



Sheet Revisions

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Land Survey Control Diagram

Title Sheet

Project Number: FSA 088A-030				
Project Location: SH-88, Road Improvements at Dayton St.				
Sec. 22 & 27, T5S, R67W/6th PM, Arapahoe County				
Project Code:	Last Mod. Date	Subset	Sheet No.	
17890	02-26-13	1 of 3	4.01	

DEPARTMENT OF TRANSPORTATION STATE OF COLORADO

LAND SURVEY CONTROL DIAGRAM

State Highway 88 MP 16.83 to 17.88
Township 5 South, Range 67 West
of the 6th Principle Meridian
County of Arapahoe



GENERAL NOTES:

- 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 design purposes, right-of-way acquisitions, monumentation, and/or roadway construction. This Land Survey Control Diagram is not a Monumented Land Survey or a Boundary Survey and does not address matters of title.
- BASIS OF BEARINGS: Bearings are grid bearings of the Colorado state plane coordinate system of 1983, central zone. The line between point 103 of Project No. IM 0881-021 (16555) and point 410 (NGS point "COMMITMENT" PID AE5259), described herein, bears N39°19'06"W, a distance of 5694.17 feet.
- Geodetic coordinates are NAD'83 (1992) datum based on a Fast Static GPS survey holding published values on the primary control points shown herein.
- Project specific** coordinates were obtained using Trimble software to create an "User-Defined Oblique Mercator Angle Projection (RSO)" with the following parameters:
Latitude of Central Point = 39°38'20.804470"N
Longitude of Central Point = 104°54'49.026200"W
Central Point False Northing = 656166.6667
Central Point False Easting = 984250.0000
Azimuth of Rotated Meridian + 00°22'11.36910"
Scale along Rotated Meridian = 1.000263782082
A close **approximation** of **Project specific** coordinates can be obtained by multiplying the project's State Plane coordinates by 1.000287 and then truncating the northing by (-1,002,517.368) and the easting by (-2,181,797.913). Units are in US survey feet: 1 survey foot = (1200/3937) meters.
- Horizontal Control Tolerances meet the precision requirements of CDOT type A control (+/- 0.07' with 95% certainty).
- Vertical Datum: Elevations are NAVD'88 Datum established by digital differential levels run from NGS benchmark "A 356" (PID KK0461), elevation = 5542.87' on CDOT Project NH-0252-299 (TREX) to point "PLAZA", elevation 5745.44' (5747.17' in construction control book).
- 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.

Arapahoe County Depositing Certificate:

Deposited this _____ day of _____ 201__ at _____ o'clock ____M. under

Reception No. _____.

