

City of West Des Moines  
Iowa

**National Adjustment 2011  
(NA2011)**

Monument  
Records

**2014**

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Dan Corbin, Inc.  
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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-HZ #1**

Network Point ID: **2001**

NAD 83(2011)

Latitude: **N41°35'53.31349"**

Longitude: **W93°43'18.91570"**

NAVD 88 Ortho Height: **855.890sft**

Ellip. Ht: **753.791sft**

**Geoid12A**

Mapping Angle: **-0°08'46"**

Combination Scale Factor: **0.999936397**

Iowa South Zone (1402)

Northing: **582342.246sft**

Easting: **1579717.898sft**

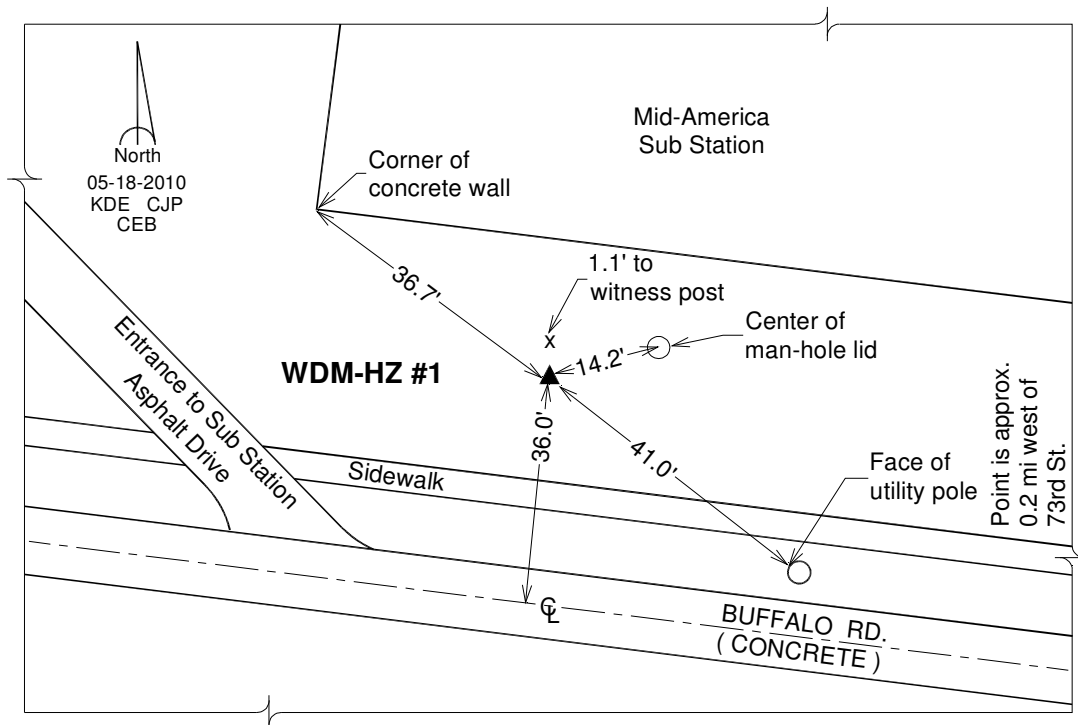
laRCS Zone 8

Northing: **7491204.707sft**

Easting: **18498562.764sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #1

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #2**

Network Point ID: **2002**

NAD 83(2011)      Latitude: **N41°36'00.84789"**

Longitude: **W93°45'24.89367"**

NAVD 88 Ortho Height: **944.500sft**

Ellip. Ht: **842.657sft**

**Geoid12A**

Mapping Angle: **-0°10'09"**

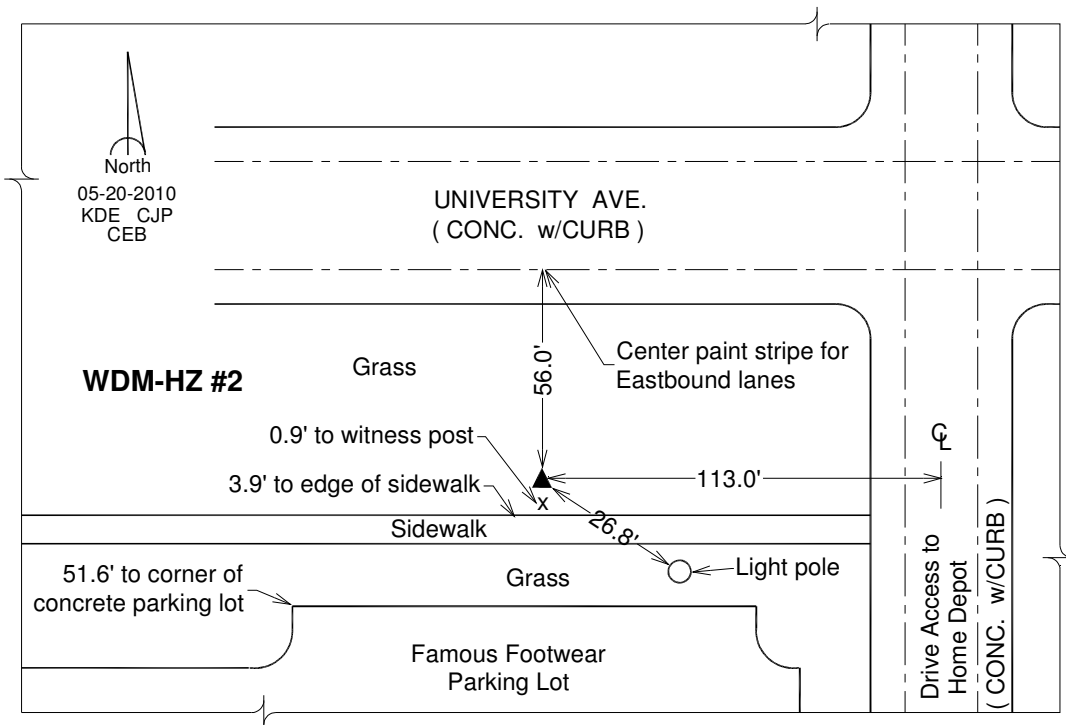
Combination Scale Factor: **0.999932411**

Iowa South Zone (1402)    Northing: **583131.189sft**    Easting: **1570148.818sft**

IaRCS Zone 8      Northing: **7491969.878sft**    Easting: **18488991.171sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #2

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



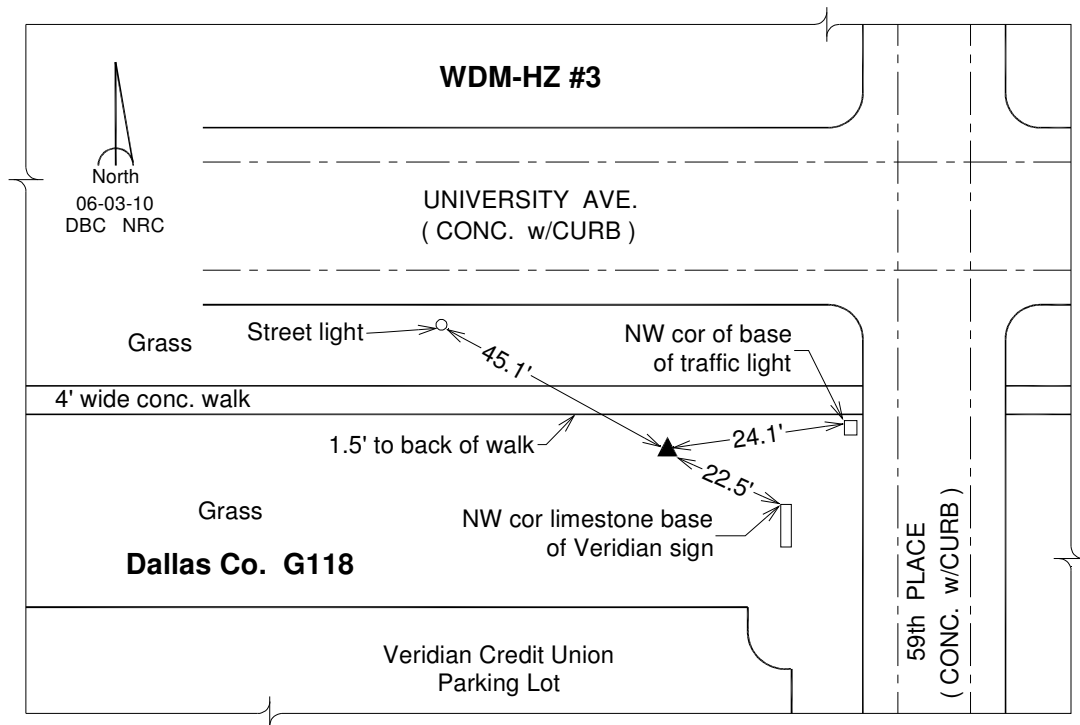
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US Survey Feet

Point Name: **WDM-HZ #3** Network Point ID: **2003**  
NAD 83(2011) Latitude: **N41°36'00.92363"** Longitude: **W93°47'27.15610"**  
NAVD 88 Ortho Height: **972.350sft** Ellip. Ht: **870.763sft** **Geoid12A**  
Mapping Angle: **-0°11'30"** Combination Scale Factor: **0.999931072**  
Iowa South Zone (1402) Northing: **583168.104sft** Easting: **1560860.114sft**  
IaRCS Zone 8 Northing: **7491983.705sft** Easting: **18479701.840sft**

**Designation:** Dallas Co. GPS Control Monument G118 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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US Survey Feet

Point Name: **WDM-HZ #4**

Network Point ID: **2004**

NAD 83(2011) Latitude: **N41°35'27.76678"**

Longitude: **W93°49'40.74467"**

NAVD 88 Ortho Height: **1012.400sft**

Ellip. Ht: **911.059sft**

**Geoid12A**

Mapping Angle: **-0°12'58"**

Combination Scale Factor: **0.999928043**

Iowa South Zone (1402)

Northing: **579848.235sft**

Easting: **1550698.258sft**

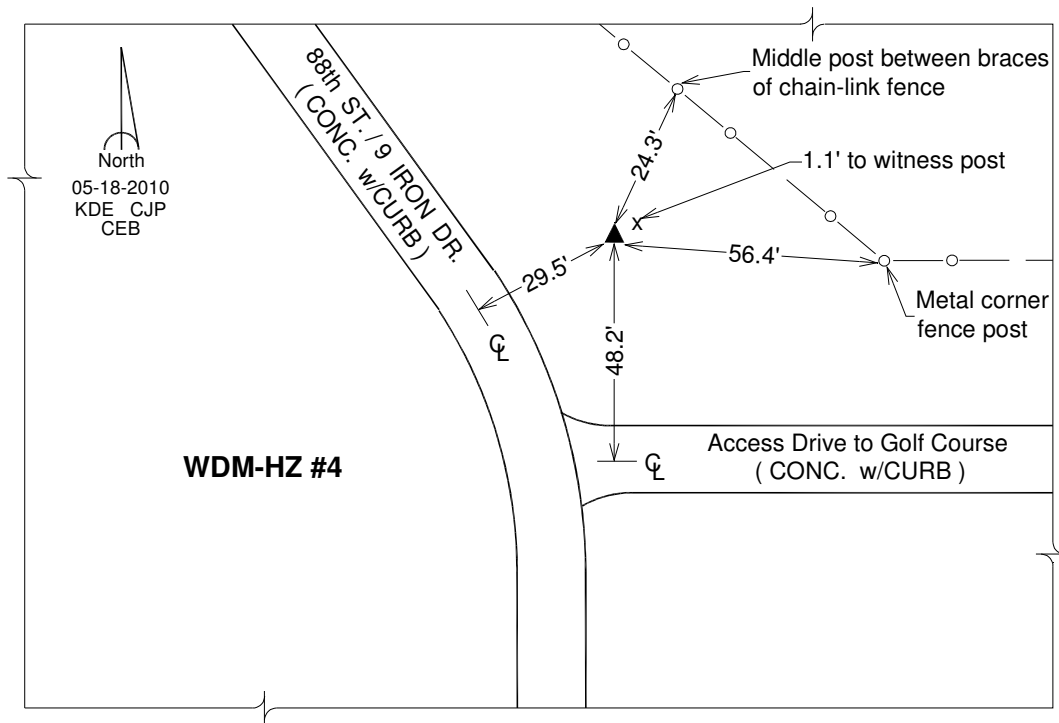
IaRCS Zone 8

Northing: **7488638.412sft**

Easting: **18469547.631sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #4

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #5**

Network Point ID: **2005**

NAD 83(2011) Latitude: **N41°34'06.87432"**

Longitude: **W93°42'41.40477"**

NAVD 88 Ortho Height: **813.140sft**

Ellip. Ht: **710.875sft**

**Geoid12A**

Mapping Angle: **-0°08'22"**

Combination Scale Factor: **0.999935003**

Iowa South Zone (1402)

