

COLORADO DEPARTMENT OF TRANSPORTATION



Region 1
18500 Colfax Avenue
Aurora, CO 80011
Phone: (303) 757-9744 FAX: (303) 757-9746

RIGHT OF WAY PLANS UNIT: JOE CONWAY, PLS

Sheet Revisions

Sheet Revisions

Sheet Revisions

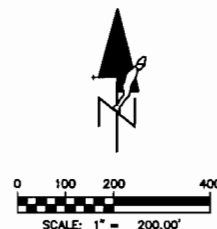
RIGHT OF WAY PLANS

LAND SURVEY CONTROL DIAGRAM

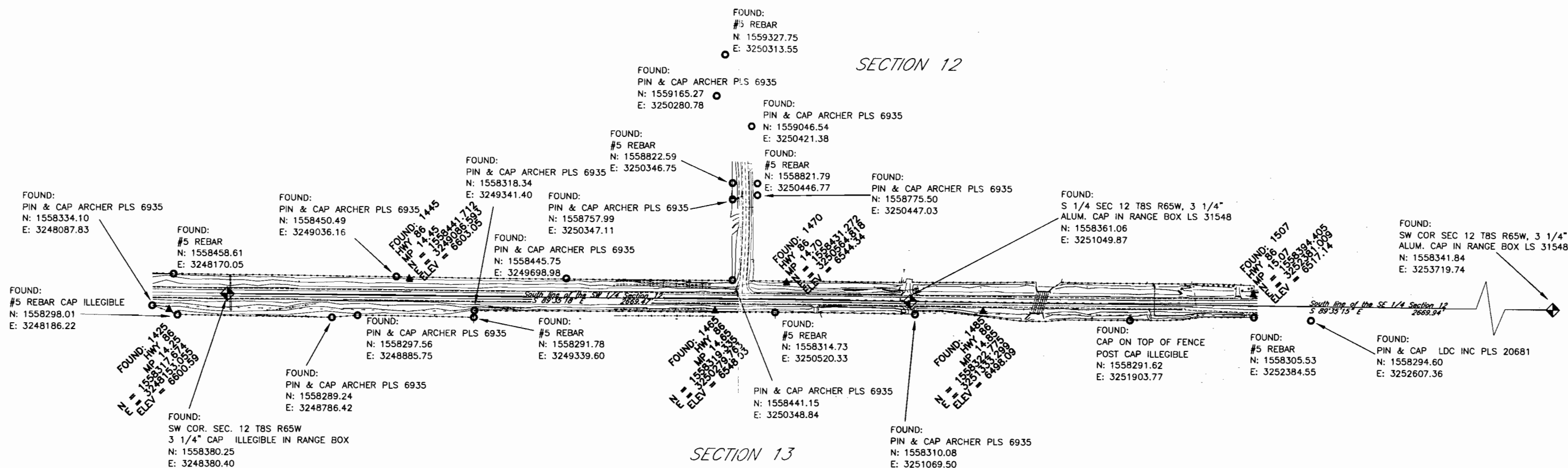
PROJECT NUMBER: STA 086-A-036

PROJECT LOCATION: SH 86 @ CIMARRON TRAIL

Project Code	Last Mod. Date	Subset Sheets	Sheet No.	Total No. of Sheets
13362	04-17-02	1 of 1		



LAND SURVEY CONTROL DIAGRAM OF SECTIONS 11, 12, AND 13 T. 8 S., R. 65 W., 6th P.M.



COORDINATE DATUM: These coordinates are based off of a Western States, Inc. survey done for CDOT on September 6-7, 2001 under the direct supervision of Robert Daley, PLS 35597. The coordinates are in U.S. Feet.

BASIS OF BEARINGS: Bearings used in the calculation of coordinates are based on a grid bearing of S 89°35'15" E from the SW Corner Section 12 to the S 1/4 Corner Section 12.

NOTE: This control survey is for the use of the Colorado Department of Transportation personnel. The survey is not a complete boundary survey and does not subdivide land. Title policy, title commitment, and title research were not part of this control survey, therefore, easements, rights, and restrictions of record are not shown. The verification of the physical evidence with relation to easements, rights of way, property boundaries, and restriction, as described in the instruments of record, were not included in this control survey.