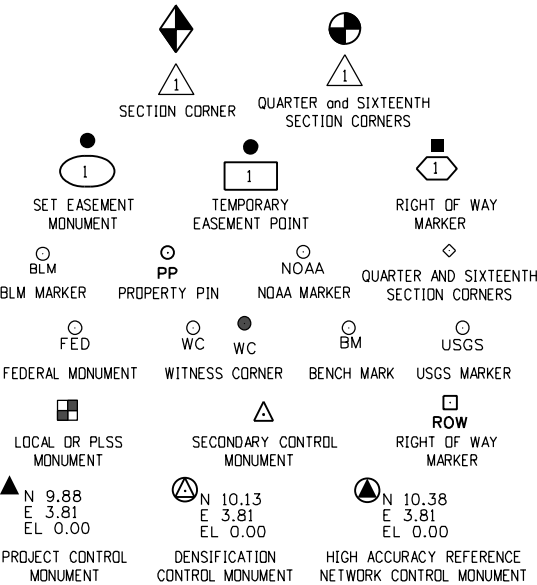
By: _____

Title: _____

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 _____



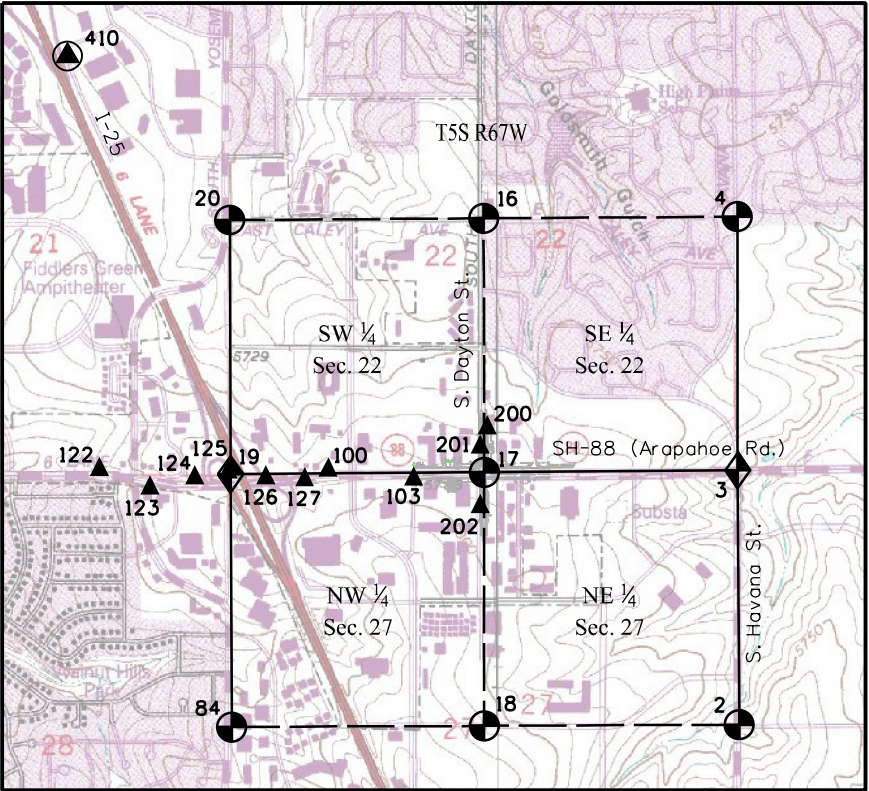
Refer to the M-629-1 Survey Monuments of the Standard Plans dated July, 2012 found in The Colorado Department of Transportation, M & S Standards for survey monument descriptions.

SHEET NO.

