STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-480-22.45

CITY OF BEDFORD HEIGHTS
CITY OF CLEVELAND
CITY OF MAPLE HEIGHTS
CITY OF WARRENSVILLE HEIGHTS

CUYAHOGA COUNTY

LOCATION MAP

LATITUDE: 41°25'22" LONGITUDE: -81°31'38"

N

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

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FEDERAL PROJECT NUMBER

E080387

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE RESURFACING OF IR-480 FROM LEE ROAD TO IR-271 IN THE CITIES OF BEDFORD HEIGHTS, CLEVELAND, MAPLE HEIGHTS, AND WARRENSVILLE HEIGHTS.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	N/A (MAINTENANCE PROJECT)
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (MAINTENANCE PROJECT)

LIMITED ACCESS

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.

2019 SPECIFICATIONS

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.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

DESIGN DESIGNATION

	S.L.M. 22.44-23.52	S.L.M. 23.52-24.14	S.L.M. 24.14-24.86	S.L.M. 24.86-26.04	S.L.M. 26.04-26.23
CURRENT ADT (2021)	174,000	147,000	45,500	51,000	58,500
DESIGN YEAR ADT (2041)	208,000	167,000	58,500	63,500	69,500
DESIGN HOURLY VOLUME (2041)	18,500	15,000	5,300	5,100	5,600
DIRECTIONAL DISTRIBUTION	0.51	0.51	0.51	0.51	0.56
TRUCKS (24 HOUR B&C)	0.06	0.06	0.05	0.06	0.04
DESIGN SPEED	65 MPH	65 MPH	65 MPH	65 MPH	65 MPH
LEGAL SPEED	60 MPH	60 MPH	60 MPH	60 MPH	60 MPH
DESIGN FUNCTIONAL CLASSIFICATION:					
INTERSTATE					
NHS PROJECT	YES				

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

Contact Two Working Days Before You Dig

OHIO811.org Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:
ODOT DISTRICT 12
PLANNING & ENGINEERING
5500 TRANSPORTATION BLVD
GARFIELD HEIGHTS, OH 44125

ENGINEER'S SEAL:

STATE OF OHIO
DRAKE A. BRAUER
E-83905
REGISTERED
PROFESSIONAL ENGINEER

SIGNED: _____
DATE: _____

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	1/17/20	MT-95.30	7/19/19	TC-41.20	10/18/13			800	1/15/21	
BP-5.1	1/18/19	MT-95.40	1/17/20	TC-41.30	10/18/13			808	1/18/19	
BP-9.1	1/18/19	MT-95.45	1/17/20	TC-41.40	10/18/13			821	4/20/12	
		MT-95.50	7/21/17	TC-42.20	10/18/13			832	10/19/18	
RM-3.1	7/20/18	MT-98.10	1/17/20	TC-52.10	10/18/13			872	4/17/20	
		MT-98.11	1/17/20	TC-52.20	7/20/18			908	10/20/17	
		MT-98.20	4/19/19	TC-65.10	1/17/14			921	4/20/12	
		MT-98.22	1/17/20	TC-65.11	7/21/17					
		MT-98.28	1/17/20	TC-71.10	1/19/18					
		MT-99.20	4/19/20	TC-72.20	7/20/18					
		MT-101.70	1/17/20	TC-73.20	1/17/20					
		MT-101.75	1/17/20	TC-82.10	7/19/19					
		MT-101.90	7/17/20							
		MT-104.10	10/16/15							
		MT-105.10	1/17/20							

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

TITLE SHEET

DESIGN AGENCY

DESIGNER DAB
REVIEWER XXX MM-DD-YY
PROJECT ID 84020
SHEET P.1 TOTAL 48

CUY-480-22.45

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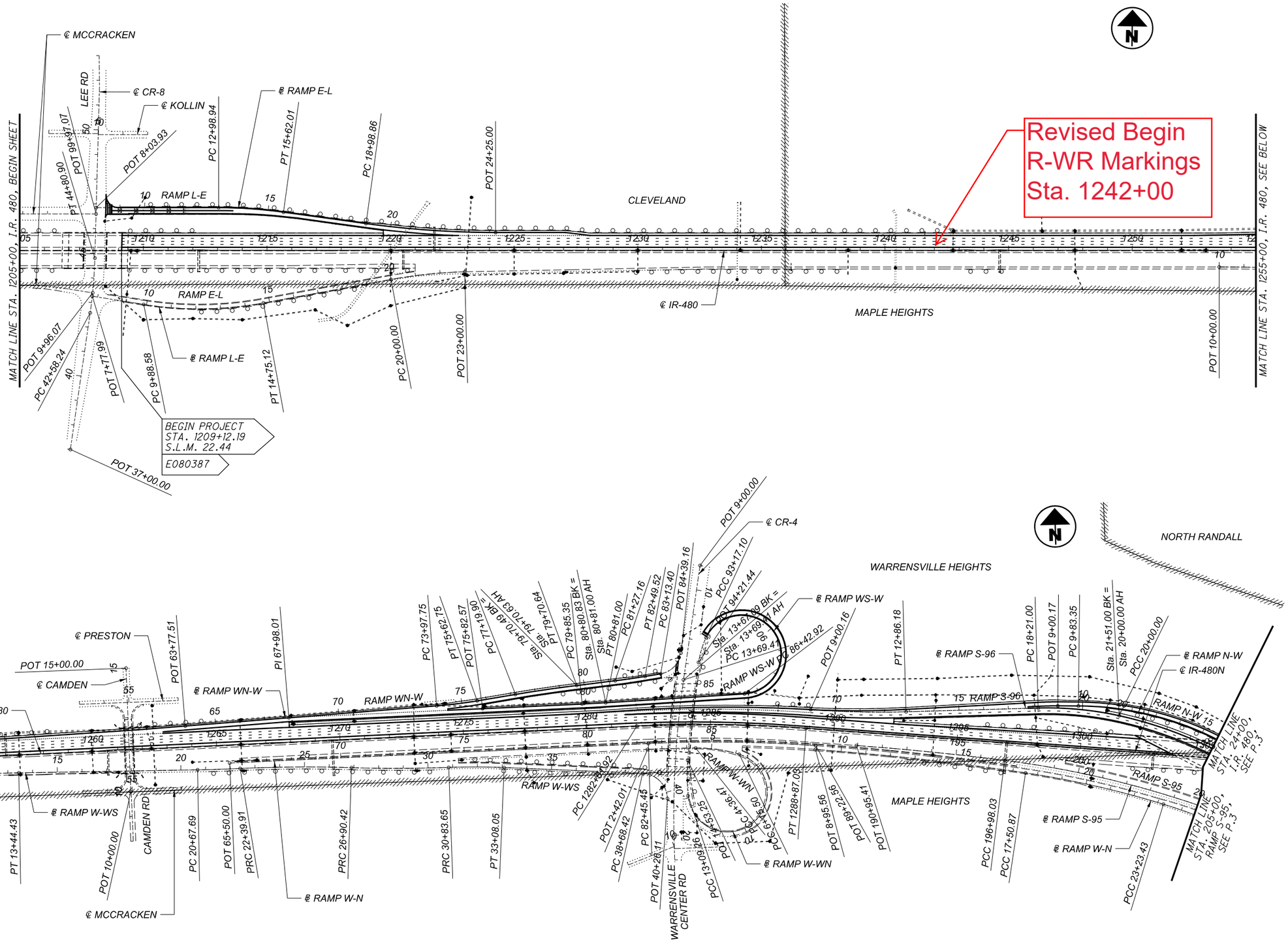

HORIZONTAL SCALE IN FEET
0 100 200 400

SCHEMATIC PLAN SHEET
I.R. 480, STA. 1205+00 TO STA. 24+00

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET P.2 TOTAL 48

CUY-480-22.45

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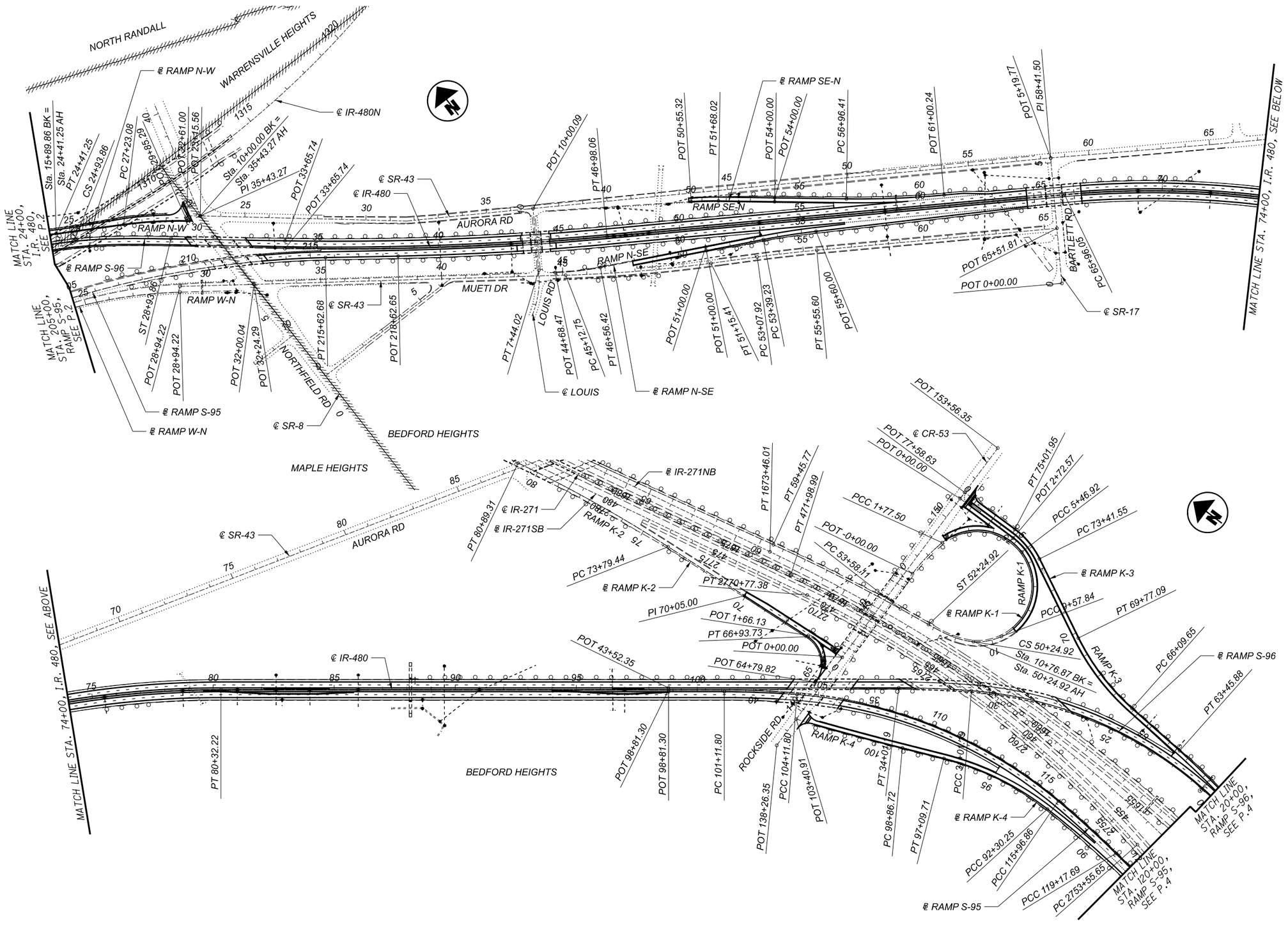

SCHEMATIC PLAN SHEET
I.R. 480, STA. 24+00 TO RAMP S-95, STA. 120+00

DESIGN AGENCY

DESIGNER: DAB

REVIEWER: XXX MM-DD-YY

PROJECT ID: 84020

SHEET P-3 TOTAL 48

CUY-480-22.45

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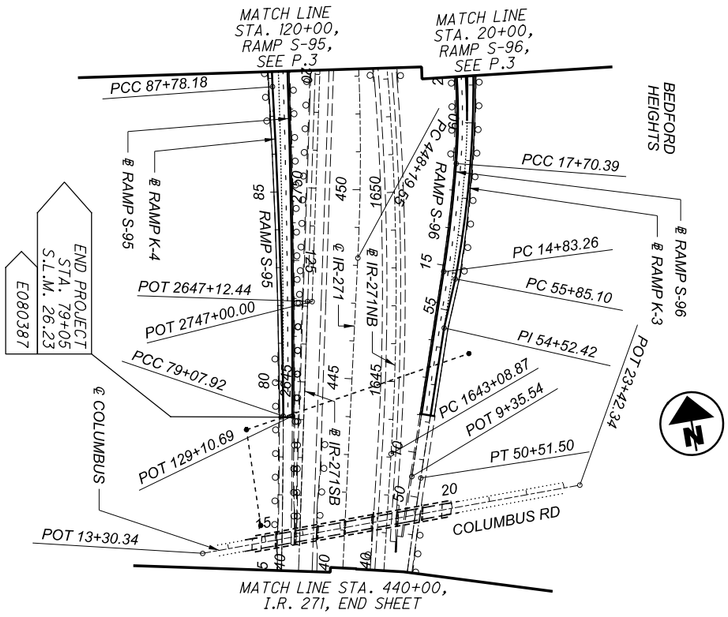
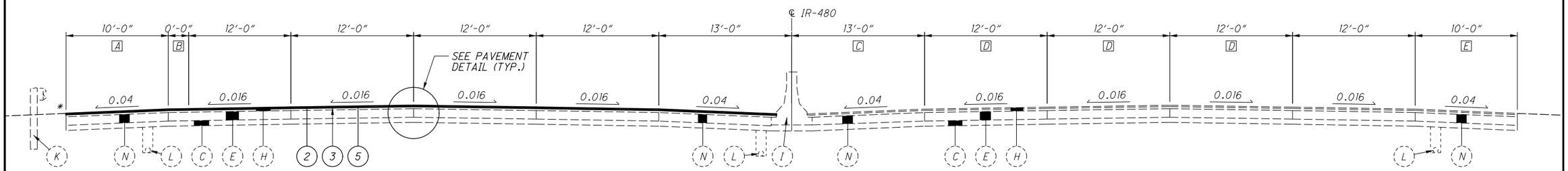


SHEET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P-4	48	84020	XXX MM-DD-YY	DAB	

SCHEMATIC PLAN SHEET
RAMP S-95, STA. 120+00 TO I.R. 271, STA. 440+00

HORIZONTAL SCALE IN FEET
0 200
100 400

* BEGIN CURB, TYPE 2-B
STA. 1261+75



NORMAL SECTION I-480 WB
STA. 1209+12.19 TO STA. 1267+97.78

NORMAL SECTION I-480 EB
STA. 1209+12.19 TO STA. 1221+00.00

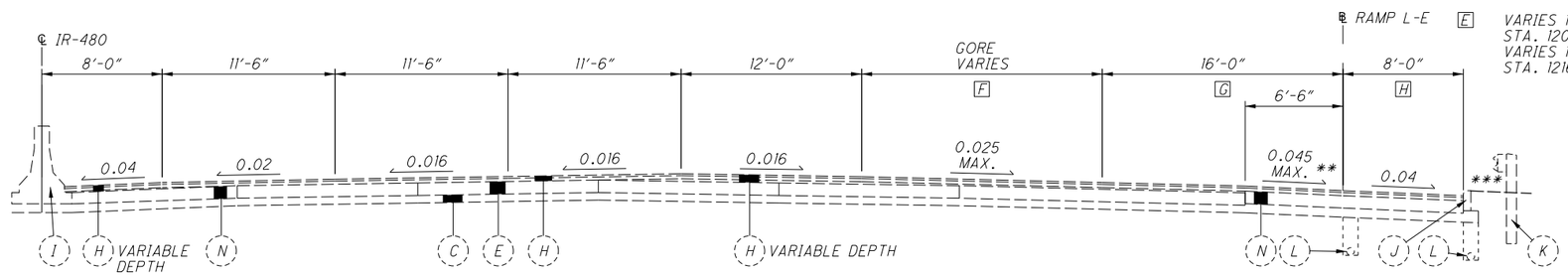
A VARIES 10'-0"± TO 8'-0"±
STA. 1219+70.69
VARIES 8'-0" TO 10'-0"
STA. 1227+06.87 TO STA. 1228+06.87
VARIES 10'-0"± TO 8'-0"±
STA. 1252+50.00 TO STA. 1253+50.00
VARIES 8'-0"± TO 6'-0"±
STA. 1262+33.00

B VARIES 39'-0"± TO 16'-0"±
STA. 1219+70.69 TO STA. 1222+49.90
VARIES 16'-0"± TO 12'-0"±
STA. 1222+49.90 TO STA. 1224+24.99
VARIES 12'-0"± TO 0'-0"±
STA. 1227+06.87 TO STA. 1228+06.87
VARIES 0'-0"± TO 18.70'±
STA. 1252+50.00 TO STA. 1261+88.51
VARIES 18.70'± TO 25'-0"±
STA. 1261+88.51 TO STA. 1263+77.51
VARIES 25'-0"± TO 39'-0"±
STA. 1263+77.51 TO STA. 1267+97.78

C VARIES 13'-0"± TO 8'-0"±
STA. 1216+00.00 TO STA. 1220+00.00

D VARIES 12'-0"± TO 11'-6"±
STA. 1216+00.00 TO STA. 1220+00.00

E VARIES 10'-0"± TO 13'-0"±
STA. 1209+12.19 TO STA. 1212+00.00
VARIES 13'-0"± TO 16'-6"±
STA. 1216+00.00 TO STA. 1220+00.00



NORMAL SECTION I-480 EB
STA. 1221+00.00 TO STA. 1253+51.80

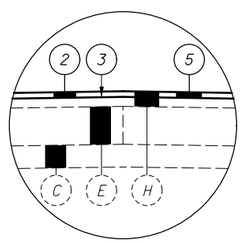
F VARIES 31'-0"± TO 0'-0"±
STA. 1221+00.00 TO STA. 1230+75.00

G VARIES 16'-0"± TO 12'-0"±
STA. 1230+75.00 TO STA. 1232+75.00

H VARIES 3'-0"± TO 8'-0"±
STA. 1221+00.00 TO STA. 1223+00.00

** 0.016 AT STA. 1231+50.00

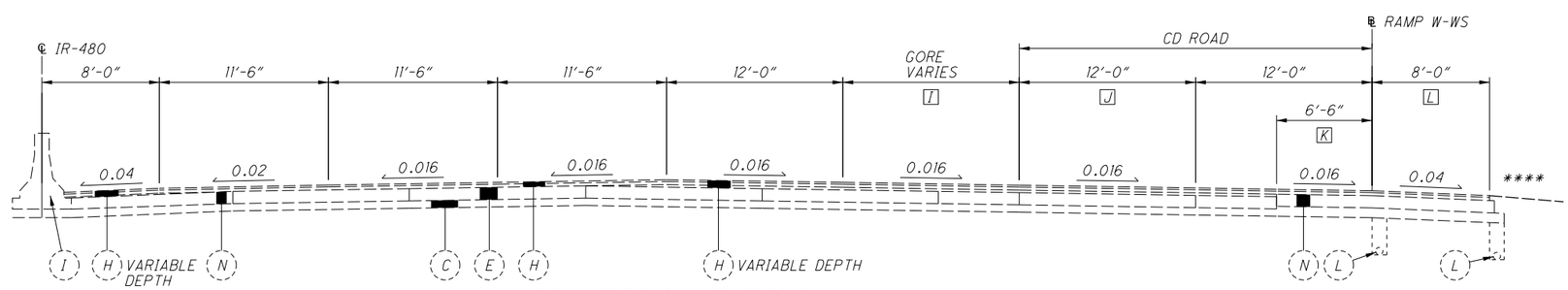
*** END CURB
STA. 1231+50.00
GUARDRAIL
STA. 1229+75.00 TO STA. 1238+40.63



PAVEMENT DETAIL

EXISTING LEGEND

- (A) 3" BITUMINOUS AGGREGATE BASE
- (B) AGGREGATE BASE
- (C) 6" SUBBASE
- (D) 9" REINFORCED CONCRETE PAVEMENT
- (E) 10" REINFORCED CONCRETE PAVEMENT
- (F) 4" CONCRETE MEDIAN
- (G) 3" ASPHALT OVERLAY
- (H) 4" ASPHALT OVERLAY
- (I) CONCRETE BARRIER
- (J) CURB
- (K) GUARDRAIL
- (L) 6" PIPE UNDERDRAIN
- (M) ASPHALT UNDER GUARDRAIL
- (N) 10" CONCRETE BASE
- (O) 13" CONCRETE BASE
- (P) 14" CONCRETE BASE



NORMAL SECTION I-480 EB/CD ROAD
STA. 1253+51.80 TO STA. 1265+91.30

I VARIES 0'-0"± TO 17'-6"±
STA. 1259+23.50 TO STA. 1265+91.30

J VARIES 0'-0"± TO 12'-0"±
STA. 1253+51.80 TO STA. 1259+23.50

K 6'-6"± STA. 10+00.00 TO STA. 11+07.00 ℄ RAMP W-WS - LONGITUDINAL JOINT
10'-0"± STA. 11+07.00 TO STA. 19+50.00 ℄ RAMP W-WS - LONGITUDINAL JOINT
2'-0"± STA. 19+50.00 TO STA. 22+39.91 ℄ RAMP W-WS - NO LONGITUDINAL JOINT

L VARIES 8'-0"± TO 6'-0"±
STA. 14+48.50 TO STA. 14+98.50 ℄ RAMP W-WS
VARIES 6'-0"± TO 8'-0"±
STA. 18+24.00 TO STA. 18+34.00

**** CONCRETE BARRIER, SINGLE SLOPE, TYPE D
STA. 1256+75.00 TO STA. 1261+21.00
CURB, TYPE 4-C
STA. 1261+21.00 TO STA. 1265+91.30

PROPOSED LEGEND

1. ITEM 209 - LINEAR GRADING
2. ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"
3. ITEM 407 - NON-TRACKING TACK COAT
4. ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (446), AS PER PLAN, PG76-22M, 1.5"
5. ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A, (447), AS PER PLAN, PG76-22M, 1.5"
6. ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER DAB
REVIEWER XXX MM-DD-YY
PROJECT ID 84020
SHEET P-5 TOTAL 48

CUY-480-22.45

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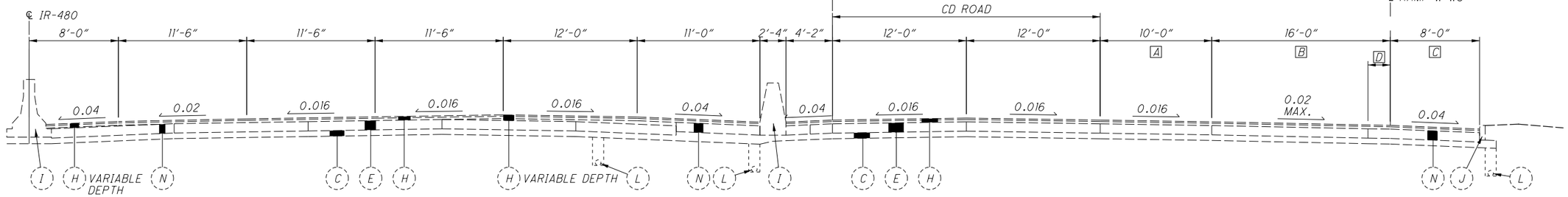


NORMAL SECTION I-480 EB

STA. 1265+91.30 TO STA. 1279+29.86

NORMAL SECTION CD ROAD/RAMP W-WS

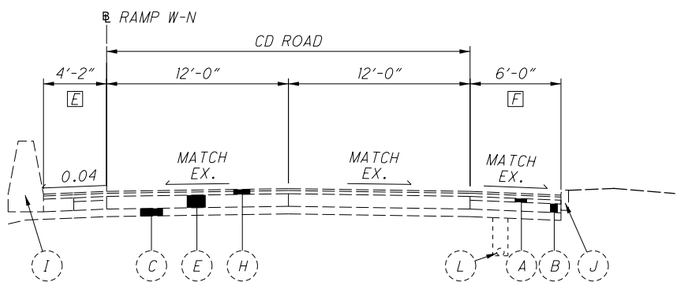
STA. 65+91.30 TO STA. 74+75.00

A VARIES 0'-0"± TO 20'-0"±
STA. 70+19.79 TO STA. 74+75.00

B VARIES 0'-0"± TO 16'-0"±
STA. 65+91.30 TO STA. 70+19.79

C VARIES 8'-0"± TO 6'-0"±
STA. 73+83.97 TO STA. 74+34.12

D 2'-0"± STA. 22+39.91 TO STA. 24+00.00 ℄ RAMP W-WS
0'-0"± STA. 24+00.00 TO STA. 30+83.65 ℄ RAMP W-WS

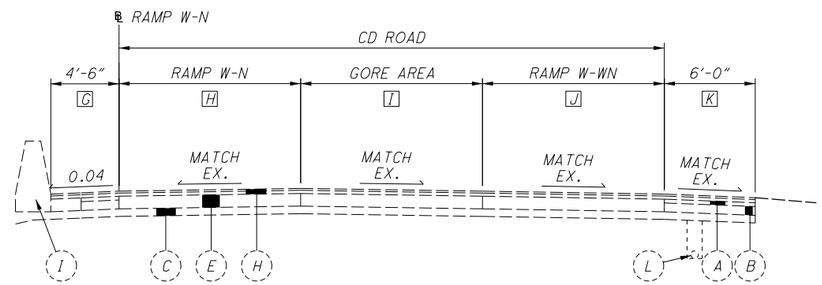


NORMAL SECTION CD ROAD

STA. 74+75.00 TO STA. 84+36.47

E VARIES 4'-2"± TO 4'-3"±
STA. 82+45.45 TO STA. 84+95.26

F VARIES 6'-0"± TO 3'-0"±
STA. 83+36.03 TO STA. 84+36.46



NORMAL SECTION CD ROAD/RAMP W-N/RAMP W-WN

STA. 84+36.47 TO STA. 89+23.57
BASELINE SHIFT 16' RT.
STA. 8+96.54 TO STA. 9+81.19

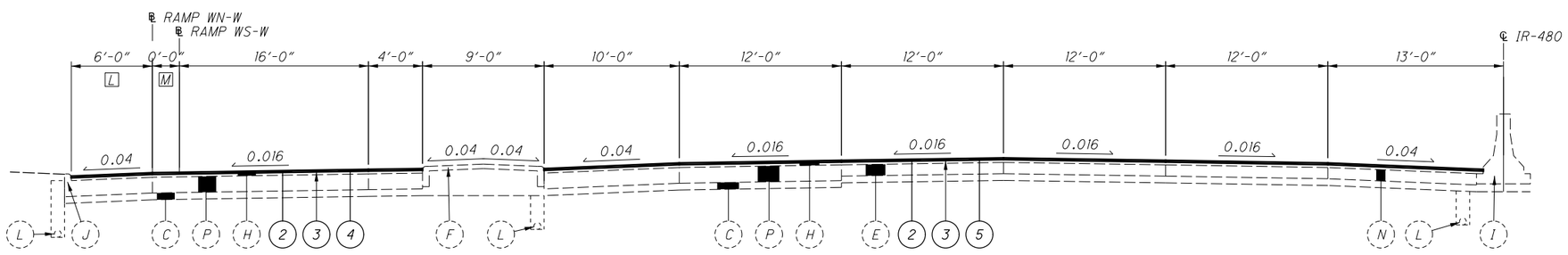
G VARIES 4'-3"± TO 4'-6"±
STA. 84+95.26 TO STA. 89+23.57

H VARIES 12'-0"± TO 15'-0"±
STA. 84+95.26 TO STA. 86+25.99
VARIES 15'-0"± TO 16'-0"±
STA. 8+95.56 TO STA. 9+81.19

I VARIES 0'-0"± TO 20'-8"±
STA. 84+95.26 TO STA. 86+25.99
VARIES 20'-8"± TO 0'-0"±
STA. 86+25.99

J VARIES 12'-0"± TO 16'-0"±
STA. 84+36.47 TO STA. 84+95.26
VARIES 16'-0"± TO 0'-0"±
STA. 86+25.99

K VARIES 3'-0"± TO 6'-0"±
STA. 84+36.46 TO STA. 86+12.46
VARIES 6'-0"± TO 4'-0"±
STA. 8+95.56 TO STA. 9+81.19

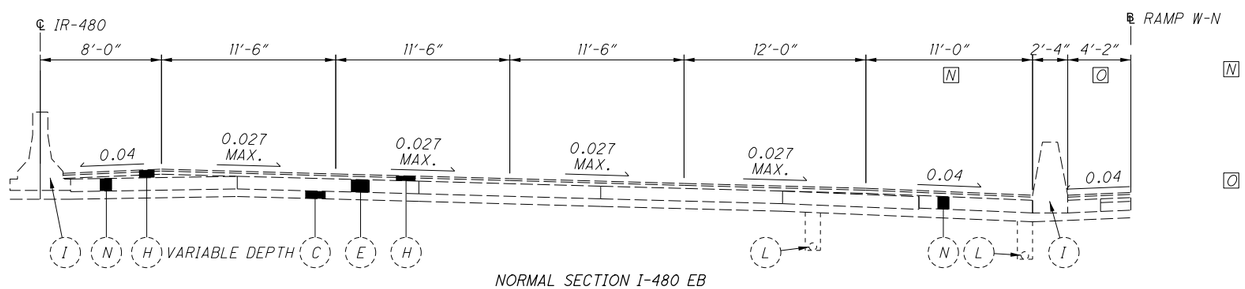


NORMAL SECTION I-480 WB

STA. 1267+97.78 TO STA. 1278+96.73

L VARIES 6'-0"± TO 8'-0"±
STA. 1274+39.06 TO STA. 1274+76.71
VARIES 8'-0"± TO 6'-0"±
STA. 1275+82.57

M VARIES 0'-0"± TO 20'-0"±
STA. 1267+97.78 TO STA. 1273+97.18
VARIES 20'-0"± TO 35'-0"±
STA. 1273+97.18 TO STA. 1275+82.57
VARIES 35'-0"± TO 0'-0"±
STA. 1275+82.57



NORMAL SECTION I-480 EB

STA. 1279+29.86 TO STA. 1290+16.54

N 11'-0"±
STA. 1279+29.86 TO STA. 1282+45.93
VARIES 11'-0"± TO 5'-4.5"±
STA. 1282+45.93 TO STA. 1289+30.86
VARIES 5'-4.5"± TO 5'-8"±
STA. 1289+30.86 TO STA. 1290+16.54

O VARIES 4'-2"± TO 4'-6"±
SEE CD ROAD TYPICAL SECTIONS

FOR LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.6 TOTAL 48

CUY-480-22.45

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TYPICAL SECTIONS

[A] VARIES 6'-0"± TO 3'-0"±
STA. 85+42.92 TO STA. 86+42.92

[B] VARIES 4'-0"± TO 3'-0"±
STA. 80+55.83 TO STA. 80+80.83

[C] VARIES 9'-0"± TO 9'-5"±
STA. 1279+40.16 TO STA. 1280+56.14
VARIES 9'-5"± TO 10'-5"±
STA. 1280+56.14 TO STA. 1280+81.14
VARIES 10'-5"± TO 27'-2"±
STA. 1280+81.14 TO STA. 1286+35.00

