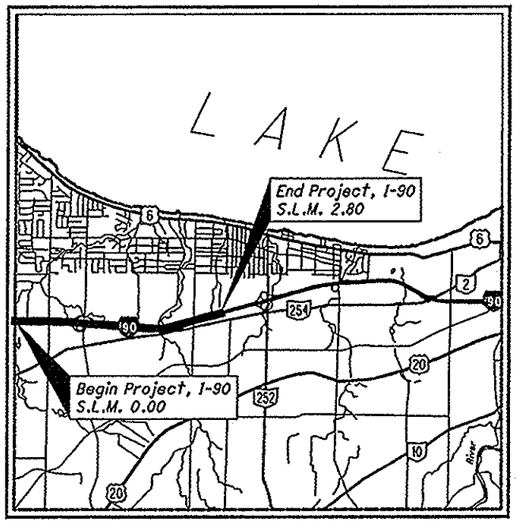

LOCATION MAP

LATITUDE: 41°28'03" LONGITUDE: 81°56'32"

SCALE IN MILES 0 1 2 3 4

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY

FEDERAL ROUTES

STATE ROUTES

COUNTY & TOWNSHIP ROADS

OTHER ROADS

DESIGN DESIGNATION

	SLM 0.00-0.95	SLM 0.95-3.56
CURRENT ADT (2016)	61,000	74,000
DESIGN YEAR ADT (2028)	64,000	78,000
DESIGN HOURLY VOLUME (2028)	5,800	7,800
DIRECTIONAL DISTRIBUTION	53%	53%
TRUCKS (24 HOUR B&C)	7%	6%
DESIGN SPEED	65mph	65mph
LEGAL SPEED	60mph	60mph
DESIGN FUNCTIONAL CLASSIFICATION: Interstate		
NHS PROJECT	YES	

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 KEITH DOUGLAS HAMILTON E-72668 REGISTERED PROFESSIONAL ENGINEER

SIGNED:

DATE: 01/20/2016

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-90-0.00

CITY OF WESTLAKE

CUYAHOGA COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

MICROSURFACING OF 2.80 MILES OF IR-90 FROM THE SLM 0.00 (LORAIN COUNTY LINE) TO SLM 2.80 IN THE CITY OF WESTLAKE, AND MICROSURFACING TO SEVEN RAMPS ALONG IR-77 IN THE CITIES OF BRECKSVILLE, BROADVIEW HEIGHTS, AND INDEPENDENCE. WORK ITEMS INCLUDE PAVEMENT REPAIRS, MICROSURFACING, 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.

2013 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 APPROVED 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 _____ DISTRICT DEPUTY DIRECTOR
DATE 1-22-16

APPROVED _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION
DATE 2-5-16

STANDARD CONSTRUCTION DRAWINGS							SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	7/18/14	TC-65.10	1/17/14				800	1/15/16	
BP-9.1	7/19/13	TC-65.11	7/18/14						
		TC-71.10	1/17/14				832	1/17/14	
MT-95.30	7/18/14	TC-72.20	7/18/14						
MT-95.50	10/16/15	TC-82.10	7/17/15						
MT-98.10	7/18/14								
MT-98.11	7/18/14								
MT-98.20	7/18/14								
MT-98.22	7/18/14								
MT-98.28	7/18/14								
MT-98.29	7/19/13								
MT-98.30	7/18/14								
MT-99.20	7/19/13								
MT-104.10	10/16/15								
MT-105.10	7/19/13								

FEDERAL PROJECT NO. E070(655)

PID NO. 22198

CONSTRUCTION PROJECT NO. -

RAILROAD INVOLVEMENT NONE

CUY-90-0.00

1/48

CUY - IR 90-00.00
160227 PID - 22198
Dist 12 4/21/2016

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

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LOCATION 1 CUY-90-0.00 TO CUY-90-2.80
LOCATION 2 IR-77 AT SR-82 RAMP C-3
LOCATION 3 IR-77 AT SR-82 RAMP C-4
LOCATION 4 IR-77 AT PLEASANT VALLEY RD. RAMP E-2
LOCATION 5 IR-77 AT PLEASANT VALLEY RD. RAMP E-4
LOCATION 6 IR-77 AT ROCKSIDE RD. RAMP F-2
LOCATION 7 IR-77 AT ROCKSIDE RD. RAMP F-3
LOCATION 8 IR-77 AT ROCKSIDE RD. RAMP F-4

N

0 4000 8000 16000
HORIZONTAL SCALE IN FEET

CALCULATED KDH
CHECKED EMK

LOCATION MAP
CUYAHOGA COUNTY

CUY-90-0.00

2/48

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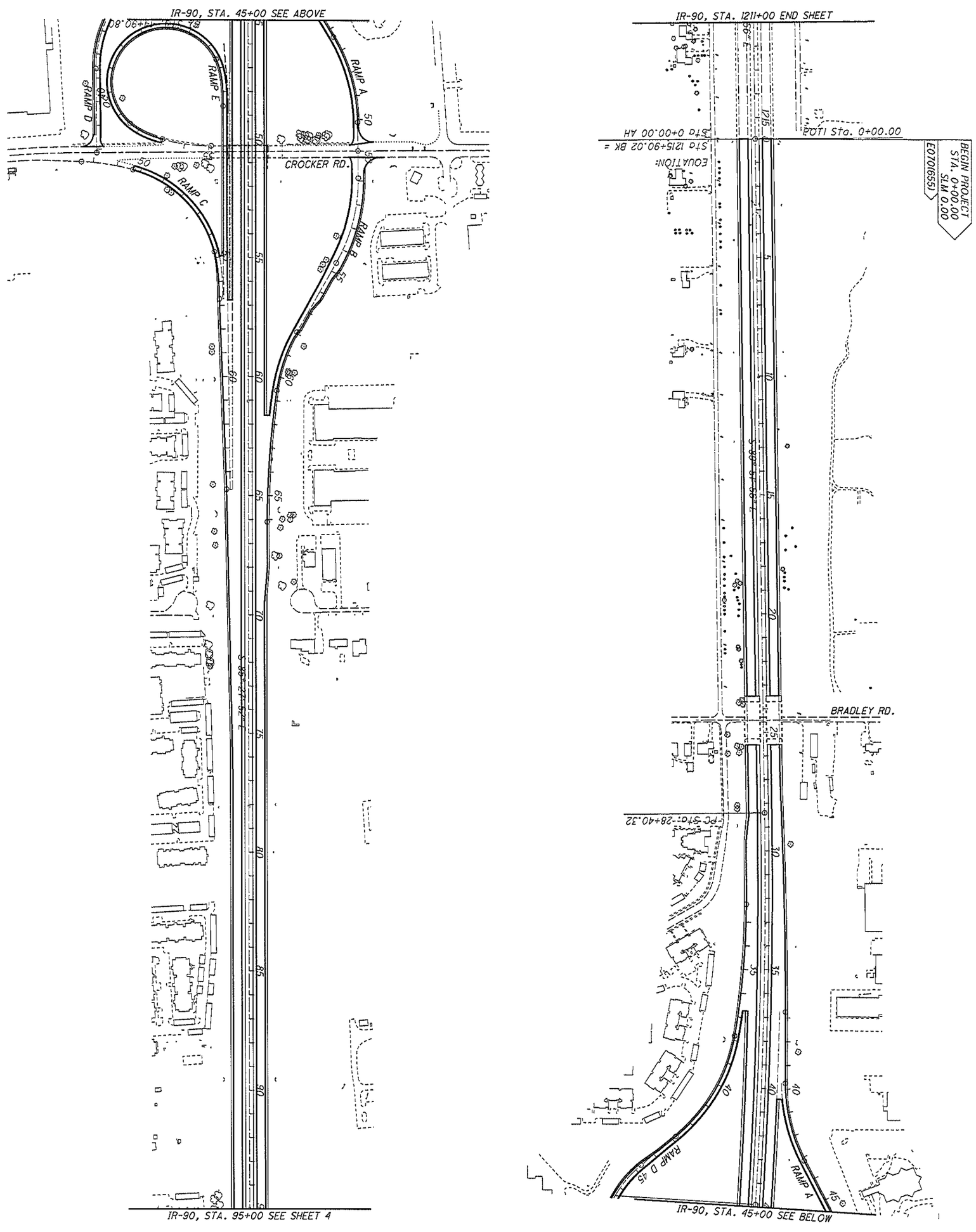
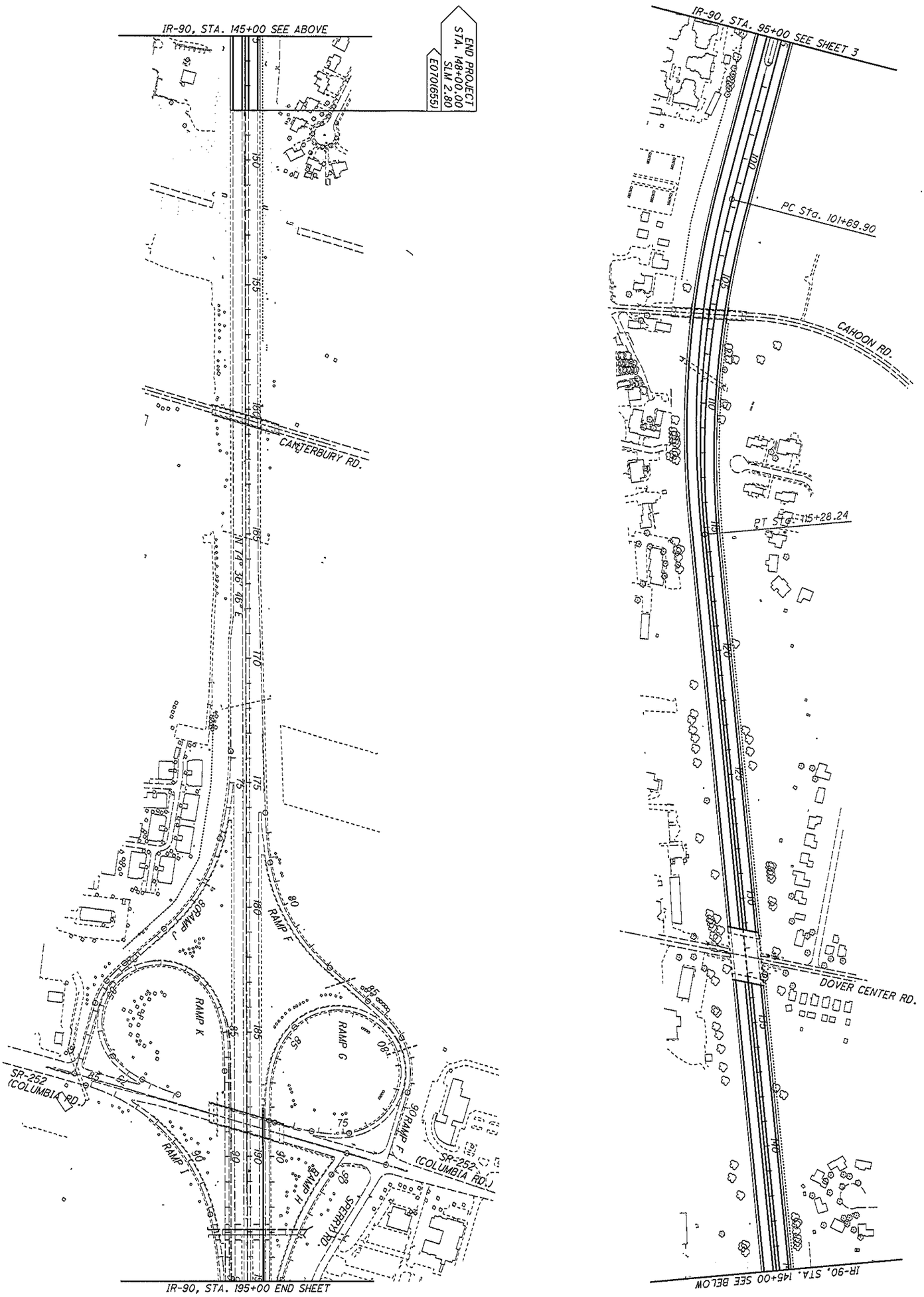
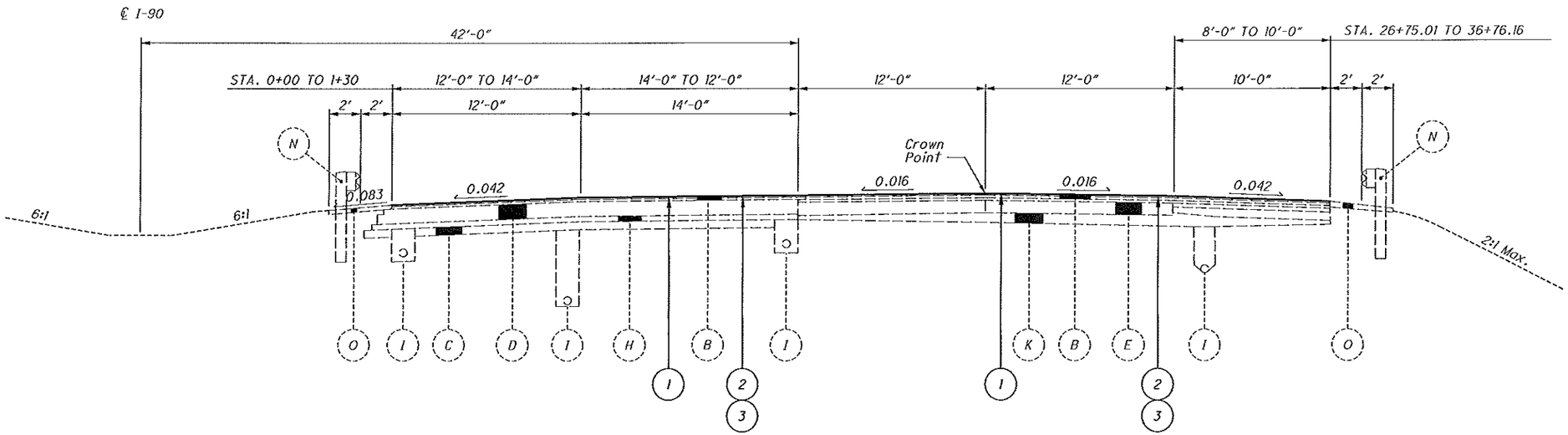

IR-90, STA. 45+00 SEE ABOVE
RAMP D
RAMP E
RAMP A
RAMP C
RAMP B
CROCKER RD.
IR-90, STA. 95+00 SEE SHEET 4
IR-90, STA. 1211+00 END SHEET
POT1 Sta. 0+00.00
Sta 1215+90.02 BK = Sta 0+00.00 AH
EQUATION:
BEGIN PROJECT STA. 0+00.00 SLM 0.00
E07016655
BRADLEY RD.
PC Sta: 28+40.32
RAMP D 45
RAMP A 45
IR-90, STA. 45+00 SEE BELOW


IR-90, STA. 145+00 SEE ABOVE
END PROJECT
STA. 148+00.00
SLM 2.80
E0706655
CANTERBURY RD.
N 74° 36' 16" E
RAMP J
RAMP F
RAMP K
RAMP G
RAMP L
RAMP I
RAMP H
SR-252
(COLUMBIA RD.)
SPERRY RD.
IR-90, STA. 195+00 END SHEET
IR-90, STA. 95+00 SEE SHEET 3
PC Sta. 101+69.90
CAHOON RD.
PT Sta. 115+28.24
DOVER CENTER RD.
IR-90, STA. 145+00 SEE BELOW



3-Lane Normal Section (14' Lane)

I-90 WB

STA. 0+00.00 to STA. 23+45.62

STA. 25+52.62 to STA. 47+60.00

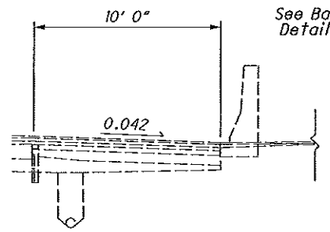
STA. 54+60.00 to STA. 96+50.00

I-90 EB

STA. 0+00.00 to STA. 23+44.52

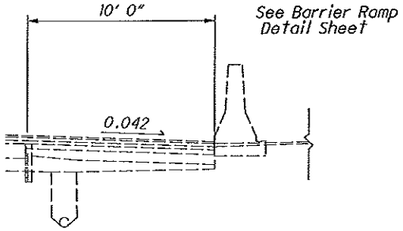
STA. 23+44.52 to STA. 48+05.00

STA. 54+05.00 to STA. 96+50.00



I-90 EB

STA. 47+21.00 to STA. 48+05.00 Shoulder



I-90 EB

STA. 54+05.00 to STA. 56+74.00 Shoulder

Existing Legend

- (A) 2 ½ " ± Asphalt Overlay
- (B) 3 ½ " ± Asphalt Overlay
- (C) 6" ± Aggregate Base
- (D) 12" ± Bit. Aggregate Base
- (E) 10" ± Concrete Pavement
- (F) 9" ± Reinforced Concrete Pavement
- (G) 15" ± Reinforced Concrete Approach Slab
- (H) 4" ± Asphalt Free Drainging Base
- (I) Underdrain
- (J) Curb
- (K) Subbase
- (L) Concrete Median
- (M) Concrete Barrier
- (N) Guardrail
- (O) Asphalt Under Guardrail
- (P) 24" Long #5 Deformed Bars

Proposed Legend

- (1) ITEM 423 - CRACK SEALING, TYPE II
- (2) ITEM 421 - MICROSURFACING, LEVELING COURSE, AS PER PLAN
- (3) ITEM 421 - MICROSURFACING, SURFACE COURSE, AS PER PLAN

TYPICAL SECTIONS

CUY-90-0.00

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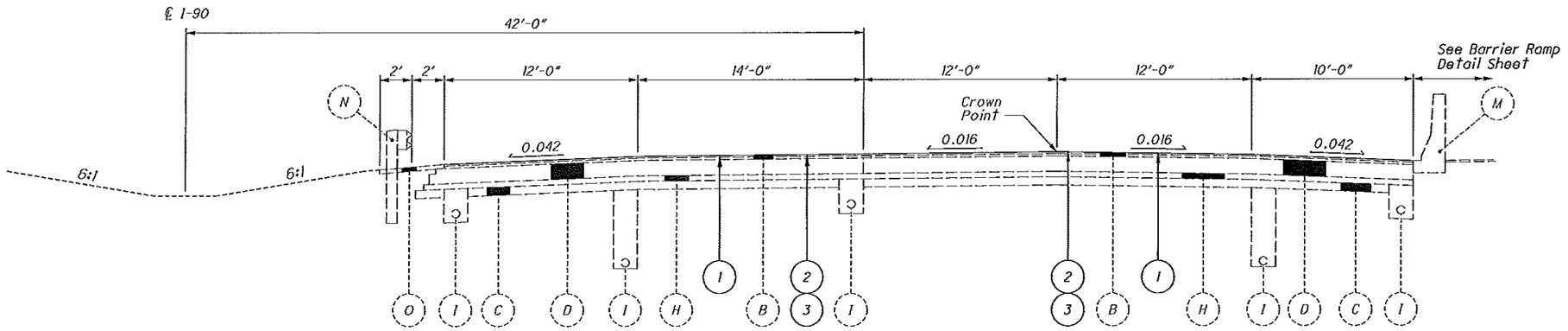
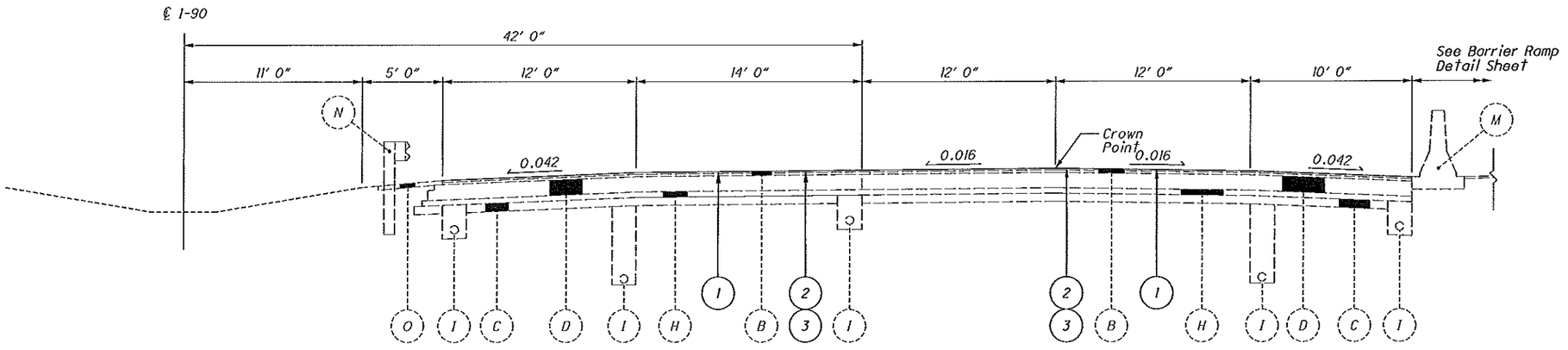


3 LANE NORMAL SECTION (14' LANE)

I-90 WB: STA 47+60.00 To STA. 50+55.00

I-90 EB: STA 48+05.00 To STA. 51+00.00



3-Lane Normal Section (14' Lane)

