

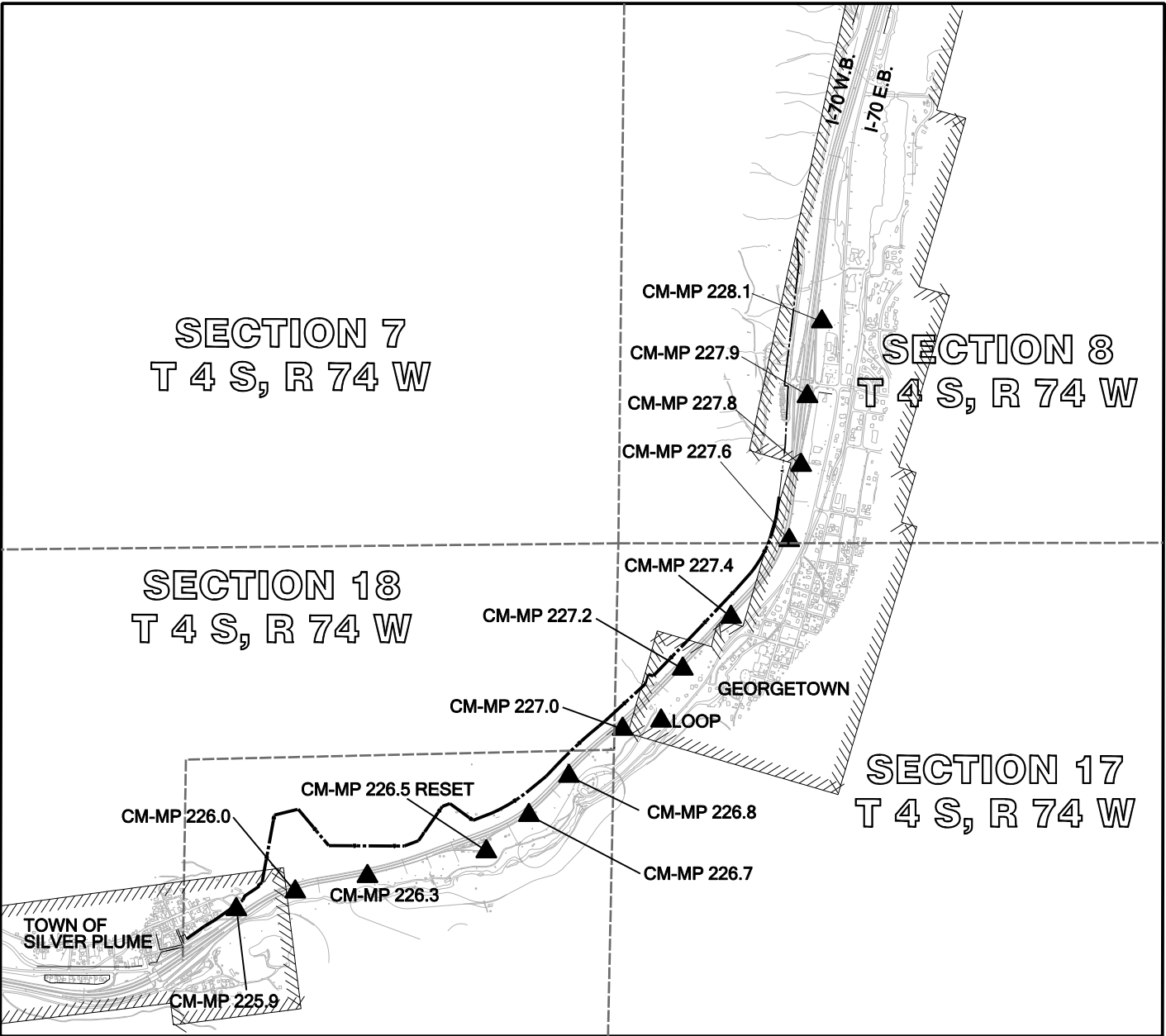
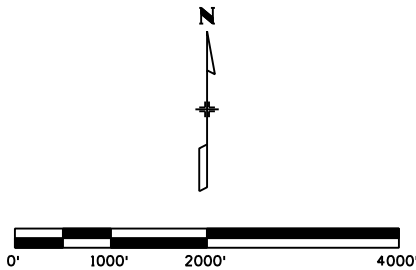
Sheet Revisions			Sheet Revisions			Sheet Revisions		
Date	Description	Initials	Date	Description	Initials	Date	Description	Initials

