T-80N

R-24W

R-23W

T-80N

T-79N

T-79N

415

NE 70 AVE

NE 69 PL

NE 66 AVE

MARGO FRANKEL WOODS STATE PARK

NE 60 AVE

NE 57 PL

NE 58 AVE

DELAWARE AVENUE

NE BERWICK DR

Corporate Woods Drive

End Project
Sta. 2114+59.42 (ML235)
End I-235 Widening
MP 87.77

NE 62 AVE

NE BERWICK DR

NE 46 ST

Begin Project
Sta. 1150+61.16 (SUR080)
Sta. 5150+61.16 (ML080)
End I-80 Widening
MP 139.16

BERWICK

NE 29 ST

NE 22 ST

35

NE 54 AVE

NE 54 PL

FHWA # 41740

FHWA # 609865 EB
609815 WB

FHWA # 609995

FHWA # 41690

FHWA # 609940

FHWA # 609945

80

NW 52 PL
NW 51 PL
NW 50 PL

NE 3 ST

NE 14 ST

NORWOOD-VILLE

F52

FHWA # 609935

FHWA # 41950 EB
41960 WB

NE 38 ST

NE BROADWAY AVE

FHWA # 700000

FHWA # 700005

FHWA # 43071 EB
43081 WB

FHWA # 609860 EB
609810 WB

NE 46 AVE

FHWA # 43051 EB
43061 WB

Begin Project
Sta. 1057+10.82 (SUR080)
Begin I-80 Widening
MP 137.21

NE BROADWAY AVE

DELAWARE AVENUE

NE 22 ST

235

Begin Project
Sta. 2015+96.21 (ML235)
Begin I-235 Widening
MP 13.38

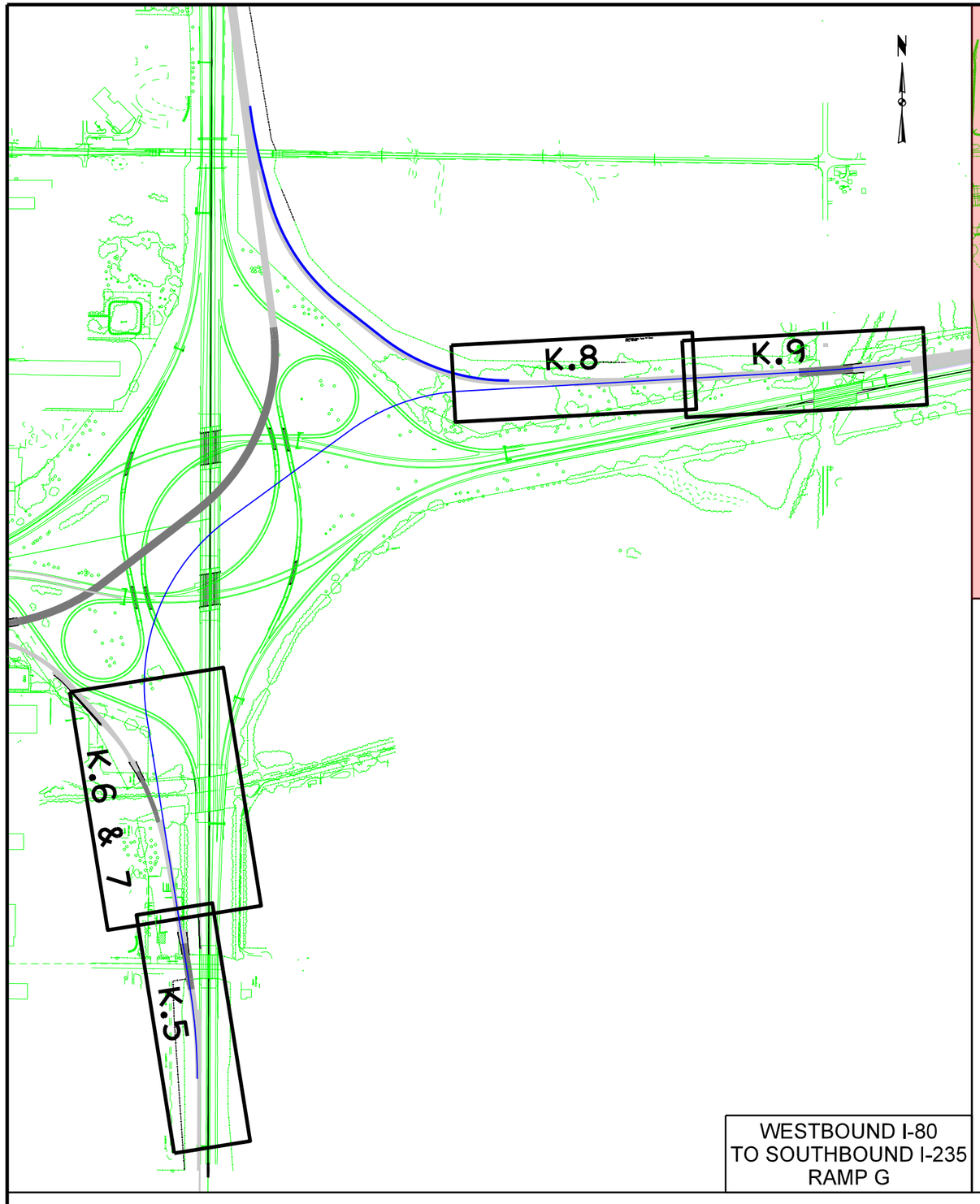
6

6

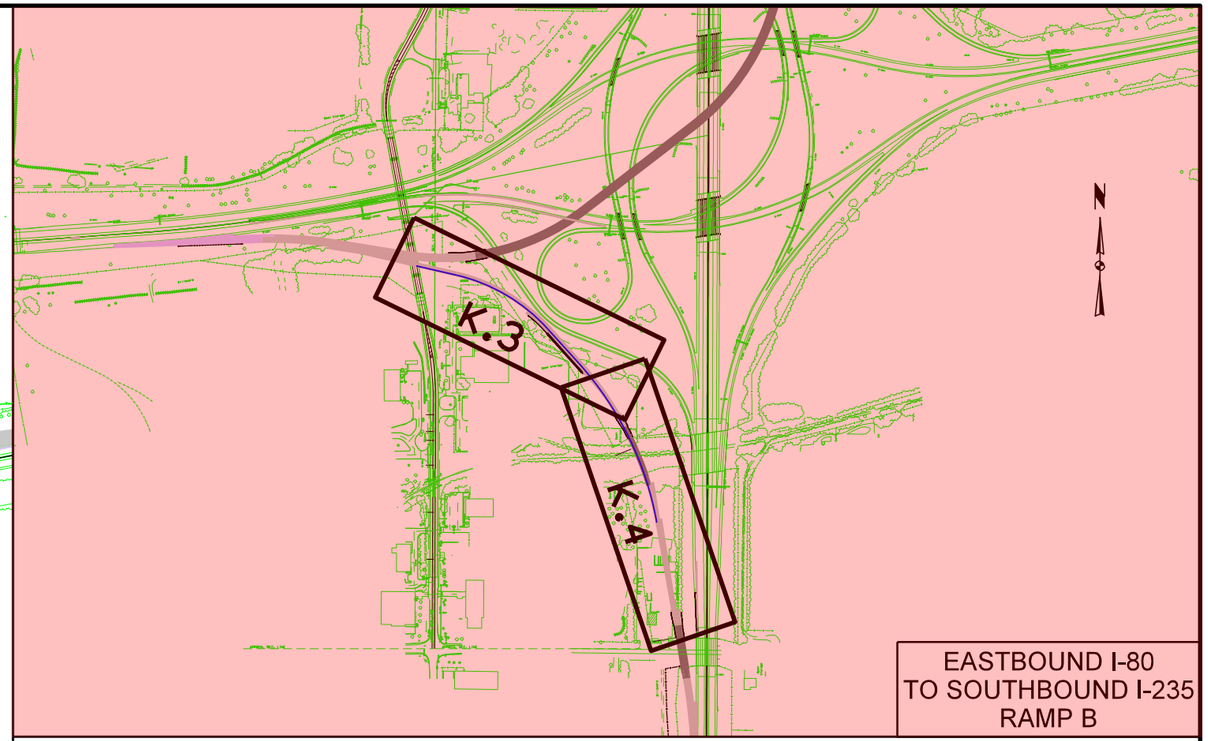
CAPI
HEIG

LOCATION MAP SCALE
0 0.5 1 1.5
Miles

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER A.2



WESTBOUND I-80
TO SOUTHBOUND I-235
RAMP G



EASTBOUND I-80
TO SOUTHBOUND I-235
RAMP B

Project Key Maps

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER A.6

Survey Information

County: Polk
PIN: 10-77-035-010-03
Project Number: IM-035-3(194)87--13-77
Location: I-35/80/235 Interchange NE Of Des Moines(Stage 3A)
Type of Work: Grading
Project Directory: 7703501010
This Index covers SAP's 0742.2, 0742.3 and 0742.4

General Information

