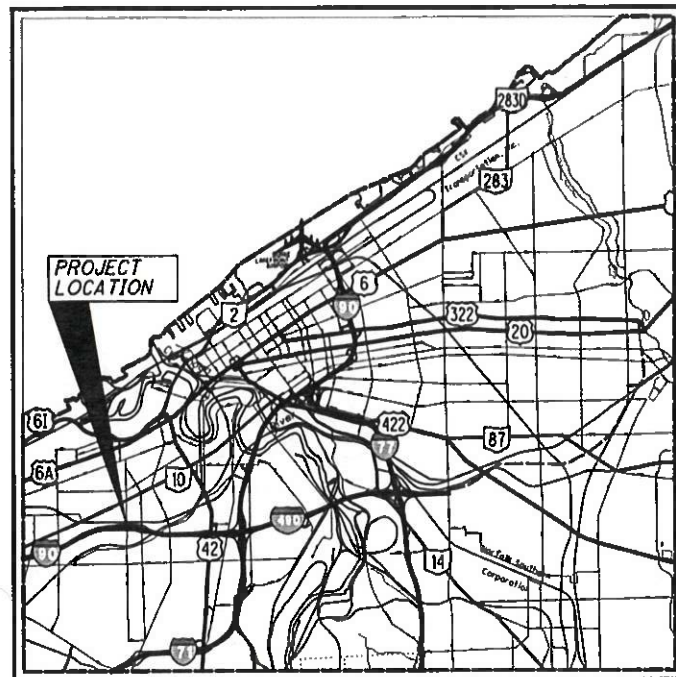


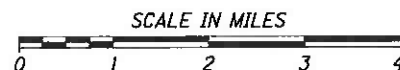
44:08 AM sriffle

CUY - IR 90-13.45 Superstructure  
200228 PID - 105792 Co  
Dist 12 4/23/2020 www

**Contract Proposal Available @  
www.contracts.dot.state.oh.us/home**



LATITUDE: 41°28'31" LONGITUDE: 81°42'59"



PORTION TO BE IMPROVED	
INTERSTATE HIGHWAY	
FEDERAL ROUTES	
STATE ROUTES	
COUNTY & TOWNSHIP ROADS	
OTHER ROADS	

CURRENT ADT (2020).....	129,000
DESIGN YEAR ADT (2040).....	163,000
DESIGN HOURLY VOLUME (2040).....	14,500
DIRECTIONAL DISTRIBUTION.....	61%
TRUCKS (24 HOUR B&C).....	3%
DESIGN SPEED.....	70 MPH
LEGAL SPEED.....	60 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
01 INTERSTATE (URBAN)	
NHS PROJECT.....	YES

NONE REQUIRED



PLAN PREPARED BY:



**ms consultants, inc.**  
4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206

TITLE SHEET	1
TYPICAL SECTIONS	2-7
GENERAL NOTES	8-9
MAINTENANCE OF TRAFFIC	10-32
GENERAL SUMMARY	33-35
ROADWAY SUBSUMMARIES	36-37
DRAINAGE SUBSUMMARY	38
PLAN - I-90	39
PLAN AND PROFILE - W. 44TH ST.	40
CROSS SECTIONS - I-90	41-45
CROSS SECTIONS - W. 44TH ST.	46-48

INTERSECTION DETAILS	49-50
CPP POWER AND WATER WORK	51-72
I-90 MEDIAN BARRIER DETAILS	73-74
MISCELLANEOUS DETAILS	75-83
TRAFFIC CONTROL	84-98
LIGHTING PLAN	99-105
STRUCTURES OVER 20' SPAN:	
BRIDGE NO. CUY-90-1345	106-135

CURRENT ADT (2020).....	9,200
DESIGN YEAR ADT (2040).....	11,600
DESIGN HOURLY VOLUME (2040).....	1,000
DIRECTIONAL DISTRIBUTION.....	100%
TRUCKS (24 HOUR B&C).....	7%
DESIGN SPEED.....	30 MPH
LEGAL SPEED.....	25 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	
04 MINOR ARTERIAL (URBAN)	
NHS PROJECT.....	NO

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS	
BP-2.1	7/17/15	RM-4.6	7/19/13	HL-30.41	1/19/18	TC-51.12	1/15/16	MT-101.75	7/15/16	800-2019	1/17/20		
BP-2.2	7/18/08			HL-50.21	1/18/19	TC-52.10	10/18/13	MT-101.90	7/21/17	805	7/16/10		
BP-3.1	10/18/19	I-2.1	1/15/16	HL-50.11	1/16/15	TC-52.20	7/20/18	MT-102.10	1/18/19	813	10/19/18		
BP-5.1	1/18/19	DM-1.1	7/21/17	HL-60.11	7/21/17	TC-65.10	1/17/14	MT-105.10	7/19/13	821	4/20/12		
BP-9.1	1/18/19	DM-1.2	1/18/13	TC-7.65	7/20/18	TC-65.11	7/21/17			832	10/19/18		
		DM-4.4	1/15/16	TC-21.10	7/19/19	TC-71.10	1/19/18	A-1-69	7/19/02	844	4/20/18		
F-1.1	7/19/13			TC-21.50	7/15/16	TC-83.20	7/21/17	AS-1-15	7/17/15	902	7/19/19		
F-3.1	7/19/13	HL-10.11	7/19/19	TC-22.20	1/17/14	TC-85.10	1/18/19	AS-2-15	1/18/19	903	7/20/12		
MGS-1.1	1/19/18	HL-10.12	1/20/17	TC-41.10	7/19/13			BR-2-15	7/17/15	913	4/21/17		
MGS-2.1	1/19/18	HL-10.13	7/20/18	TC-41.20	10/18/13	MT-95.40	1/20/17	EXJ-4-87	1/19/18	921	4/20/12		
MGS-3.1	1/19/18	HL-20.11	4/21/17	TC-41.30	10/18/13	MT-95.45	4/19/19	GSD-1-19	1/18/19				
MGS-3.2	1/18/13	HL-20.14	1/18/19	TC-41.40	10/18/13	MT-99.20	4/19/19	HL-20.13	1/19/18				
MGS-4.3	1/18/13	HL-20.24	1/19/18	TC-41.50	10/18/13	MT-99.30	1/19/18	VPF-1-90	7/20/18				
RM-4.2	10/24/19	HL-30.11	7/19/19	TC-42.10	10/18/13	MT-99.60	7/15/16						
RM-4.3	7/18/14	HL-30.22	1/17/14	TC-42.20	10/18/13	MT-101.60	1/20/17						
RM-4.4	7/19/19	HL-30.31	1/17/14	TC-51.11	1/15/16	MT-101.70	7/20/18						

REPLACEMENT OF THE EXISTING DECK AND BEAMS, REPAIR THE STRUCTURE AND UPDATE LIGHTING FOR BRIDGE NO. CUY-90-1345 CARRYING WEST 44TH STREET OVER I-90. TIE TO THE EXISTING GROUND ON EITHER SIDE OF THE BRIDGE. APPROXIMATELY 300 FT. ADDITIONALLY, REPLACE THE MEDIAN BARRIER AND INSTALL NEW TRUSS SIGNS ALONG EX. I-90. EX. UTILITIES WILL ALSO BE RELOCATED.

PROJECT EARTH DISTURBED AREA: 0.53 ACRES  
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES  
NOTICE OF INTENT EARTH DISTURBED AREA: N/A (NOI NOT REQUIRED)

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

## CONFORMED SET

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE SIDE ROAD AS DESCRIBED ON SHEETS 14-16 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED \_\_\_\_\_  
DATE 1/17/20 DISTRICT DEPUTY DIRECTOR

APPROVED [Signature]  
DATE 2/1/20 DIRECTOR, DEPARTMENT OF  
TRANSPORTATION

**E190252**

PID NO.  
**105792**

CONSTRUCTION PROJECT NO.

**NONE**

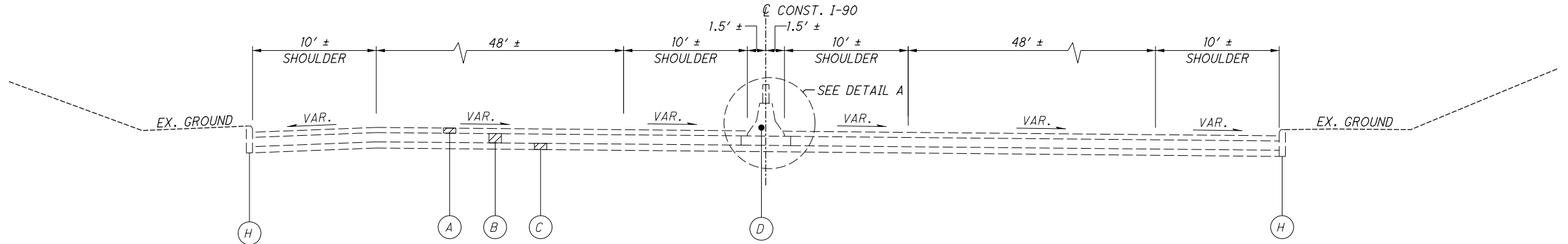
**CUY-90-13.45**

1  
135

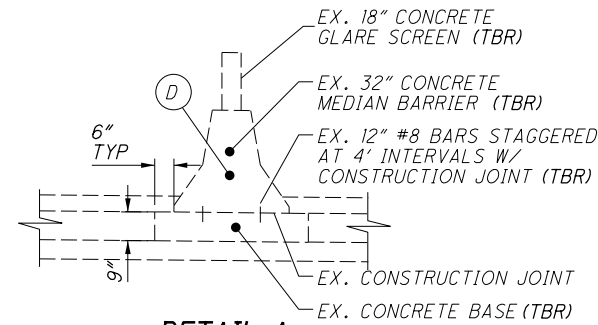
\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GY001.dgn Sheet 12/23/2019 9:44:09 AM srlf file

EXISTING LEGEND

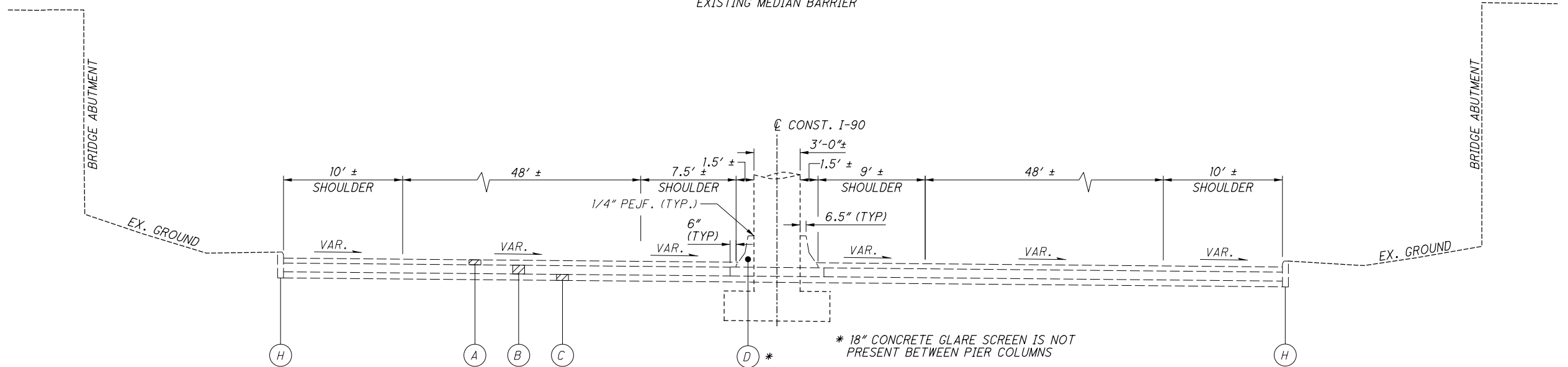
- (A) EXISTING 5" ASPHALT CONCRETE (OVERLAY)
- (B) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 6" SUBBASE
- (D) EXISTING 32" BARRIER WITH 18" CONCRETE GLARE SCREEN
- (E) EXISTING 3" ASPHALT CONCRETE (OVERLAY)
- (F) EXISTING GUARDRAIL
- (G) EXISTING 6" AGGREGATE BASE
- (H) EXISTING CONCRETE CURB
- (I) EXISTING CONCRETE SIDEWALK



EXISTING ROADWAY SECTION - I-90



DETAIL A  
EXISTING MEDIAN BARRIER



EXISTING ROADWAY SECTION - I-90 AT BRIDGE PIERS

(DND) = DO NOT DISTURB  
(TBR) = TO BE REMOVED  
(PEJF) = PREFORMED EXPANSION JOINT FILLER



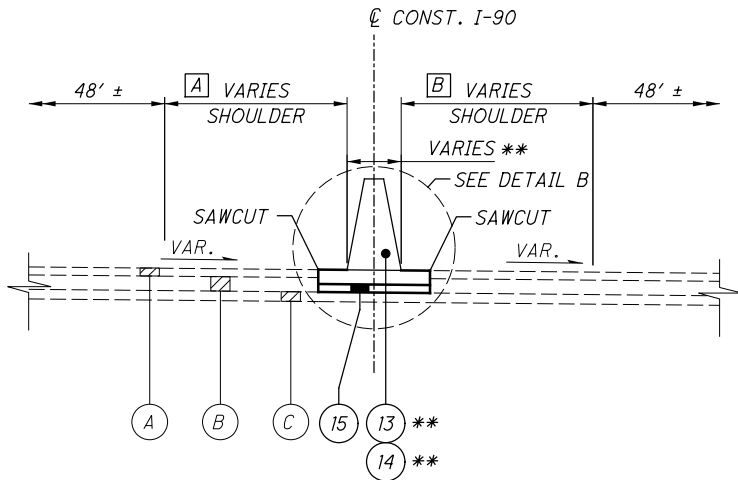
\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GY002.dgn Sheet 12/23/2019 9:44:10 AM sriffle

EXISTING LEGEND

- (A) EXISTING 5" ASPHALT CONCRETE (OVERLAY)
- (B) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 6" SUBBASE
- (D) EXISTING 32" BARRIER WITH 18" CONCRETE GLARE SCREEN
- (E) EXISTING 3" ASPHALT CONCRETE (OVERLAY)
- (F) EXISTING GUARDRAIL
- (G) EXISTING 6" AGGREGATE BASE
- (H) EXISTING CONCRETE CURB
- (I) EXISTING CONCRETE SIDEWALK

PROPOSED LEGEND

- (1) ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) AS PER PLAN, PG64-22
- (2) ITEM 407 - TACK COAT (0.06 GAL/SY)
- (3) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (4) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=17")
- (5) ITEM 606 - GUARDRAIL, TYPE MGS
- (6) ITEM 608 - 4" CONCRETE WALK
- (7) ITEM 305 - 9" CONCRETE BASE, AS PER PLAN
- (8) ITEM 304 - 6" AGGREGATE BASE
- (9) ITEM 204 - SUBGRADE COMPACTION
- (10) ITEM 609 - CURB, TYPE 6
- (11) ITEM 608 - VAR. DEPTH CONCRETE WALK (SEE APPROACH SLAB PLAN)
- (12) ITEM 659 - SEEDING AND MULCHING
- (13) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN \*\*
- (14) ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, TYPE B1, REINFORCED \*\*
- (15) ITEM 304 - 5"± AGGREGATE BASE
- (16) ITEM 441 - VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (17) ITEM 441 - 6 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (18) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1 1/4")
- (19) ITEM 407 - TACK COAT (0.09 GAL/SY)

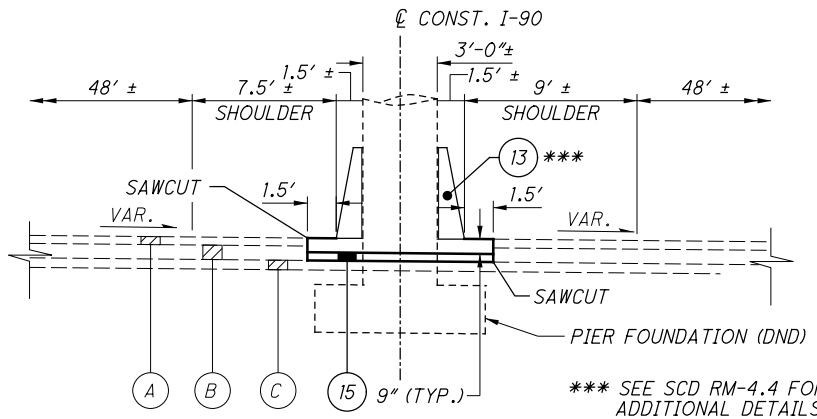


MEDIAN BARRIER REPLACEMENT SECTION - I-90

STA. 879+65.00 TO STA. 881+28.9±  
STA. 881+31.9± TO STA. 881+92.00  
STA. 882+39.00 TO STA. 883+75.00

(A) VARIES FROM STA. 879+65.00 TO STA. 881+92.00  
MIN. 7.5' ±, MAX. 10.0' ±

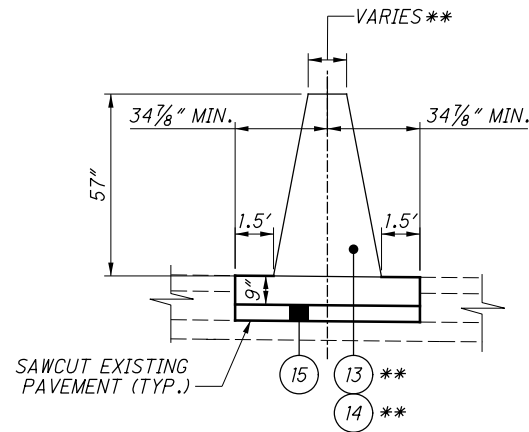
VARIES FROM STA. 882+39.00 TO STA. 883+75.00  
MIN. 7.5' ±, MAX. 9.0' ±



MEDIAN BARRIER REPLACEMENT SECTION - I-90 AT BRIDGE PIERS

STA. 881+92.00 TO STA. 882+39.00

(DND) = DO NOT DISTURB  
(TBR) = TO BE REMOVED  
(PEJF) = PREFORMED EXPANSION JOINT FILLER



DETAIL B  
PROPOSED CONCRETE BARRIER

(B) VARIES FROM STA. 879+65.00 TO STA. 881+92.00  
MIN. 9.0' ±, MAX. 10.5' ±

VARIES FROM STA. 882+39.00 TO STA. 883+75.00  
MIN. 9.0' ±, MAX. 10.5' ±

ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN

CONTRACTOR SHALL REMOVE THE EXISTING 32" CONCRETE MEDIAN BARRIER, 18" CONCRETE GLARE SCREEN, 9" CONCRETE BASE, AND EXISTING DOWELING SHOWN IN DETAIL A. THE REMOVAL OF THE EXISTING 9" CONCRETE WILL BE PAID FOR AS ITEM 202 - CONCRETE BASE REMOVED, AS PER PLAN.

ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING TYPE B1 CONCRETE BARRIER ACCORDING TO THE CMS AND STANDARD CONSTRUCTION DRAWING RM-4.3 WITH THE FOLLOWING MODIFICATIONS:

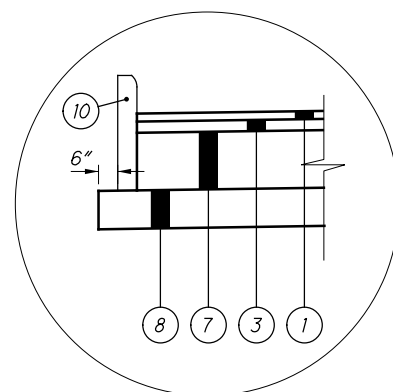
1. PROVIDE A 9" THICK CONCRETE FOUNDATION WITH AN APPROXIMATE WIDTH AS SHOWN ON THE TYPICAL SECTIONS.

2. INSTALL DOWEL BARS BETWEEN THE CONCRETE FOUNDATION AND THE CONCRETE BARRIER. THE SIZE, LENGTH, AND PLACEMENT OF THE DOWEL BARS SHALL FOLLOW THE DOWELING DETAILS ON SHEET 2 OF RM-4.3.

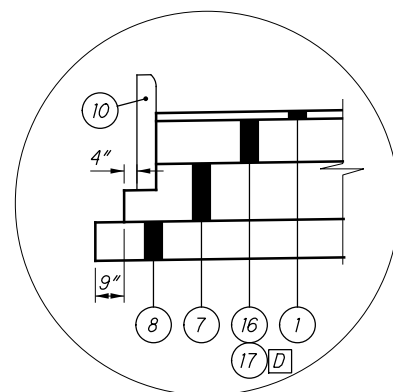
PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER FOOT FOR ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN, AND SHALL INCLUDE ALL MATERIALS, LABOR, DOWEL HOLES, DOWEL BARS, AND 9" THICK CONCRETE FOUNDATION.

\*\* SEE SHEETS 73 & 74 FOR DETAILS SHOWING THE VARYING WIDTHS AND HEIGHTS OF THE ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN.

- (A) EXISTING 5" ASPHALT CONCRETE (OVERLAY)
- (B) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 6" SUBBASE
- (D) EXISTING 32" BARRIER WITH 18" CONCRETE GLARE SCREEN
- (E) EXISTING 3" ASPHALT CONCRETE (OVERLAY)
- (F) EXISTING GUARDRAIL
- (G) EXISTING 6" AGGREGATE BASE
- (H) EXISTING CONCRETE CURB
- (I) EXISTING CONCRETE SIDEWALK



BASE AND SUBBASE STEP DETAIL  
CURB PLACED ON 304 LAYER



BASE AND SUBBASE STEP DETAIL  
CURB PLACED ON 305 LAYER

PROPOSED LEGEND

- (1) ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE,  
TYPE 1, (448) AS PER PLAN, PG64-22
- (2) ITEM 407 - TACK COAT (0.06 GAL/SY)
- (3) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (4) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=17")
- (5) ITEM 606 - GUARDRAIL, TYPE MGS
- (6) ITEM 608 - 4" CONCRETE WALK
- (7) ITEM 305 - 9" CONCRETE BASE, AS PER PLAN
- (8) ITEM 304 - 6" AGGREGATE BASE
- (9) ITEM 204 - SUBGRADE COMPACTION
- (10) ITEM 609 - CURB, TYPE 6
- (11) ITEM 608 - VAR. DEPTH CONCRETE WALK (SEE APPROACH SLAB PLAN)
- (12) ITEM 659 - SEEDING AND MULCHING
- (13) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1,  
AS PER PLAN \*\*
- (14) ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, TYPE B1,  
REINFORCED \*\*
- (15) ITEM 304 - 5"± AGGREGATE BASE
- (16) ITEM 441 - VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE,  
TYPE 2, (448)
- (17) ITEM 441 - 6 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE,  
TYPE 2, (448)
- (18) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1 1/4")
- (19) ITEM 407 - TACK COAT (0.09 GAL/SY)

[A] VARIES FROM 32.23' AT STA. 44+16.67 TO 14.00' AT STA. 44+31.54  
VARIES FROM 14.00' AT STA. 47+06.50 TO 31.98' AT STA. 47+27.28

[B] VARIES FROM 42.77' AT STA. 44+17.13 TO 18.00' AT STA. 44+42.13  
VARIES FROM 18.00' AT STA. 46+91.37 TO 43.53' AT STA. 47+15.36

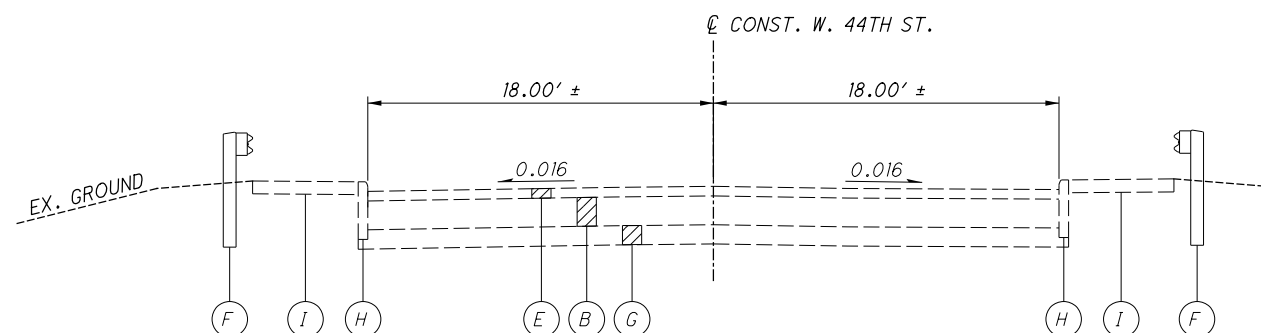
[C] SEE PLAN VIEW AND INTERSECTION DETAILS FOR GUARDRAIL LIMITING STATIONS AND LOCATIONS.

**D** SEE SHEET 107 FOR LIMITS OF VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE (ITEM 441).

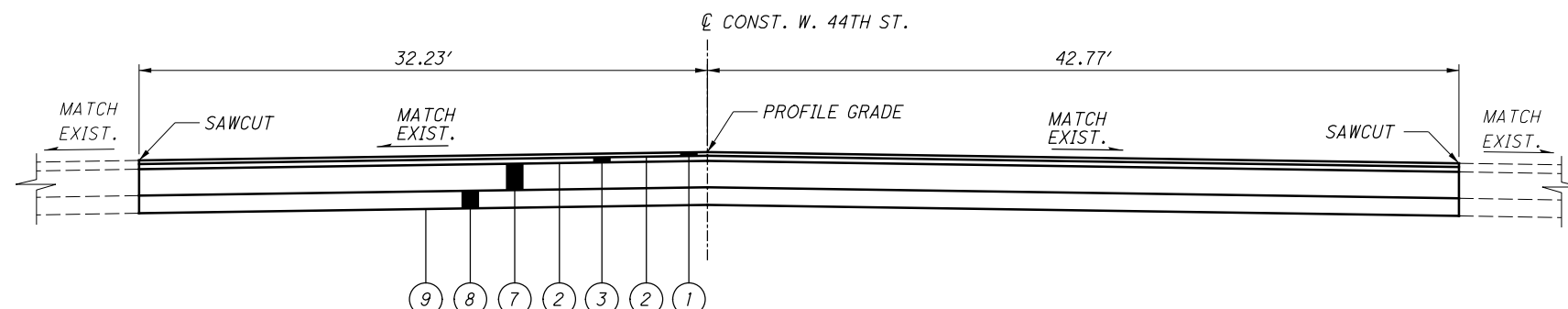
STA. 44+16.67 TO 44+21.05  
STA. 47+17.05 TO 47+27.50

VAR. DEPTH  
STA. 44+21.05 TO 44+40.80  
STA. 46+97.30 TO 47+17.05

6.75" DEPTH  
STA. 44+40.80 TO 44+46.05  
STA. 46+92.05 TO 46+97.30

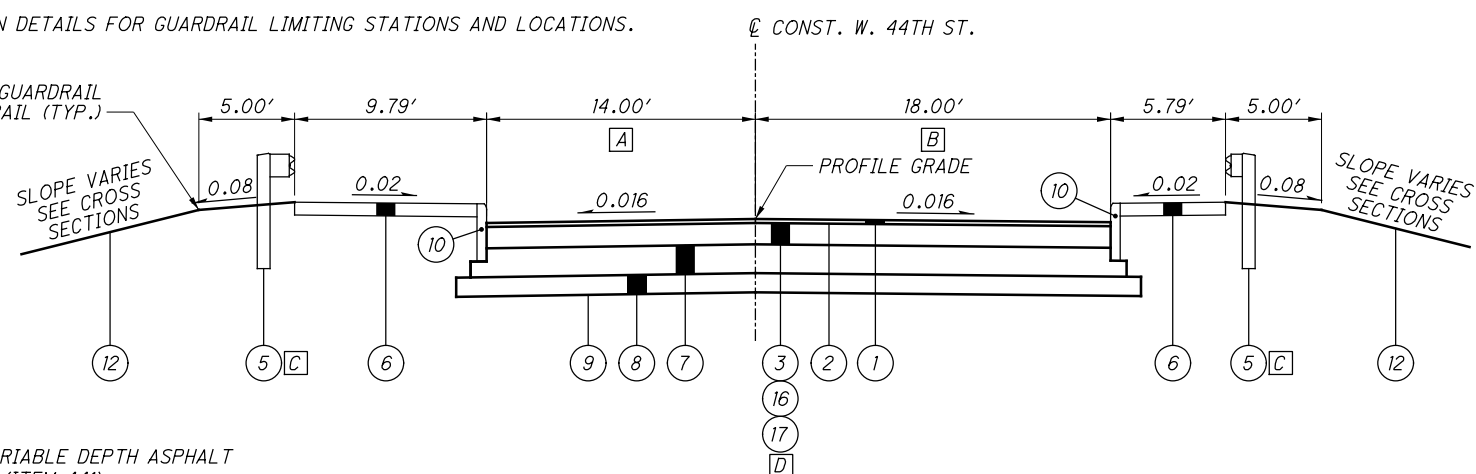


EXISTING ROADWAY SECTION - W. 44TH ST.



PROPOSED ROADWAY SECTION - W.44TH ST.

STA. 44+14.56 TO BEGIN RADIUS RETURNS  
STA. 44+14.56 TO STA. 44+16.67 (LEFT)  
STA. 44+14.56 TO STA. 44+17.13 (RIGHT)



PROPOSED ROADWAY SECTION - W. 44TH ST.

BEGIN RADIUS RETURNS TO STA. 44+46.05 (BEGIN APPROACH SLAB)  
STA. 46+92.05 (END APPROACH SLAB) TO END RADIUS RETURNS  
(SEE INTERSECTION DETAIL FOR ADDITIONAL INFORMATION)

LEFT SIDE  
STA. 44+16.67 TO STA. 44+46.05  
STA. 46+92.05 TO STA. 47+27.28

RIGHT SIDE  
STA. 44+17.13 TO STA. 44+46.05  
STA. 46+92.05 TO STA. 47+15.36

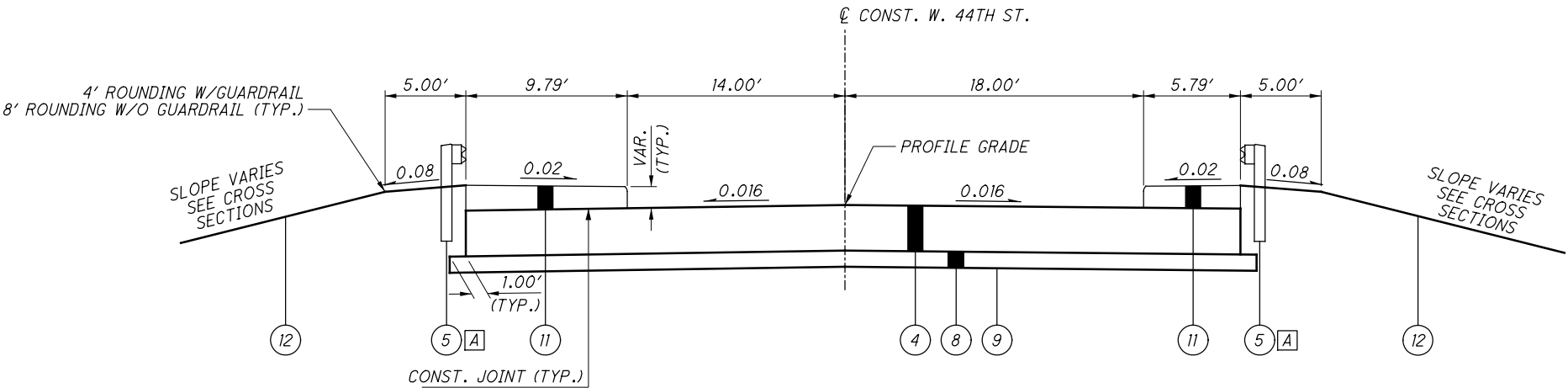
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GY004.dgn Sheet 12/23/2019 9:44:12 AM sriffle

EXISTING LEGEND

- (A) EXISTING 5" ASPHALT CONCRETE (OVERLAY)
- (B) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 6" SUBBASE
- (D) EXISTING 32" BARRIER WITH 18" CONCRETE GLARE SCREEN
- (E) EXISTING 3" ASPHALT CONCRETE (OVERLAY)
- (F) EXISTING GUARDRAIL
- (G) EXISTING 6" AGGREGATE BASE
- (H) EXISTING CONCRETE CURB
- (I) EXISTING CONCRETE SIDEWALK

PROPOSED LEGEND

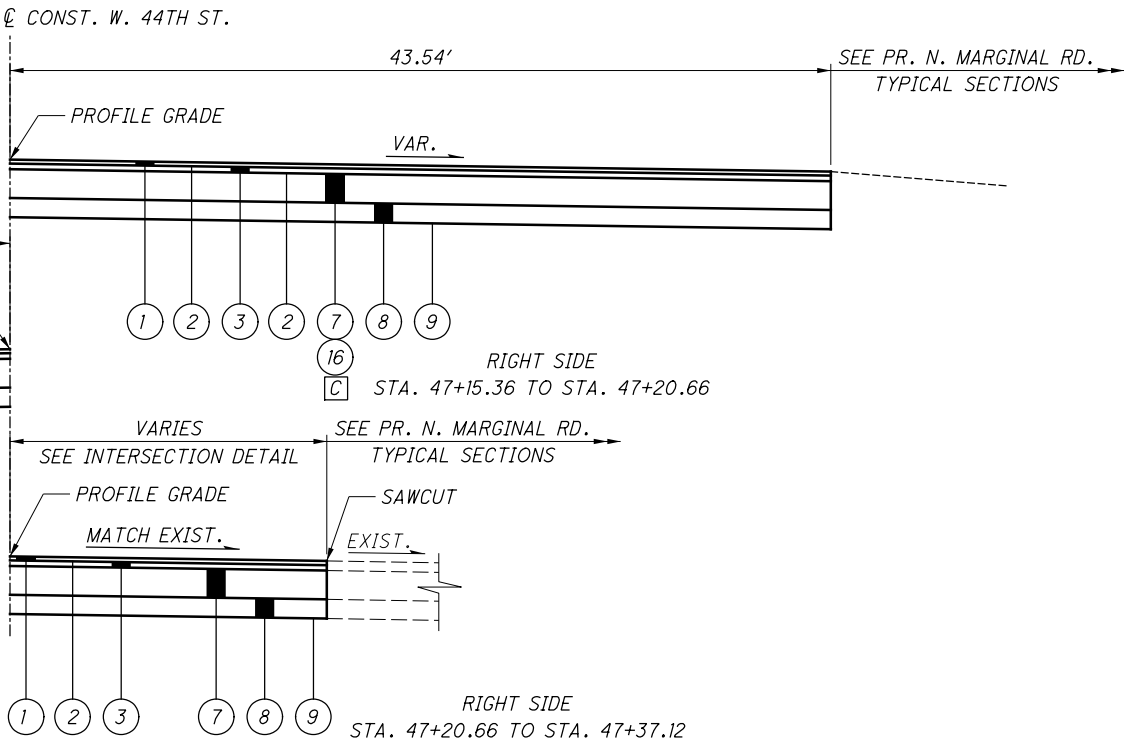
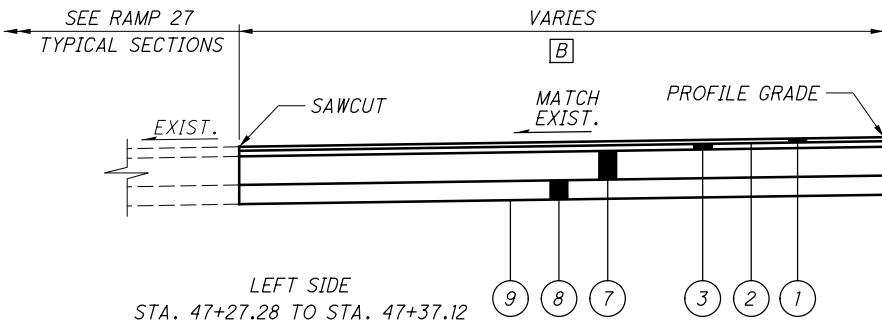
- (1) ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) AS PER PLAN, PG64-22
- (2) ITEM 407 - TACK COAT (0.06 GAL/SY)
- (3) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (4) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=17")
- (5) ITEM 606 - GUARDRAIL, TYPE MGS
- (6) ITEM 608 - 4" CONCRETE WALK
- (7) ITEM 305 - 9" CONCRETE BASE, AS PER PLAN
- (8) ITEM 304 - 6" AGGREGATE BASE
- (9) ITEM 204 - SUBGRADE COMPACTION
- (10) ITEM 609 - CURB, TYPE 6
- (11) ITEM 608 - VAR. DEPTH CONCRETE WALK (SEE APPROACH SLAB PLAN)
- (12) ITEM 659 - SEEDING AND MULCHING
- (13) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN \*\*
- (14) ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, TYPE B1, REINFORCED \*\*
- (15) ITEM 304 - 5"± AGGREGATE BASE
- (16) ITEM 441 - VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (17) ITEM 441 - 6 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (18) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=1 1/4")
- (19) ITEM 407 - TACK COAT (0.09 GAL/SY)



PROPOSED APPROACH SLAB SECTION - W. 44TH ST.

STA. 44+46.05 TO STA. 44+76.05  
STA. 46+62.05 TO STA. 46+92.05

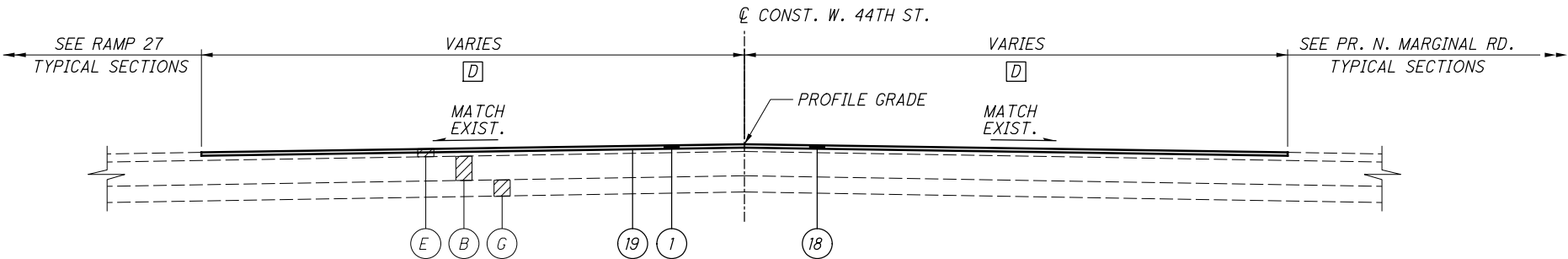
- (A) SEE PLAN VIEW AND INTERSECTION DETAILS FOR GUARDRAIL LIMITING STATIONS AND LOCATIONS.
- (B) 31.98' FROM STA. 47+27.28 TO STA. 47+29.50  
18.3'± FROM STA. 47+29.50 TO STA. 47+37.12
- (C) SEE SHEET 107 FOR LIMITS OF VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE (ITEM 441).  
VAR. DEPTH  
STA. 47+15.36 TO 47+17.05  
9" DEPTH  
STA. 47+17.05 TO 47+35.42



PROPOSED ROADWAY SECTION - W.44TH ST.

END RADIUS RETURNS TO STA. 47+37.12

- (D) SEE PLAN VIEW AND INTERSECTION DETAILS FOR RESURFACING LIMITING STATIONS AND WIDTHS.



PROPOSED ROADWAY SECTION - W. 44TH ST.

STA. 47+37.12 TO STA. 47+81.02



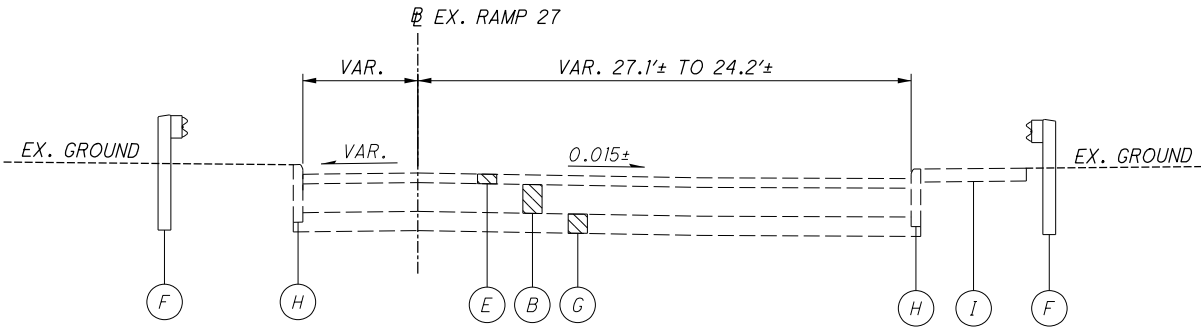
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GY005.dgn Sheet 12/23/2019 9:44:13 AM sriffle

EXISTING LEGEND

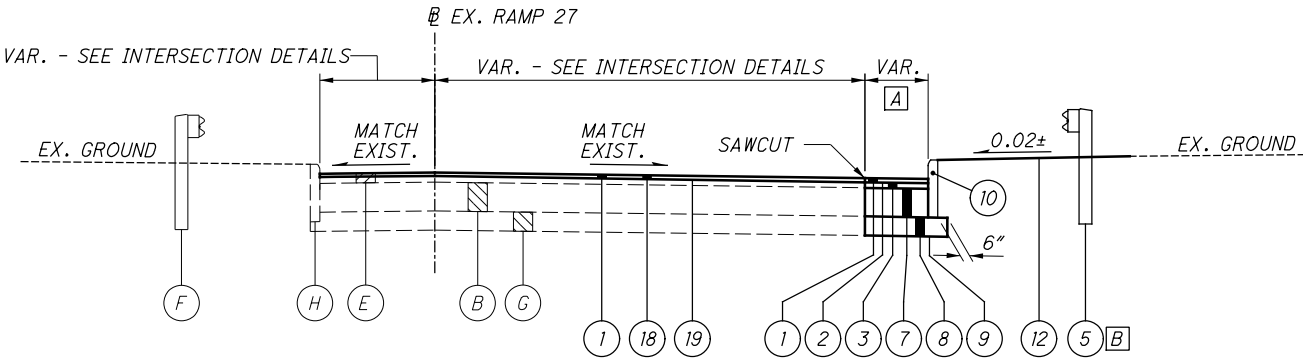
- (A) EXISTING 5" ASPHALT CONCRETE (OVERLAY)
- (B) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 6" SUBBASE
- (D) EXISTING 32" BARRIER WITH 18" CONCRETE GLARE SCREEN
- (E) EXISTING 3" ASPHALT CONCRETE (OVERLAY)
- (F) EXISTING GUARDRAIL
- (G) EXISTING 6" AGGREGATE BASE
- (H) EXISTING CONCRETE CURB
- (I) EXISTING CONCRETE SIDEWALK

PROPOSED LEGEND

- (1) ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) AS PER PLAN, PG64-22
- (2) ITEM 407 - TACK COAT (0.06 GAL/SY)
- (3) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (4) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=17")
- (5) ITEM 606 - GUARDRAIL, TYPE MGS
- (6) ITEM 608 - 4" CONCRETE WALK
- (7) ITEM 305 - 9" CONCRETE BASE, AS PER PLAN
- (8) ITEM 304 - 6" AGGREGATE BASE
- (9) ITEM 204 - SUBGRADE COMPACTION
- (10) ITEM 609 - CURB, TYPE 6
- (11) ITEM 608 - VAR. DEPTH CONCRETE WALK (SEE APPROACH SLAB PLAN)
- (12) ITEM 659 - SEEDING AND MULCHING
- (13) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN \*\*
- (14) ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, TYPE B1, REINFORCED \*\*
- (15) ITEM 304 - 5"± AGGREGATE BASE
- (16) ITEM 441 - VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (17) ITEM 441 - 6 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (18) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3")
- (19) ITEM 407 - TACK COAT (0.09 GAL/SY)



EXISTING ROADWAY SECTION - RAMP 27



PROPOSED ROADWAY SECTION - RAMP 27

STA. 81+77.58 TO STA. 81+94.50

- [A] VARIES FROM 4.63' AT STA. 81+77.58 TO 2.00' AT STA. 81+88.48  
2.00' FROM STA. 81+88.48 TO STA. 81+91.48  
VARIES FROM 2.00' AT STA. 81+91.48 TO 2.22' AT STA. 81+94.50
- [B] SEE PLAN VIEW AND INTERSECTION DETAILS FOR GUARDRAIL  
LIMITING STATIONS AND LOCATIONS.

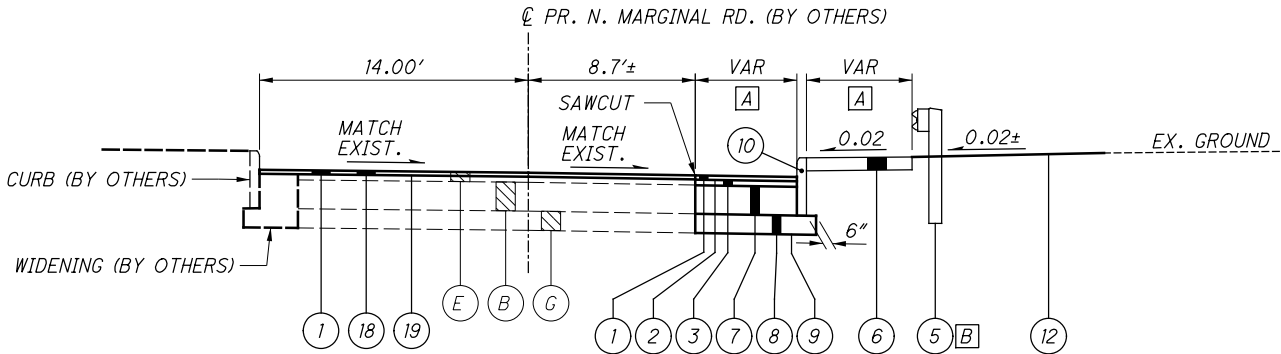
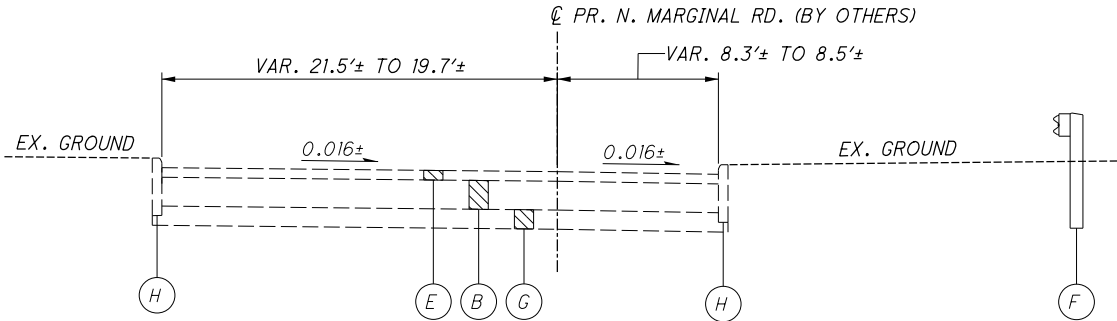
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GY006.dgn Sheet 12/23/2019 9:44:14 AM sriffle

EXISTING LEGEND

- (A) EXISTING 5" ASPHALT CONCRETE (OVERLAY)
- (B) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 6" SUBBASE
- (D) EXISTING 32" BARRIER WITH 18" CONCRETE GLARE SCREEN
- (E) EXISTING 3" ASPHALT CONCRETE (OVERLAY)
- (F) EXISTING GUARDRAIL
- (G) EXISTING 6" AGGREGATE BASE
- (H) EXISTING CONCRETE CURB
- (I) EXISTING CONCRETE SIDEWALK

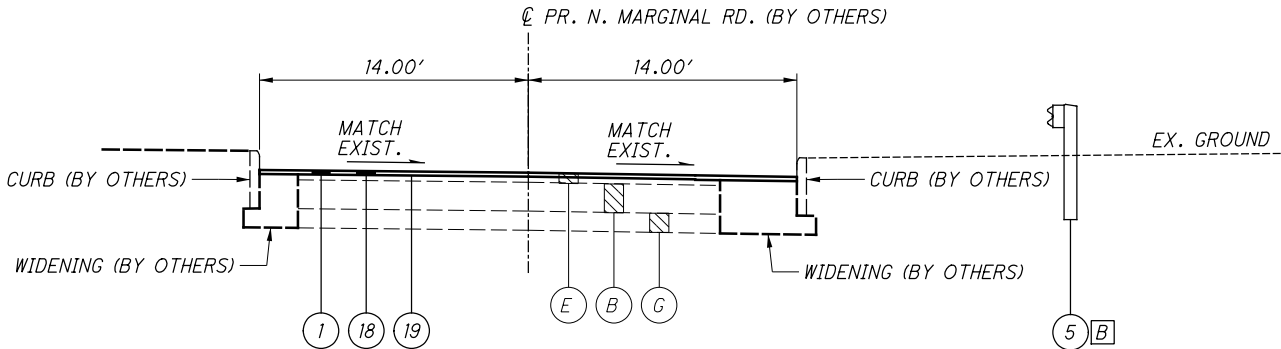
PROPOSED LEGEND

- (1) ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) AS PER PLAN, PG64-22
- (2) ITEM 407 - TACK COAT (0.06 GAL/SY)
- (3) ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (4) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=17")
- (5) ITEM 606 - GUARDRAIL, TYPE MGS
- (6) ITEM 608 - 4" CONCRETE WALK
- (7) ITEM 305 - 9" CONCRETE BASE, AS PER PLAN
- (8) ITEM 304 - 6" AGGREGATE BASE
- (9) ITEM 204 - SUBGRADE COMPACTION
- (10) ITEM 609 - CURB, TYPE 6
- (11) ITEM 608 - VAR. DEPTH CONCRETE WALK (SEE APPROACH SLAB PLAN)
- (12) ITEM 659 - SEEDING AND MULCHING
- (13) ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN \*\*
- (14) ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, TYPE B1, REINFORCED \*\*
- (15) ITEM 304 - 5"± AGGREGATE BASE
- (16) ITEM 441 - VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (17) ITEM 441 - 6 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)
- (18) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (T=3")
- (19) ITEM 407 - TACK COAT (0.09 GAL/SY)



(A) SEE INTERSECTION DETAILS FOR VARYING WIDTHS.

(B) SEE PLAN VIEW AND INTERSECTION DETAILS FOR GUARDRAIL LIMITING STATIONS AND LOCATIONS.



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GN001.dgn Sheet 4/15/2020 3:11:38 PM jhren

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AT&T - OHIO  
RALPH HUTCHINSON  
(216) 476-6104  
13630 LORAIN AVE.  
2ND FLOOR  
CLEVELAND, OHIO 44111

CHARTER COMMUNICATIONS  
RICK PALENCAR  
(216) 575-8016  
8150 DOW CIRCLE  
STRONGSVILLE, OHIO 44136

CENTURY LINK  
DOUG HOLLOWAY  
(216) 906-6284  
4000 CHESTER AVE.  
CLEVELAND, OHIO 44103

CITY OF CLEVELAND -  
PUBLIC POWER  
CHRIS HIRZEL  
(216) 563-7212  
1300 LAKESIDE AVE., ROOM 152  
CLEVELAND, OHIO 44114

CITY OF CLEVELAND -  
PUBLIC POWER (AERIAL/LIGHTING)  
CHARLES JIM MALY  
(216) 664-3922 x173  
1300 LAKESIDE AVE., ROOM 152  
CLEVELAND, OHIO, 44114

CITY OF CLEVELAND -  
WATER DEPARTMENT  
FRED ROBERTS  
(216) 664-2444 EXT. 75590  
1201 LAKESIDE AVE.  
CLEVELAND, OHIO 44114

CITY OF CLEVELAND -  
WATER POLLUTION CONTROL  
ELIE RAMY  
(216) 664-2756  
12302 KIRBY AVE.  
CLEVELAND, OHIO 44108

CITY OF CLEVELAND -  
TRAFFIC ENGINEERING  
ANDREW CROSS  
(216) 664-3197  
601 LAKESIDE AVE.  
ROOM 25  
CLEVELAND, OHIO 44114

DOMINION ENERGY OHIO  
ATTN: 2nd FLOOR RELOCATION DESIGN  
(330) 664-2409  
320 SPRINGSIDE DR.  
SUITE 320  
AKRON, OHIO 44333

CEI FIRST ENERGY - AERIAL  
JOHN ZASSICK  
(440) 546-8706  
6896 MILLER RD.  
SUITE 101  
BRECKSVILLE, OHIO 44141

CEI FIRST ENERGY -  
UNDERGROUND  
DAN CARMAN  
740-314-9986  
6896 MILLER RD.  
SUITE 101  
BRECKSVILLE, OHIO 44141

ODOT - DISTRICT 12  
KEITH HAMILTON  
(216) 584-2220  
5500 TRANSPORTATION BLVD.  
GARFIELD HEIGHTS, OHIO 44125

WINDSTREAM  
GEOFFREY HAMM  
(440) 329-4245  
560 TERNES AVE.  
ELRIA, OHIO 44035

VERIZON  
JEFF KADUSKY  
(330) 819-1444  
1150 WEST 3rd ST.  
CLEVELAND, OHIO 44256

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 9 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: STATIC GNSS  
MONUMENT TYPE: A

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: GEOID12B

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONFORMAL CONIC  
COORDINATE SYSTEM: OHIO STATE PLANE - NORTH ZONE (3401)

COMBINED SCALE FACTOR: 1.00006274  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

CURBING ON APPROACH SLABS

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE CURBING ON APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1. (448). AS PER PLAN. PG64-22

THE COARSE VIRGIN AGGREGATE SHALL CONSIST OF A BLEND OF 60% MIN. AIR COOLED BLAST FURNACE SLAG (ACBFS) OR TRAP ROCK FROM ONTARIO WITH LIMESTONE COMPRISING THE REMAINING PERCENTAGE.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. THE CITY OF CLEVELAND HAS GRANTED A VARIANCE REQUEST TO WAIVE ENFORCEMENT FOR A PERIOD OF 6 MONTHS, BETWEEN APRIL 15, 2021 AND OCTOBER 15, 2021. THE HEAVY EQUIPMENT APPROVED TO BE UTILIZED OUTSIDE OF THE NORMAL HOURS OF 7AM TO 9PM ARE MAN LIFTS, SCISSOR LIFTS, CONCRETE SAWS, HAND SAWS, EXCAVATORS, LOADERS, DUMP TRUCKS, SEMI-TRUCKS, CONCRETE TRUCKS, AND CONCRETE PUMPS.

THE NOISE ORDINANCE VARIANCE HAS THE FOLLOWING CONDITIONS:

-THE DEPARTMENT OF PUBLIC SAFETY AND THE RESPECTIVE COUNCILPERSONS SHALL BE NOTIFIED A MINIMUM OF 30 DAYS IN ADVANCE OF THE SPECIFIC DATES/TIMES THE PROJECT WILL BEGIN BETWEEN APRIL AND OCTOBER 2021.

-THE DEPARTMENT OF PUBLIC SAFETY AND THE RESPECTIVE COUNCILPERSONS SHALL BE NOTIFIED A MINIMUM OF 72 HOURS IN ADVANCE OF ANY CHANGES TO THE ORIGINAL REQUEST.

-THE DEPARTMENT OF PUBLIC SAFETY AND THE RESPECTIVE COUNCILPERSONS SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF ANY WORK SCHEDULE CHANGES RELATIVE TO THE DATES AND HOURS OF OPERATION.

-THE CITY OF CLEVELAND AND THE RESPECTIVE COUNCILPERSONS SHALL BE NOTIFIED 72 HOURS IN ADVANCE IF ANY OTHER HEAVY EQUIPMENT IS UTILIZED OTHER THAN THOSE LISTED ABOVE OR IN THE ORIGINAL REQUEST.

NOTIFICATIONS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. THE CONTRACTOR CAN REVIEW THE EXISTING VARIANCE REQUEST AT THE DISTRICT OFFICE.

PERMITS

IN THE CITY OF CLEVELAND ALL PERMITS MUST BE OBTAINED FROM THE DIVISION OF ASSESSMENTS AND LICENSES PRIOR TO BEGINNING ANY WORK. PERMITS INCLUDE BUT ARE NOT LIMITED TO STREET OPENING PERMIT, OVERLOAD PERMIT, OBSTRUCTION PERMIT AND MAY BE OBTAINED THROUGH THE FOLLOWING CONTACT:

TRAVIS EVANS  
DEPARTMENT OF FINANCE  
DIVISION OF ASSESSMENTS AND LICENSES  
601 LAKESIDE AVENUE, ROOM 122  
PHONE: 216-664-2174  
EMAIL: DALPERMITS@CITY.CLEVELAND.OH.US

ALL STREET OPENING REPAIRS, CURB REPAIRS, AND/OR SIDEWALK REPAIRS EITHER INCIDENTAL TO THE PROJECT OR PART OF THE PROJECT MUST BE PERFORMED IN ACCORDANCE TO CITY OF CLEVELAND STANDARDS. A COPY OF THE STANDARDS CAN BE OBTAINED FROM THE DIVISION OF ENGINEERING AND CONSTRUCTION BY CALLING 216-664-2381. ALL PERMITS, FEES AND CHARGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THEIR ASSOCIATED COST SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR THE PERTINENT WORK ITEMS. FOR BIDDING PURPOSES, FEE AND CHARGES MAY BE OBTAINED FROM THE DIVISION OF ASSESSMENTS AND LICENSES AT 216-664-2174.

ITEM 619 FIELD OFFICE, TYPE B, AS PER PLAN

A TYPE B FIELD OFFICE IS REQUIRED FOR THIS PROJECT. THE FOLLOWING REVISIONS TO EQUIPMENT SUPPLIED WITH THE TYPE B FIELD OFFICE, AS SPECIFIED IN TABLE 619.02-1, FIELD OFFICE, SHALL APPLY:

THE BROADBAND INTERNET CONNECTION MUST MEET A MINIMUM UPLOAD SPEED OF 5MB PER SECOND.

CONTRACTOR SHALL FURNISH AND SET UP A WI-FI ROUTER MEETING THE REQUIREMENTS OF IEEE 802.11AC FOR THE EXCLUSIVE USE OF THE DEPARTMENT.

ALL OTHER FIELD OFFICE ITEMS SUPPLIED SHALL MEET THE REQUIREMENTS OF A TYPE B, FIELD OFFICE.

ITEM 619-FIELD OFFICE, TYPE B, AS PER PLAN 5 MONTHS

CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES

AT PROJECT LOCATIONS WHERE THE CONTRACTOR IS WORKING ADJACENT TO PROPERTY AND SERVICES OF UTILITY COMPANIES SUCH AS BUT NOT LIMITED TO POWER, TELECOMMUNICATIONS, GAS, RAILWAY, ETC. WORK SHALL NOT COMMENCE UNTIL ARRANGEMENTS FOR PROPERTY PROTECTION OF SUCH FACILITIES HAVE BEEN MADE, AS DIRECTED IN SECTION 107 OF THE ODOT CMS.

PARTICULAR CAUTION SHALL BE EXERCISED BY THE CONTRACTOR WHEN PERFORMING EXCAVATION FOR CURB AND UNDERDRAINS IN THE VICINITY OF THE ILLUMINATING COMPANY AND EAST OHIO GAS UNDERGROUND CONDUITS, MANHOLES AND ANY OTHER FACILITIES.

THE UNDERGROUND UTILITY OWNERS SHALL BE GIVEN A NOTICE OF WORK TWO WORKING DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AT THE PLAN LOCATIONS AS PER SECTION 153.64 OF THE OHIO REVISED CODE.

CALCULATED  
MAH  
CHECKED  
SSR

GENERAL NOTES

CUY-90-13.45



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GN002.dgn Sheet 1/15/2020 2:03:08 PM sr1ffle

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL	65 CU. YD.
*659, SEEDING AND MULCHING	382 SQ. YD.
659, REPAIR SEEDING AND MULCHING	29 SQ. YD.
659, INTER-SEEDING	29 SQ. YD.
659, COMMERCIAL FERTILIZER	0.08 TON
659, LIME	0.12 ACRES
659, WATER	2 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

\*ADDITIONAL SEEDING AND MULCHING AREA TO REESTABLISH GROWTH FOR DISTURBANCES CAUSED BY THE INSTALLATION OF GUARDRAIL, FENCING, TRANSVERSE UNDERDRAINS AND AGGREGATE DRAINS. THIS QUANTITY IS IN ADDITION TO THAT SUMMARIZED ON THE CROSS SECTION SHEETS.

COORDINATION WITH ADJACENT PROJECT

THE CONTRACTOR SHALL COOPERATE WITH AND COORDINATE HIS/HER OPERATIONS WITH THE THE CLEVELAND METROPARKS RED LINE GREENWAY (RLG) PROJECT, WHICH WILL BE UNDER CONSTRUCTION CONCURRENTLY. THE RLG PROJECT INCLUDES ROADWAY, SIGNALS, UTILITIES, AND TRAFFIC CONTROL WORK IN THE WEST 44TH STREET/NORTH MARGINAL/RAMP 27 INTERSECTION.

THE CONTRACTOR SHALL COORDINATE WITH BOB BURICHIN, PROJECT MANAGER, CLEVELAND METROPARKS, 216-401-4116, BEFORE CONSTRUCTION BEGINS, TO COORDINATE SCHEDULES AND TO OBTAIN CONSTRUCTION PLANS FOR THE RLG PROJECT.

CONCRETE DESIGN MIX (CLEVELAND 650)

CAST-IN-PLACE CONCRETE SHALL BE PROVIDED IN ACCORDANCE WITH THE ODOT CMS, EXCEPT THE MINIMUM CEMENT CONTENT OF THE MIX SHALL BE 650 LBS. PER CUBIC YARD.

ITEM 305, 452, 608, AND 609 - CONSTRUCTION OF CONCRETE BASE PAVEMENT, DRIVEWAYS, SIDEWALKS AND CURB, AS PER PLAN.

CONSTRUCT CAST-IN-PLACE CONCRETE ITEMS IN ACCORDANCE WITH THE ODOT CMS, EXCEPT AS MODIFIED BY GENERAL NOTE "CONCRETE DESIGN MIX (CLEVELAND 650)".

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

EXISTING PLANS

EXISTING PLANS ENTITLED CUY-90-13.33 (1970) AND CUY-90-13.41 (1989) MAY BE INSPECTED IN THE ODOT DISTRICT 12 OFFICE IN GARFIELD HEIGHTS, OHIO.

ITEM 202 - PAVEMENT REMOVED. AS PER PLAN

WHERE SPECIFIED FOR REMOVAL IN THE PLANS, THE EXISTING I-90, WEST 44TH STREET, AND RAMP 27 PAVEMENTS, CONSISTING OF AN ASPHALT OVERLAY ON TOP OF REINFORCED CONCRETE, SHALL BE COMPLETELY REMOVED AND DISPOSED OF AS PER ITEM 202 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND SHALL BE PAID FOR AS ITEM 202 - PAVEMENT REMOVED, AS PER PLAN. REMOVE ALL ASPHALT AND CONCRETE FROM THE SURFACE TO THE BOTTOM OF THE PAVEMENT COURSES.

ITEM 608 - CURB RAMP. AS PER PLAN

CONSTRUCT CURB RAMPS AS PER CITY OF CLEVELAND STANDARDS. SEE MISC. DETAIL SHEETS FOR ADDITIONAL INFORMATION.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

ITEM SPECIAL - PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CLEANOUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK:

SPECIAL, PIPE CLEANOUT, 24" AND UNDER 750 FT.

MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED

ALL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY CITY OF CLEVELAND.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

ITEM 605 - 4" UNCLASSIFIED PIPE UNDERDRAINS 40 FT.

ITEM 611 - INLET NO. 3 FOR SINGLE SLOPE BARRIER. TYPE B1. AS PER PLAN

CONTRACTOR SHALL REMOVE EXISTING CONCRETE MEDIAN BARRIER AND REINFORCING STEEL IN THE LOCATION OF THE EXISTING MEDIAN INLET AT I-90 STATION 880+99. RECONSTRUCT CONCRETE MEDIAN BARRIER, REINFORCING STEEL, INLET WINDOW AND TROUGH PER SCD I-2.1. PAYMENT FOR THIS WORK WILL BE MADE AT THE UNIT PRICE BID PER EACH FOR ITEM 611 - INLET NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN, AND PER SCD I-2.1.

INSPECT THE PORTION OF INLET BOX BELOW GRADE AND CLEANOUT AS NECESSARY. THIS PORTION OF THE EXISTING INLET, AND THE EXISTING CASTING/GRATE MAY BE SALVAGED AND REINSTALLED AS APPROVED BY THE ENGINEER. IF IT IS DETERMINED THAT THE EXISTING INLET BOX AND OR CASTING/GRATE IS IN POOR CONDITION, REPLACE PER SCD I-2.1 AND RECONNECT EXISTING PIPES. THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN INCLUDED FOR THIS WORK.

ITEM 611 - INLET FRAME AND GRATE 1 EACH

ITEM 611 - INLET MISC.: WALLS, STEPS AND BOTTOM SLAB 1 EACH

ITEM 611 - 15" CONDUIT, TYPE B 10 FT.

PROJECT CONTROL								
POINT NUMBER	GRID COORDINATES U.S. SURVEY FEET		SCALED COORDINATES U.S. SURVEY FEET		STATION	OFFSET	ELEVATION	DESCRIPTION
	NORTHING	EASTING	NORTHING	EASTING				
1	659641.9715	2183570.4902	659683.3600	2183707.4960	866+04.20	188.89' RT	678.462	CMON W/ ALUM DISK
2	659527.6436	2184123.4115	659569.0250	2184260.4520	891+94.44	188.76' RT	676.352	CMON W/ ALUM DISK

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MN001.dgn Sheet 4/14/2020 9:13:00 AM jhren

ITEM 614. MAINTAINING TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES ON THE PROJECT IN ACCORDANCE WITH THE OHIO MANUAL OF TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, C&MS ITEM 614 - MAINTAINING TRAFFIC, AND AS DESCRIBED BELOW.

1. ALL SIGNS, SIGN SUPPORTS, DRUMS, PORTABLE BARRIER AND INCIDENTALS FOR TRAFFIC CONTROL SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN CONFORMANCE WITH THE MOST RECENT REVISION, CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (OMUTCD). ALL SIGNS USED FOR THE MAINTENANCE OF TRAFFIC SHALL BE NEW OR LIKE NEW CONDITION. DEVICES USED TO MAINTAIN TRAFFIC SHALL BE REMOVED IMMEDIATELY AFTER THE TERMINATION OF SAID WORK. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM BID ITEM FOR ITEM 614 - MAINTAINING TRAFFIC.

2. THE SHADOW VEHICLE SHALL BE EQUIPPED WITH A TRUCK-MOUNTED OR TRAILER ATTENUATOR (TMA) IN ACCORDANCE WITH CMS 614.03.

3. TOTAL CLOSURES OF FREEWAYS SHALL ONLY OCCUR FROM 12AM-5AM WEEKDAYS AND FROM 3AM-7AM SATURDAY AND FROM 3AM-8AM SUNDAY AND SHALL BE PER MT-99.60.

AN OPTION TO DOING 10 MINUTE CLOSURES PER MT 99.60, IS TO TOTALLY CLOSE I-90 UNDER W 44 ST. TOTAL CLOSURE WILL BE ALLOWED 8 TIMES EACH DIRECTION FROM 12AM TO 5AM WEEKDAYS, MONDAY THRU THURSDAY AND WEEKENDS FROM 3AM SATURDAY TO 7AM SATURDAY AND 3AM SUNDAY TO 8AM SUNDAY.

DURING THE TOTAL CLOSURE OF I-90 ALL TRAFFIC WILL BE DETOURED TO THE NORTH AND SOUTH MARGINAL ROADS AND ALLOWED TO REENTER I-90. 3 LEO'S WILL BE PROVIDED BY THE CONTRACTOR TO DIRECT TRAFFIC, 1 AT W. 41 ST AND N. MARGINAL RD., 1 AT W. 41 ST AND S. MARGINAL RD., AND 1 AT W. 44 ST AND N. MARGINAL RD. A LEO WILL BE AT EACH CLOSURE POINT ON I-90. 3 OR 4 LANES WILL HAVE TO BE CLOSED ON 90 TO FUNNEL THE TRAFFIC TO THE RAMPS SIMILAR TO SCD MT-99.50. A MESSAGE BOARD WILL BE USED TO WARN MOTORISTS THAT ALL TRAFFIC MUST EXIT. THE MESSAGE SHOULD READ "ALL TRAFFIC MUST EXIT/ PREPARE TO STOP". ROAD CLOSED AHEAD SIGNS SHALL BE DUAL MOUNTED 1000' TO 1500' IN ADVANCE OF THE ROAD CLOSURE ON I-90.

LEO'S WILL BE AT THE EXPENSE OF THE CONTRACTOR AS WILL ANY ADDITIONAL SIGNAGE FOR THE TOTAL CLOSURE. THE PCMS CALLED OUT IN THE PLANS CAN BE USED FOR THE TOTAL CLOSURES.

4. MOVING OPERATIONS SHALL ONLY OCCUR DURING LANE CLOSURE TIMES UNLESS PERMISSION IS GRANTED BY THE DISTRICT WORK ZONE TRAFFIC MANAGER.

WITH THE EXCEPTION OF SEPARATE PAY ITEMS, PAYMENTS FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR THE APPLICABLE MAINTAINING TRAFFIC ITEMS.

LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS       FOURTH OF JULY  
NEW YEARS       LABOR DAY  
MEMORIAL DAY   THANKSGIVING  
(OTHER HOLIDAY OR EVENT)

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6:00AM WEDNESDAY THROUGH 6:00AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE LANE VALUE CONTRACT (PN 127).

LANE VALUE CONTRACT

THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE FOR EACH UNIT OF TIME THE DESCRIBED CRITICAL LANE/RAMP IS RESTRICTED FROM FULL USE BY THE TRAVELING PUBLIC WITHIN THE RESTRICTED TIME PERIOD. THE LANE VALUE CONTRACT TABLE IS LOCATED IN THE PLAN GENERAL NOTES. THE DISINCENTIVES WILL BE ASSESSED FOR ALL RESTRICTIONS OF THE CRITICAL WORK.

CRITICAL WORK IS SHOWN IN THE LANE VALUE CONTRACT TABLE.

CRITICAL WORK IS DEFINED AS HAVING THE DESIGNATED SECTIONS OPEN TO UNRESTRICTED TRAFFIC AS SHOWN IN THE TABLE, OR THE ENTIRE PROJECT IF NOT OTHERWISE LISTED.

UNRESTRICTED TRAFFIC IS DEFINED AS ALL TRAFFIC LANES BEING AVAILABLE FOR USE WITH SPECIFIED STRIPING AND SAFETY FEATURES IN PLACE.

LANE VALUE CONTRACT TABLE

Description of Critical Lane/Ramp to be Maintained	Direction	Lanes	Restricted Time Period	Time Unit	Disincentive (per time unit per lane)
IR-90					
Hilliard Entrance Ramp to W 44 St Exit Ramp	East	4	As Per the Permitted Lane Closure Schedule	Each Minute	\$240
W 44 St Entrance Ramp to Hilliard Exit Ramp	West	4	As Per the Permitted Lane Closure Schedule	Each Minute	\$240
W 44 St Exit Ramp to 490/90 Split	East	4	As Per the Permitted Lane Closure Schedule	Each Minute	\$240
490/90 Merge to W 44 St Entrance Ramp	West	4	As Per the Permitted Lane Closure Schedule	Each Minute	\$240

LANE CLOSURE/REDUCTION REQUIRED

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NOTICE OF CLOSURE SIGN

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGEABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.]

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE		
ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURES	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN DISPLAY WILL BE PROVIDED BY THE ENGINEER. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

DROP-OFFS IN WORK ZONES

ALL DROP-OFFS DURING CONSTRUCTION SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AS PER STANDARD CONSTRUCTION DRAWING MT-101.90.

SCHEDULE OF THROUGH LANES TO BE MAINTAINED

ALL LANE CLOSURES MAY ONLY BE IMPLEMENTED AT THE TIMES PERMITTED BY THE "DISTRICT 12 PERMITTED LANE CLOSURE TIMES" LIST, WHICH IS LOCATED ON THE ODOT WEBSITE:

<http://www.dot.state.oh.us/districts/D12/HighwayManagement/Pages/PermittedLaneClosures.aspx>

THE LATEST REVISION, AT 14 DAYS PRIOR TO THE BID DATE, SHALL BE IN EFFECT FOR THIS PROJECT.

NO LANE OR SHOULDER CLOSURES SHALL BE IN PLACE WHEN NO WORK IS BEING PREFORMED, UNLESS DIRECTED BY THE ENGINEER. SHOULDER CLOSURES SHALL ONLY BE ALLOWED AT THE TIMES SPECIFIED FOR LANE CLOSURES.

ANY ROADWAY NOT LISTED SHALL NOT HAVE ANY LANE CLOSURES ON WEEKDAYS FROM 6:30AM TO 9:00AM AND 3:00PM TO 6:00PM. CONTACT DENNIS O'NEIL, DISTRICT 12 WORK ZONE TRAFFIC MANAGER, AT (216) 584-2204 IF THERE ARE ANY QUESTIONS.

ALL NOTES ON THE PERMITTED LANE CLOSURE TIMES SHALL BE PART OF THE PROJECT.

CONSTRUCTION START DATE

THE CONSTRUCTION OF THIS PROJECT SHALL NOT START UNTIL 4/15/2021.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MN002.dgn Sheet 12/23/2019 9:44:16 AM sriffle

SEQUENCE OF CONSTRUCTION

SEE SHEETS 110 & 111 OF THE STRUCTURE PLAN FOR ADDITIONAL DETAILS REGARDING THE BRIDGE CONSTRUCTION PHASING.

PHASE 1 MAINTENANCE OF TRAFFIC (SHEETS 19 TO 23):

CLOSE W 44TH STREET BETWEEN NORTH MARGINAL ROAD AND SOUTH MARGINAL ROAD. IMPLEMENT THE DETOUR AS SHOWN ON SHEET 16.

THE SIGNAL AT THE INTERSECTION OF N MARGINAL RD AND W 44TH ST SHALL REMAIN IN CYCLING OPERATION AT ALL TIMES. IF THE SIGNAL IS TO BE POWERED OFF FOR A BRIEF PERIOD OF TIME, A LEO IS REQUIRED TO BE AT THE INTERSECTION TO DIRECT THE FLOW OF TRAFFIC.

THE SIGNAL AT THE INTERSECTION OF S MARGINAL RD AND W 44TH ST SHALL BE PLACED IN 'FLASH' OPERATION WHEN W 44TH ST IS CLOSED TO TRAFFIC.

MAINTAIN EB AND WB I-90 TRAFFIC IN EXISTING LANES. INSTALL PORTABLE BARRIER ADJACENT TO THE WORK ZONE AND ALONG THE OUTSIDE LANES.

REMOVE RUMBLE STRIPS ON OUTSIDE SHOULDERS OF I-90 WB AND EB IN PREPARATION OF SHIFTING TRAFFIC ONTO SHOULDERS IN PHASE 2.

PHASE 1 BRIDGE REMOVALS (SHEETS 110 TO 111)

REMOVE THE EXISTING OVERHEAD BRIDGE MOUNTED SIGNS FOR BOTH EB AND WB I-90 UTILIZING SCD MT-99.60 (SEE SHEET 21 FOR RELOCATION OF ONE OF THE WB BRIDGE MOUNTED SIGNS). REMOVE THE EAST HALF OF THE EXISTING BRIDGE DECK (OR THE ENTIRE BRIDGE DECK) UTILIZING FALSEWORK TO PROTECT THE I-90 TRAFFIC. REMOVE THE THREE (3) EASTERN EXISTING BRIDGE GIRDERS UTILIZING SCD MT-99.60. REMOVE THE EAST HALF OF BOTH THE NORTH AND SOUTH EXISTING BRIDGE ABUTMENTS. REMOVE BOTH THE NORTH AND SOUTH EXISTING APPROACH SLABS.

PHASE 1 BRIDGE CONSTRUCTION (SHEETS 110 TO 111)

CONSTRUCT THE EAST HALF OF THE NORTH AND SOUTH BRIDGE ABUTMENT SEATS.

PHASE 2 MAINTENANCE OF TRAFFIC (SHEETS 24 TO 29):

MAINTAIN THE W 44TH STREET DETOUR IMPLEMENTED AS PART OF PHASE 1.

SHIFT EB AND WB I-90 TRAFFIC ONTO THE OUTSIDE SHOULDERS. INSTALL PORTABLE BARRIER ADJACENT TO THE WORK ZONE AND ALONG THE INSIDE LANES.

PHASE 1 BRIDGE REMOVALS (SHEETS 110 TO 111)

REMOVE AND REPLACE THE EXISTING MEDIAN BARRIER ALONG I-90. INSTALL THE BARRIER MOUNTED FOUNDATIONS AND SUPPORTS FOR BOTH THE EB AND WB I-90 OVERHEAD SIGN SUPPORT TRUSSES.

PHASE 1 BRIDGE CONSTRUCTION (SHEETS 110 TO 111)

PERFORM THE MEDIAN PIER PATCHING AND EAST HALF OF PIER CONSTRUCTION. PLACE THE THREE (3) EASTERN NEW BRIDGE GIRDERS UTILIZING SCD MT-99.60.

INSTALL PROPOSED CPP ELECTRIC DUCTS AND TRANSFER UTILITY TO NEW LOCATION.

PHASE 2 BRIDGE REMOVALS (SHEETS 110 TO 111)

REMOVE THE WEST HALF OF THE 44TH STREET EXISTING BRIDGE DECK (IF NOT REMOVED AS PART OF PHASE 1) UTILIZING FALSEWORK TO PROTECT THE I-90 TRAFFIC. REMOVE THE THREE (3) WESTERN EXISTING BRIDGE GIRDERS UTILIZING SCD MT-99.60.

PHASE 2 BRIDGE CONSTRUCTION (SHEETS 110 TO 111)

COMPLETE MEDIAN BARRIER CONSTRUCTION AND REMAINING PIER WORK.

PHASE 3 MAINTENANCE OF TRAFFIC (SHEETS 19 TO 23):

MAINTAIN THE W 44TH STREET DETOUR IMPLEMENTED AS PART OF PHASE 1.

RETURN EB AND WB I-90 TRAFFIC BACK TO EXISTING LANES. INSTALL PORTABLE BARRIER ADJACENT TO THE WORK ZONE AND ALONG THE OUTSIDE LANES.

PHASE 2 BRIDGE REMOVALS (SHEETS 110 TO 111)

REMOVE THE WEST HALF OF BOTH THE NORTH AND SOUTH EXISTING BRIDGE ABUTMENTS.

PHASE 2 BRIDGE CONSTRUCTION (SHEETS 110 TO 111)

CONSTRUCT THE WEST HALF OF THE NORTH AND SOUTH BRIDGE ABUTMENT SEATS. INSTALL THE THREE (3) WESTERN NEW BRIDGE GIRDERS UTILIZING SCD MT-99.60. INSTALL PROPOSED WATERLINE AND GASLINE AND TRANSFER UTILITIES TO NEW LOCATIONS. CONSTRUCT WEST HALF OF NORTH AND SOUTH ABUTMENT BACKWALLS AND CURTAIN WALLS.

PHASE 3 BRIDGE CONSTRUCTION (SHEETS 110 TO 111)

CONSTRUCT THE 44TH STREET PROPOSED BRIDGE DECK AND APPROACH SLABS.

SOUTH MARGINAL ROAD INTERSECTION CONSTRUCTION (SHEET 30):

STEP 1:

MAINTAIN THE W 44TH STREET DETOUR IMPLEMENTED AS PART OF PHASE 1.

MERGE THE SOUTHERN THRU/RIGHT LANE OF RAMP 28 INTO THE NORTHERN THRU LANE. INSTALL BARRICADES ALONG THE NORTH LEG OF THE INTERSECTION AND ADJACENT TO THE WORK ZONE AS SHOWN IN THE PLAN.

RELOCATE THE CPP ELECTRIC LINES AS SHOWN IN THE PLAN.

STEP 2:

MAINTAIN THE W 44TH STREET DETOUR IMPLEMENTED AS PART OF PHASE 1.

MERGE THE NORTHERN THRU LANE OF RAMP 28 INTO THE SOUTHERN THRU/RIGHT LANE. INSTALL BARRICADES ALONG THE NORTH LEG OF THE INTERSECTION AS SHOWN IN THE PLAN.

PERFORM THE FULL DEPTH PAVEMENT RECONSTRUCTION, INSTALL ALL DRAINAGE AND UTILITY ITEMS, AND INSTALL ALL SIDEWALK AND ROADWAY ITEMS BETWEEN THE SOUTHERN LIMITS OF CONSTRUCTION AND THE SOUTHERN APPROACH SLAB TIE-IN LOCATION. RELOCATE THE CPP ELECTRIC LINES TO THE LIMITS SHOWN IN THE PLAN.

IMMEDIATELY UPON COMPLETION OF THIS CONSTRUCTION, RE-OPEN RAMP 28 TO EXISTING CONDITION.

NORTH MARGINAL ROAD INTERSECTION CONSTRUCTION (SHEET 31)

MAINTAIN THE W 44TH STREET DETOUR IMPLEMENTED AS PART OF PHASE 1.

MERGE THE SOUTHERN LEFT ONLY LANE OF N MARGINAL RD IN THE NORTHERN THRU LANE. INSTALL PB AND BARRICIADES ALONG THE SOUTH LEG OF THE INTERSECTION AND ADJACENT TO THE WORK ZONE AS SHOWN IN THE PLAN.

RELOCATE THE CPP ELECTRIC LINES AS SHOWN IN THE PLAN. ONLY DURING INSTALLATION OF THE CPP ELECTRIC LINES SHALL THE PB FLARE WITHIN THE INTERSECTION BE USED. AT ALL OTHER TIMES THE PB FLARE MAY BE REPLACED WITH A STRAIGHT SECTION OF PB THAT IS PARALLEL TO WESTBOUND N MARGINAL RD TRAFFIC. INSTALLATION OF THE CPP ELECTRIC LINES WITHIN THIS INTERSECTION SHALL BE LIMITED TO 3 (THREE) CONSECUTIVE, CALENDAR DAYS.

WORK ZONE PAVEMENT MARKINGS

WORK ZONE PAVEMENT MARKINGS WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE TAPE (CMS 740.06, TYPE 1) UNLESS THE AREA WILL BE RESURFACED PRIOR TO PROJECT COMPLETION.

AFTER COMPLETION OF THE WORK, PAVEMENT MARKINGS OTHER THAN CMS 740.06, TYPE 1 SHALL BE REMOVED IN ACCORDANCE WITH CMS 614.11 (I). THE ORIGINAL MARKINGS AND RAISED PAVEMENT MARKER REFLECTORS SHALL BE RESTORED AT NO ADDITIONAL COST UNLESS SEPARATELY ITEMIZED IN THE PLANS.

METHOD OF PAYMENT

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 614, MAINTAINING TRAFFIC LUMP SUM

ITEM 614, DETOUR SIGNING LUMP SUM

ESTIMATED QUANTITIES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 300 CU. YD.

ITEM 616, WATER 50 M. GAL.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 5 M. GAL.

ITEM 618. RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN

MILL 1.5 INCHES DEEP BY 2 FEET WIDE OF THE EXISTING ASPHALT SHOULDER IN ORDER TO REMOVE THE EXISTING RUMBLE STRIPS ALONG I-90 EB AND WB IN THE AREA WHERE TRAFFIC IS SHIFTED ONTO THE SHOULDER. COAT ALL MILLED SURFACES HORIZONTAL AND VERTICAL WITH APPROVED AC MATERIAL AND THEN PLACE 1.5 INCHES OF ITEM 442 ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (448).

ONCE THE PROJECT IS COMPLETE, INSTALL NEW RUMBLE STRIPS AS PER THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 618.

ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING PAVEMENT, PLACEMENT OF THE SURFACE COURSE AND INSTALLATION OF THE RUMBLE STRIPS SHALL BE INCLUDED IN THE UNIT PRICE BID PER FOOT OF ITEM 618 - RUMBLE STRIPS (ASPHALT CONCRETE), AS PER PLAN.



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MN003.dgn Sheet 12/23/2019 9:44:17 AM srlf file

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614. WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NONGATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614. PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PORTABLE CHANGEABLE MESSAGE SIGN SHALL HAVE A WEB BASED COMMUNICATION SYSTEM THAT WILL ALLOW THE CONTRACTOR OR ODOT TO CHANGE OR PROGRAM THE MESSAGE BOARD REMOTELY. THIS SYSTEM SHALL BE PASSWORD PROTECTED AND MAY BE OPERATED FROM A COMPUTER OR HAVE AN APPLICATION THAT CAN BE OPERATED FROM A CELL PHONE, ANDROID OR IPHONE. THE WEB BASED COMMUNICATION SYSTEM WILL SHOW THE LOCATION OF EACH MESSAGE BOARD ON A MAP. ALL CHARGES FOR THE WEB BASED COMMUNICATION SYSTEM WILL BE INCLUDED IN THE COST OF THIS ITEM, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE, AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN  
14 SIGN MONTHS ASSUMING 2 PCMS  
SIGNS FOR 7 MONTHS

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MN004.dgn Sheet 12/23/2019 9:44:17 AM srlf file

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

- EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
- NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF CLEVELAND FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 2 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6AM-9AM AND 3PM-6PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY OFF-DUTY CITY OF CLEVELAND POLICE, HIRED BY THE CONTRACTOR:

- N. MARGINAL ST. AT W. 44TH ST.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

- TIME OF NOTIFICATION OF MALFUNCTION;
- TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
- ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
- A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
- TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614 OR C&MS 621 AS SPECIFIED HEREIN.

RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.

RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15 THROUGH APRIL 1.

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO C&MS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER C&MS 621.08.

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

THE FOLLOWING BID ITEMS HAVE BEEN QUANTIFIED IN THE MOT SUBSUMMARY SHEETS:

ITEM 254	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"
ITEM 407	NON-TRACKING TACK COAT
ITEM 442	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), PG76-22M (T=1.5")
ITEM 614	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

PAYMENT FOR RESURFACING WITHIN THE TRANSITION AREA SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK REQUIRED, AS PROVIDED FOR IN THE PLANS.

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL; AND, ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND PERMANENT CONCRETE BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS; OR ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLESTACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

THE FOLLOWING BID ITEMS HAVE BEEN QUANTIFIED IN THE MOT SUBSUMMARY SHEETS:

ITEM 614	BARRIER REFLECTOR, TYPE 1, ONE-WAY
ITEM 614	OBJECT MARKER, ONE-WAY
ITEM 614	INCREASED BARRIER DELINEATION

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MN005.dgn Sheet 12/23/2019 9:44:18 AM srlf file

**ITEM 614 – LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS**

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) MAY BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN A NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST’S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS’ DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING THE SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 300 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

**NOTIFICATION OF TRAFFIC RESTRICTIONS**

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	4 CALENDAR DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

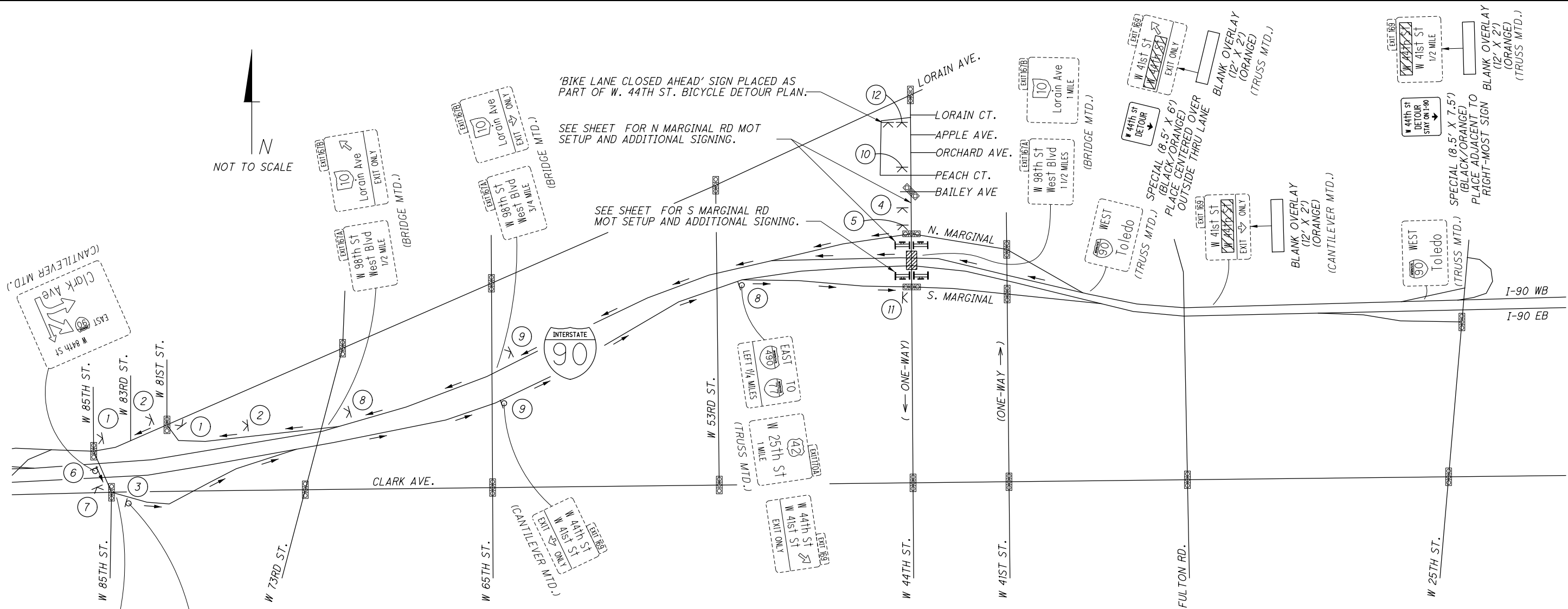
ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

**COORDINATION WITH ADJACENT PROJECT**

THE CONTRACTOR SHALL COOPERATE WITH AND COORDINATE HIS/HER OPERATIONS WITH THE CONTRACTOR FOR THE CLEVELAND METROPARKS RED LINE GREENWAY PROJECT WHICH WILL BE UNDER CONSTRUCTION CONCURRENTLY. THE CONTRACTOR SHALL COORDINATE WITH THE ADJACENT CONTRACTOR REGARDING THE MAINTENANCE OF TRAFFIC FOR BOTH OF THESE PROJECTS AT THE INTERSECTION OF WEST 44TH STREET AT NORTH MARGINAL STREET TO MINIMIZE POTENTIAL CONFLICTS. PAYMENT FOR ANY COORDINATION AND/OR ADJUSTMENTS IN THE MAINTENANCE OF TRAFFIC ITEMS, INCLUDING ALL LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 – MAINTAINING TRAFFIC.







- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
←

M4-9L-30

1
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↙

M4-H9BL-30

2
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↑

M4-H9T-30

3
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↘

M4-H9BR-30

4
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
→

M4-9R-30

5
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↙

M4-8-30  
M5-2L-30  
(BLACK/ORANGE)

6
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↖

M4-8-30  
M6-2L-30  
(BLACK/ORANGE)

7
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↗

M4-8-30  
M6-2R-30  
(BLACK/ORANGE)

8
- D3-1-12 (48" X 12")  
(BLACK/ORANGE)

W 44th St  
DETOUR  
↘

M4-8-30  
M5-2R-30  
(BLACK/ORANGE)

9

- DETOUR  
AHEAD

W20-2-36

10
- END  
DETOUR

M4-8a-24

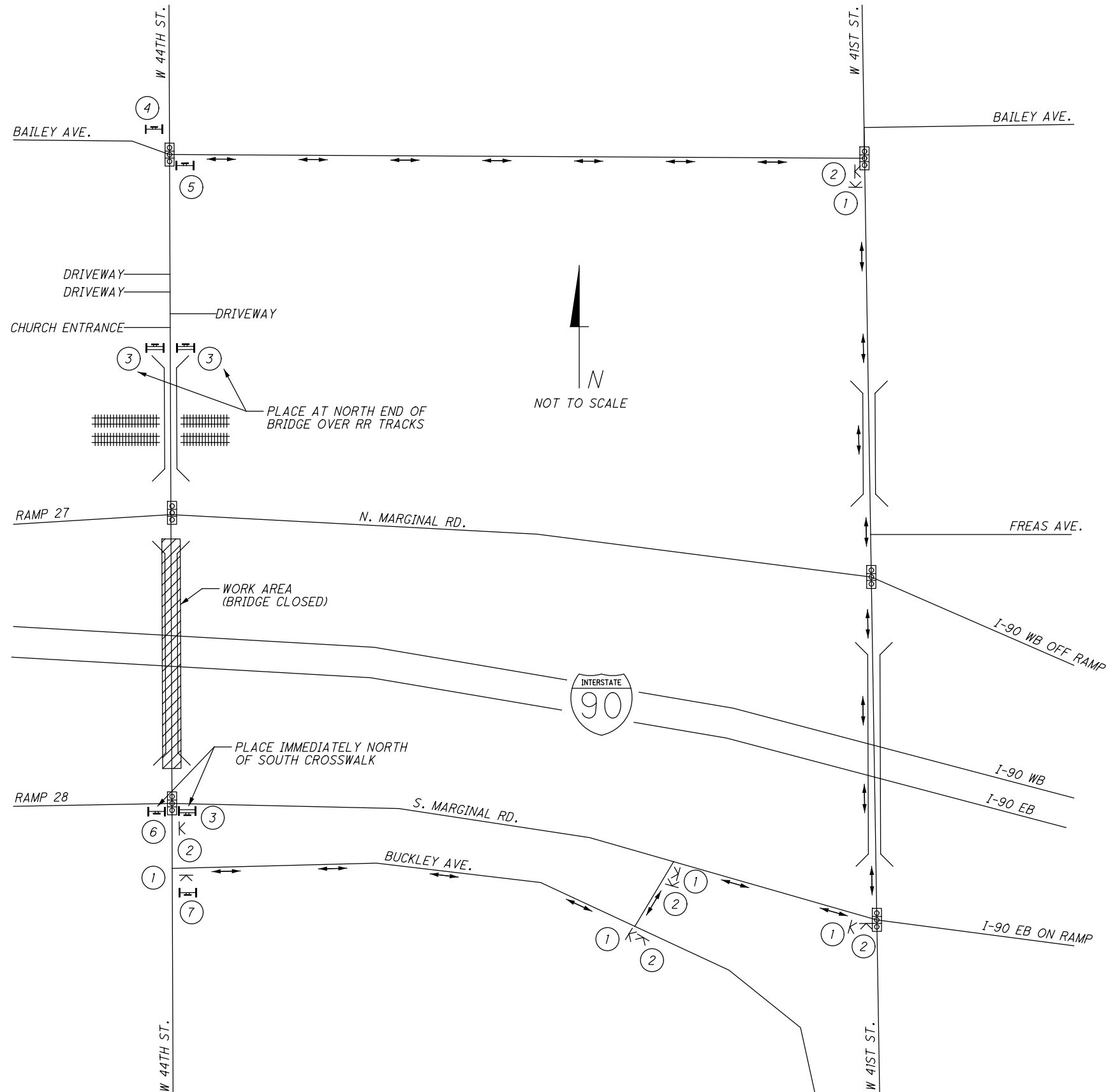
11
- ROAD  
CLOSED  
AHEAD

W20-3-36

12

- LEGEND
- K WORK ZONE SIGN & SUPPORT
  - P WORK ZONE SIGN MOUNTED ON EXISTING CANTILEVER/TRUSS SUPPORT
  - TYPE 3 BARRICADE W/ SIGN
  - DETOUR DIRECTIONAL ARROW
  - SIGNALIZED INTERSECTION

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\M01\Sheets\05792\_MD002.dgn Sheet 12/23/2019 9:44:20 AM sriffle



D3-1-8 (30" X 8")  
(BLACK/ORANGE)



M4-9bL-30

①

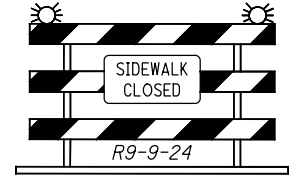
D3-1-8 (30" X 8")  
(BLACK/ORANGE)



M4-9bR-30

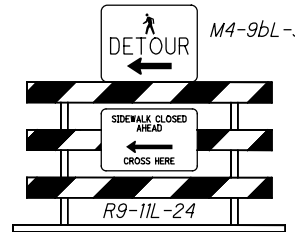
②

TYPE "B"



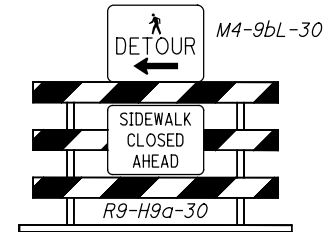
8' TYPE 3 BARRICADE  
(PLACED ACROSS SIDEWALK)

③



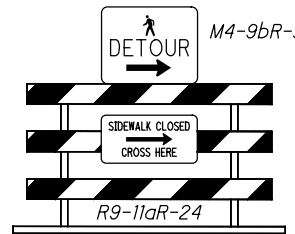
4' TYPE 2 BARRICADE  
(PLACED NEXT TO SIDEWALK)

④



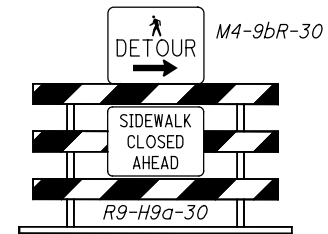
4' TYPE 2 BARRICADE  
(PLACED NEXT TO SIDEWALK)

⑤



4' TYPE 2 BARRICADE  
(PLACED NEXT TO SIDEWALK)

⑥



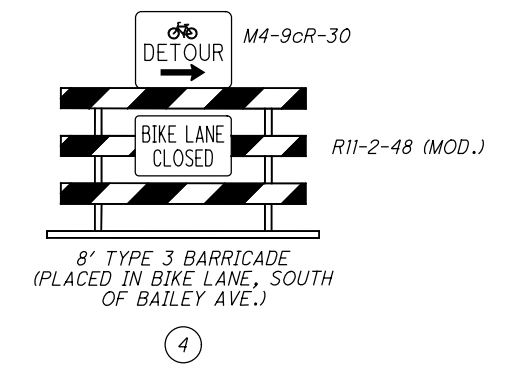
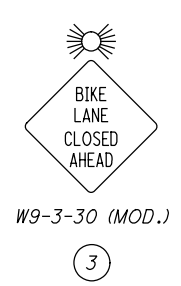
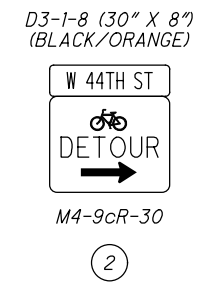
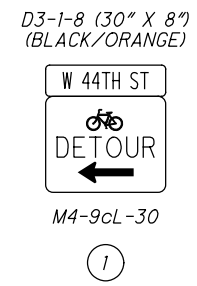
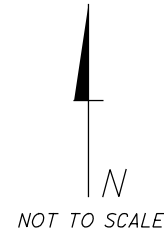
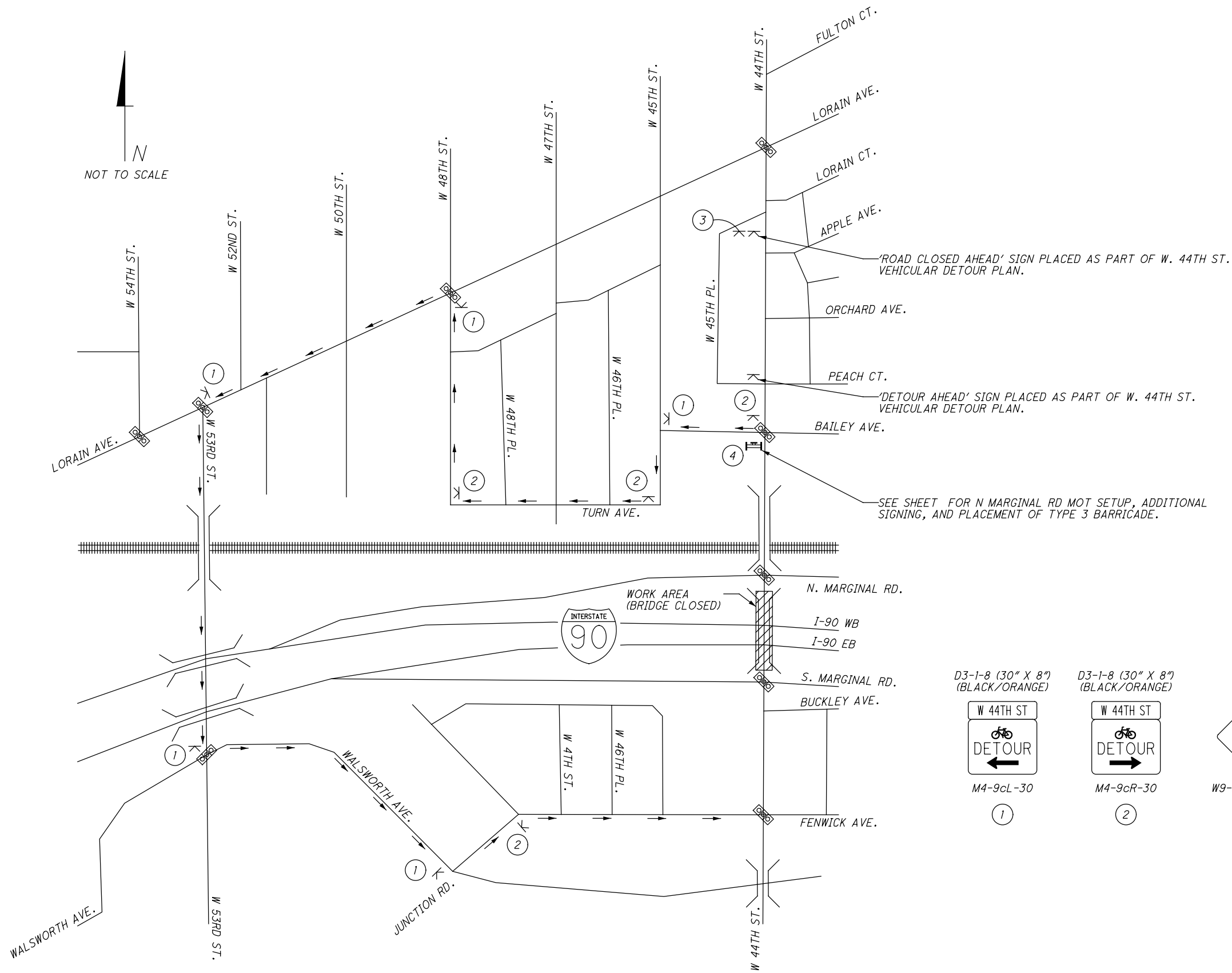
4' TYPE 2 BARRICADE  
(PLACED NEXT TO SIDEWALK)

⑦

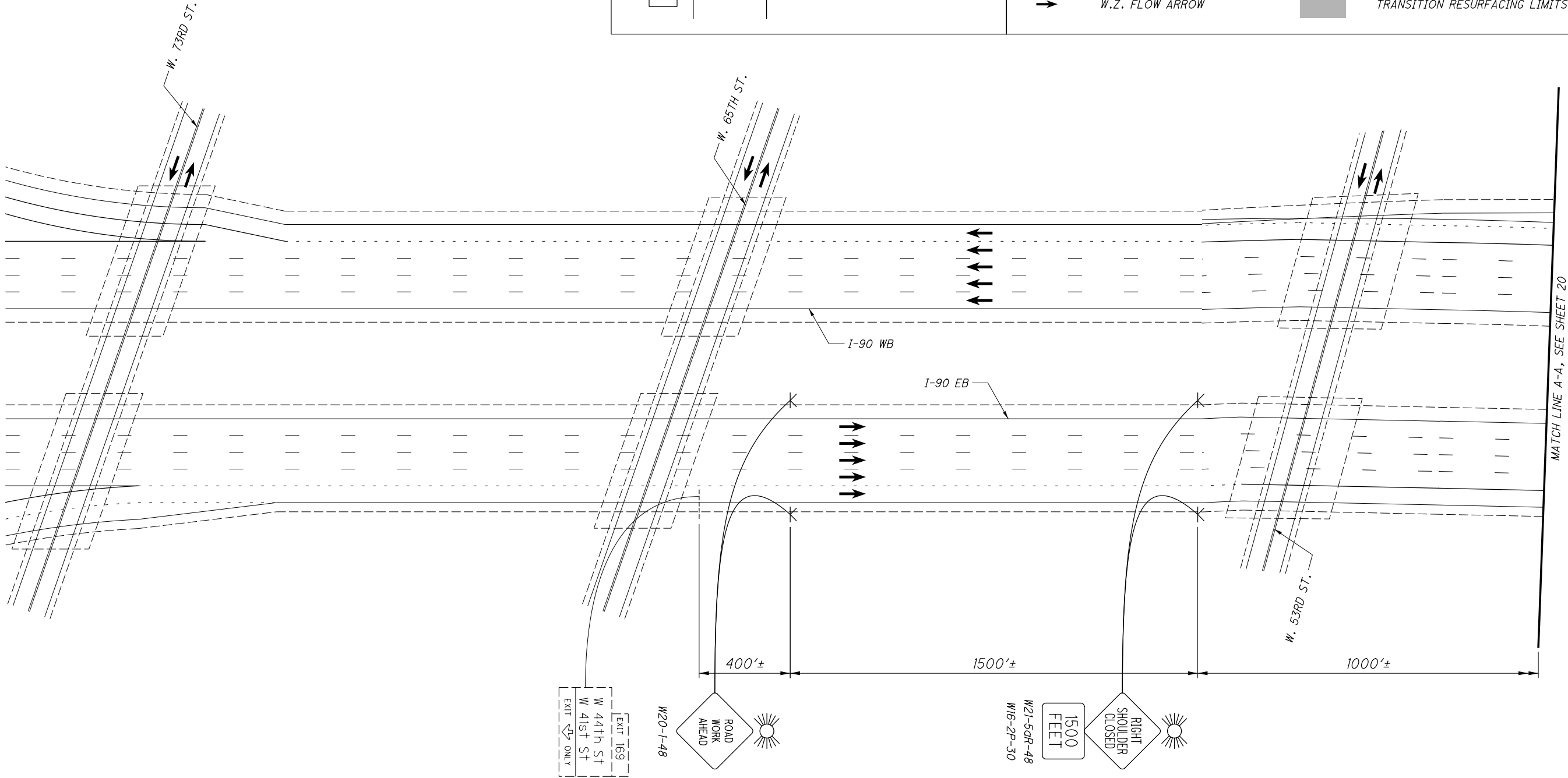
LEGEND

- K WORK ZONE SIGN & SUPPORT
- TYPE 3 BARRICADE W/ SIGN
- TYPE 2 BARRICADE W/ SIGN
- DETOUR DIRECTIONAL ARROW
- SIGNALIZED INTERSECTION

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MD003.dgn Sheet 12/23/2019 9:44:21AM sriffle



- LEGEND
- K WORK ZONE SIGN & SUPPORT
  - TYPE 3 BARRICADE W/ SIGN
  - DETOUR DIRECTIONAL ARROW
  - SIGNALIZED INTERSECTION



DRUM SPACING CHART (MAX SPACING)			
SPEED (MPH)	25	40	60
TAPER (FT)	25	40	60
TANGENT (FT)	50	80	120

W.Z. PAVEMENT MARKING LEGEND

740.06 (TAPE)	642 (PAINT)	
		W.Z. EDGE LINE, WHITE
		W.Z. EDGE LINE, YELLOW
		W.Z. CHANNELIZING LINE
		W.Z. DOTTED LINE

MOT LEGEND

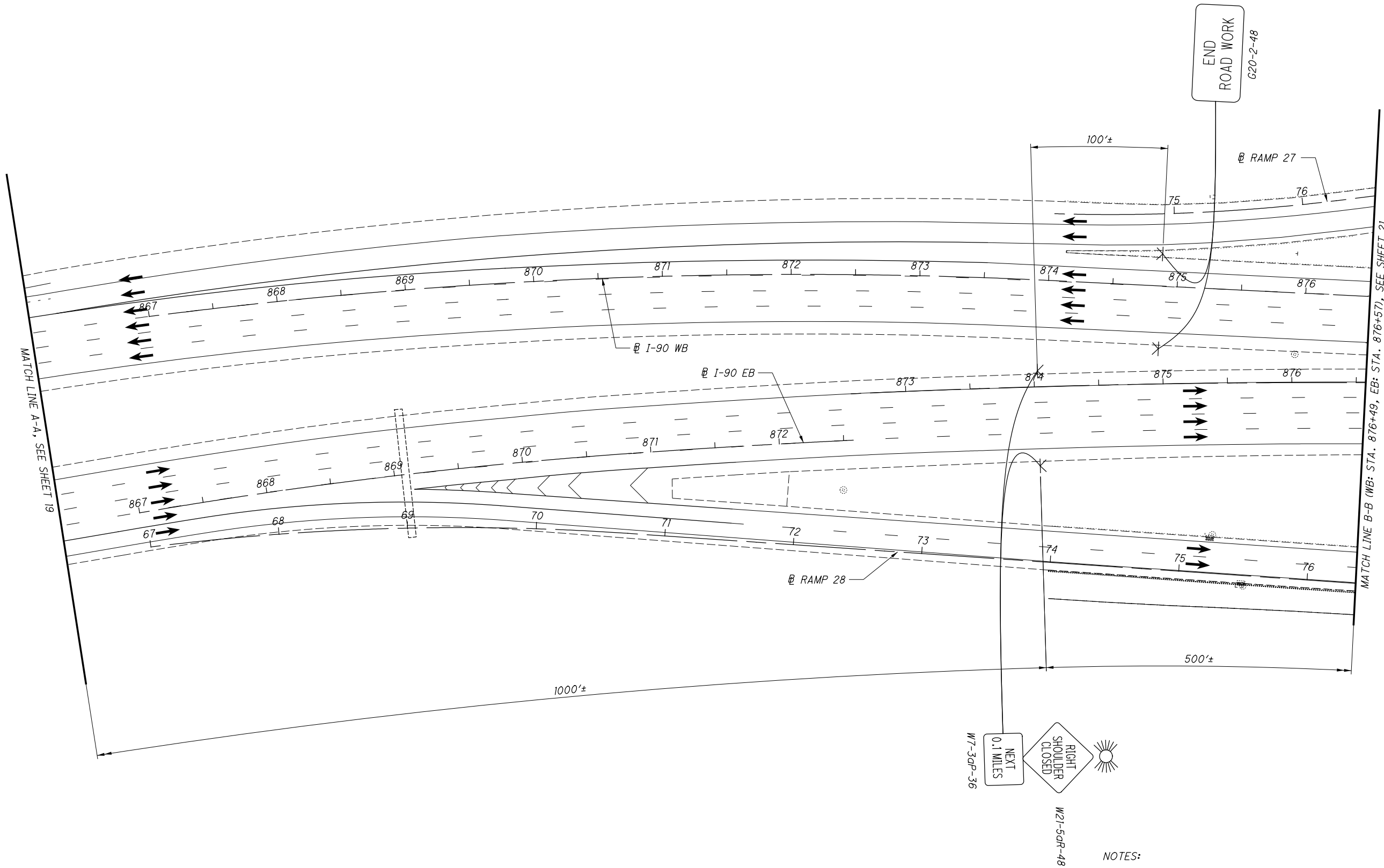
	W.Z. PORTABLE BARRIER, 32"		W.Z. DRUM
	W.Z. IMPACT ATTENUATOR		WORK AREA
	W.Z. SIGN		TYPE 'A' WARNING LIGHT
	W.Z. TYPE 3 BARRICADE		TYPE 'B' WARNING LIGHT
	W.Z. FLOW ARROW		TRANSITION RESURFACING LIMITS

CALCULATED  
JAR

CHECKED  
DRB

0 20 40 80  
HORIZONTAL  
SCALE IN FEET

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_M0102.dgn Sheet 12/23/2019 9:44:23 AM sr1f1e



NOTES:  
1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.

CALCULATED  
JAR

CHECKED  
DRB

CUY-90-13.45

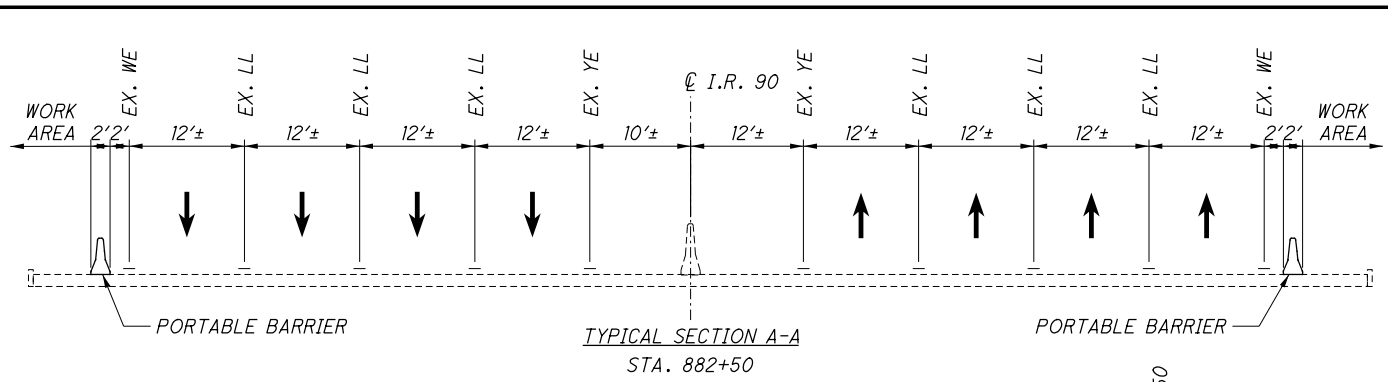
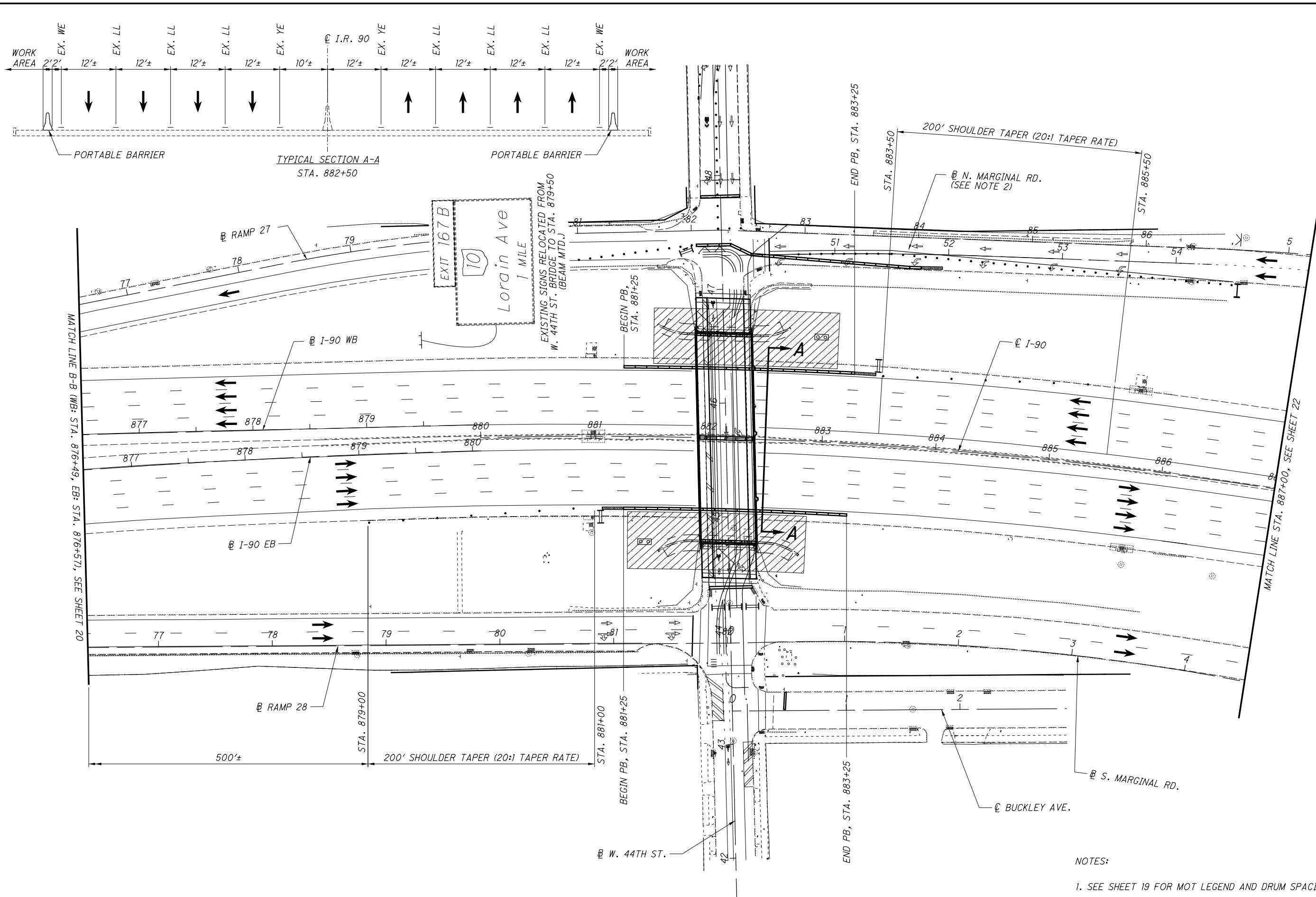
20  
135

MAINTENANCE OF TRAFFIC - PHASE 1 & 3  
I-90 - M.L. A-A TO M.L. B-B

0 20 40 80  
HORIZONTAL  
SCALE IN FEET

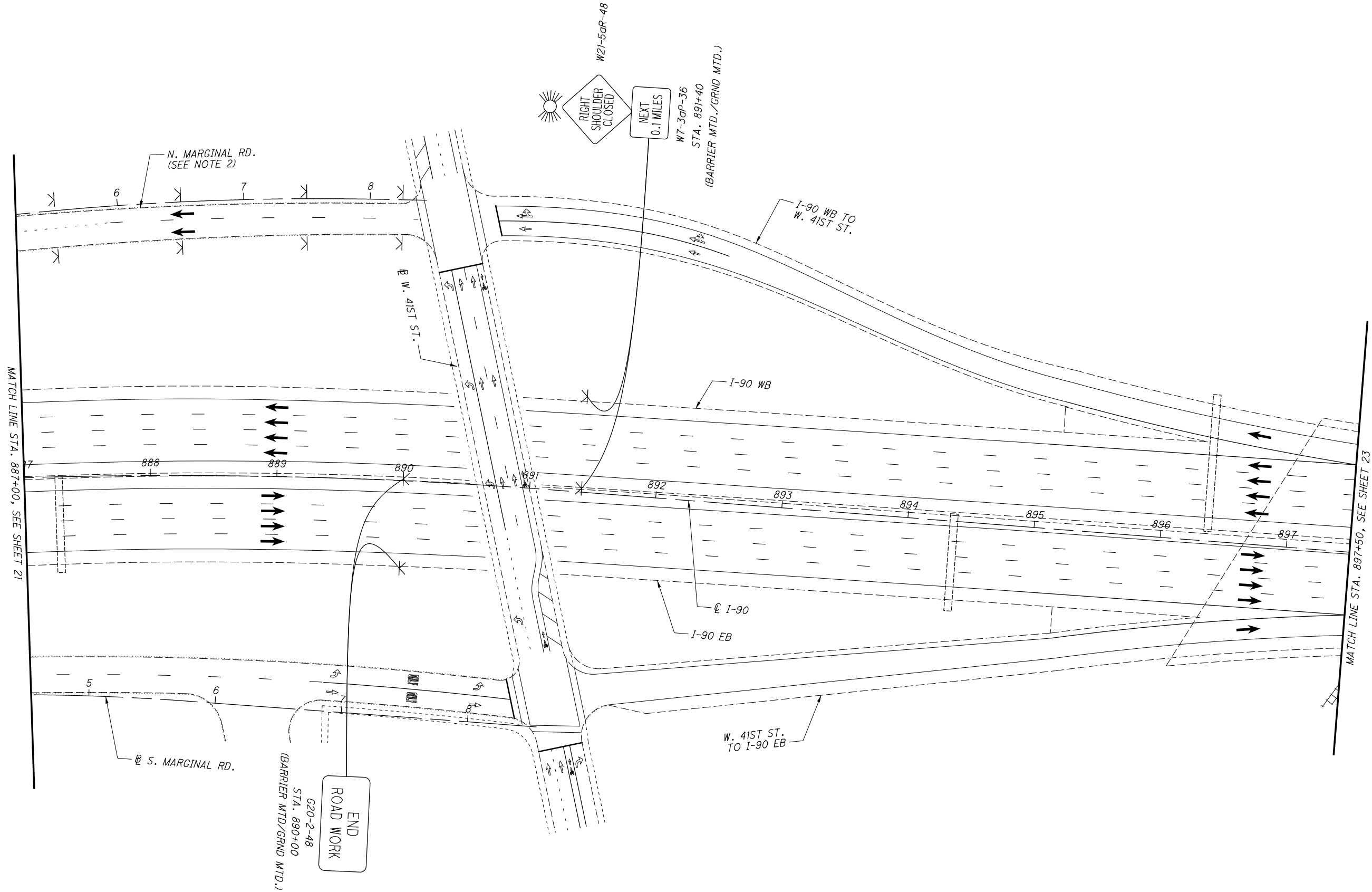


\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\M01\Sheets\05792.MP03.dgn Sheet 12/23/2019 9:44:24 AM sriffle



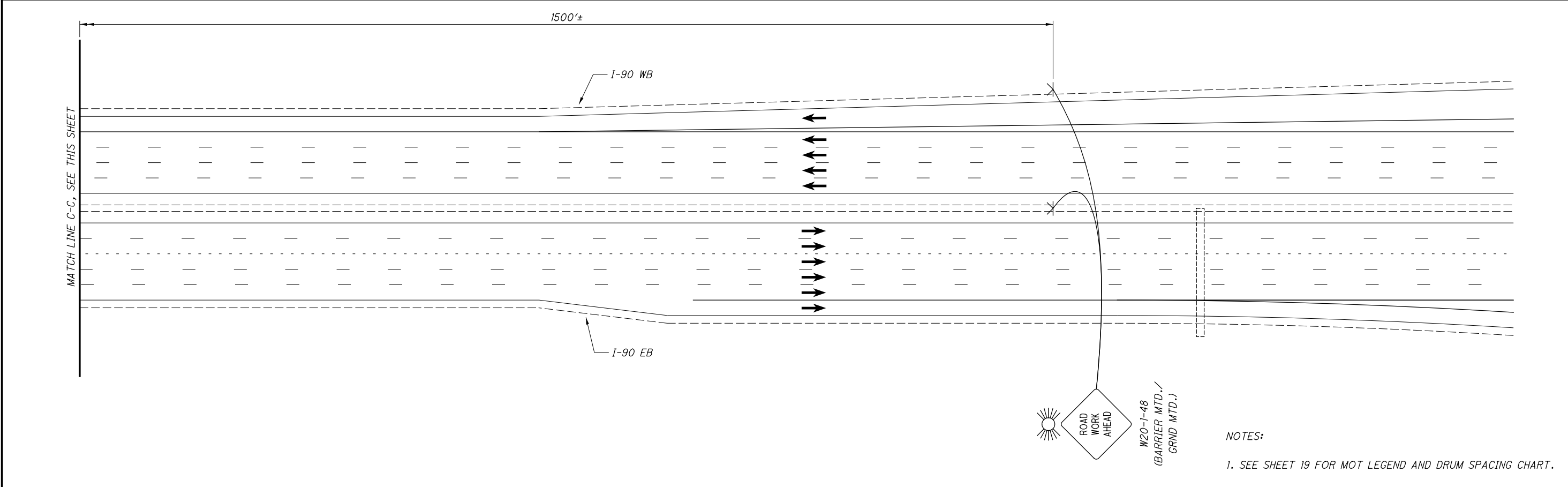
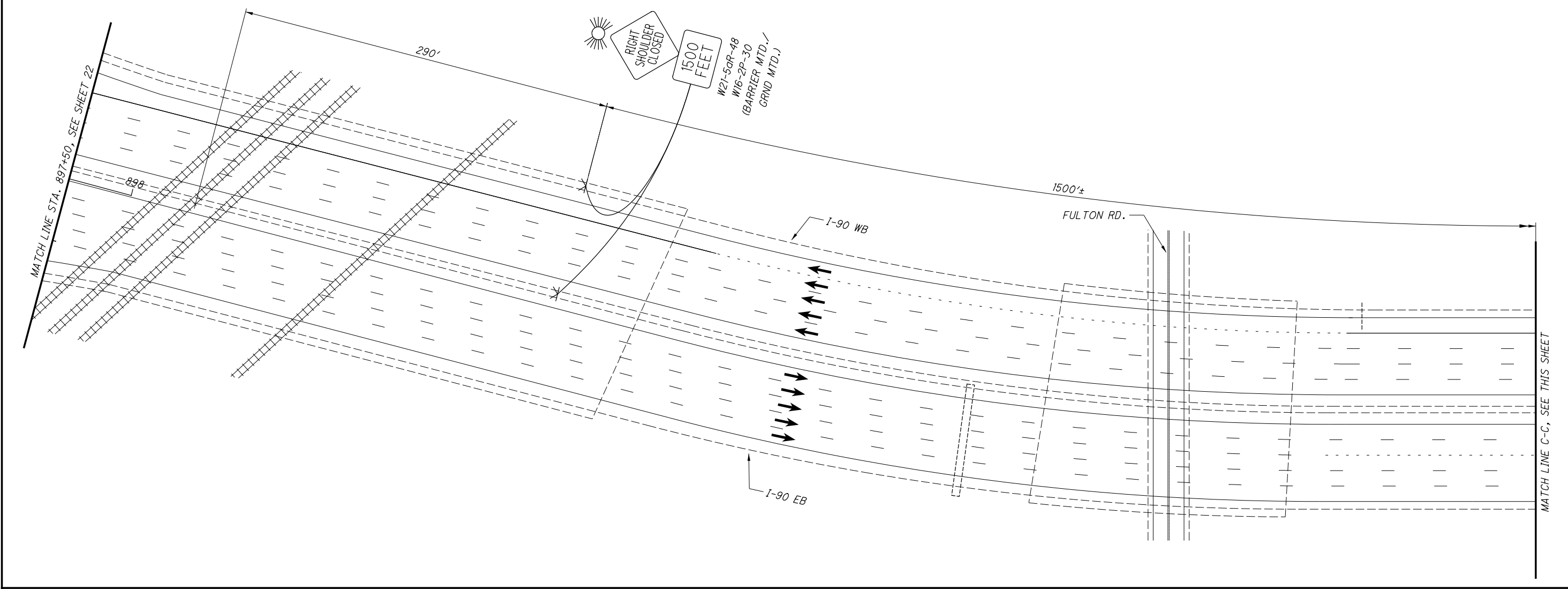
- NOTES:
1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.
  2. SEE SHEET 31 FOR MOT SETUP OF N MARGINAL RD.
  3. UTILITIES NOT SHOWN FOR PLAN CLARITY.

 0 20 40 80 HORIZONTAL SCALE IN FEET	CALCULATED JAR	MAINTENANCE OF TRAFFIC - PHASE 1 & 3 I-90 - M.L. B-B TO STA. 887+00	CUY-90-13.45	21 135
	CHECKED DRB			

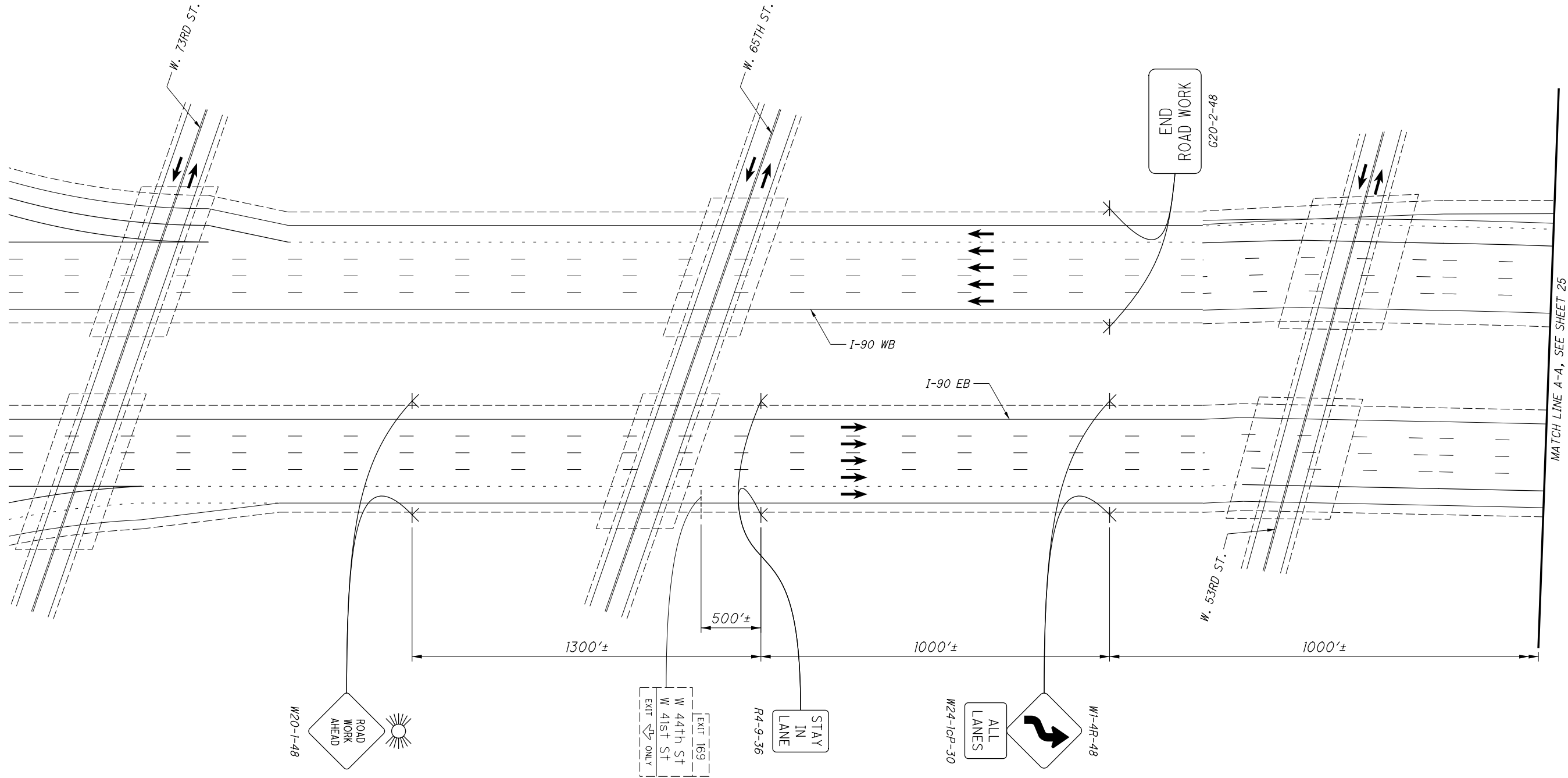


- NOTES:
- 1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.
  - 2. SEE SHEET 31 FOR MOT SETUP OF N MARGINAL RD.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MPI05.dgn Sheet 12/23/2019 9:44:26 AM sriffle

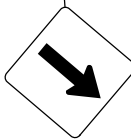


NOTES:  
1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.



NOTES:  
1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.

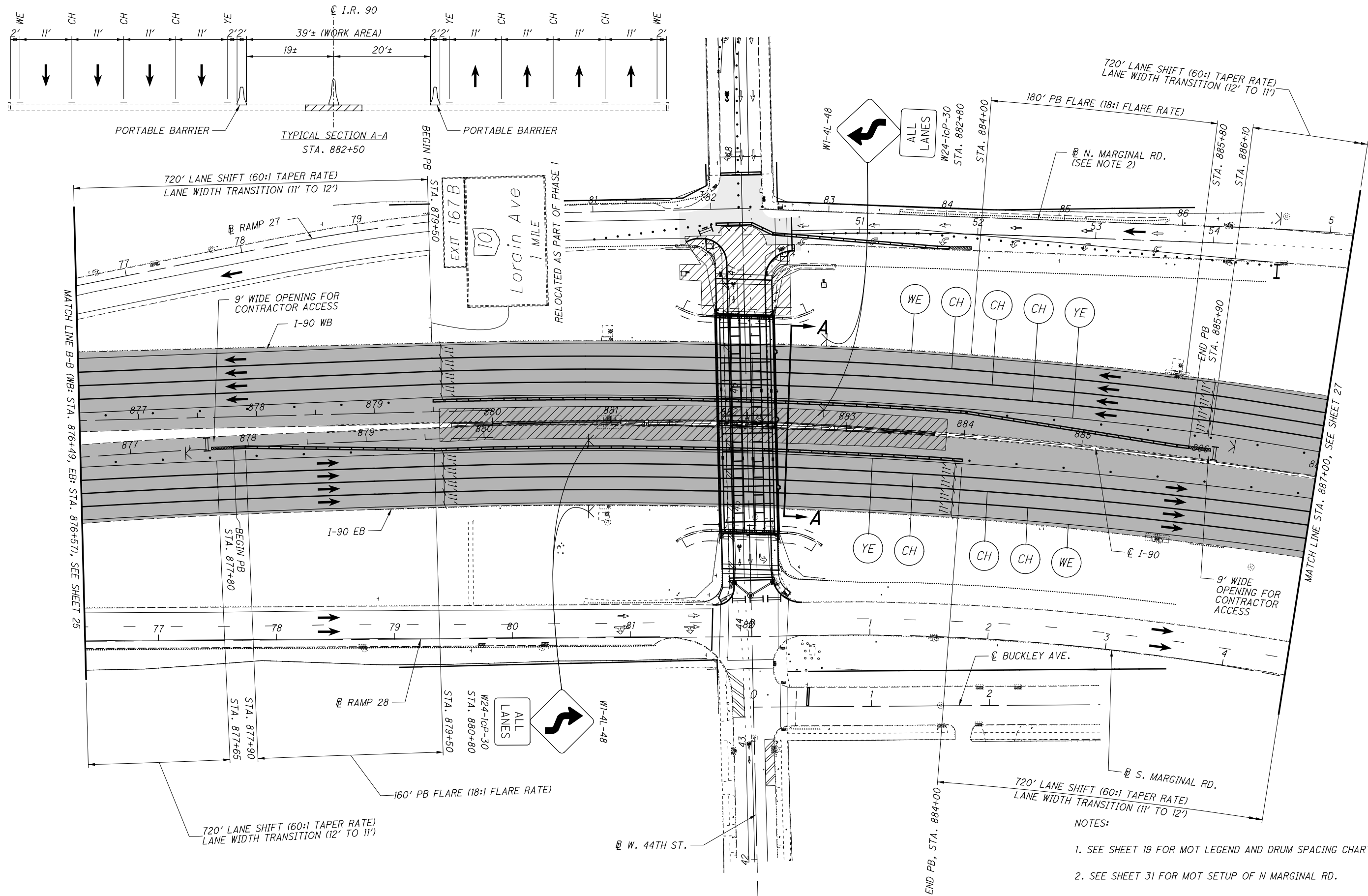
24 135	CUY-90-13.45	MAINTENANCE OF TRAFFIC - PHASE 2 I-90 - W. 73RD ST. TO M.L. A-A	CALCULATED JAR	CHECKED DRB	 0 20 40 80 HORIZONTAL SCALE IN FEET



3. PLACE WORK ZONE RAISED PAVEMENT MARKERS PER MT-99.30 IN THE EASTBOUND LANES FROM STATION 867+50 TO STATION 894+20 AND IN THE WESTBOUND LANES FROM STATION 869+30 TO STATION 896+30. RESURFACE THE TRANSITION AREAS IN ACCORDANCE WITH THE WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN NOTE ON SHEET 13.



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MP203.dgn Sheet 12/23/2019 9:44:28 AM sriffie



TYPICAL SECTION A-A  
STA. 882+50

PORTABLE BARRIER

EXIT 167B  
Lorain Ave  
1 MILE  
RELOCATED AS PART OF PHASE 1

MATCH LINE B-B (WB: STA. 876+49, EB: STA. 876+57), SEE SHEET 25

MATCH LINE STA. 887+00, SEE SHEET 27

NOTES:

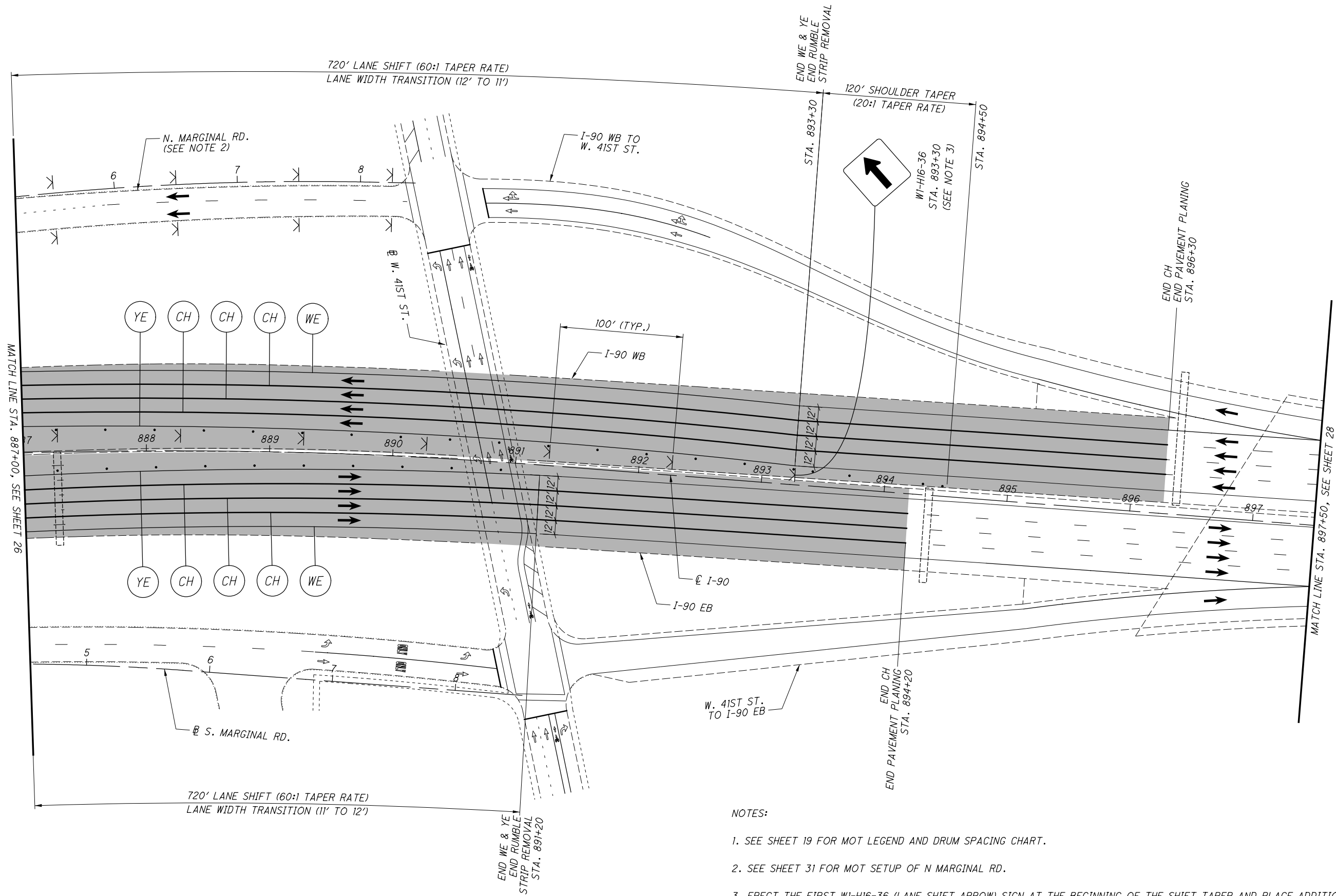
1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.
2. SEE SHEET 31 FOR MOT SETUP OF N MARGINAL RD.
3. UTILITIES NOT SHOWN FOR PLAN CLARITY.
4. EXISTING RIGHT SHOULDERS IN AREA OF SHIFTED TRAFFIC ARE FULL DEPTH (I.E. 4.5" ASPHALT CONCRETE OVER 10" CONCRETE).

MAINTENANCE OF TRAFFIC - PHASE 2  
I-90 - M.L. B-B TO STA. 887+00



CUY-90-13.45



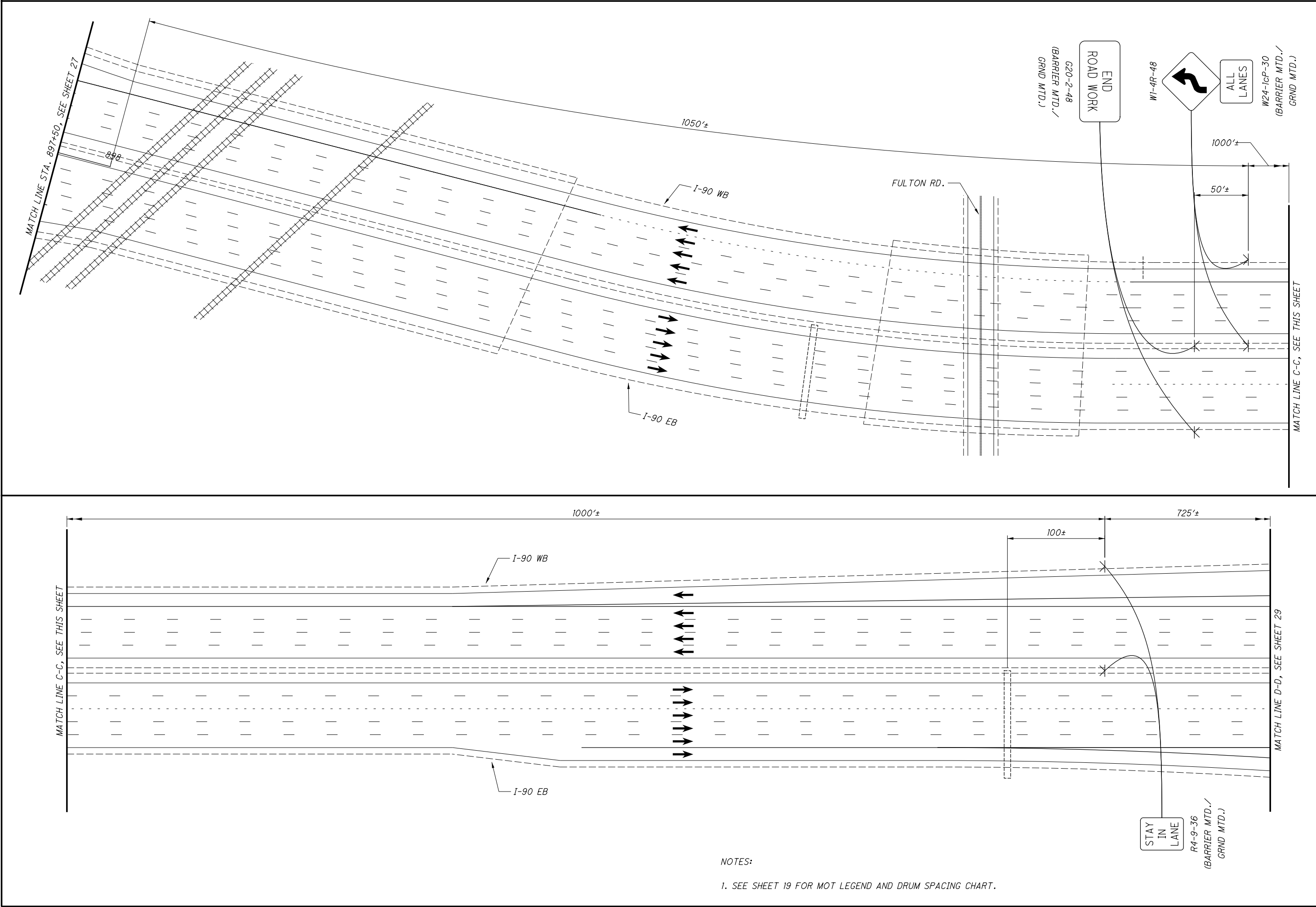
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\M01\Sheets\05792\_MP204.dgn Sheet 12/23/2019 9:44:30 AM sriffie



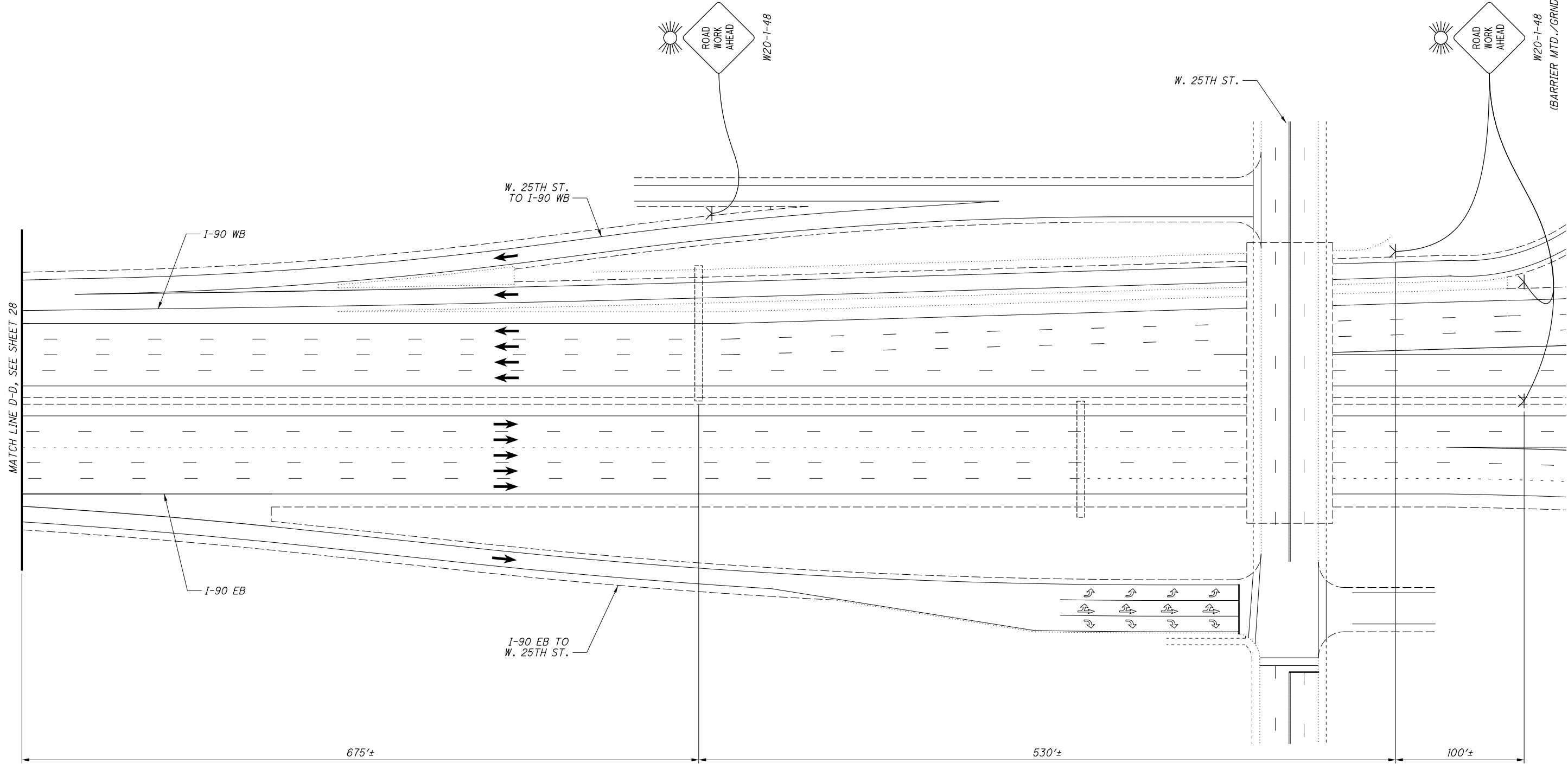
- NOTES:
1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.
  2. SEE SHEET 31 FOR MOT SETUP OF N MARGINAL RD.
  3. ERECT THE FIRST WI-H16-36 (LANE SHIFT ARROW) SIGN AT THE BEGINNING OF THE SHIFT TAPER AND PLACE ADDITIONAL SIGNS EVERY 100' ALONG THE TAPER (8 TOTAL SIGNS). SIGN SYMBOLS ARE SHOWN ON THE PLAN BUT ADDITIONAL SIGN LEGENDS ARE OMITTED FOR PLAN CLARITY.

 0 20 40 80 HORIZONTAL SCALE IN FEET	CALCULATED JAR	MAINTENANCE OF TRAFFIC - PHASE 2 I-90 - STA. 887+00 TO STA. 897+50	CUY-90-13.45	
	CHECKED DRB			

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\M01\Sheets\05792\_MP205.dgn Sheet 12/23/2019 9:44:31AM sriffle



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\M01\Sheets\05792\_MP206.dgn Sheet 12/23/2019 9:44:31AM sriffle



NOTES:

1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.

CUY-90-13.45	MAINTENANCE OF TRAFFIC - PHASE 2		29 135
	I-90 - M.L.D-D TO EASTERN LIMITS		
CALCULATED JAR		CHECKED DRB	 0 20 40 80 HORIZONTAL SCALE IN FEET

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\MOT\Sheet\05792\_MP301.dgn Sheet 4/29/2020 3:44:47 PM jrettig

NOTES:

1. SEE SHEET 19 FOR MOT LEGEND AND DRUM SPACING CHART.

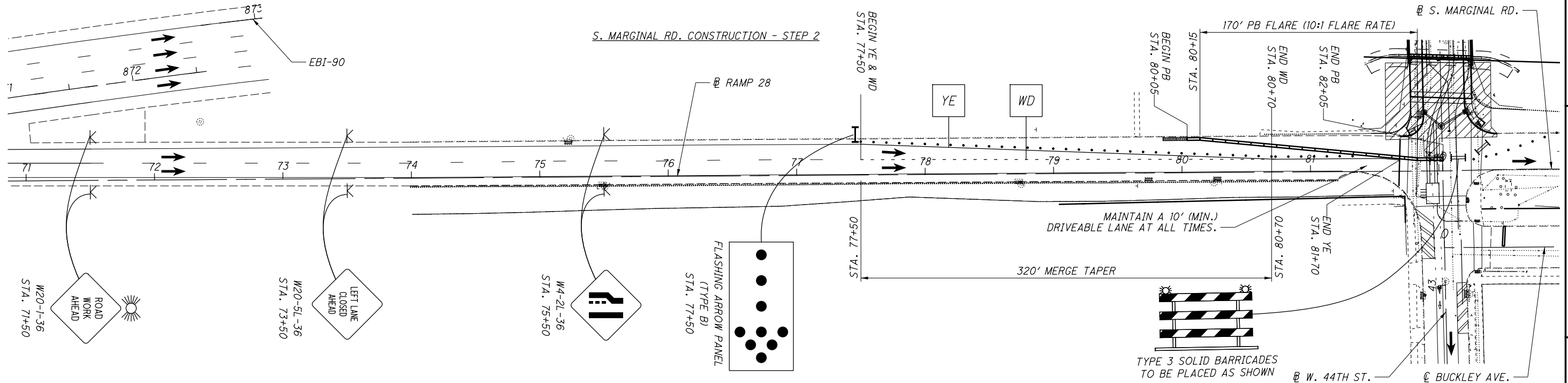
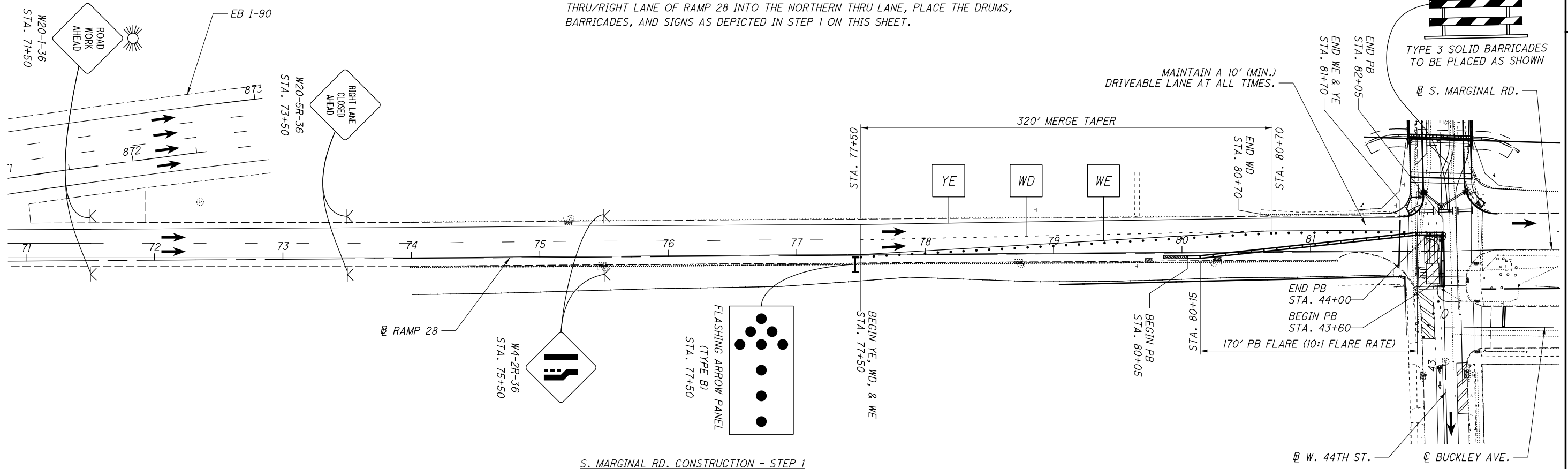
2. W 44TH ST SHALL BE CLOSED BETWEEN N MARGINAL RD AND S MARGINAL RD FOR THE ENTIRE PROJECT.

- DURING BRIDGE WORK: BARRICADES SHALL BE PLACED IMMEDIATELY NORTH OF THE INTERSECTION OF W 44TH ST AT S MARGINAL RD, BUT SHALL NOT EXTEND INTO THE INTERSECTION. RAMP 28 SHALL OPERATE PER EXISTING CONDITION.

- DURING S MARGINAL INTERSECTION WORK - STEP 1: MERGE THE SOUTHERN THRU/RIGHT LANE OF RAMP 28 INTO THE NORTHERN THRU LANE, PLACE THE DRUMS, BARRICADES, AND SIGNS AS DEPICTED IN STEP 1 ON THIS SHEET.

- DURING S MARGINAL INTERSECTION WORK - STEP 2: MERGE THE NORTHERN THRU LANE OF RAMP 28 INTO THE SOUTHERN THRU/RIGHT LANE, PLACE THE DRUMS, BARRICADES, AND SIGNS AS DEPICTED IN STEP 2 ON THIS SHEET. IMMEDIATELY UPON COMPLETION OF THE INTERSECTION WORK REOPEN RAMP 28 TO EXISTING CONDITIONS (AND PLACE THE BARRICADES PER 'DURING BRIDGE WORK' DESCRIBED ABOVE IF THE PROJECT IS NOT COMPLETE).

3. PAVEMENT MARKINGS PER ODOT SCD MT-95.30 SHALL BE REQUIRED AS SHOWN ON S MARGINAL RD.



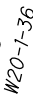
0 20 40 80  
HORIZONTAL  
SCALE IN FEET

CALCULATED  
JAR  
CHECKED  
DRB

MAINTENANCE OF TRAFFIC  
S. MARGINAL RD. WORK AREA

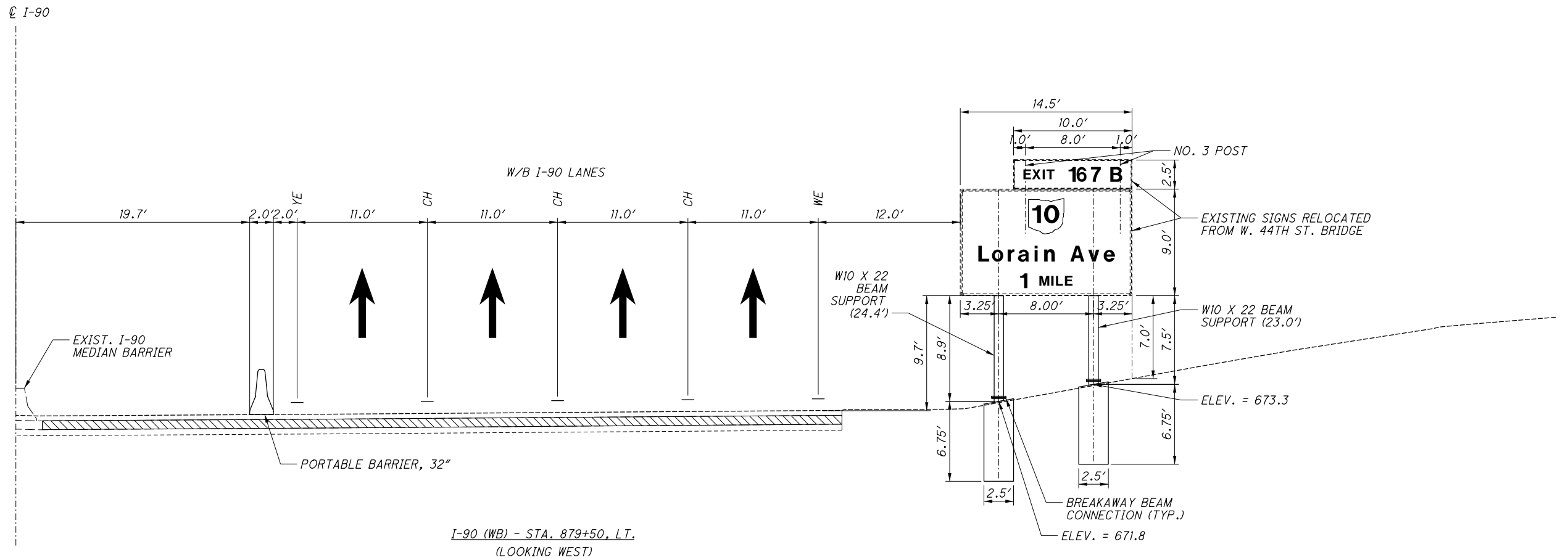
CUY-90-13.45

30  
135



$$\frac{31}{135}$$

\\msconsultants.com\\files\\Production\\02\\60\\08342\\05792\_BRIDGE\_REDECK\\Design\\M01\\Sheets\\05792\_MY001.dgn Sheet 12/23/2019 9:44:35 AM sr1file



- NOTES:
1. MAINTENANCE OF TRAFFIC PHASE 2 LANE CONFIGURATION IS SHOWN FOR BEAM AND FOUNDATION PLACEMENT.
2. VIEW IS MIRRORED TO FACE SIGN.
3. FOR PAVEMENT MARKING LEGEND SEE SHEET 17.

CALCULATED	JAR	CHECKED	KWR
 HORIZONTAL SCALE IN FEET			

MOT SIGN ELEVATION DETAIL

I-90



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GG001.dgn Sheet 4/22/2020 2:29:01 PM sriffie

SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	GENERAL SUMMARY
8	9	15	36	37	38	47	48	64		OFFICE CALCS	01/BRO/B R	02/BRO/B R	03/BRO/B R							
																		ROADWAY		
LUMP											LUMP			201	11000	LS		CLEARING AND GRUBBING	8	
										693	693			202	23001	693	SY	PAVEMENT REMOVED, AS PER PLAN	9	
										257	257			202	23901	257	SY	CONCRETE BASE REMOVED, AS PER PLAN	3	
			1,161								1,161			202	30000	1,161	SF	WALK REMOVED		
			407								407			202	30701	407	FT	CONCRETE BARRIER REMOVED, AS PER PLAN	3	
			317								317			202	32000	317	FT	CURB REMOVED		
			45					282			327			202	35100	327	FT	PIPE REMOVED, 24" AND UNDER	69	
			313								313			202	38000	313	FT	GUARDRAIL REMOVED		
			4								4			202	47000	4	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED		
			2								2			202	58100	2	EACH	CATCH BASIN REMOVED	9	
	750										750			SPECIAL	20270110	750	FT	PIPE CLEANOUT, 24" AND UNDER	9	
			306								306			202	75000	306	FT	FENCE REMOVED		
						206	26				232			203	10000	232	CY	EXCAVATION		
						6	6				12			203	20000	12	CY	EMBANKMENT		
										713	713			204	10000	713	SY	SUBGRADE COMPACTION		
				288							288			606	15050	288	FT	GUARDRAIL, TYPE MGS		
				2							2			606	35002	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		
				2							2			606	35102	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2		
				304							304			607	23000	304	FT	FENCE, TYPE CLT		
				602							602			608	10000	602	SF	4" CONCRETE WALK		
				351							351			608	52001	351	SF	CURB RAMP, AS PER PLAN (PER CITY OF CLEVELAND STANDARDS)	9	
		4,175									4,175			618	40101	4,175	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN	11	
				282							282			622	10101	282	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B1, AS PER PLAN	3	
				2							2			622	10200	2	EACH	BARRIER TRANSITION	74	
				3							3			622	25006	3	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1		
				4							4			625	32000	4	EACH	GROUND ROD (FENCING)		
																		EROSION CONTROL		
	65										65			659	00300	65	CY	TOPSOIL		
	382					153	51				586			659	10000	586	SY	SEEDING AND MULCHING		
	29										29			659	14000	29	SY	REPAIR SEEDING AND MULCHING		
	29										29			659	15000	29	SY	INTER-SEEDING		
	0.08										0.08			659	20000	0.08	TON	COMMERCIAL FERTILIZER		
	0.12										0.12			659	31000	0.12	ACRE	LIME		
	2										2			659	35000	2	MGAL	WATER		
																		DRAINAGE		
	40										40			605	05200	40	FT	4" UNCLASSIFIED PIPE UNDERDRAINS	9	
					39						39			611	04400	39	FT	12" CONDUIT, TYPE B		
	10										10			611	05900	10	FT	15" CONDUIT, TYPE B	9	
					2						2			611	98690	2	EACH	CATCH BASIN, MISC.: CLEVELAND CB-1	75	
					1						1			611	99101	1	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN	9	
	1										1			611	99160	1	EACH	INLET FRAME AND GRATE	9	
	1										1			611	99500	1	EACH	INLET, MISC.:WALLS, STEPS AND BOTTOM SLAB	9	
					1						1			611	99654	1	EACH	MANHOLE ADJUSTED TO GRADE		
											364			254	01000	364	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.25"	13	CUY -90-13.45
		39,583									39,583			254	01000	39,583	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"		
											1,021			255	20000	1,021	FT	FULL DEPTH PAVEMENT SAWING		
											164			304	20000	164	CY	AGGREGATE BASE		
											364			305	13011	364	SY	9" CONCRETE BASE, CLASS QC1, AS PER PLAN	9	
											55			407	10000	55	GAL	TACK COAT		
		3,562									3,562			407	20000	3,562	GAL	NON-TRACKING TACK COAT	13	
											26			441	50101	26	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG64-22	8	
											35			441	50300	35	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)		
		1,650									1,650			442	10000	1,650	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), PG76-22M	13	
				127							127			609	26000	127	FT	CURB, TYPE 6		
																				33 135
								1			1			638	11310	1	EACH	2" AIR RELEASE VALVE, CITY OF CLEVELAND	69, 71	
								292			292			638	98600	292	FT	WATER WORK, MISC.: SPECIAL - 8" GALVANIZED STEEL PIPE, CITY OF CLEVELAND	69	
								2			2			638	98000	2	EACH	WATER WORK, MISC.: SPECIAL - 6" CUT-IN-VALVE ASSEMBLY WITH VALVE BOX, COMPLETE	69, 71	

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GG002.dgn Sheet 4/29/2020 10:46:07 AM sriffle

SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED MSN	CHECKED	SSR
37	64	84	85	99	100	102					01/BRO/B R	02/BRO/B R	03/BRO/B R									
						6					6			625	00450	6	EACH	LIGHTING				
						18					18			625	00480	18	EACH	CONNECTION, UNFUSED PERMANENT				
						3					3			625	10500	3	EACH	LIGHT POLE, MISC.: ROUND TAPERED FIBERGLASS DECORATIVE POLE	100, 104			
						12					12			625	10614	12	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE	100			
						2					2			625	17961	2	EACH	BRACKET ARM, 8', AS PER PLAN	104			
						1,089					1,089			625	23300	1,089	FT	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE				
						384					384			625	23400	384	FT	NO. 10 AWG POLE AND BRACKET CABLE				
						51					51			625	24330	51	FT	1-1/2" DUCT CABLE WITH THREE NO. 2 AWG 2400 VOLT CABLES				
						420					420			625	25408	420	FT	CONDUIT, 2", 725.051				
						75					75			625	25911	75	FT	CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN	99			
						5					5			625	27560	5	EACH	LUMINAIRE, INSTALLATION ONLY	100			
						57					57			625	29002	57	FT	TRENCH, 24" DEEP	99			
						2					2			625	29901	2	EACH	JUNCTION BOX, AS PER PLAN	101			
						1					1			625	29930	1	EACH	MEDIAN JUNCTION BOX				
						4					4			625	31511	4	EACH	PULL BOX REMOVED, AS PER PLAN	99			
						4					4			625	31600	4	EACH	PULL BOX, MISC.: 17" X 30"	101			
						2					2			625	32000	2	EACH	GROUND ROD				
						1					1			625	33000	1	EACH	STRUCTURE GROUNDING SYSTEM				
						57					57			625	36000	57	FT	PLASTIC CAUTION TAPE				
					LUMP						LUMP			SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	100			
						2					2			625	75403	2	EACH	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN	99			
						3					3			625	75505	3	EACH	LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN	99			
						1					1			625	75521	1	EACH	LUMINAIRE SUPPORT REMOVED, AS PER PLAN	99			
						2					2			625	75801	2	EACH	DISCONNECT CIRCUIT, AS PER PLAN	99			
				1							1			625	98000	1	EACH	LIGHTING, MISC.: TEST EXISTING CIRCUITS	99			
						2					2			632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER				
						2					2			632	89300	2	EACH	WOOD POLE				
						1					1			632	89400	1	EACH	DOWN GUY				
																		OTHER UTILITIES				
	208										208			202	98200	208	FT	REMOVAL MISC.: CONCRETE ENCASED ELECTRIC DUCT BANK	55			
											LUMP			503	11100	LS		COFFERDAMS AND EXCAVATION BRACING				
	189										189			625	25803	189	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN, 18-5" DIA. CONDUITS	53			
	3,312										3,312			625	25920	3,312	FT	CONDUIT, MISC.:5" FIBERGLASS REINFORCED EPOXY CONDUIT	53			
	2										2			625	98000	2	EACH	LIGHTING, MISC.:MANHOLE RECONSTRUCTED	55			
	8,208										8,208			632	69350	8,208	FT	POWER CABLE, MISC.: 750 KCMIL-IC-CU-15 KV EPR	54-55			
	8,424										8,424			632	69350	8,424	FT	POWER CABLE, MISC.: 4/0 IC-CU-EPR-15KV WITH 133% INSULATION	54-55			
	2										2			SPECIAL	69098000	2	EACH	PRECAST ELECTRIC MANHOLE	55-56			
	4,120										4,120			804	15011	4,120	FT	FIBER OPTIC CABLE, 24 FIBER, AS PER PLAN	55, 58			
																		TRAFFIC CONTROL				
		153									153			621	00100	153	EACH	RPM				
		153									153			621	54000	153	EACH	RAISED PAVEMENT MARKER REMOVED				
			4								4			625	32000	4	EACH	GROUND ROD				
5											5			626	00102	5	EACH	BARRIER REFLECTOR, TYPE 1(BI-DIRECTIONAL)				
9											9			626	00110	9	EACH	BARRIER REFLECTOR, TYPE 2(ONE-WAY)				
			77								77			630	02100	77	FT	GROUND MOUNTED SUPPORT, NO. 2 POST				
			28.5								28.5			630	03100	28.5	FT	GROUND MOUNTED SUPPORT, NO. 3 POST				
			6								6			630	08600	6	EACH	SIGN POST REFLECTOR				
			2								2			630	45500	2	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8				
			2								2			630	55000	2	EACH	CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, TC-7.65				
			3								3			630	79500	3	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED				
			62.8								62.8			630	80100	62.8	SF	SIGN, FLAT SHEET				
			830								830			630	80224	830	SF	SIGN, OVERHEAD EXTRUSHEET				
			2								2			630	84510	2	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION				
			5								5			630	84900	5	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				
			5								5			630	86002	5	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL				
			7								7			630	86310	7	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL				
			2								2			630	86320	2	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION				
			3								3			630	87500	3	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL				
			1								1			631	94350	1	EACH	REMOVAL OF DISCONNECT SWITCH				
			1								1			631	94406	1	EACH	REMOVAL OF SIGNS WIRED				

GENERAL SUMMARY

CUY-90-13.45

34  
135

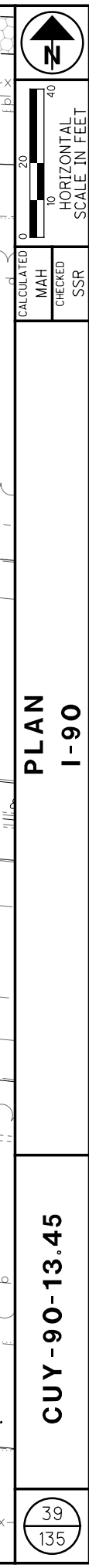
35  
135



$$\frac{37}{135}$$



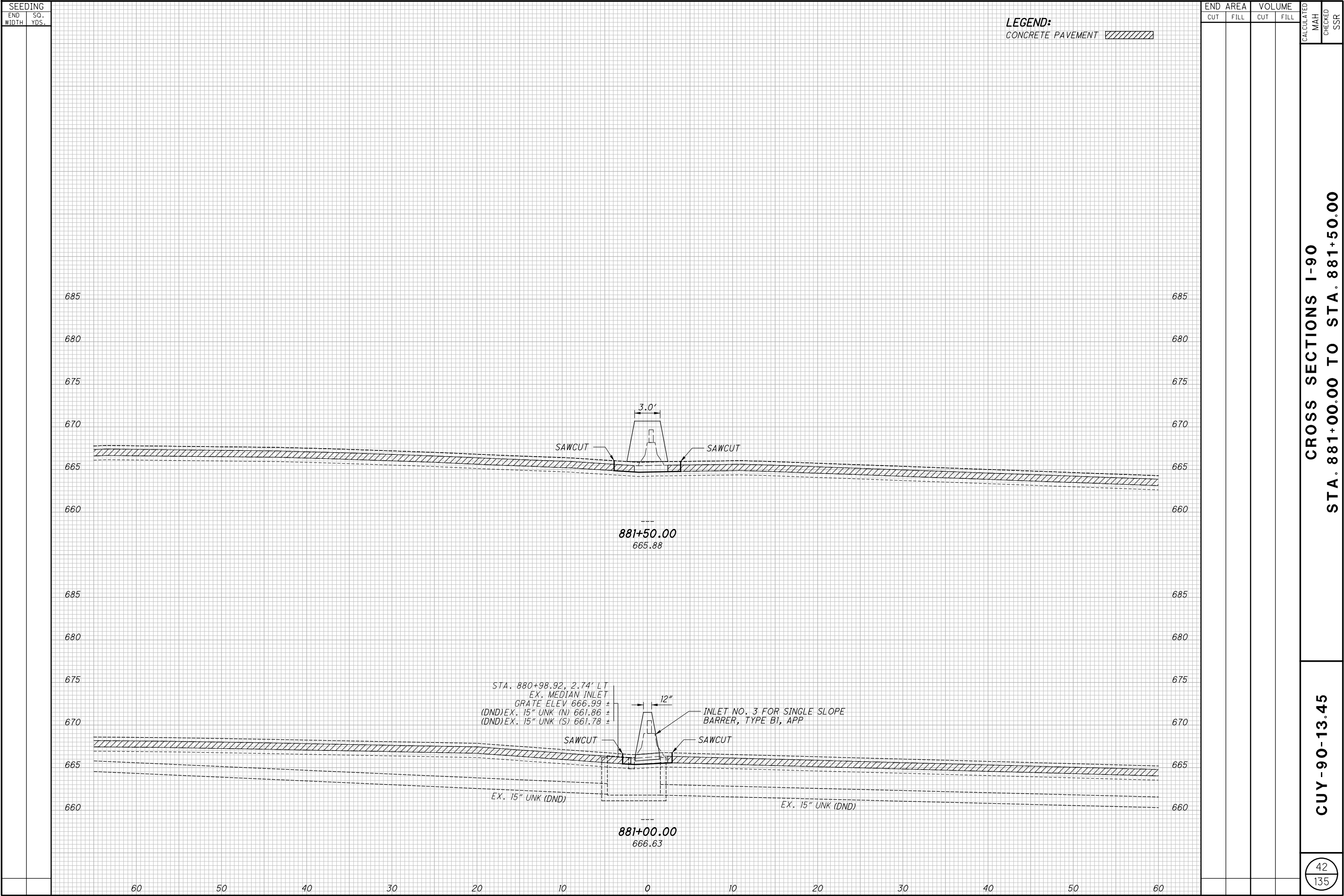






41  
135

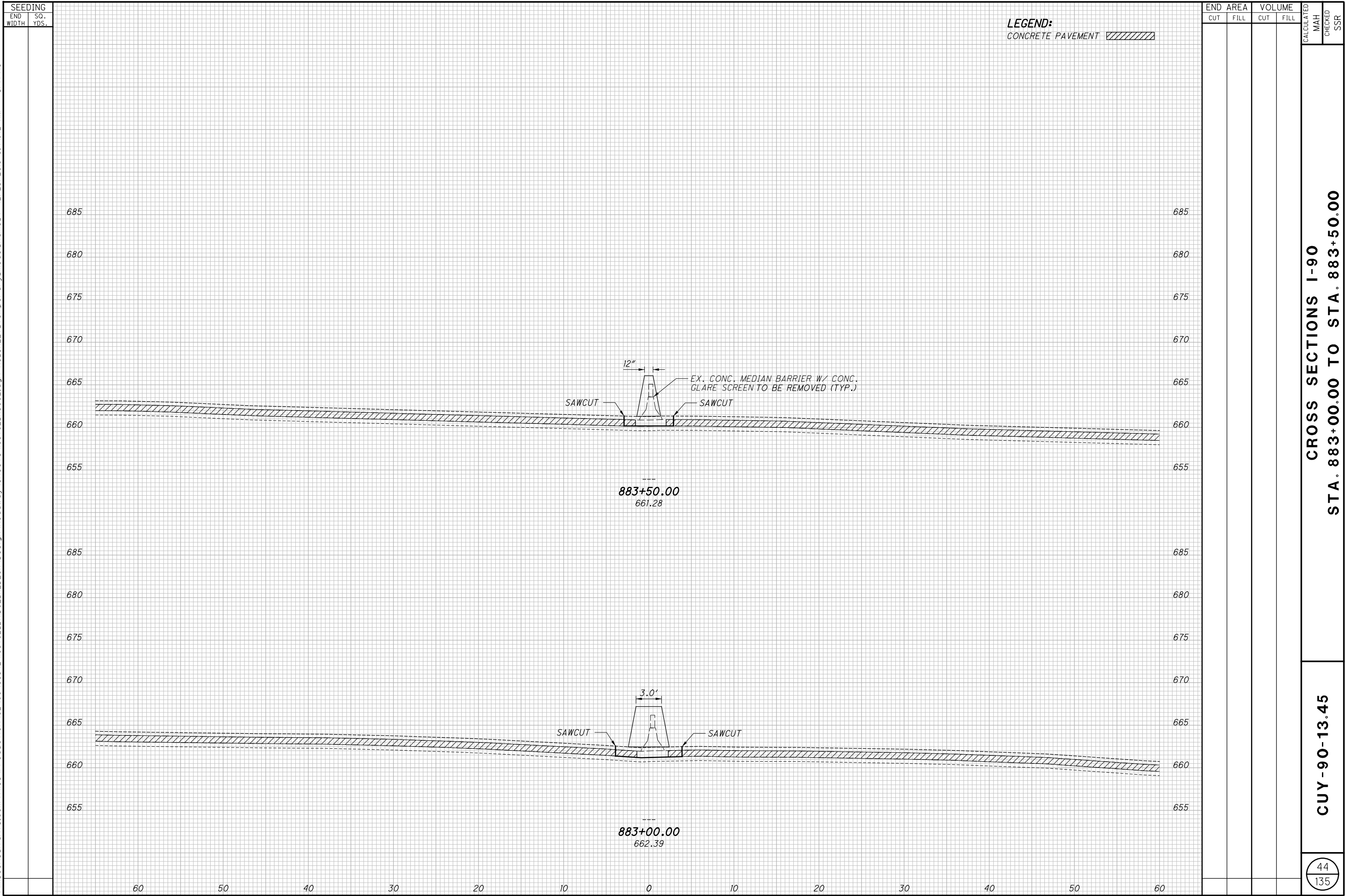
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_XS002.dgn XS\_SHEET\_temporary\_model\_name.2 12/23/2019 9:44:42 AM sr1.fle





43  
135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_XS002.dgn XS\_SHEET\_temporary\_model\_name\_4 12/23/2019 9:44:42 AM sriffle

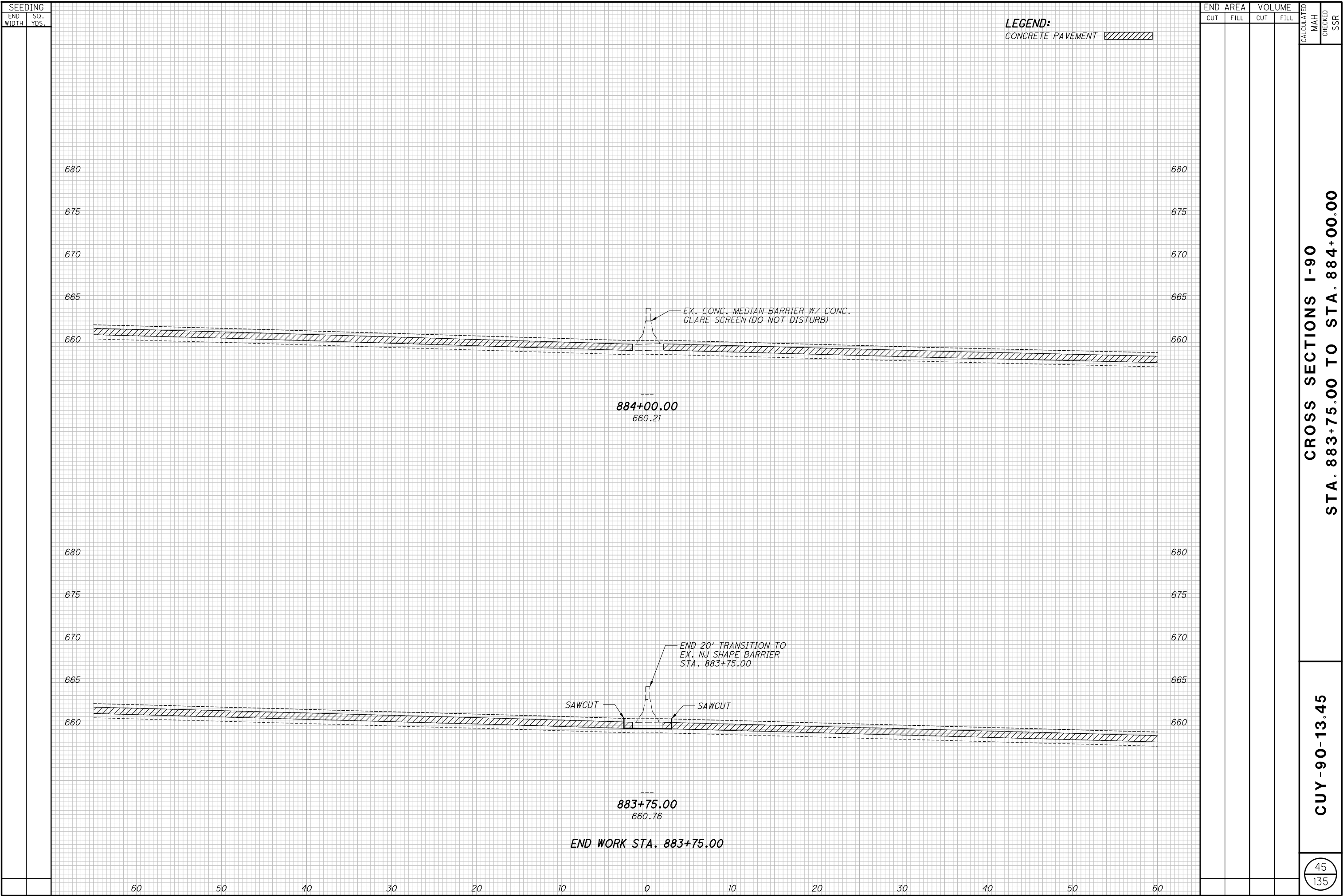


**CROSS SECTIONS I-90**  
**STA. 883+00.00 TO STA. 883+50.00**

**CUY-90-13.45**

44  
135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_XS002.dgn XS\_SHEET\_temporary\_model\_name.5 12/23/2019 9:44:43 AM sr1ffle

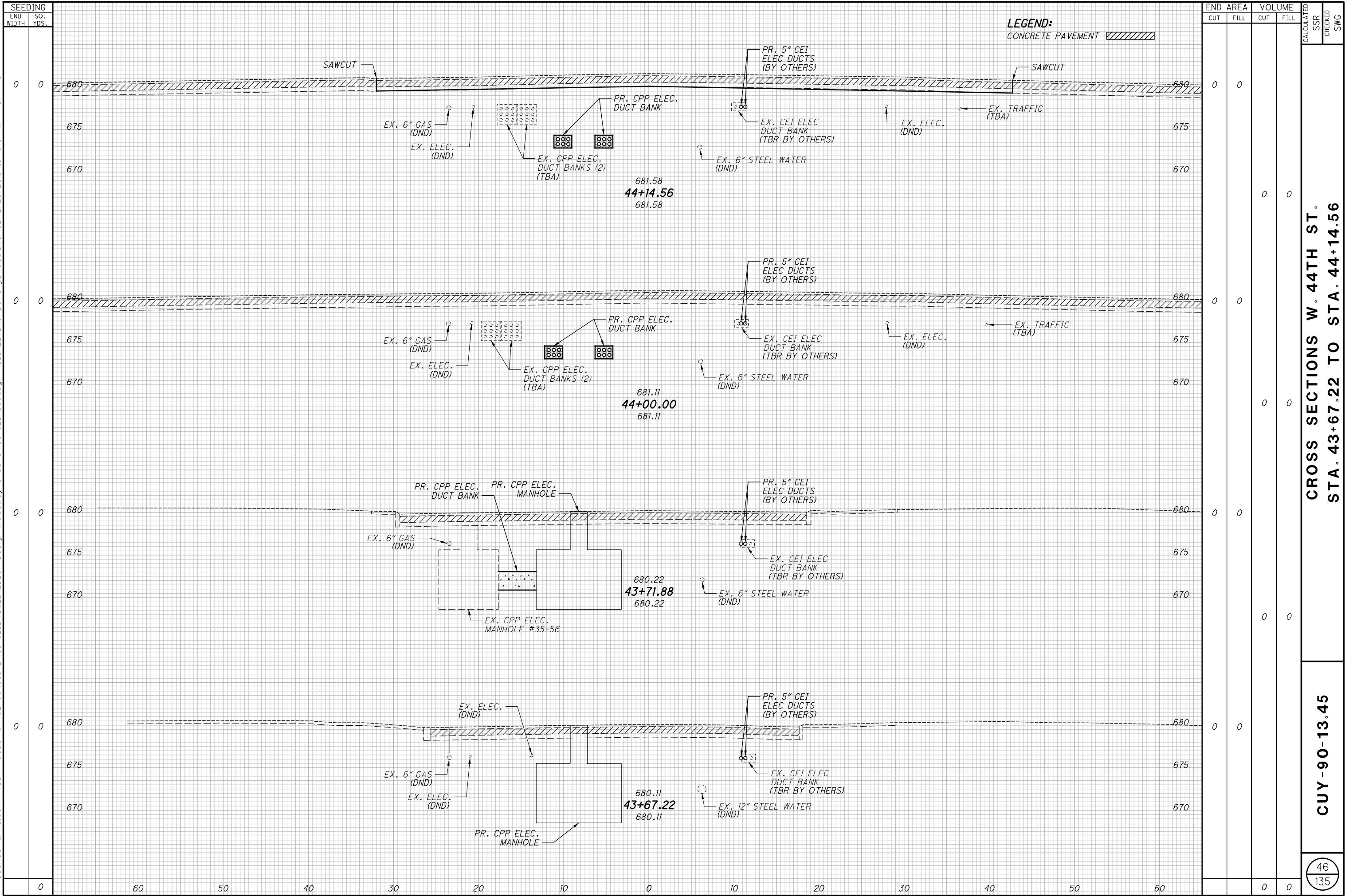


CROSS SECTIONS I-90  
STA. 883+75.00 TO STA. 884+00.00

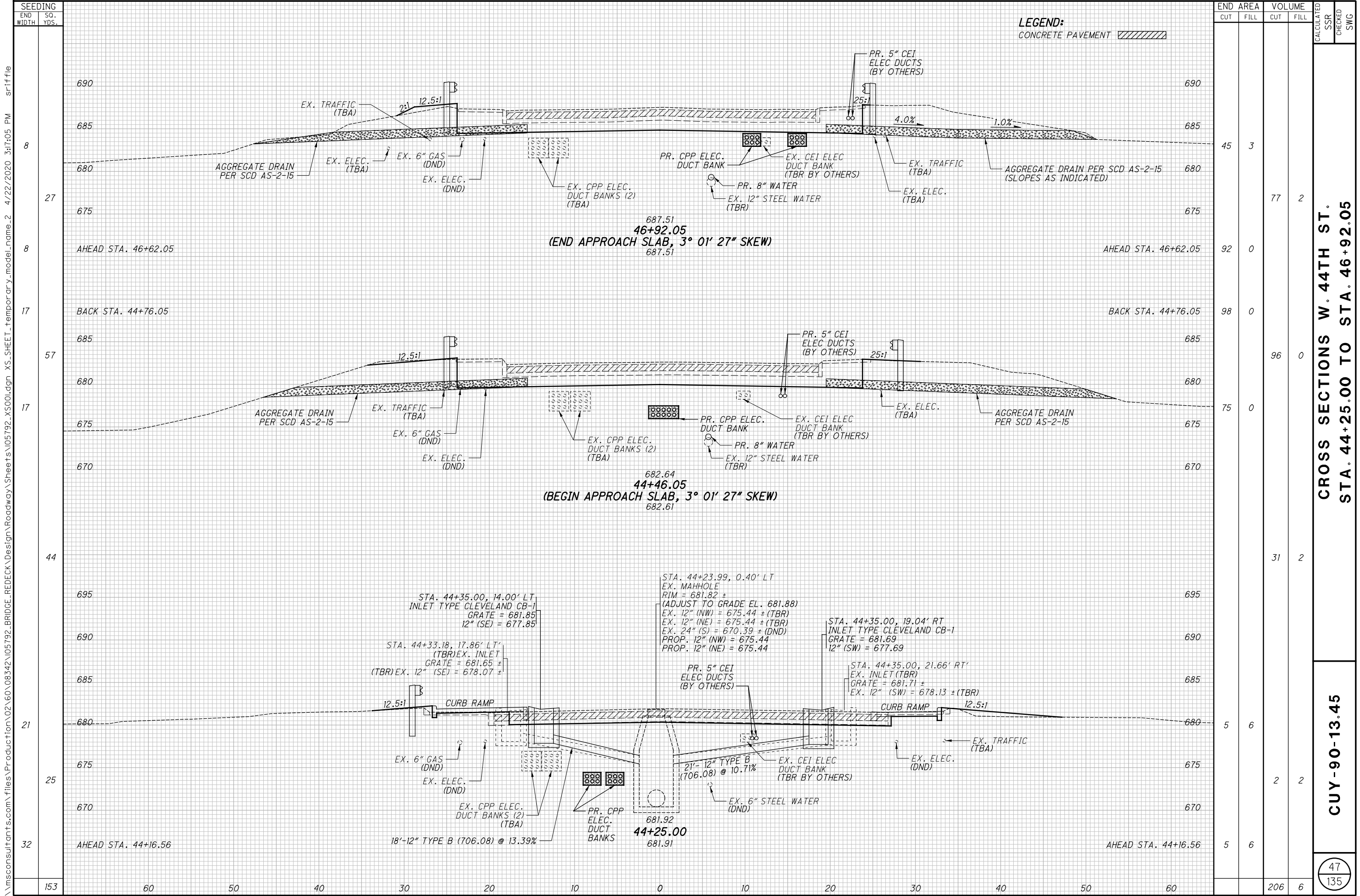
CUY-90-13.45

45  
135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_XS001.dgn XS\_SHEET\_model\_name\_1 12/23/2019 9:44:43 AM sr1.fle













\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UN001.dgn Sheet 12/23/2019 9:44:47 AM sriffle

CLEVELAND PUBLIC POWER GENERAL CONSTRUCTION NOTES

ALL CONSTRUCTION NOTES ARE MINIMUM DESIRABLE STANDARDS, ALL EXCEPTIONS MUST BE APPROVED BY CPP REPRESENTATIVE TO COMPLY WITH SAFETY CODES AND REGULATIONS.