Land Survey Control Diagram			
Title Sheet			
Project Number: IM 0703-324			
Project Location: INTERSTATE 70 MP 225.9 TO MP 227.9			
Project Location: GEORGETOWN, CLEAR CREEK COUNTY			
Project Code: 16105	Last Mod. Date: 04-01-09	Subset Sheets: 4.01 of 4.07	Sheet No.: 4.01

LAND SURVEY CONTROL DIAGRAM
GEORGETOWN, INTERSTATE 70 (MILE POST 225.9 TO MILE POST 227.9)
LOCATED IN SECTIONS 7, 8, 17, & 18 TOWNSHIP 4 SOUTH, RANGE 74 WEST, 6TH P.M.
CLEAR CREEK COUNTY, STATE OF COLORADO

Construction Surveying and Monumentation Requirements

1. This Land Survey Control Diagram represents the horizontal and vertical control for the project established by the Region. It is possible that some of the survey control monuments listed have been disturbed or obliterated. It is the Contractor's responsibility to verify the existence and stability of the control monuments before submitting a bid price.
2. All Type 1 and Type 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 is commenced. Under no circumstances shall holes in the roadway be left open overnight.
4. When installing Type 3-A monuments, the aluminum monument box shall be positively secured in the roadway surface. The monument box shall be caulked with asphalt caulking between the monument box and the edges of the roadway surface to provide a positive moisture barrier around the monument box.
5. Control survey procedures, statistical analysis, and accuracy obtained 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 wishes to reduce the minimum intervals, a Contract Modification Order must be negotiated and the cost of the item reduced accordingly.
9. Whenever the contract includes the setting of CDOT Type 2 monuments, a Supplemental Project Control Diagram, signed and sealed by the P.L.S. in responsible charge, shall be submitted to the Project Engineer. A Microstation drawing on CD shall accompany the hard copy.



Basis of Bearing:

All bearings are based on the line connecting the W 1/4 corner of section 18 to the East 1/4 corner of section 18, T. 4 S., R. 74 W. of the 6th P.M., being a GRID bearing of N. 88°40'33" E, 5,398.09 feet as obtained from a global positioning system (GPS) survey based on the Colorado High Accuracy Reference Network (CHARN). Said grid bearing is NAD 83 (1992) Colorado State Plane Central Zone 502. The W 1/4 corner being monumented with a found 3 1/4 " diameter brass cap, stamped in part "Bur. of Land Management 1983" and the E 1/4 corner being a calculated position established from the monumented witness corner which bears N. 01°11'53" E., 30.00 feet from the calculated position. Said witness corner is a found 3 1/4 "diameter alum. cap stamped in part "1/4 W.C. 30' COLO. DEPARTMENT OF TRANSPORTATION, 2008, PLS 23521"

Basis of Elevations:

Orthometric heights (elevations) are based on First Order Class II National Geodetic Survey (NGS) Bench Mark LOOP (NGS PID AA5362). The Published NAVD 88 Height = 8788.00'. All Control Point heights on this project were established by GPS fast static observations tied to said Bench Mark LOOP.

Coodinate Datum:

Coordinates on this project are for the exclusive use of the CDOT for the construction of this project and are considered Project Coordinates only.

NOTE: This Land Survey Control Diagram is for the use of the Colorado Department of Transportation personnel. The survey is not a complete Boundary Survey. Title Policy, Title Commitment, and Title Research were not part of this Land Survey Control Diagram, 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.

NOTE: In accordance with C.R.S. 13-80-105:
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.

