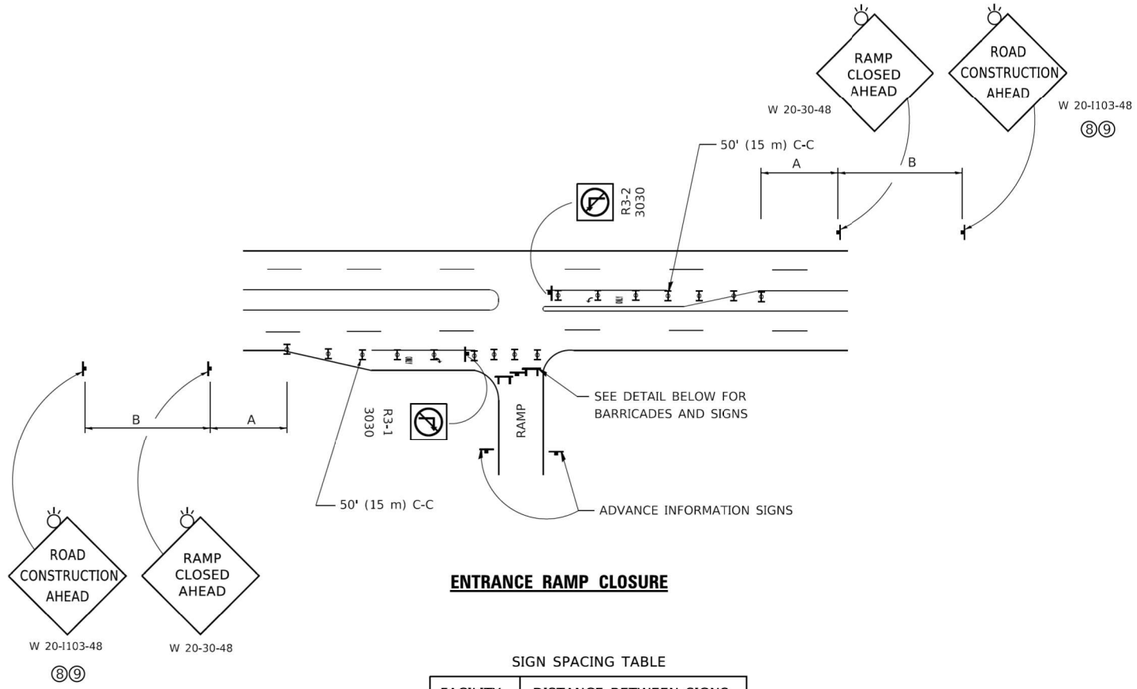
	BE-903	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

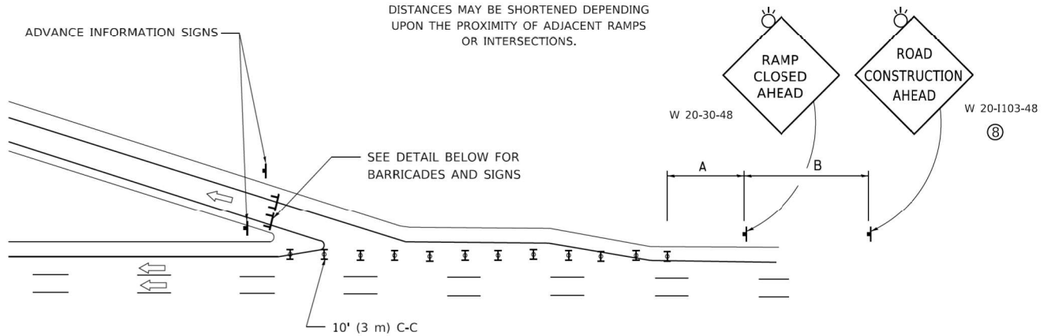


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL 55 MPH	500' (150 m)	500' (150 m)
ARTERIAL 50-45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	200' (60 m)	200' (60 m)

DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

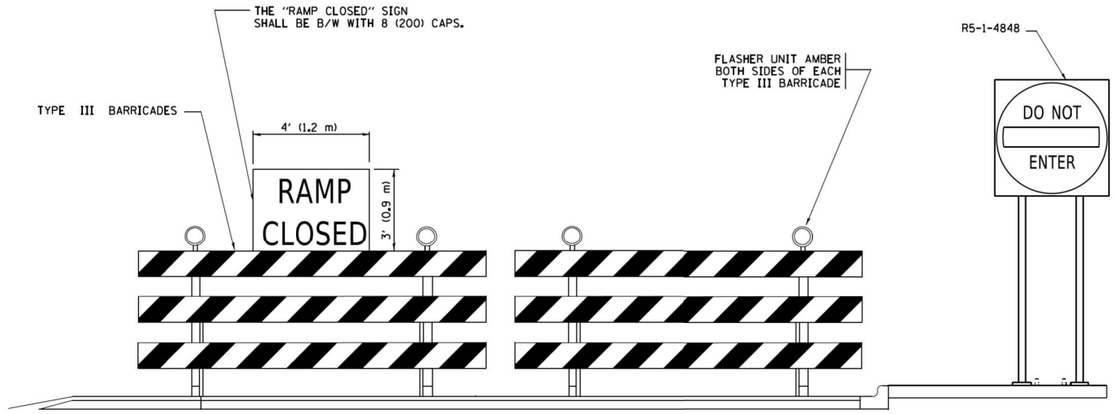


EXIT RAMP CLOSURE

SYMBOLS

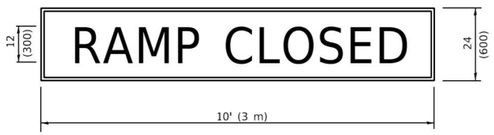
TYPE II BARRICADE OR DRUM

TYPE III BARRICADE WITH 2 FLASHING LIGHTS



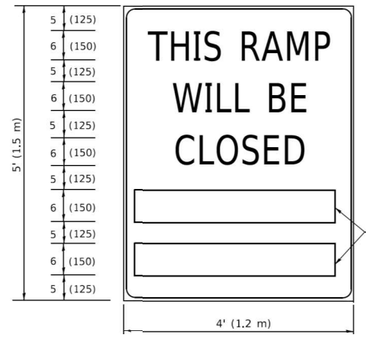
DETAIL FOR REQUIRED BARRICADES & SIGNS

RAMP CLOSURE ADVANCE WARNING SIGN



BLACK LEGEND ON ORANGE BACKGROUND MOUNTED DIAGONALLY
E MOD FONT
1 (25) BORDER
THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR EXIT RAMPS THAT WILL BE CLOSED FOR MORE THAN FOUR (4) CONSECUTIVE DAYS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



BLACK LEGEND ON WHITE BACKGROUND

½ (12) BORDER

E MOD FONT

THESE BLANK AREAS SHALL BE FILLED WITH THE DATES AND THE TIME THAT THE RAMP WILL BE CLOSED.

THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

THESE SIGNS SHALL BE FABRICATED AND PAID FOR ACCORDING TO THE TEMPORARY INFORMATION SIGNING SPECIAL PROVISION

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. VERTICAL BARRICADES SHALL NOT BE USED FOR RAMP CLOSURES.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES, PRECEEDED BY A W20-7 FLAGGER WARNING SIGN.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED WHEN THE RAMP IS CLOSED FOR MORE THAN FOUR (4) DAYS.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY-FOUR (24) HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED FOUR (4) DAYS IN LENGTH
8. ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT ALREADY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
9. ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS SHALL BE INSTALLED ON THE LEFT SIDE OF TRAFFIC IF THE MEDIAN IS MORE THAN 10 FT WIDE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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PLOT DATE = 3/4/2019	DATE - 02-83	REVISED - M.D._01-18	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ENTRANCE_AND_EXIT_RAMP CLOSURE_DETAILS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	TC-08	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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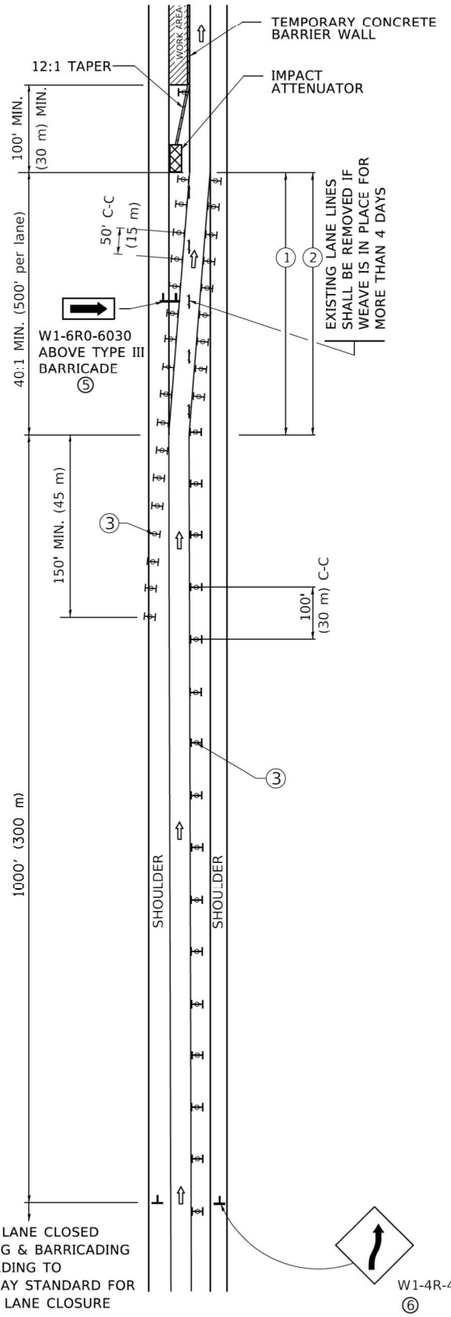
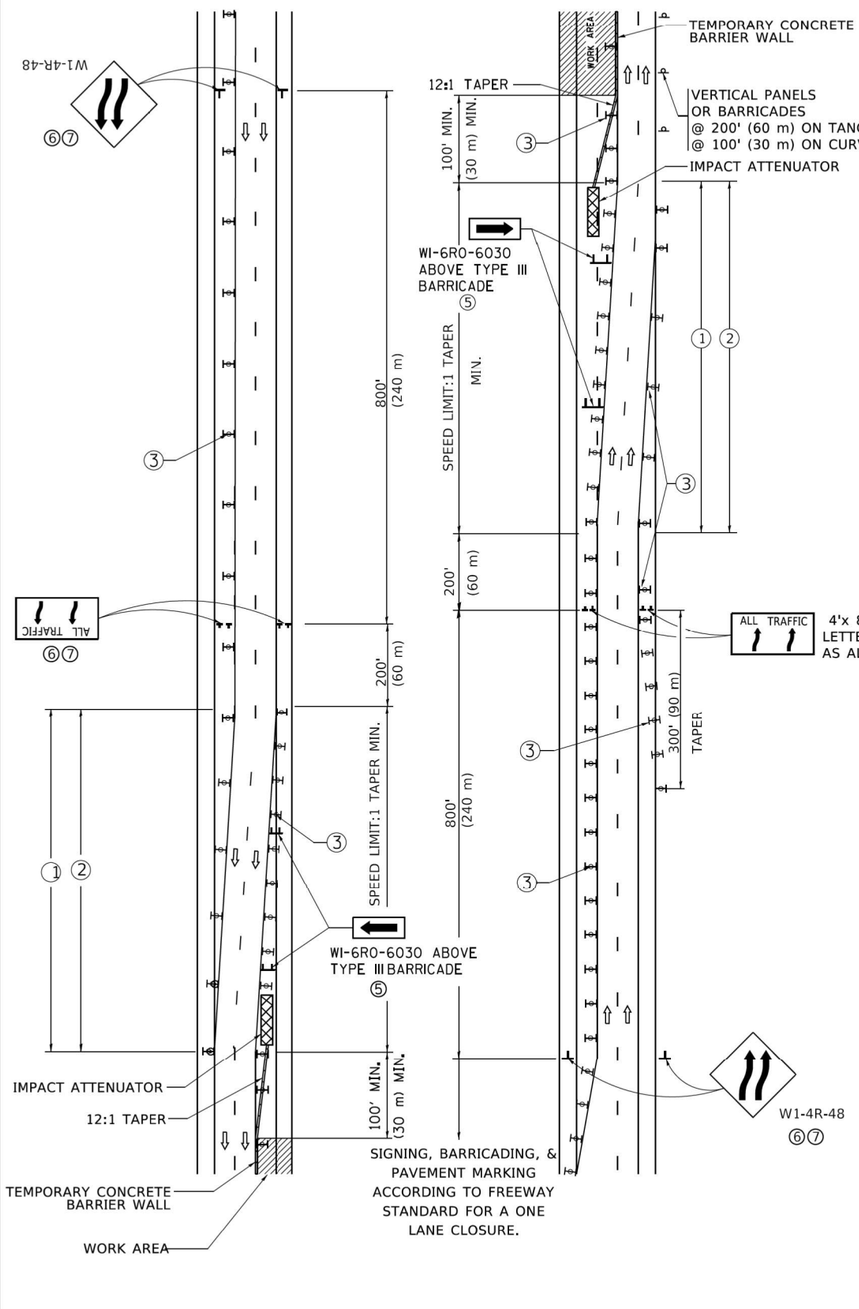
SINGLE LANE WEAVE



MULTI–LANE WEAVE



GENERAL NOTES:

① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 4 DAYS IN DURATION.

② CONTINOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.

③ PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.

④ ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

⑤ TYPE III BARRICADES MAY BE OMMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.

⑥ WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.

⑦ THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

SYMBOLS

- DIRECTION OF TRAFFIC
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE II BARRICADE OR DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT
- TEMPORARY CONCRETE BARRIER WALL
- IMPACT ATTENUATOR

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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PLOT DATE = 3/4/2019	DATE - 02-87	REVISED - M.D. 06-13	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI–LANE WEAVE

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	744
	TC-09	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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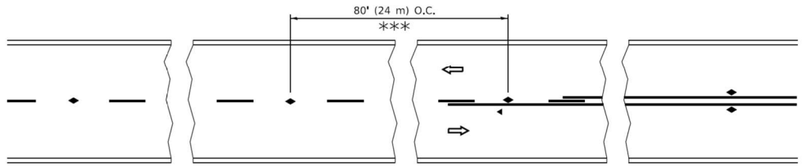
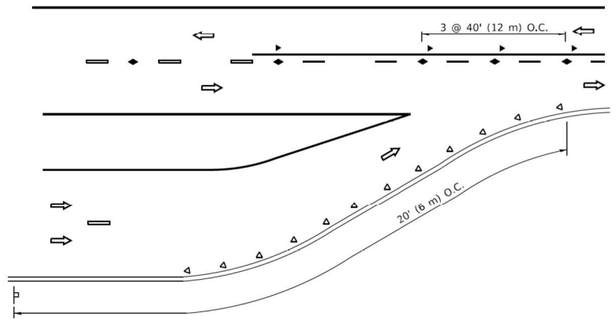


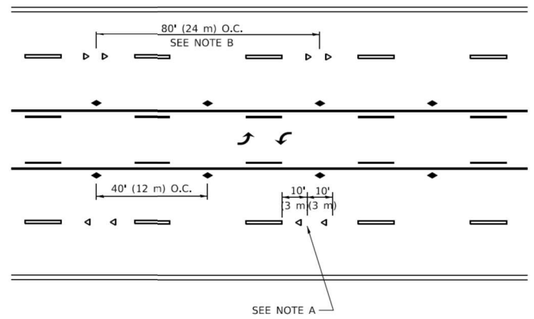
*** REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

TWO–LANE/TWO–WAY

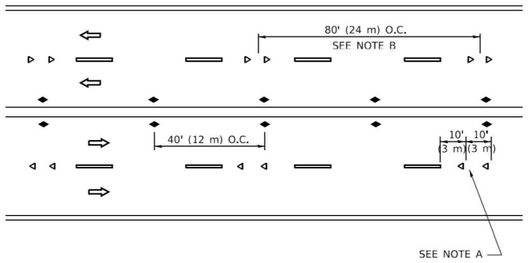
SEE FIGURE 3B-14 MUTCD



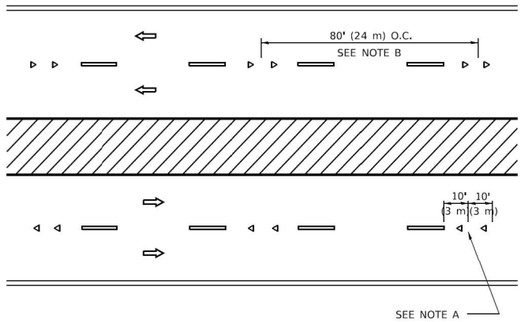
LANE REDUCTION TRANSITION



TWO–WAY LEFT TURN



MULTI–LANE/UNDIVIDED



MULTI–LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.
4. MARKERS ARE TO BE USED ADJACENT TO BOTH SOLID WHITE LINES IN DUAL LEFT TURN LANES

SYMBOLS

- YELLOW STRIPE
- WHITE STRIPE
- ONE-WAY AMBER MARKER
- ONE-WAY CRYSTAL MARKER (W/O)
- TWO-WAY AMBER MARKER

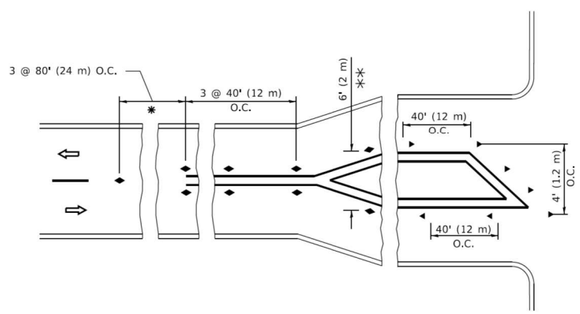
LANE MARKER NOTES

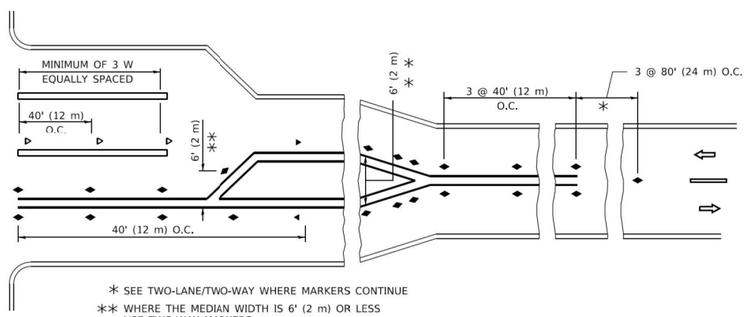
A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.

B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHALL BE INCLUDED IN THE PLANS WHEN STANDARD SPECIFICATIONS ARE NOT BEING USED.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.





* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE

** WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

TURN LANES

All dimensions are in inches (millimeters) unless otherwise shown.

USER NAME = footemj	DESIGNED -	REVISED - T. RAMMACHER 03-12-99	STATE OF ILLINOIS
	DRAWN -	REVISED - T. RAMMACHER 01-06-00	DEPARTMENT OF TRANSPORTATION
PLOT SCALE = 50.0000 ' / In.	CHECKED -	REVISED - C. JUCIUS 09-09-09	
PLOT DATE = 3/4/2019	DATE -	REVISED - C. JUCIUS 07-01-13	

TYPICAL APPLICATIONS
RAISED REFLECTIVE PAVEMENT MARKERS (SNOW–PLOW RESISTANT)

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	745
	TC-11	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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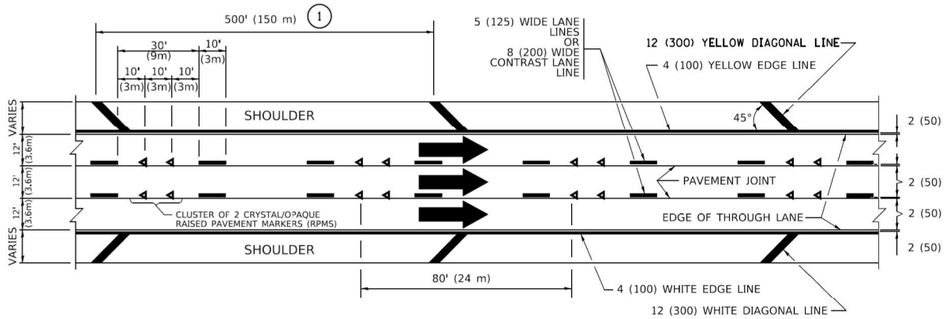
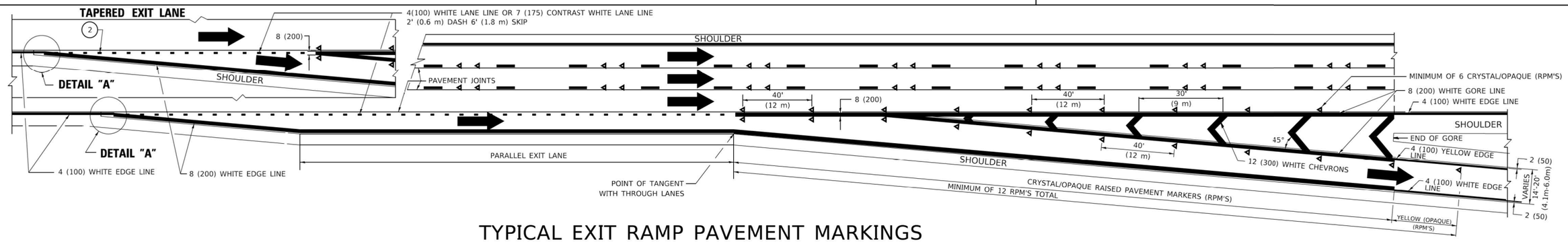


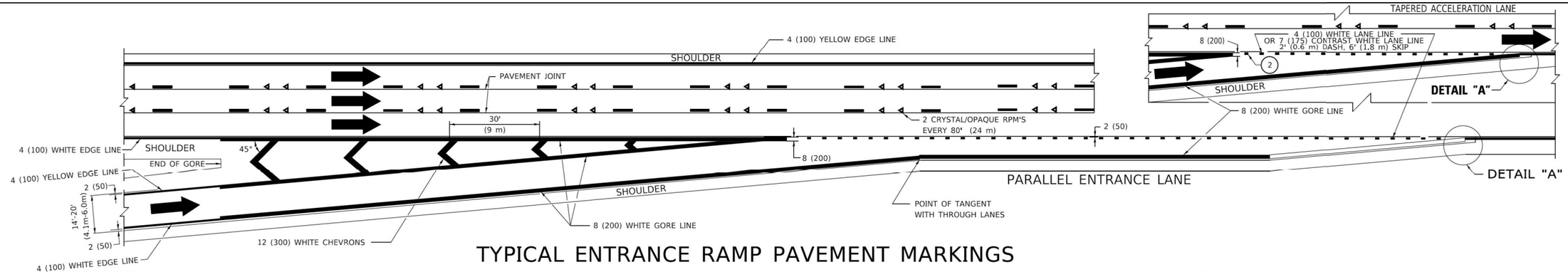
TYPICAL EDGE LINES & LANE LINES

PAVEMENT MARKING MATERIALS

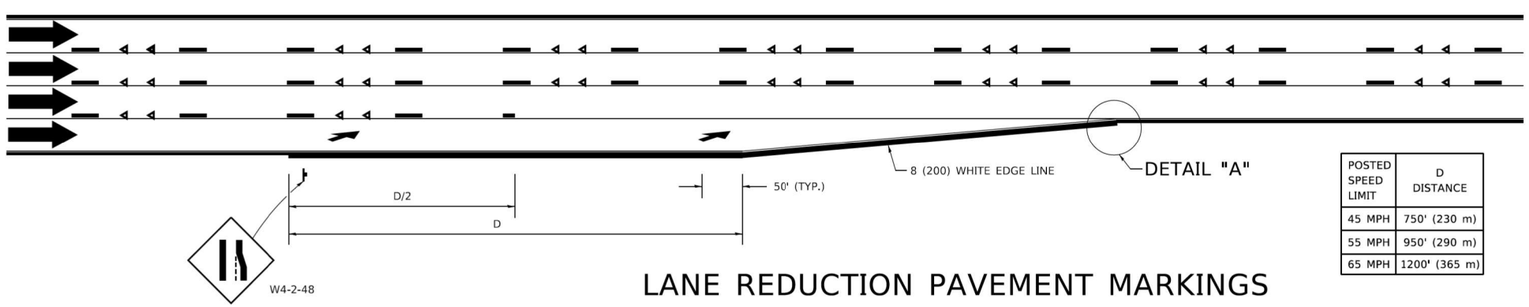
1. THERMOPLASTIC PAVEMENT MARKING LINE SHALL BE USED FOR ALL EDGE LINES, GORE LINES, AND DIAGONAL LINES ON HMA PAVEMENTS.
2. POLYUREA OR MODIFIED URETHANE PAVEMENT MARKING LINE SHALL BE USED FOR ALL EDGE LINES, GORE LINES, AND DIAGONAL LINES ON PCC PAVEMENTS.
3. PREFORMED PLASTIC PAVEMENT MARKING LINE TYPE B, INLAID OR GROOVE IN, SHALL BE USED FOR ALL LANE LINES ON HMA PAVEMENTS.
4. CONTRAST PREFORMED PLASTIC PAVEMENT MARKING LINE TYPE B, GROOVE IN, SHALL BE USED FOR ALL LANE LINES ON PCC PAVEMENT.