CONTACT OHIO UTILITIES PROTECTION SERVICE (OHIO 811), TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION. IN OHIO, CALL TOLL FREE 1-800-362-2764. IT'S THE LAW.

UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATION, AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THIS PLAN OR NOT.

PROPOSED WORK

- A.THE CONTRACTOR SHALL RELOCATE AND/OR REMOVE ALL UNDERGROUND CLEVELAND PUBLIC POWER (CPP) FACILITIES OF THE CITY OF CLEVELAND, AS INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER ONLY AFTER CPP HAS VISIBLY CONFIRMED THAT SAID CPP FACILITIES HAVE BEEN DE-ENERGIZED & DISCONNECTED. THIS WORK SHALL BE PROPERLY COMPLETED, INCLUDING INCIDENTALS, AS SHOWN ON THE DRAWINGS AND HEREINAFTER SPECIFIED.
- B.ALL WORK IN THIS IN THIS CONTRACT SHALL CONFORM TO THE LATEST NATIONAL ELECTRIC SAFETY CODE (NESC) AND OSHA, EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT, IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN. ALL WORK SHALL BE IN CONFORMANCE WITH CPP REGULATIONS
- C.THE MAJOR ITEMS TO BE PERFORMED BY THE CONTRACTOR SHALL BE AS FOLLOWS:

FURNISH AND INSTALL UNDERGROUND AND BRIDGE SUPPORTED CONDUIT DUCT BANK INCLUDING MANHOLE CONSTRUCTON, CABLES AND SPLICES.

REMOVAL OF UNDERGROUND UTILITY FACILITIES WHERE DIRECTED TO.

ALL UNDERGROUND POWER CONDUIT RUNS ARE TO BE CONSTRUCTED BY USING 5" PVC SCHEDULE CONDUITS, AS DEPICTED ON THE PLANS, ENCASED WITH A 3" CONCRETE ENVELOPE, UNLESS OTHERWISE NOTED ON THE PLANS OR SPECIFICATIONS. THE CONCRETE ENVELOPE IS TO BE 4000PSI (CITY OF CLEVELAND CONCRETE MIX). EACH CONDUIT SHALL HAVE A PULLING LINE INSTALLED WITH SLACK AT EACH END.

A RUGGED POLYETHYLENE MATERIAL WARNING TAPE CAPABLE OF RESISTING HIGH OR LOW PH CONDITIONS MUST BE PLACED ABOVE THE ELECTRICAL CONDUIT BANK. THIS WARNING TAPE IS TO BE SIX INCHES WIDE, RED IN COLOR, AND IMPRINTED WITH THE WORDS, "DANGER - BURIED HIGH VOLTAGE CABLES BELOW". THIS TAPE IS TO BE PLACED 6" ABOVE THE NEWLY INSTALLED DUCT BANK. THIS SHALL SHALL CONFORM WITH THE STANDARDS AS SET BY OHIO UTILITIES PROTECTION SERVICE (OUPS). WARNING TAPE PAYMENT INCLUDED IN APPROPRIATE CONDUIT, PAY ITEM.

AS AN OPTION, CONTRACTOR MAY ELECT TO ENCASE CPP'S CONDUITS IN RED CONCRETE. BOTH METHODS ARE APPROVED BY CLEVELAND PUBLIC POWER (CPP) AND ARE RECOMMENDED BY OHIO UTILITIES PROTECTION SERVICE (OHIO811). PAYMENT FOR TINTED DUCT CONCRETE, OR TINTED CONCRETE PROTECTIVE SLABS, IS INCLUDED IN APPROPRIATE CONDUIT PAY ITEM.

THE TOP OF THE CONCRETE ENCASED CONDUIT ENVELOPE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 3'-0" BELOW THE EXISTING AND/OR PROPOSED GRADES. THE TOTAL TRENCH DEPTH WILL BE BASED UPON THE CONDUIT FORMATION. SEE DRAWINGS ISSUED BY CLEVELAND PUBLIC POWER (CPP) FOR DETAILS.

VERTICAL AND HORIZONTAL CURVES SHALL HAVE A MINIMUM RADIUS OF NO LESS THAN 30 FEET. THESE CURVES ARE TO BE CONDUITS AS NOTED CONSTRUCTED BY USING THE APPROPRIATE 5° COUPLINGS, AND ASSOCIATED CHORD LENGTHS AS SHOWN ON THE PLAN VIEW AND/OR AS SHOWN ON THE CONDUIT CURVE CONSTRUCTION CHART. ANY OTHER CURVE DESIGN, FIELD CHANGES, OR THE USE OF PREFORMED RADIUS BENDS MUST BE APPROVED BY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER (CPP).

ALL MANHOLES OUTSIDE WALLS AND CONDUITS RUNS ARE TO HAVE A MINIMUM CLEARANCE OF 5' (FACE TO FACE), HORIZONTALLY FROM ALL WATER LINES OR AS SHOWN ON THE PROFILE SHEETS. VERTICAL CLEARANCE SHALL BE AT A MINIMUM OF 1'-6". CLEARANCE BETWEEN OTHER UTILITIES SHALL BE 1 FOOT, UNLESS NOTED OTHERWISE. CPP'S DUCT BANK SHALL CROSS OVER OR UNDER OTHER UTILITIES AT AN ANGLE OF NO LESS THAN 45°.

ANY CONDUIT RUNS THAT ARE CROSSING ANY STEAM LINES SHALL HAVE A MINIMUM CLEARANCE OF 5', OR AS SHOWN ON THE PROFILE SHEET OF THE PROJECT. IN THE EVENT THAT THIS CAN NOT BE ACCOMPLISHED, NOTIFY THE ENGINEERING DEPARTMENT OF CLEVELAND PUBLIC POWER (CPP) PRIOR TO THE INSTALLATION OF CONDUITS.

EACH NEWLY CONSTRUCTED MANHOLE SHALL BE FREE OF ALL FOREIGN OBJECTS AND DEBRIS. THE CONTRACTOR SHALL ALSO PROVIDE A PULLING LINE IN EACH OF THE NEW CONDUITS. ALL MANHOLE COVERS SHOULD BE INSCRIBED WITH THE CLEVELAND

PUBLIC POWER LOGO "CPP". LETTERS SHALL HAVE A MINIMUM HEIGHT OF 2 INCHES.

THE CONTRACTOR SHALL PROVIDE CLEVELAND PUBLIC POWER (CPP) WITH AS-BUILT PLANS OF THE NEWLY INSTALLED CONDUIT SYSTEM, SHOWING BOTH VERTICAL AND HORIZONTAL LOCATIONS. THESE LOCATIONS SHALL BE AT 50' INTERVALS (MAX). ALL COORDINATES AND ELEVATIONS ARE TO BE BASED ON THE STATE PLANE COORDINATE SYSTEM. IN ADDITION, THE CONTRACTOR SHALL PROVIDE AS-BUILT INFORMATION OF THE MANHOLES, INCLUDING BUT NOT LIMITED TO AS-BUILT PHOTOGRAPHS OF ALL INTERIOR SURFACES (WALLS, FLOORS AND CEILINGS). PAYMENT

BACKFILL MATERIAL AND BACKFILL PROCEDURES

FOR ALL BACKFILL UNDER ROADWAY PAVEMENT, REFER TO FLOWABLE FILL SPECIFICATIONS IN THIS SHEET. FOR ALL OTHER LOCATIONS, THE BACKFILL MATERIAL USED SHALL BE CRUSHED LIMESTONE OR GRAVEL AS PER ODOT ITEM 304-AGGREGATE BASE. CRUSHED AIR-COOLED SLAG MEETING #304 GRADATION MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE CPP ENGINEERING DEPARTMENT. THE USE OF SAND OR #57 AGGREGATE AS A PREMIUM BACKFILL IS PROHIBITED. SAND MAY ONLY BE USED AS INDICATED ON THE PLAN DETAILS FOR ITEMS SUCH AS CONDUIT COVER. THE SAND MATERIAL SHALL BE NATURAL RIVER OR BANK SAND; FREE OF SILT, CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER. THE BACKFILL SHALL BE INSTALLED IN 4 INCH (4") LIFTS AND COMPACTED USING MECHANICAL MEANS ONLY. COMPACT TO WITHIN 12" OF SUBGRADE AND EACH LAYER OF BACKFILL TO 85% MAXIMUM DRY DENSITY AS DETERMINED BY STANDARD PROCTOR TEST (ASTM D698.) THE USE OF WATER FOR COMPACTION IS PROHIBITED, E.G. FLOODING OR PUDDLING. SAND USED AS EMBANKMENT CONSTRUCTION AND AS BACKFILL AROUND STRUCTURES SHALL BE ODOT ITEM 203-EMBANKMENT OR MEETING THE REQUIREMENTS OF 703 - SPECIAL BACKFILL MATERIAL OF THE SECTION.

EMPLOY A PLACEMENT METHOD THAT DOES NOT DISTURB OR DAMAGE CONDUIT ENCASEMENT.

DO NOT BACKFILL OVER WET, FROZEN OR UNSTABLE SUBGRADE SURFACES.

FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES

PART I - CERTIFICATE OF COMPLIANCE

MATERIAL MUST ORIGINATE FROM A PLANT WITH A CURRENT CERTIFICATE OF COMPLIANCE DEMONSTRATING THE ABILITY OF THE MIX DESIGN TO MEET THE PROJECT SPECIFICATIONS. CERTIFICATES MUST BE ISSUED WITHIN THE LAST TWELVE MONTHS. THE CERTIFICATES MUST CONTAIN THE FOLLOWING INFORMATION:

- NAME OF SUPPLIER
- DATE
- CONTRACT NUMBER
- MIX DESIGN DATA

PART II: MATERIALS

ALL MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

- CEMENT SHALL BE ASTM C-150 TYPE I
- THE USE OF FLY ASH IS STRICTLY PROHIBITED
- FINE AGGREGATE SHALL CONFORM TO ODOT SPECIFICATION 703.03: FINE AGGREGATE FOR MORTAR OR GROUT. (ODOT CONSTRUCTION AND MATERIAL SPECIFICATION MOST CURRENT EDITION.) THE USE OF SPENT FOUNDRY OR CORE SAND IS STRICTLY PROHIBITED.

PART III: PERFORMANCE ENHANCING ADMIXTURE

AN AIR ENHANCING ADMIXTURE SHALL BE INCORPORATED IN THE MIX THAT WILL HAVE THE EFFECT OF LOWERING THE WATER/CEMENT RATIO BETWEEN 95 AND 105 LBS./ CUBIC FOOT. THE AIR-ENTRAINED CONTENT FOR THE MIX SHALL BE 30% TO ELIMINATE/MINIMIZE THE EXCESS WATER AND SEGREGATION.

COMPRESSIVE STRENGTHS SHALL HAVE A RANGE OF 50 PSI TO 80 PSI AT 28 DAYS WILL BE REQUIRED IF ADDITIONAL EXCAVATION BY MACHINE OR HAND IS REQUIRED.

APPROVED ADMIXTURES:

	MANUFACTURER	PRODUCT
A.	W.R. GRACE	DARAFILL
B.	AXIM	FLOW AIR
C.	MASTER BUILDERS	RHEOFILL

PART IV - FLOWABLE FILL MIX DESIGN

THE MIX DESIGN SHALL BE PROPORTIONED AS FOLLOWS:

CEMENT (TYPE I): 50 LBS/CUBIC YARD

SAND (SSD): 2475 LBS/CUBIC YARD

WATER: 25 GALLONS/CUBIC YARD

ADMIXTURE (AIR): 3 OZ/CUBIC YARD

VARIATIONS OF THE AFOREMENTIONED MIX DESIGN ARE STRICTLY PROHIBITED.

PART V - APPLICATION

- FLOWABLE FILL SHALL BEGIN 12 INCHES ABOVE THE TOP OF PIPE AND CONTINUE IN THE TRENCH TO THE CONCRETE BASE.
- PIPE BEDDING MATERIAL SHALL EXTEND TO A MAXIMUM OF 12 INCHES ABOVE THE TOP OF PIPE AND SHALL BE AS SPECIFIED BY THE UTILITY.
- EXPOSED BOLTS AND VALVES EXPOSED IN THE TRENCH SHOULD BE WRAPPED WITH POLYETHYLENE MATERIAL CONFORMING TO ODOT 748.07 (8 MIL THICK).
- COVER ALL JOINTS IN CLAY PIPE IN THE TRENCH AREA WITH POLYETHYLENE MATERIAL BEFORE POURING FLOWABLE FILL. REPAIR ALL OBSERVED OPENINGS IN ANY PIPE OR MANHOLE IN THE TRENCH AREA PRIOR TO BACKFILLING WITH FLOWABLE FILL. REPAIR TECHNIQUES SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARD REPAIR PROCEDURES.
- CONTACT THE RESPECTIVE UTILITY OWNER FOR REPAIR PROCEDURES.

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UN002.dgn Sheet 12/23/2019 9:44:48 AM sr1ffle

CONCRETE DESIGN MIX (CITY OF CLEVELAND MIX)  
UNDER THIS SECTION OF THESE SPECIFICATIONS THE CONTRACTOR IS REQUIRED TO SUBMIT A SEPARATE MIX DESIGN FOR EACH COMBINATION OF CEMENT TYPE, AGGREGATE TYPE, AND CONCRETE SUPPLIER THEY WILL USE UNDER THIS CONTRACT. EACH MIX SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C94-94 OPTION C AND AS HEREIN MODIFIED.

MINIMUM COMPRESSIVE STRENGTH  
4000 PSI FOR 28 DAYS COMPRESSIVE STRENGTH TEST. FOUR CYLINDERS WILL BE TAKEN AND TESED AS PER ASTM C-39-94. ONE TO BE TESTED AT SEVEN DAYS AND THE REMAINING THREE WILL BE TESTED AT TWENTY-EIGHT DAYS. ACCEPTANCE WILL BE BASED ON THE AVERAGE RESULTS OF THE THREE CYLINDERS.

MINIMUM CEMENT CONTENT  
650 LBS. PER CUBIC YARD. THE CEMENT SHALL CONFORM TO ASTM C-150-94 OR C-595-94

WATER CEMENT RATIO  
0.45 MAXIMUM

SLUMP  
NOMINAL THREE INCHES (3") AS PER ASTM C-94-94 (2"-4" ACTUAL). THE USE OF CHEMICAL ADMIXTURES MEETING ASTM C-494, TO INCREASE THE SLUMP TO A MAXIMUM OF 7", MAY BE USED WITH PRIOR WRITTEN APPROVAL OF THE DIVISION OF ENGINEERING AND CONSTRUCTION INSPECTOR. IF THIS OPTION IS SELECTED THE ADMIXTURE AND RESULTANT MAXIMUM SLUMP SHALL BE SUBMITTED FOR APPROVAL.

AIR CONTENT  
FOUR PERCENT (4%) TO SEVEN AND ONE-HALF PERCENT (7-1/2 %) ASTM C-173-94 OR C-231-94.

AGGREGATE SIZE  
NO. 57 FOR COARSE AGGREGATE SHALL BE LIMESTONE, GRAVEL OR CRUSHED AIR-COOLED BLAST FURNACE SLAG. BOTH COARSE AND FINE AGGREGATE AS PER ASTM C 33-94.  
IF CRUSHED AIR-COOLED BLAST FURNACE SLAG IS USED IT SHALL MEET ALL OF THE REQUIREMENTS OF ODOT 703.01 AND ODOT 703.02. COPIES OF ALL TESTS AND CERTIFICATIONS FOR THE CRUSHED AIR-COOLED BLAST FURNACE SLAG, IF USED, SHALL BE SUBMITTED AS PART OF THE CONCRETE MIX DESIGN.

WHEN HIGH EARLY STRENGTH IS REQUIRED, ASTM C-150-94 TYPE III A CEMENT OR ADMIXTURES IN ACCORDANCE WITH ASTM C-494-94 SHALL BE USED.

PAVEMENT REPAIR  
ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES. DOWELS SHALL BE REQUIRED AS PER DOWEL TABLE.

CONCRETE REPAVING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE AND/OR SLAB IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE AND/OR SLAB, THAT LANE OR SLAB SHALL ALSO BE REPAVED.

ASPHALT PAVEMENT  
ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES. DOWELS SHALL BE REQUIRED AS PER DOWEL TABLE.

ASPHALT RESURFACING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE IN WHICH THE REPAIRS ARE LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE, THAT LANE SHALL ALSO BE RESURFACED. FOR PAVEMENTS WITH A WIDTH OF 40' OR LESS, A LANE SHALL BE CONSIDERED 1/2 THE PAVEMENT WIDTH.

EXTEND OVERCUT IN LONGITUDINAL DIRECTION TWO FEET (2') UNTO UNDISTURBED SUBGRADE.

BRICK PAVEMENT  
ALL STREETS WITHIN THE CITY OF CLEVELAND THAT ARE CURRENTLY BRICK PAVED, SHALL BE REPLACED WITH BRICK, OR AS DIRECTED BY THE INSPECTOR REPRESENTING THE DIVISION OF ENGINEERING AND CONSTRUCTION OF THE CITY OF CLEVELAND.

THE CONTRACTOR UNDER THIS SECTION OF THE SPECIFICATIONS SHALL CONSTRUCT CONCRETE BASE, PAVEMENT, SIDEWALK, DRIVEWAY APRONS, CURB, CURB AND GUTTER SECTIONS, HANDICAP RAMPS, AND INTEGRAL RADIUS CURB AND WALK. THIS INCLUDES THE RESTORATION OF ALL ADJACENT SURFACES WHICH ARE DISTURBED BY THIS CONSTRUCTION AT NO COST TO THE CITY OF CLEVELAND AND/OR CLEVELAND PUBLIC POWER (CPP). CONTRACTOR SHALL TAKE ANY AND ALL MEASURES NECESSARY TO ENSURE CONCRETE IS NOT DEFACED WITH GRAFFITI, FOOT PRINTS, TIRE TRACKS, AND ROCKS, ETC. BY VANDALS.

SPECIFICATIONS  
ALL WORK IN THIS CONTRACT SHALL CONFORM TO THE LATEST STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIALS SPECIFICATIONS, NATIONAL ELECTRIC SAFETY CODE (NESC) AND OSHA REQUIREMENTS, EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT, IN WHICH CASE LOCAL REGULATIONS SHALL GOVERN.

REGULATIONS GOVERNING THE LAYING OF CONCRETE  
CONCRETE WALKS SHALL BE OF ONE-COURSE CONSTRUCTION AND SHALL BE FOUR INCHES (4") IN THICKNESS, EXCEPT ALONG ARTERIAL AND COLLECTOR STREETS WHERE THEY MUST BE SIX INCHES (6") IN THICKNESS. CONCRETE FOR WALKS, CURBS, DRIVES, AND APRONS SHALL BE CLASS "C" CONCRETE AS PER ITEM 608 AND SPECIAL OF THE "SUPPLEMENTAL TO STATE SPECIFICATIONS FOR THE CITY OF CLEVELAND - 1967".

WHEN CONCRETE WALKS ARE LAID ON CLAY, EXTRA EXCAVATION TO A DEPTH OF ONE-AND-ONE-HALF INCHES (1 1/2") MUST BE MADE AND FILLED WITH SAND OR GRAVEL TO ACT AS A FOUNDATION TO THE FOUR INCHES OF SIDEWALK PROPER.

NO BLOCKS OF CONCRETE SHALL BE LARGER THAN SIX FEET (6') AND THE JOINTS MUST BE CUT BY THE USE OF AN APPROVED "GROOVING TOOL" MAKING A GROOVE ONE-FOURTH INCHES (1/4") DEEP. ALL EDGES SHALL BE ROUNDED WITH AN APPROVED "EDGING TOOL" TO A RADIUS OF ONE-FOURTH INCH (1/4").

EXISTING APRONS AND "DRIVE AREAS" OF THE WALK MUST BE CONSTRUCTED OF CONCRETE. APRONS AND THE AREA OF WALK OVER WHICH VEHICLES DRIVE MUST BE NO LESS THAN SIX INCHES (6") IN THICKNESS, AND MUST BE LAID IN ACCORDANCE WITH SUPPLEMENTAL TO STATE SPECIFICATIONS FOR THE CITY OF CLEVELAND.

AT ALL WATER-METER COVERS, GAS BOXES, HYDRANTS, OR OTHER OBSTRUCTIONS, NEATLY FITTED OPENINGS SHALL BE CUT IN THE SIDEWALK. NO WALK SHALL BE LAID UNTIL ALL THESE OBSTRUCTIONS HAVE BEEN RAISED OR LOWERED TO THE CORRECT ELEVATIONS.

NO OBSTRUCTIONS SHALL BE PLACED IN FRONT OF ANY CATCH-BASIN, FIRE HYDRANT, FIRE ALARM BOX OR LETTER BOX, OR NEAR ENOUGH TO THE SAME TO INTERFERE WITH THEIR USE.

NO CHANGE IN THE WIDTH OF THE WALK TO BE LAID SHALL BE MADE FROM THAT OF EXISTING WALKS ON THE STREET AT THE TIME

WORK IS DONE UNDER THIS PERMIT, UNLESS SPECIALLY PERMITTED BY THE DIRECTOR OF PUBLIC SERVICE. TREES, LAWNS, AND SHRUBBERY SHALL NOT BE INTERFERED WITH OR DESTROYED BY ANY WORK PERFORMED BY THE CONTRACTOR. WALKS MUST BE LAID TO THE SAME GRADE AS EXISTING WALKS ON THE STREET, UNLESS PERMISSION FOR CHANGE OF GRADE IS OBTAINED FROM THE DIRECTOR OF PUBLIC SERVICE.

ONLY ONE-HALF (1/2) OF THE SIDEWALK IN THE BUSINESS DISTRICT CAN BE OBSTRUCTED AT ONE TIME, UNLESS THE CONTRACTOR HAS AN OBSTRUCTION PERMIT. GUTTERS MUST BE LEFT OPEN AT ALL TIMES.

REGULATIONS GOVERNING THE LAYING OF CONCRETE (CONT.)  
THE SPACING BETWEEN THE WALK AND THE CURB LINE MUST BE GRADED TO ALLOW WATER DRAINAGE, AND MUST BE OF A GRADUAL SLOPE FROM THE WALK TO THE CURB LINE.

THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DIRT AND RUBBISH CAUSED BY HIS WORK.

FAILURE OF A CONTRACTOR TO COMPLY WITH THESE REGULATIONS SHALL RESULT IN THE WITHHOLDING OF FUTURE PERMITS AND SHALL SUBJECT THE HOLDER OF THIS PERMIT TO THE PENALTIES PRESCRIBED IN THE SIDEWALK ORDINANCE.

CURBING: CURBING SHALL CONFORM TO THE STANDARDS ESTABLISHED FOR SIZE AND QUALITY IN THE DISTRICT IN WHICH IT IS TO BE INSTALLED. CAST-IN-PLACE CONCRETE CURBS AND INTEGRAL CURBS, WHERE USED, SHALL CONFORM TO DETAIL PLAN NO. ME-246 OF THE CITY OF CLEVELAND.

COPIES OF THESE SPECIFICATIONS AND PLANS FOR PAVEMENT REPAIR AND LAYING OF CONCRETE SIDEWALKS MAY BE OBTAINED, UPON REQUEST, FROM THE DIVISION OF ENGINEERING AND CONSTRUCTION OF THE CITY OF CLEVELAND.



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UN003.dgn Sheet 12/23/2019 9:44:48 AM srlf file

SCOPE OF WORK

- A.THE CONTRACTOR SHALL RELOCATE OR REMOVE ALL CLEVELAND PUBLIC POWER (CPP) FACILITIES AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER ONLY AFTER CPP HAS VISIBLY CONFIRMED THAT SAID CPP FACILITIES HAVE BEEN DE-ENERGIZED & DISCONNECTED. THIS WORK SHALL BE PROPERLY COMPLETED, INCLUDING INCIDENTALS, AS SHOWN ON THE DRAWINGS AND HEREINAFTER SPECIFIED.
- B.THE MAJOR ITEMS OF WORK TO BE FURNISHED AND INSTALLED BY THE CONTACTOR SHALL BE AS FOLLOWS:

WORK BY THE PROJECT CONTRACTOR:

- FURNISHING AND INSTALLING FRE (FIBER REINFORCED EPOXY) DUCT BANK SYSTEMS ACROSS BRIDGES INCLUDING BEAM SUPPORT SYSTEMS
- FURNISHING AND INSTALLING CONCRETE ENCASED CONDUIT.
- FURNISHING AND INSTALLING PRECAST MANHOLES.
- MODIFYING EXISTING MANHOLES 35-56 AND 35-57 TO PROVIDE WINDOWS FOR NEW CONDUITS.
- FURNISHING AND INSTALLING ELECTRIC CABLES AND VAULT RACKING SYSTEMS WITHIN VAULTS AND MANHOLES
- FURNISHING ELECTRICAL SPLICES, TO BE INSTALLED BY CPP. FURNISHING AND INSTALLING TRAINING AND BONDING WITHIN VAULTS AND MANHOLES.
- FURNISHING AND INSTALLING FIBER OPTIC CABLE AS SHOWN ON THE PLANS.
- TESTING ELECTRICAL SYSTEMS
- COORDINATING WITH CPP AND ITS CONTRACTORS
- REMOVING EXISTING UNDERGROUND DUCT BANKS AND FIBER OPTIC CABLES.

WORK BY CPP:

- INSTALLING SPLICES
- ENERGIZING ELECTRICAL SYSTEM
- DE-ENERGIZING AND REMOVAL OF EXISTING ELECTRICAL CABLES WITHIN DUCTS
- INSTALLING SELECT CABLES AS NOTED ON THE PLANS.

ALONG PORTIONS OF THE PROJECT CONTRACTOR SHALL BE REQUIRED TO MAINTAIN THE EXISTING ELECTRICAL SYSTEM UNTIL COMPLETION AND ACTIVATION OF THE PROPOSED UNDERGROUND POWER SYSTEM. THE CONTRACTOR SHALL COORDINATE THE DETAILS OF THIS WORK WITH CPP.

CABLE MARKING (TAGGING)

FEEDER CABLE LOCATION IN CONDUIT BANK SHALL BE ASSIGNED BY CPP. EACH CABLE UPON ENTERING AND LEAVING MANHOLES SHALL BE MARKED WITH TAGS, INDICATING THE FEEDER NUMBER AND CABLE SIZE. THE LETTER SIZE SHALL BE 1/2 IN. HIGH MINIMUM BUT 1 IN. HIGH IS PREFERRED

SUBMITTALS

IN ADDITION TO THE REQUIREMENTS OF CMS105 THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE CPP ENGINEERING DEPARTMENT ON ALL EQUIPMENT AND MATERIAL FURNISHED AND REQUIRED TO PERFORM THE WORK.

DEFINITIONS

WHENEVER IN THESE SPECIFICATIONS OR IN ANY DOCUMENT OR INSTRUCTIONS ON CONSTRUCTION WHERE THESE SPECIFICATIONS GOVERN. WHEREVER THE FOLLOWING TERMS (OR PRONOUNS IN PLACE OF THEM) ARE USE, THE INTENT AND MEANING SHALL BE INTERPRETED AS FOLLOWS: THE CITY OF CLEVELAND, IS THE DIRECTOR OF THE CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES.

STATUS OF CITY INSPECTOR

INSPECTORS AS DESIGNATED BY THE CITY OF CLEVELAND SHALL BE AUTHORIZED TO INSPECT ALL WORK DONE AND MATERIALS FURNISHED. SUCH INSPECTING MAY EXTEND TO ALL OR ANY PART OF THE WORK, AND TO THE PREPARATION OR MANUFACTURE OF THE MATERIALS TO BE USED IN THE WORK. THE CITY INSPECTOR AS DESIGNATED BY THE DIRECTOR OF PUBLIC UTILITIES SHALL GIVE WORK INSTRUCTIONS THROUGH THE PROJECT ENGINEER.

ITEM 625 - CONDUIT, CONCRETE ENCASED, AS PER PLAN

(5" PVC)

A. WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL MATERIALS FOR AND SHALL PROPERLY CONSTRUCT AND CONNECT TO MANHOLES, AS SHOWN ON THE PLANS OR AS DIRECTED, ALL NON-REINFORCED AND REINFORCED CONCRETE-ENCASED PVC CONDUIT AS REQUIRED FOR THE PROPER COMPLETION OF THE WORK INCLUDED UNDER THIS CONTRACT. ALL CONDUITS SHALL BE CONCRETE ENCASED UNLESS NOTED OTHERWISE.

B. CONDUIT AND FITTINGS

POLYVINYL CHLORIDE (PVC) CONDUIT SHALL CONFORM TO THE UL651 STANDARDS, 5 INCH IRON PIPE SIZE (I.P.S) WITH CONCRETE ENCASEMENT AS DETAILED ON PLANS. COUPLINGS SHALL BE SOCKET TYPE. END BELLS SHALL BE INSTALLED AT MANHOLE ENTRANCES. USE 5 DEGREE ELBOW SWEEPS, 11-1/4 DEGREE TO 90 DEGREES INCLUDING FILED DEGREES, ANGLE COUPLINGS, AND STANDARD COUPLINGS. THE VARIOUS BENDS AND PLUGS OR CAPS TO CLOSE UNUSED CONDUITS SHALL BE MADE OF THE SAME MATERIAL AS THE CONDUIT.CONDUIT SPACERS SHALL BE AS SHOWN IN THE PLAN DETAILS. CONCRETE BLOCK SPACERS WILL NOT BE ACCEPTED.

C. CONCRETE

CONCRETE USED FOR ENCASEMENT OF CONDUITS SHALL CONFORM TO ROADWAY PLAN GENERAL NOTE CONCRETE DESIGN MIX (CLEVELAND 650). 4000 PSI CITY OF CLEVELAND MIX.

ITEM 625 - CONDUIT, CONCRETE ENCASED, AS PER PLAN (CONTINUED)

D. INSTALLATION

CONDUIT SHALL BE INSTALLED BY THE BUILT-UP METHOD WITH JOINTS IN ADJACENT DUCTS STAGGERED. NECESSARY SPACERS SHALL BE PLACED NO GREATER THAN 8-FEET INTERVALS TO HOLD DUCTS IN THE DESIRED CONFIGURATION, WITH THE DUCT BANK BRACED SECURELY TO KEEP IT FROM SHIFTING AND FLOATING WHILE CONCRETE IS POURED. SEALER COMPOUND FURNISHED BY THE CONDUIT AND EACH SECTION SHALL BE TAPED SECURELY INTO PLACE IN THE PREVIOUS COUPLING TO OBTAIN JOINTS THAT ARE TIGHT AND LEAK-PROOF.

1. CONCRETE SHALL BE WORKED INTO THE SPACES BETWEEN DUCTS SO THAT THE CONDUIT BANK IS EFFECTIVELY ENCASED IN CONCRETE WITHOUT VOIDS OR EMPTY SPACES, REINFORCING RODS SHALL BE INSTALLED AS REQUIRED AND WHERE SHOWN ON THE PLANS.
- 2.CONDUIT WHICH IS CUT TO FIT SHORT SECTIONS SHALL BE DEBURRED ON THE DUCT END AND THE END OF THE BELL SHALL BE REAMED IN THE INSIDE DIAMETER FOR EACH ENTRY OF THE DUCT INTO COUPLING TO PRODUCE THE SAME JOINTING CONDITIONS AS PROVIDED BY SAME JOINTING CONDITIONS AS PROVIDED BY FACTIORY-MADE CONDUIT SECTIONS.
- 3.THE END BELLS SHALL BE GROUTED IN PLACE.
4. INSTALL PULLING LINE IN EACH CONDUIT, EVEN IF CONDUIT IS NOT TO HAVE CABLE INSTALLED.

E. BACKFILLING

REFER TO NOTES "BACKFILL MATERIAL AND BACKFILLING PROCEDURES AND FLOWABLE FILL SPECIFICATION FOR UTILITY TRENCHES".

F. MEASUREMENT

THE NUMBER OF FEET OF CONCRETE ENCASED CONDUIT TO BE PAID SHALL BE THE ACTUAL NUMBER OF FEET FURNISHED AND PLACED AS MEASURED ALONG THE AXIS OF THE CONDUIT DUCT BANK LINE, INCLUDING FITTINGS. THE CONDUIT DUCT BANK LINE CONTAINS 18 CONDUITS, WITH THE EXCEPTION OF THE CONDUIT DUCT BANK TO THE SOUTH OF THE NEW SOUTH MARGINAL MANHOLE, WHERE THE DUCT BANK LINE CONTAINS 9 DUCTS. WHERE THE 18 DUCT BANK LINE SPLITS INTO TWO 9 DUCT BANK LINES, THIS SHALL BE CONSIDERED ONE DUCT BANK LINE.

G. PAYMENT

THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACTOR PRICE BID PER FOOT UNDER ITEM 625 AS DESCRIBED BELOW, CLASSIFIED AS TO SIZE AND TYPE, WHICH PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR EXCAVATING AND FOR FURNISHING, HAULING, PLACING THE CONDUIT, FITTINGS, CAPPING, PULLING LINES, SPACERS, CONCRETE, REINFORCING STEEL, SHEETING AND BRACING, BACKFILL, PLASTIC CAUTION TAPE OR (RED TINTED CONCRETE), INCIDENTAL CONCRETE, REMOVAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIAL, BREAKING AND RESTORATION OF EXISTING MANHOLE WALLS AND ALL LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED. THESE ITEMS AS MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR UNDER:

ITEM	UNIT	DESCRIPTION
625	FT	CONDUIT, CONCRETE ENCASED, AS PER PLAN

ITEM 625 - CONDUIT, MISC.: 5" FIBERGLASS REINFORCED EPOXY CONDUIT

FIBER REINFORCED (FRE) CONDUIT SHALL CONFORM TO UL 1684 AND UL1684A. FRE CONDUIT SHALL HAVE A MINIMUM WALL THICKNESS OF 0.110 INCHES. FRE CONDUIT SHALL HAVE A 5 INCH INSIDE DIAMETER MOUNTED AS INDICATED ON THE DRAWINGS. COUPLINGS SHALL HAVE A BELL ON ONE END AND A SPIGOT ON THE OTHER END. ALL COUPLINGS SHALL BE MADE OF THE SAME MATERIAL. EXPANSION FITTINGS SHALL BE PROVIDED ON ALL EXPOSED CONDUIT RUNS.

THIS ITEM SHALL ALSO INCLUDE ALL MATERIALS AND LABOR FOR GRID STYLE CONDUIT SUPPORT BRACKET AS SHOWN ON THE BRIDGE PLANS. THE CONTRACTOR SHALL COORDINATE WITH CPP AND GET CPP APPROVAL BEFORE ORDERING THE BRACKETS.

PAYMENT SHALL BE MADE AT THE BID PRICE PER LINEAR FOOT OF CONDUIT PER ITEM 625, CONDUIT, MISC.: 5" FIBERGLASS REINFORCED EPOXY CONDUIT.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING

CONTRACTOR TO PROVIDE TEMPORARY SUPPORT OF EXCAVATION FOR INSTALLATION OF THE PROPOSED MANHOLES AND CONCRETE ENCASED CONDUITS. TRAFFIC MUST BE MAINTAINED AS SHOWN ON THE PLANS.

SUBMIT DESIGN PER CMS 501.05 FOR APPROVAL.

PAYMENT SHALL BE MADE AT THE LUMP SUM BID PRICE FOR ITEM 503, COFFERDAMS AND EXCAVATION BRACING.

CALCULATED	JDH
CHECKED	JUK

CLEVELAND PUBLIC POWER (CPP) NOTES

CUY - 090 - 13.45

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UN007.dgn Sheet 12/23/2019 9:44:49 AM srlf file

ITEM 632 - POWER CABLE MISC. (VARIES)

A. WORK INCLUDED

THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR MATERIALS, TOOLS AND EQUIPMENT FOR INSTALLING ALL UNDERGROUND POWER CABLES, AS SPECIFIED, REQUIRED OR SHOWN ON THE PLANS. SPLICES TO BE SUPPLIED BY CONTRACTOR AND INSTALLED BY CPP.

B. DETAILED SPECIFICATIONS

MEDIUM VOLTAGE CABLES - EPR URD

1. ALL ETHYLENE PROPYLENE RUBBER INSULATED URD CABLE IS MANUFACTURED, TESTED AND WARRANTED IN ACCORDANCE WITH:

- A. ANSI/I.C.E.A S-94-649 (LATEST VERSION)  
B. A.E.I.C CS-8 (LATEST VERSION)

2. CHARACTERISTICS

- A. BARE ANNEALED COPPER CENTER CONDUCTOR, COMPACT CLASS B STRANDING PER ASTM B-3 1/3  
B. 1/3 COPPER CONCENTRIC NEUTRAL  
C. ETHYLENE PROPYLENE RUBBER INSULATION  
D. AVERAGE MINIMUM INSULATION THICKNESS 220 MILS  
E. POLYETHYLENE JACKET  
15KV 133% 220-MIL INSULATION THICKNESS

3. FOR 3-PHASE APPLICATION:

- ITEM 1. 750KCMIL, 15KV 133%, EPR URD, 33% NEUTRAL  
ITEM 2. 500KCMIL, 15KV 133%, EPR URD, 33% NEUTRAL  
ITEM 3. 4/0 AWG, 15KV 133%, EPR URD, 33% NEUTRAL

C. MOLDED SPLICES

1. DESIGNED AND TESTED PER IEEE STANDARD 404.  
2. VOLTAGE RATING:

- A. 15 KV CLASS (8.7 KV PHASE-TO-GROUND)  
B. IMPULSE WITHSTAND : A = 110 KV, 1.2 X 50 MICROSECOND WAVE.  
C. CORONA EXTINCTION VOLTAGE : A = 13 KV, MINIMUM, 3 PC SENSITIVITY.  
D. DC WITHSTAND : DURING INSTALLATION : 56 KV  
E. DC WITHSTAND : 18 KV FOR XLPE INSULATED CABLES 45 KV FOR EPR INSULATED CABLES REFERENCE AEIC CS6 AND CS8, SECTION L.2.0.

3. FOR STRAIGHT SPLICES:

- SPLICE FOR 750 KCMIL, 15 KV URD, EPR URD, ELASTIMOLD 15 PCJ 1 M 2 380  
SPLICE FOR 500 KCMIL, 15 KV URD, EPR URD, ELASTIMOLD 15 PCJ 1 LM 2 330  
SPLICE FOR 4/0 AWG, 15 KV URD, EPR URD, ELASTIMOLD 15 PCJ 1 J 2 270 ITEMS 1, 2 AND 3 FOR SINGLE PHASE APPLICATIONS.

ITEM 632 - POWER CABLE MISC. (VARIES) (CONT.)

D. CABLE SPLICING AND ACCESSORIES:

1. ELASTIMOLD; A THOMAS AND BETTS COMPANY OR EQUIVALENT APPROVED BY CPP ENGINEERING DEPARTMENT PRIOR TO PURCHASE AND INSTALLATION.  
2. OBTAIN CABLE SPLICE KITS AND ACCESSORIES FROM A SINGLE SOURCE MANUFACTURER. SUBMIT TO CPP ENGINEERING DEPARTMENT FOR APPROVAL  
3. SPLICE KITS: COMPLY WITH IEEE 404; TYPE AS RECOMMENDED BY CABLE OR SPLICING KIT MANUFACTURER FOR THE APPLICATION. SUBMIT TO CPP ENGINEERING DEPARTMENT FOR APPROVAL  
4. SPLICING PRODUCTS: AS RECOMMENDED, IN WRITING, BY SPLICING KIT MANUFACTURER FOR SPECIFIC SIZES, MATERIALS, RATINGS, AND CONFIGURATIONS OF CABLE CONDUCTORS. INCLUDE ALL COMPONENTS REQUIRED FOR COMPLETE SPLICE, WITH DETAILED INSTRUCTIONS. SUBMIT TO CPP ENGINEERING DEPARTMENT FOR APPROVAL.  
5. HIGH-VOLTAGE TAPES: ETHYLENE/PROPYLENE RUBBER-BASED, 30-MIL SPLICING TAPE, RATED FOR 130 DEG C OPERATION. MINIMUM 1-1/2 INCH WIDE. VARIOUS SIZES. SUBMIT TO CPP ENGINEERING DEPARTMENT FOR APPROVAL.

E. CABLE LUBRICANT

USE MANUFACTURERS APPROVED PULLING COMPOUND OR LUBRICANTS FOR CABLE BEING INSTALLED THAT DO NOT DETERIORATE CONDUCTOR OR INSULATION.

F. BONDING WIRE

1. BONDING CONDUCTOR: VARIES. SUBMIT TO CPP ENGINEERING DEPARTMENT FOR APPROVAL ON CASE BY CASE BASIS.  
2. LISTED AND LABELED BY AN NRTL ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION FOR APPLICATIONS IN WHICH USED AND FOR SPECIFIC TYPES, SIZES AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS CONNECTED.

G. CABLE PULLING

1. BEFORE STARTING CABLE INSTALLATION, THE DUCTS TO BE OCCUPIED SHOULD BE SELECTED THROUGHOUT THE ENTIRE LENGTH OF THE RUN AND THE DUCTS SELECTED MUST BE CHECKED TO SEE THAT THEY ARE CLEAN AND FREE FROM ALL OBSTRUCTIONS.  
2. PROOF CONDUITS PRIOR TO CONDUCTOR INSTALLATION BY PASSING A WIRE BRUSH MANDREL AND THEN A RUBBER DUCT SWAB THROUGH THE CONDUIT.

WIRE BRUSH MANDREL: CONSISTS OF A LENGTH OF BRUSH APPROXIMATELY THE SIZE OF THE CONDUIT INNER DIAMETER WITH STIFF STEEL BRISTLES AND AN EYE ON EACH END FOR FOR ATTACHING THE PULL ROPES. IF AN OBSTRUCTION IS FELT, PULL THE BRUSH BACK AND FORTH REPEATEDLY TO BREAK UP THE OBSTRUCTION.

ITEM 632 - POWER CABLE MISC. (VARIES) (CONT.)

RUBBER DUCT SWAB: CONSISTS OF A SERIES OF RUBBER DISCS APPROXIMATELY THE SIZE OF THE CONDUIT INNER DIAMETER ON A LENGTH OF STEEL CABLE WITH AN EYE ON EACH END FOR ATTACHING THE PULL ROPES. PULL THE RUBBER DUCT SWAB THROUGH THE DUCT TO EXTRACT LOOSE DEBRIS FROM THE DUCT.

3. USE PULLING MEANS, INCLUDING FISH TAPE, ROPE, AND BASKET WEAVE CABLE GRIPS, THAT DO NOT DAMAGE CABLES AND RACEWAYS. DO NOT USE ROPE HITCHES FOR PULLING ATTACHMENT TO CABLE.  
4. DO NOT EXCEED MANUFACTURER'S RECOMMENDED MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES.  
5. USE PULL-IN GUIDES, CABLE FEEDERS, AND DRAW-IN PROTECTORS AS REQUIRED TO PROTECT CABLES DURING INSTALLATION.  
6. DO NOT PULL CABLES WITH ENDS UNSEALED. SEAL CABLE ENDS WITH RUBBER TAPE.  
7. SUPPORT CABLES USING GALVANIZED STEEL CHANNEL AND PORCELAIN OR MAPLE BLOCKS.  
8. IF REELS ARE LEFT IN THE STREET, WARNING LIGHTS SHALL BE PLACED AROUND THEM.  
9. LUBRICANT SHALL BE APPLIED TO THE CABLE JUST BEFORE IT ENTERS THE FEEDING TUBE. A COATING ABOUT 1/6TH INCH THICK IS AMPLE. NO LUBRICANT SHALL BE APPLIED TO THE FIRST AND LAST 5-FEET OF CABLE FOR CONVENIENCE AND CLEANLINESS IN SPLICING.  
10. THE REEL OF CABLE MUST BE PROPERLY PLACED AT FEEDING END TO CAUSE MINIMUM FLEXING OF THE CABLE. IT SHOULD ALWAYS BE LOCATED ON THE SIDE OF THE MANHOLE TOWARD WHICH THE CABLE IS PULLED.  
11. WHERE THERE IS A BEND IN THE DUCT LINE, THE PULLING SET-UP, WHENEVER POSSIBLE, SHOULD BE PLANNED FOR FEEDING-IN AT THE MANHOLE NEAREST THE BEND.  
12. THE AMOUNT OF SLACK IN THE CABLE AT THE FEEDING END SHALL BE REGULATED BY WORKERS STATIONED AT THE CABLE REEL SO THAT THE CABLE PASSES FREELY INTO THE FEEDING TUBE WITHOUT SCRAPING THE MANHOLE FRAME.  
13. THE CABLE SHALL BE DRAWN INTO THE DUCT JUST FAST ENOUGH TO KEEP THE CABLE AND REEL MOVING SMOOTHLY AND SO THE CABLE CAN BE PROPERLY INSPECTED AND LUBRICATED.

ITEM 632 - POWER CABLE MISC. (VARIES) (CONT.)

14. EYES OR SEALS DAMAGED DURING PULLING SHALL BE REPAIRED UNLESS SPLICING FOLLOWS IMMEDIATELY.  
15. WHEN THE CABLE IS CUT, UNLESS SPLICING IS TO BE DONE IMMEDIATELY, THE ENDS SHALL BE PREPARED AND SEALED BY AN APPROVED METHOD. ALL SEALED ENDS SHOULD BE RACKED HIGH.

H. CABLE RACKING AND TRAINING

1. RACK AND TRAIN CABLES ON CABLE RACK ASSEMBLIES CONSISTING OF HOT-DIPPED GALVANIZED, EXCEPT INSULATORS.  
2. IDENTIFY CABLE PHASE AND CIRCUIT NUMBER OF EACH CONDUCTOR AT EACH SPLICE, TERMINATION, PULL POINT, AND JUNCTION BOX. ARRANGE IDENTIFICATION SO THAT IT IS UNNECESSARY TO MOVE THE CABLE OR CONDUCTOR TO READ THE IDENTIFICATION.

CALCULATED  
JDH  
CHECKED  
JUK



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UN008.dgn Sheet 4/28/2020 2:49:00 PM jhrn

ITEM 632 – POWER CABLE MISC. (VARIES) (CONT.)

I. BONDING

- 1. MAINTAIN SHIELD CONTINUITY AND CONNECTIONS TO METAL CONNECTION HARDWARE AT ALL CONNECTION POINTS.
- 2. GROUNDING CONDUCTORS: ROUTE ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE UNLESS OTHERWISE INDICATED OR REQUIRED BY CODE. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT OR DAMAGE.
- 3. BONDING STRAPS AND JUMPERS: INSTALL IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENACE EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.
- 4. BONDING TO STRUCTURE: BOND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS.

J. TESTING

- 1. VISUAL AND MECHANICAL INSPECTIONS.
- 2. INSPECT EXPOSED CABLE SECTIONS FOR PHYSICAL DAMAGE.
- 3. INSPECT SHIELD GROUNDING AND CABLE SUPPORT. VISUALLY INSPECT CABLE TERMINATIONS PERFORMED BY CPP.
- 4. INSPECT COMPRESSION CONNECTORS FOR CORRECT CABLE MATCH AND IDENTIFICATION.
- 5. TESTING AGENCY: ENGAGE A QUALIFIED TESTING TO PERFORM TESTS AND INSPECTIONS.
- 6. PERFORM THE FOLLOWING TESTS AND INSPECTIONS WITH THE ASSISTANCE OF A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE:
  - PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ATS. CERTIFY CERTIFY COMPLIANCE TEST PARAMETERS.
  - AFTER INSTALLING MEDIUM-VOLTAGE CABLES BEFORE ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.
  - PERFORM DIRECT-CURRENT HIGH POTENTIAL TEST OF EACH NEW CONDUCTOR ACCORDING TO NETA ATS, CH. 7.3.3. DO NOT EXCEED MANUFACTURER’S RECOMMENDED MAXIMIM TEST VOLTAGE.
- 7. MEDIUM-VOLTAGE CABLES WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.
- 8. PREPARE TEST AND INSPECTION REPORTS.

K. MEASUREMENT

THE NUMBER OF FEET OF CABLE TO BE PAID FOR SHALL INCLUDE CABLE LENGTH IN DUCT PLUS LENGTH IN MANHOLES PER THE CABLE WIRING PLANS, INSTALLED IN PLACE INCLUDING CABLE RACKING, TRAINING, TESTING, CABLE TAGS, SPLICE KITS, AND OTHER INCIDENTAL WORK, EXLUDING SPLICE INSTALLATION.

L. PAYMENT

THE FOOTAGE MEASURED AS PROVIDED ABOVE SHALL BE PAID FOR AT THE CONTRACTOR PRICE BID PER FOOT FOR EACH INDIVIDUAL CABLE, UNDER ITEM 632 AS DIRECTED BELOW, CLASSIFIED AS TO SIZE AND TYPE, PAID FOR UNDER:

ITEM	UNIT	DESCRIPTION
632	FT	POWER CABLE, MISC.: 750 KCMIL-1C-CU-15kV EPR
632	FT	POWER CABLE, MISC.: 4/0-1C-CU-EPR-15kV WITH 133% INSULATION

ITEM 690 – SPECIAL MISC.: PRECAST ELECTRIC MANHOLE

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING COMPLETE IN PLACE PRECAST REINFORCED CONCRETE MANHOLE (VAULT) STRUCTURES IN ACCORDANCE WITH CLEVELAND PUBLIC POWER (CPP) REQUIREMENTS AND DESIGNED TO MEET OR EXCEED THE LATEST ASTM STANDARDS FOR UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES (ASTM C858-10E1) AND MINIMUM STRUCTURAL DESIGN LOADING FOR UNDERGROUND PRECAST UTILITY STRUCTURES (ASTM 857-14) HS25 LOADING. THE FOLLOWING CPP DEVELOPED PLAN DETAILS HAVE BEEN INCLUDED IN THE PLAN SET FOR THIS WORK:

- SAMPLE INDIVIDUAL MANHOLE DETAILS INCLUDING WINDOW OPENING DETAILS AND LIST OF MANHOLE REQUIREMENTS TYPICAL INSTALLATION DETAILS
- TYPICAL INSTALLATION DETAILS
- SAMPLE PRECAST NECK RING SCHEDULE
- GENERAL UNDERGROUND CONSTRUCTION NOTES
- BACKFILL MATERIAL AND BACKFILLING PROCEDURES
- SAMPLE RACKING DETAILS

IT IS NOTED THAT VARIOUS UNDERGROUND UTILITIES ARE PRESENT ALONG THE PROJECT THAT COULD NECESSITATE CHANGES TO MANHOLE DEPTHS AND WINDOW DIMENSIONS. THE CONTRACTOR SHALL PERFORM UTILITY TEST HOLES AT ALL VAULT LOCATIONS PRIOR TO DEVELOPING SHOP DRAWINGS FOR ELECTRIC MANHOLES. IN ADDITION, THE CONTRACTOR WILL BE SUPPLYING AND INSTALLING ELECTRICAL RACK AND BOND SYSTEMS WITHIN THE MANHOLES. CABLE RACKING ASSEMBLIES SHALL CONSIST OF STEEL, HOT-DIP GALVANIZED STANCHIONS AND ARMS, AND PORCELAIN INSULATORS MANUFACTURED BY HUBBELL POWER SYSTEMS, INC OR APPROVED EQUIVALENT.

- 1. STANCHIONS: NOB-LOC; 1-3/4 INCH NOMINAL SIZE; DUIB SERIES FOR CABLE-ARM ATTACHMENT.
- 2. ARMS: 1.97 INCHES WIDE, LENGTHS RANGING FROM 3-7/8 INCHES WITH 400 LB MINIMUM CAPACITY TO 14-7/8 INCHES WITH 200 LB MINIMUM CAPACITY. ARMS SHALL BE ARRANGED FOR SECURE MOUNTING IN HORIZONTAL POSITION AT ANY VERTICAL LOCATION ON STANCHIONS.
- 3. INSULATORS: HIGH GLAZE, DRY-PROCESS PORCELAIN ARRANGED FOR MOUNTING ON CABLE ARMS. THE CONTRACTOR SHALL COORDINATE MANHOLE WORK WITH CPP TO ENSURE COMPATIBILITY AND TIMELY COMPLTION OF RELATED WORK ELEMENTS.

ITEM 690 – SPECIAL MISC.: PRECAST ELECTRIC MANHOLE (CONT.)

SEALING DUCT ENDS IN MANHOLES: USE SEALING COMPOUND IN DUCT ENDS CONTAINING CABLES AND PLUGS IN SPARE DUCTS TO WITHSTAND AT LEAST 15 PSIG HYDROSTATIC PRESSURE. DUCT SEALING COMPOUND SHALL BE NON-HARDENING, SAFE FOR CONTACT WITH HUMAN SKIN, NOT DELETERIOUS TO CABLE INSULATION AND WORKABLE AT TEMPERATURES AS LOW AS 35 DEG. CAPABLE OF WITHSTANDING TEMPERATURE OF 300 DEG F WITHOUT SLUMP, AND ADHERING TO CLEAN SURFACES OF PLASTIC DUCTS, METALLIC CONDUITS, CONDUIT COATINGS, CONCRETE, MASONRY, LEAD, CABLE SHEATHS, CABLE JACKETS, INSULATION MATERIALS AND COMMON METALS.

THE MANHOLES TO BE PAID WILL BE THE ACTUAL NUMBER COMPLETED AND ACCEPTED, INCLUDING CONCRETE LEVELING PAD, GROUND ROD (5/8 INCH X LENGTH PER CPP DETAILS), CLAMP, GROUND WIRE, BONDING, RACK SYSTEM, NECK RINGS, CAP RINGS, PULLING IRONS, AND CASTINGS.

PAYMENT: THE WORK INCLUDED IN THIS ITEM AND THE CONTRACT UNIT PRICE FOR EACH MANHOLE BID UNDER “ITEM 690 MISC.: PRECAST ELECTRIC MANHOLE” IN PLACE, COMPLETED AND ACCEPTED, SHALL FORM THE BASIS OF PAYMENT AND SHALL CONSTITUTE FULL COMPENSATION FOR ALL EXCAVATION AND BACKFILL, FOR FURNISHING, HAULING AND PLACING ALL CASTINGS AND TYING EXISTING OR NEW DUCTS INTO MANHOLES INCLUDING RAISING OR LOWERING DUCTS, REINFORCING STEEL, CONCRETE BRICK AND CONCRETE MASONRY, PULLING IRONS, GROUND RODS, BONDING, RACK SYSTEM AND OTHER MATERIAL, ETC., AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THESE ITEMS. ALL MANHOLE CUT SHEETS SHALL BE APPROVED BY CPP ENGINEERING BEFORE THEY ARE CAST.

ITEM 625 – LIGHTING, MISC.: MANHOLE RECONSTRUCTED

TIE INTO EXISTING MANHOLES MH 35-56 AND 35-57

- A. WHEN A NEW DUCT/BANK IS CONNECTED INTO AN EXISTING MANHOLE, A MINIMAL PART OF THE WALL SHALL BE CAREFULLY AND NEATLY CUT OR CORED TO RECEIVE THE DUCT/BANK. AFTER THE DUCT/BANK HAS BEEN INSTALLED, THE EXISTING MANHOLE SHALL BE REPAIRED, PATCHED AND SEALED WITH MORTAR OR AS DIRECTED.
- B. CABLES SHALL BE PROTECTED DURING THIS WORK WITH EXTREME CARE. ANY DAMAGE TO EXISTING CABLES SHALL BE REPAIRED AT NO COST TO THE PROJECT. THIS WORK SHALL BE ACCOMPLISHED UNDER THE DIRECT SUPERVISION OF CPP.

PAYMENT SHALL BE MADE AT THE CONTRACT PRICE PER EACH BID, WHICH SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL, REMOVAL AND DISPOSAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIAL, PROTECTION OF EXISTING CABLES, ALL LABOR, EQUIPMENT TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

THIS ITEM AS PROVIDED ABOVE SHALL BE PAID FOR UNDER:

ITEM	UNIT	DESCRIPTION
625	EACH	LIGHTING, MISC.: MANHOLE RECONSTRUCTED

MAINTAIN EXISTING POWER

THE CONTRACTOR SHALL NOT INTERRUPT EXISTING POWER EXCEPT FOR SUCH PERIODS AS THE ENGINEER MAY REQUIRE FOR THE PROPER CONSTRUCTION OF NEW FACILITIES TO BE IN PLACE AND OPERATIONAL. FINAL CONNECTION SHALL BE MADE BY CPP AFTER ALL TESTING HAS BEEN CONDUCTED AND FACILITIES HAVE BEEN ACCEPTED BY CPP.

ITEM 202 – REMOVAL MISC.: CONCRETE ENCASED ELECTRIC DUCT BANK

EXISTING CPP FACILITIES TO BE REMOVED WITH THIS ITEM INCLUDE THE EXISTING CONCRETE ENCASED UTILITY DUCT BANK BETWEEN MANHOLES 35-56 AND 35-57, EXCLUDING THE BRIDGE SUPPORTED CONDUITS.

THE BRIDGE SUPPORTED CONDUITS SHALL BE REMOVED PER ITEM 202, PORTIONS OF EXISTING STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN, AS NOTED ON THE BRIDGE PLANS. THE EXPOSED CONDUITS ARE MADE OF ASBESTOS CONTAINING MATERIALS (ACM) AS NOTED IN THE ASBESTOS NOTIFICATION NOTE ON THE BRIDGE PLANS.

IT IS POSSIBLE THAT THERE ARE NON-VISIBLE OR PREVIOUSLY UNIDENTIFIED ACM ENCOUNTERED DURING CONSTRUCTION. ANY MATERIAL SUSPECTED OF CONTAINING ASBESTOS SHALL BE EVALUATED BY A CERTIFIED ASBESTOS EVALUATION SPECIALIST TO DETERMINE WHETHER THE MATERIAL ACTUALLY CONTAINS ASBESTOS.

SINCE THE PRESENCE OF ACM IS UNKNOWN WITH THE CURRENTLY UN-EXPOSED CONDUITS, THE CONTRACTOR SHALL ISOLATE AND TEST THESE CONDUITS FOR ACM. IF ACM IS ENCOUNTERED, THEN THE ACM SHALL BE REMOVED AS DESCRIBED IN THE ASBESTOS NOTIFICATION NOTE ON THE BRIDGE PLANS AND SEPARATE PAYMENT WILL BE MADE FOR ADDITIONAL DISPOSAL COSTS IN ACCORDANCE WITH C&MS 109.05.

THE WORK IN THIS ITEM WILL BE PEFORMED AFTER THE EXISTING POWER CABLES ARE DE-ENERGIZED AND REMOVED BY CPP, AND AFTER RECEIVING APPROVAL FROM CPP THAT THE REMOVAL WORK CAN BE PERFORMED.

ITEM 804 – FIBER OPTIC CABLE, 24 CABLE, AS PER PLAN

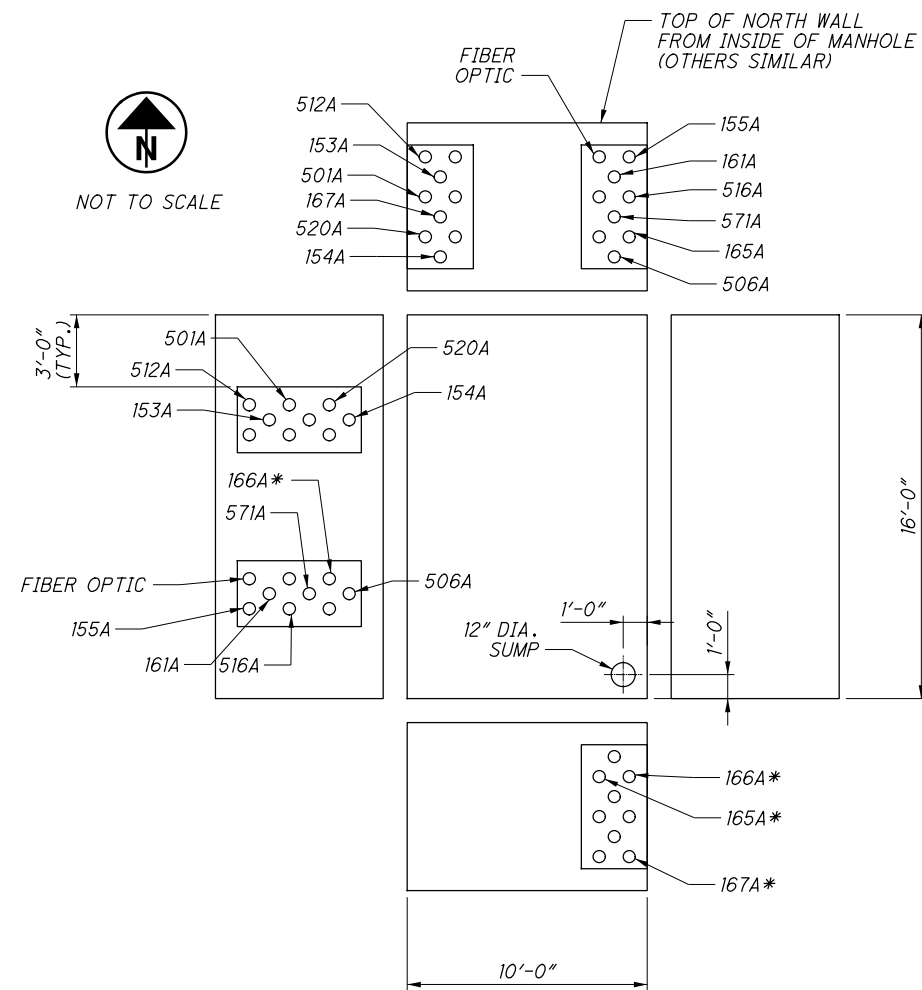
THE FIBER OPTIC CABLE SHALL BE REPLACED FROM MH 44-07 TO THE CPP SUBSTATION, AS SHOWN IN THE PLANS.

CABLE SHALL MEET THE FOLLOWING REQUIREMENTS:

- A. LOOSE TUBE GEL-FILLED FIBER OPTIC CABLE FOR INSTALLATION IN DUCTS, UNDERGROUND CONDUIT OR AERIAL/LASHED. 24 FIBER SINGLE MODE FIBERS 8.3 μM CORE DIAMETER, 125 μM CLADDING WITH A MAXIMIM ATTENUATION OF 0.4 dB/kM AT 1310 nm. COLOR CODED PER TIA/EIA 598A.
- B. FIBERGLASS (EPOXY-GLASS ROD) DIELECTRIC CENTRAL STRENGTH MEMBER, ARAMID FIBER YARN OR FIBERGLASS OVERALL STRENGTH MEMBER. MAXIMUM TENSILE LOAD 600 LBS. DURING INSTALLATION AND IN SERVICE.
- C. DUAL JACKET CONSTRUCTION WITH BLACK UV AND MOISTURE RESISTANT POLTETHYLENE (PE) INNER AND OUTER JACKETS.
- D. THE FIBER OPTIC CABLE SHALL COMPLY WITH THE FOLLOWING, ANSI/TIA/EIA 568A, ICEA S-87-640 AND BE ETL VERIFIED.
- E. GENERAL CABLE PART NUMBER AQ0244HIA-DWB OR EQUAL.

SPLICES SHALL BE COORDINATED WITH CPP BEFORE INSTALLATION.

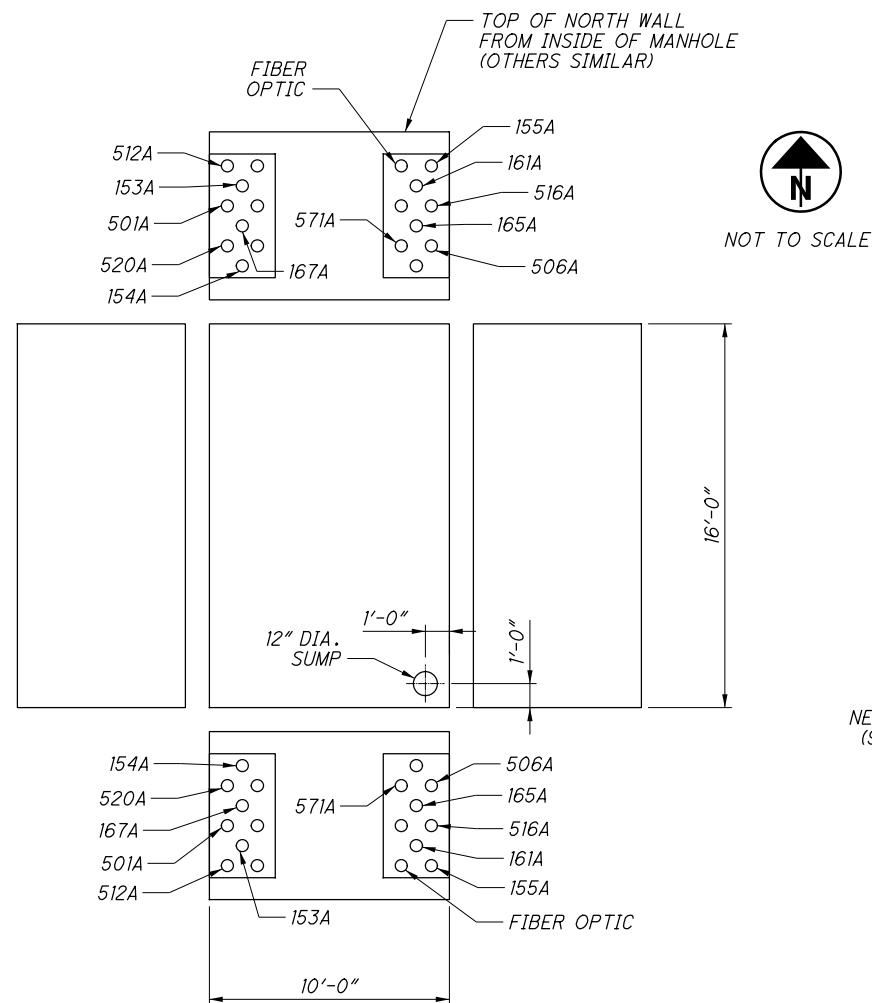
CALCULATED
JDH
CHECKED
JUK



NEW SOUTH MARGINAL MANHOLE  
(BOTTOM AND INSIDE FACES SHOWN)

REQUIREMENTS:  
16'X10'  
5 WINDOWS  
1-36" DIA. ROOF OPENING  
(CENTERED IN TOP)  
1-36" DIA COVER AND CASTINGS -  
(EJIW #1585 WITH HOLES)  
GRADE EL. = 679.85  
BOTTOM OF MANHOLE EL.  $\pm$  = GRADE - 10.0 FT.

\* CIRCUIT CABLES TO BE SUPPLIED  
AND PLACED BY CPP

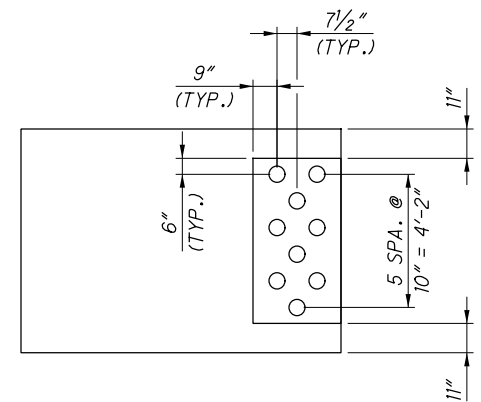


NEW NORTH MARGINAL MANHOLE  
(BOTTOM AND INSIDE FACES SHOWN)

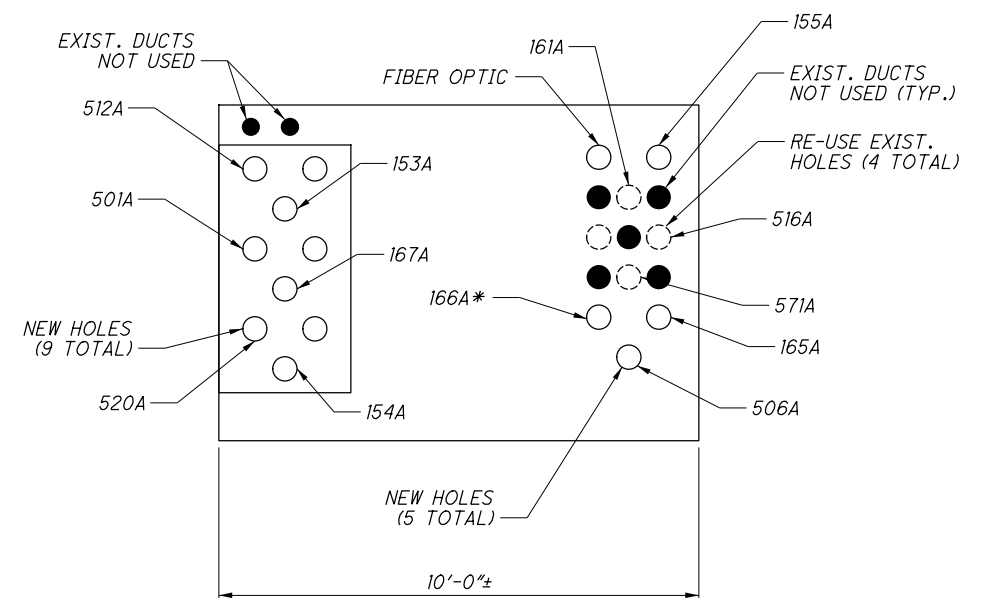
REQUIREMENTS:  
16'X10'  
4 WINDOWS  
1-36" DIA. ROOF OPENING  
(CENTERED IN TOP)  
1-36" DIA COVER AND CASTINGS -  
(EJIW #1585 WITH HOLES)  
GRADE EL. = 687.35  
BOTTOM OF EXCAVATION EL.  $\pm$  = GRADE - 10.0 FT.

NOTES:

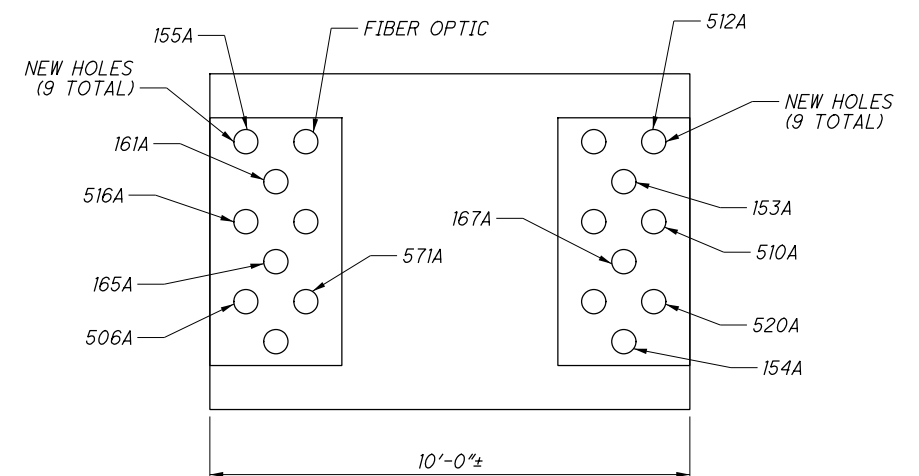
1. CONDUITS WITHOUT LABELS SHALL BE EMPTY.
2. BOTTOM OF MANHOLE ELEVATIONS TO BE VERIFIED BY CONTRACTOR.
3. MANHOLES AND INCIDENTALS TO PAID FOR WITH ITEM 690, SPECIAL - PRECAST ELECTRIC MANHOLE.
4. FOR CIRCUIT SCHEDULE SEE SHEET 57.
5. FOR MANHOLE DETAILS SEE SHEET 62.



### TYPICAL CONDUIT SPACING



EAST WALL MANHOLE 35-56  
(FROM INSIDE FACE)



EAST WALL MANHOLE 35-57  
(FROM INSIDE FACE)

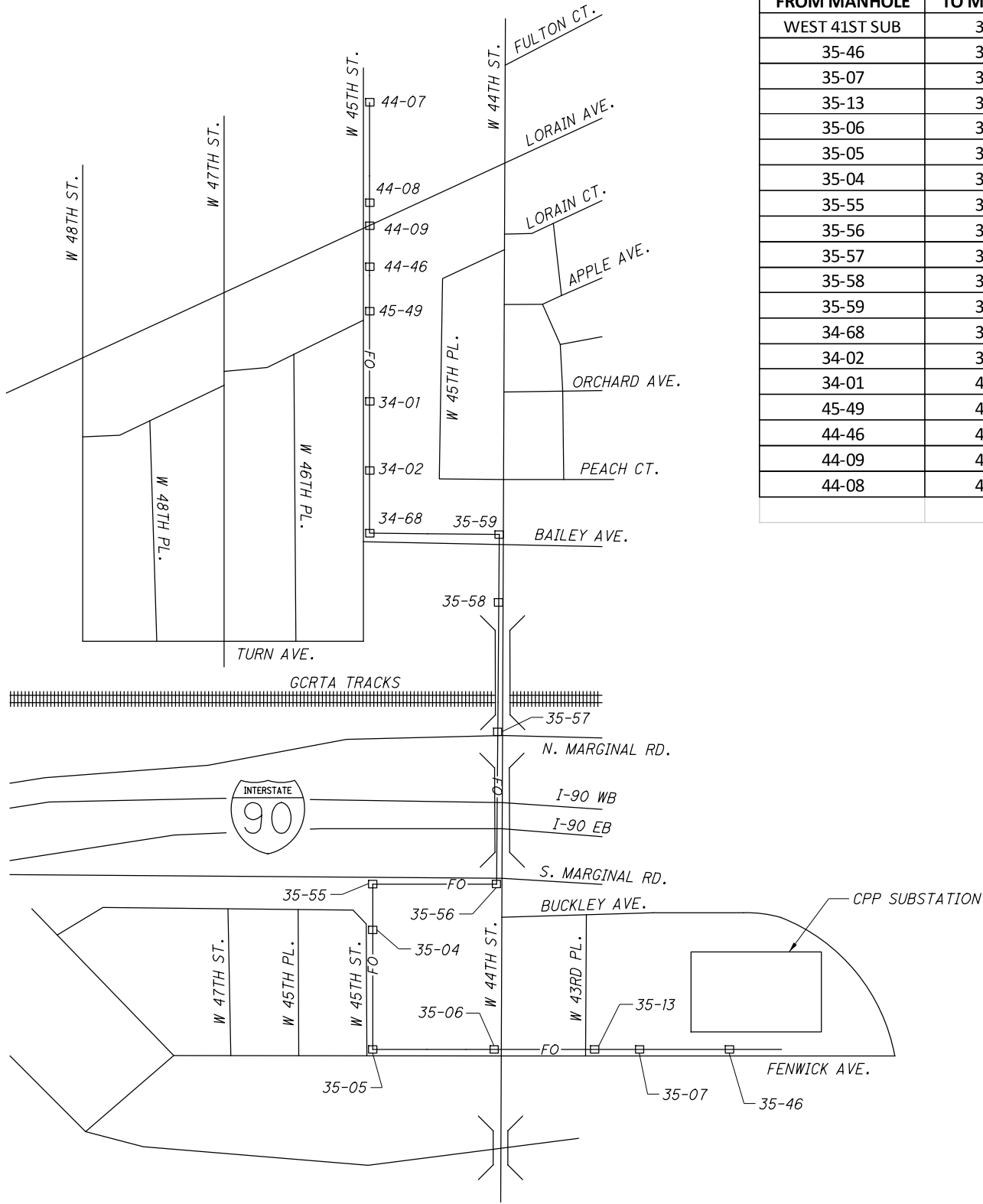
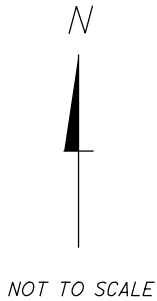
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UD006.dgn Sheet 12/23/2019 9:44:51AM sr1f file

CIRCUIT	FROM MANHOLE #	TO MANHOLE #	QTY	CABLE TYPE	LENGTH (FT)	SLACK (FT)	TOTAL CIRCUIT (FT)
153A	MH 35-56	NEW MH SOUTH MARGINAL	3	750 KCMIL-1C-CU-15kV EPR	6	30	108
154A			3	750 KCMIL-1C-CU-15kV EPR	6	30	108
161A			3	750 KCMIL-1C-CU-15kV EPR	6	30	108
155A			3	750 KCMIL-1C-CU-15kV EPR	6	30	108
FIBER OPTIC			1	SEE FIBER OPTIC ROUTING SHEET			
512A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	6	30	108
501A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	6	30	108
520A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	6	30	108
516A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	6	30	108
571A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	6	30	108
506A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	6	30	108

153A	NEW MH NORTH MARGINAL	NEW MH SOUTH MARGINAL	3	750 KCMIL-1C-CU-15kV EPR	330	30	1080
167A			3	750 KCMIL-1C-CU-15kV EPR	330	30	1080
154A			3	750 KCMIL-1C-CU-15kV EPR	330	30	1080
165A			3	750 KCMIL-1C-CU-15kV EPR	330	30	1080
161A			3	750 KCMIL-1C-CU-15kV EPR	330	30	1080
155A			3	750 KCMIL-1C-CU-15kV EPR	330	30	1080
FIBER OPTIC			1	SEE FIBER OPTIC ROUTING SHEET			
512A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	330	30	1080
501A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	330	30	1080
520A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	330	30	1080
516A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	330	30	1080
571A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	330	30	1080
506A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	330	30	1080

153A	NEW MH NORTH MARGINAL	MH 35-57	3	750 KCMIL-1C-CU-15kV EPR	42	30	216
167A			3	750 KCMIL-1C-CU-15kV EPR	42	30	216
154A			3	750 KCMIL-1C-CU-15kV EPR	42	30	216
165A			3	750 KCMIL-1C-CU-15kV EPR	42	30	216
161A			3	750 KCMIL-1C-CU-15kV EPR	42	30	216
155A			3	750 KCMIL-1C-CU-15kV EPR	42	30	216
FIBER OPTIC			1	SEE FIBER OPTIC ROUTING SHEET			
512A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	42	30	216
501A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	42	30	216
520A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	42	30	216
516A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	42	30	216
571A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	42	30	216
506A			3	4/0-1C-CU-EPR-15kV WITH 133% INSULATION	42	30	216

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UD007.dgn Sheet 12/23/2019 9:44:52 AM srl:ffe

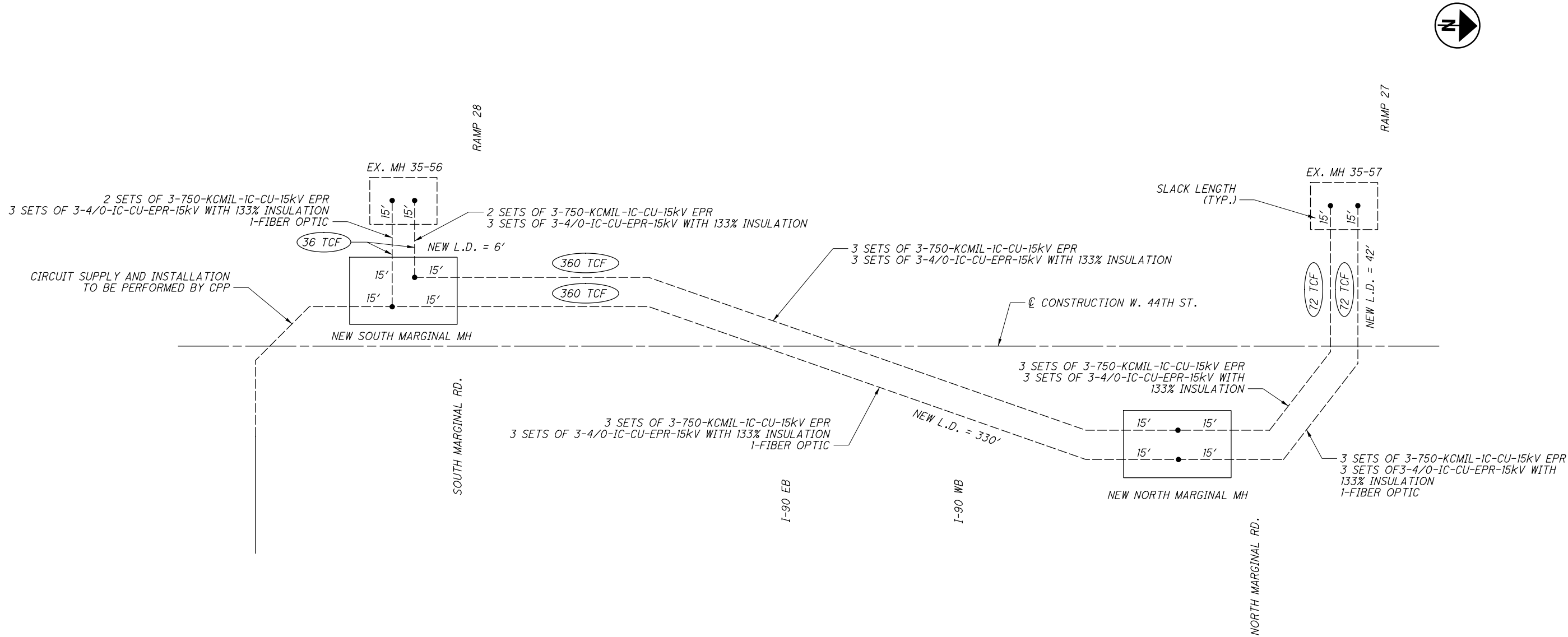


FIBER OPTIC CABLE ROUTING PLAN

LEGEND:  
□ - MANHOLE

FIBER OPTIC CABLE LENGTHS				
FROM MANHOLE	TO MANHOLE	LENGTH (FT)	SLACK (FT)	SUBTOTAL (FT)
WEST 41ST SUB	35-46	300	5	305
35-46	35-07	193	5	198
35-07	35-13	117	5	122
35-13	35-06	312	5	317
35-06	35-05	330	5	335
35-05	35-04	298	5	303
35-04	35-55	75	5	80
35-55	35-56	311	5	316
35-56	35-57	370	5	375
35-57	35-58	235	5	240
35-58	35-59	226	5	231
35-59	34-68	310	5	315
34-68	34-02	130	5	135
34-02	34-01	254	5	259
34-01	45-49	125	5	130
45-49	44-46	85	5	90
44-46	44-09	39	5	44
44-09	44-08	18	5	23
44-08	44-07	297	5	302
			TOTAL	4120

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UD008.dgn Sheet 12/23/2019 9:44:56 AM sr1ffle



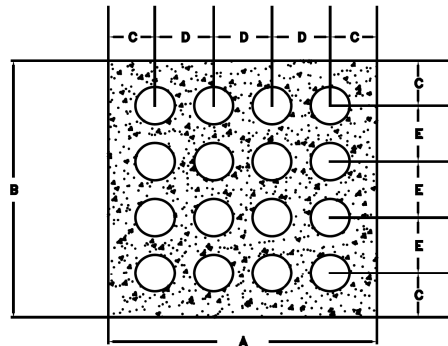
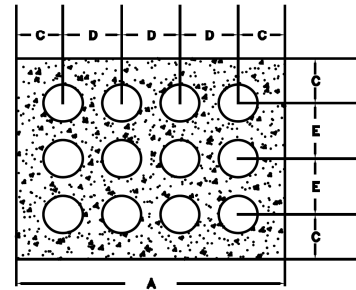
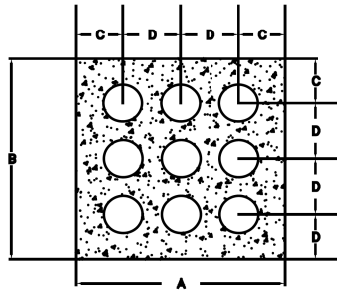
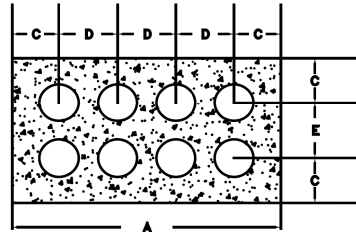
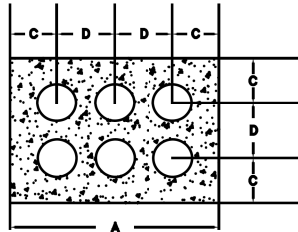
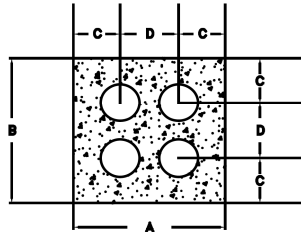
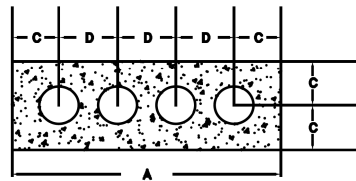
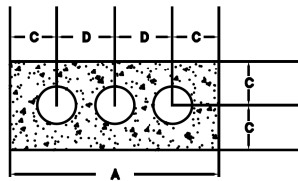
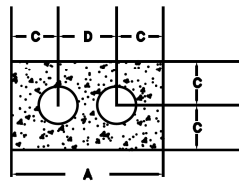
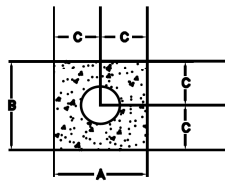
**NOTES:**

1. PRIOR TO REMOVING ANY EXISTING CABLES, THE NEW CABLES MUST BE PLACED AND ENERGIZED. CPP TO REMOVE EXISTING CABLE.
2. FOR MANHOLE DETAILS SEE SHEET 56.
3. FOR CIRCUIT SCHEDULE SEE SHEET 57.

**CABLE SYMBOLS:**

EXISTING CABLE: —  
NEW CABLE: - - -  
NEW STRAIGHT SPLICE: —●—  
TCF: TOTAL CIRCUIT FEET

\\msconsultants.com\files\Production\02\60\08342\05792\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UD009.dgn Sheet 12/23/2019 9:44:56 AM sriffle



**NOTE:**

THE ABOVE CONFIGURATIONS ARE THOSE SHOWN WITHIN THE CONDUIT RUNS.

DIMENSIONS ARE BASED ON THE USE OF CARLON SNAP-LOC INTERMEDIATE AND BASE SPACERS.

SEE MANHOLE DETAILS FOR CONDUIT CONFIGURATION AT MANHOLE WALLS

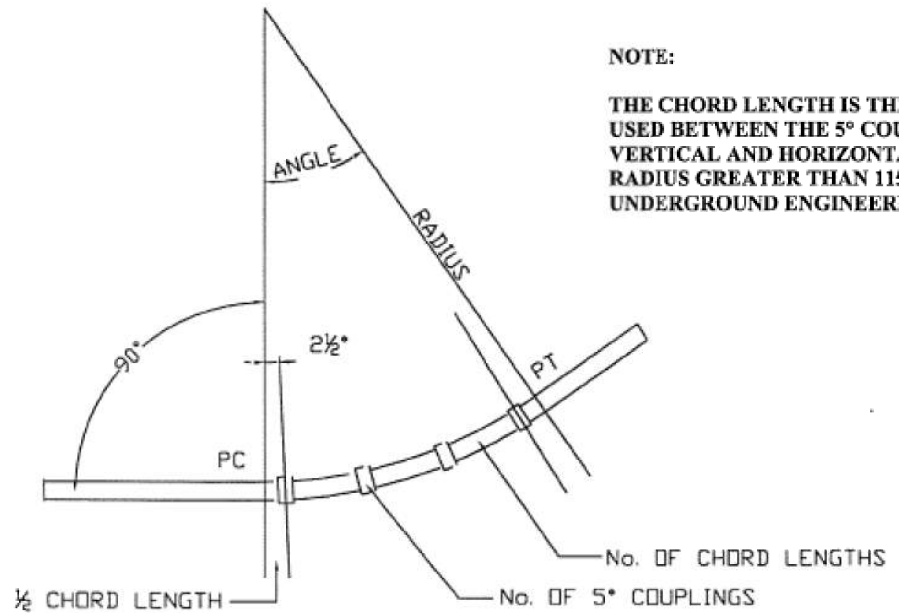
TYPE W x H	4" PVC CONDUITS				
	A	B	C	D	E
1 x 1	10"	10"	5"	—	—
2 x 1	16.75"	10"	5"	6.75"	—
3 x 1	23.5	10"	5"	6.75"	—
4 x 1	30.25"	10"	5"	6.75"	—
2 x 2	16.75"	16.51"	5"	6.75"	6.51"
3 x 2	23.5	16.51"	5"	6.75"	6.51"
4 x 2	30.25"	16.51"	5"	6.75"	6.51"
3 x 3	23.5	23"	5"	6.75"	6.51"
4 x 3	30.25"	23"	5"	6.75"	6.51"
4 x 4	30.25"	29.5"	5"	6.75"	6.51"

TYPE W x H	5" PVC CONDUITS				
	A	B	C	D	E
1 x 1	12"	12"	6"	—	—
2 x 1	19.81"	12"	6"	7.81"	—
3 x 1	27.62"	12"	6"	7.81"	—
4 x 1	35.43"	12"	6"	7.81"	—
2 x 2	19.81"	19.57"	6"	7.81"	7.57"
3 x 2	27.62"	19.57"	6"	7.81"	7.57"
4 x 2	35.43"	19.57"	6"	7.81"	7.57"
3 x 3	27.62"	27.14"	6"	7.81"	7.57"
4 x 3	35.43"	27.14"	6"	7.81"	7.57"
4 x 4	35.43"	34.71"	6"	7.81"	7.57"

TYPE W x H	6" PVC CONDUITS				
	A	B	C	D	E
1 x 1	13"	13"	6.5"	—	—
2 x 1	21.88"	13"	6.5"	8.88"	—
3 x 1	30.76"	13"	6.5"	8.88"	—
4 x 1	38.5"	13"	6.5"	8.88"	—
2 x 2	21.88"	21.64"	6.5"	8.88"	8.64"
3 x 2	30.76"	21.64"	6.5"	8.88"	8.64"
4 x 2	39.64"	21.64"	6.5"	8.88"	8.64"
3 x 3	30.76"	30.28"	6.5"	8.88"	8.64"
4 x 3	39.64"	30.28"	6.5"	8.88"	8.64"
4 x 4	39.64"	38.92"	6.5"	8.88"	8.64"

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UD010.dgn Sheet 12/23/2019 9:45:28 AM sriffle

TYPICAL CURVE CONSTURCTION USING 5° COUPLINGS

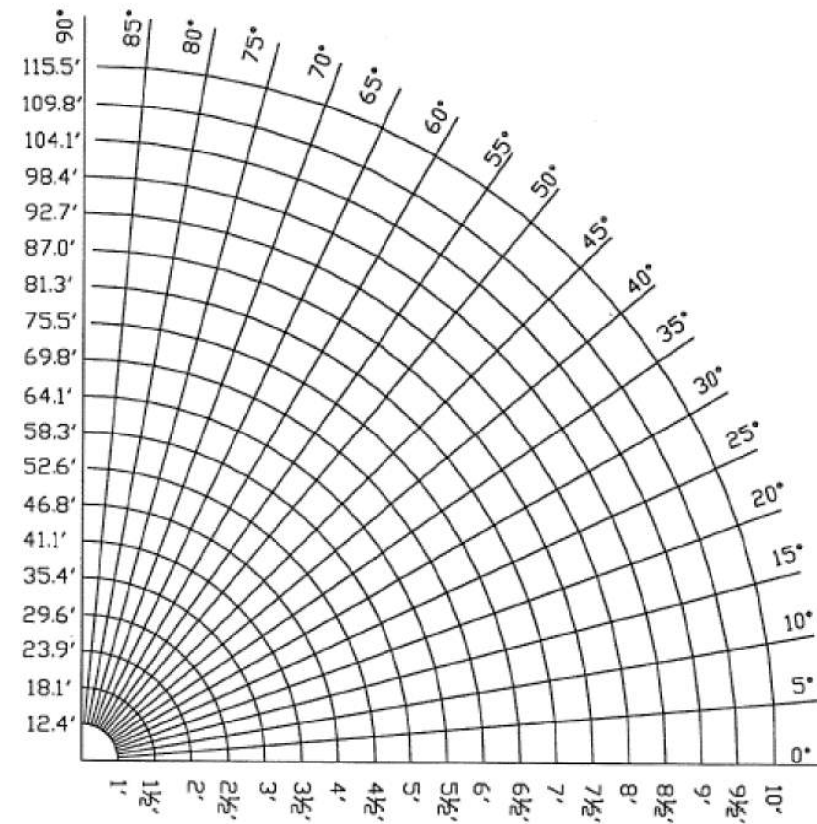


NOTE:  
THE CHORD LENGTH IS THE SPECIFIED LENGTH OF DU  
USED BETWEEN THE 5° COUPLINGS TO CONSTRUCT BO  
VERTICAL AND HORIZONTAL CURVES. FOR CURVES E  
RADIUS GREATER THAN 115.5 FEET, PLEASE CONSULT  
UNDERGROUND ENGINEERING.