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 statement shown hereon.

SURVEYORS STATEMENT: I, David A. Stewart, a Professional Land Surveyor in the State of Colorado, hereby state that this Control Survey Diagram was prepared under my direct supervision this 17th day of April, 2002, from a field survey performed under my supervision and checking from March 2, 2002 to March 9, 2002, for and on behalf of the Department of Transportation, State of Colorado, and is not a Land Survey Plat or Right-of-Way Survey Plat and to the best of my knowledge and belief this control survey, as shown, meets the minimum horizontal control tolerances of a CDOT Type B Survey, as listed in Chapter Three of the Colorado Department of Transportation 1992 Survey Manual.

David A. Stewart
Colorado PLS No. 28664

Date

COLORADO DEPARTMENT OF TRANSPORTATION



Region 1
18500 Colfax Avenue
Aurora, CO 80011
Phone: (303) 757-9744 FAX: (303) 757-9746

RIGHT OF WAY PLANS UNIT: JOE CONWAY, PLS

Sheet Revisions

Sheet Revisions

Sheet Revisions

RIGHT OF WAY PLANS

CONTROL DIAGRAM

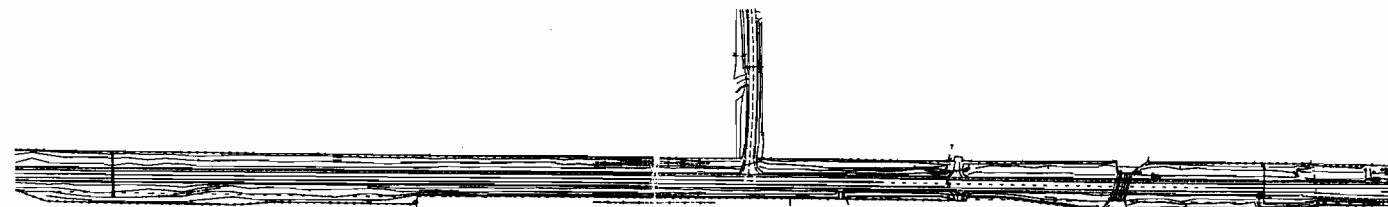
PROJECT NUMBER: STA 086-A-036

PROJECT LOCATION: SH 86

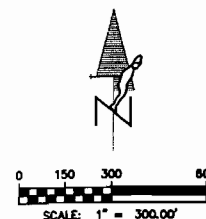
INTERSECTION #5

Project Code	Last Mod. Date	Subset Sheets	Sheet No.	Total No. of Sheets
13362	10-01-01	1 of 3	3	3

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO
SURVEY CONTROL DIAGRAM
CDOT PROJECT NO. STA 086-A-036
STATE HIGHWAY NO. 86 & CIMARRON TRAIL
MP 14.25 TO MP 15.07
ELBERT COUNTY
SECTIONS 11, 12 AND 13 T8S, R65W, 6th PM
PREPARED BY: WESTERN STATES SURVEYING, INC.



▲
X336 BENCH MARK



LOCATION MAP
WITH
LOCAL PRIMARY CONTROL

FILING CERTIFICATION

DEPOSITED THIS _____ DAY OF _____ A.D. 199__ AT
_____ O'CLOCK ____M.
IN BOOK _____ OF LAND SURVEY PLATS AT PAGE _____
RECEPTION NO. _____
OF THE RECORDS OF _____ COUNTY, COLORADO.
by: _____
CLERK & RECORDER
DEPUTY CLERK

COLORADO DEPARTMENT OF TRANSPORTATION



Region 1
18500 Colfax Avenue
Aurora, CO 80011
Phone: (303) 757-9744 FAX: (303) 757-9746

RIGHT OF WAY PLANS UNIT: JOE CONWAY, PLS

Sheet Revisions

Sheet Revisions

Sheet Revisions

RIGHT OF WAY PLANS

CONTROL DIAGRAM

PROJECT NUMBER: STA 086-A-036

PROJECT LOCATION: SH 86

INTERSECTION #5

Project Code:	Last Mod. Date	Subnet Sheets	Sheet No.	Total No. of Sheets
13362	10-01-01	2 of 3	3A	3