Northing: **571561.887sft**

Easting: **1582541.643sft**

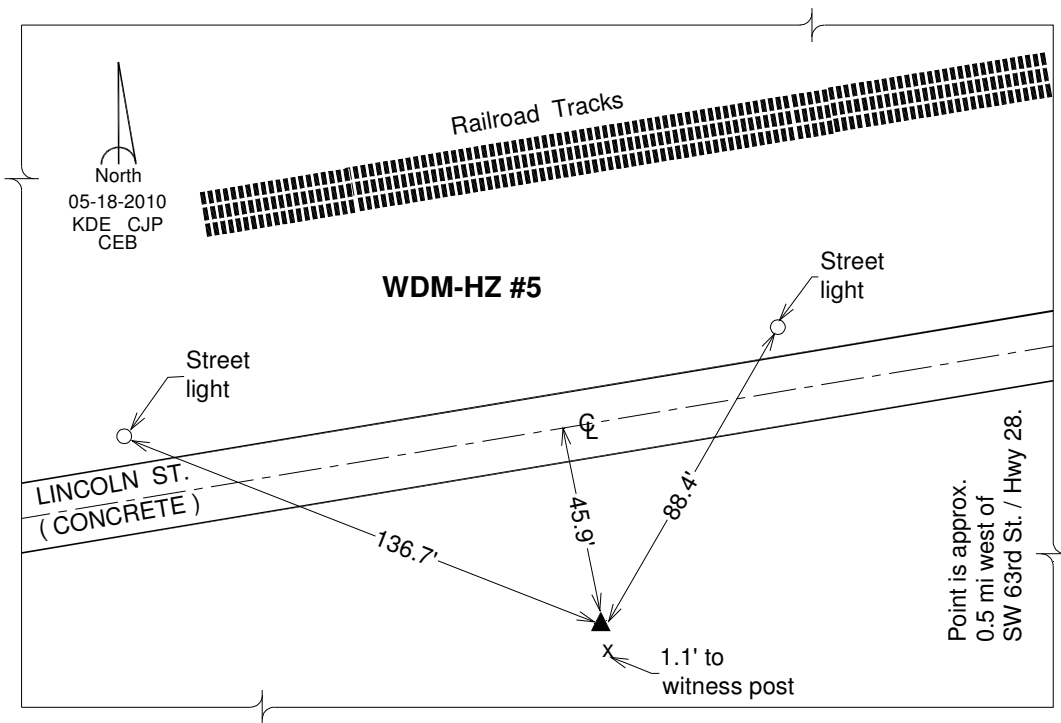
IaRCS Zone 8

Northing: **7480430.743sft**

Easting: **18501413.531sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #5

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #6**

Network Point ID: **2006**

NAD 83(2011) Latitude: **N41°34'03.14279"**

Longitude: **W93°45'22.87289"**

NAVD 88 Ortho Height: **914.010sft**

Ellip. Ht: **812.044sft**

**Geoid12A**

Mapping Angle: **-0°10'08"**

Combination Scale Factor: **0.999930060**

Iowa South Zone (1402)

Northing: **571217.209sft**

Easting: **1570267.233sft**

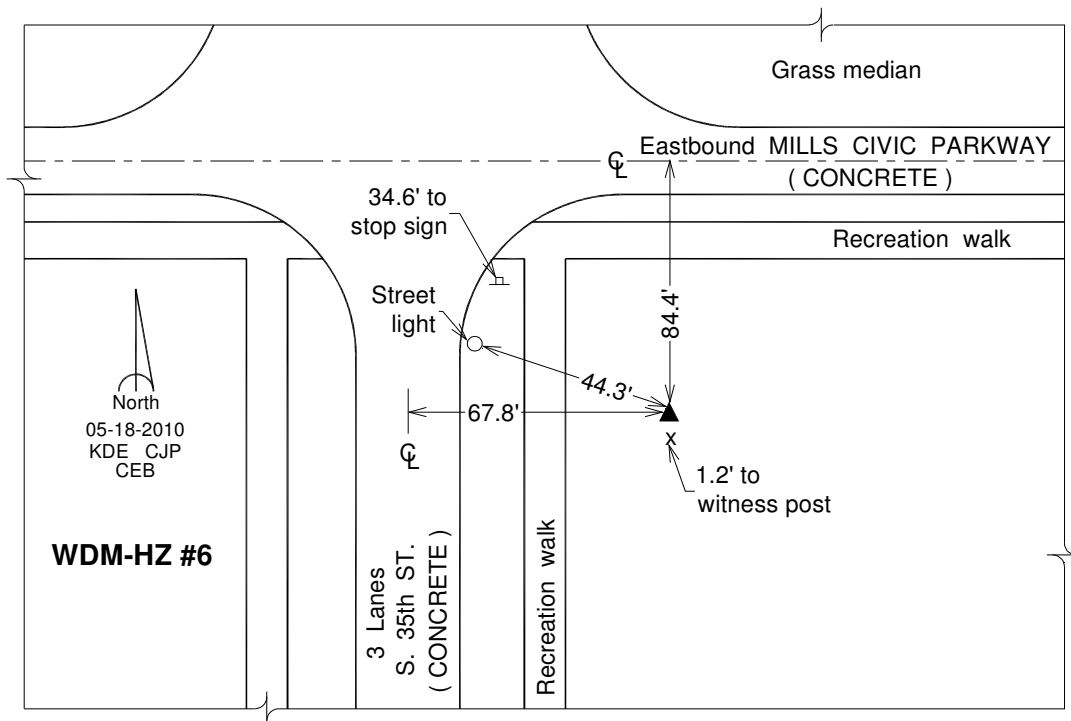
laRCS Zone 8

Northing: **7480055.486sft**

Easting: **18489139.230sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #6

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #7**

Network Point ID: **2007**

NAD 83(2011)      Latitude: **N41°33'49.34016"**

Longitude: **W93°47'34.49623"**

NAVD 88 Ortho Height: **956.940sft**

Ellip. Ht: **855.210sft**

**Geoid12A**

Mapping Angle: **-0°11'35"**

Combination Scale Factor: **0.999927575**

Iowa South Zone (1402)

Northing: **569851.773sft**

Easting: **1560257.608sft**

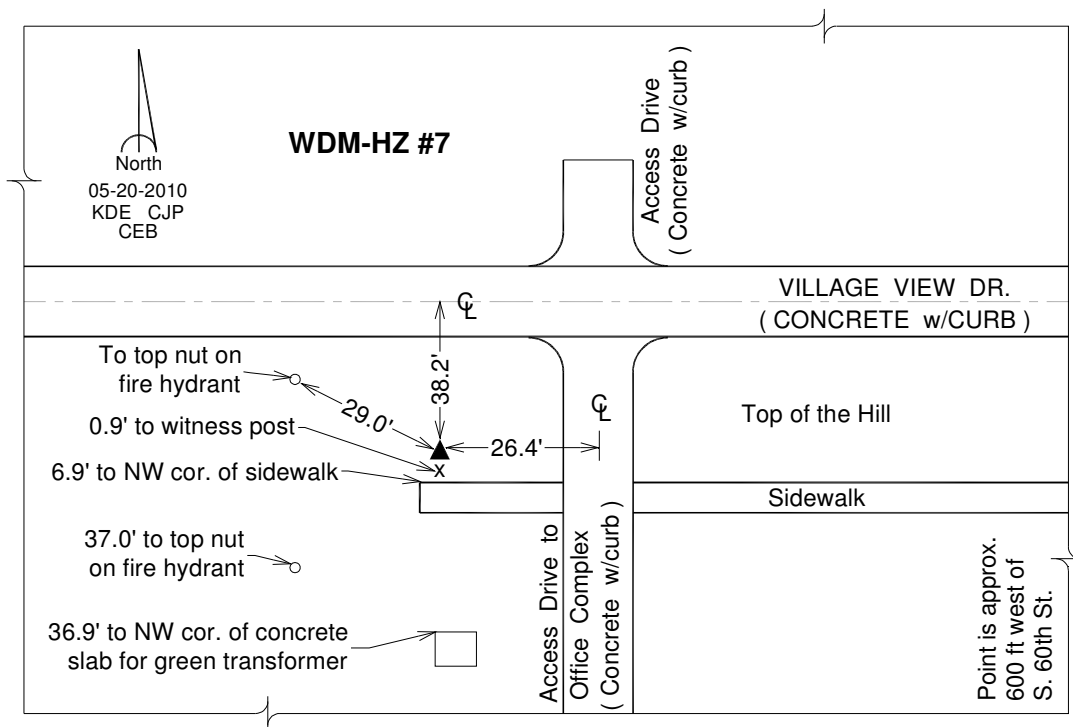
laRCS Zone 8

Northing: **7478665.079sft**

Easting: **18479132.383sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #7

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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Point Name: **WDM-HZ #8**

Network Point ID: **2008**

NAD 83(2011) Latitude: **N41°33'55.02761"**

Longitude: **W93°49'41.35127"**

NAVD 88 Ortho Height: **988.920sft**

Ellip. Ht: **887.441sft**

**Geoid12A**

Mapping Angle: **-0°12'58"**

Combination Scale Factor: **0.999926212**

Iowa South Zone (1402)

Northing: **570461.850sft**

Easting: **1550616.753sft**

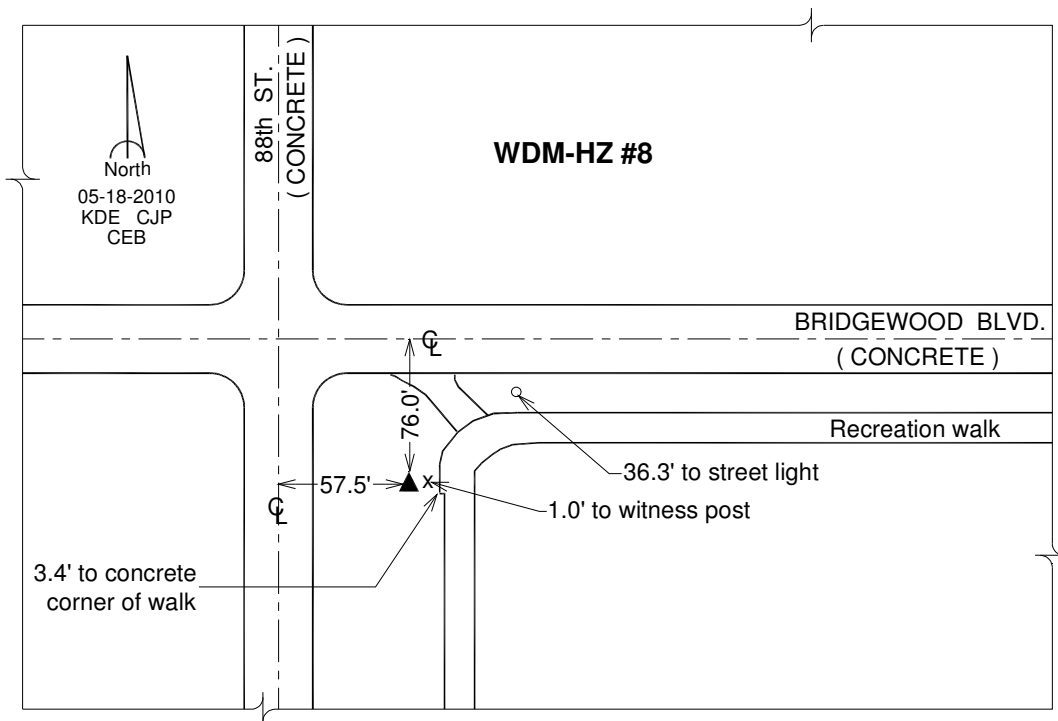
laRCS Zone 8

Northing: **7479251.254sft**

Easting: **18469489.413sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #8

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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 US Survey Feet

Point Name: **WDM-HZ #9**

Network Point ID: **2009**

NAD 83(2011)

Latitude: **N41°33'08.08099"**

Longitude: **W93°52'16.48038"**

NAVD 88 Ortho Height: **1000.910sft**

Ellip. Ht: **899.667sft**

**Geoid12A**

Mapping Angle: **-0°14'40"**

Combination Scale Factor: **0.999924208**

Iowa South Zone (1402)