Note: This Control Survey was completed under Project Number: IM 0703-324 Project Code: 16105. A signed and sealed copy is on file within the records of CDOT Region 1 Survey office. The information contained hereon has been approved by the CDOT Region Survey Coordinator for re-use on Project Number: SHE M515-004 Project Code: 17658. All future survey data for this project was acquired using the information on this Control Survey.

PROJECT LOCATION MAP

SURVEYOR STATEMENT (LAND SURVEY CONTROL DIAGRAM)

I, Geoffrey F. Stephenson, a professional land surveyor licensed in the State of Colorado, do hereby state to the Colorado Department of Transportation 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.

GEOFFREY F. STEPHENSON, PLS 23521

Date

Right of Way Plans				
Survey Control Diagram				
Project Number: IM 0703-324				
Project Location: INTERSTATE 70 MP 225.9 TO MP 227.9				
Project Location: GEORGETOWN, CLEAR CREEK COUNTY				
Project Code:	Last Mod. Date	Subset Sheets	Sheet No.	
16105	04-01-09	4.02 of 4.07	4.02	

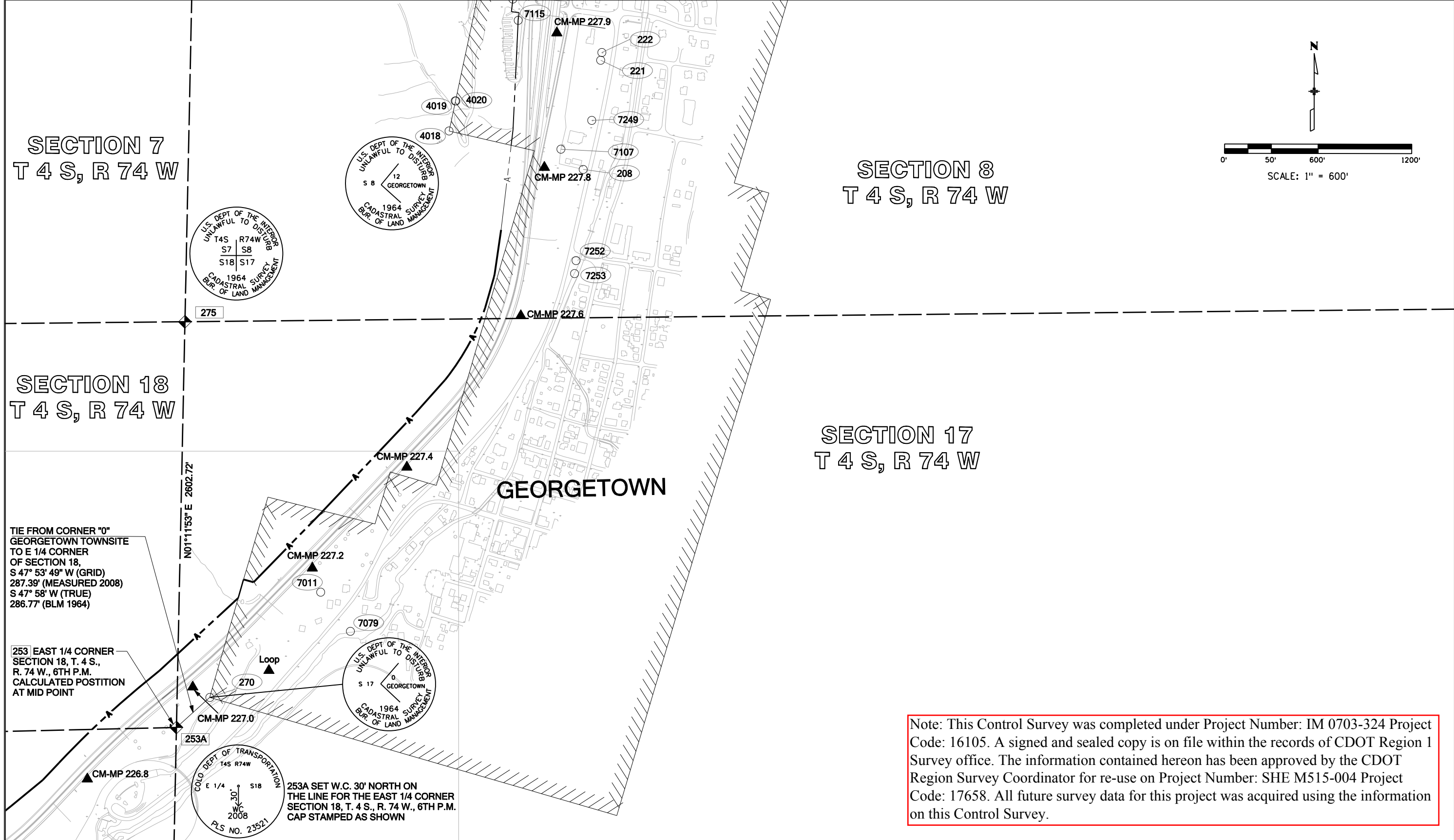
SECTION 17
T 4 S, R 74 W

Colorado Department of Transportation
Region 1 Right of Way
18500 East Colfax Avenue
Aurora, Colorado 80111
Phone: 303-365-7410 Fax: 303-365-7350
Right of Way Plan Unit: Kevin Williams, PLS

Sheet Revisions			Sheet Revisions			Sheet Revisions		
Date	Description	Initials	Date	Description	Initials	Date	Description	Initials

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CIVIL ENGINEERING
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Right of Way Plans				
Survey Control Diagram				
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Project Location: INTERSTATE 70 MP 225.9 TO MP 227.9				
Project Location: GEORGETOWN, CLEAR CREEK COUNTY				
Project Code:	Last Mod. Date	Subset Sheets	Sheet No.	
16105	04-01-09	4.03 of 4.07	4.03	



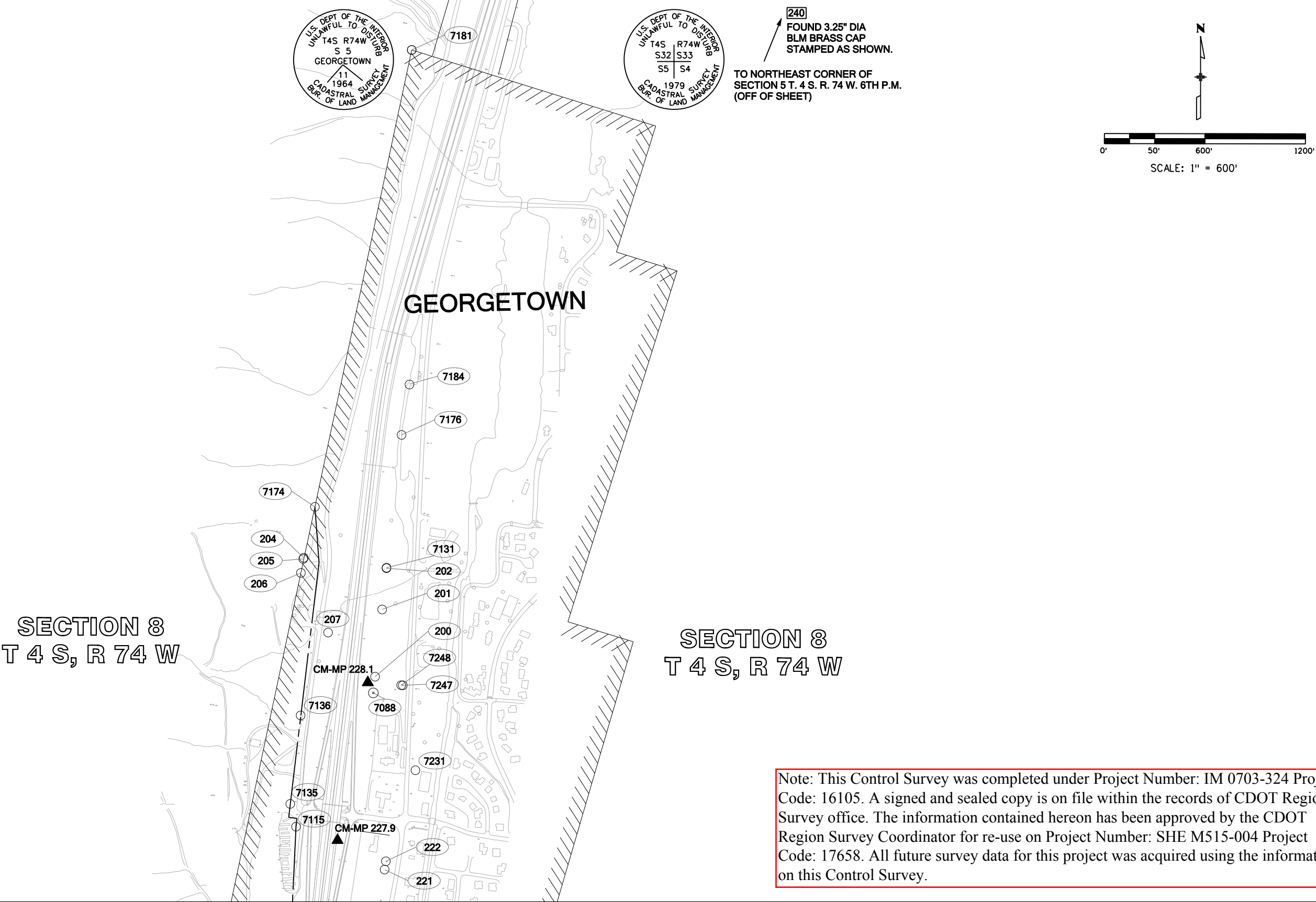
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16105	04-01-09	4,04 of 4.07	4.04	