Name	WGS 84 Latitude	Longitude	Ellipsoid Height	Grid Scale Factor	Elevation Scale Factor	Combined Scale Factor	Mapping Angle	Name	NAD83 SPC ZONE 502 Northing (m)	Easting (m)	GEOID 99 Elevation (m)	Name	Project Northing (usft)	Easting (usft)	Orthometric Elevation (usft)	Description
102	39.21'40.73165"	104.33'40.26549"W	2010.747	0.999946200170	0.999685267595	0.999631484697	0.35'32"	102	474837.115	995306.978	2028.15	102	1558430.904	3266629.977	6654.01	3 1/4" aluminum cap stamped PLS 10734 1998 in range box
103	39.21'14.44957"	104.33'40.49329"W	1998.803	0.999945630691	0.999687136489	0.999632784190	0.35'31"	103	474026.618	995309.900	2018.25	103	1555770.827	3266639.567	6614.99	5/8" aluminum rod with a 3 1/4" aluminum cap stamped LS 13485 1995
104	39.21'14.28196"	104.33'06.58430"W	2002.469	0.999945627111	0.999686562849	0.999632207003	0.35'53"	104	474029.881	996121.733	2019.93	104	1555781.536	3269304.029	6627.06	#6 rebar with a 3 1/4" CDOT aluminum cap stamped PLS 22088 2001
105	39.21'40.32841"	104.30'54.63144"W	1989.732	0.999946191310	0.999688555943	0.999634764011	0.37'16"	105	474866.659	999271.961	2007.19	105	1558527.869	3279643.180	6585.26	#6 rebar with a 3 1/4" CDOT aluminum cap stamped PLS 22088 2001
106	39.21'40.38449"	104.30'20.43516"W	1965.354	0.999946192542	0.999692370644	0.999638579738	0.37'38"	106	474877.305	1000090.511	1982.83	106	1558562.809	3282329.688	6505.32	#6 rebar with a 2 1/2" aluminum cap stamped LS 17650 1997
107	39.21'14.28332"	104.30'20.72981"W	1977.557	0.999945627140	0.999690460918	0.999636104887	0.37'37"	107	474072.372	1000092.267	1995.08	107	1555920.993	3282335.451	6545.52	#6 rebar with a 2 1/2" aluminum cap stamped LS 17650 1997
108	39.21'14.20486"	104.30'54.63325"W	2001.307	0.999945625465	0.999686744653	0.999632387151	0.37'16"	108	474061.111	999280.651	2018.82	108	1555884.034	3279671.701	6623.41	1" aluminum rod with a 2 1/2" aluminum cap, stamping illegible
1425	39.21'41.43388"	104.37'35.44041"W	1994.583	0.999946215608	0.999687796847	0.999634029247	0.33'03"	1425	474802.615	989677.259	2011.90	1425	1558317.674	3248153.055	6600.59	CDOT Type II Control Monument
1445	39.21'42.57052"	104.37'23.54374"W	1995.319	0.999946240622	0.999687681796	0.999633939208	0.33'11"	1445	474840.408	989961.698	2012.64	1445	1558441.712	3249086.593	6603.05	CDOT Type II Control Monument
1465	39.21'41.24738"	104.37'08.37294"W	1978.543	0.999946211507	0.999690306867	0.999636535031	0.33'20"	1465	474803.121	990325.244	1995.87	1465	1558319.335	3250279.763	6548.03	CDOT Type II Control Monument
1470	39.21'42.32597"	104.37'04.73113"W	1977.417	0.999946235237	0.999690483079	0.999636734957	0.33'23"	1470	474837.227	990412.097	1994.74	1470	1558431.272	3250564.818	6544.34	CDOT Type II Control Monument
1485	39.21'41.18022"	104.36'54.96384"W	1963.319	0.999946210030	0.999692689080	0.999638915640	0.33'29"	1485	474804.169	990665.245	1980.65	1485	1558322.775	3251333.299	6498.09	CDOT Type II Control Monument
1507	39.21'41.78688"	104.36'41.62041"W	1969.109	0.999946223373	0.999691783069	0.999638023017	0.33'37"	1507	474825.994	990965.471	1988.44	1507	1558394.405	3252381.009	6517.14	CDOT Type II Control Monument