Measurement units for this survey are US survey feet. This survey is for phase 3 of the NE Mixmaster ramp reconstruction. This survey uses the same coordinate system as the Delaware Ave. IM-035-4(161)87--13-77 and 54th. Ave. IM-035-4(160)87--13-77 Surveys. Phase 3 surveying was accomplished by an IDOT design survey crew and 2 consulting firms. IDOT surveyed project control, mainline alignments, culvert surveys, utility survey, photo control survey and selected ground features. R.E.Y. Consultants surveyed mainline pavement and interchange ramps using mobile LiDAR. Snyder and Associates surveyed railroads. Aerial survey will also be used to create a project surface and to add other topographic features.

IDOT Design Party Personnel

John Dewey- Party Chief
Robert Mingus- Party Chief
Myron Fox- Assistant Party Chief

IDOT Date(s) of Survey

Begin Date 04/2014
End Date 09/2014

R.E.Y Engineers, Inc.
Contract No. 801AH; WO7

Date(s) of R.E.Y. Survey
June-July 2014

Snyder and Associates
Contract No. 433AF; WO 5

Date(s) of R.E.Y. Survey
Oct. 2014

Project Control Information

GPS Control from previous surveys were used as follows:
GPS PROJECT : Sap 323 & 324 STP-69-4(65)--2c-77 (2000 Survey)
STATE PLANE COORDINATE ZONE 1402 (IOWA SOUTH LAMBERT)
STATE PLANE COORDINATES HELD AT POINT G030
AVERAGE PROJECT LATITUDE = 41 40 12.05576
RESULTING RADIUS = 6363663.482 (METERS)
MEAN PROJECT ELEVATION = 285.000 (METERS)
SEA LEVEL FACTOR = 0.999955216
AVERAGE PROJECT SCALE FACTOR = 0.999982250
COMBINED FACTOR (GRID) = 0.999937467
1 / GRID = 1.000062537
VERTICAL DATUM = NAVD 88 <> HORIZONTAL DATUM = NAD 83 (1996)

