



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

Survey Unit: Joseph P. Conway

Located
Section 27 and 34, Township 7 South, Range 75 West
of the 6th Principal Meridian
Park County, Colorado

Project Number: SHE 2854-096

Project Location: U.S. 285 Corridor PE Project

Kenosha Pass

Project Code: Last Mod. Date Subst Sheets Sheet No. Total No. of Sheets
14230 10-04-02 1 5

GEODETIC COORDINATE SUMMARY TABLE (ADJUSTED FIELD DATA)

POINT NAME	GEODETIC COORDINATES NAD 83(92) (CHARN)		ELLIPSOID HEIGHT (M)	NAVD 88 GEOID 99 ORTHOMETRIC ELEVATION (M)	MAPPING ANGLE	SCALE	NAD 83(92) NORTHING (M)	ZONE 502 EASTING (M)
	LATITUDE (N)	LONGITUDE (W)						
US 285 CM-MP 201.6	39.24'22.00581"N	105.46'19.58646"W	2933.12	2945.834	-0.10'18"	0.99949103357	479427.550	890966.694
US 285 CM-MP 202.0	39.24'11.99024"N	105.45'53.56135"W	2962.79	2975.484	-0.10'01"	0.99948613510	479116.849	891588.403
US 285 CM-MP 202.1	39.24'08.84836"N	105.45'47.67226"W	2971.82	2984.502	-0.09'58"	0.99948464351	479019.550	891729.015
US 285 CM-MP 201.3	39.24'06.86844"N	105.45'39.94133"W	2980.88	2993.555	-0.09'53"	0.99948317588	478957.959	891913.800
US 285 CM-MP 202.4	39.24'06.61812"N	105.45'29.39745"W	2993.35	3006.009	-0.09'46"	0.99948121912	478949.519	892166.039
US 285 CM-MP 202.5	39.24'08.01394"N	105.45'24.13829"W	2999.72	3012.374	-0.09'43"	0.99948025770	478992.207	892291.985
US 285 CM-MP 202.6	39.24'10.76226"N	105.45'18.87525"W	3009.06	3021.701	-0.09'40"	0.99947886745	479076.605	892418.140
US 285 CM-MP 202.7	39.24'15.86620"N	105.45'16.50368"W	3018.35	3030.986	-0.09'38"	0.99947754407	479233.841	892475.320
US 285 CM-MP 202.8	39.24'21.91680"N	105.45'18.23380"W	3022.21	3034.855	-0.09'39"	0.99947709532	479420.547	892434.452
COMO	39.19'35.46554"N	105.52'20.17474"W	2958.99	2971.992	-0.14'05"	0.99948056928	470621.909	882303.993
L303	39.22'18.81610"N	105.48'24.74441"W	2882.55	2895.475	-0.11'37"	0.99949594808	475638.175	887959.656
S303	39.25'02.05033"N	105.45'42.12778"W	3033.20	3045.902	-0.09'54"	0.99947642958	480659.817	891866.391

BASIS OF BEARING: BEARINGS USED IN THE CALCULATION OF COORDINATES ARE BASED ON A GRID BEARING OF S37°52'56"W, 6362.350M FROM S 303 (3 1/4" USC&GS BRASS DISK) TO COMO RESET (3 1/4" NGS BRASS DISK), AS OBTAIN FROM A GLOBAL POSITIONING SYSTEM (GPS) SURVEY BASED ON THE COLORADO HIGH ACCURACY REFERENCE NETWORK (CHARN).

BASIS OF ELEVATIONS: THE VERTICAL CONTROL WAS ESTABLISHED BY DIFFERENTIAL LEVELING USING S 303 A USC&GS BENCHMARK.

COORDINATE DATUM:

GEOGRAPHIC COORDINATES ARE IN NORTH AMERICAN DATUM 1983(1992). PLANAR COORDINATES ARE COLORADO CENTRAL PLANE GRID VALUES. ZONE 502. THE UNITS ARE IN FEET. MONUMENTS NUMBERS 201.6, 202.0, 202.1, 202.3, 202.4, 202.5, 202.6, 202.7, AND 202.8 ARE COLORADO DEPARTMENT OF TRANSPORTATION MONUMENTS - TYPE 2. MONUMENTS L 303 AND S 303 ARE USC&GS 3 1/4" BRASS DISKS. MONUMENT COMO RESET IS A NGS 3 1/4" BRASS DISK IN CONCRETE. THE HORIZONTAL CONTROL SURVEY WAS CARRIED OUT USING GPS FAST STATIC OBSERVATIONS.

Average Combined Scale Factor is 1.000511318

Project Northing = Northing ((SPC*1.000511318)-400000)*(3937/1200)
Project Easting = Easting ((SPC*1.000511318)-800000)*(3937/1200)

Project Narrative: This project established intermediate control points for the purpose of performing TMOSS surveys and right-of-way surveys to tie the existing highway right-of-way to project control. The primary control for this project were Colorado High Accuracy Reference Network (CHARN) points established by prior project(s).