TYPICAL EXIT RAMP PAVEMENT MARKINGS

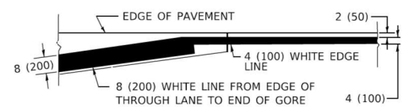


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS



POSTED SPEED LIMIT	D DISTANCE
45 MPH	750' (230 m)
55 MPH	950' (290 m)
65 MPH	1200' (365 m)

LANE REDUCTION PAVEMENT MARKINGS



DETAIL "A"

NOTES:

1. THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH. THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH.
2. 4" (2' DASH, 6' SKIP) MARKING ON TAPERED ENTRANCE AND EXIT RAMP SHALL BE OMITTED ON TANGENT SECTIONS.

USER NAME = footemj	DESIGNED - D.W.S.	REVISED - S.P.B. 01-07	
	DRAWN -	REVISED - S.P.B. 01-10	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - M.D. 05-13	
PLOT DATE = 3/4/2019	DATE - 01-90	REVISED - M.D. 09-17	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	746
	TC-12	CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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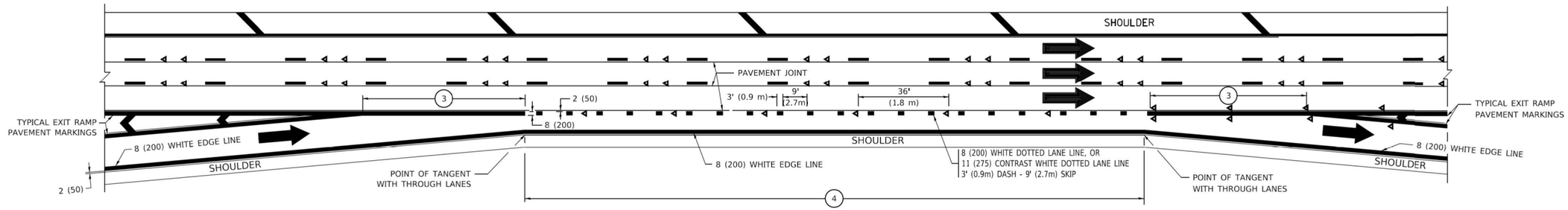
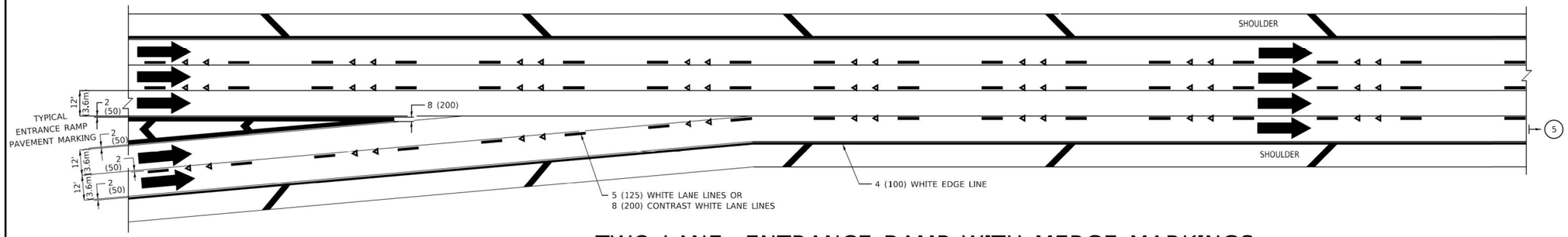
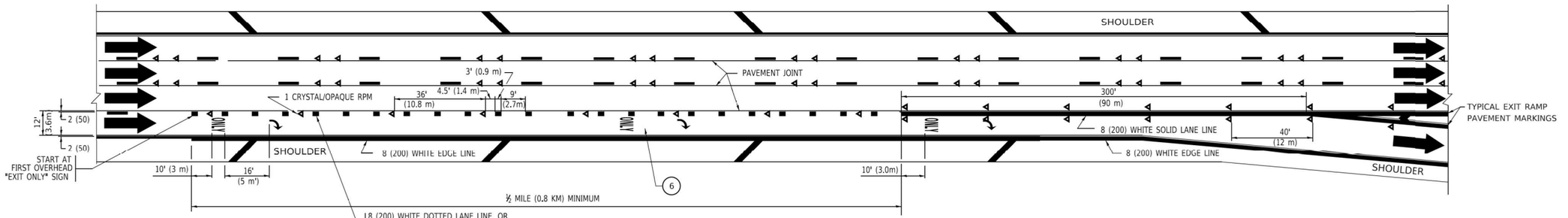


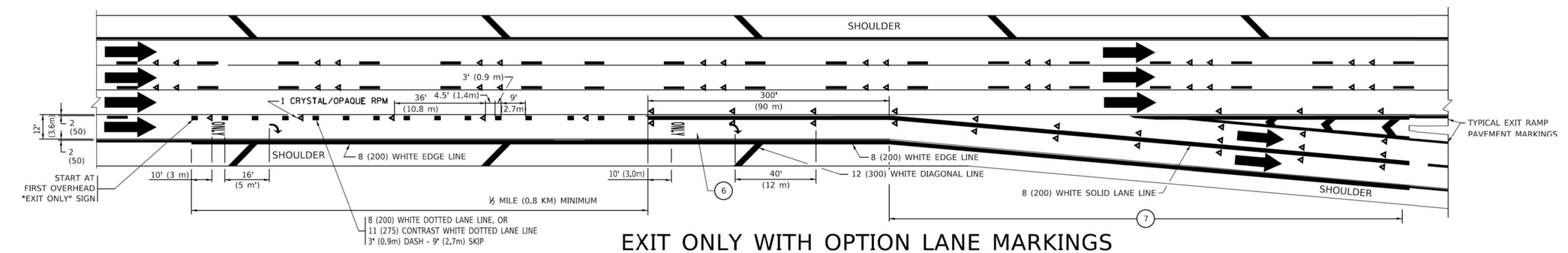
AUXILIARY LANE MARKINGS



TWO LANE ENTRANCE RAMP WITH MERGE MARKINGS



EXIT ONLY LANE MARKINGS



EXIT ONLY WITH OPTION LANE MARKINGS

NOTES:

3. OMIT WHEN LENGTH OF AUXILIARY LANE IS LESS THAN 500' (150 m).
4. 8-INCH WIDE DOTTED LANE LINE MARKINGS SHALL BE USED WHEN THE LENGTH OF THE AUXILIARY LANE IS 2 MILES OR LESS.
5. FOR TWO-LANE ENTRANCE RAMP, IF RIGHT LANE ENDS, USE TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS.
6. ONLY AND ARROWS EQUALLY SPACED, 500' (150 m) MAXIMUM SPACING. FULL SIZE LETTERS AND ARROW SHALL BE USED..
7. CONTINUE 8" SOLID LANE LINE THROUGH EXIT TO END OF PAVED GORE.

USER NAME = footemj	DESIGNED - D.W.S.	REVISED - J.A.F. 02-06	
	DRAWN -	REVISED - S.P.B. 01-07	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - S.P.B. 01-10	
PLOT DATE = 3/4/2019	DATE - 01-90	REVISED - M.D. 09-17	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MULTI–LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	747
	TC–12	CONTRACT NO. 62W87		
	ILLINOIS | FED. AID PROJECT			

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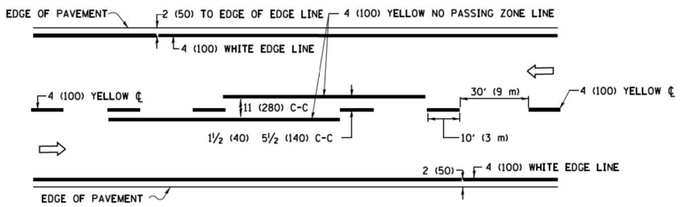
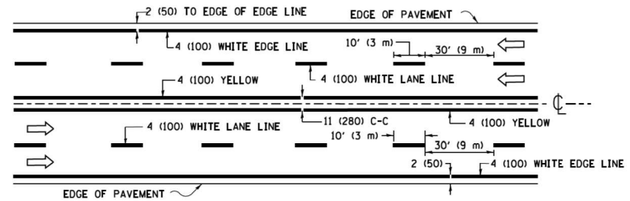
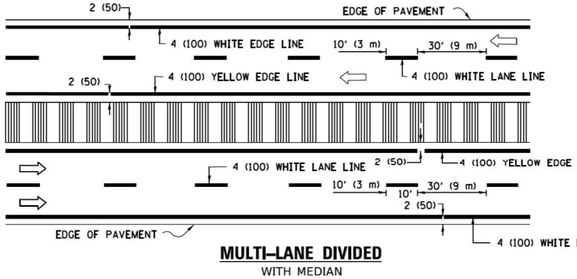


2–LANE ROADWAY

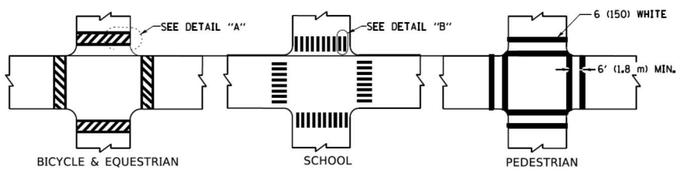


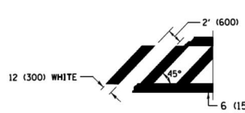
MULTI–LANE UNDIVIDED



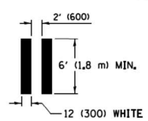
MULTI–LANE DIVIDED
WITH MEDIAN

TYPICAL LANE AND EDGE LINE MARKING





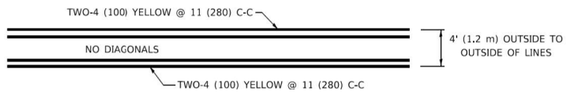
DETAIL "A"



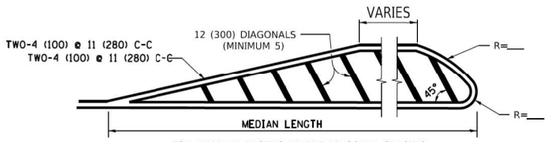
DETAIL "B"

TYPICAL CROSSWALK MARKING

✳ MARKINGS SHALL BE INSTALLED PARALLEL TO THE CENTERLINE OF THE ROAD WHICH IT CROSSES



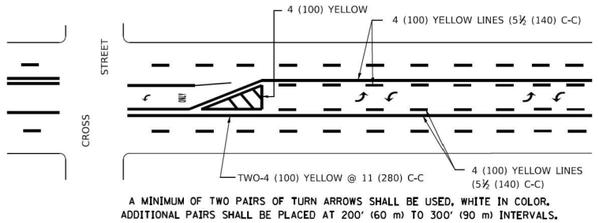
4' (1.2 m) WIDE MEDIANS ONLY



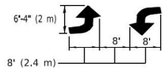
FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h))
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

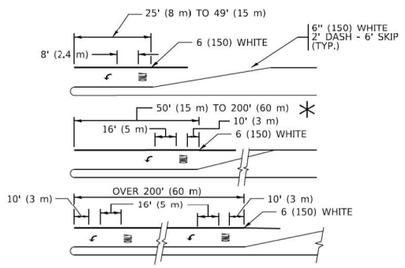


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO–WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