I-90 WB: STA. 50+55.00 to 54+60.00

I-90 EB: STA. 51+00.00 to 54+05.00

For Legend, See Sheet 5

TYPICAL SECTIONS

CUY-90-0.00

6
48

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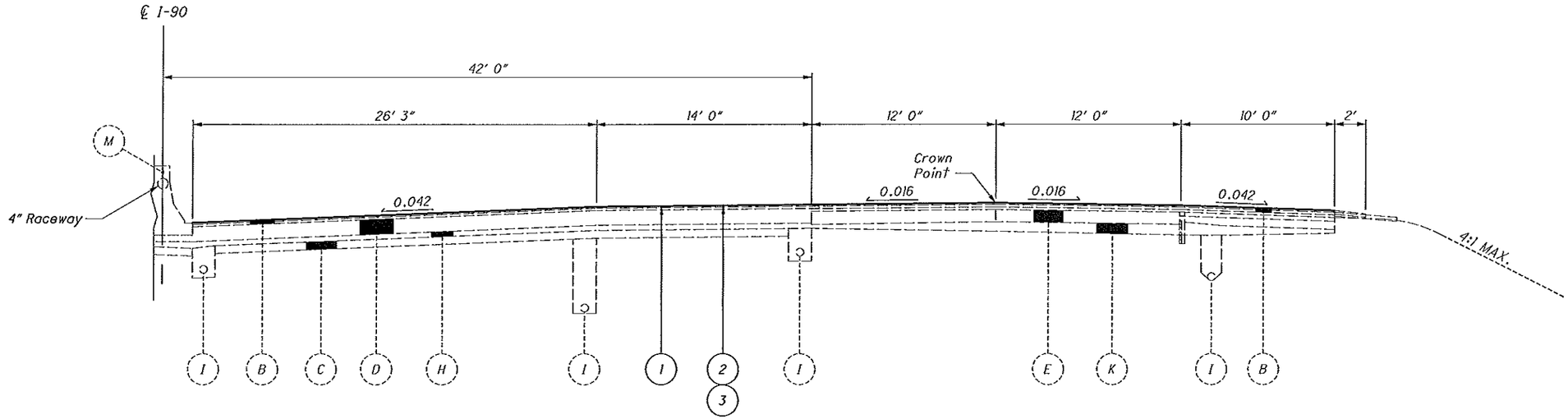
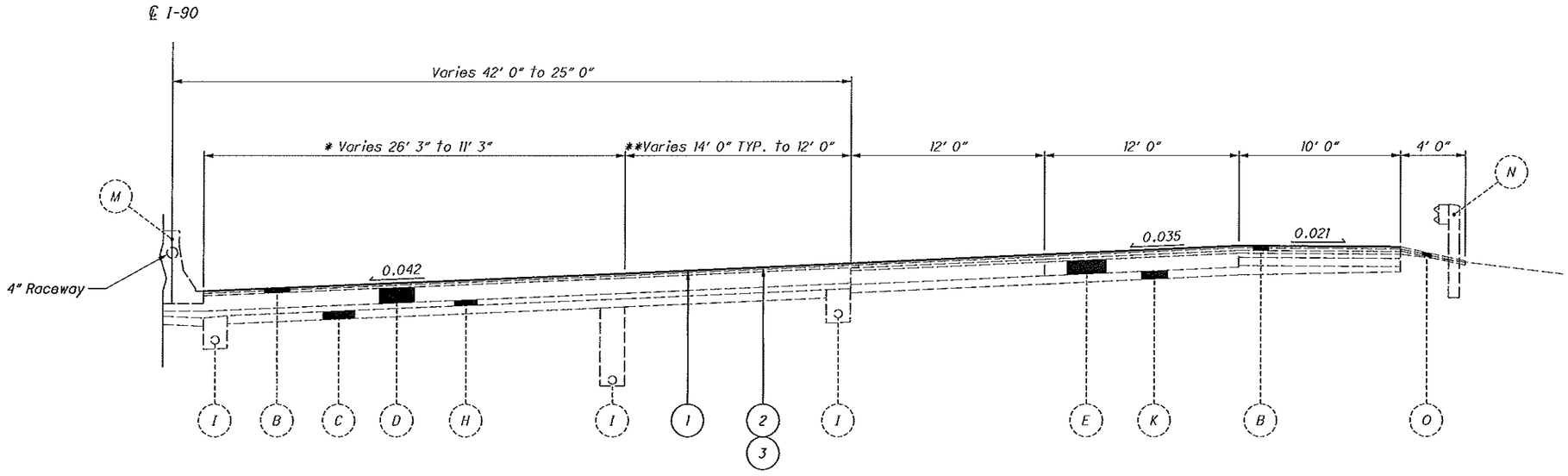


3-Lane Normal Section (14' Lane)

I-90 WB STA 96+50.00 To STA. 100+58.81
I-90 EB STA. 96+50.00 To STA 99+80.79



I-90 EB Superelevetion Left

STA. 99+80.79 to STA. 102+50.00
STA. 109+00.00 to STA. 116+24.01

* 26' 3" from STA. 99+80.79 to STA. 101+27.39
26' 3" to 25' 2" from STA. 101+27.39 to STA. 102+50.00
17' 3" to 11' 3" from STA. 109+00 to STA. 113+56.44
11' 3" from STA. 113+56.44 to STA. 116+24.01

** 14' 0" to 12' 0" from STA. 113+56.44 to STA. 115+28.28
12' 0" from STA. 115+28.28 to STA. 116+24.01

For Legend, See Sheet 5

TYPICAL SECTIONS

CUY-90-0.00

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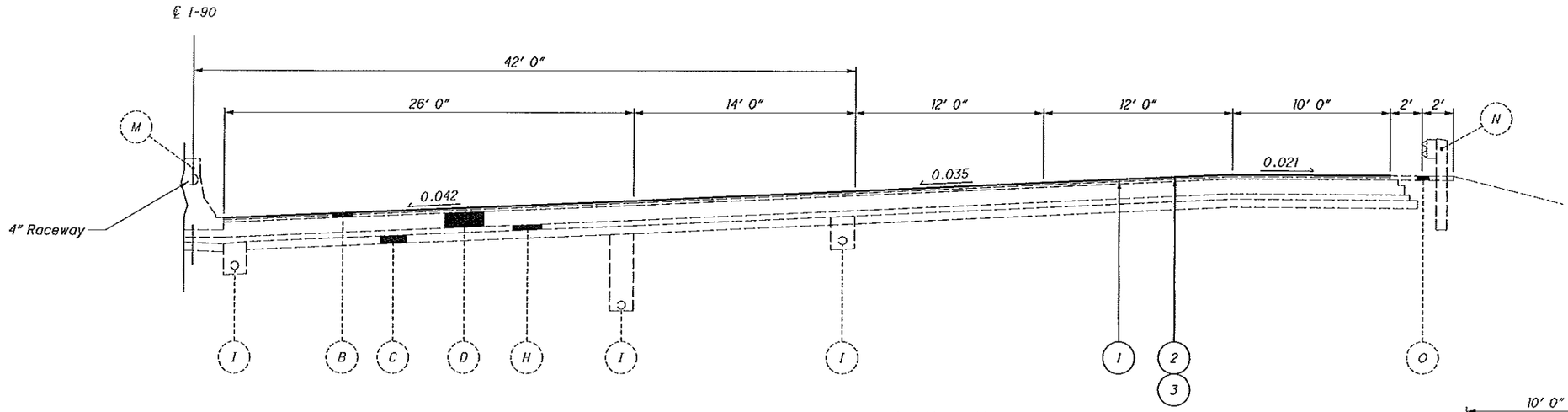
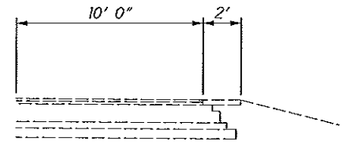
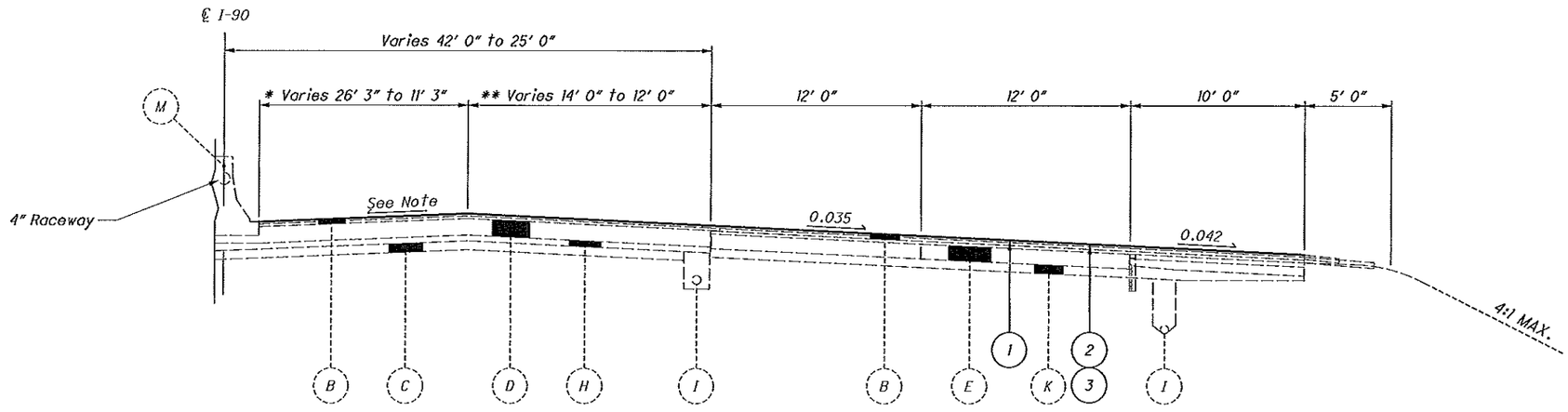


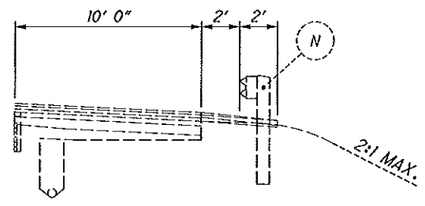
I-90 EB-Superelevation Left

STA. 102+50.00 to STA. 190+00.00



Shoulder Without Guardrail





Shoulder With Guardrail

Note for Superelevation

When Superelevated greater than 0.0283 ft/ft, the shoulder slope varies on the high side. Use roll over of 0.07 ft/ft at the pavement-shoulder joint. The maximum shoulder slope shall be 0.417 ft/ft, minimum slope shall be 0.035 ft/ft.

I-90 WB-Superelevation Left

STA. 100+58.81 to STA. 117+32.55

* 26' 3" from STA. 100+58.81 to STA. 102+12.31
26' 3" to 11' 3" from STA. 102+21.31 to STA. 114+12.61
11' 3" from STA. 114+12.61 to STA. 117+32.55

** 14' 0" from STA. 100+58.81 to STA. 114+12.61
14' 0" to 12' 0" from STA. 114+12.61 to STA. 115+82.56
12' 0" from STA. 115+82.56 to STA. 117+32.55

For Legend, See Sheet 5

TYPICAL SECTIONS

CUY-90-0.00

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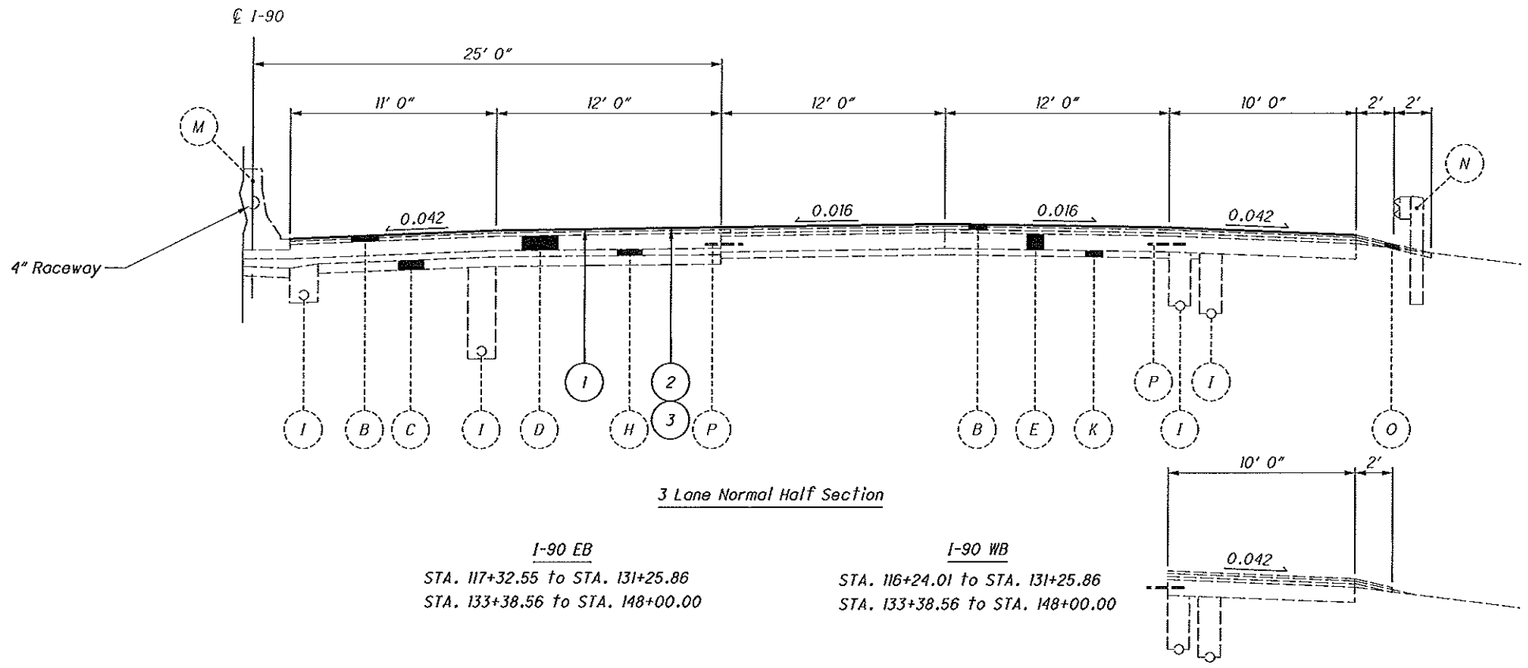

3 Lane Normal Half Section

I-90 EB

STA. 117+32.55 to STA. 131+25.86

STA. 133+38.56 to STA. 148+00.00

I-90 WB

STA. 116+24.01 to STA. 131+25.86

STA. 133+38.56 to STA. 148+00.00

Shoulder Without Guardrail

For Legend, See Sheet 5

TYPICAL SECTIONS

CUY-90-0.00

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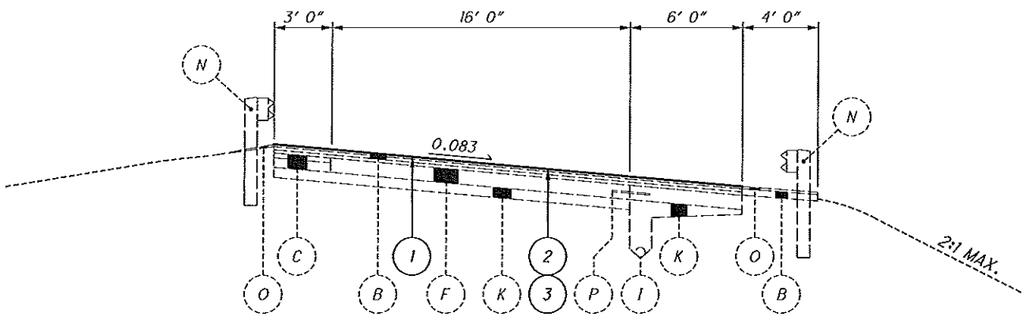
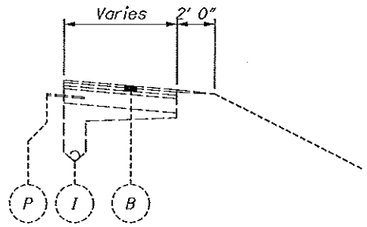
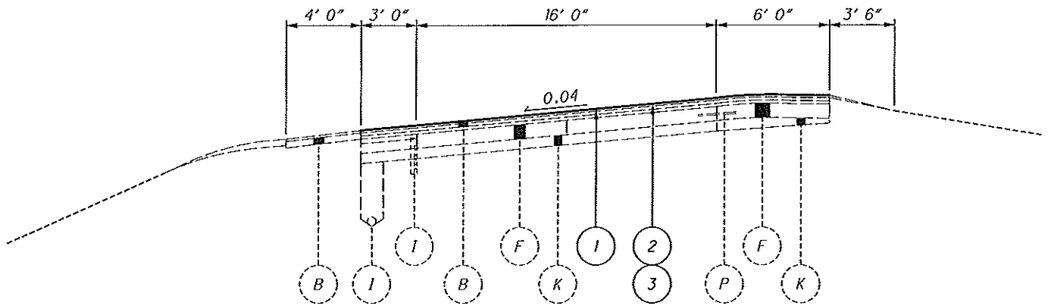


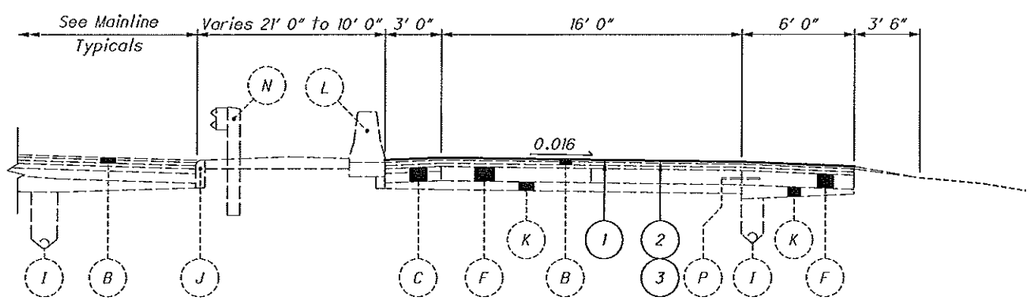
Ramp A: ℄ STA. 40+14.02 to ℄ STA. 44+75.00
Ramp B: ℄ STA. 56+50.00 to ℄ STA. 61+62.68
Ramp C: ℄ STA. 49+27.50 to ℄ STA. 54+92.71
Ramp D: ℄ STA. 36+81.16 to ℄ STA. 43+75.00
Ramp E: ℄ STA. 37+18.84 to ℄ STA. 47+22.20



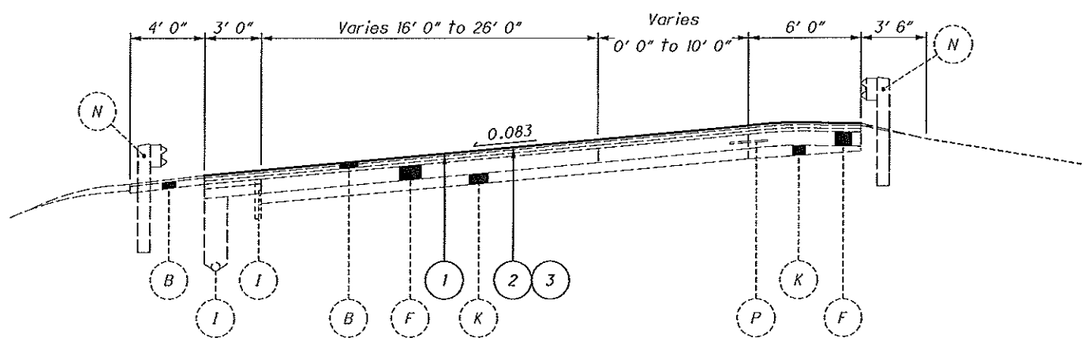
Shoulder Without Guardrail



Ramp A: ℄ STA. 44+75.00 to ℄ STA. 50+11.42
Ramp B: ℄ STA. 55+90.10 to ℄ STA. 56+50.00
Ramp D: ℄ STA. 43+75.00 to ℄ STA. 51+55.06



Ramp E: ℄ STA. 47+22.00 to ℄ STA. 51+12.08



Ramp B: ℄ STA. 50+50.00 to ℄ STA. 53+99.10
Ramp B: ℄ STA. 53+99.10 to ℄ STA. 55+99.10

For Legend, See Sheet 5

TYPICAL SECTIONS

CUY-90-0.00

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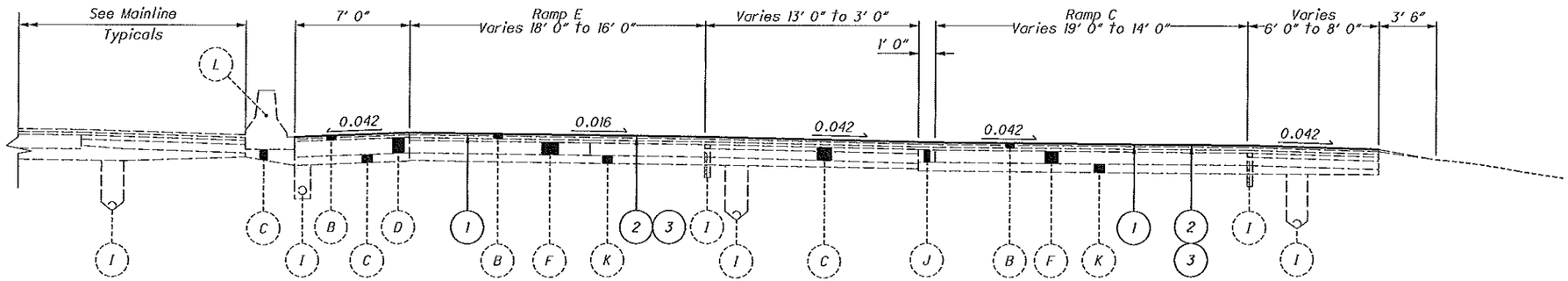
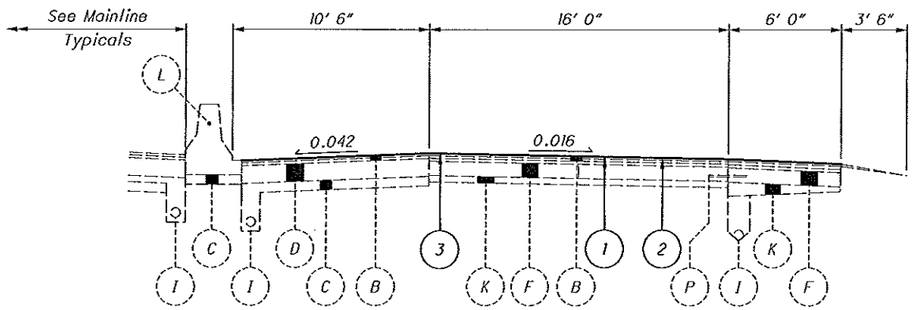
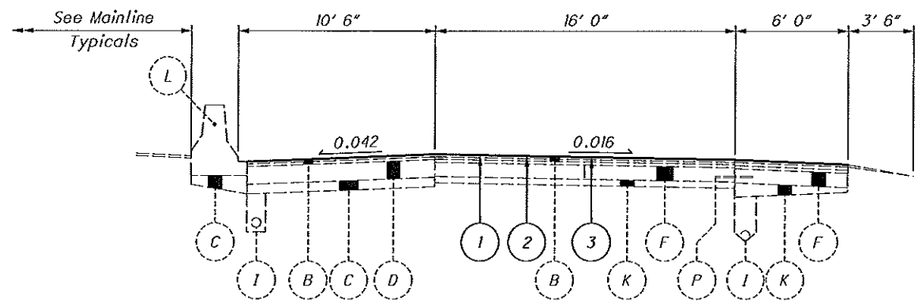