Note: This Control Survey was completed under Project Number: IM 0703-324 Project Code: 16105. A signed and sealed copy is on file within the records of CDOT Region 1 Survey office. The information contained hereon has been approved by the CDOT Region Survey Coordinator for re-use on Project Number: SHE M515-004 Project Code: 17658. All future survey data for this project was acquired using the information on this Control Survey.



Colorado Department of Transportation

Region 1 Right of Way


18500 East Colfax Avenue

Aurora, Colorado 80111

Phone: 303-365-7410 Fax: 303-365-7350

Right of Way Plan Unit: Kevin Williams, PLS

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CIVIL ENGINEERING & SURVEYING

Right of Way Plans				
Survey Control Diagram				
Project Number: IM 0703-324				
Project Location: INTERSTATE 70 MP 225.9 TO MP 227.9				
Project Location: GEORGETOWN, CLEAR CREEK COUNTY				
Project Code: 16105	Last Mod. Date: 04-01-09	Subset Sheets: 4.05 of 4.07	Sheet No.: 4.05	

GEODETIC COORDINATE SUMMARY TABLE (ADJUSTED FIELD DATA) - US FEET

POINT NAME	GEODETIC COORDINATES NAD-83(92) (CHARN)		NAD 83/92 ZONE 0502		ELLIP. HEIGHT	ELEV. (NAVD 88)	MAPPING ANGLE	GRID SCALE	DESCRIPTION
	LATITUDE	LONGITUDE	NORTHING (sft)	EASTING (sft)					
2259	39° 41' 49.82916" N	105° 43' 19.29258" W	1678901.32	2937523.39	9078.72	9119.17	-0° 08' 24.1"	0.99998998	I-70 CM-MP 225.9
2260	39° 41' 52.03079" N	105° 43' 09.79257" W	1679122.29	2938266.49	9026.47	9066.94	-0° 08' 18.1"	0.99999009	I-70 CM-MP 226.0
2263	39° 41' 53.98320" N	105° 42' 58.16615" W	1679317.67	2939175.73	8975.97	9016.45	-0° 08' 10.8"	0.99999019	I-70 CM-MP 226.3
2265 RESET	39° 41' 57.13505" N	105° 42' 39.00292" W	1679633.06	2940674.33	8884.26	8924.72	-0° 07' 58.7"	0.99999035	I-70 CM-MP 226.5
2267	39° 42' 01.63032" N	105° 42' 32.15897" W	1680086.70	2941210.30	8855.38	8896.04	-0° 07' 54.4"	0.99999057	I-70 CM-MP 226.7
2268	39° 42' 06.51603" N	105° 42' 25.71624" W	1680579.90	2941715.00	8808.37	8848.98	-0° 07' 50.3"	0.99999082	I-70 CM-MP 226.8
2270	39° 42' 12.37616" N	105° 42' 17.12626" W	1681171.31	2942387.75	8756.15	8796.64	-0° 07' 44.9"	0.99999112	I-70 CM-MP 227.0
2272	39° 42' 19.90799" N	105° 42' 07.37949" W	1681931.73	2943151.20	8687.48	8728.14	-0° 07' 38.8"	0.99999151	I-70 CM-MP 227.2