Northing: **565757.611sft**

Easting: **1538804.467sft**

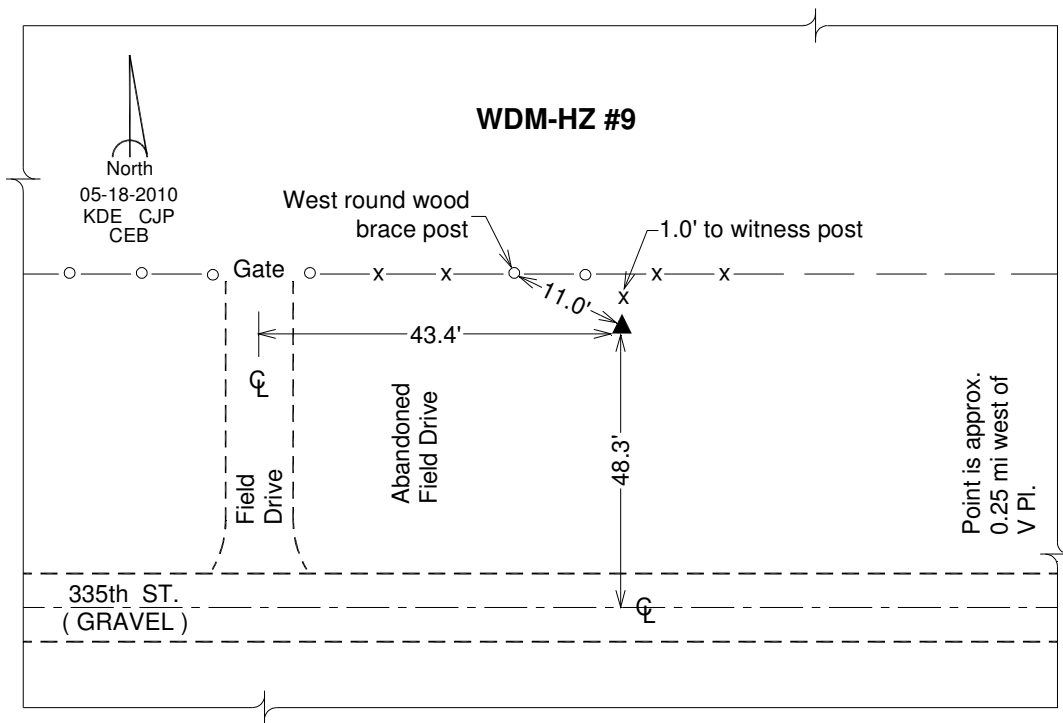
laRCS Zone 8

Northing: **7474517.418sft**

Easting: **18457688.043sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #9

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #10**

Network Point ID: **2010**

NAD 83(2011)      Latitude: **N41°31'38.88202"**      Longitude: **W93°42'12.06949"**

NAVD 88 Ortho Height: **958.160sft**      Ellip. Ht: **855.764sft**      **Geoid12A**

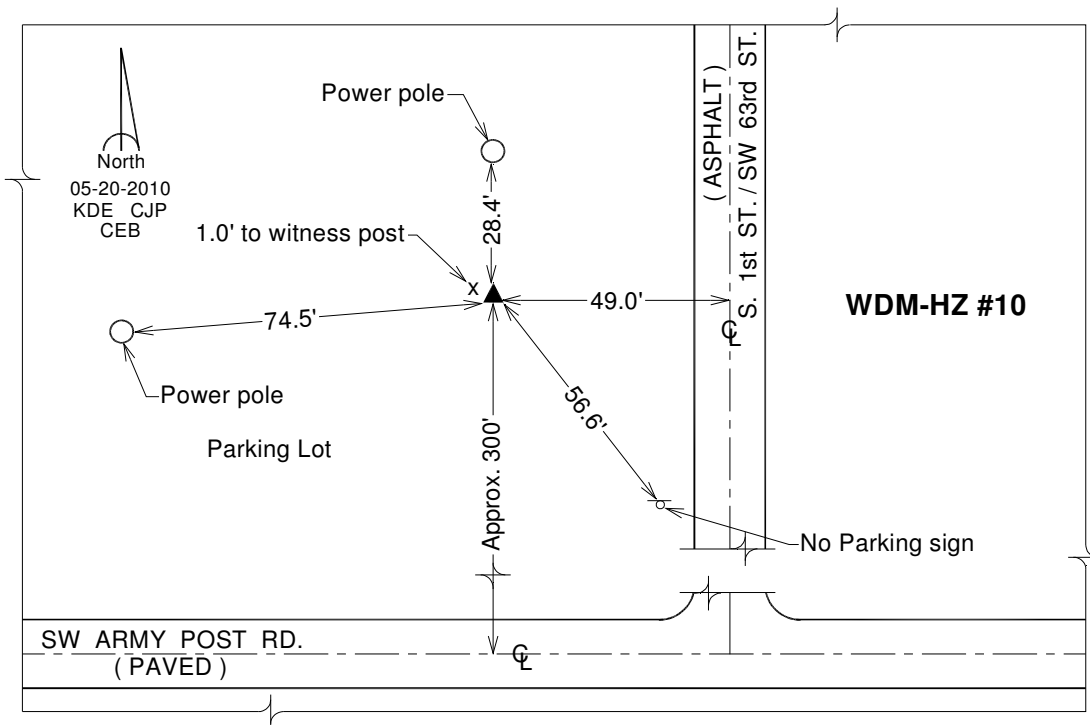
Mapping Angle: **-0°08'02"**      Combination Scale Factor: **0.999923748**

Iowa South Zone (1402)      Northing: **556577.651sft**      Easting: **1584736.420sft**

IaRCS Zone 8      Northing: **7465451.029sft**      Easting: **18503645.785sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #10

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US Survey Feet

Point Name: **WDM-HZ #11**

Network Point ID: **2011**

NAD 83(2011)      Latitude: **N41°31'47.42870"**      Longitude: **W93°45'39.03808"**

NAVD 88 Ortho Height: **827.800sft**      Ellip. Ht: **725.739sft**      **Geoid12A**

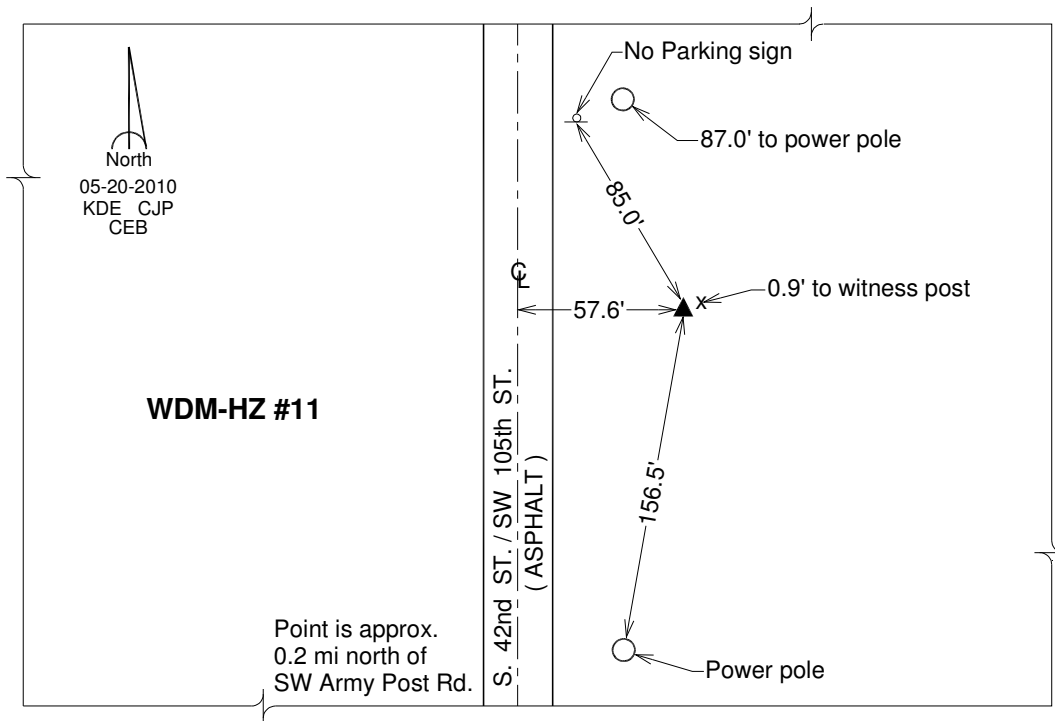
Mapping Angle: **-0°10'19"**      Combination Scale Factor: **0.999930188**

Iowa South Zone (1402)      Northing: **557484.694sft**      Easting: **1568997.296sft**

IaRCS Zone 8      Northing: **7466318.942sft**      Easting: **18487903.376sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #11

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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 US Survey Feet

Point Name: **WDM-HZ #12**

Network Point ID: **2012**

NAD 83(2011)      Latitude: **N41°32'26.25462"**      Longitude: **W93°47'25.76713"**

NAVD 88 Ortho Height: **835.980sft**      Ellip. Ht: **734.135sft**      **Geoid12A**

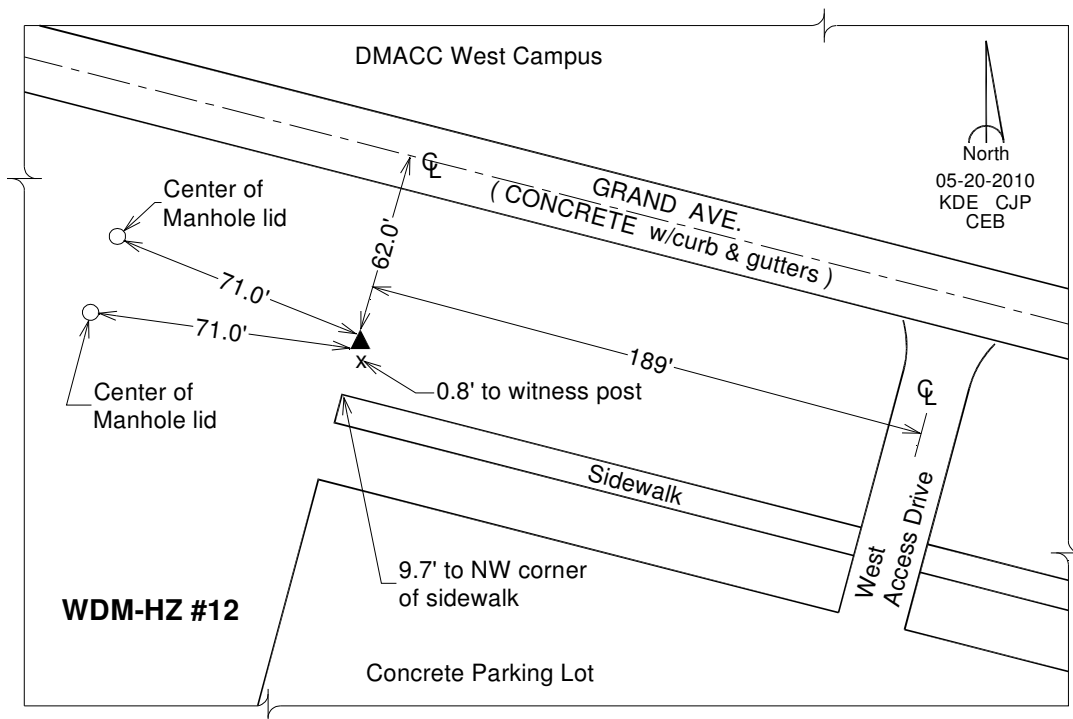
Mapping Angle: **-0°11'29"**      Combination Scale Factor: **0.999930885**

Iowa South Zone (1402)      Northing: **561440.128sft**      Easting: **1560893.076sft**

IaRCS Zone 8      Northing: **7470254.481sft**      Easting: **18479788.795sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #12

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #13**

Network Point ID: **2013**

NAD 83(2011)      Latitude: **N41°31'56.41520"**      Longitude: **W93°49'59.56442"**

NAVD 88 Ortho Height: **841.810sft**      Ellip. Ht: **740.202sft**      **Geoid12A**

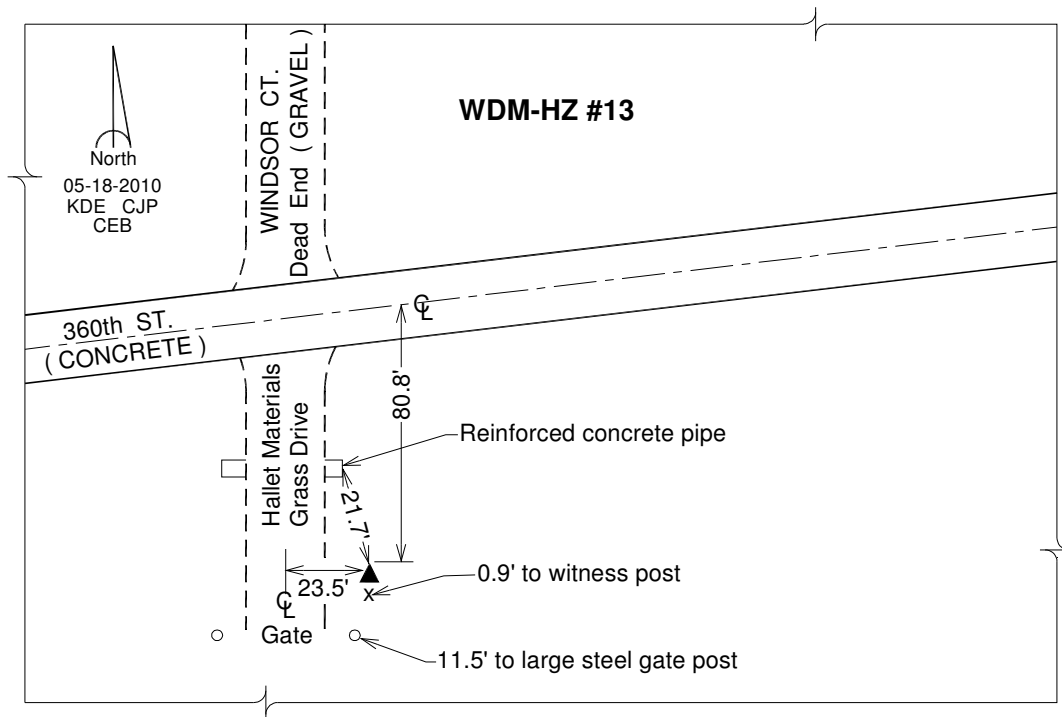
Mapping Angle: **-0°13'10"**      Combination Scale Factor: **0.999929749**