GPS Control point G024 coordinates from previous surveys were used and the following points were re-observed and adjusted: G013, G025, G026 and G027. G010, G011, G029 and G030 were searched for but not found. It is presumed reconstruction has obliterated those points. Point G128 from an I-235 survey was re- observed and adjusted. Points G128 and G026 are FENO monuments. All other points are 5/8" Rebar. Two FENO monuments were added. These are points 100 and 101.
It is intended that the control included in the re-observation will be the primary control used for future survey work. The FENO monuments designated as 26,100,101 and 128 to the north, south, east and west of the interchange are constructed to hold horizontal and vertical position reasonably well. The other rebar can be used but should be verified first relative to the FENO monuments. It is anticipated additional temporary marks in the interchange will be needed at various stages as the project progresses. Those temporary marks will be established as needed relative to this control.

Alignment Information

Mainline Alignment (I-80)

The I 80 alignment is relative to the control in the metric as-built plans IM-35-3(116)85--13-77 computed from a 1994 metric I 80 survey alignment. Metric alignment points were scaled and translated to this survey coordinate system. No rotation was required. Sta 2000+00.00 was assigned to the PC of the metric I 80 curve west of the Delaware Ave. Bridge. Stationing was run ahead without station equation to the end of the alignment at the mixmaster interchange central intersection point.

This Mainline survey relates to the mainline plan stationing as follows:

CP Sta. 1024+84.88, 97.35' Lt this survey (English)
=CP Sta. 312+34.97, 29.67m Lt Project # IM-35-3(116)85—13-77 (Metric)

POT Sta. 1075+46.01, 0.04' Lt this survey (English)
=POT Sta. 327+77.59, 0.010m Lt Project # IM-35-3(116)85—13-77 (Metric)

POT Sta. 1181+51.81 this survey (English)
=POT Sta. 1181+53.0 Project # IM-80-5(145)137--13-77 (English)

Mainline Alignment (I-35)

From 2001/2002 I-35 Realignment, Project # IM-35-4(101)—13-77
The mainline alignment for this survey is a retrace of Project # IM-35-4(101)—13-77. The mainline alignment was created in centerline of median. Stationing was obtained at PI Sta. 2001+60.36 and carried ahead to PI Sta. 3100+53.44 without equation. The following PI points were used to create this CL alignment.

PI 2001+60.36 Project # IM-35-4(101)88—13-77 (not found or set)
PI 3100+53.44 Project # IM-35-4(101)88—13-77 (not found or set)

This Mainline survey relates to the mainline plan stationing as follows:

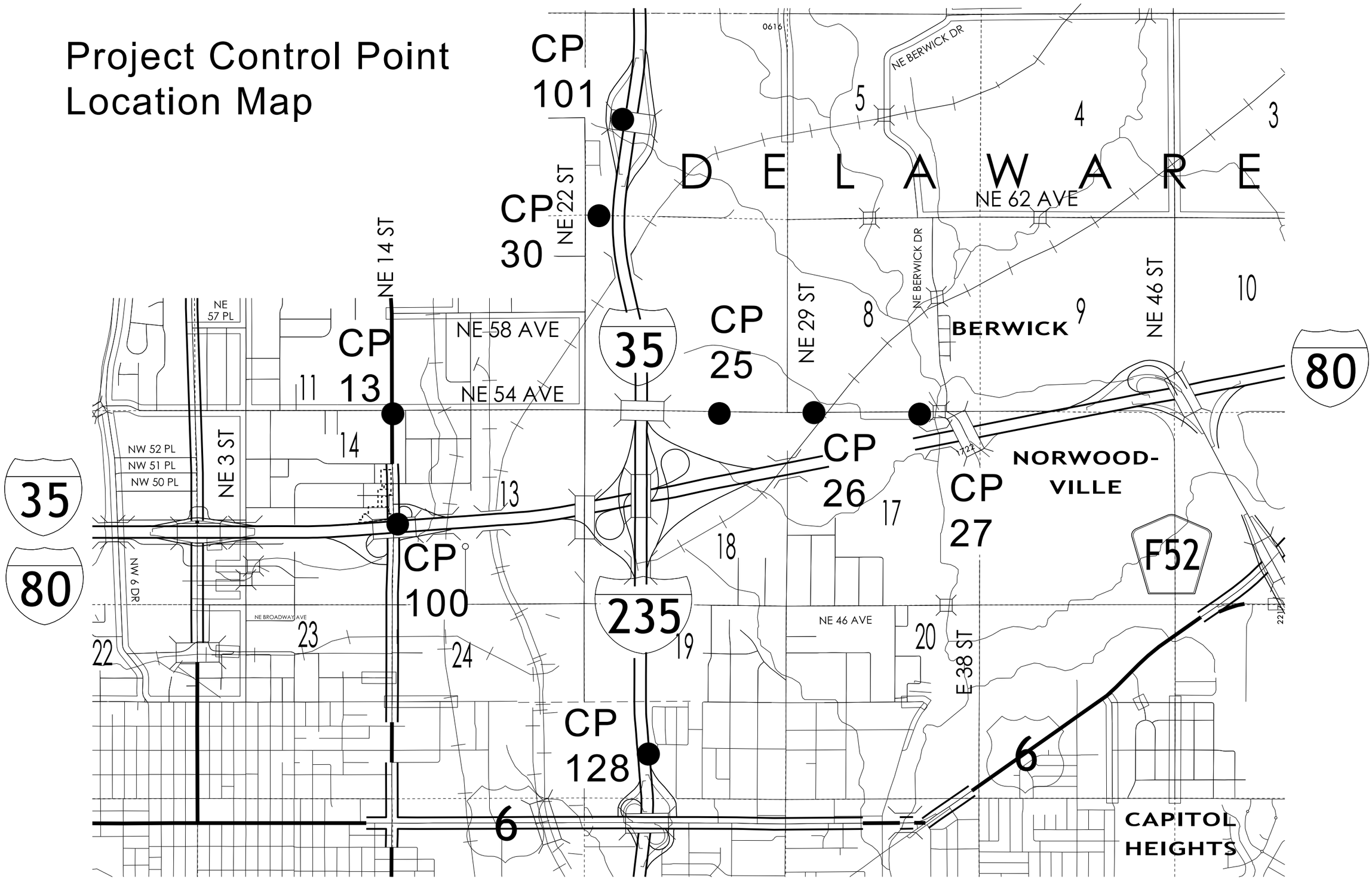
PI Sta. 2001+60.36 this survey
=PI Sta. 2001+60.36 Project # IM-35-4(101)88—13-77