Ramp E

STA. 54+93.15 to STA. 56+74.00



Ramp E: @ STA. 51+12.08 to @ STA. 54+04.84



Ramp E: @ STA. 54+08.84 to @ STA. 54+93.15

For Legend, See Sheet 5

TYPICAL SECTIONS

CUY-90-0.00

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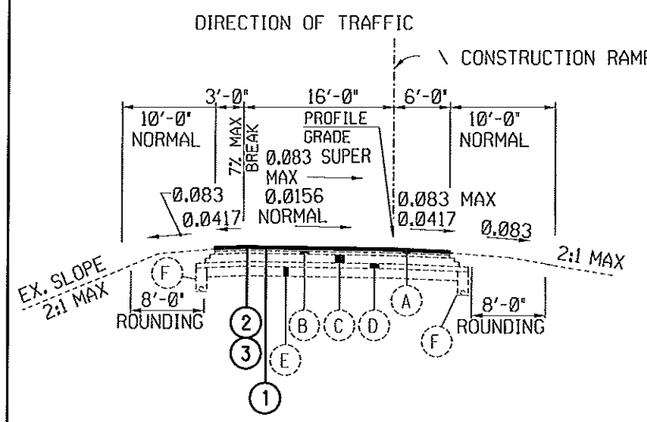
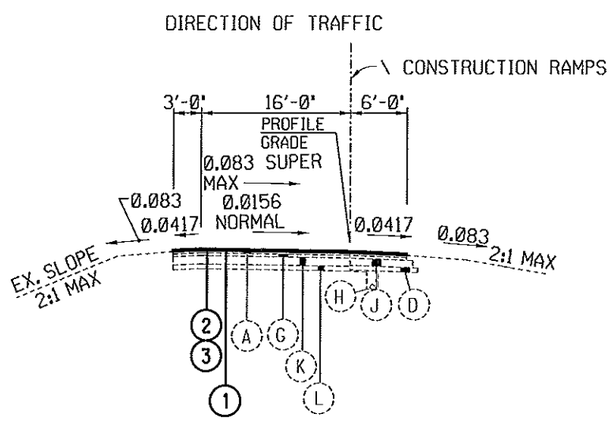


RAMP TYPICAL SECTION
ASPHALT CONCRETE PAVEMENT

RAMP C-3 STA. 44+50.00 TO STA. 47+58.47
RAMP C-3 STA. 47+58.47 TO STA. 49+18.50



RAMP TYPICAL SECTION
ASPHALT CONCRETE SHOULDER

RAMP C-3 STA. 34+63.24 TO STA. 44+50.00

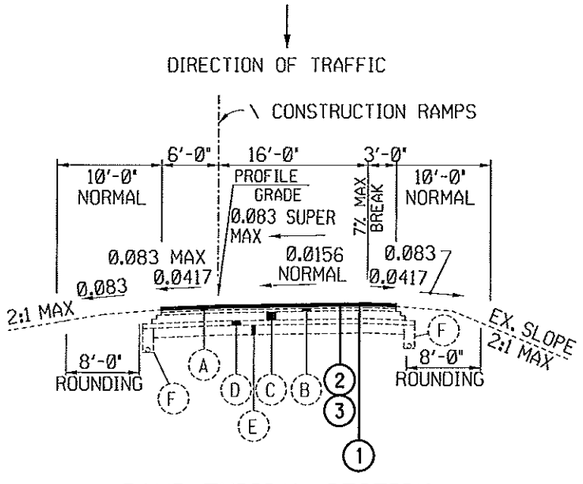
EXISTING ITEM LEGEND

- (A) ITEM-442 1 ½" ASPHALT CONCRETE SURFACE COURSE
- (B) ITEM-442 1 ½" ASPHALT CONCRETE INTERMEDIATE COURSE
- (C) ITEM-302 11½" ASPHALT CONCRETE BASE
- (D) ITEM-304 6" AGGREGATE BASE
- (E) ITEM-206 CEMENT STABILIZED SUBGRADE, 12" DEEP
- (F) ITEM-605 6" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP
- (G) ITEM-826 2" ASPHALT CONCRETE INTERMEDIATE COURSE
- (H) UNDERDRAIN
- (J) ITEM-302 9" ASPHALT CONCRETE BASE
- (K) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (L) SUBBASE

PROPOSED ITEM LEGEND

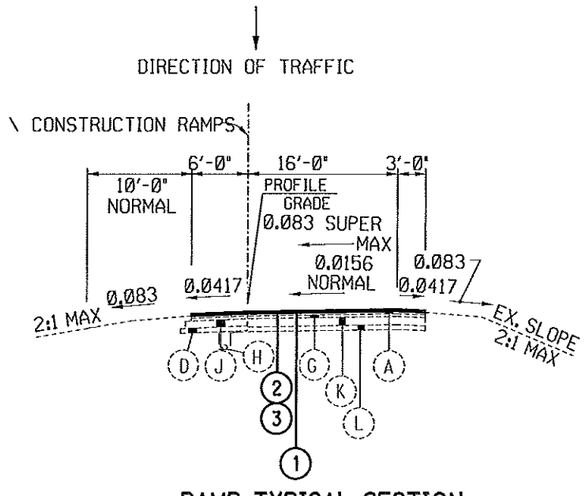
- (1) ITEM 423 - CRACK SEALING, TYPE II
- (2) ITEM 421 - MICROSURFACING, LEVELING COURSE, AS PER PLAN
- (3) ITEM 421 - MICROSURFACING, SURFACE COURSE, AS PER PLAN

WORK LOCATION 2
I.R.-77/S.R.-82 - RAMP C-3



RAMP TYPICAL SECTION
ASPHALT CONCRETE PAVEMENT

RAMP C-4 STA. 43+25.00 TO STA. 45+29.72



RAMP TYPICAL SECTION
ASPHALT CONCRETE SHOULDER

RAMP C-4 STA. 39+46.5± TO STA. 43+25.00

(LEGEND SEE ABOVE)

WORK LOCATION 3
I.R.-77/S.R.-82 - RAMP C-4

TYPICAL SECTIONS

CUY-90-0.00

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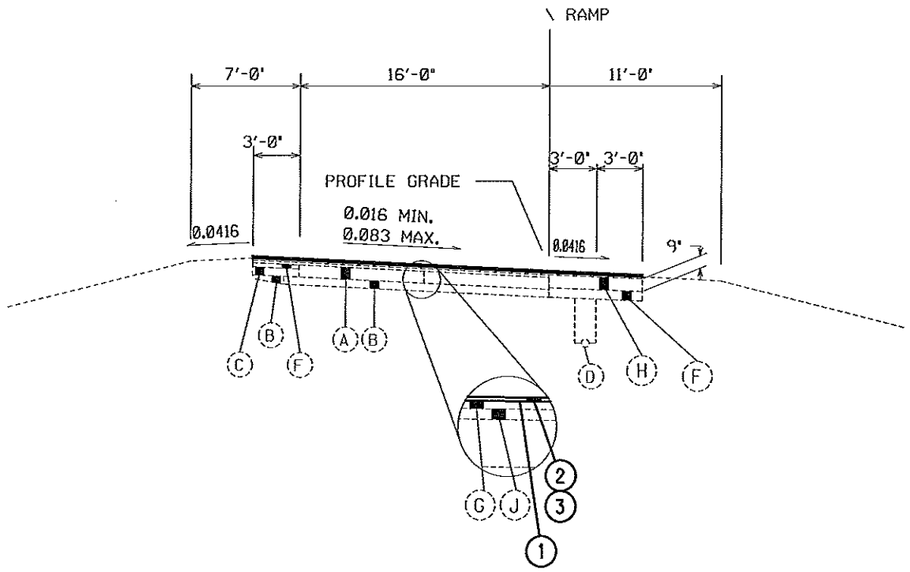


RAMP CURVE RIGHT (SHOWN)

RAMP E-2 STA. 1+86 TO STA. 4+05.94
RAMP E-2 STA. 7+57.92 TO STA. 12+45.36

EXISTING

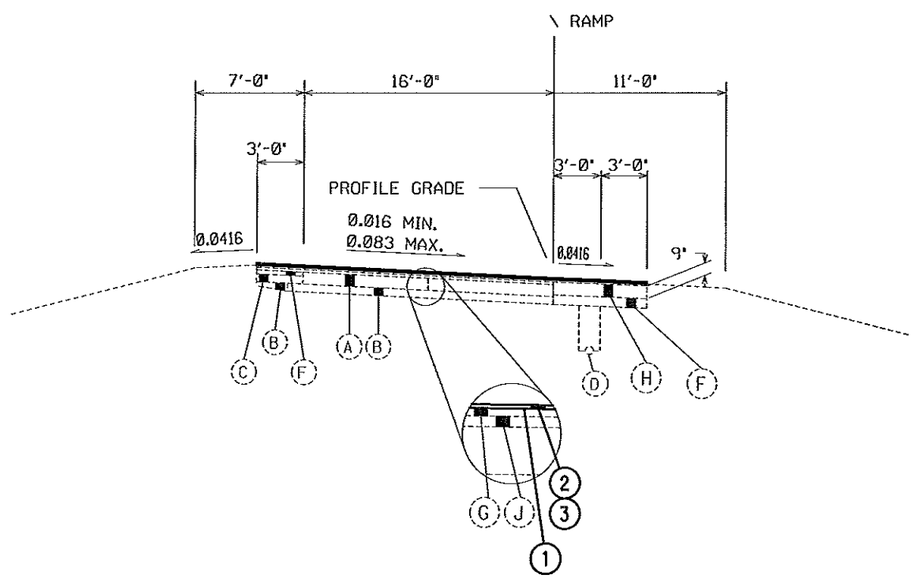
- (A) 9" REINFORCED CONCRETE BASE
- (B) SUBBASE
- (C) BIT. AGGREGATE BASE OR AGGREGATE BASE
- (D) UNDERDRAIN
- (E) AGGREGATE BASE
- (F) ITEM 304 - 6" AGGREGATE BASE
- (G) ITEM 446 - 1-½" ASPHALT CONCRETE SURFACE COURSE
- (H) ITEM 301 - BITUMINOUS AGGREGATE BASE
- (J) ITEM 446 - 2" ASPHALT CONCRETE INTERMEDIATE COURSE

PROPOSED ITEM LEGEND

- (1) ITEM 423 - CRACK SEALING, TYPE II
- (2) ITEM 421 - MICROSURFACING, LEVELING COURSE, AS PER PLAN
- (3) ITEM 421 - MICROSURFACING, SURFACE COURSE, AS PER PLAN

WORK LOCATION 4
I.R.-77/PLEASANT VALLEY RD. - RAMP E-2

TYPICAL SECTIONS



RAMP CURVE RIGHT (SHOWN)

RAMP E-4 STA. 17+86± TO STA. 23+03.21
RAMP E-4 STA. 26+29.62 TO STA. 27+96±

(LEGEND SEE ABOVE)

WORK LOCATION 5
I.R.-77/PLEASANT VALLEY RD. - RAMP E-4

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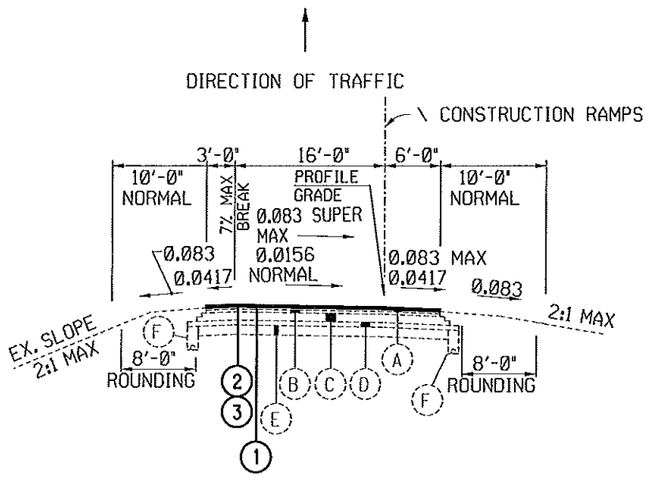
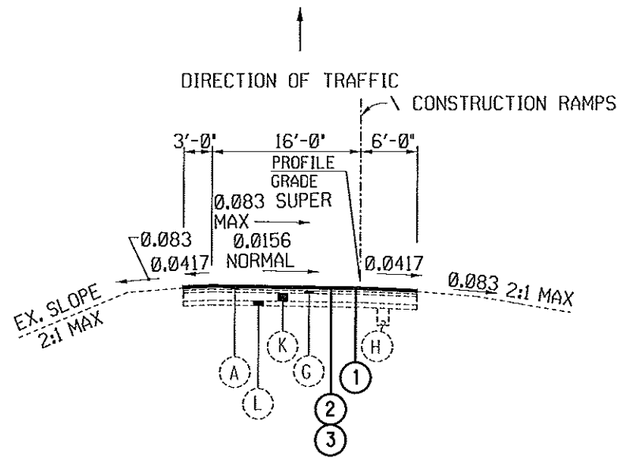


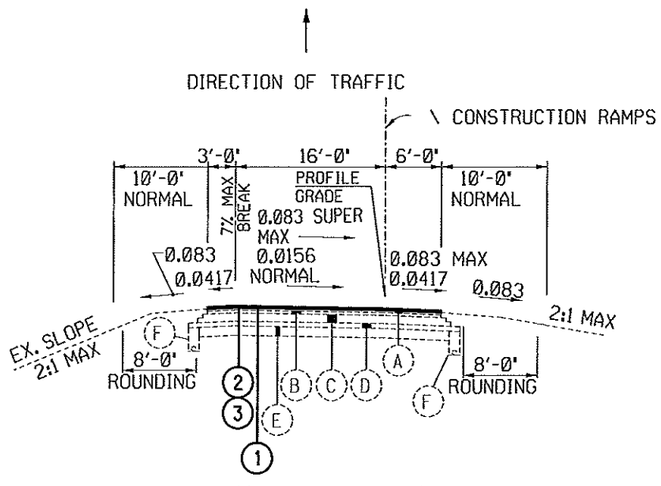
RAMP TYPICAL SECTION ASPHALT CONCRETE PAVEMENT

RAMP F-2 STA. 28+94.86 TO STA. 31+00.00



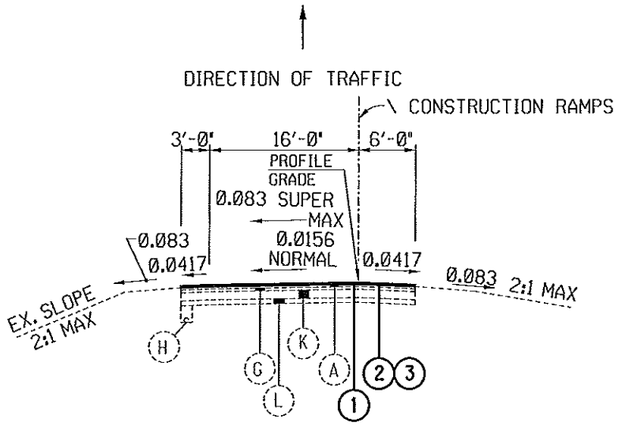
RAMP TYPICAL SECTION ASPHALT CONCRETE

RAMP F-2 STA. 31+00.00 TO STA. 34+98.69



RAMP TYPICAL SECTION ASPHALT CONCRETE PAVEMENT

RAMP F-3 STA. 30+00 TO STA. 41+71.39



RAMP TYPICAL SECTION ASPHALT CONCRETE

RAMP F-2 STA. 34+98.69 TO STA. 41+80.71

EXISTING ITEM LEGEND

- (A) ITEM-442 1 ½" ASPHALT CONCRETE SURFACE COURSE
- (B) ITEM-442 1 ½" ASPHALT CONCRETE INTERMEDIATE COURSE
- (C) ITEM-302 11½" ASPHALT CONCRETE BASE
- (D) ITEM-304 6" AGGREGATE BASE
- (E) ITEM-206 CEMENT STABILIZED SUBGRADE, 12" DEEP
- (F) ITEM-605 6" SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP
- (G) ITEM-826 2" ASPHALT CONCRETE INTERMEDIATE COURSE
- (H) UNDERDRAIN
- (J) ITEM-302 9" ASPHALT CONCRETE BASE
- (K) 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (L) SUBBASE

PROPOSED ITEM LEGEND

- (1) ITEM 423 - CRACK SEALING, TYPE II
- (2) ITEM 421 - MICROSURFACING, LEVELING COURSE, AS PER PLAN
- (3) ITEM 421 - MICROSURFACING, SURFACE COURSE, AS PER PLAN

WORK LOCATIONS 6 & 7
I.R.-77 NB/ROCKSIDE RD. - RAMP F-2 & RAMP F-3

TYPICAL SECTIONS

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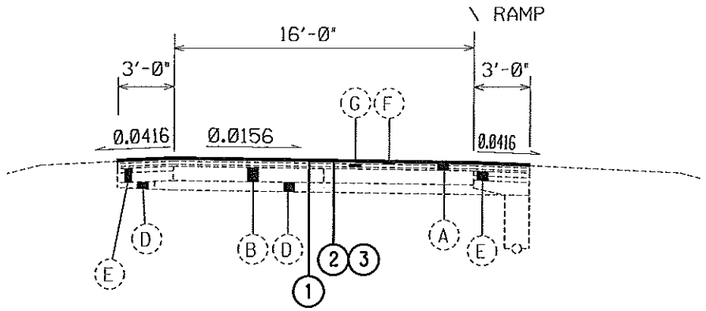
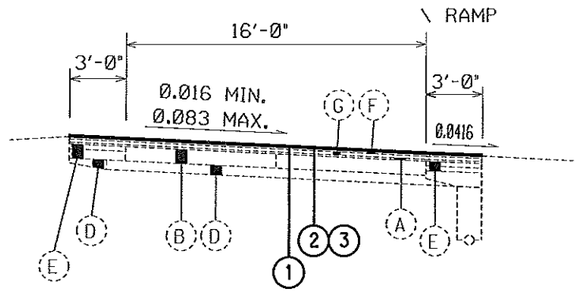


NORMAL RAMP SECTION UNCURBED

RAMP F-4 STA. 49+25.00 TO STA. 56+78.86
RAMP F-5 STA. 35+37.50 TO STA. 36+45±

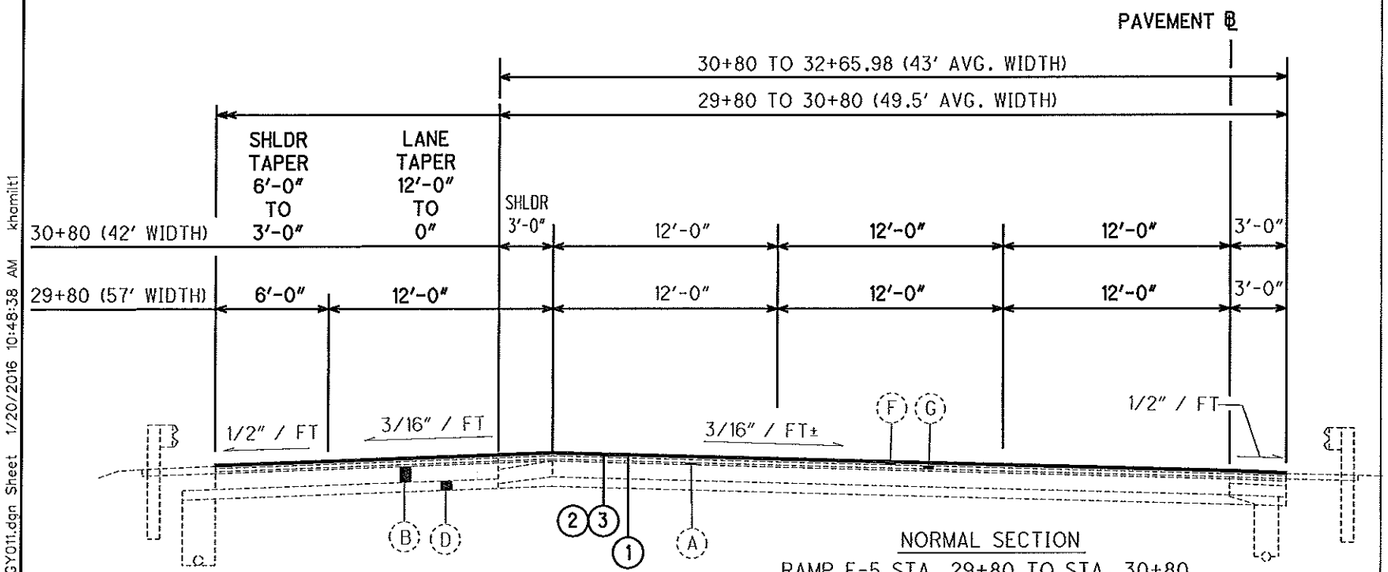


RAMP CURVE RIGHT UNCURBED (SHOWN)

