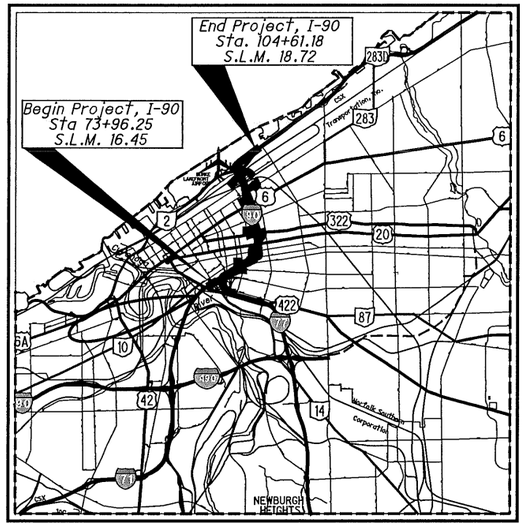
180050 Conformed Set
Dist 12



LOCATION MAP

LATITUDE: 41°30'31" LONGITUDE: 81°40'17"

SCALE IN MILES
0 1 2 3 4

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

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-90-16.45

CITY OF CLEVELAND
CUYAHOGA COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE RESURFACING OF IR-90 FROM SLM 16.45 (BRIDGE OVER E. 14TH ST.) TO SLM 18.72 (EAST OF SR-2 INTERCHANGE) IN THE CITY OF CLEVELAND IN CUYAHOGA COUNTY. WORK ITEMS INCLUDE PAVEMENT REPAIRS, RESURFACING, RPMS, AND PAVEMENT MARKINGS.

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.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS 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.

APPROVED
DATE 11-20-17 DISTRICT DEPUTY DIRECTOR

APPROVED
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E160406
PID NO. 99593
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
CUY-90-16.45
1 / 42

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.
OHIO Utilities Protection SERVICE — Call Before You Dig 1-800-362-2764
(Non-members must be called directly)
OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE 1-800-925-0988

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

*ENGINEERS SEAL
STATE OF OHIO — THOMAS M. PORTER E-79421 — REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 11/8/2017

*SHEETS 4, 4a, 4b, 28a, 29, 30, 31, 41a, 41b, 41c

ENGINEERS SEAL:
STATE OF OHIO — KEITH DOUGLAS HAMILTON E-72668 — REGISTERED PROFESSIONAL ENGINEER
SIGNED:
DATE: 11-17-2017

STANDARD CONSTRUCTION DRAWINGS							SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	7/18/14	TC-12.30	1/20/17				800	10/20/17	
		TC-21.20	7/21/17				821	4/20/12	
MT-95.30	7/21/17	TC-22.20	1/17/14				832	1/17/14	
MT-98.10	1/20/17	TC-41.20	10/18/13				875	1/17/14	
MT-98.11	1/20/17	TC-42.20	10/18/13				921	4/20/12	
MT-98.20	7/18/14	TC-51.11	1/15/16				992	4/18/14	
MT-98.22	1/20/17	TC-65.10	1/17/14						
MT-98.28	1/20/17	TC-65.11	7/21/17						
MT-98.29	1/20/17	TC-71.10	1/20/17						
MT-98.30	7/21/17	TC-72.20	7/15/16						
MT-99.20	7/21/17	TC-73.20	7/21/17						
MT-99.60	7/15/16	TC-82.10	7/17/15						
MT-101.90	7/21/17								
MT-105.10	7/19/13								

IR-90, SLM 16.19 TO SLM 16.53

(US-422/Broadway Ave. to IR-77 Ramps)

CURRENT ADT (2017)	101,000
DESIGN YEAR ADT (2029)	101,000
DESIGN HOURLY VOLUME (2029)	9,100
DIRECTIONAL DISTRIBUTION	61%
TRUCKS (24 HOUR B&C)	2%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 16.53 TO SLM 16.76

(IR-77 Ramps to E. 22nd St.)

CURRENT ADT (2017)	104,000
DESIGN YEAR ADT (2029)	104,000
DESIGN HOURLY VOLUME (2029)	10,000
DIRECTIONAL DISTRIBUTION	58%
TRUCKS (24 HOUR B&C)	5%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 16.76 TO SLM 16.91

(E. 22nd St. to Carnegie Ave.)

CURRENT ADT (2017)	100,000
DESIGN YEAR ADT (2029)	110,000
DESIGN HOURLY VOLUME (2029)	9,900
DIRECTIONAL DISTRIBUTION	58%
TRUCKS (24 HOUR B&C)	5%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 16.91 TO SLM 17.03

(Carnegie Ave. to Prospect Ave.)

CURRENT ADT (2017)	90,000
DESIGN YEAR ADT (2029)	90,000
DESIGN HOURLY VOLUME (2029)	8,100
DIRECTIONAL DISTRIBUTION	58%
TRUCKS (24 HOUR B&C)	5%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 17.03 TO SLM 17.28

(Prospect Ave. to US-322/Chester Ave.)

CURRENT ADT (2017)	92,000
DESIGN YEAR ADT (2029)	95,000
DESIGN HOURLY VOLUME (2029)	8,600
DIRECTIONAL DISTRIBUTION	52%
TRUCKS (24 HOUR B&C)	5%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 17.28 TO SLM 17.68

(Chester Ave. to US-6/Superior Ave.)

CURRENT ADT (2017)	79,000
DESIGN YEAR ADT (2029)	84,000
DESIGN HOURLY VOLUME (2029)	8,400
DIRECTIONAL DISTRIBUTION	50%
TRUCKS (24 HOUR B&C)	5%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 17.68 TO SLM 18.03

(US-6/Superior Ave. to Lakeside Ave.)

CURRENT ADT (2017)	72,000
DESIGN YEAR ADT (2029)	81,000
DESIGN HOURLY VOLUME (2029)	7,300
DIRECTIONAL DISTRIBUTION	52%
TRUCKS (24 HOUR B&C)	4%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 18.03 TO SLM 18.60

(Lakeside Ave. to SR-2)

CURRENT ADT (2017)	69,000
DESIGN YEAR ADT (2029)	81,000
DESIGN HOURLY VOLUME (2029)	7,300
DIRECTIONAL DISTRIBUTION	57%
TRUCKS (24 HOUR B&C)	4%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

IR-90, SLM 18.60 TO SLM 19.73

(SR-2 to E.55th St.)

CURRENT ADT (2017)	116,000
DESIGN YEAR ADT (2029)	121,000
DESIGN HOURLY VOLUME (2029)	11,000
DIRECTIONAL DISTRIBUTION	58%
TRUCKS (24 HOUR B&C)	6%
DESIGN SPEED	55 MPH
LEGAL SPEED	50 MPH
DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE FREEWAY	
NHS PROJECT	YES

CALCULATED KDH
CHECKED EMK

DESIGN DESIGNATIONS

CUY-90-16.45

Begin Project
SLM 16.95
Sta. 73+96.25
E160406

Bridge No.
CUY-90-16.52
SFN: 1807900
NO WORK

Bridge No.
CUY-90-16.76
SFN: 1807838
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-1"	14'-7"
PROPOSED	15'-1"	14'-7"

Bridge No.
CUY-90-16.80
SFN: 1807862
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	20'-0"	20'-0"
PROPOSED	20'-0"	20'-0"

Bridge No.
CUY-90-16.92
SFN: 1807897
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	16'-3"	14'-6"
PROPOSED	16'-3"	14'-6"

Bridge No.
CUY-90-17.04
SFN: 1807927
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-7"	15'-1"
PROPOSED	15'-7"	15'-1"

Bridge No.
CUY-20-18.78
SFN: 1807951
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	16'-6"	15'-1"
PROPOSED	16'-6"	15'-1"

Bridge No.
CUY-90-17.49
SFN: 1808044
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-1"	15'-1"
PROPOSED	15'-1"	15'-1"

Bridge No.
CUY-322-01.31
SFN: 1807986
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-5"	15'-10"
PROPOSED	15'-5"	15'-10"

MATCH LINE IR-90, STA. 39+00, SEE BELOW

RESUME PROJECT
STA. 78+22.89
℄ IR-90 WB CURVE

Bridge No.
CUY-2-17.07
SFN: 1808222
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	14'-10"	15'-4"
PROPOSED	14'-10"	15'-4"

Bridge No.
CUY-90-18.16
SFN: 1808192
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-7"	15'-8"
PROPOSED	15'-7"	15'-8"

SUSPEND PROJECT
STA. 70+65.85 ℄ I-90

Bridge No.
CUY-90-17.94
SFN: 1808133
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	16'-3"	16'-0"
PROPOSED	16'-3"	16'-0"

Bridge No.
CUY-6-16.73
SFN: 1808079
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-1"	14'-7"
PROPOSED	15'-1"	14'-7"

Bridge No.
CUY-90-17.96
SFN: 1809350
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	14'-10"	14'-9"
PROPOSED	14'-10"	14'-9"

Bridge No.
CUY-90-17.86
SFN: 1808109
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-2"	15'-3"
PROPOSED	15'-2"	15'-3"

Bridge No.
CUY-90-18.03
SFN: 1808168
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-2"	15'-4"
PROPOSED	15'-2"	15'-4"

Bridge No.
CUY-90-18.13
SFN: 1809415
NO WORK

VERTICAL CLEARANCES

	WB	EB
EXISTING	15'-0"	15'-3"
PROPOSED	15'-0"	15'-3"

End Project
SLM 18.72
Sta. 104+61.18
E160406

E. 14TH ST.
E. 22ND ST.
CENTRAL AVE.
CEDAR AVE.
PROSPECT AVE.
CARNEGIE AVE.
HAMILTON AVE.
LAKESIDE AVE.
ST. CLAIR AVE
US-6 (SUPERIOR AVE)
US-20 (EUCLID AVE)
SR-322 (CHESTER AVE)
PAYNE AVE
BURKE LAKEFRONT AIRPORT
SOUTH MARGINAL RD.
N. MARGINAL RD.
SR-2 EASTBOUND RAMP
NORFOLK SOUTHERN RAILROAD

RAMP 3
RAMP 4
RAMP 5
RAMP 6
RAMP 7
RAMP 8
RAMP 9
RAMP 10
RAMP 11
RAMP 12
RAMP 13
RAMP 14
RAMP 15
RAMP 17
RAMP 18

POT Sta. 0+00.00
PC Sta. 4+88.37
PT Sta. 24+68.26
POT Sta. 26+61.43
STA 85+08.31 BK = STA 0+00.00 AH
EQUATION: STA 21+09.87 BK = STA 21+13.41 AH
PC Sta. 73+15.03
PT Sta. 75+55.03
PCC Sta. 75+35.28
PCC Sta. 80+26.12
PT Sta. 80+93.02
PC Sta. 82+94.12
PT Sta. 84+08.17

MATCH LINE IR-90, STA. 39+00, SEE ABOVE

N

0 100 200 400
HORIZONTAL SCALE IN FEET

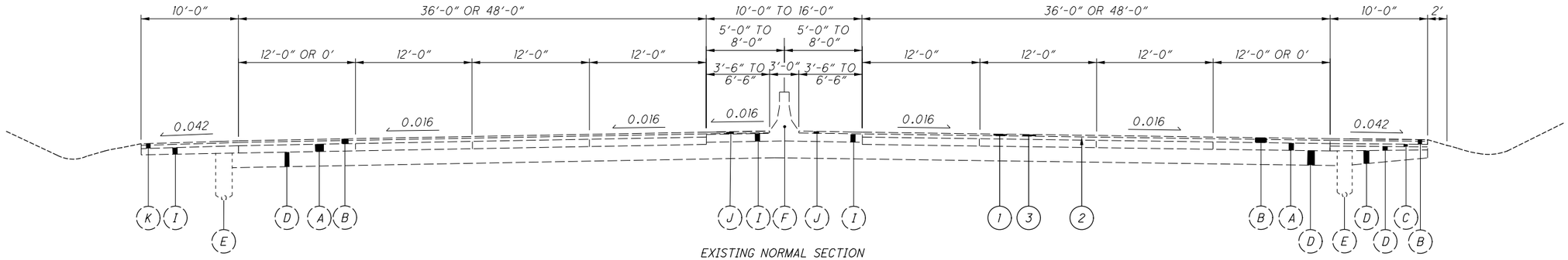
CALCULATED KDH
CHECKED EMK

SCHEMATIC PLAN
STA 72+00 TO STA 104+61.18

CUY-90-16.45

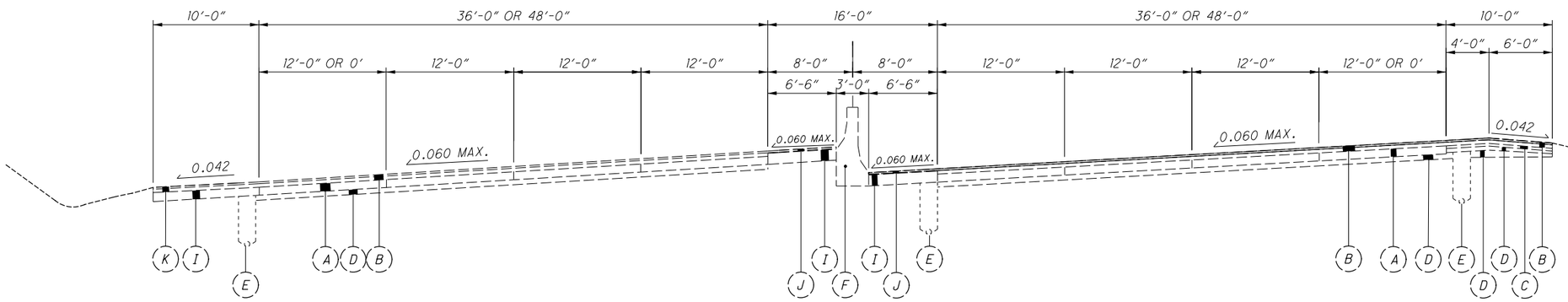
3
42

I:\ProjectData\CUY\99593\Design\Roadway\Sheets\99593_GB001.dgn Sheet 11/17/2017 2:56:22 PM khamilt1



EXISTING NORMAL SECTION

STA. 74+21.25 TO STA. 85+09.31 BK.
STA. 0+00.00 AH. TO STA. 1+25.00
STA. 27+75.00 TO STA. 51+00.00



EXISTING SUPERELEVATED SECTION

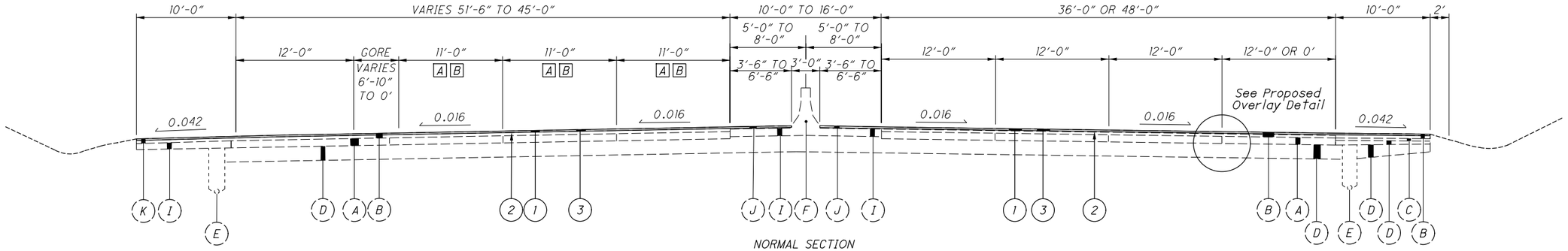
STA. 1+25.00 TO STA. 27+09.87 BK.
STA. 26+61.13 AH. TO STA. 27+75.00

EXISTING LEGEND

- (A) 9" REINFORCED CONCRETE PAVEMENT
- (B) 5-1/2" ASPHALT CONCRETE OVERLAY
- (C) BITUMINOUS AGGREGATE BASE
- (D) AGGREGATE BASE, 6" OR 18"
- (E) UNDERDRAIN
- (F) CONCRETE MEDIAN BARRIER
- (G) CURB
- (H) GUARDRAIL
- (I) 9" PLAIN CONCRETE PAVEMENT
- (J) 1-3/4" ASPHALT CONCRETE OVERLAY
- (K) 4-1/4" ASPHALT CONCRETE OVERLAY

EXISTING TYPICAL SECTIONS - MAINLINE I-90

CUY-90-16.45

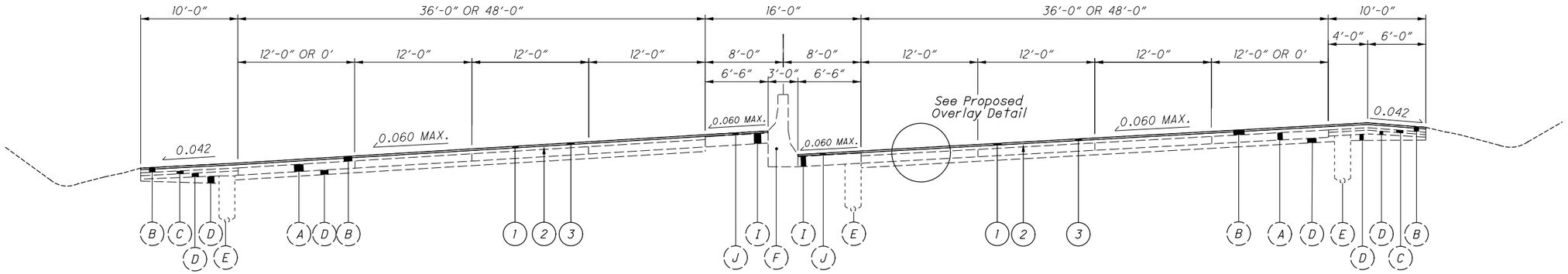


NORMAL SECTION

STA. 73+96.25 TO STA. 79+38.00
STA. 27+75.00 TO STA. 51+00.00

[A] TRANSITION FROM 12'-0" AT STA. 73+96.25 TO 11'-0" AT STA. 75+46.00

[B] 12'-0" FROM STA. 27+75.00 TO STA. 51+00.00

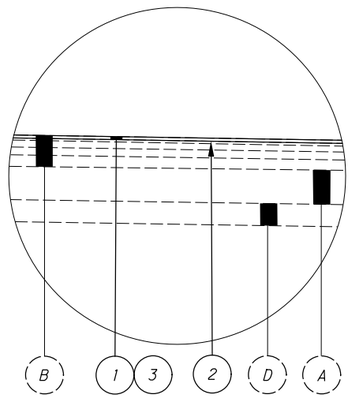


SUPERELEVATED SECTION

STA. 13+08.05 TO STA. 27+09.87 BK
STA. 26+61.13 AH TO STA. 27+75.00

EXISTING LEGEND

- (A) 9" REINFORCED CONCRETE PAVEMENT
- (B) 5-1/2" ASPHALT CONCRETE OVERLAY
- (C) BITUMINOUS AGGREGATE BASE
- (D) AGGREGATE BASE, 6" OR 18"
- (E) UNDERDRAIN
- (F) CONCRETE MEDIAN BARRIER
- (G) CURB
- (H) GUARDRAIL
- (I) 9" PLAIN CONCRETE PAVEMENT
- (J) 1-3/4" ASPHALT CONCRETE OVERLAY
- (K) 4-1/4" ASPHALT CONCRETE OVERLAY



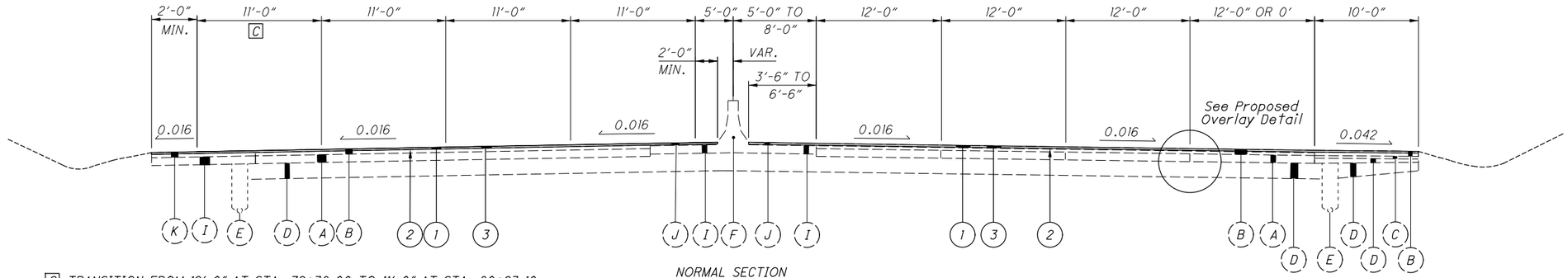
PROPOSED OVERLAY DETAIL

PROPOSED LEGEND

- (1) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, 1-1/2"
- (2) ITEM 407 - NON-TRACKING TACK COAT
- (3) ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN, PG76-22M, 1-1/2"

TYPICAL SECTIONS - MAINLINE I-90

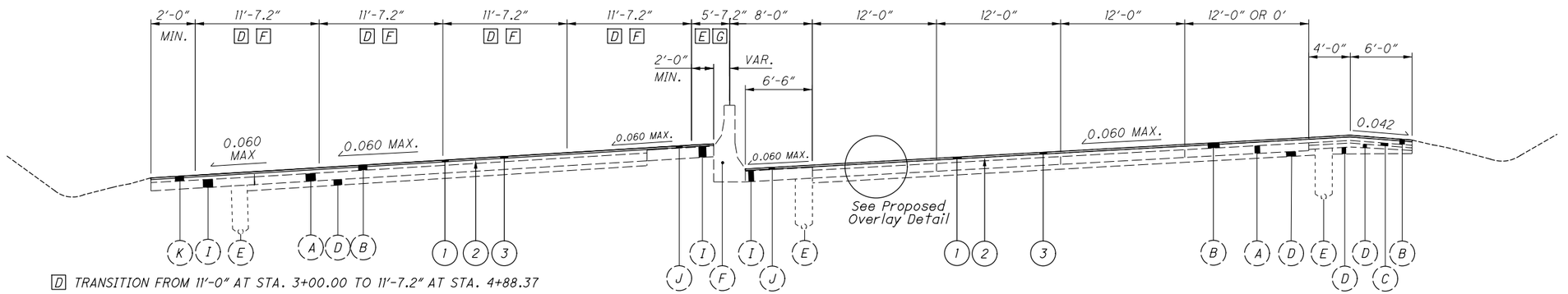
CUY-90-16.45



C TRANSITION FROM 12'-0" AT STA. 79+38.00 TO 11'-0" AT STA. 80+23.10

NORMAL SECTION

STA. 79+38.00 TO STA. 85+09.31 BK.
STA. 0+00.00 AH. TO STA. 1+25.00

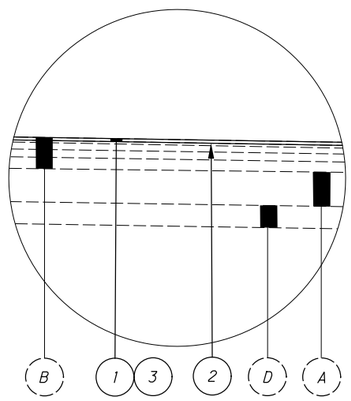


D TRANSITION FROM 11'-0" AT STA. 3+00.00 TO 11'-7.2" AT STA. 4+88.37
E TRANSITION FROM 5'-0" AT STA. 3+00.00 TO 5'-7.2" AT STA. 4+88.37
F TRANSITION FROM 11'-7.2" AT STA. 10+00.00 TO 12'-0" AT STA. 13+08.05
G TRANSITION FROM 5'-7.2" AT STA. 10+00.00 TO 8'-0" AT STA. 13+08.05

