



2000 South Holly
Denver, CO 80222
Phone: 303-757-9922 FAX: 303-757-9390

Region 6

PED

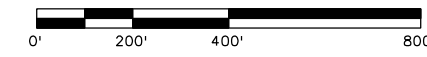
Sheet Revisions

Date	Description	Initials
mm/dd/yy	XXXXXXXX	XXX

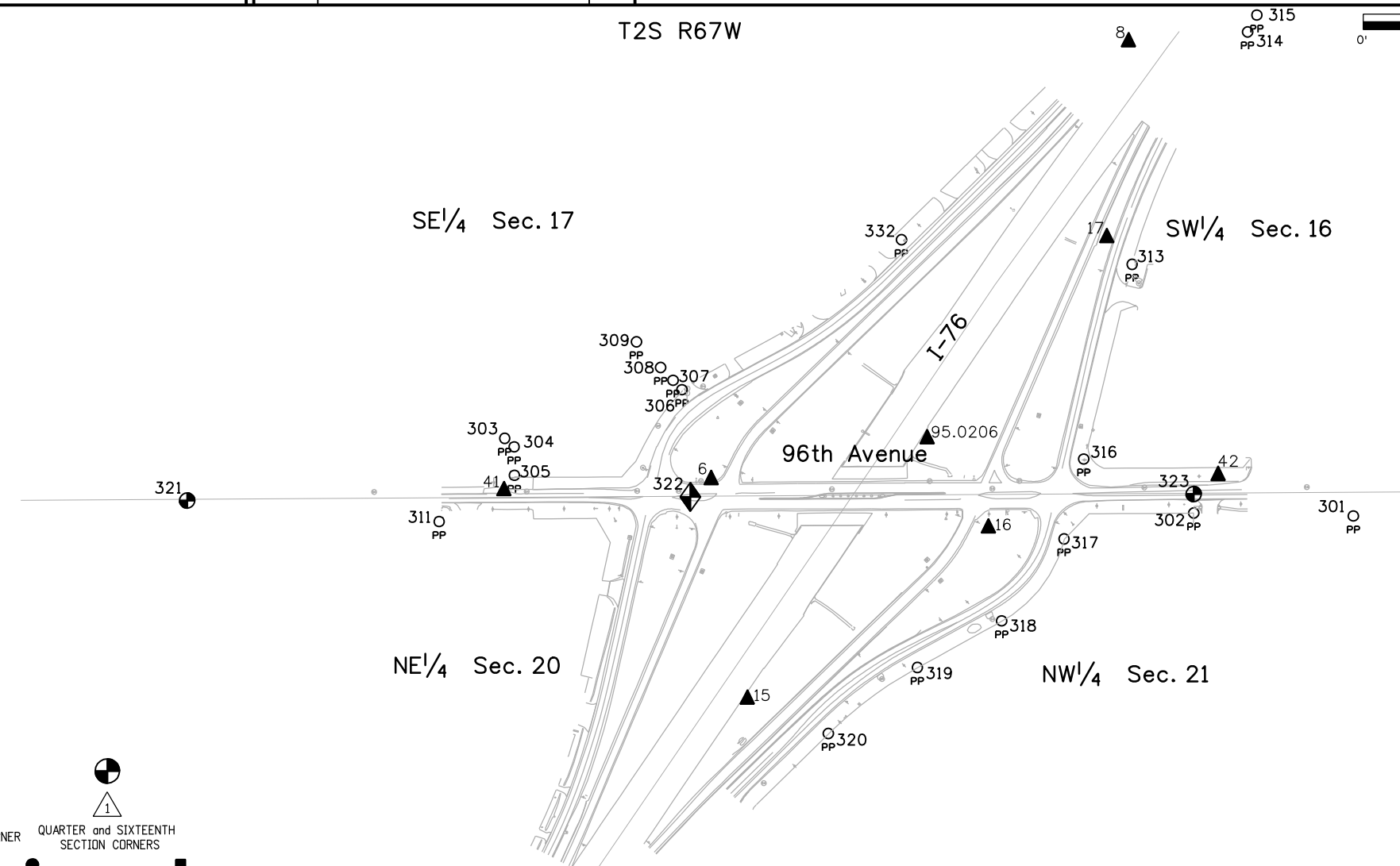
Land Survey Control Diagram

Title Sheet

Project Number: SHE 0761-196			
Project Location: I-76 & 96th Avenue Roundabouts			
Sec. 16, 17, 20, 21, T2S R67W/6th PM, Adams County, CO			
Project Code:	Last Mod. Date	Subset	Sheet No.
16530	01-27-09	1 of 2	3.01