CONDUIT LENGTH	APPROX. OFFSET
1'	0'-1"
5'	0'-5"
10'	0'-10"
15'	1'-4"
20'	1'-9"

CONDUIT RADUIS CHART AND CHORD LENGTH DATA

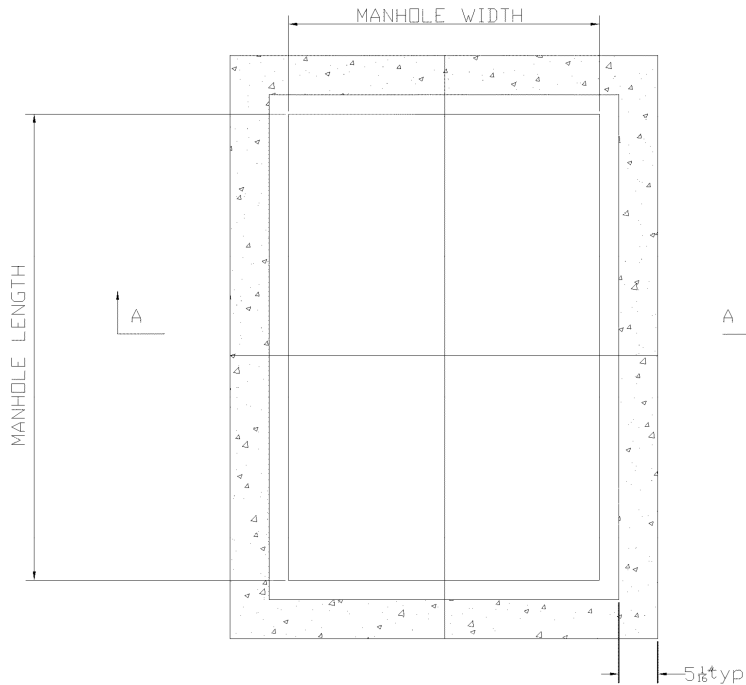


ANGLE	5° COUPLINGS	No. OF CHORDS
10°	2	1
15°	3	2
20°	4	3
25°	5	4
30°	6	5
35°	7	6
40°	8	7
45°	9	8
50°	10	9
55°	11	10
60°	12	11
65°	13	12
70°	14	13
75°	15	14
80°	16	15
85°	17	16
90°	18	17

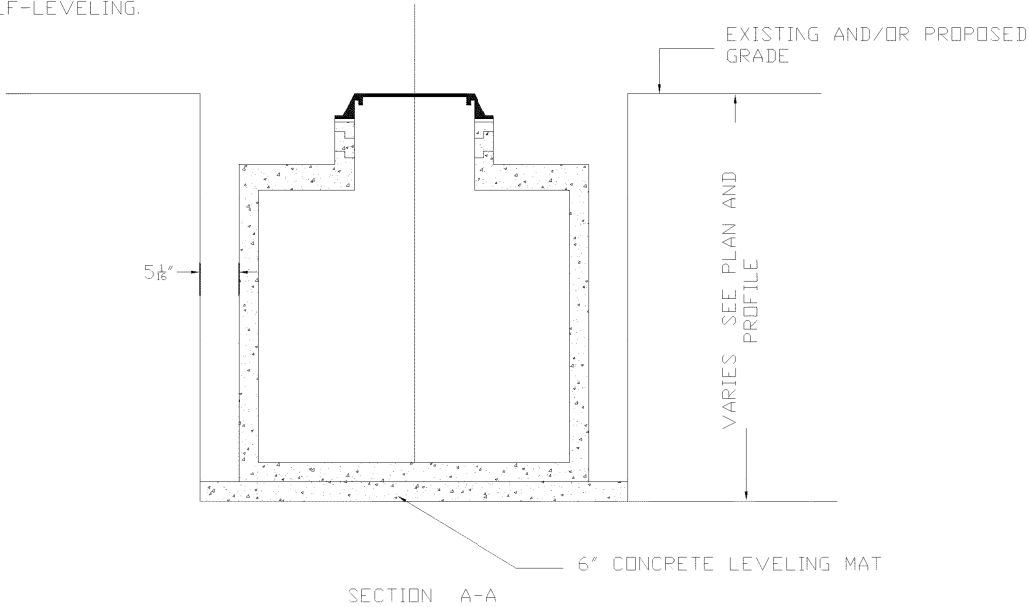
MIN. RADIUS	LENGTH OF CHORD
12.4'	1'
18.1'	1½'
23.9'	2'
29.6'	2½'
35.4'	3'
41.1'	3½'
46.8'	4'
52.6'	4½'
58.3'	5'
64.1'	5½'
69.8'	6'
75.5'	6½'
81.3'	7'
87.0'	7½'
92.7'	8'
98.4'	8½'
104.1'	9'
109.8'	9½'
115.5'	10'

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UD01.dgn Sheet 12/23/2019 9:45:57 AM sriffle

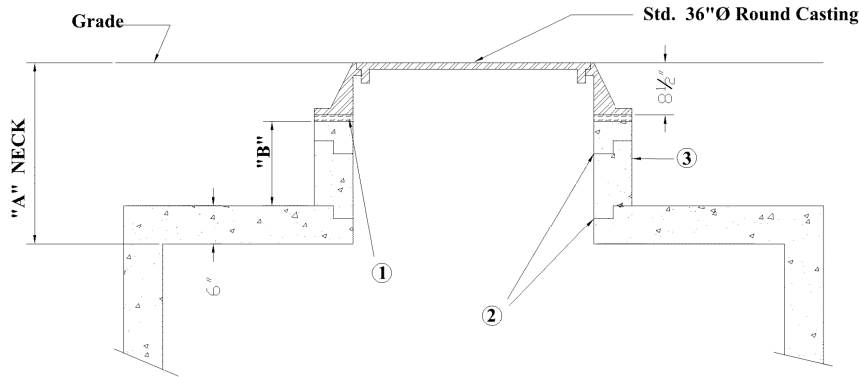
TYPICAL MANHOLE INSTALLATION DETAILS



NOTE: USE 4000 PSI CONCRETE. ADD SUFFICIENT AMOUNT OF WATER; MIX TO BE FLOWABLE AND SELF-LEVELING.



PRECAST NECK RING SCHEDULE



NOTES:

- 1 Bricks or blocks to be flush with inside face of neck rings.
- 2 Place sealant in all neck ring joints before assembly.
- 3 Apply 1/2" thick layer of waterproof mortar to outside surface of neck. Waterproofing additive to be added to mortar per manufacturer's recommendation.

"A" NECK	"B" NECK RING HEIGHT	PREFERRED RING COMBINATION
2' - 6" *	15"	1 - 3" CAP RING 1 - 12" NECK RING
3' - 0"	21"	1 - 3" CAP RING 2 - 9" NECK RINGS
4' - 0"	33"	1 - 3" CAP RING 1 - 6" NECK RING 2 - 12" NECK RINGS

NOTE:

For intermediate neck heights, please consult with Underground Engineering.

CPP standard round cover and casting --- East Jordan Iron Works No. 1585.

\* CPP minimum standard neck.

REVISED NECK RING SCHEDULE 7-22-11

RING SIZE (EFFECTIVE HEIGHT)	WEIGHT	NORWALK CONCRETE CATALOG NO.
3"	265#	R-3-37-C
6"	425#	R-6-37-N
9"	635#	R-9-37-N
12"	845#	R-12-37-N

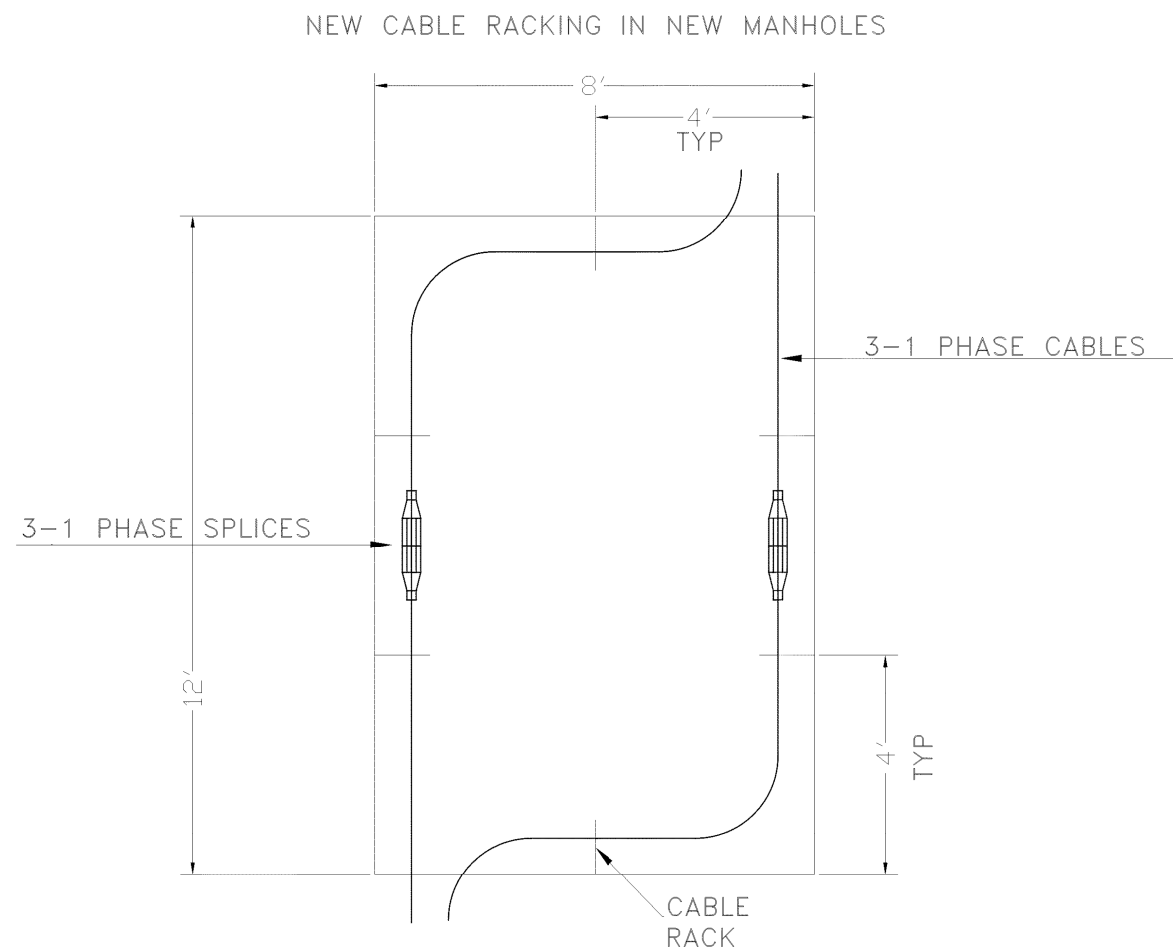
NOTE:

The use of cap rings and neck rings by other manufacturers must be equivalent to those of Norwalk Concrete Industries. See above for Norwalk cataloge numbers.

CALCULATED	JDH
CHECKED	JUK



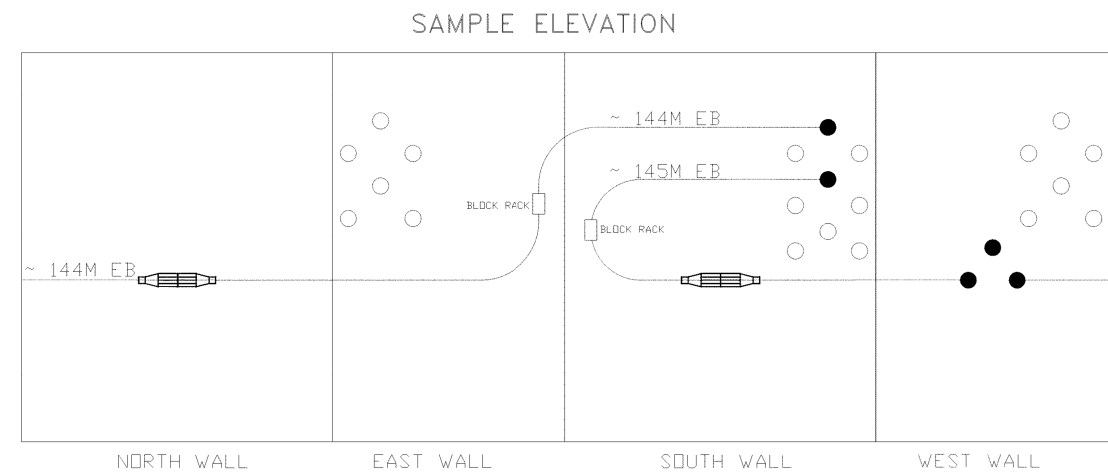
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UD012.dgn Sheet 12/23/2019 9:46:26 AM sriffle



TYPICAL DETAIL OF CABLE RACKING IN NEW MANHOLES (LOOKING DOWN INTO MANHOLE). ALL MEASUREMENTS FROM INSIDE WALLS.

RACKS ARE FASTENED ON WALLS AT 6" FROM CEILING AND 6" ABOVE FLOOR.

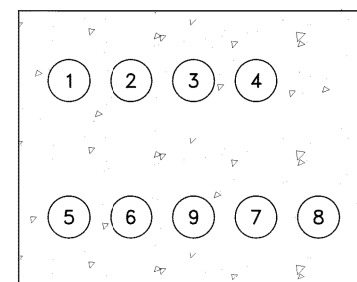
## NEW CABLE RACKING IN NEW MANHOLES



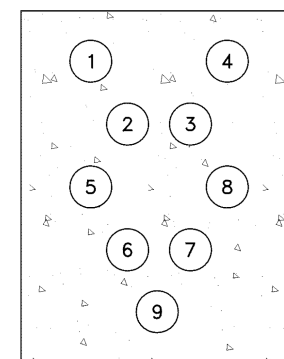
### SAMPLE MATERIAL LIST

- 6-750KCMIL-1C-CU-15KV STRAIGHT SPLICES
- 2-8" OFFSET BLOCK RACKS
- 6-6' CABLE RACKS AND ASSOCIATED ARMS

### 4 OVER 5 TYPICAL CONDUIT NUMBERING DETAIL

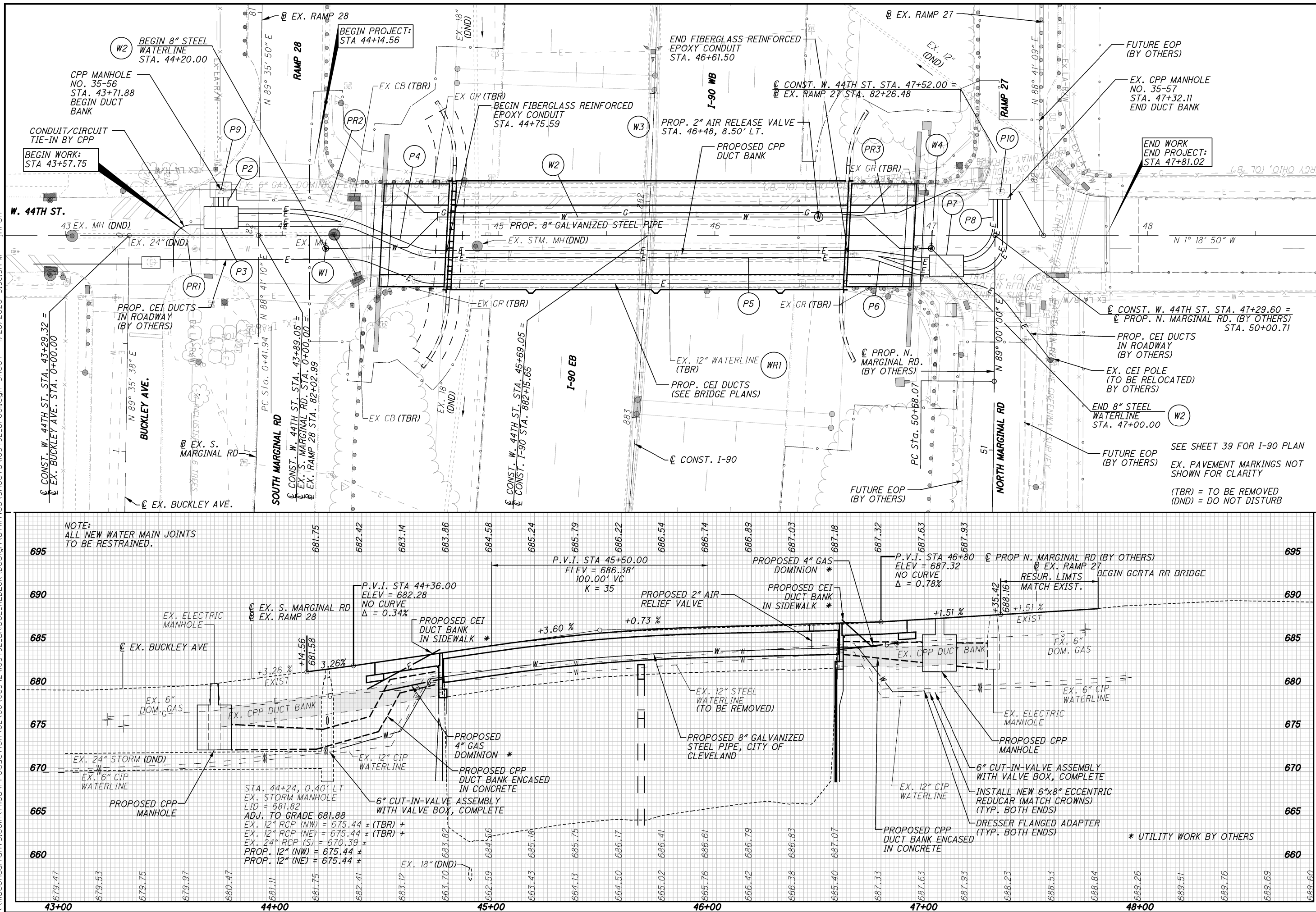


DUCT  
CONFIGURATION

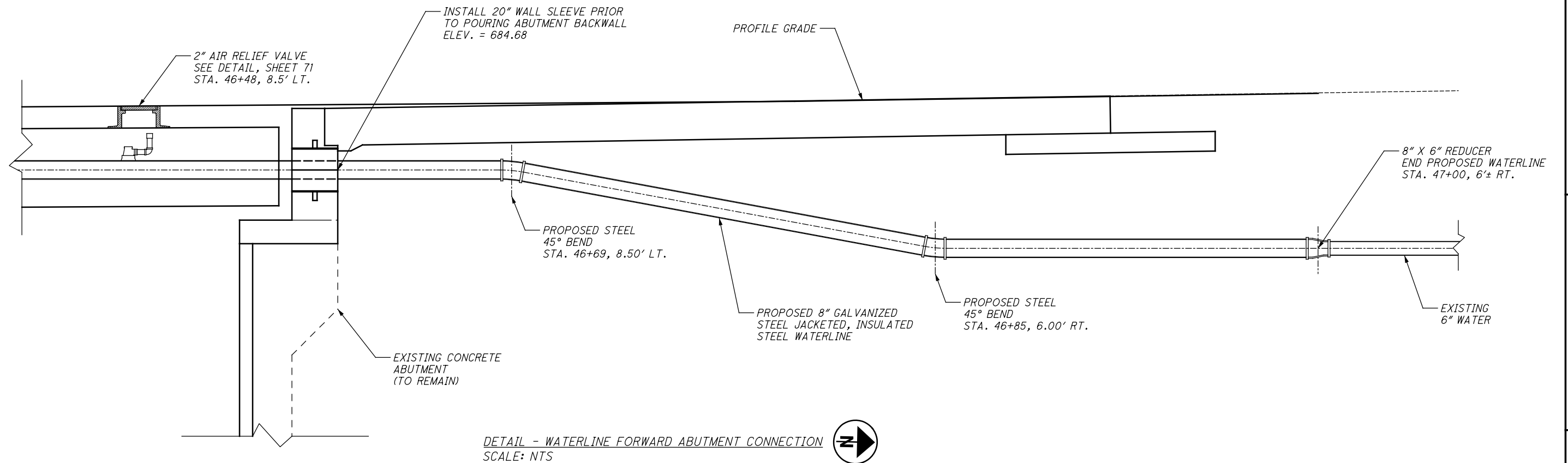
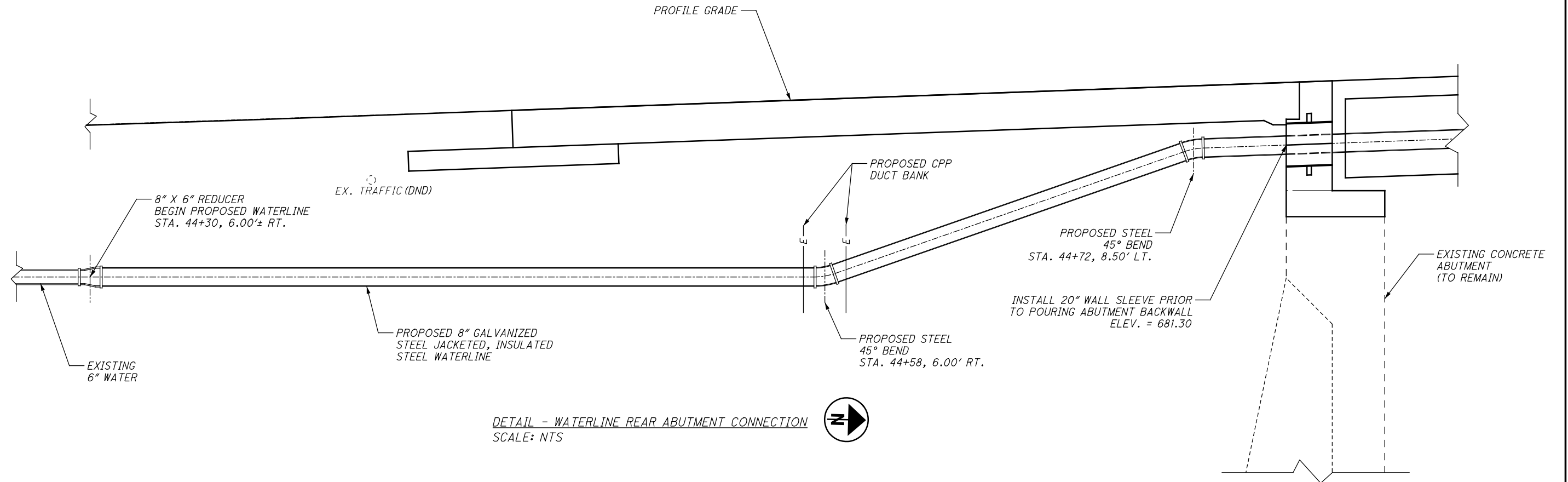


VAULT  
CONFIGURATION





\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UD004.dgn Sheet 12/23/2019 9:47:02 AM sr1ffle



$$\frac{67}{135}$$



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Utilities\Sheets\05792\_UN005.dgn Sheet 12/23/2019 9:47:04 AM sr1ffle

CLEVELAND DIVISION OF WATER NOTES FOR WATER  
MAIN INSTALLATION ON BRIDGES:

1. THE CONTRACTOR, THROUGH THE ENGINEER, SHALL SUBMIT TO THE CITY FOR APPROVAL A MINIMUM OF (6) SETS OF PIPE ASSEMBLY LAYOUT DRAWINGS GENERATED BY THE PIPE OR STRUCTURAL FABRICATOR. PIPE ASSEMBLY LAYOUT DRAWINGS SHALL INCLUDE ALL OF THE FOLLOWING:

- A.) PIPE DIMENSIONS
- B.) FITTING DIMENSIONS
- C.) LOCATION AND ELEVATION OF ALL PIPES, FITTINGS, PIPE JOINTS, PIPE SUPPORTS, EXPANSION JOINTS AND ANY OTHER APPURTENANCES
- D.) TYPE OF PIPE, FITTINGS, PIPE JOINTS, PIPE SUPPORTS, EXPANSION JOINTS, AND ANY OTHER APPURTENANCES.

2. THE CONTRACTOR SHALL SUBMIT TO THE CITY THROUGH THE ENGINEER FOR APPROVAL A MINIMUM OF (6) SETS OF PRINTS OF ALL SHOP DRAWINGS GENERATED BY THE PIPE OR STRUCTURAL FABRICATOR. DRAWINGS SHALL INCLUDE ALL OF THE FOLLOWING:

- A.) PIPE
- B.) COUPLINGS
- C.) INSULATION
- D.) WATER STOP
- E.) EXPANSION JOINT ASSEMBLY
- F.) PIPE SUPPORTS

3. NO WORK SHALL BE PERFORMED IN THE SHOP OR IN THE FIELD UNTIL AFTER THE DRAWINGS HAVE BEEN APPROVED.

4. THE APPROVAL OF THE DRAWINGS BY THE CITY SHALL NOT RELIEVE THE CONTRACTOR OF ANY OF HIS OBLIGATIONS WITH THIS CONTRACT.

5. CARRIER PIPE SHALL BE GALVANIZED STEEL ASTM A-53 GRADE B, HAVING A MINIMUM WORKING PRESSURE OF 350 PSI. CARRIER PIPE SHALL BE OF THE FOLLOWING DIMENSIONS:

8.625" O.D. X 0.5" WALL THICKNESS

6. PIPE SUPPORT ASSEMBLIES SHALL BE FABRICATED AS DETAILED ON THE PLANS AND SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL MATERIALS, CADMIUM PLATED SHOULDER AND CLAMP BOLTS, FASTENERS AND NUTS. THE SUPPORT ASSEMBLY CLAMP, SEAT PLATE ("LUBRITE" PLATE) AND SHIMS SHALL ALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A-123, LATEST REVISION THEREOF. NO FIELD WELDING OF GALVANIZED STEEL PIPE WILL BE PERMITTED. THERE SHALL BE A MINIMUM OF TWO (2) PIPE SUPPORTS FOR EACH PIPE LENGTH.

7a. ALL PIPE SHALL HAVE A MINIMUM OF 3.5" OF POLYURETHANE INSULATION WITH AN 18 GAUGE GALVANIZED STEEL JACKET. A POLYETHYLENE ENCASEMENT SHALL BE PROVIDED OVER THE STEEL JACKET. HALF SHELLS SHALL BE PROVIDED AROUND EACH BEND AND PROVIDED WITH A POLYETHYLENE ENCASEMENT.

7b CONTRACTOR SHALL PROVIDE AN INSULATION PROTECTION SHIELD ON THE BOTTOM OF THE PIPE AT EACH PIPE SUPPORT. PIPE SHIELD SHALL BE STEEL WITH A GALVANIZED COATING. SHIELD SHALL MEET ANSI/MSS SP-69 AND MSS SP-58 (TYPE 40).

7c. AT EACH JOINT AND OVER EACH EXPANSION JOINT, THE CONTRACTOR SHALL PROVIDE HALF SHELL INSULATION WITH AN 18 GAUGE GALVANIZED STEEL JACKET, PROTECTING THE JOINTS AND EXPANSION JOINTS FROM FREEZING. 3 (TYP.) STAINLESS STEEL BANDS SHALL BE PROVIDED TO SECURE THE INSULATION AND JACKET TO THE PIPE.

7d. THE CONTRACTOR SHALL PROVIDE HEAT SHRINK INSULATED PIPE END CAPS AT EACH LOCATION WHERE THE INSULATION WILL BE EXPOSED TO PROVIDE A WEATHER TIGHT SEAL ON THE INSULATION. THE PRE INSULATED PIPE END CAP IS A HEAT SHRINKABLE PART, MANUFACTURED FROM A MODIFIED CROSS-LINKED POLYOLEFIN. MASTIC SHALL BE LINED ON BOTH ENDS OF THE CAP. PROVIDED BY URECON OR APPROVED EQUAL.

7e. BURIED PIPE BEYOND THE BACKWALLS OF THE BRIDGE ABUTMENTS HAVING LESS THAN FOUR AND ONE-HALF (4-1/2') FEET OF COVER SHALL BE INSULATED WITH A MINIMUM OF ONE (1) FOOT INSULATION ENVELOPE EQUAL TO "WITCOLITE" OR "GILSULATE 500XR."

7f. THE VOID BETWEEN THE SLEEVE AND THE STEEL WATER MAIN THROUGH EACH BRIDGE ABUTMENT WALL SHALL BE FILLED WITH JUTE PACKING AND SEALED AT BOTH ENDS WITH THREE (3") INCHES OF NON-SHRINKING GROUT AS SHOWN IN THE "SLEEVE PACKING DETAIL" ON THE PLANS.

8a. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE CITY THROUGH THE ENGINEER FOR APPROVAL OF THE EXPANSION JOINT ASSEMBLY.

8b. CONTRACTOR SHALL PROVIDE 8-INCH DIAMETER SELF RESTRAINED EXPANSION JOINT AS SHOWN ON THE DRAWINGS. (SEE PAGE 70). THE EXPANSION JOINT SHALL BE PROVIDED AT LOCATIONS INDICATED ON THE BRIDGE FRAME PLAN. THE EXPANSION JOINT ASSEMBLY SHALL BE, "DRESSER STYLE 63, TYPE 1 SLIP TYPE, OR APPROVED EQUAL, WITH MINIMUM 1/2" THICK BODY AND SLIP, WITH A MINIMUM 8-INCH TRAVERSE. THE EXPANSION JOINT ASSEMBLY SHALL INCLUDE ALL MATERIALS, BOLTS, NUTS AND WASHERS, WELDED NECK FLANGES A.S.A. 150# AND GASKETS. ALL BOLTS AND NUTS SHALL BE MADE OF STAINLESS STEEL: ASTM A 276-89A, TYPE 304, "SPECIFICATION FOR STAINLESS STEEL AND HEAT-RESISTING SHEET BARS AND SHAPES." THE EXPANSION JOINT SHALL BE GALVANIZED EXCEPT SLIP PIPE. THE EXPANSION JOINT SHALL HAVE FIELD APPLIED INSULATION AS PER DETAILS ON THE CONTRACT DRAWINGS.

8c. CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER FOR SETTING OF THE EXPANSION JOINT BASED ON THE LOCAL WEATHER CONDITIONS. CONTRACTOR SHALL ADJUST EXPANSION JOINT BASED ON CHANGING SITE WEATHER CONDITIONS DURING THE CONSTRUCTION DURATION AS NECESSARY.

CONTRACTOR SHALL PROVIDE A FACTORY WELDED FLANGE ON THE STEEL WATER LINE AT THE FLANGE CONNECTION TO THE EXPANSION JOINT.NO FIELD WELDING OF GALVANIZED STEEL PIPE WILL BE PERMITTED.

9a. CONTRACTOR SHALL PROVIDE RESTRAINED COMPRESSION COUPLINGS AT EACH JOINT AS NOTED ON THE DRAWINGS. THE COUPLING SHALL BE DESIGNED FOR CONNECTING STEEL WATER LINE PIPE WITH A MINIMUM FACTOR OF SAFETY OF 2:1. A MINIMUM WORKING PRESSURE OF 350 PSI. 15 MILS OF FUSION BONDED EPOXY SHALL BE PROVIDED TO THE INTERNAL SURFACES AND 5 MIL EPOXY COATING TO THE EXTERNAL SURFACES. THE RESTRAINT SHALL CONFORM TO AWWA C111 STANDARDS. THE RESTRAINT SHALL BE EBAA IRON, INC., SERIES 3800 OR APPROVED EQUAL.

9b. STEEL PIPE WITH A PLAIN END SHALL BE CONNECTED BY MEANS OF A MECHANICAL RESTRAINT AS MANUFACTURED BY EBBA IRON INC., OR APPROVED EQUAL. CONNECTIONS OF PROPOSED PIPE TO EXISTING PIPE SHALL BE WITH MECHANICAL RESTRAINT. ACTUAL JOINTS OF EXISTING PIPE ARE UNKNOWN. CONTRACTOR SHALL FIELD VERIFY AND PROVIDE MECHANICAL RESTRAINTS AS RECOMMENDED BY THE MANUFACTURE.

9c. THE CONTRACTOR SHALL PROVIDE 6 OUNCE ZINC ANODE CAPS, MEETING ASTM B418, ON EACH BOLT OF THE RESTRAINT AT THE CONNECTION OF THE NEW STEEL WATER LINE TO THE EXISTING WATER LINE.

ITEM 202 – PIPE REMOVED. 24" AND UNDER

THIS ITEM SHALL INCLUDE ALL MATERIALS, LABOR AND EQUIPMENT NEEDED FOR THE REMOVAL OF THE EXISTING WATER MAIN AT THE LOCATIONS SHOWN ON THE PLANS. PAYMENT WILL BE MADE AT THE UNIT PRICE BID PER FOOT OF REMOVAL MEASURED THROUGH VALVES AND FITTINGS FROM CENTER TO CENTER.

ITEM 638 SPECIAL – 2" AIR RELEASE VALVE  
CITY OF CLEVELAND

THIS ITEM SHALL INCLUDE ALL NECESSARY EXPLORATION, EXCAVATION, UTILITY COORDINATION, PROTECTION/REPLACEMENT, FURNISHING, AND INSTALLATION, TESTING, DISINFECTION AND ALL OTHER EXPENSES WHETHER SPECIFICALLY MENTIONED OR NOT TO COMPLY WITH THE STANDARD DETAILS OF CITY OF CLEVELAND TO PROVIDE A 2" RELEASE VALVE ON STEEL WATER MAIN ON BRIDGE. PAYMENT WILL BE MADE FOR EACH AIR RELEASE VALVE ASSEMBLY INSTALLED, COMPLETE, TESTED, DISINFECTED AND READY FOR SERVICE.

ITEM 638 – WATER WORK MISC.: SPECIAL – 8" GALVANIZED STEEL PIPE  
CITY OF CLEVELAND

THIS ITEM SHALL INCLUDE ALL NECESSARY EXPLORATION, EXCAVATION, EMBANKMENT, DEWATERING, SHEETING, UTILITY COORDINATION, PROTECTION/REPLACEMENT, BEDDING, BACKFILL, HAULING, FURNISHING, PLACING, CUTTING AND CONNECTING THE PIPE INCLUDING ALL EXPANSION JOINTS, COUPLINGS, PIPE INSTALLATION, INSTALLING SUPPORT ASSEMBLIES AND OTHER PIPE APPURTENANCES, FURNISHING AND COMPLETING THE SLEEVE PACKING DETAIL INCLUDING THE SEAL AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM, EXCEPT FOR THE ITEMS SPECIFICALLY LISTED AS SEPARATE PAY ITEMS.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH LINEAR FOOT OF PIPE INSTALLED AS MEASURED THROUGH EXPANSION JOINTS, COUPLINGS, SUPPORT ASSEMBLIES, FITTINGS, VALVES AND OTHER PIPE APPURTENANCES FROM CENTER TO CENTER ALONG THE CENTERLINE OF THE WATER MAIN, COMPLETE, TESTED, DISINFECTED AND READY FOR SERVICE.

THE CONTRACTOR WILL BE ASSESSED A CWD LABOR CHARGE FOR THE CHLORINATION OR THE FLUSHING, TESTING AND SAMPLING OF THE NEWLY LAID WATER MAIN BY THE CITY OF CLEVELAND, DIVISION OF WATER. PAYMENT OF THE CWD LABOR CHARGE FOR CHLORINATION OR THE FLUSHING, TESTING AND SAMPLING SHALL BE MADE BY THE CONTRACTOR TO THE PERMITS AND SALES SECTION OF THE DIVISION OF WATER BEFORE ANY WATER WORK IS PERFORMED.

ITEM SPECIAL – CUT-IN-VALVE ASSEMBLY WITH VALVE BOX. COMPLETE

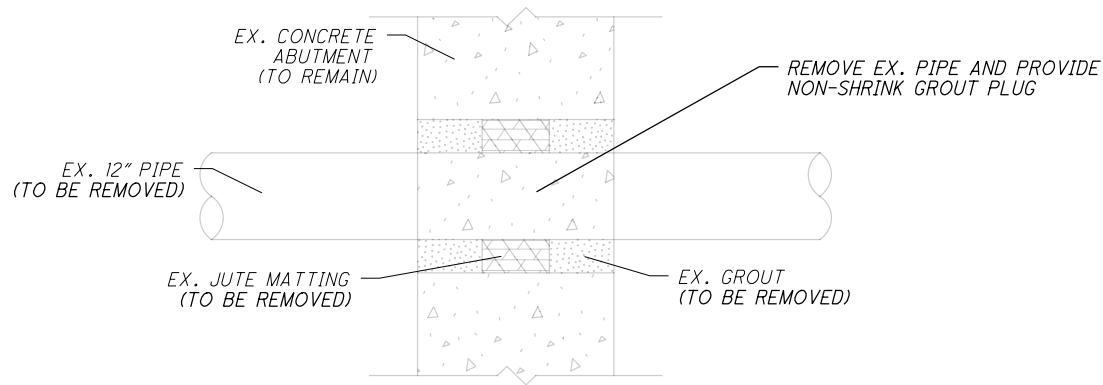
WORK INCLUDED:  
THE CONTRACTOR SHALL FURNISH AND INSTALL AT THE LOCATION(S) NOTED ON THE CONTRACT DRAWINGS OR WHERE ORDERED ALL CUT-IN-VALVE ASSEMBLIES WITH VALVE BOX COMPLETE AS SHOWN IN CUT-IN-VALVE DETAIL ON SHEET 71 INCLUDING THE FURNISHING AND INSTALLATION OF A VALVE STEM EXTENSION IF SO REQUIRED. THE DIVISION OF WATER WILL SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE AND THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. THE INSTALLATION OF THE CUT-IN-VALVE SHALL BE DONE UNDER HE SUPERVISION OF THE DIVISION OF WATER. THE CONTRACTOR SHALL FURNISH AND DELIVER TO AND INSTALL AT THE LOCATION(S) SHOWN ON THE PLANS A RETAINED MECHANICAL JOINT BELL END GATE VALVE, VALVE BOX COMPLETE, EITHER RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT PATTERN) OR COMPRESSION COUPLINGS (WITH STOPS REMOVED) EQUAL TO DRESSER STYLE NO. 38, 138 OR 162 OR SMITH-BLAIR NO. 441, HAVING STAINLESS STEEL BOLTS AND NUTS (ASTM A276-89A, TYPE 304), DUCTILE IRON PIPE SHORTS AND, IF REQUIRED, A VALVE STEM EXTENSION. COMPRESSION COUPLINGS SHALL HAVE A MINIMUM PRESSURE RATING OF 250 PSI. THE CONTRACTOR SHALL FURNISH ALL MATERIALS AND DO ALL NECESSARY EXCAVATION, SHEETING, SHORING, BACKFILLING, MISCELLANEOUS REMOVAL AND RESTORATION, SEEDING AND/OR SODDING, REPAVING AND REPLACEMENT OF SIDEWALK REQUIRED TO COMPLETE THE WORK AS HEREIN SPECIFIED.

QUALITY OF VALVES:  
THE GATE VALVES FURNISHED AND INSTALLED AS PART OF THE CUT-IN-VALVE ASSEMBLE SHALL CONFORM WITH THE REQUIREMENTS OF THE MOST CURRENT CLEVELAND WATER SPECIFICATIONS.

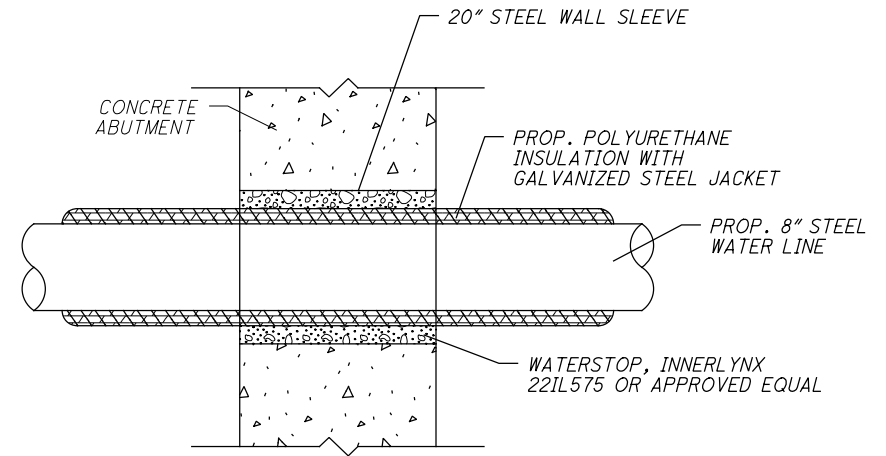
PAYMENT:  
THE WORK INCLUDED IN THIS ITEM SHALL BE PAID FOR AT THE UNIT PRICE BID FOR EACH "ITEM SPECIAL – CUT-IN-VALVE ASSEMBLY WITH VALVE BOX COMPLETE", CLASSIFIED AS TO SIZE. THE PRICE AND PAYMENT SHALL CONSTITUTE FULL COMPENSATION FOR PERFORMING ALL EXCAVATION, BACKFILLING, AND THE FURNISHING OF ALL LABOR, TOOLS, ALL EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN PLACE AS SHOWN. SEEDING AND SODDING, REPAVING (BOTH TEMPORARY AND PERMANENT)SIDEWALK REPLACEMENT AND OTHER SITE RESTORATION SHALL BE INCLUDED IF NOT PAID FOR SEPARATELY UNDER OTHER ITEMS INDICATED IN THE PLANS.



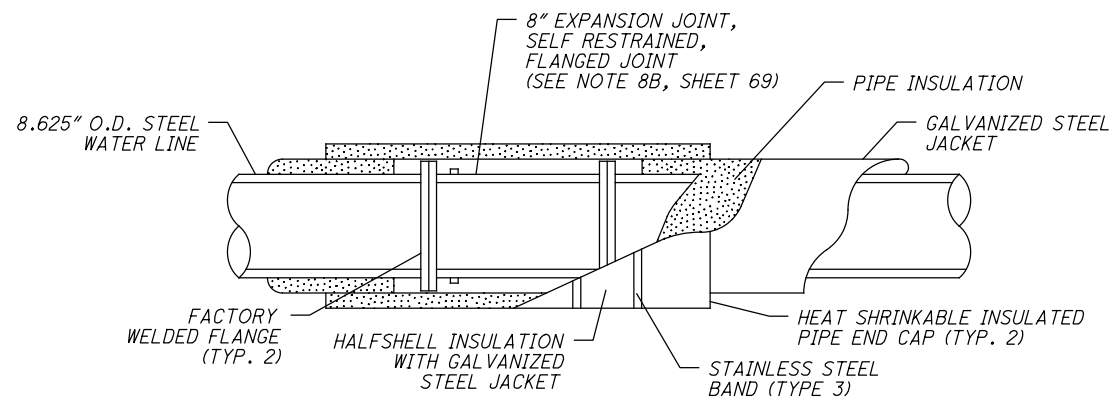
\\msconsultants.com\\files\\Production\\02\\60\\08342\\05792\_BRIDGE\_REDECK\\Design\\Utilities\\Sheets\\05792\_UD001.dgn Sheet 4/14/2020 4:01:30 PM ebodnar



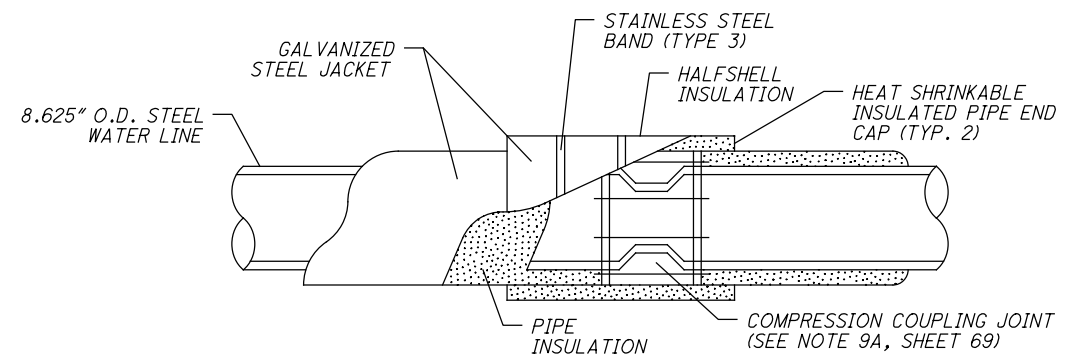
DETAIL - ABUTMENT WALL EXISTING CONNECTION  
SCALE: N.T.S.



DETAIL - ABUTMENT WALL CONNECTION  
SCALE: N.T.S.



DETAIL - STEEL WATER LINE PIPE  
SCALE: N.T.S.

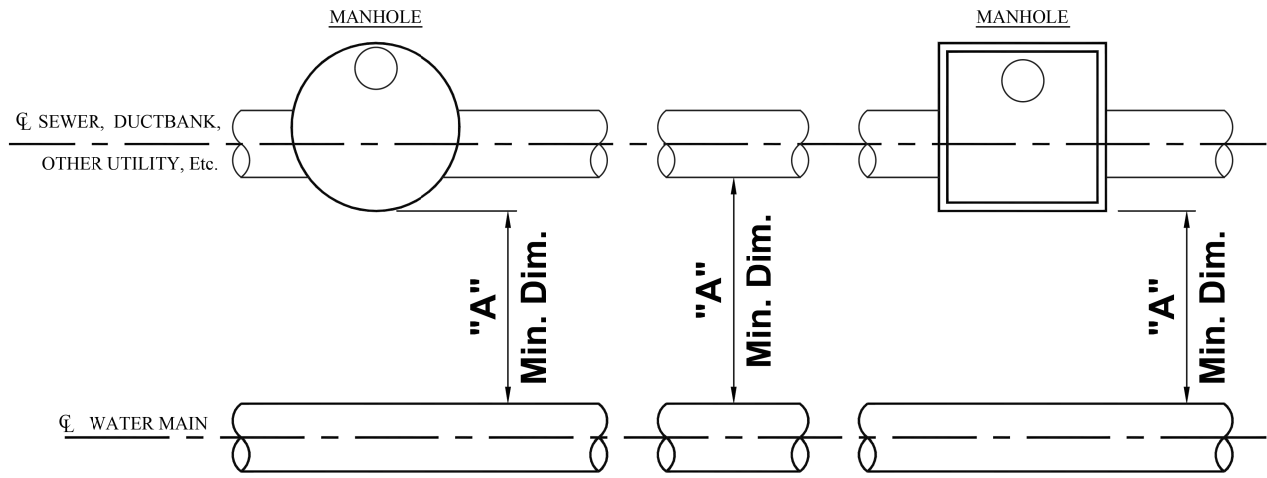


DETAIL - STEEL WATER LINE PIPE  
SCALE: N.T.S.





\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Utilities\Sheets\05792\_UD003.dgn Sheet 12/23/2019 9:47:33 AM sr1ffle



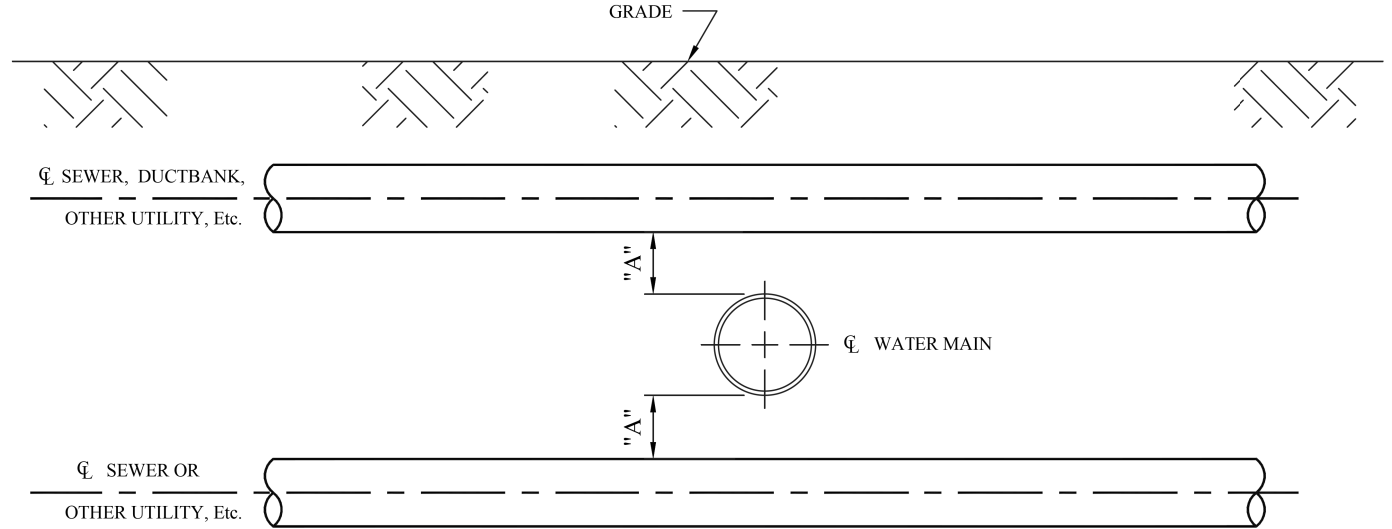
PLAN VIEW  
- SEE STD-018 FOR PROFILE VIEW -

HORIZONTAL CLEARANCE	STORM SEWER	SANITARY SEWER	GAS, DUCTBANK, OTHER UTILITY, Etc.
"A"	10'-0" MIN.	10'-0" MIN.	5'-0" MIN.

HORIZONTAL CLEARANCE FOR UTILITIES  
NOT TO SCALE

STD-017

DATE: 7-02-2014 BY: MTA



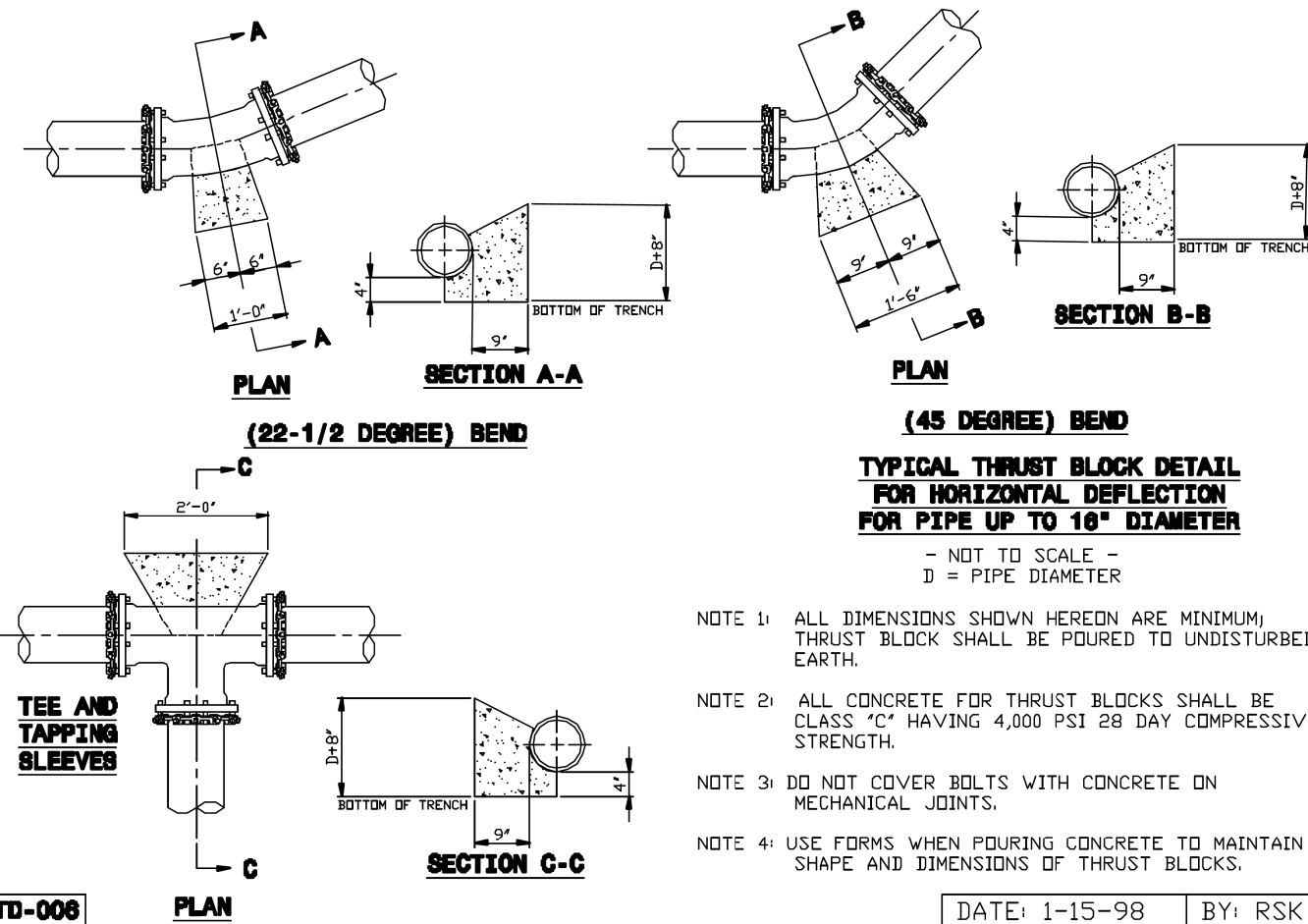
PROFILE VIEW  
- SEE STD-017 FOR PLAN VIEW -

VERTICAL CLEARANCE	SANITARY SEWER LESS THAN 24"	SANITARY SEWER 24" & LARGER	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY LESS THAN 24"	STORM SEWER, DUCTBANK, GAS, OTHER UTILITY 24" & LARGER	REMARKS
"A"	18" Min.	18" Min.	18" Min.	18" Min.	IF CANNOT ACHIEVE MIN. CLEARANCE WATER MAIN TO BE LOWERED

VERTICAL CLEARANCE FOR UTILITIES  
NOT TO SCALE

STD-018

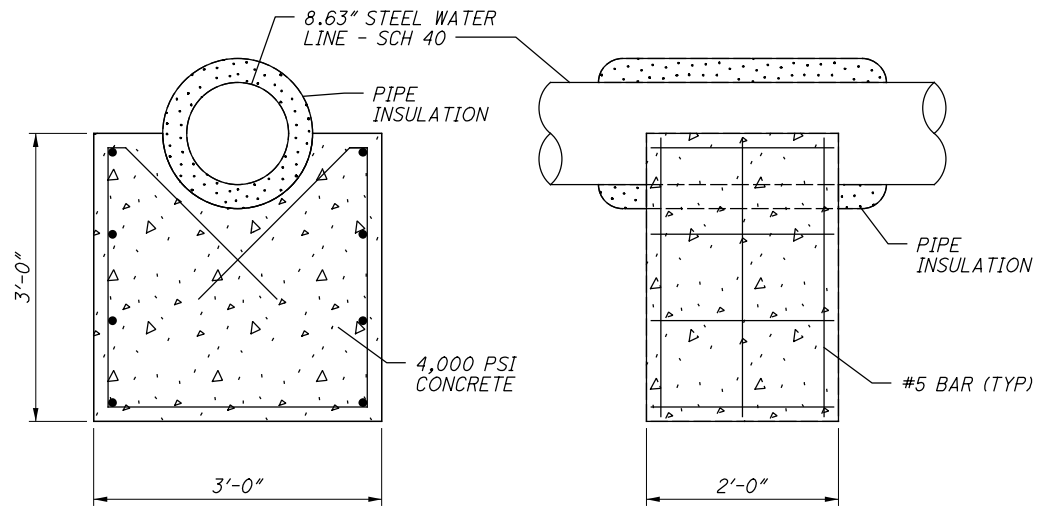
DATE: 7-02-2014 BY: MTA



- NOTE 1: ALL DIMENSIONS SHOWN HEREON ARE MINIMUM; THRUST BLOCK SHALL BE POURED TO UNDISTURBED EARTH.
- NOTE 2: ALL CONCRETE FOR THRUST BLOCKS SHALL BE CLASS "C" HAVING 4,000 PSI 28 DAY COMPRESSIVE STRENGTH.
- NOTE 3: DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.
- NOTE 4: USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.

STD-008

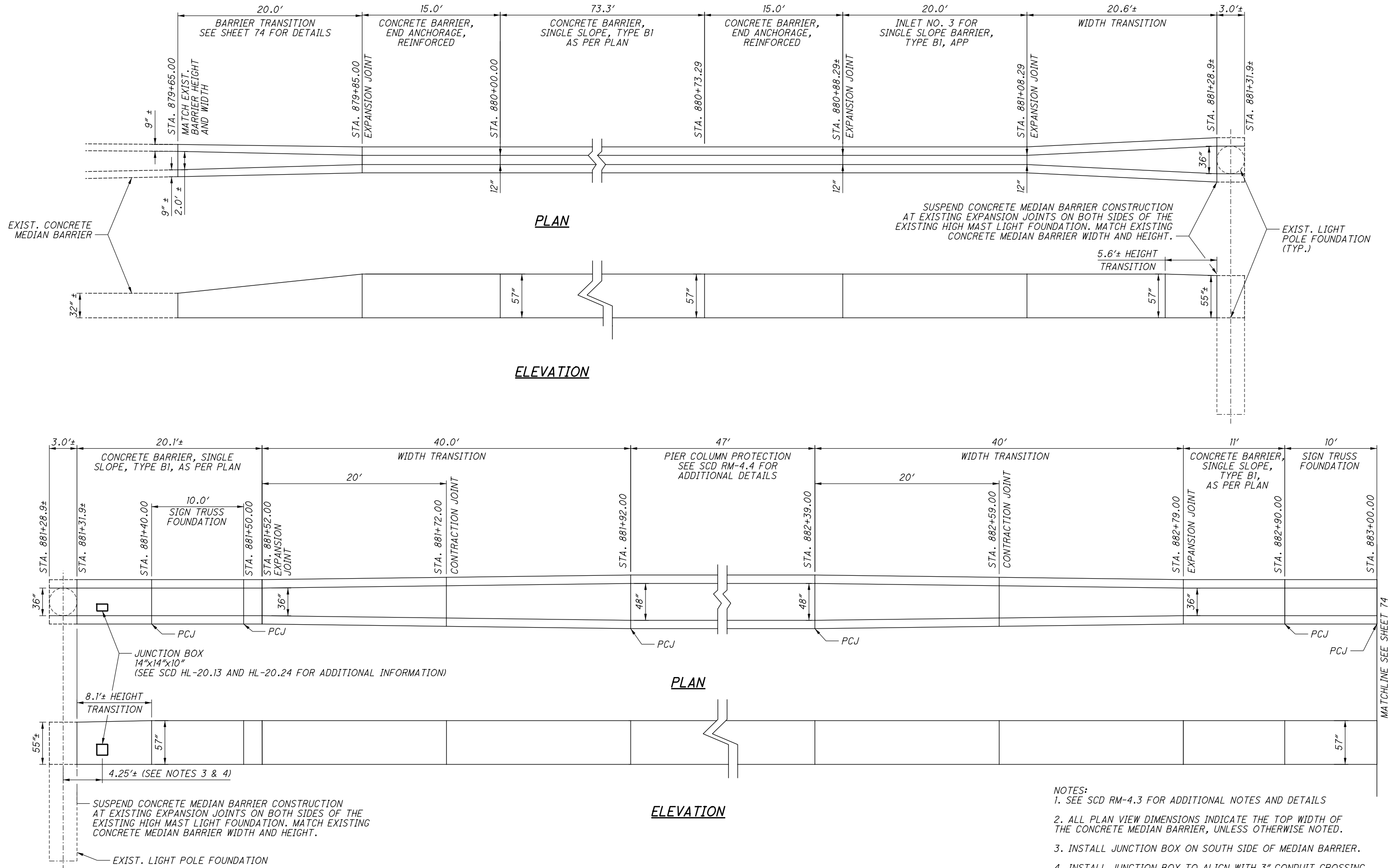
DATE: 1-15-98 BY: RSK



DETAIL - CONCRETE ANCHOR  
SCALE: N.T.S.

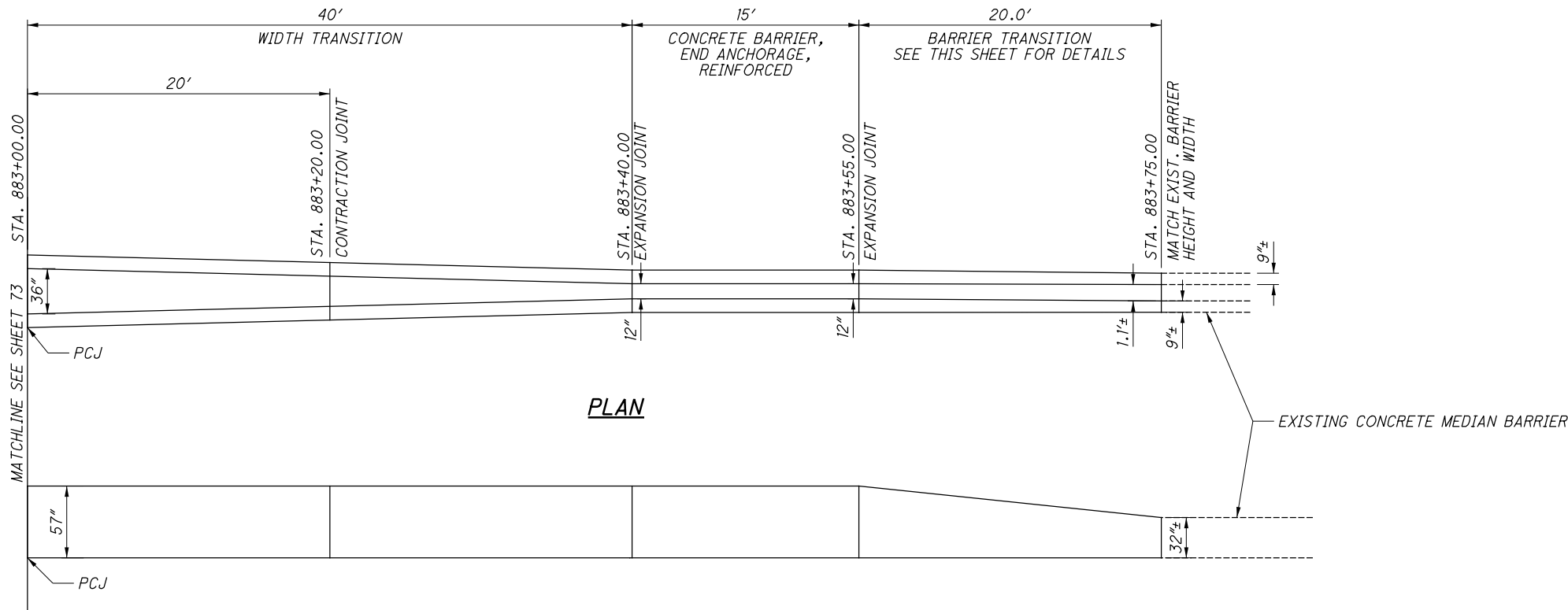
- NOTES:  
1. REINFORCEMENT TO BE ASTM A615 GRADE 60 STEEL

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GR001.dgn Sheet 12/23/2019 9:47:57 AM sriffle



- NOTES:
1. SEE SCD RM-4.3 FOR ADDITIONAL NOTES AND DETAILS
  2. ALL PLAN VIEW DIMENSIONS INDICATE THE TOP WIDTH OF THE CONCRETE MEDIAN BARRIER, UNLESS OTHERWISE NOTED.
  3. INSTALL JUNCTION BOX ON SOUTH SIDE OF MEDIAN BARRIER.
  4. INSTALL JUNCTION BOX TO ALIGN WITH 3" CONDUIT CROSSING UNDER EB I-90 LANES.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GRO02.dgn Sheet 12/23/2019 9:47:58 AM srifile



PLAN

ELEVATION

NOTES:  
1. SEE SCD RM-4.3 FOR ADDITIONAL NOTES AND DETAILS

2. ALL PLAN VIEW DIMENSIONS INDICATE THE TOP WIDTH OF THE CONCRETE MEDIAN BARRIER, UNLESS OTHERWISE NOTED.

NOTES FOR BARRIER TRANSITION:

**MATERIALS:**  
MATERIALS ARE SAME FOR THOSE SHOWN ON RM-4.3, EXCEPT THAT CAST-IN-PLACE IS THE ONLY ACCEPTABLE METHOD. EDGES MAY BE CHAMFERED OR RADIUSSED AS SHOWN ON THOSE DRAWINGS.

**CONCRETE BASE:**  
CONSTRUCT BASE AS SHOWN ON THE NJ SHAPE INSERT SHEETS, INCLUDING THE METHODS DETAILING THE FOOTING JOINT, PERMISSIBLE CONSTRUCTION JOINT (PCJ), AND DOWELLING REQUIREMENTS. THE WIDTH OF THE BASE MATCHES THE EXISTING NJ BARRIER.

**JOINTS:**  
CONSTRUCT JOINTS AS SHOWN ON RESPECTIVE BARRIER DRAWINGS.

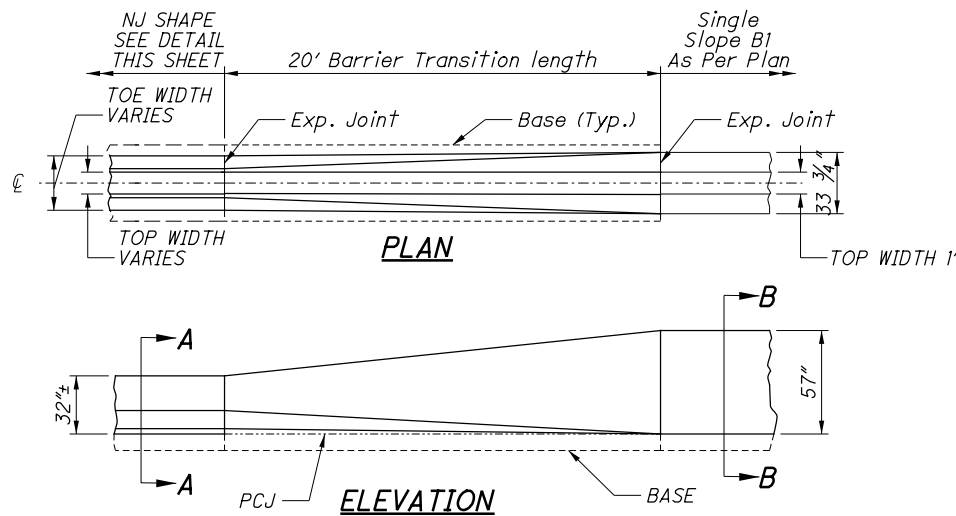
**RACEWAYS:**  
WHEN SPECIFIED, PLACE RECEWAY(S) TO MATCH RACEWAY ELEVATION IN ADJOINING SEGMENTS. PLACE TO OBTAIN MAXIMUM CONCRETE COVER.

**PAYMENT:**  
THIS BARRIER TRANSITION SHALL INCLUDE ALL MATERIAL AND LABOR NEEDED TO CONSTRUCT THIS 20' SECTION, INCLUDING ANY RACEWAYS, REINFORCING STEEL, DOWELS AND OTHER NECESSARY INCIDENTALS. PAYMENT SHALL BE MADE AT THE UNIT PRICE FOR ITEM 622 - BARRIER TRANSITION, EACH.

**GENERAL:**  
THIS INSERT DETAILS THE BARRIER TRANSITION, TO CONNECT EXISTING NJ CONCRETE BARRIER (SAFETY SHAPE) TO A NEW RUN OF SINGLE SLOPE CONCRETE BARRIER AT LOCATIONS SHOWN ON THE PLANS. FOR NJ BARRIER SHAPE AND OTHER DETAILS SEE THIS SHEET. FOR SINGLE SLOPE BARRIER DETAILS, SEE SCD RM-4.3.

**ADJACENT CONCRETE BARRIER RUNS:**  
REMOVE ANY TAPERED END SECTIONS, IMPACT ATTENUATORS, OR OTHER GUARDRAIL HARDWARE FROM EXISTING BARRIER END. THE BARRIER TO BARRIER TRANSITION IS NOT INTENDED TO BE USED AT TRANSITION SECTIONS (THOSE SHOWN ON SCD RM-4.4), INLETS, OR ON TYPE C OR C1 BARRIER. THE ADJACENT SINGLE SLOPE END SHOULD BE TERMINATED WITH A REINFORCED END ANCHOR AS DETAILED ON THE SCDS.

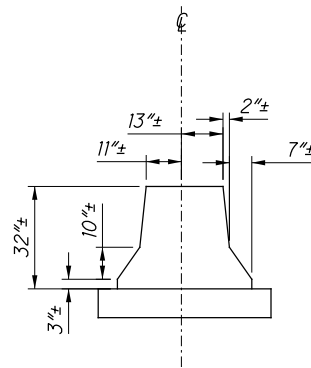
**BARRIER FACE TRANSITION:**  
TO PREVENT VEHICLE SNAGGING, A SMOOTH TRANSITION FROM THE SAFETY SHAPE FACE TO THE SINGLE SLOPE FACE IS MADE OVER A 20' LENGTH. THE ACTUAL SHAPE OF THE TRANSITION IS DEPENDENT ON BOTH THE ADJACENT NJ BARRIER AND THE SINGLE SLOPE BARRIER TYPES, AS DETAILED ON THE PLANS. THE CONTRACTOR AND ENGINEER WILL AGREE ON A CONSTRUCTION METHOD TO ENSURE A SMOOTH BARRIER FACE.



PLAN

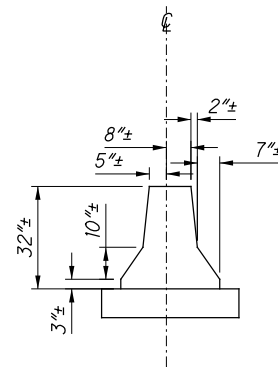
ELEVATION

BARRIER TRANSITION DETAIL



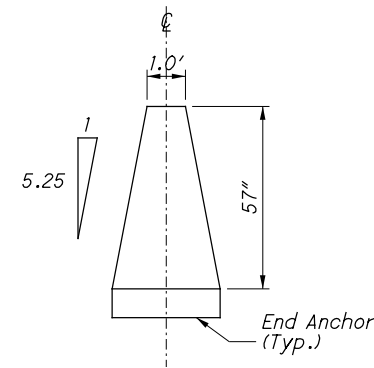
A-A  
STA 879+65

MATCH EXISTING  
NJ SHAPE  
APPROX DIM.



A-A  
STA 883+75

MATCH EXISTING  
NJ SHAPE  
APPROX DIM.



B-B  
Type B1, As Per Plan

SEE SCD RM-4.3 FOR  
SPECIFIC SINGLE SLOPE  
CONCRETE BARRIER DETAILS

CALCULATED  
MAH  
CHECKED  
SSR

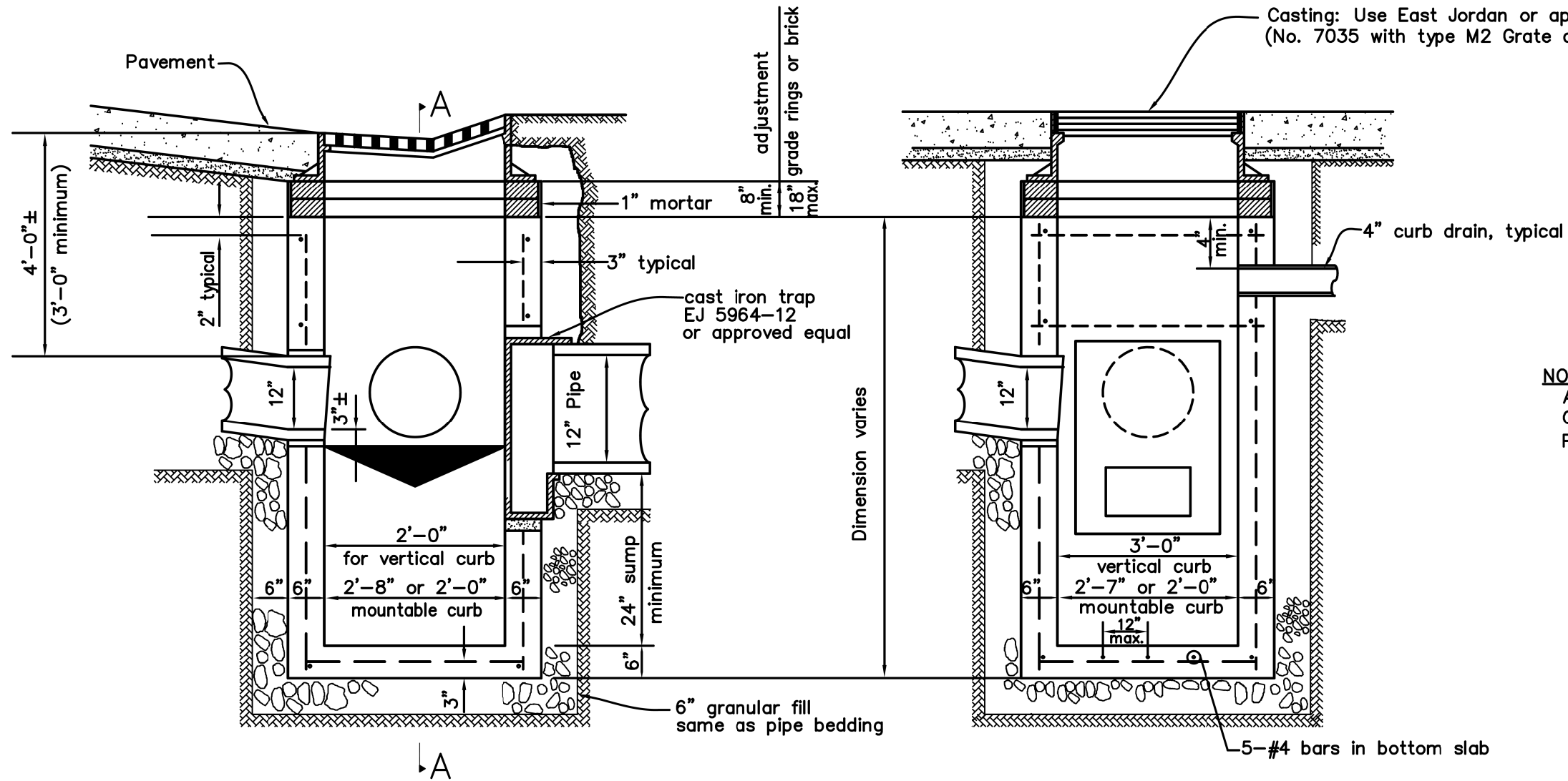
I-90 MEDIAN BARRIER DETAILS

CUY-90-13.45

74  
135

# Cleveland CB-1

no scale



## NOTE:

All reinforcing shall be #4 deformed bars.  
Concrete shall be ODOT class "C" #4000  
PSI, in 28 days.

## SECTION A-A

- \* Use 12 inch VCP at 1% minimum grade for all catch basin connections
- \* Use a minimum of 3 ft cover for catch basin connections
- \* All catch basins should have a trap and 24 inch minimum sump

MODIFIED

RECTANGULAR PRECAST  
CONCRETE CATCH BASIN

REVISIONS:

SCALE  
No Scale

DATE  
1998

REVIEWED:

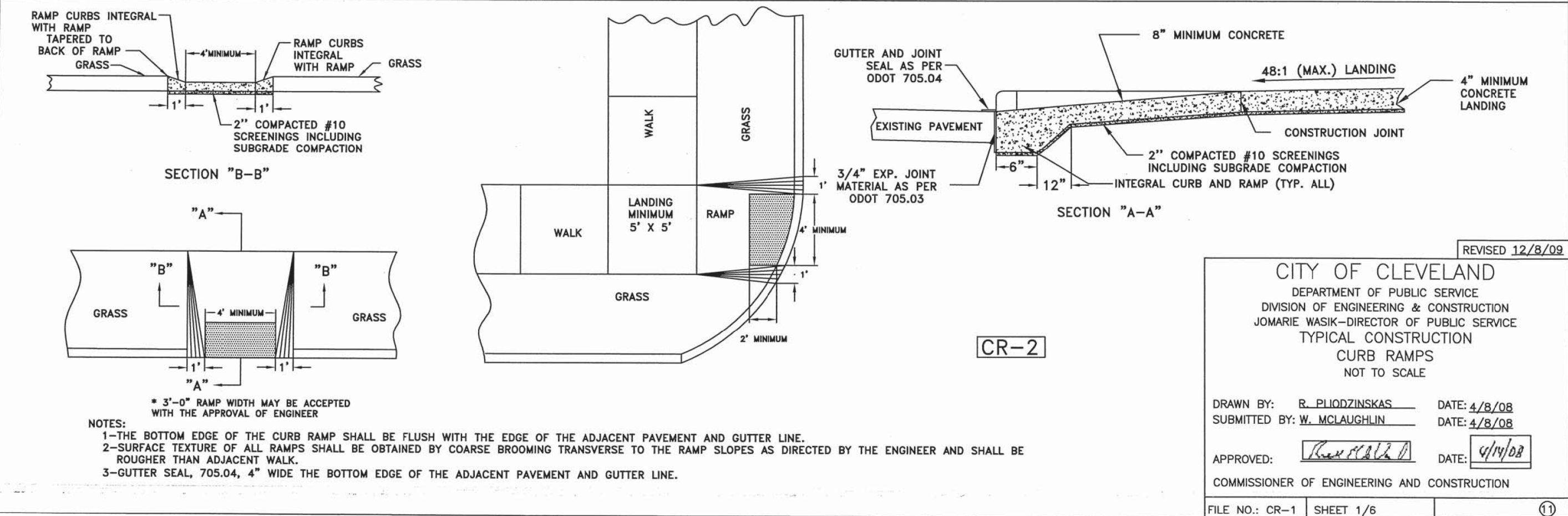
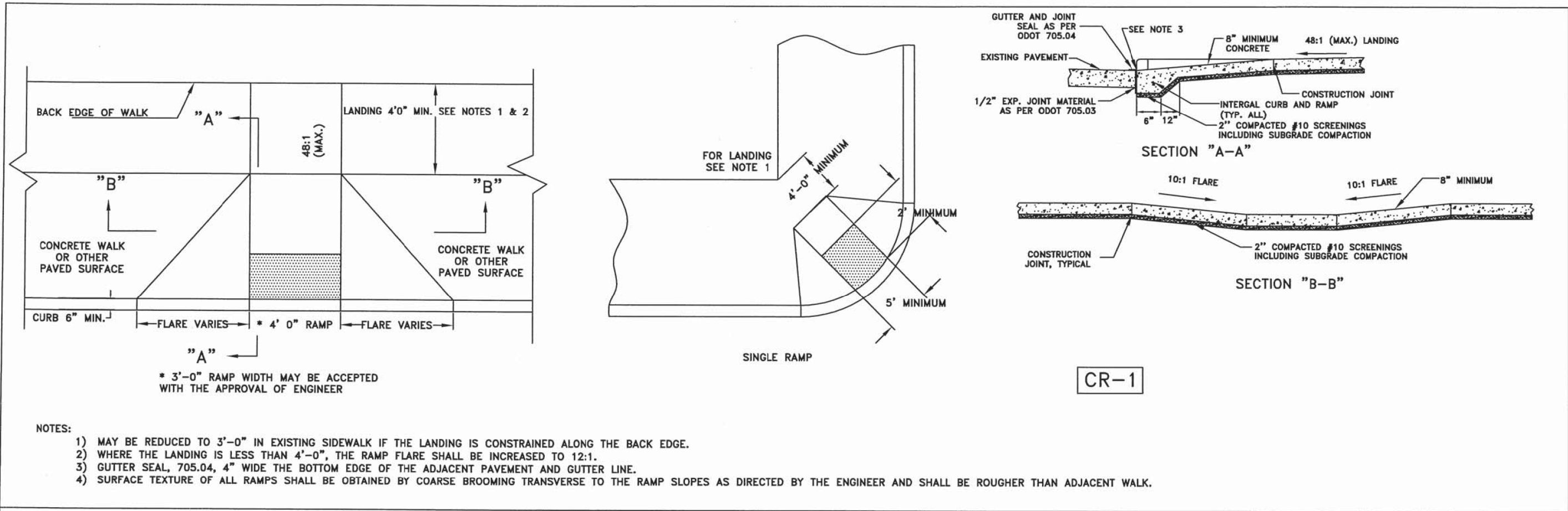
UNIFORM STANDARDS: CLEVELAND — CUYAHOGA COUNTY — NORTHEAST OHIO REGIONAL SEWER DISTRICT

MISC. DETAILS - CLEVELAND CATCH BASIN TYPE 1

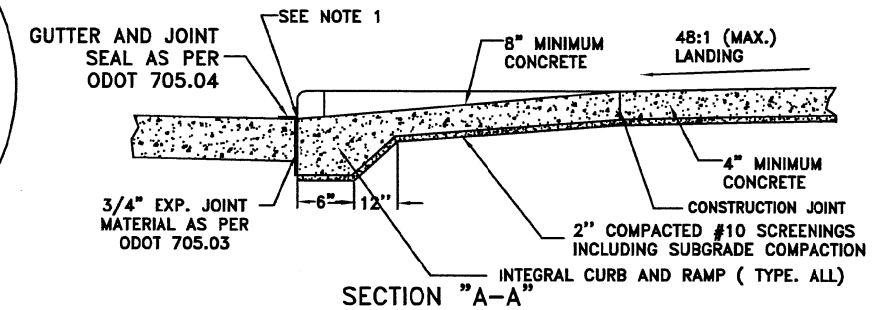
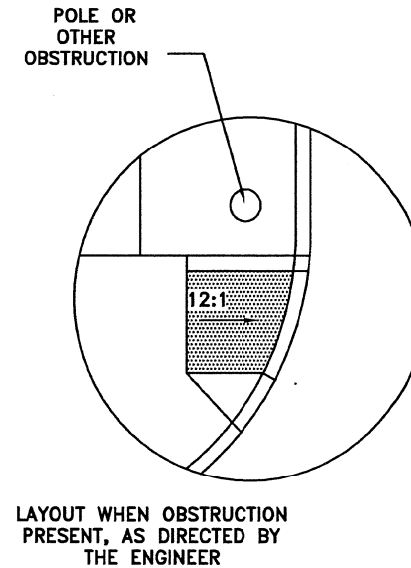
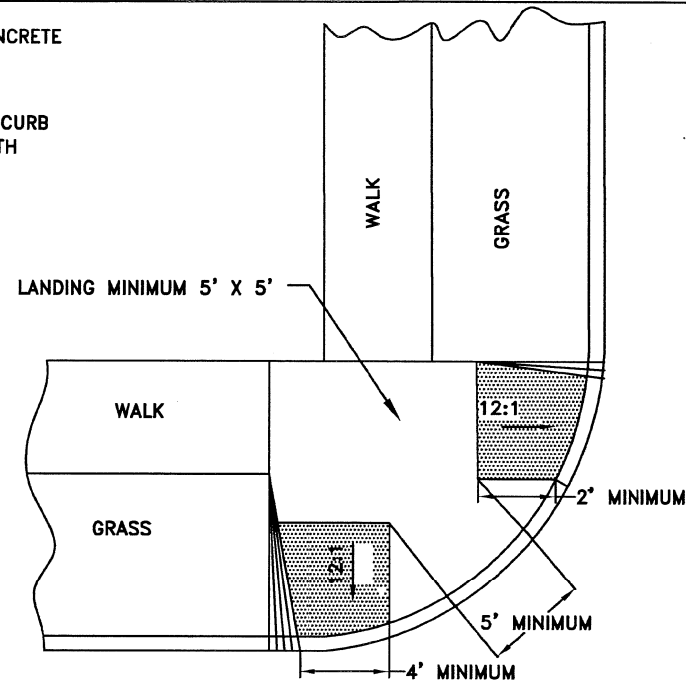
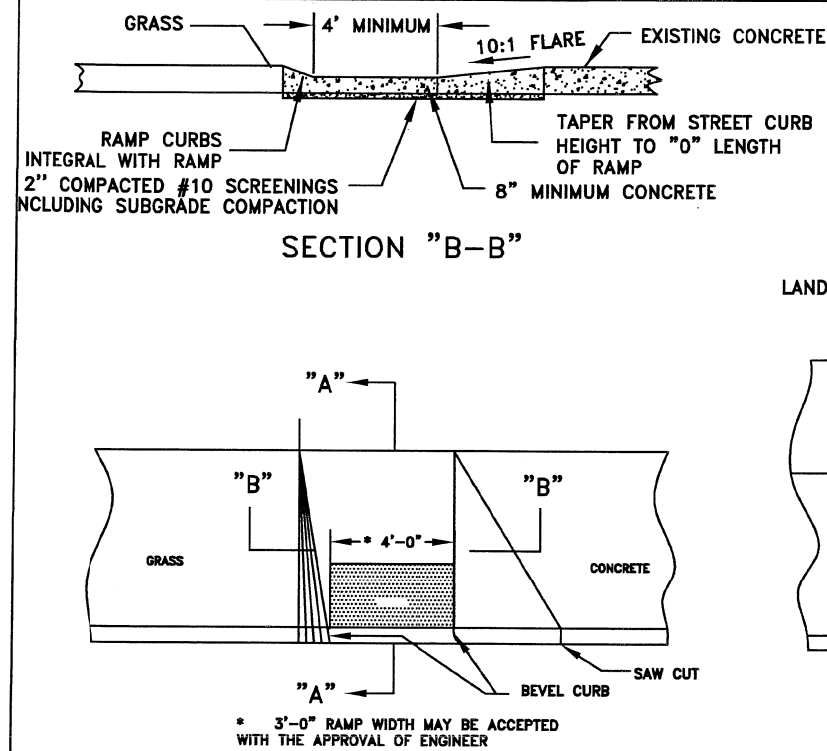
CUY-90-13.45

75  
135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GM002.dgn Sheet 12/23/2019 9:48:36 AM sriffie



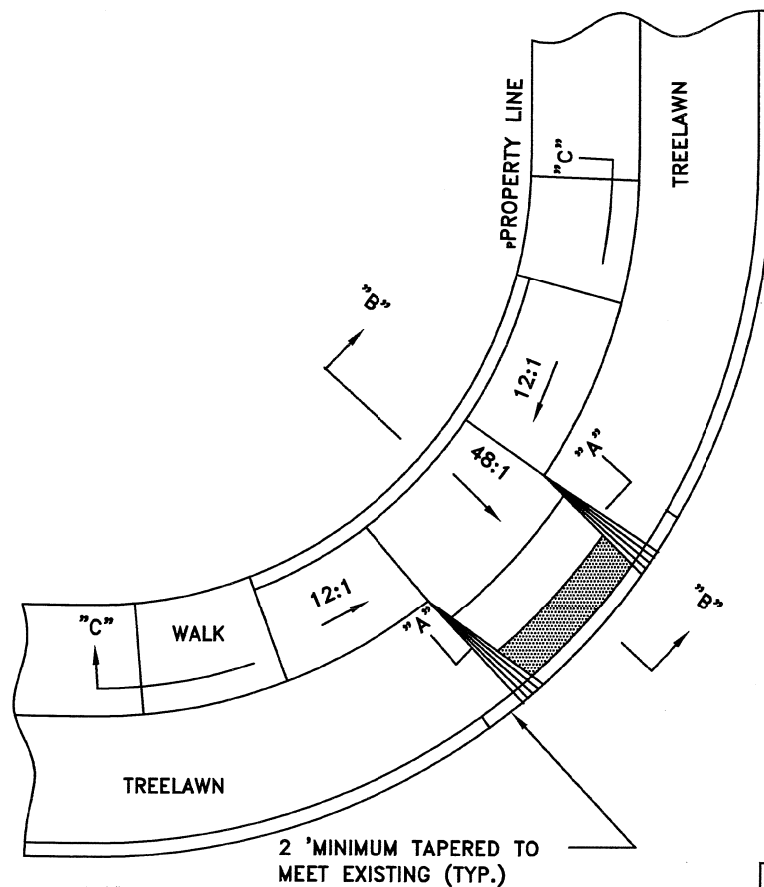
\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GM003.dgn Sheet 12/23/2019 9:49:09 AM sriffle



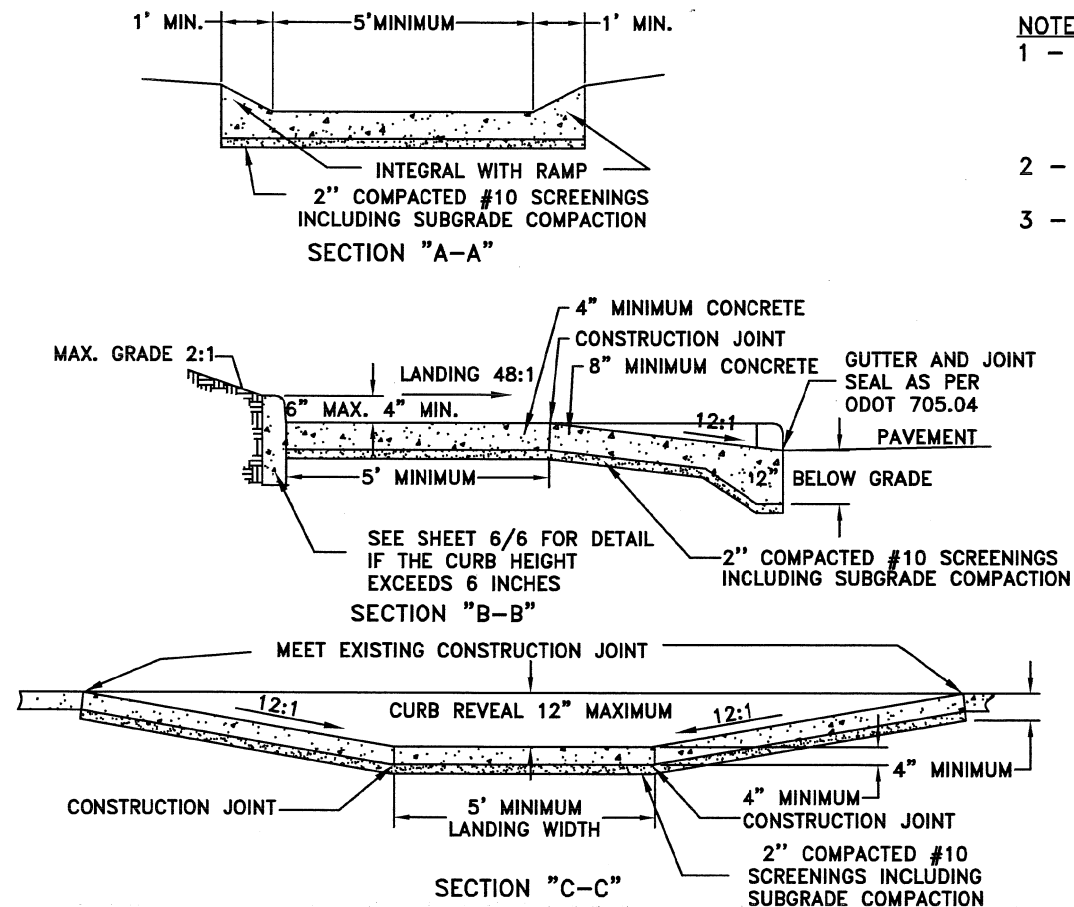
CR-3

NOTES:

- 1-THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 2-SURFACE TEXTURE OF ALL RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3-BARRIER CURB INSTALLATION ONLY WHEN ADJACENT OBSTACLE PRESENT AND AS DIRECTED BY THE ENGINEER



CR-4



NOTES:

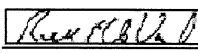
- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 3 - SURFACE TEXTURE OF ALL RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
TYPICAL CONSTRUCTION  
CURB RAMPS  
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED:  DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 2/6

12

MISC. DETAILS - CLEVELAND CURB RAMP

CUY-90-13.45

77  
135



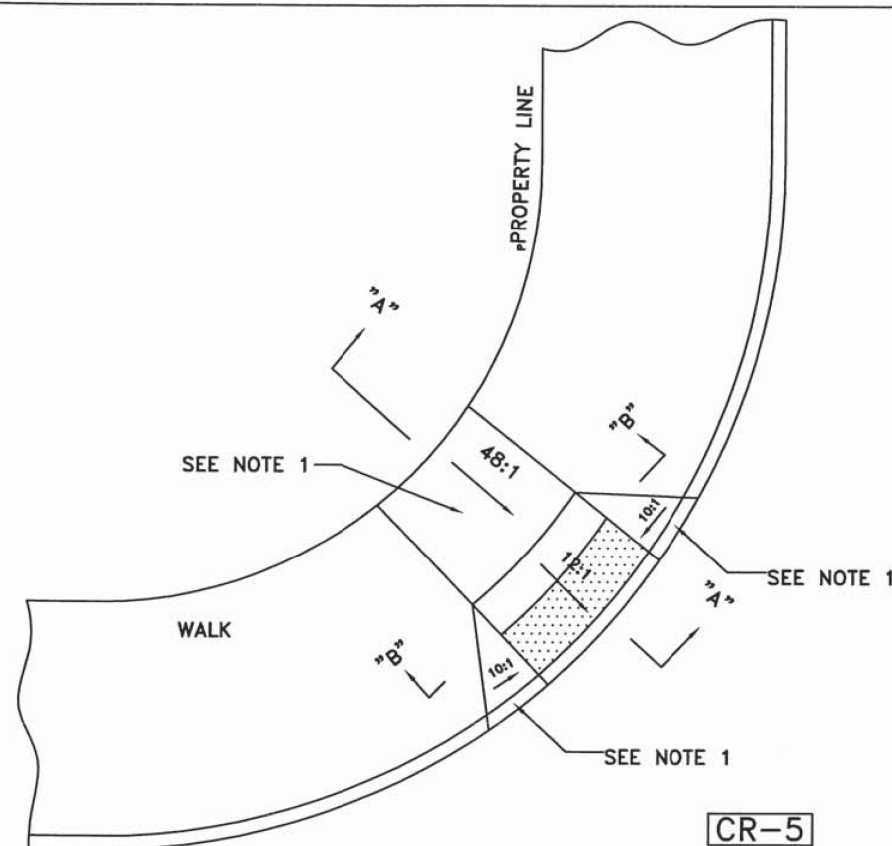
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Roadway\Sheets\05792\_GM004.dgn Sheet 12/23/2019 9:50:00 AM sniffle

CALCULATED  
CHECKED

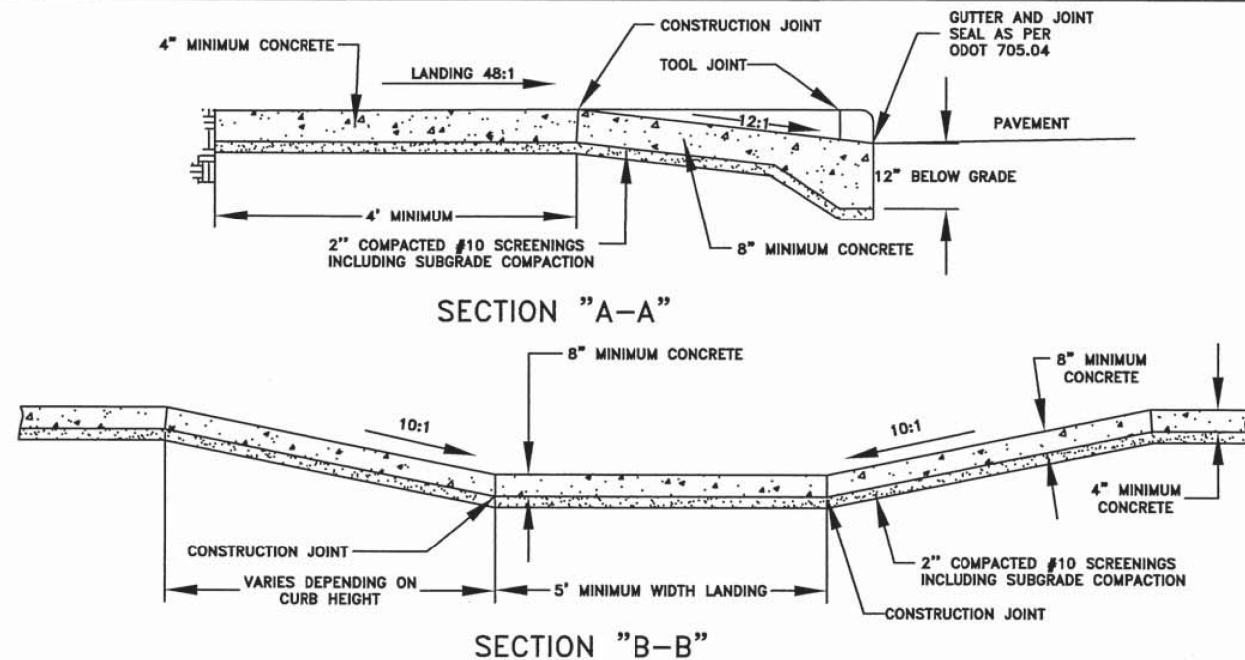
MISC. DETAILS - CLEVELAND CURB RAMP

CUY-90-13.45

78  
135

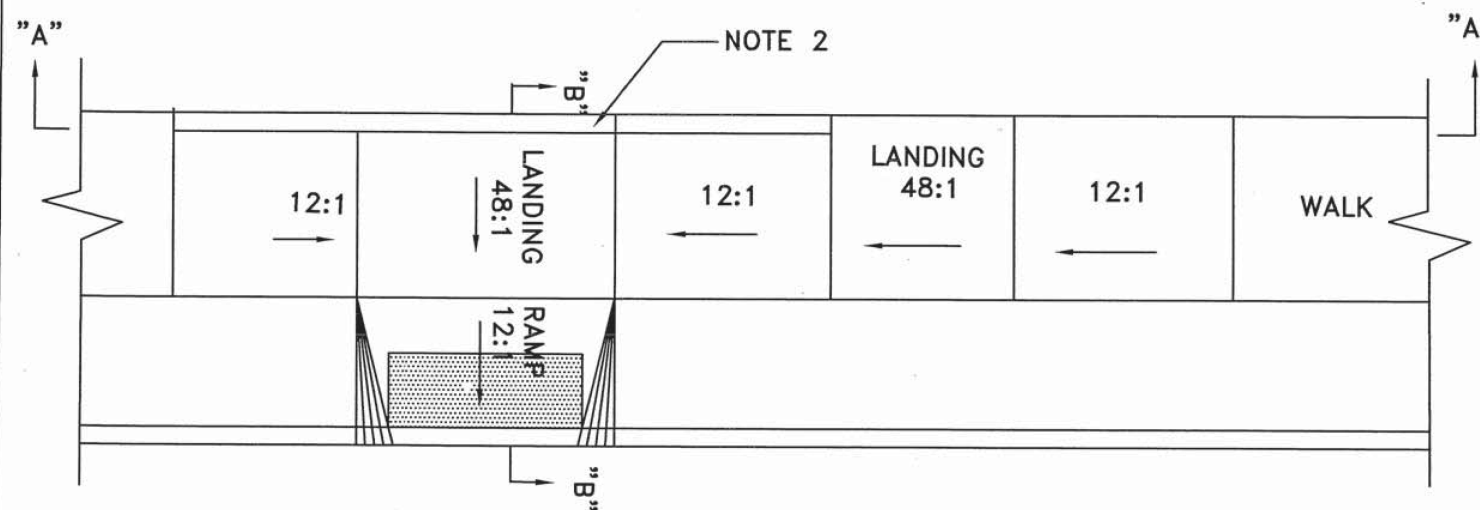


CR-5

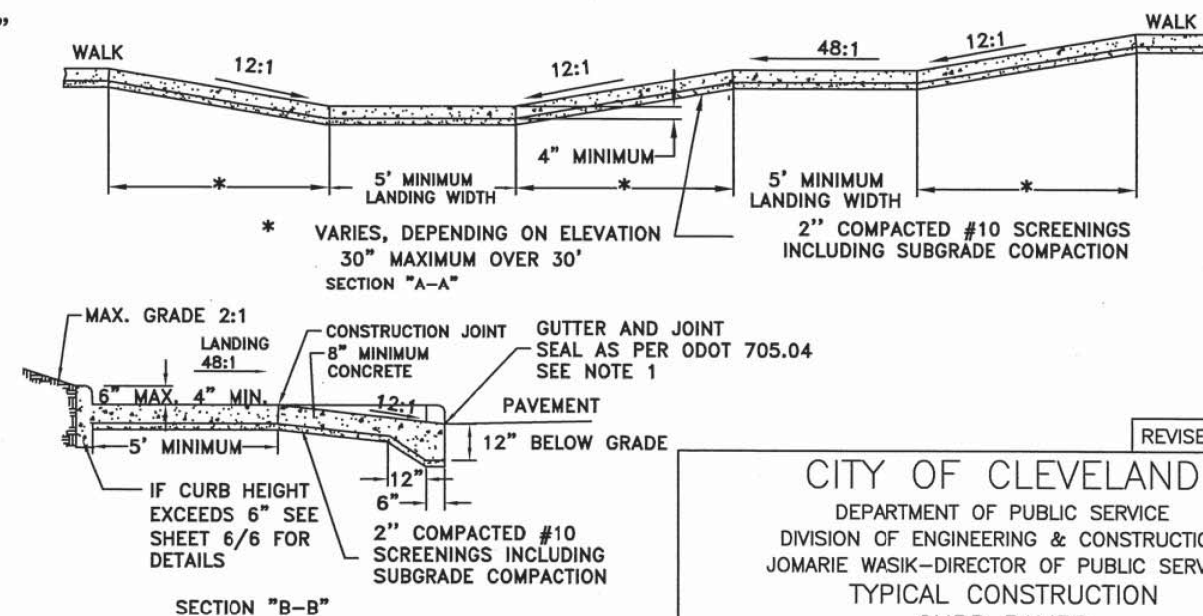


NOTES:

- 1 - WHERE THE LANDING IS LESS THAN 4'-0" THE RAMP FLARE SHALL BE INCREASED TO 12:1.
- 2 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 3 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 4 - GUTTER SEAL, 705.04, 6" WIDE THE BOTTOM EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.