SUPERELEVATED SECTION
STA. 1+25.00 TO STA. 13+08.05

EXISTING LEGEND

- (A) 9" REINFORCED CONCRETE PAVEMENT
- (B) 5-1/2" ASPHALT CONCRETE OVERLAY
- (C) BITUMINOUS AGGREGATE BASE
- (D) AGGREGATE BASE, 6" OR 18"
- (E) UNDERDRAIN
- (F) CONCRETE MEDIAN BARRIER
- (G) CURB
- (H) GUARDRAIL
- (I) 9" PLAIN CONCRETE PAVEMENT
- (J) 1-3/4" ASPHALT CONCRETE OVERLAY
- (K) 4-1/4" ASPHALT CONCRETE OVERLAY



PROPOSED OVERLAY DETAIL

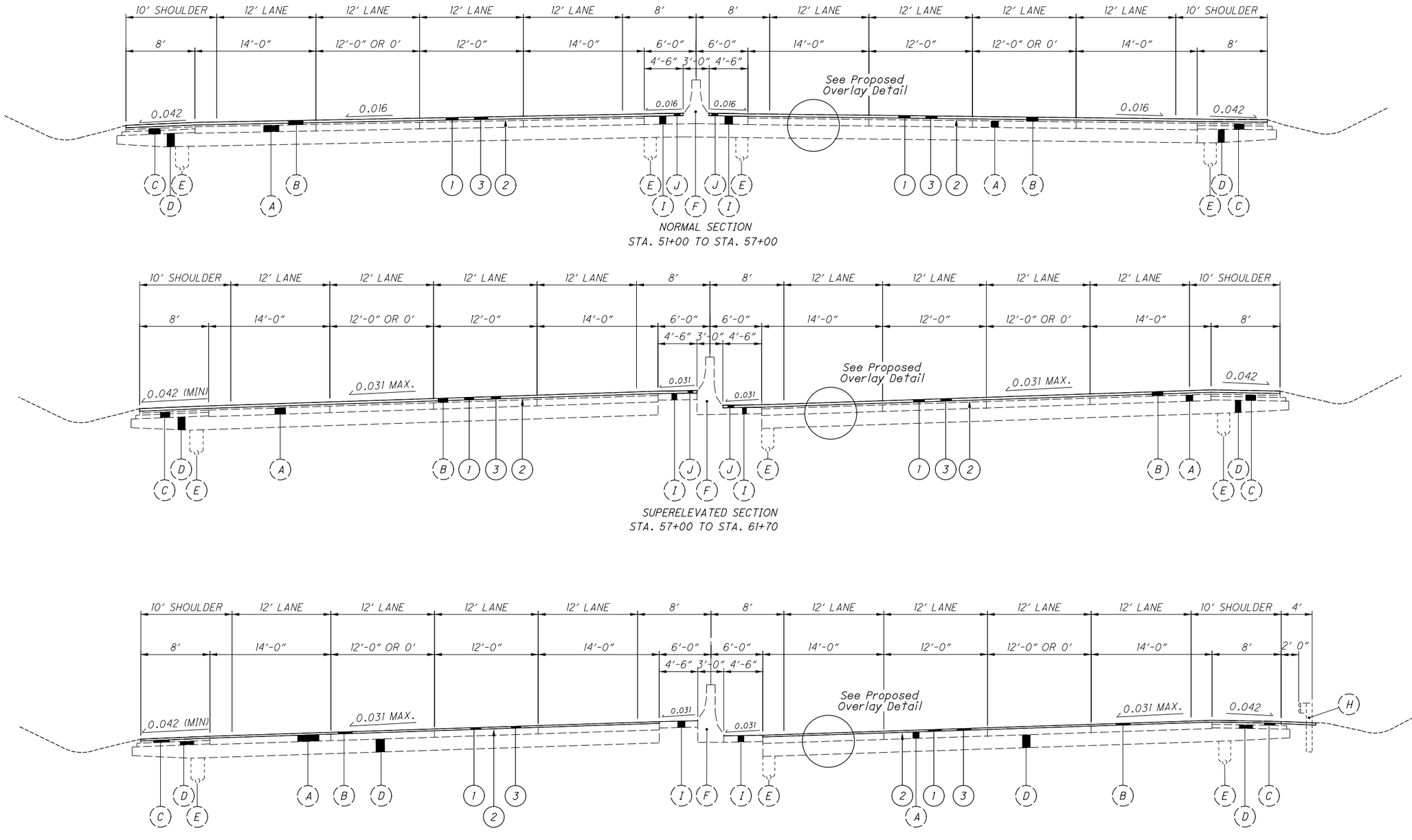
PROPOSED LEGEND

- (1) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE, 1-1/2"
- (2) ITEM 407 - NON-TRACKING TACK COAT
- (3) ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN, PG76-22M, 1-1/2"

TYPICAL SECTIONS - MAINLINE I-90

CUY-90-16.45

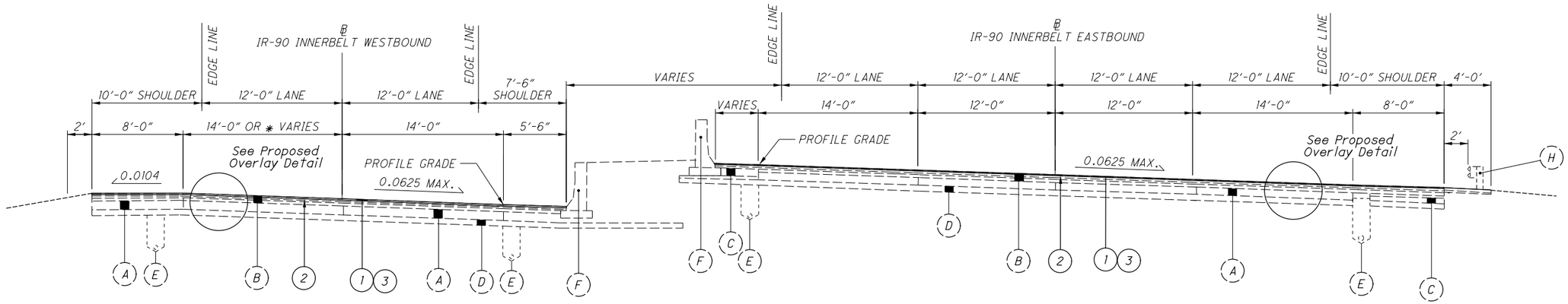
4b
42



SEE SHEET 4 FOR LEGEND
SEE SHEET 4 FOR OVERLAY DETAIL

TYPICAL SECTIONS - MAINLINE I-90

CUY-90-16.45



SUPERELEVATED SECTION

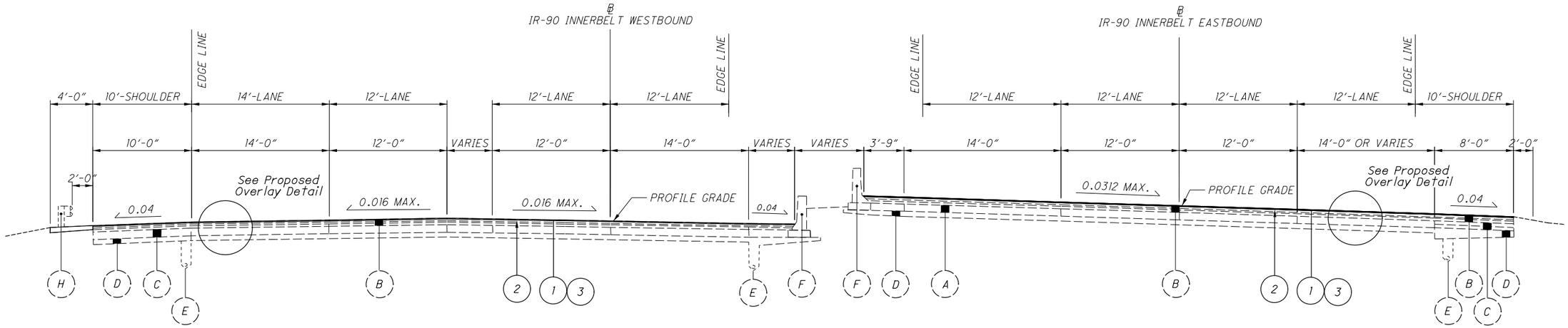
STA. 78+22.89 TO STA. 79+25.07 (℄ I-90 WESTBOUND CURVE)

SEE SHEET 4 FOR LEGEND
SEE SHEET 4 FOR OVERLAY DETAIL

TYPICAL SECTIONS - MAINLINE I-90

CUY-90-16.45

6
42

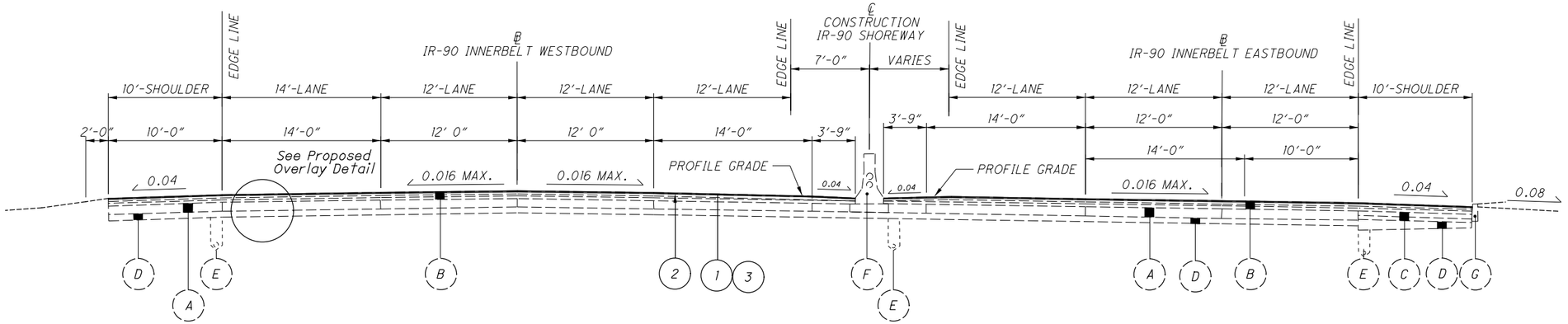


WESTBOUND-NORMAL SECTION

STA. 79+31.39 TO STA. 84+08.71 BK (℄ I-90 WESTBOUND CURVE) =
STA. 83+23.06 AH (℄ I-90 EASTBOUND CURVE)

EASTBOUND-SUPERELEVATED SECTION

STA. 82+94.97 TO STA. 84+91.16 (℄ I-90 EASTBOUND CURVE)



NORMAL SECTION

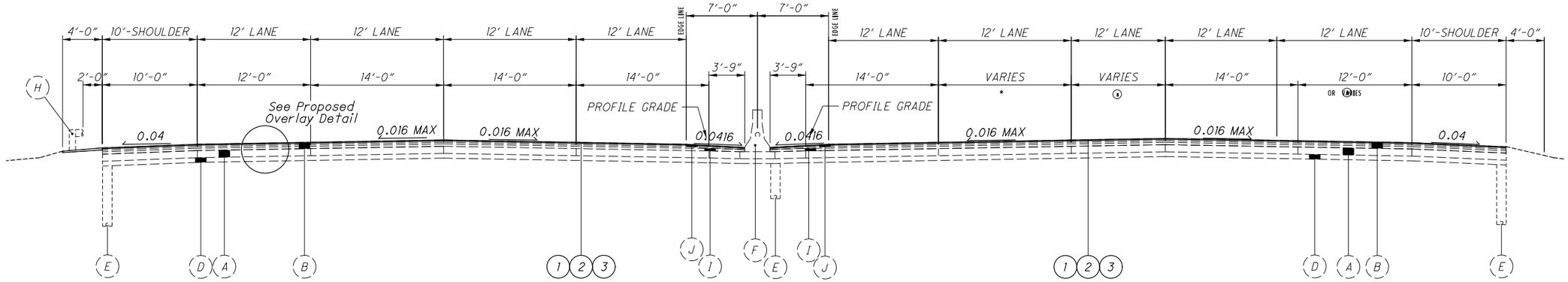
STA. 84+91.16 TO STA. 86+93.02 BK =
85+88.93 AH (℄ I-90 WESTBOUND SHOREWAY)

✱ VARIES 14′ 0″ TO 38′ 0″ STA. 239+03.25 TO STA. 240+14.83
⊖ VARIES 5′ 6″ TO 3′ 9″ STA. 233+94.30 TO STA. 238+61.15
⊕ VARIES 32′ 0″ TO 0′ 0″ STA. 233+94.30 TO STA. 238+61.15

SEE SHEET 4 FOR LEGEND
SEE SHEET 4 FOR OVERLAY DETAIL

TYPICAL SECTIONS - MAINLINE I-90

CUY-90-16.45



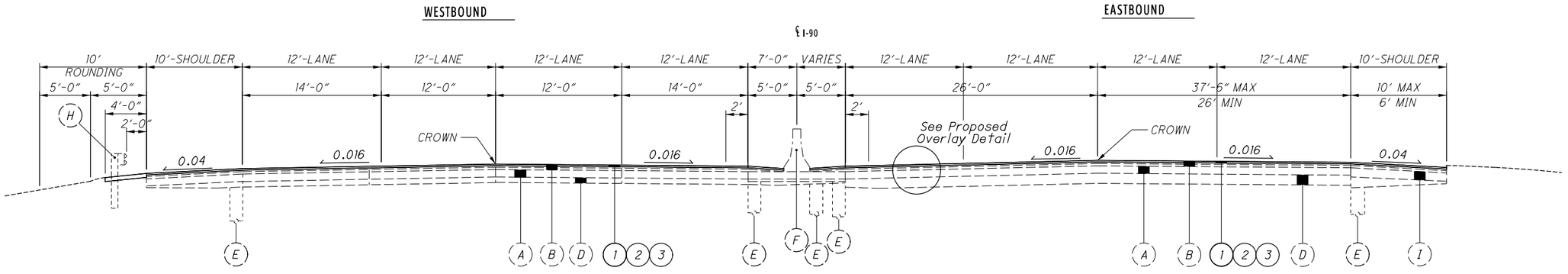
NORMAL SECTION

STA. 94+94.05 TO STA. 104+61.24 (℄ I-90 SHOREWAY)

* VARIES 14'-0" TO 12'-0" STA 80+03.17 TO STA 86+13.93

Ⓘ VARIES 40'-0" TO 12'-0" STA 80+03.17 TO STA 86+13.93

Ⓑ VARIES 12'-0" TO 10'-0" STA 85+88.93 TO STA 86+88.93



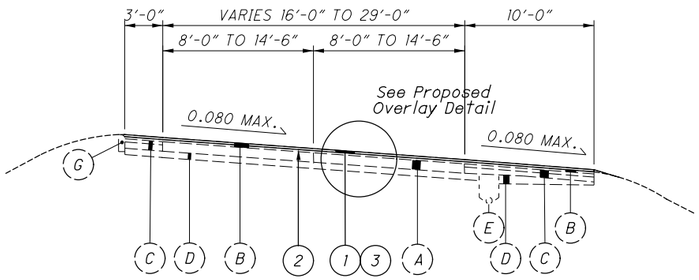
NORMAL SECTION

STA. 85+88.93 TO STA. 94+94.05 (℄ I-90 SHOREWAY)

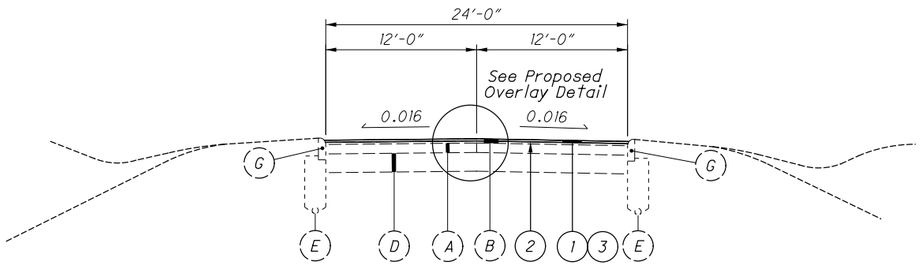
SEE SHEET 4 FOR LEGEND
SEE SHEET 4 FOR OVERLAY DETAIL

TYPICAL SECTIONS - MAINLINE I-90

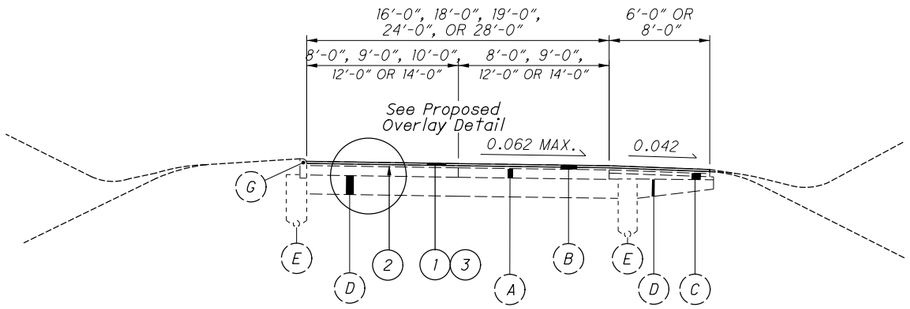
CUY-90-16.45



RAMP E-11



RAMP NO. 14
RAMP NO. 15
RAMP NO. 17
RAMP NO. 18
E. 30TH CONN. STA. 102+54.76 TO STA. 103+04.83
E. 33RD ST. CONN.
E. 33RD ST. KING AVE. CONN.



RAMP NO. 3	RAMP NO. 4
RAMP NO. 5	RAMP NO. 6
RAMP NO. 7	RAMP NO. 8
RAMP NO. 9	RAMP NO. 10
RAMP NO. 11	RAMP NO. 12
RAMP NO. 13	CHESTER AVE. CONNECTION

E. 30TH CONNECTION STA. 100+00 TO STA. 102+54.76

SEE SHEET 4 FOR LEGEND
SEE SHEET 4 FOR OVERLAY DETAIL

TYPICAL SECTIONS - RAMPS

CUY-90-16.45

General

Project Description

This project consists of the rehabilitation of 2.27 miles of IR-90 from SLM 16.45 (East End of Bridge over IR-77 Ramps) to SLM 18.72 (East of SR-2 EB On-Ramp) in the City of Cleveland in Cuyahoga County.

Right of Way

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

Existing Plans

Existing plans entitled may be inspected in the ODOT District 12 Office at:

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

Plan Sheet Stationing

The roadway was not surveyed prior to the preparation of these plans. Record drawings were used to prepare plan sheets and calculate estimated pavement area quantities and pavement markings.

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.

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.

Utilities

Listed below are all utilities located within the project construction limits together with their respective owners. The Ohio Department of Transportation has used the best available information to determine the utility companies serving this area but cannot guarantee that this utility company list is complete.

Electric:

CEI First Energy
6896 Miller Road
Brecksville, OH 44141
Attn: Ted Rader, Design Supervisor
Phone: (440) 546-8738
Email: radert@firstenergycorp.com

City of Cleveland
Division of Cleveland Public Power (MELP)
1300 Lakeside Ave.
Cleveland, OH 44114
Attn: Chris Hirzel
Phone: (216) 664-3922, Ext. 115
Fax: (216) 664-2972
Email: chirzel@cpp.org

Water:

City of Cleveland
Division of Water
1201 Lakeside Ave.
Cleveland, OH 44114
Attn: Andrew Krawczyk,
Consulting Engineer
Phone: (216) 664-2444, Ext. 5520
Fax: (216) 664-2378
Email:
andrew_krawczyk@ClevelandWater.com

OR

Attn: Fred Roberts
Phone: (216) 644-2444, Ext. 5590
Email:
fred_roberts@ClevelandWater.com

City of Cleveland
Division of Water Pollution Control
12302 Kirby Road
Cleveland, OH 44108
Attn: Rachid Zoghaib
Phone: (216) 664-3785
Email:
rzoghaib@ClevelandWPC.com

OR

Attn: Elie Ramy
Phone: (216) 664-2756
Email: eramy@clevelandwpc.com

Sanitary:

Cuyahoga County Sanitary Engineer
6100 West Canal Road
Cleveland, OH 44125
Attn: Hugh Blocksidge
Phone: (216) 443-8205
Cell: (216) 256-3619
Fax: (216) 698-7595
Email: hblocksidge@cuyahogacounty.us

Northeast Ohio Regional Sewer District
NEOSRD Watershed Programs
3900 Euclid Ave.
Cleveland, OH 44115-2504
Attn: Mary Maciejowski,
CDPP Manager
Phone: (216) 881-6600, Ext. 6466
Email:
maciejowskim@neorsd.org

Traffic Signals:

City of Cleveland
Division of Traffic Engineering
601 Lakeside Ave.
Cleveland, OH 44114
Attn: Dimitri Szynal
Phone: (216) 402-9278
Email: Dszynal@City.Cleveland.OH.US

Gas:

Dominion East Ohio Gas Company
320 Springside Dr., Suite 320
Akron, OH 44333
Attn: Bryan D. Dayton
Phone: (330) 664-2409
Email:
Bryan.D.Dayton@dom.com

Transit:

Greater Cleveland Regional Transit Authority (GCRTA)
1240 West 6th Street
Cleveland, OH 44113-1331
Attn: Mike Schipper
Phone: (216) 566-5084
Fax: (216) 431-6209
Email: mschipper@gcrta.org

Lighting:

Ohio Department of Transportation
5500 Transportation Blvd.
Garfield Heights, OH 44125
Attn: Tony Toth, P.E., District Traffic Engineer
Phone: (216) 584-2220
Fax: (216) 584-2278

Telecommunications:

AT&T
13630 Lorain Ave. – 2nd Floor
Cleveland, OH 44111
Attn: James Janis, Design Manager
Phone: (216) 476-6142
Fax: (216) 476-6013
Email: pj8191@att.com

Windstream
560 Ternes Ave.
Elyria, OH 44035
Attn: Geoffrey Hamm,
OSP Engineer II
Phone: (440) 329-4245
Cell: (330) 256-6133
Email:
geoffrey.p.hamm@windstream.com

Sprint Nextel Corporation
875 Greentree Rd.
Suite 410, Building 7
Pittsburgh, PA 15220
Attn: Luke Bryan, Project Manager
Phone: (412) 960-4071
Cell: (412) 505-3139
Email: Luke.Bryan@sprint.com

OR

Attn: Paul Caltelli
Phone: (412) 960-4037
Cell: (724) 417-1465
Email: Paul.Castelli@sprint.com

Spread Networks, LLC
800 Woodlands Parkway,
Suite 102
Ridgeland, MS 39157
Attn: John P. Bruce
Phone: (769) 216-8095
Email:
john.bruce@spreadnetworks.com

OR

Attn: Dana T. Costa
Phone: (513) 254-4348
Email:
dana.costa@spreadnetworks.com

Level 3 Communications, LLC
1025 El Dorado Blvd.
Broomfield, CO 80021
Attn: Marvin Muncy, OSP Engineer
Cell: (419) 304-5190
Attn: Relocations Department
Email: relo@Level3.com

Verizon
120 Ravine St.
Akron, OH 44303
Attn: Al Guest
Phone: (330) 253-8267
Cell: (330) 329-5495
Email: allan.guest@verizon.com

Charter Communications
8179 Dow Circle
Strongsville, OH 44136
Supervisor: Gary Nauman
Phone: (216) 575-8016, Ext. 5033
Email: gary.nauman1@charter.com

OR

Field Engineer: Paul Silvestro
Phone: (216) 575-8016,
Ext. 2165555034
Fax: (216) 826-2940
Email: paul.silvestro@charter.com

CenturyLink
441 W. Broad St.
Pataskala, OH 43062
Attn: Chris Strayer
Cell: (303) 886-1299
Email:
christopher.strayer@centurylink.com

OR
Attn: George McElvain
Phone: (303) 992-9931
Email:
george.mcelvain@centurylink.com

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.