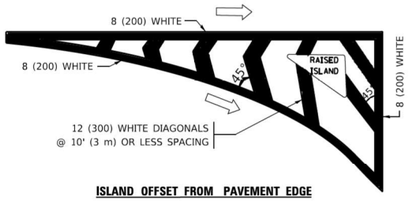


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
AREA = 15.6 SQ. FT. (1.5 m²) **ONLY** AREA = 20.8 SQ. FT. (1.9 m²)

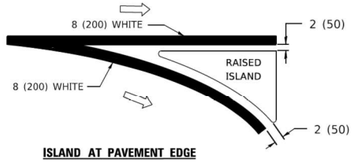
✳ TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING

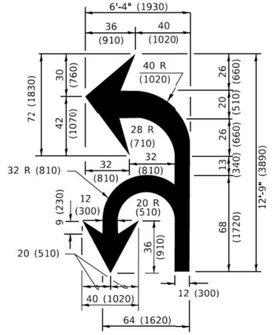


ISLAND OFFSET FROM PAVEMENT EDGE

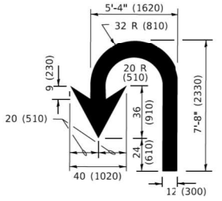


ISLAND AT PAVEMENT EDGE

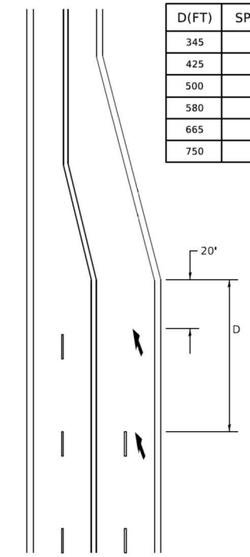
TYPICAL ISLAND MARKING



COMBINATION LEFT AND U–TURN



U–TURN



LANE REDUCTION TRANSITION

D(FT)	SPEED LIMIT
345	30
425	35
500	40
580	45
665	50
750	55

✳ LANE REDUCTION ARROWS REQUIRED AT SPEEDS OF 45 MPH OR GREATER OR WHEN SPECIFIED IN PLANS.

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5½ (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MEDIANS IN YELLOW
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH, 5½ (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m² EACH "X"=54.0 SQ. FT. (5.0 m²
SHOULDER DIAGONALS (REQUIRED FOR SHOULDERS ≥ 8')	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))
U TURN ARROW	SEE DETAIL	SOLID	WHITE	16.3 SF
2 ARROW COMBINATION LEFT AND U TURN	SEE DETAIL	SOLID	WHITE	30.4 SF

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

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USER NAME = footemj	DESIGNED - EVERS	REVISED - C. JUCIUS 09-09-09	
	DRAWN -	REVISED - C. JUCIUS 07-01-13	
PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED - C. JUCIUS 12-21-15	
PLOT DATE = 3/4/2019	DATE - 03-19-90	REVISED - C. JUCIUS 04-12-16	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
TYPICAL PAVEMENT MARKINGS

SCALE: NONE | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	748
	TC–13	CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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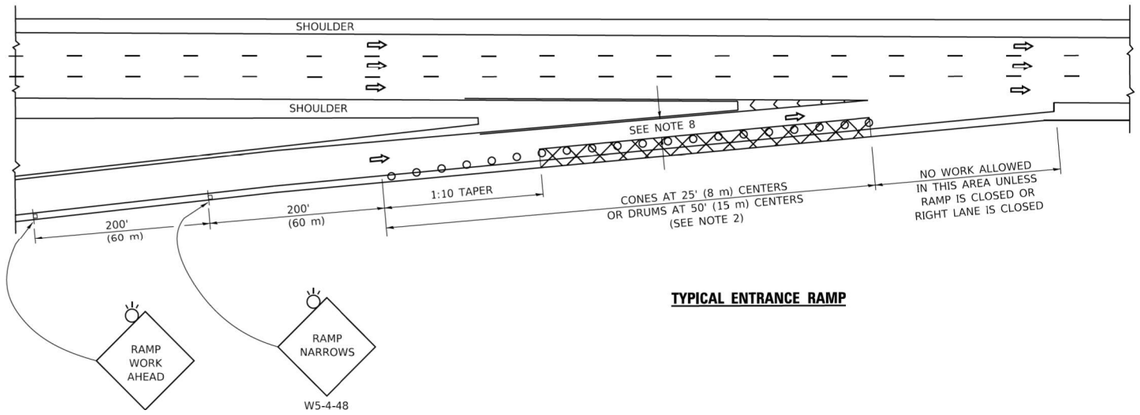
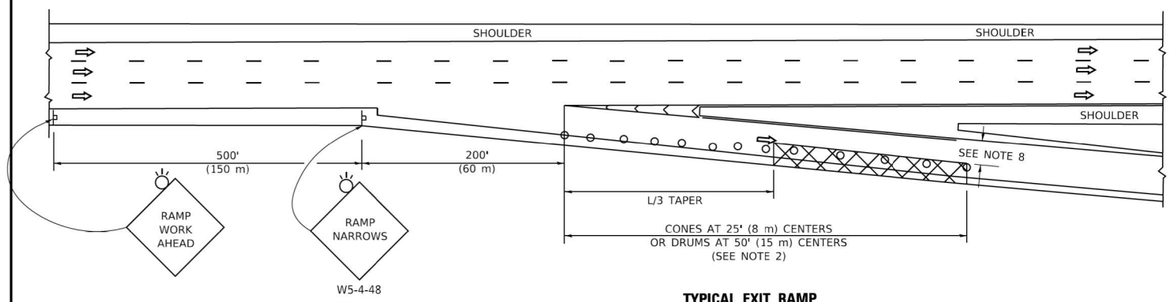
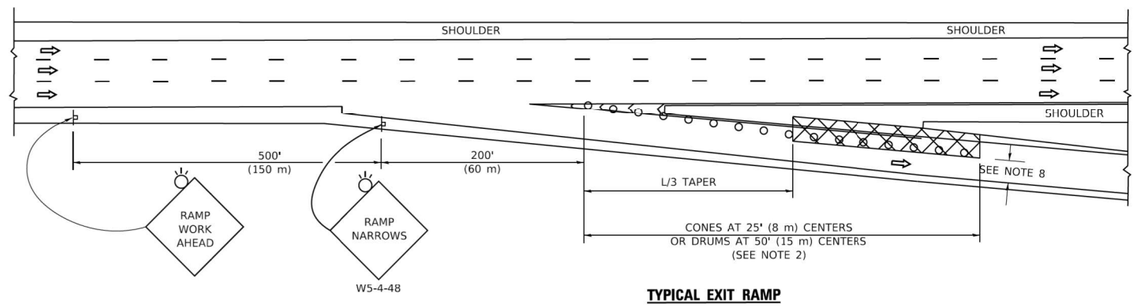
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP

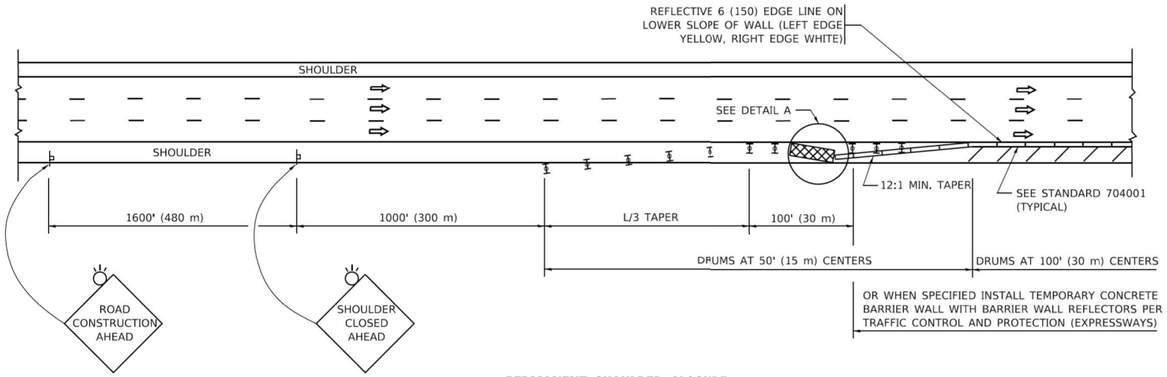


TYPICAL EXIT RAMP



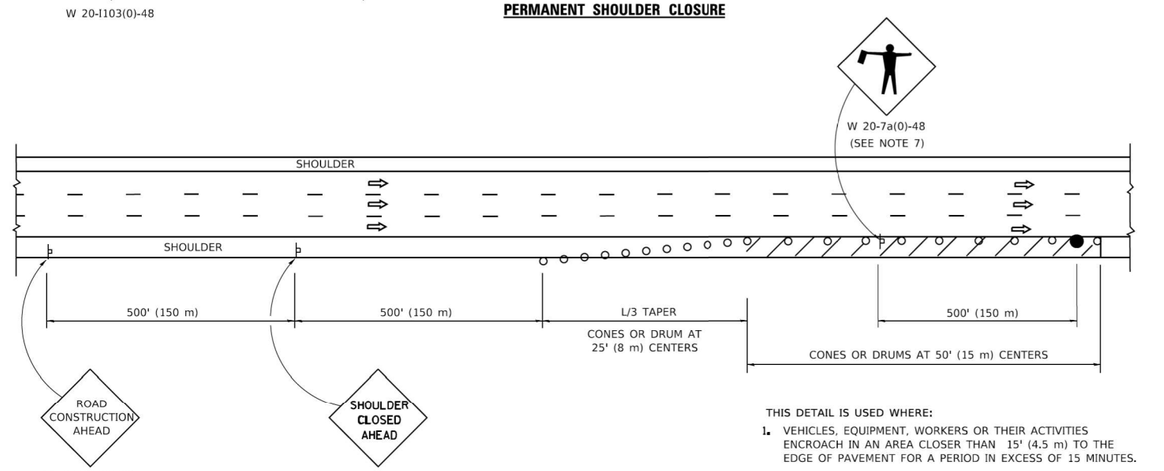
TYPICAL EXIT RAMP

SHOULDER CLOSURE DETAILS



W 20-I103(0)-48

PERMANENT SHOULDER CLOSURE

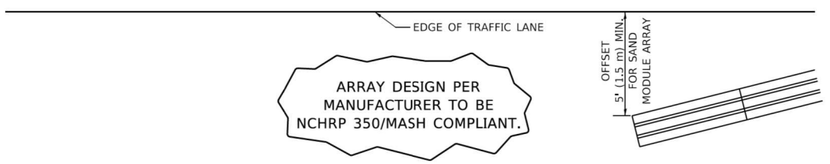


W 20-I103(0)-48

THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.