RAMP F-4 STA. 47+71.74 TO STA. 48+75.00
RAMP F-4 STA. 63+63.62 TO STA. 68+56.04
RAMP F-5 STA. 32+65.98 TO STA. 35+37.50

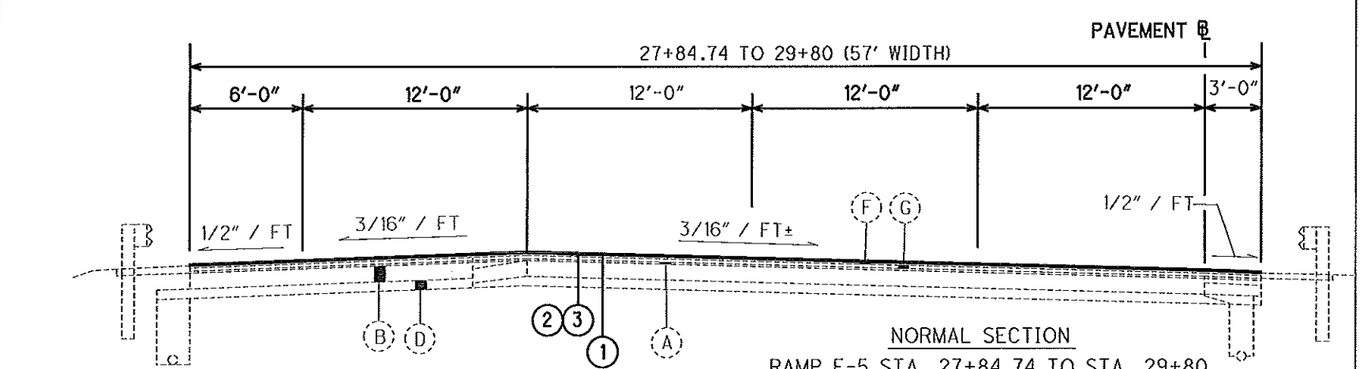
RAMP CURVE LEFT UNCURBED

RAMP F-4 STA. 48+75.00 TO STA. 49+25.00
RAMP F-4 STA. 56+78.86 TO STA. 63+63.62



NORMAL SECTION

RAMP F-5 STA. 29+80 TO STA. 30+80
RAMP F-5 STA. 30+80 TO STA. 32+65.98



NORMAL SECTION

RAMP F-5 STA. 27+84.74 TO STA. 29+80

EXISTING LEGEND

- (A) EXISTING ASPHALT (1 1/4"±)
- (B) 9" REINFORCED CONCRETE BASE
- (C) 10" REINFORCED CONCRETE BASE
- (D) SUBBASE
- (E) BITUMINOUS AGGREGATE BASE OR AGGREGATE BASE
- (F) ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE
- (G) ITEM 442 - 2" ASPHALT CONCRETE INTERMEDIATE COURSE

PROPOSED ITEM LEGEND

- (1) ITEM 423 - CRACK SEALING, TYPE II
- (2) ITEM 421 - MICROSURFACING, LEVELING COURSE, AS PER PLAN
- (3) ITEM 421 - MICROSURFACING, SURFACE COURSE, AS PER PLAN

WORK LOCATION 8
I.R.-77 SB / ROCKSIDE RD. - RAMP F-5/RAMP F-4

TYPICAL SECTIONS

CUY-90-0.00

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General

Project Description

This project consists of the microsurfacing of 2.80 miles of IR-90 from SLM 0.00 (Lorain County Line) to SLM 2.80 (West of Canterbury Rd.) in the City of Westlake in Cuyahoga County. Also included are seven ramps along IR-77 in the cities of Brecksville, Broadview Heights, and Independence.

Right of Way

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

Existing Plans

Existing plans entitled CUY-90-0.00, Project 558-00 and CUY-90-0.00, Project 588-70 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:
First Energy - The Illuminating Company
6896 Miller Road
Brecksville, OH 44141
Attn: Ted Rader,
Design Supervisor
Office: (440) 546-8738
Email:
radert@firstenergycorp.com

Gas:
Columbia Gas of Ohio - NISource
7080 Fry Road
Middleburg Heights, Ohio 44130
Attn: Dan Suren
Phone: (440) 891-2428
Fax: (440) 891-2477

Telecommunications:
AT&T
13630 Lorain Ave. – 4th Floor
Cleveland, OH 44111
Attn: James Janis,
Design Manager
Phone: (216) 476-6142
Fax: (216) 476-6013

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

Lighting:
ODOT District 12
5500 Transportation Blvd.
Garfield Heights, OH 44125
Attn: Tony Toth, P.E.,
District Traffic Engineer
Phone: (216) 584-2220
Fax: (216) 584-2278

Signals:
City of Westlake
Engineering Department
27700 Hilliard Blvd.
Westlake, OH 44145
Attn: Bob Kelly, P.E., City Engineer
Phone: (440) 617-4145
Fax: (440) 617-4189
Email: engdept@cityofwestlake.org

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.

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.

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.

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 [10 meters] 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.

Item 619 Field Office, Type B, As Per Plan

A Type B Field Office is required for this project.

The following revisions to equipment supplied with the Type B Field Office, as specified in Table 619.02-1, Field Office, shall apply:

The copier supplied must meet the requirements of copier supplied with the Type C Field Office.

The broadband internet connection must meet a minimum download speed of 10MB per second and a minimum upload speed of 5MB per second.

All other field office items supplied shall meet the requirements of a Type B, Field Office.

619, Field Office, Type B, As Per Plan.....**6 Months**

CALCULATED KDH
CHECKED EMK

GENERAL NOTES

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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 the pavement and shoulder into roadside ditches or drainage structures. This item is not intended to be used to excavate a uniform depth to place Item 617 – Compacted Aggregate, As Per Plan.

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

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

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

209, Linear Grading, As Per Plan.....**200 Stations**

Pavement

Profile and Alignment

Place the proposed microsurfacing 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 microsurfacing as shown on the typical sections.

Item 251 – Partial Depth Pavement Repair, 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 as directed by the Engineer. The depth of the repair from the top of the existing surface shall be 3". The width of the repair shall be 12" centered over the existing joint.

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

251, Partial Depth Pavement Repair, As Per Plan A .....**2,000 Sq Yds**

Item 251 – Partial Depth Pavement Repair, 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 as directed by the Engineer. The depth of the repair from the top of the existing surface shall be 3". The width of the repair shall be 24" centered over the existing joint.

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

251, Partial Depth Pavement Repair, As Per Plan B .....**2,575 Sq Yds**

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

To eliminate the need for tapering and thinning the overlay or microsurfacing items at the start of paving, end of paving, and bridges, a Pavement Planing, Asphalt Concrete quantity has been added to construct a butt joint at these locations within the project. The length of the planing shall be 15 FT., or as directed by the Engineer, and shall extend across the width of the pavement, including the shoulders. The depth of the planing shall taper from 0 IN. to the thickness of the overlay of microsurfacing material.

Item 421 – Microsurfacing, Leveling Course, As Per Plan

In addition to the requirements of the Construction and Material Specifications Item 421, the following construction requirements shall also apply:

If a leveling course and a surface course are specified, apply the paving mixture at 14 ± 2 pounds per square yard (7.6 ± 1.1 kg/m^2) for the leveling course and 16 ± 1 pounds per square yard (8.7 ± 0.6 kg/m^2) for the surface course. Apply the two courses at a minimum combined rate of 30 pounds per square yard (16.3 kg/m^2) regardless of the above tolerances.

The placement of Item 421 shall not begin before May 15.

The depressions caused by the removal of the raised pavement markers shall be hand-filled and compacted with virgin microsurfacing material prior to the application of the microsurfacing course.

Item 421 – Microsurfacing, Surface Course, As Per Plan

In addition to the requirements of the Construction and Material Specifications Item 421, the following construction requirements shall also apply:

If a leveling course and a surface course are specified, apply the paving mixture at 14 ± 2 pounds per square yard (7.6 ± 1.1 kg/m^2) for the leveling course and 16 ± 1 pounds per square yard (8.7 ± 0.6 kg/m^2) for the surface course. Apply the two courses at a minimum combined rate of 30 pounds per square yard (16.3 kg/m^2) regardless of the above tolerances.

The aggregate mix shall be a 50/50 blend of Ontario Trap Rock and Limestone.

The placement of Item 421 shall not begin before May 15.

Item 423 – Crack Sealing, Type II

The intent of this item is to seal all visible cracks, as directed by the Engineer, prior to placement of the microsurfacing overlay.

Item 617 – Compacted Aggregate, As Per Plan

This item shall be used to place compacted aggregate at a variable depth only where needed to fill in low spots 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.

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

617, Compacted Aggregate, As Per Plan .....**300 Cu Yds**

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'.

618, Rumble Strips, (Asphalt Concrete), As Per Plan.....**10.90 Mile**

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GENERAL NOTES

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Traffic Control

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.

The final pavement markings shall be placed no earlier than 7 days, but no later than 21 days after the placement of the microsurfacing course.

Item Special – Misc.: Inventory Existing Pavement Markings

Prior to any planing and paving operations on the IR-77 Ramps (Locations 2 – 8), 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**

Raised Pavement Markers

Raised pavement marker spacing shall be 80 feet.

Traffic Signals

Item 632 Detector Loop, As Per Plan

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

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

System loops shall be as depicted in the plans.

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

It is not anticipated that the planing operations required for butt joints at the ends of the Crocker Road exit ramps will affect the existing detector loops. If damaged by planing operations, replace existing detector loops.

If needed, the following items shall be used at locations as determined by the Engineer to replace any loops affected by planing operations.

Item	Size	Qty.
Detector Loop, As Per Plan	4' x 9'	2 Each
	6' x 20'	2 Each

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

If detector loops at the Crocker Rd. interchange require replacement, contact Bob Kelly, P.E., City of Westlake Engineer at (440) 617-4145.

If detector loops at the IR-77 ramps at Pleasant Valley or Rockside Rd. require replacement, contact Don Ramm, P.E., City of Independence Engineer at (216) 524-4832.

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

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

632, Detector Loop, As Per Plan..... **4 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 respective City Engineer.

If the loss of vehicle detection is known prior to the start of construction, it shall be discussed at the preconstruction meeting. At such time, the City Engineer(s) 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

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Maintenance of Traffic

Item 614 - Maintaining Traffic

Generally the Contractor shall conduct his operations as to complete the proposed improvement with a minimum of hazard, delay and inconvenience to the motorists using the highway affected by the work done under this contract. In addition to the construction and material specifications, the following specific provisions are mandatory.

I. Notification

Since functional traffic control is a major concern on this project, it is essential that the motoring public be adequately forewarned of future lane closures and traffic constrictions. Therefore, the Contractor shall submit a written schedule to the Engineer, responsible law enforcement agencies, and the ODOT Public Information Office (216-584-2007) indicating the locations and dates of the lane closures at least 3 days prior to the implementation of any such closures.

II. Work Hours

Night work will be permitted due to the nature of the work required.

III. Lane Closure, Planing and Paving Restrictions

1. Maintain a minimum of one 11' lane in each direction at all times.

IV. Maintenance of Traffic Systems

A. When Required

Whenever any part of the traveled surface is being worked upon or is otherwise not suitable for safe and convenient use by vehicles, traffic control devices sufficient to protect such areas to assure the safe and convenient passage of vehicular traffic shall be installed and maintained. Such traffic control devices and the manner in which they are used shall be consistent with these plans and the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, hereinafter referred to as the OMUTCD. The traffic control device system shall constitute the minimum provisions for traffic control for each particular situation. Whenever the Engineer deems it necessary especially where a grade, curve, or merge conditions exists, he may direct that additional or alternative devices be used.

B. Conditions

During all parts of this project, flaggers, signing, barricades, flashing arrows, etc. shall be located as indicated in the OMUTCD or as shown in the Standard Construction Drawings. Two-way traffic shall be maintained at all times.

C. Advance Warning Signs

All advance warning signs for any condition which restricts traffic shall be erected before any such restriction is put into effect. All such signs shall be covered or removed from the view of traffic whenever they are not applicable.

D. Flashing Arrow Requirement

Whenever any part of the traveled surface is closed, the motorists shall be warned and directed by the Contractor through the use of one flashing arrow for each lane closed. Additionally, the provisions set forth in the OMUTCD and the applicable Standard Construction Drawings shall be met.

E. Flaggers and Law Enforcement Officers

The Contractor shall furnish additional flaggers as directed by the Engineer. Law Enforcement Officers (LEO's) shall be required for traffic direction only under the following circumstances: (1) if signals are non-operational or (2) if traffic must move against signal phasing.

F. Protection of Public

Personal cars shall not be parked within the R/W.

G. Failure to Comply

If there is any failure to comply with provisions for traffic control set out in these plans and notes, or with the provisions of the OMUTCD, the highway in the vicinity of the work area shall not be considered in a condition for the safe and convenient use by the traveling public. Any failure to keep the highway, in the vicinity of the work area, in a condition for the safe and convenient use by the traveling public shall be considered a breach of this contract. Work shall be suspended until the Contractor complies with the provisions of the aforementioned items.

V. Maintenance of Traffic Materials

A. Signs

Sign dimensions and specifications, including letter sizes shall be as provided in the OMUTCD, or in design drawings provided by the Department of Transportation. The signs shall be subject to approval of the Engineer prior to the start of the project.

B. Sign Supports

Sign supports shall be of sufficient size and height as to support the signs at the appropriate height. Supports shall be adequate in mass and stability to prevent the signs from being blown over by wind or vehicular generated air turbulence.

C. Flashing Arrows

Whenever any part of the traveled surface is closed, the motorist shall be warned and diverted by the Contractor through the use of one flashing arrow barricade for each lane closed. The Contractor shall refer to Standard Construction Drawing MT-35.10 and the provisions set forth in the OMUTCD for all information regarding furnishing, maintaining, and use of flashing arrow barricades. Payment for the above shall be included in the lump sum bid for Item 614 Maintaining Traffic.

D. Drums

Drums shall be in accordance with pertinent sections of the OMUTCD. All costs for installing, maintaining and subsequent removal of said drums shall be included in the lump sum bid price for Item 614 Maintaining Traffic.

E. Cones

Cones shall be located as shown in the OMUTCD and the Standard Construction Drawings.

F. Flashers

Flashers shall be 12 volt battery operated models with 7 inch diameter yellow lenses illuminated by rapid intermittent flashers of short duration and shall be placed on all signs at all times as required by the OMUTCD and the Standard Construction Drawings.

VI. 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.

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)	12:00N 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 $50 for each minute the above described lane closure restrictions are violated.

Lane Closure Restriction for the 2016 Republican National Convention

No short-term lane closures will be permitted at any time beginning Sunday, July 10, 2016 through Sunday, July 24, 2016.

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.

The Contractor shall be responsible for any damage to median turn-arounds located within the project limits. Any damage caused by the Contractor's actions shall be repaired at no cost to the State.

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.

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.

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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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. Place microsurfacing leveling course
D. Place microsurfacing surface course
E. Place proposed pavement markings and raised pavement markers

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.

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.

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 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.

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 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 required to complete the work as described above shall be included in the lump sum bid for Item 614 Maintaining Traffic, unless separately itemized in the plan.

Work Zone Pavement Markings

Place Work Zone Edge Line, Work Zone Lane Line, and Work Zone Dotted Line at 6" widths. Place Work Zone Channelizing Line at 12" widths for all mainline channelizing line, and 8" widths for all channelizing lines on exit ramps. All other marking dimensions shall be as given in 614 or 641.

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 crack seal, after placement of the leveling course of microsurfacing, and again after the surface course of microsurfacing has been placed (3 applications total).

614, Work Zone Lane Line, Class I, 642 Paint, As Per Plan (6") ..... **33.96 Mile**

614, Work Zone Edge Line, Class I, 642 Paint, As Per Plan (6") ..... **51.72 Mile**

614, Work Zone Channelizing Line, Class I, 642 Paint, As Per Plan (12") ..... **14,694 Feet**

614, Work Zone Channelizing Line, Class I, 642 Paint, As Per Plan (8") ..... **13,401 Feet**

614, Work Zone Dotted Line, Class I, 642 Paint, As Per Plan (6") .... **12,558 Feet**

614, Work Zone Stop Line, Class I, 642 Paint ..... **288 Feet**

614, Work Zone Crosswalk Line, Class I, 642 Paint ..... **570 Feet**

614, Work Zone Arrow, Class I, 642 Paint..... **153 Each**

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MAINTENANCE OF TRAFFIC GENERAL NOTES

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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 CMS 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 CMS 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:

* 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 at the point of lane restriction or road closure and to manually control traffic movements through intersections in work zones.
* When construction vehicles are entering/exiting the zone directly from/into an open lane of traffic. If a lane has been closed to provide an acceleration/deceleration lane for the vehicle, the LEO will not be required.

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..... **480 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

IR-90 Eastbound and Westbound		
Location	Permitted Lane Reductions	
	One Lane Closed	Two Lanes Closed
Lorain County Line to Hilliard Blvd. Eastbound	Weekday * 9am – 4pm 7pm – 6am Weekend 7pm Fri – 6am Mon	Weekday 10pm – 6am Weekend 11pm Fri – 8am Sat 11pm Sat – 9am Sun 10pm Sun – 6am Mon
Hilliard Blvd. to Lorain County Line Westbound	Weekday* 9am – 3pm 7pm – 6am Weekend 8pm Fri – 6am Mon	Weekday 10pm – 6am Weekend 11pm Fri – 8am Sat 11 pm Sat – 10am Sun 10pm Sun – 6am Mon

IR-90 & IR-77 Ramps (Single Lane Exit/Entrance)		
Location	Permitted Closures	
	Partial Width	Total Closure
All IR-90 and IR-77 Entrance and Exit Ramps	Maintain 11' Lane	Permitted From 8 PM to 5 AM for a Maximum of 2 Separate Times Using an Approved Detour

All notes on the District 12 Permitted Lane Closure Times website, which is located on ODOT's website at the following location shall apply:

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 job.

Ramp Closures for Microsurfacing

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

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.

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Work Zone 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 WTSs 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 current WTS certification (with an expiration date no more than 5 years from the date of issue) from any of the approved organizations.

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.

In addition to the plan requirements for Work Zone 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 11 of the Work Zone Traffic Supervisor plan note.

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.

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

614, Worksite Traffic Supervisor..... **6 Months**

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

A Work Zone Speed Zone is an approved speed limit revision to be implemented on this project to enhance the safety of both workers and motorists within the limits of active work zones. Work Zone Speed Zones are temporary in nature and will be in effect only during the times which lane closures are in place.

Implementation of Work Zone Speed Zones is required for all operations requiring the closure of one or more lanes to perform items of work detailed in the plans, except for lane closures needed to install pavement markings and raised pavement markers.

The District Speed Zone Coordinator will retain the official Work Zone Speed Limit Revision and justification report. The Project Engineer will retain all records furnished by the Worksite Traffic Supervisor indicating what signs were in place on every day that Work Zone Speed Zones were in place.

Furnish, install, maintain, cover during suspension of work, and subsequently remove Work Zone Speed Limit (R2-1) (50 mph speed limit) signs and supports within the work limits in accordance with the following requirements:

Cover or remove any existing speed limit signs within active work zone speed zones. Restore existing speed limit signs once lane closures are no longer in place.

Erect or uncover Work Zone Speed Limit signs no more than one hour before the start of work requiring lane closures. Remove or cover Speed Reduction and Work Zone Speed Limit signs and restore existing speed limit signs no later than one hour once lane closures are no longer in place.

Erect Speed Reduction (Speed Zone Ahead symbol) signs (W3-5) approximately 1250' in advance of the first Work Zone Speed Limit signs. Provide a dual installation where inside shoulder is greater than 5'.

Erect the first Work Zone Speed Limit signs approximately 500' in advance of a lane closure as depicted in SCD MT-95.30. Provide a dual installation where inside shoulder is greater than 5'. Repeat Work Zone Speed Limit signs every 1 mile for 60 and 55 mph zones and every one-half mile for 50 mph and 45 mph zones. Erect a Work Zone Speed Limit sign immediately after each open entrance ramp within the zone.

Erect signs indicating the resumption of the statutory speed limit at the end of the lane closure. Provide a dual installation. The Contractor may use signs and supports in used, but good condition, provided the signs meet current ODOT specifications. Sign faces shall be retro-reflectorized with Type G sheeting complying with the requirements of CMS 730.19.

Mount Work Zone Speed Limit signs on two No. 3 posts in accordance with Item 630, unless mounted on a temporary sign support per SCD MT 105.10.

Observe all requirements of the OMUTCD for Work Zone speed limit and related sign sizes, placement, supports, etc with two exceptions: 1) expressway size speed limit signs may be used on freeways and expressways, if necessary; 2) the height of signs mounted on portable supports should be the height required for ground-mounted signs but shall not be more than 1 foot lower than the height required by the OMUTCD, or as directed by the Engineer. Portable supports should not be used for more than 3 consecutive days.

Provide Work Zone Speed Limit signs and supports and cover, remove, and restore existing Speed Limit or Minimum Speed Limit signs incidental to Item 614 Maintaining Traffic.

The following table provides details on work zone speed zones approved for use on this project.

WZSZ Revision Number	County & Route	SLM		Phase/ Part & Direction	Approved Speed Limit (mph)	Specific Warranting Conditions and Factors
		From	To			
WZ-65187	CUY-90	Varies[A]	Varies[A]	All	50 MPH	Lane closures necessary to improve highway.

[A]The begin and end point of the WZSZ will vary within the project limits based on where lane reductions are in place to perform work required by the plans.

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.

Uncover or place Work Zone Increased Penalties signs once the pavement surface is under construction for overlay removal, pavement repair, and placement of intermediate and surface courses. Uncover or place increased penalties signs no more than four hours before the actual start of work. Do not cover signs when lanes are re-opened to traffic subject to the provisions of the "Schedule of Through Lanes to be Maintained." Cover or remove signs between October 15 and April 1 each year. Remove signs once all work requiring lane closures is complete.