CALCULATED KDH
CHECKED EMK

GENERAL NOTES

CUY-90-16.45

10
42

General (Continued)

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 contact Jill Powers at 216-584-2195 at District 12 in order to apply for a permit per Section 107.02 of the CMS.

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.

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.

Work Limits

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

Cooperation Between Contractors

The Contractor shall cooperate and coordinate his/her operations with the contractors on other projects that may be in force during the life of the contract. No waiver of any provisions of 105.07 of the Construction and Material Specifications is intended.

Airway/Highway Clearance for Airports and Heliports

This project has been identified as being within the influence area of a public use airport or heliport. No temporary structures or construction equipment at maximum operating height shall exceed a height of 25 FT. If any temporary structures or construction equipment will exceed this height, further coordination with the Federal Aviation Administration (FAA), and ODOT Office of Aviation, will be necessary prior to erecting such temporary structures or operating such equipment on the project. The Contractor will be required to submit Form 7460-1 to the FAA. Notify the ODOT Office of Aviation when submitting FAA Form 7460-1.

No temporary structures or construction equipment shall exceed permissible height, until a copy of the FAA approval and the ODOT Office of Aviation permit has been furnished to the Project Engineer.

Express Processing Center
The Federal Aviation Administration
Southwest Regional Office
Air Traffic Airspace Branch ASW-520
2601 Meacham Blvd.
Fort Worth, TX 76137-4298

Ohio Department of Transportation
Office of Aviation
2829 West Dublin-Granville Road
Columbus, Ohio 43235
614-387-2346

Roadway

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 of 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 - Linear Grading, As Per Plan and shall include all labor, tools, equipment and materials necessary to perform this item of work.

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 appurtenance shall be determined from field observations. Records of the inspection shall be kept in writing by the State.

All new conduits, inlets, catch basins, and manholes constructed as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the State.

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 or light duty) for the particular structure in question. All material shall meet item 611 of the specifications and shall have the prior approval of the Engineer.

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

Special, Miscellaneous Metal ..... **5,000 Lbs.**

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.

Castings Adjusted to Grade

All castings 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. When performing this work, the pavement shall be sawcut prior to removal and hook bolts shall be used where practical to connect existing pavement to new concrete.

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

611, Catch Basin Adjusted to Grade, As Per Plan..... **25 Each**
611, Inlet Adjusted to Grade, As Per Plan..... **55 Each**
611, Manhole Adjusted to Grade, As Per Plan..... **25 Each**
638, Valve Box Adjusted to Grade, As Per Plan..... **3 Each**

Castings Reconstructed to Grade

The Contractor and Field Engineer shall field check all existing catch basins or manholes located within the limits of the project. Any casting found that exhibits substantial deterioration and requires more work than is specified under "Castings Adjusted to Grade" shall be "Reconstructed to Grade", as directed by the Engineer. If none are needed, these items are to be non-performed.

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

611, Catch Basin Reconstructed to Grade..... **2 Each**
611, Inlet Reconstructed to Grade..... **5 Each**
611, Manhole Reconstructed to Grade ..... **2 Each**

CALCULATED KDH
CHECKED EMK

GENERAL NOTES

CUY-90-16.45

Pavement

Profile and Alignment

Place the proposed pavement to follow the alignment and profile of the existing pavement. Previous construction plans showing the original alignment and profile, are available for inspection at the ODOT District 12 Office. Place the proposed asphalt concrete overlay as shown on the typical sections.

Part-Width Construction

Because of the necessity to build this project under traffic, exercise care to prevent the construction of a transverse butt joint in the asphalt courses. Lap longitudinal joints as shown on Standard Construction Drawing BP-3.1.

Asphalt Concrete Surface Course Sealing Requirements

In addition to the gutter sealing requirements specified in SCD BP-3.1 and C&MS 401.15, the Contractor shall seal the following locations after completion of the surface course:

- 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)

Locate longitudinal joints in the surface course subject to the following requirements:

- Place the mainline pavement surface course with a single cold longitudinal joint. No other cold joints are permitted in the surface course of the mainline pavement.
- If part-width construction is used for the ramps, place the ramp surface course with a single cold longitudinal joint located near the middle of the ramp's total width.
- At speed change lanes at ramp merge and diverge areas, place surface course on speed change lanes within the same work day as adjacent mainline pavement.

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

This item shall be used for the repair of unsound, cold patch, or pop-out areas of longitudinal joints consisting of existing asphalt or concrete prior to pavement planing as directed by the Engineer. The depth of the repair from the top of the planed surface shall be 4-1/2". 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 is carried to the General Summary to complete this item of work:

251, Partial Depth Pavement Repair (442), As Per Plan A .....**500 Sq Yds**

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

This item shall be used for the repair of unsound, cold patch, or pop-out areas of transverse joints consisting of existing asphalt or concrete prior to pavement planing as directed by the Engineer. The depth of the repair from the top of the planed surface shall be 4-1/2". 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 is carried to the General Summary to complete this item of work:

251, Partial Depth Pavement Repair (442), As Per Plan B .....**650 Sq Yds**

Item 253 – Pavement Repair

Use this item to repair severely distressed areas. Make repairs prior to planing the existing overlay.

Make the majority of the repairs at an average depth of 5". The size, location, and depth of the repair areas will be as determined by the Engineer.

Use replacement materials conforming to the requirements of Item 301.

The following estimated quantity is carried to the General Summary to complete this item of work:

253, Pavement Repair .....**75 Cu Yds**

Item 254 – Pavement Planing, Asphalt Concrete

The Contractor shall plane and pave with a 6" offset from the existing Portable Concrete Barrier (PCB) or Qwick Kurb, or as directed by the Engineer. Do not disturb existing PCB or Qwick Kurb.

Item 442 – Asphalt Concrete Surface Course, 12.5mm, Type A (446), As Per Plan, PG76-22M

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).

Table 442.02-2 applies except No. 4 sieve requirements are 52 to 62 Total Percent Passing.

Item 617 – Compacted Aggregate, As Per Plan

This item shall be used to place compacted aggregate at a variable depth to fill in low spots along the shoulder and eliminate drop-offs. Material shall be limited to reclaimed asphalt concrete pavement.

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 as per 617.05 and included under Item 617 – Compacted Aggregate, As Per Plan.

Item 618 – Rumble Strips, (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 has been carried to the General Summary to install rumble strips as described above:

618, Rumble Strips, (Asphalt Concrete), As Per Plan.....**8.85 Mile**

Item 875 – Longitudinal Joint Adhesive

The following estimated quantity shall be used on all cold longitudinal joints in the surface course:

875, Longitudinal Joint Adhesive.....**16,260 Lbs**

CALCULATED KDH CHECKED EMK

GENERAL NOTES

CUY-90-16.45

Traffic Control

Raised Pavement Markers

Raised pavement marker spacing on lane lines shall be 80 feet.

Entrance and Exit Markings

The entrance and exit pavement markings shall be located and installed as per Standard Construction Drawing TC-72.20. Plan details showing gore locations are approximate. The Contractor shall be responsible to perform as many measurements as needed to determine the correct locations of the markings.

Item Special – Misc.: Inventory Existing Pavement Markings

Prior to any planing and paving operations, the Contractor is responsible for conducting a field survey of the existing pavement markings. This inventory shall be used for the placement of temporary markings and proposed final pavement markings. It is the intent of this plan to replace the pavement markings in the same location as the existing pavement markings. Any staking or marking required to establish control points to ensure that existing markings are accurately placed is the responsibility of the Contractor. The Engineer will verify all permanent marking locations prior to the actual installation.

The Contractor must lay out all center lines using the most recent copy of the Center Line Log. Copies of the Center Line Log may be obtained from the District 12 Roadway Services Department.

The following quantity is carried to the General Summary to accomplish the above items of work as directed by the Engineer:

Item Special, Misc.: Inventory Existing Pavement Markings..... **Lump Sum**

Sign Shop Drawings

Extrusheet sign designs for this project were developed using SignCAD software. A copy of these shop drawings will be supplied to the Contractor at the Pre-Construction Meeting.

The Contractor shall submit a final set of shop drawings from the sign fabricator to the Project Engineer for approval. The Project Engineer shall forward the sign shop drawings to the District 12 Planning & Engineering Department c/o Frank Konopka for review.

Traffic Signals

Item 632 Detector Loop, As Per Plan

An estimated quantity of Item 632 – Detector Loop, As Per Plan has been provided as a contingency if a wire is cut, broken, or destroyed.

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.

If damaged by planing operations, replace existing detector loops at the following locations:

Mark	Approach	Size	No.
DL-1	Ramp 6 – IR-90 WB to Prospect Ave. Powerhead Loops at Stop Bar	6' x 20'	2
DL-2	Ramp 13 – Superior Ave. at IR-90 WB Powerhead Loop at Stop Bar for NB E. 26th St.	6' x 20'	1

If needed, the following items shall be used at locations as determined by the Engineer to replace and/or add loops at locations not called out above.

Item	Size	Qty.
Detector Loop, As Per Plan	9' x 18'	1 Each
	6' x 20'	1 Each

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.

If detector loops require replacement, contact Dimitri Szynal, City of Cleveland, Division of Traffic Engineering at (216) 402-9278.

The Division of Traffic Engineering 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:

632, Detector Loop, As Per Plan ..... **5 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 Cleveland Representative.

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 Cleveland Representative 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 non-intrusive detection (i.e. video, radar) already exists, the Contractor shall ensure 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 abandoned, the non-intrusive 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.

CALCULATED KDH CHECKED EMK

GENERAL NOTES

CUY-90-16.45

13 42

Maintenance of Traffic

Item 614 - Maintaining 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 in the "Schedule of Through Lanes to be Maintained" note.

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 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 than 1-1/2" and transverse drop-offs are ramped as per the "Maintaining Traffic and Sequence of Operations" note.

All costs associated with the set up and take down of the maintenance of traffic zones including all labor, equipment, signs, drums and flashing arrow board shall be included in the lump sum bid for Item 614, Maintaining Traffic.

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.

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 authority.

Maintaining Traffic at All Times

A minimum of one lane of traffic in each direction shall be maintained at all times by use of the existing pavement and/or the completed pavement.

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 Ohio Manual of Uniform Traffic Control Devices, the Engineer shall suspend work until the Contractor complies with the necessary requirements.

Lanes Open During Holidays or Special Events

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

Christmas	Fourth of July
New Year's Day	Labor Day
Memorial 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 holiday or event	Time all lanes must be open to traffic
Sunday	12:00N Friday through 6:00 AM Monday
Monday	12:00N Friday through 6:00 AM Tuesday
Tuesday	12:00N Monday through 6:00 AM Wednesday
Wednesday	12:00N Tuesday through 6:00 AM Thursday
Thursday	12:00N Wednesday through 6:00 AM Friday
Thursday (Thanksgiving only)	6:00AM Wednesday through 6:00 AM Monday
Friday	12:00N Thursday through 6:00 AM Monday
Saturday	12:00N Friday through 6:00 AM Monday

Should the Contractor fail to meet any of these requirements, the Contractor shall be assessed a disincentive in the amount of $125 for each minute the above described lane closure restrictions are violated.

Lane Closures During Special Events

Lane closure times given in the "Schedule of Through Lanes to be Maintained" shall be adjusted for special events that have a seating capacity of 10,000 in the downtown Cleveland area. There shall be no lane closures in the inbound direction two (2) hours prior to an event and in the outbound direction two (2) hours after an event ends.

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.

Truck Mounted Attenuator

When the Contractor is setting short term work zones and the shoulders (right or left shoulder) are less than 10 feet in width and are on a road with speeds 45 mph or higher, a Truck Mounted Attenuator (TMA) must trail the operation of setting the advance warning signs up or taking them down. This same truck must have a Type B flashing arrow panel mounted on it facing the rear of the truck.

The TMA must meet NCHRP 350 TL-3 Criteria. The Manufacturer's specification must be followed concerning the size of the truck and the connections to the TMA.

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.

Contractor's Equipment - Operation and Storage

Vehicles and equipment shall always move with, and not across or against the flow of traffic. Vehicles and other equipment shall not park or stop except within designated work areas; and shall not enter and leave work areas in a manner which will be hazardous to, or interfere with the normal traffic flow. Personal vehicles will not be permitted to park within the Right-of-Way except in specific areas designated by the Engineer.

Equipment, vehicles and materials shall not be stored or parked within 30 feet of the traveled way unless 6 feet behind PCB or guardrail.

All work vehicles and equipment that enters the work zone more than once a day must be equipped with at least one flashing, rotating, or oscillating amber light that is visible in all directions of traffic for at least one quarter of a mile, day or night.

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 RPM's
B. Perform pavement repairs
C. Plane asphalt concrete
D. Place asphalt concrete surface course
E. Place proposed pavement markings and raised pavement markers

Time Limitation for Planed Surfaces

The duration of time between removing the existing asphalt concrete pavement and placement of the surface course of asphalt shall be kept to a minimum. In no instance shall this time exceed ten (10) calendar days. This is to ensure that the potential degradation of the exposed pavement due to traffic is kept to a minimum.

In the event that the time between exposing the existing pavement and placing the asphalt surface course exceeds 10 calendar days, liquidated damages as per 108.07 of the C&MS shall be assessed.

Payment

All work and traffic control devices shall be in accordance with C&MS 614 and other applicable portions of the specifications, as well as the Ohio Manual of Uniform Traffic Control Devices. Payment for all labor, equipment, and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, unless separately itemized in the plan.

CALCULATED KDH
CHECKED EMK

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-90-16.45

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 to 401.15 of the Construction and Material Specifications 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 (2) weeks in advance of his detailed plans. See the OMUTCD and Standard Construction 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 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, type 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.

12. All labor, materials, equipment, and any incidentals necessary to complete the work as described above shall be included in the lump sum bid for Item 614 Maintaining Traffic.

Maintaining Traffic and Sequence of Operations

All asphalt concrete operations shall be conducted in a manner that will assure minimum danger and inconvenience to the highway users. All work shall be performed at the times provided in the "Schedule of Through Lanes to be Maintained." 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 except as necessary during the actual removal or paving operation. 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 signs (dual sign installation). Placement shall be as directed by the Engineer and included in the Lump Sum bid 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 Ohio Manual of Uniform Traffic Control Devices.

Item 614 Asphalt Concrete for Maintaining Traffic

This item shall be used to install and remove temporary asphalt ramps for transverse discontinuities. Ramping shall be placed at the rate of 1" per 10 ft. or to be used as determined by the Engineer.

Material shall be removed prior to the placement of the next course of asphalt.

The following estimated quantity is carried to the general summary to accomplish this item of work.

614, Asphalt Concrete for Maintaining Traffic ..... **250 Cu Yd**

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 the current year CMS.

Payment for this item shall include but not be limited to the cost to furnish and erect the sign, including drive posts or other approved methods of 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 that is detailed in the Standard Drawings and the OMUTCD.

The following quantity shall be carried to the General Summary:

630, Signing Misc.: Additional Signs, Ground Mounted,
As Directed By The Engineer ..... **300 Sq. Ft.**

Work Zone Pavement Markings

The following estimated quantities have been carried to the General Summary, to be used as directed by the Engineer, to place work zone pavement markings after the Contractor has planed the existing asphalt.

614, Work Zone Lane Line, Class I, 642 Paint, As Per Plan (6") ..... **9.88 Mile**

614, Work Zone Center Line, Class I, 642 Paint ..... **0.03 Mile**

614, Work Zone Edge Line, Class I, 642 Paint, As Per Plan (6") ..... **13.22 Mile**

614, Work Zone Channelizing Line, Class I, 642 Paint, As Per Plan (12") ..... **6,657 Feet**

614, Work Zone Channelizing Line, Class I, 642 Paint, As Per Plan (8") ..... **1,677 Feet**

614, Work Zone Dotted Line, Class I, 642 Paint, As Per Plan (12") .. **5,432 Feet**

614, Work Zone Dotted Line, Class I, 642 Paint, As Per Plan (6") .... **1,652 Feet**

614, Work Zone Transverse/Diagonal Line, Class I, 642 Paint..... **534 Feet**

614, Work Zone Stop Line, Class I, 642 Paint ..... **243 Feet**

614, Work Zone Crosswalk Line, Class I, 642 Paint ..... **1,466 Feet**

614, Work Zone Arrow, Class I, 642 Paint..... **54 Each**

614, Work Zone Word on Pavement, 96", Class I, 642 Paint..... **5 Each**

The following estimated quantities have been carried to the General Summary, to be used as directed by the Engineer, to place work zone pavement markings after the Contractor has placed the surface course.

614, Work Zone Lane Line, Class III, 642 Paint..... **9.88 Mile**

614, Work Zone Center Line, Class III, 642 Paint ..... **0.03 Mile**

614, Work Zone Edge Line, Class III, 642 Paint ..... **13.22 Mile**

614, Work Zone Channelizing Line, Class III, 642 Paint..... **8,334 Feet**

614, Work Zone Dotted Line, Class III, 642 Paint ..... **7,084 Feet**

614, Work Zone Transverse/Diagonal Line, Class III, 642 Paint..... **534 Feet**

614, Work Zone Stop Line, Class III, 642 Paint ..... **243 Feet**

614, Work Zone Crosswalk Line, Class III, 642 Paint..... **1,466 Feet**

614, Work Zone Arrow, Class III, 642 Paint..... **54 Each**

614, Work Zone Word on Pavement, 96", Class III, 642 Paint..... **5 Each**

CALCULATED KDH
CHECKED EMK

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-90-16.45

Item 614 Law Enforcement Officer (With Patrol Car) For Assistance During Construction Operations

Use of Law Enforcement Officers (LEOs) by contractors other than the uses specified below will not be permitted at project cost. LEOs should not be used where the OMUTCD intends that flaggers be used.

In addition to the requirements of C&MS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) shall be provided for the following traffic control tasks:

- During the entire advance preparation and closure sequence where complete blockage of traffic is required.
- During a traffic signal installation when impacting the normal function of the signal or the flow of traffic, or when traffic needs to be directed through an energized traffic signal contrary to the signal display (e.g., directing motorists through a red light).

In addition to the requirement of C&MS 614 and the OMUTCD, a uniformed LEO with an official patrol car (car with top-mounted emergency flashing lights and complete markings of the appropriate law enforcement agency) should 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.

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. Once the LEO has completed the duties described above and still has time remaining on his/her shift, the LEO may be asked to patrol through the work zone (with flashing lights off) or be placed at a location to deter motorists from speeding. 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.

614, Law Enforcement Officer with Patrol Car for Assistance..... **600 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 unit price for Item 614, Law Enforcement Officer with Patrol Car for Assistance.

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, 14 days prior to the bid date, will be in effect for this project.

No lane or shoulder closures shall be in place when no work is being performed. Shoulder closures shall only be allowed at the times specified for lane closures.

Ramp Closures for Resurfacing

The Contractor may close one ramp at a time at each permitted 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".

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. An 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 paid for by the Contractor.

Road User Costs/Short Term Lane Closures

Short term lane closures are those which are permitted by the "Schedule of Through Lanes to be Maintained" table. Short term road user costs shall also be assessed when a ramp closure is violated.

These times shall not be revised without prior approval from the District 12 Work Zone Traffic Control Engineer.

If short term lane closures are in place outside the specified times, the Contractor will be assessed road user costs in the amount of $50 per each minute the lane remains closed.

Short term lane closures shall only be implemented when work is being continuously performed. The closure shall be removed as soon as possible after work has stopped.

IR-90 Ramps		
Location	**Permitted Closures**	
	Partial Width	**Total Closure**
Ramp E-11 (IR-90 EB Exit to E. 22nd St.)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp E-13 (E. 21st St. Entrance to IR-77 SB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times

IR-90 Ramps		
Location	**Permitted Closures**	
Ramp 3 (IR-90 EB Exit to Carnegie Ave.)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 4 (Prospect Ave. Entrance to IR-90 EB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 5 (Prospect Ave. Entrance to IR-90 WB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 6 (IR-90 WB Exit to Prospect Ave.)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 7 (IR-90 EB Exit to Chester Ave. EB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 8 (Chester Ave. EB Entrance to IR-90 EB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 9 (Chester Ave. WB Entrance to IR-90 EB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 10 (Chester Ave. WB / E. 24th St. Entrance to IR-90 WB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 11 (IR-90 WB Exit to Chester Ave. / E. 24th)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 12 (IR-90 EB Exit to Superior Ave. / E. 30th)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 13 (Superior Ave. / E. 26th St. Entrance to IR-90 WB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 14 (IR-90 WB Exit to Superior Ave / E. 26th)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 15 (Superior Ave. Entrance to IR-90 EB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 17 (E. 26th St. Entrance to IR-90 WB)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times
Ramp 18 (IR-90 EB Exit to Lakeside Ave. / E. 33rd St. / King St.)	Maintain one 11' Lane at all times	Permitted for a Maximum of 3 Individual Times

CALCULATED KDH CHECKED EMK

MAINTENANCE OF TRAFFIC GENERAL NOTES

CUY-90-16.45

Worksite Traffic Supervisor

Subject to approval of the Engineer, the Contractor shall employ and identify (someone other than the superintendent) a certified Worksite Traffic Supervisor (WTS) before starting work in the field. The WTS shall be certified from one of the following organizations:

1. American Traffic Safety Service Association (ATSSA), phone number 1-800-272-8772, certified Traffic Control Supervisor (TCS).

2. National Highway Institute, Design and Operation of Work Zone Traffic Control, phone number 1-703-235-0528.

3. The Ohio Contractors Association, Traffic Control Supervisor (OCA/TCS) work zone class, only if taken after May 5, 2004, phone number 1-800-229-1388.

4. Ohio Laborers' Training, Traffic Control Supervisors Class, phone number 1-740-599-7915.

A copy of each WTS's certification and 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 WTS to be available when the primary is off duty. Each WTS shall have a WTS certification containing the date of issue and shall be from any of the approved organizations. At the time of the preconstruction conference, the WTS certification date of issue shall be within the 5 years prior to the Original Completion Date of the project.

The WTS position has the responsibility of monitoring traffic control deficiencies for the entire work zone. The duties of the WTS are as follows:

1. Be available on a 24-hour per day basis, and be able to be on site for all emergency traffic control needs within one hour of notification by police or project staff and be prepared to effect corrective measures immediately on existing work zone traffic control devices.