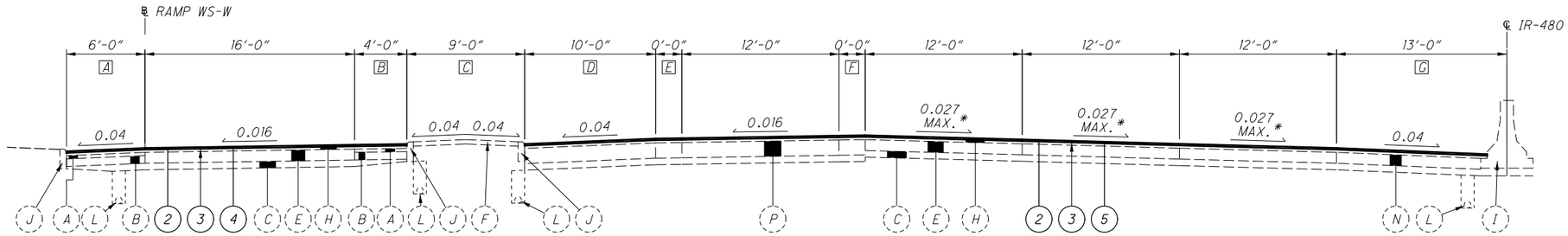
[D] VARIES 10'-0"± TO 8'-0"±
STA. 1279+40.16 TO STA. 1280+60.16

[E] VARIES 0'-0"± TO 12'-0"±
STA. 1279+40.16 TO STA. 1289+00.16

[F] VARIES 0'-0"± TO 9'-0"±
STA. 1281+58.81 TO STA. 1289+00.16

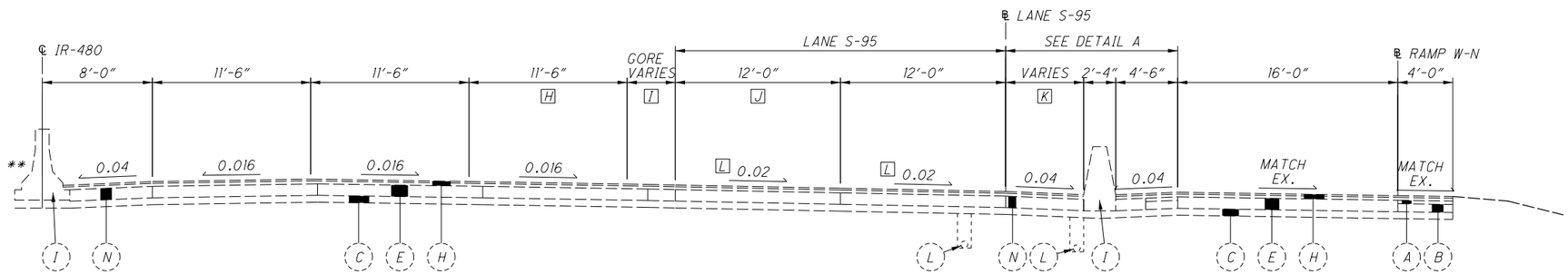
[G] VARIES 13'-0"± TO 8'-0"±
STA. 1281+58.81 TO STA. 1288+41.84

* SUPERELEVATION CONTINUES
UNTIL STA. 1289+26.67



NORMAL SECTION RAMP WS-W
STA. 78+96.73 TO STA. 86+42.92

SUPERELEVATED SECTION I-480 WB
STA. 1278+96.73 TO STA. 1289+00.16*



** BEGIN CONCRETE BARRIER, TYPE B1
STA. 1297+45.00

NORMAL SECTION I-480 EB
STA. 1290+16.54 TO STA. 1299+44.26

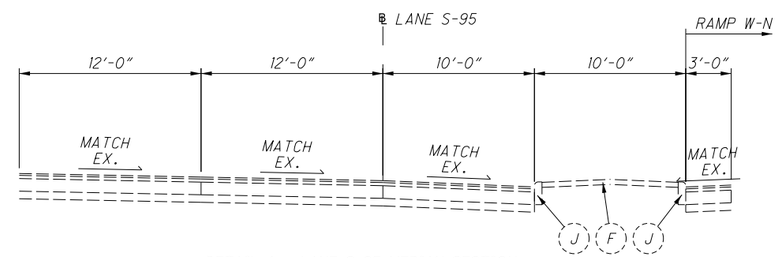
[H] VARIES 11'-6"± TO 12'-0"±
STA. 1290+95.41 TO STA. 1299+44.26

[I] VARIES 0'-0"± TO 24'-0"±
STA. 1296+27.06 TO STA. 1299+44.26

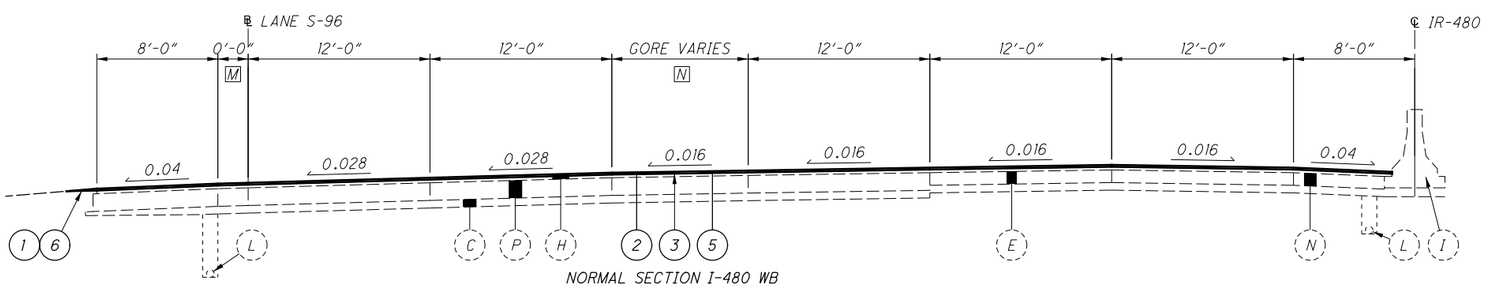
[J] VARIES 0'-0"± TO 12'-0"±
STA. 1290+95.41 TO STA. 1296+27.06

[K] VARIES 5'-8"± TO 16'-0"±
STA. 1290+16.54 TO STA. 1297+47.48
VARIES 16'-0"± TO 10'-0"±
STA. 1297+47.48

[L] TRANSITION CROSS SLOPE TO MATCH EXISTING
BETWEEN STATIONS 1296+47.48 AND 1297+47.48



DETAIL A - LANE S-95 MEDIAN SECTION
STA. 1297+47.48 TO STA. 1299+44.26



NORMAL SECTION I-480 WB
STA. 1289+00.16 TO STA. 1292+39.40

[M] VARIES 0'-0"± TO 8'-5"±
STA. 1289+00.16 TO STA. 1292+39.40

[N] VARIES 9'-0"± TO 24'-0"±
STA. 1289+00.16 TO STA. 1292+39.40

FOR LEGEND, SEE P.5

DESIGN AGENCY

DESIGNER
DAB

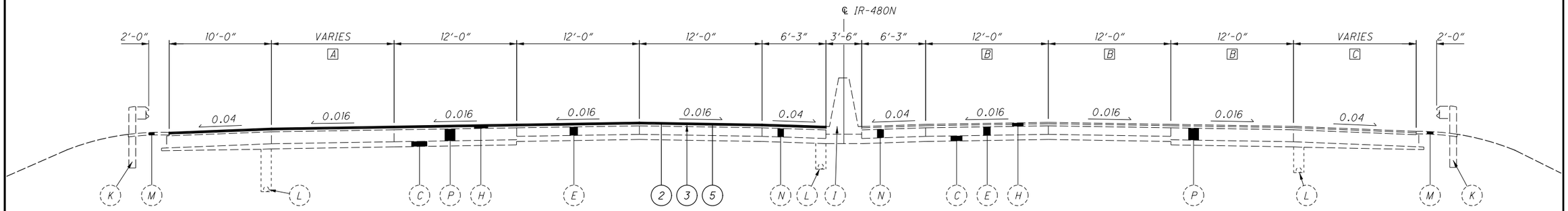
REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P-7 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:34:37 PM USER: dbrauer
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 12\Cuyahoga\84020\400-Engineering\Roadway\Sheets\84020_GY003.dgn



A VARIES 0'-0"± TO 12'-0"±
STA. 1292+60.00 TO STA. 1301+00.00

IR-480 WESTBOUND - NORMAL SECTION

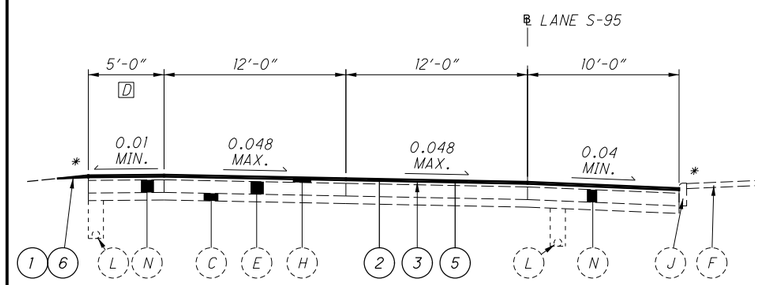
STA. 1292+39.40 TO STA. 1303+75.50

IR-480 EASTBOUND - NORMAL SECTION

STA. 1299+44.26 TO STA. 1303+75.50

B VARIES 11'-6"± TO 12'-0"±
STA. 1301+00.00 TO STA. 1302+00.00

C VARIES 10'-0"± TO 15'-0"±
STA. 1299+44.26 TO STA. 1301+00.00
VARIES 15'-0"± TO 14'-0"±
STA. 1301+00.00 TO STA. 1302+00.00
VARIES 14'-0"± TO 10'-0"±
STA. 1302+42.50 TO STA. 1303+42.50



LANE S-95 NORMAL SECTION

STA. 199+41.09 TO STA. 211+00.40
BRIDGE CUY-480-2437R
** STA. 212+99.13 TO STA. 218+62.65

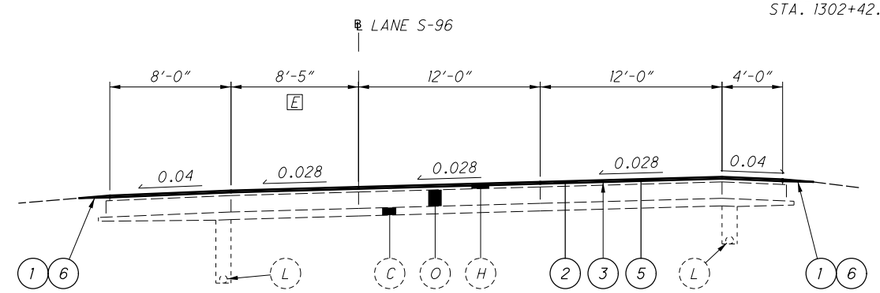
D VARIES 4'-0"± TO 5'-0"±
STA. 212+99.13
VARIES 5'-0"± TO 11'-5"±
STA. 215+45.00
VARIES 11'-5"± TO 6'-6"±
STA. 215+45.00 TO STA. 218+62.65

* CURB, TYPE 6 LIMITS
ENDS AT STA. 207+31.00 RT.
STA. 212+99.13 TO STA. 215+45.00 LT.

GUARDRAIL LIMITS
BEGINS AT STA. 207+31.00 RT.
BEGINS AT STA. 206+43.00 LT.

MEDIAN CONCRETE BARRIER
BEGINS AT STA. 215+45.00 LT.

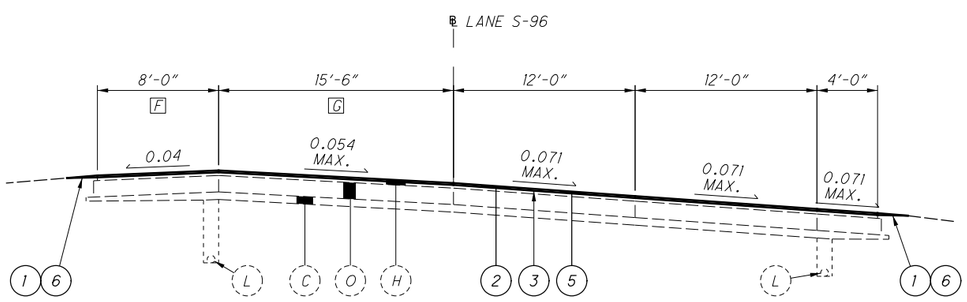
** BEGIN RESURFACING STA. 212+99.13



SUPERELEVATED SECTION LANE S-96

STA. 12+37.37 TO STA. 15+20.59

E VARIES 8'-5"± TO 15'-6"±
STA. 12+37.37 TO STA. 15+20.59

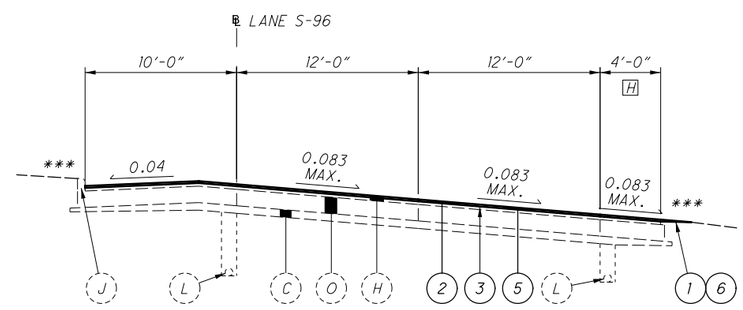


SUPERELEVATED SECTION LANE S-96

STA. 15+20.59 TO STA. 20+95.06

F VARIES 8'-0"± TO 6'-0"±
STA. 19+00.17 TO STA. 19+48.44

G VARIES 15'-6"± TO 39'-0"±
STA. 15+20.59 TO STA. 20+95.06



SUPERELEVATED SECTION LANE S-96

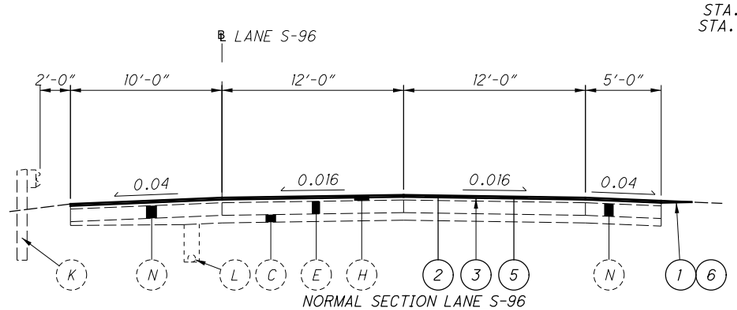
STA. 20+95.06 TO STA. 21+51.00 BK
STA. 20+00.00 AH TO STA. 28+93.86

H VARIES 4'-0"± TO 5'-0"±
STA. 21+00.00 TO STA. 21+15.00

*** END CURB/BEGIN GUARDRAIL
STATION 23+50.00

CURB
STA. 21+00.00 RT. TO STA. 21+15.00 RT.

CONCRETE BARRIER
STA. 21+15.00 RT. TO STA. 25+65.00 RT.



NORMAL SECTION LANE S-96

STA. 28+93.86 TO STA. 29+83.40
BRIDGE CUY-480-2437L
STA. 32+09.87 TO STA. 33+65.74

FOR LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

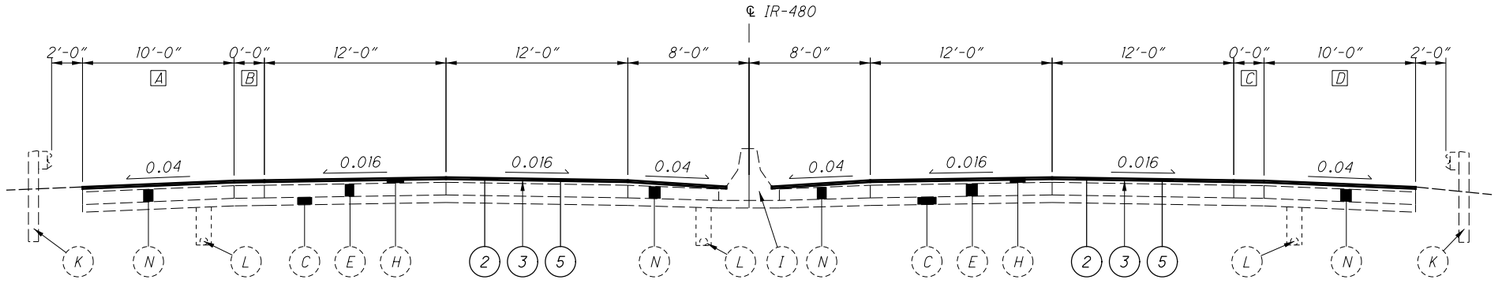
SHEET P.8 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:34:43 PM USER: dbrauer
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 12\Cuyahoga\84020\400-Engineering\Roadway\Sheets\84020_GY004.dgn

A VARIES 10'-0"± TO 8'-0"±
STA. 56+42.00
VARIES 8'-0"± TO 10'-0"±
STA. 61+81.26 TO STA. 62+81.26

B VARIES 0'-0"± TO 39'-0"±
STA. 56+42.00
VARIES 39'-0"± TO 12'-0"±
STA. 56+42.00 TO STA. 61+00.24
VARIES 12'-0"± TO 0'-0"±
STA. 61+81.26 TO STA. 62+81.26

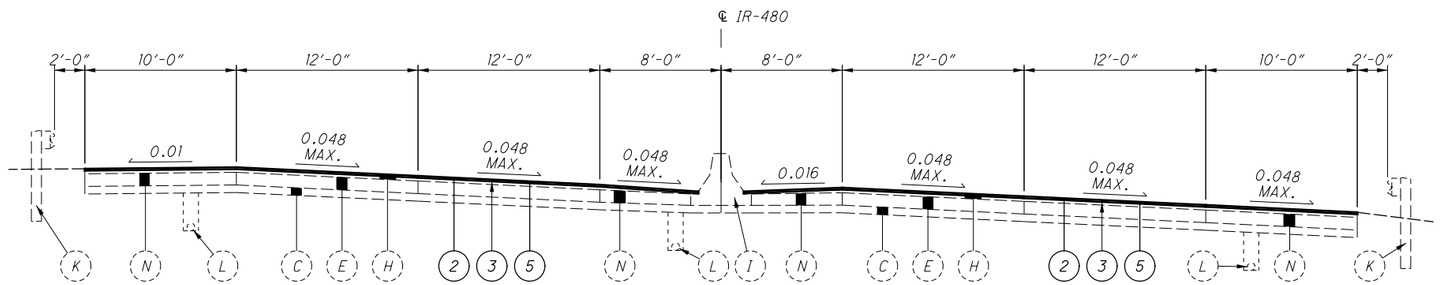


NORMAL SECTION I-480

STA. 33+65.74 TO STA. 38+32.67 WB ONLY
STA. 38+32.67 TO STA. 43+48.43
BRIDGE CUY-480-2463
STA. 44+60.18 TO STA. 63+65.64

C VARIES 0'-0"± TO 40'-0"±
STA. 53+28.00
VARIES 40'-0"± TO 0'-0"±
STA. 53+28.00 TO STA. 65+60.00

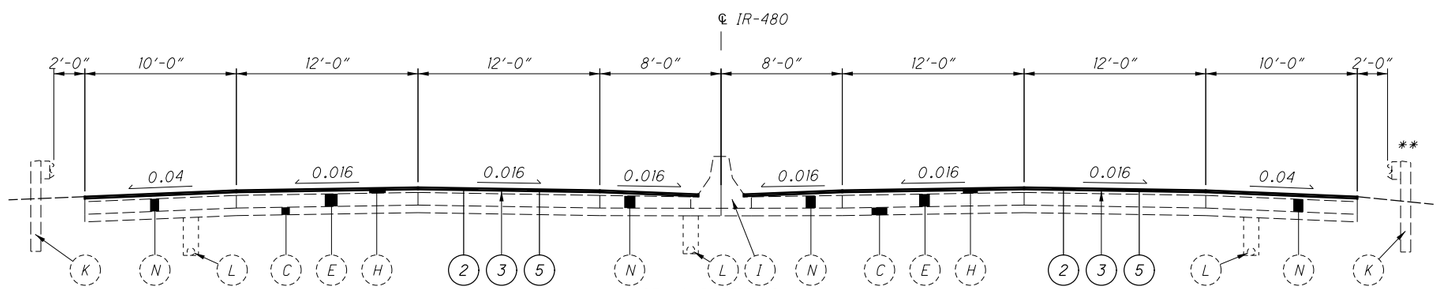
D VARIES 10'-0"± TO 6'-0"±
STA. 53+28.00
VARIES 6'-0"± TO 8'-0"±
STA. 53+39.73 TO STA. 55+60.00
VARIES 8'-0"± TO 5'-9"±
STA. 63+40.29 TO STA. 63+90.18
VARIES 5'-9"± TO 10'-0"±
STA. 63+90.18 TO STA. 65+60.00



SUPERELEVATED SECTION I-480

STA. 63+65.64 TO STA. 82+62.41 *

* SEE C AND D FOR END STATIONS OF ACCELERATION LANE TAPER.



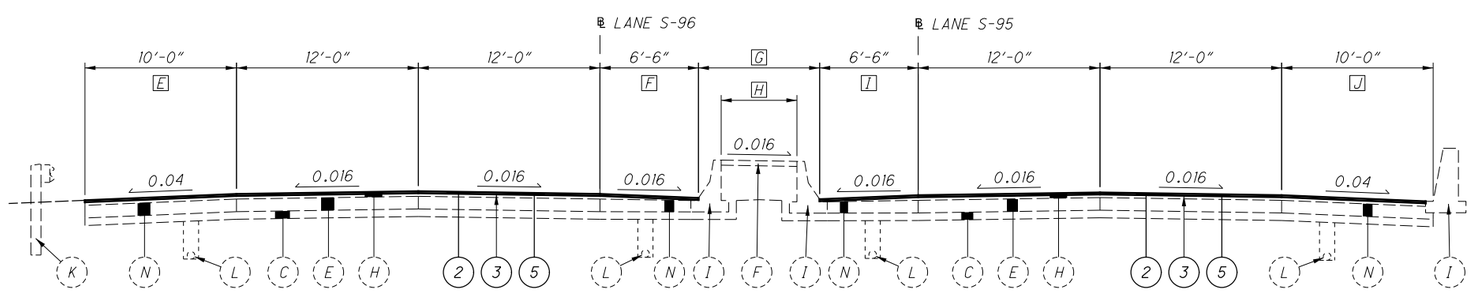
NORMAL SECTION I-480

STA. 82+62.41 TO STA. 101+11.80

** BEGIN CONCRETE BARRIER
STA. 77+60.00

E 11'-6"±
STA. 38+59.81 TO STA. 39+00.00
VARIES 11'-6"± TO 10'-0"±
STA. 39+00.00 TO STA. 39+90.00

F VARIES 5'-8"± TO 6'-6"±
STA. 38+59.81 TO STA. 39+00.00



NORMAL SECTION LANE S-96

BRIDGE CUY-480-2577L
STA. 38+59.81 TO STA. 41+21.85
STATIONING DIRECTION IS REVERSED

NORMAL SECTION LANE S-95

STA. 101+11.80 TO STA. 103+55.31
BRIDGE CUY-480-2577R

G VARIES 3'-0"± TO 13'-0"±
STA. 101+11.80 TO STA. 103+55.31

H VARIES 0'-0"± TO 10'-0"±
STA. 101+11.80 TO STA. 103+55.31

I VARIES 6'-6"± TO 5'-8"±
STA. 103+00.00 TO STA. 103+55.31

J VARIES 10'-0"± TO 11'-6"±
STA. 102+94.13 TO STA. 103+19.13

FOR LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER DAB
REVIEWER XXX MM-DD-YY
PROJECT ID 84020
SHEET P.9 TOTAL 48

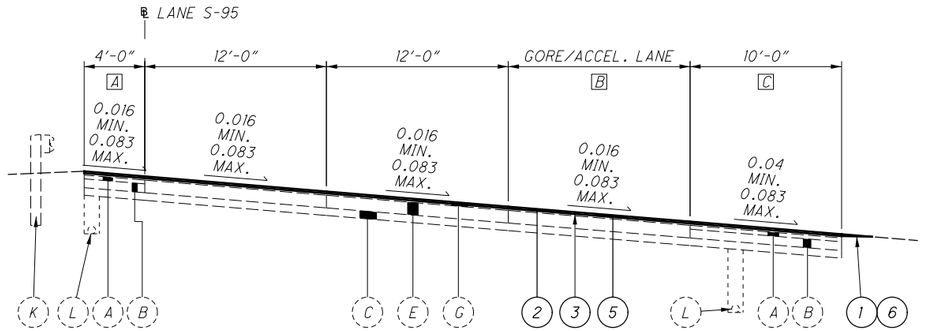
CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:34:50 PM USER: dbrauer
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 12\Cuyahoga\84020\400-Engineering\Roadway\Sheets\84020_GY005.dgn

A 5'-8"±
STA. 106+05.13 TO STA. 106+50.00
VARIES 5'-8"± TO 4'-0"±
STA. 106+50.00 TO STA. 107+10.00

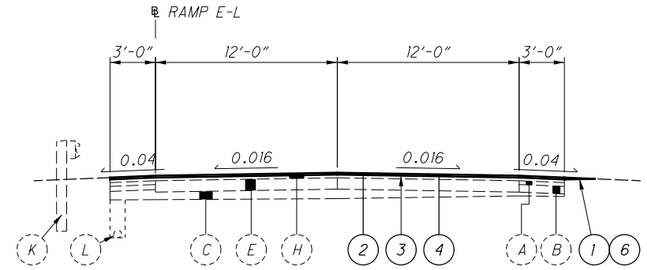
B VARIES 0'-0"± TO 48'-7.5"±
STA. 113+14.00
VARIES 48'-7.5"± TO 22'-0"±
STA. 113+14.00 TO STA. 118+24.46
VARIES 22'-0"± TO STA. 0'-0"±
STA. 118+24.46 TO STA. 129+10.69

C 11'-6"±
STA. 106+05.13 TO STA. 106+50.00
VARIES 11'-6"± TO 10'-0"±
STA. 106+50.00 TO STA. 107+40.00
VARIES 10'-0"± TO 3'-0"±
STA. 113+14.00
VARIES 3'-0"± TO 6'-0"±
STA. 113+57.15 TO STA. 115+11.74
VARIES 6'-0"± TO 10'-0"±
STA. 116+14.23 TO STA. 118+16.82



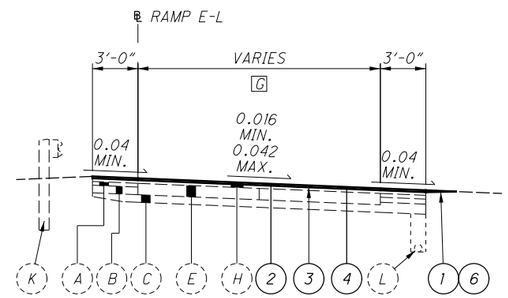
SUPERELEVATED SECTION LANE S-95

BRIDGE CUY-480-2577R
STA. 106+05.13 TO STA. 129+10.69
STA. 79+05.00 TO STA. 79+07.92 ℄ RAMP K-4
STATIONING DIRECTION OF RAMP K-4 IS REVERSED



NORMAL SECTION RAMP E-L

STA. 8+42.44 TO STA. 12+98.94



SUPERELEVATED SECTION RAMP E-L

STA. 12+98.94 TO STA. 16+21.37

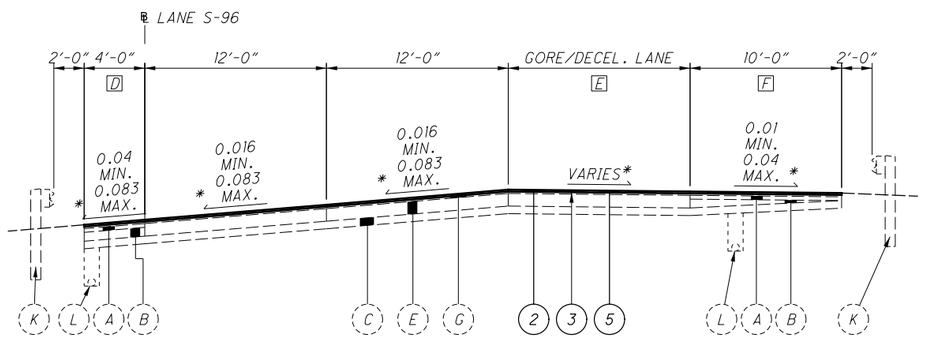
G VARIES 24'-0"± TO 16'-0"±
STA. 13+56.24 TO STA. 16+21.37

D VARIES 4'-0"± TO 5'-8"±
STA. 25+10.00 TO STA. 25+88.73
VARIES 5'-8"± TO 5'-0"±
STA. 33+51.40 TO STA. 34+01.19
VARIES 5'-0"± TO 5'-8"±
STA. 35+32.40 TO STA. 35+82.40

E VARIES 0'-0"± TO 12'-0"±
STA. 13+36.46 TO STA. 15+92.86
VARIES 12'-0"± TO 16'-0"±
STA. 15+92.86 TO STA. 19+11.24
VARIES 16'-0"± TO STA. 40'-0"±
STA. 19+11.24 TO STA. 22+28.25
VARIES 40'-0"± TO 0'-0"±
STA. 22+28.25

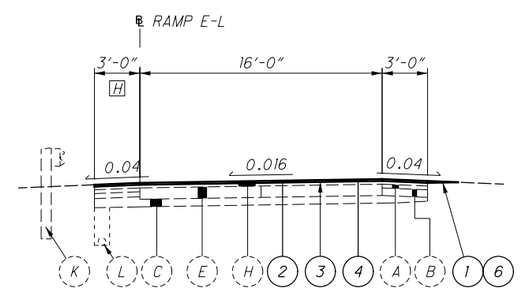
F VARIES 10'-0"± TO 5'-0"±
STA. 14+68.12 TO STA. 17+16.47
VARIES 5'-0"± TO 3'-0"±
STA. 21+27.19 TO STA. 22+28.25
VARIES 14'-0"± TO 10'-0"±
STA. 22+28.25 TO STA. 23+08.25
VARIES 10'-0"± TO 11'-6"±
STA. 25+10.00 TO STA. 26+00.00

* SUPERELEVATION BEGINS AT STA. 12+39.98



SUPERELEVATED SECTION LANE S-96

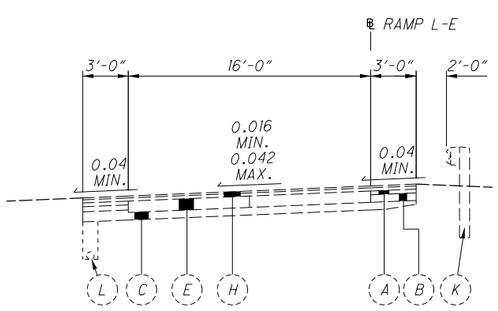
STA. 11+02.54 TO STA. 26+81.27
BRIDGE CUY-480-2585
STA. 33+39.64 TO STA. 35+94.58
BRIDGE CUY-480-2577L