The signs shall be dual mounted. 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 (3 kilometers) through the construction work limits.

The Contractor may use signs and supports in used, but good condition provided the signs meet current ODOT specifications. Sign faces shall be reflectorized with Type G sheeting complying with the requirements of CMS 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 re-erected 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.....**14 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 four (4) PCMS units for duration of six (6) 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 **24 Sign Month**

SHEET NUM.											PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
16	17	18	20	21	22	23	25	26	27	28	01/NHS/PV	02/SAF/PV							
																		ROADWAY	
	200										200			209	60201	200	STA	LINEAR GRADING, AS PER PLAN	17
																		EROSION CONTROL	
											891	109		832	30000	1,000	EACH	EROSION CONTROL	
																		PAVEMENT	
	2,000										1,785	215		251	01001	2,000	SY	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN A	17
	2,575										2,300	275		251	01001	2,575	SY	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN B	17
							2,005	760			2,005	760		254	01001	2,765	SY	PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN	17
							227,859	27,755			227,859	27,755		421	10011	255,614	SY	MICROSURFACING, SURFACE COURSE, AS PER PLAN	17
							227,859	27,755			227,859	27,755		421	10021	255,614	SY	MICROSURFACING, LEVELING COURSE, AS PER PLAN	17
							227,859	27,755			227,859	27,755		423	00204	255,614	SY	CRACK SEALING, TYPE II	
	300										250	50		617	10101	300	CY	COMPACTED AGGREGATE, AS PER PLAN	17
	10.9										10.9			618	40601	10.9	MILE	RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	17
																		TRAFFIC CONTROL	
									1,147	320	1,147	320		621	00100	1,467	EACH	RPM	
									1,147	320	1,147	320		621	54000	1,467	EACH	RAISED PAVEMENT MARKER REMOVED	
									13.48	3.76	13.48	3.76		646	10010	17.24	MILE	EDGE LINE, 6"	
									11.21	0.11	11.21	0.11		646	10110	11.32	MILE	LANE LINE, 6"	
									2,445	2,022	2,445	2,022		646	10300	4,467	FT	CHANNELIZING LINE, 8"	
									4,537	361	4,537	361		646	10310	4,898	FT	CHANNELIZING LINE, 12"	
									96		96			646	10400	96	FT	STOP LINE	
									190		190			646	10500	190	FT	CROSSWALK LINE	
									31	20	31	20		646	20300	51	EACH	LANE ARROW	
									3,986	200	3,986	200		646	20504	4,186	FT	DOTTED LINE, 6"	
									1	4	1	4		646	98000	5	EACH	PAVEMENT MARKING, MISC.: WRONG WAY ARROW	
		LS										LS		SPECIAL	69098400	LS		MISC.: INVENTORY EXISTING PAVEMENT MARKINGS	18
																		TRAFFIC SIGNALS	
		4									2	2		632	26501	4	EACH	DETECTOR LOOP, AS PER PLAN	18
																		MAINTENANCE OF TRAFFIC	
				480							428	52		614	11110	480	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
					6						4	2		614	11500	6	MNTH	WORKSITE TRAFFIC SUPERVISOR	
						14					14			614	12484	14	EACH	WORK ZONE INCREASED PENALTIES SIGN	
						24					20	4		614	18601	24	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	23
			33.96								33.63	0.33		614	20101	33.96	MILE	WORK ZONE LANE LINE, CLASS I, 642 PAINT, AS PER PLAN	
			51.72								40.44	11.28		614	22101	51.72	MILE	WORK ZONE EDGE LINE, CLASS I, 642 PAINT, AS PER PLAN	
			28,095								20,946	7,149		614	23201	28,095	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 642 PAINT, AS PER PLAN	
			12,558								11,958	600		614	24201	12,558	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, AS PER PLAN	
			288								288			614	26200	288	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	
			570								570			614	27200	570	FT	WORK ZONE CROSSWALK LINE, CLASS I, 642 PAINT	
			153								93	60		614	30200	153	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	
																		INCIDENTALS	
											LS	LS		614	11000	LS		MAINTAINING TRAFFIC	
6											4	2		619	16011	6	MNTH	FIELD OFFICE, TYPE B, AS PER PLAN	16
LS											LS	LS		623	10001	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	16
											LS	LS		624	10000	LS		MOBILIZATION	

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GENERAL SUMMARY

CUY-90-0.00

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN		423 CRACK SEALING, TYPE II		421 MICROSURFACING, SURFACE COURSE, AS PER PLAN	421 MICROSURFACING, LEVELING COURSE, AS PER PLAN
					FT.	FT.	FT.	FT.	SQ. YD.	SY		SY		SY	SY
			I-90 EASTBOUND												
	29-30	1	0+00.00	23+46.22	2346.22	60	60	60	15641	200		15641		15641	15641
	30	1	25+51.52	28+55.00	303.48	60	60	60	2023	100		2023		2023	2023
	30	1	28+55.00	29+55.00	100	60	62	61	678			678		678	678
	30	1	29+55.00	36+75.87	720.87	62	95	78.5	6288			6288		6288	6288
	30-31	1	36+75.87	56+78.25	2002.38	60	60	60	13349			13349		13349	13349
	31-32	1	56+78.25	76+72.75	1994.5	111	60	85.5	18948			18948		18948	18948
	32-33	1	76+72.75	96+50.00	1977.25	60	60	60	13182			13182		13182	13182
	33	1	96+50.00	101+69.90	519.9	75	75	75	4333			4333		4333	4333
	33	1	101+69.90	113+56.44	1186.54	75	60	67.5	8899			8899		8899	8899
	33-34	1	113+56.44	131+28.28	1771.84	60	60	60	11812	100		11812		11812	11812
	34-35	1	133+38.56	148+00.00	1461.44	60	60	60	9743	200		9743		9743	9743
			I-90 WESTBOUND												
	29-30	1	0+00.00	23+46.22	2346.22	60	60	60	15641	200		15641		15641	15641
	30	1	25+52.62	26+75.00	122.38	60	60	60	816	100		816		816	816
	30	1	26+75.00	40+42.73	1367.73	60	96	78	11854			11854		11854	11854
	30-31	1	40+42.73	61+62.77	2120.04	60	60	60	14134			14134		14134	14134
	31	1	61+62.77	69+21.57	758.8	96	60	78	6576			6576		6576	6576
	31-33	1	69+21.57	96+50.00	2728.43	60	60	60	18190			18190		18190	18190
	33	1	96+50.00	101+69.90	519.9	75	75	75	4333			4333		4333	4333
	33	1	101+69.90	114+12.61	1242.71	75	60	67.5	9320			9320		9320	9320
	33-34	1	114+12.61	131+25.86	1713.25	60	60	60	11422	100		11422		11422	11422
	34-35	1	133+38.56	148+00.00	1461.44	60	60	60	9743	200		9743		9743	9743
			RAMP A												
	36	1	40+44.71	50+34.19	989.48	25	25	25	2749			2749		2749	2749
	36	1		APRON			CAD AREA		278	278		278		278	278
			RAMP B												
	37	1		APRON			CAD AREA		294	294		294		294	294
	37	1	50+44.93	54+78.18	433.25	60	60	60	2888			2888		2888	2888
	37	1	54+78.18	55+28.18	50	60	45	52.5	292			292		292	292
	37	1	55+28.18	56+28.86	100.68	45	45	45	503			503		503	503
	37	1	56+28.86	56+78.18	49.32	45	32	38.5	211			211		211	211
	37	1	56+78.18	57+78.18	100	32	32	32	356			356		356	356
	37	1	57+78.18	58+22.48	44.3	32	25	28.5	140			140		140	140
	37	1	58+22.48	61+61.57	339.09	25	27	26	980			980		980	980
			RAMP C												
	38	1	49+67.39	54+91.66	524.27	22	22	22	1282	37		1282		1282	1282
	38	1	54+91.66	56+77.64	185.98	55	43	49	1013			1013		1013	1013
			RAMP D												
	39	1	36+74.12	43+70.22	696.1	25	25	25	1934			1934		1934	1934
	39	1	43+70.22	44+70.46	100.24	25	33	29	323			323		323	323
	39	1	44+70.46	51+63.00	692.54	33	33	33	2539			2539		2539	2539
	39	1		APRON			CAD AREA		154	154		154		154	154
			RAMP E												
	39	1	36+93.84	48+61.56	1167.72	25	25	25	3244	42		3244		3244	3244
			BL 48+61.56 = CL 48+61.72												
	31	1	48+61.72	54+93.32	631.6	25	25	25	1754			1754		1754	1754
SUBTOTALS										2005		227859		227859	227859
TOTALS CARRIED TO GENERAL SUMMARY										2005		227859		227859	227859
PLAN SPLIT #1 TOTAL										2005		227859		227859	227859
PLAN SPLIT #2 TOTAL															
PLAN SPLIT #3 TOTAL															

CALCULATED KDH
CHECKED EMK

PAVEMENT SUBSUMMARY

CUY-90-0.00

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REF. NO.	SHEET NO.	PLAN SPLIT NO.	STATION TO STATION		LENGTH	BEGIN WIDTH	ENDING WIDTH	AVERAGE WIDTH	AREA	254 PAVEMENT PLANING, ASPHALT CONCRETE, AS PER PLAN		423 CRACK SEALING, TYPE II		421 MICROSURFACING, SURFACE COURSE, AS PER PLAN	421 MICROSURFACING, LEVELING COURSE, AS PER PLAN						
					FT.	FT.	FT.	FT.	SQ. YD.	SY		SY		SY	SY						
			LOCATION 2 - RAMP C-3																		
	40	2	34+63.60	34+78.60	15.00	25	25	25	42	42		42		42	42						
	40	2	34+78.60	44+50.00	971.40	25	25	25	2698			2698		2698	2698						
	40	2	44+50.00	47+58.47	308.47	25	25	25	857			857		857	857						
	40	2	47+58.47	49+18.50	160.03	25	25	25	445	42		445		445	445						
			LOCATION 3 - RAMP C-4																		
	41	2	39+46.50	43+25.00	378.50	25	25	25	1051	42		1051		1051	1051						
	41	2	43+25.00	44+68.00	143.00	25	25	25	397			397		397	397						
	41	2	44+68.00	45+29.72	61.72	25	27	26	178	45		178		178	178						
			LOCATION 4 - RAMP E-2																		
	42	2	1+86.00	4+05.94	219.94	23	23	23	562	39		562		562	562						
	42	2	4+05.94	5+22.49	116.55		CAD AREA		451			451		451	451						
	42	2	5+22.49	8+55.16	332.67	23	23	23	850			850		850	850						
	42	2	8+55.16	12+45.00	389.84	25	25	25	1083	42		1083		1083	1083						
			LOCATION 4 - RAMP E-2A																		
	42	2	2+90.00	4+05.94	115.94	25	25	25	322	42		322		322	322						
			LOCATION 5 - RAMP E-4																		
	43	2	17+86.00	19+10.00	124.00	33	25	29	400	55		400		400	400						
	43	2	19+10.00	22+73.93	363.93	25	25	25	1011			1011		1011	1011						
	43	2	22+73.93	25+36.42	262.49	23	23	23	671			671		671	671						
	43	2	25+36.42	26+60.17	123.75		CAD AREA		496			496		496	496						
	43	2	26+60.17	27+96.00	135.83	30	30	30	453	50		453		453	453						
			LOCATION 5 - RAMP E-4A																		
	43	2	26+60.17	27+57.00	96.83	17	17	17	183	29		183		183	183						
			LOCATION 6 - RAMP F-2																		
	44	2	28+94.86	29+44.86	50.00	27	25	26	144	45		144		144	144						
	44	2	29+44.86	31+00.00	155.14	25	25	25	431			431		431	431						
	44	2	31+00.00	33+09.36	209.36	25	25	25	582			582		582	582						
	44	2	33+09.36	41+80.71	871.35	25	32	29	2759	42		2759		2759	2759						
			LOCATION 7 - RAMP F-3																		
	44	2	30+00.00	31+02.37	102.37	25	25	25	284	42		284		284	284						
	44	2	31+02.37	41+71.39	1069.02	25	25	25	2970	42		2970		2970	2970						
			LOCATION 8 - RAMP F-5																		
	45	2	27+84.74	27+99.74	15.00	52	52	52	87	87		87		87	87						
	45	2	27+99.74	29+80.00	180.26	52	52	52	1042			1042		1042	1042						
	45	2	29+80.00	30+80.00	100.00	52	38	45	500			500		500	500						
	45	2	30+80.00	32+65.98	185.98	38	38	38	785			785		785	785						
	45	2	32+65.98	36+45.01	379.03	22	22	22	927	37		927		927	927						
			LOCATION 8 - RAMP F-4																		
	45	2	47+71.74	48+71.74	100.00	22	22	22	244			244		244	244						
	45	2	48+71.74	49+71.74	100.00	22	22	22	244			244		244	244						
	45-46	2	49+71.74	68+56.04	1884.30	22	22	22	4606	37		4606		4606	4606						
SUBTOTALS										760		27755		27755	27755						
TOTALS CARRIED TO GENERAL SUMMARY										760		27755		27755	27755						
PLAN SPLIT #1 TOTAL																					
PLAN SPLIT #2 TOTAL										760		27755		27755	27755						
PLAN SPLIT #3 TOTAL																					

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PAVEMENT SUBSUMMARY

CUY-90-0.00

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SHEET NO.	PLAN SPLIT NO.	LOCATION	STATION FROM	STATION TO	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 6", YELLOW	646 LANE LINE, 6"	646 CHANNELIZING LINE, 8"	646 CHANNELIZING LINE, 12"	646 STOP LINE	646 CROSSWALK LINE	646 LANE ARROW	646 DOTTED LINE, 6"	646 PAVEMENT MARKING, MISC.: WRONG WAY ARROW	621 RPM, (WHITE)	621 RPM, (WHITE/RED)	621 RPM, (YELLOW/RED)	621 RAISED PAVEMENT MARKER REMOVED		
			FROM	TO	FT	FT	FT	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH		
		I-90 EASTBOUND																		
29-30	1		0+00.00	28+55.00	2,855	2,855	5,710								73			73		
30	1		28+55.00	29+55.00	100	100	200						100		4			4		
30	1		29+55.00	32+25.00	270	270	540						270		8			8		
30	1		32+25.00	33+97.44		172	345						173		6			6		
30	1		33+97.44	36+75.04		278	555		278						8	8		16		
30-31	1		36+75.04	56+78.25	2,003	2,003	4,006								52			52		
31	1		56+78.25	64+74.00		796	1,592		796						21	21		42		
31	1		64+74.00	66+17.84	144	144	288		288						5	9		14		
31-32	1		66+17.84	76+74.00	1,056	1,056	2,112						1,057		28			28		
32-35	1		76+74.00	148+00.00	7,126	7,126	14,252								180			180		
		I-90 WESTBOUND																		
29-30	1		0+00.00	26+75.07	2,675	2,675	5,350								68			68		
30	1		26+75.07	35+59.86	885	885	1,770						885		24			24		
30	1		35+59.86	36+75.07	115	115	230		231						4	7		11		
30	1		36+75.07	40+42.73		368	735		368						11	11		22		
30-31	1		40+42.73	61+62.77	2,120	2,120	4,240								55			55		
31	1		61+62.77	64+36.78		274	548		275						8	8		16		
31	1		64+36.78	66+10.24		173	347						174		6			6		
31	1		66+10.24	68+02.63	192	192	385						193		6			6		
31	1		68+02.63	69+44.38	142	142	284						142		5			5		
31-35	1		69+44.38	148+00.00	7,856	7,856	15,711								198			198		
		RAMP A																		
36	1		36+75.00	40+42.57	368				368							14		14		
36	1		40+42.57	50+11.41	969	969					90					13	13	26		
		RAMP B																		
37	1		50+44.93	54+78.18	433	433		1,300		60		16	90			38	6	44		
37	1		54+78.18	55+28.18	50	50		100								4	1	5		
37	1		55+28.18	56+28.86	101	101		202				2				7	2	9		
37	1		56+28.86	56+78.18	49	49		50								2	1	3		
37	1		56+78.18	57+78.18	100	100		100				1				4	2	6		
37	1		57+78.18	58+22.48	44	44										1	1	2		
37	1		58+22.48	61+61.57	339	339										5	5	10		
37	1		61+61.57	64+37.35	276				276							11		11		
37	1		64+37.35	66+10.01	173											3		3		
		RAMP C																		
38	1		49+67.39	54+91.66	524	524					16					7	7	14		
38	1		54+91.66	55+72.91	81				163							6		6		
38	1		55+72.91	56+77.64	105								105			2		2		
38	1		56+77.64	64+74.00	796				797				797			30		30		
		RAMP D																		
39	1		32+25.00	33+96.03	171											3		3		
39	1		33+93.03	36+74.12	281											4		4		
39	1		36+74.12	43+70.22	696	696			697					1		27	9	36		
39	1		43+70.22	44+70.46	100	100										2	2	4		
39	1		44+70.46	51+63.00	693	693		693		36	60	12				26	9	35		
		RAMP E																		
39	1		36+93.84	48+61.56	1,168	1,168					24					15	15	30		
			BL 48+61.56 Romp E = 48+61.72 I-90																	
31	1		48+61.72	54+93.32	632	632										8	8	16		
SUBTOTALS					35688	35498	59200	2445	4537	96	190	31	3986	1	770	296	81	1147		
TOTALS CARRIED TO GENERAL SUMMARY					6.76 MI	6.72 MI	11.21 MI	2445	4537	96	190	31	3986	1	770	296	81	1147		
PLAN SPLIT #1 TOTAL					6.76 MI	6.72 MI	11.21 MI	2445	4537	96	190	31	3986	1	770	296	81	1147		
PLAN SPLIT #2 TOTAL																				
PLAN SPLIT #3 TOTAL																				

CALCULATED KDH
CHECKED EMK

TRAFFIC CONTROL SUBSUMMARY

CUY-90-0.00

27
48

I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_TS001.dgn Sheet 1/20/2016 10:49:59 AM khamilt1

SHEET NO.	PLAN SPLIT NO.	LOCATION	STATION FROM	STATION TO	646 EDGE LINE, 6", WHITE	646 EDGE LINE, 8", YELLOW	646 LANE LINE, 6"	646 CHANNELIZING LINE, 8"	646 CHANNELIZING LINE, 12"	646 STOP LINE	646 CROSSWALK LINE	646 LANE ARROW	646 DOTTED LINE, 6"	646 PAVEMENT MARKING, MISC.: WRONG WAY ARROW	621 RPM, (WHITE)	621 RPM, (WHITE/RED)	621 RPM, (YELLOW/RED)	621 RAISED PAVEMENT MARKER REMOVED		
			MILE	MILE	MILE	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH			
		LOCATION 2 - RAMP C-3																		
40	2		34+63.60	47+58.47	1.295	1.295										17	17	34		
40	2		47+58.47	49+18.50	160				161							7		7		
		LOCATION 3 - RAMP C-4																		
41	2		39+46.50	45+29.72	583	583										8	8	16		
		LOCATION 4 - RAMP E-2																		
42	2		1+86.00	12+45.00	1,059	1,059										14	14	28		
		LOCATION 4 - RAMP E-2A																		
42	2		2+90.00	4+05.94	116	116								1		2	2	4		
		LOCATION 5 - RAMP E-4																		
43	2		17+86.00	27+96.00	1,010	1,010										13	13	26		
		LOCATION 5 - RAMP E-4A																		
43	2		26+60.17	27+57.00	97	97								1		2	2	4		
		LOCATION 6 - RAMP F-2																		
44	2		28+94.86	36+03.51	709	709								1		9	9	18		
44	2		36+03.51	41+80.71	577	577		578				12				22	8	30		
		LOCATION 7 - RAMP F-3																		
44	2		30+00.00	41+71.39	1,171	1,171										15	15	30		
		LOCATION 8 - RAMP F-5																		
45	2		27+84.74	32+65.98	481	481		1,444				8				43	7	50		
45	2		29+80.00	30+80.00	100	100	200						200			2	2	4		
45	2		30+80.00	32+65.98	186	186	372									3	3	6		
45	2		32+65.98	36+45.01	379	379			200							5	5	10		
		LOCATION 8 - RAMP F-4																		
45	2		47+71.74	49+71.74	400									1		5		5		
45-46	2		49+71.74	68+56.04	1,884	1,884										24	24	48		
SUBTOTALS					10208	9648	572	2022	361			20	200	4		191	129	320		
TOTALS CARRIED TO GENERAL SUMMARY					1.93 MI	1.83 MI	0.11 MI	2022	361			20	200	4		320		320		
PLAN SPLIT #1 TOTAL																				
PLAN SPLIT #2 TOTAL					1.93 MI	1.83 MI	0.11 MI	2022	361			20	200	4		320		320		
PLAN SPLIT #3 TOTAL																				