2. Attend preconstruction meeting and all project meetings where traffic control management is discussed.

3. Be available for meetings or discussions with the Engineer upon request or within 36 hours.

4. Coordinate a Traffic Incident Management meeting each year before construction work begins with ODOT and the Safety Forces that will respond to incidents on the project. Items to be discussed will be the:

    a. Traffic Incident Management Plan (TIMP);
    b. Emergency Response and Notification;
    c. Project work/phasing concerns (e.g., ramp closures); and
    d. Responders concerns.

5. Be aware of, and coordinate if necessary, all traffic control operations, including those of subcontractors and suppliers.

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

7. Coordinate meetings with ODOT personnel, LEOs and other applicable entities before each plan phase switch to discuss work zone traffic control.

8. Ensure compliance with the contract documents for signs, barricades, temporary concrete barrier, pavement markings, portable message signs, and other traffic control devices on a daily basis; and facilitate any corrective action necessary.

9. Notify the Contractor of the need for cleaning and maintenance of all traffic control devices, including the covering and removal of inapplicable signs.

10. Inspect, evaluate, propose necessary modifications to, and document the effectiveness of, the traffic control devices and/or traffic operations on a DAILY BASIS (7 days a week). In addition, a 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 traffic control setup (day and night review).
    b. Daily traffic control setup and removal.
    c. When construction staging causes a change in the traffic control setup.
    d. Crash occurrences within the construction area.
    e. Removal of traffic control devices at the end of a phase or project.
    f. All other emergency traffic control needs.

11. Complete the Department approved Long Term Inspection form (CA-D-8) after each inspection as required in # 10 and submit it to the Engineer the following work day. These reports shall include a checklist of all traffic control 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 corrective actions and the dates by which such corrections were, or will be, completed. A copy of this document can be found in the current revision of the Department of Transportation Construction Inspection Forms Manual.

12. Verify that all flagging operations are being conducted per the Ohio Manual of Uniform Traffic Control Devices.

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

14. Identify and contact all possible response personnel; preplan and keep an updated roster with phone numbers:

    a. Federal, State, and local transportation agencies (Traffic Management Center);
    b. Regional, county or local 911 dispatch; and
    c. Towing and recovery providers.

15. Comply with the provisions of OMUTCD Chapter 6I, Control of Traffic Through Traffic Incident Management Areas.

16. Propose a response/action plan to:

    a. Establish alternate route plans per the provided ODOT Playbook;
    b. Remove traffic demand from impacted roadway(s);
    c. Divert traffic to routes that can accommodate demands;
    d. Detour traffic away from sensitive areas (such as schools, hospitals, etc.);
    e. Discuss methods of determining a staging area for responders within or near the construction zone; and
    f. Discuss methods of developing ingress and egress sites within the construction zone.

    The response/action plan shall be submitted to ODOT for acceptance before the Contractor's first day of work.

17. Perform, at a minimum, the following functions in incident detection and verification:

    a. Call 911/ notify Traffic Management Center and provide the following:

        i. Location – including milepost number and direction of travel.
        ii. Number and type of vehicles involved.
        iii. Estimated extent of damage or injury.
        iv. Estimated number of patients involved.
        v. Any potential hazardous conditions.
        vi. The placard number on any hazardous materials placard from a safe distance.

    b. Initiate traffic management / provide traffic control.
    c. Assist motorist with disabled vehicles.
    d. Recommend roadway repair needs.
    e. Provide repair resources.

18. Attend post-incident debriefings if required.

The Department will deduct the prorated daily amount of the unit price bid for the WTS for any day on which the Contractor fails to perform the duties set forth above. Should the Contractor's failure to perform any of the duties described above result in a maintenance of traffic safety issue, the Department will deduct the prorated daily amount for Item 614 Maintenance of Traffic from the Contractor's next scheduled estimate.

If three or more failures to perform the duties set forth above occur, the WTS shall be immediately removed from the work in accordance with C&MS 108.05.

In addition to the plan requirements for Worksite Traffic Supervisor, complete a Department-approved inspection form for each day a work zone speed zone is implemented. In the inspection report, note the disposition of all existing and work zone speed limit signing, including the actual times that the work zone speed limit signs were in place each day. Submit these daily inspection reports to the Engineer at least as often as the weekly inspection reports required in Item 10 of the Worksite Traffic Supervisor plan note.

The following estimated quantity has been included for the Worksite Traffic Supervisor:

614, Worksite Traffic Supervisor..... **7 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 of 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.....**21 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 650 feet and 475 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 plan quantity below is based on a total of five (5) PCMS units for duration of seven (7) months each.

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.

614, Portable Changeable Message Sign, As Per Plan.....**35 Sign Month**

SHEET NUM.																PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	15	16	17	18	21	22	23	24	25	26	27	28	28A	01/IMS/PV						
																					ROADWAY	
															2	2	202	42010	2	EACH	ANCHOR ASSEMBLY REMOVED, TYPE E	
							117	120	77	64						378	209	60201	378	STA	LINEAR GRADING, AS PER PLAN	11
															316.5	316.5	606	13000	316.5	FT	GUARDRAIL, TYPE 5	
															1	1	606	26100	1	EACH	ANCHOR ASSEMBLY, TYPE E	
															1	1	606	35100	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
																					EROSION CONTROL	
																1,000	832	30000	1,000	EACH	EROSION CONTROL	
																					DRAINAGE	
25																25	611	98631	25	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	11
2																2	611	98634	2	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	
55																55	611	99151	55	EACH	INLET ADJUSTED TO GRADE, AS PER PLAN	11
5																5	611	99154	5	EACH	INLET RECONSTRUCTED TO GRADE	
25																25	611	99655	25	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	11
2																2	611	99660	2	EACH	MANHOLE RECONSTRUCTED TO GRADE	
5,000																5,000	SPECIAL	61199820	5,000	LB	MISCELLANEOUS METAL	11
																					PAVEMENT	
	500															500	251	01021	500	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN A	12
	650															650	251	01021	650	SY	PARTIAL DEPTH PAVEMENT REPAIR (442), AS PER PLAN B	12
	75															75	253	02000	75	CY	PAVEMENT REPAIR	
							73,303	77,065	19,264	16,671						186,303	254	01001	186,303	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1-1/2"	
							6,613	6,946	1,745	1,511						16,815	407	20000	16,815	GAL	NON-TRACKING TACK COAT	
							2,444	2,575	812	708						6,539	442	00100	6,539	CY	ANTI-SEGREGATION EQUIPMENT	
							3,066	3,221	812	708						7,807	442	10001	7,807	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M, 1-1/2"	
							205	212	127	110						654	617	10101	654	CY	COMPACTED AGGREGATE, AS PER PLAN	12
	8.85															8.85	618	40601	8.85	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	12
	16,260															16,260	875	10000	16,260	LB	LONGITUDINAL JOINT ADHESIVE	
																					WATER WORK	
3																3	638	10801	3	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN	11
																					TRAFFIC CONTROL	
											82	68				150	620	00500	150	EACH	DELINEATOR, POST GROUND MOUNTED	
											50	40				90	620	31200	90	EACH	REMOVAL OF DELINEATOR	
											488	525	155	59		1,227	621	00100	1,227	EACH	RPM	
															60	60	630	02100	60	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
															1	1	630	20600	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 6	
															48	48	630	80100	48	SF	SIGN, FLAT SHEET	
															495	495	630	80224	495	SF	SIGN, OVERHEAD EXTRUSHEET	
															1	1	630	84510	1	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
															3	3	630	84900	3	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
															4	4	630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
															6	6	630	87400	6	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
		300														300	630	97800	300	SF	SIGNING, MISC.: ADDITIONAL SIGNS, GROUND MOUNTED, AS DIRECTED BY THE ENGINEER	15
														0.03		0.03	644	00300	0.03	MILE	CENTER LINE	
													1,464	213		1,677	644	00400	1,677	FT	CHANNELIZING LINE, 8"	
													197	46		243	644	00500	243	FT	STOP LINE	
													1,210	306		1,516	644	00600	1,516	FT	CROSSWALK LINE	
														534		534	644	00700	534	FT	TRANSVERSE/DIAGONAL LINE, YELLOW	
													46	8		54	644	01300	54	EACH	LANE ARROW	
											5					5	644	01410	5	EACH	WORD ON PAVEMENT, 96"	
													11	7		18	644	50100	18	EACH	PAVEMENT MARKING, MISC.: WRONG WAY ARROW	

CALCULATED KDH
CHECKED EMK

GENERAL SUMMARY

CUY-90-16.45

SHEET NUM.																PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	15	16	17	18	21	22	23	24	25	26	27	28	28A	01/IMS/PV						
											4.7	4.36	2.9	1.42		13.38	646	10010	13.38	MILE	EDGE LINE, 6"	
											5.22	4.57	0.15	0.03		9.97	646	10110	9.97	MILE	LANE LINE, 6"	
											3,126	4,333				7,459	646	10310	7,459	FT	CHANNELIZING LINE, 12"	
											320	516				836	646	10620	836	FT	CHEVRON MARKING	
											3					3	646	20350	3	EACH	LANE REDUCTION ARROW	
											1,174	194				1,368	646	20504	1,368	FT	DOTTED LINE, 6"	
											2,604	4,736				7,340	646	20510	7,340	FT	DOTTED LINE, 12"	
		LS														LS	SPECIAL	69098400	LS		INVENTORY EXISTING PAVEMENT MARKINGS	13
																					TRAFFIC SIGNALS	
		5														5	632	26501	5	EACH	DETECTOR LOOP, AS PER PLAN	13
																					MAINTENANCE OF TRAFFIC	
				600												600	614	11110	600	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
					7											7	614	11500	7	MNTH	WORKSITE TRAFFIC SUPERVISOR	
						21										21	614	12484	21	EACH	WORK ZONE INCREASED PENALTIES SIGN	
			250													250	614	13000	250	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
						35										35	614	18601	35	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	18
			9.88													9.88	614	20101	9.88	MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT, AS PER PLAN (6")	15
			9.88													9.88	614	20550	9.88	MILE	WORK ZONE LANE LINE, CLASS III, 642 PAINT	
			0.03													0.03	614	21100	0.03	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	
			0.03													0.03	614	21550	0.03	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
			13.22													13.22	614	22101	13.22	MILE	WORK ZONE EDGE LINE, CLASS I, 642 PAINT, AS PER PLAN (6")	15
			13.22													13.22	614	22350	13.22	MILE	WORK ZONE EDGE LINE, CLASS III, 642 PAINT	
			6,657													6,657	614	23201	6,657	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT, AS PER PLAN (12")	15
			1,677													1,677	614	23201	1,677	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT, AS PER PLAN (8")	15
			8,334													8,334	614	23680	8,334	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 642 PAINT	
			5,432													5,432	614	24201	5,432	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, AS PER PLAN (12")	15
			1,652													1,652	614	24201	1,652	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, AS PER PLAN (6")	15
			7,084													7,084	614	24610	7,084	FT	WORK ZONE DOTTED LINE, CLASS III, 642 PAINT	
			534													534	614	25200	534	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT	
			534													534	614	25620	534	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS III, 642 PAINT	
			243													243	614	26200	243	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
			243													243	614	26610	243	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
			1,466													1,466	614	27200	1,466	FT	WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT	
			1,466													1,466	614	27620	1,466	FT	WORK ZONE CROSSWALK LINE, CLASS III, 642 PAINT	
			54													54	614	30200	54	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
			54													54	614	30650	54	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	
			5													5	614	31650	5	EACH	WORK ZONE WORD ON PAVEMENT, 96", CLASS I, 642 PAINT	
			5													5	614	31670	5	EACH	WORK ZONE WORD ON PAVEMENT, 96", CLASS III, 642 PAINT	
																					INCIDENTALS	
																LS	108	30000	LS		CPM PROGRESS SCHEDULE SHORT DURATION PROJECTS	
																LS	614	11000	LS		MAINTAINING TRAFFIC	
																LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
																LS	624	10000	LS		MOBILIZATION	

CALCULATED KDH
CHECKED EMK

GENERAL SUMMARY

CUY-90-16.45

2.0
4.2

I:\ProjectData\CUY\99593\Design\Roadway\Sheets\99593_GG002.dgn Sheet 1/10/2018 7:27:32 AM dbrauer

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	209 LINEAR GRADING, AS PER PLAN	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1-1/2"	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, 1-1/2"	617 COMPACTED AGGREGATE, AS PER PLAN						
					FT.	FT.	FT.	FT.	SQ. YD.	STA	SY	GAL	CY	CY	CY						
			℄ IR-90 Eastbound																		
		1	73+96.25	76+85.51	289.26	61.5	61.5	61.5	1977	3	1977	178	83	83	6						
		1	76+85.51	79+53.38	267.87	61.5	100	80.8	2404	3	2404	217	101	101	5						
		1	79+53.38	80+09.31	55.93	61.5	61.5	61.5	383	1	383	35	16	16	2						
		1	80+09.31	83+09.31	300.00	61.5	52.5	57.0	1900	3	1900	171	80	80	6						
		1	83+09.31	85+09.31	200.00	52.5	52.5	52.5	1167	2	1167	106	49	49	4						
			EQUATION: 85+09.31 BK = 0+00.00 AH																		
		1	0+00.00	2+00.00	200.00	52.5	52.5	52.5	1167	2	1167	106	49	49	4						
		1	2+00.00	5+02.76	302.76	52.5	93	72.8	2448	4	2448	221	102	102	6						
		1	5+02.76	12+13.52	710.76	52.5	52.5	52.5	4147	8	4147	374	173	173	14						
		1	12+13.52	13+90.00	176.48	86	63	74.5	1461	2	1461	132	48	61	4						
		1	13+90.00	20+00.00	610.00	63	63	63.0	4270	7	4270	385	132	178	12						
		1	20+00.00	20+82.61	82.61	63	59	61.0	560	1	560	51	18	24	2						
		1	20+82.61	22+11.48	128.87	59	91	75.0	1074	2	1074	97	35	45	3						
		1	22+11.48	25+31.60	320.12	52.5	52.5	52.5	1868	4	1868	169	54	78	6						
		1	25+31.60	27+09.87	178.27	81	64	72.5	1437	2	1437	130	47	60	4						
			EQUATION: 27+09.87 BK = 26+61.13 AH																		
		1	26+61.13	30+07.11	345.98	64	55.5	59.8	2297	4	2297	207	70	96	7						
		1	30+07.11	33+64.58	357.47	55.5	49	52.3	2076	4	2076	187	60	87	7						
		1	33+64.58	36+00.00	235.42	77.5	65	71.3	1864	3	1864	168	60	78	5						
		1	36+00.00	39+94.14	394.14	65	65	65.0	2847	4	2847	257	89	119	8						
		1	39+94.14	42+64.65	270.51	65	94	79.5	2390	3	2390	216	79	100	6						
		1	42+64.65	54+28.07	1163.42	52.5	52.5	52.5	6787	12	6787	611	194	283	22						
		1	54+28.07	55+51.08	123.01	75	64.5	69.8	954	2	954	86	31	40	3						
		1	55+51.08	67+00.00	1148.92	64.5	64.5	64.5	8234	12	8234	742	256	344	22						
		1	67+00.00	68+54.71	154.71	64.5	112	88.3	1518	2	1518	137	52	64	3						
		1	68+54.71	70+64.85	210.14	64.5	64.5	64.5	1507	3	1507	136	47	63	4						
			Baseline IR-90 Eastbound Innerbelt Curve																		
		1	82+94.97	83+56.14	61.17	64.5	64.5	64.5	439	1	439	40	14	19	2						
		1	83+56.14	84+65.05	108.91	64.5	94.5	79.5	963	2	963	87	32	41	3						
		1	84+65.05	84+91.16	26.11	94.5	51.5	73.0	212	1	212	20	7	9	1						
		1	84+91.16	86+93.02	201.86	51.5	51.5	51.5	1156	3	1156	105	33	49	4						
			℄ IR-90 Shoreway																		
		1	85+88.93	94+94.05	905.12	51.5	51.5	51.5	5180	10	5180	467	147	216	17						
		1	94+94.05	104+61.18	967.13	107.5	76.5	92.0	9887	10	9887	890	339	412	18						
			Rumble Strips																		
		1	Total Length = (10 at 22' Each)		220.00			52.0	1271	-3	-1271	-115	-53	-53	-5						
SUBTOTALS										117	73303	6613	2444	3066	205						
TOTALS CARRIED TO GENERAL SUMMARY										117	73303	6613	2444	3066	205						
PLAN SPLIT #1 TOTAL										117	73303	6613	2444	3066	205						
PLAN SPLIT #2 TOTAL																					

CALCULATED KDH
CHECKED EMK

PAVEMENT SUBSUMMARY - MAINLINE

CUY-90-16.45

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	209 LINEAR GRADING, AS PER PLAN	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1-1/2"	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, 1-1/2"	617 COMPACTED AGGREGATE, AS PER PLAN						
					FT.	FT.	FT.	FT.	SQ. YD.	STA	SY	GAL	CY	CY	CY						
			IR-90 Westbound																		
		1	73+96.25	78+66.68	470.43	78	78	78.0	4078	5	4078	368	170	170	9						
		1	78+66.68	80+23.10	156.42	78	99	88.5	1539	2	1539	139	65	65	3						
		1	80+23.10	85+09.31	486.21	52.5	52.5	52.5	2837	5	2837	256	119	119	10						
			EQUATION: 85+09.31 BK = 0+00.00 AH																		
		1	0+00.00	8+04.29	804.29	52.5	52.5	52.5	4692	9	4692	423	196	196	15						
		1	8+04.29	15+09.07	704.78	52.5	88	70.3	5502	8	5502	496	230	230	14						
		1	15+09.07	17+46.30	237.23	52.5	52.5	52.5	1384	3	1384	125	40	58	5						
		1	17+46.30	19+00.00	153.70	99	64	81.5	1392	2	1392	126	47	58	3						
		1	19+00.00	27+09.87	809.87	64	64	64.0	5760	9	5760	519	179	240	15						
			EQUATION: 27+09.87 BK = 26+61.13 AH																		
		1	26+61.13	27+30.00	68.87	64	64	64.0	490	1	490	45	16	21	2						
		1	27+30.00	28+43.87	113.87	64	85.5	74.8	946	2	946	86	31	40	3						
		1	28+43.87	31+97.67	353.80	52.5	52.5	52.5	2064	4	2064	186	59	86	7						
		1	31+97.67	34+50.00	252.33	95	63.5	79.3	2222	3	2222	200	74	93	5						
		1	34+50.00	39+00.00	450.00	63.5	63.5	63.5	3175	5	3175	286	98	133	9						
		1	39+00.00	40+68.34	168.34	63.5	82	72.8	1361	2	1361	123	44	57	4						
		1	40+68.34	53+97.73	1329.39	52.5	52.5	52.5	7755	14	7755	698	222	324	25						
		1	53+97.73	55+82.23	184.50	90	64	77.0	1579	2	1579	143	52	66	4						
		1	55+82.23	65+11.66	929.43	64	64	64.0	6610	10	6610	595	205	276	18						
		1	65+11.66	67+65.15	253.49	64	99	81.5	2296	3	2296	207	77	96	5						
		1	67+65.15	70+64.85	299.70	64	64	64.0	2132	3	2132	192	66	89	6						
			Baseline IR-90 Westbound Innerbelt Curve																		
		1	78+22.89	79+09.80	109.35	50.5	56.5	53.5	651	2	651	59	19	28	3						
		1	79+09.80	82+76.10	366.30	76	37	56.5	2300	4	2300	207	68	96	7						
		1	82+76.10	84+08.71	132.61	69	67.5	68.3	1006	2	1006	91	32	42	3						
		1	84+08.71	87+82.43	373.72	67.5	63.5	65.5	2720	4	2720	245	85	114	7						
			℄ IR-90 Shoreway																		
		1	85+88.93	104+61.18	1872.25	63.5	63.5	63.5	13210	19	13210	1189	408	551	35						
			Rumble Strips																		
		1	Total Length = (10 at 22' Each)		220.00			26.0	636	-3	-636	-58	-27	-27	-5						
			SUBTOTALS							120	77065	6946	2575	3221	212						
			TOTALS CARRIED TO GENERAL SUMMARY							120	77065	6946	2575	3221	212						
			PLAN SPLIT #1 TOTAL							120	77065	6946	2575	3221	212						
			PLAN SPLIT #2 TOTAL																		

CALCULATED KDH
CHECKED EMK

PAVEMENT SUBSUMMARY - MAINLINE

CUY-90-16.45

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	209 LINEAR GRADING, AS PER PLAN	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1-1/2"	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, 1-1/2"	617 COMPACTED AGGREGATE, AS PER PLAN						
				FT.	FT.	FT.	FT.	SQ. YD.	STA	SY	GAL	CY	CY	CY						
			Ramp E-11																	
		1	2+66.33 4+10.30	143.97	29	37	33.0	528	2	528	48	22	22	3						
		1	4+10.30 4+98.77	88.47	37	35	36.0	354	1	354	32	15	15	2						
		1	4+98.77 6+26.30	127.53	27.5	27.5	27.5	390	2	390	36	17	17	3						
		1	6+26.30 6+70.83	44.53			CADD	123	1	124	12	6	6	1						
			Ramp E-11 Spur																	
		1	6+00.00 6+55.69	157.00			CADD	308	2	309	28	13	13	3						
			Ramp E-13																	
		1	0+00.00 5+00.00	500.00			CADD	1939	5	1939	175	81	81	10						
			Ramp 3																	
		1	3+04.58 8+00.00	495.42	33.5	33.5	33.5	1844	5	1845	166	77	77	10						
		1	8+00.00 9+13.79	113.79			CADD	369	2	370	34	16	16	3						
			Ramp 4																	
		1	1+83.15 7+92.87	609.72	24	24	24.0	1626	7	1626	147	68	68	12						
		1	7+92.07 8+48.82	56.75			CADD	276	1	276	25	12	12	2						
			Ramp 5																	
		1	0+97.87 6+09.12	511.25	27	27	27.0	1534	6	1534	139	64	64	10						
		1	6+09.12 6+29.02	19.90			CADD	163	1	164	15	7	7	1						
			Ramp 6																	
		1	1+50.73 6+62.58	511.85	32	32	32.0	1820	6	1820	164	76	76	10						
		1	6+62.58 7+40.41	77.83			CADD	206	1	206	19	9	9	2						
			Ramp 7																	
		1	2+06.30 6+32.93	426.63	30	30	30.0	1422	5	1423	128	60	60	8						
		1	6+32.93 7+94.16	161.23	30	30	30.0	537	2	538	49	23	23	3						
		1	7+94.16 8+12.58	18.42			CADD	87	1	88	8	4	4	1						
			Ramp 8																	
		1	1+43.43 6+77.28	533.85	21	29	25.0	1483	6	1483	134	62	62	10						
		1	6+77.28 7+10.86	33.58			CADD	96	1	96	9	4	4	1						
			Ramp 9																	
		1	2+34.05 8+62.62	628.57	23	23	23.0	1606	7	1607	145	67	67	12						
		1	8+62.62 9+10.10	47.48			CADD	156	1	157	15	7	7	1						
			Ramp 10																	
		1	1+14.56 5+81.61	467.05	25	25	25.0	1297	5	1298	117	55	55	9						
		1	5+81.61 8+25.08	243.47	23	23	23.0	622	3	623	56	26	26	5						
		1	8+25.08 8+54.28	29.20			CADD	78	1	79	8	4	4	1						
			Ramp 10 Spur																	
		1	5+81.61 7+00.00	118.39	17	17	17.0	224	2	224	21	10	10	3						
		1	7+00.00 7+45.00	45.00			CADD	163	1	163	15	7	7	1						
SUBTOTALS									77	19264	1745	812	812	127						
TOTALS CARRIED TO GENERAL SUMMARY									77	19264	1745	812	812	127						
PLAN SPLIT #1 TOTAL									77	19264	1745	812	812	127						
PLAN SPLIT #2 TOTAL																				