SUPERELEVATED SECTION RAMP E-L

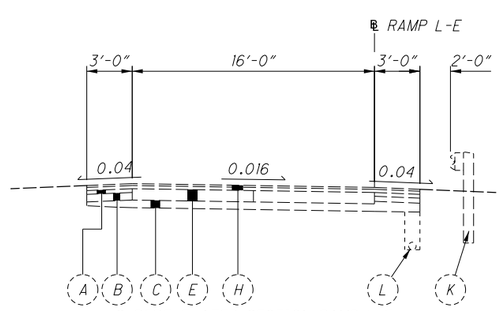
STA. 16+21.37 TO STA. 19+71.89

H VARIES 3'-0"± TO 8'-0"±
STA. 18+71.52 TO STA. 19+71.52



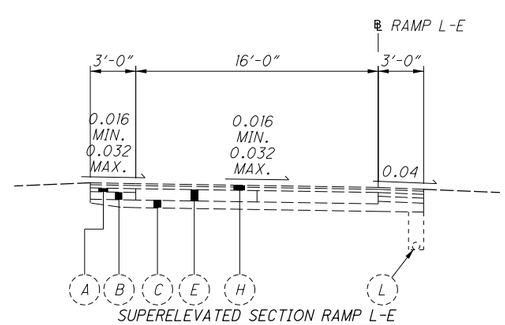
SUPERELEVATED SECTION RAMP L-E

STA. 8+16.20 TO STA. 16+42.16



SUPERELEVATED SECTION RAMP L-E

STA. 16+42.16 TO STA. 20+00.00



SUPERELEVATED SECTION RAMP L-E

STA. 20+00.00 TO STA. 21+01.75

FOR LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER DAB
REVIEWER XXX MM-DD-YY
PROJECT ID 84020
SHEET P.10 TOTAL 48

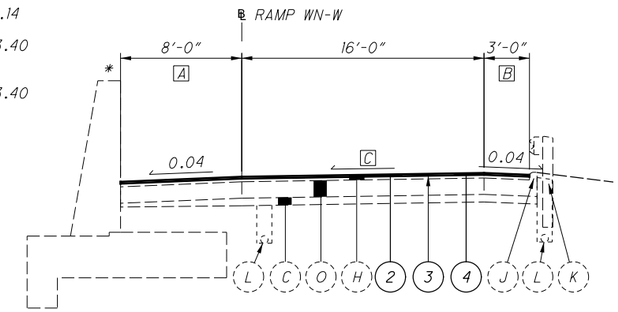
CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:34:56 PM USER: dbrauer
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 12\Cuyahoga\84020\400-Engineering\Roadway\Sheets\84020_GY006.dgn

TYPICAL SECTIONS

[A] VARIES 8'-0"± TO 6'-0"±
STA. 81+50.14 TO STA. 82+00.14
VARIES 6'-0"± TO 0'-0"±
STA. 83+03.40 TO STA. 83+13.40

[B] VARIES 3'-0"± TO 2'-0"±
STA. 83+03.40 TO STA. 83+13.40

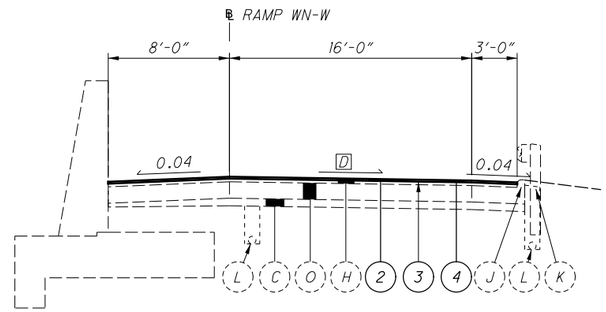


SUPERELEVATED SECTION RAMP WN-W

STA. 75+81.90 TO STA. 76+43.00
STA. 80+57.00 TO STA. 83+13.40

[C] CROSS SLOPE VARIES FROM 0.0175'/FT AT STA. 75+81.90 TO LEVEL AT STA. 76+43.00
CROSS SLOPE VARIES FROM LEVEL AT STA. 80+57.00 TO 0.021'/FT AT STA. 81+62.00
CROSS SLOPE VARIES FROM 0.021'/FT AT STA. 82+33.00 TO 0.0156'/FT AT STA. 82+60.00

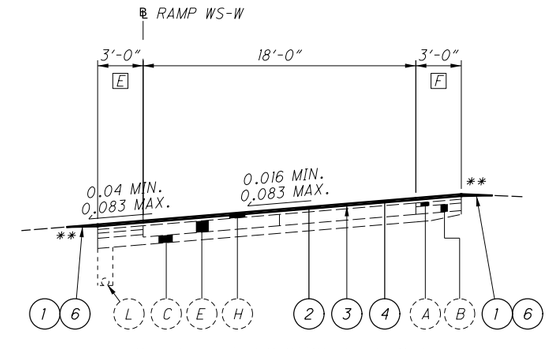
* END RETAINING WALL AND BEGIN CURB & GUARDRAIL AT STA. 81+50.14



SUPERELEVATED SECTION RAMP WN-W

STA. 76+43.00 TO STA. 79+70.49 BK
STA. 79+70.63 AH TO STA. 80+57.00

[D] CROSS SLOPE VARIES FROM LEVEL AT STA. 76+43.00 TO 0.0156'/FT AT STA. 76+98.00
CROSS SLOPE VARIES FROM 0.0156'/FT AT STA. 79+70.63 AH TO LEVEL AT STA. 80+57.00



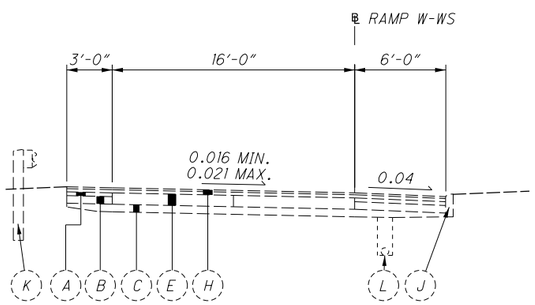
SUPERELEVATED SECTION RAMP WS-W

STA. 86+42.92 TO STA. 93+04.00

[E] VARIES 3'-0"± TO 0'-0"±
STA. 92+20.00

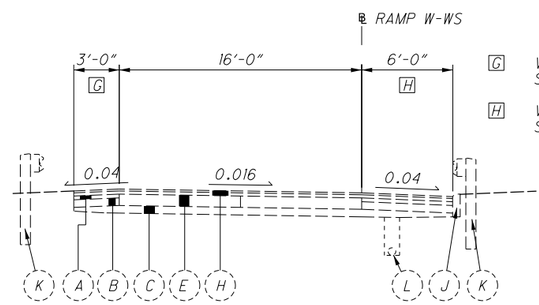
[F] VARIES 3'-0"± TO 2'-0"±
STA. 92+25.00

** CURB BEGINS
STA. 92+20.00 LT.
STA. 92+25.00 RT.



SUPERELEVATED SECTION RAMP W-WS

STA. 31+25.76 TO STA. 33+16.69

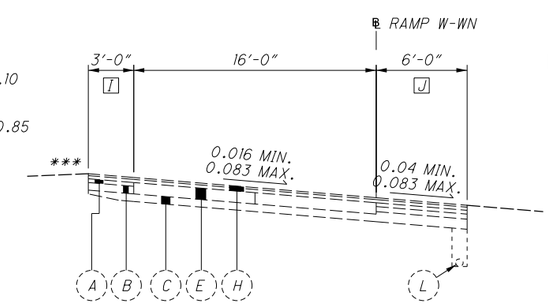


SUPERELEVATED SECTION RAMP W-WS

STA. 33+16.69 TO STA. 39+00.00

[G] VARIES 3'-0"± TO 0'-0"±
STA. 38+52.10 TO STA. 38+77.10

[H] VARIES 6'-0"± TO 0'-0"±
STA. 38+60.00 TO STA. 38+80.85



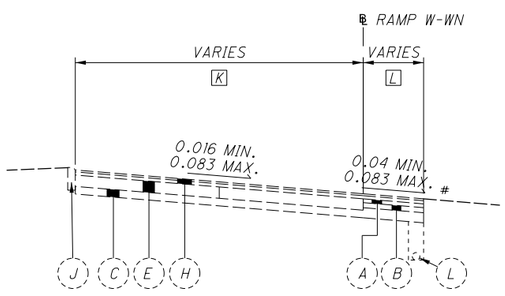
SUPERELEVATED SECTION RAMP W-WN

STA. 6+21.58 TO STA. 10+60.24

[I] VARIES 3'-0"± TO 5'-0"±
STA. 9+00.00 TO STA. 10+00.00
VARIES 5'-0"± TO 3'-0"±
STA. 10+50.24 TO STA. 10+60.24

[J] VARIES 6'-0"± TO 4'-0"±
STA. 9+00.00 TO STA. 10+00.00

*** CURB BEGINS STA. 10+17.00



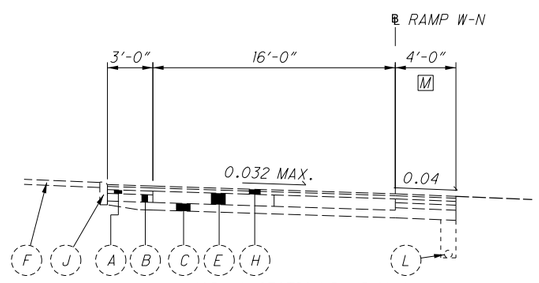
SUPERELEVATED SECTION RAMP W-WN

STA. 10+60.24 TO STA. 12+47.50

[K] VARIES 19'-0"± TO 16'-0"±
STA. 10+60.24 TO STA. 12+10.24
VARIES 16'-0"± TO 15'-7.5"±
STA. 12+10.24 TO STA. 12+47.50

[L] VARIES 4'-0"± TO 3'-0"±
STA. 10+60.24 TO STA. 12+10.24
VARIES 3'-0"± TO 1'-1"±
STA. 12+16.50
VARIES 1'-1"± TO 1'-7"±
STA. 12+16.50 TO STA. 12+47.50

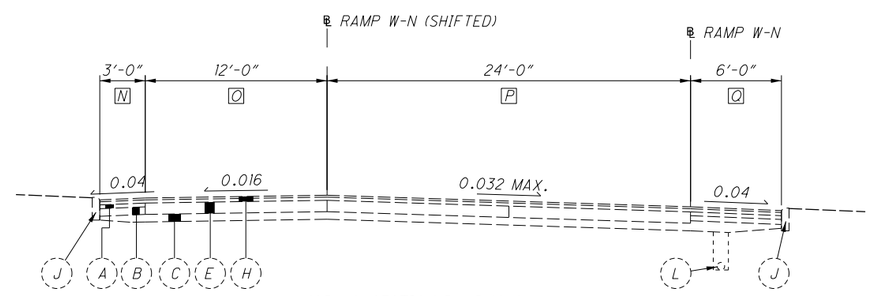
\# CURB BEGINS STA. 12+16.50



NORMAL SECTION RAMP W-N

STA. 19+01.66 TO STA. 20+00.00

[M] VARIES 4'-0"± TO 6'-0"±
STA. 19+75.00 TO STA. 20+00.00



NORMAL SECTION RAMP W-N

STA. 20+00.00 TO STA. 31+52.76
BASELINE SHIFT 24' LT. STA. 28+94.22

[N] VARIES 3'-0"± TO 0'-0"±
STA. 30+83.04 TO STA. 30+92.04

[O] VARIES 0'-0"± TO 12'-0"±
STA. 25+80.00 TO STA. 30+00.00

[P] VARIES 16'-0"± TO 24'-0"±
STA. 23+00.00 TO STA. 25+80.00

[Q] VARIES 6'-0"± TO 0'-0"±
STA. 31+16.90 TO STA. 31+34.90

FOR LEGEND, SEE P.5

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P:11 TOTAL 48

CUY-480-22.45
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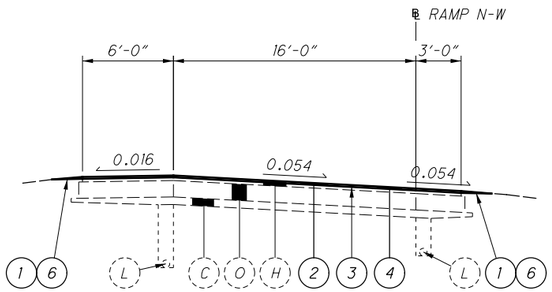
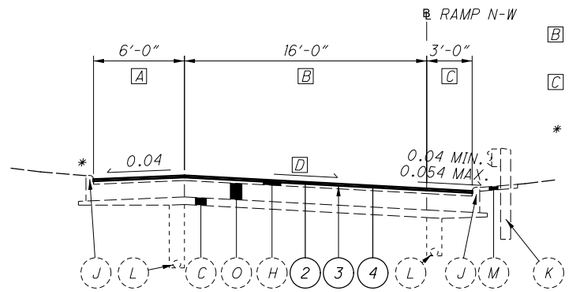


SUPERELEVATED SECTION RAMP N-W

STA. 10+97.79 TO STA. 15+50.00



SUPERELEVATED SECTION RAMP N-W

STA. 15+50.00 TO STA. 15+89.86 BK
STA. 24+41.25 AH TO STA. 29+85.29
BASELINE SHIFT 16' LT.
STA. 22+61.00 TO STA. 29+70.94

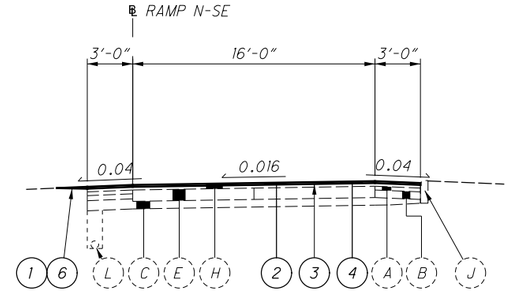
A VARIES 6'-0"± TO 0'-0"±
STA. 28+98.41 TO STA. 29+10.16

B VARIES 16'-0"± TO 24'-0"±
STA. 25+00.00 TO STA. 27+40.00

C VARIES 3'-0"± TO 0'-0"±
STA. 22+70.35 TO STA. 22+79.35

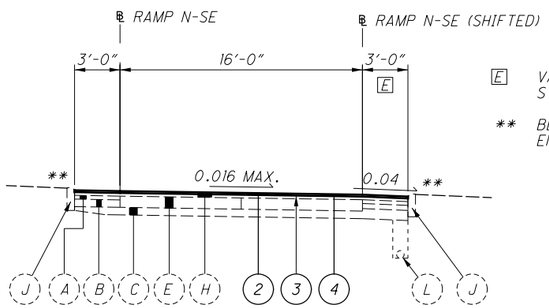
* CONCRETE BARRIER
STA. 25+00.00 TO STA. 28+31.00

D CROSS SLOPE VARIES FROM 0.054'/FT AT STA. 15+50.00 TO 0.0156'/FT AT STA. 25+23.00



NORMAL SECTION RAMP N-SE

STA. 47+92.00 TO STA. 49+29.15

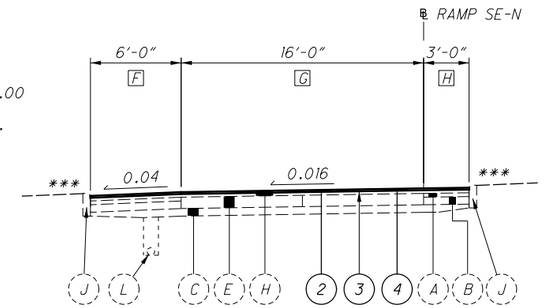


NORMAL SECTION RAMP N-SE

STA. 49+29.15 TO STA. 51+00.00
BASELINE SHIFT 16' RT.
STA. 51+00.00 TO STA. 53+29.44

E VARIES 3'-0"± TO 6'-0"±
STA. 51+00.00 TO STA. 52+50.00

** BEGIN CURB STA. 49+50.00 LT.
END CURB STA. 51+00.00 RT.



NORMAL SECTION RAMP SE-N

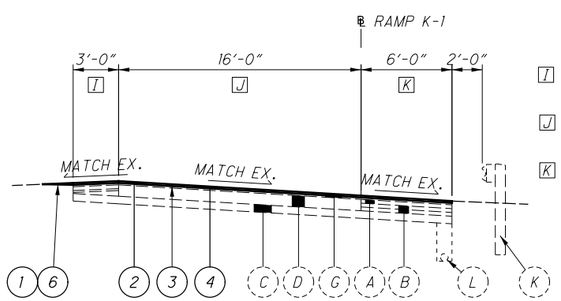
STA. 43+36.16 TO STA. 43+46.16 (SR-43)
STA. 50+55.32 TO STA. 54+00.00
BASELINE SHIFT 16' LT.
STA. 54+00.00 TO STA. 56+42.96

F VARIES 2'-0"± TO 1'-0"±
STA. 50+55.32 TO STA. 51+55.32
VARIES 1'-0"± TO 4'-0"±
STA. 51+55.32 TO STA. 52+55.32
VARIES 4'-0"± TO 6'-0"±
STA. 52+55.32 TO STA. 54+00.00
VARIES 6'-0"± TO 8'-0"±
STA. 55+81.40 TO STA. 56+81.40

G VARIES 15'-0"± TO 16'-0"±
STA. 51+55.32 TO STA. 52+05.32

H VARIES 1'-0"± TO 3'-0"±
STA. 50+55.32 TO STA. 51+55.32

*** END CURB
STA. 54+05.00 LT.
STA. 55+55.00 RT.



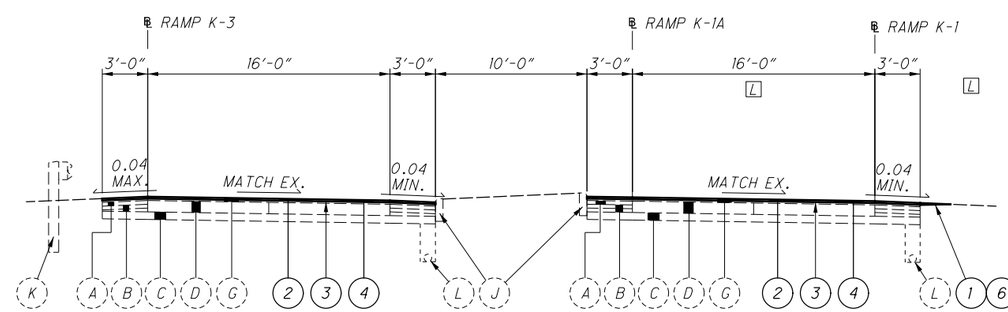
NORMAL SECTION RAMP K-1

STA. 1+95.76 TO STA. 3+76.96
STA. 4+82.73 TO STA. 8+97.50

I VARIES 2'-0"± TO 3'-0"±
STA. 1+98.03 TO STA. 3+76.96

J VARIES 18'-0"± TO 16'-0"±
STA. 1+98.03 TO STA. 3+76.96

K VARIES 0'-0"± TO 6'-0"±
STA. 2+08.00 TO STA. 2+58.00



NORMAL SECTION RAMP K-3

STA. 75+01.95 TO STA. 77+31.63

NORMAL SECTION RAMP K-1/K-1A

STA. 3+76.96 TO STA. 4+82.73 (RAMP K-1)
STA. 0+27.00 TO STA. 1+61.16 (RAMP K-1A)

L VARIES 42'-0"± TO 16'-0"±
STA. 3+76.96 TO STA. 4+82.73

FOR LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.12 TOTAL 48

CUY-480-22.45

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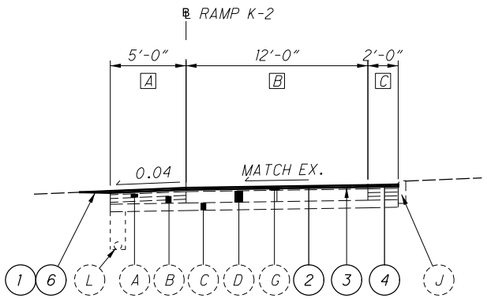


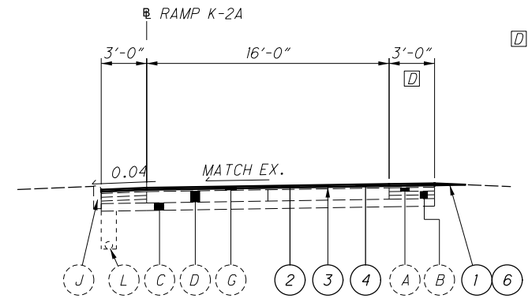
NORMAL SECTION RAMP K-2

STA. 64+79.82 TO STA. 66+31.96

A VARIES 0'-0"± TO 5'-0"±
STA. 65+40.00 TO STA. 65+65.00

B VARIES 12'-0"± TO 15'-6"±
STA. 65+44.74 TO STA. 66+31.96

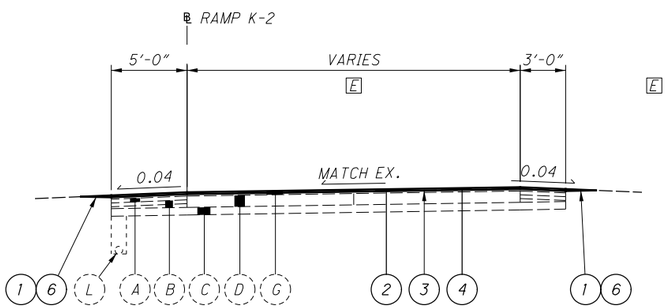
C VARIES 2'-0"± TO 2'-6"±
STA. 65+44.74 TO STA. 66+31.96



NORMAL SECTION RAMP K-2A

STA. 0+27.06 TO STA. 0+98.04

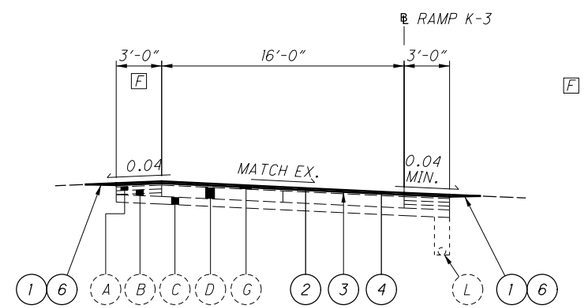
D VARIES 0'-0"± TO 3'-0"±
STA. 0+50.53 TO STA. 0+57.67



NORMAL SECTION RAMP K-2

STA. 66+31.96 TO STA. 70+05.00

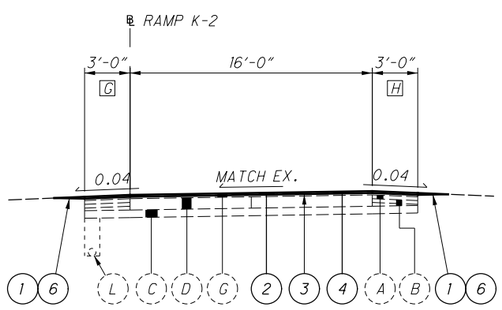
E VARIES 38'-6"± TO 22'-0"±
STA. 66+31.96 TO STA. 66+93.73
VARIES 22'-0"± TO 16'-0"±
STA. 69+05.00 TO STA. 70+05.00



NORMAL SECTION RAMP K-3

STA. 63+58.60 TO STA. 75+01.95

F VARIES 6'-0"± TO 3'-0"±
STA. 63+58.60 TO STA. 65+08.60



NORMAL SECTION RAMP K-4

STA. 94+89.37 TO STA. 103+12.05

G VARIES 3'-0"± TO 0'-0"±
STA. 102+63.65 TO STA. 102+74.18

H VARIES 3'-0"± TO 0'-0"±
STA. 102+44.44 TO STA. 102+54.99

FOR LEGEND, SEE P.5

TYPICAL SECTIONS

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.13 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:35:16 PM USER: dbrauer
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GENERAL

Project Description

This project consists of the resurfacing of IR-480 from Lee Rd to IR-271 in the Cities of Bedford Heights, Cleveland, Maple Heights, and Warrensville Heights.

Existing Typical Sections

Existing typical sections have been taken from the records and are believed to represent the existing pavement, but the State of Ohio does not guarantee the accuracy of the same.

For further information in regard to the existing typical sections, the contractor shall refer to the previous construction plans.

These plans may be reviewed at the

Ohio Department Transportation
District 12 Office
5500 Transportation Boulevard
Garfield Heights, Ohio 44125

Contingency Quantities

The contractor shall not order materials or perform work for items designated by plan note to be used "as directed by the engineer" unless authorized by the engineer. The actual work locations and quantities used for such items shall be incorporated into the final change order governing completion of this project.

Equipment and Material Storage

In order to provide for the safety of the traveling public the Contractor's attention is directed to 614.03. In addition the following provisions shall apply:

1. Any removed items shall not be stored on the right of way for more than thirty (30) days.
2. The storage of equipment, materials, and vehicles within the highway right of way will be permitted. The number of areas and exact locations shall be approved by the Engineer.
3. All disturbed areas shall be returned to their original condition at no expense to the state.

Cooperation Between Contractors

The contractor shall cooperate and coordinate operations with the contractors on other projects that may be in force during the life of the contract.

Work Limits

The work limits shown on these plans are for physical construction only. The installation and operation of all temporary traffic control and temporary traffic control devices required by these plans shall be provided by the contractor whether inside or outside these work limits.

Right Of Way

All work shall be performed within the existing right of way or easements.

Plan Sheet Stationing

The roadway was not surveyed prior to the preparation of these plans. Stationing was provided to prepare plan sheets and calculate pavement and pavement marking quantities.

Staging Areas

There are no specific areas given in the plans for the Contractor to use as a staging area(s). If the Contractor wants to use an area(s) for staging, regardless if it falls within the project limits or not, the Contractor is to use the Right of Way E-Permitting System located at https://odhcp.bemcorp.net/Accounts/Account/Account in order to apply for a permit per Section 107.02 of the CMS. For specific permitting questions, the Contractor can contact the District Permitting Office, (Melvin Safford) at 216-584-2137 or at District12Permits@dot.ohio.gov.

If a permit is granted, all conditions of the permit shall be met in addition to the requirements of 104.04 of the CMS, at no additional cost to the State. If the Project Engineer deems that all the conditions of the permit were not met, then 10% of the Contract bid amount for mobilization shall be withheld until all the conditions of the permit are satisfied.

Item 619 – Field Office, Type B, As Per Plan

In addition to the requirements of CMS 619, the 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 ..... **6 Months**

Item 623 - Construction Layout Stakes and Surveying, As Per Plan

In addition to the requirements of the CMS, this item of work will include the following additional requirements.

An Ohio professional surveyor shall determine the minimum vertical clearances of all existing and new bridges within the project limits after completion of all the work, but prior to final acceptance of the project. At a minimum, measurements shall be taken along the centerline of each fascia beam at the edge of shoulders, edge lines, lane lines, and crown of the roadway below. The measurements shall be documented on the ODOT vertical clearance survey form. The form shall bear the stamp or seal of the Ohio professional surveyor who has taken the measurements. The Ohio professional surveyor shall submit the completed form to the Project Engineer and the district bridge maintenance engineer prior to final acceptance of the project.

Payment for all of the above work shall be at the unit price bid for Item 623 – Construction Layout Stakes, As Per Plan, which shall include all labor, equipment, materials and incidentals necessary to complete the above work.

Protection of Right-of-Way Landscaping

Prior to beginning work, the Contractor, the Project Engineer and a representative of the maintaining agency will review and record all landscaping items within the right-of-way (both within and outside the construction limits). A record of this review will be kept in the Project Engineer's files. Prior to final acceptance, a final review of landscaping items will be made.

Constrict all activities, equipment storage and staging to within the construction limits. Unless otherwise identified in the plans or proposal, the construction limits are identified as 30 feet from the edge of pavement.

Submit a written request to the Project Engineer to use any area outside these limits. The document submitted must clearly identify the area and explain the proposed use and restoration of the area. Use of these areas for disposal of waste material and construction debris, excavation of borrow material and placement of portable plants is prohibited. The request must be approved, in writing, before the Contractor has permission to use the area.

Any items damaged beyond the construction limits, as defined above, will be replaced in kind or as approved by the Project Engineer.

Utilities

The following utilities and owners are located within the work limits of this project. The Ohio Department of Transportation has used the best available information to determine the utility companies serving this area, but cannot guarantee the utility company list is complete.

Illuminating Co.
6896 Miller Road
Brecksville, Ohio 44141
Attn: John Zassick
Phone: (440) 546-8706

AT&T
13630 Lorain Ave. – 2nd floor
Cleveland, Ohio 44111
Attn: James Janis
Phone: (216) 476-6142

Dominion Energy Ohio
320 Springside Dr.
Suite 320, Akron, Ohio 44333
Attn: Michael Antonius
Phone: (330) 664-2481

Charter Communications
7 Severance Circle
Cleveland Heights, Ohio 44118
Attn: Pat Santoiemmo
Phone: (216) 701-6082

Zayo Fiber Solutions
305 E. Wiggin Street
Gambier, Ohio 43022
Attn: Scott Heinlen
Phone: (740) 501-6921

City of Cleveland Division of Water
Pollution Control
12302 Kirby Road
Cleveland, Ohio 44108
Attn: Rachid Zoghaib
Phone: (216) 664-3785

City of Cleveland Division of Cleveland
Public Power (MELP)
1300 Lakeside Ave.
Cleveland, Ohio 44114
Attn: Michael Ibos
Phone: (216) 664-3922, Ext. 76121

City of Cleveland Division of Water
1201 Lakeside Ave.
Cleveland, Ohio 44114
Attn: Fred Roberts
Phone: (216) 664-2444 x 5590

ODOT Traffic Monitoring Section
1980 West Broad Street
Columbus, Ohio 43223
Attn: Ed Newmeyer (Field Rep)
Phone: (614) 204-0914
Attn: Sandra Mapel (Field Operations)
Phone: (614) 644-0291

Northeast Ohio Regional Sewer District
3900 Euclid Ave.
Cleveland, Ohio 44115
Attn: Mary Maciejowski
Phone: (216) 881-6600

Cuyahoga County Sanitary Engineer
2079 E. 9th Street, 5th Floor
Cleveland, Ohio 44113
Attn: Hugh Blocksidge
Phone: (216) 443-8205

City of Maple Heights
22999 Forbes Road
Oakwood Village, Ohio 44146
Attn: Edward Hren
Phone: (440) 439-1999

City of Bedford Heights
5661 Perkins Road
Bedford Heights, Ohio 44146
Attn: Don Bierut
Phone: (440) 439-1999

City of Warrensville Heights
5595 Transportation Blvd
Cleveland, Ohio 44125
Attn: Daniel Gerson
Phone: (216) 927-8685

There are no underground utilities shown on this plan. The nature of the work required by this project will not affect any known underground utilities that exist under or adjacent to the work area.

Roadway and Erosion Control

Item 202 – Concrete Barrier Removed, As Per Plan

Removal of the existing concrete barrier foundation and existing conduit shall be included in this item of work. The Contractor may elect to sawcut the pavement at the barrier foundation edge prior to the concrete barrier and concrete barrier foundation removal as to prevent adjacent pavement from being damaged.

This item of work shall also include removal of reinforced sections of barrier located within the project limits including, but not limited to, inlet tops. When removing inlet tops, care should be taken to avoid damaging inlet walls below the pavement surface.

All costs for this item of work, including sawcutting, labor, materials, equipment and incidentals shall be included in the unit bid price for Item 202 – Concrete Barrier Removed, As Per Plan.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 202 – Concrete Barrier Removed, As Per Plan…….. **180 Ft**

Item 209 – Linear Grading, As Per Plan

This item of work shall consist of grading along the outside edge of the paved shoulder to eliminate high spots and provide positive sheet flow off the pavement and shoulder into roadside ditches or drainage structures. This item is not intended to be used to excavate a uniform depth to place Item 617 – Compacted Aggregate, As Per Plan.

Any debris collected shall be removed and disposed of as specified in Section 105.16 & 105.17 of the Construction and Material Specifications.