CR-6



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

REVISED 12/8/09

CITY OF CLEVELAND  
DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
TYPICAL CONSTRUCTION  
CURB RAMPS  
NOT TO SCALE

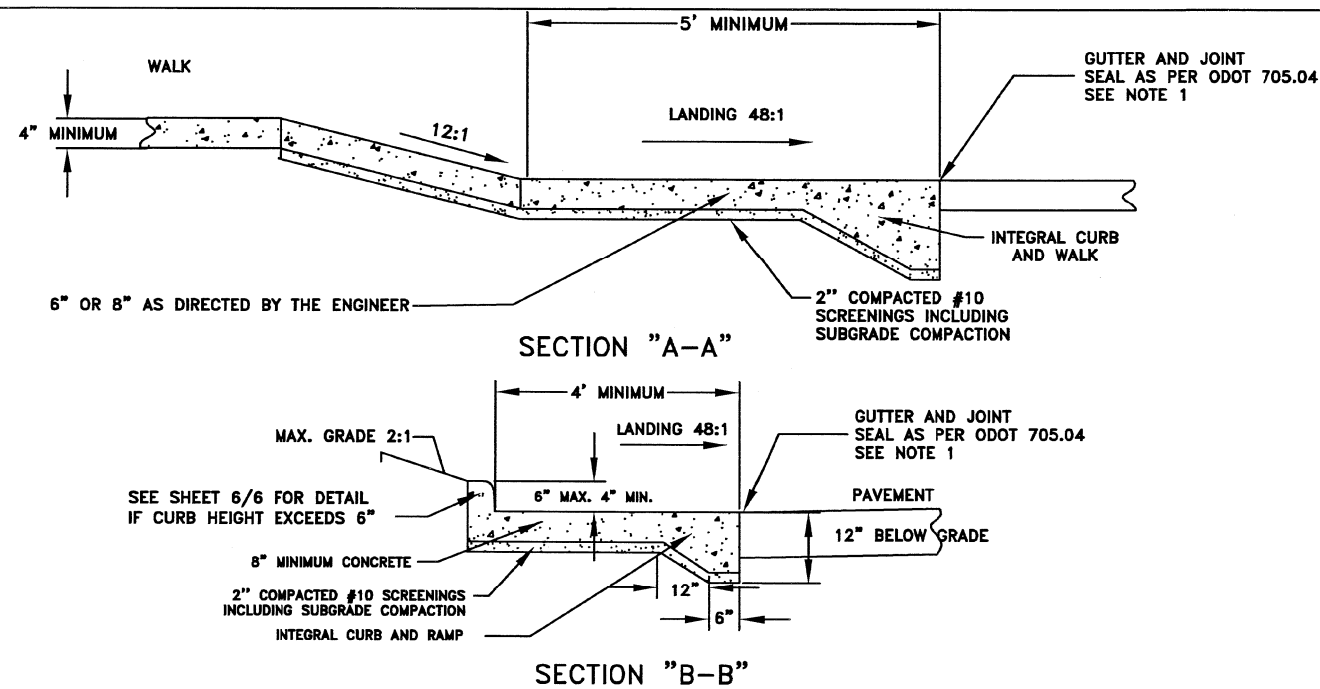
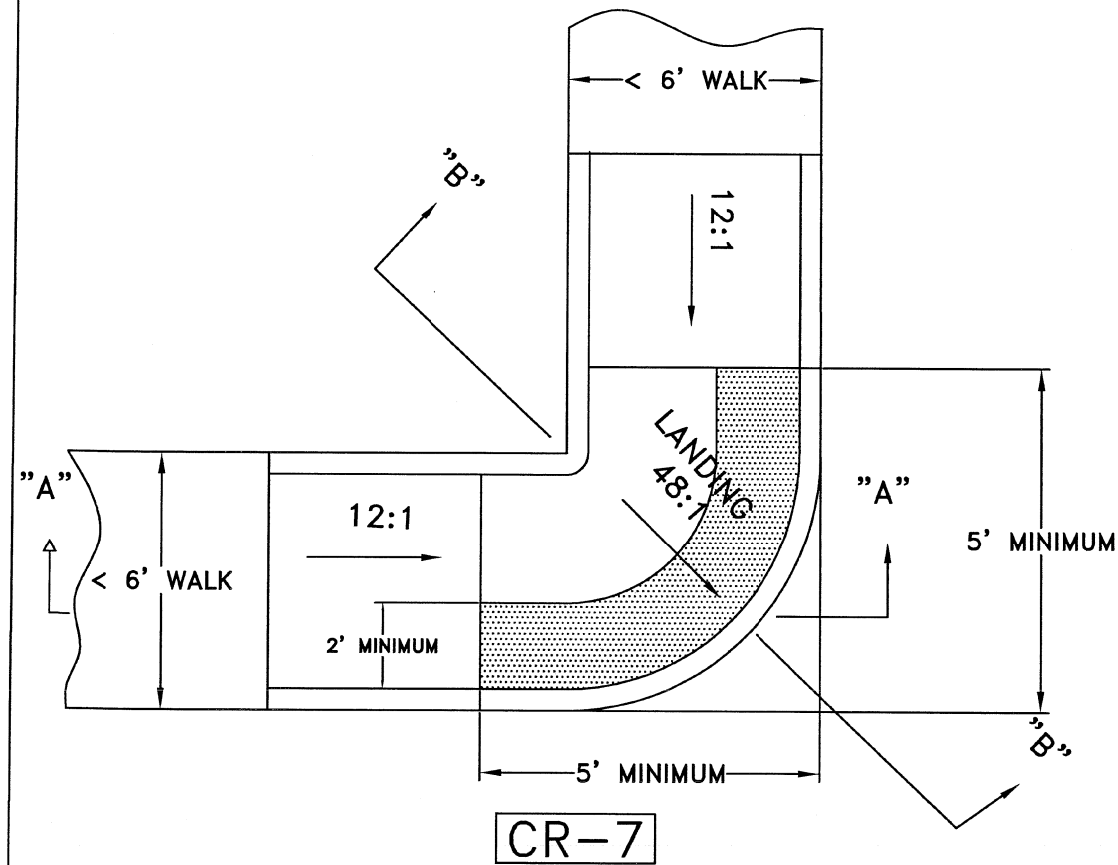
DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: [Signature] DATE: 4/14/08  
COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 3/6 13

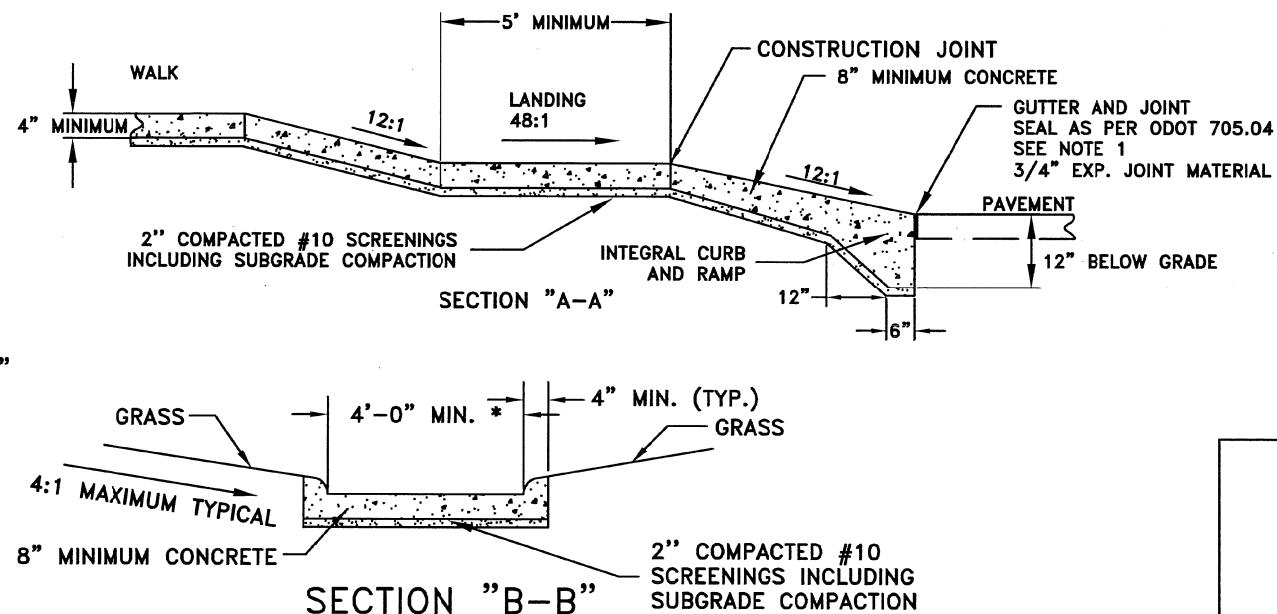
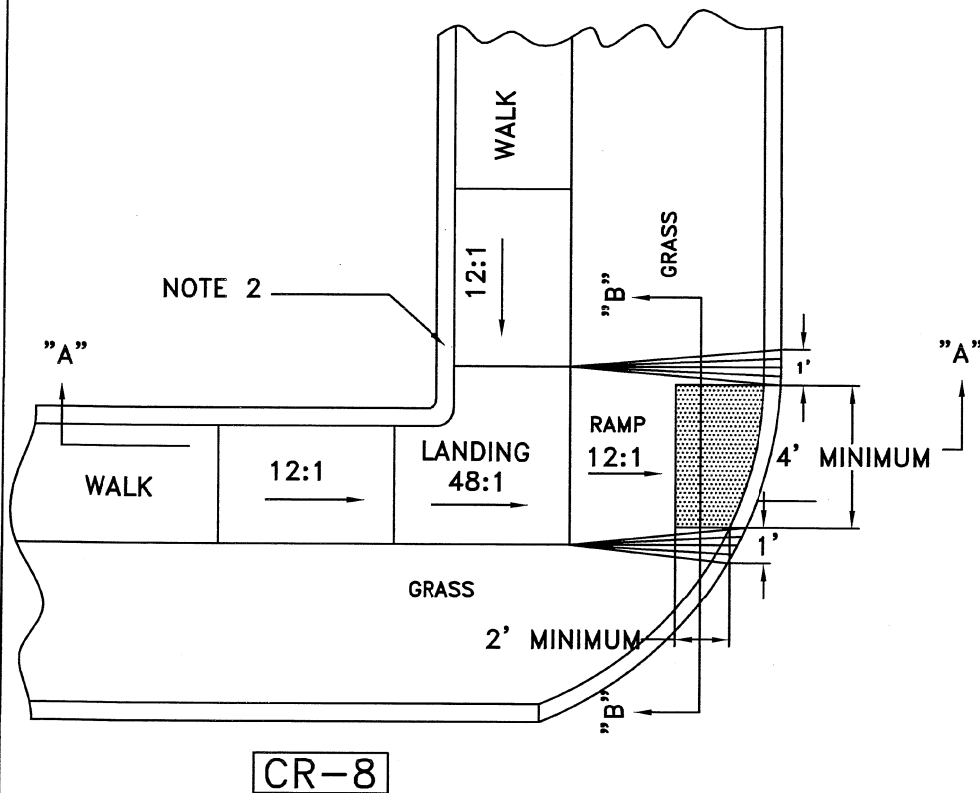


\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Sheets\05792\_GM005.dgn Sheet 12/23/2019 9:50:34 AM srifile



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

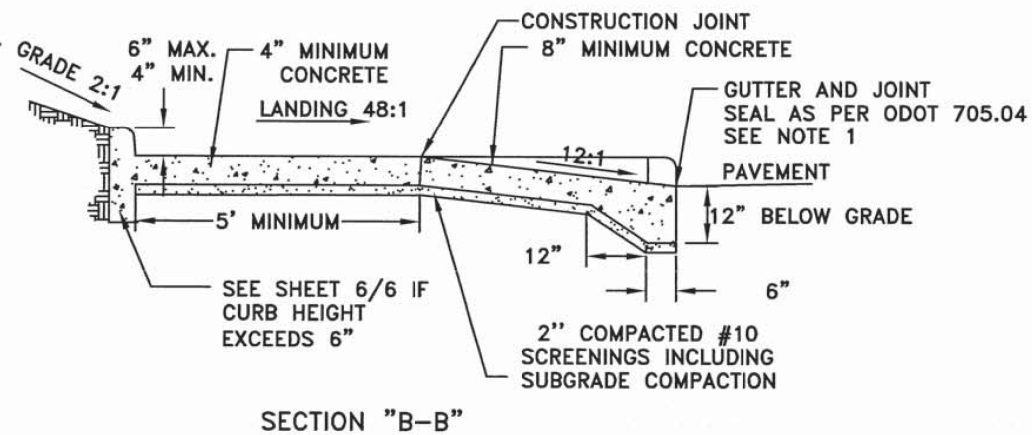
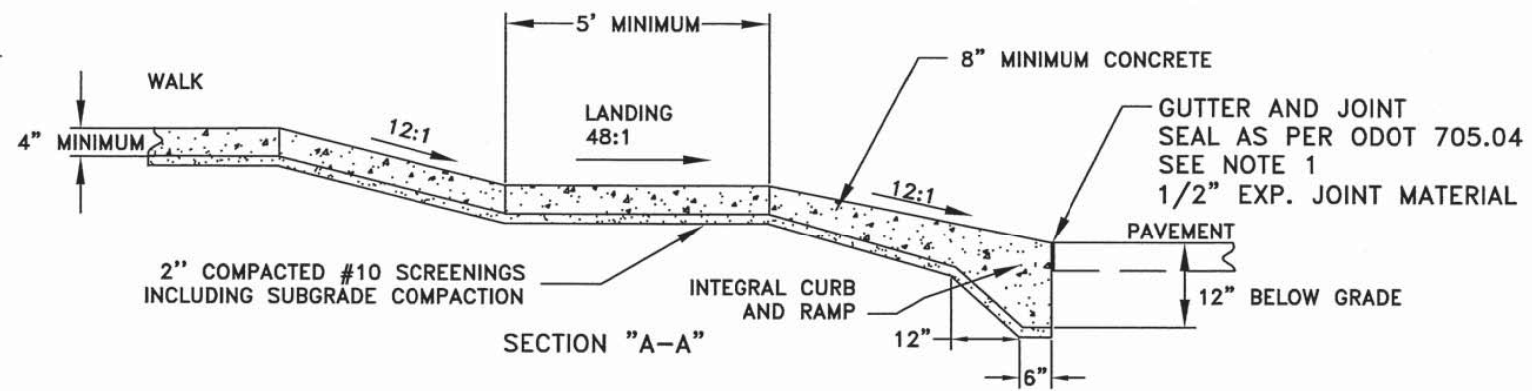
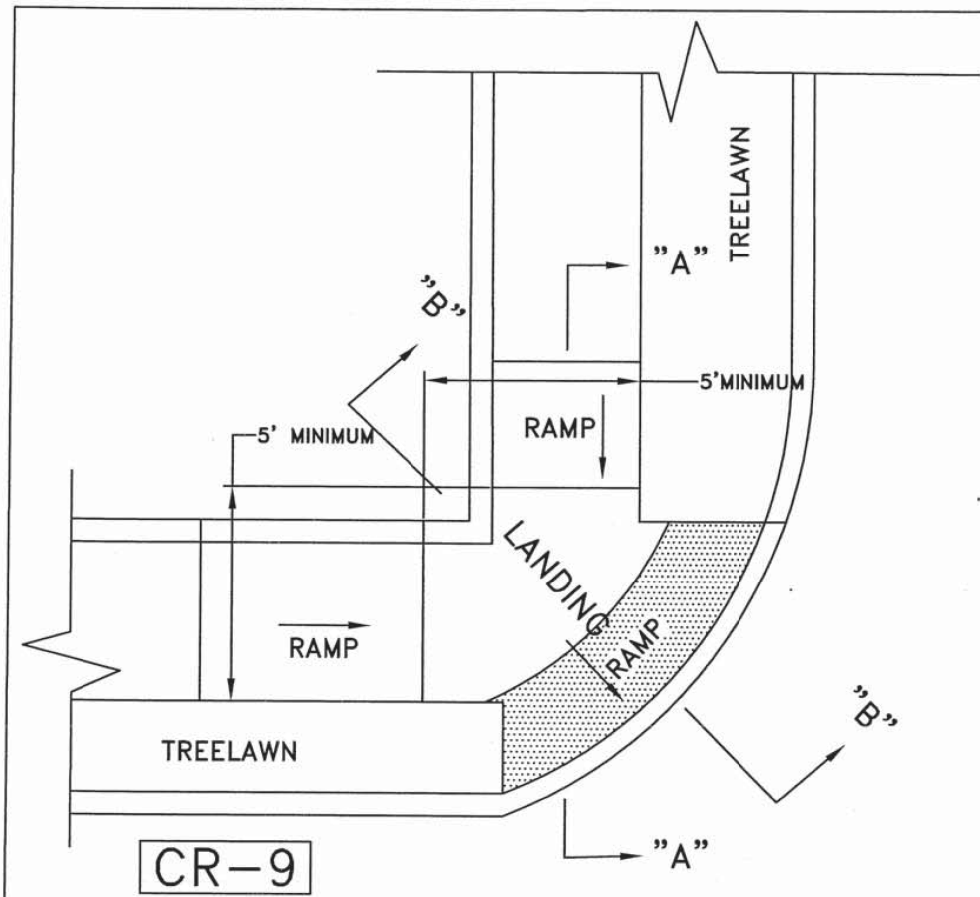


NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

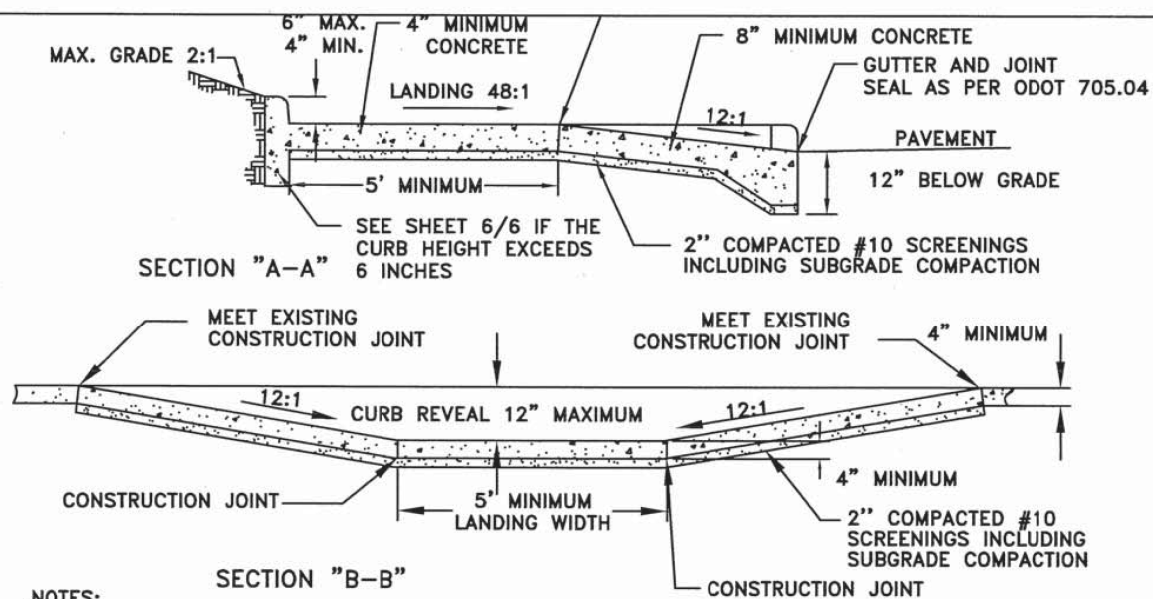
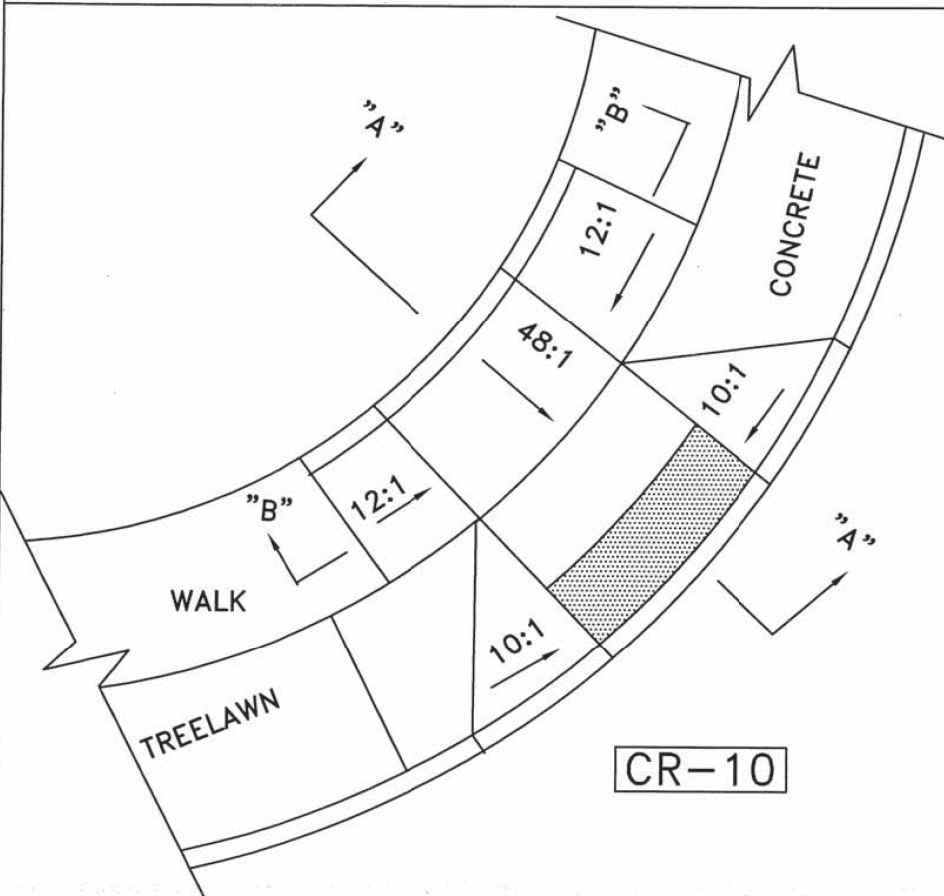
REVISED 12/8/09	
CITY OF CLEVELAND	
DEPARTMENT OF PUBLIC SERVICE	
DIVISION OF ENGINEERING & CONSTRUCTION	
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE	
TYPICAL CONSTRUCTION	
CURB RAMPS	
NOT TO SCALE	
DRAWN BY: R. PLIODZINSKAS	DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN	DATE: 4/8/08
APPROVED:	DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION	
FILE NO.: CR 1	SHEET 4/6

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GM006.dgn Sheet 12/23/2019 9:51:20 AM srlf file



NOTES:

- 1 - THE BOTTOM EDGE OF THE CURB RAMP SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT OR GUTTER LINE.
- 2 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.



SECTION "B-B"

- NOTES:
- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB (6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
  - 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
  - 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
TYPICAL CONSTRUCTION  
CURB RAMPS  
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 | SHEET 5/6

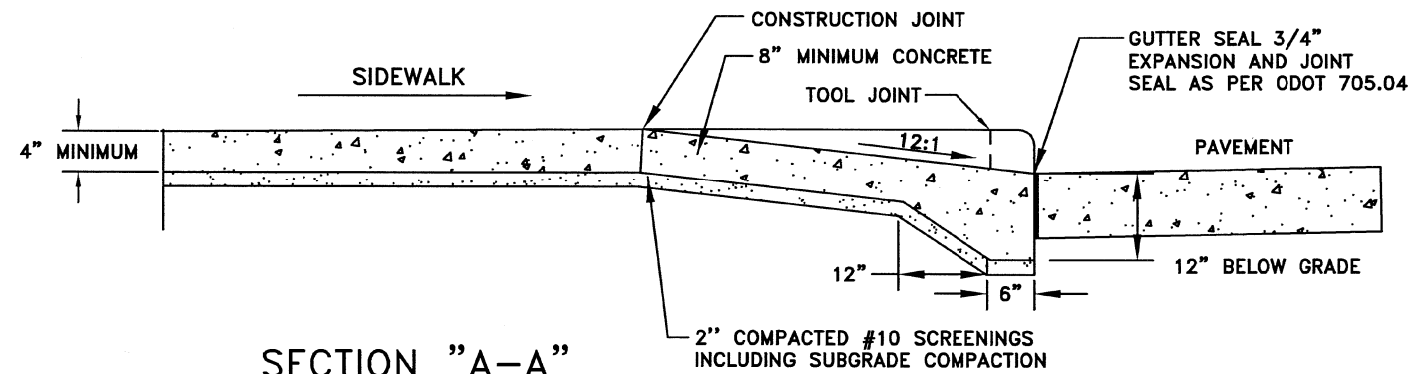
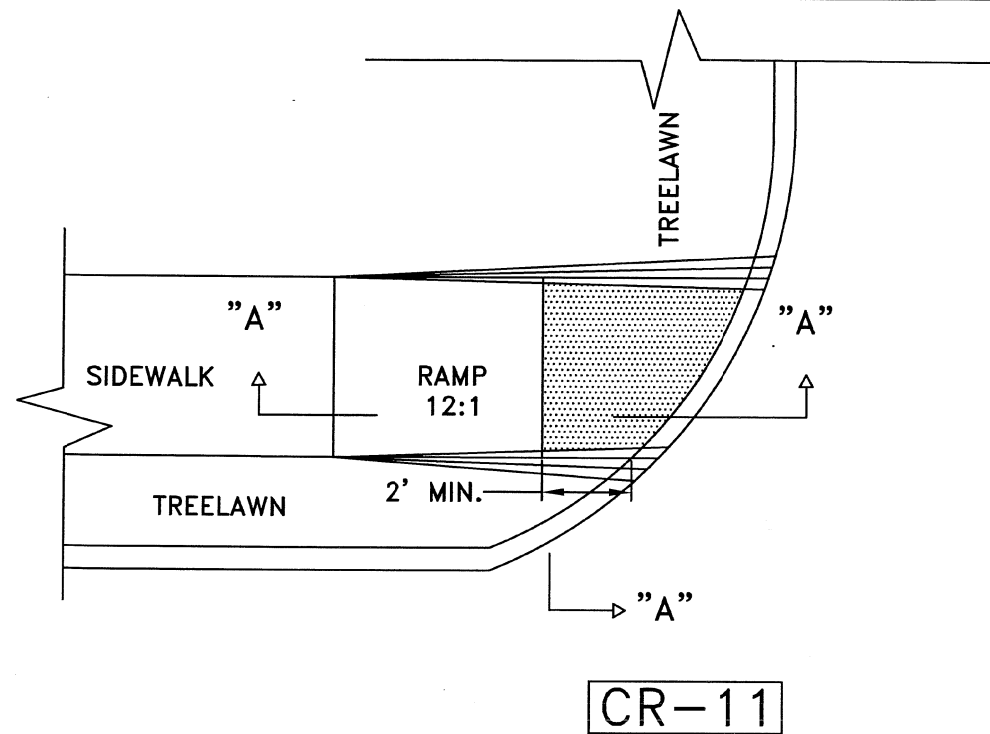
(15)

MISC. DETAILS - CLEVELAND CURB RAMP

CUY-90-13.45

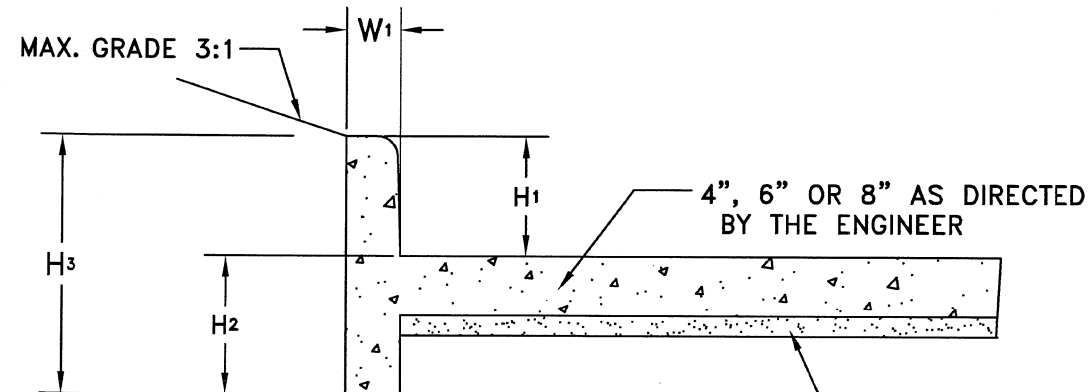
80  
135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GM007.dgn Sheet 12/23/2019 9:51:53 AM srlf1e



**NOTES:**

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL TYPE "6" CURB ( 6" X 18"). ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.
- 2 - THE BOTTOM EDGE OF THE CURB SHALL BE FLUSH WITH THE EDGE OF THE ADJACENT PAVEMENT AND GUTTER LINE.
- 3 - SURFACE TEXTURE OF ALL RAMPS SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE RAMP SLOPES AS DIRECTED BY THE ENGINEER AND SHALL BE ROUGHER THAN ADJACENT WALK.
- 4 - THIS DETAIL SHALL ONLY BE USED TO RETROFIT EXISTING CURB RAMPS AND SHALL NOT BE USED FOR NEW CURB RAMP CONSTRUCTION.



H <sub>1</sub>	W <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>
6"	6"	6"	12"
8"	6"	10"	18"
10"	8"	12"	22"
12"	10"	12"	24"

ROLLED CURB  
INSTALL ONLY AT THE DIRECTION  
OF THE ENGINEER

2" COMPACTED #10 SCREENINGS  
INCLUDING SUBGRADE COMPACTION

**NOTES:**

- 1 - WHERE A ROLLED CURB EXCEEDS SIX INCHES ABOVE THE WALK, THE CONTRACTOR SHALL INSTALL CURB PER THIS DETAIL. ROLLED CURB SHALL BE INSTALLED ONLY AT THE DIRECTION OF THE ENGINEER.

REVISED 12/8/09

**CITY OF CLEVELAND**

DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
TYPICAL CONSTRUCTION  
CURB RAMPS & ROLLED CURB DETAIL  
NOT TO SCALE

SUBMITTED BY: R. PLIODZINSKAS DATE: 4/8/08  
W. MCLAUGHLIN DATE: 4/8/08

DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: CR 1 SHEET 6/6

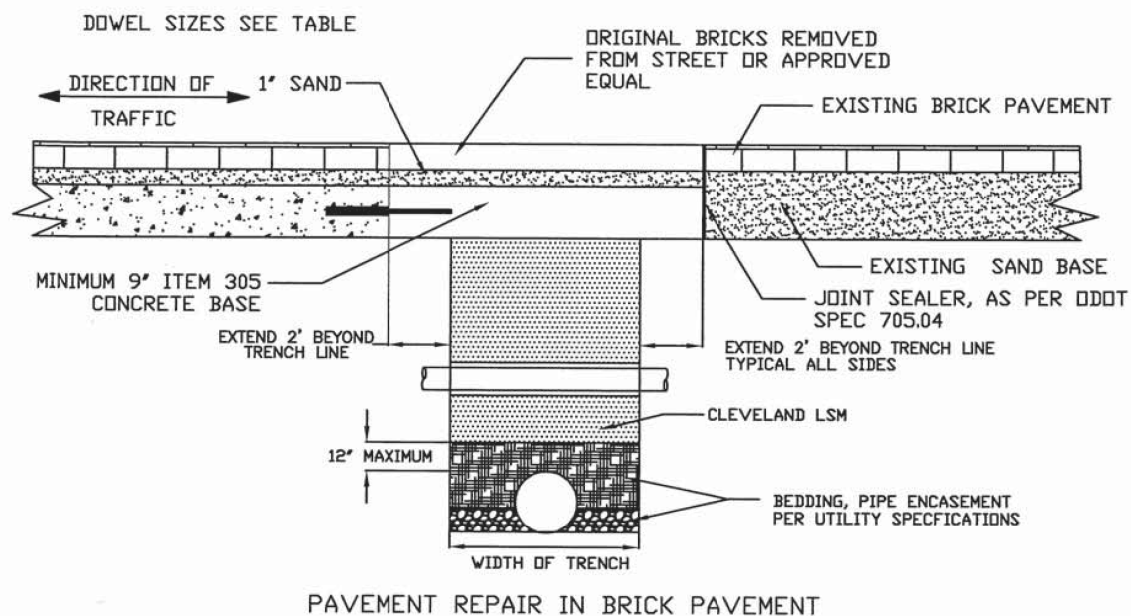
16

MISC. DETAILS - CLEVELAND CURB RAMP

CUY-90-13.45

81  
135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_DESIGN\Roadway\Sheets\05792\_GM008.dgn Sheet 12/23/2019 9:52:41 AM sniffle

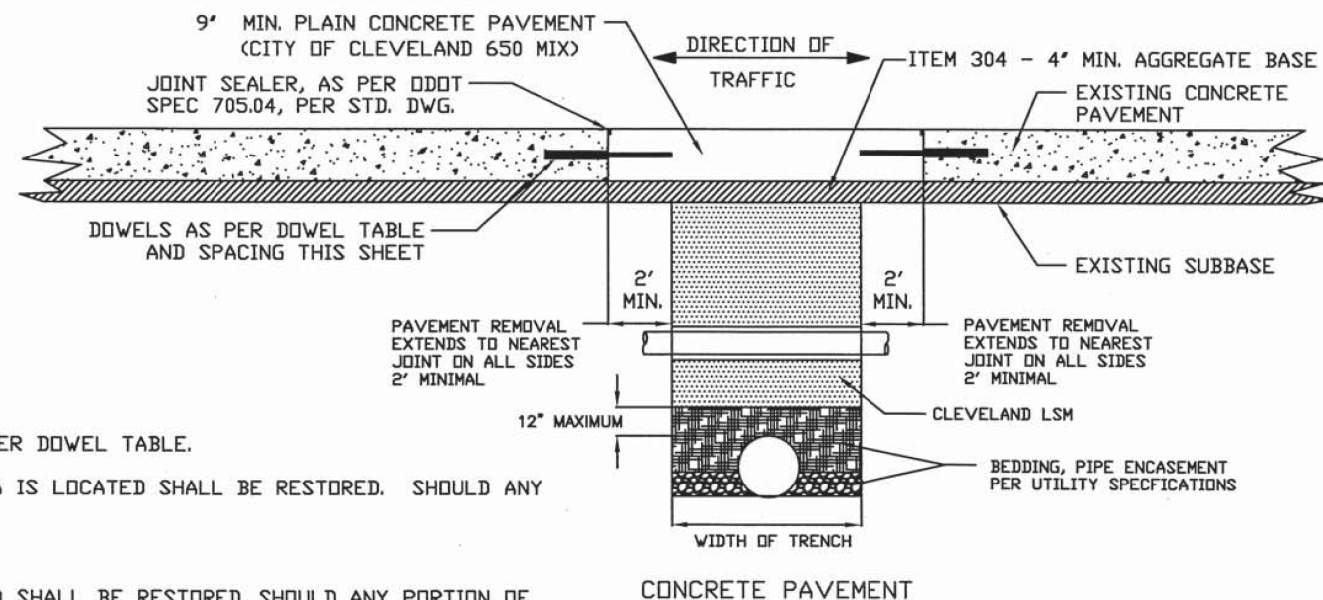
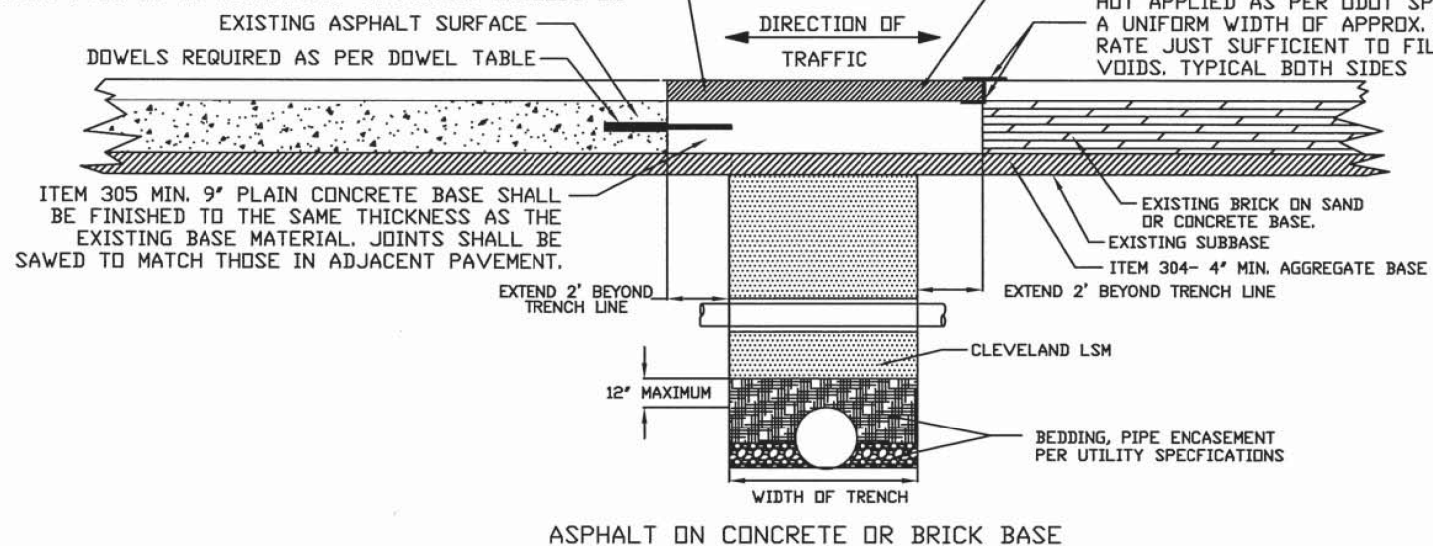


DOWEL TABLE	
PAVEMENT THICKNESS	DIAMETER OF DOWELS
8" OR LESS	1"
9"	1 1/8"
10"	1 1/4"
OVER 10"	AS DIRECTED
DOWELS SHALL BE SPACED EVERY 30'	

#### NOTES:

- ALL PAVEMENT OPENINGS SHALL BE SAWED FULL DEPTH AND HAVE SMOOTH VERTICAL FACES. DOWELS SHALL BE REQUIRED, AS PER DOWEL TABLE.
- CONCRETE REPAVING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE AND/OR SLAB IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE AND/OR SLAB, THAT LANE OR SLAB SHALL ALSO BE REPAVED.
- EXTEND OVERCUT IN LONGITUDINAL DIRECTION TWO FEET (2') ONTO UNDISTURBED SUBGRADE.
- ASPHALT RESURFACING SHALL BE PERFORMED IN SUCH A MANNER THAT THE ENTIRE LANE IN WHICH THE REPAIR AREA IS LOCATED SHALL BE RESTORED. SHOULD ANY PORTION OF THE REPAIR AREA EXTEND INTO AN ADJACENT LANE, THAT LANE SHALL ALSO BE RESURFACED. THE RESURFACING SHALL TAKE PLACE FROM BEGINNING PROJECT TO END PROJECT (I.E. WORK LIMITS). FOR PAVEMENTS WITH A WIDTH OF 40' OR LESS A LANE SHALL BE CONSIDERED 1/2 THE PAVEMENT WIDTH.
- BRICKS REMOVED FROM A REPAIR SHALL BE STORED IN A SAFE PLACE BY THE CONTRACTOR FOR REUSE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING ANY BRICKS THAT ARE STOLEN OR DAMAGED AT NO COST TO THE CITY.
- ALL NEW BRICKS SUPPLIED BY THE CONTRACTOR MUST FIRST BE APPROVED BY THE CITY BEFORE THEY ARE USED.
- SAWCUTTING: ALL PARTIAL BRICKS SHALL BE SAWCUT. FURTHER, NO BRICK WILL BE PERMITTED TO BE CUT, FOR REPLACEMENT, TO A LENGTH LESS THAN ONE-HALF ITS ORIGINAL LENGTH. THIS MAY REQUIRE SAWCUTTING OF ADJACENT UNDISTURBED BRICK(S).
- THE PERIMETER FACES OF THE EXISTING BASE MATERIAL SHALL BE CUT BACK TO AS NEARLY VERTICAL ORIENTATION AS POSSIBLE. IF SHEARING OF THE ADJACENT BASE RESULTS, THE CONTRACTOR SHALL REMOVE ADDITIONAL BRICK AND BASE AS SHOWN IN THE DETAIL.
- THE MAXIMUM WIDTH OF A BRICK MORTAR JOINT SHALL BE 1/2" THIS RESTRICTION WILL ALSO APPLY TO THE PERIMETER OF A REPAIR AREA, WHERE THE ROWS MAY NOT BE PARALLEL TO ONE ANOTHER.
- MORTARING OF JOINTS: ALL JOINTS SHALL BE MORTARED WITH A 50/50 MIXTURE BY VOLUME OF SAND /CEMENT, TO PROVIDE FOR A FLUSH FINISH. THIS MAY REQUIRE MORE THAN ONE APPLICATION; FURTHER MECHANICAL VIBRATION WILL BE REQUIRED FOR COMPACTION.
- ALL BACKFILL MATERIALS USED UNDER ANY PAVEMENTS SHALL BE CLEVELAND LSM PLACED FROM THE INITIAL ONE FOOT OVER THE TOP OF UTILITIES, TO THE SUBGRADE.
- TO PREVENT FLOTATION AND ENTRY OF FLOWABLE FILL INTO ANY OTHER AREAS COVER ALL JOINTS IN CLAY PIPE IN THE TRENCH AREA WITH POLYETHYLENE MATERIAL BEFORE POURING FLOWABLE FILL. REPAIR TECHNIQUES SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S STANDARD REPAIR PROCEDURES.

ITEM 448, 1.5" ASPHALT WEARING COURSE, TYPE 1 PG64-22 LEVEL W/ ITEM 448, ASPHALT INTERMEDIATE COURSE, TYPE 2 PG64-22 AS REQUIRED IF THICKNESS EXCEEDS 2.5"

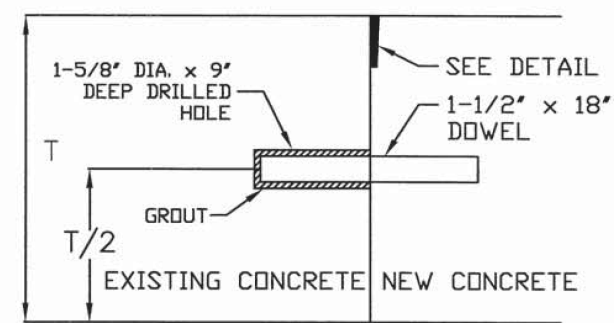
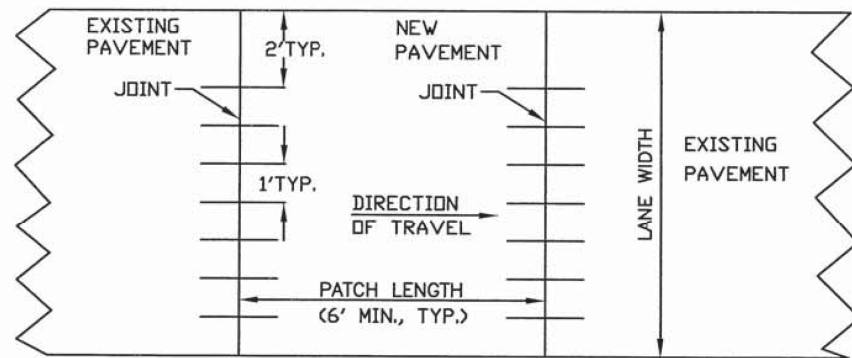


REVISED 8/3/09

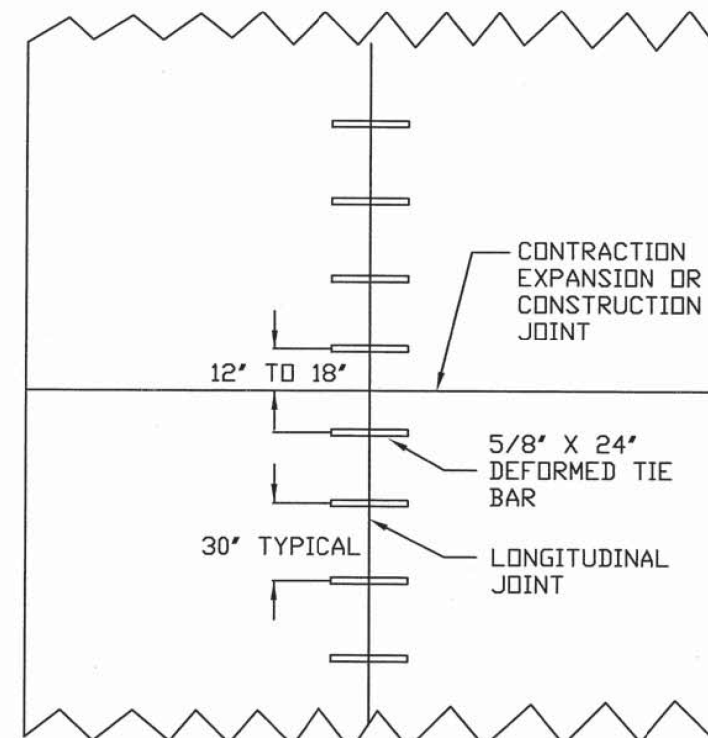
<b>CITY OF CLEVELAND</b>	
DEPARTMENT OF PUBLIC SERVICE	
DIVISION OF ENGINEERING & CONSTRUCTION	
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE	
<b>STREET OPENING REPAIR-SUPPLEMENTAL</b>	
NOT TO SCALE	
DRAWN BY: R. PLIODZINSKAS	DATE: 4/8/08
SUBMITTED BY: W. MCLAUGHLIN	DATE: 4/8/08
APPROVED:	DATE: 4/14/08
COMMISSIONER OF ENGINEERING AND CONSTRUCTION	
FILE NO. : PR 1	SHEET 1/2



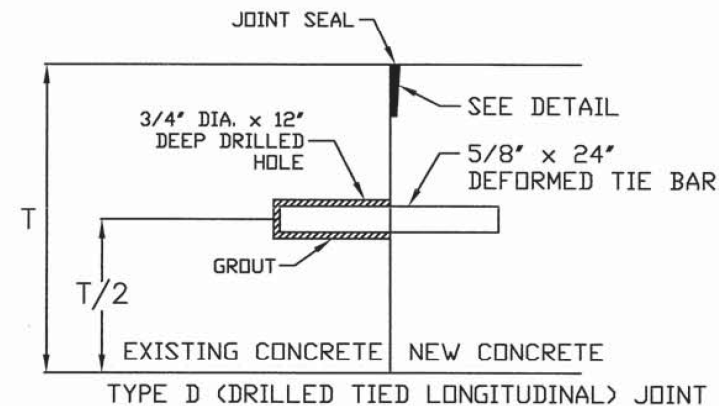
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Roadway\Sheets\05792\_GM009.dgn Sheet 12/23/2019 9:53:19 AM srlf1f1e



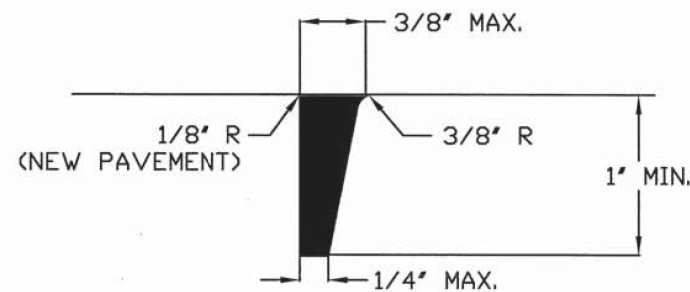
SECTION THROUGH TRANSVERSE JOINT



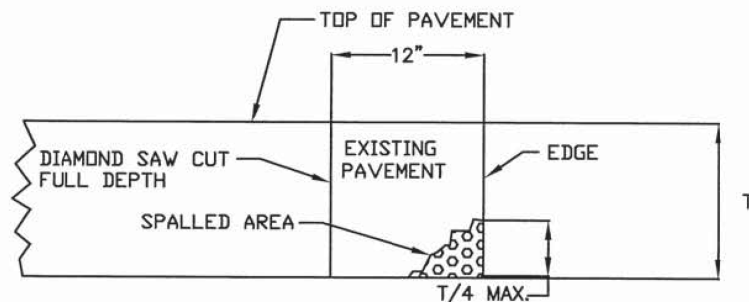
TIE BAR SPACING



TYPE D (DRILLED TIED LONGITUDINAL) JOINT



GROOVE & SEAL DETAIL



ADDITIONAL PAVEMENT REMOVAL

NOTES:

1. ALL JOINTS SHALL BE CONSTRUCTED NORMAL TO THE CENTERLINE OF THE PAVEMENT LANE.
2. ALL DOWEL HOLES SHALL BE DRILLED BY A MECHANICAL DEVICE THAT WILL ALLOW INDEPENDENT ADJUSTMENT OF ALL DRILL SHAFTS IN THE HORIZONTAL AND VERTICAL DIRECTION. THE DEVICE SHALL BE CAPABLE OF DRILLING A MINIMUM OF THREE HOLES AT ONE TIME.
3. ALL SMOOTH DOWELS SHALL BE COATED WITH A THIN LAYER OF OIL OR OTHER 'BOND-BREAKING' MATERIAL AFTER THEY HAVE BEEN INSTALLED IN THE EXISTING PAVEMENT AND JUST PRIOR TO PLACING THE PATCH. ALL DOWELS SHALL BE PLACED PARALLEL TO THE PAVEMENT SURFACE AND THE CENTERLINE OF THE PAVEMENT LANE.
4. ADDITIONAL PAVEMENT REMOVAL: IF AFTER THE REMOVAL OF THE PAVEMENT FROM THE AREA TO BE REPAIRED, THE FACE OF THE REMAINING PAVEMENT IS SPALLED OF DETERIORATED FOR A HEIGHT GREATER THAN ONE-FOURTH (1/4) THE THICKNESS OF THE RIGID PAVEMENT, ADDITIONAL REMOVAL SHALL BE MADE AS SHOWN.
5. LONGITUDINAL JOINT: FOR PATCHES 10 FEET OR GREATER IN LENGTH THE LONGITUDINAL JOINT SHALL BE CONSTRUCTED AS PER STANDARD DRAWING. SPACING OF THE TIE BARS SHALL BE NO MORE THAN 30' NOR LESS THAN 24'.
6. TYPE D (DRILLED TIED LONGITUDINAL) JOINT: TYPE D JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ODOT SPEC. 255.05. GROUT SHALL MEET THE REQUIREMENTS OF ODOT SPEC. 255.02. THE USE OF 5/8" EXPANSION ANCHORS, FF-S-325, GROUP VIII, TYPE I OF GROUP II, TYPE 4, CLASS I MAY BE USED IN LIEU OF THE 5/8" x 24" DEFORMED TIE BAR AND SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE USE OF SELF DRILLING EXPANSION SHIELD ANCHORS, FF-S-325, GROUP III, TYPE I (A) AND (C) SHALL NOT BE PERMITTED.
7. SEALING JOINTS: SAWED OR HAND FORMED JOINTS SHALL BE SEALED WITH ODOT 705.04 JOINT SEALER.

REVISED 8/3/09

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE  
DIVISION OF ENGINEERING & CONSTRUCTION  
JOMARIE WASIK-DIRECTOR OF PUBLIC SERVICE  
STREET OPENING REPAIR  
NOT TO SCALE

DRAWN BY: R. PLIODZINSKAS DATE: 4/8/08  
SUBMITTED BY: W. MCLAUGHLIN DATE: 4/8/08

APPROVED: *[Signature]* DATE: 4/14/08

COMMISSIONER OF ENGINEERING AND CONSTRUCTION

FILE NO.: PR 1

SHEET 2/2

9

CUY-90-13.45

MISC. DETAILS - CLEVELAND PAVEMENT REPAIR (2 OF 2)

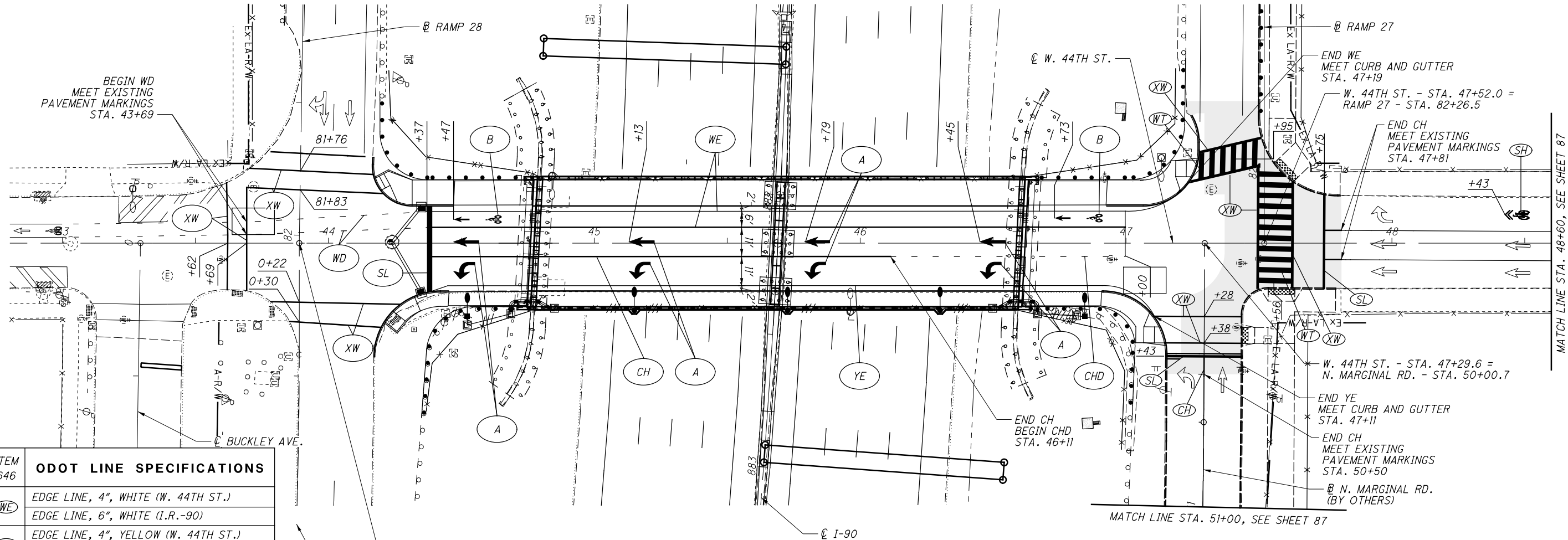
CALCULATED  
CHECKED





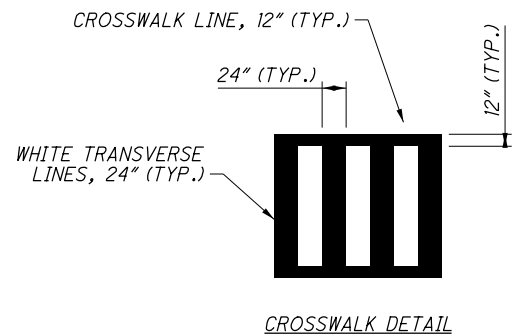
\\msconsultants.com\files\Production\02\60\_08342\_105792\_BRIDGE\_REDECK\Design\Traffic\Sheets\05792\_IP010.dgn Sheet 12/23/2019 9:54:00 AM sriffle

ITEM	ODOT LINE SPECIFICATIONS
646	
(WE)	EDGE LINE, 4", WHITE (W. 44TH ST.)
	EDGE LINE, 6", WHITE (I.R.-90)
(YE)	EDGE LINE, 4", YELLOW (W. 44TH ST.)
	EDGE LINE, 6", YELLOW (I.R.-90)
(LL)	LANE LINE, 4" (W. 44TH ST.)
	LANE LINE, 6" (I.R.-90)
(CHD)	DOTTED LINE, 8", WHITE (DOTTED CHANNELIZING LINE)
	DOTTED LINE, 4", WHITE
(WD)	
(CH)	CHANNELIZING LINE, 8" (W. 44TH ST.)
	CHANNELIZING LINE, 12" (I.R.-90)
(WT)	TRANSVERSE LINE, WHITE, 24"
(SL)	STOP LINE
(XW)	CROSSWALK LINE
(A)	LANE ARROW
(SH)	SHARED LANE MARKING
(B)	BIKE SYMBOL



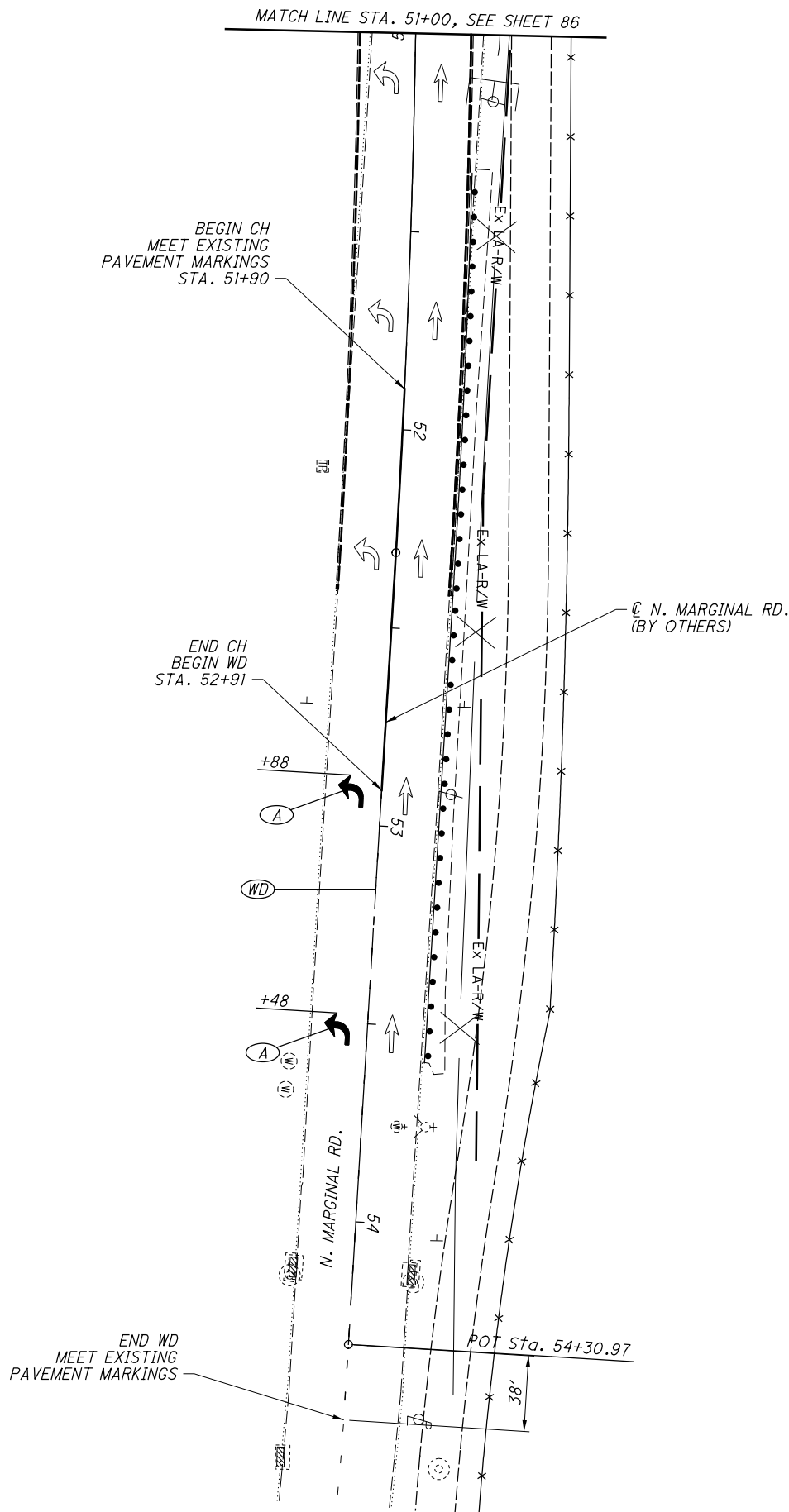
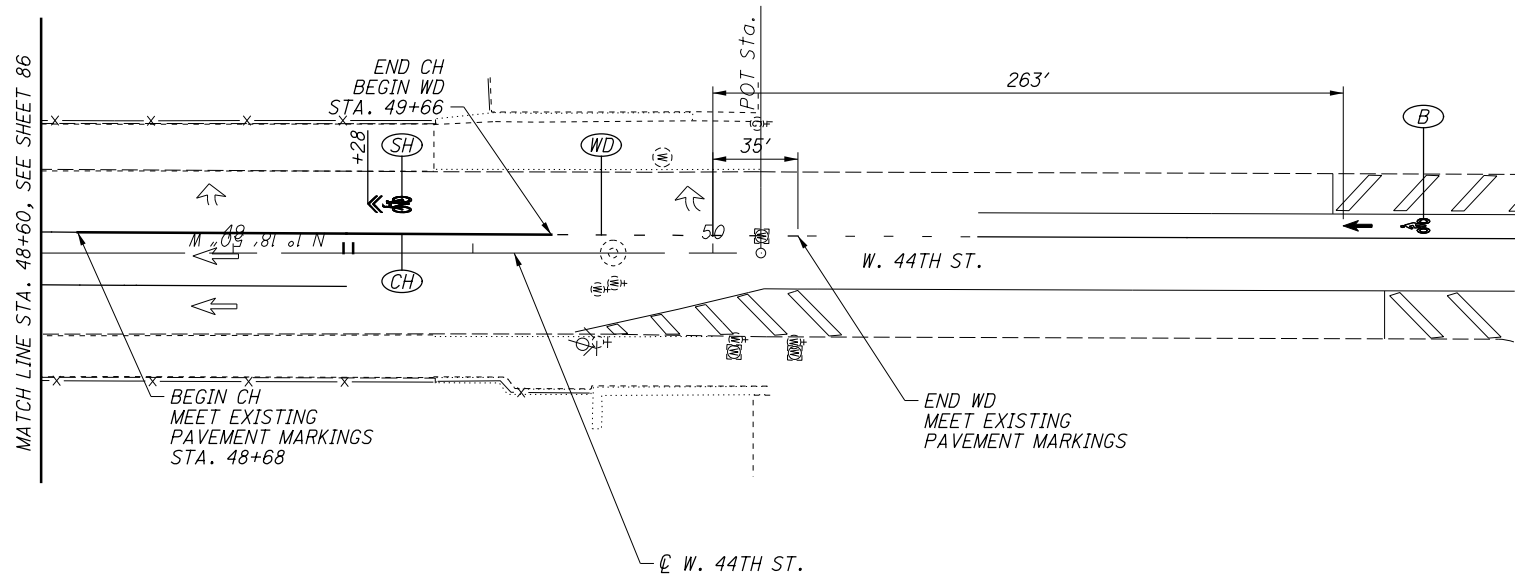
NOTES:

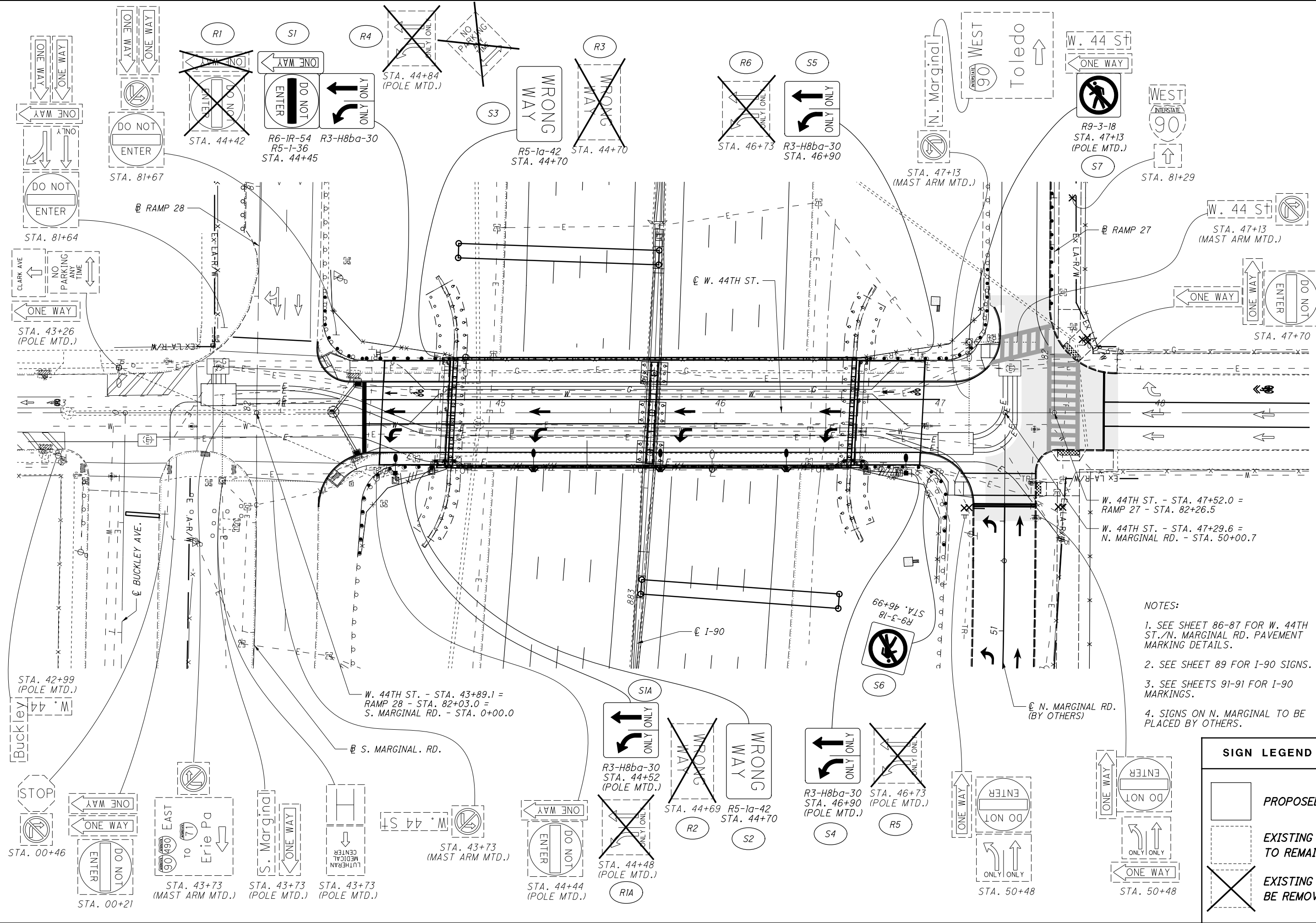
1. SEE SHEET 88 FOR W. 44TH ST. SIGNS.
2. SEE SHEET 92 FOR I-90 SIGNS.
3. SEE SHEETS 89-91 FOR I-90 MARKINGS.
4. UTILITIES NOT SHOWN FOR PLAN CLARITY.
5. SIGNS ON N. MARGINAL TO BE PLACED BY OTHERS.





NOTE:  
1. SEE SHEET 86 FOR PAVEMENT MARKING LEGEND.

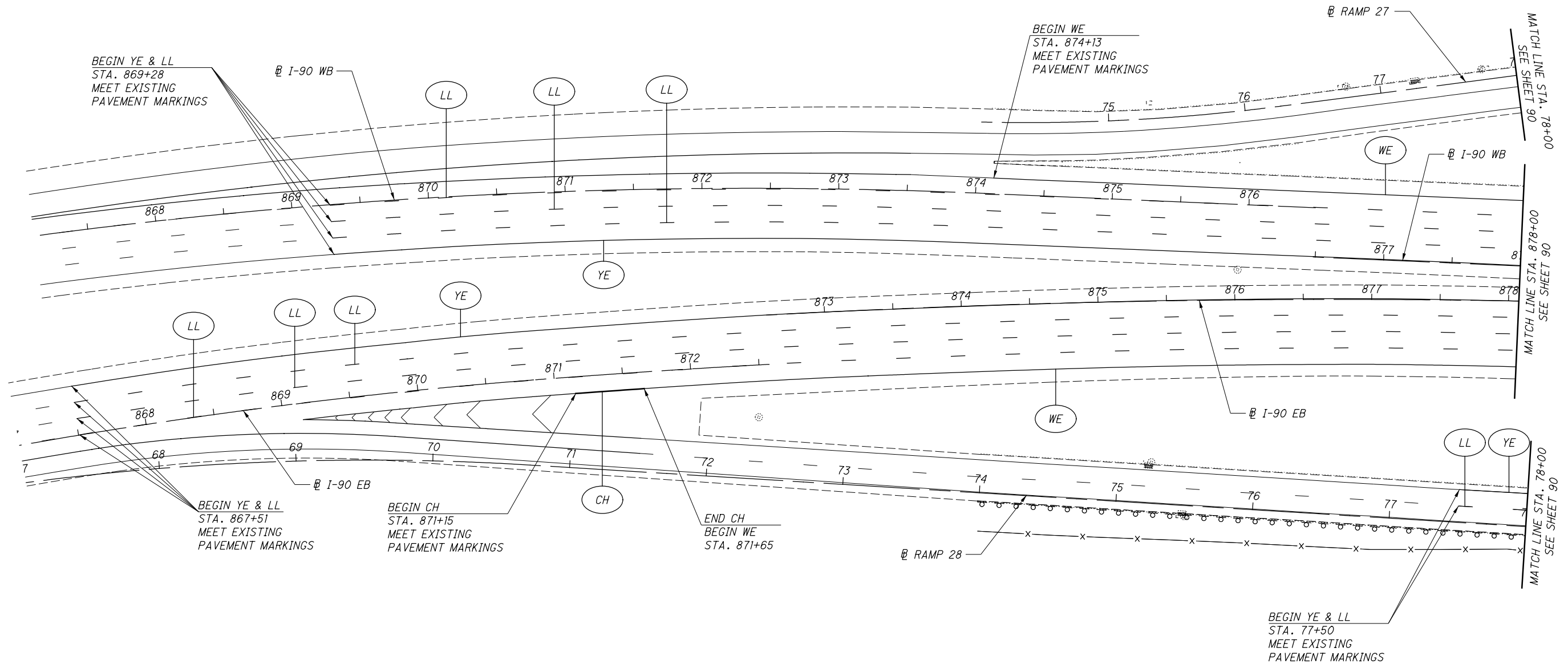




- NOTES:
1. SEE SHEET 86-87 FOR W. 44TH ST./N. MARGINAL RD. PAVEMENT MARKING DETAILS.
  2. SEE SHEET 89 FOR I-90 SIGNS.
  3. SEE SHEETS 91-91 FOR I-90 MARKINGS.
  4. SIGNS ON N. MARGINAL TO BE PLACED BY OTHERS.

SIGN LEGEND	
	PROPOSED
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Traffic\Sheets\05792\_TPI01.dgn Sheet 4/29/2020 3:44:59 PM jrettig



NOTES:

1. SEE SHEET 86 FOR PAVEMENT MARKING LEGEND.

0

20

40

80

HORIZONTAL

SCALE IN FEET

CALCULATED

KWR

CHECKED

JAR

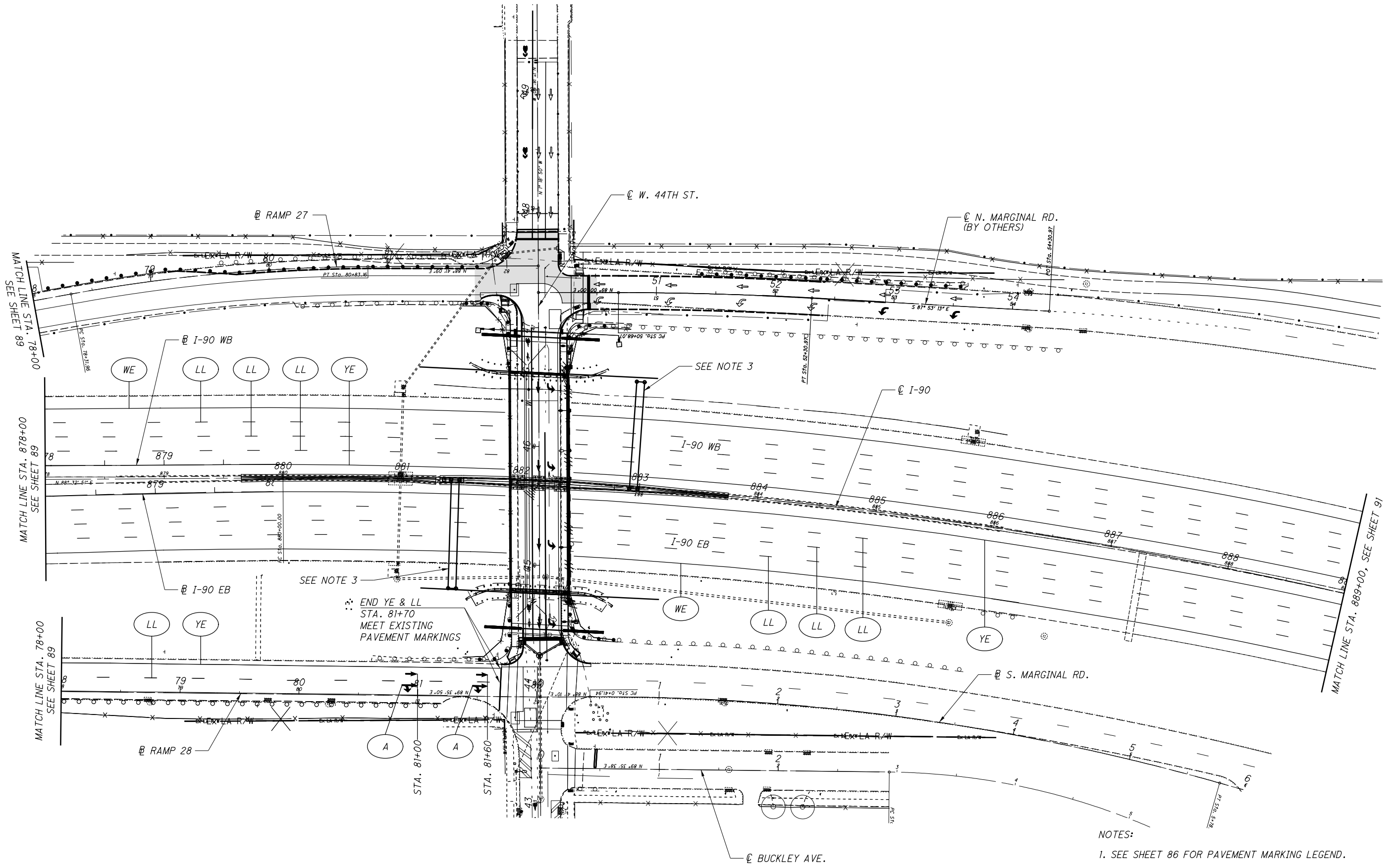
CUY-90-13.45

89  
135

PAVEMENT MARKING PLAN

I-90 - STA. 867+00 TO STA. 878+00

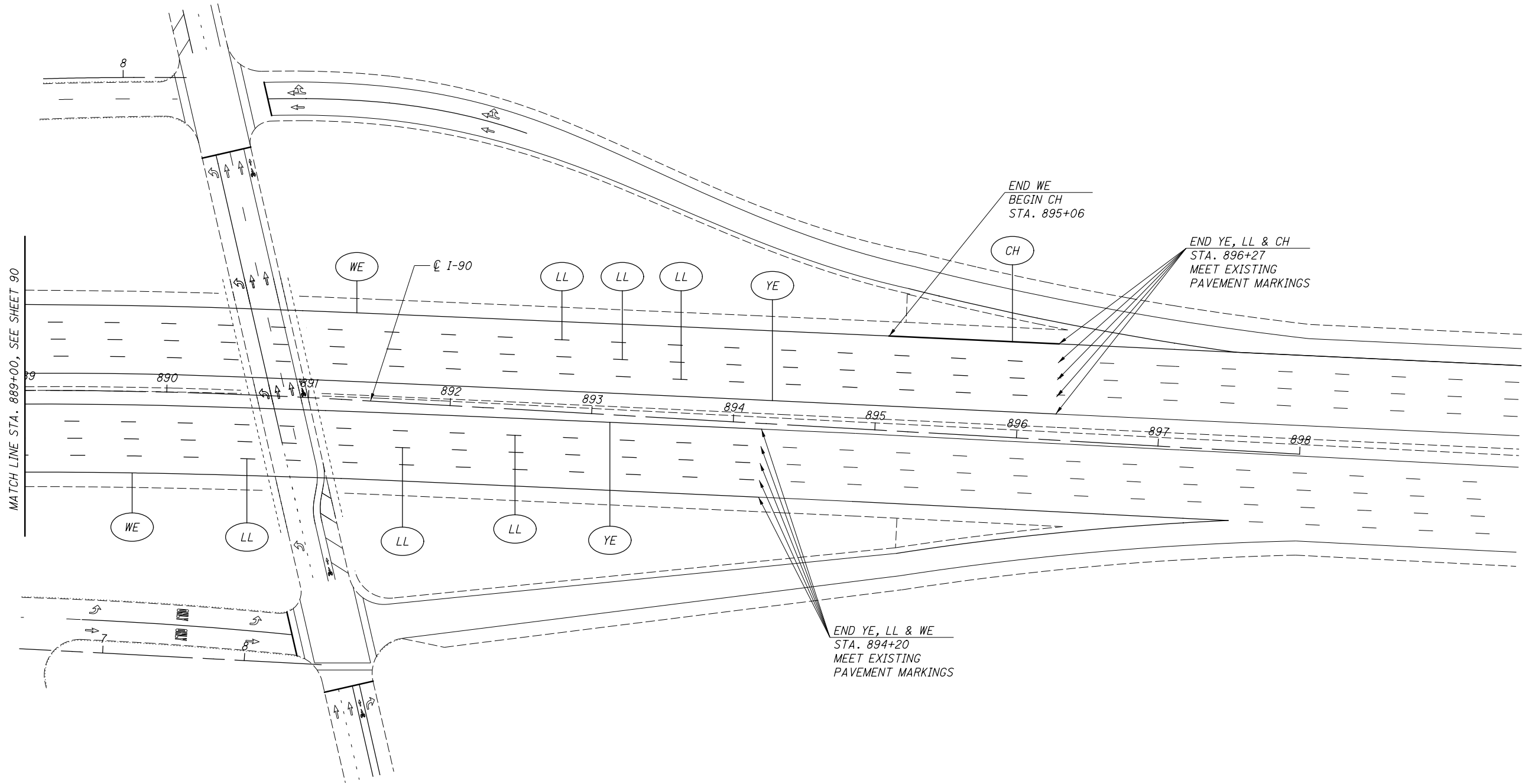
\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Traffic\Sheets\05792\_IP02.dgn Sheet 4/29/2020 3:15:01 PM jrettig



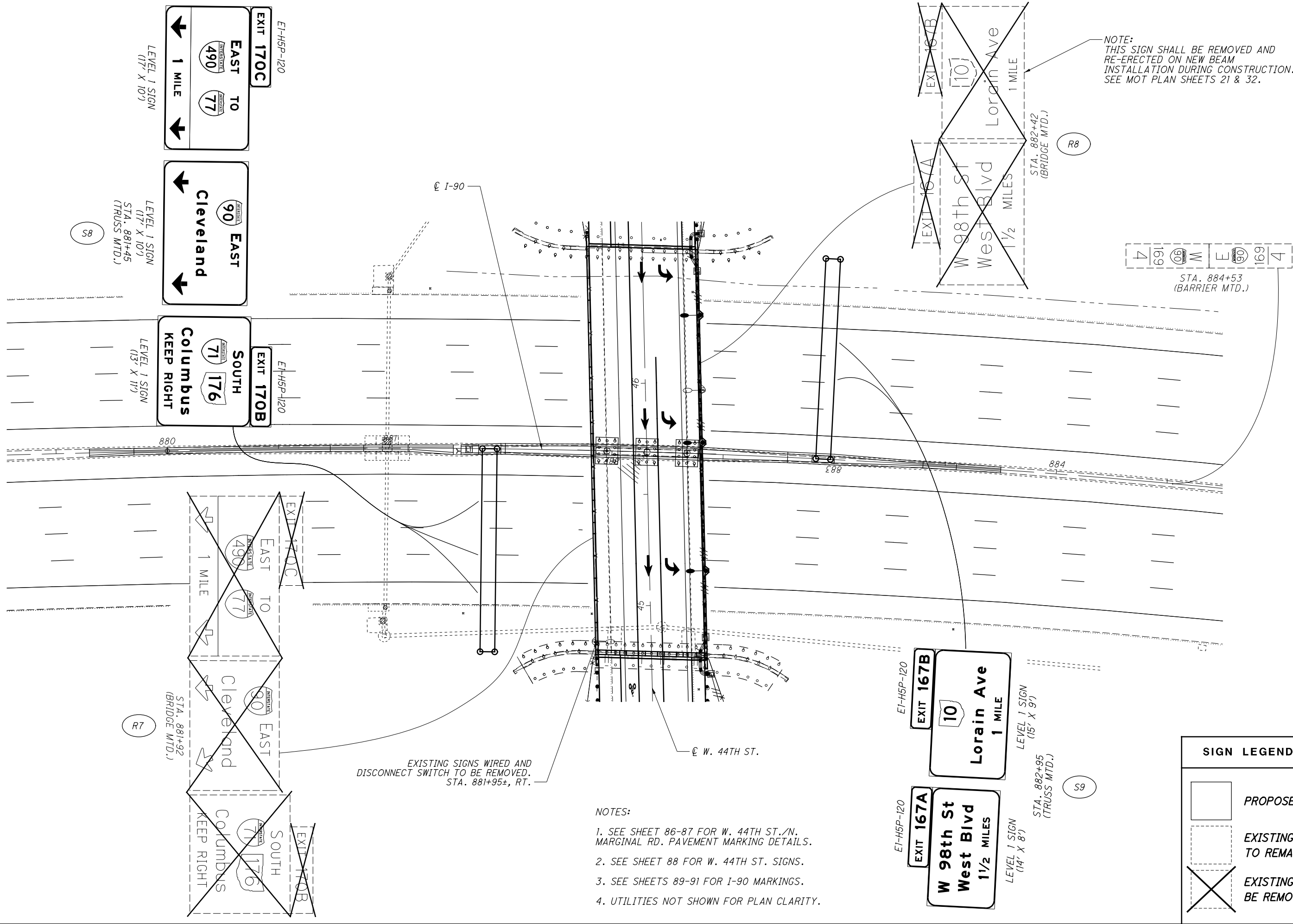
- NOTES:
- 1. SEE SHEET 86 FOR PAVEMENT MARKING LEGEND.
  - 2. SEE SHEET 86-87 FOR PAVEMENT MARKINGS ON W. 44TH ST./N. MARGINAL RD.
  - 3. SEE SHEET 92 FOR I-90 SIGNING DETAILS.