NOTE: Refer to M-629-1 Survey Monuments of the Standard Plans, Colorado Department of Transportation, M & S Standards, October, 2000 for survey monument descriptions. Refer to M-100-1 Standard Symbols of the Standard Plans, Colorado Department of Transportation, M & S Standards, October, 2000 for standard symbol definitions.

NOTE: THE 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. THIS IS NOT A LAND SURVEY PLAT AND/OR RIGHT-OF-WAY PLAT. TITLE POLICY, TITLE COMMITMENT AND TITLE RESEARCH WERE NOT A PART OF THIS CONTROL SURVEY. THEREFORE, RIGHTS AND RESTRICTIONS OF RECORD ARE NOT SHOWN. THE VERIFICATION OF THE PHYSICAL EVIDENCE WITH RELATION TO EASEMENTS, RIGHT-OF-WAY, PROPERTY BOUNDARIES AND RESTRICTIONS AS DESCRIBED IN THE INSTRUMENTS OF RECORD, WERE NOT INCLUDED IN THIS CONTROL SURVEY.

SURVEYOR'S STATEMENT:

I, ALBERT V. VALLETTA JR., A PROFESSIONAL SURVEYOR IN THE STATE OF COLORADO, DO HEREBY STATE THAT THIS CONTROL SURVEY DIAGRAM WAS PREPARED UNDER MY SUPERVISION THIS 20TH DAY OF SEPTEMBER, 2002, FROM A FIELD SURVEY PERFORMED UNDER MY SUPERVISION ON AUGUST 28TH AND 29TH, 2002. THIS IS NOT A LAND SURVEY PLAT OR RIGHT-OF-WAY SURVEY, AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS CONTROL SURVEY MEETS THE MINIMUM HORIZONTAL TOLERANCE OF A TYPE B SURVEY, AS LISTED IN THE COLORADO DEPARTMENT OF TRANSPORTATION SURVEY MANUAL.

ALBERT V. VALLETTA JR. PLS 23524
FOR AND ON BEHALF OF
WESTERN STATES SURVEYING, INC.

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

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.

CONTROL SURVEYING AND MONUMENTATION REQUIREMENTS:

1). THIS CONTROL SURVEY DIAGRAM REPRESENTS 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 ENGINEER.

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

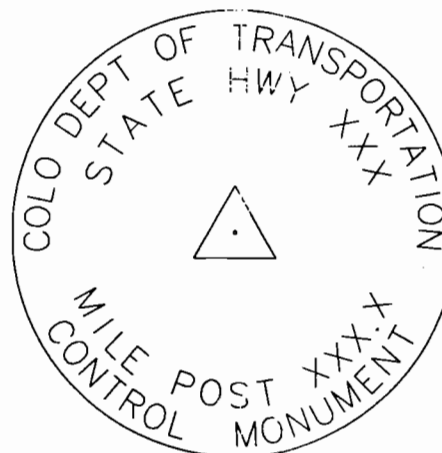
4). WHEN INSTALLING TYPE 3-A MONUMENTS, THE ALUMINUM ACCESS COVER SHALL BE POSITIVELY SECURE TO THE PVC. THE ACCESS COVER SHALL BE CAULKED WITH ASPHALT CAULKING BETWEEN THE ACCESS COVER AND THE EDGES OF THE ROADWAY SURFACE TO PROVIDE A POSITIVE MOISTURE BARRIER, AROUND THE ACCESS COVER.

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 CONTRACT MODIFICATION ORDER MUST BE NEGOTIATED AND THE COST OF EACH ITEM REDUCED ACCORDINGLY.



CONTROL
MONUMENT CAP

CDOT TYPE 2 MONUMENT: 36" X 3/4" FINNED ROD
SECTION ATOP A 36" X 3/4" SMOOTH ROD SECTION WITH
A 3 1/4" ALLOY CAP, STAMPED AS SHOWN AND/OR
DESCRIBED IN THE TABULATION SHEET.