CALCULATED KDH
CHECKED EMK

TRAFFIC CONTROL SUBSUMMARY

CUY-90-0.00

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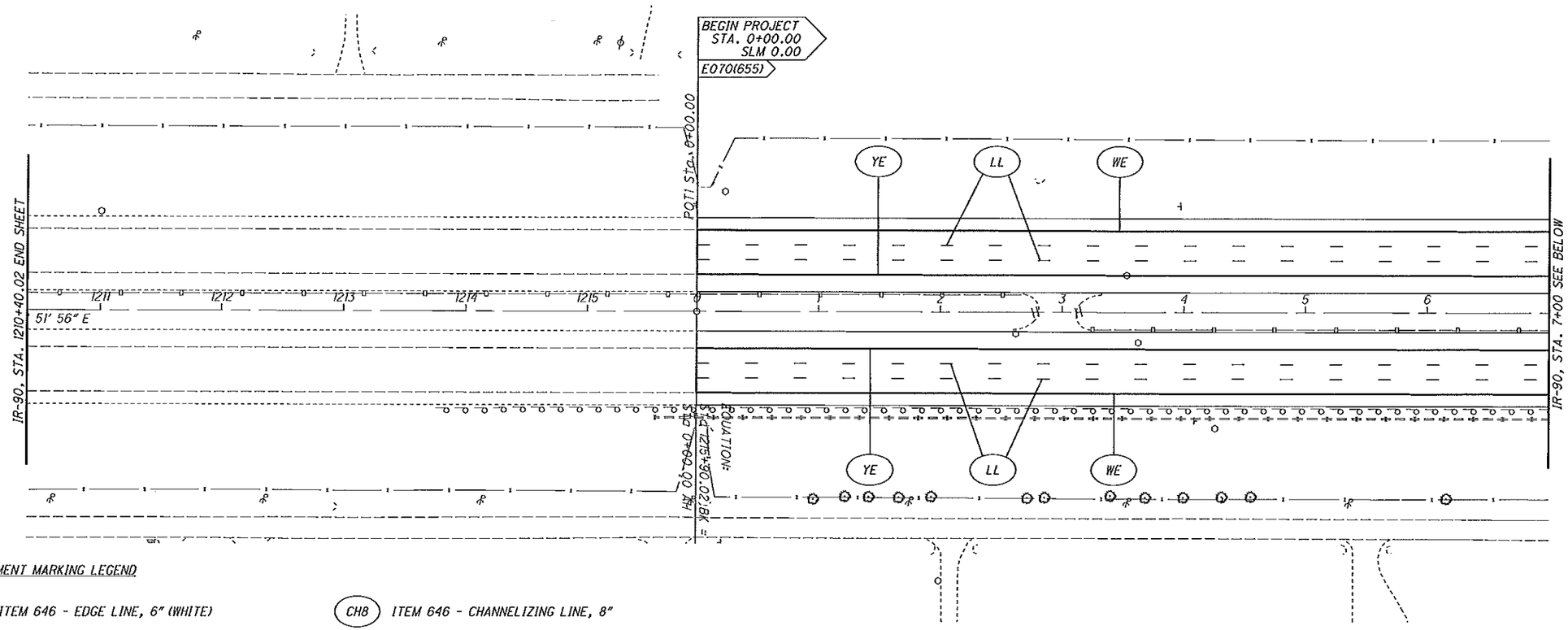
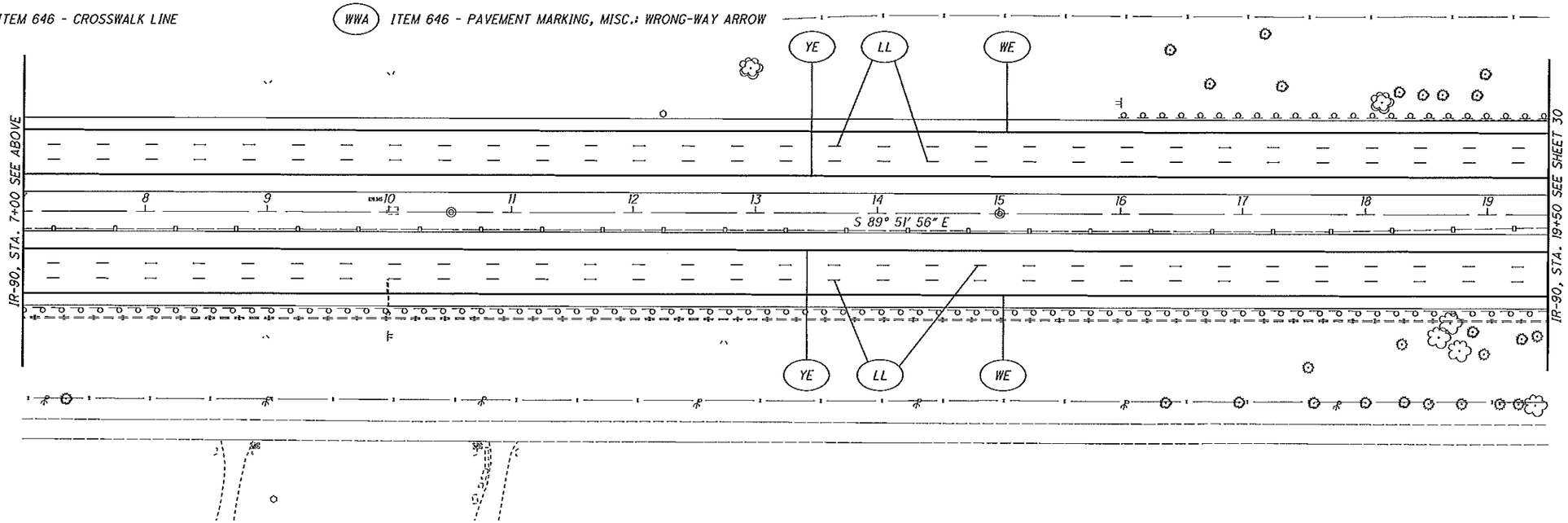


PAVEMENT MARKING LEGEND

WE	ITEM 646 - EDGE LINE, 6" (WHITE)	CH8	ITEM 646 - CHANNELIZING LINE, 8"
YE	ITEM 646 - EDGE LINE, 6" (YELLOW)	CH12	ITEM 646 - CHANNELIZING LINE, 12"
LL	ITEM 646 - LANE LINE, 6"	LA	ITEM 646 - LANE ARROW
WD	ITEM 646 - DOTTED LINE, 6" (WHITE)	SL	ITEM 646 - STOP LINE
XW	ITEM 646 - CROSSWALK LINE	WWA	ITEM 646 - PAVEMENT MARKING, MISC.: WRONG-WAY ARROW



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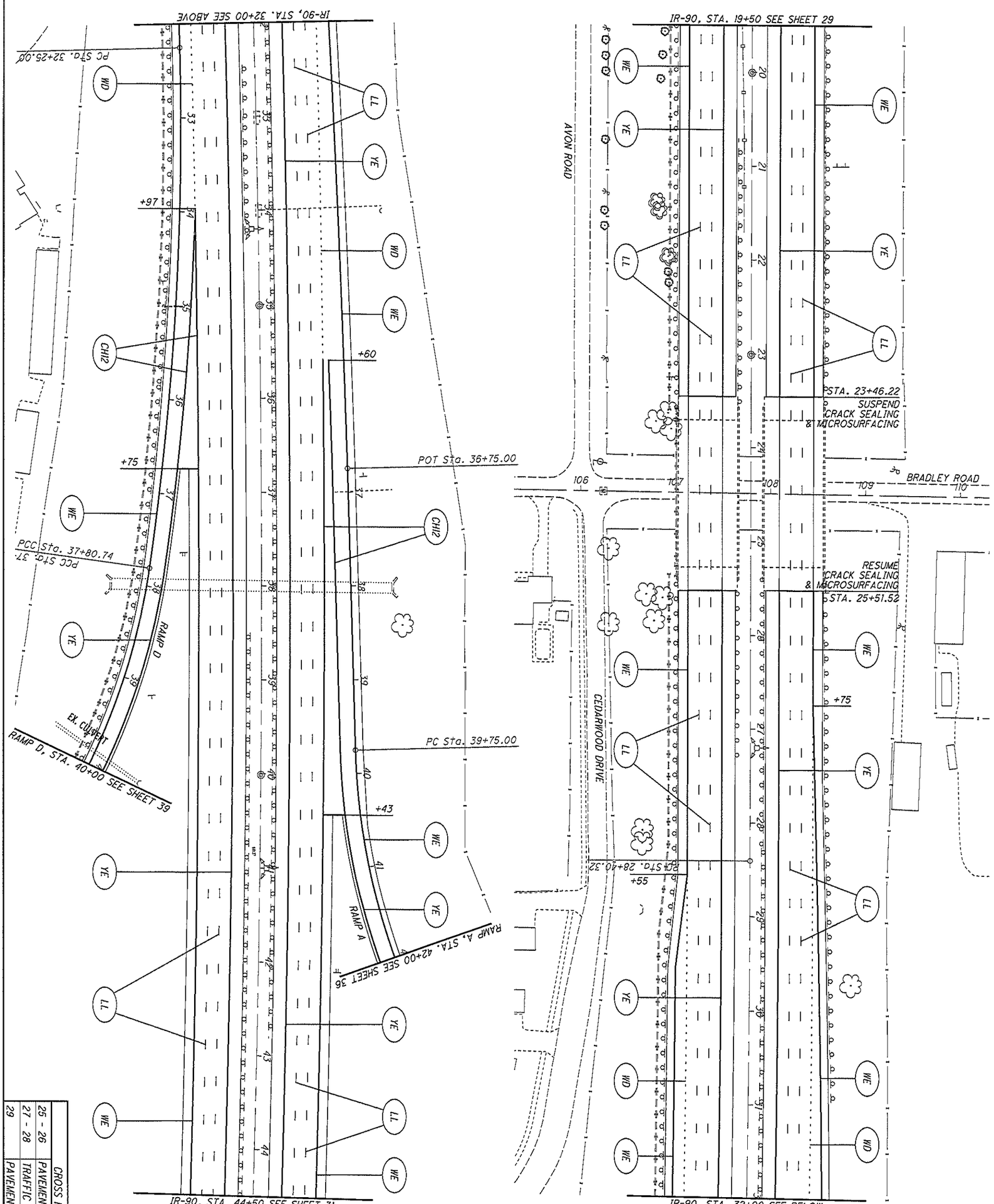
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN
IR-90, STA. 0+00 TO STA. 19+50

CUY-90-0.00

I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_GP002.dgn Sheet 1/20/2016 10:50:01 AM khamilt1



CROSS REFERENCES	
PAVEMENT SUBSUMMARY	25 - 26
TRAFFIC CONTROL SUBSUMMARY	27 - 28
PAVEMENT MARKING LEGEND	29

30
48

CUY-90-0.00

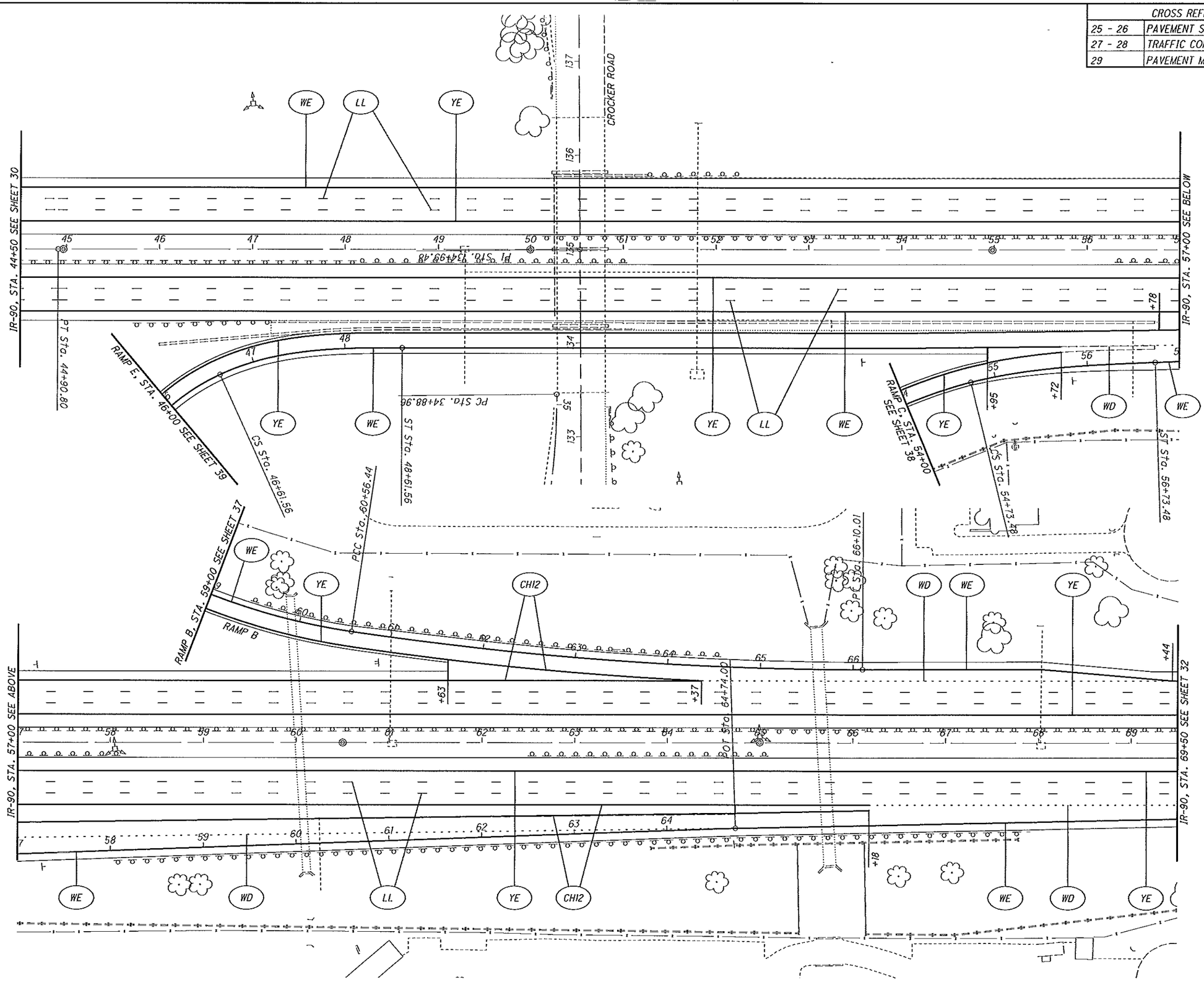
PLAN
IR-90, STA. 19+50 TO STA. 44+50

CALCULATED KDH
CHECKED EMK

0 50 100
25
HORIZONTAL SCALE IN FEET

N

CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN
IR-90, STA. 44+50 TO STA. 69+50

CUY-90-0.00

31
48

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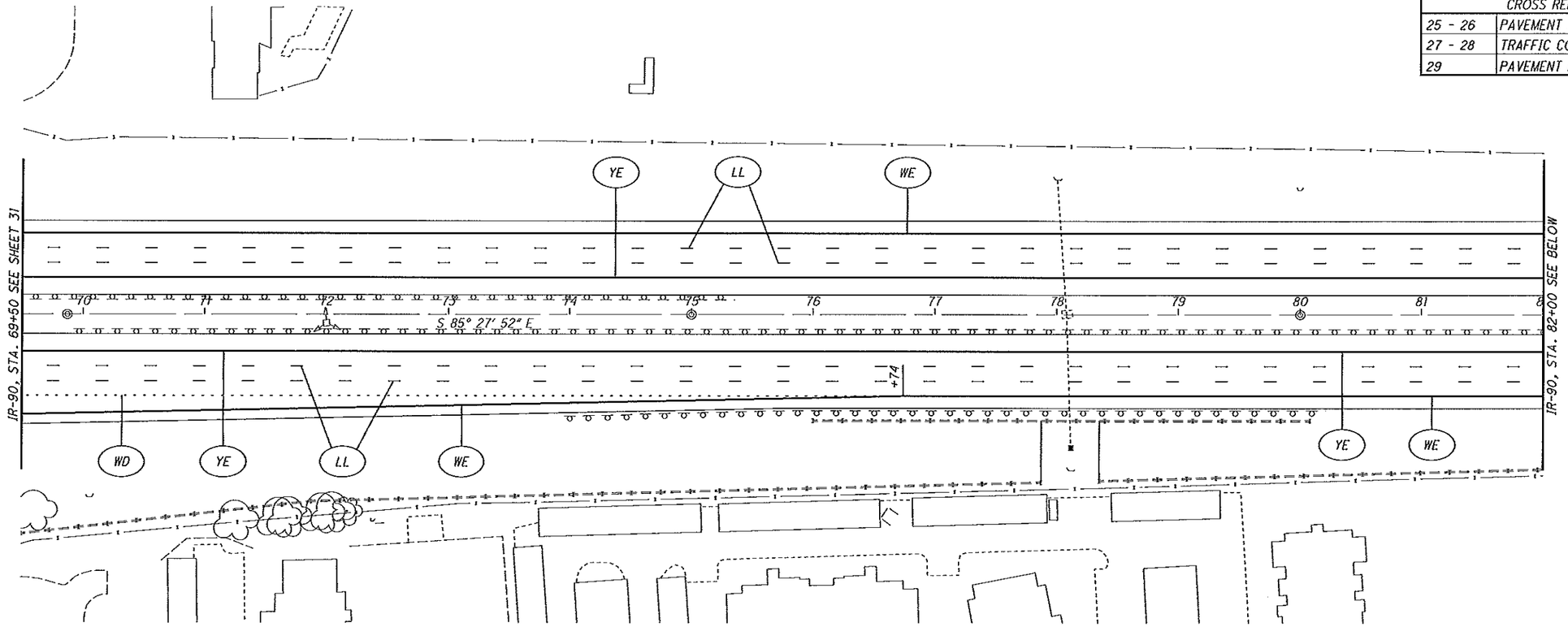
CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND



N

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN
IR-90, STA. 69+50 TO STA. 94+50

CUY-90-0.00

32
48

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CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND

CALCULATED KDH
CHECKED EMK

0 25 50 100
HORIZONTAL SCALE IN FEET

PLAN
94+50 TO STA. 119+50
IR-90, STA. 94+50 TO STA. 119+50

CUY-90-0.00

33
48

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CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN
IR-90, STA. 119+50 TO STA. 144+50

CUY-90-0.00

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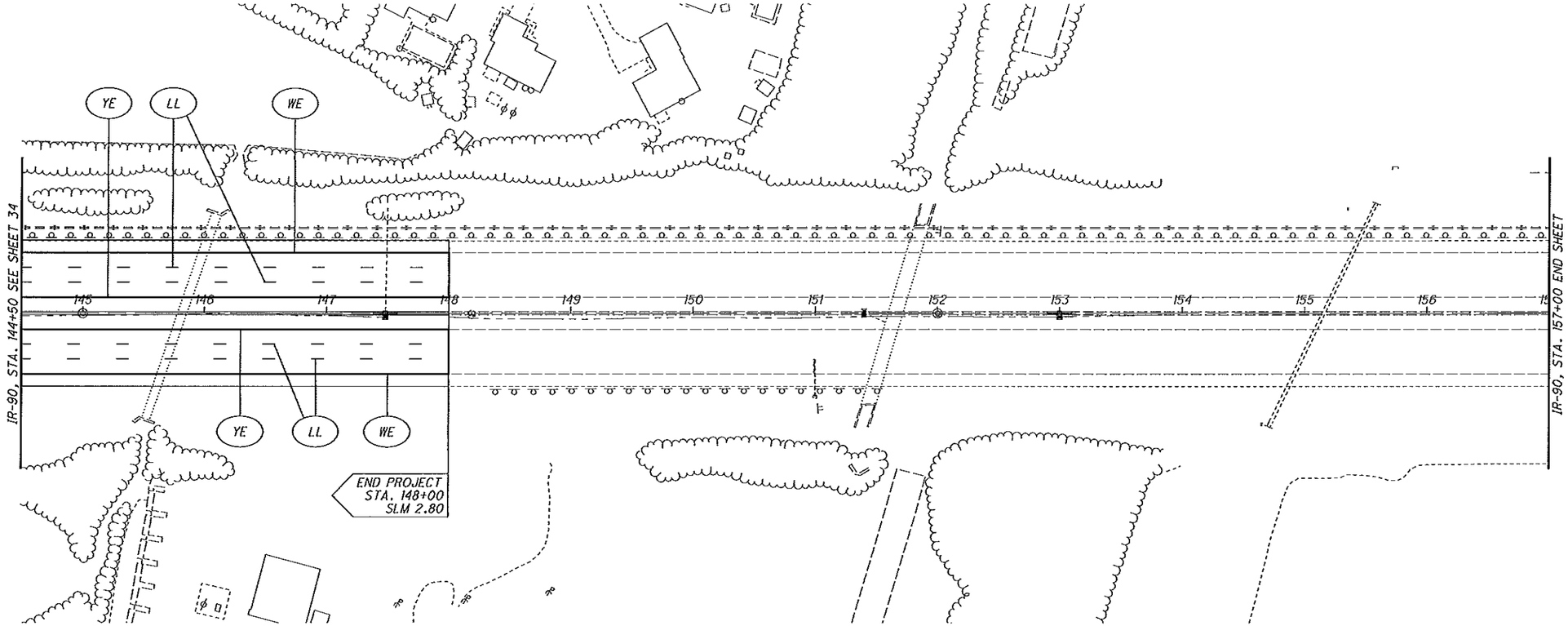

