



Survey Information

Johnson County
IMN-080-6(235)2390E-52
I-80/I-380/US-218 Interchange near
Iowa City
PIN 02-52-080-010
Sap-0411.4
Sap-0411.5

2003 Vertical Control Information

This survey is relative to NAVD88 vertical datum. Three wire bench level loops were run throughout this project. All bench loops originated and closed on one project benchmark #566 a 3rd order USGS mark called 26FDR 1964 682. Note the vertical datum difference between NGVD 88 and NAVD 29 is 0.10 feet in this area. The 29 datum is 0.10 higher than 88. Benchmark elevations were validated in the 2013/2014 survey. A few updates were needed.

Vertical equations to the project datum Bench Marks and other benches along this survey are as follows:

BM # 566	This survey	EL=682.046
=BM # 566	Johnson County 2000 survey	EL=682.046
=USGS BM	#26 26FDR 1964 682	EL=682.046
BM #625	This survey	EL=685.519
=BM #14	1986 AB plan F-518-4(26)--20-52	
EL=685.56		
=BM # 1	Paving plan I-IG-380-6(19)243--04-52	
EL=685.56		
BM #517	This survey	EL=737.314
=BM # 3	Paving plan I-IG-380-6(19)243--04-52	
EL=737.37		
BM #520	This survey	EL=699.144
=BM # 19	Paving plan I-IG-380-6(19)243--04-52	
EL=699.26		
BM #536	This survey	EL=691.494
=BM # 22	Paving plan I-IG-380-6(19)243--04-52	
EL=691.61		
BM #636	This survey	EL=691.493
=BM #521	2000 Carlson survey IMN-80-6(21)240--00-52 (88 Datum)	
EL=691.493		
=BM # 22	Paving plan I-IG-380-6(19)243--04-52 (29 Datum)	
EL=691.61		
=BM #22	1986 AB Plan F-518-4(12)--20-52 (29 Datum)	
EL=691.61		
BM #608	This survey	EL=804.915
=BM # 37	1986 AB Plan F-518-4(12)--20-52 (29 Datum)	
EL=804.85		
BM #582	This survey	EL=758.068
=BM # 39	1986 AB Plan F-518-4(12)--20-52 (29 Datum)	
EL=758.03		
BM #502	This survey	EL=738.113
=BM #502	2000 Carlson survey IMN-80-6(21)240--00-52 (88 Datum)	
EL=738.113		
=BM # 51A	I-80-6(12)238 Grading Plan (29 Datum)	
EL=738.36		
BM #512	This survey	EL=789.582
=BM #512	2000 Carlson survey IMN-80-6(21)240--00-52 (88 Datum)	
EL=789.582		
=BM # 60A	I-80-6(12)238 Grading Plan (29 Datum)	
EL=789.74		
=BM # 500	IM-80-6(171)240--13-52 Plan (29 Datum)	
EL=789.96		
BM #633	This survey	EL=684.211
=BM # 21A	F-289(6) 1970 AB PLAN (Datum unknown)	
EL=703.62		
BM #634	This survey	EL=682.904
=BM # 21B	F-289(6) 1970 AB PLAN (Datum unknown)	
EL=702.26		

General Information

Measurement units for this survey are US survey feet. This survey is for proposed reconstruction of the systems interchange. This field survey including mobile lidar pavement survey is supplemented with aerial survey to create the entire dtm. As of Jan. 2015 the entire surface model tin is located at [pw:\projectwise.dot\int\lan\PM\Main\Documents\Projects\5208001002\Photo\52080243.tin](#)

The 2013/2014 survey was made to update previous surveys to current mapping standards and to check previous survey control, drainage structures, existing pavement and utilities.