CALCULATED KDH
CHECKED EMK

PAVEMENT SUBSUMMARY - RAMPS

CUY-90-16.45

REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	209 LINEAR GRADING, AS PER PLAN	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN, 1-1/2"	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, 1-1/2"	617 COMPACTED AGGREGATE, AS PER PLAN						
					FT.	FT.	FT.	FT.	SQ. YD.	STA	SY	GAL	CY	CY	CY						
			Ramp 11																		
		1	2+50.34	8+41.85	591.51	32	31	31.5	2070	6	2071	187	87	87	11						
		1	8+41.85	8+96.21	54.36			CADD	178	1	179	17	8	8	2						
			Ramp 12																		
		1	2+69.97	4+06.29	136.32	33	33	33.0	500	2	500	45	21	21	3						
		1	4+06.29	5+23.48	117.19	33	79	56.0	729	2	730	66	31	31	3						
		1	5+23.48	6+94.31	170.83	35	35	35.0	664	2	665	60	28	28	4						
		1	6+94.31	7+88.77	94.46			CADD	347	1	348	32	15	15	2						
			Ramp 12 Spur																		
		1	5+20.93	7+50.00	229.07	34	34	34.0	865	3	866	78	37	37	5						
		1	7+50.00	8+67.81	117.81			CADD	376	2	376	34	16	16	3						
			Ramp 13																		
		1	1+67.54	3+36.66	169.12	24.5	32	28.3	531	2	531	48	23	23	4						
		1	3+36.66	5+00.00	163.34	32	32	32.0	581	2	581	53	25	25	4						
		1	5+00.00	7+69.62	269.62	32	34	33.0	989	3	989	89	42	42	5						
		1	7+69.62	8+01.67	32.05			CADD	156	1	156	15	7	7	1						
			Ramp 14																		
		1	1+83.56	3+75.07	191.51	26	26	26.0	553	2	554	50	24	24	4						
		1	3+75.07	7+53.68	378.61	26	26	26.0	1094	4	1094	99	46	46	8						
		1	7+53.68	7+82.77	29.09			CADD	82	1	83	8	4	4	1						
			Ramp 14 Spur																		
		1	4+72.38	6+80.82	208.44	25	25	25.0	579	3	579	53	25	25	4						
			Ramp 15																		
		1	2+19.03	7+36.63	517.60	22	22	22.0	1265	6	1266	114	53	53	10						
		1	7+36.63	8+06.02	69.39			CADD	291	1	292	27	13	13	2						
			Ramp 17																		
		1	1+40.02	8+39.34	699.32	24	24	24.0	1865	7	1865	168	78	78	13						
		1	8+39.34	9+03.63	64.29			CADD	257	1	257	24	11	11	2						
			Ramp 18																		
		1	1+59.21	6+57.99	498.78	24	24	24.0	1330	5	1331	120	56	56	10						
		1	6+57.99	7+61.80	103.81	24	58	41.0	473	2	473	43	20	20	2						
		1	7+61.80	9+62.67	200.87	28	28	28.0	625	3	625	57	27	27	4						
			Ramp 18 Spur																		
		1	7+61.80	8+67.89	117.00	20	20	20.0	260	2	260	24	11	11	3						
SUBTOTALS										64	16671	1511	708	708	110						
TOTALS CARRIED TO GENERAL SUMMARY										64	16671	1511	708	708	110						
PLAN SPLIT #1 TOTAL										64	16671	1511	708	708	110						
PLAN SPLIT #2 TOTAL																					

CALCULATED KDH
CHECKED EMK

PAVEMENT SUBSUMMARY - RAMPS

CUY-90-16.45

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	621 RPM (WHITE)	621 RPM (WHITE/RED)	621 RPM (YELLOW/RED)						644 WORD ON PAVEMENT, 96'	646 LANE REDUCTION ARROW	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"	646 CHANNELIZING LINE, 12"	646 CHEVRON MARKING	646 DOTTED LINE, 6"	646 DOTTED LINE, 12"
				FT	FT	FT	EACH	EACH	EACH						EACH	EACH	MILE	MILE	MILE	FT	FT	FT	FT
		℄ IR-90 Eastbound																					
	1	73+95.77	78+37.37		3	2	13										884	884	884				
	1	78+37.37	79+54.56		2	1	4	7									236	236	236	236	88		
	1	79+54.56	81+00.00		2	1	5	1									292	292	292				
	1	81+00.00	85+09.31		3	2	12										410	410	820				410
		STA 85+09.31 BK= STA 0+00.00 AH																					
	1	0+00.00	4+06.00		3	2	17										406	406	1218				406
	1	4+06.00	5+03.93		2	1	5	6									98	98	294	196	56		
	1	5+03.93	12+13.52		3	2	19									3	710	710	1420			710	
	1	12+13.52	13+00.00		2	1	4	6									87	87	174	174			
	1	13+00.00	21+00.00		3	2	21										800	800	1600				800
	1	21+00.00	21+24.23		2	1	2										25	25	50	25			
	1	21+24.23	22+11.72		2	1	4	6									88	88	176	176			
	1	22+11.72	25+31.60		2	1	9										320	320	640				
	1	25+31.60	26+15.23		2	1	4	6									84	84	168	168			
	1	26+15.23	29+55.17		2	1	10										340	340	680			340	
	1	29+55.17	33+64.58		3	2	12										410	410	820				
							1																
	1	33+64.58	34+73.07		2	1	4	7									109	109	218	218			
	1	34+73.07	40+00.00		3	2	15										527	527	1054				527
	1	40+00.00	41+24.75		2	1	5										125	125	250	25			
	1	41+24.75	42+64.65		2	1	5	8									140	140	280	280	176		
	1	42+64.65	54+28.07		4	3	31										1,164	1,164	2328				
	1	54+28.07	55+03.10		2	1	3	5									76	76	152	152			
	1	55+03.10	66+51.62		4	3	45										1,149	1,149	3447				
	1	66+51.62	67+75.00		2	1	6										124	124	372			124	
	1	67+75.00	68+54.71		2	1	4	5									80	80	240	160			
	1	68+54.71	73+15.03		3	2	13								5		461	461	922				461
		℄ EB IR-90																					
	1	73+15.03	81+16.93		4	3	32										802	802	2406				
	1	81+16.93	84+30.46		2	1	9	9									314	314	628	314			
	1	84+30.46	84+82.17		2	1	3	5									52	52	104	156			
	1	84+82.17	86+93.02		2	1	7										211	211	422				
		℄ IR-90 Shoreway																					
	1	85+88.93	94+94.05		4	3	24										906	906	1812				
	1	94+94.05	99+16.68		3	2	17	23									423	423	1269	846			
	1	99+16.68	104+61.20		3	2	29										545	545	2180				
SUBTOTALS					82	50	394	94							5	3	12398	12398	27556	3126	320	1174	2604
TOTALS CARRIED TO GENERAL SUMMARY					82	50	488								5	3	4.7 MI		5.22 MI	3126	320	1174	2604

CALCULATED JAC
CHECKED KDH

PAVEMENT MARKING SUBSUMMARY - MAINLINE

CUY-90-16.45

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	621 RPM (WHITE)	621 RPM (WHITE/RED)	621 RPM (YELLOW/RED)						644 WORD ON PAVEMENT, 96"		646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"	646 CHANNELIZING LINE, 12"	646 CHEVRON MARKING	646 DOTTED LINE, 6"	646 DOTTED LINE, 12"
				FT	EACH	EACH	EACH	EACH	EACH						EACH		MILE	MILE	MILE	FT	FT	FT	FT
		℄ IR-90 Westbound																					
	1	72+90.06	73+96.25					6									107			214	46		
	1	73+96.25	75+71.83				4	10									176	176	352	352	19		
	1	75+71.83	78+21.00				8	8									250	250	500	250			
	1	78+21.00	85+09.31		3	2	27										689	689	1377				689
		STA 85+09.31 BK= STA 0+00.00 AH																					
	1	0+00.00	13+08.00		5	3	51										1308	1308	2616				1308
	1	13+08.00	15+09.07		2	1	7	12									202	202	403	404			
	1	15+09.07	17+46.30		2	1	7										238	238	475				
	1	17+46.30	18+30.94		2	1	4	6									85	85	170	170	72		
	1	18+30.94	27+76.05		4	3	37										946	946	1891				946
	1	27+76.05	28+43.87		2	1	3	5									68	68	136	136			
	1	28+43.87	31+96.91		2	1	10										354	354	707				
	1	31+96.91	34+50.00		2	1	8	14									254	254	507	508	118		
	1	34+50.00	39+10.35		3	2	19										461	461	921				461
	1	39+10.35	40+68.34		2	1	5	9									158	158	316	316			
	1	40+68.34	53+97.73		5	3	35										1330	1330	2659				
	1	53+97.73	55+98.55		2	1	7	12									201	201	402	402	81		
	1	55+98.55	58+49.00		2	1	8										251	251	501	251			
	1	58+49.00	65+14.07		3	2	26										666	666	1331				666
	1	65+14.07	67+07.80		2	1	9										194	194	388			194	194
	1	67+07.80	67+65.15		2	1	4	4									58	58	115	116			58
	1	67+65.15	71+78.33		3	2	17										414	414	827				414
	1	71+78.33	72+64.35		2	1	4	4									87	87	173	87			
	1	72+64.35	73+15.03		2	1	3	4									51	51	102	102			
		℄ WB IR-90																					
	1	73+15.03	73+51.54		2	1	2	3									37	37	74	74			
	1	73+51.54	79+09.80		3	2	8										559	559	559				
	1	79+09.80	83+61.72		3	2	13	24									452	452	904	904	180		
	1	83+61.72	84+08.71		2	1	3	3									47	47	94	47			
		℄ IR-90 Shoreway																					
	1	85+88.93	104+61.17		6	4	72										1873	1873	5617				
SUBTOTALS					68	40	401	124									11516	11409	24117	4333	516	194	4736
TOTALS CARRIED TO GENERAL SUMMARY					68	40	525										4.34 MI		4.57 MI	4333	516	194	4736

CALCULATED JAC
CHECKED KDH

PAVEMENT MARKING SUBSUMMARY - MAINLINE

CUY-90-16.45

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	621 RPM (YELLOW/YELLOW)	621 RPM (WHITE/RED)	621 RPM (YELLOW/RED)	644 CHANNELIZING LINE, 8"	644 STOP LINE	644 CROSSWALK LINE	644 TRANSVERSE/DIAGONAL LINE, YELLOW	644 LANE ARROW	644 PAVEMENT MARKING, MISC.: WRONG WAY ARROW	644 CENTER LINE	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"	646 CHANNELIZING LINE, 12"	646 CHEVRON MARKING	646 DOTTED LINE, 6"	646 DOTTED LINE, 12"
			FT	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	EACH	MILE	MILE	MILE	MILE	FT	FT	FT	FT
		Ramp E-11																				
	1	2+66.33 4+00.00						2								134	134					
	1	4+00.00 5+00.00						2						2		100	100	100				
	1	5+00.00 6+00.00					3	2	100				3			100	100					
	1	6+00.00 6+63.00					3	1	71	25	50		2			48	48					
		Ramp E-11 Spur																				
	1	6+00.00 6+86.13						2			72		1			87	87					
		Ramp E-13																				
	1	0+00.00 5+00.00						7			50					500	500					
		Ramp 3																				
	1	3+04.58 4+30.00						2								126	126					
	1	4+30.00 6+31.00						3						2		201	201	201				
	1	6+31.00 9+13.79					6	4	225	45	116		6			283	283					
		Ramp 4																				
	1	1+79.46 8+39.31						9			110					660	660					
		Ramp 5																				
	1	0+97.98 6+36.62						7								539	539					
		Ramp 6																				
	1	1+50.56 4+10.00						4						1		260	260					
	1	4+10.00 7+34.00					8	5	313	31	189		10			324	324					
		Ramp 7																				
	1	2+06.30 3+68.00						3								162	162					
	1	3+68.00 6+33.00						4						2		265	265	265				
	1	6+33.00 8+12.58					4	3	155	25	70		6			180	180					
		Ramp 8																				
	1	1+42.60 7+17.52						8			59					575	575					
		Ramp 9																				
	1	2+34.04 9+05.60						9			96					672	672					
		Ramp 10																				
	1	1+14.56 5+71.21						6								457	457					
	1	5+71.21 8+54.28					3	4	32		64					284	284					
		Ramp 10 Spur																				
	1	5+71.21 7+38.00						3								167	167					
		Ramp 11																				
	1	2+50.00 6+50.00						5						1		400	400					
	1	6+50.00 8+97.00					6	4	224	24	196		8			247	247					
		Ramp 12																				
	1	2+71.78 4+06.29						2								135	135					
	1	4+06.29 4+83.46						1								78	78	78				
	1	4+83.46 5+93.80					3	2	91					2		111	111	111				
	1	5+93.80 7+68.88					4	3	160	22	63		6			176	176					
		Ramp 12 Spur																				
		5+27.77 7+50.00						3						1		223	223					
	1	7+50.00 8+61.86					3	2	93	25	75		4			112	112					
		SUBTOTALS					**43**	**112**	**1464**	**197**	**1210**		**46**	**11**		**7606**	**7606**	**755**				
		TOTALS CARRIED TO GENERAL SUMMARY				**155**			**1464**	**197**	**1210**		**46**	**11**		**2.88 MI**		**0.14 MI**				

CALCULATED JAC
CHECKED KDH

PAVEMENT MARKING SUBSUMMARY - RAMPS

CUY-90-16.45

SHEET NO.	PLAN SPLIT NO.	STATION TO STATION	LENGTH	620 DELINEATOR, POST GROUND MOUNTED	620 REMOVAL OF DELINEATOR	621 RPM (YELLOW/YELLOW)	621 RPM (WHITE/RED)	621 RPM (YELLOW/RED)	644 CHANNELIZING LINE, 8"	644 STOP LINE	644 CROSSWALK LINE	644 TRANSVERSE/DIAGONAL LINE, YELLOW	644 LANE ARROW	644 PAVEMENT MARKING, MISC.: WRONG WAY ARROW	644 CENTER LINE	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"	646 CHANNELIZING LINE, 12"	646 CHEVRON MARKING	646 DOTTED LINE, 6"	646 DOTTED LINE, 12"
			FT	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	EACH	MILE	MILE	MILE	MILE	FT	FT	FT	FT
		Ramp 13																				
	1	1+67.54 2+62.77						2								96	96					
	1	2+62.77 6+28.37						5				534				366	366					
	1	6+28.37 7+81.00				3				14	60		2		138	153	153					
		Ramp 14																				
	1	1+83.56 4+54.57						4								272	272					
	1	4+55.00 4+75.00						1								20	20					
	1	4+75.00 6+00.00						2						2		125	125	125				
	1	6+00.00 7+78.33					5	3	167		78		6			179	179					
		Ramp 14 Spur																				
	1	4+54.57 6+80.82						3			94			2		227	227					
		Ramp 15																				
	1	2+19.77 8+06.02						8			74					587	587					
		Ramp 17																				
	1	1+40.08 9+15.50						10		16						776	776					
		Ramp 18																				
	1	1+63.91 7+35.61						8						1		572	572					
	1	7+35.61 9+62.67						3	46					1		228	228					
		Ramp 18 Spur																				
	1	7+61.80 8+67.89						2		16				1		117	117					
		SUBTOTALS				3	5	51	213	46	306	534	8	7	138	3718	3718	125				
		TOTALS CARRIED TO GENERAL SUMMARY				59			213	46	306	534	8	7	0.03 MI	1.41 MI		0.02 MI				

CALCULATED JAC
CHECKED KDH

PAVEMENT MARKING SUBSUMMARY - RAMPS

CUY-90-16.45

28
42

I:\ProjectData\CUY\99593\Design\Roadway\Sheets\99593_GS009.dgn Sheet 11/17/2017 3:02:26 PM khamilt1

SIGNING SUBSUMMARY												
NO.	STA.	CODE	SIZE	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	630 REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL		630 GROUND MOUNTED SUPPORT, NO. 2 POST	630 OVERHEAD SIGN SUPPORT, TYPE TC 12.30 DESIGN 6	630 SIGN, FLAT SHEET	630 SIGN, OVERHEAD EXTRUSHEET	630 RIGID OVERHEAD SIGN SUPPORT FOUNDATION
				EACH	EACH	EACH		FT	EACH	SF	SF	EACH
R-1	RAMP 5 STA. 4+00	W3-2	4X4	1	2							
S-1	RAMP 5 STA. 1+75	W4-3L	4X4	1	2			60		32.0		
S-2	16+00	W4-3R	4X4	1						16.0		
OS-1	74+27		15X11			1					165.0	
		E1-H5P	10X2.5			1					25.0	
OS-2	2+33		13X10			1					130.0	
		E1-H5P	9X2.5			1					22.5	
OS-3	11+50		13X10			1			1		130.0	1
		E1-H5P	9X2.5			1					22.5	
TOTALS				3	4	6		60	1	48.0	495.0	1

GUARDRAIL SUBSUMMARY						
NO.	STA. FROM	STA. TO	202 ANCHOR ASSEMBLY REMOVED, TYPE E	606 GUARDRAIL, TYPE 5	606 ANCHOR ASSEMBLY, TYPE E	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2
			EA	FT	EA	EA
GR1	3+50	4+63	1	62.5	1	
GR2	10+30	13+09	1	254		1
TOTALS			2	316.5	1	1

CALCULATED KMD
CHECKED TMP

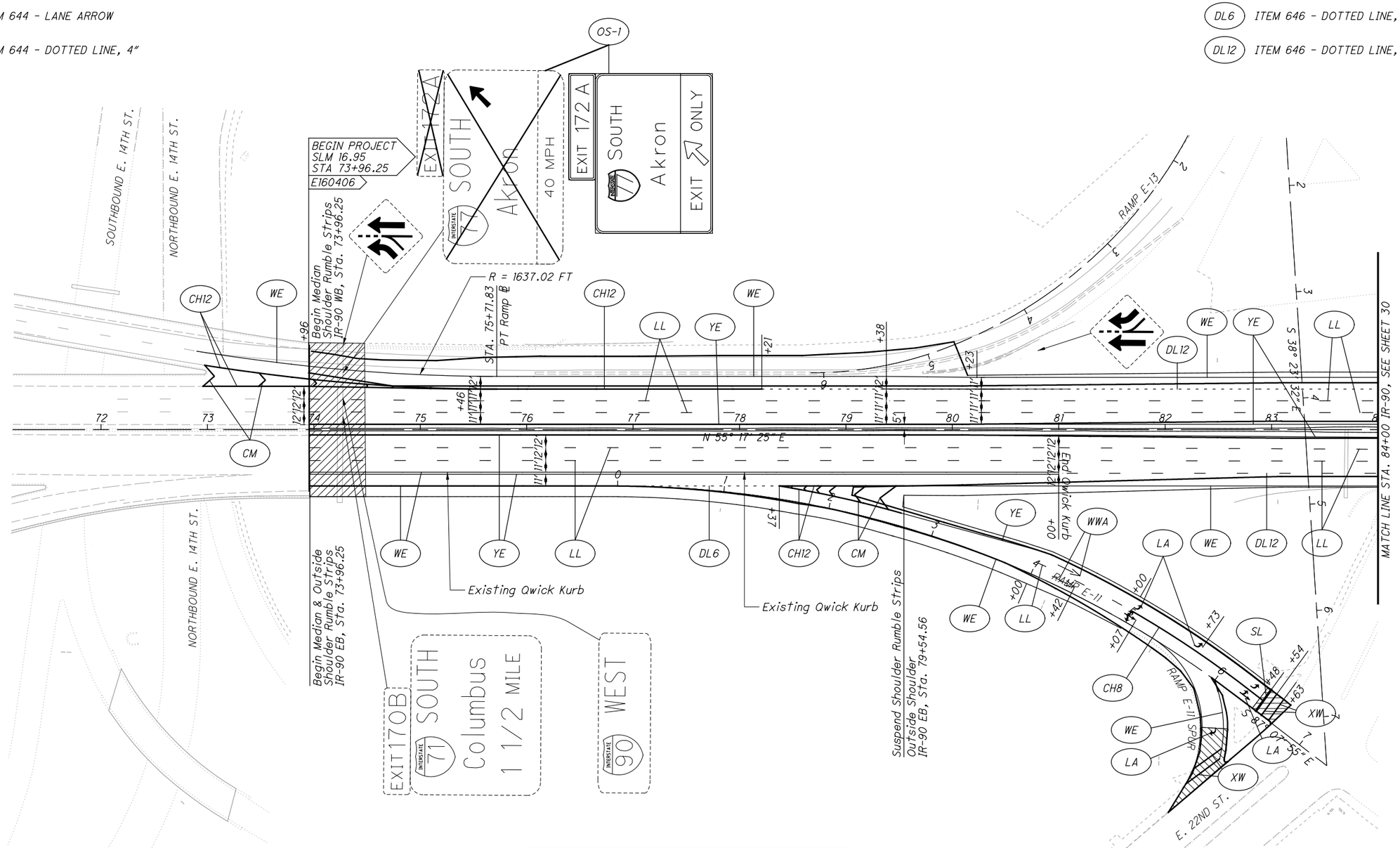
GUARDRAIL AND SIGNING SUBSUMMARY

GUARDRAIL

CUY-90-16.45

PAVEMENT MARKING LEGEND

CH8 — ITEM 644 - CHANNELIZING LINE, 8"	WWA — ITEM 644 - PAVEMENT MARKING, MISC.: WRONG-WAY ARROW	CLDS — ITEM 644 - CENTER LINE (DOUBLE SOLID)	LL — ITEM 646 - LANE LINE, 6"
SL — ITEM 644 - STOP LINE	WORD — ITEM 644 - WORD ON PAVEMENT, 96"	WE — ITEM 646 - EDGE LINE, 6" (WHITE)	CH12 — ITEM 646 - CHANNELIZING LINE, 12"
XW — ITEM 644 - CROSSWALK LINE	TDL — ITEM 644 - TRANSVERSE/DIAGONAL LINE (YELLOW)	YE — ITEM 646 - EDGE LINE, 6" (YELLOW)	CM — ITEM 646 - CHEVRON MARKING
LA — ITEM 644 - LANE ARROW			DL6 — ITEM 646 - DOTTED LINE, 6"
DL4 — ITEM 644 - DOTTED LINE, 4"			DL12 — ITEM 646 - DOTTED LINE, 12"



BUTT JOINT AS PER BP-3.1

CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
SIGNING SUBSUMMARY	28a
SIGN DETAILS	41a