Payment for the above work shall be made at the unit bid price for Item 209, Station, Linear Grading, As Per Plan and shall include all labor, tools, equipment and materials necessary to perform this item of work.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 209 – Linear Grading, As Per Plan…….. **182 Sta**

Item 622 – Barrier Misc.: Concrete Barrier, Type B32

This item shall consist of furnishing and installing Type B32 Concrete Barrier according to the details shown on plan insert sheet P.47 with the following modifications:

1. The cost of the 9" thick, 4' wide foundation shall be included in this pay item.
2. Apply a certified 702.01 PG binder, 2-3 inches wide, along the longitudinal butt joint between the new concrete barrier footing and the existing asphalt pavement.

All costs for this item of work, including sawcutting of existing shoulder asphalt, labor, materials, equipment and incidentals shall be included in the unit bid price for Item 622 – Barrier, Misc.: Concrete Barrier, Type B32.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 622 – Barrier Misc.: Concrete Barrier, Type B32…… **120 Ft**

Drainage

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 appurtenances 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 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 drainage items.

Castings Adjusted to Grade, As Per Plan

All castings, within the asphalt overlay section, shall be adjusted to the finished roadway elevation by the Contractor. The time between adjusting the castings and resurfacing shall be kept to an absolute minimum. No adjusting rings shall be permitted.

The following estimated quantities have been carried to the General Summary:

Item 611 – Catch Basin Adjusted to Grade, As Per Plan…… **46 Each**
Item 611 – Manhole Adjusted to Grade, As Per Plan…… **1 Each**

Item 611 – Inlet, No. 3B, As Per Plan

This item shall consist of furnishing and installing Item 611 – Inlet, No. 3B according to the details shown on plan insert sheet P.48 with the following modifications:

1. This item is intended to replace the concrete barrier on top of the inlet only.

All costs for this item of work, including labor, materials, equipment and incidentals shall be included in the unit bid price for Item 611 – Inlet, No. 3B, As Per Plan.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 611 – Inlet, No. 3B, As Per Plan…….. **3 Each**

Item Special – Miscellaneous Metal

Existing castings may prove to be unsuitable for reuse, as determined by the Engineer. It shall be the Contractor's responsibility to provide the castings of the required type, size, and strength (heavy duty) for the particular structure in question. All materials must meet Item 611 of the CMS and shall have the prior approval of the Engineer.

The Contractor is cautioned to use extreme care in the removal, storage, and replacement of all existing castings. Castings damaged by the negligence of the Contractor, as determined by the Engineer, shall be replaced with the proper new castings at the expense of the Contractor.

The Contractor shall not order materials until authorized by the Engineer, and if none are needed, the item shall be non-performed.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item Special – Miscellaneous Metal…… **5000 Lbs**

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Pavement

Profile and Alignment

Place the proposed pavement to follow the alignment of the existing pavement. Place the proposed asphalt concrete with a uniform thickness as shown on the typical sections.

Planing Requirements

The duration of time between planing the asphalt and placing the asphalt overlay shall be kept to a minimum. In no instance shall this time exceed 7 calendar days. The time limit shall begin on the first day of planing and shall continue based on calendar days, minus any weather days, until completion of the asphalt concrete surface course. This is to ensure that the potential degradation of the exposed pavement due to traffic is kept to a minimum. This requirement applies to both mainline and ramps alike.

In the event that the time between exposing the existing pavement and placing the asphalt surface course exceeds 7 calendar days, liquidated damages as per 108.07 of the C&MS shall be assessed.

Asphalt Concrete Surface Course Sealing Requirements

In addition to the gutter sealing requirements specified in SCD BP-3.1 and C&MS 401.15, after completion of the surface course, the contractor shall use a certified 702.01 PG binder to seal the following locations:

- All castings including but not limited to monuments, manholes, water valves, catch basins, curb inlets.
- Butt joints and feather joints including bridge approaches.
- Forward joint for driveway asphalt and trailing joint when butting to existing asphalt drive.
- Perimeter of all pavement repairs or other asphalt inlays when pavement repairs/inlays are not overlaid with an asphalt concrete surface course.
- All cold longitudinal joints between paved shoulders and guardrail asphalt.

The material used shall be a certified 702.01 PG binder. The width of the sealer shall be 2-3 inches.

Any additional costs associated with the work identified in this note shall be included in the appropriate asphalt concrete surface course item of work.

Longitudinal Joints (Flexible Pavement)

Longitudinal joints between a pavement lane and adjoining shoulder or speed change lane, and between a speed change lane and the adjoining shoulder shall be made the same day. All longitudinal joints shall be hot with the exception of one cold joint per roadway. Locate the cold joint along the centerline or a lane line. Longitudinal joint locations shall be as approved by the Engineer. Each ramp shall have a maximum of one longitudinal cold joint located approximately halfway across the ramp.

Item 251 – Partial Depth Pavement Repair (442), As Per Plan A

This item shall be used for the repair unsound, cold patch, or pop-out areas of longitudinal joints consisting of existing asphalt or concrete as directed by the Engineer. The work shall be performed prior to the planing operation. The depth of the repair shall be 4” below the top of the existing asphalt surface. The width of the repair shall be 12” centered over the existing joint.

Use replacement materials conforming to the requirements of Item 442, 19mm.

The following estimated quantity has been carried to the General Summary:

Item 251 – Partial Depth Pavement Repair (442), As Per Plan A…….. **1900 Sq Yd**

Item 251 – Partial Depth Pavement Repair (442), As Per Plan B

This item shall be used for the repair unsound, cold patch, or pop-out areas of transverse joints and cracks of existing asphalt or concrete as directed by the Engineer. The work shall be performed prior to the planing operation. The depth of the repair shall be 4” below the top of the existing asphalt surface. The width of the repair shall be 12” centered over the existing joint.

Use replacement materials conforming to the requirements of Item 422, 19mm.

The following estimated quantity has been carried to the General Summary:

Item 251 – Partial Depth Pavement Repair (442), As Per Plan B…….. **325 Sq Yd**

Item 254 – Pavement Planing, Asphalt Concrete, As Per Plan

This item shall be used to remove the existing asphalt overlay full width at an average depth of 1-1/2” as specified in the plans on IR-480. Areas which have transverse wedges (butt joints) are to be removed in two passes as required for maintaining traffic. No additional payment shall be made for the second pass.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A, (447), As Per Plan, PG 76-22M

The coarse virgin aggregate for this item shall be limited to a blend of air cooled blast furnace slag (ACBFS) or Trap Rock from Ontario and limestone. The Contractor shall use a minimum 60% of ACBFS or Trap Rock from Ontario with limestone comprising the remaining percentage. At least 50% of fine virgin aggregate for this item shall be limited to ACBFS or Trap Rock from Ontario.

Table 442.02-2 applies except No. 4 sieve requirements are 52 to 60 Total Percent Passing. For the No. 4 sieve do not exceed 63 in production.

When ACBFS is used for a fraction of the coarse aggregate, provide a total asphalt binder content greater than or equal to 6.2 percent. If ACBFS makes up 100% of the coarse aggregate, apply the binder content requirements of C&MS 442.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A, (446), As Per Plan, PG 76-22M

Joint coring in accordance with 446.04 is not required for cold longitudinal joints placed over Void Reducing Asphalt Membrane (VRAM). Construct cold longitudinal joints over VRAM using the same techniques, equipment, and roller patterns used on the rest of the mat. Obtain 10 mat cores for each lot of material in accordance with 446.04. Pay factors for each lot of material will be determined according to Table 446.04-2.

The coarse virgin aggregate and at least 50% of fine virgin aggregate for this item shall be limited to air cooled blast furnace slag (ACBFS) or Trap Rock from Ontario.

Table 442.02-2 applies except No. 4 sieve requirements are 52 to 60 Total Percent Passing. For the No. 4 sieve do not exceed 63 in production.

Item 609 – Concrete Median, As Per Plan

This item shall be used to place a concrete median between ramps K-1A & K-3. The concrete median shall be constructed as per the details on P.46 and as per SCD RM-3.1 with the following revisions:

1. The concrete median shall be 9” thick.
2. Provide a 6” aggregate base.

This item shall include any sawcutting, excavation, and curb removal required to complete the above work. Payment for the above work shall be made at the unit bid price for Item 609, SY, Concrete Median, As Per Plan and shall include all labor, tools, equipment and materials necessary to perform this item of work.

The following estimated quantities have been carried to the General Summary:

Item 304 – Aggregate Base……. **3 Cu Yd**
Item 609 – Concrete Median, As Per Plan…… **16 Sq Yd**

Item 617 – Compacted Aggregate, As Per Plan

This item shall be used to place compacted aggregate at a variable depth only where needed to fill in low spots and eliminate drop offs along shoulders. Material shall be limited to reclaimed asphalt concrete pavement (RAP).

The actual depth of compacted aggregate placed will vary depending upon existing conditions. For estimating purposes, an average depth of one inch (1”) has been used. Water, if needed, shall be applied according to 617.05 and shall be included with Item 617 – Compacted Aggregate, As Per Plan.

The following estimated quantity has been carried to the General Summary for use as directed by the Engineer:

Item 617 – Compacted Aggregate, As Per Plan…… **113 Cu Yd**

Item 618 – Rumble Strips, Shoulder (Asphalt Concrete), As Per Plan

For all freeways, the lateral position of edge line rumble strips shown in SCD BP-9.1 is revised as follows:

1. Median and Outside Shoulder Offset for shoulders less than 6’: Dimension A and B are equal to 6”.
2. Median and Outside Shoulder Offset for shoulders 6’ to 12’: Dimension A and B are equal to half the shoulder width minus 12”.
3. Median and Outside Shoulder Offset for shoulders greater than 12’: Dimension A and B are equal to 5’.

The following estimated quantity shall be used to construct Item 618 – Rumble Strips, Shoulder (Asphalt Concrete), As Per Plan:

Item 618 – Rumble Strips, Shoulder
(Asphalt Concrete), As Per Plan …… **10.94 Miles**

Traffic Control

Permanent Pavement Markings on Bridges

Proposed pavement markings on bridges shall be placed on top of existing markings.

Raised Pavement Markers

Install raised pavement markers for lane lines at a spacing of eighty feet (80') center-to-center.

Item 621 – Raised Pavement Marker Removed

This item shall include the removal and disposal of existing RPMs.

The following estimated quantity has been carried to the General Summary:

Item 621 – Raised Pavement Marker Removed ..... **807 Each**

Detection Maintenance

If vehicle detection becomes unexpectedly disabled, requires modification, or is scheduled to be temporarily removed during the construction project, the Contractor shall immediately notify the Project Engineer and City of Bedford Heights Engineer.

If the loss of vehicle detection is known prior to the start of construction, it shall be discussed at the preconstruction meeting. At such time, the City of Bedford Heights Engineer shall advise the Project Engineer and Contractor on the appropriate action to rectify any loss of vehicle detection. This may include placing the traffic signal on minimum or maximum recall, modifying the minimum green times, and removing the malfunctioning detection from service. Where nonintrusive detection (i.e. video, radar) already exists, the Contractor shall insure that detection is operating and maintained by reconfiguring the detection units accordingly during all construction phases. This is to avoid the signal from maxing out the effected signal phase and creating unnecessary delays.

Locations where non-intrusive detection is proposed and the existing vehicle detection is to be abandon, the non-intrusive vehicle detection shall be installed, configured and made fully functional prior to the existing detection being disabled. The Contractor shall continue to maintain and modify the detection until final acceptance of the traffic signal. This is to ensure vehicle detection remains fully functional throughout construction.

Item 632 – Detector Loop, As Per Plan

All stop line inductance detector loops shown in the plans shall be the powerhead configuration shown on TC-82.10. The width shall be as specified on TC-82.10 and the length shall match the existing detector loop length, with a maximum length of 35'. The stop line detector loops shall not be wired to any other loops and shall have their own detector channel. The location of these loops shall be such that the powerhead is located at the stop line, not past it.

All dilemma zone inductance detector loops called for in the plans shall be the Angular Design Detection (A.D.D.) loop as shown on TC-82.10. Dimensions shall be as specified on TC-82.10.

System loops shall be as depicted in the plans.

All stop line detection shall be tested for a bicycle target and all dilemma detection zones shall be tested for a motorcycle target.

Install detector loops in the surface course within 72 hours of its placement.

When replacing the loop detectors, the loop detector wire shall be replaced to the pull box or pole, whichever is applicable, under Item 632 and TC-82.10. The new cable splice kits shall be included in this pay item.

The Contractor shall contact the Project Engineer and Don Bierut, (440) 439-1999, City Engineer for Bedford Heights, seven (7) days prior to planing through an intersection to adjust signal operation as needed.

The City of Bedford Heights Engineer shall concur with the location of the replacement loops.

The following estimated quantity has been carried to the General Summary for use as described above:

Item 632 – Detector Loop, As Per Plan..... **4 Each**

Detector Loop Locations

REFERENCE NO.	SEE SHEET NO.	LOCATION	632 6' X 20' POWERHEAD DETECTOR LOOP EACH	632 4.5' X 9' ANGULAR DESIGN DETECTION LOOP EACH
L-1		IR-271 SB to Rockside Rd WB	2	
L-2		IR-271 SB to Rockside Rd EB	1	
		Extra for Damaged Apron Loops, Use As Directed by the Engineer	1	
SUBTOTALS			4	0
TOTAL CARRIED TO GEN. SUMMARY			4	

GENERAL NOTES

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.17 TOTAL 48

CUY-480-22.45

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Maintenance of Traffic

General

It is the responsibility of the Contractor to provide through vehicular access in both directions at all times throughout the project area. The project shall be constructed in phases in order to minimize traffic disruption and inconvenience to the general public. The Contractor shall be responsible for providing all equipment, materials and manpower needed to adequately maintain traffic as provided for in the plans and specifications.

The Contractor is reminded that, in the conduct of this project, the sequence of operations shall be planned in a fashion which minimizes the number of lane reductions and/or lane width reductions required to maintain traffic through the project.

Permitted lane closures shall be as shown on the "Schedule of Through Lanes to be Maintained" table. The time limits shown in this table shall be adhered to or road user costs will be assessed.

Construction Sequence

No permanent maintenance of traffic zones are detailed in these plans. Traffic shall be maintained in accordance to the "Schedule of Through Lanes to be Maintained" note. All work zone closures shall comply with the appropriate Standard Construction Drawings.

Prior to opening all lanes to normal traffic, the Contractor shall ensure that the pavement is in a drivable condition with no potholes or dust and that all longitudinal drop-offs greater that 1-1/2" and transverse drop-offs are ramped as per the "Maintaining Traffic and Sequence of Operations" note.

Maintenance of Traffic Control Zones

The Contractor shall be responsible to maintain the signs, drums or cones specified in the Standard Construction Drawings. When the Contractor is notified of deficiencies, he shall correct the deficiencies as soon as possible, preferably within 12 hours and no later than 24 hours. If any noted deficiencies are not corrected within 24 hours the Engineer shall deduct one day pay for Item 614 – Maintaining Traffic, not as a penalty but as road user costs. The Contractor shall be subject to these road user costs for each and every day that these provisions are not met. All costs for maintaining the work zones as described above shall be included under Item 614 – Maintaining Traffic.

Suspension of Work

If the Contractor fails to comply with the provisions for traffic control as set forth in these plans or with provisions of the OMUTCD, the Engineer shall suspend work until the Contractor complies with the necessary requirements.

Payment

All work and traffic control devices shall be in accordance with CMS 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 plans.

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.

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 performed, 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.

IR-480 Ramps		
Location	Permitted Ramp Closures, Lane Reductions	
	Short Term Closure	Partial Width Closure (maintain one 11' lane)
One-Lane Ramps	9:00pm – 5:00am ♦	7:00pm – 6:00am
Two-Lane Ramps	Not Permitted	7:00pm – 6:00am

♦Each ramp shall be closed for a maximum of two (2) separate times using an approved detour. Any closure shall be as directed by the Engineer.

Ramp Closures for Resurfacing

The Contractor may close one ramp at a time at each location for milling, partial depth pavement repairs, or resurfacing. Closures for ramps scheduled for repairs and resurfacing shall be limited according to the days of the week and hours shown in the "Schedule of Through Lanes to be Maintained" table.

The motoring public shall be given advance warning of closures at least 72 hours in advance through the use of either a ground mounted flat sheet sign or a portable changeable message sign. A LEO with patrol car (paid for separately) shall be used for each ramp closure and be present for the entire closure time.

Freeway entrance ramps shall be closed with a PCMS suggesting a recommended detour.

Freeway exit ramps shall be closed with a PCMS routing traffic to the next exit and a second PCMS indicating a U-turn at the exit, unless directed differently by the Project Engineer.

For ramp closures, one or two additional PCMS units will be needed as described above. These will be in addition to the PCMS units specified in the plans and shall be included for payment in Item 614 – Maintaining Traffic.

Alternate Methods

If the Contractor so elects, he may submit alternate methods for the maintenance of traffic, provided the intent of the provisions is followed and no additional inconvenience to the traveling public results there from. No alternate plan shall be placed into effect until approval has been granted, in writing, by the Director.

All items proposed for use under these provisions must comply with current Department standards for their use when the plan detail, Standard Construction Drawing or other bid document governing their use is not provided as part of the bid package.

Construction Traffic

All construction traffic shall use acceptable truck routes to access the construction area. Use of local residential streets is strictly prohibited unless allowed in writing by the local enforcement authorities.

Lane Value Contract Table

Description of Critical Lane/Ramp to be Maintained	Restricted Time Period	Time Unit	Disincentive $ per Time Unit per Lane
IR-480			
Broadway on ramp to SR 21 overpass, WB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$335
3 lane section under Broadway ramp, WB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$485
Warrensville overpass to Broadway exit, WB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$365
Camden to 480N split, EB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$365
480N split to I-271, EB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$210
271 split to Northfield, WB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$210
IR-480N			
480 N both	As per the D12 Permitted Lane Closure Schedule	Each Minute	$300
IR-271			
480/271 Alex. To Col., NB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$390
480/271 Columbus to Alex., SB	As per the D12 Permitted Lane Closure Schedule	Each Minute	$390

The Contractor shall be assessed a disincentive equal to the largest disincentive within all sections impacted by the physical lane restriction, including the Transition Area, Activity Area, and Termination Area as defined by the OMUTCD. Holiday disincentives shall be applied per section per lane per time unit.

MAINTENANCE OF TRAFFIC NOTES

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.18 TOTAL 48

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Maintaining Traffic – General Provisions

1. Traffic shall be maintained in accordance with the "Schedule of Through Lanes to be Maintained." The Contractor shall set up and operate his equipment in such a manner as to minimize encroachment upon the traveled width of pavement

2. The Contractor shall notify the Engineer, the responsible law enforcement agency and the Ohio Department of Transportation, District 12 Public Information Officer ((216) 584-2007) not less than 24 hours prior to a scheduled disruption of traffic.

3. Nighttime work shall be permitted in accordance with these plans and notes. The Contractor shall provide flood lighting of the work area in accordance with CMS 401.15 in order to assure the safest conditions during nighttime work. A lighting plan for nighttime operations shall be presented to and approved by the Engineer.

4. The Contractor shall furnish, erect and maintain all warning and information signs necessary for maintaining traffic. The sign faces shall be reflectorized with type G sheeting complying with the requirements of CMS 730.19. The Contractor shall determine what signs are needed and advise the Engineer two weeks in advance of his detailed plans. See the OMUTCD and standard drawings for the minimum signage required.

5. Traffic control devices shall be set up prior to the start of construction and shall be properly maintained during the time special conditions exist. They shall remain in place only as long as they are needed and shall be immediately removed thereafter. Where operations are performed in stages, there shall be in place only those devices that apply to the condition present during the stage in progress. All signs with messages which do not apply during a certain period shall be covered or set aside out of the view of traffic.

6. Placement of final roadway pavement markings and raised pavement markers shall be accomplished in accordance with the "Schedule of Through Lanes to be Maintained." The Contractor shall provide 2 shadow vehicles as per MT-99.20 following the pavement marking equipment. The shadow vehicles shall travel 500' apart with the remote vehicle traveling on the shoulder (left or right as applicable) where usable shoulder is available. The first shadow vehicle in a traffic lane shall be equipped with a truck mounted attenuator meeting NCHRP 350 requirements. Each shadow vehicle shall have a yellow flashing beacon plus 48" construction warning signs mounted on the back facing traffic with standard type messages advising motorists of the work ahead, advisory warning speed, and which lane is closed.

7. During non-working periods, open excavations shall be delineated with warning flashers and/or other approved devices as deemed appropriate by the Engineer.

8. Existing signs located within the road work areas which are necessary for interim or permanent traffic control shall be removed and re-erected in locations as approved by the Engineer.

9. No stoppage of traffic shall occur without law enforcement personnel at each location to direct traffic.

10. Whenever a total closure is implemented, the Contractor shall provide a portable changeable message sign from ODOT's pre-approved list. It shall be placed 1.5 miles to 2 miles in advance of the closure or as directed by the Engineer.

11. For any operation not specifically mentioned in these plans, the traffic shall be maintained in accordance with the OMUTCD.

Holiday Closures

No work shall be performed and all existing lanes shall be open to traffic during the following designated holidays or events:

Christmas	New Years	Mother's Day
Memorial Day	Fourth of July	Easter
Labor Day	Thanksgiving	

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 the Week	Times All Lanes Must Be Open to Traffic
Sunday	12:00 Noon Friday through 6:00 AM Monday
Monday	12:00 Noon Friday through 6:00 AM Tuesday
Tuesday	12:00 Noon Monday through 6:00 AM Wednesday
Wednesday	12:00 Noon Tuesday through 6:00 AM Thursday
Thursday	12:00 Noon Wednesday through 6:00 AM Monday
Thursday (Thanksgiving only)	6:00AM Wednesday through 6:00 AM Monday
Friday	12:00 Noon Thursday through 6:00 AM Monday
Saturday	12:00 Noon Friday through 6:00 AM 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).

Maintaining Traffic and Sequence of Operations

All asphalt concrete operations shall be conducted in a manner that will assure minimum danger and inconvenience to highway users. The procedure for the removal or placement of any existing or proposed asphalt course shall be such that no greater than 1-1/2" discontinuity in the elevation of the traveled surface shall be exposed to traffic.

Traffic shall not be permitted to cross any partial-width removal or resurfacing joint during the actual removal or paving operation except as necessary. Any partial-width longitudinal joints with a discontinuity greater than 1-1/2" which must be exposed to traffic shall be ramped using Item 614 – Asphalt Concrete for Maintaining Traffic at a rate not steeper than 6:1.

Temporary transverse removal or paving joints which must be exposed to traffic shall be ramped using Item 614 – Asphalt Concrete for Maintaining Traffic at a rate not to exceed 1" in 10'.

For removal of existing overlays, a transition may be planed into the existing overlay and may be substituted for the asphalt ramps previously described.

Whenever traffic is subject to partial width removals or overlays prior to full width completion, the Contractor shall provide W8-11-48 "UNEVEN LANES" signs (dual sign installation). Placement shall be as directed by the Engineer and included in the lump sum payment for Item 614 – Maintaining Traffic.

Whenever any part of the traveled surface is closed, the motorists shall be warned and diverted by the Contractor through the use of a flashing arrow, in addition to those provisions set forth in the OMUTCD, the Traffic Engineering Manual and the applicable Standard Construction Drawings.

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.

Major Work Items

The following major work items will require traffic maintenance which shall be incorporated into the Contractor's sequence of operations.

A. Removal of existing RPMs
B. Completion of pavement repairs
C. Planing of asphalt concrete
D. Adjustment of existing castings
E. Placing of asphalt concrete
F. Placing proposed pavement markings and raised pavement markers
G. Placing of rumble strips

Item 614 – Asphalt Concrete for Maintaining Traffic, As Per Plan

This item shall be used to provide temporary asphalt ramps for transverse discontinuities. Ramping shall be placed at the rate of 1" per 10' or to be used as directed by the Engineer.

Remove temporary asphalt ramps as part of this item. Materials shall be removed prior to the placement of the next course of asphalt.

Item 614 – Asphalt Concrete for Maintaining Traffic, As Per Plan..... **50 Cu Yd**

MAINTENANCE OF TRAFFIC NOTES

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

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Item 614 – Work Zone Pavement Markings

The following estimated quantities have been carried to the General Summary to be used as directed by the Engineer for work zone pavement markings per the requirements of CMS 614.04 and 614.11. Place temporary markings at the same locations as the proposed permanent pavement markings.

After the planing is completed, use the following temporary markings:

Item 614 – Work Zone Lane Line, Class I, 6", 642 Paint ..... **9.20 Mile**
Item 614 – Work Zone Edge Line, Class I, 6", 642 Paint ..... **15.55 Mile**
Item 614 – Work Zone Channelizing Line, Class 1, 12", 642 Paint ..... **8,263 Ft**
Item 614 – Work Zone Dotted Line, Class 1, 6", 642 Paint ..... **7,818 Ft**
Item 614 – Work Zone Stop Line, Class 1, 642 Paint ..... **93 Ft**
Item 614 – Work Zone Crosswalk Line, Class 1, 642 Paint ..... **735 Ft**
Item 614 – Work Zone Arrow, Class 1, 642 Paint ..... **8 Each**

After the surface course is placed, use the following temporary markings:

Item 614 – Work Zone Lane Line, Class III, 6", 642 Paint ..... **9.20 Mile**
Item 614 – Work Zone Edge Line, Class III, 6", 642 Paint ..... **15.55 Mile**
Item 614 – Work Zone Channelizing Line, Class III, 12", 642 Paint ..... **8,263 Ft**
Item 614 – Work Zone Dotted Line, Class III, 6", 642 Paint ..... **7,818 Ft**
Item 614 – Work Zone Stop Line, Class III, 642 Paint ..... **93 Ft**
Item 614 – Work Zone Crosswalk Line, Class III, 642 Paint ..... **735 Ft**
Item 614 – Work Zone Arrow, Class III, 642 Paint ..... **8 Each**

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 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.

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 opened from a cell phone, android or I phone. 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.

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 ..... **6 Sign Month(s)**
Assuming 2 PCMS Signs for 3 Months

Item 614 – Law Enforcement Officer with Patrol Car for Assistance

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 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 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 ..... **500 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 an LEO are included with the bid price for Item 614, Law Enforcement Officer with Patrol Car for Assistance.

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Item 630 – Signing Misc.: Additional Signs, Ground Mounted, As Directed by the Engineer

When additional signing is needed to maintain traffic, the Contractor shall furnish the sign or signs as directed by the Engineer. These signs shall be ground mounted and meet all the specifications of the plan, proposal and current year CMS.

Payment for this item shall include, but not be limited to, the cost to furnish and erect the sign, including driving posts or other approved methods of sign support, maintaining the sign and removal of the sign.

This item of work shall be used to provide signs that are beyond the requirements of the signage detailed in the Standard Construction Drawings and the OMUTCD.

The following estimated quantity has been carried to the General Summary to be used as directed by the Engineer:

Item 630 – Signing Misc.: Additional Signs, Ground Mounted, As Directed by the Engineer ..... **300 Sq Ft**

Covering of Ground-Mounted Signs--General

When required by other items or incidentally to Item 614 – Maintaining Traffic, cover existing ground-mounted signs with plywood or OSB blanks (1/2" minimum thickness) covering 80% of the sign area and all of the sign legend. The use of low quality materials such as duct tape and black plastic is not permitted.

Item 614 Maintaining Traffic – Work Zone Speed Zone Signs for Freeway Resurfacings

The following Work Zone Speed Zone (WZSZ) Speed Limit Revision(s) have been approved for use on this project when work zone conditions and factors are met as described below:

WZSZ Revision Number	County & Route	Direction
WZ-65230	Cuyahoga IR-480	EB & WB

Potential WZSZ locations shall have an original (pre-construction) posted speed limit of 55 mph or greater, a qualifying work zone condition of at least 0.5 mile in length, an expected work duration of at least three hours, and a work zone condition in place that reduces the existing functionality of the travel lanes or shoulders (i.e., lane closure, lane shift, crossover, contraflow and/or shoulder closure). The length of the work zone condition is measured from the beginning of the taper for the subject work zone condition impacting the travel lanes and/or shoulder to the end of the downstream taper, where drivers are returned to typical alignment. An expected work duration of at least three hours is required to balance the additional exposure created by installing and removing WZSZ signing with the time needed to complete the work.

If the work zone meets these minimum criteria, it shall be analyzed further using Table 1 below to determine if and when it qualifies for a speed limit reduction. Depending on the original posted speed limit, the type of temporary traffic control used, and whether or not workers are present, a warranted WZSZ will vary in the approved speed limit to be posted over time.

C&MS Item 614, Paragraph 614.02(B), indicates that two directions of a divided highway are considered separate highway sections. Therefore, if the work on a multi-lane divided highway is limited to only one direction, a speed limit reduction in the direction of the work does not automatically constitute a speed limit reduction in the opposite direction. Each direction shall be analyzed independently from each other.

All WZSZs fluctuate between two approved reduced speed limits or between an approved reduced speed limit and the original posted speed limit. Only one of two signing strategies shall be used to implement a WZSZ.

WZSZs using DSL Sign Assemblies shall be in accordance with this note, Approved List, Supplemental Specifications (SS) 808 and 908, and Traffic SCD MT-104.10.

Only one warranted speed limit applies at any one time; speed limit reductions are not cumulative. WZSZs shall not be used for Moving/Mobile activities, as defined in OMUTCD Part 6.

When looking up the warranted work zone speed limits, always use the original, preconstruction, posted speed limit. Do not use a prior or current work zone speed limit as a look up value in the table. Positive Protection is generally regarded as portable barrier or other rigid barrier in use along the work area within the subject warranted work zone condition. Without Positive Protection is generally regarded as using drums, cones, shadow vehicle, etc., along the work area within the subject warranted work zone condition. Workers are considered as being present when on-site, working within the subject warranted work zone condition. When the work zone condition reducing the existing functionality of the travel lanes or shoulders is removed, the speed limit displayed shall return to the original posted speed limit.

Table 1: Warranted Work Zone Speed Limits (MPH) for Work Zones on High-Speed (55 mph or greater) Multi-Lane Highways

	WITH Positive Protection		WITHOUT Positive Protection	
Original Posted Speed Limit	Workers Present	Workers NOT Present	Workers Present	Workers NOT Present
70	60	65	55	65
65	55	60	50	60
60	55	60	50	60
55	50	55	45	55

The following estimated quantity has been carried to the General Summary.

Item 808, Digital Speed Limit (DSL) Sign Assembly …… **33 Sign Mnth**
Assuming 11 DSL Sign Assemblies for 3 Months

Item 614 Work Zone Increased Penalties Sign

R11-H5a-48 signs shall be furnished, erected, and maintained in good condition and/or replaced as necessary and subsequently removed by the Contractor. Signs shall be mounted at the appropriate offsets and elevations as prescribed by the Ohio Manual of Uniform Traffic Control Devices. They shall be maintained on supports meeting current safety criteria.

The signs may be erected or uncovered no more than four hours before the actual start of work. The signs shall be removed or covered no later than four hours following restoration of all lanes to traffic with no restrictions, or sooner as directed by the Engineer. Temporary sign covering and uncovering due to temporary lane restorations shall be guided by the four-hour limitations stated above. Such lane restorations should be expected to remain in effect for 30 or more consecutive calendar days, such as during winter shut-downs.