PI Sta. 2100+53.74 this survey
=PI Sta. 3100+53.44 Project # IM-35-4(101)88—13-77

Project Control -FENO monuments are also Bench Marks

Name	Ground Northing (USft)	Ground Easting (USft)	Elevation (USft)	Description
13	604251.756	1612997.613	933.158	rebar, 6" deep, in the SE quad. of intersection NE 14th (US 69) & NE 54th Ave., 13' south of ROW rail; 62' south of NE 54th Ave.;
25	604260.796	1621907.741	939.609	rebar, 6" deep, in the south sideditch, @ the west edge of field entrance south, and adj. to inlet of CMP under NE 54th Ave.; 22' west of field entr.; 10' from inlet CMP; 5' from edge AC slab.
26	604283.735	1624489.54	886.7	Feno. Monument, w/cap stamped "026", 6" deep, in the north ROW/shoulder of NE 54th Ave., 9' north of edge AC slab; 128' from P.I. of NE 54th Ave. with of RR crossing.
27	604243.29	1627372.639	838.959	rebar, 6" deep, in the south edge of shoulder, on the west side of a field entrance; 31' west of approx. center gravel field south; 13' south of edge AC slab of NE 54th Ave.; 40' north of center large CMP under entrance.
100	601242.316	1613129.094	904.541	Feno. Monument
101	612281.879	1619265.525	932.935	Feno. Monument
128	594971.978	1619970.2	933.868	Feno. Monument between top backslope and ROW fence in east ROW