1790	39.21'41.33146"	104.33'22.72518"W	1998.061	0.999946213356	0.999687252752	0.999633482930	0.35'43"	1790	474859.961	995726.657	2015.47	1790	1558505.886	3268007.377	6612.34	CDOT Type II Control Monument
1810	39.21'41.09345"	104.33'14.44228"W	1991.908	0.999946208122	0.999688215429	0.999634440323	0.35'48"	1810	474854.684	995925.004	2009.32	1810	1558488.566	3268658.358	6592.20	CDOT Type II Control Monument
1830	39.21'40.94173"	104.33'05.49199"W	1984.745	0.999946204787	0.999689336373	0.999635557872	0.35'53"	1830	474852.239	998139.300	2002.16	1830	1558480.542	3269361.685	6568.75	CDOT Type II Control Monument
2000	39.21'20.09169"	104.31'12.31547"W	2003.810	0.999945751576	0.999686353021	0.999632121612	0.37'05"	2000	474238.060	998855.383	2021.30	2000	1556464.786	3278275.958	6631.56	CDOT Type II Control Monument
2020	39.21'17.49888"	104.31'02.93540"W	2004.440	0.999945695931	0.999686254396	0.999631967364	0.37'11"	2020	474160.534	999080.800	2021.94	2020	1556210.344	3279015.784	6633.68	CDOT Type II Control Monument
2030	39.21'15.80056"	104.30'55.21099"W	2000.315	0.999945659568	0.999686899934	0.999632576518	0.37'16"	2030	474110.166	999266.287	2017.82	2030	1556045.034	3279624.558	6620.17	CDOT Type II Control Monument
2050	39.21'14.42185"	104.30'46.00057"W	1996.713	0.999945630099	0.999687463430	0.999633110522	0.37'21"	2050	474070.046	999487.243	2014.23	2050	1555913.359	3280349.743	6606.36	CDOT Type II Control Monument
2070	39.21'14.92017"	104.30'31.21002"W	1986.523	0.999945640745	0.999689058000	0.999634715647	0.37'31"	2070	474089.268	999641.158	2004.04	2070	1555976.446	3281511.303	6574.99	CDOT Type II Control Monument
2090	39.21'13.31612"	104.30'18.16041"W	1978.303	0.999945606496	0.999690344244	0.999635967584	0.37'39"	2090	474043.221	1000154.104	1995.83	2090	1555825.318	3282538.402	6548.04	CDOT Type II Control Monument
2100	39.21'12.09887"	104.30'07.33203"W	1973.134	0.999945580547	0.999691153063	0.999636750417	0.37'46"	2100	474008.529	1000413.747	1990.87	2100	1555711.458	3283390.559	6531.10	CDOT Type II Control Monument
E53	39.21'23.54086"	104.31'27.95663"W	2004.560	0.999945825844	0.999686235664	0.999632078507	0.36'55"	E53	474340.389	998479.803	2022.04	E53	1556800.634	3277043.292	6633.98	3 1/2" USC&GS Brass Disc Bench Mark HARN Station
X336	39.21'42.54177"	104.36'24.00522"W	1985.743	0.999946239989	0.999689180124	0.999635436823	0.33'48"	X336	474853.407	991388.906	2003.08	X336	1558484.375	3253764.173	6571.77	3 1/2" USC&GS Brass Disc Bench Mark
CONWAY	39.20'17.87301"	104.25'51.98291"W	1996.450	0.999944459861	0.999687504360	0.999631981578	0.40'27"	CONWAY	472405.982	1006546.452	2014.19	CONWAY				9/16" Stainless Steel Rod, NGS HARN Station
LOVE	39.21'44.47047"	104.39'58.62146"W	2026.640	0.999946282501	0.999682780788	0.999629080329	0.31'33"	LOVE	474864.048	986248.986	2043.91	LOVE				9/16" Stainless Steel Rod, NGS HARN Station
MIN				0.999945580547	0.999685267595	0.999631484697			474008.529	989677.259	1980.65					
MAX				0.999946240622	0.999692689080	0.999638915640			474877.305	1000413.747	2028.15					
OIFF				0.000000660075	0.000007421485	0.000007430943			868.776	10736.488	47.50					
AVERAGE				0.999945947515	0.999688623450	0.999634587796			474486.604	996088.736	2006.74					
STD DEV				0.000000287918	0.000002103722	0.000002201374			381.214	3921.589	13.47					