[Survey file locations in ProjectWise as of Jan. 2015](#)

Year 2000 2006 I-80 SAP 321 files (SDMS Data collection)

[pw:\projectwise.dot\int\lan\PM\Main\Documents\Projects\5208001098\Photo\SURVEY\](#)

Year 2003 I-380 SAP 411.0 to SAP 411.3 files (SDMS Data collection)

[pw:\projectwise.dot\int\lan\PM\Main\Documents\Projects\5208001002\PrelimSurvey\0411\OLD\102913\2003 SDMS Survey\](#)

Year 2013/2014 SAP 411.4 files (Current standards)

[pw:\projectwise.dot\int\lan\PM\Main\Documents\Projects\5208001002\PrelimSurvey\04114\](#)

Year 2013 SAP 411.5 files (Mobile lidar)

[pw:\projectwise.dot\int\lan\PM\Main\Documents\Projects\5208001002\PrelimSurvey\04115\](#)

Date(s) of Survey(s)

I-80

SAP 321 Aug. 2000

SAP 321.1 Aug. 2001 Additional Survey

SAP 321.2 April 2006 Additional Survey-Dubuque St.

SAP 411.4 2013-2014 Update survey to current standards and building floor elev. survey

SAP 411.5 Fall 2013 Mobile Lidar pavement survey (R.E.Y.)

I-380/US-218

SAP 411,411.1,411.2,411.3- April 2003

SAP 411.4 2013-2014 Update survey to current standards and building floor elev. survey

SAP 411.5 Fall 2013 Mobile Lidar pavement survey (R.E.Y.)

2003 Horizontal Control

The GPS Network along this project was collected by IDOT Preliminary Survey Crews. Information about that network can be found in the 0411gpspoints.doc file included with this survey in NAD83(1996) Modified State Plane Project Coordinates.

As of Jan. 2015 see control report at:

[pw:\projectwise.dot\int\lan\PM\Main\Documents\Projects\5208001002\PrelimSurvey\0411\OLD\102913\2003 SDMS Survey\0411gpspoints.doc](#)

Twelve section corners were found and included in this survey. None of the section corners coded as SCR in this survey have been certified by District 6 office. This survey was measured in English Units.

[This survey intersects a 2000 Preliminary Survey along I-80.](#) The 2000 survey data used Sap 0321. A revised GPS network was observed in 2002 for this project that includes all 2000 network control with approximately fourteen additional points added along the I-380 corridor north and south of I-80. The project control for this project is identical to the 2000 network control survey. Station equations to all as-built PI points are in the Horizontal datum information included below. Project control was validated in 2013/2014 survey.

Alignment Information

The mainline alignment of the I 80 survey is a retrace of GRADING PLANS NO. 80-6(12)238.

2000 survey stationing relates to the Grading Plans as follows:

PI-676+17.64-THIS-SURVEY=

PI 676+17.60 ORLINS FEB

1995 SURVEY PROJ. NUMBER IM-80-6(171)240-13-52 =

PI 670+17.6 GRADING PLANS PROJ NO 80-6(12)238

FOUND IRON PIN

The mainline alignment of the I 380 survey is a retrace of the as-built plans # F-518-4(12) 20-52 1986 AB plans (centerline of median).

2003 Survey stationing relates to as built plan stationing as follows:

BOP POT Sta 11082+95.29 this survey =

POT Sta 1684+00.22 F-518-4(12)--20-52 As-Built Plans

CP Point 11097+51.08, 0.14 feet right this survey =

=PC Sta 1698+56.76 F-518-4(12)--20-52 As-Built Plans Back

=PC Sta 1698+60.00 F-518-4(12)--20-52 As-Built Plans Ahead

PI Sta 11109+54.89 this survey =

PI Sta 1710+60.76 F-518-4(12)--20-52 As-Built Plans

PI Sta 11127+45.33 this survey =

=POT Sta.1127+45.33 IMN-80-6(211)2400E-52 2000 Preliminary Survey

=POT Sta 1728+54.9 F-518-4(12)--20-52 As-Built Plans Back

=POT Sta 1127+44.85 F-518-4(12)--20-52 As-Built Plans Ahead

POT Sta 11163+54.20 This Survey I-380 Stationing (Not Set in Field)