Project Control Point Location Map



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER G.2

ALIGNMENT COORDINATES

101-16
10-20-09

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
(ML080)	I-80																		
90		5128+03.54	602,662.82	1,623,353.19															
91		5188+97.59	603,831.81	1,629,334.07															
92		5208+07.61	604,179.78	1,631,212.12															
93		5240+69.50	604,805.49	1,634,413.44															
(SUR080)	I-80 ML SURVEY																		
8011		975+28.38	600,997.23	1,608,212.44															
SUR080-1								998+08.83	600,998.02	1,610,492.89	1004+20.94	600,998.23	1,611,105.00	1010+32.54	601,041.98	1,611,715.55			
8012		1024+84.88	601,145.79	1,613,164.17															
8013		1055+07.15	601,361.80	1,616,178.71															
SUR080-2								1058+28.34	601,384.75	1,616,499.08	1064+81.98	601,431.47	1,617,151.06	1071+34.02	601,556.86	1,617,792.56			
8014		1240+69.40	604,805.49	1,634,413.44															
(ML035N)	I-35 NORTHBOUND																		
ML035N-1								8464+19.42	601,337.20	1,617,100.02	8466+93.08	601,357.77	1,617,372.91	8469+64.19	601,313.73	1,617,643.01			
ML035N-2								8473+48.85	601,251.83	1,618,022.66	8479+25.90	601,158.98	1,618,592.19	8484+37.74	601,511.45	1,619,049.07			
ML035N-3								8491+99.33	601,976.65	1,619,652.07	8499+65.23	602,444.47	1,620,258.48	8505+89.13	603,203.78	1,620,158.24			
ML035N-4								8531+09.25	605,702.22	1,619,828.39	8536+86.32	606,274.32	1,619,752.86	8542+62.49	606,836.53	1,619,622.78			
(ML235)	I-235																		
23510		1949+59.42	590,888.03	1,619,611.10															
ML235-1								1973+48.82	593,260.91	1,619,891.57	1976+35.85	593,545.95	1,619,925.27	1979+20.97	593,832.02	1,619,901.74			
ML235-2								1999+18.25	595,822.57	1,619,738.02	2001+63.13	596,066.63	1,619,717.95	2004+07.71	596,311.51	1,619,718.77			
ML235-3								2091+68.42	605,072.17	1,619,748.25	2100+53.74	605,957.48	1,619,751.23	2109+31.19	606,820.01	1,619,551.67			
ML235-4								2120+36.80	607,897.17	1,619,302.45	2133+30.72	609,157.79	1,619,010.79	2145+94.73	610,438.20	1,619,197.30			
ML235-5								2175+76.86	613,389.19	1,619,627.15	2181+89.48	613,995.41	1,619,715.45	2187+99.48	614,607.95	1,619,706.02			
23511		2221+71.45	617,979.53	1,619,654.15															
(ML235)	I-235 NORTHBOUND																		
	(NORTH END I-235)																		
309100		2090+59.42	604,963.12	1,619,762.88															
ML235NB-1								2091+68.09	605,071.79	1,619,763.13	2096+10.48	605,514.19	1,619,764.17	2100+51.90	605,953.75	1,619,714.23			
ML235NB-2								2100+51.90	605,953.75	1,619,714.23	2104+93.64	606,392.67	1,619,664.37	2109+34.40	606,822.94	1,619,564.34			
(ML235)	I-235 SOUTHBOUND																		
	(NORTH END I-235)																		
309200		2090+59.42	604,963.22	1,619,732.88															
ML235SB-1								2091+68.07	605,071.88	1,619,733.37	2096+08.60	605,512.40	1,619,735.34	2100+48.16	605,950.22	1,619,686.57			
ML235SB-2								2100+48.16	605,950.22	1,619,686.57	2104+88.55	606,387.91	1,619,637.82	2109+27.97	606,817.08	1,619,539.01			
(235A)	RAMP A																		
235A-1								38484+75.18	604,621.62	1,619,995.26	38486+84.50	604,414.10	1,620,022.66	38488+93.31	604,211.33	1,620,074.59			
235A-2								38490+63.31	604,046.65	1,620,116.77	38495+12.65	603,611.36	1,620,228.26	38499+29.96	603,332.87	1,620,580.89			
235A-3								38502+68.51	603,123.05	1,620,846.58	38507+35.22	602,833.80	1,621,212.84	38511+66.22	602,836.84	1,621,679.54			
(235B)	RAMP B																		
303220		32574+22.46	601,202.23	1,618,091.36															
235B-1								32576+53.97	601,149.86	1,618,316.87	32579+68.33	601,078.75	1,618,623.08	32582+63.12	600,845.23	1,618,833.52			
235B-2								32585+22.66	600,652.43	1,619,007.27	32590+41.99	600,266.64	1,619,354.94	32595+34.44	599,755.47	1,619,446.66			
(235G)	RAMP G																		
235G-1								38552+54.84	598,296.98	1,619,652.83	38555+37.05	598,579.19	1,619,653.78	38558+18.03	598,857.90	1,619,609.50			
235G-2								38576+34.09	600,651.46	1,619,324.57	38584+47.75	601,455.05	1,619,196.91	38590+94.52	601,934.59	1,619,854.24			
235G-3								38600+76.01	602,513.05	1,620,647.15	38604+68.41	602,744.31	1,620,964.16	38608+39.16	602,766.46	1,621,355.93			
235G-4								38630+76.49	602,892.74	1,623,589.70	38634+27.39	602,912.55	1,623,940.05	38637+77.87	602,962.58	1,624,287.37			