The signs on the mainline shall be dual mounted unless not physically possible. The first sign shall be placed between the ROAD WORK AHEAD (W20-1) sign and the next sign in the sequence. Signs shall be erected on each entrance ramp and every 2 miles through the construction work limits. Signs on the mainline shall be R11-H5a-48. Signs used on the ramps shall be R11-H5a-24. R11-H5a-24 signs may be used in the median in lieu of R11-H5a-48 signs if it is not physically possible to provide R11-H5a-48 signs in the median.

The R11-H5a-48 signs shall be mounted on 2 No. 3 posts when located within clear zones.

The Contractor may use signs and supports in used, but good, condition provided the signs meet current ODOT specifications. Sign faces shall be retroreflectorized with Type G sheeting complying with the requirements of C&MS 730.19.

Work Zone Increased Penalties signs and supports will be measured as the number of sign installations, including the sign and necessary supports. If a sign and support combination is removed and reerected at another location as directed by the Engineer, it shall be considered another unit.

Payment for accepted quantities, complete, in place will be made at the contract unit price. Payment shall be full compensation for all materials, labor, incidentals and equipment for furnishing, erecting, maintaining, covering during suspension of work, and removal of the sign and support.

Item 614 - Work Zone Increased Penalties Sign……..... **15 Each**

Work Zone Queue Detection Warning System, As Per Plan

The Contractor shall furnish, install, and maintain an approved Work Zone Queue Detection Warning System (WZQDWS) as per Supplemental Specification 896.

The probable initial locations of the WZQDWS devices will move with the work going on. It is expected that these locations will vary based on planned or unplanned phase and traffic pattern changes. Placement, operation, maintenance and all activation of the devices by the Contractor shall be directed by the Engineer.

The following traffic sensor thresholds and Portable Changeable Message Signs (PCMS) messages shall be used:

Greater than or equal to 50 MPH – Use four corner flashing caution mode or a message pertaining to advance warning for a lane closure.
Between 50 MPH and 25 MPH – Traffic Ahead XX MPH / Slow Down.
Below or equal to 25 MPH – Stopped Traffic Ahead / Prepare to Stop.

Four corner flashing caution mode shall consist of the use of one asterisk in each corner of the PCMS display (4 total asterisks).

XX shall be rounded up to the nearest multiple of 5 MPH minus 1. Occupancy may be directed to be used based on certain traffic conditions and scenarios. ODOT will direct the Contractor of the thresholds to be used for those areas where occupancy is directed to be used.

The following estimated quantity has been carried to the General Summary:

Item 896 – Portable Non-Intrusive Traffic Sensor, Class II …….. **36 Sign Month(s)**
Assuming 12 Sensor(s) for 3 Month(s)
Item 896 – Portable Changeable Message Sign, As Per Plan ….. **9 Sign Month(s)**
Assuming 3 PCMS Sign(s) for 3 Month(s)

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Worksite Traffic Supervisor

Subject to approval of the Engineer, the Contractor shall employ and identify (someone other than the superintendent) a prequalified Worksite Traffic Supervisor (WTS) before starting work in the field. The WTS shall be trained in accordance with CMS 614.03, shall have successfully completed ODOT administered WTS testing (and re-testing when applicable) and be listed on the ODOT prequalified WTS roster. Prequalification expires every 5 years. Re-testing shall be successfully repeated every 5 years to remain prequalified.

The name of the prequalified WTS and related 24-hour contact information shall be provided to the Engineer at the preconstruction conference. If the designated WTS will not be available full time (24/7), the Contractor may designate an alternate (secondary) WTS to be available when the primary is off duty; however the primary WTS shall remain the point of contact at all times. Any alternate (secondary) WTS is subject to the same training, prequalification and other requirements outlined within this plan note. At all times the Engineer, or Engineer's representatives, must be informed of who the primary WTS (and secondary WTS, if applicable) is at the current time.

The WTS position has the primary responsibility of implementing the Traffic Management Plan (TMP), monitoring the safety and mobility of the entire work zone, and correcting Temporary Traffic Control (TTC) deficiencies for the entire work zone. The WTS, and alternate WTS when on duty, shall have sufficient authority to effectively carry out the identified WTS responsibilities and duties. The duties of the WTS are as follows:

1. Be available on a 24-hour per day basis.

2. Be on site for all emergency TTC needs within one hour of notification by police or project staff, and effect corrective measures immediately on existing work zone TTC devices.

3. Attend preconstruction meeting and all project meetings where TTC management is discussed.

4. Be available on site for other meetings or discussions with the Engineer upon request.

5. Be aware of all existing and proposed TTC operations of the contractor, subcontractors and suppliers, and ensure coordination occurs between them to eliminate conflicting temporary and/or permanent traffic control.

6. Coordinate project activities with all Law Enforcement Officers (LEOs). The WTS shall also be the main contact person with the LEOs while LEOs are on the project.

7. Coordinate and facilitate meetings with ODOT personnel, LEOs and other applicable entities before each plan phase switch to discuss the work zone TTC for implementing the phase switch. Submit a written detail of MOT operations and schedule of events to implement the switch between phase plans to the Engineer 5 calendar days prior to this meeting.

8. Be present, on site for, and involved with, each TTC set up/take down and each phase change in accordance with CMS 614.03.

9. On a continual basis ensure that the TTC zone and all related devices are installed, maintained and removed in compliance with the contract documents.

10. On a continual basis facilitate corrective action(s) necessary to bring deficient TTC zones and all related devices into compliance with contract documents in the timeframe determined by the Engineer.

11. Inspect, evaluate, propose necessary modifications to, and document the effectiveness of, the TTC devices and traffic operations on a DAILY BASIS (7 days a week). In addition, perform one weekly night inspection of the work zone setup for daytime work operations; and one daytime inspection per week for nighttime projects. This shall include (but not be limited to) documentation on the following project events:

    a. Initial TTC setup (day and night review).

    b. Daily TTC setup and removal.

    c. When construction staging causes a change in the TTC setup.

    d. Crash occurrences within the construction area and within the influence area(s) approaching the work zone.

    e. Removal of TTC devices at the end of a phase or project.

    f. All other emergency TTC needs.

12. Complete the Department approved Long Term Inspection form (CA-D-8) after each inspection as required in # 11 and submit it to the Engineer the following workday. These reports shall include a checklist of all TTC maintenance items to be reviewed. A copy of the form will be provided at the pre-construction meeting. Any deficiencies observed shall be noted, along with recommended or completed corrective actions and the dates by which such corrections were, or will be, completed. A copy of the current CA-D-8 document can be found on the Office of Construction Administration's Inspection Forms website.

13. Have copies of the ODOT Temporary Traffic Control Manual and contract documents available at all times on the project.

The Department will deduct:

A. The prorated daily amount of Item 614 Maintaining Traffic for any day in which the WTS fails to perform the duties set forth above. The prorated daily amount will be equal to the original bid amount for Item 614 Maintaining Traffic divided by the difference between the original completion date and the first day of work, in calendar days.

B. 1% of the original bid amount for Item 614 Maintaining Traffic for any day that a TTC issue is identified in the field and is not corrected in the given timeframe per the Engineer. Deduction B shall not apply to situations covered by Deduction C.

C. 1% of the original bid amount for Item 614 Maintaining Traffic for any day that a lane or ramp is blocked (fully or partially) without TTC, as determined by the Engineer. This deduction shall be in addition to any other disincentives established for unauthorized lane use.

For days in which more than one deduction listed above occur, the highest deduction amount will apply.

If three or more total days result in TTC issues described in Deduction B or C above, the primary WTS shall be immediately removed from the work in accordance with C&MS 108.05. Upon removal the Engineer shall notify ODOT Central Office (WTSPrequalification@dot.ohio.gov) to register a removal against the statewide prequalification for the primary WTS. Three removals shall cause statewide disqualification for any previously prequalified WTS.

Payment for the above requirements, responsibilities and duties shall be included in the lump sum price bid for Item 614, Maintaining Traffic.

MAINTENANCE OF TRAFFIC NOTES

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

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Item 622 – Barrier Misc.: Portable Temporary Movable Barrier System

A. Description

This item consists of furnishing, installing and relocating a portable temporary movable barrier system, including the necessary barrier transfer devices, in accordance with this specification, the plans and as directed by the Engineer.

B. Materials and Construction Methods

All temporary barrier installations shall be completed in accordance with the applicable sections of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) including all revisions up to the date of advertisement of the contract.

The Portable Temporary Movable Barrier System shall be fully tested to and shall meet the recommended criteria as defined in the National Cooperative Highway Research Program (NCHRP) Report 350 for test level 3 when properly installed according to the manufacturer's recommendations, the plans and as directed by the Engineer.

For design impacts the Portable Temporary Movable Barrier System shall be capable of a lateral deflection of no more than 8 feet when impacted.

The Portable Temporary Movable Barrier System shall be constructed from a series of individual sections. Each barrier section shall be no longer than 50 feet (15 meters) and no shorter than 3 feet (1 meter). A portable impact attenuator shall be installed at the leading edge of the barrier installation and the first two (2) sections of barrier shall be anchored to the roadway in accordance with the manufacturer's recommendations. **Payment for the appropriate impact attenuators shall be included in this bid item**. The last two (2) sections of barrier shall also be anchored to the roadway in accordance with the manufacturer's recommendations. Barrier-to-barrier connections shall be accomplished in accordance with the manufacturer's recommendations.

Sections of the Portable Temporary Movable Barrier System shall be equipped with wheel and jack mechanisms that allow for manual movement of the barrier if directed by the Engineer.

The Portable Temporary Movable Barrier System shall have the capability to be configured as a gate to facilitate work zone or median access. The gate function shall be integrated into the barrier and shall be capable of being moved with the barrier. The gate functionality shall only be used if directed by the Engineer.

A barrier transfer device shall be provided as per the manufacturer's recommendations and shall be incidental to this item. The barrier transfer device shall be a self-contained unit or can be an attachment for any typical construction apparatus. The barrier transfer devices shall be capable of laterally adjusting the barrier at a rate no more than one (1) mile in thirty (30) minutes. The movable barrier system shall be moved at the beginning of the work day to close a lane as required by the Engineer and shall be moved at the end of the work day to open a lane as required by the Engineer.

Barrier reflectors and object markers, spaced at alternating 50 foot intervals per standard drawing MT-101.70, shall be installed on the Portable Temporary Movable Barrier System. Payment for the appropriate barrier reflectors and object markers shall be included in this bid item.

The Contractor shall submit his or her plan for phasing of the Portable Temporary Movable Barrier System to the Engineer two weeks prior to mobilizing the Portable Temporary Movable Barrier System for approval.

To reposition the movable barrier system to close or open a lane, the Contractor shall position three (3) TMA's in the left lane/shoulder. One TMA shall remain at the end of the left lane taper, one shall follow the barrier positioning vehicle and one TMA shall follow further behind the second TMA. Barrier movement shall occur in the direction of traffic flow. A LEO shall follow the second TMA.

The Contractor shall submit to the Engineer the product specification information, design cut sheets and other information necessary for approval as determined by the Engineer.

C. Method of Measurement and Basis of Payment

The measurement of the item shall be made along the centerline in feet and payment shall be made at the unit price bid per foot of Item 622 – Barrier Misc.: Portable Temporary Movable Barrier System.

Payment for accepted quantities, complete in place, will be made at the contract price. Payment shall be full compensation for all materials, labor, incidentals and equipment for furnishing, erecting, relocating, maintaining and removing the Portable Temporary Movable Barrier System. The following estimated quantity has been carried to the general summary:

Item 622 – Barrier Misc.: Portable Temporary Movable Barrier System….. **1120 Ft**

If the contractor so desires, they may propose to use a different style of portable barrier with the understanding that no payment will be made for moving the portable barrier before and after work shifts. Impact attenuators, barrier reflectors and object markers shall be included in the cost of whichever style of portable barrier the contractor proposes.

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
14-17	19-23		26	27	28	29		30	31	32		01/IMS/PV							
																		ROADWAY	
180												180		202	30701	180	FT	CONCRETE BARRIER REMOVED, AS PER PLAN	15
182												182		209	60201	182	STA	LINEAR GRADING, AS PER PLAN	15
120												120		622	90000	120	FT	BARRIER, MISC.: CONCRETE BARRIER, TYPE B32	15
																		EROSION CONTROL	
												1,000		832	30000	1,000	EACH	EROSION CONTROL	
																		DRAINAGE	
46												46		611	98631	46	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	15
3												3		611	98801	3	EACH	INLET, NO. 3B, AS PER PLAN	15
1												1		611	99655	1	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	15
5,000												5,000		SPECIAL	61199820	5,000	LB	MISCELLANEOUS METAL	15
																		PAVEMENT	
1,900												1,900		251	01021	1,900	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN A	16
325												325		251	01021	325	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN B	16
			104,017	65,469	20,367	12,473						202,326		254	01001	202,326	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"	16
3												3		304	20000	3	CY	AGGREGATE BASE	
			9,362	5,892	1,833	1,123						18,210		407	20000	18,210	GAL	NON-TRACKING TACK COAT	
			3,002	1,873	793	520						6,188		442	00100	6,188	CY	ANTI-SEGREGATION EQUIPMENT	
					712	520						1,232		442	10001	1,232	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	16
			4,334	2,728	136							7,198		442	10301	7,198	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"	16
16												16		609	72001	16	SY	CONCRETE MEDIAN, AS PER PLAN	16
113												113		617	10101	113	CY	COMPACTED AGGREGATE, AS PER PLAN	16
10.94												10.94		618	40101	10.94	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN	16
					5,398	4,763						10,161		872	10000	10,161	FT	VOID REDUCING ASPHALT MEMBRANE (VRAM)	
																		TRAFFIC CONTROL	
								788	207	80		1,075		621	00100	1,075	EACH	RPM	
807												807		621	54000	807	EACH	RAISED PAVEMENT MARKER REMOVED	
4												4		632	26501	4	EACH	DETECTOR LOOP, AS PER PLAN	17
								10.84	3.7	1.01		15.55		646	10010	15.55	MILE	EDGE LINE, 6"	
								8.52	0.64	0.04		9.2		646	10110	9.2	MILE	LANE LINE, 6"	
								6,989	1,194	80		8,263		646	10310	8,263	FT	CHANNELIZING LINE, 12"	
									33	60		93		646	10400	93	FT	STOP LINE	
									567	168		735		646	10500	735	FT	CROSSWALK LINE	
									139			139		646	10800	139	SF	ISLAND MARKING	
									8			8		646	20300	8	EACH	LANE ARROW	
									2	4		6		646	20320	6	EACH	WRONG WAY ARROW	
								7,194	624			7,818		646	20504	7,818	FT	DOTTED LINE, 6"	

GENERAL SUMMARY

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.24 TOTAL 48

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
14-17	19-23		26	27	28	29		30	31	32		01/IMS/PV							
																		MAINTENANCE OF TRAFFIC	
	500											500		614	11110	500	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
	15											15		614	12484	15	EACH	WORK ZONE INCREASED PENALTIES SIGN	
	50											50		614	13001	50	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC, AS PER PLAN	19
	6											6		614	18601	6	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	20
	9.2											9.2		614	20110	9.2	MILE	WORK ZONE LANE LINE, CLASS I, 6", 642 PAINT	
	9.2											9.2		614	20560	9.2	MILE	WORK ZONE LANE LINE, CLASS III, 6", 642 PAINT	
	15.55											15.55		614	22110	15.55	MILE	WORK ZONE EDGE LINE, CLASS I, 6", 642 PAINT	
	15.55											15.55		614	22360	15.55	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	
	8,263											8,263		614	23210	8,263	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", 642 PAINT	
	8,263											8,263		614	23690	8,263	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 12", 642 PAINT	
	7,818											7,818		614	24202	7,818	FT	WORK ZONE DOTTED LINE, CLASS I, 6", 642 PAINT	
	7,818											7,818		614	24612	7,818	FT	WORK ZONE DOTTED LINE, CLASS III, 6", 642 PAINT	
	93											93		614	26200	93	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
	93											93		614	26610	93	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
	735											735		614	27200	735	FT	WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT	
	735											735		614	27620	735	FT	WORK ZONE CROSSWALK LINE, CLASS III, 642 PAINT	
	8											8		614	30200	8	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
	8											8		614	30650	8	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	
	1,120											1,120		622	90000	1,120	FT	BARRIER, MISC.: PORTABLE TEMPORARY MOVABLE BARRIER SYSTEM	23
	300											300		630	97800	300	SF	SIGNING, MISC.: ADDITIONAL SIGNS, GROUND MOUNTED, AS DIRECTED BY THE ENGINEER	21
	33											33		808	18700	33	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	
	36											36		896	00012	36	SNMT	PORTABLE NON-INTRUSIVE TRAFFIC SENSOR, CLASS II	
	9											9		896	00021	9	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	21
																		INCIDENTALS	
												LS		614	11000	LS		MAINTAINING TRAFFIC	
6												6		619	16011	6	MNTH	FIELD OFFICE, TYPE B, AS PER PLAN	14
LS												LS		623	10001	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	14
												LS		624	10000	LS		MOBILIZATION	
																			21

GENERAL SUMMARY

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.25 TOTAL 48

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA		254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"		407 NON-TRACKING TACK COAT		442 ANTI-SEGREGATION EQUIPMENT	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"			872 VOID REDUCING ASPHALT MEMBRANE (VRAM)	
					FT.	FT.	FT.	FT.	SQ. YD.		SY		GAL		CY	CY	CY			FT	
			RAMP S-95 (IR-480 EASTBOUND)																		
		1	212+80.47	213+24.13	43.66			CADD AREA	68.68		68.68		6.18		0.88		2.86				
		1	213+24.13	215+45.00	220.87	39.00	39.00	39.00	957.11		957.11		86.14		24.54		39.88				
		1	215+45.00	218+62.65	317.65	45.43	40.50	42.96	1516.40		1516.40		136.48		35.29		63.18				
			IR-480 EASTBOUND																		
		1	38+32.67	43+23.69	491.01	40.50	40.50	40.50	2209.57		2209.57		198.86		54.56		92.07				
		1	43+23.69	43+48.37	24.69			CADD AREA	46.78		46.78		4.21				1.95				
			BRIDGE CUY-480-2463																		
		1	44+60.18	44+85.33	25.15			CADD AREA	45.27		45.27		4.07				1.89				
		1	44+85.33	53+28.00	842.67	40.50	40.50	40.50	3792.01		3792.01		341.28		93.63		158.00				
		1	53+28.00	55+60.00	232.00	76.60	63.50	70.05	1805.75		1805.75		162.52		60.74		75.24				
		1	55+60.00	63+40.29	780.29	63.50	43.99	53.75	4659.68		4659.68		419.37		141.77		194.15				
		1	63+40.29	63+90.18	49.89	43.99	40.50	42.25	234.19		234.19		21.08		6.67		9.76				
		1	63+90.18	64+39.56	49.38	40.50	40.50	40.50	222.21		222.21		20.00		6.32		9.26				
			BRIDGE CUY-480-2503																		
		1	66+65.06	98+81.30	3216.24	40.50	40.50	40.50	14473.08		14473.08		1302.58		357.37		603.05				
			RAMP S-95 (IR-480 EASTBOUND)																		
		1	98+81.30	102+94.13	412.83	40.50	40.50	40.50	1857.74		1857.74		167.20		45.87		77.41				
		1	102+94.13	103+19.13	25.00	40.50	41.71	41.11	114.18		114.18		10.28		2.78		4.76				
		1	103+19.13	103+31.95	12.82	41.71	41.52	41.62	59.30		59.30		5.34		1.42		2.47				
		1	103+31.95	103+58.99	27.04			CADD AREA	62.44		62.44		5.62		1.72		2.60				
			BRIDGE CUY-480-2577R																		
		1	106+05.13	106+50.00	44.87	41.17	41.17	41.17	205.25		205.25		18.47		4.98		8.55				
		1	106+50.00	107+10.00	60.00	41.17	38.50	39.83	265.56		265.56		23.90		6.67		11.07				
		1	107+10.00	107+40.00	30.00	38.50	38.00	38.25	127.50		127.50		11.48		3.33		5.31				
		1	107+40.00	113+14.00	574.00	38.00	38.00	38.00	2423.56		2423.56		218.12		63.78		100.98				
		1	113+14.00	113+57.16	43.16	79.63	75.31	77.47	371.53		371.53		33.44		14.08		15.48				
		1	113+57.15	115+11.74	154.58	75.31	66.85	71.08	1220.85		1220.85		109.88		44.79		50.87				
		1	115+11.74	116+14.23	102.50	66.85	62.94	64.90	739.09		739.09		66.52		26.05		30.80				
		1	116+14.23	118+16.82	202.58	62.94	60.26	61.60	1386.59		1386.59		124.79		46.52		57.77				
		1	118+16.82	120+39.57	222.76	60.26	54.84	57.55	1424.39		1424.39		128.20		44.91		59.35				
		1	120+39.57	129+10.69	871.12	54.84	38.00	46.42	4492.83		4492.83		404.35		130.74		187.20				
			RAMP K-4 (IR-480 EASTBOUND)																		
		1	79+05.00	79+07.92	2.92	38.00	38.00	38.00	12.32		12.32		1.11		0.32		0.51				
			IR-480 WESTBOUND																		
		1	1209+12.19	1219+70.69	1058.50	69.50	69.50	69.50	8173.98		8173.98		735.66		235.22		340.58				
		1	1219+70.69	1224+24.99	454.30	106.48	79.50	92.99	4693.98		4693.98		422.46		154.57		195.58				
		1	1224+24.99	1227+06.87	281.88	79.50	79.50	79.50	2489.94		2489.94		224.09		78.30		103.75				
		1	1227+06.87	1228+06.87	100.00	79.50	69.50	74.50	827.78		827.78		74.50		25.00		34.49				
		1	1228+06.87	1253+50.00	2543.13	69.50	69.50	69.50	19638.62		19638.62		1767.48		565.14		818.28				
		1	1253+50.00	1261+88.52	838.52	69.50	86.20	77.85	7253.20		7253.20		652.79		226.52		302.22				
		1	1261+88.52	1262+33.00	44.48	86.20	87.68	86.94	429.69		429.69		38.67		13.88		17.90				
		1	1262+33.00	1263+77.51	144.51	85.68	90.50	88.09	1414.46		1414.46		127.30		47.23		58.94				
		1	1263+77.51	1267+97.78	420.27	90.50	104.50	97.50	4552.88		4552.88		409.76		155.65		189.70				
		1	1267+97.78	1280+60.16	1262.38	69.50	69.50	69.50	9748.38		9748.38		877.35		280.53		406.18				
SUBTOTALS											104017		9362		3002		4334				
TOTALS CARRIED TO GENERAL SUMMARY											104017		9362		3002		4334				
PLAN SPLIT #1 TOTAL											104017		9362		3002		4334				
PLAN SPLIT #2 TOTAL																					

PAVEMENT SUBSUMMARY

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.26 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:39:03 PM USER: dbrauer
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 12\Cuyahoga\84020\400-Engineering\Roadway\Sheets\84020_GS001.dgn

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA		254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"		407 NON-TRACKING TACK COAT		442 ANTI-SEGREGATION EQUIPMENT	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"			872 VOID REDUCING ASPHALT MEMBRANE (VRAM)	
					FT.	FT.	FT.	FT.	SQ. YD.		SY		GAL		CY	CY	CY			FT	
			IR-480 WESTBOUND (CONT.)																		
		1	1280+60.16	1289+00.16	840.00	69.50	83.50	76.50	7140.00		7140.00		642.60		231.39		297.50				
		1	1289+00.16	1292+39.40	339.24	83.50	106.90	95.20	3588.43		3588.43		322.96		126.75		149.52				
		1	1292+39.40	1292+60.00	20.60	52.50	52.50	52.50	120.17		120.17		10.82		3.44		5.01				
		1	1292+60.00	1301+00.00	840.00	52.50	64.50	58.50	5460.00		5460.00		491.40		163.33		227.50				
		1	1301+00.00	1302+16.82	116.82	66.50	66.50	66.50	863.16		863.16		77.68		25.96		35.97				
		1	1302+16.82	1303+75.50	158.68			CADD AREA	580.33		580.33		52.23		19.08		24.18				
			RAMP S-96 (IR-480 WESTBOUND)																		
		1	12+37.37	19+00.17	662.80	44.42	61.00	52.71	3881.70		3881.70		349.35		124.92		161.74				
		1	19+00.17	19+48.43	48.26	61.00	61.12	61.06	327.45		327.45		29.47		11.18		13.64				
		1	19+48.43	20+95.06	146.63	61.12	73.01	67.07	1092.62		1092.62		98.34		38.74		45.53				
		1	20+95.06	21+51.00	55.94	38.00	38.00	38.00	236.20		236.20		21.26		6.21		9.84				
			STA. 21+51.00 BK = STA. 20+00.00 AH																		
		1	20+00.00	21+00.00	100.00	38.00	38.00	38.00	422.23		422.23		38.00		11.11		17.59				
		1	21+00.00	21+15.00	15.00	38.00	39.00	38.50	64.17		64.17		5.78		1.66		2.67				
		1	21+15.00	29+52.72	837.72	39.00	39.00	39.00	3630.13		3630.13		326.71		93.08		151.26				
		1	29+52.72	30+06.92	54.20			CADD AREA	74.67		74.67		6.72		1.71		3.11				
			BRIDGE CUY-480-2437L																		
		1	32+09.87	33+65.74	155.87	39.00	39.00	39.00	675.44		675.44		60.79		17.32		28.14				
			IR-480 WESTBOUND																		
		1	33+65.74	38+32.67	466.93	39.00	40.50	39.75	2062.30		2062.30		185.61		51.88		85.93				
		1	38+32.67	43+42.18	509.51	40.50	40.50	40.50	2292.80		2292.80		206.35		56.61		95.53				
		1	43+42.18	43+48.19	6.00			CADD AREA	10.09		10.09		0.91				0.42				
			BRIDGE CUY-480-2463																		
		1	44+60.18	44+66.02	5.84			CADD AREA	11.61		11.61		1.04				0.48				
		1	44+66.02	56+42.00	1175.99	40.50	40.50	40.50	5291.94		5291.94		476.27		130.67		220.50				
		1	56+42.00	61+00.24	458.24	76.68	50.50	63.59	3237.62		3237.62		291.39		104.14		134.90				
		1	61+00.24	61+81.26	81.02	50.50	50.50	50.50	454.62		454.62		40.92		13.50		18.94				
		1	61+81.26	62+81.26	100.00	50.50	40.50	45.50	505.56		505.56		45.50		13.89		21.07				
		1	62+81.26	64+39.56	158.30	40.50	40.50	40.50	712.36		712.36		64.11		17.59		29.68				
			BRIDGE CUY-480-2503																		
		1	66+65.06	98+81.30	3216.24	40.50	40.50	40.50	14473.08		14473.08		1302.58		357.37		603.05				
			RAMP S-96 (IR-480 WESTBOUND)																		
		1	11+02.54	13+36.46	233.92	38.00	38.00	38.00	987.67		987.67		88.89		25.99		41.15				
		1	13+36.46	14+68.81	132.35	38.00	47.27	42.64	626.99		626.99		56.43		17.54		26.12				
		1	14+68.81	17+16.47	247.66	47.27	46.33	46.80	1287.82		1287.82		115.90		40.47		53.66				
		1	17+16.47	21+27.19	410.72	46.33	62.59	54.46	2485.36		2485.36		223.68		86.45		103.56				
		1	21+27.19	22+28.25	101.06	62.59	70.86	66.72	749.25		749.25		67.43		27.48		31.22				
		1	22+28.25	23+08.25	80.00	41.92	38.00	39.96	355.18		355.18		31.97		8.87		14.80				
		1	23+08.25	25+10.00	201.75	38.00	38.00	38.00	851.84		851.84		76.67		22.41		35.49				
		1	25+10.00	25+88.73	78.73	38.00	40.98	39.49	345.45		345.45		31.09		8.75		14.39				
		1	25+88.73	26+00.00	11.27	40.98	41.17	41.07	51.44		51.44		4.63		1.25		2.14				
		1	26+00.00	26+68.49	68.49	41.17	41.17	41.17	313.28		313.28		28.20		7.61		13.05				
		1	26+68.49	27+55.01	86.52			CADD AREA	205.90		205.90		18.53		4.33		8.58				
			BRIDGE CUY-480-2585																		
			SUBTOTALS								65469		5892		1873		2728				
			TOTALS CARRIED TO GENERAL SUMMARY								65469		5892		1873		2728				
			PLAN SPLIT #1 TOTAL								65469		5892		1873		2728				
			PLAN SPLIT #2 TOTAL																		

PAVEMENT SUBSUMMARY

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.27 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:39:10 PM USER: dbrauer
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PAVEMENT SUBSUMMARY

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA		254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"		407 NON-TRACKING TACK COAT		442 ANTI-SEGREGATION EQUIPMENT	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"			872 VOID REDUCING ASPHALT MEMBRANE (VRAM)	
					FT.	FT.	FT.	FT.	SQ. YD.		SY		GAL		CY	CY	CY			FT	
			RAMP S-96 (IR-480 WESTBOUND) (CONT.)																		
		1	33+30.04	33+98.31	68.27			CADD AREA	153.53		153.53		13.82		4.30		6.40				
		1	33+98.31	35+32.40	134.09	40.50	40.50	40.50	603.41		603.41		54.31		14.90		25.14				
		1	35+32.40	35+68.19	35.79	40.50	40.98	40.74	162.01		162.01		14.58		3.98		6.75				
		1	35+68.19	35+98.79	30.60			CADD AREA	69.84		69.84		6.29		1.94		2.91				
			BRIDGE CUY-480-2577L																		
		1	38+33.42	38+64.09	30.67			CADD AREA	70.29		70.29		6.33		1.47		2.93				
		1	38+64.09	39+00.00	35.91	42.00	42.00	42.00	167.59		167.59		15.08		3.99		6.98				
		1	39+00.00	39+90.00	90.00	42.00	40.50	41.25	412.50		412.50		37.13		10.00		17.19				
		1	39+90.00	43+52.35	362.35	40.50	40.50	40.50	1630.58		1630.58		146.75		40.26		67.94				
			RAMP E-L																		
		1	8+42.44	9+02.33	59.89			CADD AREA	246.16		246.16		22.15		10.26	10.26				59.89	
		1	9+02.33	13+56.24	453.91	30.00	30.00	30.00	1513.04		1513.04		136.17		63.04	63.04				453.91	
		1	13+56.24	16+21.37	265.13	30.00	22.00	26.00	765.94		765.94		68.93		31.91	31.91				265.13	
		1	16+21.37	18+71.52	250.15	22.00	22.00	22.00	611.48		611.48		55.03		25.48	25.48				250.15	
		1	18+71.52	19+71.52	100.00	22.00	27.00	24.50	272.23		272.23		24.50		11.34	11.34				100.00	
			RAMP WN-W																		
		1	67+98.01	74+40.00	641.99	26.00	47.87	36.93	2634.55		2634.55		237.11		109.77	109.77				641.99	
		1	74+40.00	74+78.00	38.00	47.87	48.34	48.10	203.10		203.10		18.28		8.46	8.46				38.00	
		1	74+78.00	75+81.48	103.48	48.34	63.00	55.67	640.05		640.05		57.60		26.67	26.67				103.48	
		1	75+81.48	79+70.64	389.16	27.00	27.00	27.00	1167.50		1167.50		105.08		48.65	48.65				389.16	
			STA. 79+70.64 BK = STA. 79+70.63 AH																		
		1	79+70.63	81+50.14	179.51	27.00	27.00	27.00	538.54		538.54		48.47		22.44	22.44				179.51	
		1	81+50.14	82+00.14	50.00	27.00	25.00	26.00	144.45		144.45		13.00		6.02	6.02				50.00	
		1	82+00.14	83+03.40	103.26	25.00	25.00	25.00	286.84		286.84		25.82		11.95	11.95				103.26	
		1	83+03.40	83+13.40	10.00	25.00	18.00	21.50	23.89		23.89		2.15		1.00	1.00				10.00	
			RAMP WS-W																		
		1	75+82.57	80+55.83	473.26	26.00	26.00	26.00	1367.20		1367.20		123.05		56.97	56.97				473.26	
		1	80+55.83	80+80.83	25.00	26.00	25.00	25.50	70.84		70.84		6.38		2.95	2.95				25.00	
			STA. 80+80.83 BK = STA. 80+81.00 AH																		
		1	80+81.00	85+42.92	461.92	25.00	25.00	25.00	1283.12		1283.12		115.48		53.46	53.46				461.92	
		1	85+42.92	86+42.92	100.00	25.00	22.00	23.50	261.12		261.12		23.50		10.88	10.88				100.00	
		1	86+42.92	87+42.92	100.00	22.00	24.00	23.00	255.56		255.56		23.00		10.65	10.65				100.00	
		1	87+42.92	92+20.00	477.08	24.00	24.00	24.00	1272.22		1272.22		114.50		53.01	53.01				477.08	
		1	92+20.00	92+25.00	5.00	21.00	21.00	21.00	11.67		11.67		1.05		0.49	0.49				5.00	
		1	92+25.00	93+00.00	75.00	20.00	20.00	20.00	166.67		166.67		15.00		6.94	6.94				75.00	
			RAMP N-W																		
		1	10+97.79	15+89.86	492.07	25.00	25.00	25.00	1366.87		1366.87		123.02		56.95	56.95				492.07	
			STA. 15+89.86 BK = STA. 24+41.25 AH																		
		1	24+41.15	25+00.00	58.85	25.00	25.00	25.00	163.48		163.48		14.71		6.81	6.81				58.85	
		1	25+00.00	27+40.00	240.00	25.00	33.00	29.00	773.34		773.34		69.60		32.22	32.22				240.00	
		1	27+40.00	28+98.41	158.41	33.00	33.00	33.00	580.83		580.83		52.27		24.20	24.20				158.41	
		1	28+98.41	29+85.29	86.88			CADD AREA	476.63		476.63		42.90		19.86	19.86				86.88	
			SUBTOTALS								20367		1833		793	712	136			5398	
			TOTALS CARRIED TO GENERAL SUMMARY								20367		1833		793	712	136			5398	
			PLAN SPLIT #1 TOTAL								20367		1833		793	712	136			5398	
			PLAN SPLIT #2 TOTAL																		