COLORADO DEPARTMENT OF TRANSPORTATION



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Survey Unit: Joseph P. Conway

Sheet Revisions	

U.S. Highway 285 MP 202.0 to MP 202.8
Located
Section 27 and 34, Township 7 South, Range 75 West
of the 6th Principal Meridian
Park County, Colorado

Survey Control Diagram				
Plan Sheet				
Project Number: SHE 2854-096				
Project Location: U.S. 285 Corridor PE Project				
Kenosha Pass				
Project Code:	Last Mod. Date	Subset Sheets	Sheet No.	Total No. of Sheets
14230	10-04-02		2	5

PROJECT COORDINATE SUMMARY TABLE
(ADJUSTED FIELD DATA IN METERS)

POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
US 285 CM-MP 201.6	79672.690	91422.261	2945.846	CDOT Type II Control Monument Stamped 201.6
US 285 CM-MP 202.0	79361.830	92044.288	2975.479	CDOT Type II Control Monument Stamped 202.0
US 285 CM-MP 202.1	79264.481	92184.972	2984.498	CDOT Type II Control Monument Stamped 202.1
US 285 CM-MP 202.3	79202.859	92369.852	2993.541	CDOT Type II Control Monument Stamped 202.3
US 285 CM-MP 202.4	79194.414	92622.220	3005.992	CDOT Type II Control Monument Stamped 202.4
US 285 CM-MP 202.5	79237.124	92748.230	3042.849	CDOT Type II Control Monument Stamped 202.5
US 285 CM-MP 202.6	79321.566	92874.450	3021.696	CDOT Type II Control Monument Stamped 202.6
US 285 CM-MP 202.7	79478.882	92931.659	3030.986	CDOT Type II Control Monument Stamped 202.7
US 285 CM-MP 202.8	79665.683	92890.770	3034.848	CDOT Type II Control Monument Stamped 202.8
COMO	70862.546	82755.131		3 1/4" NGS Brass Disc set in concrete
L303	75881.377	88413.686	2895.475	3 1/4" USC&GS Brass Disc Benchmark set in concrete
S303	80905.587	92322.418	3045.903	3 1/4" USC&GS Brass Disc Benchmark set in concrete
500	79556.031	91529.168		3 1/4" BLM Brass Cap Sections 28,27,33,34 T7S R75W

PROJECT COORDINATE SUMMARY TABLE
(ADJUSTED FIELD DATA IN US FEET)

POINT NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
US 285 CM-MP 201.6	261392.817	299941.202	9664.83	CDOT Type II Control Monument Stamped 201.6
US 285 CM-MP 202.0	260372.937	301981.969	9762.05	CDOT Type II Control Monument Stamped 202.0
US 285 CM-MP 202.1	260053.552	302443.529	9791.64	CDOT Type II Control Monument Stamped 202.1
US 285 CM-MP 202.3	259851.379	303050.088	9821.31	CDOT Type II Control Monument Stamped 202.3
US 285 CM-MP 202.4	259823.675	303878.065	9862.16	CDOT Type II Control Monument Stamped 202.4
US 285 CM-MP 202.5	259963.799	304291.484	9983.08	CDOT Type II Control Monument Stamped 202.5
US 285 CM-MP 202.6	260240.836	304705.590	9913.68	CDOT Type II Control Monument Stamped 202.6
US 285 CM-MP 202.7	260756.965	304893.284	9944.16	CDOT Type II Control Monument Stamped 202.7
US 285 CM-MP 202.8	261369.829	304759.134	9956.83	CDOT Type II Control Monument Stamped 202.8
COMO	232488.204	271505.792		3 1/4" NGS Brass Disc set in concrete
L303	248954.152	290070.567	9499.57	3 1/4" USC&GS Brass Disc Benchmark set in concrete
S303	265437.747	302894.468	9993.10	3 1/4" USC&GS Brass Disc Benchmark set in concrete
500	261010.079	300291.945		3 1/4" BLM Brass Cap Sections 28,27,33,34 T7S R75W

COLORADO DEPARTMENT OF TRANSPORTATION



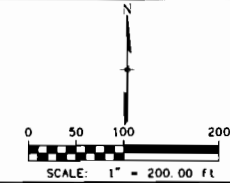
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Sheet Revisions

U.S. Highway 285 MP 202.0 to MP 202.8

Located
Section 27 and 34, Township 7 South, Range 75 West
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Park County, Colorado



Survey Control Diagram

Plan Sheet

Project Number: SHE 2854-096

Project Location: U.S. 285 Corridor PE Project

Kenosha Pass

Project Code	Last Mod. Date	Subst Sheets	Sheet No.	Total No. of Sheets
14230	10-04-02		3	5

SECTION 27, 28 AND 34
T. 7 S., R 75 W., 6th P.M.