DAYTIME SHOULDER CLOSURE



DETAIL "A"
IMPACT ATTENUATOR, TEMPORARY
(SEE NOTE 5)

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE OR DRUM
- CONE, DRUM OR BARRICADE
- IMPACT ATTENUATOR OF TYPE AND TEST LEVEL SPECIFIED

GENERAL NOTES:

1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS	
45 mph (80 km/h) OR GREATER:	METRIC	ENGLISH
	L=0.65(W)(S)	L=(W)(S)

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

2. TYPE II BARRICADES OR DRUMS ARE REQUIRED FOR ALL NIGHTIME CLOSURES. TYPE II BARRICADES OR DRUMS WITH MONODIRECTIONAL STEADY BURN LIGHTS ARE REQUIRED FOR DELINEATING OBSTICLES, EXCAVATIONS, OR HAZARDS EXCEEDING 100 FT (30m) IN LENGTH AT NIGHT.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350/MASH.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.
8. 12' MIN. WIDTH TANGENT SECTION
   16' MIN. WIDTH CURVE SECTION.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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PLOT SCALE = 50.0000 ' / in.	CHECKED -	REVISED -	M.D. 06-13
PLOT DATE = 3/4/2019	DATE - 11-96	REVISED -	M.D. 01-18

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY
SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	749
	TC-17	CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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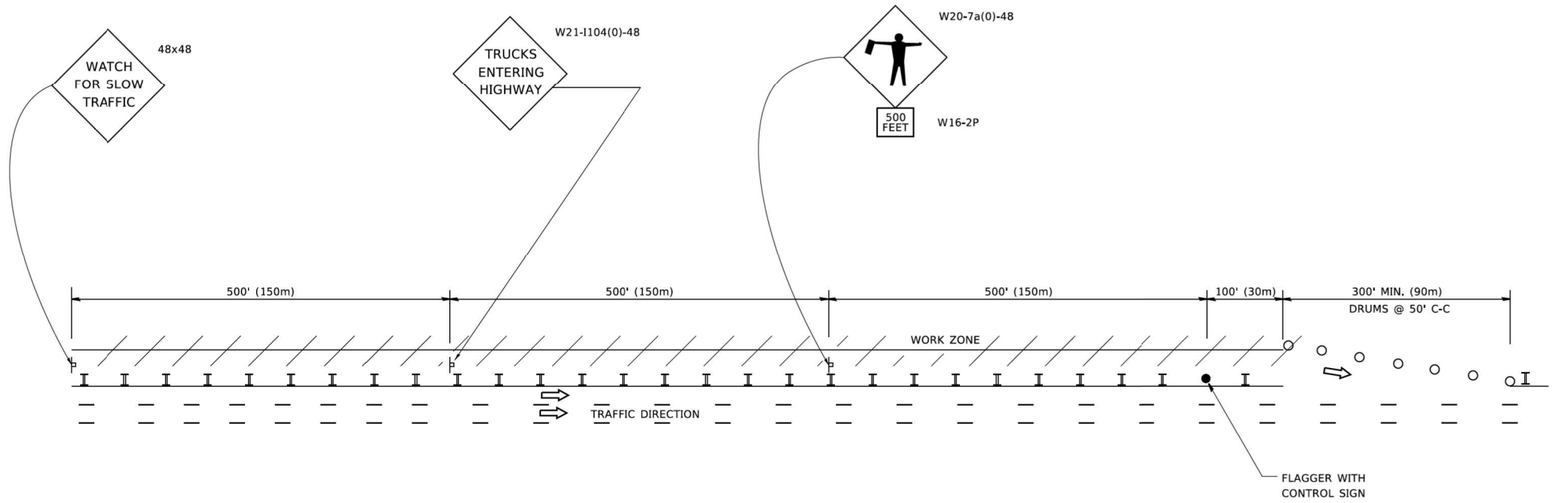
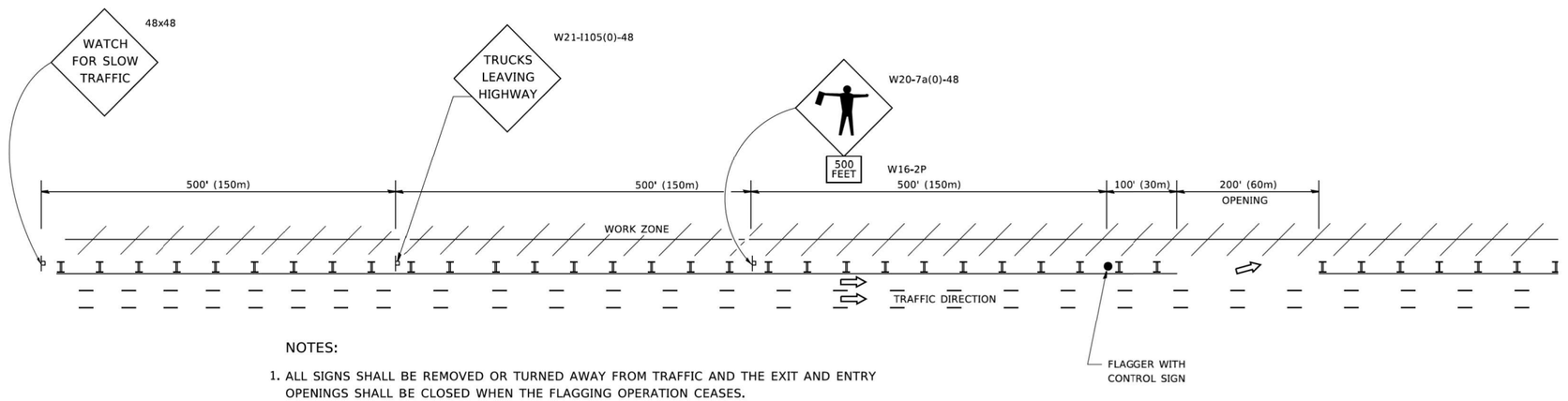
SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

1. ALL SIGNS SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE OPENINGS SHALL BE A MINIMUM OF ONE HALF MILE APART AND A MINIMUM OF ONE QUARTER MILE FROM ALL ENTRANCE AND EXIT RAMPS.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS
5. FLAGGERS SHALL NOT STOP TRAFFIC OR DIRECT TRAFFIC INTO AN ADJACENT LANE.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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PLOT DATE = 3/4/2019	DATE -	REVISED - M.D.06-13

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FREEWAY /EXPRESSWAY SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS ON FREEWAYS /EXPRESSWAYS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	750
	TC-18	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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ROUTE MARKERS

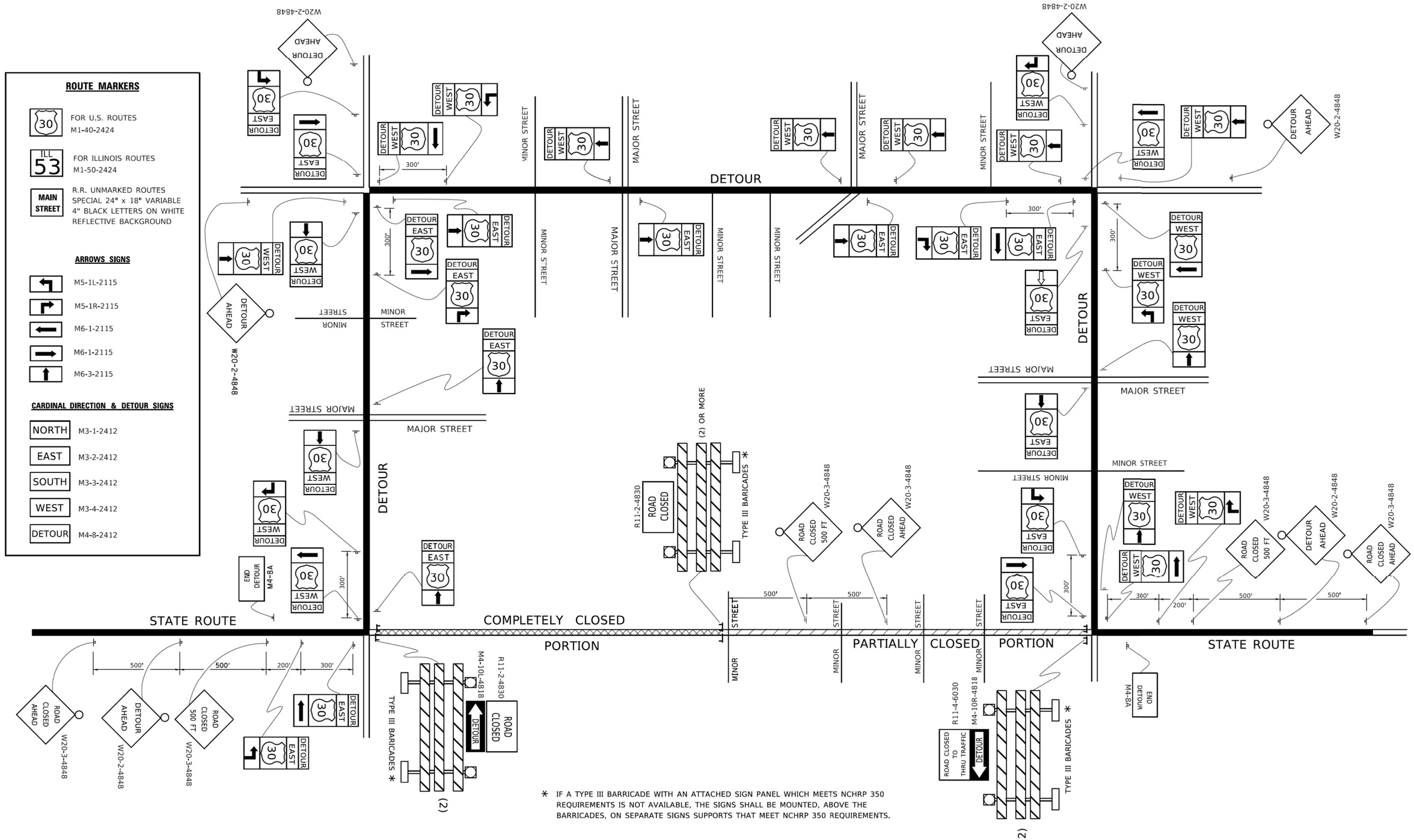
- 30 — FOR U.S. ROUTES M1-40-2424
- ILL 53 — FOR ILLINOIS ROUTES M1-50-2424
- MAIN STREET — R.R. UNMARKED ROUTES SPECIAL 24" x 18" VARIABLE 4" BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND

ARROWS SIGNS

- M5-1L-2115
- M5-1R-2115
- M6-1-2115
- M6-1-2115
- M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

- NORTH — M3-1-2412
- EAST — M3-2-2412
- SOUTH — M3-3-2412
- WEST — M4-3-2412
- DETOUR — M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

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PLOT DATE = 3/4/2019	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETOUR SIGNING FOR CLOSING STATE HIGHWAYS

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	751
	TC-21	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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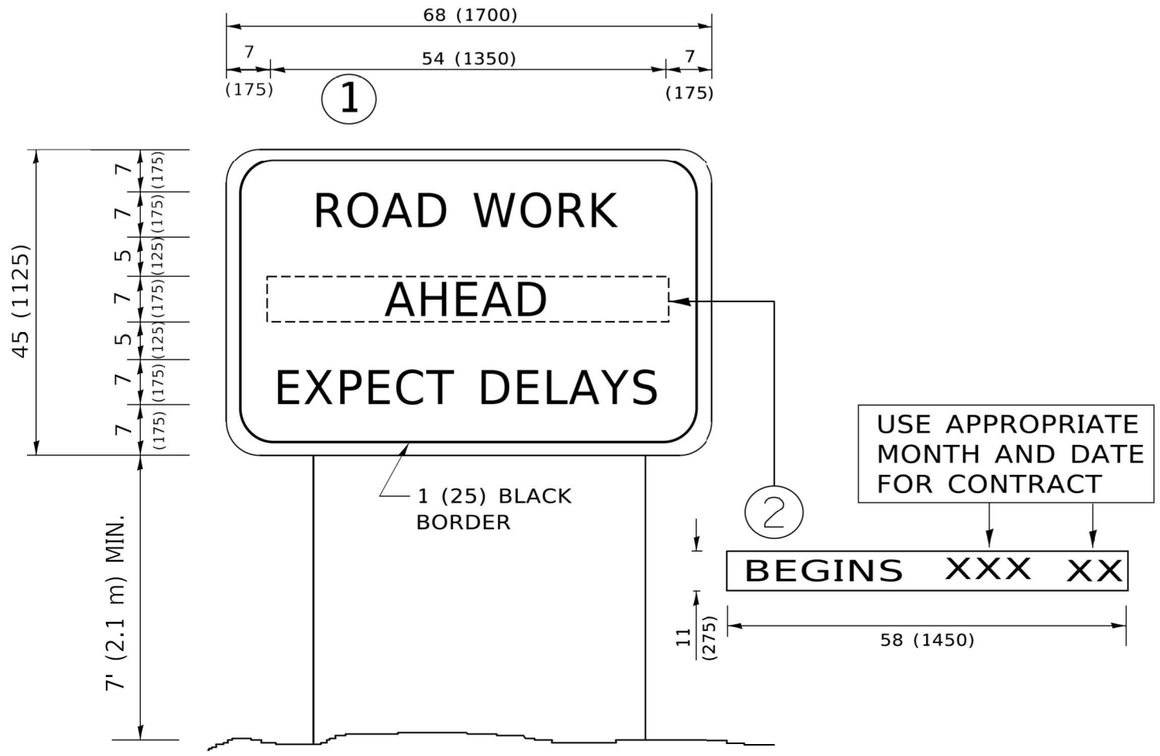

NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN (1) WITH INSTALLED PANEL (2) ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL (2) SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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PLOT DATE = 3/4/2019	DATE -	REVISED -	C. JUCIUS 01-31-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARTERIAL ROAD INFORMATION SIGN

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	752
	TC-22	CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			

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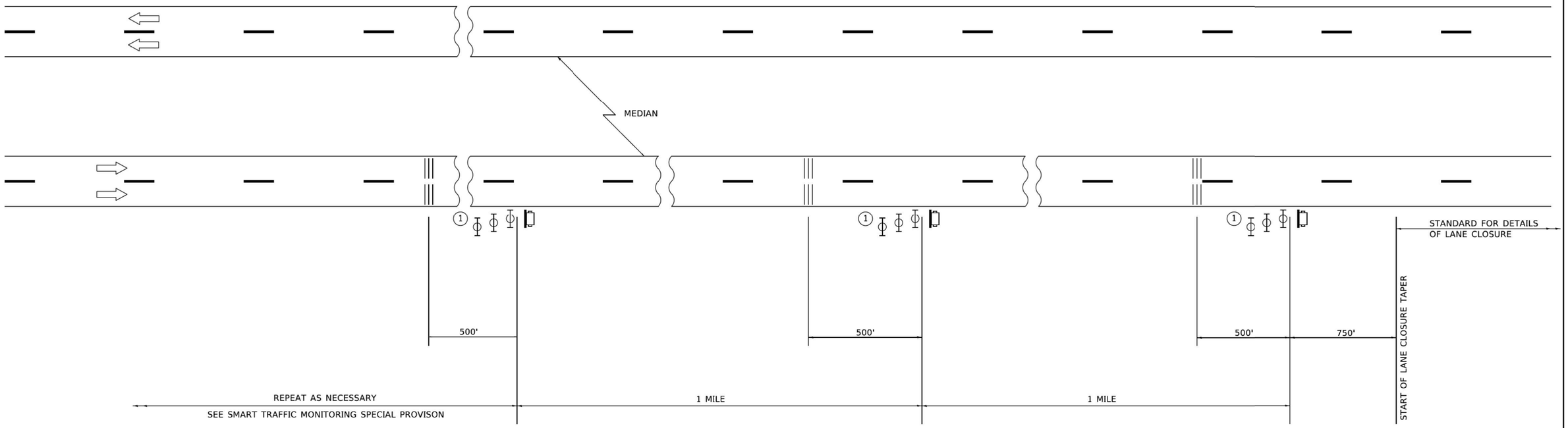


SYMBOLS

PORTABLE CHANGEABLE MESSAGE SIGN

TEMPORARY RUMBLE STRIP (SPECIAL)

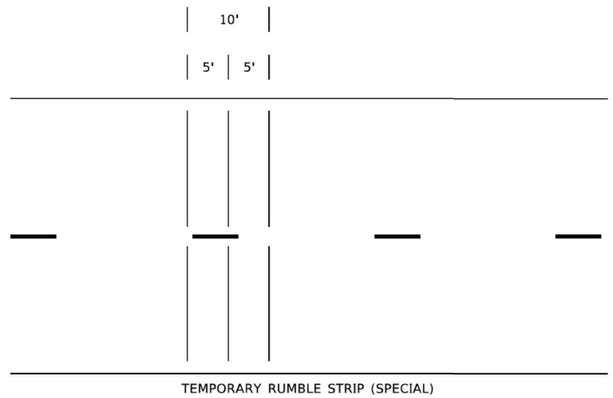
TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES WITH MONODIRECTIONAL FLASHING LIGHT.

(1) THREE TYPE II BARRICADES, DRUMS, OR VERTICAL BARRICADES AT 25' (8 m) CENTERS.

GENERAL NOTE:

THIS DETAIL IS TO BE USED IN CONJUNCTION WITH SMART TRAFFIC MONITORING SYSTEM AND TEMPORARY RUMBLE STRIP (SPECIAL) SPECIAL PROVISIONS.

TRAFFIC CONTROL SHOWN IN THIS DETAIL IS TO BE PROVIDED IN ADDITION TO ANY TEMPORARY TRAFFIC CONTROL SHOWN ON STATE STANDARDS, DISTRICT DETAILS, AND MAINTENANCE OF TRAFFIC PLANS.



TEMPORARY RUMBLE STRIP (SPECIAL)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SMART TRAFFIC MONITORING SYSTEM
TYPICAL LAYOUT

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	TC-33	CONTRACT NO. 62W87		
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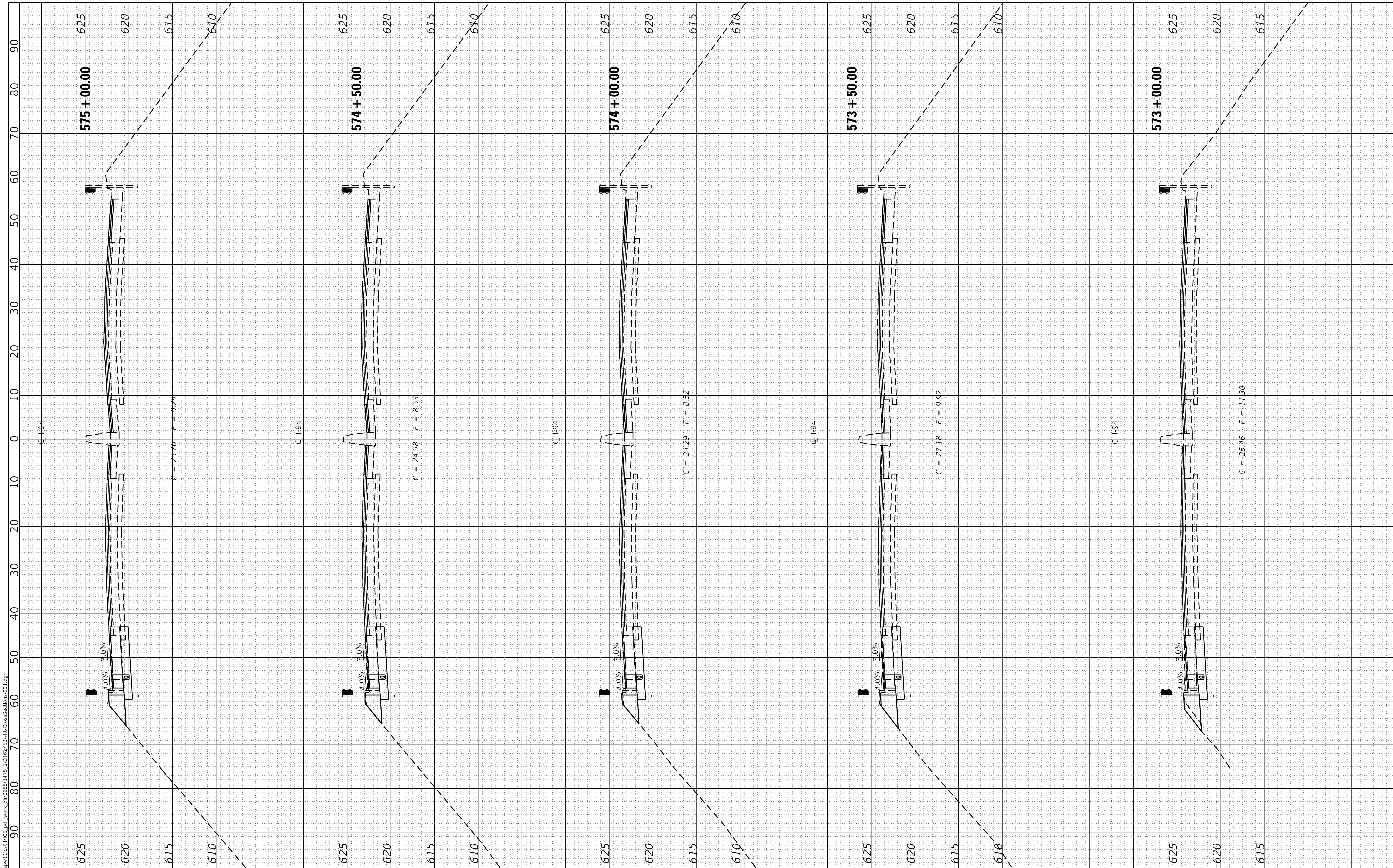

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ORIGINAL SURVEY: NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED — BY — DATE

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PLOT DATE = 1/24/2025	DATE - 12/9/2024	REVISED -	

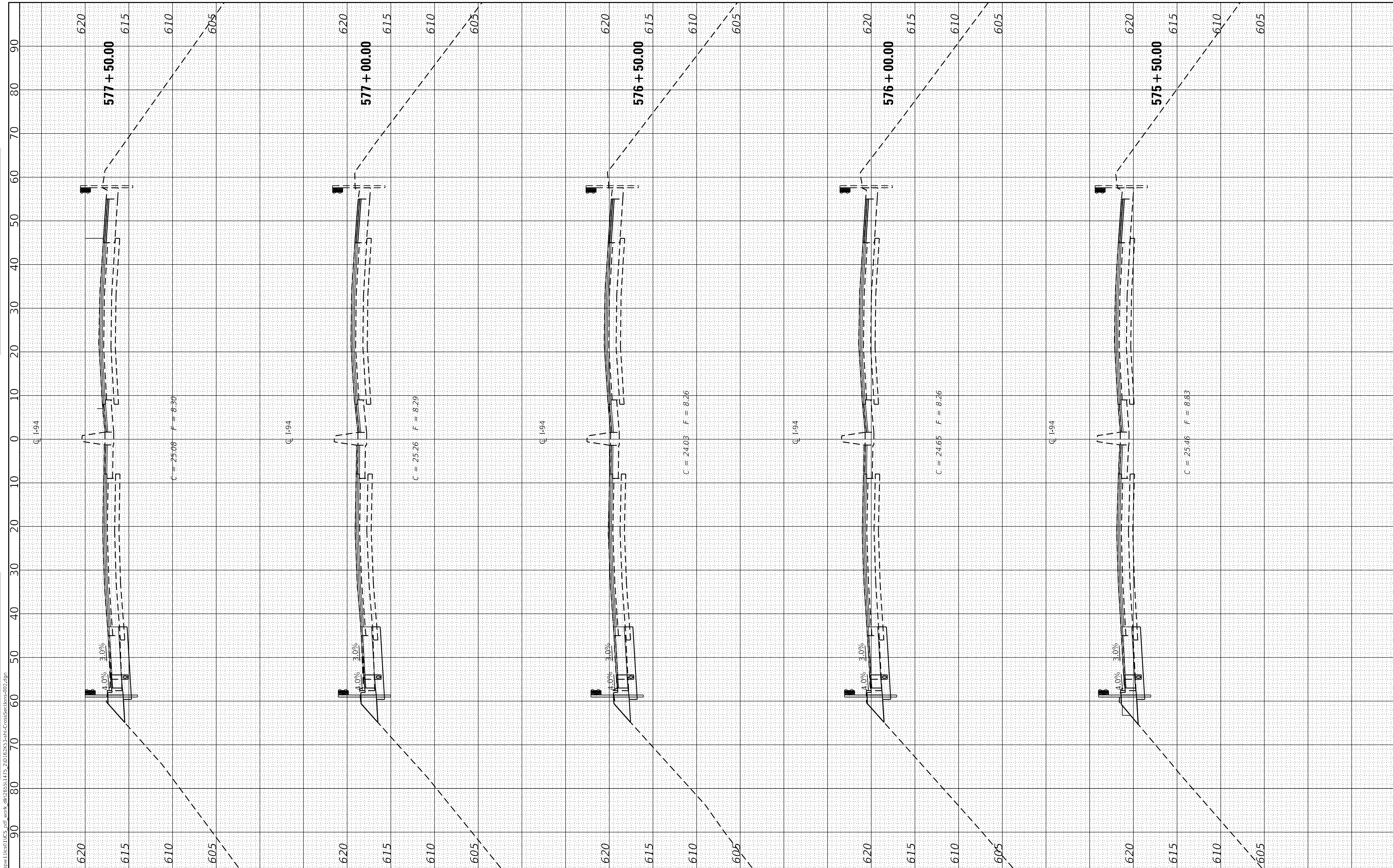
CROSS SECTIONS
WB US–6 TO WB I–94

SCALE: | SHEET 1 OF 8 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	754

CONTRACT NO. 62W87

ILLINOIS FED. AID PROJECT



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NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