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER G.3

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

Name	Location	Δ_{scs}	Horizontal Alignment Data												Remarks
			Spiral Data								Curve Data				
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ_c	T	L	R	E	
(SUR080)	I-80 ML SURVEY														
SUR080-1											4° 04′ 43.41″ LT	612.11′	1,223.71′	17,190.00′	10.89′	
SUR080-2											6° 57′ 38.61″ LT	653.65′	1,305.68′	10,747.47′	19.86′	
(ML035N)	I-35 NORTHBOUND															
ML035N-1											13° 34′ 14.76″ RT	273.66′	544.77′	2,300.00′	16.22′	
ML035N-2											46° 54′ 31.73″ LT	577.04′	1,088.89′	1,330.00′	119.79′	
ML035N-3											59° 52′ 18.89″ LT	765.89′	1,389.80′	1,330.00′	204.76′	
ML035N-4											5° 30′ 22.71″ LT	577.06′	1,153.24′	12,000.00′	13.87′	
(ML235)	I-235															
ML235-1											11° 26′ 34.74″ LT	287.03′	572.15′	2,864.79′	14.34′	
ML235-2											4° 53′ 40.67″ RT	244.88′	489.46′	5,729.58′	5.23′	
ML235-3											13° 13′ 11.22″ LT	885.31′	1,762.76′	7,639.98′	51.12′	
ML235-4											21° 18′ 52.28″ RT	1,293.92′	2,557.93′	6,875.99′	120.69′	
ML235-5											9° 10′ 08.25″ LT	612.62′	1,222.62′	7,639.98′	24.52′	
(ML235)	I-235 NORTHBOUND															
	(NORTHERLY END I-235)															
ML235NB-1											6° 36′ 56.13″ LT	442.39′	883.81′	7,654.39′	12.77′	
ML235NB-2											6° 36′ 24.10″ LT	441.74′	882.51′	7,653.45′	12.74′	
(ML235)	I-235 SOUTHBOUND															
	(NORTHERLY END I-235)															
ML235SB-1											6° 36′ 45.46″ LT	440.53′	880.08′	7,625.57′	12.71′	
ML235SB-2											6° 36′ 35.18″ LT	440.39′	879.81′	7,626.51′	12.70′	
(235A)	RAMP A															
235A-1											6° 50′ 41.78″ LT	209.32′	418.13′	3,500.00′	6.25′	
235A-2											37° 20′ 05.39″ LT	449.34′	866.65′	1,330.00′	73.85′	
235A-3											38° 40′ 21.70″ LT	466.71′	897.70′	1,330.00′	79.51′	
(235B)	RAMP B															
235B-1											34° 54′ 05.36″ RT	314.35′	609.15′	1,000.00′	48.25′	
235B-2											31° 51′ 07.08″ RT	519.33′	1,011.78′	1,820.00′	72.65′	
(235G)	RAMP G															
235G-1											9° 13′ 10.55″ LT	282.21′	563.19′	3,500.00′	11.36′	
235G-2											62° 54′ 53.64″ RT	813.67′	1,460.44′	1,330.00′	229.15′	
235G-3											32° 52′ 34.42″ RT	392.40′	763.15′	1,330.00′	56.68′	
235G-4											4° 57′ 40.47″ LT	350.91′	701.38′	8,100.00′	7.60′	
(CV_TRAIL)	CHICHAQUA VALLEY TRAIL															
TRAIL2											22° 56′ 27.65″ RT	10.15′	20.02′	50.00′	1.02′	
TRAIL3											22° 56′ 27.65″ LT	10.15′	20.02′	50.00′	1.02′	
TRAIL6											11° 40′ 45.25″ LT	10.23′	20.38′	100.00′	0.52′	
TRAIL7											11° 40′ 45.25″ RT	10.23′	20.38′	100.00′	0.52′	
TRAIL8											84° 27′ 36.42″ RT	90.77′	147.41′	100.00′	35.05′	
TRAIL9											60° 39′ 51.21″ LT	29.26′	52.94′	50.00′	7.93′	
(DET_3_10)	I-35/80 WB to Proposed I-35 NB (Detour)															
C50											2° 04′ 06.35″ RT	41.74′	83.47′	2,312.00′	0.38′	
(DET_3_30)	I-35/80 EB to I-80 EB (Detour)															
DET_3_30-1											3° 37′ 58.48″ LT	341.72′	683.20′	10,775.00′	5.42′	
DET_3_30-2											22° 42′ 52.07″ RT	395.69′	780.99′	1,970.00′	39.35′	
DET_3_30-3											46° 51′ 11.56″ LT	827.58′	1,561.89′	1,910.00′	171.58′	
(235B)	RAMP B RET. WALL															
RET_RMP_B-1											1° 38′ 51.83″ RT	25.84′	51.69′	1,797.25′	0.19′	

SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e	L	x														
		FT	%	FT	FT														
ML035N	ML035-1	2300	5.2	208	80	PV-303	[1]		8464+19.42	8464+81.82						8464+33.82	8464+33.82		
							8470+29.79		8469+64.19	8469+01.79						8469+49.79	8469+49.79		
ML035N	ML035N-2	1330	6.0	240	80	PV-303	8472+60.85		8473+48.85	8474+20.85						8473+40.85	8473+40.85		
							8485+25.74		8484+37.74	8483+65.74						8484+45.74	8484+45.74		
ML035N	ML035N-3	1330	6.0	240	80	PV-303	8490+63.33		8491+99.33	8492+23.33						8491+43.33	8491+43.33		Refer to Modified PV-303 CASE B
ML035N	ML035N-3	1330	6.0	240	80	PV-303													
							8508+85.13	8508+05.13	8505+89.13	8505+65.13						8506+45.13	8506+45.13		Refer to Modified PV-303 CASE A
ML035N	ML035N-4	12000	NC	N/A	N/A														No Superelevation
																			No Superelevation
235A	235A-2	1330	5.4	194	72	PV-303	[2]		38490+63.31	38491+21.51						38490+71.21	38490+71.21		
							38499+93.76		38499+29.96	38498+71.76						38499+22.06	38499+22.06		
235A	235A-3	1330	5.4	194	72	PV-303	38502+04.71		38502+68.51	38503+26.71						38502+76.41	38502+76.41		
							[3]		38511+66.22	38511+08.02						38511+58.32	38511+58.32		
235B	235B-1	1000	6.0	216	72	PV-303	32575+74.77		32576+53.97	32577+18.77						32576+46.77	32576+46.77		
							32583+42.32		32582+63.12	32581+98.32						32582+70.32	32582+70.32		
235B	235B-2	1820	4.6	166	72	PV-303	32584+78.46		32585+22.66	32585+72.46						32585+50.81	32585+50.81		
							[4]		32595+34.44	32594+84.64						32595+06.29	32595+06.29		
235G	235G-1	3500	3.0	108	72	PV-303	[5]		38552+54.84	[5]									
							38558+21.63		38558+18.03	38557+85.63									
235G	235G-2	1330	5.4	194	72	PV-303	38574+26.29	38574+98.29	38576+34.09	38576+92.29						38576+41.99	38576+41.99		
235G	235G-2	1330	5.4	194	72	PV-303													
							38591+58.32		38590+94.52	38590+36.32						38590+86.62	38590+86.62		
235G	235G-3	1330	5.4	194	72	PV-303	38600+12.21		38600+76.01	38601+34.21						38600+83.91	38600+83.91		
235G	235G-3	1330	5.4	194	72	PV-303													
							38610+46.96	38609+74.96	38608+39.16	38607+80.96						38608+31.26	38608+31.26		
235G	235G-4	8100	NC	N/A	N/A														No Superelevation