4.01
4.02
4.03

INDEX OF SHEETS

(1) Title Sheet
(1) Plan Sheet
(1) Monument Coordinate Tables
(3) Total Sheets



PROJECT LOCATION MAP



2000 South Holly
Denver, CO 80222
Phone: 303-757-9923 FAX: 303-757-9390

Region 6

SLK

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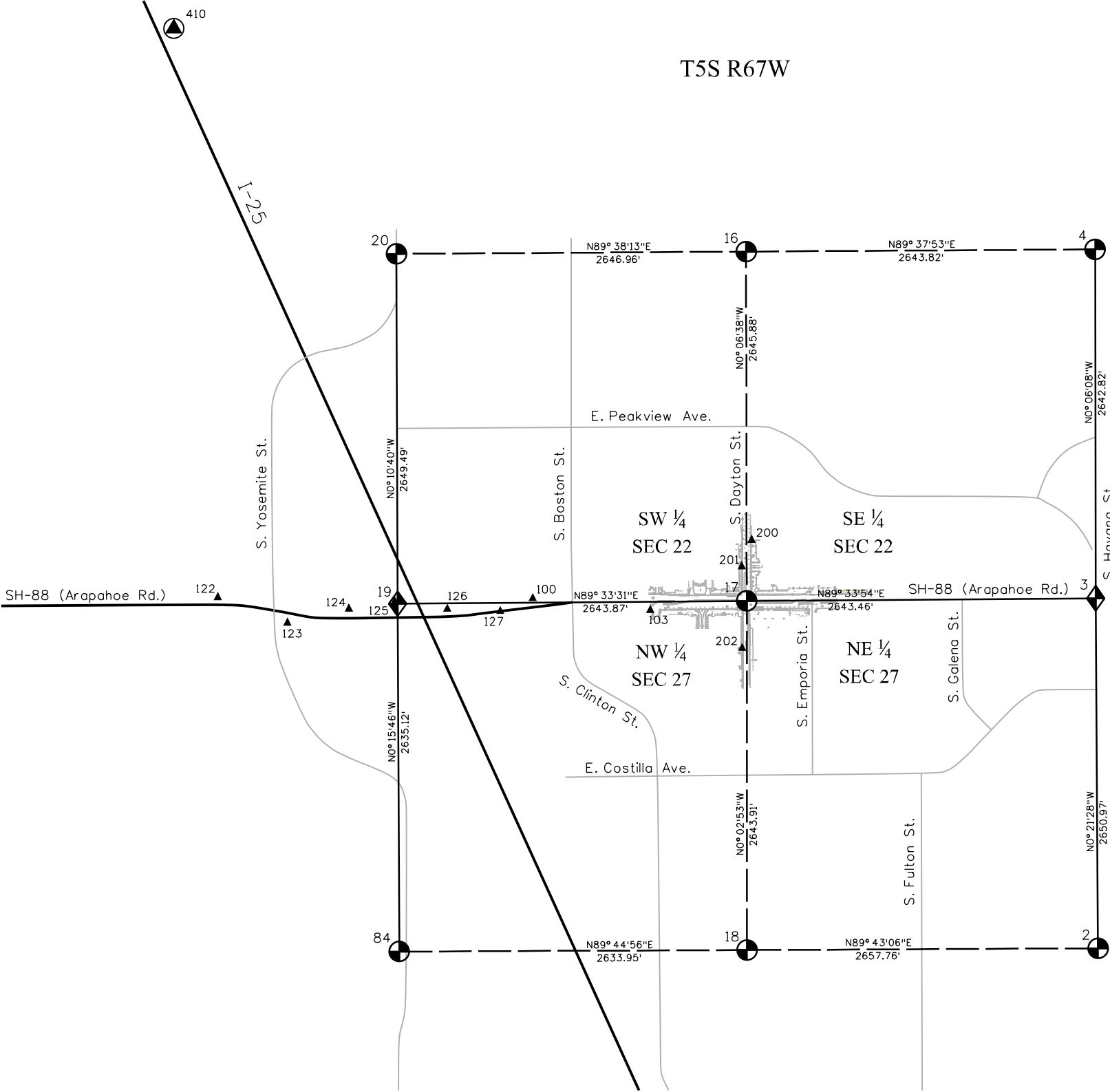
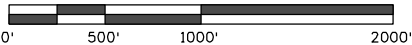
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Land Survey ControlDiagram

Plan Sheet

Project Number: FSA 088A-030				
Project Location: SH-88, Road Improvements at Dayton St.				
Sec. 22 & 27, T5S, R67W/6th PM, Arapahoe County				
Project Code:	Last Mod. Date	Subset	Sheet No.	
17890	02-27-13	2 of 3	4.02	





2000 South Holly
Denver, CO 80222
Phone: 303-757-9923 FAX: 303-757-9390

Region 6

SLK

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Land Survey ControlDiagram

Tabulation Sheet

Project Number: FSA 088A-030				
Project Location: SH-88, Road Improvements at Dayton St.				
Sec. 22 & 27, T5S, R67W/6th PM, Arapahoe County				
Project Code:	Last Mod. Date	Subset	Sheet No.	
17890	10-03-12	3 of 3	4.03	

Existant Control from Project No. IM 0881-021 (16555)