N

0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED KDH
CHECKED EMK

PLAN
IR-90, STA. 144+50 TO STA. 148+00

CUY-90-0.00

35
48

CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND

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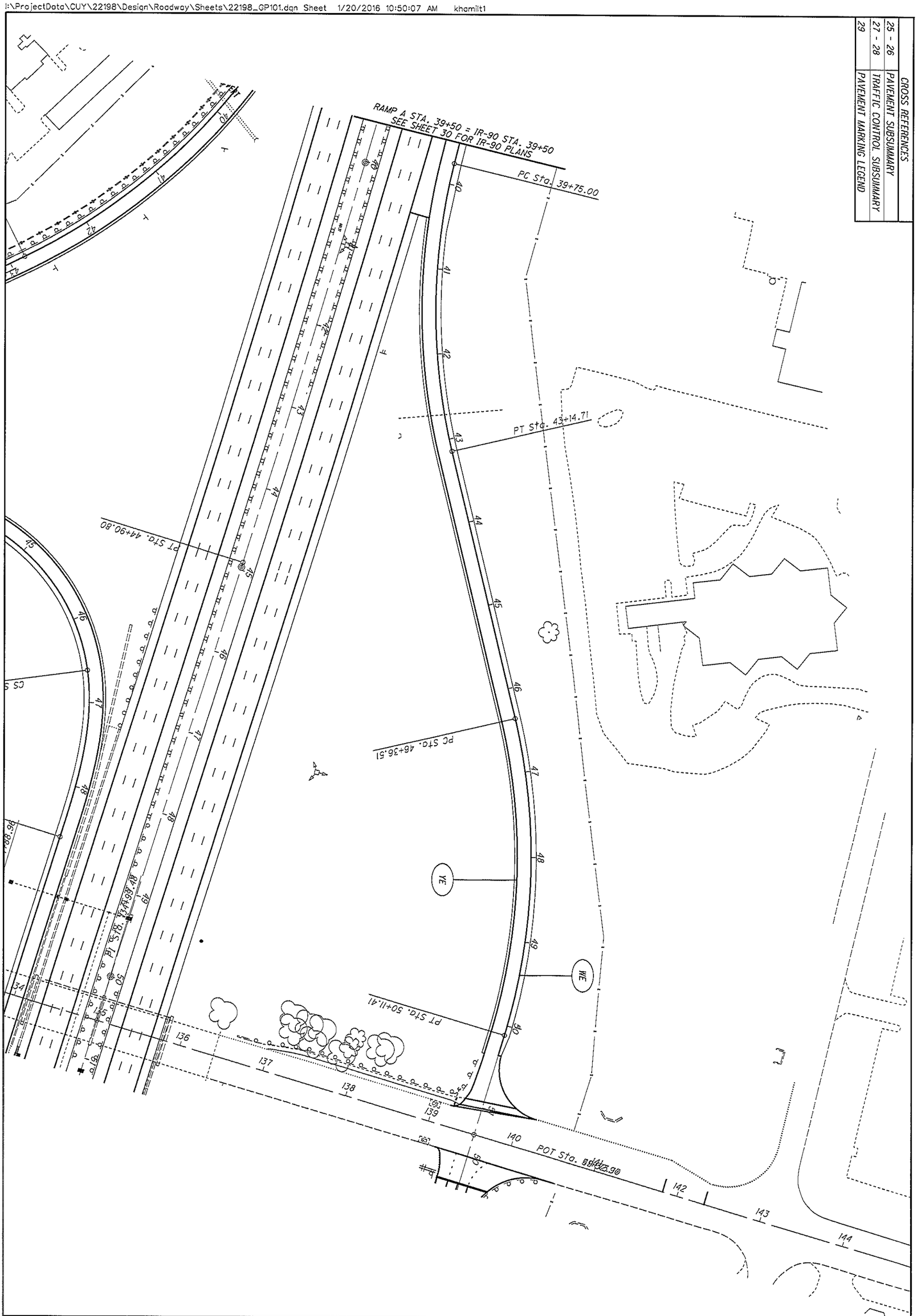
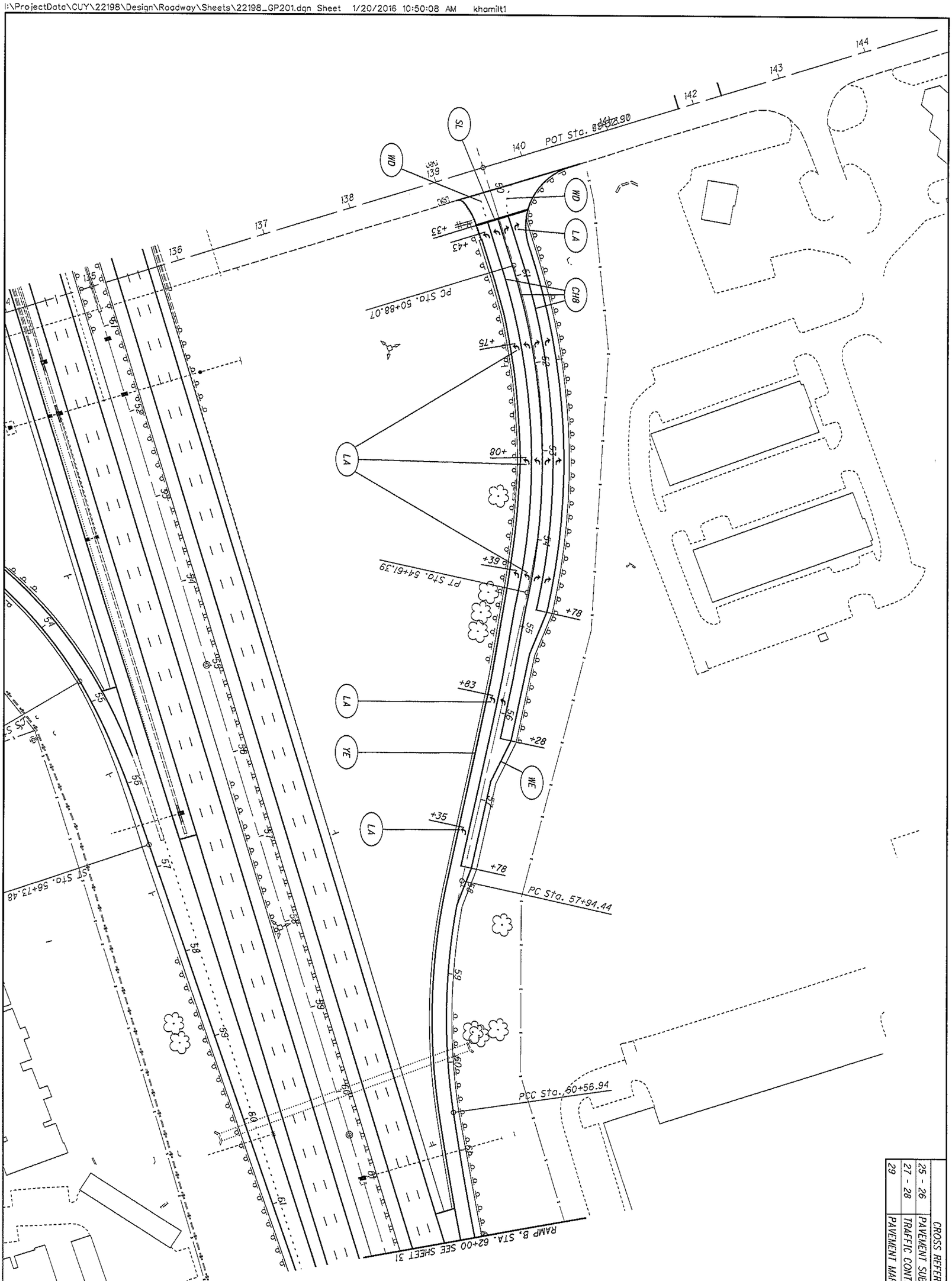
CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND

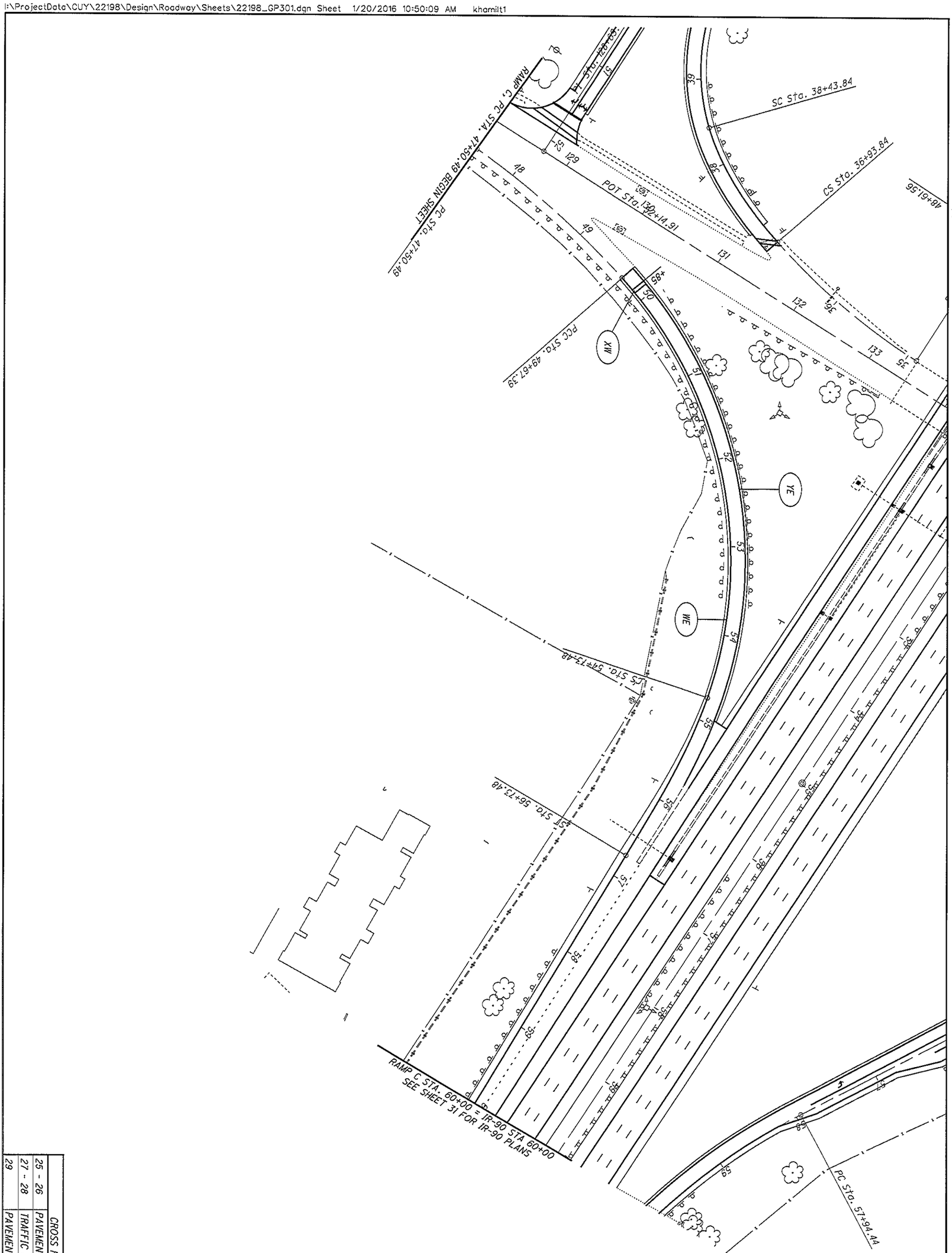


36/48	CUY-90-0.00	PLAN RAMP A, STA. 39+75 TO STA. 51+32.97	CALCULATED KDH CHECKED EMK	0 50 25 100 HORIZONTAL SCALE IN FEET



CROSS REFERENCES	
PAVEMENT SUBSUMMARY	25 - 26
TRAFFIC CONTROL SUBSUMMARY	27 - 28
PAVEMENT MARKING LEGEND	29

37/48	CUY-90-0.00	PLAN RAMP B, STA. 49+73.10 TO STA. 62+00	CALCULATED KDH CHECKED EMK	0 50 25 100 HORIZONTAL SCALE IN FEET



38
48

CUY-90-0.00

PLAN
RAMP C, STA. 47+50.49 TO STA. 60+00

CALCULATED KDH
CHECKED EMK

0 50
25 100
HORIZONTAL SCALE IN FEET

CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY
29	PAVEMENT MARKING LEGEND

IR-90 RAMP D, STA. 40+00 SEE SHEET 30

PT Sta. 44+90.80

CS Sta. 46+61.56

PC Sta. 34+88.96

ST Sta. 48+61.56

CS Sta. 36+93.84

SC Sta. 38+43.84

PT Sta. 52+14.91

PC Sta. 44+70.46

PT Sta. 47+81.53

ST Sta. 48+61.41

PT Sta. 48+09.79

PLAN

RAMP D, STA. 40+00 TO STA. 52+14.91 & RAMP E

HORIZONTAL SCALE IN FEET

0 25 50 100

CALCULATED KDH

CHECKED EMK

CUY-90-0.00

39
48

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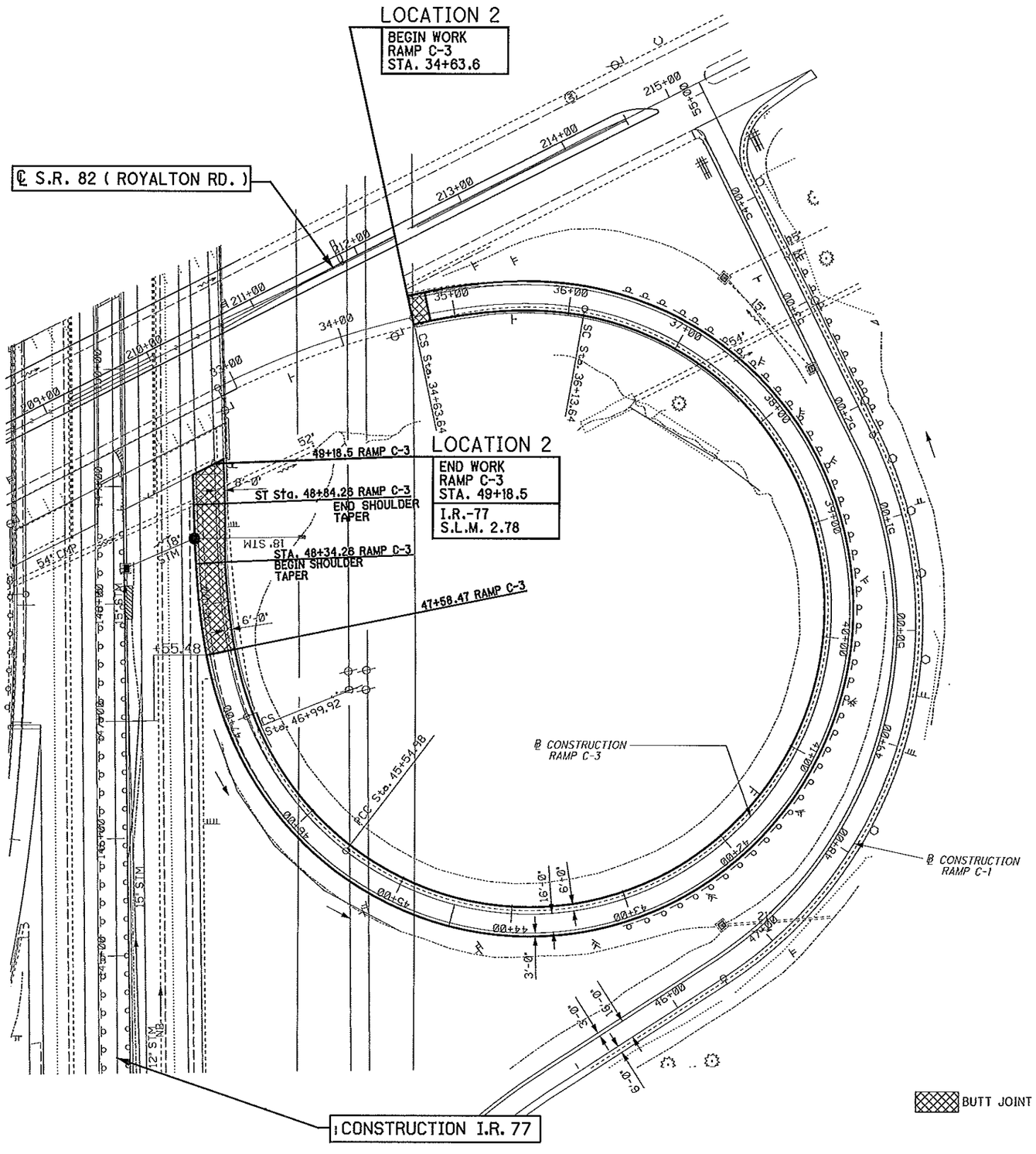
CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN - LOCATION 2
IR-77 AT SR-82, RAMP C-3

CUY-90-0.00

40
48

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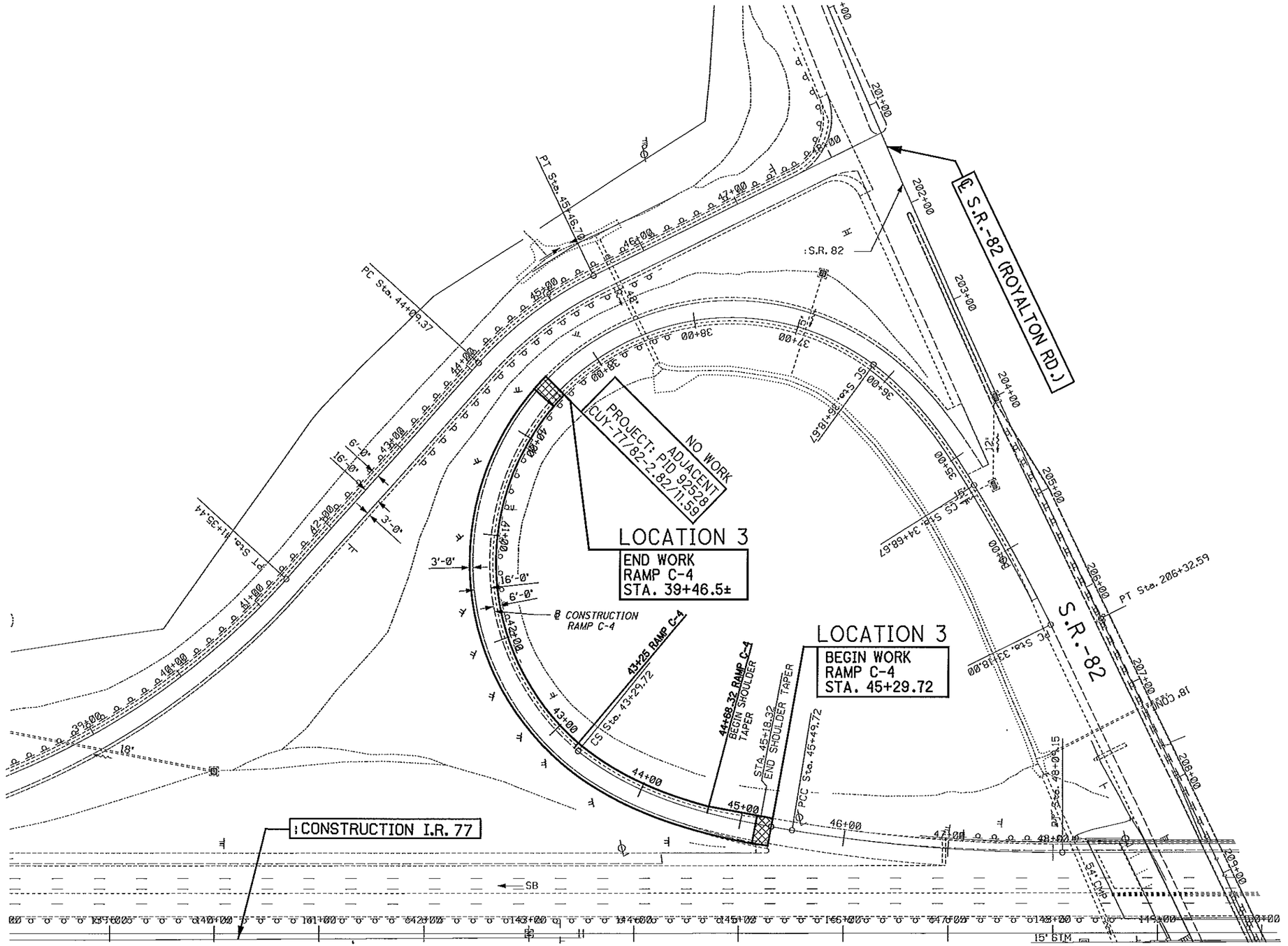
CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY



CALCULATED KDH
CHECKED EMK

HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN - LOCATION 3
IR-77 AT SR-82, RAMP C-4

CUY-90-0.00

41
48

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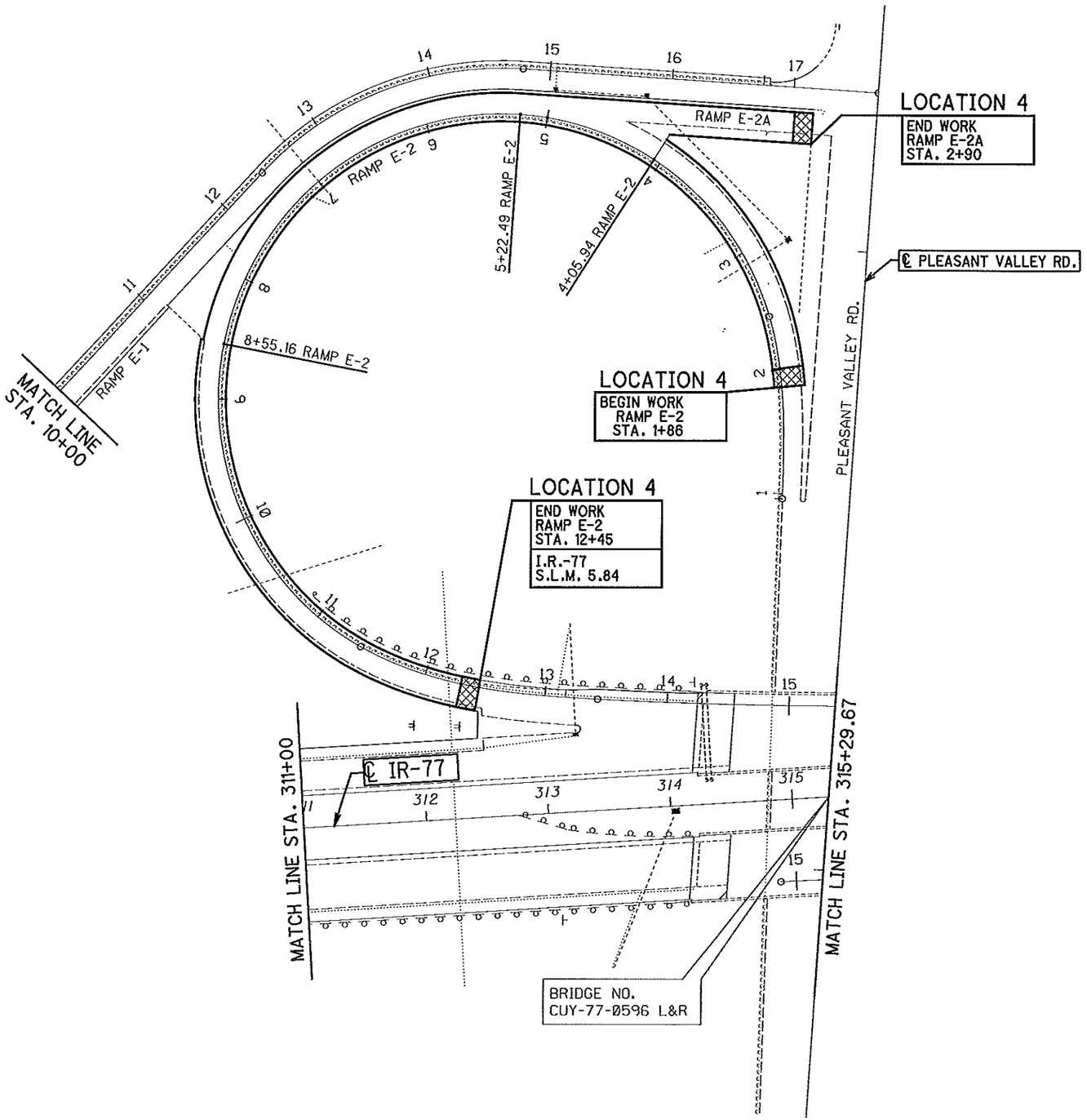
CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN - LOCATION 4
IR-77 AT PLEASANT VALLEY, RAMP E-2

CUY-90-0.00

42
48

I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_GP7702.dgn Sheet 1/20/2016 10:50:11 AM khamilt1

CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY

BRIDGE NO.
CUY-77-0596 L&R

℄ I.R.-77

MATCH LINE STA. 315+29.67

MATCH LINE STA. 329+00

℄ PLEASANT VALLEY RD.