NOTE:
[1] Sta. 8465+42.83 5.2%. Refer to K Sheets.
[2] Sta. 38490+71.23 4.0%. Refer to K Sheets.
[3] Sta. 38511+66.22 3.78%. Refer to Ramp A Exit Detail in the U Sheets.
[4] Refer to Ramp B Entrance Detail in the U Sheets.
[5] Refer to Ramp G Entrance Detail in the U Sheets.
[5] Refer to Shoulder Transitions Details at Bridges in the U Sheets.

PI Sta 1064+81.98
PC Sta 8464+19.42
8465
1065
PI Sta 8466+93.08
PT Sta 8469+64.19
8470
1070
PT Sta 1071+34.02
PC Sta 8473+48.85
POT Sta 32574+22.46
MAINLINE NB I-35
32575
1075
8475
PC Sta 32576+53.97
PI Sta 8479+25.90
32580
PT Sta 32582+63.12
8480
1080
MAINLINE I-80 (SURVEY)
PC Sta 32585+22.66
32585
PI Sta 32579+68.33
32590
PI Sta 32595+34.44
8485
PT Sta 8484+37.74
PI Sta 38584+47.75
1085
EB I-80 to SB I-235 RAMP B
WB I-80 to SB I-235 RAMP G
8490
PC Sta 8491+99.33
PC Sta 38552+54.84
PT Sta 38558+18.03
PI Sta 32590+41.89
PC Sta 38576+34.09
38575
38580
38585
38570
1090
2065
2070
2075
2080
8495
MAINLINE I-235
MAINLINE I-235
38565
38560
38555
PI Sta 38555+37.05
2020
2025
2030
2035
2040
2045
2050
2055
38590
PT Sta 38590+94.52
1095
2060
8500
8505
8510
PI Sta
MAINLINE NB I-35
PI Sta 8499+65.23
PT Sta 8505+89.13
PI Sta 38495+12.65
38595
WB I-80 to SB I-235 RAMP G
WB I-80 to NB I-35 RAMP A
38495
1100
38600
PC Sta
PI Sta 38604+68.41
0 200
FEET

MAINLINE AND RAMP GEOMETRICS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER G.7

DELAWARE TWP.
T-79-N R-23W
SEC. 18

SAYLOR TWP.
T-79-N R-24W
SEC. 13

FUTURE EB I-80

FUTURE SB I-235 TO NB I-80

NB I-35 (ML035N)

NE 22ND ST.

SEC. LINE

(U.A.C.)

Sta. 32574+82.00, 28.5' Lt.
Area Intake SW-562
w/24" x 90' DR-601
(U.A.C.)

Sta. 32584+11.43, 223.6' LT
~~Install~~ 30" x 106' DR-601
(Trenchless)
Skew = 0° Ahd.
F.L. = Lt. 947.25
Rt. 947.80

PI Sta 32579+68.33

32580

32585

EB I-80 to SB I-235 RAMP B (235B)

POT Sta 32574+24.46

PC Sta 32576+53.97

(235B) Baseline

Curve Data
Δ = 34° 54' 05.36" (RT)
T = 314.35
L = 609.15
R = 1,000.00
E = 48.25
e = 6.0%
L = 216
x = 72

Sta. 32574+22.46 RAMP B (235B) =
Sta. 8474+22.46, 40.00' RT (ML035N)
Begin Ramp B Paving

(Note: For Gore Detail, Refer to U Sheets

Sta. 32579+00.00 RAMP B (235B)
Begin Left Ditch Grading
Continue Ramp B Paving

Sta. 32582+75.00, 22.75' RT (235B) =
Sta. 32582+75.00 (RAMP B RET. WALL)
Begin Ramp B Ret. Wall (BY OTHERS)

PT Sta 32582+63.12

32582+68.00
BA-107
BA-102

BA-250 Guardrail

Ramp B Ret. Wall
By Others

Sta. 32585+00.00 RAMP B (235B)
End Left Ditch Grading
Continue Ramp B Paving

PC Sta 32585+22.66

Sta. 32585+75.00, 20.00' RT
Begin Ramp Taper

Sta. 32587+55.00, 8.00' RT
End Ramp Taper

BA-102
BA-107

15:1 Taper

Sta. 32585+75.00, 22.75' RT (RAMP B) =
Sta. 32585+74.35 (RAMP B RET. WALL)
End Ramp B Ret. Wall BY OTHERS)

Sta. 3256+58, 105' Lt
30" X 110' Conc Pipe
D.A. = 8 Ac - Median
Proposed Ramp B
Sta. 32584+89, 143' Lt
(Remove)