Iowa South Zone (1402)      Northing: **558461.909sft**      Easting: **1549186.306sft**

IaRCS Zone 8      Northing: **7467246.991sft**      Easting: **18468088.658sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #13

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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 US Survey Feet

Point Name: **WDM-HZ #14**

Network Point ID: **2014**

NAD 83(2011)      Latitude: **N41°31'35.29892"**      Longitude: **W93°51'55.76938"**

NAVD 88 Ortho Height: **852.930sft**      Ellip. Ht: **751.511sft**      **Geoid12A**

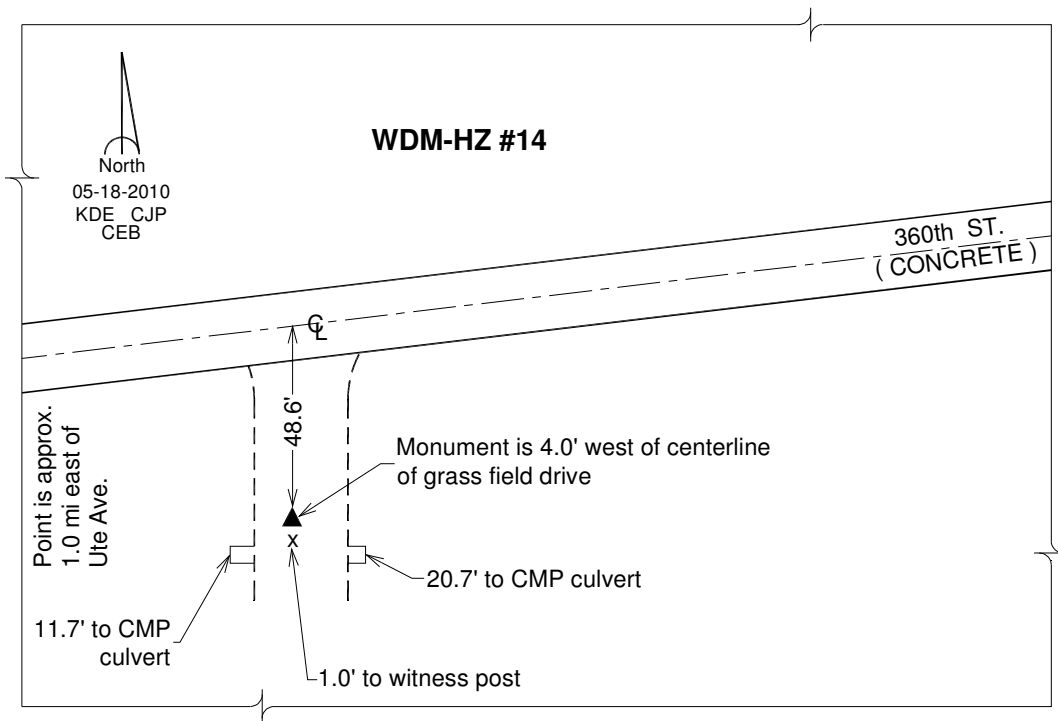
Mapping Angle: **-0°14'27"**      Combination Scale Factor: **0.999928623**

Iowa South Zone (1402)      Northing: **556360.162sft**      Easting: **1540339.650sft**

IaRCS Zone 8      Northing: **7465123.154sft**      Easting: **18459246.627sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #14

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #15**

Network Point ID: **2015**

NAD 83(2011)      Latitude: **N41°31'11.87787"**      Longitude: **W93°54'07.25032"**

NAVD 88 Ortho Height: **859.180sft**      Ellip. Ht: **757.984sft**      **Geoid12A**

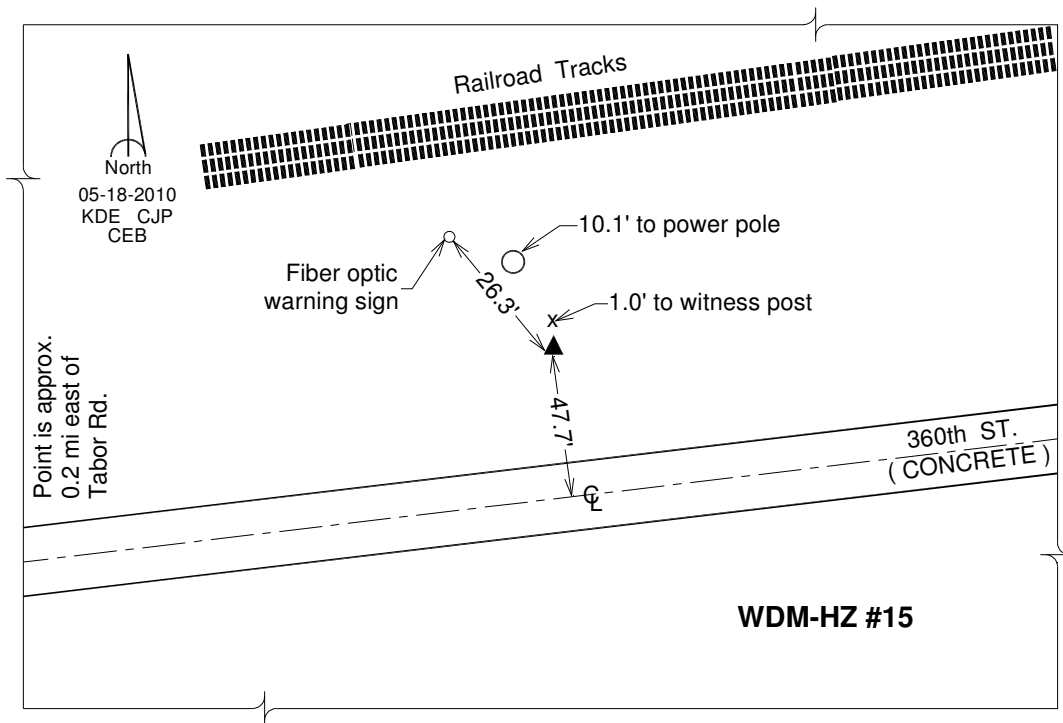
Mapping Angle: **-0°15'53"**      Combination Scale Factor: **0.999927676**

Iowa South Zone (1402)      Northing: **554033.775sft**      Easting: **1530328.362sft**

IaRCS Zone 8      Northing: **7462771.793sft**      Easting: **18449240.423sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #15

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #16**

Network Point ID: **2016**

NAD 83(2011)      Latitude: **N41°30'43.78742"**      Longitude: **W93°42'28.05246"**

NAVD 88 Ortho Height: **966.140sft**      Ellip. Ht: **863.739sft**      **Geoid12A**

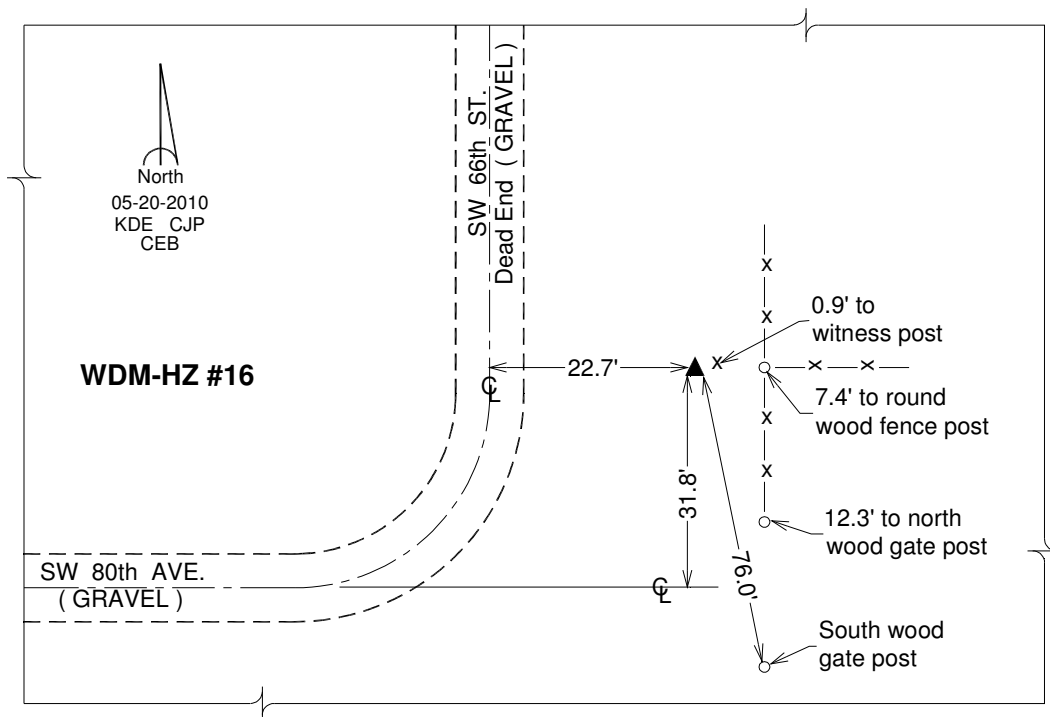
Mapping Angle: **-0°08'13"**      Combination Scale Factor: **0.999921882**

Iowa South Zone (1402)      Northing: **551004.213sft**      Easting: **1583507.457sft**

IaRCS Zone 8      Northing: **7459874.160sft**      Easting: **18502430.629sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #16

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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US Survey Feet

Point Name: **WDM-HZ #17**

Network Point ID: **2017**

NAD 83(2011)      Latitude: **N41°30'18.49401"**      Longitude: **W93°45'10.21888"**

NAVD 88 Ortho Height: **968.840sft**      Ellip. Ht: **866.691sft**      **Geoid12A**

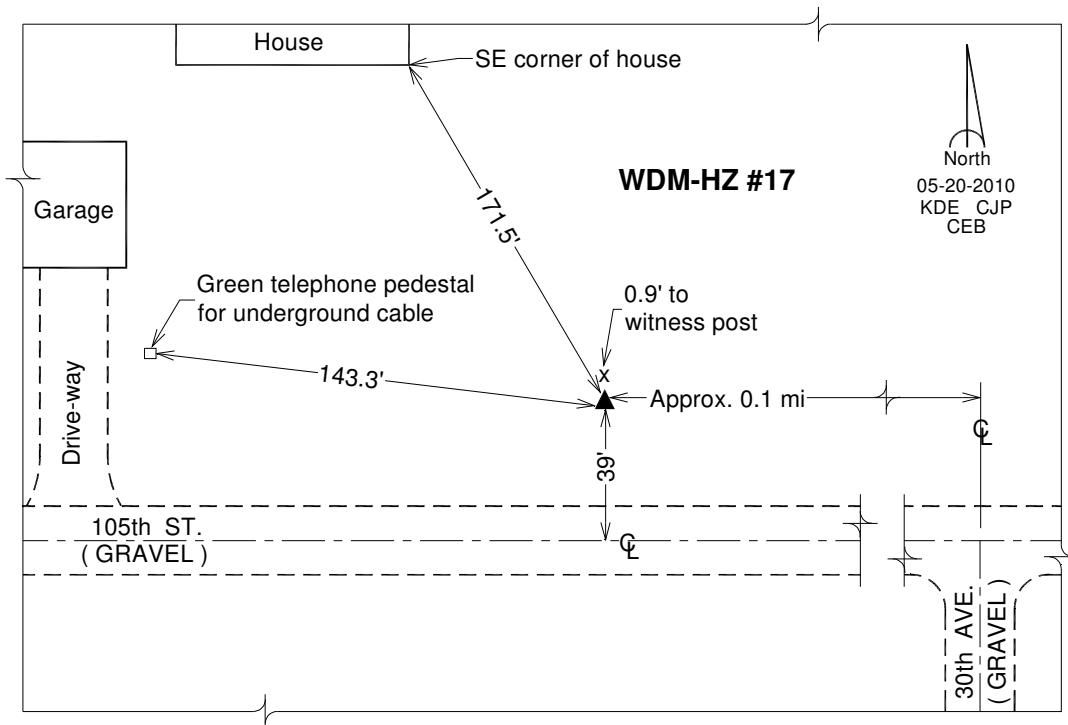
Mapping Angle: **-0°10'00"**      Combination Scale Factor: **0.999921084**

Iowa South Zone (1402)      Northing: **548476.860sft**      Easting: **1571162.995sft**

IaRCS Zone 8      Northing: **7457315.898sft**      Easting: **18490091.631sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #17

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US Survey Feet

Point Name: **WDM-HZ #18**

Network Point ID: **2018**

NAD 83(2011)      Latitude: **N41°30'16.88602"**      Longitude: **W93°47'25.41551"**

NAVD 88 Ortho Height: **986.220sft**      Ellip. Ht: **884.292sft**      **Geoid12A**