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.28 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:39:17 PM USER: dbrauer
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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA		254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1.5"		407 NON-TRACKING TACK COAT		442 ANTI-SEGREGATION EQUIPMENT	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1.5"	442 ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN, PG76-22M, 1.5"			872 VOID REDUCING ASPHALT MEMBRANE (VRAM)	
					FT.	FT.	FT.	FT.	SQ. YD.		SY		GAL		CY	CY	CY			FT	
			RAMP N-SE																		
		1	47+92.00	51+00.00	308.00	22.00	22.00	22.00	752.89		752.89		67.76		31.37	31.37				308.00	
		1	51+00.00	52+50.00	150.00	22.00	25.00	23.50	391.67		391.67		35.25		16.32	16.32				150.00	
		1	52+50.00	53+29.44	79.44	25.00	25.00	25.00	220.66		220.66		19.86		9.19	9.19				79.44	
			SR-43 (RAMP SE-N)																		
		1	43+36.16	43+46.16	10.00	18.00	18.00	18.00	20.00		20.00		1.80		0.83	0.83				10.00	
			RAMP SE-N																		
		1	50+55.32	51+55.32	100.00	18.00	19.00	18.50	205.56		205.56		18.50		8.57	8.57				100.00	
		1	51+55.32	52+55.32	100.00	19.00	23.00	21.00	233.34		233.34		21.00		9.72	9.72				100.00	
		1	52+55.32	54+00.00	144.68	23.00	25.00	24.00	385.82		385.82		34.72		16.08	16.08				144.68	
		1	54+00.00	55+81.40	181.40	25.00	25.00	25.00	503.89		503.89		45.35		21.00	21.00				181.40	
		1	55+81.40	56+42.96	61.56	25.00	26.23	25.62	175.21		175.21		15.77		7.30	7.30				61.56	
			RAMP K-1																		
		1	1+95.76	2+08.00	12.24	20.00	20.00	20.00	27.20		27.20		2.45		1.13	1.13				12.24	
		1	2+08.00	2+26.96	18.96	20.00	22.28	21.14	44.53		44.53		4.01		1.86	1.86				18.96	
		1	2+26.96	2+58.00	31.04	22.28	25.79	24.03	82.90		82.90		7.46		3.45	3.45				31.04	
		1	2+58.00	3+76.96	118.96	25.79	25.00	25.40	335.69		335.69		30.21		13.99	13.99				118.96	
		1	3+76.96	4+82.73	105.77	50.89	25.00	37.95	445.97		445.97		40.14		18.58	18.58				105.77	
		1	4+82.73	8+97.50	414.77	25.00	25.00	25.00	1152.14		1152.14		103.69		48.01	48.01				414.77	
			RAMP K-1A																		
		1	0+27.00	0+43.82	16.82			CADD AREA	48.56		48.56		4.37		2.02	2.02				16.82	
		1	0+43.82	1+61.16	117.34	22.00	22.00	22.00	286.84		286.84		25.82		11.95	11.95				117.34	
			RAMP K-2																		
		1	64+79.82	65+44.74	64.92			CADD AREA	40.34		40.34		3.63		1.68	1.68				64.92	
		1	65+44.74	65+65.00	20.26	15.00	19.97	17.48	39.36		39.36		3.54		1.64	1.64				20.26	
		1	65+65.00	66+31.96	66.96	19.97	23.00	21.48	159.83		159.83		14.38		6.66	6.66				66.96	
		1	66+31.96	66+93.73	61.77	46.45	30.00	38.22	262.35		262.35		23.61		10.93	10.93				61.77	
		1	66+93.73	69+05.00	211.27	30.00	30.00	30.00	704.24		704.24		63.38		29.34	29.34				211.27	
		1	69+05.00	70+05.00	100.00	30.00	24.00	27.00	300.00		300.00		27.00		12.50	12.50				100.00	
			RAMP K-2A																		
		1	0+27.06	0+50.53	23.47			CADD AREA	57.24		57.24		5.15		2.39	2.39				23.47	
		1	0+50.53	0+57.67	7.14	19.00	22.00	20.50	16.27		16.27		1.46		0.68	0.68				7.14	
		1	0+57.67	0+98.04	40.37	22.00	22.00	22.00	98.69		98.69		8.88		4.11	4.11				40.37	
			RAMP K-3																		
		1	63+58.31	65+08.60	150.29	24.96	22.00	23.48	392.10		392.10		35.29		16.34	16.34				150.29	
		1	65+08.60	76+91.07	1182.47	22.00	22.00	22.00	2890.49		2890.49		260.14		120.44	120.44				1182.47	
		1	76+91.07	77+31.63	40.56			CADD AREA	161.54		161.54		14.54		6.73	6.73				40.56	
			RAMP K-4																		
		1	94+89.37	102+44.44	755.07	22.00	22.00	22.00	1845.73		1845.73		166.12		76.91	76.91				755.07	
		1	102+44.44	103+12.05	67.61			CADD AREA	191.55		191.55		17.24		7.98	7.98				67.61	
SUBTOTALS											12473		1123		520	520				4763	
TOTALS CARRIED TO GENERAL SUMMARY											12473		1123		520	520				4763	
PLAN SPLIT #1 TOTAL											12473		1123		520	520				4763	
PLAN SPLIT #2 TOTAL																					

PAVEMENT SUBSUMMARY

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.29 TOTAL 48

CUY-480-22.45

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PAVEMENT MARKING SUBSUMMARY

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"		646 CHANNELIZING LINE, 12"	646 STOP LINE	646 CROSSWALK LINE	646 ISLAND MARKING	646 LANE ARROW	646 WRONG WAY ARROW	646 DOTTED LINE, 6"						621 RPM(WHITE)	621 RPM(WHITE/RED)	621 RPM(YELLOW/RED)
				FT	FT	FT	MILE		FT	FT	FT	SF	EACH	EACH	FT						EACH	EACH	EACH
		RAMP S-95 (IR-480 EASTBOUND)																					
	1	212+91.37	218+62.65	571.28	571.28	571.28	0.11														8		
		IR-480 EASTBOUND																					
	1	38+32.69	53+28.00	1495.31	1495.31	1495.31	0.28														19		
	1	53+28.00	56+80.00	352.00	352.00	352.00	0.07		704												5	18	
	1	56+80.00	65+60.00	880.00	880.00	880.00	0.17								880						12		
	1	65+60.00	98+81.30	3321.30	3321.30	3321.30	0.63														42		
		RAMP S-95 (IR-480 EASTBOUND)																					
	1	98+81.30	113+14.00	1432.70	1432.70	1432.70	0.27														19		
	1	113+14.00	118+24.46	510.46	510.46	510.46	0.10		1021												7	26	
	1	118+24.46	129+10.69	1086.23	1086.23	1086.23	0.21								1086						14		
		RAMP K-4 (IR-480 EASTBOUND)																					
	1	79+05.00	79+07.92	2.92	2.92	2.92																	
		IR-480 WESTBOUND																					
	1	1209+12.19	1219+70.69	1058.50	1058.50	1058.50	0.60														42		
	1	1219+70.69	1222+49.90	279.21	279.21	279.21	0.16		558												12	15	
	1	1222+49.90	1222+74.90	25.00	25.00	25.00	0.01		25													1	
	1	1222+74.90	1228+06.87	531.97	531.97	531.97	0.30								532						21		
	1	1228+06.87	1252+50.00	2443.13	2443.13	2443.13	1.39														93		
	1	1252+50.00	1262+87.65	1037.65	1037.65	1037.65	0.59								1038						42		
	1	1262+87.65	1267+97.78	510.13	510.13	510.13	0.29		1020												21	28	
	1	1267+97.78	1274+42.05	644.27	1288.54	1288.54	0.37								644						27		9
	1	1274+42.05	1275+82.57	140.52	281.04	281.04	0.08		281												6	8	2
	1	1275+82.57	1279+40.16	357.59	357.59	357.59	0.20														15		
	1	1279+40.16	1281+58.81	218.65	218.65	218.65	0.12								219						9		
	1	1281+58.81	1289+00.16	741.35	741.35	741.35	0.28		1483						741						20	37	
	1	1289+00.16	1292+39.40	339.24	339.24	339.24	0.19		678						339						15	18	
	1	1292+39.40	1292+60.00	20.60	20.60	20.60	0.01																
	1	1292+60.00	1301+00.00	840.00	840.00	840.00	0.32								840						22		
	1	1301+00.00	1303+59.90	259.90	145.44	259.90	0.12														9		
		RAMP S-96 (IR-480 WESTBOUND)																					
	1	12+37.37	17+80.17	542.80	542.80	542.80	0.10								543						7		
	1	17+80.17	20+95.06	314.89	314.89	314.89	0.06		630												4	16	
	1	20+95.06	21+51.00	55.94	55.94	55.94	0.01														1		
		STA. 21+51.00 BK = STA. 20+00.00 AH																					
	1	20+00.00	33+65.74	1365.74	1365.74	1365.74	0.26														18		
		IR-480 WESTBOUND																					
	1	33+65.74	56+42.00	2276.26	2276.26	2276.26	0.43														29		
	1	56+42.00	59+24.03	282.03	282.03	282.03	0.05		564												4	15	
	1	59+24.03	59+49.03	25.00	25.00	25.00			25													1	
	1	59+49.03	62+81.26	332.23	332.23	332.23	0.06								332						5		
	1	62+81.26	98+81.30	3600.04	3600.04	3600.04	0.68														46		
SUBTOTALS					28565.17	28679.63	8.52		6989						7194						594	183	11
TOTALS CARRIED TO GENERAL SUMMARY					10.84 MI		8.52		6989						7194						788		

DESIGN AGENCY

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PROJECT ID
84020

SHEET P.30 TOTAL 48

CUY-480-22.45

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PAVEMENT MARKING SUBSUMMARY

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"		646 CHANNELIZING LINE, 12"	646 STOP LINE	646 CROSSWALK LINE	646 ISLAND MARKING	646 LANE ARROW	646 WRONG WAY ARROW	646 DOTTED LINE, 6"						621 RPM(WHITE)	621 RPM(WHITE/RED)	621 RPM(YELLOW/RED)
			FT	FT	FT	MILE		FT	FT	FT	SF	EACH	EACH	FT						EACH	EACH	EACH
		RAMP S-96 (IR-480 WESTBOUND)																				
	1	11+02.54 13+36.46	233.92	233.92	233.92	0.04														3		
	1	13+36.46 18+86.24	549.78	549.78	549.78	0.10								550						7		
	1	18+86.24 19+11.24	25.00	25.00	25.00			25													1	
	1	19+11.24 22+28.25	317.01	317.01	317.01	0.06		634												4	17	
	1	22+28.25 43+52.35	2124.10	2124.10	2124.10	0.40														27		
		RAMP E-L																				
	1	8+65.00							33	101												
	1	8+65.00 8+93.33	28.33		28.33			28													2	1
	1	8+93.33 13+56.24	462.91	462.91	462.91			463				8	2								23	12
	1	13+56.24 19+71.89	615.65	615.65	615.65																	8
		RAMP WN-W																				
	1	75+81.48 79+70.49	389.01	389.01	389.01																	5
		STA. 79+70.49 BK = STA. 79+70.63 AH																				
	1	79+70.63 83+13.40	342.77	342.77	342.77																	5
	1	83+13.40								67												
		RAMP WS-W																				
	1	75+82.57 80+80.83	498	498	498																	7
		STA. 80+80.83 BK = STA. 80+81.00 AH																				
	1	80+81.00 93+04.00	1,223	1,223	1,223																	16
	1	93+04.00								41												
		RAMP N-W																				
	1	10+97.79 15+89.86	492	492	492																	7
		STA. 15+89.86 BK = STA. 24+41.25 AH																				
	1	24+41.25 27+40.00	299	299	299																	4
	1	27+40.00 29+10.16	170	170	170	0.03														3		3
	1	29+10.16 29+85.29	75		75	0.01														1		1
	1	29+85.29			14					159												1
		RAMP N-SE																				
	1	47+92.00 53+29.44	537.44	537.44	537.44																	7
		SR-43 (RAMP SE-N)																				
	1	43+36.16 43+46.16	10.00	10.00	10.00																	1
		RAMP SE-N																				
	1	50+55.32 56+42.96	587.64	587.64	587.64																11	14
		RAMP K-1																				
	1	2+09.11								44												
	1	2+09.11 3+76.96	167.85	167.85	167.85																	3
	1	3+76.96 3+99.19	22.23	22.23	22.23			44													3	1
	1	3+99.19 8+97.50	498.31	498.31	498.31																	7
		RAMP K-1A																				
	1	0+38.72								155	139			74								
	1	0+38.72 1+61.16	122.44	122.44	122.44																	2
SUBTOTALS				9688.3	9805.45	0.64		1194	33	567	139	8	2	624						45	57	105
TOTALS CARRIED TO GENERAL SUMMARY				3.7 MI		0.64		1194	33	567	139	8	2	624						207		

DESIGN AGENCY

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PROJECT ID 84020

SHEET P:31 TOTAL 48

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PAVEMENT MARKING SUBSUMMARY

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"		646 CHANNELIZING LINE, 12"	646 STOP LINE	646 CROSSWALK LINE	646 ISLAND MARKING	646 LANE ARROW	646 WRONG WAY ARROW	646 DOTTED LINE, 6"						621 RPM(WHITE)	621 RPM(WHITE/RED)	621 RPM(YELLOW/RED)
				FT	FT	FT	MILE		FT	FT	FT	SF	EACH	EACH	FT						EACH	EACH	EACH
		RAMP K-2																					
	1	65+53.03									54												
	1	65+53.03	66+31.96	78.93	78.93	78.93				13												2	3
	1	66+31.96	66+67.55	35.59	35.59	35.59			71													3	1
	1	66+67.55	66+76.52	8.97	8.97	8.97			9													2	
	1	66+76.52	69+05.00	228.48	228.48	228.48	0.04							2								11	6
	1	69+05.00	70+05.00	100.00	100.00	100.00																2	3
		RAMP K-2A																					
	1	0+37.90									49												
	1	0+37.90	0+98.04	60.14	60.14	60.14				16												2	2
		RAMP K-3																					
	1	63+58.60	77+14.91	1356.31	1356.31	1356.31								2								11	22
	1	77+14.91								31													
		RAMP K-4																					
	1	94+89.37	102+74.18	784.81	784.81	784.81																	10
	1	102+74.18									65												
SUBTOTALS					2653.23	2653.23	0.04		80	60	168			4								33	47
TOTALS CARRIED TO GENERAL SUMMARY					1.01 MI		0.04		80	60	168			4							80		

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84020

SHEET P.32 TOTAL 48

CUY-480-22.45

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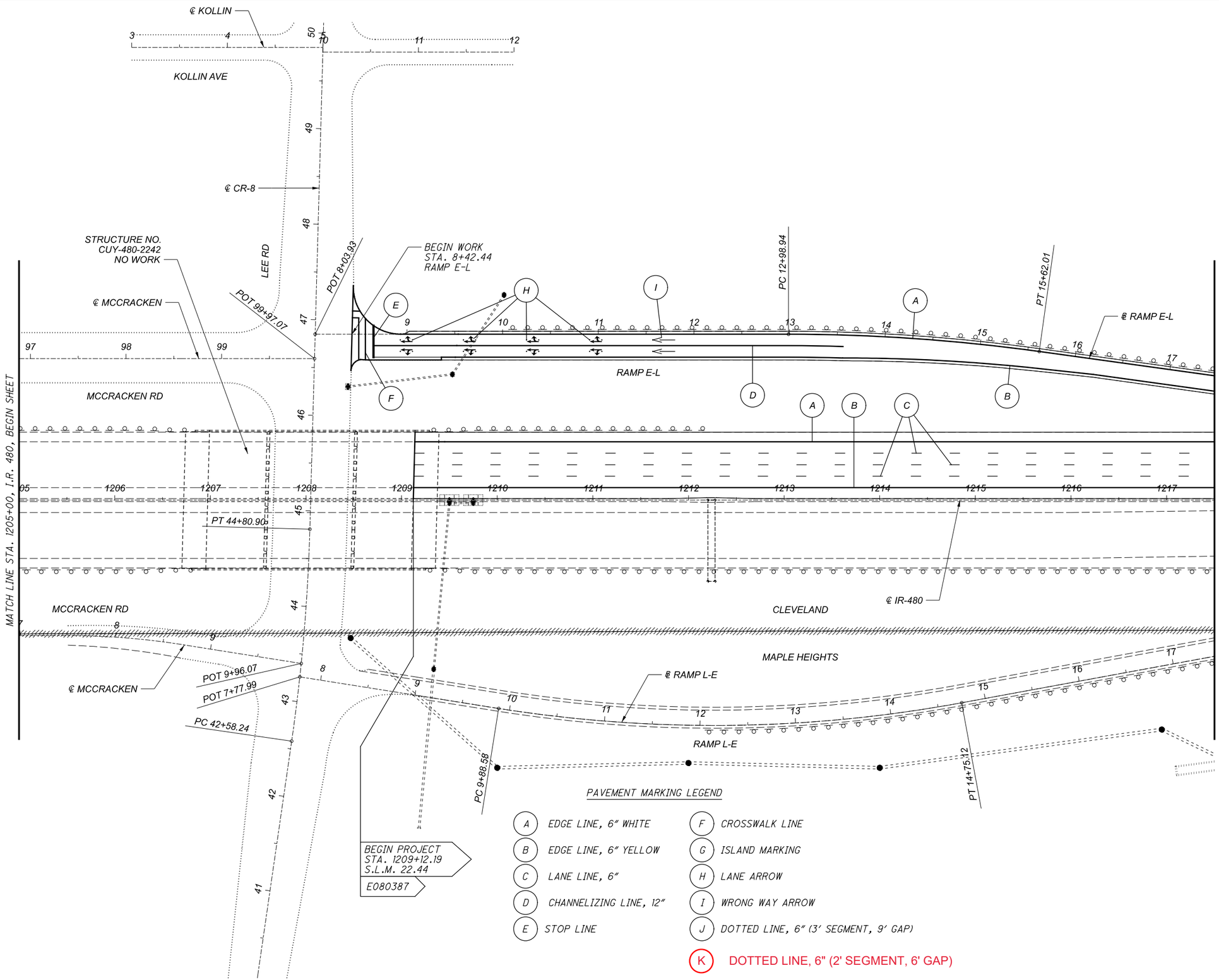

PAVEMENT MARKING LEGEND

A	EDGE LINE, 6" WHITE	F	CROSSWALK LINE
B	EDGE LINE, 6" YELLOW	G	ISLAND MARKING
C	LANE LINE, 6"	H	LANE ARROW
D	CHANNELIZING LINE, 12"	I	WRONG WAY ARROW
E	STOP LINE	J	DOTTED LINE, 6" (3' SEGMENT, 9' GAP)

K DOTTED LINE, 6" (2' SEGMENT, 6' GAP)

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 1205+00 TO STA. 1217+50

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PROJECT ID
84020

SHEET P.33 TOTAL 48

CUY-480-22.45

MODEL: Plan [(Sheet)] PAPERSIZE:17x11(in.) DATE:8/21/2020 TIME:12:39:58 PM USER:dbrauer
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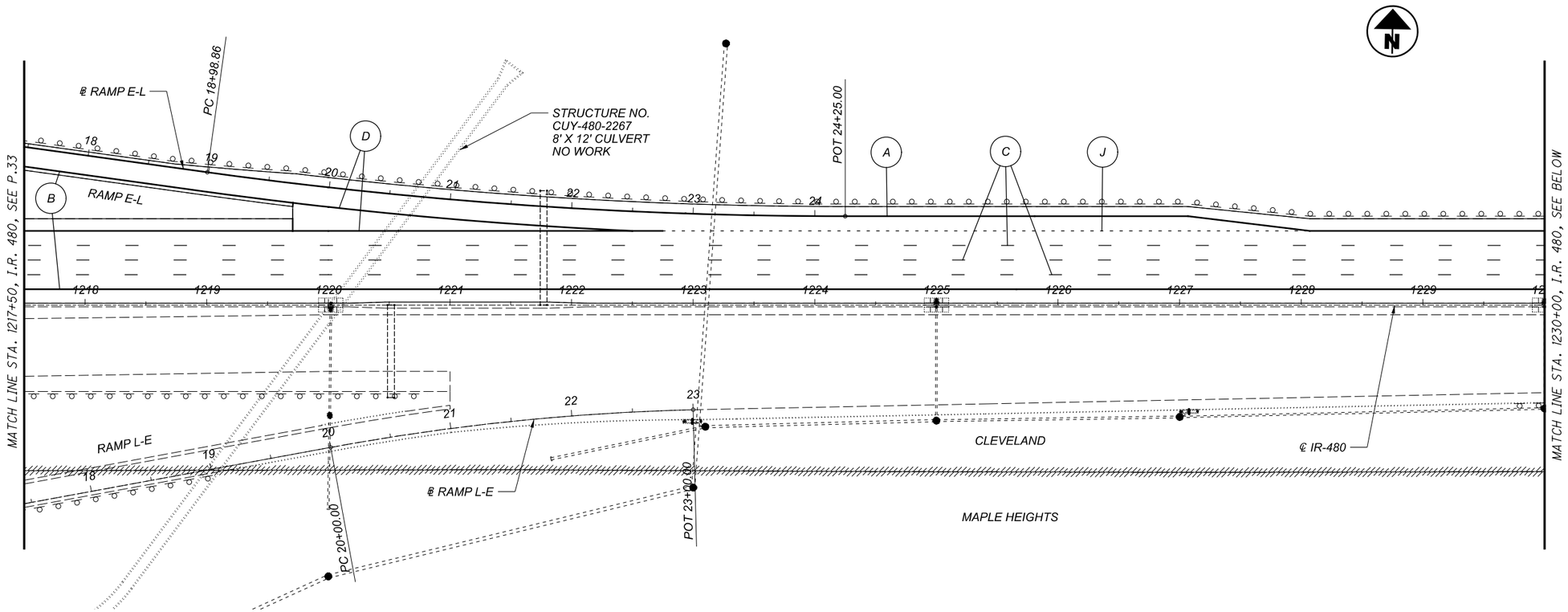

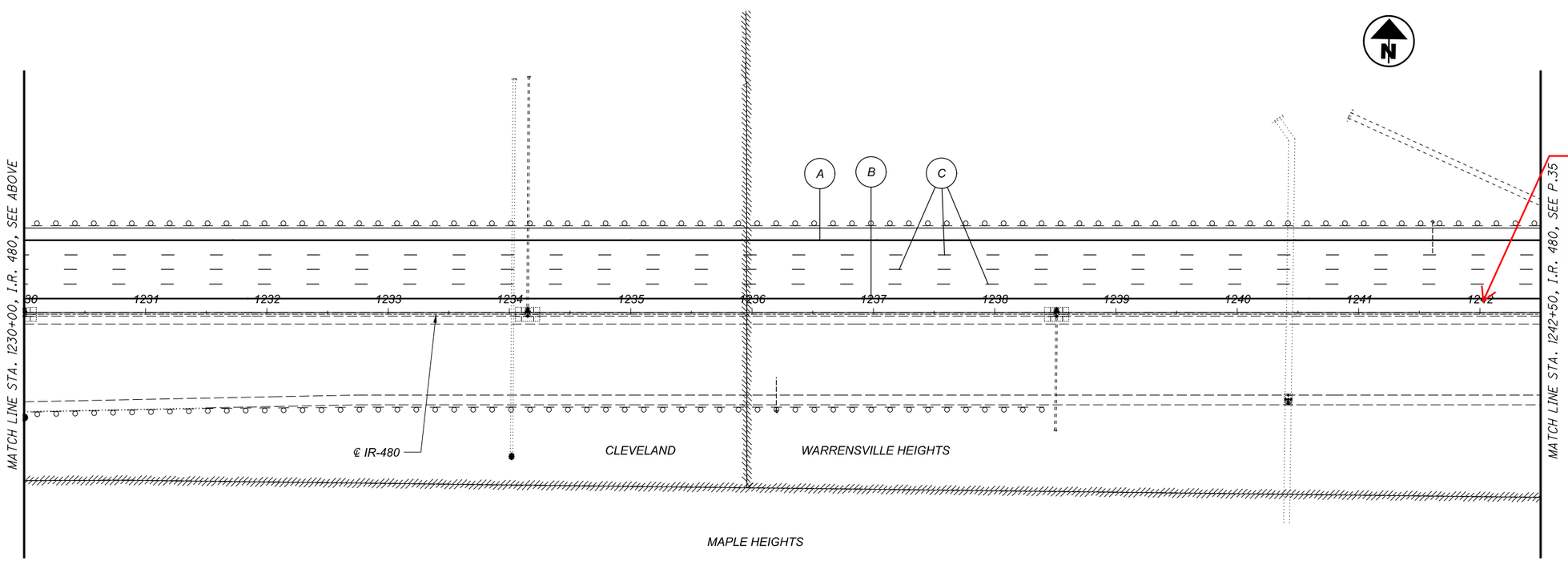

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
STA. 1217+50 TO STA. 1242+50

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.34 TOTAL 48

CUY-480-22.45

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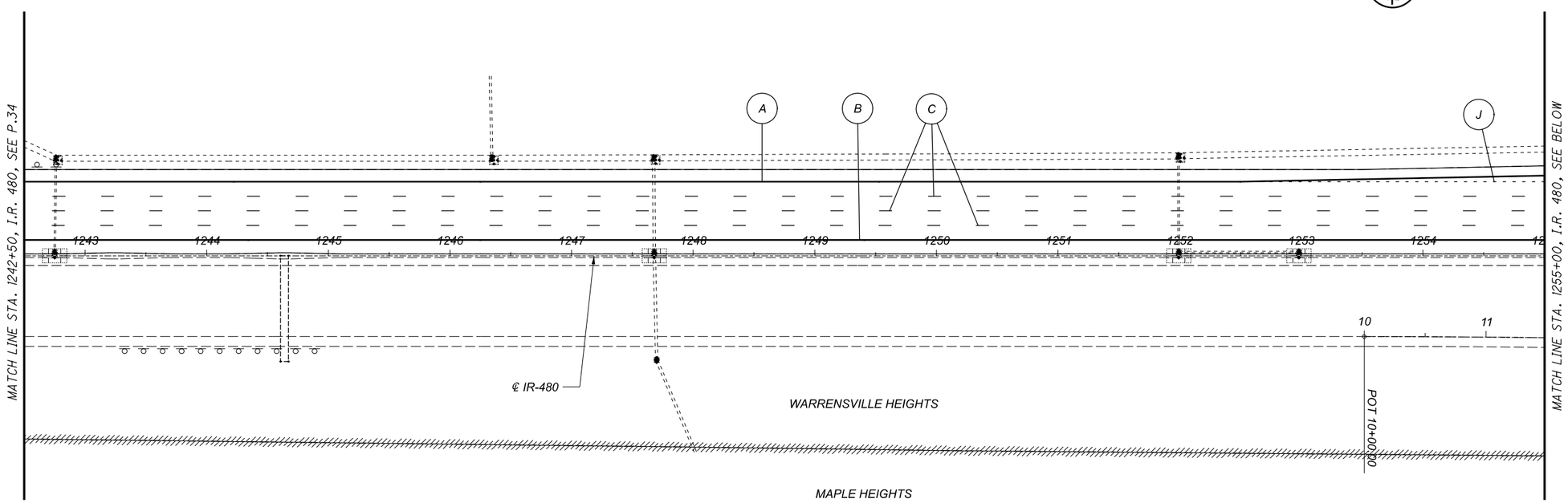