2274	39° 42' 26.33808" N	105° 41' 59.60823" W	1682581.01	2943760.00	8634.17	8674.86	-0° 07' 33.8"	0.99999183	I-70 CM-MP 227.4
2276	39° 42' 35.94713" N	105° 41' 50.28610" W	1683551.70	2944490.67	8565.09	8605.82	-0° 07' 28.0"	0.99999233	I-70 CM-MP 227.6
2278	39° 42' 45.33448" N	105° 41' 48.33564" W	1684501.22	2944645.16	8502.15	8542.89	-0° 07' 26.7"	0.99999281	I-70 CM-MP 227.8
2279	39° 42' 53.88153" N	105° 41' 47.38402" W	1685365.89	2944721.40	8469.43	8510.17	-0° 07' 26.1"	0.99999326	I-70 CM-MP 227.9
2281	39° 43' 03.18910" N	105° 41' 45.09268" W	1686307.27	2944902.51	8453.84	8494.48	-0° 07' 24.7"	0.99999374	I-70 CM-MP 228.1
LOOP	39° 42' 13.42932" N	105° 42' 10.88186" W	1681276.78	2942876.03	8747.42	8788.00	-0° 07' 41.0"	0.99999117	NGS PID AA5362
Q 449	39° 41' 46.18797" N	105° 44' 52.09022" W	1678551.65	2930268.89	9258.67	9299.03	-0° 09' 22.6"	0.99998979	NGS PID DF5485

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

NOTE: National Geodetic Survey First Order Horizontal Control Stations held fixed in the final fully constrained least squares adjustment of the GPS data are as follows:

Designation: LOOP
PID: AA5362
NAD 83(1992) CHARN
Latitude 39° 42' 13.42932 (N)
Longitude 105° 42' 10.88186 (W)
Ellip. Height 2666.22 (meters)

Designation: Q 449
PID: DF5485
NAD 83(1992) CHARN
Latitude 39° 41' 46.18797 (N)
Longitude 105° 44' 52.09022 (W)
Ellip. Height 2822.05 (meters)

POINT NAME	PROJECT COORDINATES		ELEV. (NAVD 88)	DESCRIPTION
	NORTHING	EASTING		
2259	678893.86	937526.31	9119.17	I-70 CM-MP 225.9
2260	679114.92	938269.73	9066.94	I-70 CM-MP 226.0
2263	679310.38	939179.36	9016.45	I-70 CM-MP 226.3
2265 RESET	679625.91	940678.59	8924.72	I-70 CM-MP 226.5
2267	680079.72	941214.81	8896.04	I-70 CM-MP 226.7
2268	680573.13	941719.72	8848.98	I-70 CM-MP 226.8
2270	681164.80	942392.72	8796.52	I-70 CM-MP 227.0
2272	681925.54	943156.54	8728.14	I-70 CM-MP 227.2
2274	682575.10	943765.60	8674.86	I-70 CM-MP 227.4
2276	683546.20	944496.58	8605.82	I-70 CM-MP 227.6
2278	684496.13	944651.13	8542.89	I-70 CM-MP 227.8
2279	685361.17	944727.40	8510.17	I-70 CM-MP 227.9
2281	686302.96	944908.57	8494.48	I-70 CM-MP 228.1
LOOP	681270.33	942881.23	8788.00	NGS PID AA5362
Q 449	678544.04	930268.72	9299.03	NGS PID DF5485