Storage

0 50 FEET

EASTBOUND I-80 to SOUTHBOUND I-235 RAMP B

970 / 965 / 960 / 955 / 950 / 945 / 940 / 935

VPI +75.000
Elv 954.18
K = 90
Len 300.00 ft

Sta. 32574+22.46
RAMP B (235B) =
Begin Ramp B Paving
Elev. 948.31

PROPOSED PGL AT (235B) Baseline

+3.850%

+0.500%

EXIST. GROUND AT (235B) Baseline

Sta. 32579+00.00 RAMP B (235B)
Begin Left Ditch Grading
Continue Ramp B Paving

+0.500%

Sta. 32585+00.00 RAMP B (235B)
End Left Ditch Grading
Continue Ramp B Paving

VPI +00.000
Elv 958.81
K = 177
Len 150.00 ft

-0.348%

VPI +00.000
Elv 958.11
K = 150
Len 150.00 ft

PROPOSED PGL AT (235B) Baseline

EXIST. GROUND AT (235B) Baseline

+22 Rt. 935.03
+4.25% Rt. Ditch Grade
+50 Rt. 944.70
+0.20% Rt. Ditch Grade
+75 Rt. 945.95
+00 Lt. 940.55
-3.50% Lt. Ditch Grade
+95 Lt. 940.21
+4.28% Lt. Ditch Grade
+45 Lt.
+75 Lt. 948.91
-2.34% Lt. Ditch Grade
+00 Lt. 948.32
-0.20%
+1.56% Lt. Ditch Grade
+00 Lt. 953.00
+75 Rt. 950.10
-3.55% Rt. Ditch Grade
+25 Rt. 950.00

Lt: Vari. - See Cross Sections | Ditch Grade | Vari. - See Cross Sections | Ditch Grade
Rt: Ditch Grade | Wall | Ditch Grade

948.41 949.34 950.19 950.98 951.70 952.35 952.93 953.44 953.87 954.24 954.54 954.77 954.93 955.06 955.18 955.31 955.43 955.56 955.68 955.81 955.93 956.06 956.18 956.31 956.43 956.56 956.68 956.81 956.93 957.06 957.18 957.31 957.43 957.56 957.68 957.81 957.93 958.06 958.18 958.31 958.43 958.54 958.61 958.65 958.65 958.62 958.55 958.46 958.37 958.31 958.28 958.30 958.36 958.46 958.60 958.76

32575 32576 32577 32578 32579 32580 32581 32582 32583 32584 32585 32586 32587 32588

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER K.3

Sta. 32589+00.00
~~Install~~ 30" x 124' DR-601
Skew = 0° Ahd.
F.L. = Lt. 949.70
Rt. 943.00

DELAWARE TWP.
T-79-N R-23W
SEC. 18

(235G) Baseline

FUTURE WB I-80 to SB I-235

PI Sta 32590+41.99

BA-250 Guardrail

32590

EB I-80 to SB I-235 RAMP B (235B)

BA-250 Guardrail

Open Storage

U.P.R.R.

Curve Data
Δ = 31° 51' 07.08" (RT)
T = 519.33
L = 1,011.78
R = 1,820.00
E = 72.65
e = 4.6%
L = 166
x = 72

Sta. 32589+63.22 (RAMP B)
End Ramp B Paving

Sta. 32593+05.82 (235B) =
Sta. 38569+60.04, 23.07' LT (235G)

Sta. 32593+20.22 (235B) =
Sta. 35569+43.47, 36.86' LT (235G)

Note: For Gore Detail,
Refer to U Sheets

32595

(235B) Baseline

PT Sta 32595+34.44

Sta. 32593+05.82 Ramp B (235B) =
Sta. 38569+57.72, 38.90' LT (235G)
Refer to Ramp G Paving

Sta. 32595+34.44 RAMP B (235B) =
Sta. 38567+30.04, 20.00' LT (235G)

(235G) Baseline

NORTHBOUND I-235

SOUTHBOUND I-235

FUTURE NB I-235

FUTURE SB I-235

NE BROADWAY AVENUE

C. LINE

0 FEET 50

DELAWARE TWP.
T-79-N R-23W
SEC. 18

EASTBOUND I-80 to SOUTHBOUND I-235 RAMP B

VPI +00.000
Elv 961.37
K = 277
Len 200.00 ft

Sta. 32589+63.22
RAMP B (235B) =
End Paving
Elev. 959.83

+0.652%

-0.070%

Sta. 32593+05.82 Ramp B (235B) =
Sta. 38569+57.72, 38.90' LT (235G

Sta. 32593+20.22 RAMP B (235B)
Ramp G Gore Paving

EXIST. GROUND
AT (235B) Baseline

PROPOSED PGL AT
(235B) Baseline

+00 Lt.
953.00

-3.30% Lt. Ditch Grade

+00 Lt.
949.70

-2.55% Rt. Ditch Grade

-1.00% Rt. Ditch Grade

+00 Rt.
943.00

+50 Rt.
941.50

970 965 960 955 950 945 940 935

Lt
Rt

Ditch Grade | Bridge | Ditch Grade
Ditch Grade | Ditch Grade | Bridge | Ditch Grade

958.93 959.09 959.25 959.42 959.58 959.74 959.91 960.07 960.23 960.40 960.56 960.72 960.87 961.00 961.11 961.19 961.25 961.29 961.31 961.30

32588 32589 32590 32591 32592

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(197)87--13-77	SHEET NUMBER K.4