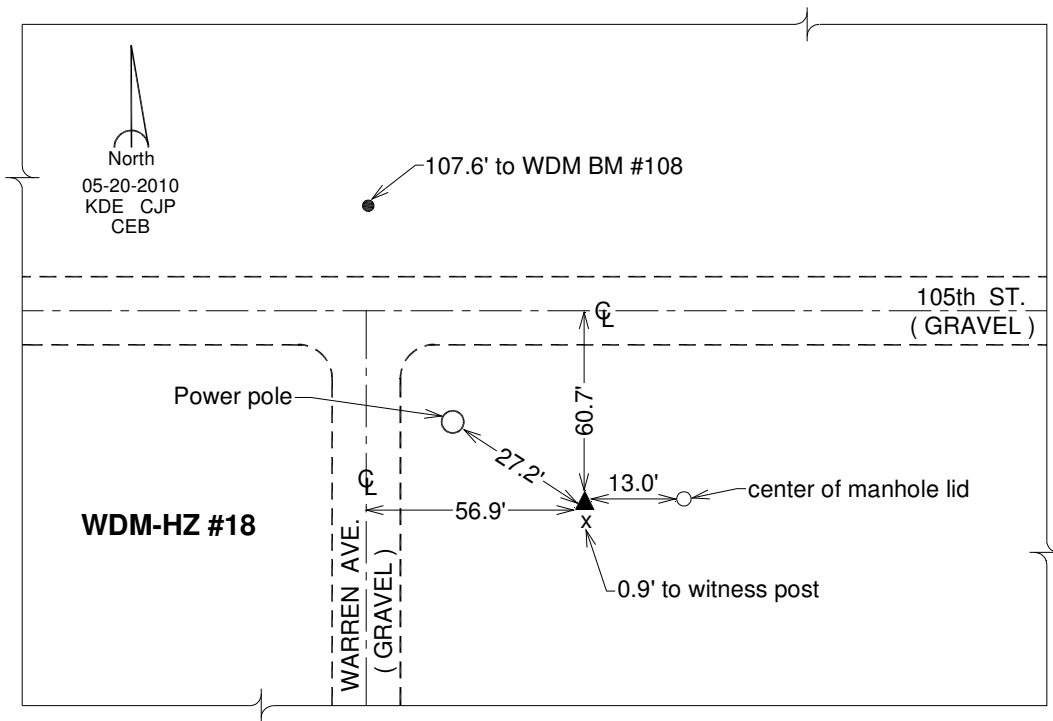
Mapping Angle: **-0°11'29"**      Combination Scale Factor: **0.999920203**

Iowa South Zone (1402)      Northing: **548346.232sft**      Easting: **1560876.101sft**

IaRCS Zone 8      Northing: **7457159.675sft**      Easting: **18479804.365sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #18

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



*This document was prepared by DCI on June 13, 2014 for use by The City of West Des Moines, Iowa*

**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-HZ #19**

Network Point ID: **2019**

NAD 83(2011)      Latitude: **N41°30'07.17911"**      Longitude: **W93°49'25.43007"**

NAVD 88 Ortho Height: **963.280sft**      Ellip. Ht: **861.532sft**      **Geoid12A**

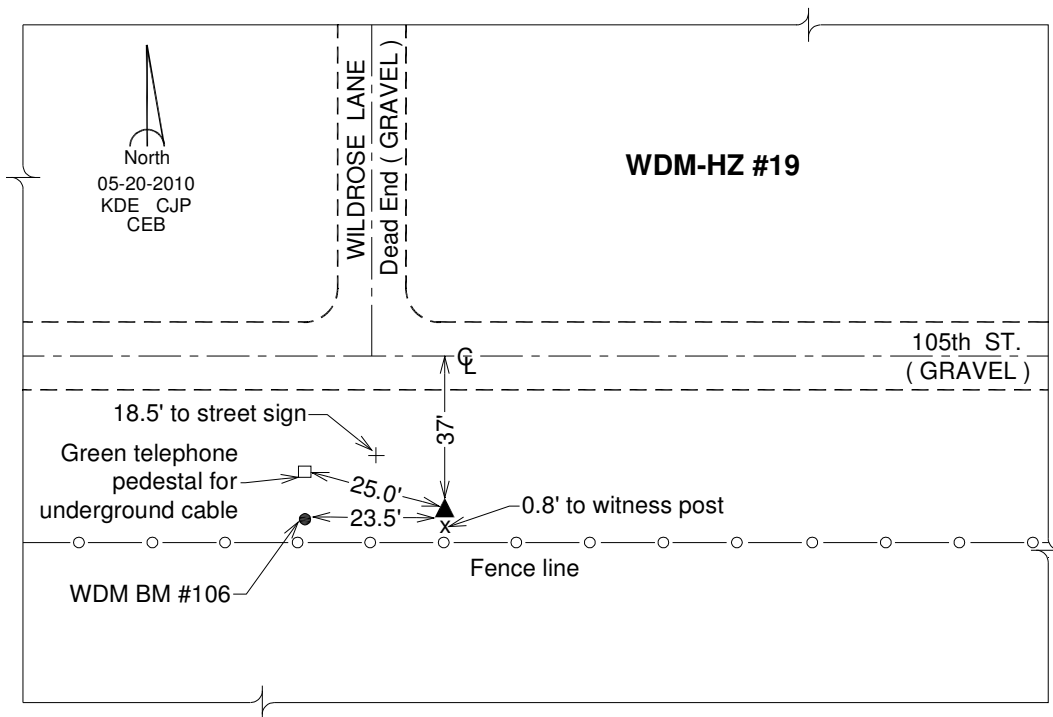
Mapping Angle: **-0°12'48"**      Combination Scale Factor: **0.999921041**

Iowa South Zone (1402)      Northing: **547396.005sft**      Easting: **1551741.162sft**

IaRCS Zone 8      Northing: **7456186.685sft**      Easting: **18470671.163sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #19

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-HZ #20**

Network Point ID: **2020**

NAD 83(2011)      Latitude: **N41°29'54.70007"**      Longitude: **W93°52'00.46121"**

NAVD 88 Ortho Height: **1013.730sft**      Ellip. Ht: **912.229sft**      **Geoid12A**

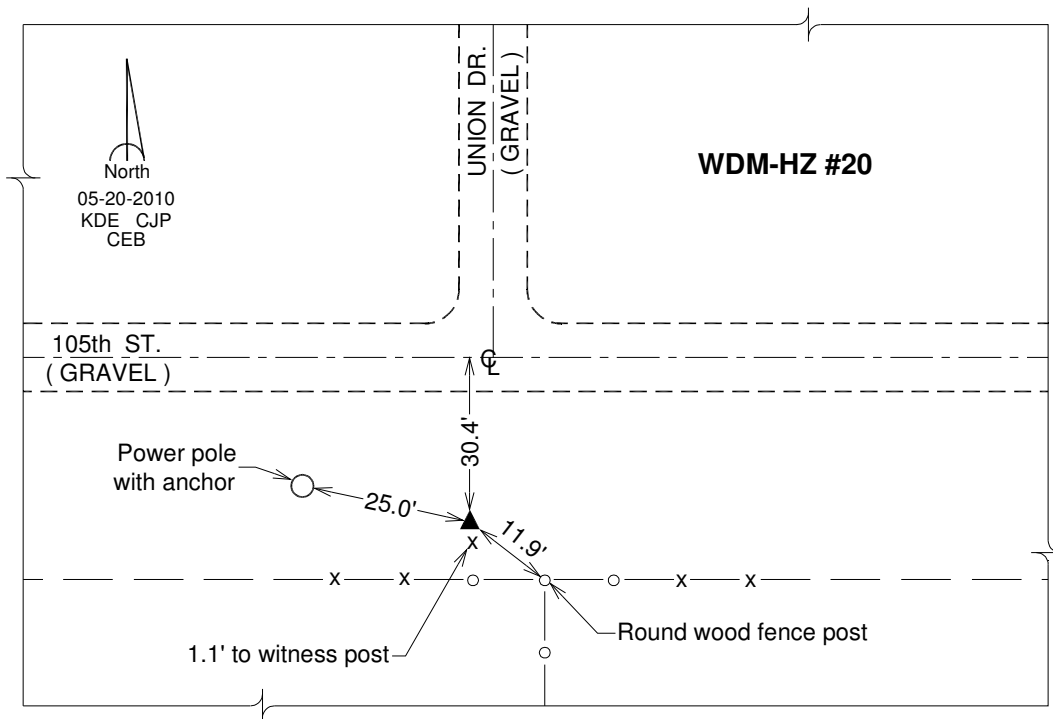
Mapping Angle: **-0°14'30"**      Combination Scale Factor: **0.999918306**

Iowa South Zone (1402)      Northing: **546179.795sft**      Easting: **1539939.857sft**

IaRCS Zone 8      Northing: **7454941.097sft**      Easting: **18458872.059sft**

**Designation:** West Des Moines GPS Control Pt. - WDM-HZ #20

**Monument Type:** 3/4" x 9'-0" long Berntsen Top Security Rod monument with a 2-1/2" dia. domed survey cap and permanent magnet encased in a white PVC pipe with a NGS style alum. access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-HZ #21**

Network Point ID: **2021**

NAD 83(2011)      Latitude: **N41°30'11.07149"**      Longitude: **W93°54'24.19335"**

NAVD 88 Ortho Height: **972.840sft**      Ellip. Ht: **871.615sft**      **Geoid12A**

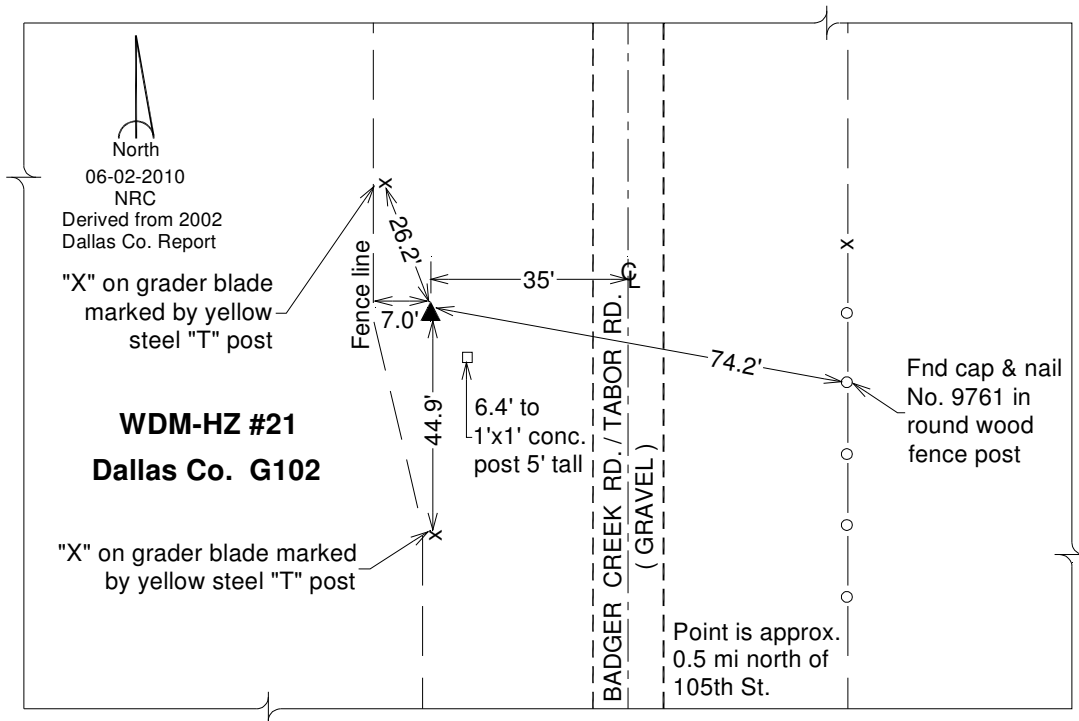
Mapping Angle: **-0°16'04"**      Combination Scale Factor: **0.999920659**

Iowa South Zone (1402)      Northing: **547885.410sft**      Easting: **1529010.785sft**

IaRCS Zone 8      Northing: **7456619.733sft**      Easting: **18447937.988sft**

**Designation:** Dallas Co. GPS Control Monument G102 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-BM-068**

Network Point ID: **68**

NAD 83(2011)      Latitude: **N41°36'01.12217"**      Longitude: **W93°44'09.08550"**

NAVD 88 Ortho Height: **839.090sft**      Ellip. Ht: **737.097sft**      **Geoid12A**

Mapping Angle: **-0°09'19"**      Combination Scale Factor: **0.999937457**

Iowa South Zone (1402)      Northing: **583142.637sft**      Easting: **1575908.327sft**

IaRCS Zone 8      Northing: **7491995.659sft**      Easting: **18494750.982sft**

**Designation:** West Des Moines Vertical Control Pt. 068 (set by others)

**Monument Type:** #5 rebar encased in a 6" dia. X 48" minimum depth concrete cylinder with a 1-1/2" dia. aluminum cap affixed to the top of the rebar.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-BM-093**

Network Point ID: **93**

NAD 83(2011)      Latitude: **N41°35'59.73133"**      Longitude: **W93°50'35.91196"**