CALCULATED KWR	CHECKED JAR	 HORIZONTAL SCALE IN FEET 0 20 40 80
PAVEMENT MARKING PLAN		
I-90 - STA. 878+00 TO STA. 889+00		
CUY-90-13.45		90 135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Traffic\Sheets\05792\_IP03.dgn Sheet 12/23/2019 9:54:06 AM sriffle

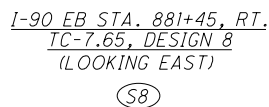


NOTES:  
1. SEE SHEET 86 FOR PAVEMENT MARKING LEGEND.



- NOTES:
1. SEE SHEET 86-87 FOR W. 44TH ST./N. MARGINAL RD. PAVEMENT MARKING DETAILS.
  2. SEE SHEET 88 FOR W. 44TH ST. SIGNS.
  3. SEE SHEETS 89-91 FOR I-90 MARKINGS.
  4. UTILITIES NOT SHOWN FOR PLAN CLARITY.

SIGN LEGEND	
	PROPOSED
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED







\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Signals\Sheets\05792\_CN001.dgn Sheet 12/23/2019 9:54:09 AM srlfje

TRAFFIC SIGNALS

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
- A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
- B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
- C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
- D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
- E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
- F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS.

- A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
- B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
- C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
- D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING.

- A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:

I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.

II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
- B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.

4. GROUND ROD.

- A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
- B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

CONDUCTOR NO.	COLOR	VEHICLE SIGNAL
1	BLACK	GREEN BALL
2	WHITE	AC NEUTRAL
3	RED	RED BALL
4	GREEN	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL
6	BLUE	GREEN ARROW
7	WHITE/BLACK STRIPE	YELLOW ARROW

6. POWER SERVICE AND DISCONNECT SWITCH.

- A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
- B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MAST ARM POLES, ETC. SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE DISPOSED OF BY THE CONTRACTOR OR STORED AND DELIVERED TO THE CITY OF CLEVELAND IN ACCORDANCE WITH THE LISTING GIVEN HEREIN AND AS SHOWN ON SHEET 82.

ITEMS TO BE STORED AND DELIVERED:

- (1)-PEDESTRIAN PEDESTAL
- (1)-PEDESTRIAN SIGNAL HEAD
- (1)-PEDESTRIAN PUSHBUTTON

STORED ITEMS SHALL BE DELIVERED TO THE CITY OF CLEVELAND. THE CONTRACTOR SHALL CONTACT THE CITY OF CLEVELAND DIVISION OF TRAFFIC ENGINEERING, MR. ANDREW CROSS (216-664-3197) FORTY-EIGHT (48) HOURS IN ADVANCE TO ARRANGE A MUTUALLY AGREEABLE TIME AND LOCATION FOR DELIVERY.

ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER CABINET MODIFICATIONS

THIS ITEM OF WORK SHALL CONSIST OF PERFORMING ANY PHASING, TIMING, PREEMPT, COORDINATION, AND WIRING MODIFICATIONS INCLUDING ANY NECESSARY LOAD SWITCHES TO THE EXISTING CONTROLLERS AND/OR CABINETS LOCATED IN THE SOUTHWEST QUADRANT OF THE W. 44TH ST./N. MARGINAL RD. INTERSECTION AND THE SOUTHEAST QUADRANT OF THE W. 44TH ST./S. MARGINAL RD. INTERSECTION NECESSARY FOR THE INTERSECTION TO OPERATE AS SHOWN IN THE PLANS.

PAYMENT FOR ITEM 633 - CONTROLLER ITEM, MISC.: CONTROLLER CABINET MODIFICATIONS WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH CONTROLLER CABINET AND SHALL BE FULL COMPENSATION FOR ALL WORK INCLUDING MATERIALS, EQUIPMENT, LABOR AND INCIDENTALS COMPLETE AND ACCEPTED.

ITEM 633 - GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY

THIS ITEM SHALL BE AS PER C&MS ITEM 633. GPS UNITS SHALL BE ELTEC CORP TIMESYNC1, WAPITI WG4, OR APPROVED EQUAL. ALL GPS UNITS SHALL COME EQUIPPED WITH A "D" PLUG TO BE COMPATIBLE WITH AN EAGLE/SEIMENS TRAFFIC SIGNAL CONTROLLER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 633 - "GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY" FOR EACH UNIT WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

REMOVING/REROUTING EXISTING CABLES

THE CONTRACTOR SHALL REMOVE AND/OR REROUTE SIGNAL AND DETECTION CABLES AS REQUIRED BY THE PLANS TO COMPLETE THE TRAFFIC SIGNAL MODIFICATION, INCLUDING ALL FINAL CONNECTIONS.

PAYMENT SHALL BE INCIDENTAL TO THE VARIOUS TRAFFIC SIGNAL ITEMS.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Signals\Sheets\05792\_CN002.dgn Sheet 12/23/2019 9:54:09 AM sriffle

ITEM 625 – PULL BOX, MISC.: 13" X 24"

SIZE

- 1. THE EXTERIOR DIMENSIONS AT THE TOP SHALL BE 13" X 24" (NOMINAL).
- 2. THE BOX SHALL BE 24" DEEP (NOMINAL) AND SHALL TAPER OUTWARD FROM THE TOP TO THE OPEN BOTTOM.
- 3. THE INSIDE DIMENSIONS AT THE BOTTOM SHALL BE 11-7/8" X 21-3/8" (MINIMUM).
- 4. THE BOX (WITHOUT COVER) SHALL WEIGH APPROXIMATELY 64 LBS.
- 5. THE COVER SHALL BE 13-3/4" X 23-1/4" X 2", AND SHALL WEIGH APPROXIMATELY 34 LBS.

LOAD CAPACITY

THE BOX AND COVER SHALL BE CAPABLE OF SUPPORTING A LOAD OF 20,000 LBS, ON A 10" X 10" AREA, TESTED IN ACCORDANCE WITH WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. THE COVER DEFLECTION SHALL NOT EXCEED 1/2" AT DESIGN LOAD. THE COVER AND BOX SHALL SHOW NO SIGNS OF DAMAGE AFTER TEN (10) CYCLES AT DESIGN LOAD.

MATERIAL AND CONSTRUCTION

THE BOX SHALL BE CONSTRUCTED OF FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPHTHALIT POLYESTER USING THE SPRAY-UP AND ROLL CONSTRUCTION METHOD. THE MATERIAL SHALL HAVE STABILIZERS TO RESIST ULTRAVIOLET (UV) DEGRADATION IN ACCORDANCE WITH ASTM D-790 AND ASTM D-11501-71, SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX SHALL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING SHALL HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS FOR THE COVER BOLTS SHALL BE STAINLESS STEEL.

THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM OF TEN PERCENT (10%) FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIN MATRIX. THE COVER SHALL BE MARKED WITH THE WORD "TRAFFIC" IN 2" LETTERS, EMBOSSED INTO THE TMC, AND SHALL HAVE A NON-SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL.

THE COVER SHALL BE SECURED TO THE BOX USING TWO HEX HEAD STAINLESS STEEL BOLTS AND WASHERS WHICH SHALL ATTACH TO THREADED INSERTS IN THE BODY OF THE BOX.

CONDUIT OPENINGS

OPENINGS IN THE SIDE OF THE PULL BOX, WHICH ARE REQUIRED TO INSERT CONDUIT (INTO THE PULL BOX) SHALL BE DRILLED OR SAWN IN THE FIELD, ONCE THESE LOCATIONS HAVE BEEN DETERMINED. THE OPENINGS SHALL NOT EXCEED THE OUTSIDE DIAMETER OF THE CONDUIT BY MORE THAN FIVE PERCENT (5%). ALL OPENINGS IN THE SIDE OF THE PULL BOX SHALL BE THOROUGHLY GROUTED WITH CEMENT MORTAR AFTER PLACING THE CONDUIT.

NOTE

THE EXACT LOCATIONS OF PULL BOXES ARE TO BE STAKED AND CHECKED BY THE ENGINEER PRIOR TO PLACEMENT TO VERIFY CLEARANCE OF UNDERGROUND FACILITIES AND ANY ABOVE GROUND OBSTRUCTIONS. IF THERE ARE ANY CONFLICTS, THEY ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS IS INCIDENTAL TO ALL 625 ITEMS.

PULL BOXES ARE TO BE PROVIDED A 4" DRAIN TO THE NEAREST STORM INLET, UNDER DRAIN OR OTHER SUITABLE OUTLET FROM THE PULL BOX. TWENTY (20) FEET OF 4" PVC CONDUIT SHALL BE USED AND BE INCLUDED IN THE PRICE OF THE PULL BOX. ADDITIONAL 4" CONDUIT IN THE AMOUNT OF 100 L.F. HAS BEEN INCLUDED IN THE BID PROPOSAL FOR USE AS DIRECTED BY THE ENGINEER. FAILURE TO INSTALL DRAIN CONDUIT SHALL RESULT IN A PENALTY EQUAL TO THE PRICE BID FOR THE AFFECTED PULL BOXES. PAYMENT FOR PULL BOX ITEMS SHALL NOT BE MADE UNTIL PULL BOXES, INCLUDING UNDER DRAIN, HAVE BEEN COMPLETELY INSTALLED.

PAYMENT

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITIES OF:

ITEM 625 – PULL BOX, MISC.: 13" X 24"

ITEM 625 – JUNCTION BOX, AS PER PLAN

PARAPET JUNCTION BOXES SHALL MEET THE FOLLOWING SPECIFICATIONS

- 1. THE EXTERIOR DIMENSIONS AT THE TOP SHALL BE 11-1/2" X 21-1/2" (NOMINAL).
- 2. THE BOX SHALL BE 8-12" DEEP AND HAVE A CLOSED BOTTOM.
- 3. THE COVER SHALL BE A SINGLE UNIT 9-5/8" X 19-5/8".
- 4. THE COVER SHALL BE EMBOSSED WITH "SIGNALS" IN 2" LETTERS.
- 5. THE BOX (WITHOUT COVER) SHALL WEIGH APPROXIMATELY 35 LBS.
- 6. THE COVER SHALL WEIGH APPROXIMATELY 11 LBS AND BE MOUNTED WITH FOUR 3/8" STAINLESS STEEL HEX HEAD BOLTS WITH WASHERS.
- 7. THE LOAD RATING FOR PULL BOX AND COVER SHALL BE TIER-15. LOAD CAPACITY, MATERIAL CONSTRUCTION, COVER FASTENERS AND CONDUIT OPENINGS ARE THE SAME AS SPECIFIED IN CONSTRUCTION NOTE ITEM 625, PULL BOX MISC.: 17" X 30".

CALCULATED	KWR	TRAFFIC SIGNAL GENERAL NOTES	CUY-90-13.45	96 135
	CHECKED DRB			



632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

DESCRIPTION OF ITEM TO BE REMOVED BY CONTRACTOR

REMOVED & DELIVERED TO CITY OF CLEVELAND	DISPOSED OF BY CONTRACTOR
SIGNAL CABLE	X
INTERCONNECT CABLE	X
POWER CABLE (TO N. SIGNAL)	X
(1) PEDESTRIAN PEDESTAL	X
(1) PEDESTAL FOUNDATION	X
(1) PEDESTRIAN SIGNAL HEAD	X
(1) PEDESTRIAN PUSHBUTTON	X

PEDESTRIAN SIGNS

PEDESTRIAN HEADS



R10-3e-9



R9-3-18  
(SEE SIGNING PLAN)



(LED, COUNTDOWN, TYPE D2)

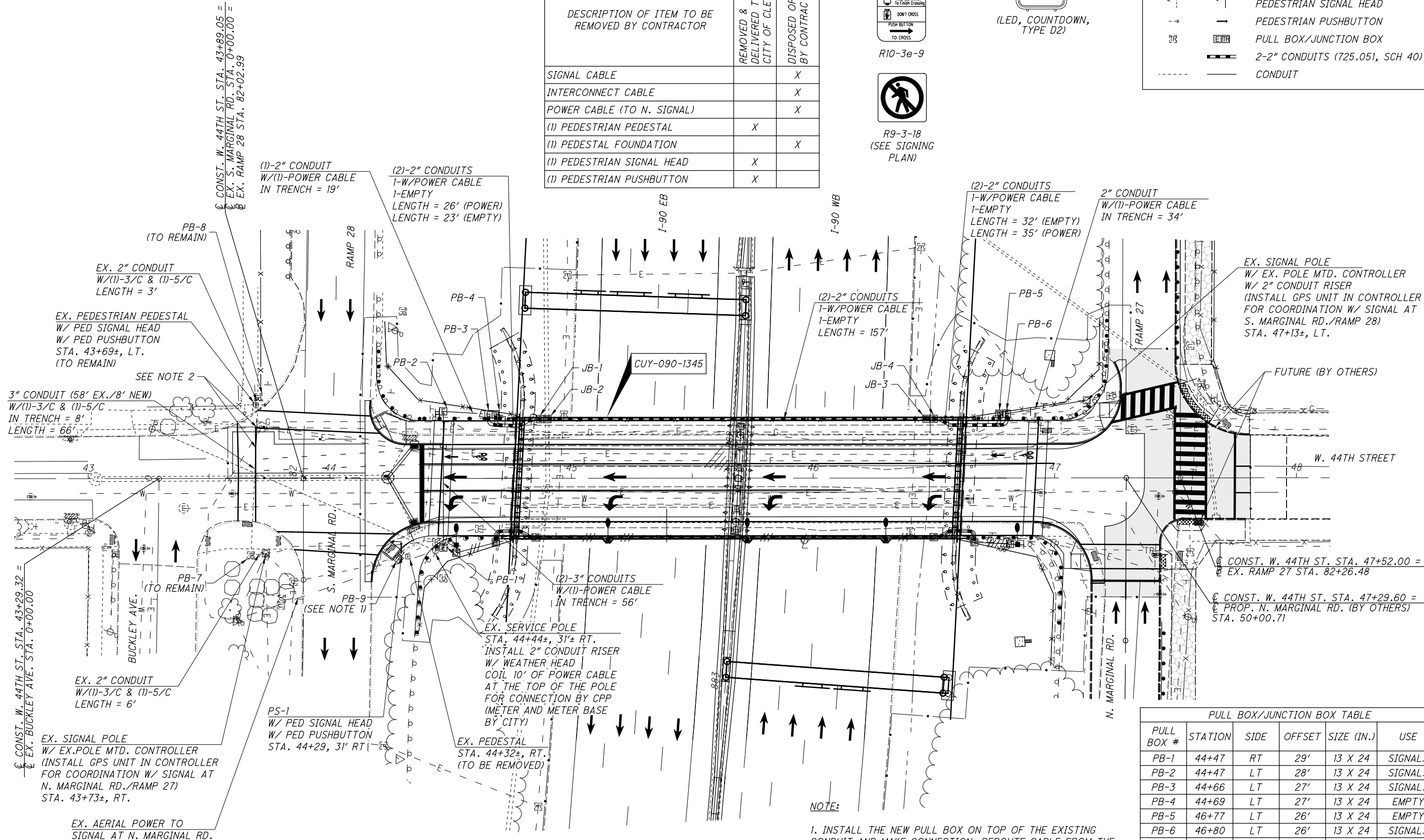
EXIST.	PROP.	LEGEND
		TRAFFIC SIGNAL SUPPORT
		PEDESTRIAN PEDESTAL
		PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN PUSHBUTTON
		PULL BOX/JUNCTION BOX
		2-2" CONDUITS (725.051, SCH 40)
		CONDUIT



CALCULATED	KWR	CHECKED	DRB
------------	-----	---------	-----

TRAFFIC SIGNAL PLAN  
W. 44TH ST & (N/S) MARGINAL RD/ RAMP 27 / 28

CUY-90-13.45



NOTE:

1. INSTALL THE NEW PULL BOX ON TOP OF THE EXISTING CONDUIT AND MAKE CONNECTION. REROUTE CABLE FROM THE EXISTING PEDESTAL AND CONNECT TO THE NEW PEDESTAL.
2. CUT EXISTING TRAFFIC CONDUIT AT SAW CUT LINES AND INSTALL NEW 3" CONDUIT BETWEEN SAW CUT LINES.
3. JUNCTION BOXES SHALL BE SIZED PER THE "JUNCTION BOX, AS PER PLAN" NOTE ON SHEET 96.

PULL BOX/JUNCTION BOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)	USE
PB-1	44+47	RT	29'	13 X 24	SIGNALS
PB-2	44+47	LT	28'	13 X 24	SIGNALS
PB-3	44+66	LT	27'	13 X 24	SIGNALS
PB-4	44+69	LT	27'	13 X 24	EMPTY
PB-5	46+77	LT	26'	13 X 24	EMPTY
PB-6	46+80	LT	26'	13 X 24	SIGNALS
PB-7	43+67	RT	32'	EXISTING	SIGNALS
PB-8	43+70	LT	34'	EXISTING	SIGNALS
PB-9	44+28	RT	33'	13 X 24	SIGNALS
JB-1	44+87	LT	24.5'	NOTE 3	SIGNALS
JB-2	44+90	LT	24.5'	NOTE 3	EMPTY
JB-3	46+47	LT	24.5'	NOTE 3	EMPTY
JB-4	46+50	LT	24.5'	NOTE 3	SIGNALS

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Lighting\Sheets\05792\_LN001.dgn\_Sheet 12/23/2019 9:54:42 AM sriffle

GOVERNING AGENCIES

LIGHTING SYSTEM MAINTAINING AGENCY/POWER SUPPLY AGENCY:

CITY OF CLEVELAND  
DEPARTMENT OF PUBLIC UTILITIES  
CLEVELAND PUBLIC POWER (CPP)  
1300 LAKESIDE AVE  
CLEVELAND, OHIO 44114  
CONTACT: MR. CHARLES (JIM) MALY  
PHONE: 216-664-2444 EXT 173  
EMAIL: CMALY@CPP.ORG

EXISTING LIGHTING ITEMS, SIGNS, CONDUIT, CABLE AND POWER CENTERS

THE LOCATIONS OF EXISTING LIGHTING ITEMS, SIGNS, CONDUIT, CABLE AND POWER CENTERS SHOWN ON THE PLANS AND DESCRIBED BY NOTATION HAVE BEEN OBTAINED BY FIELD CHECKS AND INFORMATION FROM EXISTING LIGHTING PLANS PROVIDED BY THE CITY OF CLEVELAND. IT IS BELIEVED THAT THE INFORMATION IS ESSENTIALLY CORRECT, HOWEVER, THE OHIO DEPARTMENT OF TRANSPORTATION AND THE CITY OF CLEVELAND CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS. NOT ALL EXISTING LIGHTING EQUIPMENT WITHIN THE PROJECT LIMITS IS SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS. PRIOR TO REMOVAL AND/OR RELOCATION OF EXISTING CPP STREET LIGHTING EQUIPMENT. CONTACT CPP A MINIMUM OF ONE WEEK PRIOR TO BEGINNING CONSTRUCTION TO SCHEDULE ARRANGEMENTS TO HAVE A CPP REPRESENTATIVE ON SITE TO COORDINATE THE REQUIRED ACTIVITIES. ANY DAMAGE TO CPP FACILITIES DUE TO A FAILURE TO CONTACT CPP, WILL RESULT IN ANY REPAIRS TO CPP FACILITIES AT CONTRACTOR'S EXPENSE.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIAL OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER.

ITEM 625 TRENCH

TRENCH SHALL BE AS PER 625.13. IN ADDITION, ALL TRENCHING IN PAVED AREAS AND AREAS TO BE PAVED SHALL BE PERFORMED PRIOR TO THE PLACEMENT OF PAVEMENT.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS. MINIMUM DEFLECTION CAPABILITY: 25 DEGREES.

EXPANSION AND DEFLECTION FITTINGS FULLY OR PARTIALLY EMBEDDED IN CONCRETE, SOIL, OR SIMILAR MATERIAL SHALL BE COMPLETELY WRAPPED IN A NEOPRENE SLEEVE OR SHEET OF 1/2-INCH MINIMUM THICKNESS. SECURE NEOPRENE WRAP WITH TIE-WRAPs PRIOR TO EMBEDMENT OF THE FITTING.

CONFLICTS WITH EXISTING UTILITIES

CONTACT OHIO UTILITIES PROTECTION SERVICE (OUPS), TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION, IN OHIO, CALL TOLL-FREE 1-800-362-2764. IT'S THE LAW. NON-MEMBER UTILITY COMPANIES MUST BE CALLED DIRECTLY. SEE SHEET 8 FOR ADDITIONAL UTILITY INFORMATION.

PRIOR TO INSTALLING ANY OF THE PROPOSED STREET LIGHTING EQUIPMENT, PULL BOXES, CONDUIT, CONDUIT DUCT BANKS AND POWER SUPPLIES, THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF ALL UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID AND DAMAGE. ALL REPAIRS TO ANY DAMAGE TO EXISTING UTILITIES CAUSED BY THE FAILURE TO COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES AND DRILL APPROPRIATE UTILITY TEST HOLES, WILL BE PAID FOR BY THE CONTRACTOR.

THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UNDERGROUND PIPE LINES, DRAINAGE, ELECTRICAL CONDUIT, AND DUCT BANKS, WATERLINES, COMMUNICATION DUCTS, AND OTHER STRUCTURES BY CONTACTING OWNERS OF UNDERGROUND UTILITIES AND BY EXCAVATING APPROPRIATE UTILITY TEST HOLES.

THE CONTRACTOR SHALL COORDINATE THE LIGHTING PLANS WITH THE ROADWAY CONSTRUCTION PLANS AND CROSS-SECTIONS. ALL LIGHTING EQUIPMENT SYMBOLS SHOWN ON THE LIGHTING PLANS ARE NOT DRAWN TO SCALE, ARE SHOWN DIAGRAMMATICALLY AND MAY NOT BE IN THE EXACT LOCATION REQUIRED. THE CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATIONS WITH THE KEYNOTE SHEETS AND VARIOUS NOTES ON EACH LIGHTING PLAN AND DETAIL SHEET.

THE CONTRACTOR SHALL MAINTAIN PROPER CLEARANCE FROM ALL OVERHEAD AND UNDERGROUND UTILITIES AND SHALL CONTACT EACH UTILITY FOR SPECIFIC REQUIREMENTS.

EXISTING LIGHTING CIRCUITS

PRIOR TO BEGINNING ANY WORK ON THE REMOVAL OR MODIFICATION ON ANY OF THE EXISTING LIGHTING SYSTEM CIRCUITRY, FIELD VERIFY ALL EXISTING LIGHTING CIRCUITRY. CONTACT THE CITY OF CLEVELAND LIGHTING REPRESENTATIVES FOR ASSISTANCE IN THE COORDINATION OF THE EXISTING LIGHTING CIRCUITRY.

ALL EXISTING LIGHTING TO BE REMOVED IS BELIEVED TO BE 240/480V, HOWEVER, LIGHTING CIRCUITS ARE EXPECTED TO BE CONVERTED TO 120/240V PRIOR TO THE REQUIRED LIGHTING WORK FOR THIS PROJECT.

FIELD CONDITION REQUIREMENTS

UNLESS OTHERWISE INDICATED, ALL EXISTING CONDUIT, CABLE, DUCT CABLE, WILL BE ABANDONED IN PLACE. TRENCHING FOR NEW CONDUIT/CABLE RUNS IN AREAS WHERE EXISTING CIRCUITS HAVE BEEN ABANDONED, MAY RESULT IN UPROOTING THE EXISTING CONDUIT. CONDUIT MAY REMAIN IN PLACE UNLESS IT BECOMES AN OBSTACLE TO THE INSTALLATION OF THE NEW CONDUITS/DUCT CABLE. REMOVAL OF ANY CONDUIT WILL BE INCIDENTAL TO THE APPROPRIATE PAY ITEM FOR TRENCH.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON CIRCUIT 'A51' MODIFIED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

ITEM 625 - LIGHTING, MISC.: TEST EXISTING CIRCUITS

UPON COMPLETION OF THE MODIFICATIONS TO EXISTING LIGHTING CIRCUITS, THE CONTRACTOR SHALL TEST ALL EXISTING/MODIFIED CIRCUITS TO VERIFY THAT POWER IS SUPPLIED TO ALL LIGHT POLES, AND THAT NO CIRCUITS HAVE BEEN DAMAGED. REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL BE PRESENT FOR THE INSPECTION OF THESE CIRCUITS.

TESTING OF EXISTING CIRCUITS SHALL BE CHECKED AT EACH PROPOSED POWER SERVICE LOCATION THAT WILL SERVE ALL, OR PORTIONS OF EXISTING LIGHTING CIRCUITRY.

PAYMENT WILL BE MADE AT THE UNIT PRICE UNDER CMS ITEM 625, "LIGHTING, MISC.: TEST EXISTING CIRCUIT" FOR EACH INDICATED POWER SERVICE INSTALLATION WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 625 - LIGHTING, MISC.: TEST EXISTING CIRCUIT 1 EACH

ITEM 625 - PULL BOX REMOVED. AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF AND EXISTING PULL BOX AND PROPER DISPOSAL OFF OF THE PROJECT SITE. THE RESULTANT OPENING SHALL BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

WHERE A PROPOSED PULL BOX WILL BE PLACED IN THE SAME AREA AS AN EXISTING PULL BOX, THE REMOVAL COST OF THE EXISTING PULL BOX WILL BE INCIDENTAL TO THE 625 - PULL BOX ITEM.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 625 "PULL BOX REMOVED, AS PER PLAN" AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.

ITEM 625 - LUMINAIRE SUPPORT REMOVED. AS PER PLAN

THIS ITEM OF WORK SHALL BE AS PER CMS 625 AND SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE BRACKET ARM AND LIGHTING CABLES. THE EXISTING SIGNAL POLE SHALL REMAIN IN PLACE.

PAYMENT SHALL BE AS PER CMS 625.

ITEM 625 - LIGHT POLE REMOVED FOR STORAGE. AS PER PLAN  
ITEM 625 - LUMINAIRE REMOVED FOR STORAGE. AS PER PLAN

CONTACT CLEVELAND PUBLIC POWER TO DE-ENERGIZE CIRCUITS BEFORE REMOVAL. EXISTING LIGHTING FOUNDATIONS, PULL BOXES AND MISCELLANEOUS ITEMS NO LONGER IN SERVICE SHALL BE REMOVED AND DISPOSED OFFSITE BY THE CONTRACTOR, EXCEPT FOR EXISTING DUCTS AND CONDUITS, WHICH CAN BE ABANDONED IN PLACE. EXISTING LIGHT POLES W/ BRACKET ARMS, LUMINAIRES AND CONDUCTORS REMOVED ON THE PROJECT SHALL BE RETURNED TO CPP. THE CONTRACTOR SHALL NOTIFY CPP AND STORE THE MATERIALS ON SITE, SUITABLY PROTECTED, AT A DESIGNATED LOCATION FOR PICK UP BY CPP STAFF WITHIN 30 WORKDAYS OF NOTIFICATION BY THE CONTRACTOR. THE CONTRACTOR MAY DISPOSE OF MATERIALS NOT PICKED UP WITHIN THE 30 WORKDAY TIMEFRAME. ALL OTHER EQUIPMENT AND MATERIALS NO LONGER IN SERVICE SHALL BE REMOVED AND DISPOSED OFFSITE BY THE CONTRACTOR.

ITEM 625 - CONDUIT CLEANED AND CABLES REMOVED. AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF CLEANING AN EXISTING CONDUIT BY REMOVING EXISTING CABLES, MUD AND DEBRIS SO THAT THE EXISTING CABLE CAN BE RE-FED TO THE NEW MEDIAN JUNCTION BOX LOCATION. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND/OR COUPLINGS ON THE ENDS OF EXISTING CONDUIT AS REQUIRED. MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR PROPER DISPOSAL OFF OF THE PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625, "CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN" PER FOOT OF CONDUIT CLEANED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - DISCONNECT CIRCUIT. AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR A LIGHT POLE OR LIGHT TOWER OR JUNCTION BOX. CONTACT CLEVELAND PUBLIC POWER TO DE-ENERGIZE CIRCUITS BEFORE REMOVAL.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE PROPERLY TERMINATED.

DISCONNECTION AT A LIGHT POLE SHALL ALSO INVOLVE DISCONNECTION OF THE CIRCUIT AT THE ADJACENT JUNCTION BOX, PULL BOX, ETC.

A CIRCUIT MAY REQUIRE CUTTING AND/OR DISCONNECTING AT VARIOUS LOCATIONS ALONG THE CIRCUIT WHETHER AT A LIGHT POLE, JUNCTION BOX OR PULL BOX. WHEN A CIRCUIT IS INITIALLY DISCONNECTED, PAYMENT FOR DISCONNECTION OF THAT CIRCUIT SHALL INCLUDE ALL OTHER DISCONNECTIONS AT VARIOUS LOCATIONS WITHIN THAT PARTICULAR CIRCUIT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 625 "DISCONNECT CIRCUIT, AS PER PLAN" AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Lighting\Sheets\05792\_LN003.dgn Sheet 12/23/2019 9:54:13 AM sr1ffle

ITEM 625 – PULL BOX, MISC.: 17" X 30"

SIZE

1. THE EXTERIOR DIMENSIONS AT THE TOP SHALL BE 17" X 30" (NOMINAL).
2. THE BOX SHALL BE 24" DEEP (NOMINAL) AND SHALL TAPER OUTWARD FROM THE TOP TO THE OPEN BOTTOM.
3. THE INSIDE DIMENSIONS AT THE BOTTOM SHALL BE 15-5/8" X 28-5/8" (MINIMUM).
4. THE BOX (WITHOUT COVER) SHALL WEIGH APPROXIMATELY 84 LBS.
5. THE COVER SHALL BE 17-1/2" X 30-1/2" X 2", AND SHALL WEIGH APPROXIMATELY 65 LBS.

LOAD CAPACITY

THE BOX AND COVER SHALL BE CAPABLE OF SUPPORTING A LOAD OF 20,000 LBS, ON A 10" X 10" AREA, TESTED IN ACCORDANCE WITH WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. THE COVER DEFLECTION SHALL NOT EXCEED 1/2" AT DESIGN LOAD. THE COVER AND BOX SHALL SHOW NO SIGNS OF DAMAGE AFTER TEN (10) CYCLES AT DESIGN LOAD.

MATERIAL AND CONSTRUCTION

THE BOX SHALL BE CONSTRUCTED OF FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPHTHALIT POLYESTER USING THE SPRAY-UP AND ROLL CONSTRUCTION METHOD. THE MATERIAL SHALL HAVE STABILIZERS TO RESIST ULTRAVIOLET (UV) DEGRADATION IN ACCORDANCE WITH ASTM D-790 AND ASTM D-11501-71, SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX SHALL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING SHALL HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS FOR THE COVER BOLTS SHALL BE STAINLESS STEEL.

THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM OF TEN PERCENT (10%) FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIN MATRIX. THE COVER SHALL BE MARKED WITH THE WORD "LIGHTING" IN 2" LETTERS, EMBOSSED INTO THE TMC, AND SHALL HAVE A NON-SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL.

THE COVER SHALL BE SECURED TO THE BOX USING TWO HEX HEAD STAINLESS STEEL BOLTS AND WASHERS WHICH SHALL ATTACH TO THREADED INSERTS IN THE BODY OF THE BOX.

CONDUIT OPENINGS

OPENINGS IN THE SIDE OF THE PULL BOX, WHICH ARE REQUIRED TO INSERT CONDUIT (INTO THE PULL BOX) SHALL BE DRILLED OR SAWN IN THE FIELD, ONCE THESE LOCATIONS HAVE BEEN DETERMINED. THE OPENINGS SHALL NOT EXCEED THE OUTSIDE DIAMETER OF THE CONDUIT BY MORE THAN FIVE PERCENT (5%). ALL OPENINGS IN THE SIDE OF THE PULL BOX SHALL BE THOROUGHLY GROUTED WITH CEMENT MORTAR AFTER PLACING THE CONDUIT.

NOTE

THE EXACT LOCATIONS OF PULL BOXES ARE TO BE STAKED AND CHECKED BY THE ENGINEER PRIOR TO PLACEMENT TO VERIFY CLEARANCE OF UNDERGROUND FACILITIES AND ANY ABOVE GROUND OBSTRUCTIONS. IF THERE ARE ANY CONFLICTS, THEY ARE TO BE ADJUSTED AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS IS INCIDENTAL TO ALL 625 ITEMS.

PULL BOXES ARE TO BE PROVIDED A 4" DRAIN TO THE NEAREST STORM INLET, UNDER DRAIN OR OTHER SUITABLE OUTLET FROM THE PULL BOX. TWENTY (20) FEET OF 4" PVC CONDUIT SHALL BE USED AND BE INCLUDED IN THE PRICE OF THE PULL BOX.

PAYMENT

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY FOR THE ACTUALLY COMPLETED AND ACCEPTED QUANTITIES OF:

ITEM 625 – PULL BOX, MISC.: 17" X 30"

ITEM 625 – JUNCTION BOX, AS PER PLAN

PARAPET JUNCTION BOXES SHALL MEET THE FOLLOWING SPECIFICATIONS

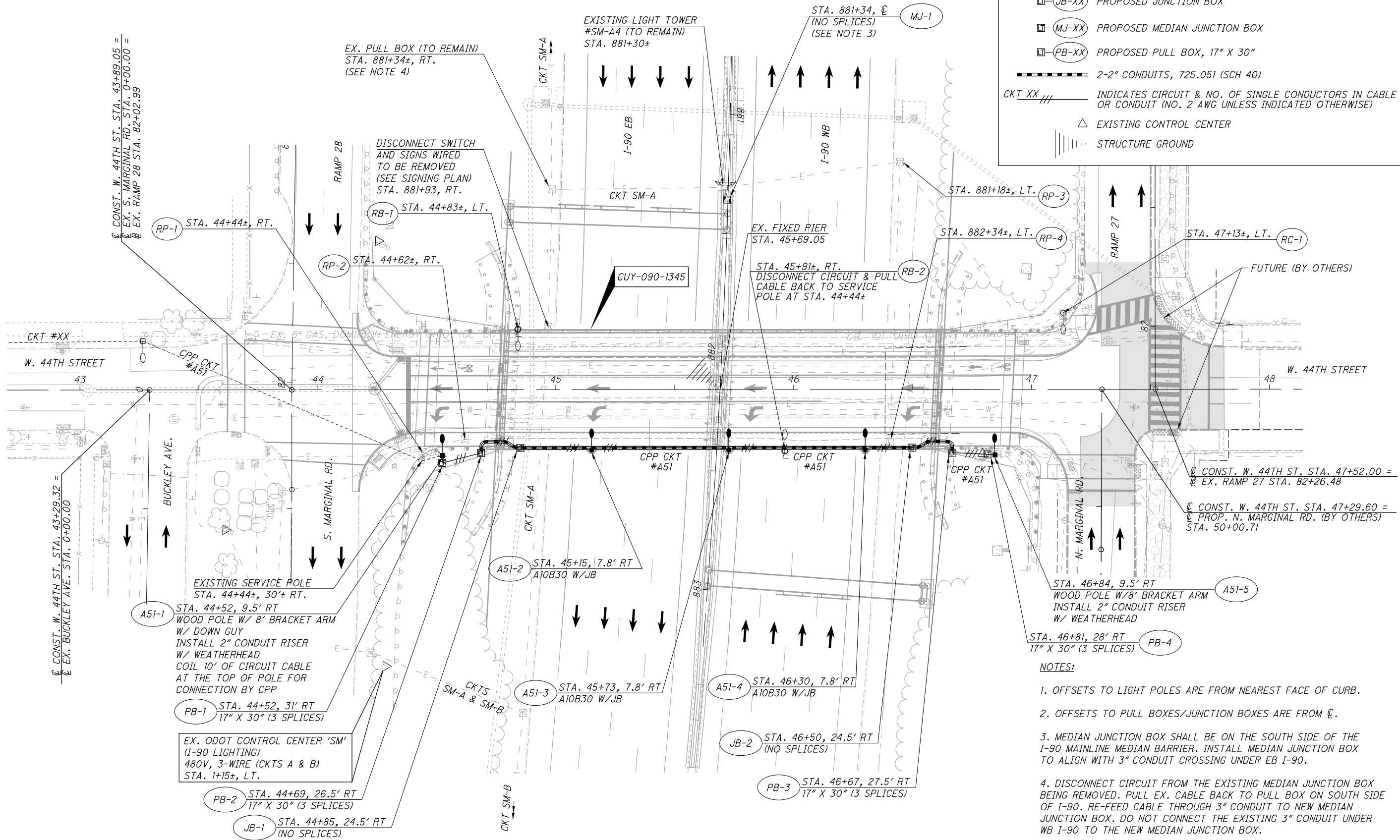
1. THE EXTERIOR DIMENSIONS AT THE TOP SHALL BE 11-1/2" X 21-1/2" (NOMINAL).
2. THE BOX SHALL BE 8-12" DEEP AND HAVE A CLOSED BOTTOM.
3. THE COVER SHALL BE A SINGLE UNIT 9-5/8" X 19-5/8".
4. THE COVER SHALL BE EMBOSSED WITH "LIGHTING" IN 2" LETTERS.
5. THE BOX (WITHOUT COVER) SHALL WEIGH APPROXIMATELY 35 LBS.
6. THE COVER SHALL WEIGH APPROXIMATELY 11 LBS AND BE MOUNTED WITH FOUR 3/8" STAINLESS STEEL HEX HEAD BOLTS WITH WASHERS.
7. THE LOAD RATING FOR PULL BOX AND COVER SHALL BE TIER-15. LOAD CAPACITY, MATERIAL CONSTRUCTION, COVER FASTENERS AND CONDUIT OPENINGS ARE THE SAME AS SPECIFIED IN CONSTRUCTION NOTE ITEM 625, PULL BOX MISC.: 17" X 30".

CALCULATED	KWR	LIGHTING GENERAL NOTES	CUY-90-13.45	<div><div>101</div><div>135</div></div>
	CHECKED			
DRB				

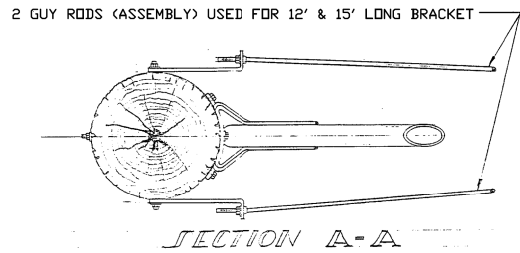


$$\frac{102}{135}$$





\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Lighting\Sheets\05792\_LD001.dgn Sheet 12/23/2019 9:54:16 AM srifle

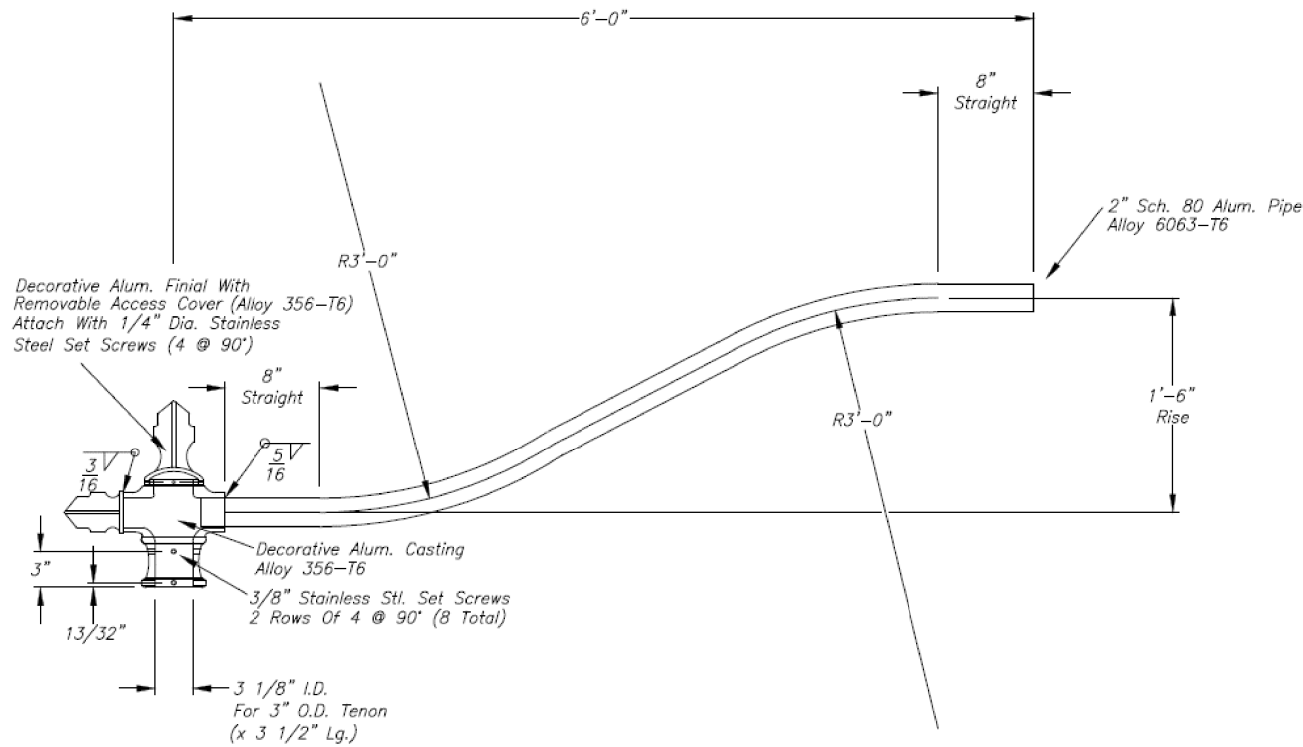


EACH ASSEMBLY SHALL INCLUDE ALL NECESSARY NUT AND WASHERS. BRACKET TO ACCOMMODATE STANDARD 2" SLIPFITTER LUMINAIRE.

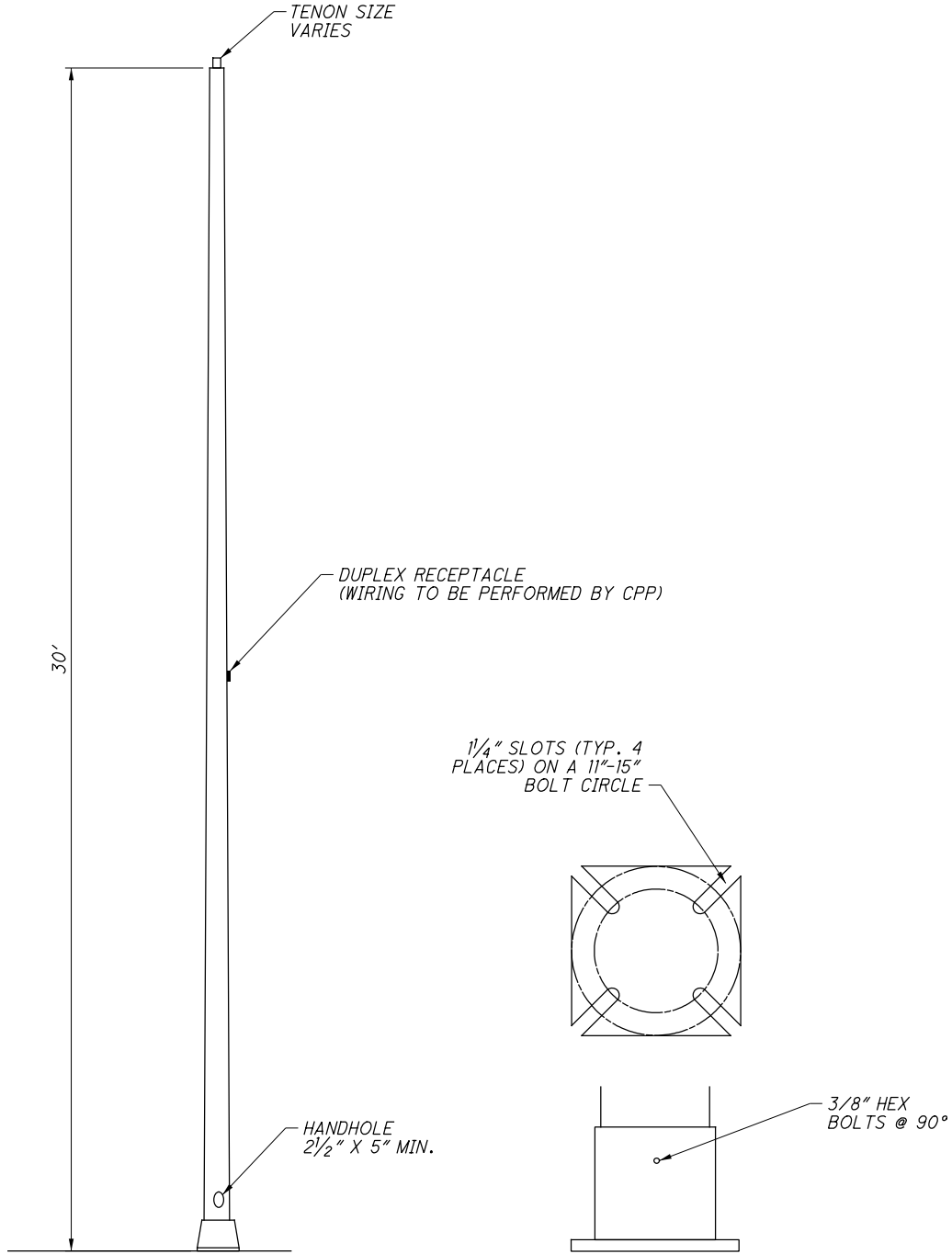
BRACKET DESIGN INFORMATION	
ARM LENGTH	RISE
6'	22"
8'	28 1/4"
12'	42 1/4"
12'	60"
15'	60"

NOTE: RISE DIMENSION IS FROM TOP OF POLE PLATE TO CENTERLINE OF BRACKET

ITEM 625 - BRACKET ARM, (BY LENGTH), AS PER PLAN



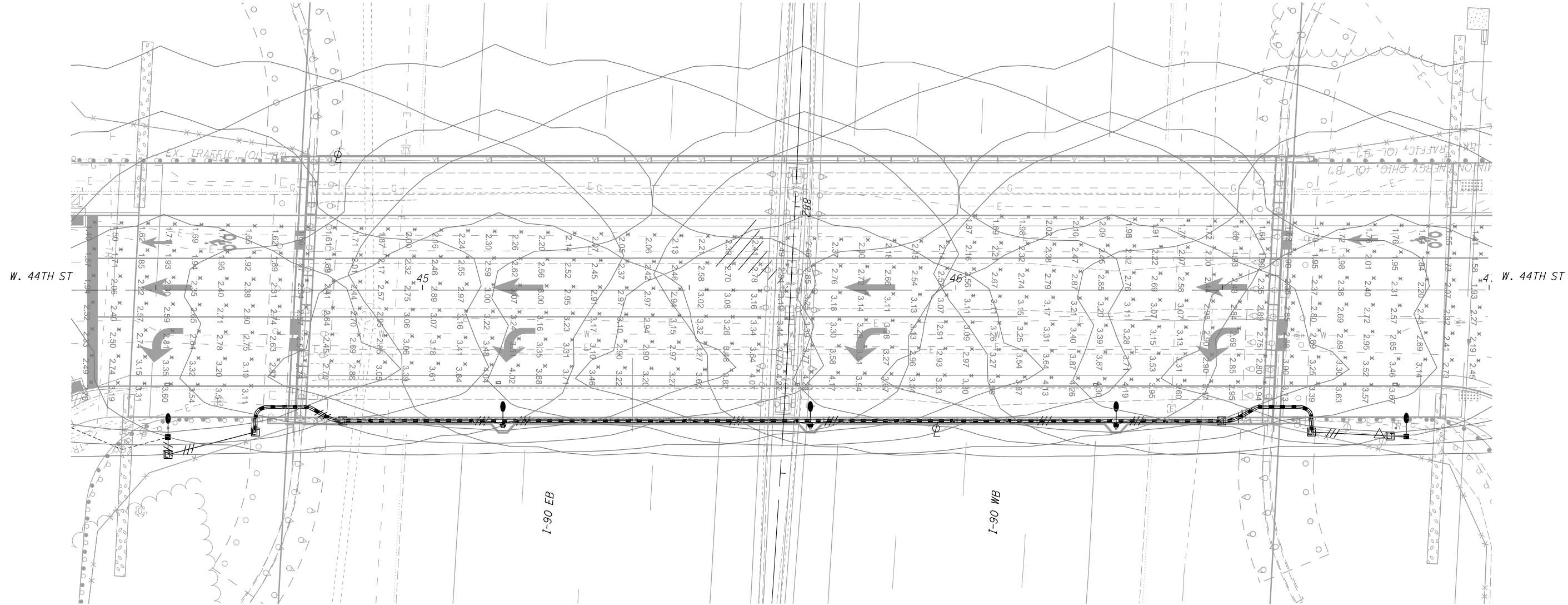
ITEM 625 - LIGHT POLE, MISC.: ROUND TAPERED FIBERGLASS DECORATIVE POLE



STATISTICS									
DESCRIPTION	ROADWAY CLASSIFICATION	AREA CLASSIFICATION	CPP FOOTCANDLE STANDARD (AVG.)	CPP FOOTCANDLE STANDARD (MIN.)	AVERAGE	MAX.	MIN.	MAX./MIN.	AVG./MIN.
W. 44TH STREET	COLLECTOR	INTERMEDIATE/COMMERCIAL	2.7fc - 3.6fc	0.9fc - 1.2fc	2.8fc	4.3fc	1.4fc	3.1:1	2.0:1

LUMINAIRE SCHEDULE						
CATALOG NUMBER	DESCRIPTION	LAMP	FILE	LUMENS	LLF	WATTS
ERLH_13C340-----	EVOLVE LED ROADWAY STREETLIGHT - ERLH	LED	ERLH_13C340-----.IES	13,000	0.86	111

NOTE:  
MOUNTING HEIGHT = 30'





\* - CRUSHED AGGREGATE SLOPE PROTECTION



1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
2. EXISTING SIGNAGE ON BRIDGE TO BE REMOVED.
3. FOR BENCHMARK INFORMATION, SEE PROJECT CONTROL TABLE, SHEET 7/116.
4. SOME TRAFFIC CHANNELIZING LINES NOT SHOWN FOR CLARITY.

2020 ADT = 9,200      2020 ADTT = 651  
2040 ADT = 11,600      2040 ADTT = 820

<i>DIMENSION</i>	<i>LOCATION</i>	<i>EXISTING</i>	<i>PROPOSED</i>	<i>REQUIRED</i>
<i>A</i>	<i>EASTBOUND I-90</i>	<i>15.92'±</i>	<i>17.73'</i>	<i>15.50'</i>
<i>B</i>	<i>WESTBOUND I-90</i>	<i>14.69'±</i>	<i>15.62'</i>	<i>15.50'</i>

<i>DIMENSION</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
<i>EXISTING/PROPOSED</i>	30.72'±	32.08'±	8.93'±	9.69'±
<i>REQUIRED</i>	30.00'	30.00'	4.00'	4.00'

REMOVE DECK, GIRDERS, BACKWALLS, FENCE, SIGNS, EXPANSION JOINTS, APPROACH SLABS AND BRIDGE LIGHTING. PERFORM PATCHING ON BREASTWALLS AND PIER. RAISE GIRDER SEATS. INSTALL NEW GIRDERS, UTILITIES, BACKWALLS, DECK, APPROACH SLABS, FENCING AND LIGHTING.

SPANS: 90'-9"±, 90'-9"± C/C BRGS.  
ROADWAY: 36'-0"± F/F CURBS WITH 6'-0"± SIDEWALKS  
LOADING: HS20-44  
SKEW: 3°-01'-27"± L.F.  
APPROACH SLABS: 30'-0"± LONG (AS-I-67)  
ALIGNMENT: TANGENT  
CROWN:  $\frac{3}{16}$ "± PER FOOT  
STRUCTURAL FILE NUMBER: 1807811  
DATE BUILT: 1975  
DISPOSITION: TO BE REHABILITATED

SPANS: 90'-9", 90'-9" C/C BRGS.  
ROADWAY: 32'-0" F/F CURBS W/9'-10½" SIDEWALK LT.,  
5'-10½" SIDEWALK RT.  
LOADING: HL-93 0.06 KSF FUTURE WEARING SURFACE  
SKEW: 3°-01'-27" L.F.  
APPROACH SLABS: 30'-0" LONG (AS-1-15)  
ALIGNMENT: TANGENT  
CROWN: 0.016 FT/FT  
DECK AREA: 9234 SQ. FT.  
COORDINATES: LATITUDE N 41°-28'-29.77"  
LONGITUDE W 81°-42'-59.30"

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\Sheets\090\_1345C\_SN001.dgn Sheet 4/10/2020 12:33:10 PM lwebster

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD DRAWINGS:

A-1-69	REVISED	07-19-02
AS-1-15	REVISED	07-17-15
AS-2-15	REVISED	01-18-19
BR-2-15	REVISED	07-17-15
EXJ-4-87	REVISED	01-19-18
GSD-1-19	REVISED	01-18-19
HL-20.14	REVISED	01-18-19
HL-30.31	REVISED	01-17-14
VPF-1-90	REVISED	07-20-18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

SS 800-2019	DATED	07-17-20
SS 844	DATED	04-20-18

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017, 8TH EDITION AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

LRFD LOAD MODIFIERS

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2019.

DESIGN LOADING

DESIGN LOADING: HL93  
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ. FT.

DESIGN STRESSES

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL  
2 1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.04.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 202, PORTIONS OF STRUCTURE REMOVED  
OVER 20 FOOT SPAN, AS PER PLAN DESCRIPTION

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

CUT LINE CONSTRUCTION JOINT PREPARATION

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

DECK PLACEMENT DESIGN ASSUMPTIONS

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.37 KIPS.

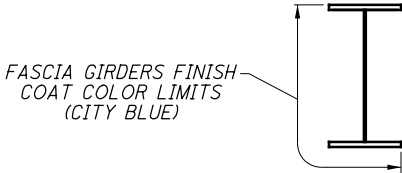
A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

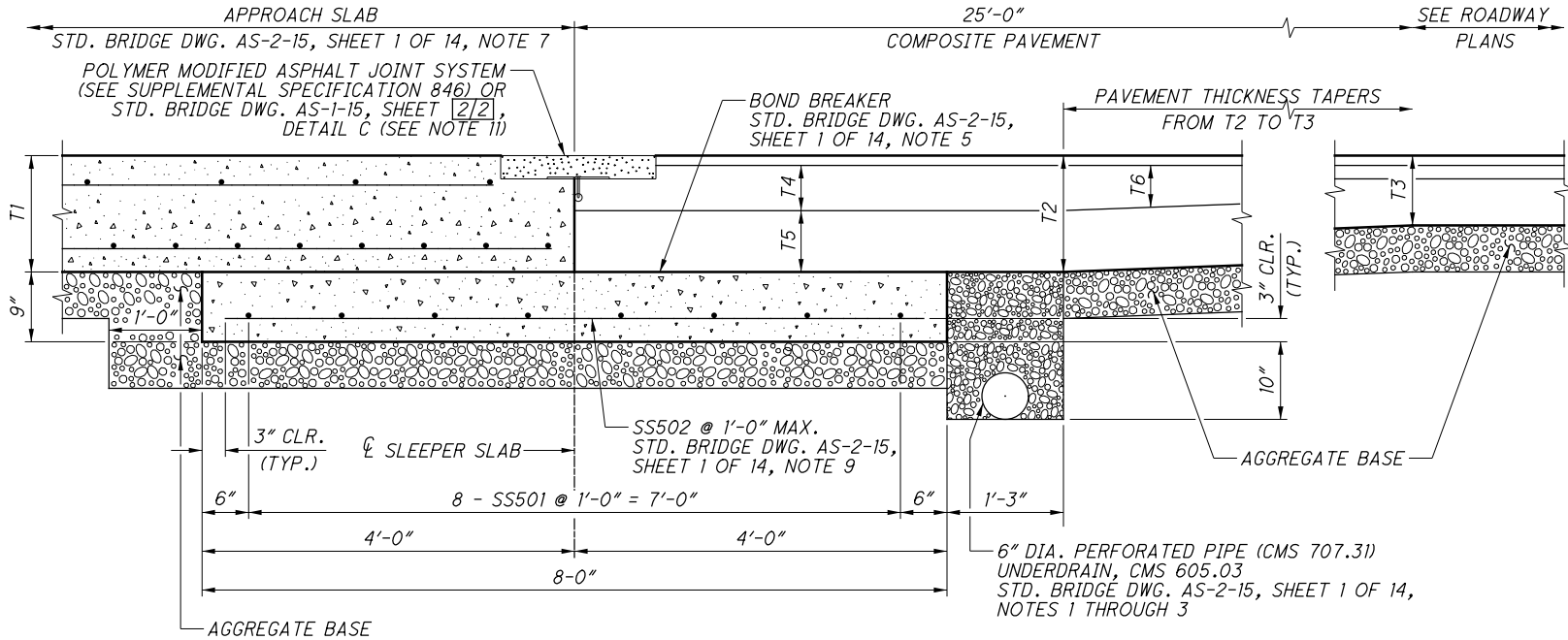
ITEM 514 - FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

THE FINISH COAT COLOR OF THE EXTERIOR OF THE TWO FASCIA GIRDERS SHALL BE FEDERAL COLOR NUMBER 595B-15056 (CITY BLUE) PER THE DETAIL BELOW. THE FINISH COAT COLOR OF THE INSIDE OF THE TWO FASCIA GIRDERS, THE INTERIOR GIRDERS, AND THE CROSSFRAMES SHALL BE FEDERAL COLOR NUMBER 595B-15450 (BLUE). THE BEARING STEEL LOAD PLATES SHALL BE PAINTED IN ACCORDANCE WITH ITEM 514 WITH FINISH COAT TO MATCH THE INTERIOR GIRDERS.



ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.



SECTION A-A

SEE STD. BRIDGE DWG. AS-2-15, FOR ADDITIONAL NOTES AND DETAILS.

SUBSTRUCTURE CONCRETE REMOVAL

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ITEM 512, SEALING OF CONCRETE SURFACES

SEAL THE CONCRETE SURFACES AS DETAILED ON THE PLAN SHEETS. THE COLOR OF THE NON-EPOXY SHALL BE CLEAR. THE FINISH COLOR OF THE EPOXY-URETHANE SHALL BE FEDERAL COLOR NUMBER 595B-37722 (ODOT BUFF), EXCEPT THE AREA THAT IS FORMLINED SHALL HAVE THE FINISH COLOR MATCHING FEDERAL COLOR NUMBER 595B-26521 (TAN, SEMIGLOSS).

ITEM 526, REINFORCED CONCRETE APPROACH SLABS  
(T=17"), AS PER PLAN

THE APPROACH SLAB SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ODOT CMS ITEM 526 AND AS DETAILED IN THE PLANS. PAYMENT FOR THIS ITEM WILL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND ANY INCIDENTALS REQUIRED TO PERFORM THIS WORK. PAYMENT WILL BE MADE AT THE UNIT BID PRICE PER SQUARE YARD FOR ITEM 526, REINFORCED CONCRETE APPROACH SLABS.

FOR THE PAVEMENT THICKNESS TAPER, VARY THE THICKNESS OF THE ITEM 441 LAYER (ASPHALT CONCRETE INTERMEDIATE COURSE) AND KEEP A CONSTANT 9" THICKNESS OF THE ITEM 305 LAYER (CONCRETE BASE) AS SHOWN IN THE DETAIL BELOW. SEE STD. BRIDGE DWG. AS-2-15, FOR ADDITIONAL NOTES AND DETAILS.

GENERAL NOTES (1 OF 2)

BRIDGE NO. CUY-090-1345  
WEST 44TH STREET OVER I-90

CUY-090-13.45

PID No. 105792

2 / 30

107  
135

DESIGN AGENCY  
**ms consultants, inc.**  
4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206  
ims

REVIEWED	DATE
JDH	7/17/2019
DRAWN	FILE NUMBER
JSP	1807811

CHECKED	REVIS
LAW	SUR



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_Sheets\090\_1345C.dgn Sheet 4/29/2020 10:56:31PM jhren

ITEM SPECIAL - FORM LINER:

THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL MATERIALS AND THE NECESSARY LABOR TO PROVIDE A REUSABLE ARCHITECTURAL TREATMENT ON THE INSIDE FACE OF BRIDGE AND APPROACH SLAB PARAPET RAILINGS.

ALL WORK SHALL CONFORM TO THE APPLICABLE PROVISIONS OF ITEM 511 EXCEPT AS MODIFIED AND ADDED HEREIN.

ARCHITECTURAL TREATMENT OF CONCRETE PARAPETS SHALL BE AS FOLLOWS:

GENERAL: THE WORK SHALL INCLUDE:

- CONSTRUCTION OF TEXTURED CONCRETE SURFACES USING FORM LINERS DESIGNED TO DUPLICATE CLOSELY THE APPEARANCE OF NATURAL STONE.
- DESIGN AND PATTERN OF THE CONCRETE SURFACES SHALL FOLLOW THE MANUFACTURER'S STANDARD DRAWING SELECTED.
- PATTERN SHALL BE: CUSTOM ROCK #1203, NEW ENGLAND DRYSTACK; GREENSTREAK #330, ASHLAR STONE; ARCHITECTURAL POLYMERS #911, LARGE STONE DRYSTACK; OR APPROVED EQUAL.
- SHOP DRAWINGS: PLAN, ELEVATION, AND DETAILS TO SHOW OVERALL PATTERN, JOINT LOCATIONS, FORM TIE LOCATIONS, AND END, EDGE AND OTHER SPECIAL CONSIDERATIONS.
- SAMPLES: FORM TIES, SAMPLE AND DESCRIPTION, SHOWING METHOD OF SEPARATION WHEN FORMS ARE REMOVED.
- MANUFACTURER OF FORM LINERS MUST HAVE A MINIMUM FIVE YEARS EXPERIENCE MAKING CUSTOM FORM LINERS AND COLOR STAINS TO CREATE FORMED CONCRETE SURFACES TO MATCH NATURAL STONE SHAPES AND SURFACE TEXTURES.
- PRE-INSTALLATION MEETING: SCHEDULE CONFERENCE WITH MANUFACTURER'S REPRESENTATIVE TO ASSURE UNDERSTANDING OF FORM LINER USE, REQUIREMENTS FOR CONSTRUCTION OF MOCK-UP, AND TO COORDINATE THE WORK.

PRODUCTS:

- FORM LINERS AS MANUFACTURED BY:

CUSTOM ROCK FORMLINER  
2020 WEST 7TH STREET  
ST. PAUL, MN 55116  
(615) 699-1345  
WWW.CUSTOMROCK.COM

ARCHITECTURAL POLYMERS  
1220 LITTLE GAP ROAD  
PALMERTON, PA 18071  
(610) 824-3322  
WWW.APFORMLINER.COM

GREENSTREAK  
3400 TREE COURT INDUSTRIAL BLVD.  
ST. LOUIS, MO 63122-6614  
(636) 225-9400  
WWW.GREENSTREAK.COM
- RELEASE AGENT: COMPATIBLE WITH FORM LINER. CONSULT MANUFACTURER.
- FORM TIES: DESIGNED TO SEPARATE AT LEAST 1 INCH BACK FROM FINISHED SURFACE, LEAVING ONLY A NEAT HOLE THAT CAN BE PLUGGED WITH PATCHING MATERIAL.

EXECUTION:

- FORMED CONCRETE CONSTRUCTION: INSTALLER SHALL HAVE A MINIMUM FIVE YEARS OF EXPERIENCE WITH VERTICALLY FORMED ARCHITECTURAL CONCRETE. INSTALLER SHALL BE TRAINED IN MANUFACTURER'S SPECIAL TECHNIQUES IN ORDER TO ACHIEVE REALISTIC SURFACES.
- FORM LINER PREPARATION: CLEAN AND MAKE FREE OF BUILDUP PRIOR TO EACH POUR. INSPECT FOR BLEMISHES OR TEARS. REPAIR IF NEEDED FOLLOWING MANUFACTURER'S RECOMMENDATIONS.
- FORM LINER ATTACHMENT: PLACE ADJACENT LINERS WITH LESS THAN 1/4 INCH SEPARATION BETWEEN LINERS. ATTACH LINERS TO FORM SECURELY, FOLLOWING MANUFACTURER'S RECOMMENDATIONS.
- FORM RELEASE AGENT: APPLY FOLLOWING MANUFACTURER'S RECOMMENDATIONS.
- FORM STRIPPING AND RELATED CONSTRUCTION SHALL AVOID CREATING DEFECTS IN THE FINISHED SURFACES.
- WHERE FORM LINERS ABUT, CAREFULLY BLEND TO MATCH THE BALANCE OF THE STONE PATTERN, AVOIDING VISIBLE SEAMS OR FORM MARKS.
- PLACE FORM TIES AT THE THINNEST POINTS OF LINER (HIGHER POINTS OF FINISHED WALL). NEATLY PATCH THE HOLE REMAINING AFTER DISENGAGING THE PROTRUDING PORTION OF THE TIE SO THAT IT WILL NOT BE VISIBLE AFTER SEALING THE CONCRETE SURFACE.
- WHERE AN EXPANSION JOINT MUST OCCUR AT A POINT OTHER THAN AT MORTAR OR RUSTICATION JOINTS, SUCH AS AT THE FACE OF CONCRETE TEXTURE WHICH IS TO HAVE THE APPEARANCE OF STONE, CONSULT MANUFACTURER FOR PROPER TREATMENT OF EXPANSION MATERIAL.

BASIS OF PAYMENT: PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM SPECIAL - FORM LINER. THIS PRICE SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM AS SPECIFIED.

ITEM 690 - DOMINION ENERGY ROLLER GUIDE/SUPPORT

UNDER THIS ITEM, THE CONTRACTOR WILL PROVIDE AND INSTALL PIPE ROLLER GUIDE/SUPPORT WHERE SHOWN ON THE PLANS TO SUPPORT THE PROPOSED DOMINION ENERGY (DE) 6" DIAMETER GAS LINE. ROLLERS/SUPPORTS WILL BE SIZED TO CARRY THE PROPOSED GAS LINE. FOR PIPE SUPPORTS, ROLLERS SHALL BE DOUBLE ROLLERS USING NON-CONDUCTIVE MATERIAL. THESE ROLLERS WILL BE FULLY FIELD-ADJUSTABLE AND BE PROVIDED WITH ALL REQUIRED HARDWARE AND FASTENERS FOR A COMPLETE OPERABLE SYSTEM. DOMINION ENERGY WILL SUPPLY AND INSTALL THE GAS MAIN. BEFORE ORDERING THE CONTRACTOR SHALL GET APPROVAL FROM DOMINION ENERGY. THE CONTRACTOR SHALL COORDINATE WITH DOMINION ENERGY TO SCHEDULE THE WORK. NO ADDITIONAL PAYMENT WILL BE MADE FOR ANY SCHEDULE DELAYS WHEN COORDINATING THIS WORK WITH DOMINION ENERGY.

PAYMENT WILL BE MADE AT THE PRICE PER EACH PER ITEM 690 - DOMINION ENERGY ROLLER GUIDE/SUPPORT.

ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN

THE ANCHORS SHALL BE CAST IN PLACE. ALL FENCE FABRIC SHALL BE BLACK VINYL COATED AND ALL RAILS, POSTS, PLATES AND ADDITIONAL VISUAL HARDWARE SHALL BE PAINTED WITH BLACK EPOXY-URETHANE SHOP APPLIED. ALL TIE WIRES AND CAULK SHALL BE BLACK.

PAYMENT SHALL BE AT THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 607 - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

ABBREVIATIONS

- ABUT.

APPR.

APPROX.

BOT.

BRG.

C/C

CEI

C.J.

COL.

CONST.

C.P.P.

CPP

CWD

DIA.

E.F.

EL. - ELEV.

EQ. SPA.

E.W.

EX. - EXIST.

EXP.

F.A.

F.F.

FTG.

FWD.

H.M.W.M.

MAX.

M.O.T.

MIN.

N.F.

P.E.J.F.

R.A.

RT.

S.B.

SER.

SPA.

STA.

T & B

T.H.

TYP.

T/T

VAR.

V.C.

VERT.

U.N.O.
- ABUTMENT

- APPROACH

- APPROXIMATE

- BOTTOM

- BEARING

- CENTER TO CENTER

- CLEVELAND ELECTRIC ILLUM.

- CONSTRUCTION JOINT

- COLUMN

- CONSTRUCTION

- CORRUGATED PLASTIC PIPE

- CLEVELAND PUBLIC POWER

- CLEVELAND WATER DEPARTMENT

- DIAMETER

- EACH FACE

- ELEVATION

- EQUAL SPACE

- EACH WAY

- EXISTING

- EXPANSION

- FORWARD ABUTMENT

- FAR FACE

- FOOTING

- FORWARD

- HIGH MOLECULAR WEIGHT METHACRYLATE

- MAXIMUM

- MAINTENANCE OF TRAFFIC

- MINIMUM

- NEAR FACE

- PREFORMED EXPANSION JOINT FILLER

- REAR ABUTMENT

- RIGHT

- SOUTHBOUND

- SERIES

- SPACING

- STATION

- TOP AND BOTTOM

- TEST HOLE

- TYPICAL

- TOE TO TOE

- VARIES

- VERTICAL CURVE

- VERTICAL

- UNLESS NOTED OTHERWISE

CEI FIRST ENERGY COORDINATION

THE CONTRACTOR SHALL COORDINATE DE-ENERGIZING OF THE EXISTING CEI ELECTRIC CABLE(S) WHICH ARE SUPPORTED BY THE EXISTING BRIDGE GIRDERS AND WHICH EXTEND UNDERGROUND UNDER SOUTH MARGINAL AND NORTH MARGINAL ROADS. CEI WILL INSTALL TWO (2) NEW 5" DIA. DUCTS IN THE BRIDGE SIDEWALK AND APPROACH ROADWAYS, AND WILL ALSO INSTALL NEW CABLE(S) IN THE NEW CONDUITS. THE CONTRACTOR SHALL COORDINATE WITH CEI TO PROVIDE ACCESS AND TO SCHEDULE THEIR WORK.

THE EXISTING CEI CONDUITS WILL BE REMOVED BEFORE THE CPP DUCT BANK IS RELOCATED.

THE WORK FOR THIS ITEM SHALL BE INCIDENTAL TO THE PROJECT AND NO SEPARATE PAYMENT SHALL BE MADE.

ITEM 844 - CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION, AS PER PLAN

THE CONCRETE PATCHING DEPTH SHALL BE 7". THE REINFORCING STEEL WITHIN THE PATCH IS INCLUDED WITH ITEM 509 EPOXY COATED REINFORCING STEEL FOR PAYMENT. ANODES SHALL BE SPACED AT 30 INCHES ON CENTERS EACH WAY.

ASBESTOS NOTIFICATION

A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST SURVEYED THE BRIDGE STRUCTURE SCHEDULED FOR DEMOLITION AND/OR REHABILITATION; THE SURVEY DETERMINED THAT 6415 SQUARE FEET OF ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

ODOT SHALL PROVIDE A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO ONE OF THE ADDRESSES BELOW AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION.

ASBESTOS PROGRAM  
OHIO EPA, DAPC  
P.O. BOX 1049  
COLUMBUS, OH 43216-1049

OR

ASBESTOS PROGRAM  
OHIO EPA, DAPC  
50 W. TOWN ST., SUITE 700  
COLUMBUS, OH 43215

THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION. THE FORM SHALL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. COPIES OF THE OEPA FORM AND BRIDGE INSPECTION REPORT ARE AVAILABLE FOR REVIEW AT THE ODOT DISTRICT 12 OFFICE, 5500 TRANSPORTATION BOULEVARD, GARFIELD HEIGHTS, OHIO 44125.

BASIS FOR PAYMENT: THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM, AND REMOVAL, HANDLING AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 511, THE CONTRACTOR MAY INSTALL GALVANIZED STEEL STAY-IN-PLACE DECK FORMS (SIP FORMS) BETWEEN GIRDER 4 AND GIRDER 5 IF THE FOLLOWING REQUIREMENTS ARE MET:

- SIP FORMS SHALL NOT BE INSTALLED WITHIN APPROXIMATELY 8 FEET OF THE EXPANSION JOINTS.

- THE SIP FORMS AND THEIR SUPPORT SYSTEM SHALL HAVE A MINIMUM MATERIAL THICKNESS AS FOLLOWS: SIP FORMS (20 GAGE), SUPPORT ANGLES (12 GAGE), AND SUPPORT BARS (12 GAGE).

- THE SIP FORMS AND THEIR SUPPORT SYSTEM SHALL BE HOT-DIPPED GALVANIZED PER ASTM A653 WITH A COATING DESIGNATION OF G235.

- THE SIP FORMS AND THEIR SUPPORT SYSTEM SHALL NOT BE CUT OR PERFORATED AFTER THEY HAVE BEEN HOT-DIP GALVANIZED, EXCEPT TO INSTALL SELF-DRILLING FASTENERS.

- THE SELF-DRILLING FASTENERS SHALL BE CADMIUM PLATED PER ASTM B766 AND HAVE A MINIMUM PLATING THICKNESS OF 5, TEN THOUSANDTHS OF AN INCH (0.0005 INCH).

- THE FLUTES OF THE SIP FORMS SHALL BE COMPLETELY FILLED WITH CONCRETE.

- THE WEIGHT OF THE SIP FORMS PLUS THE WEIGHT OF THE CONCRETE WITHIN THE SIP FORM FLUTES SHALL NOT EXCEED 18 PSF.

- THE SIP FORMS SHALL MEET THE DEFLECTION REQUIREMENTS OF CMS 508.

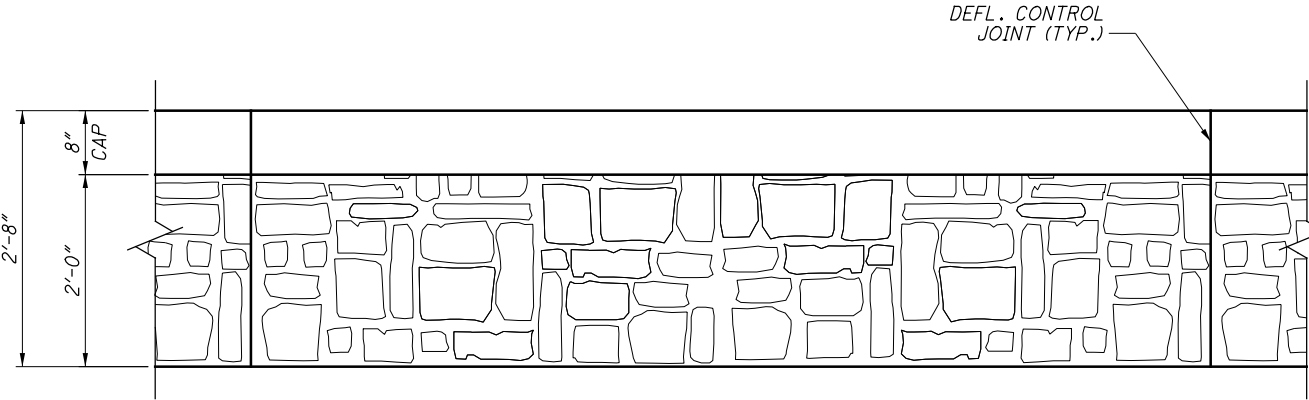
- THE SIP FORMS SHALL BE PLACED ON FORM SUPPORTS. THE SIP FORMS SHALL NOT BE INSTALLED DIRECTLY ON THE BRIDGE'S STRUCTURAL MEMBERS.

- THE SIP FORMS AND/OR THEIR SUPPORTS SHALL NOT BE WELDED TO STEEL BRIDGE MEMBERS.

- THE ELEVATIONS OF THE SIP FORM SUPPORTS SHALL BE SET TO ACHIEVE THE DECK THICKNESS AND SCREED ELEVATIONS, AS SPECIFIED IN THE CONSTRUCTION PLANS.

- THE SIP FORMS SHALL BE PLACED ON THE FORM SUPPORTS TO ACHIEVE THE MINIMUM BEARING LENGTH PER THE MANUFACTURE'S DESIGN.

ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS FOR THE DESIGN, FABRICATION, DELIVERY, AND INSTALLATION OF THE STAY-IN-PLACE DECK FORMS AND THEIR SUPPORT SYSTEM SHALL BE INCLUDED FOR PAYMENT WITH ITEM 511 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN. DECK HANGERS USED TO CONSTRUCT AS SPECIFIED IN THE PLANS ARE THE MEANS AND METHODS OF THE CONTRACTOR, SUBJECT TO ACCEPTANCE BY THE DEPARTMENT. GALVANIZE ALL DECK HANGERS NOT ENCASED IN CONCRETE PER 711.02.



TYPICAL FORM LINER ELEVATION  
(AS VIEWED FROM SIDEWALK)

DESIGN AGENCY

ms consultants, inc.

4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206

DATE

7/17/2019

REVIEWED

JDH

STRUCTURE FILE NUMBER

1807811

DRAWN

JSP

REVISID

JDH

DESIGNED

LAW

CHECKED

SUR

GENERAL NOTES (2 OF 2)

BRIDGE NO. CUY-090-1345

WEST 44TH STREET OVER I-90

CUY-090-13.45

PID No. 105792

3/30


108

135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_S000.dgn Sheet 4/29/2020 11:08:58 PM jhren

ESTIMATED QUANTITIES												BY:	TVB	6/24/2019
												CHECKED:	LAW	9/20/2019
ITEM	ITEM EXT.	PARTICIPATION			TOTAL	UNIT	DESCRIPTION	ABUTMENTS	PIERS	SUPERSTRUCTURE	GENERAL	SHEET REF.		
		01/BRO/BR	02/BRO/BR	03/BRO/BR										
202	11203	LS			LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	2		
202	22900	240			240	SY	APPROACH SLAB REMOVED				240			
202	23500	240			240	SY	WEARING COURSE REMOVED			240				
503	11100	LS			LS		COFFERDAMS AND EXCAVATION BRACING				LS			
509	10000	106,810			106,810	LB	EPOXY COATED REINFORCING STEEL	10,317	1,309	91,824	3,360			
510	10000	362			362	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	268	94					
511	34447	269			269	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN			269		3		
511	34450	45			45	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			45				
511	42510	12			12	CY	CLASS QC1 CONCRETE, PIER CAP		12					
511	45710	55			55	CY	CLASS QC1 CONCRETE, ABUTMENT	55						
511	51512	133			133	CY	CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK			107	26			
512	10050	462			462	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)			462				
512	10100	1,082			1,082	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	492	120	470				
512	10600	33			33	FT	CONCRETE REPAIR BY EPOXY INJECTION	33						
512	33000	11			11	SY	TYPE 2 WATERPROOFING	11						
513	10280	265,003			265,003	LB	STRUCTURAL STEEL MEMBERS, LEVEL 4			265,003				
513	20000	3,168			3,168	EACH	WELDED STUD SHEAR CONNECTORS			3,168				
514	00060	14,468			14,468	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			14,468				
514	00066	14,468			14,468	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT			14,468				
516	11210	101			101	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL			101				
516	13600	86			86	SF	1" PREFORMED EXPANSION JOINT FILLER	86						
516	44100	12			12	EACH	ELASTOMERIC BEARING (10" X 16" X 2.0488") WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE (11" X 19" X 1.5" MIN.)	12						
516	44200	6			6	EACH	ELASTOMERIC BEARING (18" X 20" X 3.1235") WITH INTERNAL LAMINATES (NEOPRENE) AND LOAD PLATE (19" X 30.5" X 1.5" MIN.)		6					
518	21200	45			45	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	45						
519	11101	537			537	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	153	384			2		
526	30011	318			318	SY	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17"), AS PER PLAN				318	2		
526	90010	96			96	FT	TYPE A INSTALLATION				96			
SPECIAL	530E13000	733			733	SF	FORMLINER			733		3		
601	20010	37			37	CY	CRUSHED AGGREGATE SLOPE PROTECTION				37			
607	39901	367			367	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, AS PER PLAN			367		3		
SPECIAL	690E98000			11	11	EACH	DOMINION ENERGY ROLLER GUIDE/SUPPORT			11		3		
844	10001	743			743	SF	CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION, AS PER PLAN	743				3		

DESIGN AGENCY

ms consultants, inc.

4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206

REVIEWED

DATE

7/17/2019

JDH

STRUCTURE FILE NUMBER

1807811

DRAWN

KRM

REVISED

SSR

DESIGNED

TVB

CHECKED

SUR

ESTIMATED QUANTITIES

BRIDGE NO. CUY-090-1345

WEST 44TH STREET OVER I-90

CUY-090-13.45

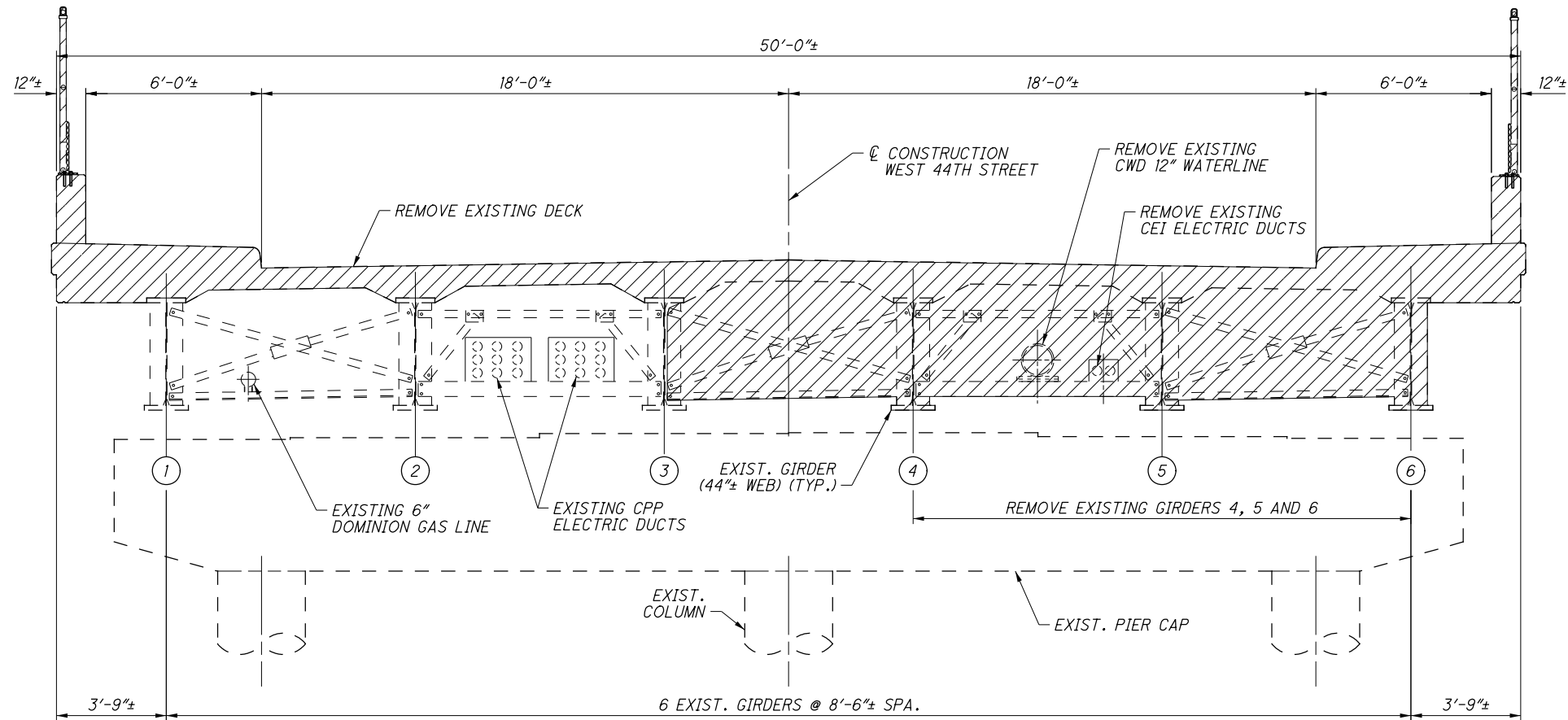
PID No. 105792

4/30

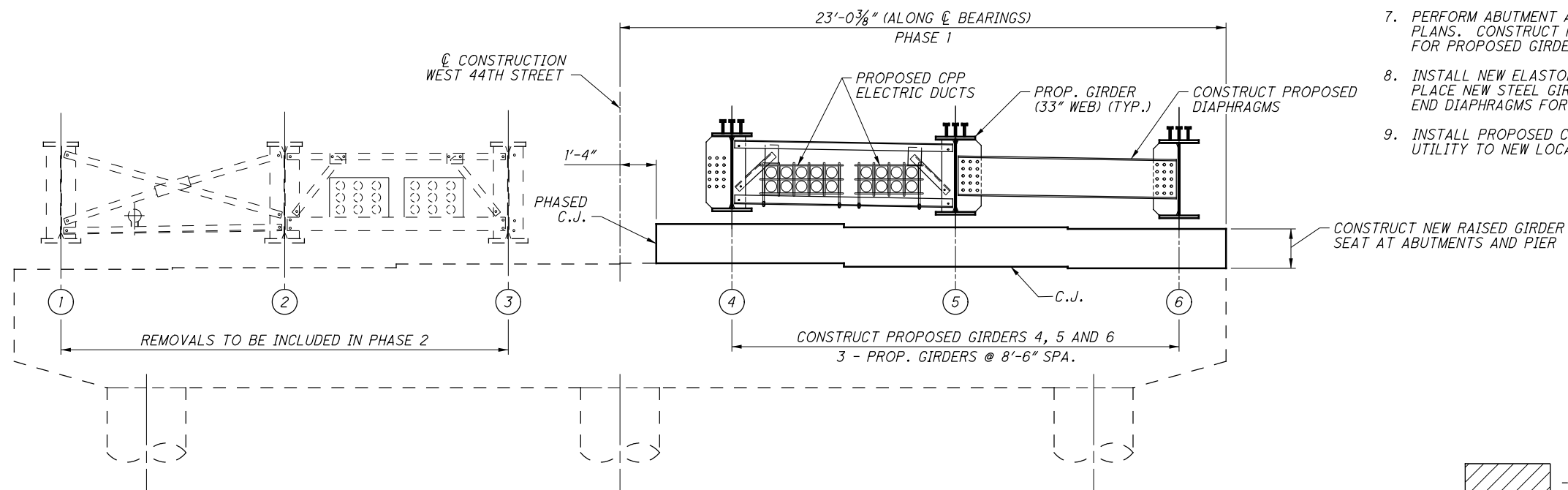
109

135

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\090\_1345C\_Sheet 12/23/2019 9:54:42 AM sr1f1e



**PHASE 1 - REMOVALS**  
(AT EXISTING PIER)



**PHASE 1 - CONSTRUCTION**  
(AT EXISTING PIER)


**PROPOSED WORK:**

PHASE 1 REMOVALS AND CONSTRUCTION

1. PLACE TRAFFIC CONTROL AND CLOSE WEST 44TH STREET TO BRIDGE TRAFFIC BETWEEN NORTH AND SOUTH MARGINAL ROAD.
2. PLACE TRAFFIC CONTROL FOR EASTBOUND AND WESTBOUND I-90.
3. INSTALL FALSEWORK TO PROTECT I-90 TRAFFIC.
4. REMOVE EXISTING APPROACH SLABS, BRIDGE DECK AND ABUTMENT BACKWALLS DOWN TO ABUTMENT SEATS.
5. DISCONNECT EXISTING 12" CWD WATERLINE AND CEI ELECTRIC DUCTS.
6. REMOVE EXISTING GIRDER LINES 4, 5 AND 6 ALONG WITH CROSSFRAMES, UTILITIES AND EXISTING BEARINGS.
7. PERFORM ABUTMENT AND PIER PATCHING AS NOTED ON THE PLANS. CONSTRUCT NEW ABUTMENT SEATS AND PIER SEATS FOR PROPOSED GIRDERS 4, 5 AND 6.
8. INSTALL NEW ELASTOMERIC BEARINGS AT ABUTMENTS AND PIER. PLACE NEW STEEL GIRDERS, INTERMEDIATE CROSSFRAMES AND END DIAPHRAGMS FOR GIRDER LINES 4, 5 AND 6.
9. INSTALL PROPOSED CPP ELECTRICAL DUCTS AND TRANSFER UTILITY TO NEW LOCATION.

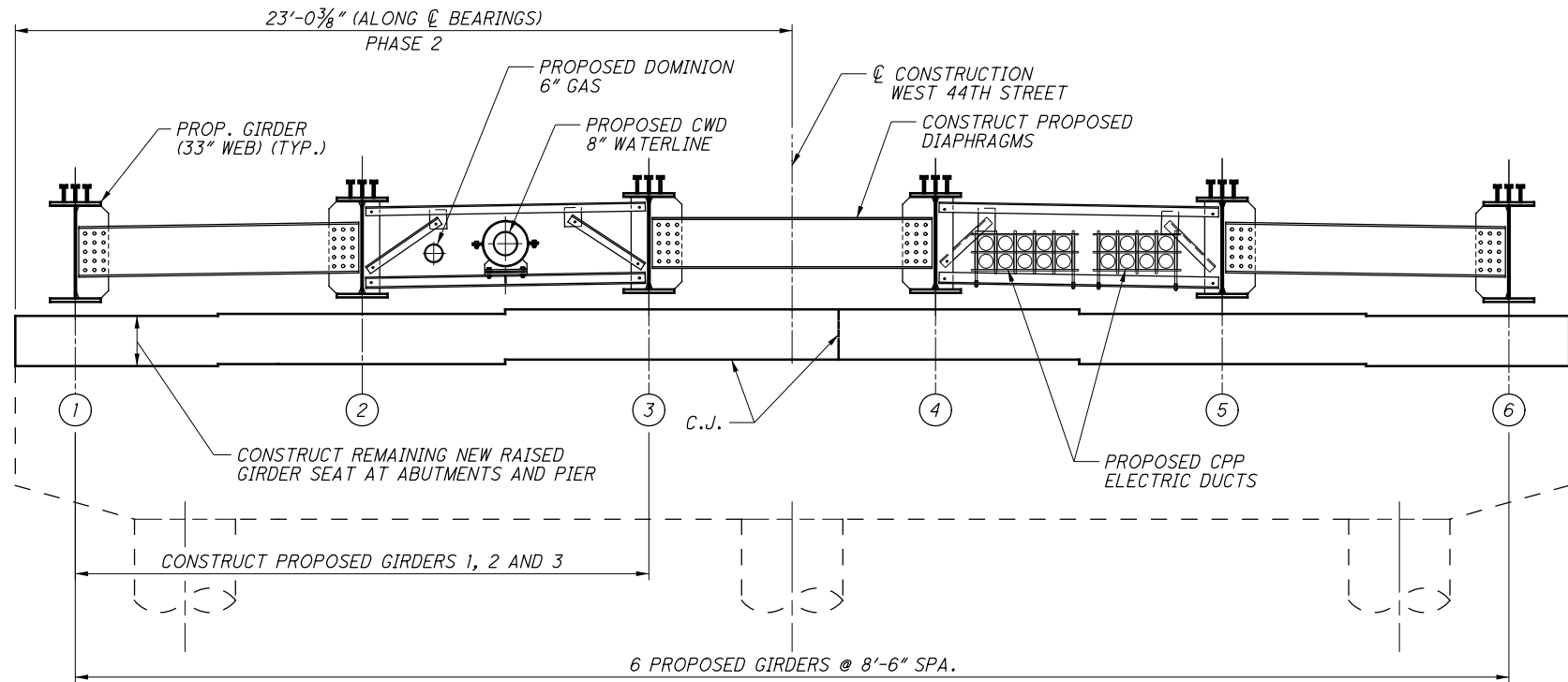
**LEGEND:**

 - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

 - INDICATES GIRDER NUMBER AND CENTERLINE OF GIRDER

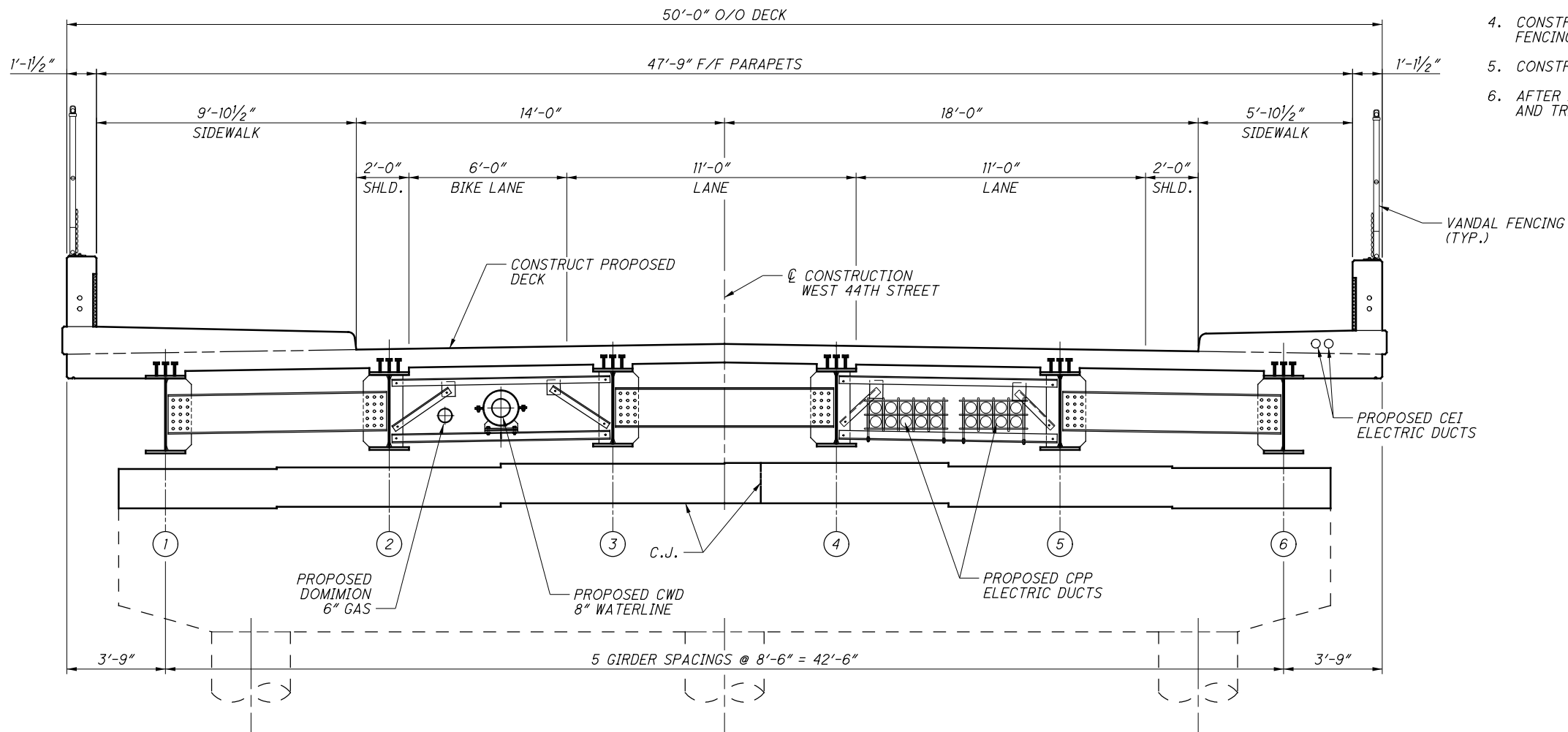


\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SC002.dgn Sheet 12/23/2019 9:54:42 AM sriffle



### PHASE 2 - CONSTRUCTION

(AT EXISTING PIER)  
(PHASE 2 REMOVALS NOT SHOWN)



### PHASE 3 - CONSTRUCTION

(AT EXISTING PIER)

### PROPOSED WORK:

#### PHASE 2 REMOVALS AND CONSTRUCTION

1. DISCONNECT EXISTING 6" DOMINION GAS LINE.
2. REMOVE REMAINING EXISTING GIRDERS, CROSSFRAMES, BEARINGS FOR GIRDER LINES 1, 2 AND 3 ALONG WITH EXISTING 6" GAS LINE AND EXISTING CPP ELECTRIC DUCTS.
3. CONSTRUCT NEW ABUTMENT SEATS AND PIER SEATS FOR PROPOSED GIRDERS 1, 2 AND 3.
4. INSTALL NEW ELASTOMERIC BEARINGS AT ABUTMENTS AND PIER. PLACE NEW STEEL GIRDERS, INTERMEDIATE CROSSFRAMES AND END DIAPHRAGMS FOR GIRDER LINES 1, 2 AND 3.
5. INSTALL PROPOSED 6" GAS LINE AND 8" WATERLINE AND TRANSFER UTILITY TO NEW LOCATION.