Average Combined Scale Factor = 1.000365545779

Project Northing = SPC Northing (m) * (3937/1200) * 1.000365545779 (Average Combined Scale Factor)
Project Easting = SPC Easting (m) * (3937/1200) * 1.000365545779 (Average Combined Scale Factor)

CHARM stations Conway and Love were not used in the computation of the average combined scale factor.
MP 23.05 To MP 23.80

SURVEYORS STATEMENT: I, ROBERT DALEY, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, HEREBY STATE THAT THIS CONTROL SURVEY DIAGRAM WAS PREPARED UNDER MY SUPERVISION THIS 2ND DAY OF OCTOBER 2001, FROM A FIELD SURVEY PERFORMED UNDER MY SUPERVISION FROM SEPTEMBER 6TH TO THE 7TH, 2001, AND CHECKING FOR AND ON BEHALF OF WESTERN STATES SURVEYING, INC., AND IS NOT A LAND SURVEY PLAT OR RIGHT-OF-WAY PLAT AND TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS CONTROL SURVEY, AS SHOWN, MEETS THE MINIMUM HORIZONTAL CONTROL TOLERANCE OF A TYPE B SURVEY AND THIS TOPOGRAPHIC SURVEY, AS SHOWN, MEETS THE MINIMUM HORIZONTAL CONTROL TOLERANCE OF A TYPE D SURVEY AS LISTED IN THE COLORADO DEPARTMENT OF TRANSPORTATION SURVEY MANUAL CHAPTER THREE (REVISED 2/7/96).

ROBERT DALEY PLS 35597

CONTROL SURVEYING AND MONUMENTATION REQUIREMENTS:

1.) THIS CONTROL SURVEY DIAGRAM REPRESENTS THE HORIZONTAL AND VERTICAL CONTROL FOR THE PROJECT ESTABLISHED BY WESTERN STATES SURVEYING, INC. IT IS POSSIBLE THAT SOME OF THE SURVEY CONTROL MONUMENTS LISTED HAVE BEEN DISTURBED OR OBLITERATED.

2.) ALL TYPE 1 AND 2 MONUMENTS SHALL BE SET FLUSH WITH THE GROUND. WITNESS POSTS SHALL BE INSTALLED 1 FOOT FROM AND FACING ALL TYPE 1 AND TYPE 2 MONUMENTS, OR AS DIRECTED BY THE PROJECT ENGINEER.

3.) INSTALLATION OF TYPE 3 AND TYPE 3-A MONUMENTS SHALL BE COMPLETED IN THE SAME DAY THAT INSTALLATION IN COMMENCED UNDER NO CIRCUMSTANCES SHALL HOLES IN THE ROADWAY BE LEFT OPEN OVERNIGHT.

4.) WHEN INSTALLING TYPE 3-A MONUMENTS, THE ALUMINUM ACCESS COVER SHALL BE POSITIVELY SECURE TO THE PVC. THE ACCESS COVER SHALL BE CAULKED WITH ASPHALT CAULKING EDGES OF THE ROADWAY SURFACE TO PROVIDE A POSITIVE MOISTURE BARRIER AROUND THE ACCESS COVER.

5.) CONTROL SURVEY PROCEDURES, STATISTICAL ANALYSIS, AND ACCURACY FOR HORIZONTAL AND VERTICAL CONTROL SHALL BE DOCUMENTED IN THE FIELD BOOK.

6.) LEGIBLE COPIES OF THE FIELD BOOKS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW ON A MONTHLY BASIS.

7.) IT IS ULTIMATELY THE PRIME CONTRACTORS RESPONSIBILITY TO INSURE THAT THESE REQUIREMENTS, AS WELL AS ANY CONTAINED IN THE CDOT SPECIFICATIONS, PROJECT SPECIAL PROVISIONS, AND CDOT SURVEY MANUAL ARE FULFILLED UNDER THIS CONTRACT.