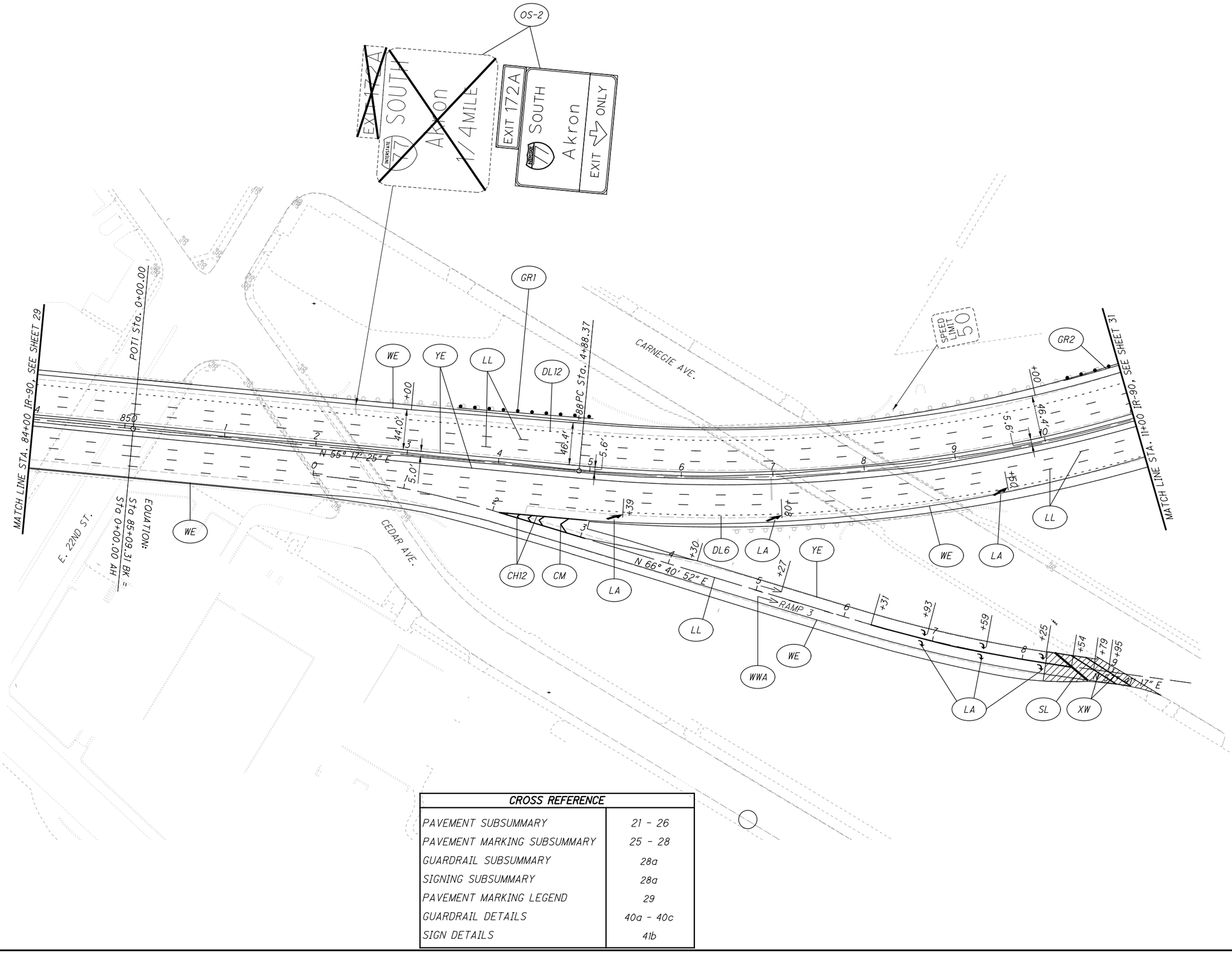
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90, STA 73+96.25 TO 84+00
CUY-90-16.45

29
42

I:\ProjectData\CUY\99593\ProjAdmin\PlanReviews\2017-11-08_Michael Baker_Aux Lane Final Submittal\CADD\99593_GP001.dgn Sheet 11/17/2017 3:02:29 PM khamilt1



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
GUARDRAIL SUBSUMMARY	28a
SIGNING SUBSUMMARY	28a
PAVEMENT MARKING LEGEND	29
GUARDRAIL DETAILS	40a - 40c
SIGN DETAILS	41b

HORIZONTAL SCALE IN FEET
0 25 50 100

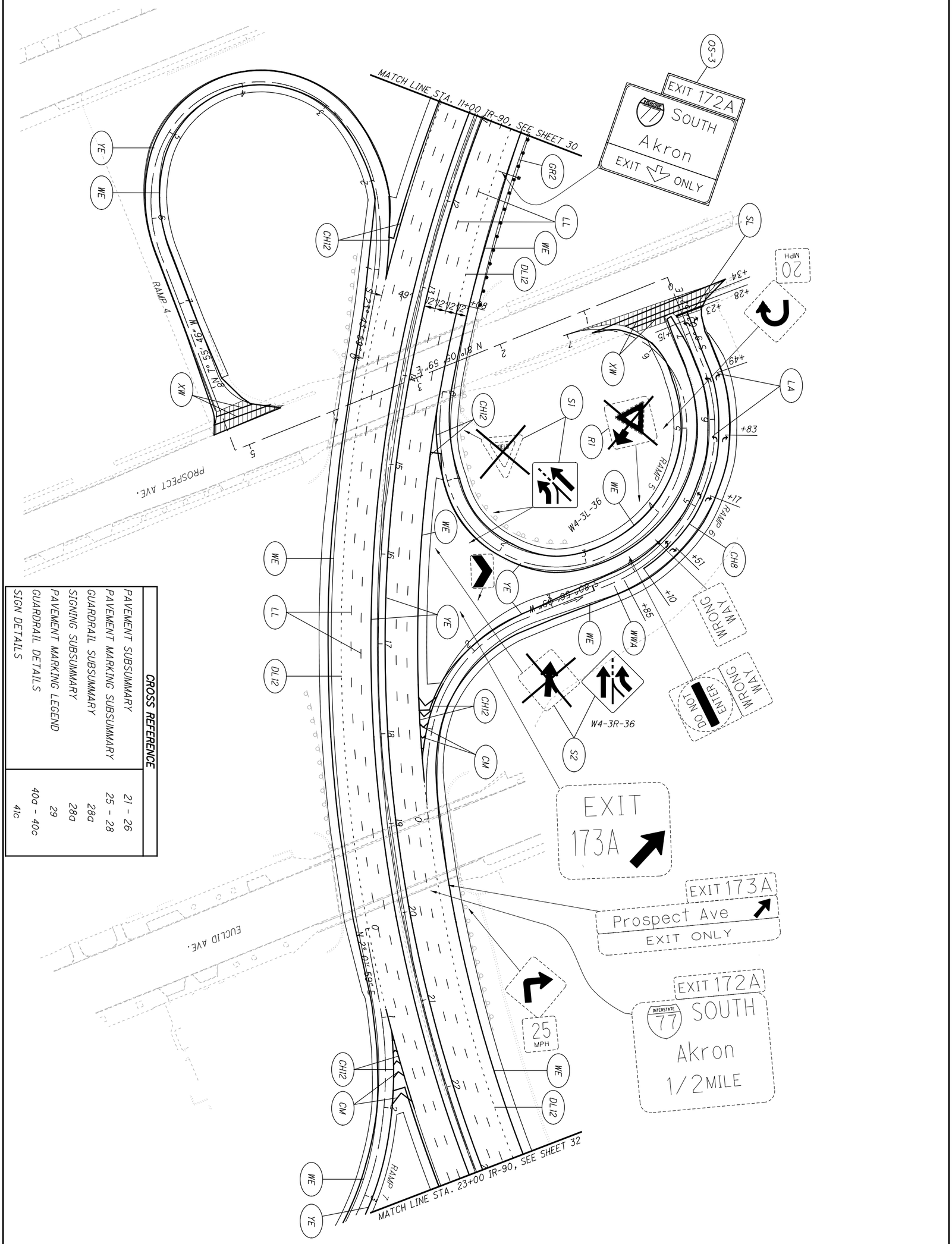
CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90, STA 84+00 TO STA 11+00

CUY-90-16.45

30
42

I:\ProjectData\CUY\99593\ProjAdmin\PlanReviews\2017-11-08_Michael Baker_Aux Lane Final Submittal\CADD\99593_GP003.dgn Sheet 11/17/2017 3:02:33 PM khamilt1



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
GUARDRAIL SUBSUMMARY	28a
SIGNING SUBSUMMARY	28a
PAVEMENT MARKING LEGEND	29
GUARDRAIL DETAILS	40a - 40c
SIGN DETAILS	41c

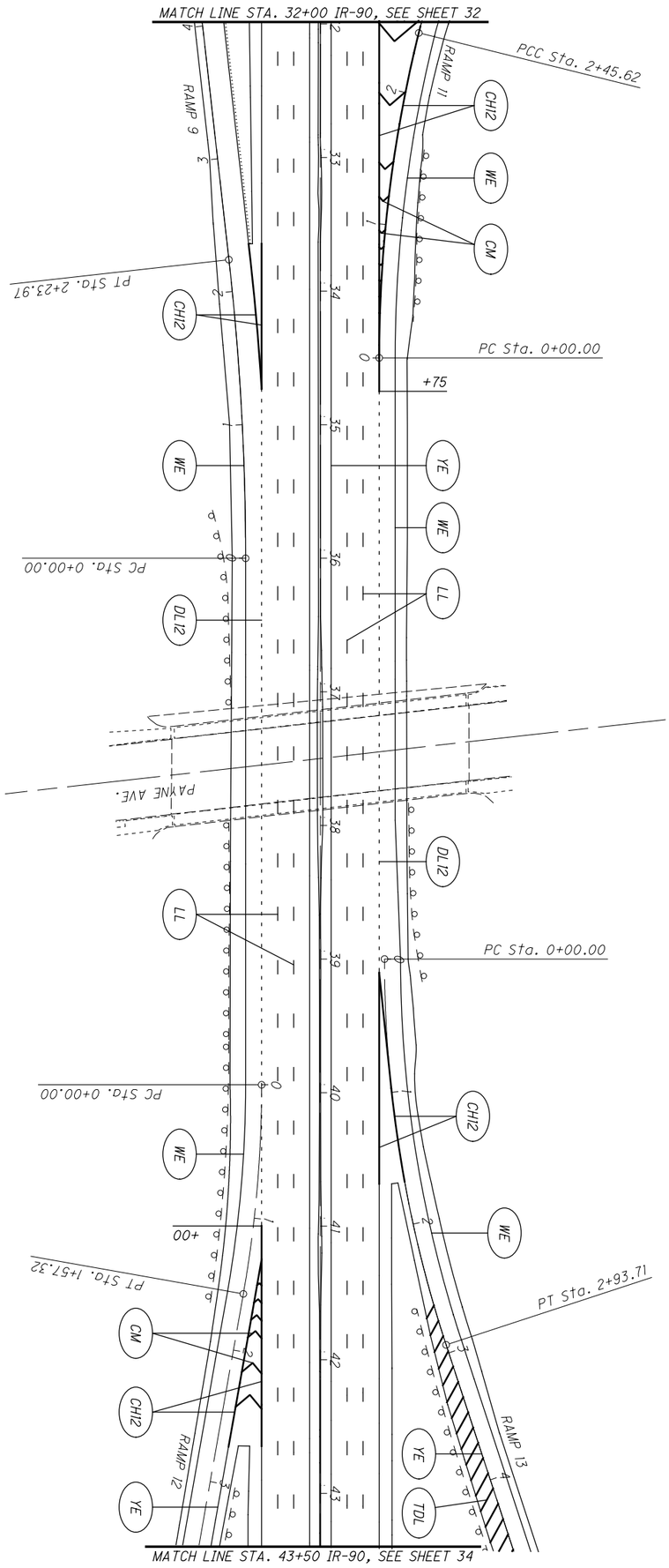
31/42	CUY-90-16.45	PLAN SHEET IR-90, STA 11+00 TO STA 23+00	CALCULATED KDH CHECKED EMK	0 50 25 100 HORIZONTAL SCALE IN FEET

CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

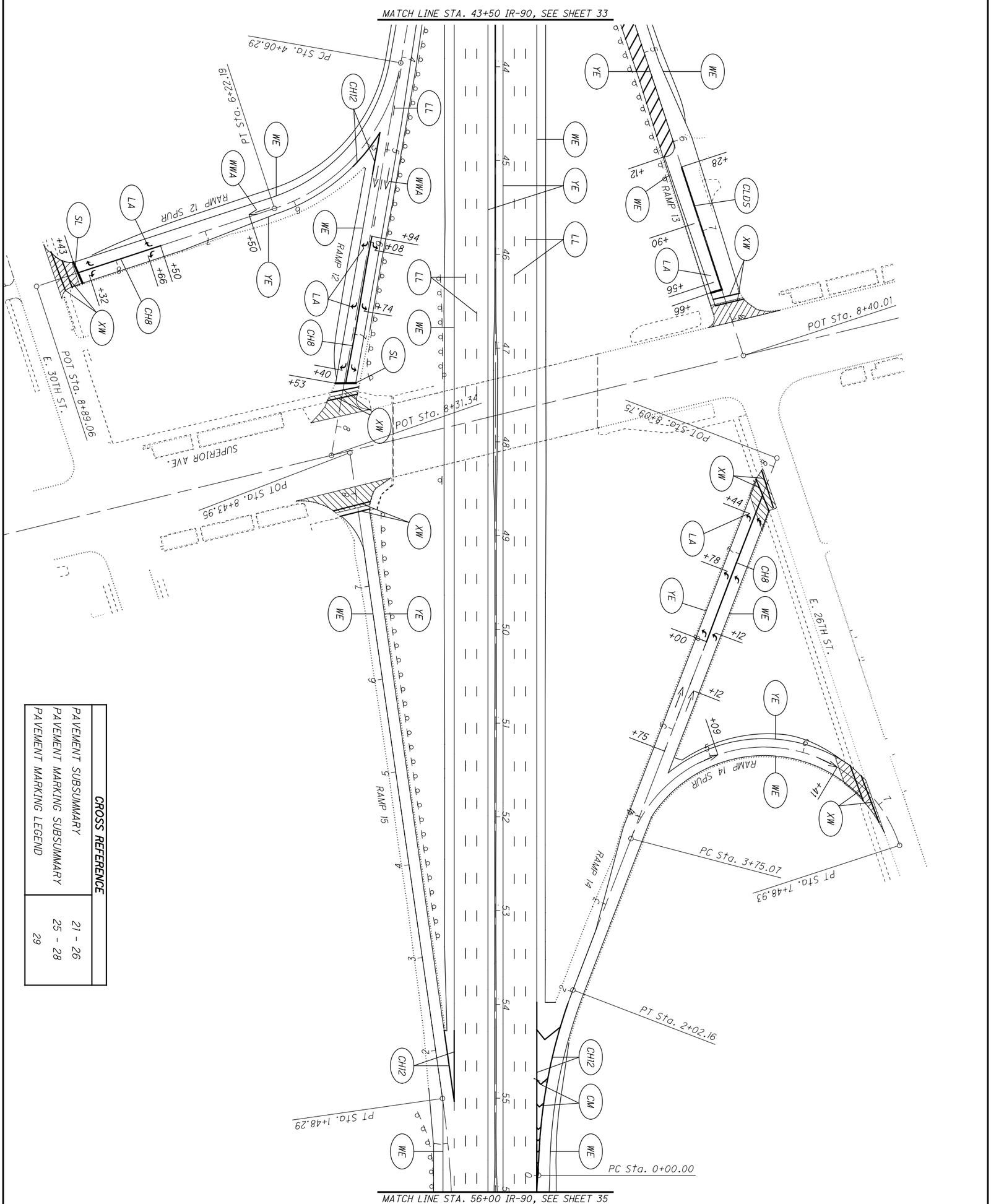
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

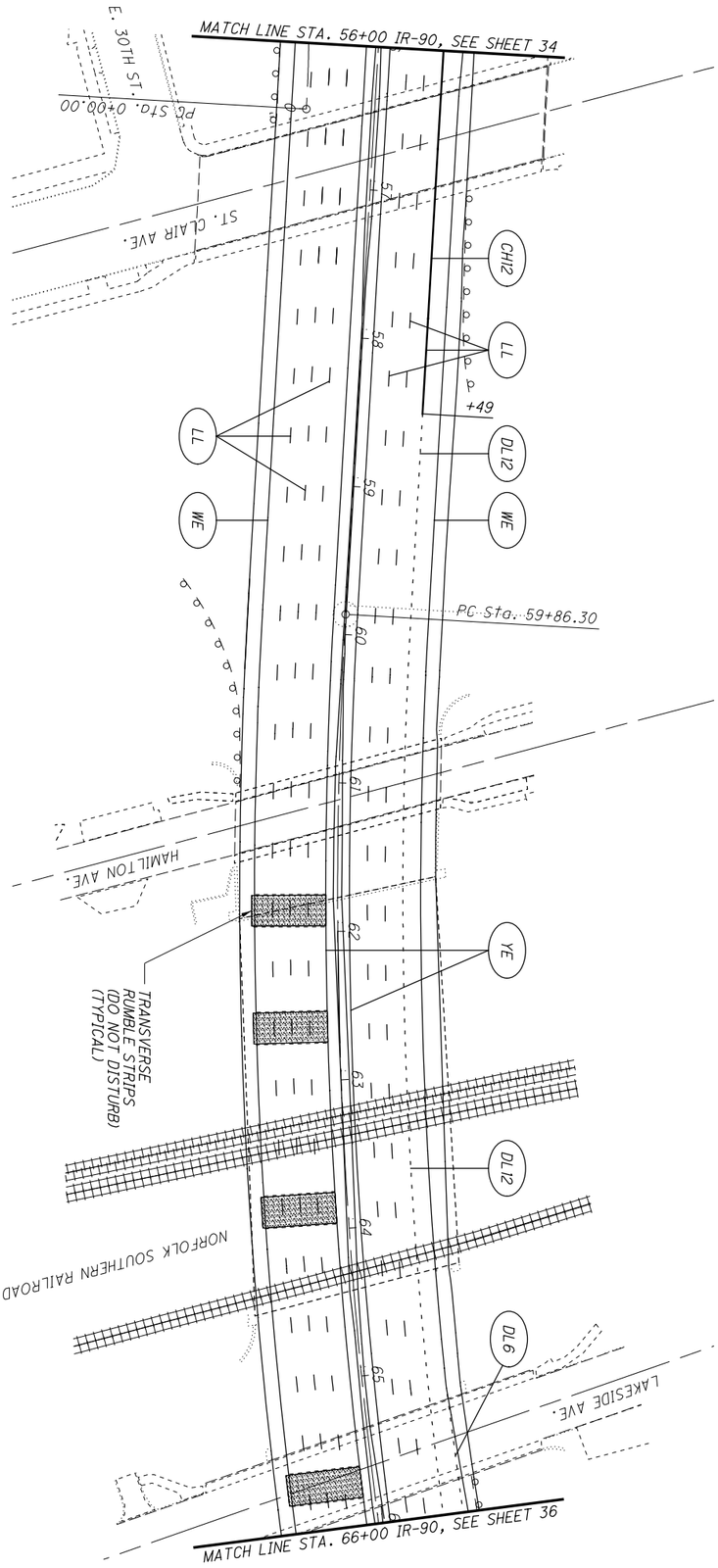
PLAN SHEET
IR-90, STA 23+00 TO STA 32+00
CUY-90-16.45



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

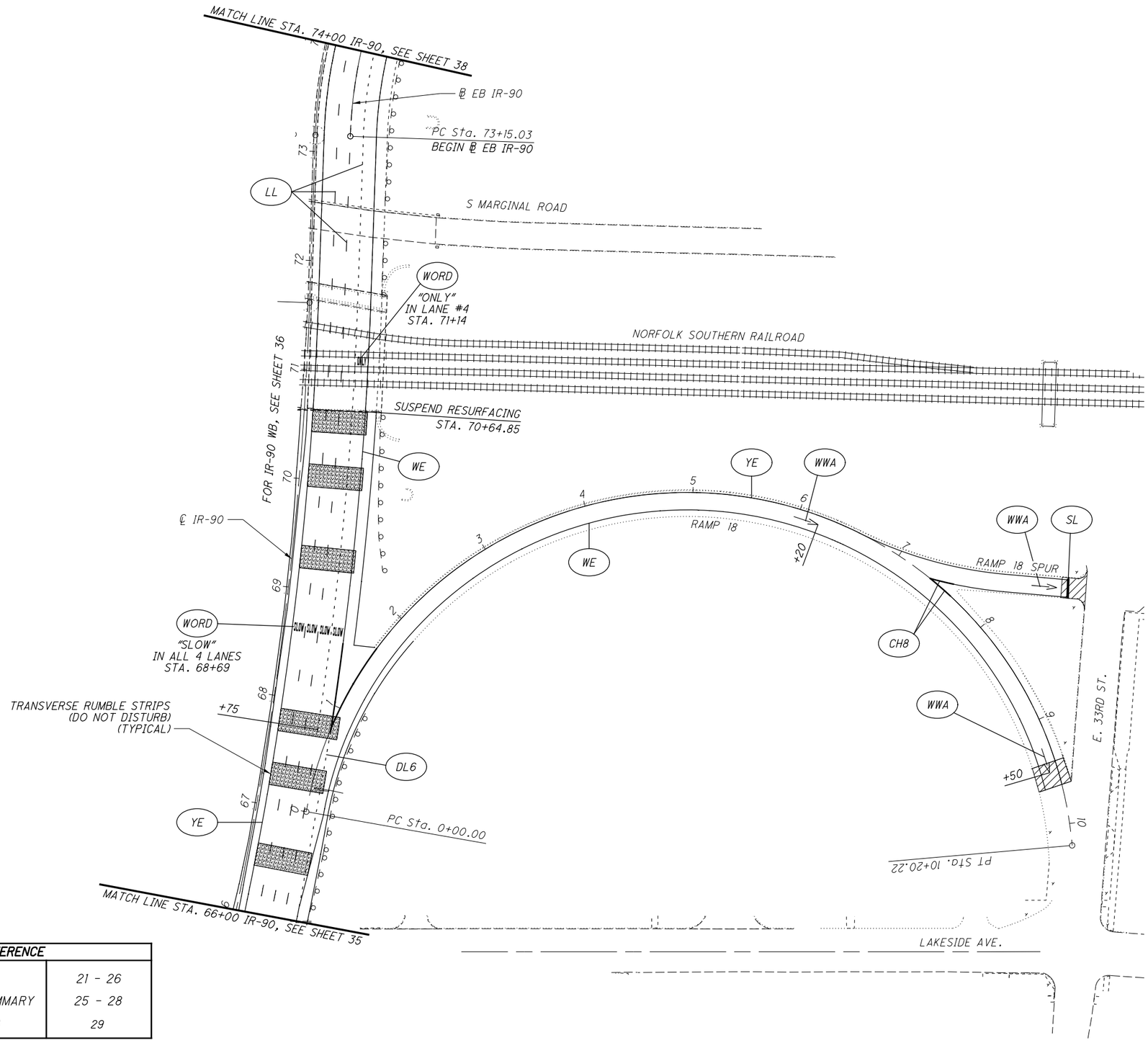
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90 WB, STA 66+00 TO STA 74+00