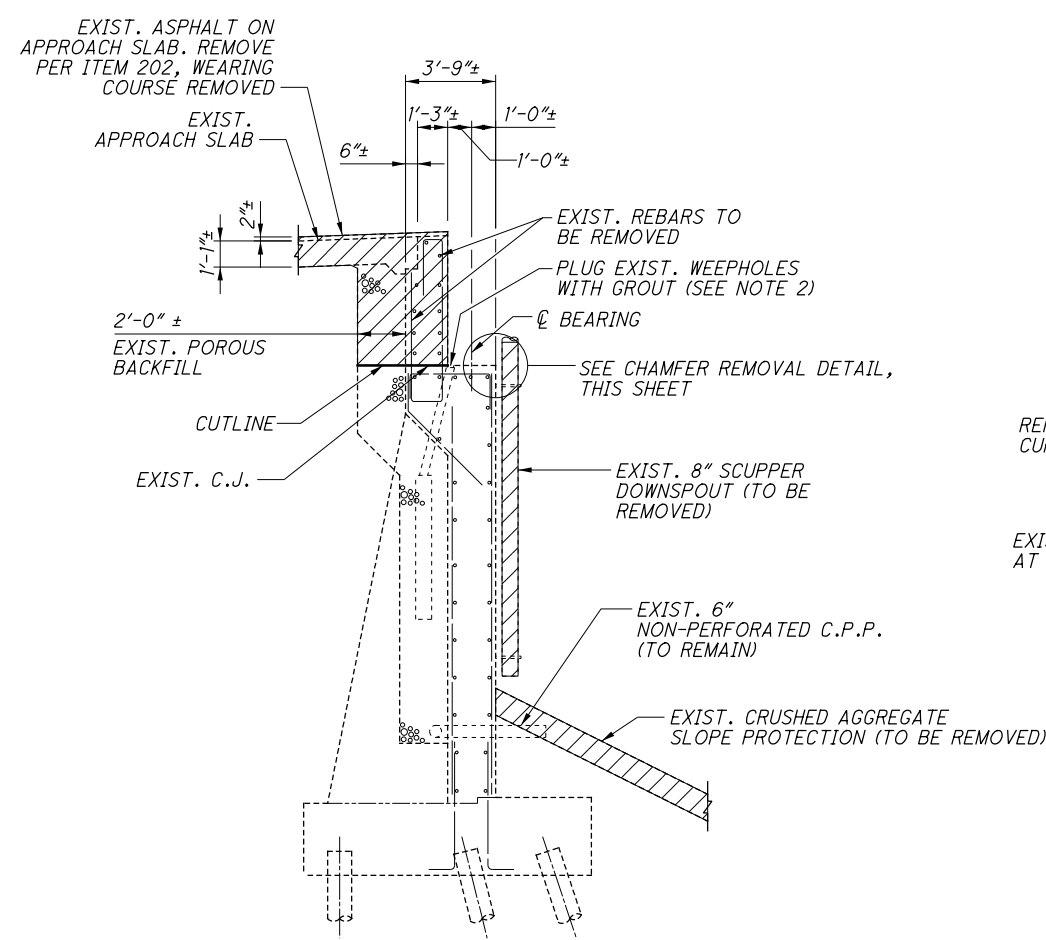
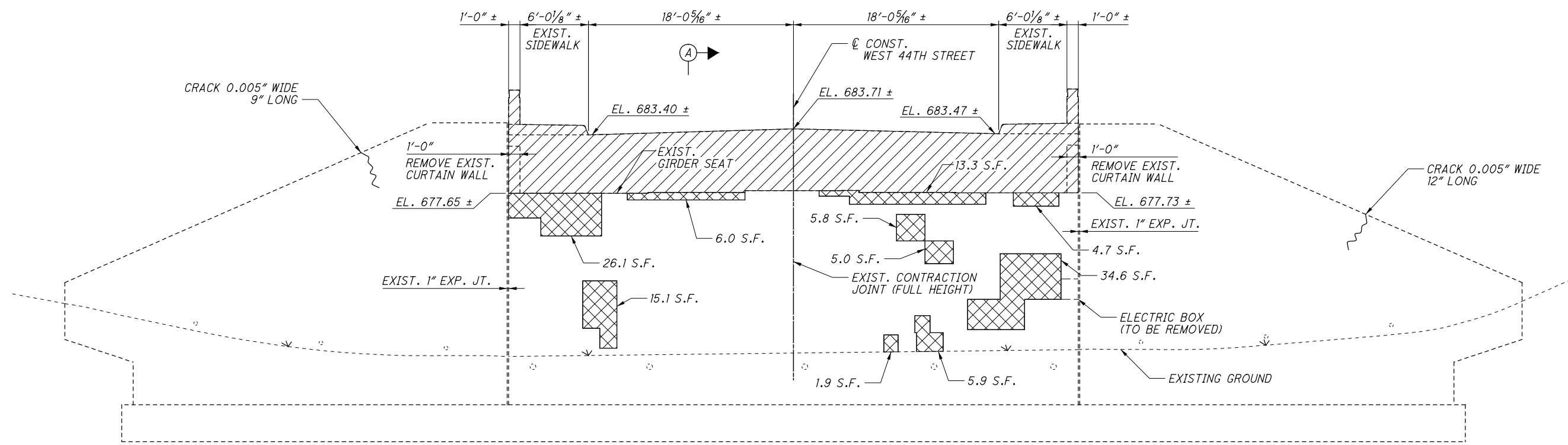
#### PHASE 3 CONSTRUCTION

1. CONSTRUCT ABUTMENT BACKWALLS UP TO APPROACH SLAB SEATS.
2. CONSTRUCT PROPOSED BRIDGE DECK.
3. INSTALL PROPOSED CEI ELECTRIC DUCTS IN RIGHT SIDE SIDEWALK AND TRANSFER UTILITY TO NEW LOCATION.
4. CONSTRUCT SIDEWALKS, PARAPETS AND VANDAL PROTECTION FENCING.
5. CONSTRUCT APPROACH SLABS.
6. AFTER ALL CONSTRUCTION IS COMPLETE, REMOVE FALSEWORK AND TRAFFIC CONTROL AND RESUME NORMAL TRAFFIC.

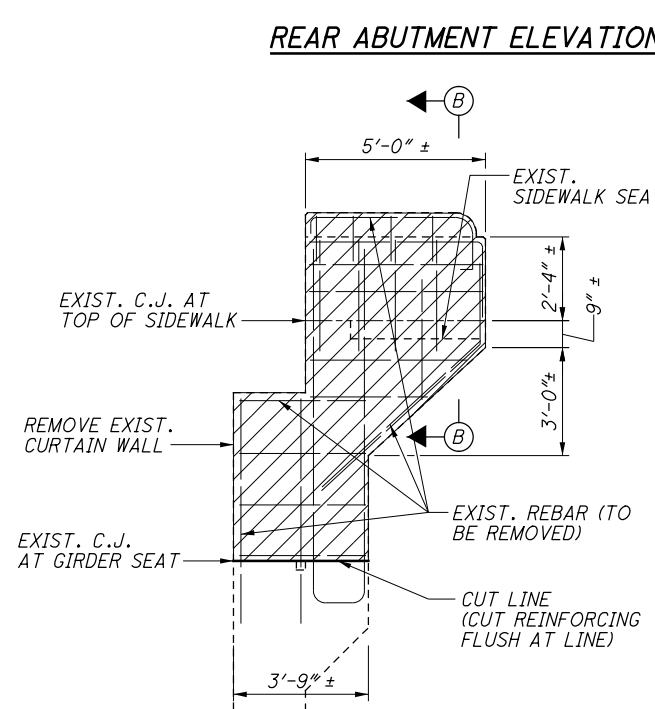
### LEGEND:

- (2) - INDICATES GIRDER NUMBER AND CENTERLINE OF GIRDER

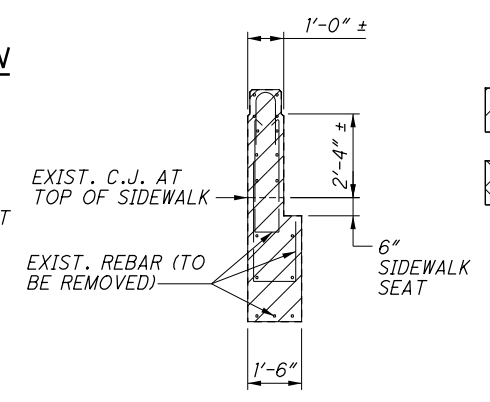
\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SV001.dgn Sheet 12/23/2019 9:54:43 AM sr1ffle



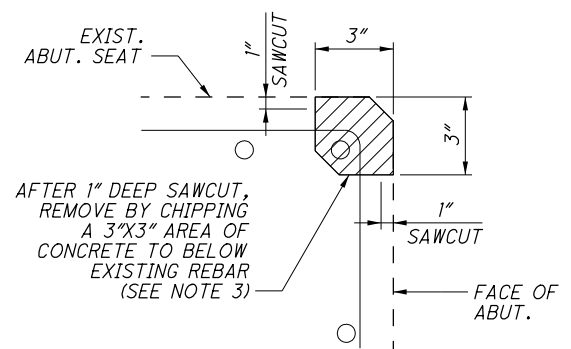
**SECTION A-A**  
**REAR ABUTMENT REMOVAL SECTION**



**TYPICAL WING AND CURTAIN WALL REMOVAL**



**SECTION B-B**



**CHAMFER REMOVAL DETAIL**

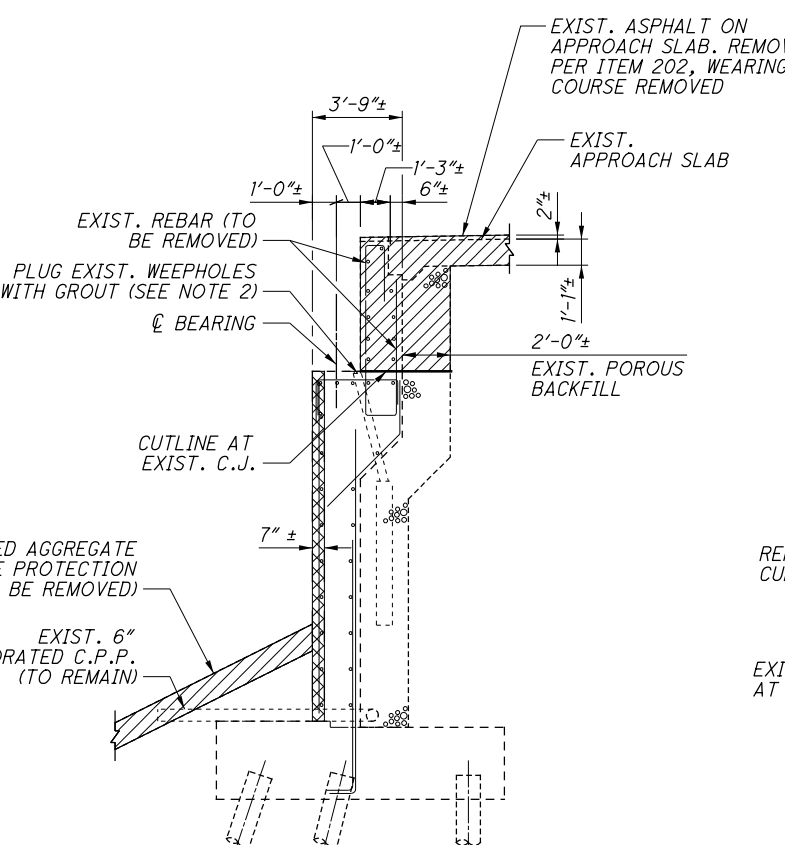
**LEGEND:**

- ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
- ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN

**NOTES:**

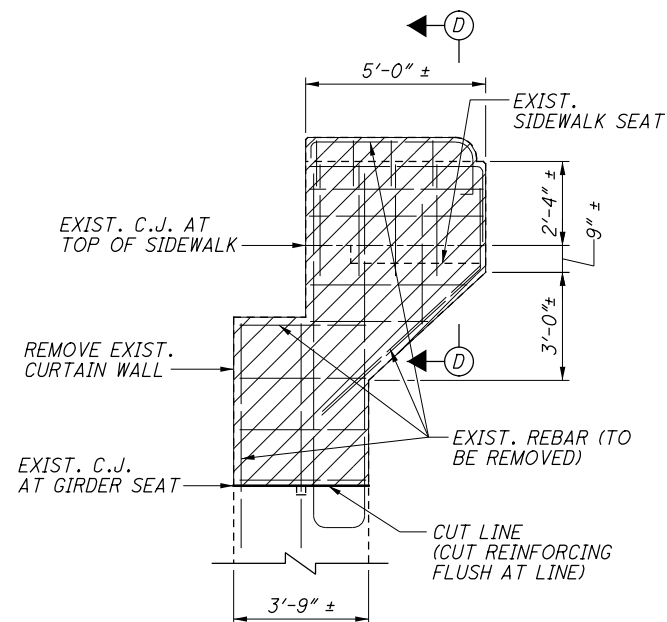
- CRACKS SHALL BE SEALED PER ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION.
- PLUGGING OF EXISTING WEEPHOLES TO BE INCLUDED WITH ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN, FOR PAYMENT.
- CONTRACTOR TO USE CARE WHEN REMOVING CONCRETE TO SALVAGE EXISTING REBAR.

ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN		
PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN AUGUST 2018.		
* ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 25% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.		
EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.		
ESTIMATED PATCHING QUANTITIES (SQ. FEET)		
LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES
REAR ABUT.	120	150 *
TOTAL	120	150 *

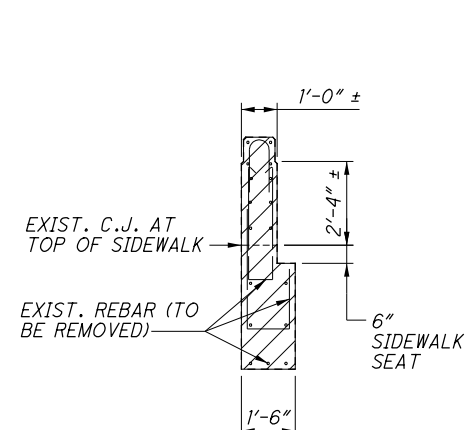


*FORWARD ABUTMENT REMOVAL SECTION*

*FORWARD ABUTMENT ELEVATION*






TYPICAL WING AND CURTAIN  
WALL REMOVAL



SECTION D-D

LEGEND:

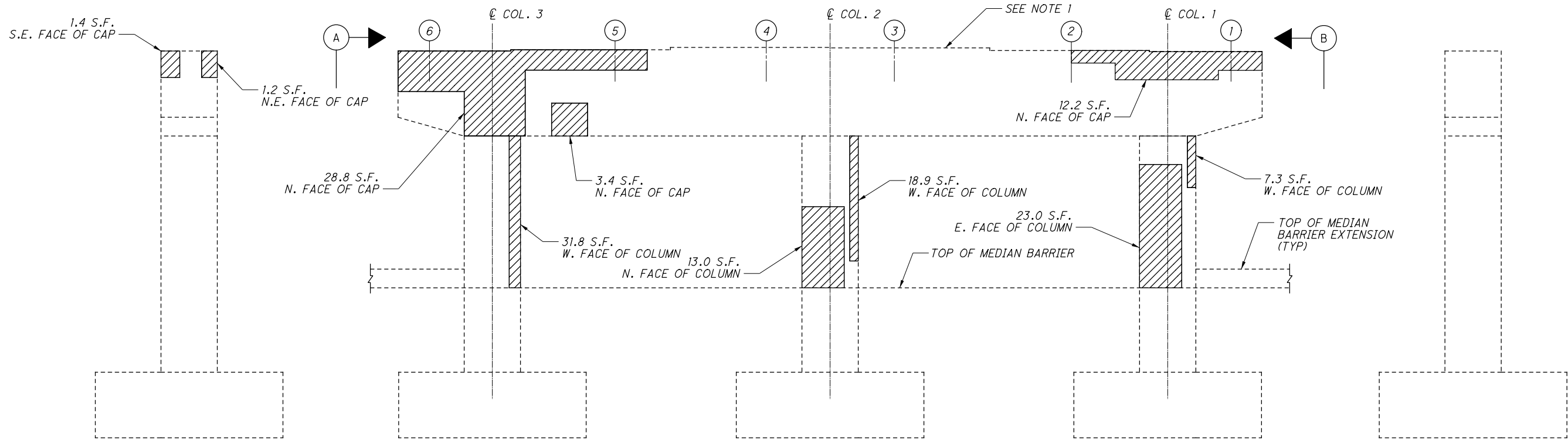
-  - ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
-  - ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN
-  - ITEM 844 - CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION

NOTES:

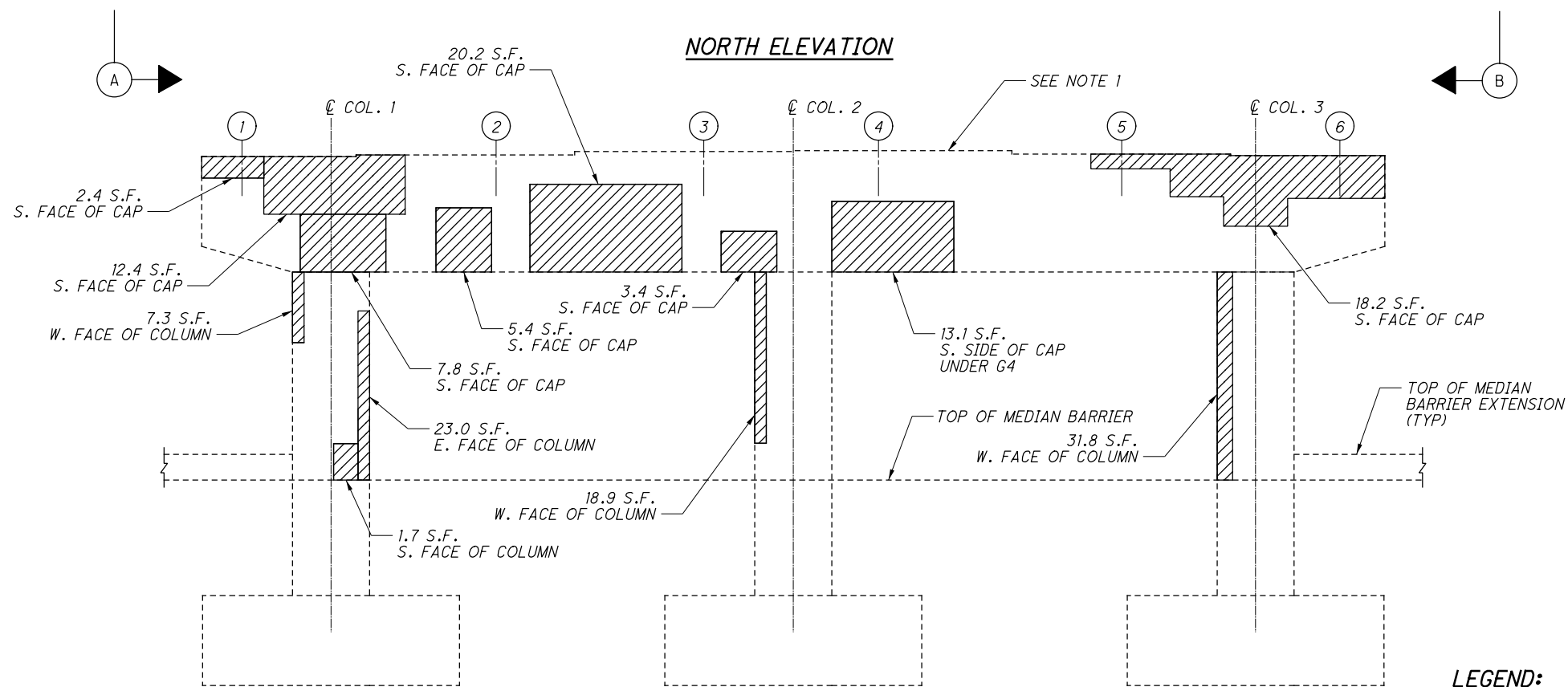
1. CRACKS SHALL BE SEALED PER ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION.
2. PLUGGING OF EXISTING WEEPHOLES TO BE INCLUDED WITH ITEM 519, PATCHING CONCRETE STRUCTURE, AS PER PLAN, FOR PAYMENT.

<p><b><u>ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN</u></b></p> <p>PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN AUGUST 2018.</p> <p>* ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 25% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.</p> <p>EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.</p>	<p><b><u>ESTIMATED PATCHING QUANTITIES</u></b></p> <p>(SQ. FEET)</p> <table><tr><th>LOCATION</th><th>MEASURED QUANTITIES</th><th>ESTIMATED QUANTITIES</th></tr><tr><td>FWD. ABUT.</td><td>2</td><td>3 *</td></tr><tr><td></td><td></td><td></td></tr><tr><td>TOTAL</td><td>2</td><td>3 *</td></tr></table>			LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES	FWD. ABUT.	2	3 *				TOTAL	2	3 *
LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES													
FWD. ABUT.	2	3 *													
TOTAL	2	3 *													

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SV003.dgn Sheet 12/23/2019 9:54:44 AM sriffle



**NORTH ELEVATION**




**SOUTH ELEVATION**

**VIEW B-B**

**VIEW A-A**

**LEGEND:**

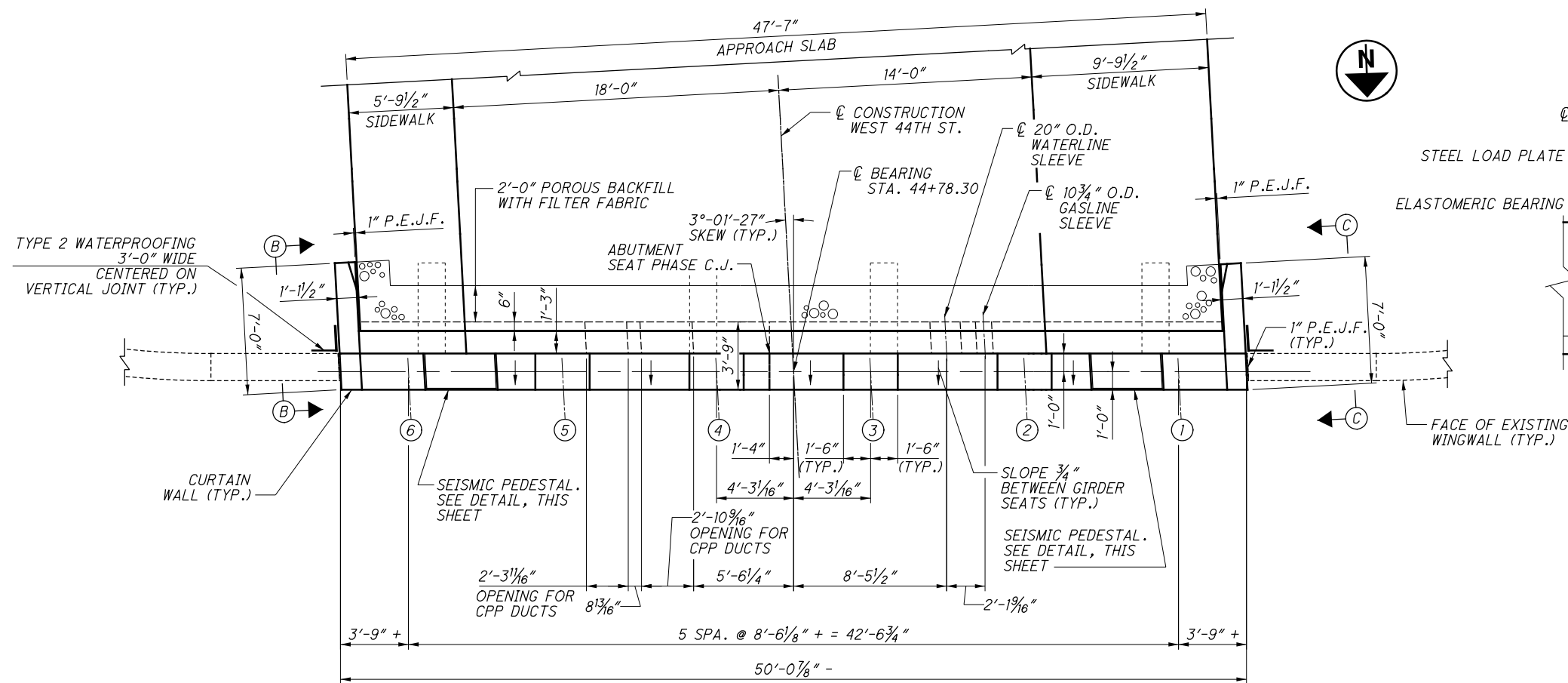
① - INDICATES GIRDER NUMBER

KEY		ITEM 519 - PATCHING CONCRETE STRUCTURE, AS PER PLAN			ESTIMATED PATCHING QUANTITIES		
		PHYSICAL INVENTORY OF MEASURED QUANTITIES OF DETERIORATION WAS PERFORMED IN AUGUST 2018.			(SQ. FEET)		
	- AREA OF SPALLING OR DELAMINATION TO BE REPAIRED PER ITEM 519	* ESTIMATED QUANTITIES HAVE BEEN INCREASED BY 25% OVER MEASURED QUANTITIES TO ALLOW FOR ADDITIONAL DETERIORATION.  EXACT DIMENSIONS AND LOCATIONS OF PATCHES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD FOR FINAL PAY QUANTITY.			LOCATION	MEASURED QUANTITIES	ESTIMATED QUANTITIES
					PIER	307	384 *
					TOTAL	307	384 *

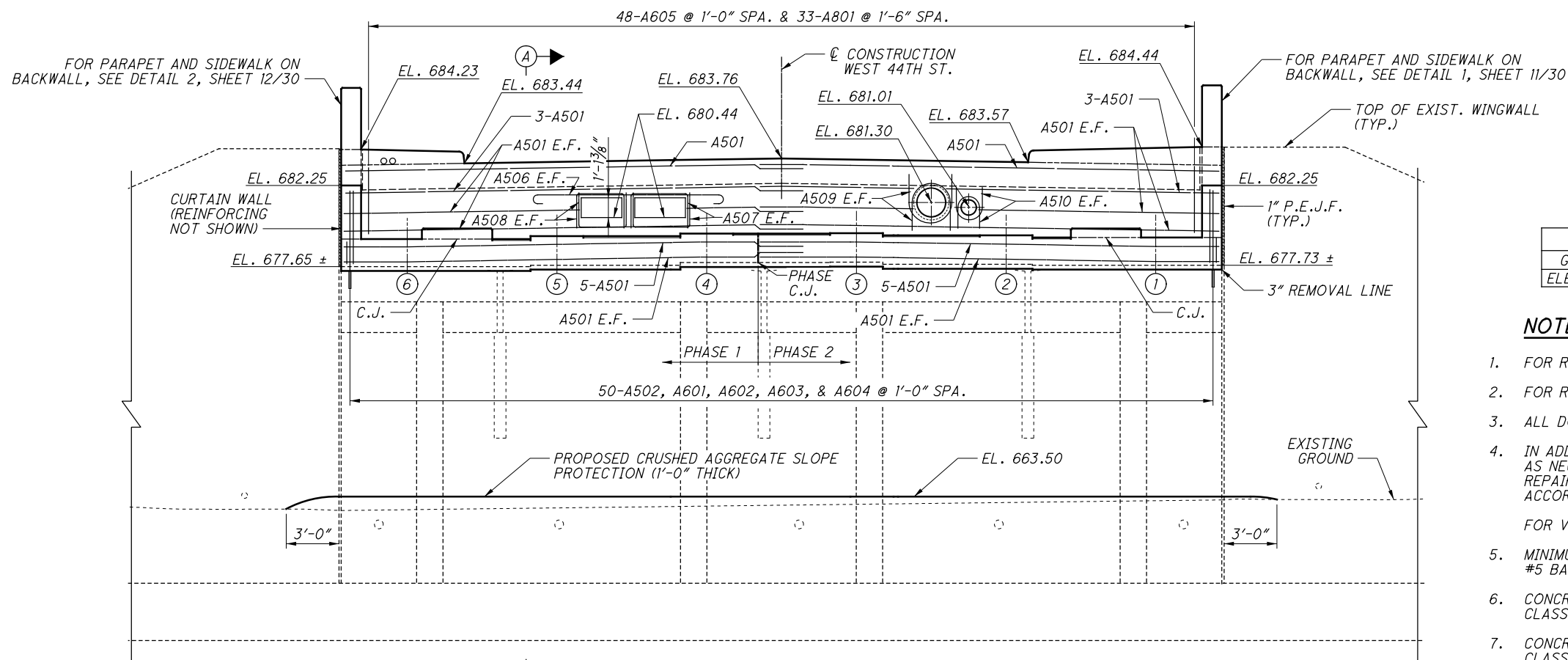
**NOTE:**

- TOP OF PIER WILL HAVE NEW CONCRETE DOWELED IN TO INCREASE SEAT ELEVATIONS. TOP OF PIER CAP SHALL HAVE LOOSE CONCRETE REMOVED AND BE SCARIFIED TO 1/4" AMPLITUDE. PAYMENT SHALL BE INCLUDED WITH ITEM 202, PORTION OF EXISTING STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

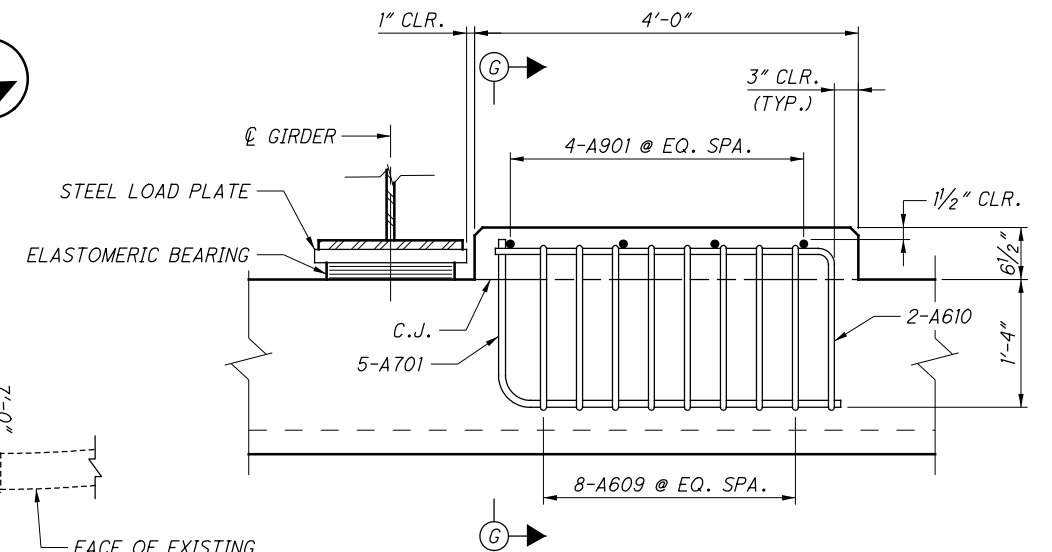
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\090\_1345C\_Sheets\090\_1345C\_SRO01.dgn Sheet 12/23/2019 9:54:45 AM sriffie



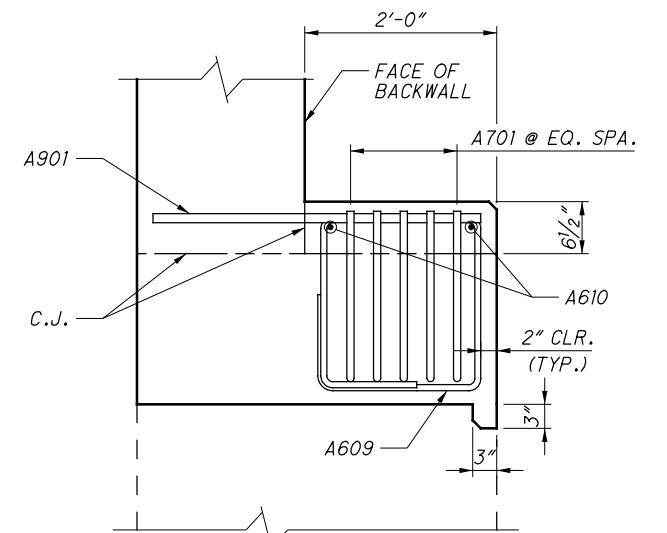
**PLAN**  
(FOOTING NOT SHOWN)



**ELEVATION**



**SEISMIC PEDESTAL DETAIL**



**SECTION G-G**

(ABUTMENT REINFORCING NOT SHOWN)  
(R.A. SHOWN, F.A. SIMILAR)

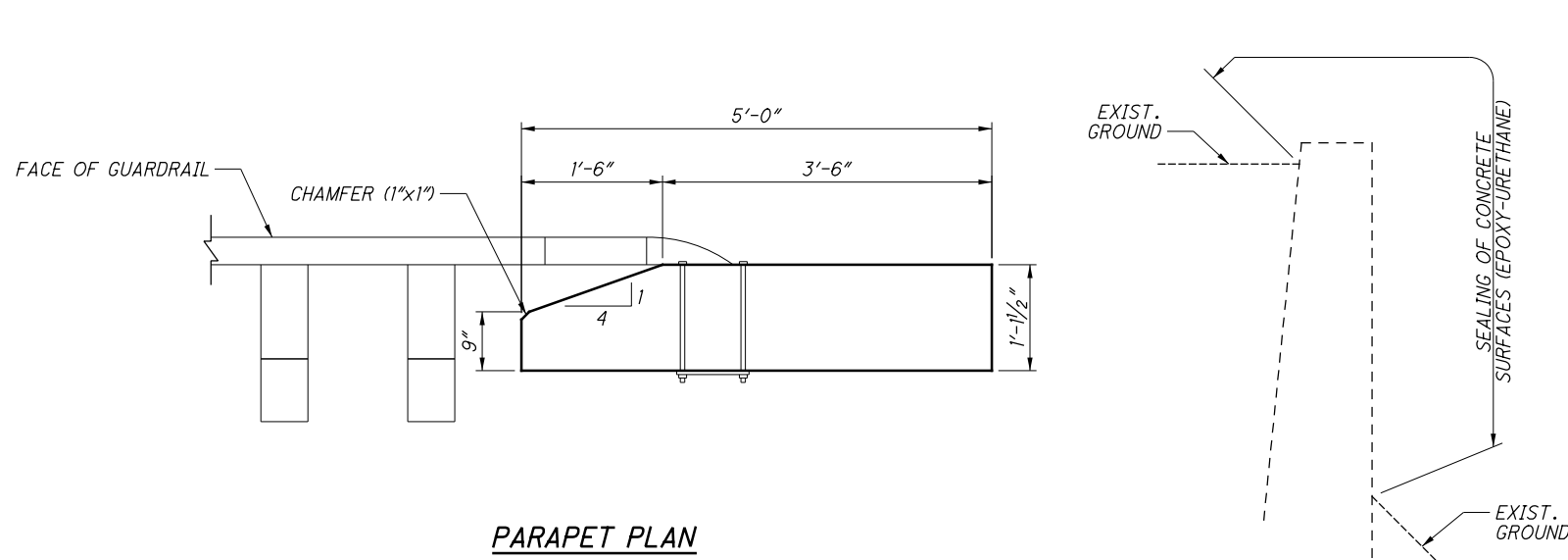
**GIRDER SEAT ELEVATIONS**

GIRDER	1	2	3	4	5	6
ELEVATION	679.31	679.43	679.55	679.53	679.38	679.22

**NOTES:**

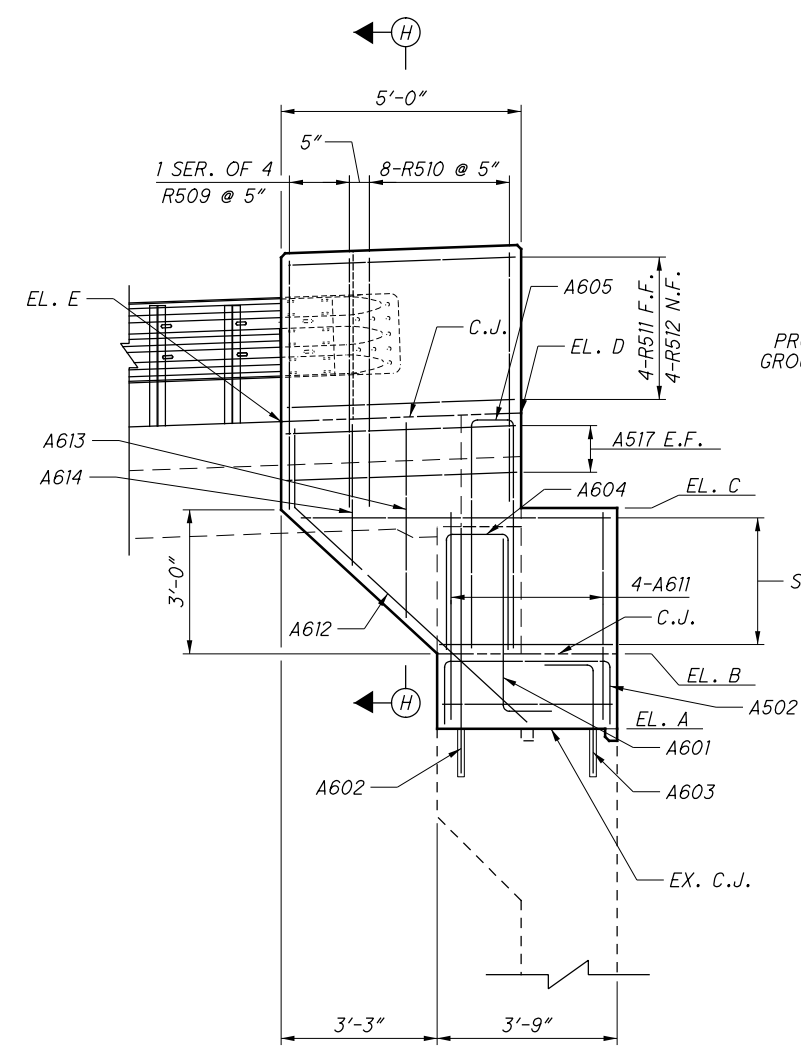
- FOR REAR ABUTMENT DETAILS AND SECTION A-A, SEE SHEET 11/30.
- FOR REINFORCEMENT SCHEDULE, SEE SHEET 29/30 AND 30/30.
- ALL DOWEL HOLES TO BE FILLED WITH NONSHRINK, NONMETALLIC GROUT.
- IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD CUT VERTICAL BARS AS NECESSARY TO MAINTAIN 2" CLEARANCE AROUND UTILITY OPENINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00.
- FOR VIEWS B-B AND C-C, SEE SHEET 11/30.
- MINIMUM LAP SPLICE LENGTH:  
#5 BAR = 2'-5"
- CONCRETE FOR RAILINGS ON ABUTMENT TO BE INCLUDED WITH ITEM 511, CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET) FOR PAYMENT.
- CONCRETE FOR SIDEWALKS ON ABUTMENT TO BE INCLUDED WITH ITEM 511, CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK FOR PAYMENT.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SRO02.dgn Sheet 12/23/2019 9:54:46 AM sriffle

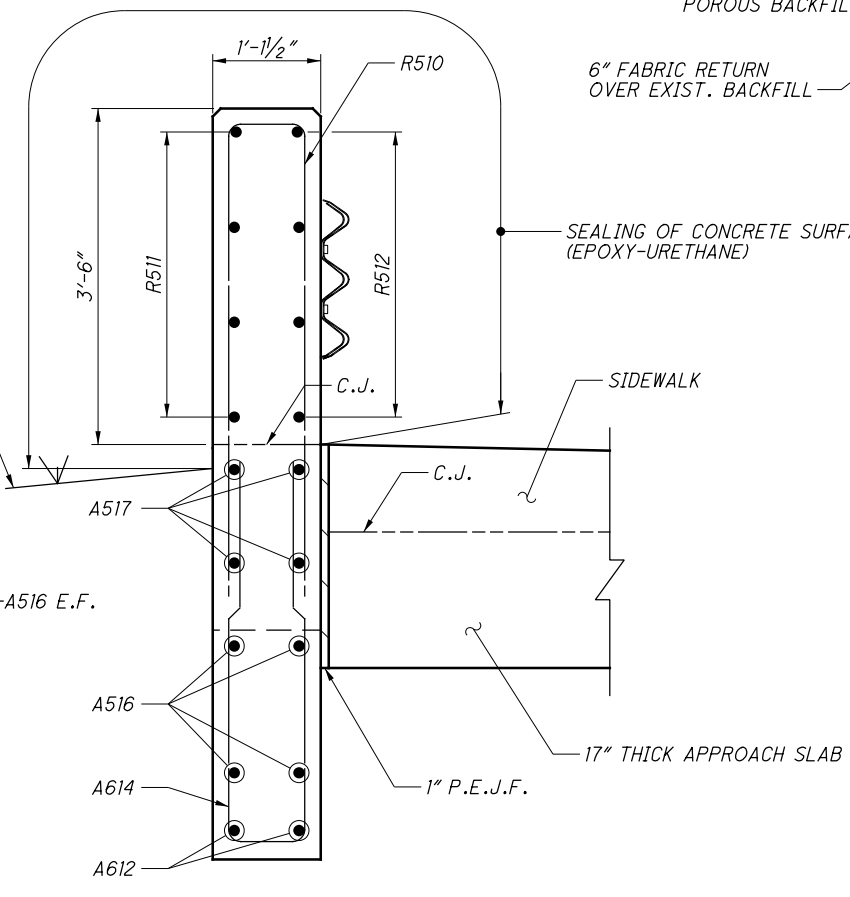


PARAPET PLAN

TYPICAL EXISTING WINGWALL SEALING LIMITS  
(TYPICAL REAR AND FWD. ABUTMENTS)



VIEW B-B (AS SHOWN)  
VIEW C-C (OPPOSITE HAND & SIMILAR)

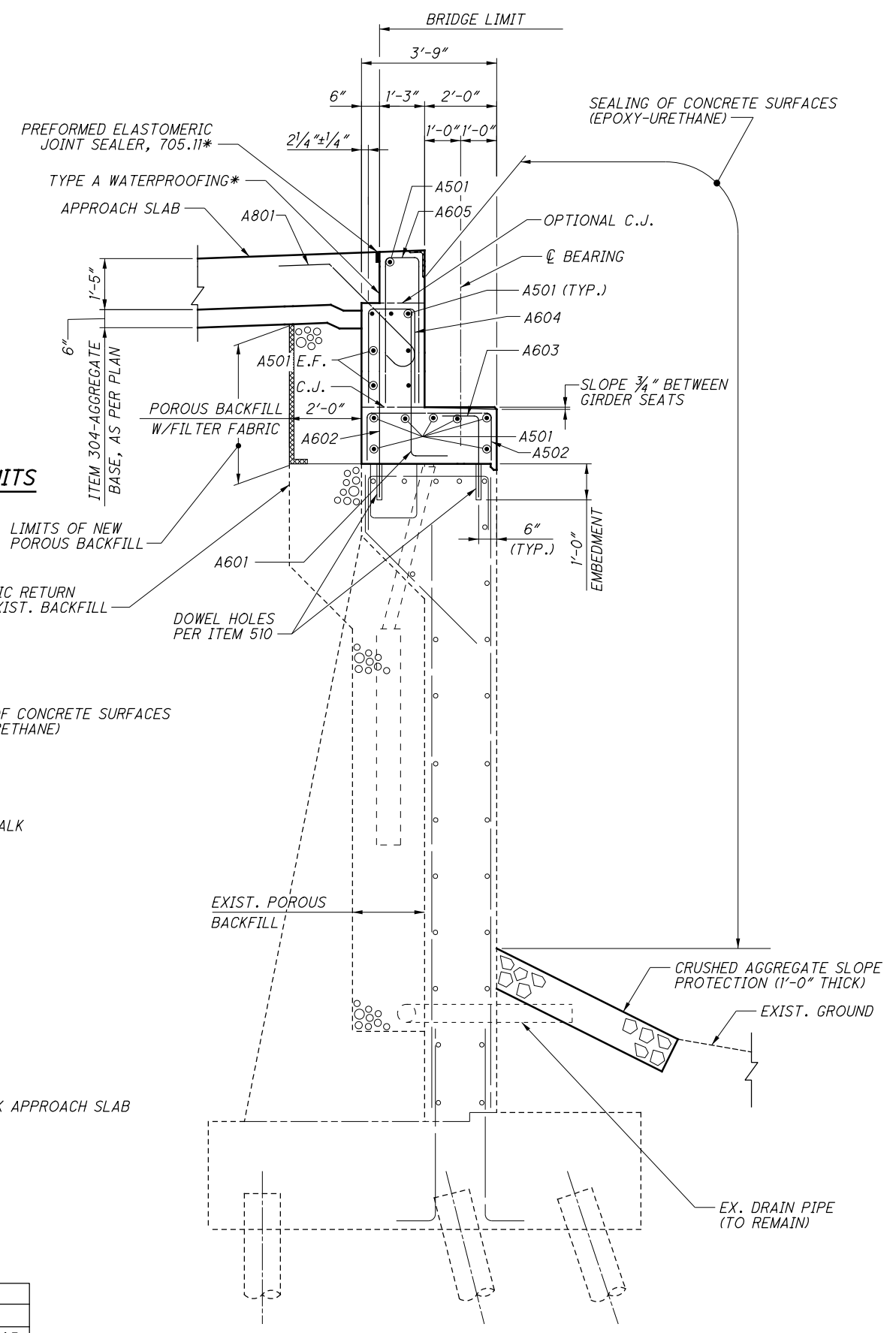


SECTION H-H

ELEVATIONS					
	A	B	C	D	E
EAST	677.65±	679.21	682.25	684.23	684.05
WEST	677.73±	679.29	682.25	684.44	684.26

LEGEND:

\* - INCLUDE WITH APPROACH SLAB FOR PAYMENT.



SECTION A-A

REAR ABUTMENT PROPOSED SECTION

NOTES:

1. FOR LOCATIONS OF SECTION A-A AND VIEWS B-B AND C-C, SEE SHEET 10/30.

DESIGN AGENCY  
**ms consultants, inc.**  
4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206

DATE  
7/17/2019

REVIEWED  
JDH

DRAWN  
TVB

DESIGNED  
SUR

CHECKED  
LAW

STRUCTURE FILE NUMBER  
1807811

REAR ABUTMENT DETAILS

BRIDGE NO. CUY-090-1346  
WEST 44TH STREET OVER I-90

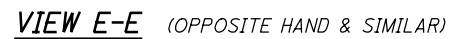
CUY-090-13.45

PID No. 105792

11/30

116  
135





BRIDGE LIMIT

3'-9"

2'-0" 1'-3" 6"

1'-0" 1'-0" 2 1/4" ± 1/4"

PREFORMED ELASTOMERIC JOINT SEALER, 705.11\*

TYPE A WATERPROOFING\*

A501

A605

A801

APPROACH SLAB

1'-5"

OPTIONAL C.J.

A501 (TYP.)

A604

C.J.

BEARING

1'-0" EMBEDMENT

C.J.

A501 E.F.

2" CLR. (TYP.)

A503

A501

2'-0"

POROUS BACKFILL W/FILTER FABRIC

ITEM 304-AGGREGATE BASE, AS PER PLAN

6"

6" (TYP.)

6" FABRIC RETURN OVER EXIST. BACKFILL

LIMITS OF NEW POROUS BACKFILL

A607

A608

A606

7" (SEE NOTE 1)

8"

4-A504 BENT BARS @ 3'-0" SPA. E.W.

3" CLR. (MIN.) \*\*

A505

A501 (TYP.)

EXIST. POROUS BACKFILL

SECTION D-D  
FORWARD ABUTMENT PROPOSED SECTION

NOTE:

1. CONCRETE REFACING AT FORWARD ABUTMENT BREASTWALL SHALL BE PER SS844 - CONCRETE PATCHING WITH EMBEDDED GALVANIC ANODE PROTECTION, AS PER PLAN.

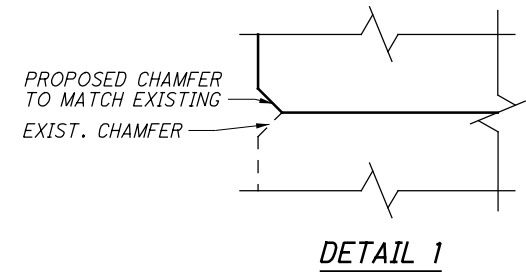
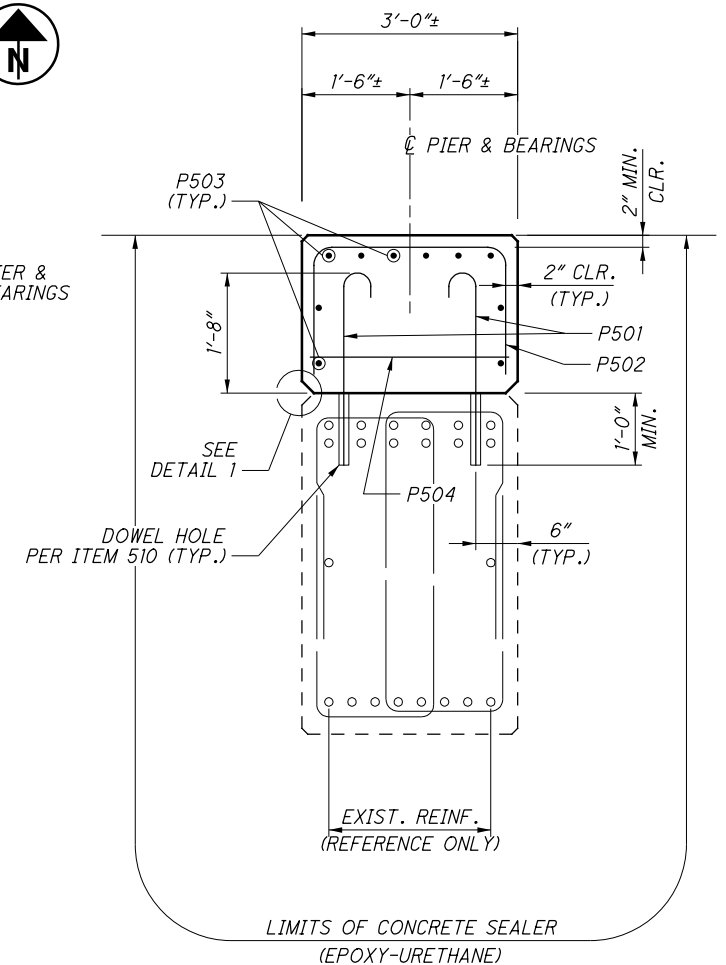
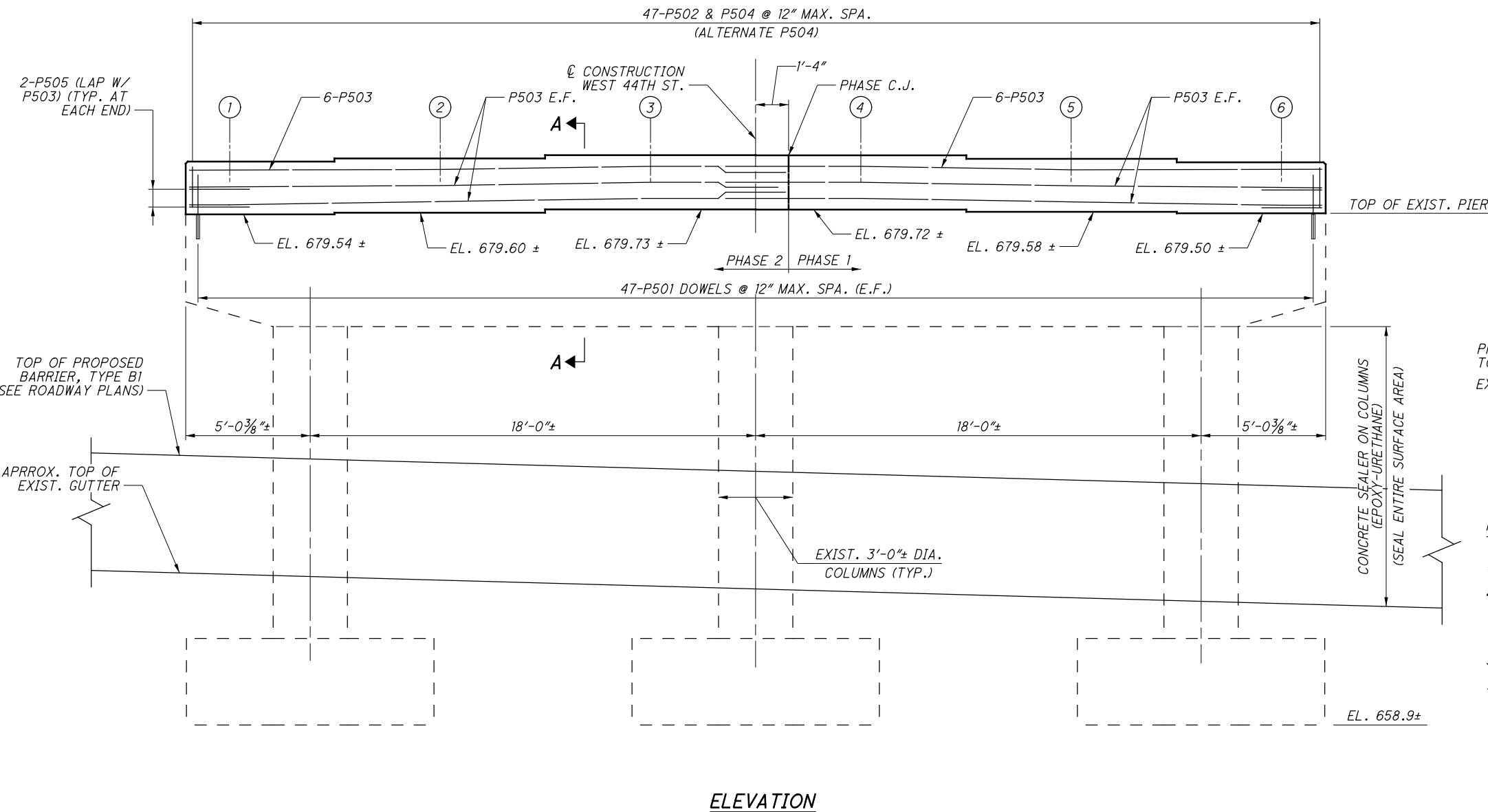
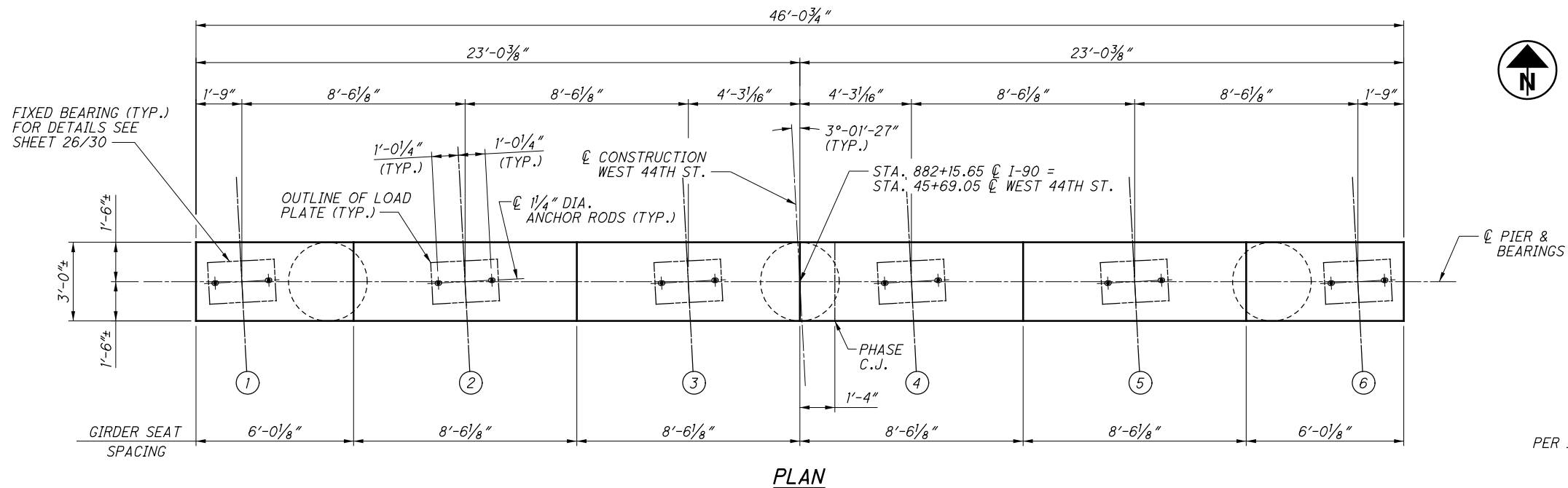
**LEGEND:**

\* - INCLUDE WITH APPROACH SLAB FOR PAYMENT.

\*\* - AT 7" CONCRETE REPAIR



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_S1001.dgn Sheet 12/23/2019 9:54:48 AM sniffie

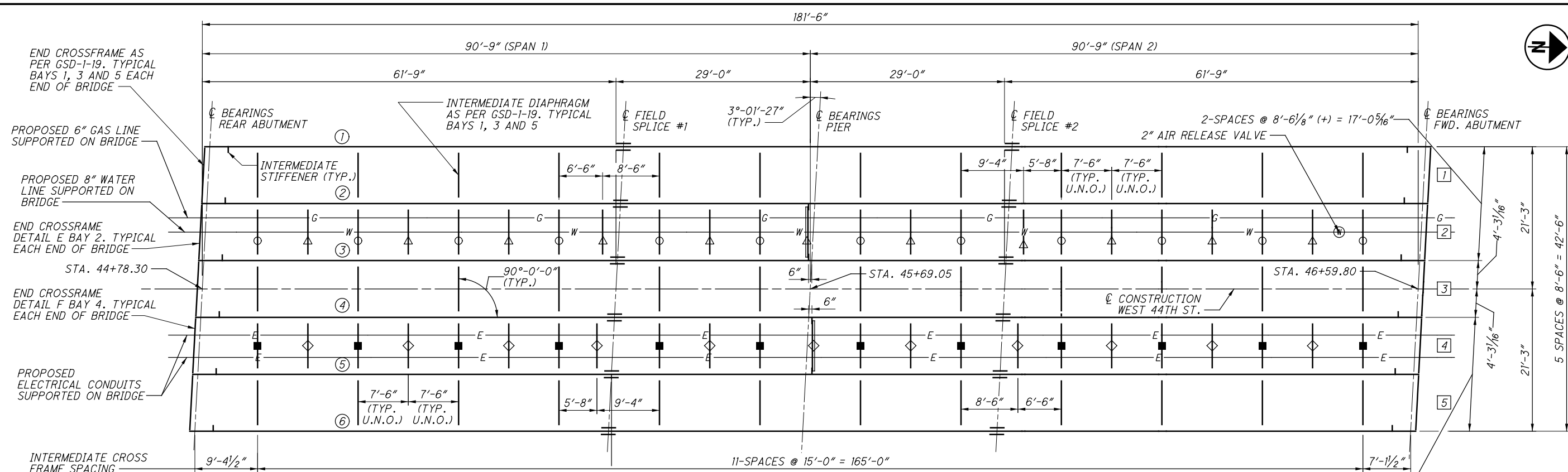


NOTES:

1. DOWEL HOLES TO BE FILLED WITH NONSHRINK, NON METALLIC GROUT.
2. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
3. FOR PATCHING DETAILS, SEE SHEET 9/30.
4. MINIMUM LAP SPLICE LENGTH:  
#5 BAR = 2'-5"

GIRDER SEAT ELEVATIONS						
GIRDER	1	2	3	4	5	6
ELEVATION	681.67	681.80	681.93	681.92	681.78	681.64

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\090\_1345C\_S5001.dgn Sheet 12/23/2019 9:54:48 AM srlf file



**NOTES:**

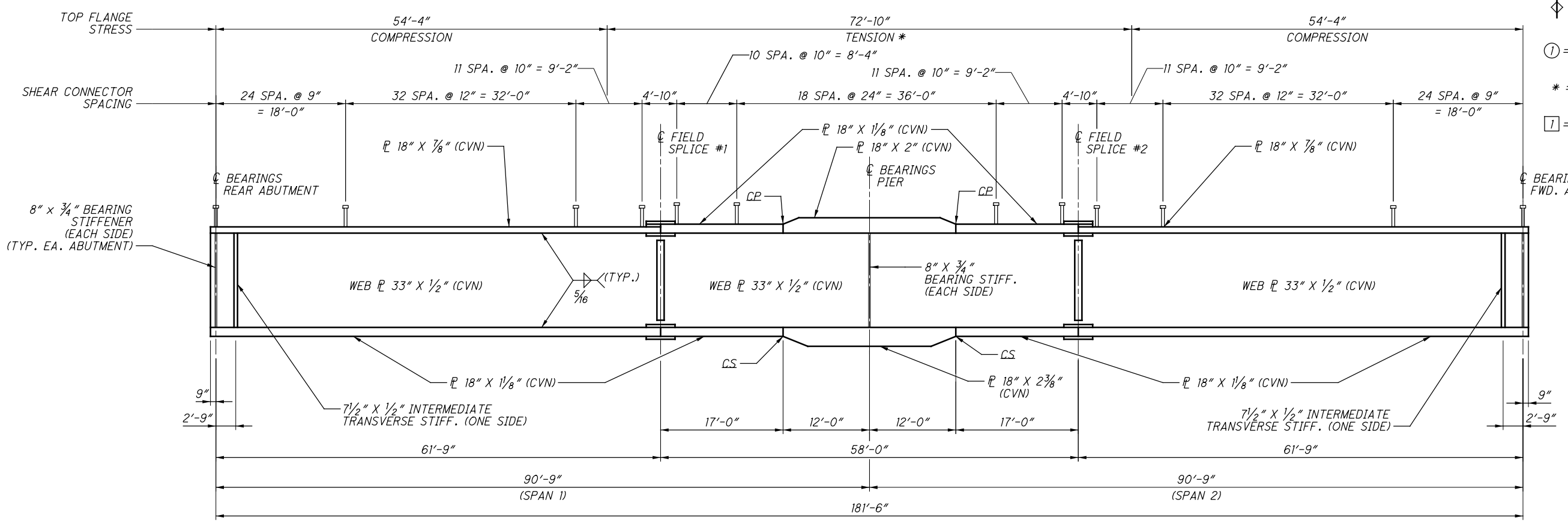
1. FOR SPLICE AND GIRDER DETAILS AND STRUCTURAL STEEL NOTES, SEE SHEET 16/30.
2. FOR CROSSFRAME DETAILS A THRU D, SEE SHEET 17/30.
3. FOR END CROSSFRAME DETAILS E AND F, SEE SHEET 18/30.
4. FOR CAMBER DIAGRAM AND DEFLECTION AND CAMBER TABLE, SEE SHEET 19/30.

**FRAMING PLAN**

2-SPACES @ 8'-6 1/8" (+) = 17'-0 5/16"

**LEGEND:**

- ⊕ - INTERMEDIATE CROSSFRAME TYPE A
- ⚓ - SUPPORT CROSSFRAME TYPE B
- - INTERMEDIATE CROSSFRAME TYPE C
- ◇ - SUPPORT CROSSFRAME TYPE D
- ① = DENOTES GIRDER NUMBER
- \* = INCLUDES STRESS REVERSAL AREAS
- 1 = DENOTES BAY NUMBER



**TYPICAL GIRDER ELEVATION**



○



○



○



○

○

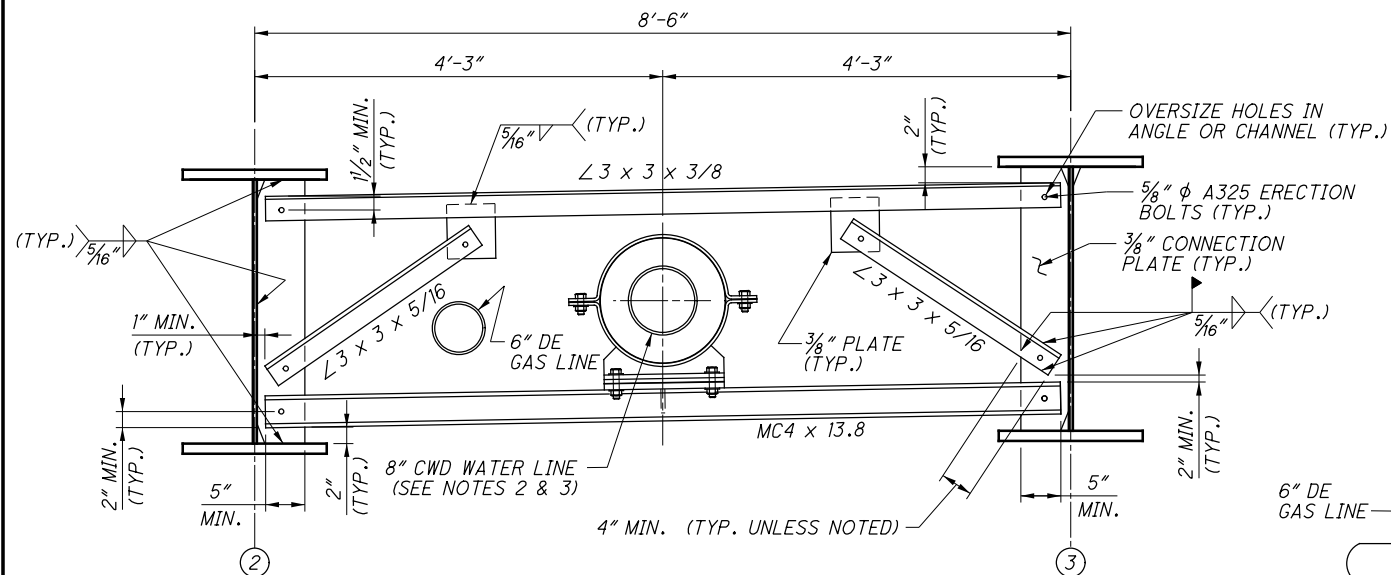
○

- 

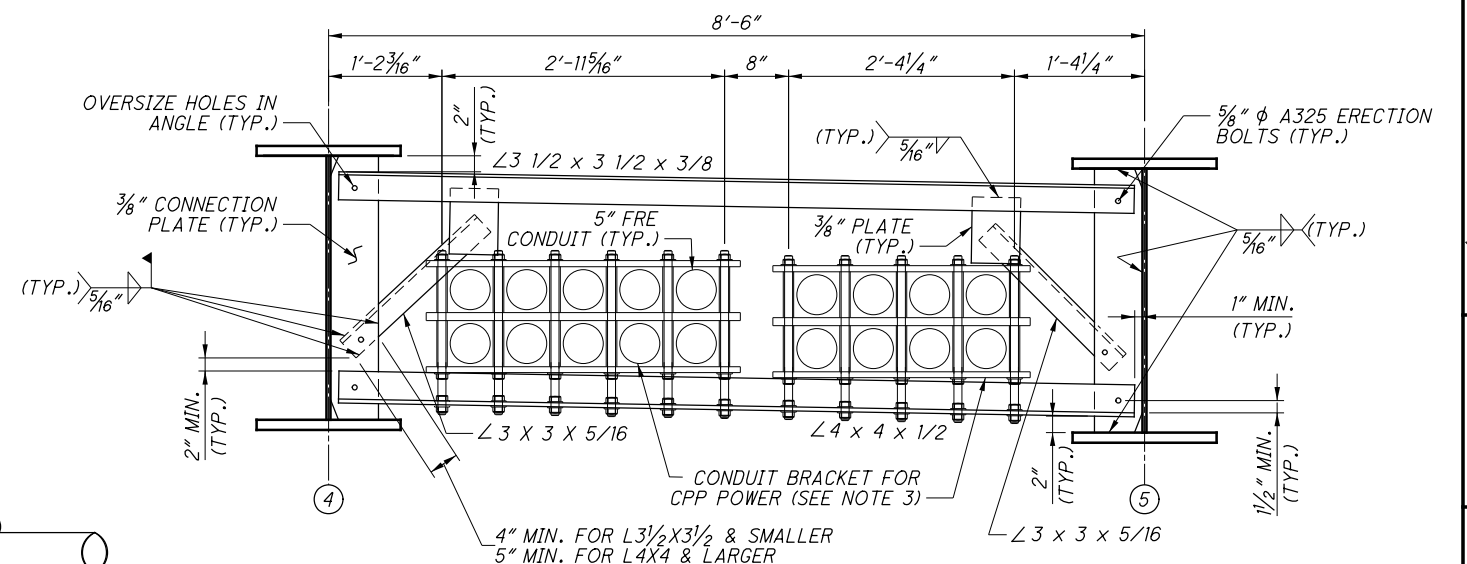
○

-

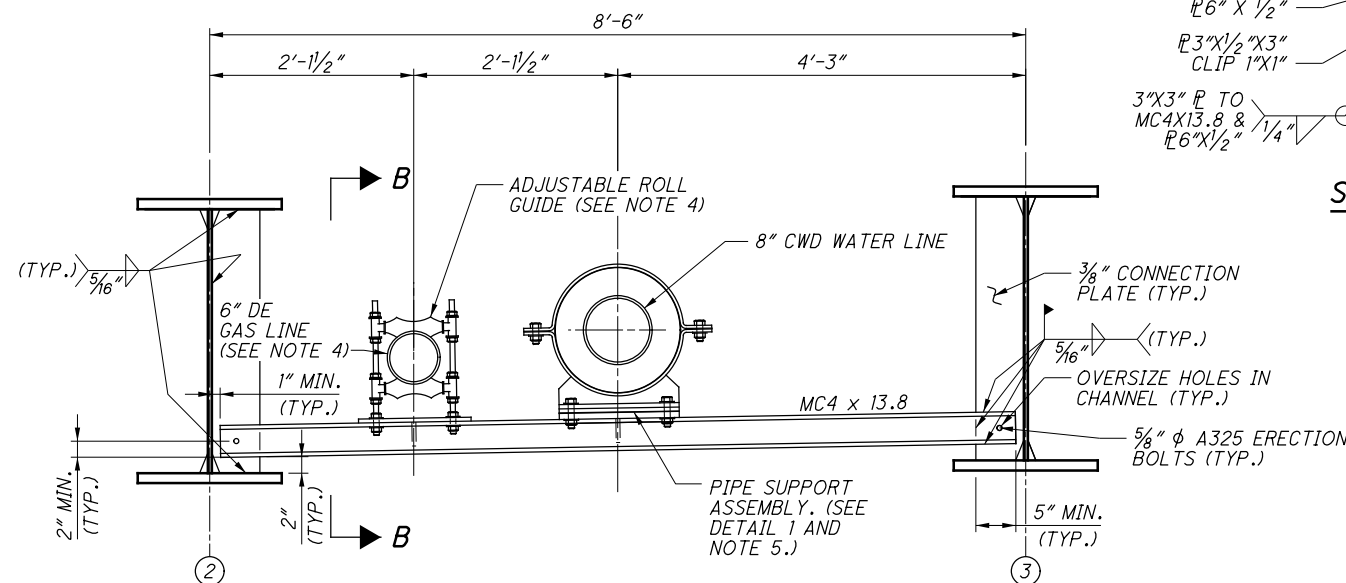
\\msconsultants.com\files\Production\02\60\08342\105792\_BRIDGE\_REDECK\Design\Structures\090\_1345C\_Sheets\090\_1345C\_SS006.dgn Sheet 4/17/2020 2:42:47 PM webster



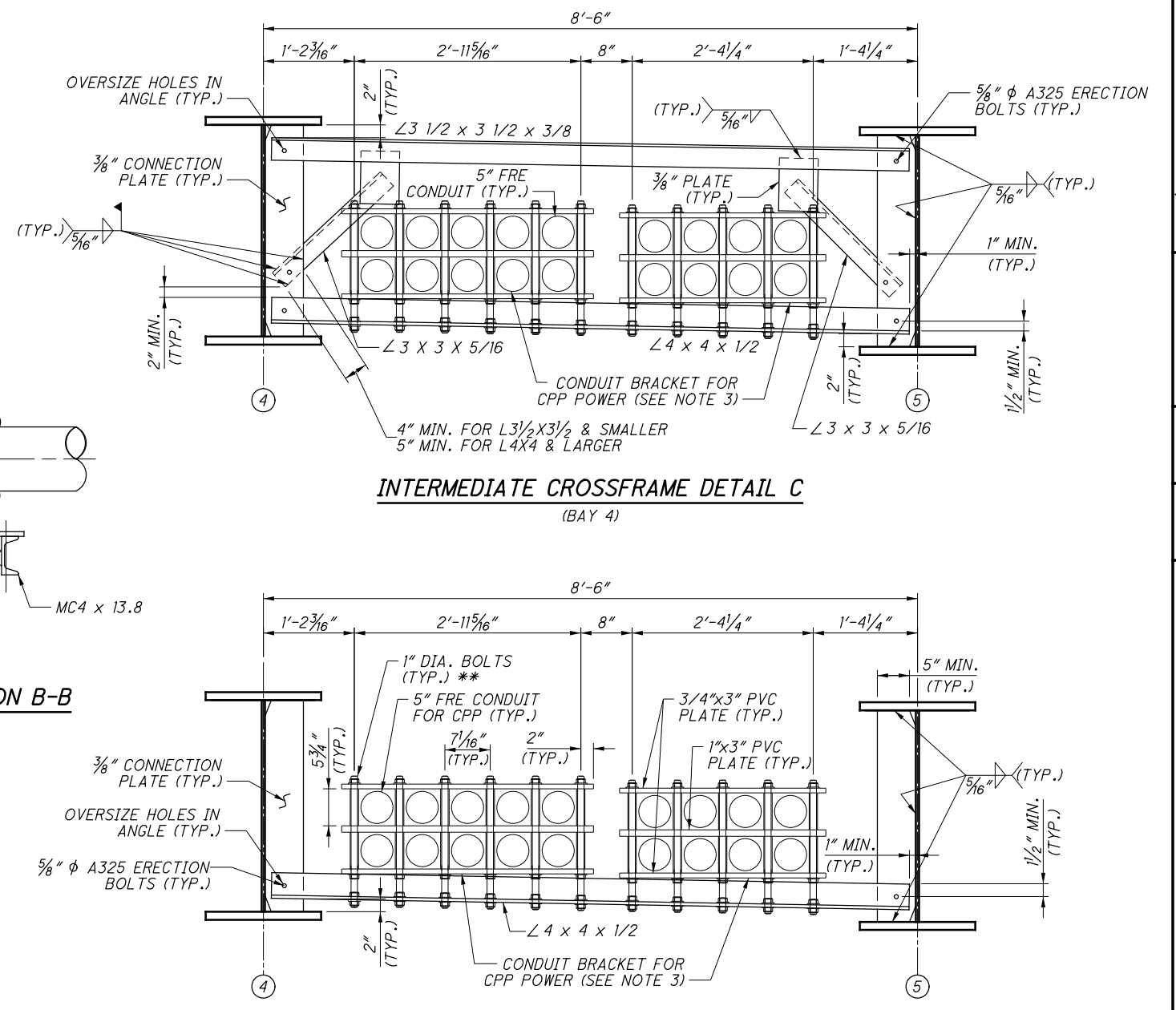
**INTERMEDIATE CROSSFRAME DETAIL A**  
(BAY 2)



**INTERMEDIATE CROSSFRAME DETAIL C**  
(BAY 4)

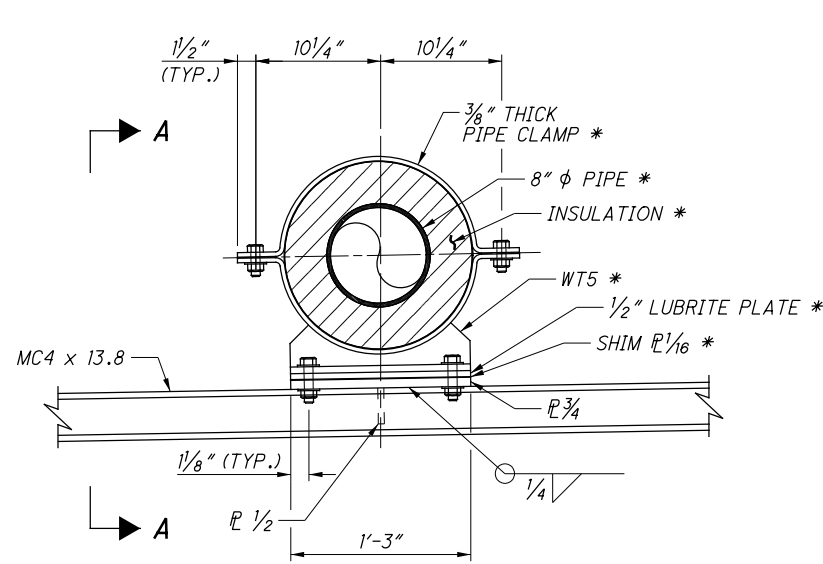
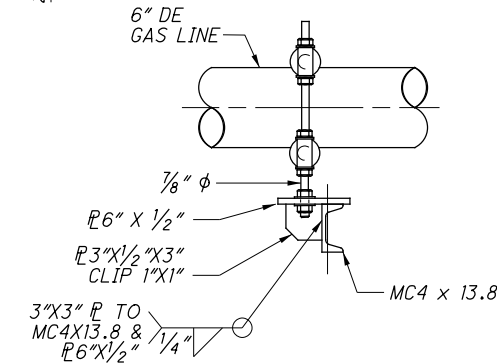


**SUPPORT CROSSFRAME DETAIL B**  
(BAY 2)

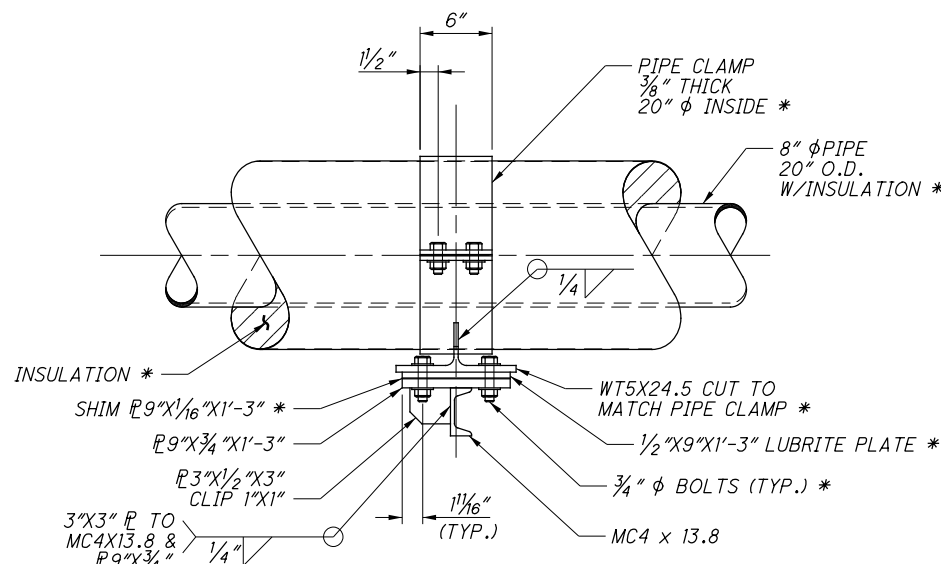


**SUPPORT CROSSFRAME DETAIL D**  
(BAY 4)

**SECTION B-B**



**DETAIL 1**



**VIEW A-A**

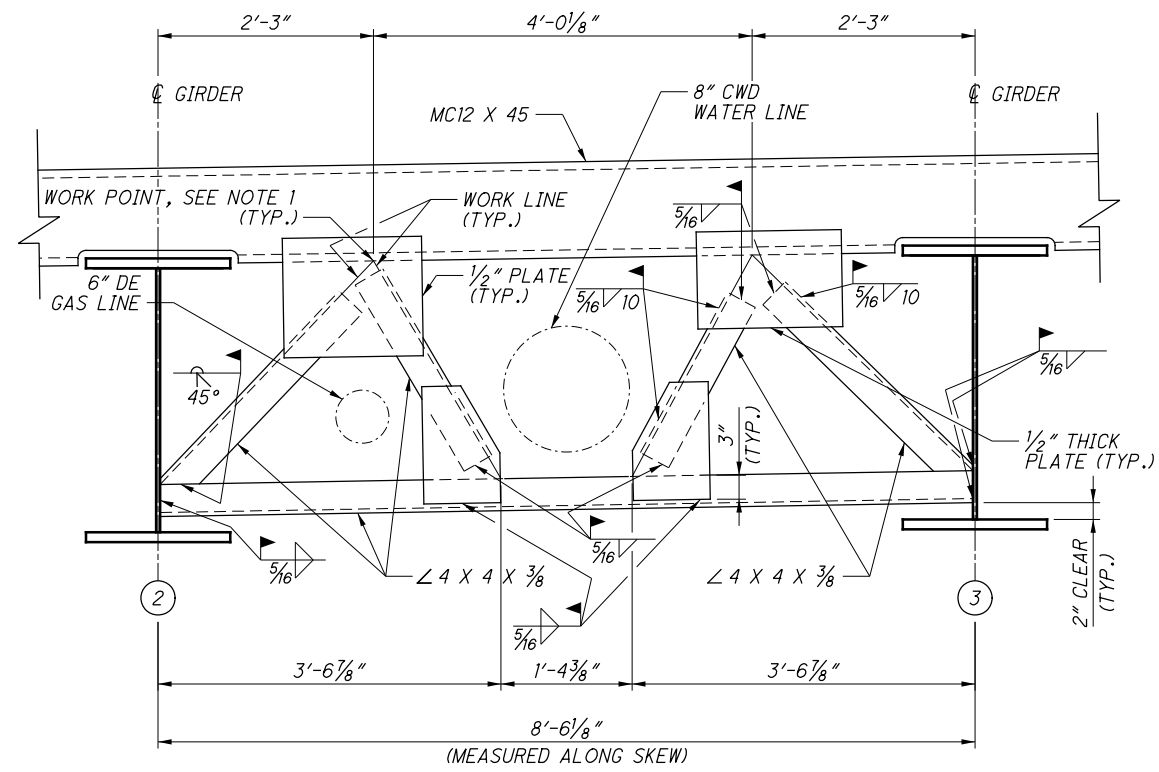
**LEGEND:**

- DE - DOMINION ENERGY  
④ - GIRDER NUMBER  
FRE - FIBERGLASS REINFORCED EPOXY  
CPP - CLEVELAND PUBLIC POWER  
CWD - CLEVELAND WATER DEPARTMENT
- \* - INCLUDED WITH ITEM 638 - WATER WORK MISC.: SPECIAL - 8" GALVANIZED  
\*\* - 1"-8 N.C. STEEL INTERMEDIATE BOLTS, NUTS, FLAT AND LOCK WASHERS WITH 1" PVC SPACER TUBE 1.315" O.D. x 1.049" I.D., 5.75" LONG (TYP.)

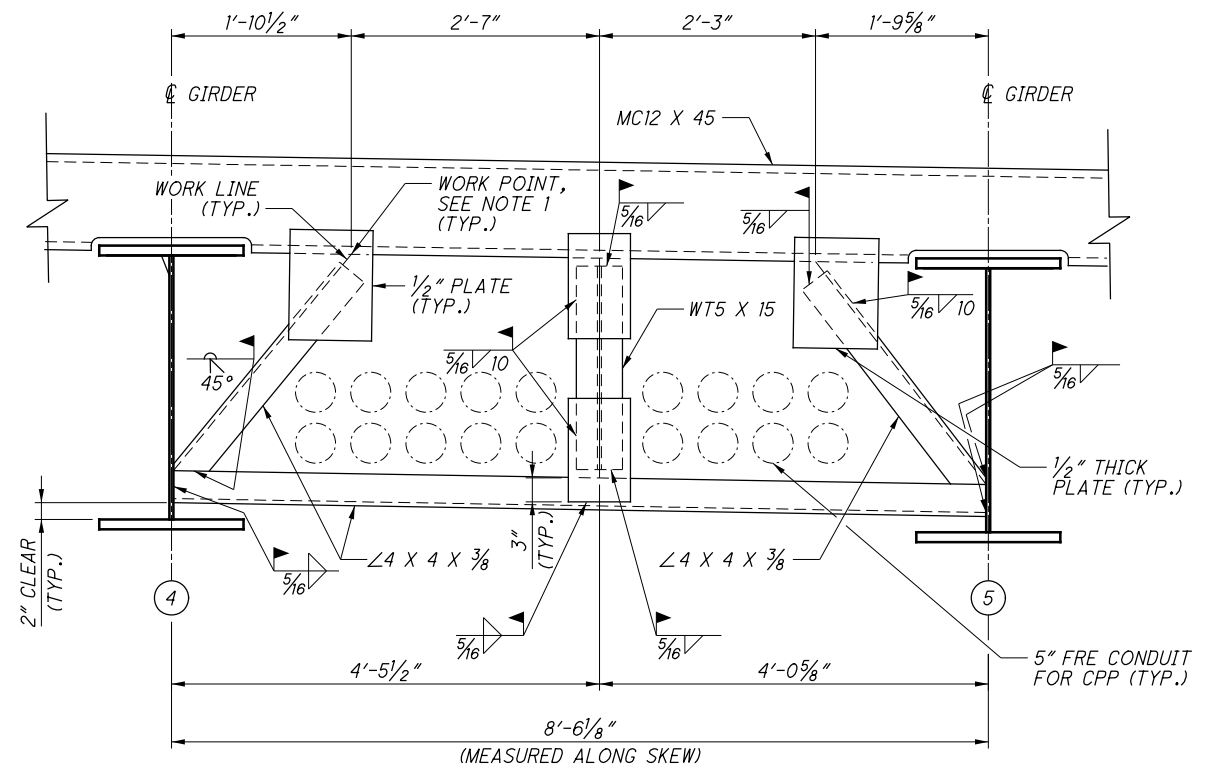
**NOTES:**

- FOR STRUCTURAL STEEL NOTES, SEE SHEET 16/30.
- BRIDGE ESTIMATED QUANTITIES INCLUDES STRUCTURAL STEEL FOR UTILITY SUPPORT ANGLES, CHANNELS AND CONNECTION PLATES FOR CPP, CWD AND DE UTILITIES.
- SEE CPP POWER PLANS FOR CPP UTILITY SUPPORT BRACKET AND FRE CONDUIT NOTES AND PAYMENT.
- FOR DOMINION ENERGY SUPPORT NOTE, SEE BRIDGE GENERAL NOTES.
- WATER LINE PIPE ASSEMBLY SUPPORT TO BE PER THIS PLAN SHEET, AND PAID FOR WITH ITEM 638 - WATER WORK MISC.: SPECIAL - 8" GALVANIZED STEEL PIPE, CITY OF CLEVELAND. SEE WATER LINES PLANS FOR ADDITIONAL NOTES AND DETAILS.

\\msconsultants.com\files\Production\02\60\_08342\_105792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SS008.dgn Sheet 12/23/2019 9:54:50 AM sriffie



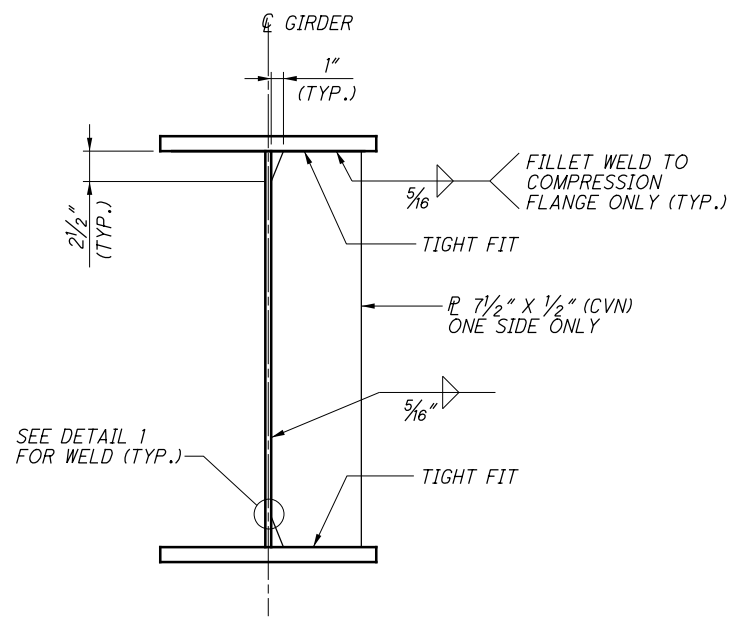
**END CROSSFRAME DETAIL E**  
(BAY 2)



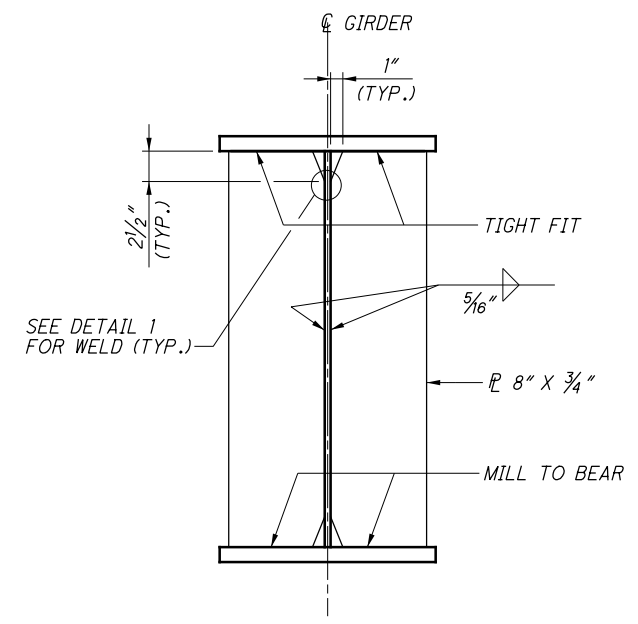
**END CROSSFRAME DETAIL F**  
(BAY 4)

**NOTES:**

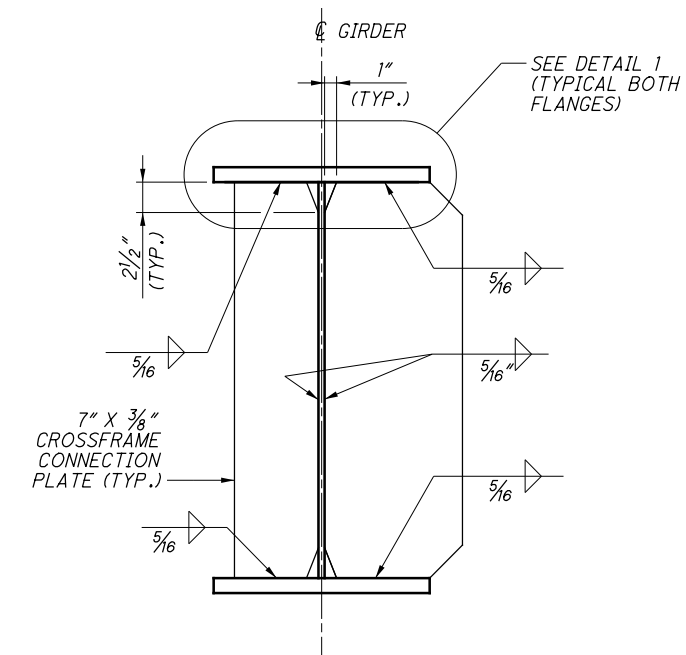
1. THE WORK LINE SHALL BE THE INSIDE FACE OF THE PROTRUDING ANGLE LEG EXTENDED AS SHOWN. THE WORK POINT SHALL BE AT THE INTERSECTION OF THESE LINES.
2. FOR ADDITIONAL DETAILS, SEE GSD-1-19 AND EXJ-4-87.
3. THE WELDING SYMBOLS SHOWN ABOVE ARE TYPICAL FOR ALL SIMILAR LOACTIONS OF THIS END CROSSFRAME.