Geodetic and State Plane (NAD 1983-92 Zone 502) coordinates							Project Specific Coordinates				Description
Point	Latitude	Longitude	Ellipsoid Height	Convergence Angle	Northing	Easting	Point	Northing	Easting	Elevation NAVD'88	
100	39°35'42.46769"N	104°52'54.92539"W	5730.22	0°23'23.3"	1642246.931	3174174.415	100	640200.884	993287.492	5786.74	Project STU M580-005 (13696), CDOT Type 5 mon., "100.0"
103	39°35'41.53106"N	104°52'43.56820"W	5736.09	0°23'30.5"	1642158.229	3175064.067	103	640112.156	994177.392	5792.64	Project STU M580-005 (13696), CP-103, CDOT Type 5 mon. "103.0"
122	39°35'42.71113"N	104°53'25.38058"W	5683.92	0°23'04.1"	1642255.454	3171790.314	122	640209.405	990902.699	5740.38	CDOT Type 2 mon w/3-1/4" Alum Cap "CP 122"
123	39°35'40.77234"N	104°53'18.67673"W	5706.07	0°23'08.4"	1642062.816	3172316.390	123	640016.710	991428.925	5762.53	CDOT Type 2 mon w/3-1/4" Alum Cap "CP 123"
124	39°35'41.77268"N	104°53'12.71160"W	5706.06	0°23'12.1"	1642167.176	3172782.641	124	640121.102	991895.312	5762.52	CDOT Type 2 mon w/3-1/4" Alum Cap "CP 124"
125	39°35'42.32354"N	104°53'08.28225"W	5721.52	0°23'14.9"	1642225.254	3173128.981	125	640179.198	992241.752	5778.00	CDOT Type 2 mon w/3-1/4" Alum Cap "CP 125"
126	39°35'41.71542"N	104°53'03.20720"W	5710.58	0°23'18.1"	1642166.415	3173526.657	126	640120.343	992639.544	5767.05	CDOT Type 5S mon "126"
127	39°35'41.52817"N	104°52'58.07980"W	5722.07	0°23'21.3"	1642150.193	3173928.143	127	640104.118	993041.147	5778.58	CDOT Type 5S mon "127"
410	39°36'25.29685"N	104°53'29.26842"W	5677.28	0°23'01.7"	1646562.181	3171457.123	410	644517.377	990569.399	5733.79	HARN sta. COMMITMENT, 3" NGS Brass disk in conc PID AE5259

Double Based Project Control from Points 100 and 103

Point	Northing (Project)	Easting (Project)	Elevation NAVD'88	Description
200	640642.633	994944.152	5769.48	Set CDOT Type 5(S) mon "200"
201	640443.409	994870.124	5775.97	Set CDOT Type 5(S) mon "201"
202	639824.060	994873.973	5795.17	Set CDOT Type 5(S) mon "202"

Aliquot Points from Arapahoe County Horizontal Control Network - Phase VI (not recovered by this project)

Geodetic and State Plane (NAD 1983-92 Zone 502) coordinates						Project Specific Coordinates			Description
Point	Latitude	Longittude	Convergence Angle	Northing	Easting	Point	Northing	Easting	
2	39°35'15.98581"N	104°52'00.49741"W	0°23'57.7"	1639596.882	3178453.536	2	637550.083	997567.872	3.25" Alum Cap in a monument box LS 19003 1987
3	39°35'42.17856"N	104°52'00.47273"W	0°23'57.7"	1642247.031	3178436.996	3	640201.005	997551.313	3.25" Alum Cap in a monument box LS 7735 1988
4	39°36'08.29042"N	104°52'00.29749"W	0°23'57.8"	1644889.084	3178432.298	4	642843.825	997546.598	3.25" Alum Cap in a monument box LS 7735 1988
16	39°36'08.30320"N	104°52'34.06568"W	0°23'36.5"	1644872.090	3175789.294	16	642826.813	994902.830	3.25" Alum Cap in a monument box LS 7735 1988
17	39°35'42.16108"N	104°52'34.23274"W	0°23'36.4"	1642226.979	3175794.382	17	640180.934	994907.930	3.25" Alum Cap in a monument box LS 7735 1988
18	39°35'16.03856"N	104°52'34.43642"W	0°23'36.3"	1639583.838	3175796.587	18	637537.023	994910.147	3.25" Alum Cap in a monument box LS 7735 1988
19	39°35'42.13794"N	104°53'07.99796"W	0°23'15.1"	1642206.626	3173151.361	19	640160.564	992264.141	3.25" Alum Cap in a monument box LS 16401 1986
20	39°36'08.31579"N	104°53'07.87399"W	0°23'15.2"	1644855.329	3173143.150	20	642810.036	992255.918	3.25" Alum Cap in a monument box LS 7735 1982
84	39°35'16.10192"N	104°53'08.07136"W	0°23'15.0"	1639572.306	3173163.433	84	637525.476	992276.224	3.25" Alum Cap in a monument box LS 27275 1997