NAVD 88 Ortho Height: **1046.580sft**      Ellip. Ht: **945.418sft**      **Geoid12A**

Mapping Angle: **-0°13'34"**      Combination Scale Factor: **0.999927470**

Iowa South Zone (1402)      Northing: **583099.704sft**      Easting: **1546519.184sft**

IaRCS Zone 8      Northing: **7491879.708sft**      Easting: **18465360.245sft**

**Designation:** West Des Moines Vertical Control Pt. 093 (set by others)

**Monument Type:** #5 rebar encased in a 6" dia. X 48" minimum depth concrete cylinder with a 1-1/2" dia. aluminum cap affixed to the top of the rebar.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-BM-110**

Network Point ID: **110**

NAD 83(2011)      Latitude: **N41°30'43.85501"**      Longitude: **W93°43'54.33770"**

NAVD 88 Ortho Height: **969.980sft**      Ellip. Ht: **867.719sft**      **Geoid12A**

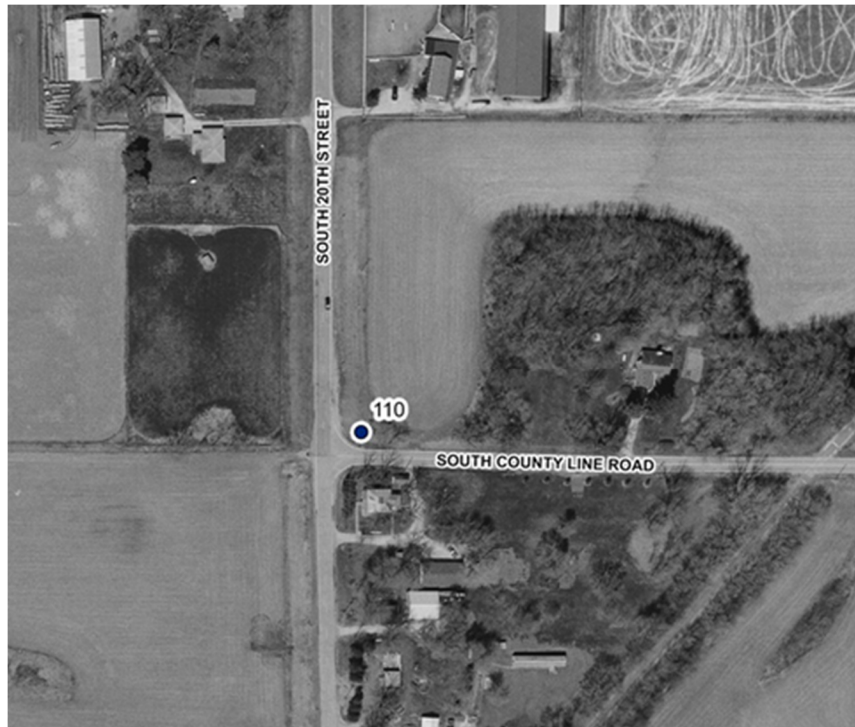
Mapping Angle: **-0°09'10"**      Combination Scale Factor: **0.999921694**

Iowa South Zone (1402)      Northing: **551027.641sft**      Easting: **1576943.211sft**

IaRCS Zone 8      Northing: **7459881.239sft**      Easting: **18495865.886sft**

**Designation:** West Des Moines Vertical Control Pt. 110 (set by others)

**Monument Type:** #5 rebar encased in a 6" dia. X 48" minimum depth concrete cylinder with a 1-1/2" dia. aluminum cap affixed to the top of the rebar.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **USGS A** Network Point ID: **114**  
NAD 83(2011) Latitude: **N41°33'31.79494"** Longitude: **W93°43'38.36927"**  
NAVD 88 Ortho Height: **818.860**sft Ellip. Ht: **716.669**sft **Geoid12A**  
Mapping Angle: **-0°08'59"** Combination Scale Factor: **0.999933651**  
Iowa South Zone (1402) Northing: **568022.265**sft Easting: **1578202.453**sft  
IaRCS Zone 8 Northing: **7476880.095**sft Easting: **18497082.891**sft

**Designation:** NGS 1st order vertical control station "N 155" PID: MH0435

**Monument Type:** A standard bench mark disk stamped "N 155 1950" and set in the top of the northwest end of the southwest abutment of railroad bridge 3639.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **USGS C**

Network Point ID: **115**

NAD 83(2011) Latitude: **N41°32'14.31528"**

Longitude: **W93°48'24.28427"**

NAVD 88 Ortho Height: **835.070sft**

Ellip. Ht: **733.316sft**

**Geoid12A**

Mapping Angle: **-0°12'07"**

Combination Scale Factor: **0.999930583**

Iowa South Zone (1402)

Northing: **560246.982sft**

Easting: **1556438.996sft**

IaRCS Zone 8

Northing: **7469050.190sft**

Easting: **18475337.390sft**

**Designation:** NGS 1st order vertical control station "835" PID: MH0429

**Monument Type:** A USGS survey disk stamped "ELEV 834.903" and set in the top of the west end of the north headwall of a concrete culvert.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **USGS D**

Network Point ID: **116**

NAD 83(2011)

Latitude: **N41°32'13.88112"**

Longitude: **W93°45'34.74784"**

NAVD 88 Ortho Height: **839.080sft**

Ellip. Ht: **737.031sft**

**Geoid12A**

Mapping Angle: **-0°10'16"**

Combination Scale Factor: **0.999930393**

Iowa South Zone (1402)

Northing: **560161.062sft**

Easting: **1569331.585sft**

IaRCS Zone 8

Northing: **7468996.315sft**

Easting: **18488231.028sft**

**Designation:** NGS 1st order vertical control station "Q 155" PID: MH0433

**Monument Type:** A standard bench mark disk stamped "Q 155 1950" and set in the top of a round concrete monument.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **USGS E** Network Point ID: **117**  
NAD 83(2011) Latitude: **N41°31'47.97198"** Longitude: **W93°50'55.36516"**  
NAVD 88 Ortho Height: **845.500sft** Ellip. Ht: **743.983sft** **Geoid12A**  
Mapping Angle: **-0°13'47"** Combination Scale Factor: **0.999929333**  
Iowa South Zone (1402) Northing: **557623.979sft** Easting: **1544939.094sft**  
IaRCS Zone 8 Northing: **7466398.465sft** Easting: **18463843.244sft**

**Designation:** NGS 1st order vertical control station "845" PID: MH0427

**Monument Type:** A USGS survey disk stamped "ELEV 845.208" and set in the south end of the west abutment of railroad bridge 370.9.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **WDM-BM-128**

Network Point ID: **128**

NAD 83(2011)      Latitude: **N41°34'25.47019"**      Longitude: **W93°46'48.96614"**

NAVD 88 Ortho Height: **910.230sft**      Ellip. Ht: **808.455sft**      **Geoid12A**

Mapping Angle: **-0°11'05"**      Combination Scale Factor: **0.999930929**

Iowa South Zone (1402)      Northing: **573497.253sft**      Easting: **1563730.415sft**

IaRCS Zone 8      Northing: **7482319.414sft**      Easting: **18482596.343sft**

**Designation:** West Des Moines Vertical Control Pt. 128 (set by others)

**Monument Type:** #5 rebar encased in a 6" dia. X 48" minimum depth concrete cylinder with a 1-1/2" dia. aluminum cap affixed to the top of the rebar.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **G100**

Network Point ID: **200**

NAD 83(2011)      Latitude: **N41°31'07.67891"**      Longitude: **W93°47'39.96873"**

NAVD 88 Ortho Height: **927.800sft**      Ellip. Ht: **825.920sft**      **Geoid12A**

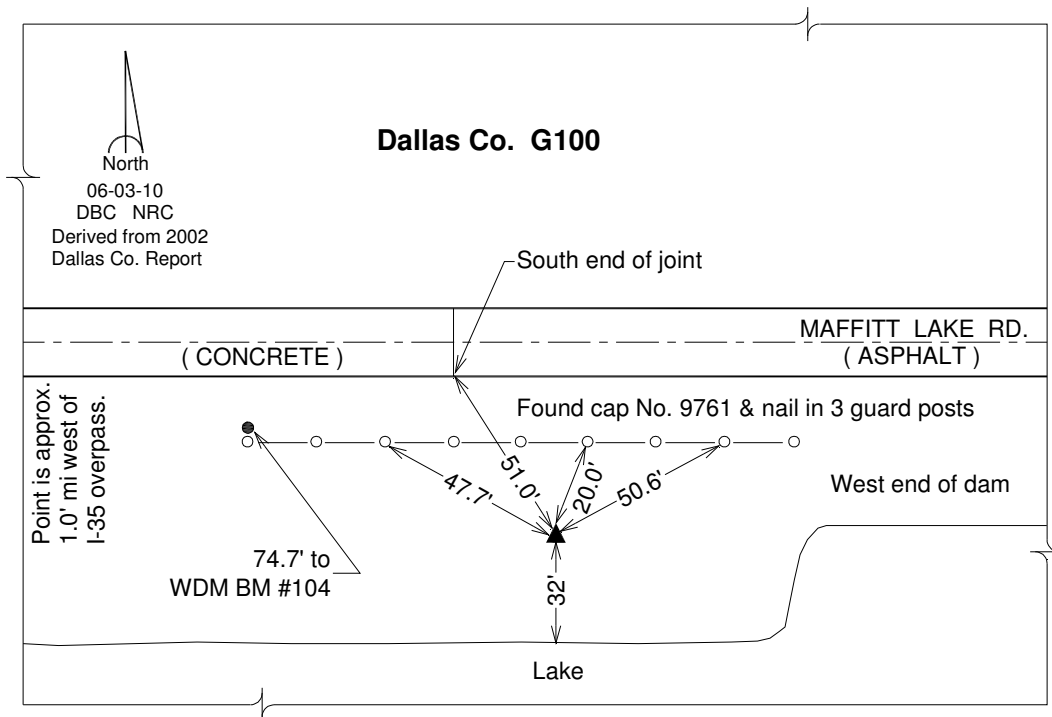
Mapping Angle: **-0°11'38"**      Combination Scale Factor: **0.999924322**

Iowa South Zone (1402)      Northing: **553490.848sft**      Easting: **1559786.224sft**

IaRCS Zone 8      Northing: **7462301.928sft**      Easting: **18478701.626sft**

**Designation:** Dallas Co. GPS Control Monument G100 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **G101**

Network Point ID: **201**

NAD 83(2011)      Latitude: **N41°30'26.73470"**      Longitude: **W93°50'47.60153"**

NAVD 88 Ortho Height: **994.340sft**      Ellip. Ht: **892.741sft**      **Geoid12A**

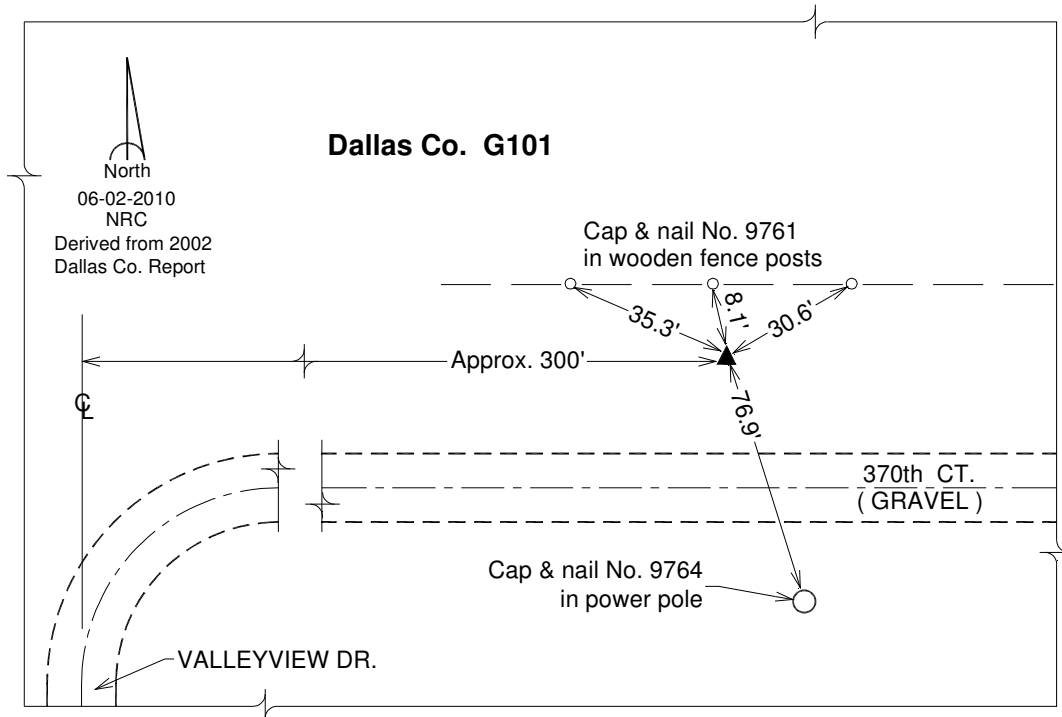
Mapping Angle: **-0°13'42"**      Combination Scale Factor: **0.999920054**