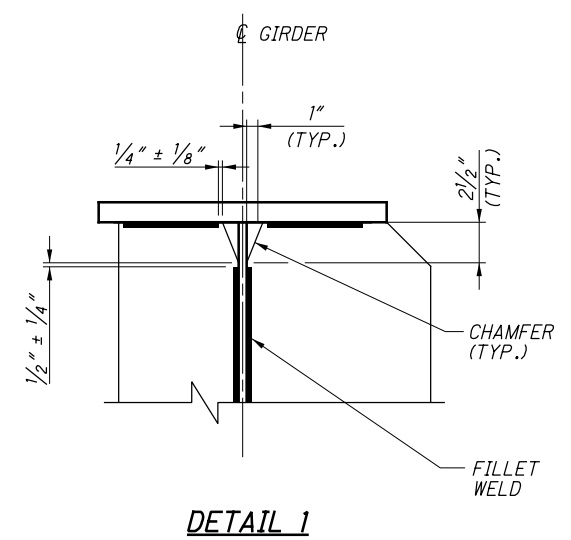
**INTERMEDIATE TRANSVERSE STIFFENER DETAIL**



**BEARING STIFFENER PLATE DETAIL**

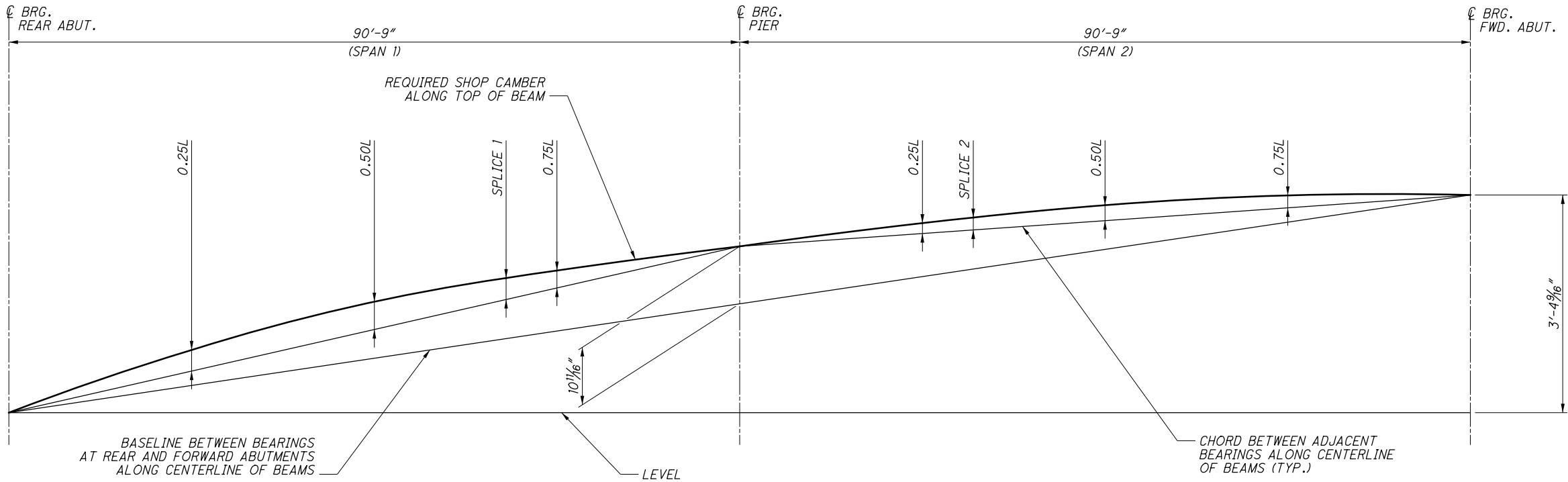


**CROSSFRAME CONNECTION PLATE DETAIL**



**DETAIL 1**

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\Sheets\090\_1345C\_SS007.dgn Sheet 12/23/2019 9:54:51AM sr1ffile



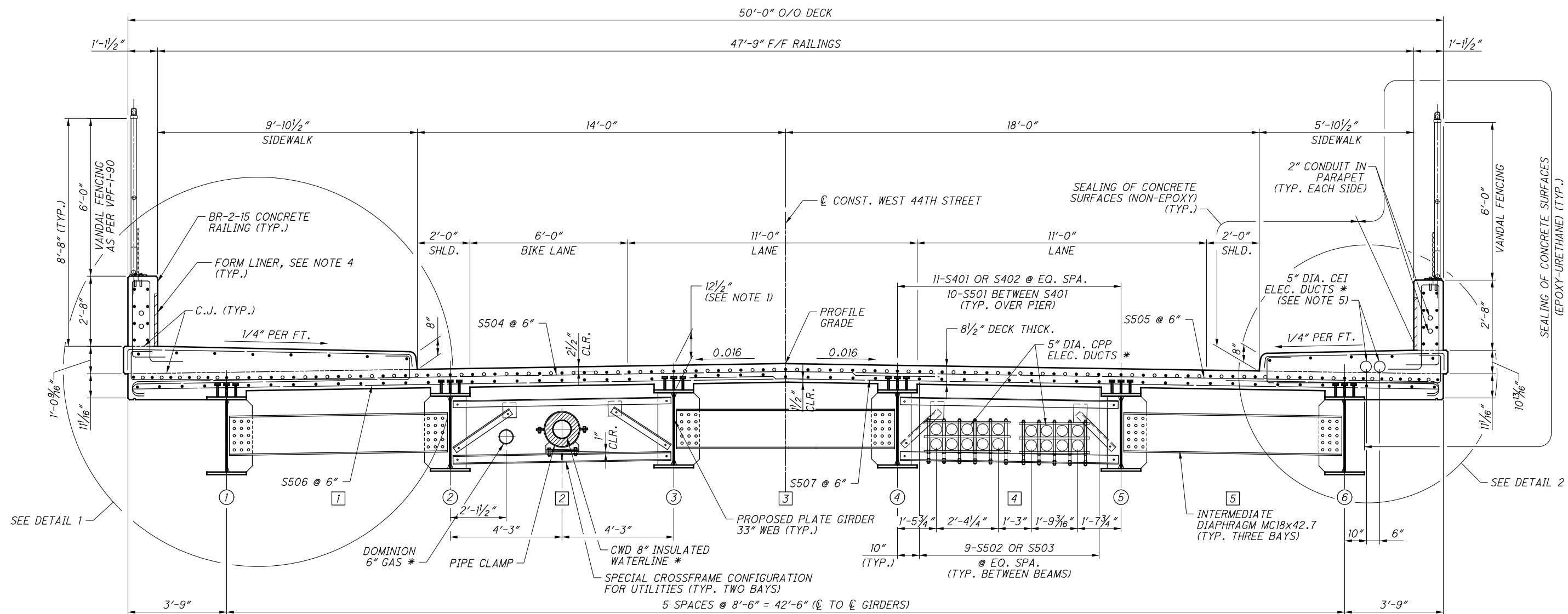
**CAMBER DIAGRAM**  
(TYPICAL ALL GIRDERS)

DEFLECTION AND CAMBER (TYPICAL ALL GIRDERS)								
	SPAN 1				SPAN 2			
	0.25L	0.50L	SPLICE 1	0.75L	0.25L	SPLICE 2	0.50L	0.75L
DEFLECTION DUE TO WEIGHT OF STEEL	1/4"	1/4"	1/8"	1/8"	1/8"	1/8"	1/4"	1/4"
DEFLECTION DUE TO REMAINING DEAD LOAD	1 5/8"	1 13/16"	1 1/16"	11/16"	11/16"	1 1/16"	1 13/16"	1 5/8"
ADJUSTMENT DUE TO VERTICAL CURVE	2 1/16"	3 1/8"	2 13/16"	2 7/16"	1 1/8"	1 1/8"	13/16"	7/16"
TOTAL CAMBER	3 15/16"	5 3/16"	4"	3 1/4"	1 15/16"	2 5/16"	2 7/8"	2 5/16"

L = SPAN LENGTH

POSITIVE VALUES INDICATE REQUIRED CAMBER IS ABOVE THE CHORD BETWEEN ADJACENT BEARINGS

\\msconsultants.com\files\Production\02\60\08342\105792\_BRIDGE\_REDECK\Design\Structures\090\_1345C\_Sheets\090\_1345C.dgn Sheet 4/17/2020 2:46:13 PM lwebster

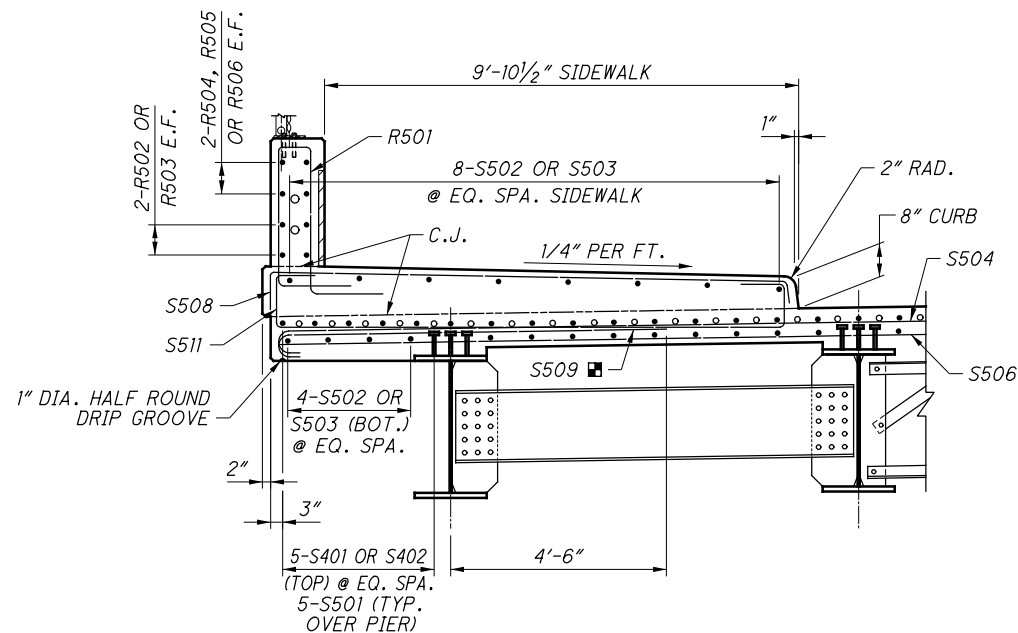


### TRANSVERSE SECTION

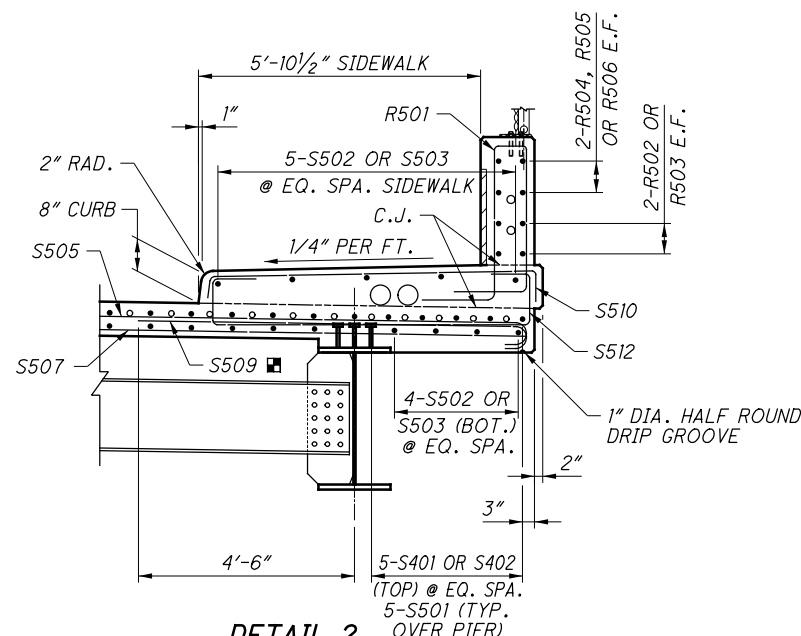
- LEGEND:**
- \* - LOCATION OF UTILITIES TO BE COORDINATED WITH OWNERS FOR FINAL LOCATION.
  - ⑤ - INDICATES GIRDER LINE NUMBER.
  - - BUNDLED W/ S504 OR S505
  - ③ - BAY NUMBER
  - CPP - CLEVELAND PUBLIC POWER

### NOTES:

- DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 12 1/2 INCHES AND A HAUNCH WIDTH EQUAL TO THE TOP FLANGE WIDTH. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE.  
  
THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.23.
- FOR DECK PLAN, SEE SHEET 21/30.
- SEE SCD GSD-I-19 FOR INTERMEDIATE DIAPHRAGM DETAILS.
- 1 1/2" MAX. DEPTH FORM LINER, FOR DETAILS SEE SHEET 3/30.
- FOR CEI FRE CONDUIT NOTE, SEE BRIDE GENERAL NOTES.

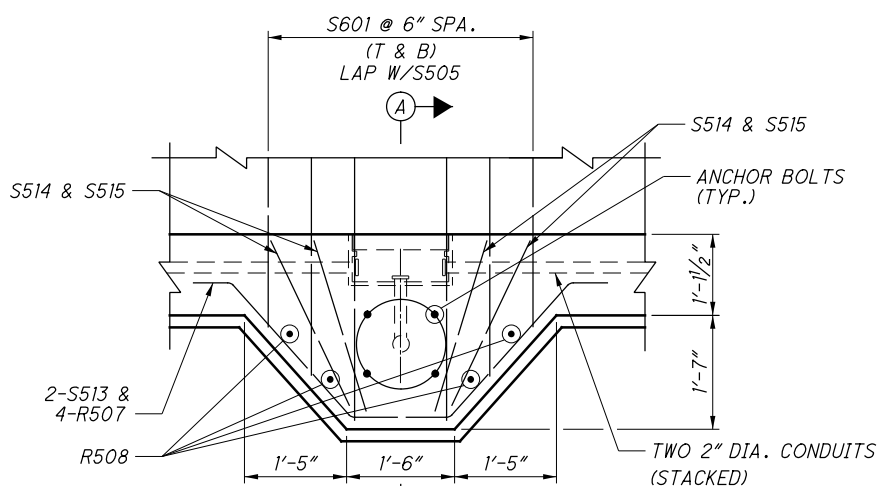
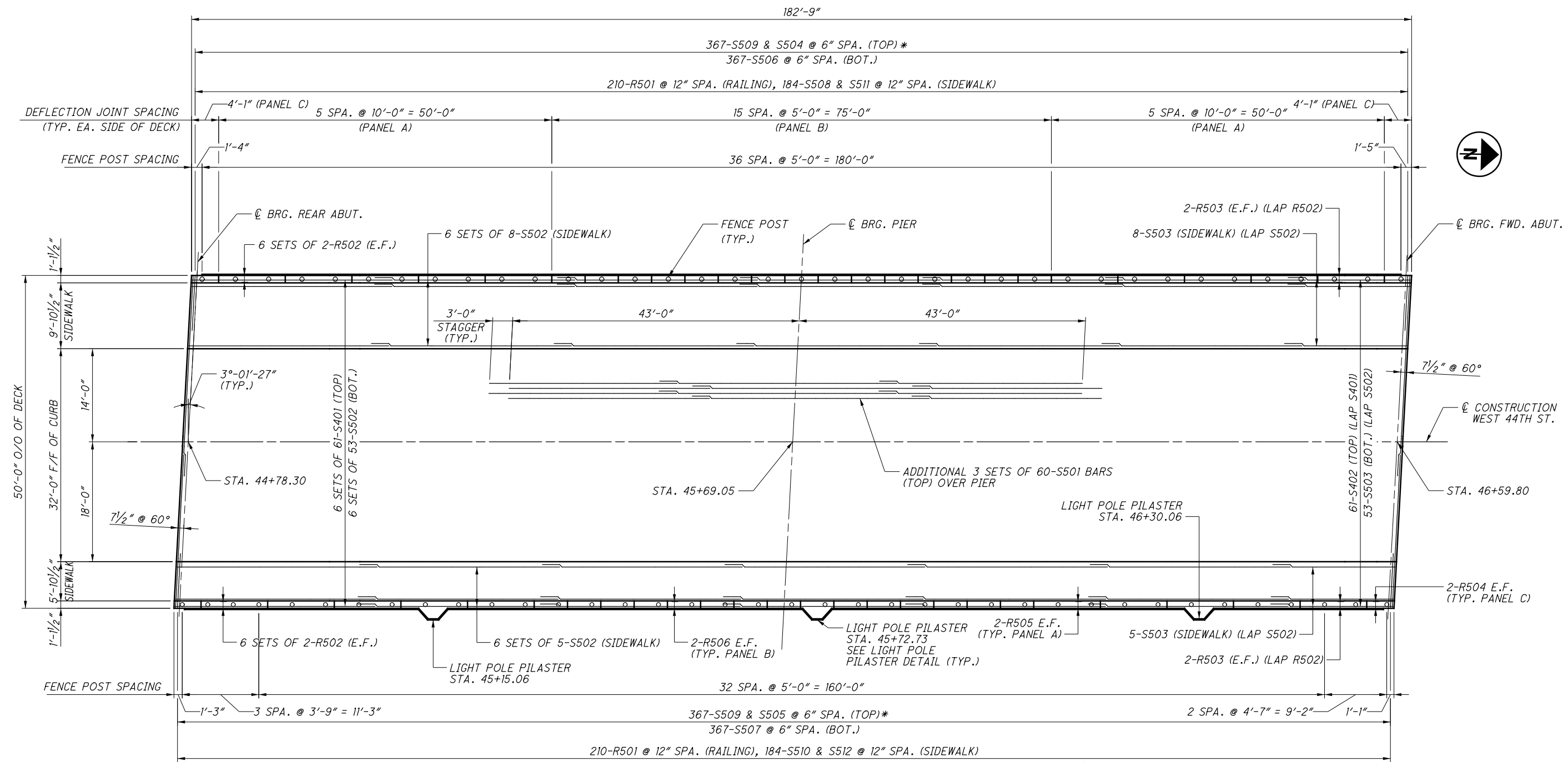


DETAIL 1



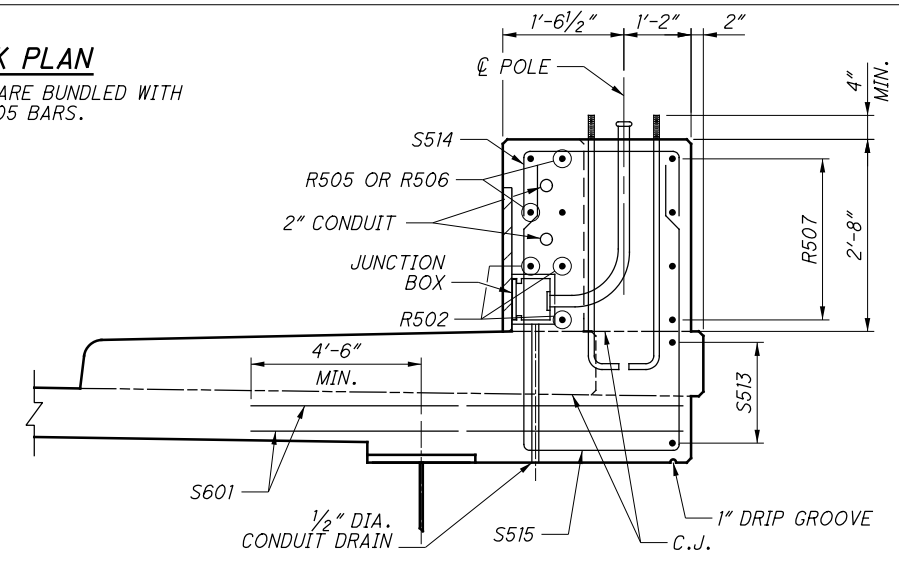
DETAIL 2

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_Sheet 12/23/2019 9:54:52 AM sriffie



LIGHT POLE PILASTER DETAIL

DECK PLAN  
\* S509 BARS ARE BUNDLED WITH S504 OR S505 BARS.



SECTION A-A

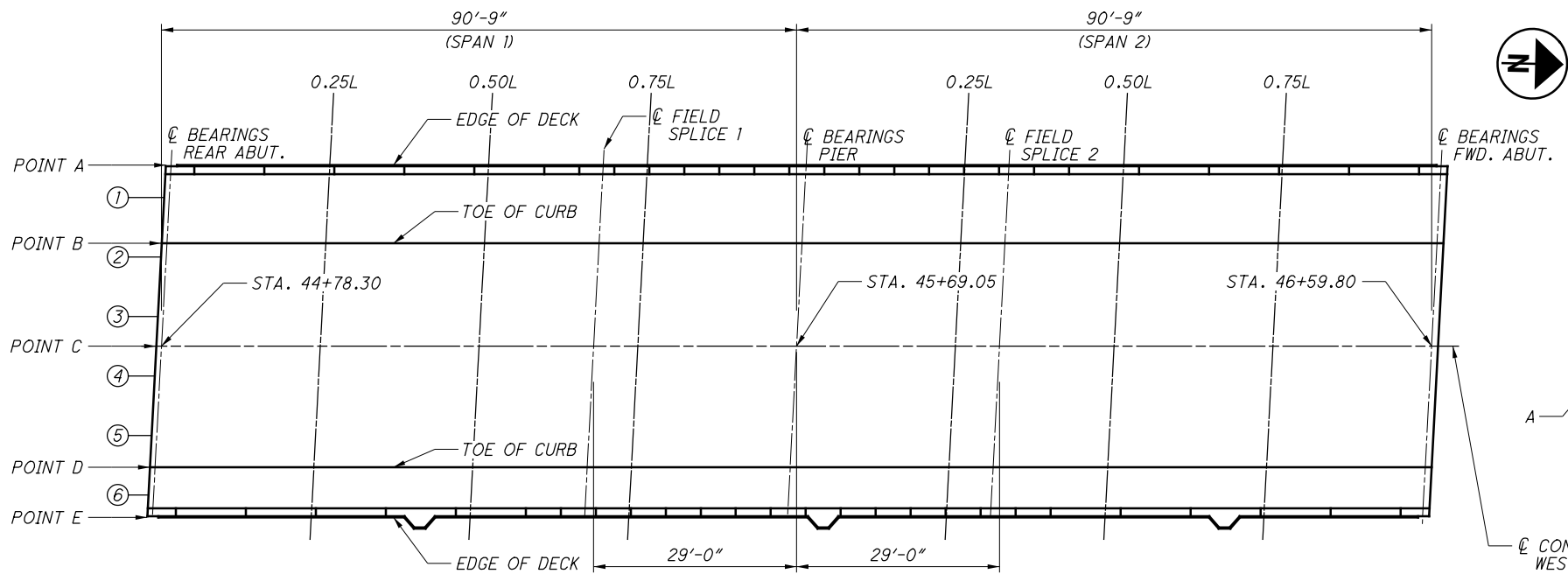
NOTES:

1. FOR REINFORCEMENT SCHEDULES, SEE SHEET 29/30 AND 30/30.
2. MINIMUM REBAR LAPS:  
LONGITUDINAL  
#4 BARS = 1'-11"  
#5 BARS = 2'-7"  
TRANSVERSE  
#5 BARS = 3'-2"
3. FOR ADDITIONAL LIGHT POLE PILASTER DETAILS, SEE SCD HL-20.14.
4. FOR RAILING DETAILS, SEE SHEET 25/30.

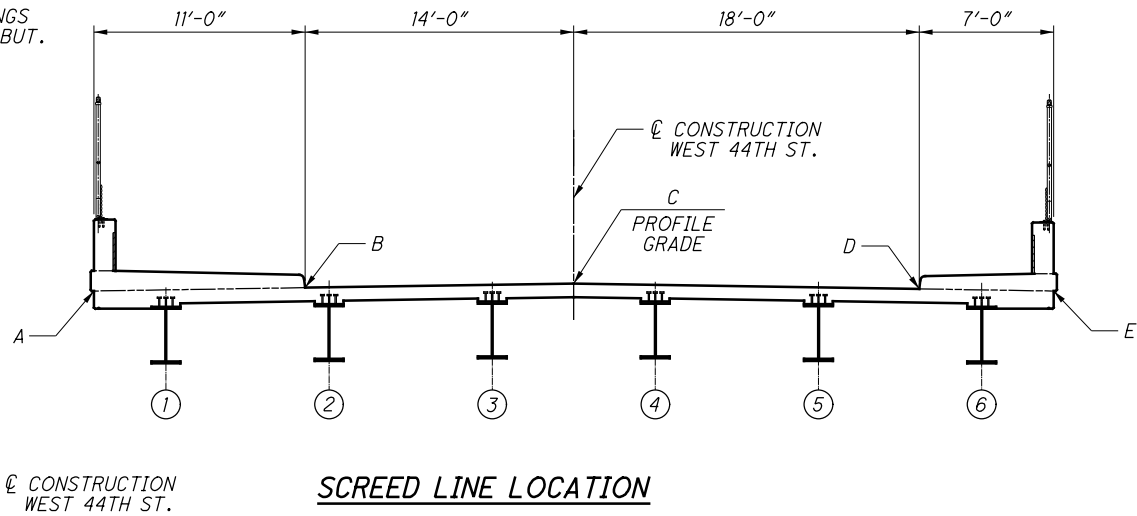
DESIGN AGENCY <b>ms consultants, inc.</b> 4608 St. Clair Avenue Cleveland, Ohio 44103-1206				
DATE 7/17/2019	REVIEWED JDH	DESIGNED LAW	DRAWN KRM	STRUCTURE FILE NUMBER 1807811
BRIDGE NO. CUY-090-1345 WEST 44TH STREET OVER I-90				
DECK PLAN				
CUI-090-13.45 PID No. 105792				
21/30				
126 135				



\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SS002.dgn Sheet 12/23/2019 9:54:53 AM sriffle



LOCATION PLAN



SCREED LINE LOCATION

SCREED ELEVATIONS											
SPAN NO.	LOCATION	A		B		C (CROWN & PROFILE GRADE)		D		E	
		STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
1	0.00 L	44+79.62	683.45	44+79.04	683.60	44+78.30	683.80	44+77.35	683.48	44+76.98	683.35
	0.25 L	45+02.31	684.40	45+01.73	684.55	45+00.99	684.75	45+00.04	684.43	44+99.67	684.30
	0.50 L	45+25.00	685.14	45+24.41	685.30	45+23.68	685.50	45+22.72	685.19	45+22.35	685.06
	SPLICE	45+41.37	685.51	45+40.79	685.68	45+40.05	685.88	45+39.10	685.57	45+38.73	685.45
	0.75 L	45+47.68	685.63	45+47.10	685.79	45+46.36	686.00	45+45.41	685.69	45+45.04	685.57
2	0.00 L	45+70.37	686.00	45+69.79	686.17	45+69.05	686.38	45+68.10	686.08	45+67.73	685.96
	0.25 L	45+93.06	686.35	45+92.48	686.52	45+91.74	686.73	45+90.79	686.44	45+90.42	686.32
	SPLICE	45+99.37	686.43	45+98.79	686.60	45+98.05	686.82	45+97.10	686.52	45+96.73	686.41
	0.50 L	46+15.75	686.61	46+15.16	686.78	46+14.43	687.00	46+13.47	686.71	46+13.10	686.59
	0.75 L	46+38.43	686.76	46+37.85	686.93	46+37.11	687.15	46+36.16	686.86	46+35.79	686.74
	1.00L	46+61.12	686.79	46+60.54	686.96	46+59.80	687.18	46+58.85	686.89	46+58.48	686.77

NOTES:

- SCREED ELEVATIONS:  
SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
- L = SPAN LENGTH

DESIGN AGENCY  
**ms consultants, inc.**  
4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206

DATE  
7/17/2019

REVIEWED  
JDH

DRAWN  
TVB

DESIGNED  
TVB

STRUCTURE FILE NUMBER  
1807811

REVISION  
1807811

WER

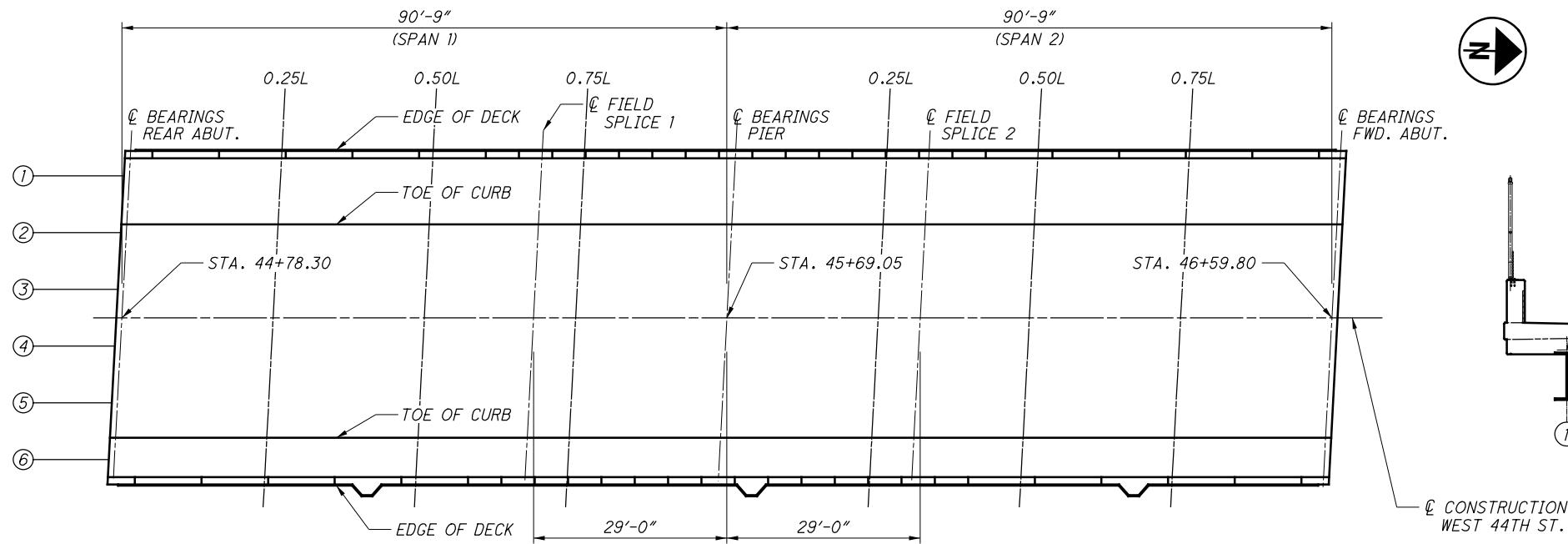
SCREED ELEVATIONS  
BRIDGE NO. CUY-090-1345  
WEST 44TH STREET OVER I-90

CUY-090-13.45  
PID No. 105792

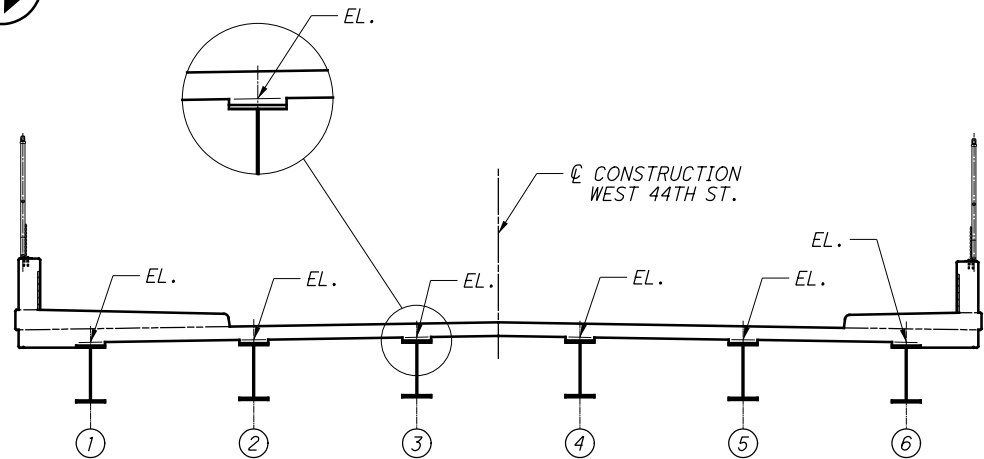
22/30

127  
135

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SS003.dgn Sheet 12/23/2019 9:54:54 AM sriffle



LOCATION PLAN



TOP OF HAUNCH ELEVATION LOCATIONS

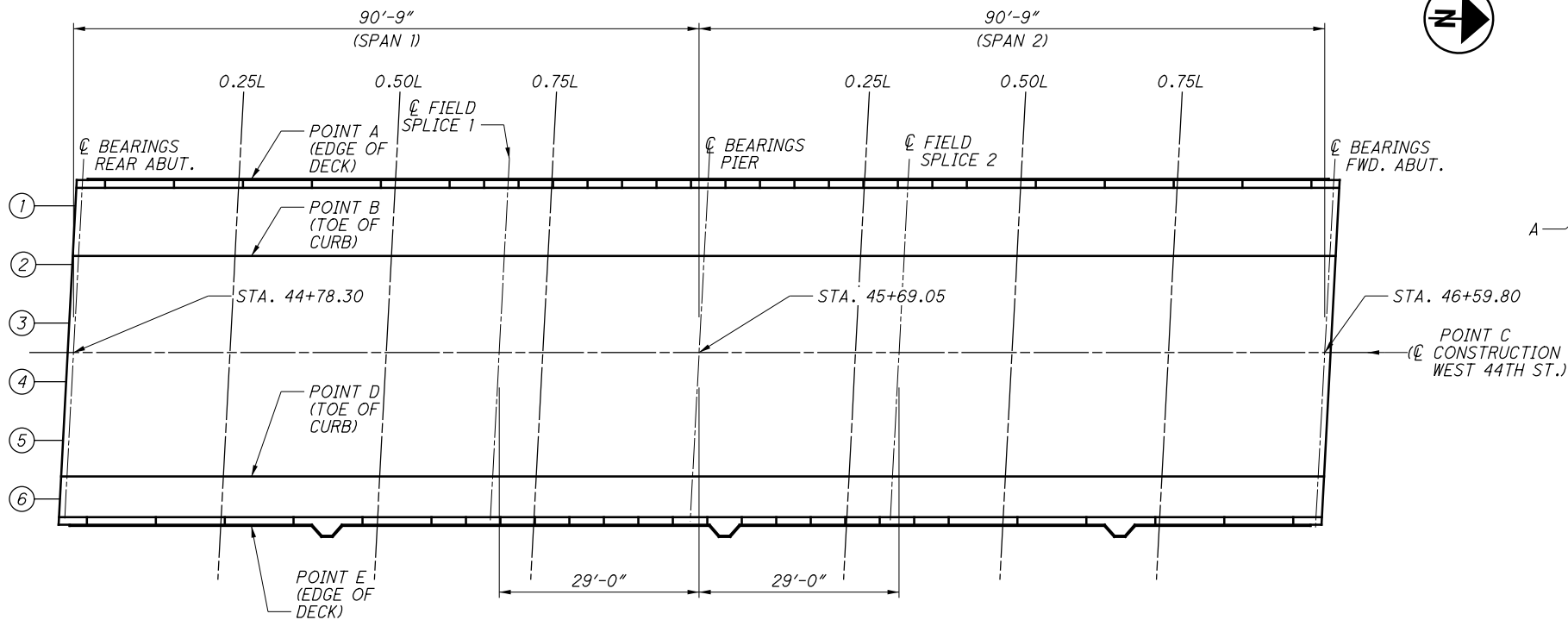
TOP OF HAUNCH ELEVATIONS													
		GIRDER 1		GIRDER 2		GIRDER 3		GIRDER 4		GIRDER 5		GIRDER 6	
SPAN NO.	LOCATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
1	0.00 L	44+79.42	682.79	44+78.97	682.91	44+78.52	683.03	44+78.08	683.01	44+77.63	682.86	44+77.18	682.71
	0.25 L	45+02.11	683.74	45+01.66	683.86	45+01.21	683.98	45+00.76	683.97	45+00.31	683.82	44+99.86	683.66
	0.50 L	45+24.80	684.49	45+24.35	684.61	45+23.90	684.73	45+23.45	684.72	45+23.00	684.57	45+22.55	684.42
	SPLICE	45+41.17	684.86	45+40.72	684.99	45+40.27	685.11	45+39.83	685.10	45+39.38	684.95	45+38.93	684.81
	0.75 L	45+47.49	684.98	45+47.04	685.10	45+46.59	685.23	45+46.14	685.22	45+45.69	685.07	45+45.24	684.93
2													
	0.00 L	45+70.17	685.35	45+69.72	685.48	45+69.27	685.61	45+68.83	685.60	45+68.38	685.46	45+67.93	685.31
	0.25 L	45+92.86	685.70	45+92.41	685.83	45+91.96	685.96	45+91.51	685.96	45+91.06	685.82	45+90.61	685.67
	SPLICE	45+99.17	685.78	45+98.72	685.91	45+98.27	686.05	45+97.83	686.04	45+97.38	685.90	45+96.93	685.76
	0.50 L	46+15.55	685.96	46+15.10	686.09	46+14.65	686.23	46+14.20	686.22	46+13.75	686.08	46+13.30	685.94
	0.75 L	46+38.24	686.11	46+37.79	686.25	46+37.34	686.38	46+36.89	686.37	46+36.44	686.24	46+35.99	686.10
	1.00L	46+60.92	686.14	46+60.47	686.27	46+60.02	686.41	46+59.58	686.40	46+59.13	686.26	46+58.68	686.13

NOTES:

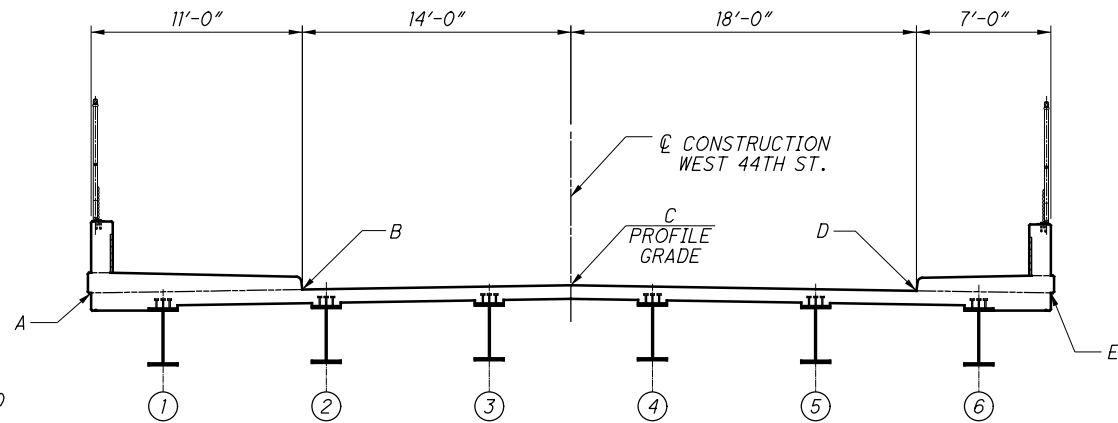
1. TOP OF HAUNCH ELEVATIONS:  
TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL  
LOCATION OF THE BOTTOM OF THE DECK ABOVE THE GIRDER HAUNCH  
PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER  
ANTICIPATED DEAD LOADS.

\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\Design\Structures\CUY090\_1345C\_S004.dgn Sheet 12/23/2019 9:54:55 AM sriffle

FINAL DECK SURFACE ELEVATIONS																							
		A		GIRDER 1		B		GIRDER 2		GIRDER 3		C (CROWN & PROFILE GRADE)		GIRDER 4		GIRDER 5		D		GIRDER 6		E	
SPAN NO.	LOCATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
1	0.00 L	44+79.62	683.45	44+79.42	683.50	44+79.04	683.60	44+78.97	683.62	44+78.52	683.74	44+78.30	683.80	44+78.08	683.72	44+77.63	683.57	44+77.35	683.48	44+77.18	683.42	44+76.98	683.35
	0.25 L	45+02.31	684.26	45+02.11	684.32	45+01.73	684.42	45+01.66	684.44	45+01.21	684.56	45+00.99	684.62	45+00.76	684.54	45+00.31	684.39	45+00.04	684.29	44+99.86	684.24	44+99.67	684.17
	0.50 L	45+25.00	684.99	45+24.80	685.04	45+24.41	685.15	45+24.35	685.17	45+23.90	685.29	45+23.68	685.35	45+23.45	685.28	45+23.00	685.13	45+22.72	685.04	45+22.55	684.98	45+22.35	684.91
	SPLICE	45+41.37	685.42	45+41.17	685.48	45+40.79	685.59	45+40.72	685.60	45+40.27	685.73	45+40.05	685.79	45+39.83	685.72	45+39.38	685.57	45+39.10	685.48	45+38.93	685.42	45+38.73	685.36
	0.75 L	45+47.68	685.57	45+47.49	685.63	45+47.10	685.73	45+47.04	685.75	45+46.59	685.88	45+46.36	685.94	45+46.14	685.87	45+45.69	685.72	45+45.41	685.63	45+45.24	685.57	45+45.04	685.51
2	0.00 L	45+70.37	686.00	45+70.17	686.06	45+69.79	686.17	45+69.72	686.19	45+69.27	686.32	45+69.05	686.38	45+68.83	686.31	45+68.38	686.17	45+68.10	686.08	45+67.93	686.02	45+67.73	685.96
	0.25 L	45+93.06	686.29	45+92.86	686.35	45+92.48	686.46	45+92.41	686.48	45+91.96	686.61	45+91.74	686.67	45+91.51	686.60	45+91.06	686.46	45+90.79	686.38	45+90.61	686.32	45+90.42	686.26
	SPLICE	45+99.37	686.34	45+99.17	686.40	45+98.79	686.51	45+98.72	686.53	45+98.27	686.66	45+98.05	686.73	45+97.83	686.66	45+97.38	686.52	45+97.10	686.43	45+96.93	686.38	45+96.73	686.32
	0.50 L	46+15.75	686.46	46+15.55	686.52	46+15.16	686.63	46+15.10	686.65	46+14.65	686.78	46+14.43	686.85	46+14.20	686.78	46+13.75	686.64	46+13.47	686.56	46+13.30	686.50	46+13.10	686.44
	0.75 L	46+38.43	686.63	46+38.24	686.68	46+37.85	686.80	46+37.79	686.82	46+37.34	686.95	46+37.11	687.02	46+36.89	686.95	46+36.44	686.81	46+36.16	686.72	46+35.99	686.67	46+35.79	686.61
	1.00L	46+61.12	686.79	46+60.92	686.85	46+60.54	686.96	46+60.47	686.98	46+60.02	687.12	46+59.80	687.18	46+59.58	687.11	46+59.13	686.97	46+58.85	686.89	46+58.68	686.83	46+58.48	686.77



LOCATION PLAN



DECK ELEVATION LOCATIONS

LEGEND:

① INDICATES GIRDER NUMBER

NOTES:

1. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

DESIGN AGENCY  
**ms consultants, inc.**  
4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206

DATE  
7/17/2019

REVIEWED  
JDH

DRAWN  
KRM

DESIGNED  
SUR

STRUCTURE FILE NUMBER  
1807811

REVISOR  
WER

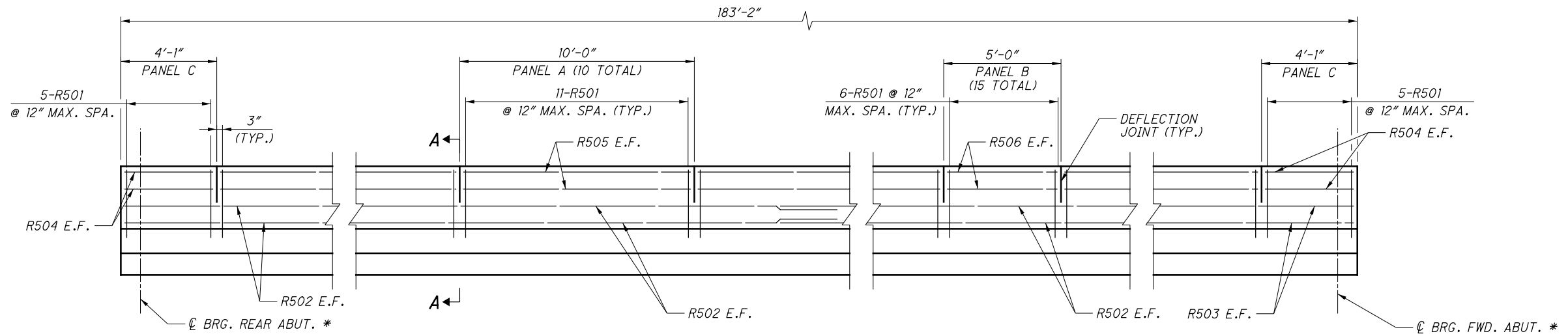
BRIDGE NO. CUY-090-1345  
WEST 44TH STREET OVER I-90

CUY -090-13.45  
PID No. 105792

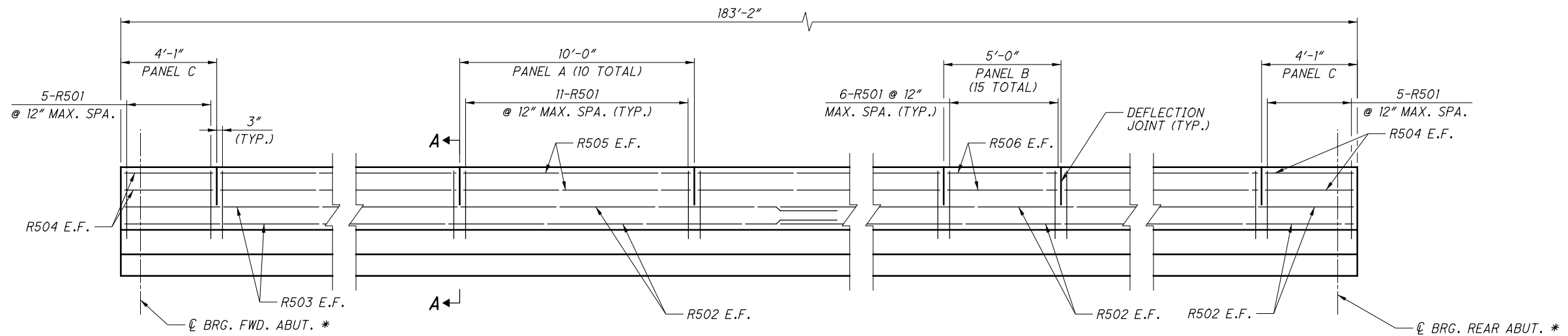
24/30

129  
135

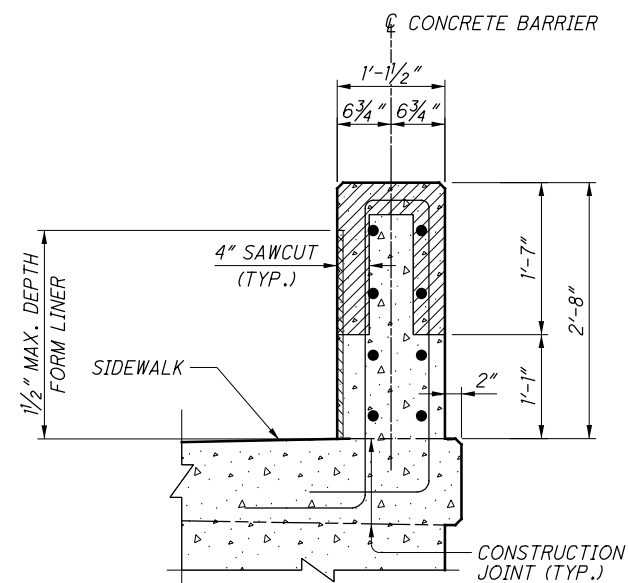
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SA001.dgn Sheet 12/23/2019 9:54:56 AM srlf file



**ELEVATION - LEFT RAILING**  
DIMENSIONS ALONG INSIDE FACE OF RAILING  
UPSTATION



**ELEVATION - RIGHT RAILING**  
DIMENSIONS ALONG INSIDE FACE OF RAILING  
UPSTATION



**SECTION A-A**

**LEGEND:**

\* DRAWN TO REPRESENT CL AT INSIDE FACE OF BARRIER

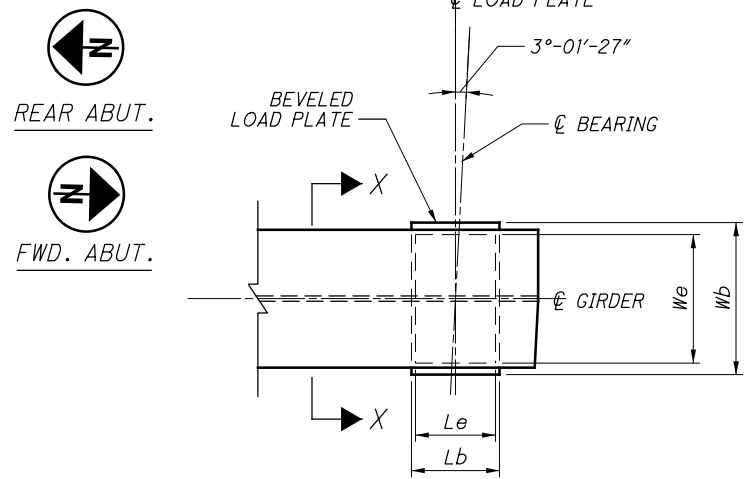
**MINIMUM LAP LENGTH:**

#5 BAR = 2'-5"

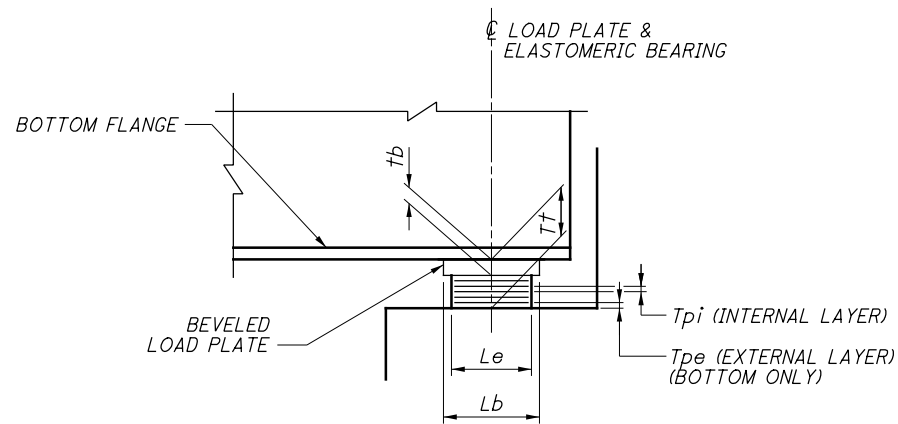
**NOTES:**

1. FOR ADDITIONAL NOTES AND RAILING DETAILS, SEE STANDARD BRIDGE DRAWING BR-2-15.
2. SEE SHEET 21/30 FOR DECK REINFORCING AND DEFLECTION JOINT SPACING.

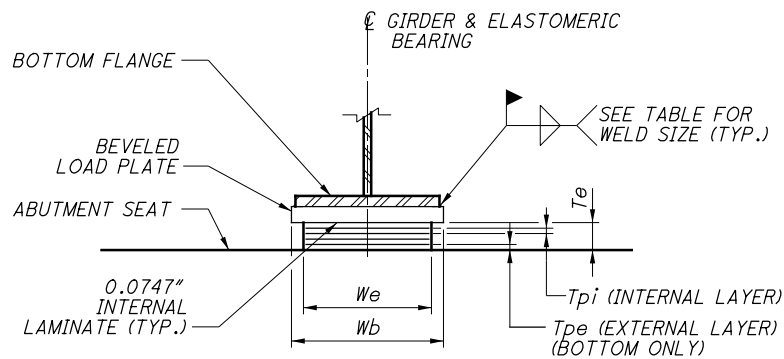
\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SB001.dgn Sheet 12/23/2019 9:54:56 AM srlf file



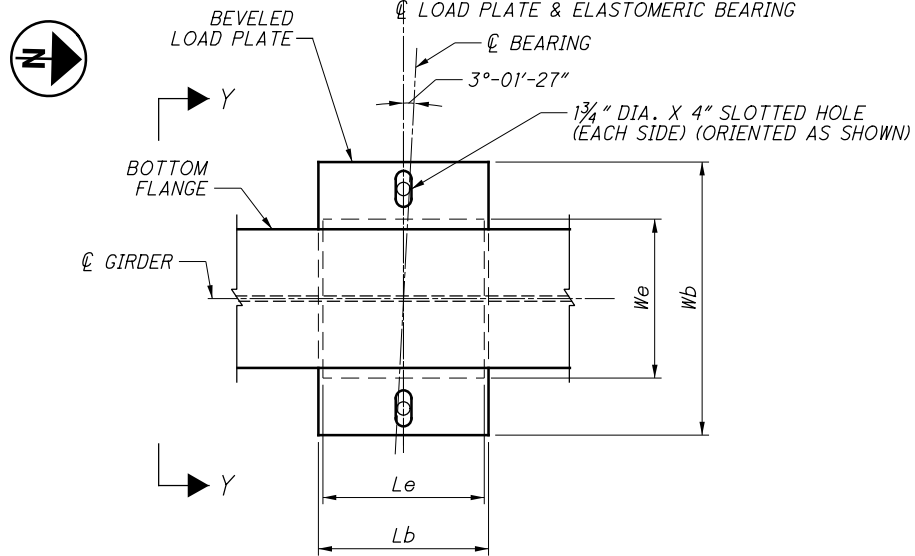
PLAN AT ABUTMENTS



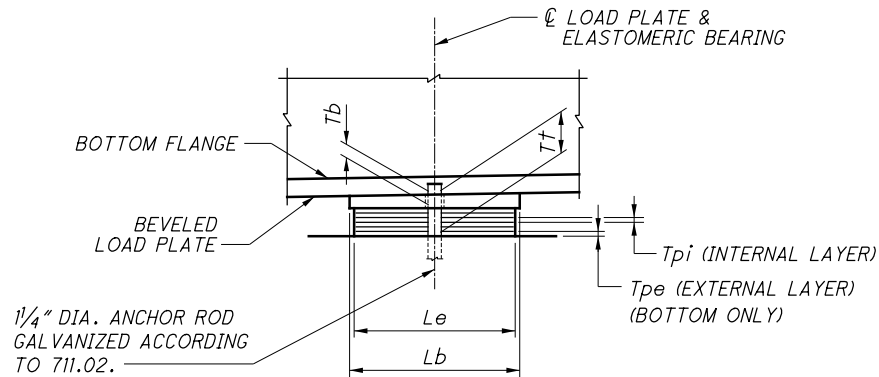
LAMINATED ELASTOMERIC  
EXPANSION BEARING AT ABUTMENTS



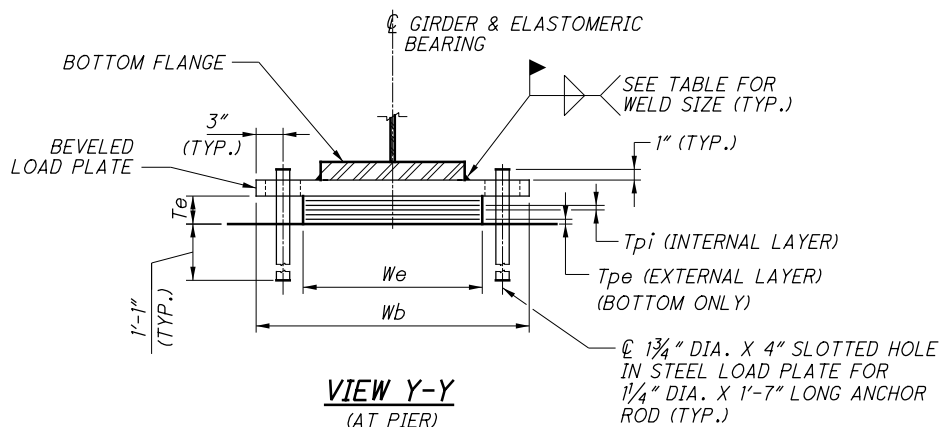
VIEW X-X  
(AT ABUTMENTS)



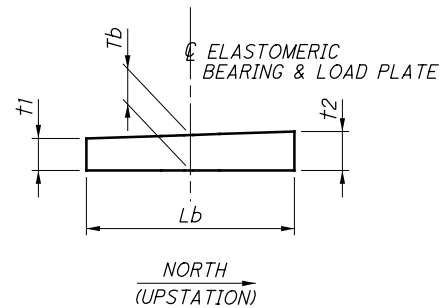
PLAN AT PIER



LAMINATED ELASTOMERIC  
FIXED BEARING AT PIER



VIEW Y-Y  
(AT PIER)



STEEL LOAD PLATE

NOTES:

1. LOAD PLATE:

THE STEEL LOAD PLATE SHALL BE THE SAME MATERIAL AS THE ATTACHED STRUCTURAL STEEL AND SHALL BE PAINTED AS PER ITEM 514.

THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.

2. ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

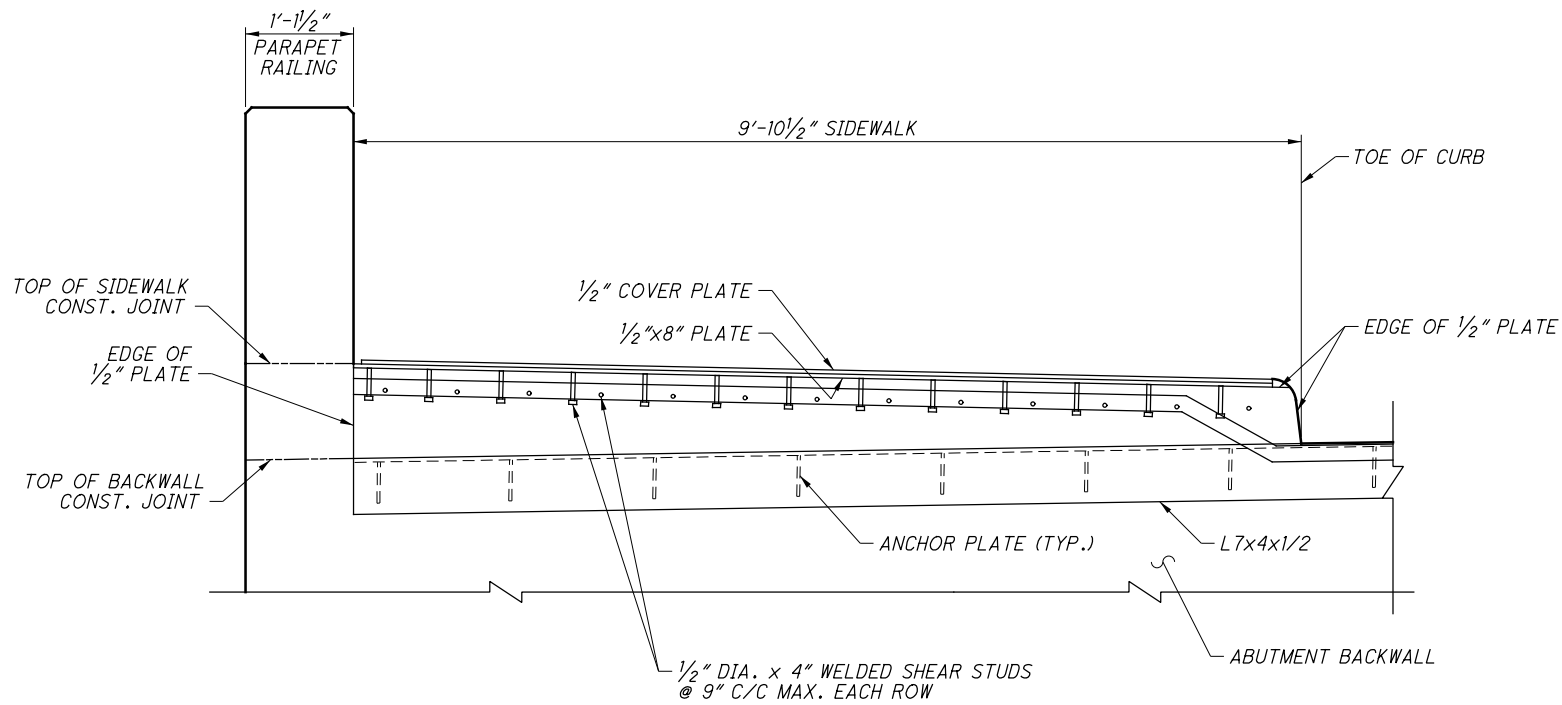
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

4. ANCHOR RODS SHALL BE IN ACCORDANCE WITH ASTM F1554 GRADE 105 AND HOT DIP GALVANIZED IN ACCORDANCE WITH CMS 711.02.

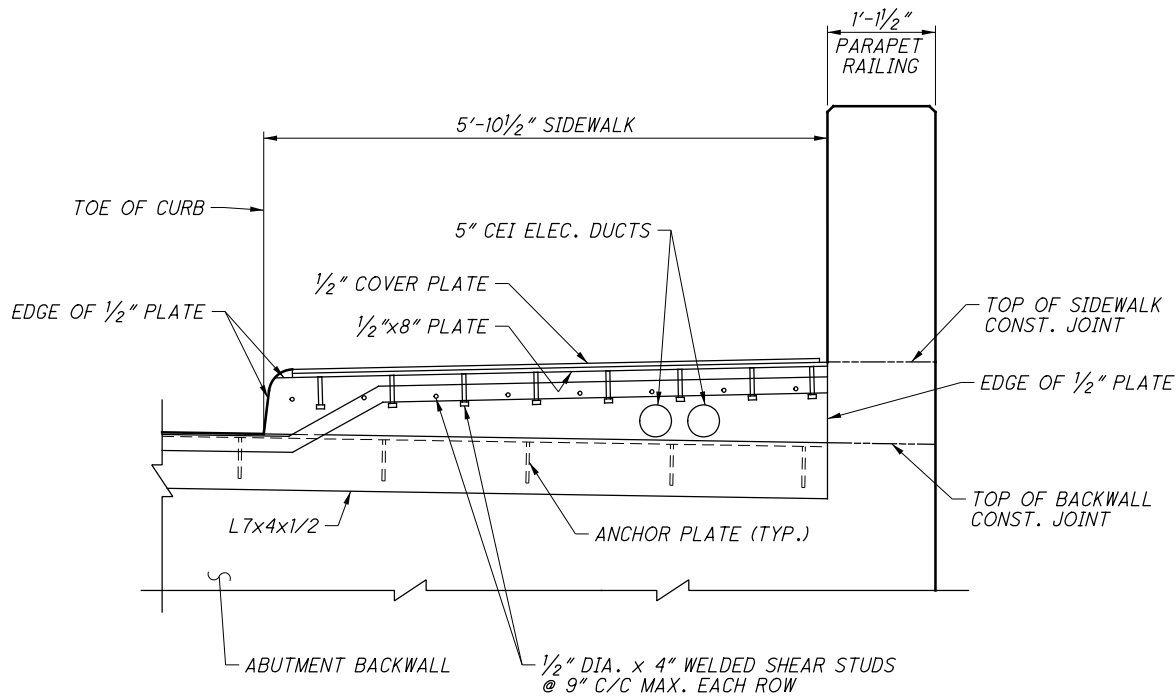
5. BEARING STIFFENERS NOT SHOWN.

BEARING LOCATION	BEARING TYPE	NO. REQ'D. PER LOCATION	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) (KIPS)	Le (inches)	We (inches)	Tpi (inches)	NO. OF Tpi'S	Tpe (1 EA.) (inches)	NUMBER OF INTERNAL LAMINATES (14 GAGE)	Te (inches)	STEEL LOAD PLATE					T† (inches)	FILLET WELD SIZE (inches)
													Lb (inches)	Wb (inches)	Tb (inches)	t1 (inches)	t2 (inches)		
REAR ABUTMENT	EXP.	6	70	75	145	10	16	0.375	4	0.25	4	2.0488	11	19	1.698	1.500	1.896	3.747	5/16"
PIER 1	FIX.	6	256	141	397	18	20	0.50	5	0.25	5	3.1235	19	30.50	1.654	1.500	1.807	4.778	1/2"
FORWARD ABUTMENT	EXP.	6	70	75	145	10	16	0.375	4	0.25	4	2.0488	11	19	1.540	1.500	1.580	3.589	5/16"

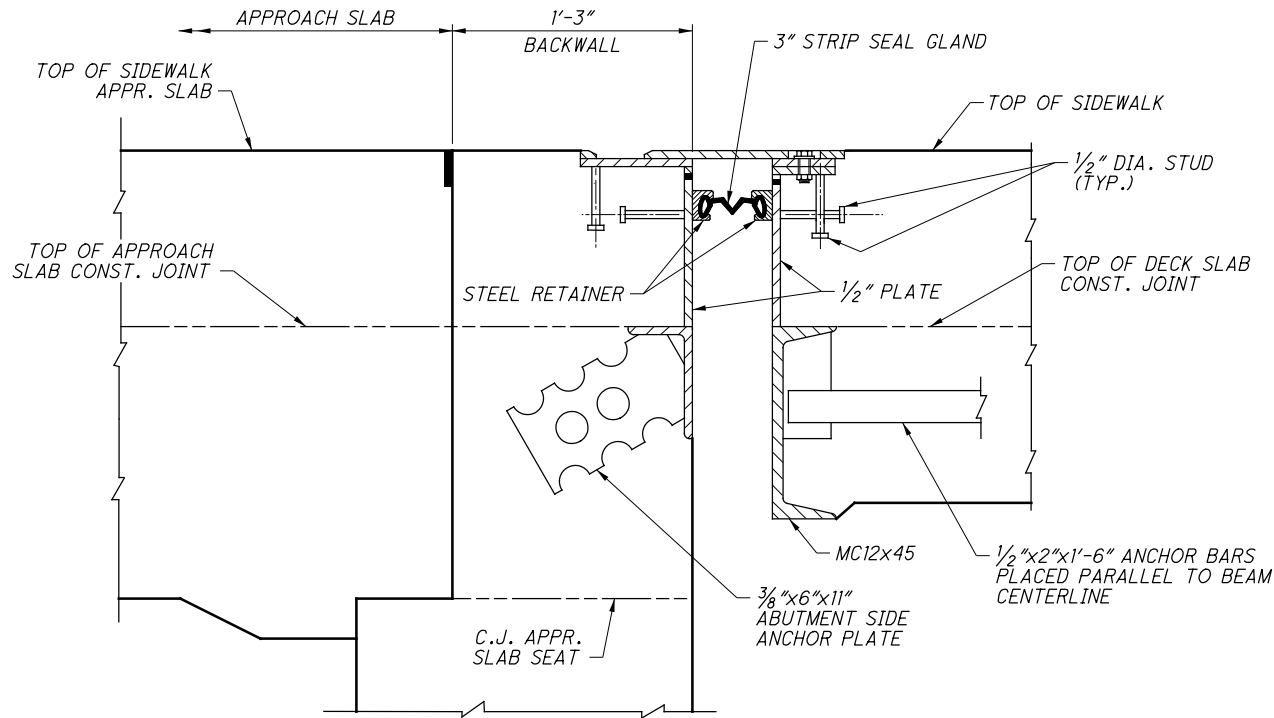
\\msconsultants.com\files\Production\02\60\08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C.dgn Sheet 12/23/2019 9:54:57 AM srlf file



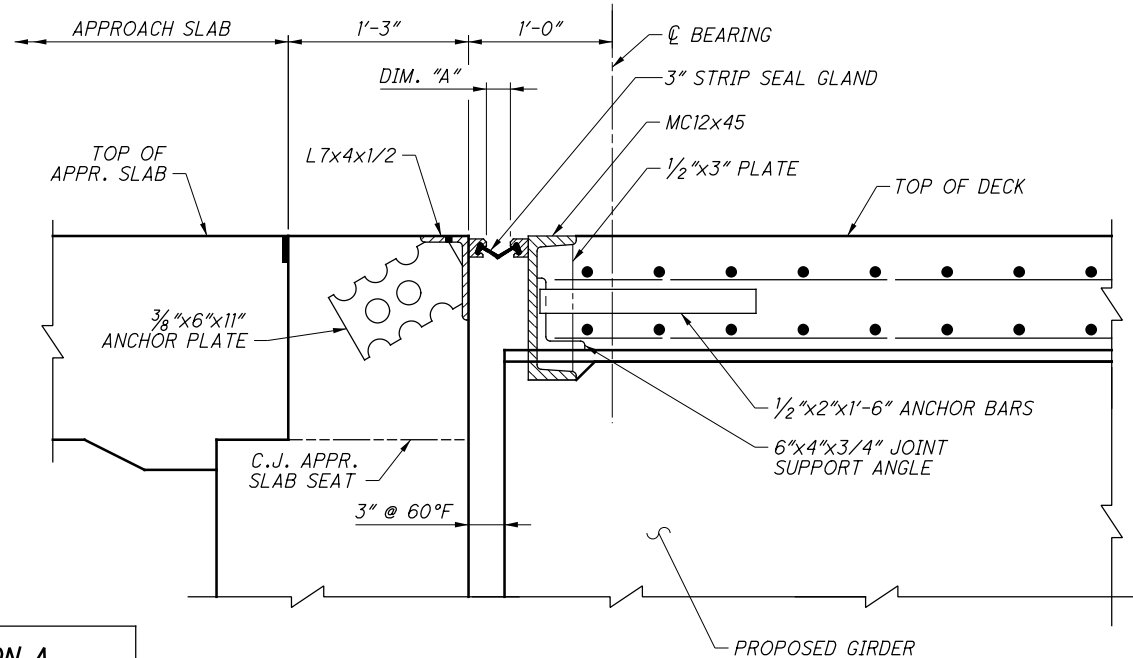
EXPANSION JOINT AT WEST SIDEWALK



EXPANSION JOINT AT EAST SIDEWALK



TYPICAL EXPANSION JOINT DETAIL AT SIDEWALKS



TYPICAL EXPANSION JOINT DETAIL AT BACKWALL

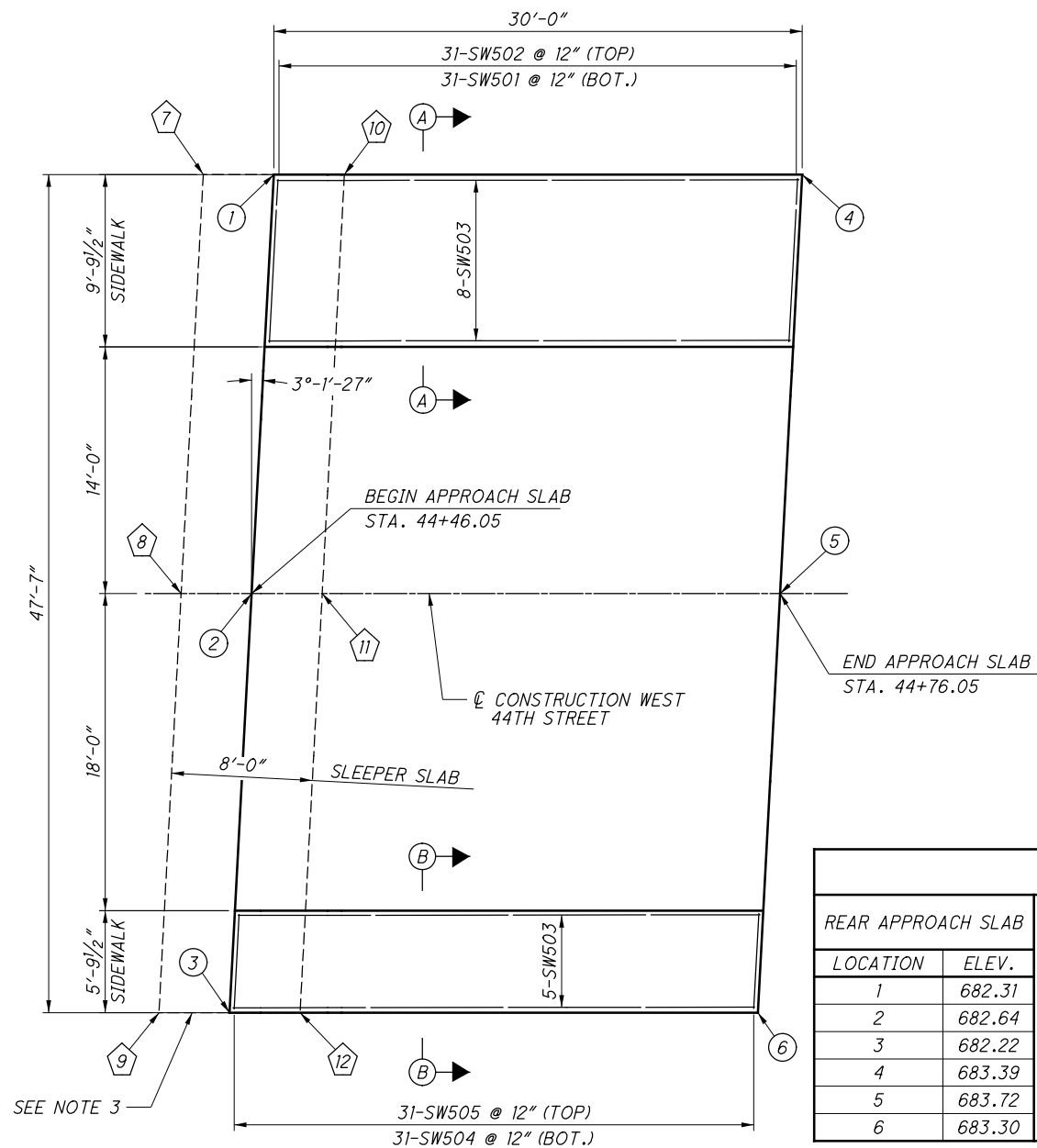
DIMENSION A		
TEMP. †	REAR ABUT.	FORWARD ABUT.
90°	1 1/16"	1 1/16"
80°	1 1/2"	1 1/2"
70°	1 9/16"	1 9/16"
60°	1 5/8"	1 5/8"
50°	1 11/16"	1 11/16"
40°	1 3/4"	1 3/4"
30°	1 13/16"	1 13/16"

† AMBIENT AIR TEMPERATURE (°F)  
AT TIME OF JOINT INSTALLATION

NOTES:

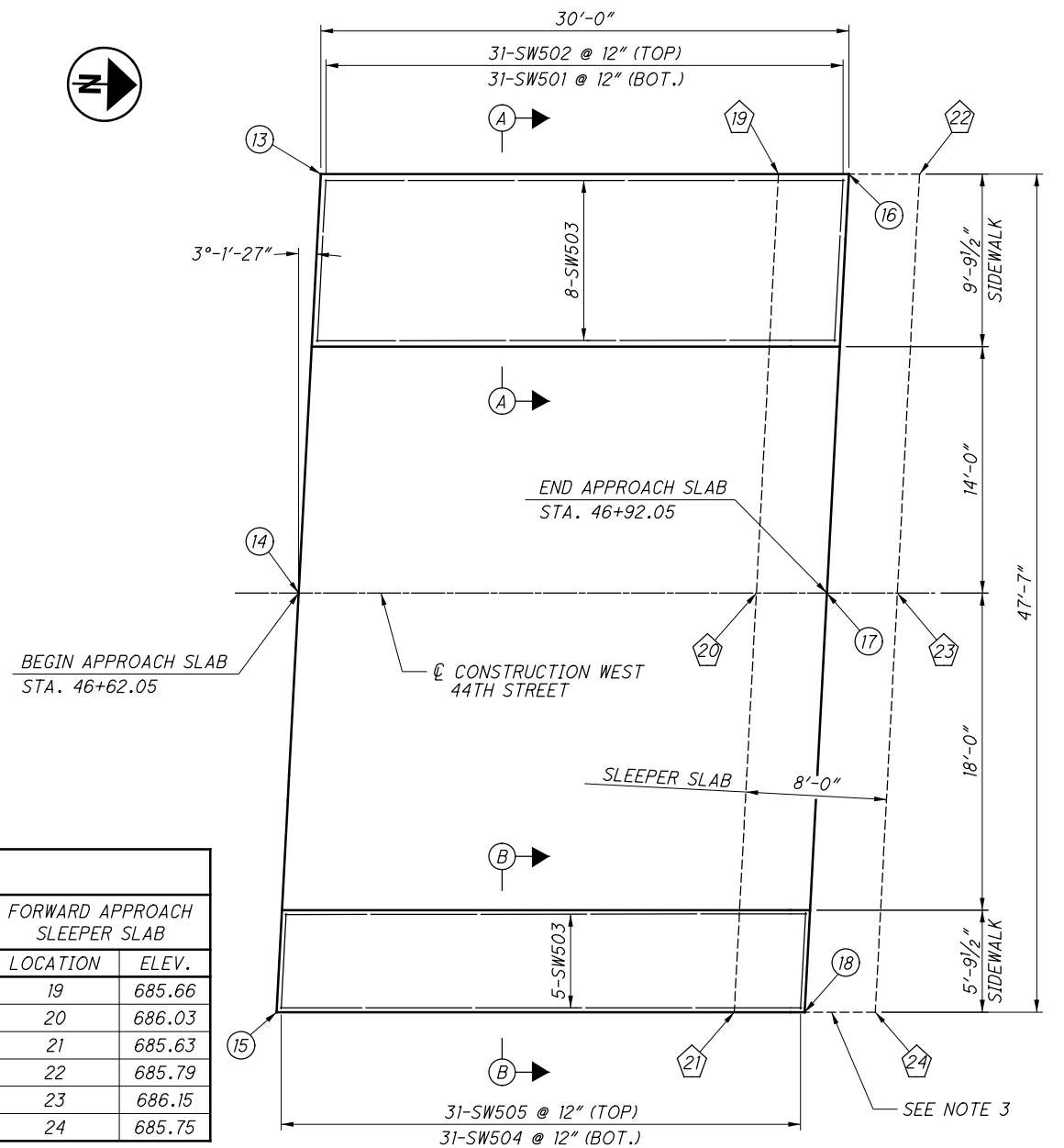
- FOR ADDITIONAL STRIP SEAL EXPANSION JOINT DETAILS, SEE STANDARD DRAWING EXJ-4-87.
- FOR ADDITIONAL END CROSSFRAME NOTES AND DETAILS, SEE ODOT STANDARD DRAWING GSD-1-19 AND SHEET 18/30.
- ELASTOMERIC STRIP SEAL SHALL BE INSTALLED IN ONE CONTINUOUS PIECE ACROSS THE WIDTH OF THE STRUCTURE.

\\msconsultants.com\files\Production\02\60\_08342\_105792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SM001.dgn Sheet 12/23/2019 9:54:57 AM sr1ffle

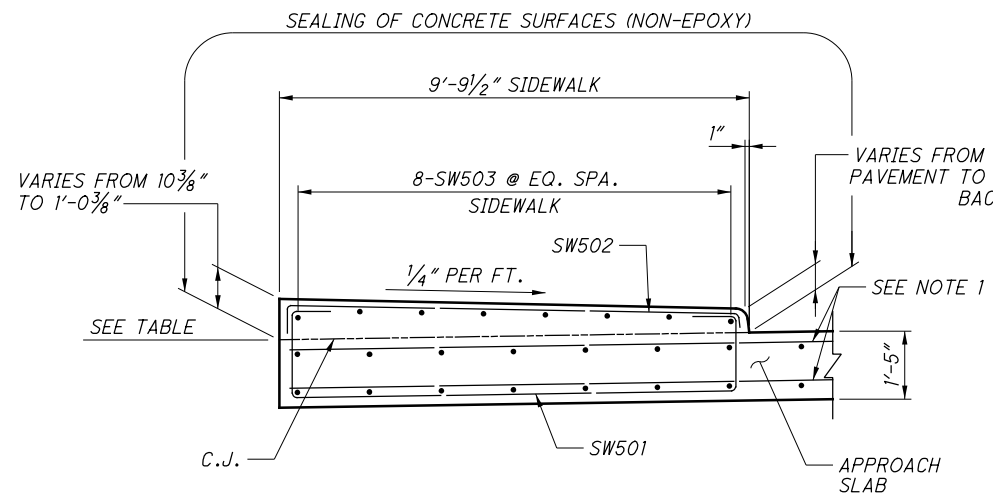


REAR APPROACH SLAB PLAN

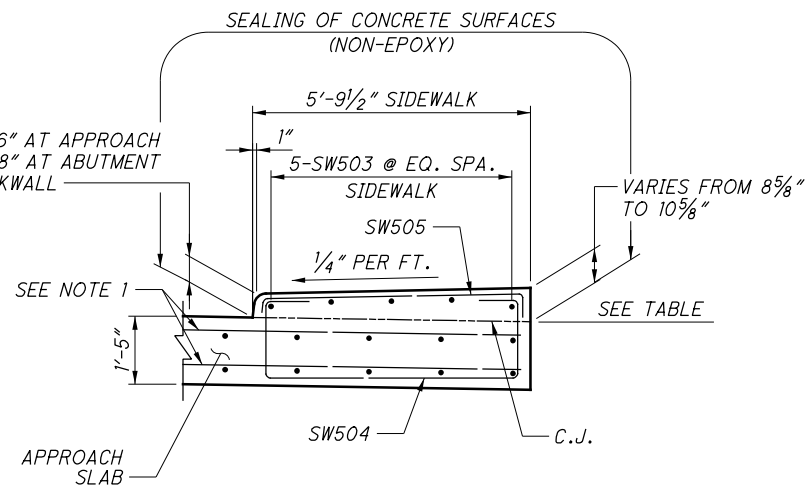
APPROACH SLAB ELEVATIONS							
REAR APPROACH SLAB		REAR APPROACH SLEEPER SLAB		FORWARD APPROACH SLAB		FORWARD APPROACH SLEEPER SLAB	
LOCATION	ELEV.	LOCATION	ELEV.	LOCATION	ELEV.	LOCATION	ELEV.
1	682.31	7	680.75	13	686.82	19	685.66
2	682.64	8	681.08	14	687.19	20	686.03
3	682.22	9	680.66	15	686.80	21	685.63
4	683.39	10	681.03	16	687.14	22	685.79
5	683.72	11	681.37	17	687.50	23	686.15
6	683.30	12	680.94	18	687.10	24	685.75



FORWARD APPROACH SLAB PLAN



SECTION A-A



SECTION B-B

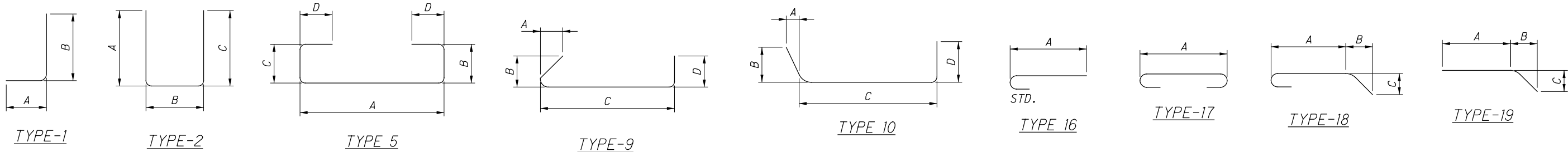
LEGEND:

- ① - INDICATES ELEVATION AT TOP OF APPROACH SLAB  
⑦ - INDICATES ELEVATION AT TOP OF SLEEPER SLAB

NOTES:

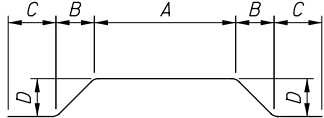
- FOR ADDITIONAL APPROACH SLAB REINFORCEMENT AND DETAILS, SEE ODOT STANDARD BRIDGE DRAWING AS-1-15.
- MIN. LAP LENGTH:  
#5 BAR = 2'-5"
- SEE STD. DWG. AS-2-15, APPROACH SLAB INSTALLATION (TYPE A), FOR DETAILS.
- CONCRETE FOR SIDEWALKS ON APPROACH SLABS SHALL BE INCLUDED WITH ITEM 511, CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK. REINFORCEMENT FOR SIDEWALKS ON APPROACH SLABS SHALL BE INCLUDED WITH ITEM 509, EPOXY COATED REINFORCING STEEL.

\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SL001.dgn Sheet 12/23/2019 9:54:58 AM srlrfile

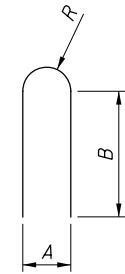


MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FORWARD	TOTAL				A	B	C	D	E	R	INC.
ABUTMENT BARS													
A501	30	50	80	26'-1"	2,176	ST							
A502	50		50	6'-2"	322	2	1'-6"	3'-5"	1'-6"				
A503		50	50	6'-0"	313	2	1'-5"	3'-5"	1'-5"				
A504		68	68	1'-8"	118	1	9"	1'-0"					
A505		34	34	16'-2"	573	ST							
A506	2	2	4	12'-1"	50	17	10'-11"						
A507	4	4	8	7'-3"	60	2	2'-2"	3'-2"	2'-2"				
A508	4	4	8	6'-9"	56	2	2'-2"	2'-8"	2'-2"				
A509	4	4	8	8'-6"	71	24	2'-0"	2'-8"				12"	
A510	4	4	8	5'-8"	47	24	1'-3"	1'-10"				8"	
A511	2	2	4	14'-1"	59	5	10'-7"	1'-2"	1'-4"	9"			
A512	2	2	4	9'-1"	38	5	6'-7"	1'-2"	1'-4"	9"			
A513	2	2	4	11'-7"	48	10	1"	5"	10'-7"	9"			
A514	2	2	4	7'-6"	31	10	1"	5"	6'-7"	8"			
A515	13	13	26	1'-0"	27	ST							
A516	2 SER. OF 3	2 SER. OF 3	4 SER. OF 3	3'-7" TO 6'-0"	60	ST							1'-2 1/2"
A517	4	4	8	4'-8"	39	ST							
A601	50		50	5'-0"	376	1	1'-0"	4'-2"					
A602	50		50	5'-4"	401	ST							
A603	50		50	3'-6"	263	1	1'-0"	2'-8"					
A604	50	50	100	5'-9"	864	2	2'-4"	1'-5"	2'-4"				
A605	48	48	96	8'-1"	1,166	2	3'-9"	11"	3'-9"				
A606		50	50	3'-5"	257	1	1'-0"	2'-7"					
A607		50	50	5'-3"	394	ST							
A608		50	50	4'-11"	369	1	1'-0"	4'-1"					
A609	16	16	32	8'-0"	385	33	1'-8"	1'-9"					
A610	4	4	8	5'-1"	61	1	1'-9"	3'-6"					
A611	8		8	8'-9"	105	2	4'-2"	9"	4'-2"				
A612	4		4	8'-2"	49	19	6'-7"	1'-1"	1'-2"				
A613	2		2	8'-5"	25	2	4'-0"	9"	4'-0"				
A614	2		2	6'-3"	19	2	2'-11"	9"	2'-11"				
A615		8	8	9'-3"	111	2	4'-5"	9"	4'-5"				
A616		4	4	8'-8"	52	19	7'-3"	1'-0"	1'-1"				
A617		2	2	7'-11"	24	2	3'-9"	9"	3'-9"				
A618		2	2	5'-11"	18	2	2'-9"	9"	2'-9"				
A701	10	10	20	5'-1"	208	1	1'-9"	3'-6"					
A801	33	33	66	5'-1"	896	18	2'-10"	1'-0"	1'-0"				
A901	8	8	16	3'-5"	186	ST							

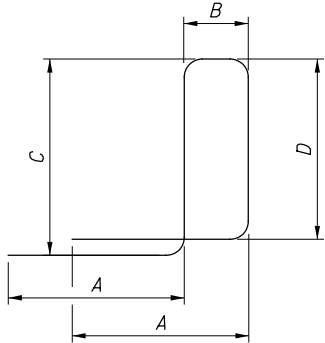
TOTAL = 10,317



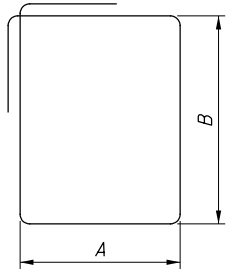
TYPE-21



TYPE-24



TYPE 32



TYPE-33

MARK	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS					
					A	B	C	D	E	INC.
PIER BARS										
P501	94	3'-3"	319	16	2'-8"					
P502	47	5'-11"	290	2	1'-9"	2'-8"	1'-9"			
P503	20	24'-1"	502	ST						
P504	47	3'-8"	180	9	5"	7"	2'-8"	7"		
P505	4	4'-3"	18	2	1'-0"	2'-6"	1'-0"			

TOTAL = 1,309

NOTES:

- BAR SIZE: THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR DIGITS ARE USED INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, AN A601 IS A #6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.



\\msconsultants.com\files\Production\02\60\_08342\05792\_BRIDGE\_REDECK\_Design\Structures\CUY090\_1345C\_Sheets\090\_1345C\_SL002.dgn Sheet 12/23/2019 9:54:59 AM sriffle

MARK	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS					
					A	B	C	D	E	INC.
SUPERSTRUCTURE BARS										
S401	366	30'-0"	7,335	ST						
S402	61	14'-10"	604	ST						
S501	180	31'-5"	5,898	ST						
S502	396	30'-0"	12,391	ST						
S503	66	18'-4"	1,262	ST						
S504	367	30'-7"	11,707	16	30'-0"					
S505	367	23'-5"	8,963	16	22'-10"					
S506	367	24'-5"	9,346	ST						
S507	367	28'-6"	10,909	ST						
S508	184	11'-9"	2,255	10	1"	5"	10'-9"	9"		
S509	734	8'-8"	6,635	16	8'-1"					
S510	184	7'-8"	1,471	10	1"	5"	6'-9"	8"		
S511	184	13'-7"	2,607	5	10'-7"	11"	1'-1"	9"		
S512	184	9'-6"	1,823	5	6'-7"	1'-0"	11"	9"		
S513	6	7'-5"	46	21	1'-4"	1'-10"	6"	1'-10"		
S514	12	4'-3"	53	2	1'-0"	2'-6"	1'-0"			
S515	12	10'-3"	128	2	4'-0"	2'-6"	4'-0"			
S601	36	8'-1"	437	ST						
		TOTAL = 83,870								

MARK	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS					
					A	B	C	D	E	INC.
APPROACH SLAB SIDEWALK BARS										
SW501	62	13'-10"	895	5	9'-4"	1'-7"	1'-11"	9"		
SW502	62	10'-0"	647	10	1"	3"	9'-4"	7"		
SW503	26	29'-8"	805	ST						
SW504	62	9'-9"	630	5	5'-5"	1'-7"	1'-9"	9"		
SW505	62	5'-11"	383	10	1"	3"	5'-5"	5"		
TOTAL =			3,360							

MARK	TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS					
					A	B	C	D	E	INC.
RAILING BARS										
R501	420	9'-2"	4,016	32	1'-6"	8"	3'-1"	2'-11"		
R502	48	30'-0"	1,502	ST						
R503	8	17'-4"	145	ST						
R504	16	3'-9"	63	ST						
R505	80	9'-8"	807	ST						
R506	120	4'-8"	584	ST						
R507	12	7'-5"	93	21	1'-4"	1'-10"	6"	1'-10"		
R508	12	4'-1"	51	ST						
R509	4 SER. OF 4	10'-6" TO 10'-9"	177	2	5'-2"	5" TO 8"	5'-2"			0'-1"
R510	32	10'-10"	362	2	5'-2"	9"	5'-2"			
R511	16	4'-8"	78	ST						
R512	16	4'-7"	76	19	3'-4"	1'-3"	5"			
		TOTAL = 7,954								

NOTE:

1. FOR REINFORCING NOTES AND BAR TYPES, SEE SHEET 29/30

DESIGN AGENCY  
**ms consultants, inc.**  
4608 St. Clair Avenue  
Cleveland, Ohio 44103-1206



DESIGNED  
LAW  
CHECKED  
TVB

DRAWN  
KRM  
REVISED

REVIEWED  
JDH  
STRUCTURE FILE NUMBER  
1807811

DATE  
7/17/2019

REINFORCING STEEL LIST  
BRIDGE NO. CUY-090-1345  
WEST 44TH STREET OVER I-90

CUY-090-13.45  
PID No. 105792

30/30

135

135