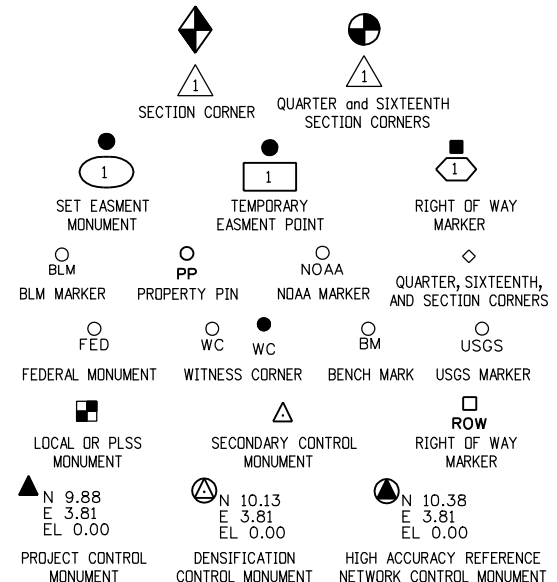
T2S R67W



GENERAL NOTES:

1. This **Land Survey Control Diagram** is to document the recovery and/or establishment of survey points that will be the basis of future surveys for roadway design, right-of-way acquisitions, monumentation, and/or roadway construction. This Land Survey Control Diagram is not a Monumented Land Survey or Boundary Survey and does not address matters of title.
2. BASIS OF BEARINGS: All bearings shown, or computed using coordinate values listed, herein are Grid bearings of the Colorado coordinate system of 1983, north zone, from published values of a Fast Static GPS survey performed by Arrow Land Surveying, Inc. and Zylstra Baker Surveying, Inc., for CDOT Project No. IM 0761-180, (Project Code: 12967). The line between point 4 and point 8, shown herein, bears N34°34'51"E, a distance of 2865.72 feet.
3. Geodetic coordinates are NAD'83 (1992) datum (Geoid 2003), based on a Fast Static GPS survey holding published values on the primary control points shown herein.
4. **Project specific** coordinates were obtained by multiplying each point's state plane coordinates by 1.0002649042. **Caution** no truncation was applied. Published units are in US survey feet: 1 survey foot = (1200/3937) meters
5. Horizontal Control Tolerances of Project Control Points meet the precision requirements of CDOT type A control (+/- 0.07' with 95% certainty).
6. Vertical Datum: Elevations are on NAVD'88 and are based on the data sheet for NGS benchmark "5900" (PID KK0395), elevation = 5094.85'.
7. Bench elevations on control points were established by digital differential levels with an accuracy meeting or exceeding 0.035' times the square root of the distance leveled in miles.

NOTICE: According to Colorado law you **must** commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.



Refer to the M-629-1 Survey Monuments of the Standard Plans dated July, 2006 found in The Colorado Department of Transportation, M & S Standards for survey monument descriptions.

Surveyor's Statement (Land Survey Control Diagram):

I, Donald D. Hansen, a professional land surveyor licensed in the State of Colorado, do hereby state to the Colorado Department of Transportation that this **Land Survey Control Diagram** was prepared and the field survey it represents was performed under my responsible charge and, based upon my knowledge, information and belief, is in accordance with applicable standards of practice defined by Colorado Department of Transportation publications. This statement is not a guaranty or warranty, either expressed or implied.

Donald D. Hansen, PLS No. 14599 Date _____

Adams County Survey Depositing Certificate:

Deposited this _____ day of _____, 20____, at _____ o'clock ____M. in Book _____ at page _____ of Land Surveys/Right of Way Surveys, under Reception No. _____.

By: _____

Title: _____



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Land Survey Control Diagram

Plan Sheet

Project Number: SHE 0761 196			
Project Location: I-76 & 96th Avenue Roundabouts			
Sec. 16, 17, 20, 21, T2S R67W/6th PM, Adams County, CO			
Project Code:	Last Mod. Date	Subset	Sheet No.
16530	01-27-09	2 of 2	3.02

Existant Control Points from CDOT Project No. IM 0761-180

Name	Latitude	Longitude	Ellipsoid Height	Convergence Angle	Northing (Zone 501)	Easting (Zone 501)	Name	Northing (Project)	Easting (Project)	Elevation NAVD'88	*	Description
4	39°52'03.26696"N	104°54'17.20362"W	5045.12	0°23'04.5"	1195168.564	3167075.907	4	1195485.168	3167914.879	5102.67	P	found CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 4"
6	39°52'15.18703"N	104°54'10.28819"W	5037.46	0°23'09.0"	1196378.309	3167606.978	6	1196695.234	3168446.092	5095.04	B	found CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 6"
8	39°52'26.46949"N	104°53'56.14438"W	5040.48	0°23'18.1"	1197527.362	3168701.976	8	1197844.591	3169541.380	5098.12	P	found CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 8"
15	39°52'09.48577"N	104°54'09.11827"W	5055.51	0°23'09.8"	1195802.047	3167702.080	15	1196118.819	3168541.218	5113.09	P	found CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 15"
16	39°52'13.88385"N	104°54'00.97081"W	5039.10	0°23'15.0"	1196251.351	3168334.310	16	1196568.242	3169173.616	5096.71	B	found CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 16"
17	39°52'21.39429"N	104°53'56.92163"W	5039.25	0°23'17.6"	1197013.423	3168644.860	17	1197330.516	3169484.248	5096.88	B	found CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 17"
95.0206	39°52'16.20626"N	104°54'03.00899"W	5058.01	0°23'13.7"	1196485.267	3168173.812	95.0206	1196802.220	3169013.075	5115.62	B	3.25 Alum. Cap in conc, in Survey box, Adams County GPS densification point 95.0206

* B = elevation determined this project with differential levels from NGS benchmark 5090 (PID KK0395) NAVD'88 elevation = 5094.85; P = elevation published on previous Control Diagram adjusted to benched elevation (+0.04). Adams County Densification point 95.0206 was also adjusted to match benched elevation.