8.) THE MINIMUM STAKING INTERVALS FOR EACH ITEM ARE DESCRIBED ON THE PLANS OR IN THE CDOT SURVEY MANUAL. IF THE CONTRACTOR WISHED TO REDUCE THE MINIMUM INTERVALS, A CONTACT MODIFICATION ORDER MUST BE NEGOTIATED AND THE COST OF EACH ITEM REDUCED ACCORDINGLY.

CONTROL NETWORK NOTES:

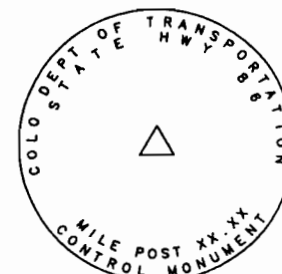
- 1.) GEOGRAPHIC COORDINATES ARE IN NORTH AMERICAN DATUM 1983(1992). PLANAR COORDINATES ARE COLORADO CENTRAL STATE PLANE GRID VALUES. THE UNITS ARE IN US FEET.
- 2.) MONUMENTS #1425-#2100 ARE COLORADO DEPARTMENT OF TRANSPORTATION MONUMENTS TYPE 2.
- 3.) MONUMENTS E53 AND X336 ARE USC&GS BRASS DISKS SET IN CONCRETE.
- 4.) THE HORIZONTAL CONTROL SURVEY WAS CARRIED OUT USING GPS FAST STATIC OBSERVATIONS.
- 5.) ORTHOMETRIC ELEVATION FOR THE SURVEY CONTROL POINTS MP 466, U52 AND SHAYNE WERE PROVIDED BY DAVE STEWART (CDOT), AS PER MSM BLUE BOOK CONTROL SURVEY IN SPRING 2001.
- 6.) THIS SURVEY IS NOT A COMPLETE BOUNDARY SURVEY OR RIGHT-OF-WAY SURVEY AND IS PREPARED FOR CDOT PURPOSES ONLY.
- 7.) FIELD SURVEY CONTROL PRECISION MEETS OR EXCEEDS CDOT TYPE "A" OR "B" SURVEY REQUIREMENTS.

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.

NO WARRANTY IS IMPLIED OR EXPRESSED UNLESS THIS SHEET BEARS THE ORIGINAL SIGNATURE AND SEAL OF THE PREPARER.

BASIS OF BEARING:

BEARINGS USED IN THE CALCULATION OF COORDINATES ARE BASED ON A GRID BEARING OF S 83°05'42" E FROM HARN POINT "LOVE" (1/2" STAINLESS STEEL ROD) AND HARN POINT "CONWAY" (1/2" STAINLESS STEEL ROD) AS OBTAINED FROM A GLOBAL POSITIONING SYSTEM (GPS) SURVEY BASED ON THE COLORADO HIGH ACCURACY REFERENCE NETWORK (CHARM).



CDOT Type II Monument: 36"x 3/4" finned rod section atop 36"x 3/4" smooth rod section with 3.25" alloy cap stamped as shown and/or as described in tabulation.

SURVEYOR CERTIFICATE (FIELD)

CONTROL SURVEY AND MONUMENTATION WAS DONE UNDER MY SUPERVISION AND CHECKING.
FOR AND ON BEHALF OF WESTERN STATES SURVEYING:

NAME ROBERT DALEY P.L.S. NO. 35597

DATE _____

COLORADO DEPARTMENT OF TRANSPORTATION



Region 1
18500 Colfax Avenue
Aurora, CO 80011
Phone: (303) 757-9744 FAX: (303) 757-9746

RIGHT OF WAY PLANS UNIT: JOE CONWAY, PLS

[illegible][illegible][illegible]

RIGHT OF WAY PLANS				
CONTROL DIAGRAM				
PROJECT NUMBER: STA 086-A-036				
PROJECT LOCATION: SH 86				
INTERSECTION #5				
Project Code:	Last Mod. Date	Subest Sheets	Sheet No.	Total No. of Sheets
13742	10-01-01	1 of 12	12	

SECTIONS 11, 12, AND 13
T. 8 S., R. 65 W., 6th P.M.