=POT Sta. 644+59.06 This Survey I-80 Stationing

=POT Sta. 644+59.06 IMN-80-6(211)2400E-52 2000 Preliminary Survey I-80

Stationing

=POT Sta. 644+50.24 IM-80-6(167)24013-52 Feb 1996 Grading Plan I-80

Stationing

=POT Sta. 638+56.24 F-518-4(12)--20-52 As-Built Plans I-80 Stationing

=POT Sta. 638+56.24 I-IG-380-6(19)243-04-52 As-Built Plans I-80 Stationing

=POT Sta 1163+53.95 F-518-4(12)--20-52 As-Built Plans I-380 Stationing

=POT Sta 1163+53.95 I-IG-380-6(19)243-04-52 As-Built Plans I-380 Stationing

POT Sta 11183+81.20 This survey

= TS Sta 1183+81.20 F-518-4(12)--20-52 As-Built Plans

= TS Sta 1183+81.20 I-IG-380-6(19)243-04-52 As-Built Plans

= TS Sta 1183+81.20 IMN-80-6(211)2400E-52 2000 Preliminary Survey

PI Sta 11191+13.01 this survey =

PI Sta 1191+12.08 I-IG-380-6(19)243-04-52 As-Built Plans

PI Sta 11271+13.95 this survey =

PI Sta 1271+13.52 I-IG-380-6(19)243-04-52 As-Built Plans

PI Sta 11324+10.95 this survey =

PI Sta 1324+11.21 I-IG-380-6(19)243-04-52 As-Built Plans

POT Sta 11404+97.20 this survey =

PC Sta 1404+96.91 I-IG-380-6(19)243-04-52 As-Built Plans

Utility Information

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02
Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

The 2013/2014 utility survey information is too extensive to be reported in this index. For complete utility survey information as of Jan. 2015 see:

<pw:\projectwise\dot\int\lan\PMMain\Documents\Projects\5208001002\PrelimSurvey\04114\04114 Dewey\UtilityInfo>