US 285 CM-MP 201.6
GPS PROJECT STATION
N:261392.817
E:299941.202
EL:9664.83



SECTION 28



28 27
33 34 N: 261010.079
E: 300291.945

500
FOUND 3 1/4" BRASS CAP
BUREAU OF LAND MANAGEMENT
SECTION CORNER

S. LINE SECTION 27
N. LINE SECTION 34

S 89°53'02" W
2728.73 FT

SECTION 27

SECTION 34

SECTION 33



US 285 CM-MP 202.0
GPS PROJECT STATION
N:260372.937
E:301981.969
EL:9762.05



US 285 CM-MP 201.1
GPS PROJECT STATION
N:260053.552
E:302443.529
EL:9791.64

TO GRANT

COLORADO DEPARTMENT OF TRANSPORTATION



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Sheet Revisions

Rev.	Description

U.S. Highway 285 MP 202.0 to MP 202.8

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Survey Control Diagram

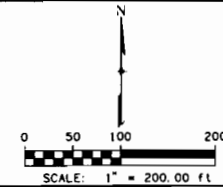
Plan Sheet

Project Number: SHE 2854-096

Project Location: U.S. 285 Corridor PE Project

Kenosha Pass

Project Code:	Last Mod. Date	Subst Sheets	Sheet No.	Total No. of Sheets
14230	10-04-02		4	5



SECTION 27 AND 34
T. 7 S., R 75 W., 6th P.M.

SECTION 27

515
FOUND 3 1/4" BRASS CAP
BUREAU OF LAND MANAGEMENT
QUARTER CORNER

S 89°53'02" W
2728.73 FT

27
34

N: 261015.607
E: 303020.674



N 89°54'26" E
2728.41 FT

S. LINE SECTION 27
N. LINE SECTION 34

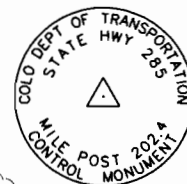
SECTION 34



US 285 CM-MP 202.1
GPS PROJECT STATION
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E:302443.529
EL:9791.64

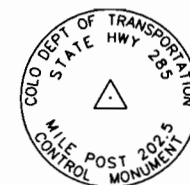
TO JEFFERSON

US 285 CM-MP 202.3
GPS PROJECT STATION
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E:303050.088
EL:9821.31

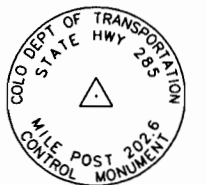


US 285 CM-MP 202.4
GPS PROJECT STATION
N:259823.675
E:303878.065
EL:9862.16

US 285 CM-MP 202.5
GPS PROJECT STATION
N:259963.799
E:304291.484
EL:9983.08



US 285 CM-MP 202.6
GPS PROJECT STATION
N:260240.836
E:304705.590
EL:9913.68



512
FOUND 3 1/4" BRASS CAP
BUREAU OF LAND MANAGEMENT
SECTION CORNER

US 285 CM-MP 202.7
GPS PROJECT STATION
N:260756.965
E:304893.284
EL:9944.16



US 285 CM-MP 202.8
GPS PROJECT STATION
N:261369.829
E:304759.134
EL:9956.83



N: 261020.023
E: 305749.078

27 26

34 35

FOUND 3-1/4" BRASS CAP STATE HIGHWAY DEPT. R.O.W. MONUMENT

FOUND 3-1/4" BRASS CAP STATE HIGHWAY DEPT. R.O.W. MARKER

SOUTH PARK HISTORICAL MARKER

FOUND BROKEN 6" DIA CONC. ROW MONUMENT, NO CAP

FOUND 3 1/4" COOT BC ROW MONUMENT

FOUND 3 1/4" COOT BC ROW MONUMENT

FOUND 3 1/4" COOT BC ROW MONUMENT

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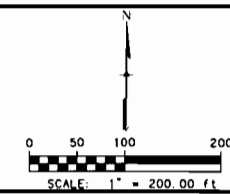
Survey Unit: Joseph P. Conway

Sheet Revisions

U.S. Highway 285 MP 202.0 to MP 202.8

Located

Section 27 and 34, Township 7 South, Range 75 West
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Park County, Colorado



Survey Control Diagram

Plan Sheet

Project Number: SHE 2854-096

Project Location: U.S. 285 Corridor PE Project

Project Location:

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14230	10-04-02		5	5

SECTION 27 AND 34
T. 7 S., R 75 W., 6th P.M.

FOUND 3 1/4" COOT BC ROW MONUMENT NO STATION STAMPED ON CAP

SECTION 27



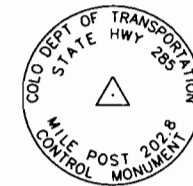
515
FOUND 3 1/4" BRASS CAP
BUREAU OF LAND MANAGEMENT
QUARTER CORNER

S 89°53'02" W
2728.73 FT

27
34

N: 261015.607
E: 303020.674

N 89°54'26" E
2728.41 FT



US 285 CM-MP 202.8
GPS PROJECT STATION
N:261369.829
E:304759.134
EL:9956.83

FOUND 3-1/4" BRASS CAP STATE HIGHWAY DEPT R.O.W. MONUMENT

S. LINE SECTION 27
N. LINE SECTION 34



512
FOUND 3 1/4" BRASS CAP
BUREAU OF LAND MANAGEMENT
SECTION CORNER

27 26
34 35

N: 261020.023
E: 305749.078