Local site settings

Project latitude: 39°49'49.65323"N
 Project longitude: 104°56'44.04515"W
 Project height: 5076.847sft
 Ground scale factor: 1.0002649042
 False northing offset: -313.003sft
 False easting offset: -835.962sft

Control set this Project (mean of double based RTK observations)

Name	Latitude	Longitude	Ellipsoid Height	Convergence Angle	Northing (Zone 501)	Easting (Zone 501)	Name	Northing (Project)	Easting (Project)	Elevation NAVD'88	*	Description
41	39°52'14.93579"N	104°54'17.26028"W	5038.31	0°23'04.5"	1196349.233	3167063.563	41	1196666.150	3167902.532	5095.88	B	set CDOT type 5S mon. w/1" Brass Cap "CP 41"
42	39°52'15.20427"N	104°53'53.23077"W	5040.84	0°23'20.0"	1196389.044	3168936.866	42	1196705.972	3169776.331	5098.47	B	set CDOT type 2 mon. w/3-1/4" Alum. Cap "CP 42"

Recovered survey evidence. Double based RTK (GPS derived elevation)

Name	Northing (Project)	Easting (Project)	Elevation NAVD'88	*	Description
301	1196599.561	3170131.279	5098.32		1.0" red plastic cap "LSI LS 34995"
302	1196607.196	3169712.602	5099.44		1.5" Alum. cap "GILLIAN ASSOC ls 13486"
303	1196803.431	3167904.614	5094.79		1.5" yellow plastic cap "AA1 PLS 23027"
304	1196780.978	3167929.332	5094.09		1.5" yellow plastic cap "AA1 PLS 23027"
305	1196706.296	3167930.004	5096.16		1.5" yellow plastic cap "AA1 PLS 23027"
306	1196931.107	3168369.664	5095.24		1.5" yellow plastic cap "AA1 PLS 23027"
307	1196955.758	3168346.197	5095.89		1.5" yellow plastic cap "AA1 PLS 23027"
308	1196989.490	3168313.779	5095.80		1.5" yellow plastic cap "AA1 PLS 23027"
309	1197056.810	3168250.119	5094.76		1.5" yellow plastic cap "AA1 PLS 23027"
311	1196584.884	3167732.500	5094.10		1.0" yellow plastic cap "BAYER LS 6973"
312	1195320.221	3167738.884	5101.33		1.0" yellow plastic cap "BAYER LS 6973"
313	1197260.113	3169550.710	5097.40		1.0" yellow plastic cap "BAYER LS 6973"
314	1197870.337	3169853.618	5095.01		1.5" Alum. cap illegible
315	1197914.519	3169878.001	5095.24		1.5" Alum. cap illegible
316	1196749.097	3169423.854	5099.51		1.5" Alum. cap "LS 2432"
317	1196539.447	3169372.138	5100.63		1.5" Alum. cap illegible
318	1196324.177	3169208.513	5101.66		1.5" Alum. cap illegible damaged
319	1196201.913	3168987.297	5102.24		1.5" Alum. cap illegible
320	1196028.415	3168753.734	5100.69		1.5 Alum. cap "GILLIAN ASSOC LS 1348(6)"
321	1196640.093	3167071.379	5064.94		2.25 Alum. cap "CDOT PLS 25951 E 1/16 S17 S20 1996"
322	1196649.581	3168391.618	5095.46		3.25 Alum. cap illegible
323	1196657.205	3169712.308	5099.11		3.25 Alum. cap pls 23516
324	1192514.872	3166305.026	5107.42		yellow plastic cap "LS 10737"
325	1193887.799	3167132.263	5106.42		1.5" Alum. cap "FLATIRONS SURVEY LS 28283"
326	1193946.584	3167170.362	5106.27		1.5" Alum. cap "JR ENG LS 30099"

Recovered survey evidence. Single based RTK (GPS derived elevation)

Name	Northing (Project)	Easting (Project)	Elevation NAVD'88	*	Description
327	1192692.199	3166028.213	5107.11		No. 5 rebar, no cap, by fence post
328	1194377.791	3168407.460	5108.73		1.5" Alum. cap "Galerson PLS 21047"
329	1193992.925	3167199.791	5105.03		3" ROW Marker in conc. post
331	1193999.555	3168410.221	5109.73		CROSS "+" in stone
332	1197324.689	3168945.553	5098.67		1.5" yellow plastic cap