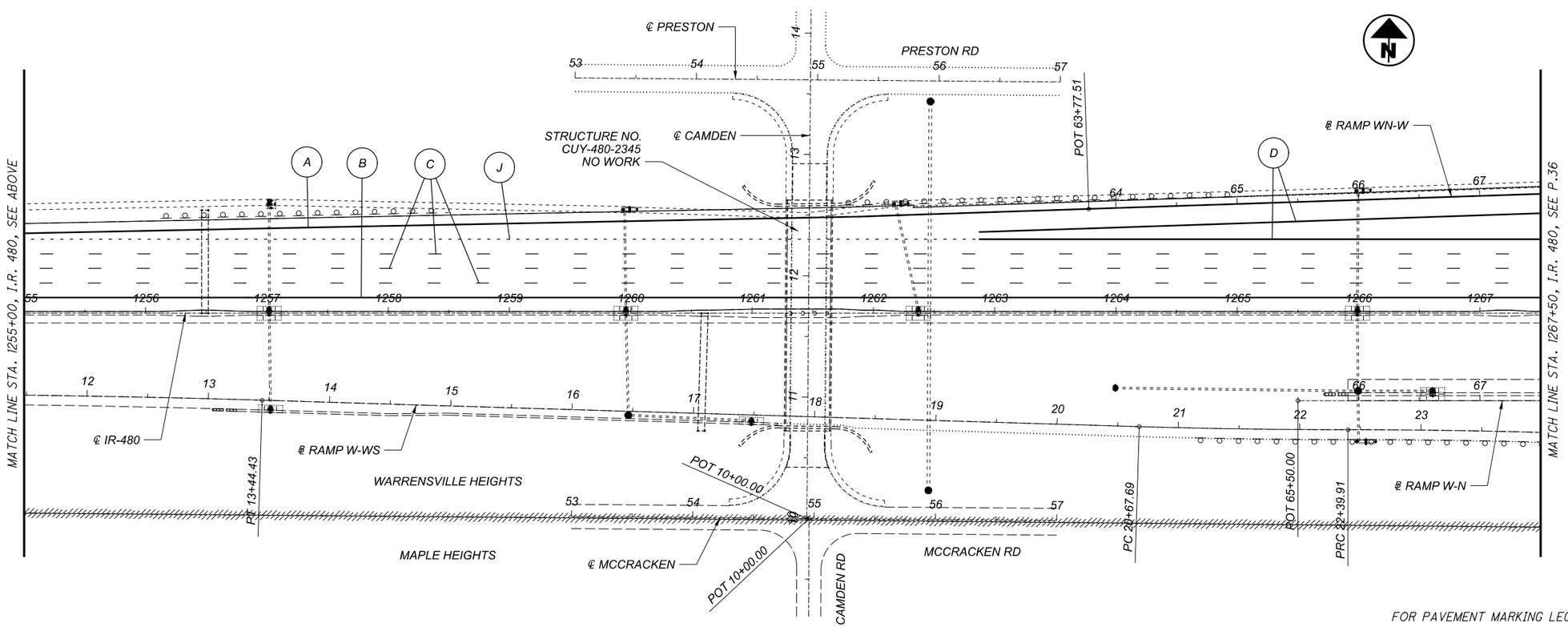

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 1242+50 TO STA. 1267+50

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.35 TOTAL: 48

CUY-480-22.45

MODEL: Plan 4 [Sheet] PAPERSIZE: 17x11(in.) DATE: 8/21/2020 TIME: 12:40:02 PM USER: dbrauer
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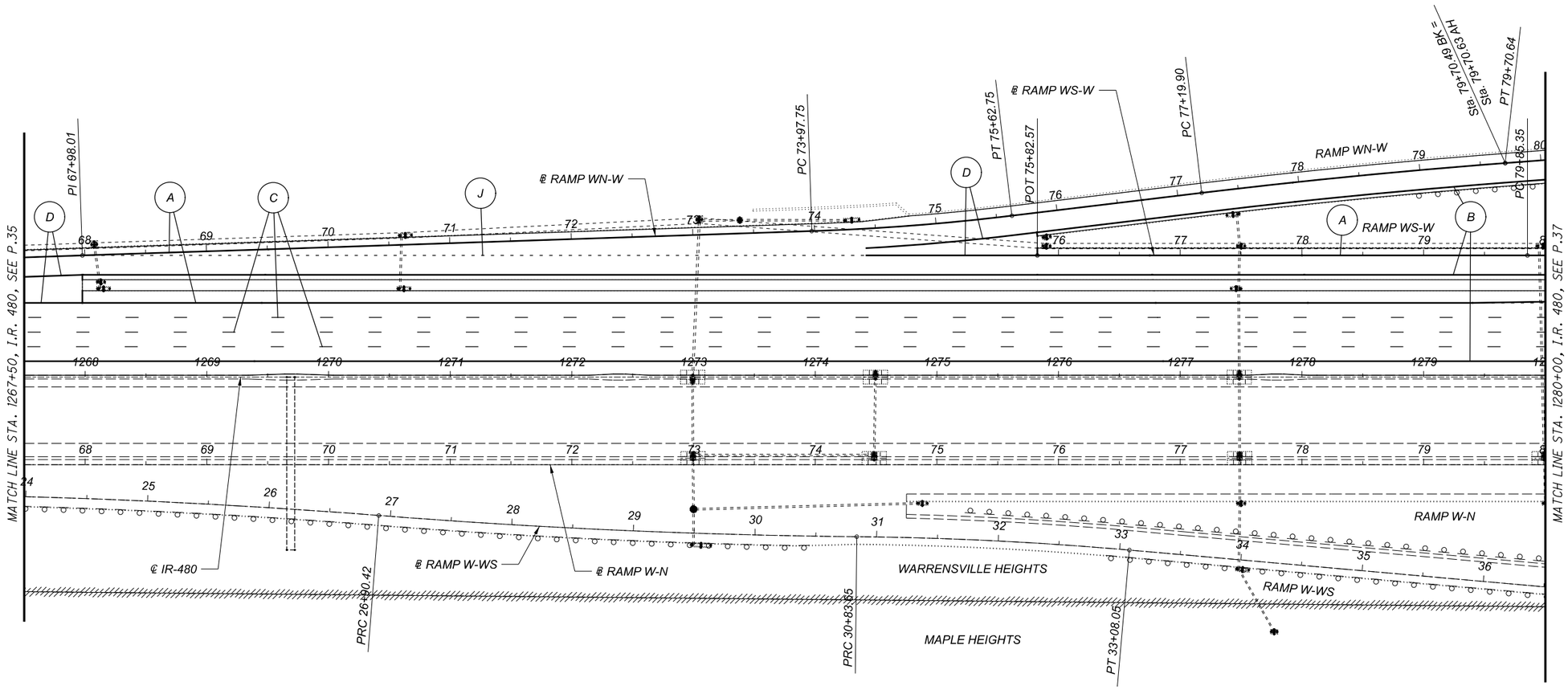

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 1267+50 TO STA. 1280+00

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.36 TOTAL 48

CUY-480-22.45

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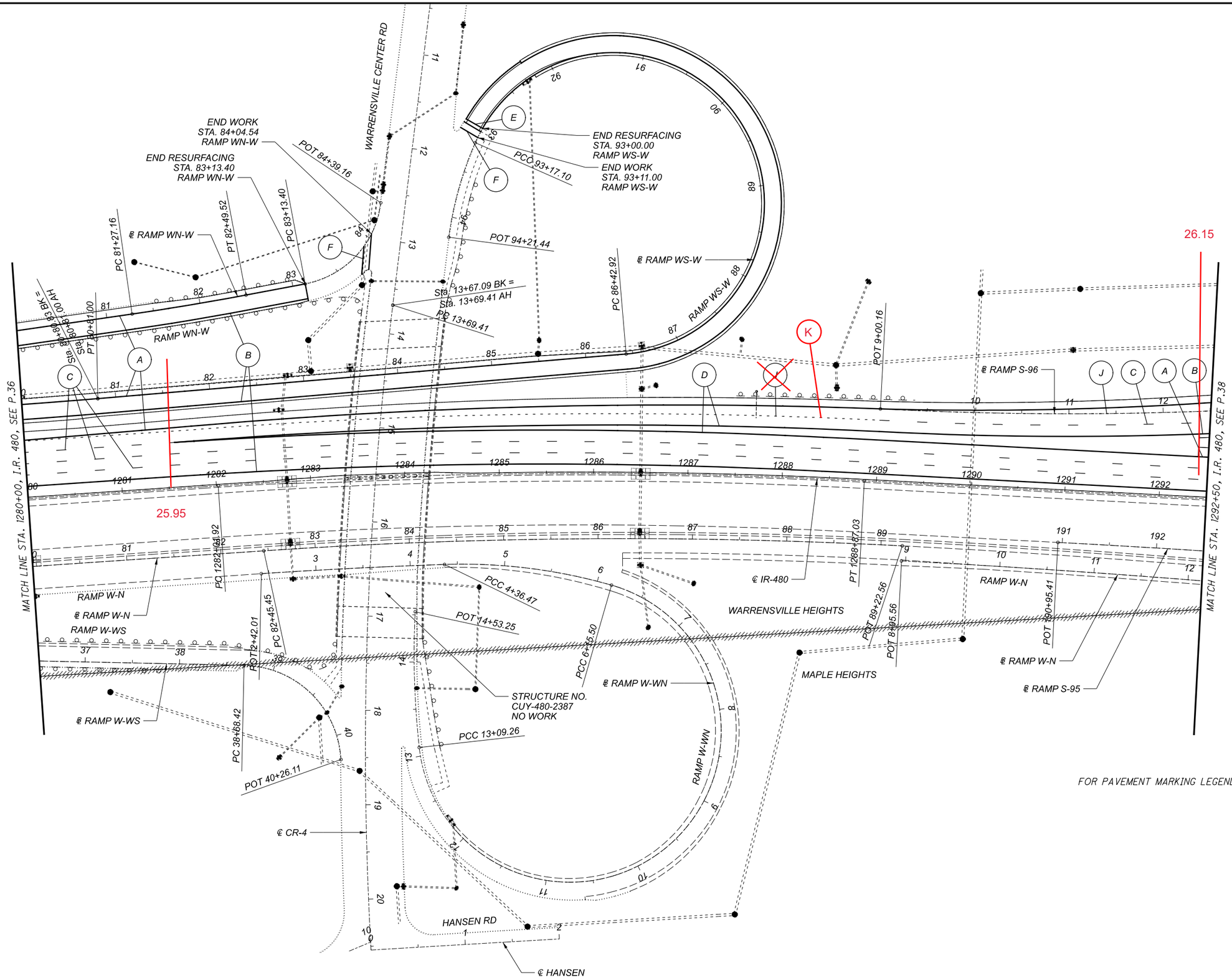

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 1280+00 TO STA. 1292+50

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.37 TOTAL: 48

CUY-480-22.45

MODEL: Plan 7 [Sheet] PAPERSIZE: 17x11(in.) DATE: 8/21/2020 TIME: 12:40:06 PM USER: dbrauer
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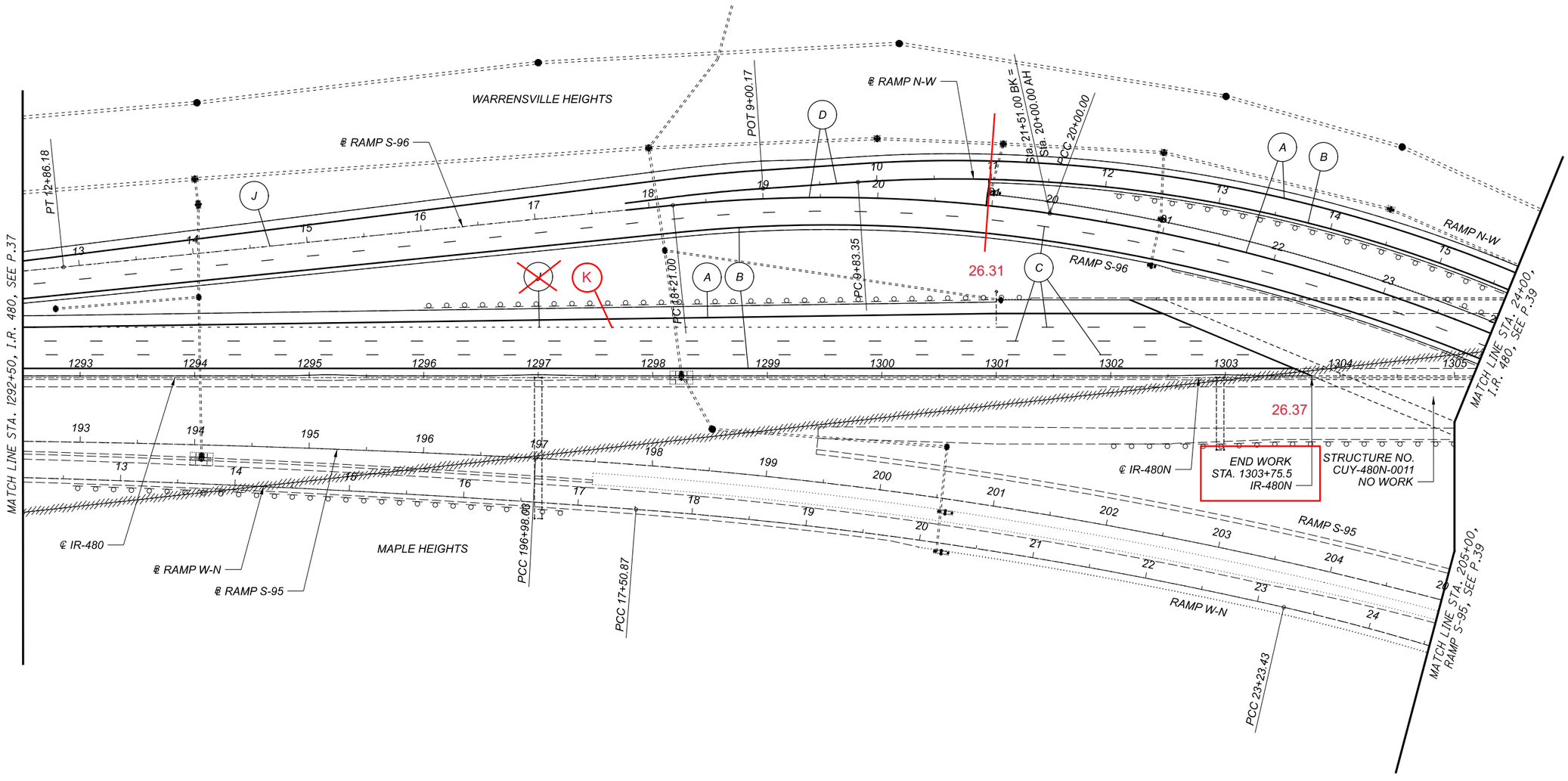

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 1292+50 TO STA. 24+00

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.38 TOTAL: 48

CUY-480-22.45

MODEL: Plan 8 [Sheet] PAPERSIZE: 17x11(in.) DATE: 8/21/2020 TIME: 12:40:08 PM USER: dbrauer
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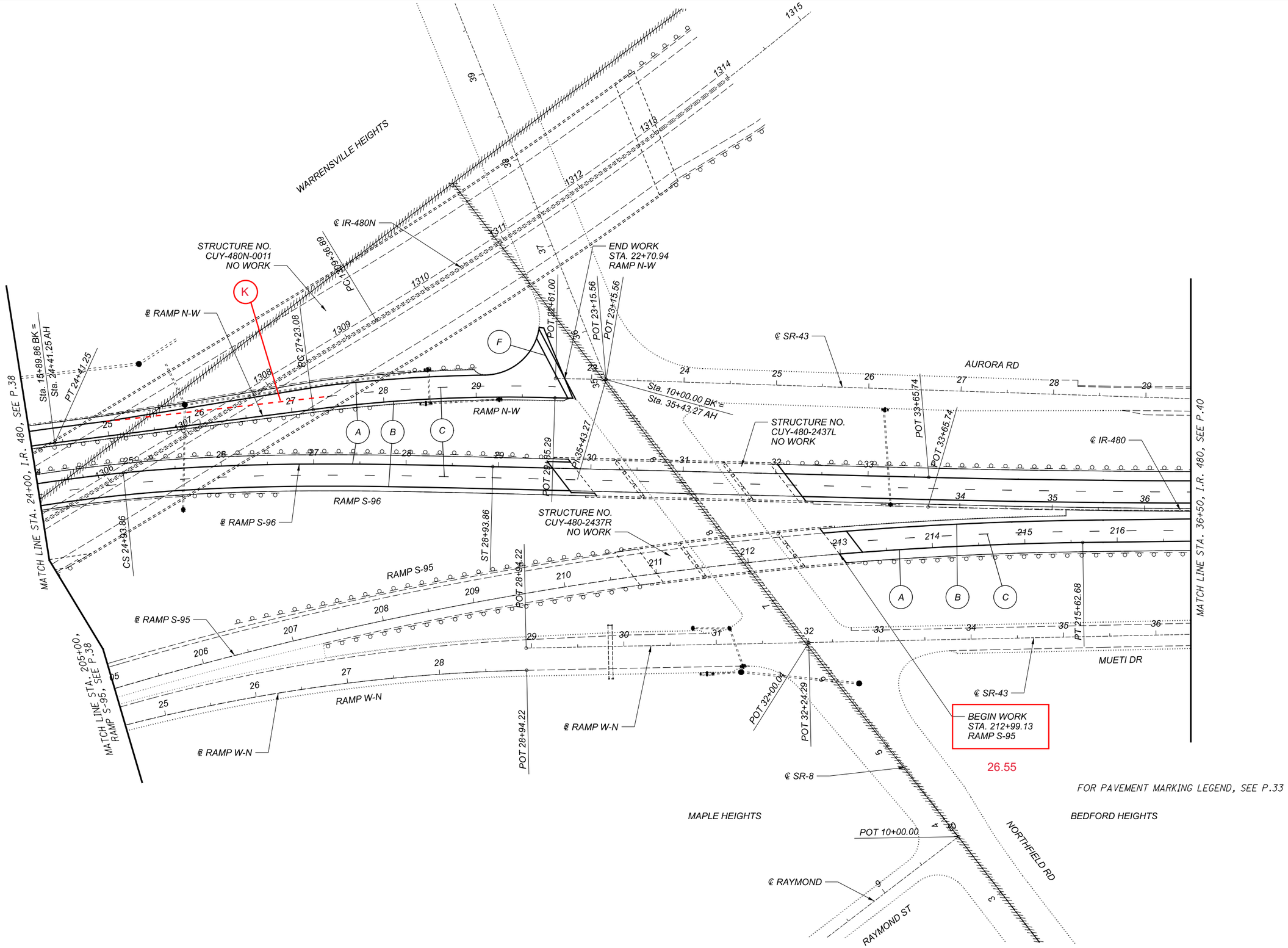

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 24+00 TO STA. 36+50

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.39 TOTAL: 48

CUY-480-22.45

MODEL: Plan 9 [Sheet1] PAPERSIZE: 17x11(in.) DATE: 8/21/2020 TIME: 12:40:09 PM USER: dbrauer
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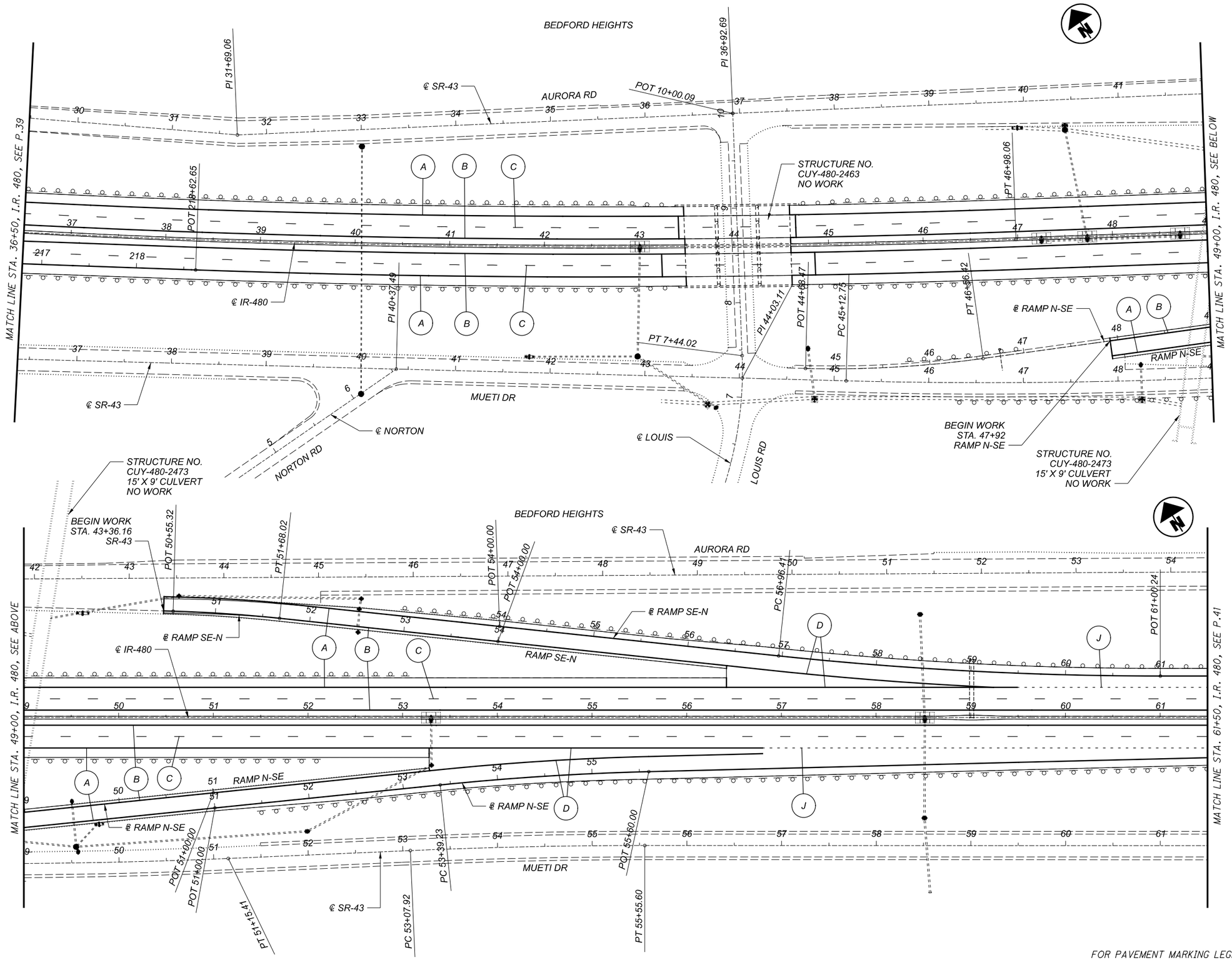

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 36+50 TO STA. 61+50

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.40 TOTAL: 48

CUY-480-22.45

MODEL: Plan 10 [Sheet] PAPERSIZE: 17x11(in.) DATE: 8/21/2020 TIME: 12:40:11 PM USER: dbrauer
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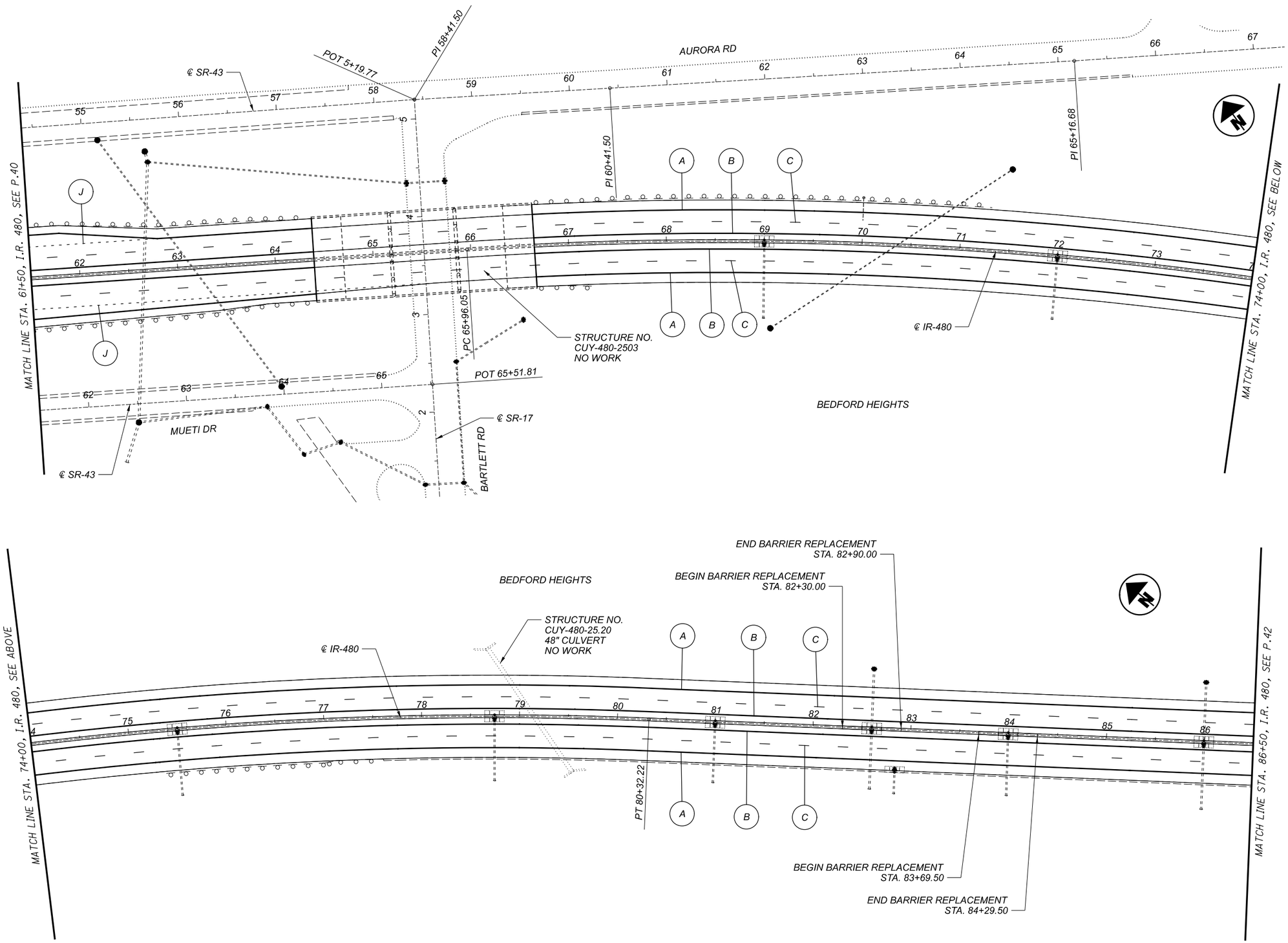

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 61+50 TO STA. 86+50

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

SHEET P.41 TOTAL 48

CUY-480-22.45

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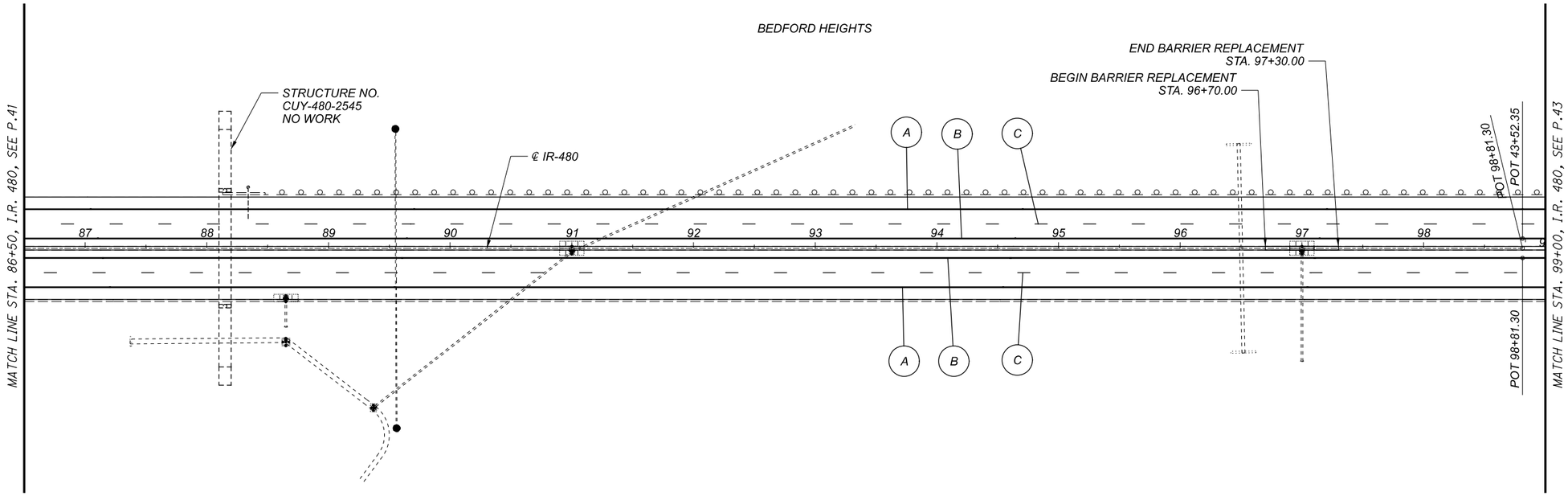

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 86+50 TO STA. 99+00

DESIGN AGENCY

DESIGNER
DAB

REVIEWER
XXX MM-DD-YY

PROJECT ID
84020

CUY-480-22.45
MODEL: Plan 14 (Sheet) PAPERSIZE: 17x11(in.) DATE: 8/24/2020 TIME: 9:19:24 AM USER: dbrauer
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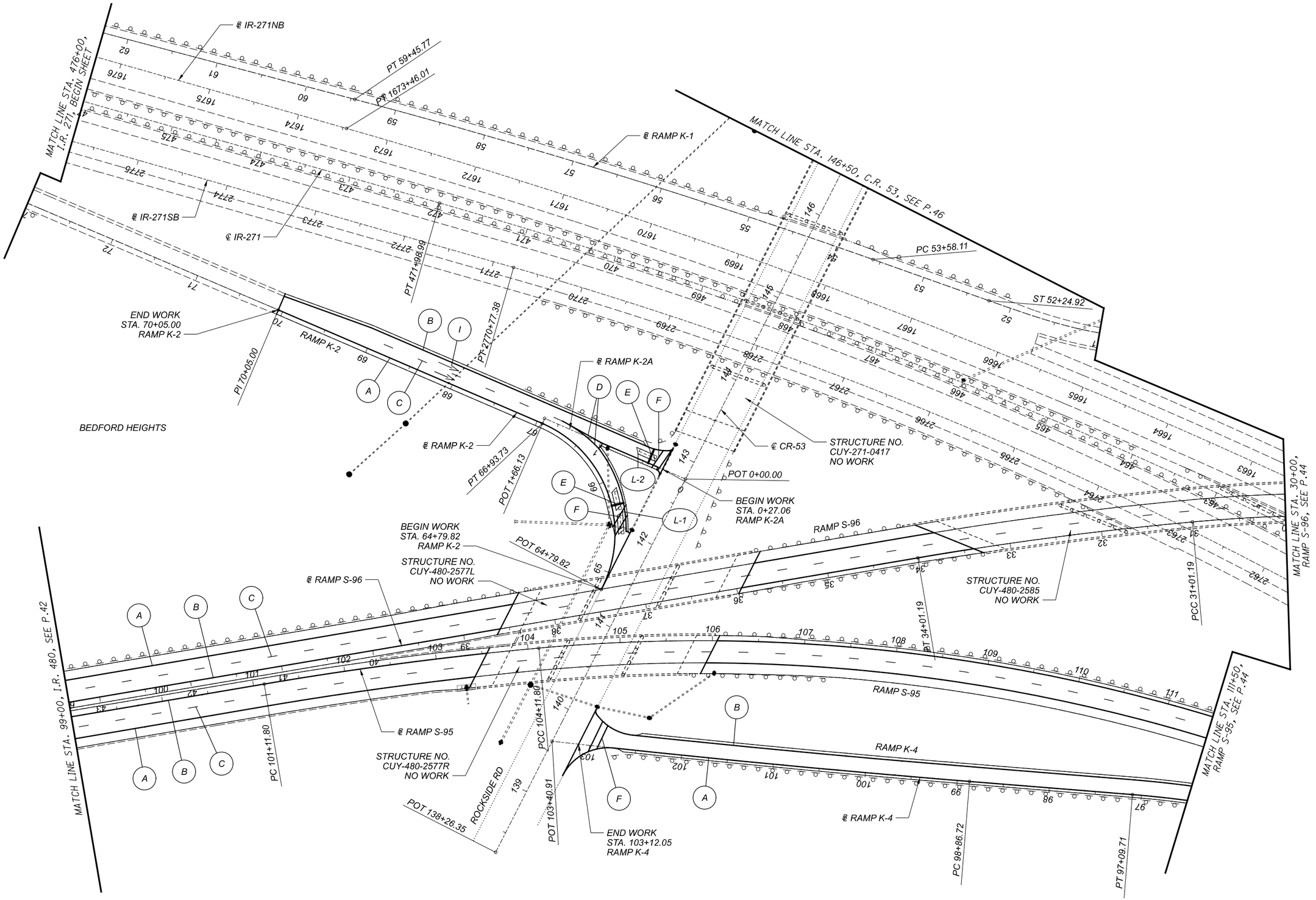