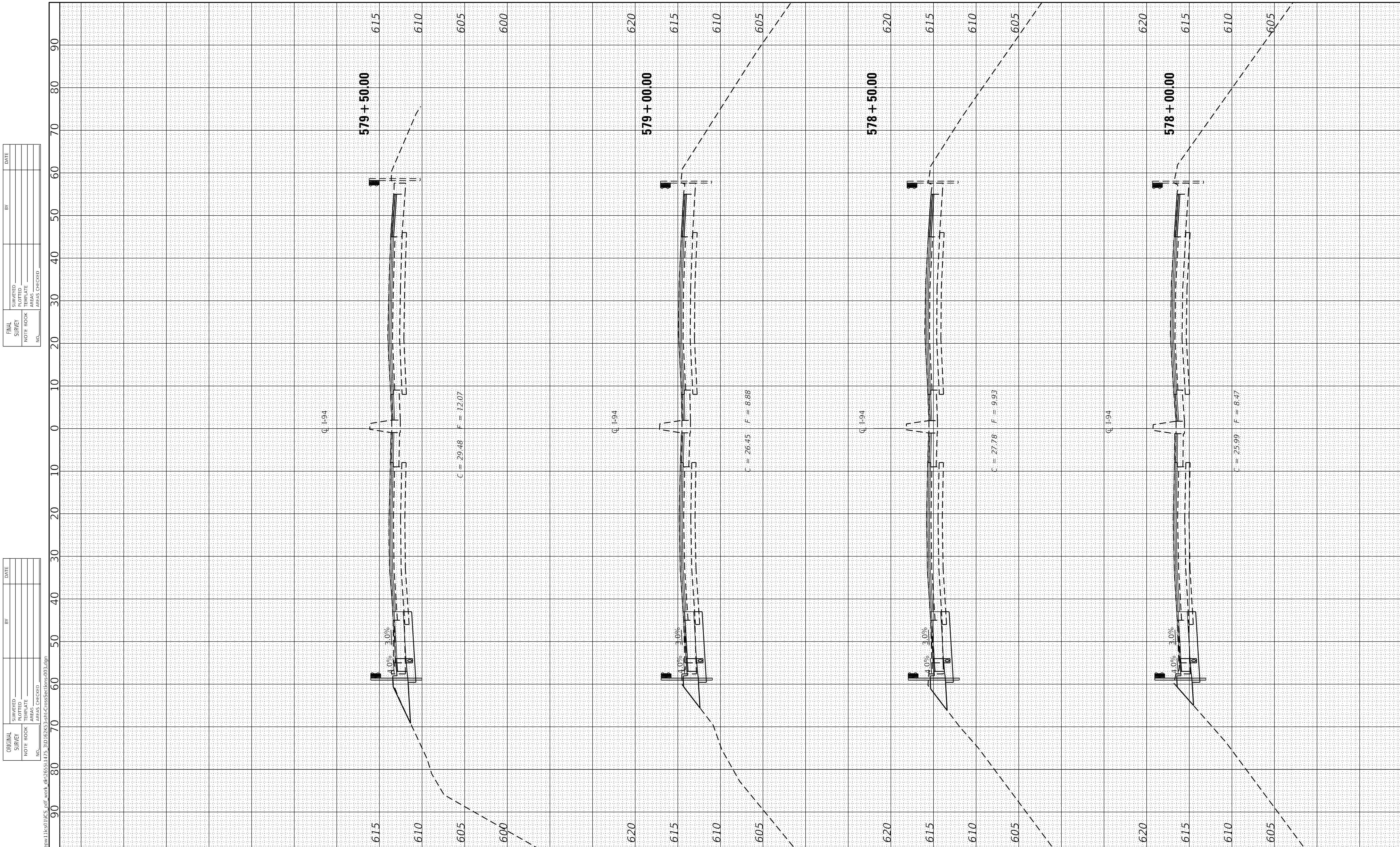
CROSS SECTIONS
WB US–6 TO WB I–94

SCALE: SHEET 2 OF 8 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	755

CONTRACT NO. 62W87

ILLINOIS FED. AID PROJECT



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
WB US–6 TO WB I–94

SCALE: SHEET 3 OF 8 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	756
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		

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	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

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NOTE BOOK	SURVEYED		
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	TEMPLATE		
	AREAS		
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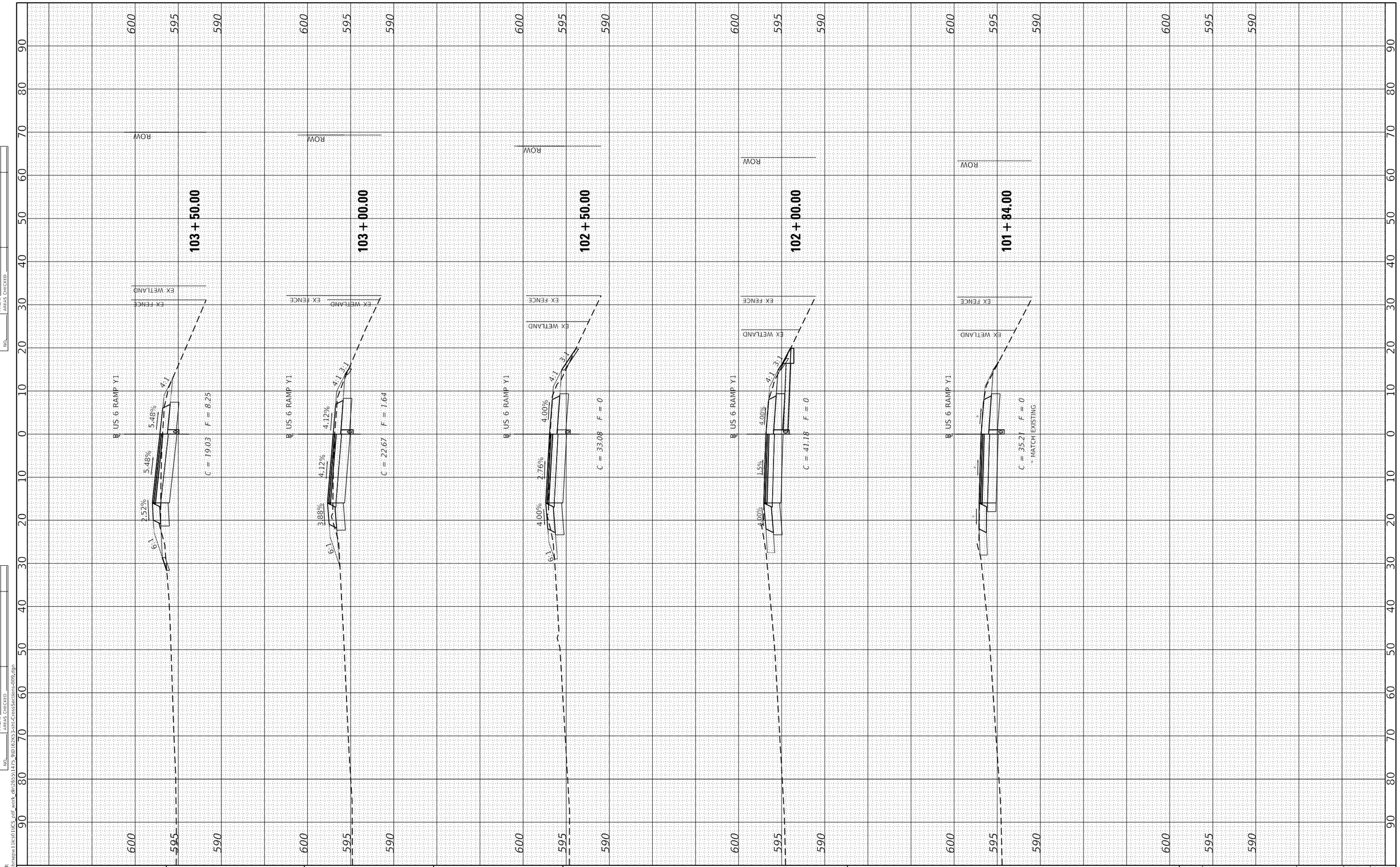

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CROSS SECTIONS
WB US-6 TO WB I-94

SCALE: | SHEET 4 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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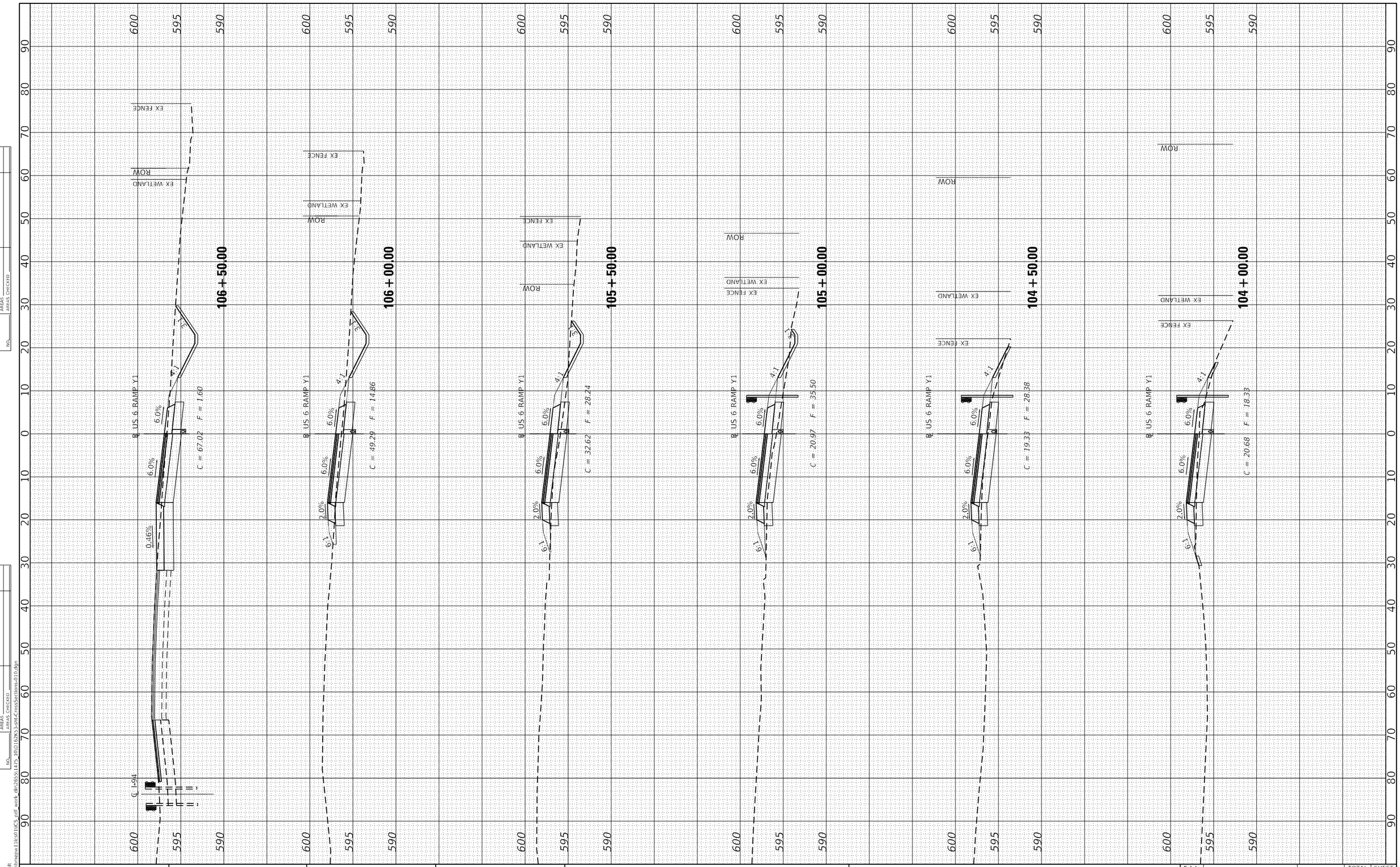