LOCATION 5
BEGIN WORK
RAMP E-4
STA. 17+86
I.R.-77
S.L.M. 5.98

LOCATION 5
END WORK
RAMP E-4
STA. 27+96

LOCATION 5
END WORK
RAMP E-4A
STA. 27+57

19+10 RAMP E-4

22+73.9 RAMP E-4

26+60.2 RAMP E-4

25+36.4 RAMP E-4

RAMP E-4

RAMP E-4A

RAMP E-3

BUTT JOINT

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN - LOCATION 5
IR-77 AT PLEASANT VALLEY, RAMP E-4

CUY-90-0.00

43
48

I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_GP7703.dgn Sheet 1/20/2016 10:50:12 AM khamilt1

CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY

LOCATION 6
BEGIN WORK
RAMP F-2
STA. 28+94.86
BEGIN SHOULDER
TAPER

LOCATION 6
END WORK
RAMP F-2
STA. 41+80.71

LOCATION 7
BEGIN WORK
RAMP F-3
STA. 30+00

LOCATION 7
END WORK
RAMP F-3
STA. 41+71.39

℄ CONSTRUCTION I.R. 77

℄ CONSTRUCTION RAMP F-2

℄ CONSTRUCTION RAMP F-3

℄ ROCKSIDE RD.

PC Sta. 27+84.02
CS Sta. 29+02.87
SC Sta. 30+52.87
PCC Sta. 31+81.77
PT Sta. 32+93.96
PC Sta. 34+49.95
CS Sta. 36+17.77
SC Sta. 40+16.31
PT Sta. 39+69.59
PC Sta. 36+03.51
STA. 29+44.86 END SHOULDER TAPER
PCC Sta. 29+92.22

N 45° 41' 44" E
N 16° 24' 33" E

(7'W X 300'L)

- BUTT JOINT (15' LONG)

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED KDH
CHECKED EMK

PLAN - LOCATIONS 6 & 7
IR-77 AT ROCKSIDE, RAMPS F-2 & F-3

CUY-90-0.00

44
48

I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_GP7705.dgn Sheet 1/20/2016 10:50:14 AM khamilt1

CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY

LOCATION 8
BEGIN WORK
STA. 27+69.74
RAMP F-5

LOCATION 8
END WORK
STA. 36+45±
RAMP F-5

29+80

30+80

NOSE STA. 47+71.74 RAMP F-4
STA. 32+65.98 RAMP F-5

RAMP F-5

P.C. STA. 30+32.74

RAMP F-5

RAMP F-4
49+71.74

RAMP F-4

P.T. STA. 34+59.75

P.T. STA. 35+63.44

NOSE P.C. STA. 37+45.01 RAMP F-5
STA. 37+42.28 LANE E-S

P.T. STA. 40+00, RAMP F-5
STA. 40+00, LANE E-S, 12' RT

BRIDGE NO. CUY-77-0837

P.C. 31+11.24 LANE E-S
STA. 447+00 I-77

LANE E-S

I-77

45

50

RAMP F-3

RAMP F-6

MATCH LINE STA. 459+00

LANE S-W

ROCKSIDE ROAD

P.C.C. STA. 46+71.16

P.T. STA. 52+17.96, RAMP F-6
P.T. STA. 52+17.96, RAMP F-3, 20' RT

P.C. STA. 56+13, RAMP F-7 =
STA. 56+80.13, RAMP F-3, 8' RT

NOSE STA. 57+92.12, RAMP F-7 =
STA. 58+63.09, RAMP F-3

P.C.C. STA. 43+55.11

NOSE P.T. STA. 52+97.50, LANE S-W, 36' LT
STA. 453+12.76 I-77, 44' RT

P.C. STA. 40+54.08, RAMP F-6
STA. 119+75 ROCKSIDE RD, 48' LT

- BUTT JOINT (15' LONG)

0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED KDH
CHECKED EMK

PLAN - LOCATION 8
IR-77 AT ROCKSIDE, RAMP F-4

CUY-90-0.00

45
48

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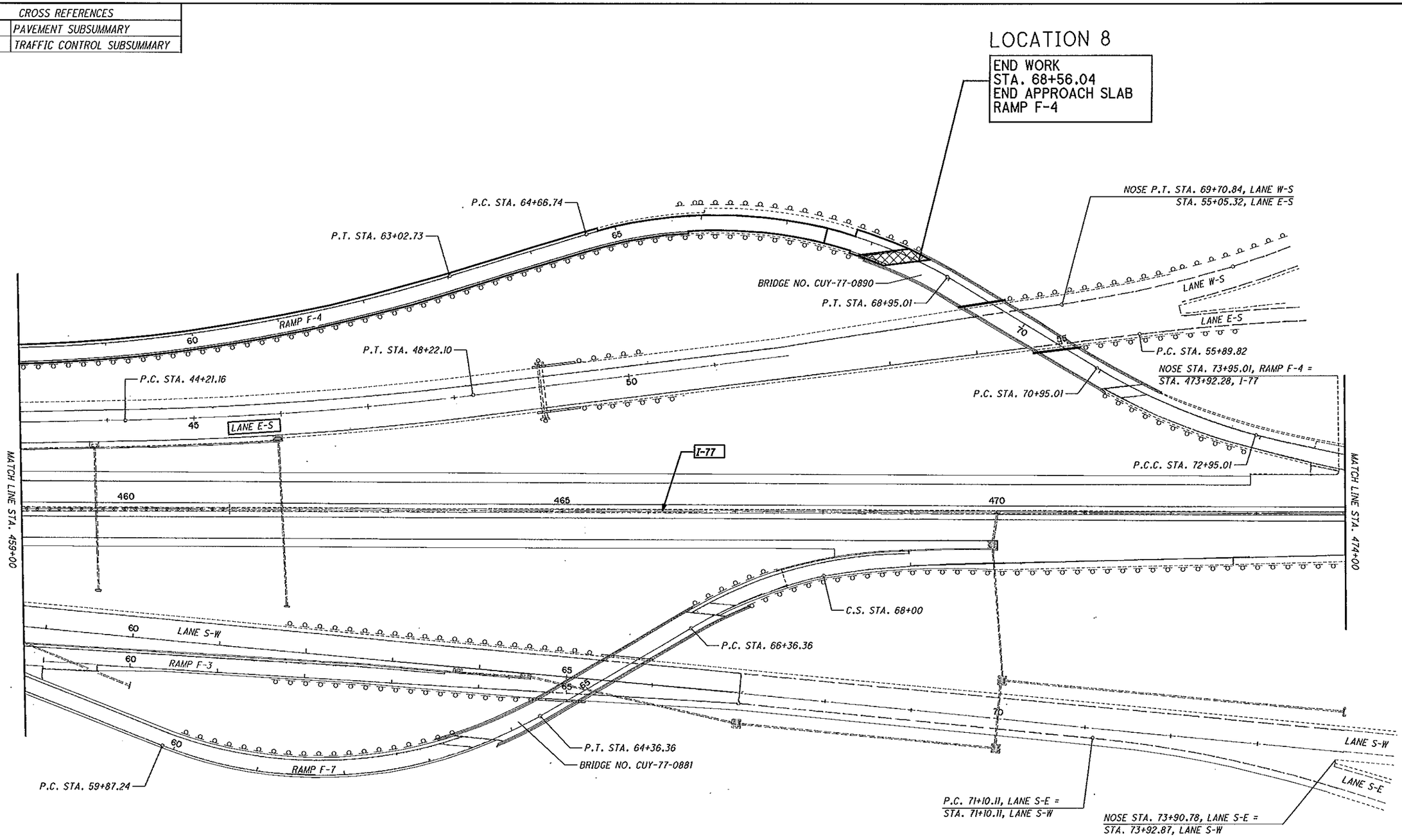
CROSS REFERENCES	
25 - 26	PAVEMENT SUBSUMMARY
27 - 28	TRAFFIC CONTROL SUBSUMMARY



N

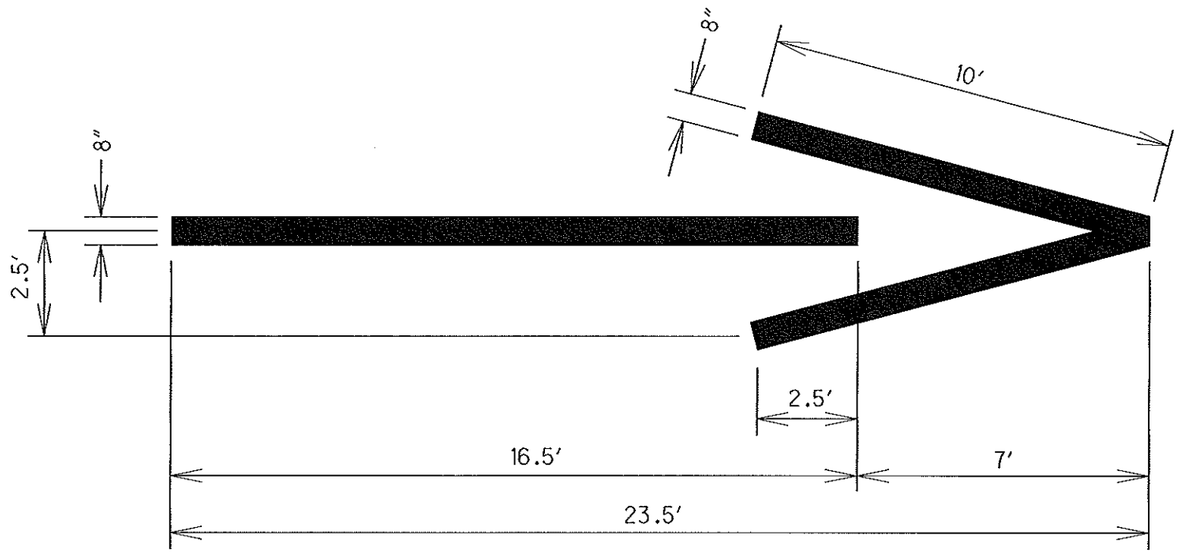
0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED KDH
CHECKED EMK

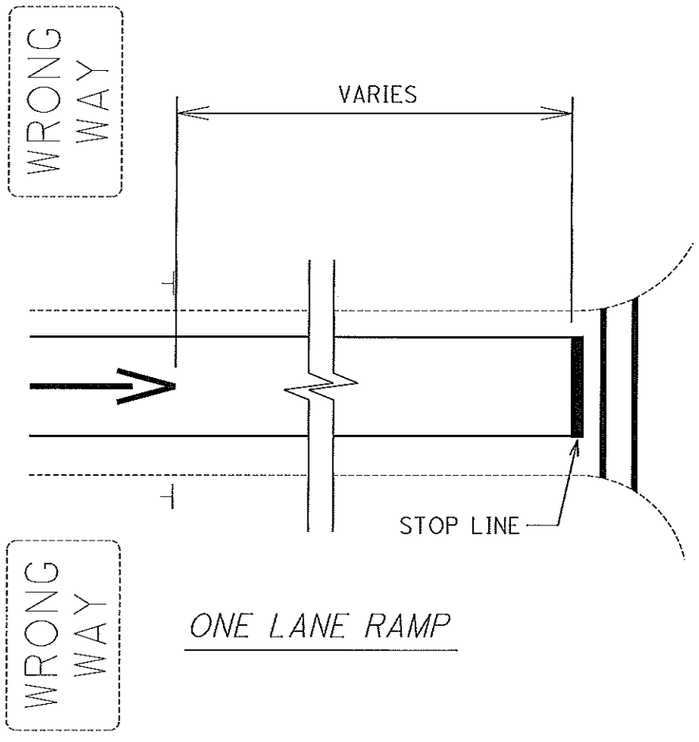
PLAN - LOCATION 8
IR-77 AT ROCKSIDE, RAMP F-4

CUY-90-0.00

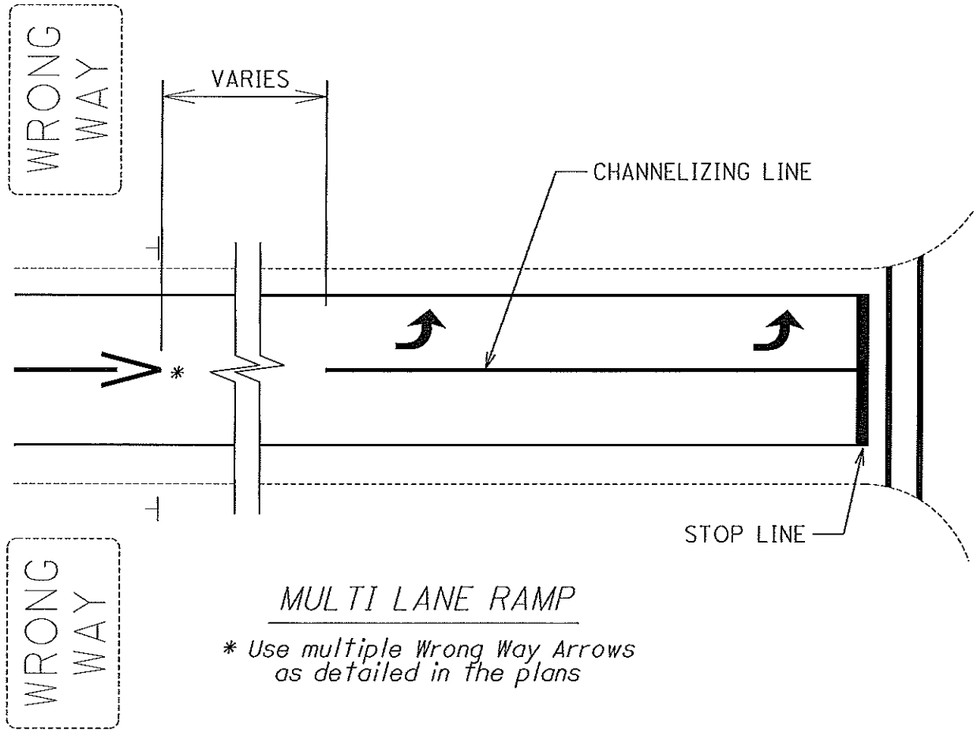
I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_GP7707.dgn Sheet 1/20/2016 10:50:15 AM khamilt1



WRONG WAY ARROW



ONE LANE RAMP



MULTI LANE RAMP

* Use multiple Wrong Way Arrows as detailed in the plans

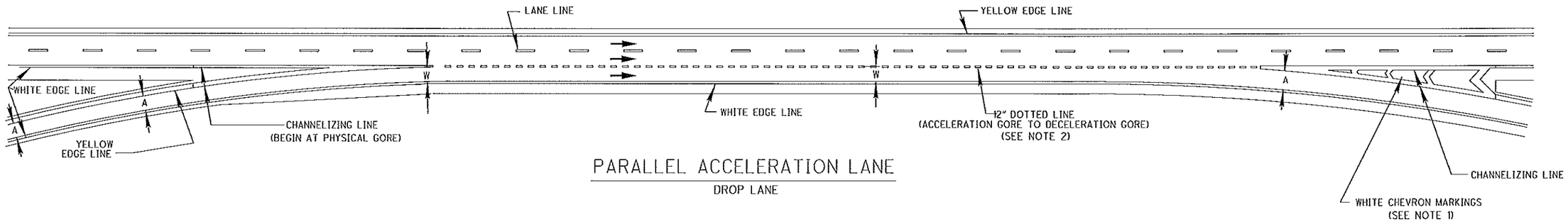
CALCULATED KDH
CHECKED EMK

Pavement Marking Details
Wrong Way Arrow

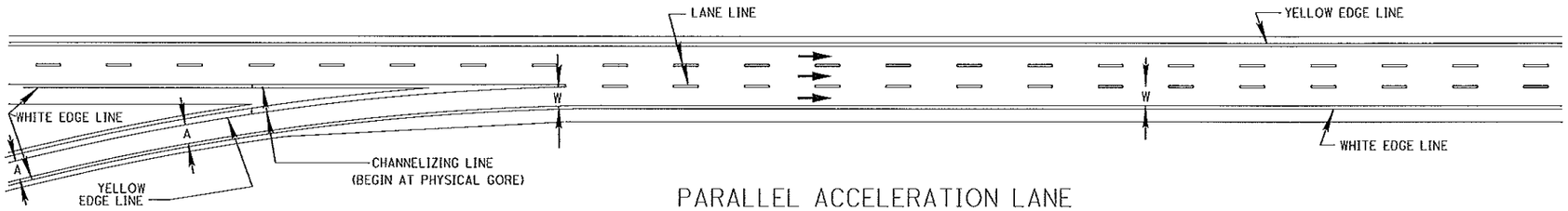
CUY-90-0.00

47
48

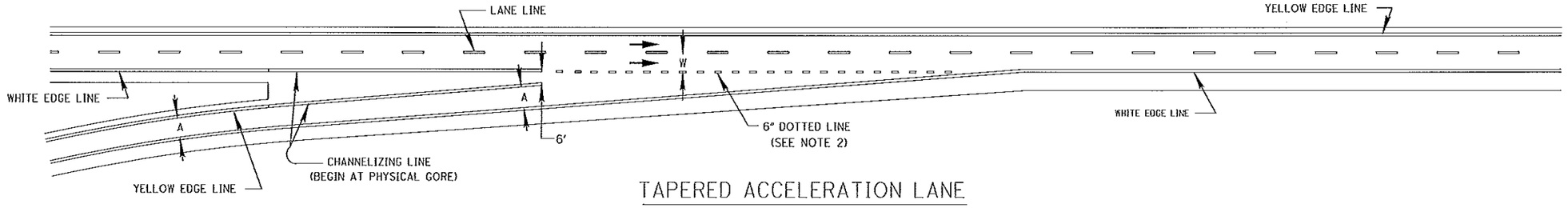
I:\ProjectData\CUY\22198\Design\Roadway\Sheets\22198_TM001.dgn Sheet 1/20/2016 10:50:23 AM khamilt1



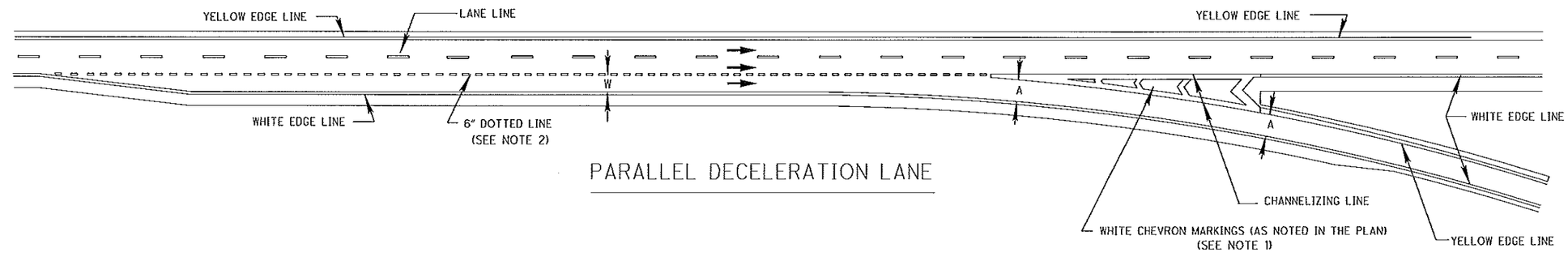
PARALLEL ACCELERATION LANE
DROP LANE



PARALLEL ACCELERATION LANE
ADD LANE



TAPERED ACCELERATION LANE



PARALLEL DECELERATION LANE

NOTES

1. Chevron markings when used in neutral areas of exit ramps are 24 inch wide lines and are placed at the spacing shown in the Chevron Markings Spacing Table.

2. Dotted lines are white dotted line segments 3 feet in length separated by 9 foot gaps.

CHEVRON MARKINGS SPACING TABLE

FROM (feet)	TO (feet)	CHEVRON MARKINGS SPACING (feet)
0	48	12 on Centers
49	96	24 on Centers
97	Greater than 97	48 on Centers

A = UNIFORM RAMP WIDTH
W = LANE WIDTH
→ = DIRECTION OF TRAVEL

CALCULATED KDH CHECKED EWK

FREEWAY ENTRANCE AND EXIT PAVEMENT MARKINGS

CUY-90-0.00

48
48

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