Project Coordinate Parameters:

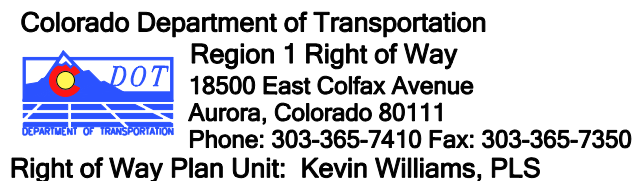
Geodetic coordinates are based on NAD 83(1992)
Orthometric Heights are shown in NAVD 88
State Plane coordinates are Colorado Central Zone (502)
Units are in US Survey Feet (sft)
Project (Ground) coordinates are Modified State Plane
Combined Project factor = 0.999573933
Combined Project Factor Reciprocal = 1.0004262494
Truncation applied to State Plane Coordinates:
Northing Reduction 1,000,723.09 sft
Easting Reduction 2,001,249.20 sft

Note: The reason for the odd truncation is in order to match previously established project coordinates.

Conversion Example of State Plane Coordinates to Project Coordinates:

State Plane Northing x 1.0004262494 - 1,000,723.09 (sft) = Project Northing (sft)
State Plane Easting x 1.0004262494 - 2,001,249.20 (sft) = Project Easting (sft)

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POINT NAME	PROJECT COORDINATES US FT		DESCRIPTION
	NORTHING	EASTING	
200	686337.57	944952.05	Found 1.5" dia. alum. cap, 0.5' out of the ground, cap stamped "5274".
201	686739.08	944994.08	Found 1.25" dia. yellow plastic cap, 0.2' out of the ground, cap stamped "R.L.S. 10847".
202	686985.15	945019.99	Found 1" dia. yellow plastic cap, 0.4' out of the ground, cap stamped "RICHMOND PLS 25298".
204	687047.97	944526.45	Found #5 rebar, 0.6' out of the ground, no cap.
205	687038.51	944526.35	Found 1' wide by 2' tall stone marked "6724 46".
206	686957.38	944509.40	Found 1.5" dia. red plastic cap on #5 rebar, 0.2' out of the ground, cap unreadable.
207	686601.08	944671.46	Found 3.25" dia. brass cap set in 0.5' dia. conc., 1' out of ground, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
208	684485.05	944896.68	Found 0.5" dia. steel rod, flush, no cap.
209	678059.24	935730.80	Found 1" dia. orange plastic cap on #3 rebar, 0.2' out of the ground, cap stamped "HAYES & SOUCIE RLS 10388".
210	677950.61	935727.26	Found 1" dia. orange plastic cap on #3 rebar, 0.3' out of the ground, cap stamped "HAYES & SOUCIE RLS 10388".
211	678060.95	935418.30	Found 1.5" dia. alum. cap stamped "GREG MARKLE 25373".
212	678058.80	935570.08	Found 1" dia. iron bar, no cap.
213	678057.88	935699.07	Found 1" dia. iron bar, no cap.
215	678551.17	936944.54	Found 1" dia. red plastic cap, 0.2' out of the ground, cap stamped "GREG MARKLE LS 25373".
216	678592.72	937002.95	Found 1" dia. red plastic cap, 0.2' out of the ground, cap stamped "GREG MARKLE LS 25373".
217	678518.09	936897.59	Found 1" dia. red plastic cap, 0.2' out of the ground, cap stamped "GREG MARKLE LS 25373".
218	678610.21	937028.10	Found 1" dia. red plastic cap, 0.3' out of the ground, cap stamped "GREG MARKLE LS 25373".
219	678214.91	936422.57	Found 1" dia. yellow plastic cap on #3 rebar, flush with ground, cap unreadable.
220	678162.97	936177.58	Found 1" dia. yellow plastic cap, 0.1' above 2' x 2' conc. and rock pillar, cap stamped "RLS 10847".
221	685185.23	945008.87	Found 1.25" dia. red plastic cap, 0.2' out of the ground, 0.4' west of fence, cap stamped "ALPINE SURVEY LS 9896".
222	685234.93	945016.39	Found "T" post, 1' out of the ground.
270	681098.40	942501.35	Found 3.25" dia. BLM brass cap, 1.2' below the ground, cap stamped in part "CADASTRAL SURVEY, BUR. OF LAND MANAGEMENT, S 17 GEORGETOWN O 1964".