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	AREAS		
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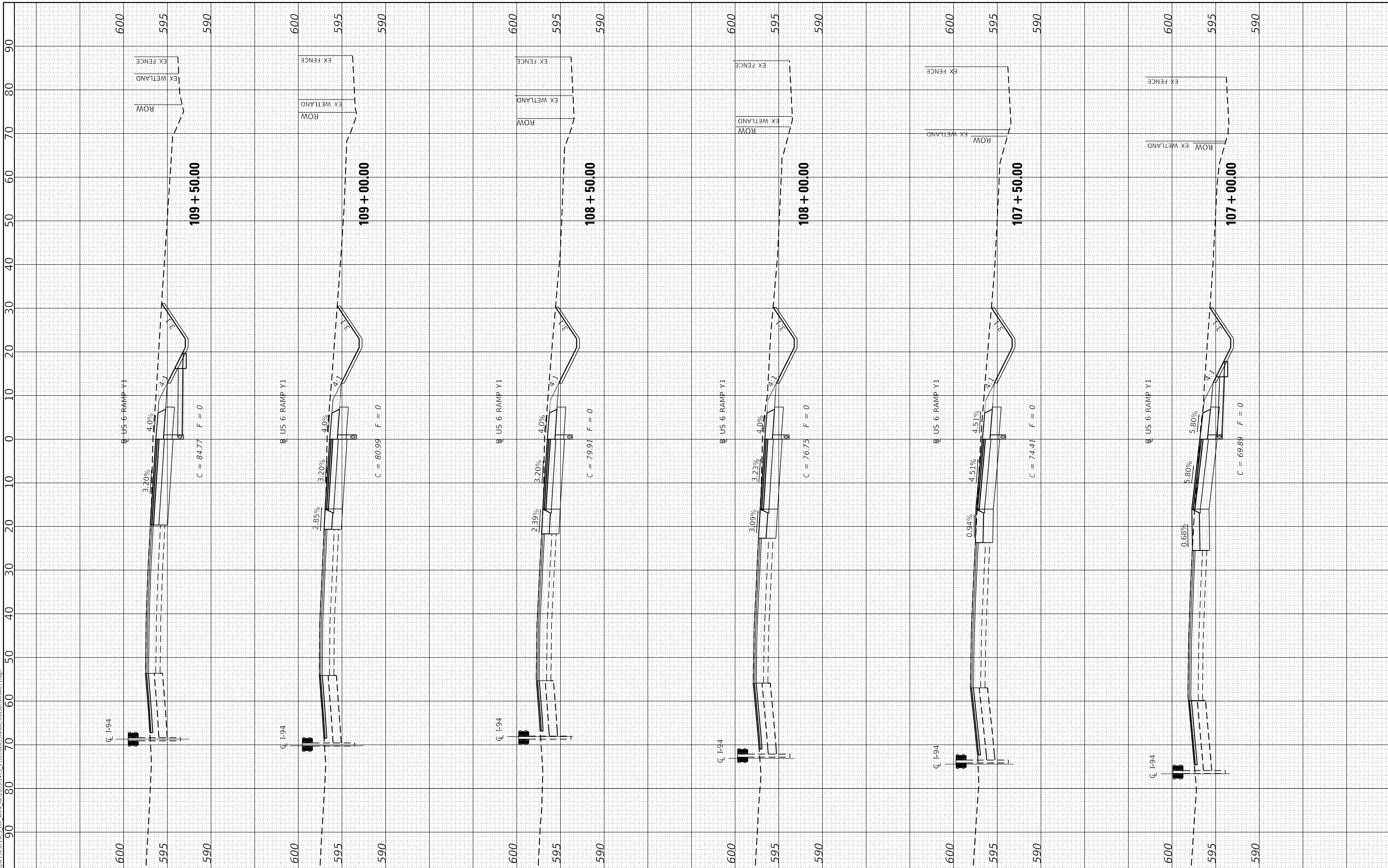
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
WB US-6 TO WB I-94

SCALE: | SHEET 5 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	758
		CONTRACT NO. 62W87		
	ILLINOIS FED. AID PROJECT			



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
WB US–6 TO WB I–94

SCALE: | SHEET 6 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	759
		CONTRACT NO. 62W87		
		ILLINOIS	FED. AID PROJECT	

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	AREAS		
	AREAS CHECKED		

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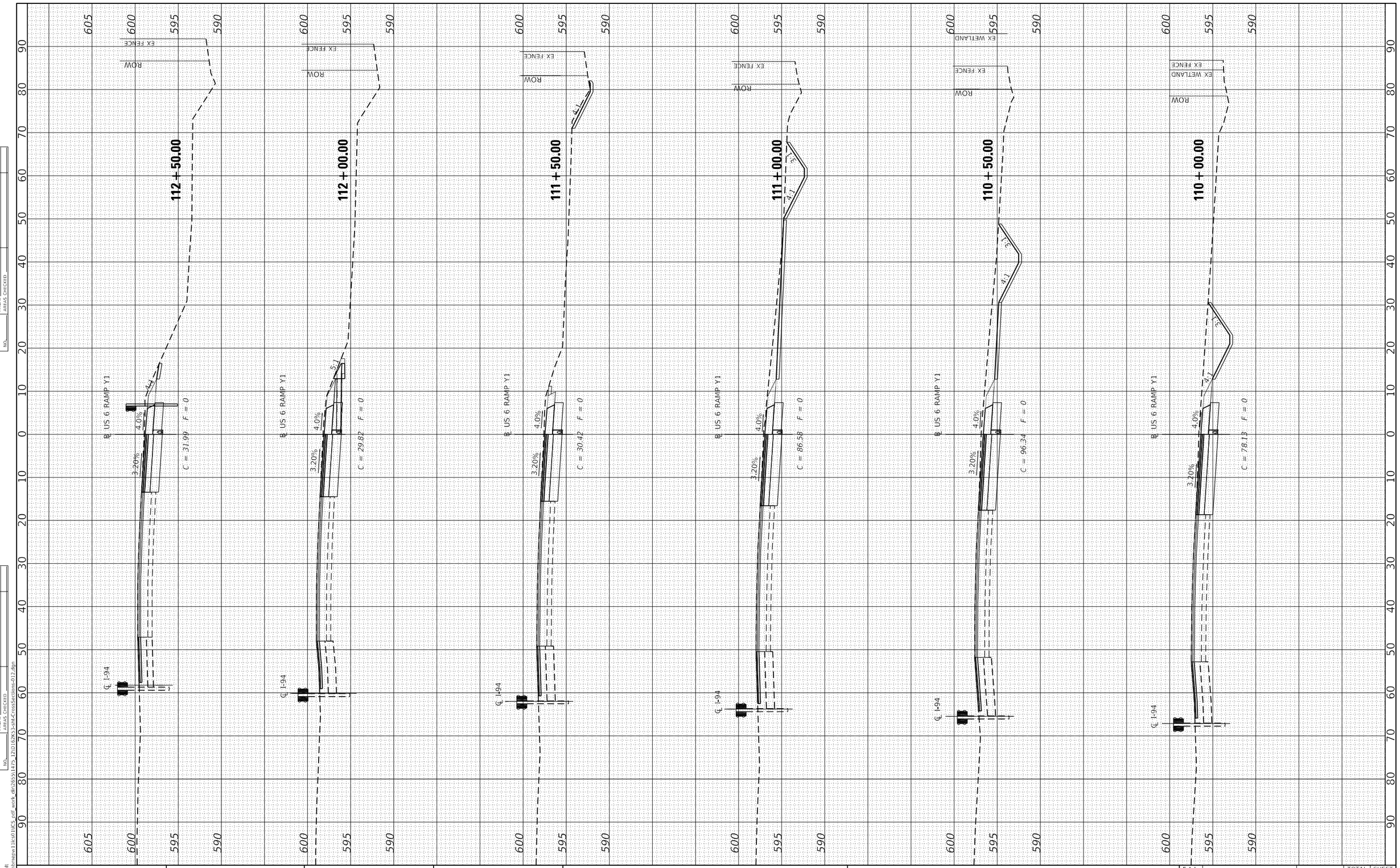

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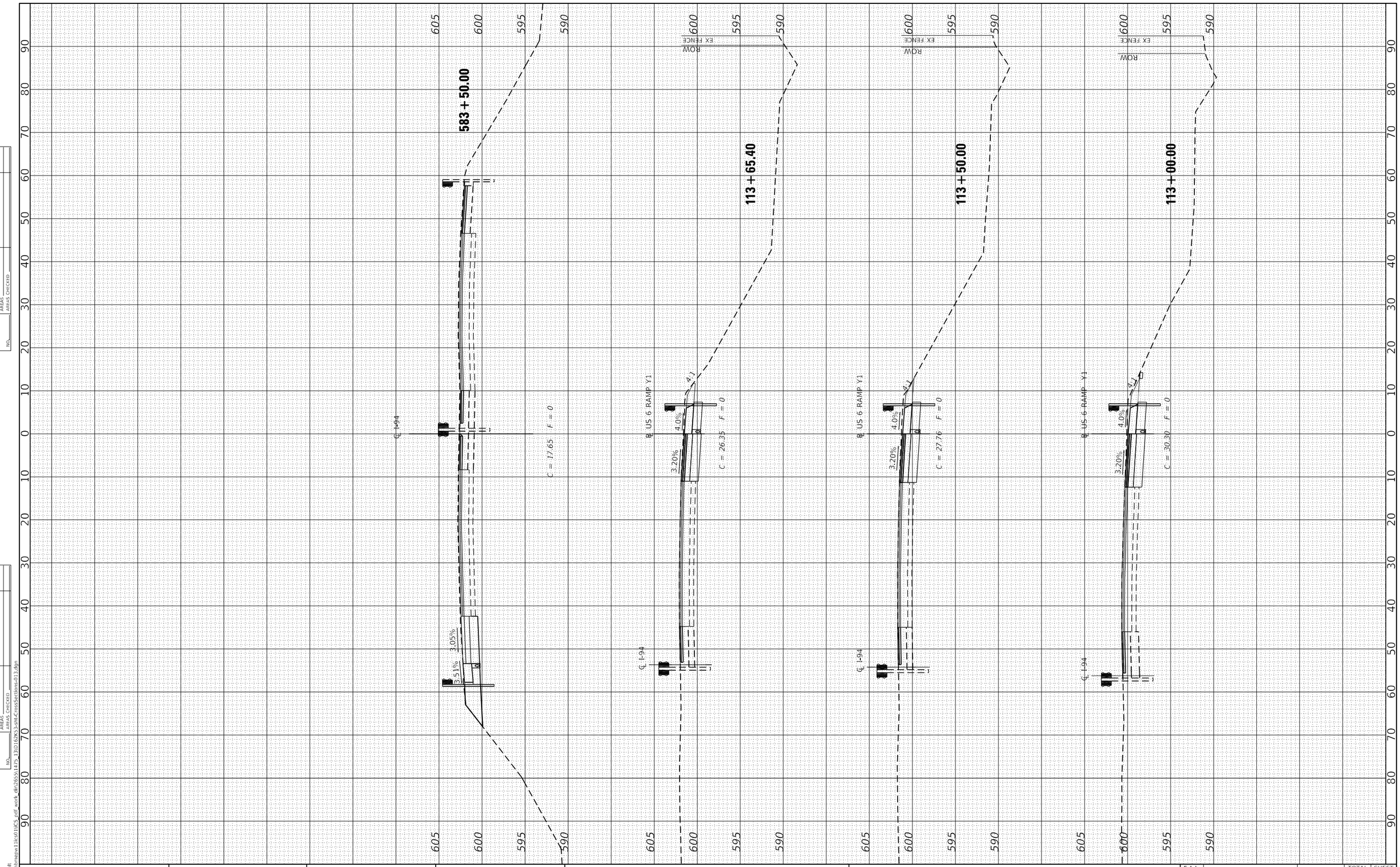
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
WB US-6 TO WB I-94

SCALE: | SHEET 7 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	760
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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HBM
ENGINEERING GROUP, LLC

USER NAME = hbmepw11ics01$	DESIGNED - ADS	REVISED -
	DRAWN - ADS	REVISED -
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PLOT DATE = 1/24/2025	DATE - 12/9/2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS
WB US–6 TO WB I–94

SCALE: | SHEET 8 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	(42-B-11-1) BR, BJR 24	COOK	761	761
		CONTRACT NO. 62W87		
	ILLINOIS	FED. AID PROJECT		