CUY-90-16.45

36
42



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90 EB, STA 66+00 TO STA 74+00

CUY-90-16.45

37
42

I:\ProjectData\CUY\99593\Design\Roadway\Sheets\99593_GP009.dgn Sheet 11/17/2017 3:02:46 PM khamilt1

CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90, STA 74+00 TO STA 87+00

CUY-90-16.45

38
42

I:\ProjectData\CUY\99593\Design\Roadway\Sheets\99593_GP010.dgn Sheet 11/17/2017 3:02:48 PM khamilt1

CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

N

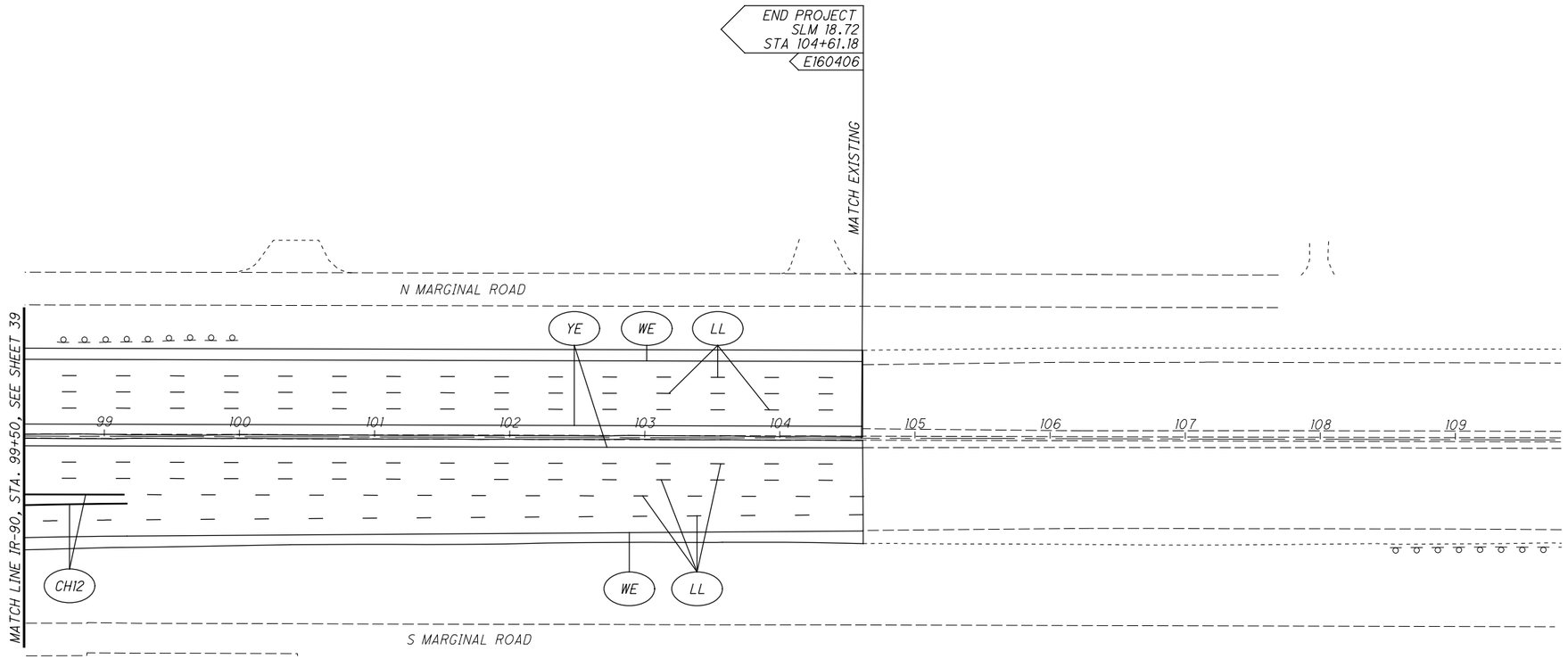
0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90, STA 87+00 TO STA 99+50

CUY-90-16.45

39
42



CROSS REFERENCE	
PAVEMENT SUBSUMMARY	21 - 26
PAVEMENT MARKING SUBSUMMARY	25 - 28
PAVEMENT MARKING LEGEND	29

HORIZONTAL SCALE IN FEET
0 25 50 100

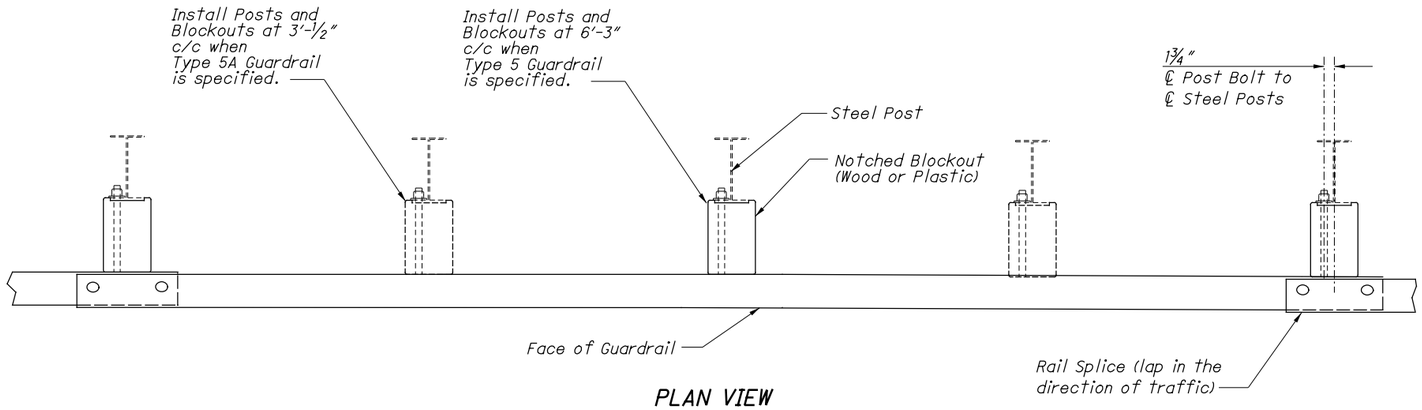
CALCULATED KDH
CHECKED EMK

PLAN SHEET
IR-90, STA 99+50 TO STA 111+99.82

CUY-90-16.45

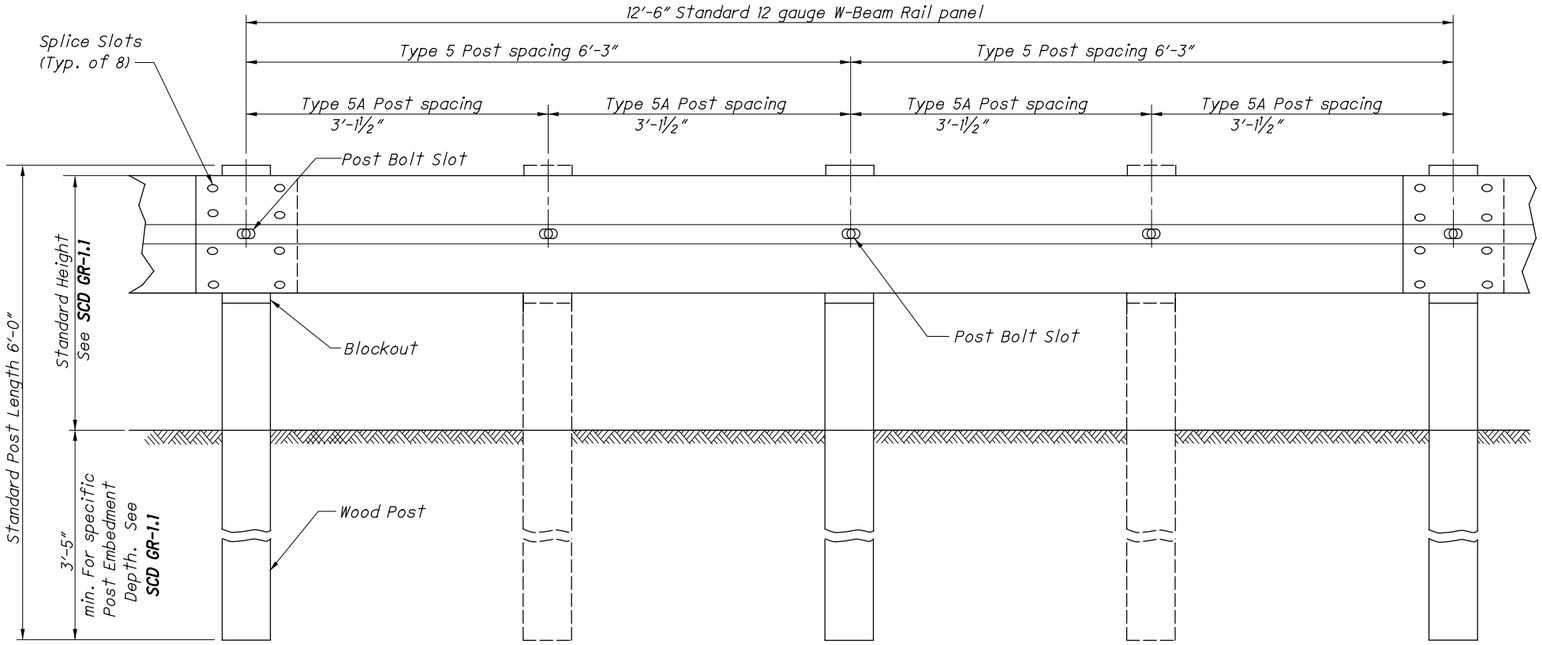
40
42

I:\ProjectData\CUY\99593\Design\Roadway\Sheets\99593_GP012.dgn Sheet 11/17/2017 3:02:51 PM khamilt1



PLAN VIEW

(Steel Posts shown)



ELEVATION

(Wood Posts shown)

NOTES

RAIL: *Use W-Beam rail meeting AASHTO M 180 Type II Class A, as specified in CMS 606.*

POSTS: *Posts may be constructed of wood or steel. Wood posts may be round or 6"x8" square-sawed.*

Use round wood posts on runs of single-sided rail. The round posts shall be 8"±1 in diameter at the top and not more than 3" larger at the butt with a uniform taper.

Fabricated wood posts with square ends. Posts shall be pressure-treated as per CMS 710.14. Bore bolt holes and, if required, trim the tops of posts after the posts are set.

Steel posts are to be W6x9 or W6x8.5 galvanized steel. Use the same type of post throughout the length of the project unless otherwise specified in the plans or permitted by the Engineer.

All posts are 6'-0" long unless specified otherwise in the Contract Document. Posts may be set in drilled holes or may be driven to grade.

WELDED BEAM POSTS: *Welded beam guardrail posts may be used for Item 606, Guardrail, provided the web and flange sizes are as shown here. Welding of the web to the flanges must comply with ASTM A 769, Class 1, using Grade 36 steel [250 MPa yield point] with the following exceptions:*

Sec. 7.2 Test reports of tensile properties for each lot shall accompany each shipment.

Sec. 12 Beams that have imperfections repaired by welding shall not be accepted for use in Item 606.

Sec. 13 Random samples shall be tested by the Department from materials delivered to the project site, or other locations designated by the Laboratory.

ALTERNATE POSTS: Engineered guardrail posts having met NCHRP 350 criteria, and listed on the ***Office of Materials Management's*** *Approved List are permitted as an equal alternate when installed according to the Manufacturer's instructions and within the limitations shown on the Approved List.*

BLOCKOUTS: *Blockout dimensions are dependent on post used. Wood Blockouts are to be pressure treated as specified in CMS 710.14. Bore bolt holes. Approved alternate blockouts may be used in lieu of the wood blockouts shown. The approved list is maintained by the* ***Office of Roadway Engineering.***

WASHERS: *Install appropriate sized standard galvanized steel washers on the nut side of bolts installed on wood posts.*

DELINEATION: *For barrier reflectors, see CMS 626.*

MISCELLANEOUS: *For other guardrail details, see* ***SCD GR-1.1.***

STEEL BEAM POSTS (English)				
Size	**Beam depth**	**Flange width**	**Flange thickness**	**Web thickness**
Rolled W6x8.5	5.8"	3.94"	0.193"	0.170"
Rolled W6x9	5.9"	3.94"	0.215"	0.170"
Welded 6x8.5	6.0"	3.94"	0.193"	0.170"
Welded 6x9	6.0"	3.94"	0.215"	0.170"

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX REVIEWED XXX

REVISION DATE 1/18/2013 CHECKED CHECKED

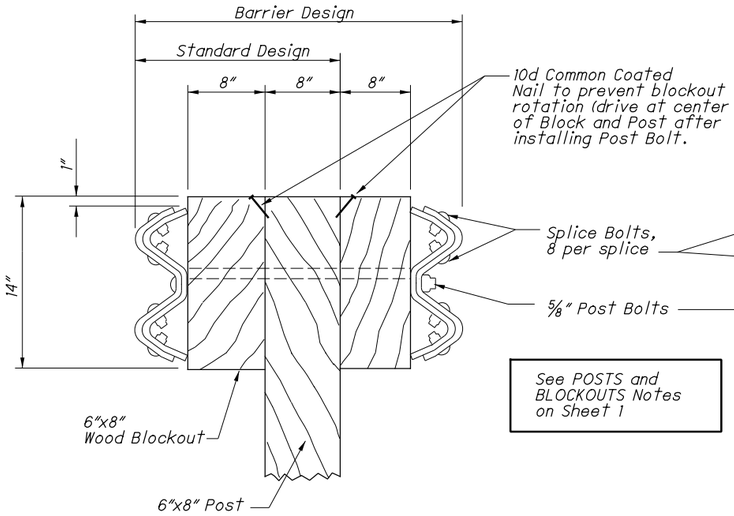
PLAN INSERT SHEET

GUARDRAIL TYPE 5 & 5A

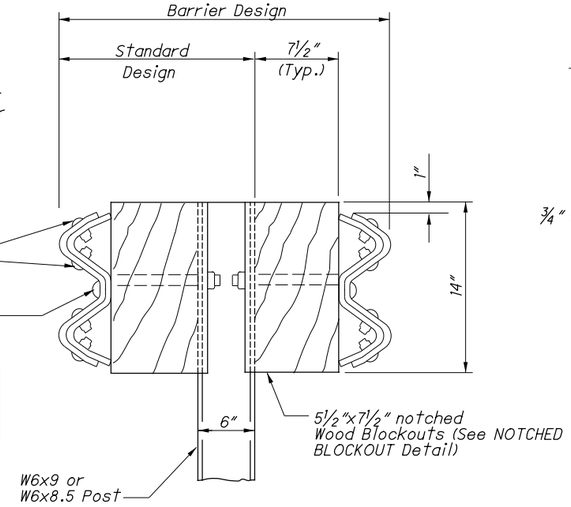
CUY-90-16.45

1 / 2

40a / 42

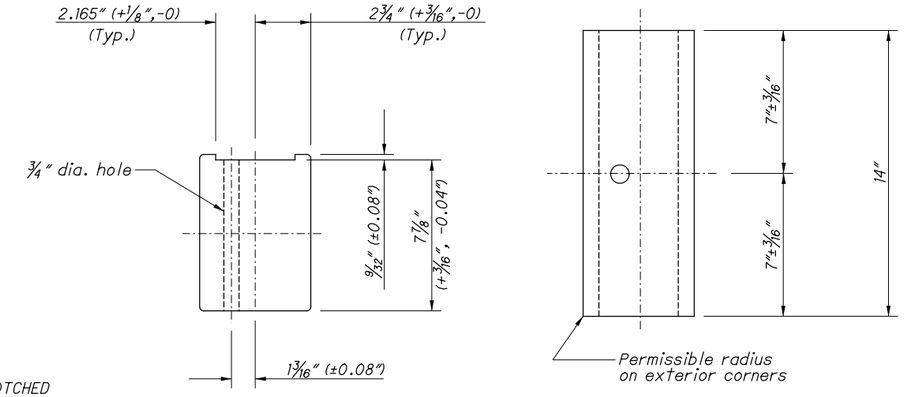


SQUARE WOOD POST



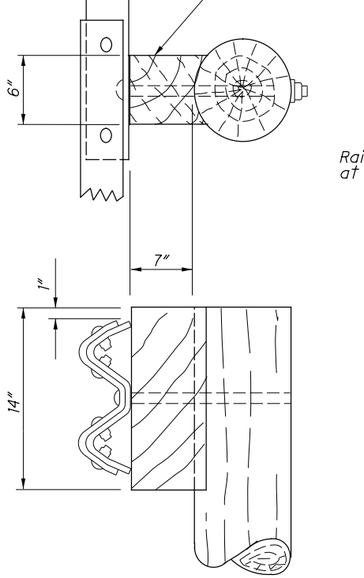
STEEL POST

See POSTS Note, Sheet 1

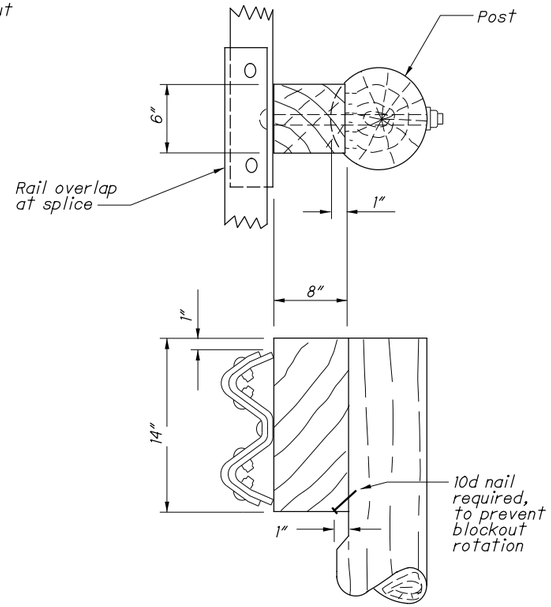


NOTCHED BLOCKOUTS FOR STEEL POSTS

See BLOCKOUTS Note on Sheet 1



Method 1
Routed Blockout

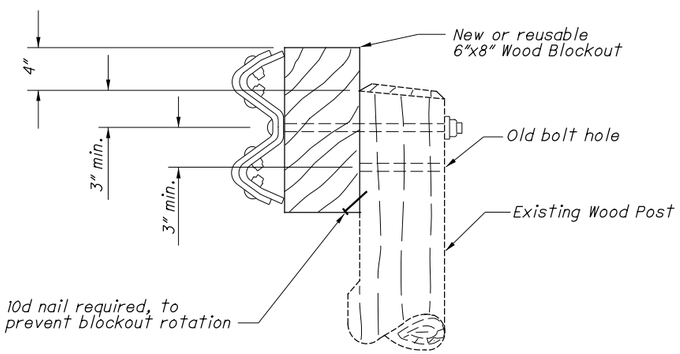


Method 2
Notched Post

Alternate methods of placing the Blockouts on round Posts may be submitted for consideration and approved by the Engineer.

ROUND WOOD POSTS

Single Sided runs only (Standard Design)



WOOD POSTS WITH WOOD BLOCK RAISING EXISTING GUARDRAIL HEIGHT

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX REVIEWED XXX

REVISION DATE 1/18/2013 CHECKED CHECKED

PLAN INSERT SHEET

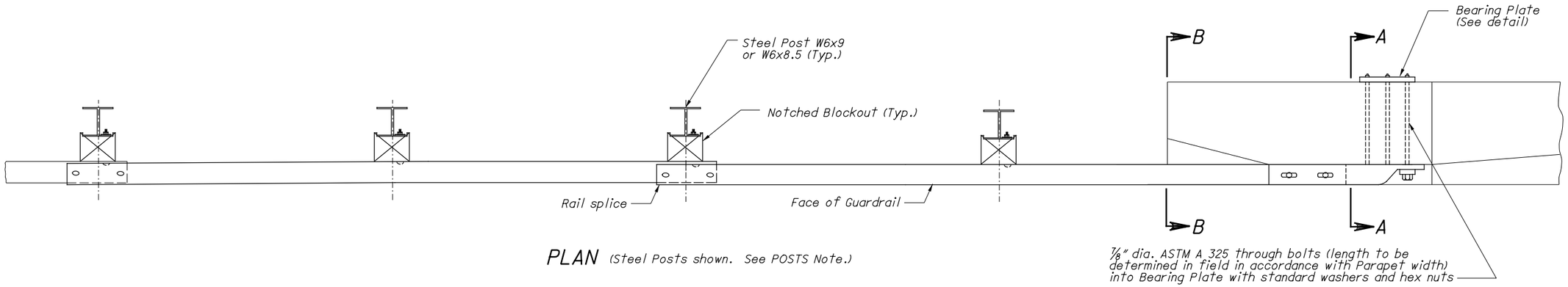
GUARDRAIL TYPE 5 & 5A

CUY-90-16.45

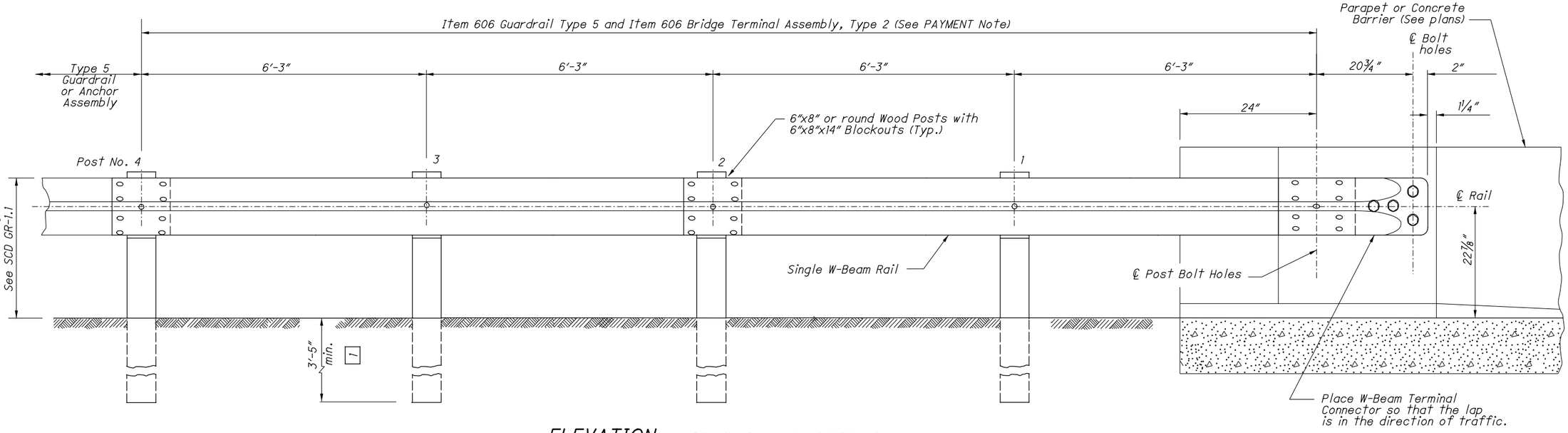
2 / 2

40b / 42

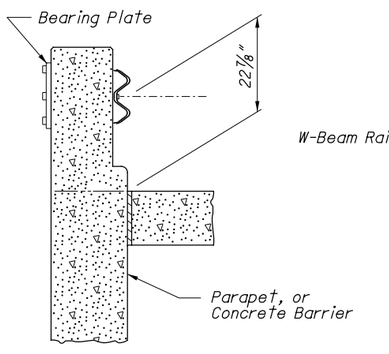
I:\ProjectData\CUY\99593\ProjAdmin\PlanReviews\2017-11-08_Michael Baker_Aux Lane Final Submittal\CADD\99593_PIS_GR-2_1-18-2013.dgn Sheet 2 11/17/2017 3:02:52 PM khamilt1



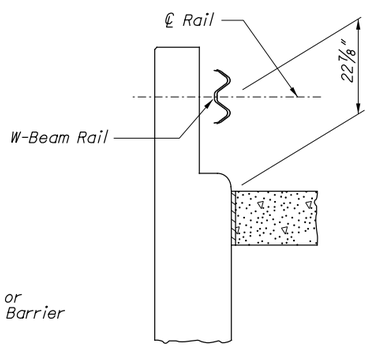
PLAN (Steel Posts shown. See POSTS Note.)