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 99+00 TO STA. 111+50

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.43 TOTAL: 48

CUY-480-22.45

MODEL: Plan 15 [Sheet] PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:40:16 PM USER: dbrauer
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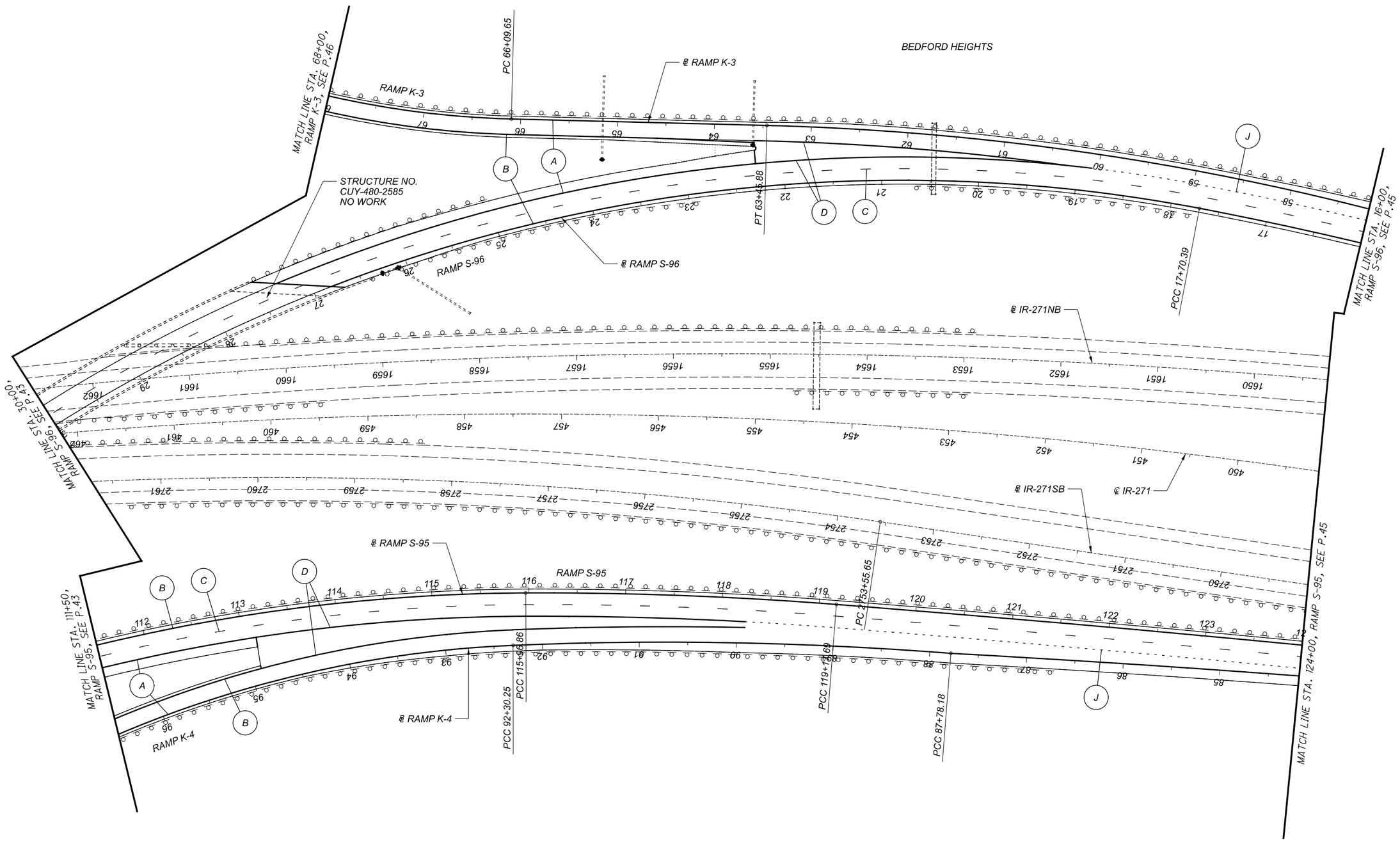

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 111+50 TO STA. 124+00

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.44 TOTAL: 48

CUY-480-22.45

MODEL: Plan 16 (Sheet1) PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:40:18 PM USER: dbrauer
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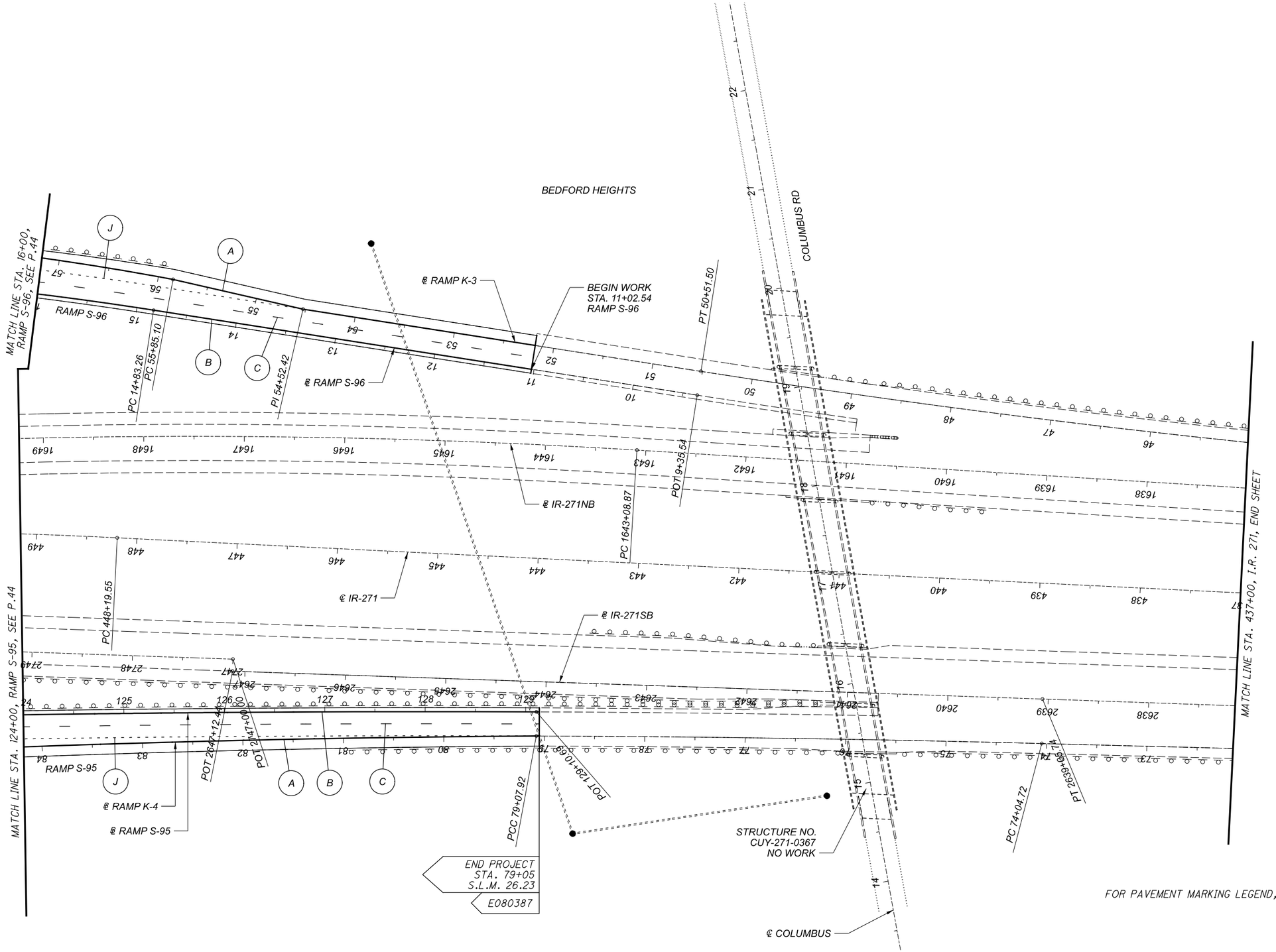

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
I.R. 480, STA. 124+00 TO I.R. 271, STA. 437+00

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.45 TOTAL: 48

CUY-480-22.45

MODEL: Plan 17 [Sheet] PAPERSIZE:17x11(in.) DATE:8/21/2020 TIME:12:40:19 PM USER:dbrauer
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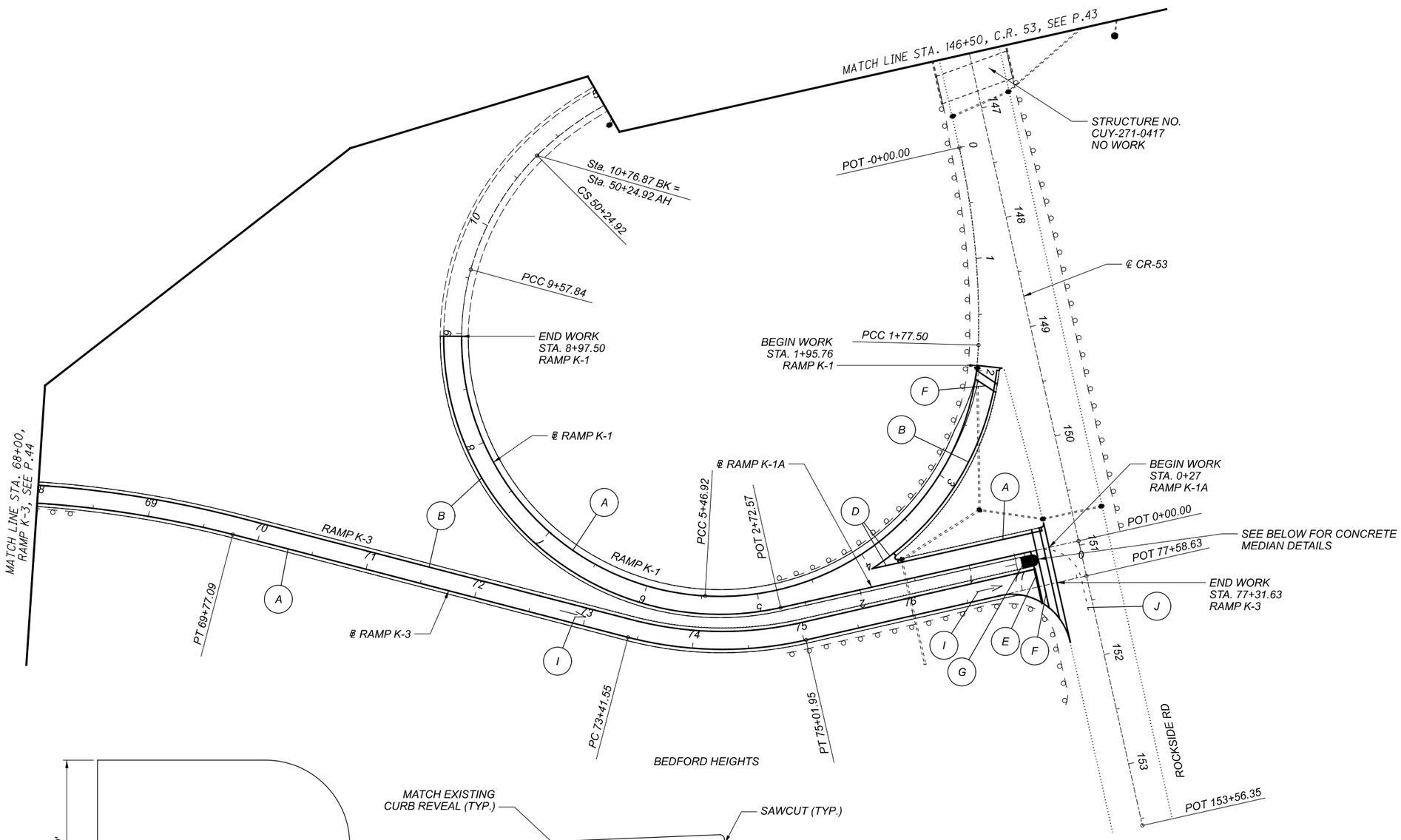

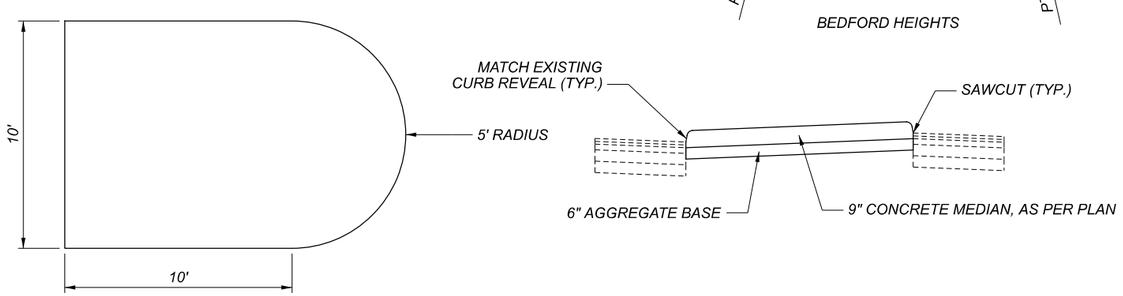

CONCRETE MEDIAN DETAILS

FOR PAVEMENT MARKING LEGEND, SEE P.33

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN SHEET
RAMP K-3, STA. 68+00 TO STA. 77+58.63

DESIGN AGENCY

DESIGNER: DAB
REVIEWER: XXX MM-DD-YY
PROJECT ID: 84020
SHEET: P.46 TOTAL: 48

CUY-480-22.45

MODEL: Plan 18 [Sheet] PAPERSIZE:17x11(in.) DATE: 8/21/2020 TIME: 12:40:21PM USER: dbrauer
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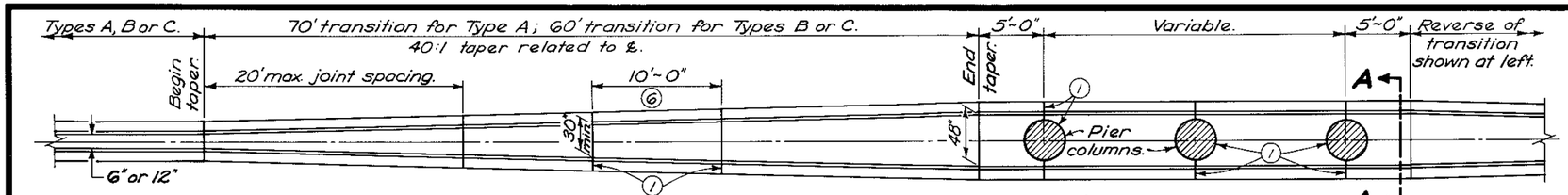
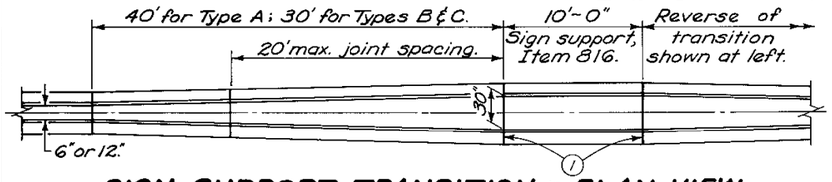


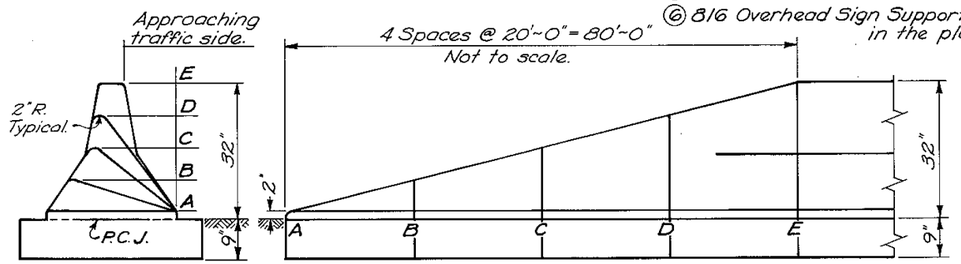
BRIDGE PIER TRANSITION ~ PLAN VIEW



SIGN SUPPORT TRANSITION ~ PLAN VIEW

LEGEND

1. Expansion joint, 3/4" min. Preformed Filler 705.03.
2. No. 8 deformed steel bars, 12" long, spaced on staggered (except Type D) 4' centers. The End Terminal will require shorter dowels between points A & C. Omit dowels when top is constructed integral with the base.
3. 1" Radius or 3/4" chamfer.
4. Permissible 10" radius.
5. Permissible 1" radius.
6. 816 Overhead Sign Support Foundation, if specified in the plan.



END VIEW

PROFILE VIEW

END TERMINAL DETAIL

NOTES

JOINTS: Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports. See 625 Light pole foundation drawing for other joint details.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts or tooled or sawed joints shall have a 1 1/2" min. depth. All joints shall be constructed for the full height of the barrier including the base.

LIGHTING: The 4" polyvinyl chloride raceway shall be included in the unit price bid for 622.

MEASUREMENT: 622 Concrete Barrier, including transitions and end terminals and pier sections, is paid for in linear feet as one of the four types (A, B, C or D) with the following deductions for structures covered under other items.

604 I-3 Median inlets _____ 20 Lin. Ft.
625 Light pole foundation _____ 14 Lin. Ft.
816 Overhead sign support foundation _ 10 Lin. Ft.

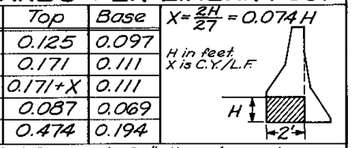
The following table gives information to compute the volume of the various type barriers:

CUBIC YARDS PER LINEAR FOOT

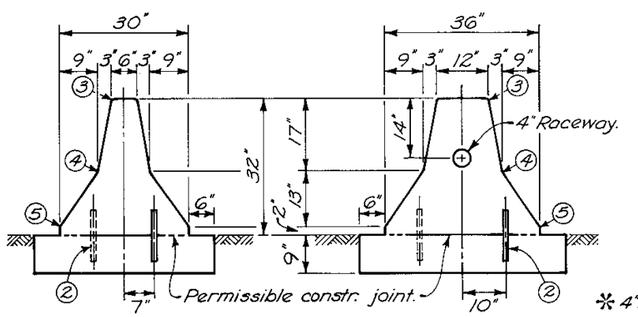
Barrier	Top	Base
TYPE A	0.125	0.097
TYPE B	0.171	0.111
TYPE C	0.171+X	0.111
TYPE D	0.087	0.069
SECTION A-A*	0.474	0.194

$X = \frac{2H}{27} = 0.074H$

H in feet.
X is C.Y./L.F.



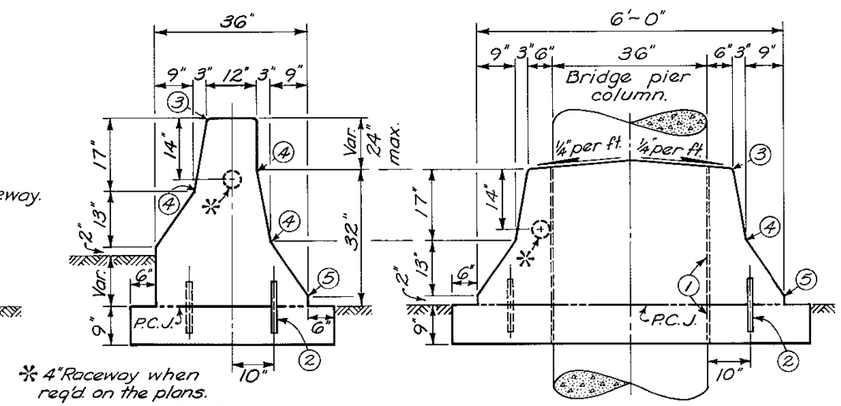
* Deduct 1 Cu. Yd. for each 36" dia. pier column.



TYPE A

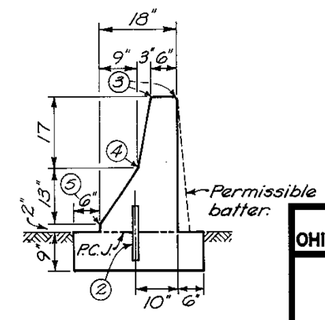
TYPE B

NORMAL SECTIONS



TYPE C

SECTION A-A



TYPE D

BUREAU OF ROADWAY DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER

DATE 1-1-74

STANDARD CONSTRUCTION DRAWING

MC-9

APPROVED G. J. Lehnert ENGR., R.D.

BARRIER DETAILS

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.47 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:40:29 PM USER: dbrauer
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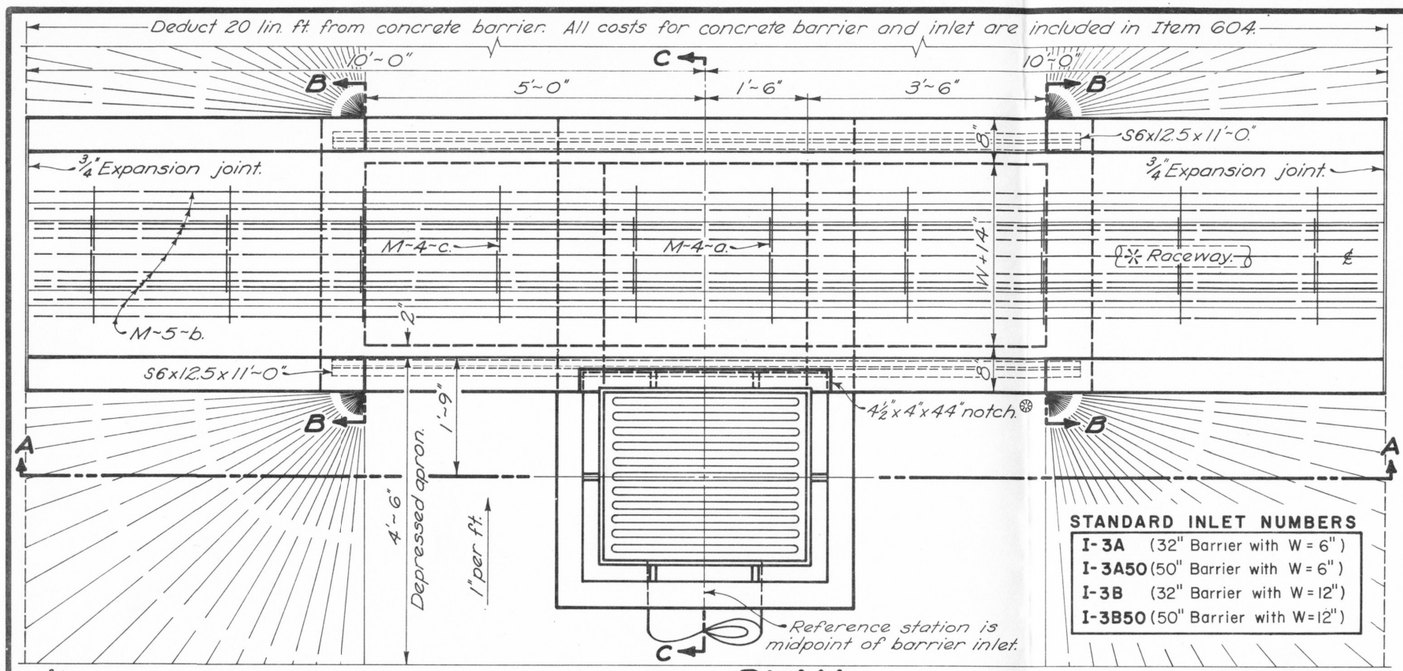
Deduct 20 lin. ft. from concrete barrier. All costs for concrete barrier and inlet are included in Item 604.



STANDARD INLET NUMBERS

I-3A	(32" Barrier with W = 6")
I-3A50	(50" Barrier with W = 6")
I-3B	(32" Barrier with W = 12")
I-3B50	(50" Barrier with W=12")

THE WALLS between the bottom slab and the upper permissible construction joint may be built of brick, concrete block or cast-in-place concrete, 8" nominal thickness for depths of 12' or less. Precast walls shall have a minimum thickness of 6" and be reinforced sufficiently to permit shipping and handling without damage. The unit above the upper permissible construction joint may be precast or cast-in-place.
HEIGHT: When placed in 50" high barrier the 32" height shall be made 50" per details on MC-9.
CONCRETE, cast-in-place, to be Class C. All precast concrete shall meet the requirements of 706.13 with 6 ± 2% air void content in the hardened concrete. Required markings shall include the inlet number.

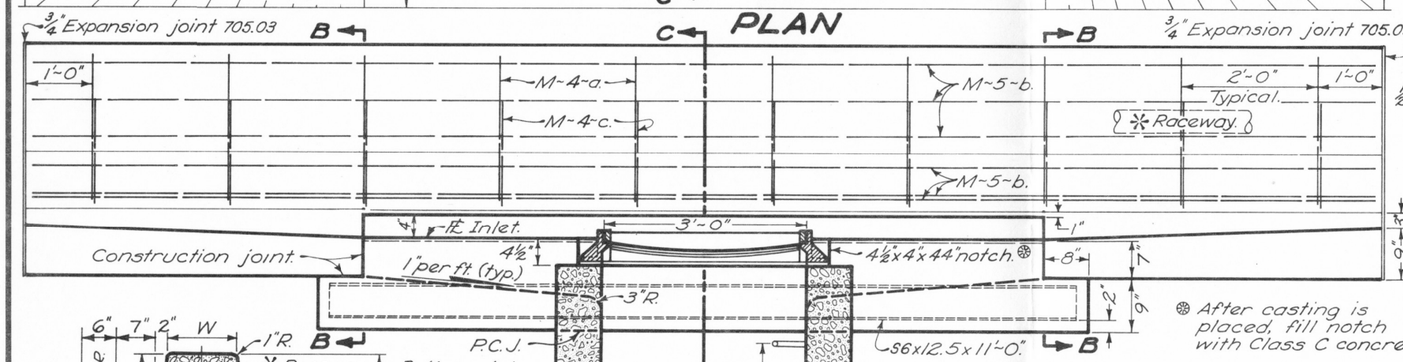
STEPS shall be in accordance with Standard Drawing MH-1. Minimum weight of frame and cover shall be 540 pounds.

GRATE LOCATION: In superelevated curves or at other locations where there is unequal discharge from the directional roadways, the inlet grating shall be located in the roadway which discharges the major flow.

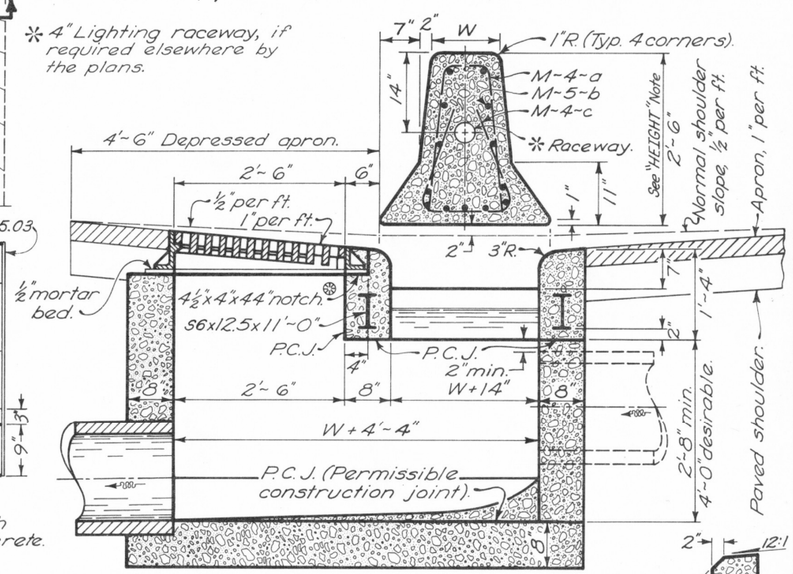
INLETS OVER 12 FEET IN DEPTH shall be precast or cast-in-place concrete; reinforced with No.4 bars on 12" centers both vertically and horizontally with 2" clearance from inside wall face.

OPENINGS for pipes shall be O.D.+2" when prefabricated or field cut.

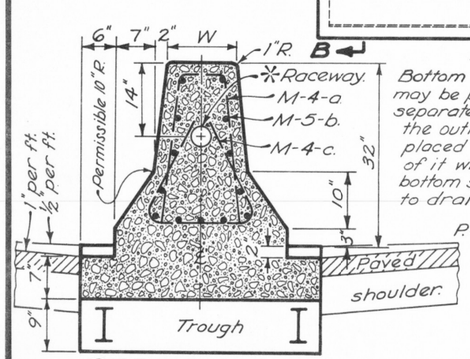
PLAN



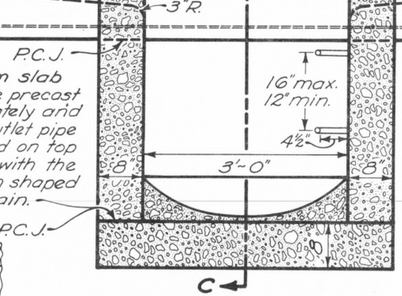
After casting is placed, fill notch with Class C concrete.



SECTION C-C



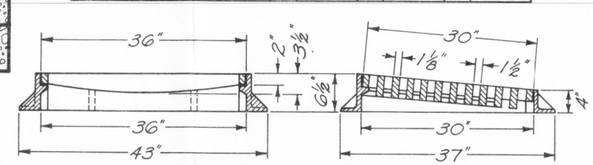
SECTION B-B



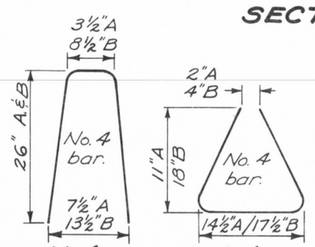
ELEVATION A-A

STEEL LIST

INLET No.	W	M-4-a No.	M-4-a Lin. Ft.	M-5-b No.	M-5-b Lin. Ft.	M-4-c No.	M-4-c Lin. Ft.	S6x12.5 No.	S6x12.5 Lin. Ft.
I-3A	6"	10	4'-6"	13	19'-8"	10	3'-1"	2	11'-0"
I-3B	12"	10	5'-0"	13	19'-8"	10	4'-6"	2	11'-0"



CASTING DETAILS



BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

BARRIER MEDIAN INLETS

DATE
1-20-70
11-1-77
5-1-79
4-1-80

STANDARD CONSTRUCTION DRAWING I-3A & B

APPROVED M. J. Cunningham ENGR., L. & D.

DRAINAGE DETAILS

DESIGN AGENCY

DESIGNER DAB

REVIEWER XXX MM-DD-YY

PROJECT ID 84020

SHEET P.48 TOTAL 48

CUY-480-22.45

MODEL: Sheet PAPERSIZE: 17x11 (in.) DATE: 8/21/2020 TIME: 12:40:48 PM USER: dbrauer
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