1010	679868.18	939900.09	Found 3.25" dia. brass cap set flush in rock outcrop, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
1015	679840.27	939879.47	Found 3.25" dia. brass cap set flush in rock outcrop, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
4004	679908.87	937999.22	Found 24" x 8" x 6" Stone Chiseled 1129-8
4007	679207.73	937249.25	Found 3.25" dia. brass cap set 0.8' above ground stamped "US DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MS 7894 CORNER 1, 1981"
4008	679286.12	937285.56	Found steel post adjacent to a 24" x 13" x 6" Stone, no markings found old flagging
4010	679779.06	937115.01	Found 3.25" dia. brass cap set 0.8' above ground stamped "US DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MS 810 CORNER 1, 1981"
4012	679629.79	937025.28	Found 3.25" dia. brass cap set 0.7' above ground stamped "US DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT MS 868 CORNER 1, 1981"
4013	679982.78	936312.56	Found 2.875" dia. brass cap set in metal grate 13' x 11' Stamped "State of Colorado Mined Land Reclamation Division ID 3"
4014	680165.99	936312.56	Found 2.875" dia. brass cap set in metal grate 13' x 11' Stamped "State of Colorado Mined Land Reclamation Division ID 4"
4015	679821.41	936323.99	Found 2.875" dia. brass cap set in metal grate 13' x 11' Stamped "State of Colorado Mined Land Reclamation Division ID 2"
4016	679829.32	936311.50	Found 2.875" dia. brass cap set in metal grate 13' x 11' Stamped "State of Colorado Mined Land Reclamation Division ID 1"
4018	684731.78	944036.51	Found 3.25" dia. brass cap on 3" pipe set in rock mound Stamped "US DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT Georgetown Corner 12"
4019	684923.83	944079.13	Found 1" Red Plastic Cap, on #5 Rebar 0.4' above ground stamped "LS 25353"
4020	684924.14	944075.79	Found 1/2" Metal Rod in Ground 0.2' Above the ground no markings
7011	681773.38	943213.08	Found 3.25" dia. brass cap set in 0.5' dia. conc., 0.5' out of the ground, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
7079	681522.33	943403.81	Found 3.25" dia. brass cap set in 0.5' dia. conc., 0.7' out of the ground, cap stamped "STATE HIGHWAY DEPT - FAP NO - Sta 315+00 EI 8572.80 - R.O.W. MARKER".
7088	686240.62	944941.52	Found 3.25" dia. brass cap set in 0.5' dia. conc., flush with ground, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
7107	684615.01	944753.85	Found 3.25" dia. brass cap set in 0.5' dia. conc., 0.7' out of the ground, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
7115	685441.24	944480.04	Found 3.25" dia. brass cap set in 0.5' dia. conc., 0.7' out of ground, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
7131	686988.62	945020.36	Found 3.25" dia. brass cap set in 0.5' dia. conc., 0.7' out of the ground, cap stamped "COLO DEPT OF HIGHWAYS R.O.W. MARKER".
7135	685577.66	944445.43	Found 1.5" dia. orange plastic cap on #5 rebar, 0.2' above the ground, cap stamped "HIS CONSULTS PLS 20140".
7136	686106.20	944507.51	Found 1.5" dia. red plastic cap on #5 rebar, 0.3' out of the ground, cap stamped "GREG MARKLE LS 25373".
7174	687351.83	944592.77	Found 1.5" dia. red plastic cap on #5 rebar, 0.6' out of the ground, cap stamped "GREG MARKLE LS 25373".
7			