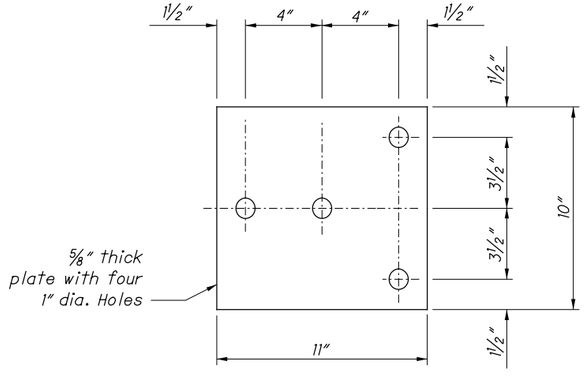
ELEVATION (Wood Posts shown. See POSTS Note.)



SECTION A-A



SECTION B-B



BEARING PLATE

NOTES

GENERAL: For additional rail and post details, see **SCD GR-1.1.**

APPLICATION: Use Type 2 Bridge Terminal Assembly to connect guardrail runs to the trailing end of Parapets or Concrete Barriers (see **SCD RM-4.6** for barrier) on one-directional roadways. Do not use if located within clear zone of opposing traffic.

POSTS: Posts shall be of standard size and material specified for the appropriate type of guardrail to be installed leaving the bridge or barrier. For Type 5 guardrail, see **SCD GR-2.1.**

BLOCKOUTS: Wood or plastic blockouts are permitted.

FLARED GUARDRAIL: Begin Standard Guardrail Flares as shown on **SCD GR-5.1,** preferably at or beyond Post No. 4, however, the flare may begin at Post No. 2.

PAYMENT: **Item 606 - Bridge Terminal Assembly, Type 2, Each.** includes the cost of extra components, in excess of normal guardrail for the Terminal connector, Bearing Plates, bolts, washers, nuts, and other hardware.

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX REVIEWED XXX

REVISION DATE 1/18/2013 CHECKED CHECKED

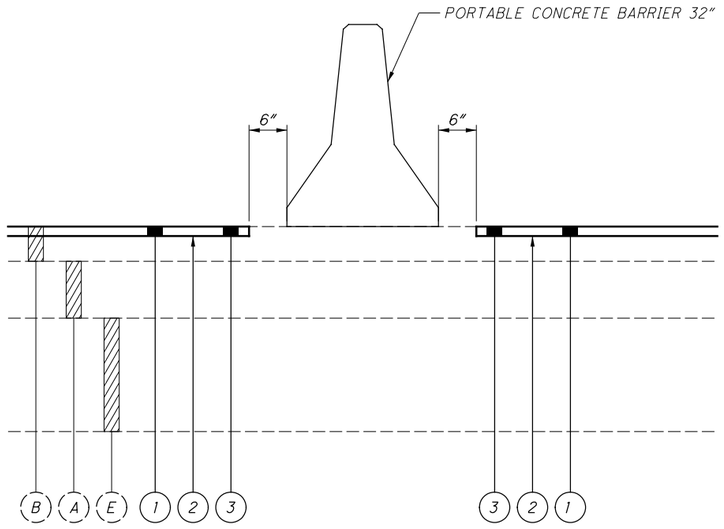
PLAN INSERT SHEET

BRIDGE TERMINAL ASSEMBLY, TYPE 2

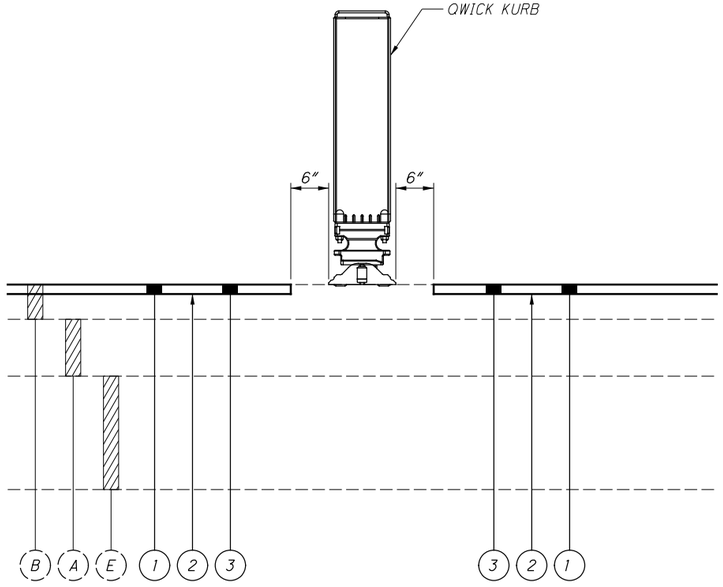
CUY-90-16.45

1 / 1

40c
42



PLANING DETAIL NEXT TO PCB
(ENLARGED TO SHOW DETAIL)



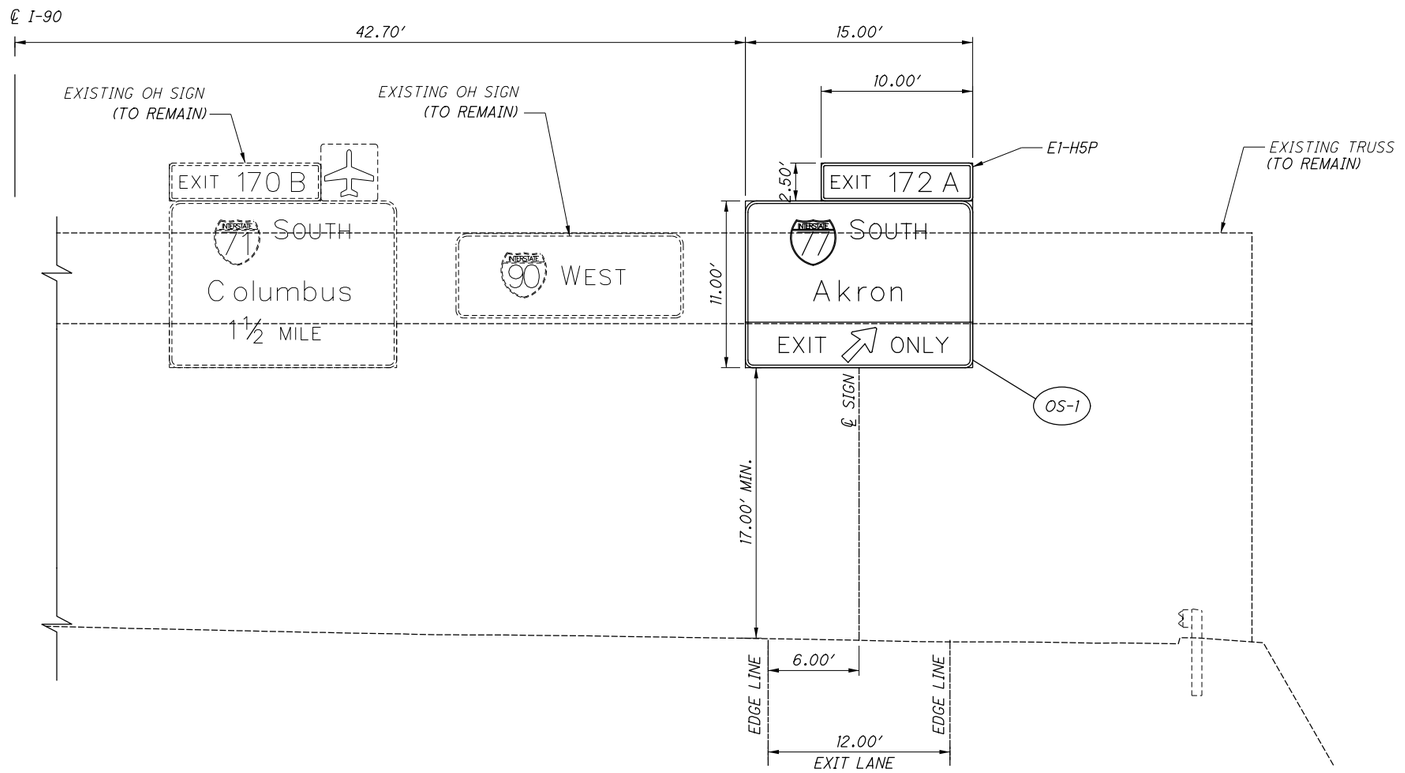
PLANING DETAIL NEXT TO QWICK KURB
(ENLARGED TO SHOW DETAIL)

SEE SHEET 4 FOR TYPICAL SECTION LEGEND

CALCULATED JAC
CHECKED KDH

PAVEMENT PLANING DETAILS

CUY-90-16.45



SIGN ELEVATION
STA. 74+27 I-90 WESTBOUND
MOUNTED ON EXISTING OVERHEAD STEEL TRUSS

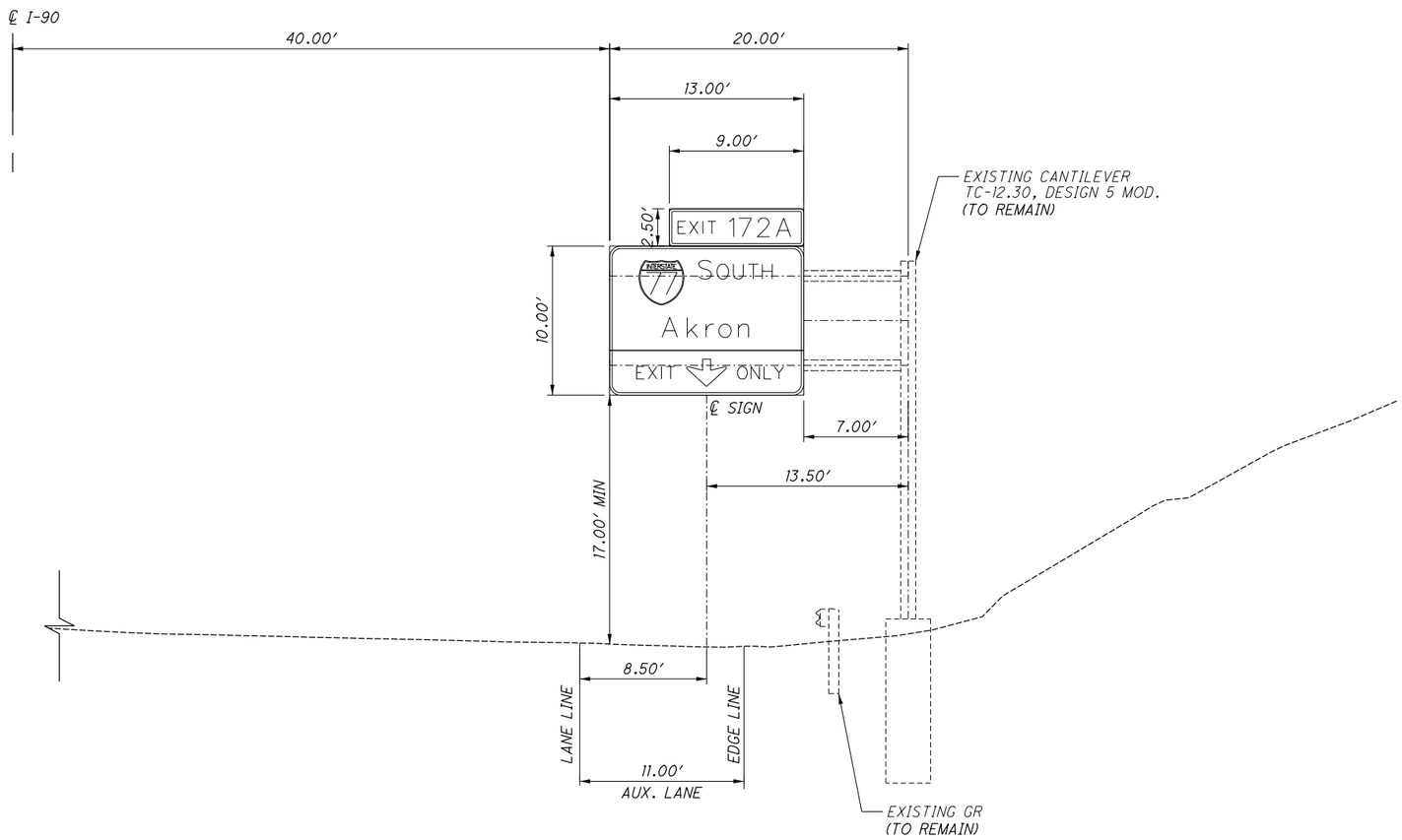
HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED KMD
CHECKED TP

SIGN ELEVATION
OS-1 - STA. 74+27, I-90 WESTBOUND

CUY-90-16.45

41a
42



SIGN ELEVATION
STA. 2+33 I-90 WESTBOUND
MOUNTED ON EXISTING CANTILEVER, TYPE 12.30 DES. 5 MOD

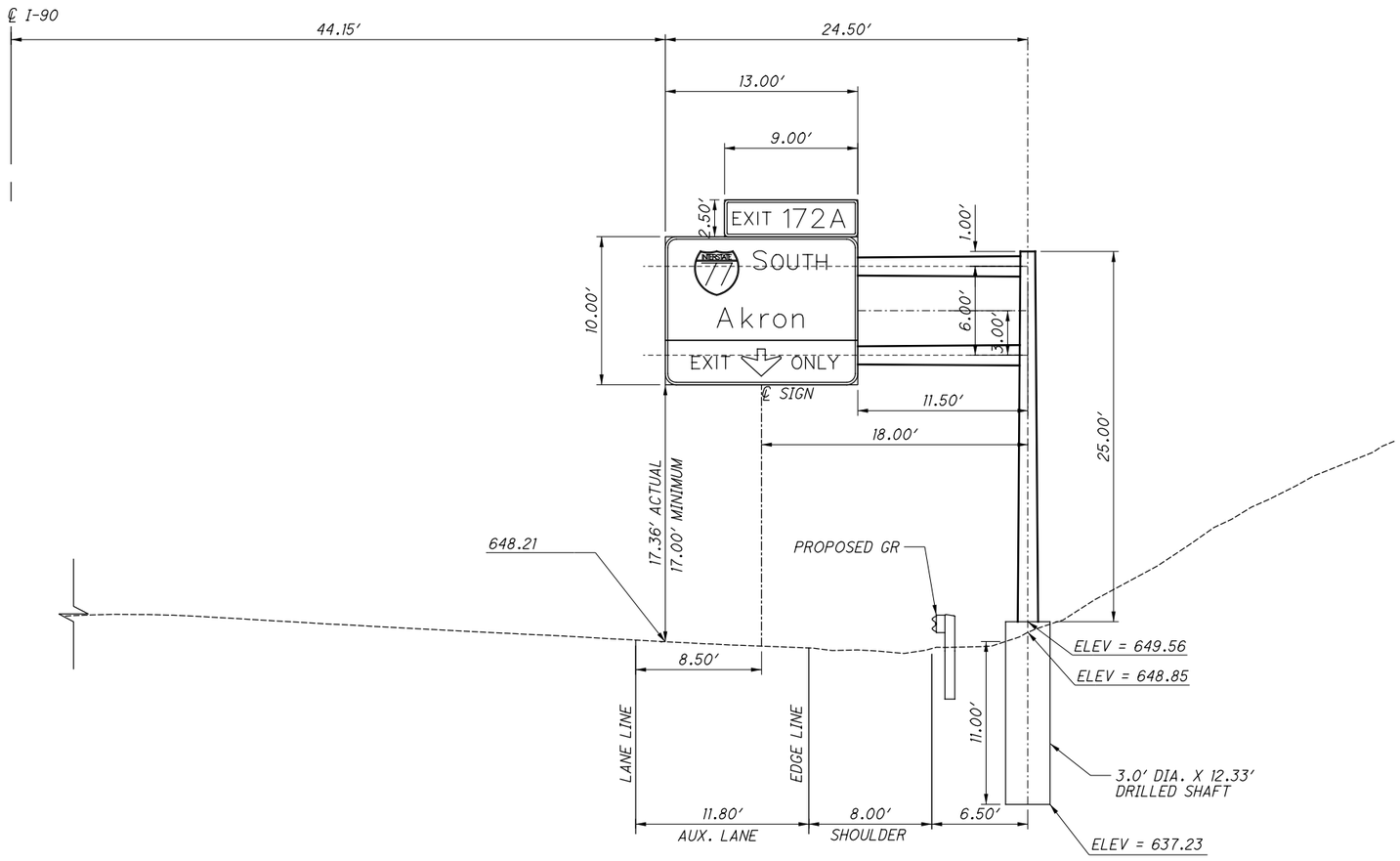
HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED KMD
CHECKED TP

SIGN ELEVATION
OS-2 - STA. 2+33, I-90 WESTBOUND

CUY-90-16.45

41b
42



SIGN ELEVATION
STA. 11+50 I-90 WESTBOUND
MOUNTED ON NEW OVERHEAD SIGN SUPPORT
TYPE TC-12.30, DESIGN 6

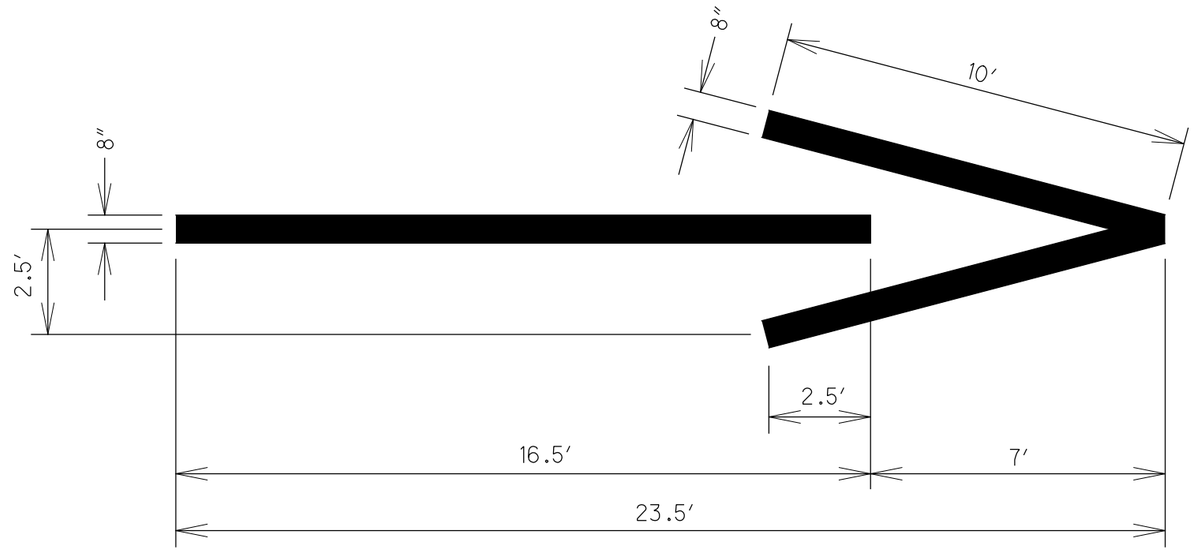
HORIZONTAL SCALE IN FEET
0 2.5 5 10

CALCULATED KMD
CHECKED TP

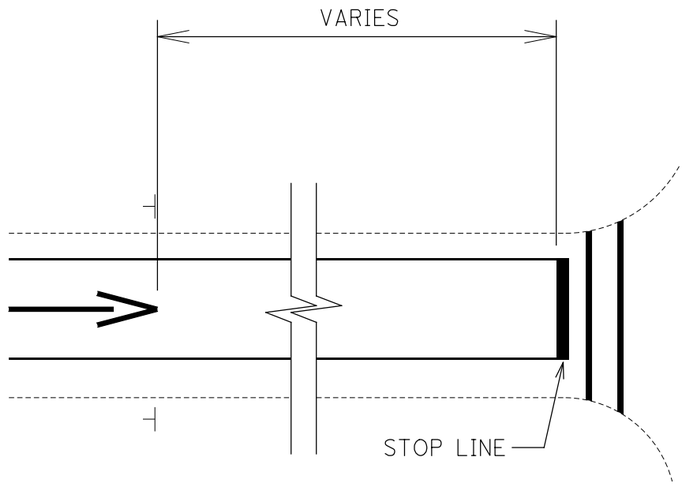
SIGN ELEVATION
OS-3 - STA. 11+50, I-90 WESTBOUND

CUY-90-16.45

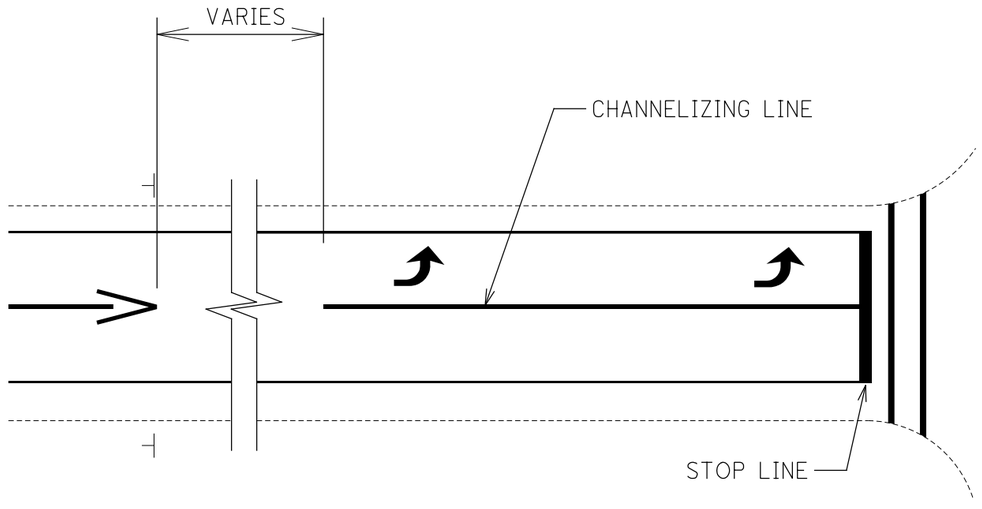
41c
42



WRONG WAY ARROW



ONE LANE RAMP



MULTI LANE RAMP

CALCULATED KDH
CHECKED EMK

PAVEMENT MARKING DETAILS
WRONG WAY ARROW

CUY-90-16.45

42
42