ALIGNMENT COORDINATES

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			
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		
Kansas and Jasper Ave Relocation (KANSAS_JASPER)															
30100		1568+00.00	619,704.31	2,149,135.48											
30101						1571+37.12	620,041.32	2,149,126.81	1579+65.54	620,869.46	2,149,105.51	1584+50.44	620,869.46	2,148,277.10	
30102						1589+21.07	620,869.46	2,147,806.46	1599+73.43	620,869.46	2,146,754.11	1606+48.93	621,912.81	2,146,616.73	
30103		1610+12.69	622,273.46	2,146,569.24			1620+24.16	623,276.27	2,146,437.20	1622+60.89	623,510.98	2,146,406.30	1624+97.19	623,747.63	2,146,400.10
340th Ave. (340TH)															
30200		1692+89.37	621,673.42	2,145,107.96											
30201						1695+32.92	621,916.97	2,145,107.35	1701+25.42	622,509.46	2,145,105.88	1704+02.78	622,411.31	2,145,690.18	
30202						1708+70.34	622,333.85	2,146,151.27	1711+48.13	622,287.83	2,146,425.22	1714+25.74	622,258.39	2,146,701.45	
30203						1724+68.69	622,147.88	2,147,738.53	1727+52.19	622,117.84	2,148,020.43	1730+31.93	622,010.61	2,148,282.86	
I80/I380/US218/IA27 Interchange															
I380 Ramp A (ML380A)															
51003						1530+63.64	624,625.87	2,148,108.75	1538+80.74	623,878.10	2,148,438.13	1546+44.73	623,462.62	2,149,141.71	
51002						1549+82.45	623,290.90	2,149,432.52	1556+43.04	622,955.00	2,150,001.34	1562+75.00	622,938.80	2,150,661.73	
51000		1577+27.34	622,903.16	2,152,113.64											
I380 Ramp B (ML380B)															
52000		2513+50.00	622,562.89	2,145,745.33											
52001						2522+50.00	622,574.18	2,146,645.26	2527+86.01	622,580.91	2,147,181.23	2533+06.52	622,370.50	2,147,674.21	
52003						2537+06.52	622,213.48	2,148,042.10	2549+45.93	621,726.96	2,149,182.03	2560+77.75	620,610.31	2,149,719.84	
52004						2560+77.75	620,610.31	2,149,719.84	2561+45.63	620,549.16	2,149,749.29	2562+13.49	620,487.04	2,149,776.65	
I380 Ramp G (ML380G)															
57003						7504+21.04	621,043.13	2,149,445.04	7510+11.90	621,522.40	2,149,099.47	7515+70.07	621,736.93	2,148,548.93	
57002						7518+20.07	621,827.69	2,148,315.99	7652+15.67	616,964.06	2,160,797.46	7545+40.49	623,336.56	2,149,014.71	
57001						7550+90.49	623,074.91	2,149,498.49	7553+44.97	622,953.85	2,149,722.33	7555+90.00	622,947.61	2,149,976.74	
57000		7562+75.00	622,930.80	2,150,661.53											
I380 Ramp H (ML380H)															
58000		8537+06.52	622,220.84	2,148,045.24											
58001						8539+56.52	622,130.42	2,148,278.32	8581+13.80	620,626.78	2,152,154.15	8562+44.01	623,507.60	2,149,156.84	
58002						8571+33.34	624,123.87	2,148,515.65	8575+07.94	624,383.45	2,148,245.57	8578+73.96	624,723.18	2,148,087.74	
Existing Ramp B (DETOUR_RAMPB_EX)															
DSNALIGNMENT1_1						3628+47.68	622,629.08	2,147,238.75	3632+92.35	622,616.69	2,147,683.25	3637+16.29	622,382.23	2,148,061.08	
DSNALIGNMENT1_4						3647+56.37	621,833.83	2,148,944.82	3651+09.08	621,647.85	2,149,244.52	3654+42.04	621,328.37	2,148,319.19	
I-80 (SUR080)															
15		488+00.88	622,563.99	2,142,324.94											
C11						575+94.28	622,430.99	2,141,991.19	579+28.07	622,425.94	2,142,324.94	582+61.53	622,446.80	2,142,658.08	
C12						621+27.54	622,688.31	2,146,516.54	625+84.74	622,716.87	2,146,972.85	630+41.82	622,727.21	2,147,429.93	
C13						673+07.90	622,823.70	2,151,694.93	676+17.64	622,830.70	2,152,004.58	679+27.34	622,829.34	2,152,314.32	
C14						740+40.31	622,802.38	2,158,427.23	749+37.94	622,798.42	2,159,324.85	758+21.10	622,520.14	2,160,178.25	
C15						820+16.63	620,599.40	2,166,068.53	839+10.31	620,012.31	2,167,868.91	857+70.08	631,493.96	2,169,621.11	
C16						889+87.89	620,075.36	2,172,980.02	895+41.62	620,082.20	2,173,533.71	900+91.93	620,194.93	2,174,075.85	
C17						930+00.13	620,787.02	2,176,923.14	936+13.34	620,911.87	2,177,523.51	942+21.91	620,906.83	2,178,089.65	
C18						1050+10.26	620,814.94	2,189,324.68	1066+45.52	620,804.79	2,190,559.90	1078+43.53	620,286.60	2,189,277.62	
11		1155+97.06	617,033.96	2,198,719.50											
I-380 (SUR380)															
101		11082+95.29	615,990.69	2,152,999.38											
CUR1						11097+51.38	616,974.03	2,151,925.48	11109+54.89	617,974.03	2,151,037.87	11121+23.91	618,888.00	2,155,794.82	
SCS20						11183+82.41	624,615.39	2,148,029.23							
CUR2						11267+32.55	632,919.28	2,147,584.41	11271+13.95	633,300.61	2,147,576.90	112			

