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SURVEYS AT PAGE _____, RECEPTION NUMBER _____
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14927_PH2_LSCD_2D.dgn PLOT/EDIT R. Edwards/B. Claybrook

Colorado Department of Transportation



18500 East Colfax Avenue
Aurora, CO 80011
Phone: 303-365-7409 FAX: 303-365-7350

Region 1

DAVID A. STEWART

DAS

Sheet Revisions



SH 9 MP 93.12 to MP 95.43
Located in
Section 35, 36, T. 5 S. R. 78 W
Section 31 T. 5 S. R. 77 W
SUMMIT COUNTY, COLORADO



LAND SURVEY CONTROL DIAGRAM

STA 0091-024 Phase II

Swan Mtn. Rd. to Frisco

PROJECT CODE: 14927

Sheet Subset: 1 of 5

Sheet Number: 3

LAND SURVEY CONTROL DIAGRAM

GEODETTIC COORDINATE SUMMARY TABLE (ADJUSTED FIELD DATA)

POINT NAME	GEODETTIC COORDINATES NAD-83(92) (CHARN)		ELLIP. HEIGHT	ELEV. (NAVD '88)m	MAPPING ANGLE	SCALE	NAD 83(92) ZONE 0502	
	LATITUDE(N)	LONGITUDE(W)					NORTHING (m)	EASTING (m)
OVERLOOK 1993	39° 36' 3.21581" N	106° 5' 23.07948" W	2786.529	2799.093	-0° 22' 19.00405"	0.999973905	501181.547	863751.001
FERRIS 1998	39° 29' 10.77095" N	106° 3' 8.25642" W	2956.438	2969.036	-0° 20' 53.97256"	0.999958472	488441.984	866890.139
USCGS BM J 299 1951	39° 31' 23.18370" N	106° 2' 44.53913" W	2822.559	2835.175	-0° 20' 39.01431"	0.999962990	492521.976	867481.414
SH 9 CM-MP 93.12	39° 34' 4.35482" N	106° 3' 18.64892" W	2742.220	2754.823	-0° 21' 0.52700"	0.999969046	497497.253	866697.132
SH 9 CM-MP 93.33	39° 34' 13.66960" N	106° 3' 24.10872" W	2743.022	2755.629	-0° 21' 3.97043"	0.999969415	497785.310	866568.577
SH 9 CM-MP 94.22	39° 34' 34.78036" N	106° 3' 47.57379" W	2750.828	2763.427	-0° 21' 18.76961"	0.999970258	498439.800	866012.565
SH 9 CM-MP 94.41	39° 34' 27.53504" N	106° 3' 56.31284" W	2759.849	2772.452	-0° 21' 24.28124"	0.999969967	498217.656	865802.614
SH 9 CM-MP 94.56	39° 34' 21.32542" N	106° 4' 2.91734" W	2768.157	2780.759	-0° 21' 28.44663"	0.999969719	498027.140	865643.795
SH 9 CM-MP 94.63	39° 34' 20.26105" N	106° 4' 7.56545" W	2771.869	2784.469	-0° 21' 31.37815"	0.999969677	497995.009	865532.655
SH 9 CM-MP 94.82	39° 34' 22.29196" N	106° 4' 20.60356" W	2777.914	2790.511	-0° 21' 39.60114"	0.999969758	498059.595	865221.874
SH 9 CM-MP 94.98	39° 34' 19.07414" N	106° 4' 30.72224" W	2774.755	2787.335	-0° 21' 45.98289"	0.999969630	497961.886	864979.748
SH 9 CM-MP 94.99	39° 34' 19.07395" N	106° 4' 30.48284" W	2775.054	2787.630	-0° 21' 45.83000"	0.9999696	497961.844	864985.462
SH 9 CM-MP 95.23	39° 34' 21.31456" N	106° 4' 48.78807" W	2752.704	2765.281	-0° 21' 57.37682"	0.999969719	498033.721	864549.017
SH 9 CM-MP 95.43	39° 34' 23.51654" N	106° 5' 1.85410" W	2746.814	2759.384	-0° 22' 5.61743"	0.999969807	498103.626	864237.612