Iowa South Zone (1402)      Northing: **549399.364sft**      Easting: **1545496.799sft**

IaRCS Zone 8      Northing: **7458174.677sft**      Easting: **18464421.396sft**

**Designation:** Dallas Co. GPS Control Monument G101 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **G115**

Network Point ID: **215**

NAD 83(2011)      Latitude: **N41°32'46.88436"**      Longitude: **W93°53'49.28611"**

NAVD 88 Ortho Height: **1017.980sft**      Ellip. Ht: **916.897sft**      **Geoid12A**

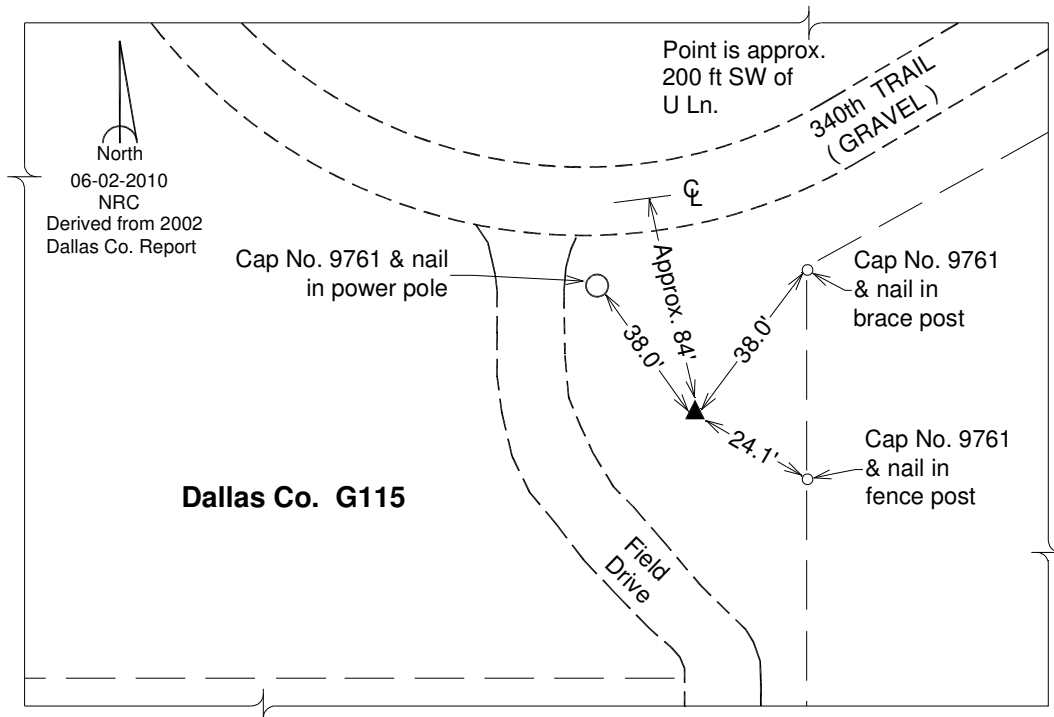
Mapping Angle: **-0°15'41"**      Combination Scale Factor: **0.999922762**

Iowa South Zone (1402)      Northing: **563643.387sft**      Easting: **1531738.731sft**

laRCS Zone 8      Northing: **7472385.549sft**      Easting: **18450627.082sft**

**Designation:** Dallas Co. GPS Control Monument G115 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **G116**

Network Point ID: **216**

NAD 83(2011)      Latitude: **N41°33'27.35122"**      Longitude: **W93°50'59.62621"**

NAVD 88 Ortho Height: **875.760sft**      Ellip. Ht: **774.392sft**      **Geoid12A**

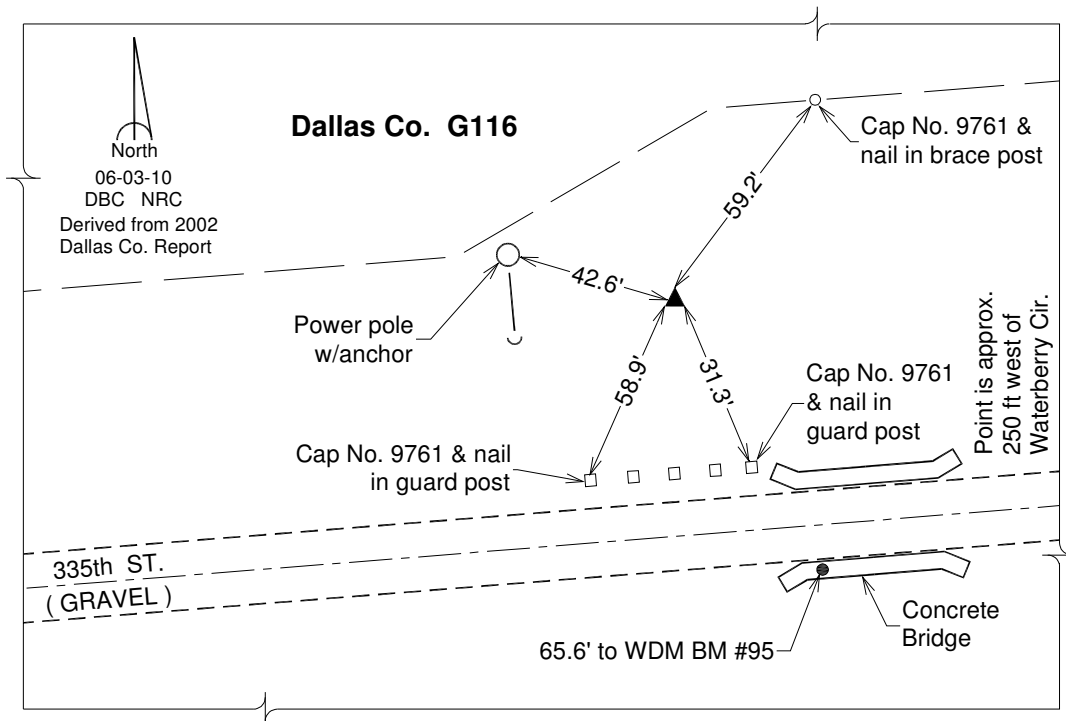
Mapping Angle: **-0°13'50"**      Combination Scale Factor: **0.999930762**

Iowa South Zone (1402)      Northing: **567683.803sft**      Easting: **1544655.480sft**

laRCS Zone 8      Northing: **7476458.241sft**      Easting: **18463534.657sft**

**Designation:** Dallas Co. GPS Control Monument G116 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **G120**

Network Point ID: **220**

NAD 83(2011)      Latitude: **N41°35'59.54914"**      Longitude: **W93°53'47.96132"**

NAVD 88 Ortho Height: **1011.760sft**      Ellip. Ht: **911.045sft**      **Geoid12A**

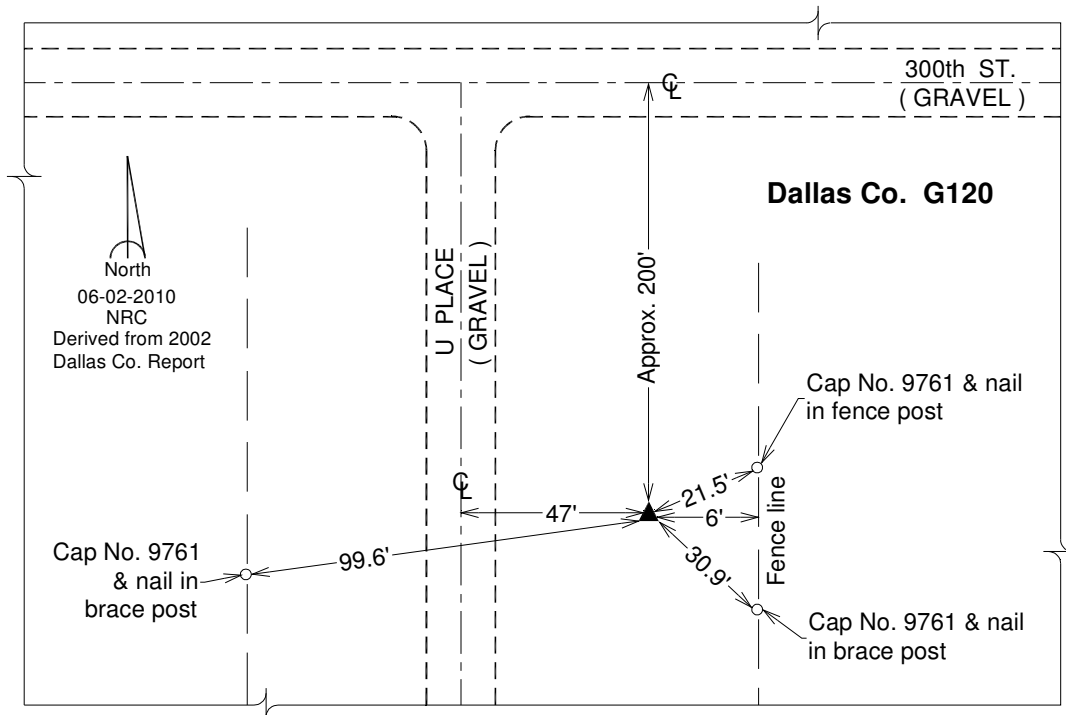
Mapping Angle: **-0°15'41"**      Combination Scale Factor: **0.999929104**

Iowa South Zone (1402)      Northing: **583143.325sft**      Easting: **1531928.388sft**

IaRCS Zone 8      Northing: **7491887.190sft**      Easting: **18450768.475sft**

**Designation:** Dallas Co. GPS Control Monument G120 (set by WHKS in 2002)

**Monument Type:** 5/8" x 6'-0" long aluminum rod with stamped cap and NGS style access cover.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **B 117**

Network Point ID: **3000**

NAD 83(2011)      Latitude: **N41°32'27.61935"**      Longitude: **W93°40'40.46071"**

NAVD 88 Ortho Height: **836.100sft**      Ellip. Ht: **733.576sft**      **Geoid12A**

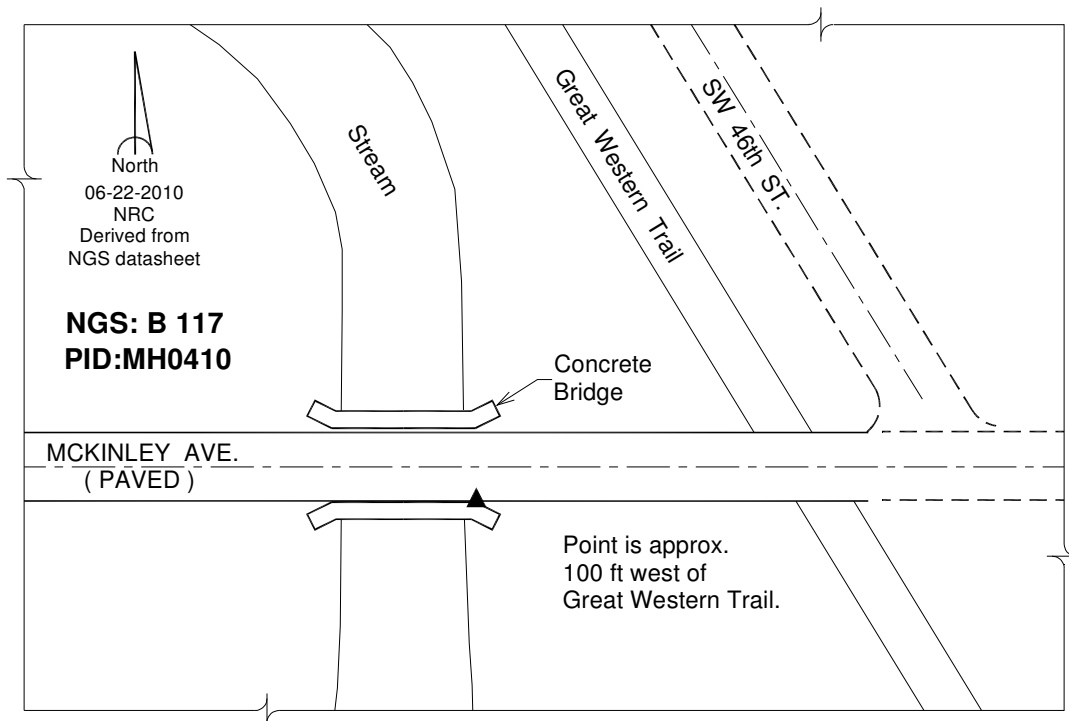
Mapping Angle: **-0°07'02"**      Combination Scale Factor: **0.999930951**

Iowa South Zone (1402)      Northing: **561495.274sft**      Easting: **1591714.143sft**

IaRCS Zone 8      Northing: **7470386.366sft**      Easting: **18510611.699sft**

**Designation:** NGS Vertical control station "B 117" PID: MH0410

**Monument Type:** A standard bench mark disk stamped "B 117" and set on the northeast end of the southeast headwall of a road bridge.