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

Name	Location	Δ_{SCS}	Horizontal Alignment Data										Remarks				
			Spiral Data							Curve Data							
			θ_s	L_s	T_s	E_s	X_c	Y_c	L.T.	S.T.	Δ_c	T	L	R	E		
Kansas and Jasper Ave Relocation (KANSAS_JASPER)																	
30101											88° 31' 35.70" LT	828.42'	1,313.32'	850.00'	336.92'		
30102											82° 29' 56.41" RT	1,052.35'	1,727.86'	1,200.00'	396.07'		
30104											6° 00' 01.14" RT	236.73'	473.03'	4,516.86'	6.20'		
340th Ave. (340TH)																	
30201											99° 40' 42.25" RT	592.49'	869.86'	500.00'	275.27'		
30202											3° 27' 10.64" LT	277.79'	555.41'	9,216.00'	4.19'		
30203											16° 08' 28.42" RT	283.50'	563.24'	1,999.31'	20.00'		
I80/I380/US218/IA27 Interchange																	
I380 Ramp A (ML380A)											35° 39' 54.75" LT	817.10'	1,581.09'	2,540.00'	128.19'		
51003											29° 09' 22.90" LT	660.59'	1,292.54'	2,540.00'	84.50'		
I380 Ramp B (ML380B)											23° 49' 56.31" RT	536.01'	1,056.52'	2,540.00'	55.94'		
52001											41° 10' 12.77" RT	1,239.41'	2,371.23'	3,300.00'	225.07'		
52003											1° 56' 39.43" RT	67.87'	135.74'	4,000.00'	0.58'		
I380 Ramp G (ML380G)											32° 55' 03.02" LT	590.86'	1,149.04'	2,000.00'	85.45'		
57003											187° 07' 00.01" RT	13,395.59'	2,720.41'	833.00'	14,254.47'		
57002											27° 00' 00.00" LT	254.48'	499.51'	1,060.00'	30.12'		
I380 Ramp H (ML380H)											157° 20' 21.27" LT	4,157.28'	2,287.49'	833.00'	3,406.92'		
58001											21° 13' 01.53" RT	374.60'	740.62'	2,000.00'	34.78'		
Existing Ramp B (DETOUR_RAMPB_EX)											30° 13' 32.32" RT	444.67'	868.61	1,646.55'	58.99'		
DSNALIGNMENT1_1											33° 06' 36.74" RT	352.71'	685.68'	1,186.54	51.31'		
I-80 (SUR080)																	
C11											4° 26' 53.84" LT	333.79'	667.24	8,594.37'	6.48'		
C12											2° 17' 08.53" RT	457.20'	914.28'	22,918.31'	4.56'		
C13											1° 32' 54.91" RT	309.74'	619.42'	22,918.31'	2.09'		
C14											17° 48' 28.25" RT	897.63'	1,773.63'	5,729.58'	69.89'		
C15											18° 46' 02.12" LT	1,893.69'	3,753.45'	11,459.16'	155.42'		
C16											11° 02' 25.40" LT	553.73'	1,104.04'	5,729.58'	26.70'		
C17											12° 13' 03.89" RT	613.21'	1,221.77'	5,729.58'	32.54'		
C18											24° 19' 57.71" RT	1,235.26'	2,433.27'	5,729.58'	131.64'		
I-380 (SUR380)																	
CUR1											23° 43' 30.84" RT	1,203.51'	2,372.52'	5,729.58'	125.04'		
SCS20			22° 38' 40.61" RT	1° 18' 45.00" RT	150.00'	730.60'		149.99'	1.15'	100.00'	50.00'	20° 01' 10.61" RT	577.88'	1,143.98'	3,274.05'	50.61'	
CUR2											1° 16' 16.63" LT	381.40'	762.77'	34,377.47'	2.12'		
CUR3											1° 54' 47.06" RT	382.65'	765.23'	22,918.31'	3.19'		
Ramp A Detour (DET_RAMPA)																	
DET_RAMPA_1											2° 35' 30.34" LT	36.14'	72.26'	1,597.43'	0.41'		
DET_RAMPA_2											13° 27' 46.67" LT	188.85'	375.96'	1,600.00'	11.11'		
DET_RAMPA_5											23° 06' 49.98" LT	388.53'	766.49'	1,900.00'	39.32'		
Ramp B Detour (DET_RAMPB)																	
DET_RAMPB_3											2° 09' 36.96" RT	71.08'	142.14'	3,770.00'	0.67'		
DET_RAMPB_4											3° 58' 32.83" LT	130.85'	261.60'	3,770.00'	2.27'		
DET_RAMPB_7											17° 58' 27.90" RT	158.16'	313.71'	1,000.00'	12.43'		