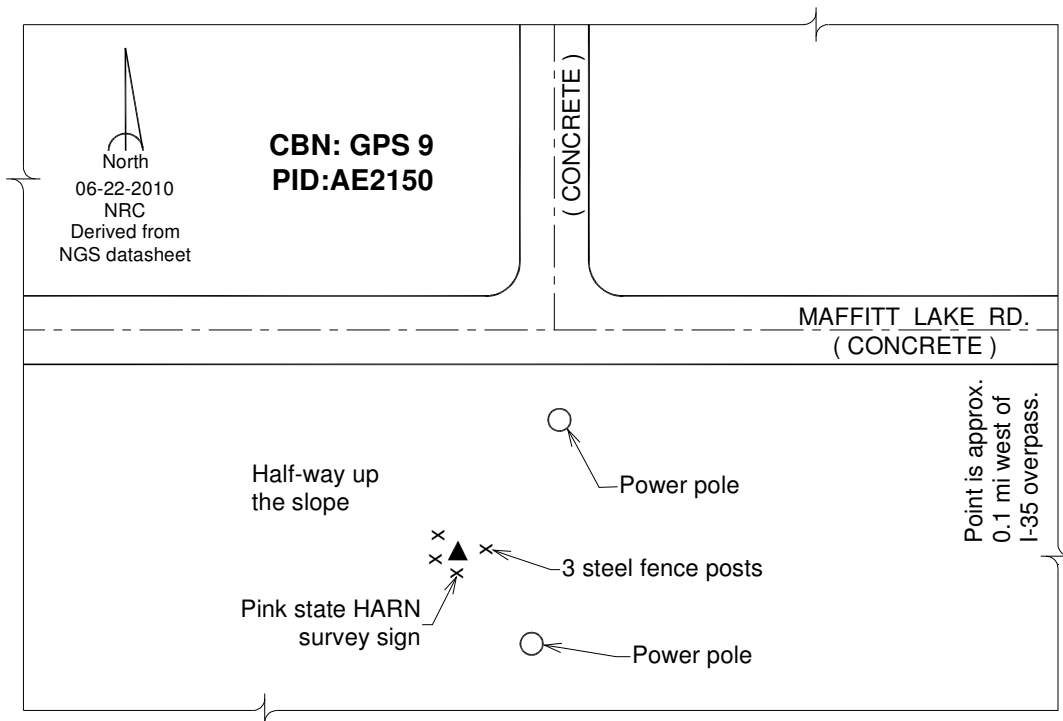
*This document was prepared by DCI on June 13, 2014 for use by The City of West Des Moines, Iowa*

**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **GPS 9** Network Point ID: **3002**  
NAD 83(2011) Latitude: **N41°31'09.30624"** Longitude: **W93°46'41.06874"**  
NAVD 88 Ortho Height: **938.993sft** Ellip. Ht: **837.017sft** **Geoid12A**  
Mapping Angle: **-0°10'59"** Combination Scale Factor: **0.999923836**  
Iowa South Zone (1402) Northing: **553640.810sft** Easting: **1564267.180sft**  
IaRCS Zone 8 Northing: **7462463.041sft** Easting: **18483182.508sft**

**Designation:** CBN Horizontal control station "GPS 9" PID: AE2150

**Monument Type:** A horizontal control disk stamped "GPS 9" and set in the top of a concrete monument. (Point is the center of the letter P in GPS)



**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **A 162**

Network Point ID: **3003**

NAD 83(2011)      Latitude: **N41°29'22.49246"**      Longitude: **W94°06'39.76436"**

NAVD 88 Ortho Height: **1095.820sft**      Ellip. Ht: **996.291sft**      **Geoid12A**

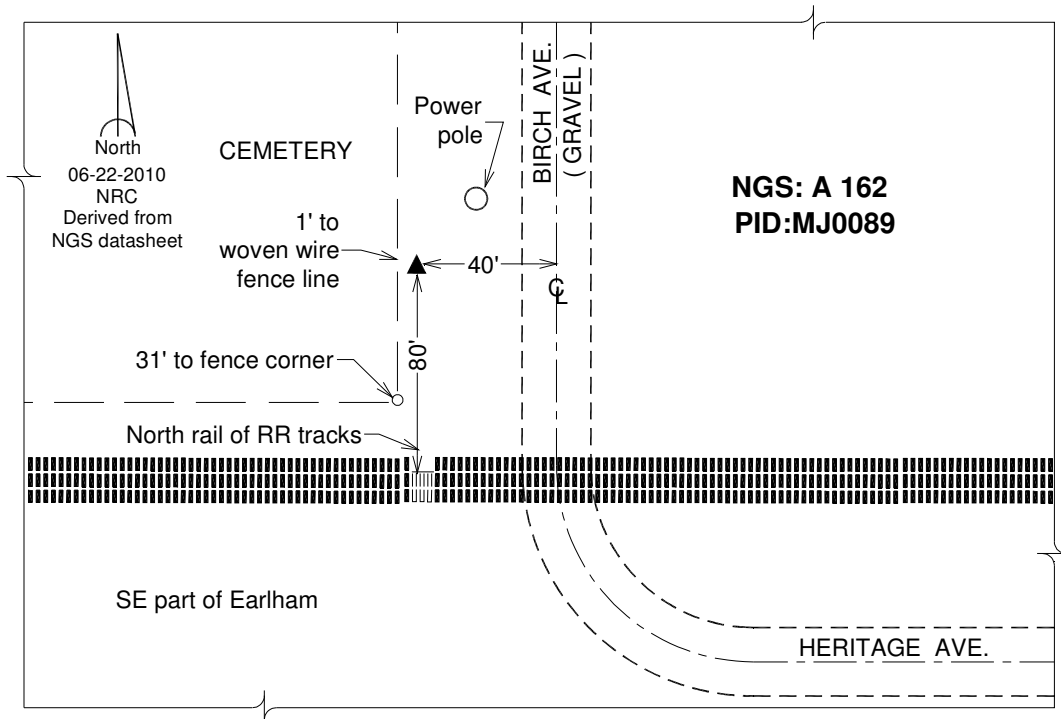
Mapping Angle: **-0°24'09"**      Combination Scale Factor: **0.999913498**

Iowa South Zone (1402)      Northing: **543296.130sft**      Easting: **1473009.720sft**

IaRCS Zone 8      Northing: **7451891.705sft**      Easting: **18391944.013sft**

**Designation:** NGS Horiz. and 1st order vert. control station "A 162" PID: MJ0089

**Monument Type:** A standard CGS bench mark disk stamped "A 162 1950" and set in the top of a concrete monument.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **J 33**

Network Point ID: **3004**

NAD 83(2011)      Latitude: **N41°42'09.23008"**      Longitude: **W93°31'56.00254"**

NAVD 88 Ortho Height: **938.930sft**      Ellip. Ht: **836.223sft**      **Geoid12A**

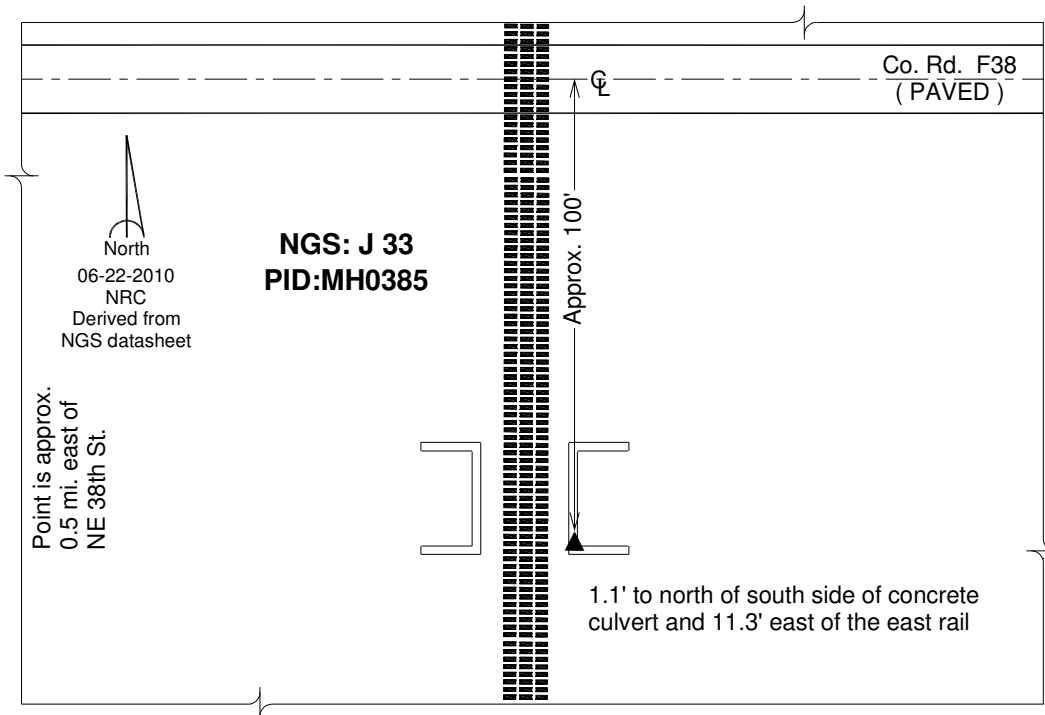
Mapping Angle: **-0°01'16"**      Combination Scale Factor: **0.999946757**

Iowa South Zone (1402)      Northing: **620315.794sft**      Easting: **1631617.293sft**

IaRCS Zone 8      Northing: **7529309.994sft**      Easting: **18550369.879sft**

**Designation:** NGS 2nd order vertical control station "J 33" PID: MH0385

**Monument Type:** A standard CGS bench mark disk stamped "J 33 1934" and set in the southeast corner of a concrete culvert.



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**2014 City of West Des Moines, Iowa**  
Horizontal Datum: **NAD 83(2011)** - Vertical Datum: **NAVD 1988**  
Iowa South Zone (1402)  
Iowa Regional Coordinate System Zone 8 Ames-Des Moines  
US Survey Feet

Point Name: **IKV A**

Network Point ID: **3005**

NAD 83(2011)      Latitude: **N41°41'29.93726"**      Longitude: **W93°34'00.67417"**

NAVD 88 Ortho Height: **887.840sft**      Ellip. Ht: **785.251sft**      **Geoid12A**

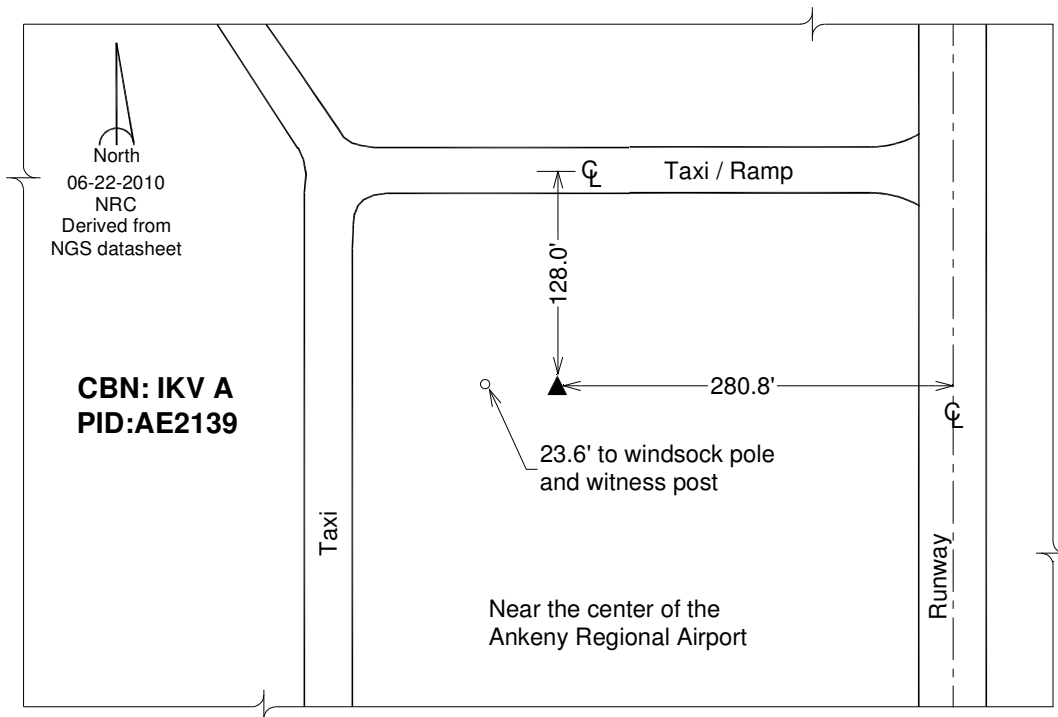
Mapping Angle: **-0°02'39"**      Combination Scale Factor: **0.999947539**

Iowa South Zone (1402)      Northing: **616344.000sft**      Easting: **1622157.270sft**

IaRCS Zone 8      Northing: **7525314.271sft**      Easting: **18540919.386sft**

**Designation:** CBN Horizontal control station "IKV A" PID: AE2139

**Monument Type:** A stainless steel rod datum point set in a 5" dia. logo cap stamped "IKV A 1996"



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