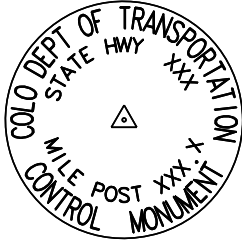
PROJECT COORDINATE SUMMARY TABLE (ADJUSTED FIELD DATA FEET)

POINT NAME	PROJECT COORDINATES		ELEV(ft) NAVD '88'	DESCRIPTION
	NORTH (ft)	EAST (ft)		
CM-MP 93.12	1632981.00	2844839.73	9038.12	CDOT Type II Control Monument
CM-MP 93.33	1633926.52	2844417.76	9040.76	CDOT Type II Control Monument
CM-MP 93.52*	1635065.81	2844757.80	9039.18	CDOT Type II Control Monument
CM-MP 93.66*	1635632.63	2844617.27	9039.83	CDOT Type II Control Monument
CM-MP 93.84*	1636465.03	2844171.44	9043.08	CDOT Type II Control Monument
CM-MP 93.96*	1636760.21	2843638.93	9045.84	CDOT Type II Control Monument
CM-MP 94.22 DESTROYED	1636074.81	2842592.71	9066.34	CDOT Type II Control Monument
CM-MP 94.41 DESTROYED	1635345.65	2841903.57	9095.95	CDOT Type II Control Monument
CM-MP 94.56	1634720.30	2841382.27	9123.21	CDOT Type II Control Monument
CM-MP 94.63	1634614.84	2841017.46	9135.38	CDOT Type II Control Monument
CM-MP 94.82	1634826.83	2839997.35	9155.20	CDOT Type II Control Monument
CM-MP 94.98 DESTROYED	1634506.11	2839202.60	9144.78	CDOT Type II Control Monument
CM-MP 94.99*	1634505.97	2839221.36	9145.75	CDOT Type II Control Monument
CM-MP 95.23	1634741.90	2837788.77	9072.43	CDOT Type II Control Monument
CM-MP 95.43	1634971.36	2836766.62	9053.08	CDOT Type II Control Monument

*ESTABLISHED BY CONVENTIONAL CLOSED TRAVERSE.

CONSTRUCTION SURVEYING AND MONUMENTATION REQUIREMENTS:

- This Control Survey Diagram represents the horizontal and vertical control for the project established by the Division. 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.
- All Type 1 and Type 2 monuments shall be set flush with the ground. Witness posts shall be installed 2 foot from and facing all Type 1 and Type 2 monuments, or as directed by the Project Engineer.
- 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.
- 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.
- Control survey procedures, statistical analysis, and accuracy obtained for horizontal and vertical control shall be documented in the field book.
- Legible copies of the field books shall be submitted to the Project Engineer for review on a monthly basis.
- 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.
- 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.
- Whenever the contract includes the setting of CDOT Primary Control monuments, a 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.



Typical Control
Monument Cap
Not to Scale



CM-MP - Control Point Monuments set by CDOT. They are CDOT type 2 monuments, a 3-1/4" dia. aluminum control monument cap (as shown) on a 3' X 3/4" dia. finned aluminum security rod on a 3' X 3/4" dia. smooth aluminum rod.

BASIS OF BEARINGS: Bearings used in the calculation of coordinates are based on a grid bearing of N 24°03'02" W from CM-MP 93.12 to CM-MP 93.33 as obtained from a Global Positioning System (GPS) survey based on the Colorado High Accuracy Reference Network (CHARN).

BASIS OF ELEVATIONS: Project is based on a U.S.Coast and Geodetic Survey (USCGS) benchmark J 299, a found 3 1/4" brass cap in a 10" diameter concrete post stamaped J 299 1951. Approximately 105 ft. easterly of the present east edge of asphalt of SH. 9 at mile post 89.64 with a NAVD 1988 and project elevation of 9301.74 ft. (2835.175 m). J 299 1951 is on Colorado Line 89, a First Order Class II benchmark leveled in 1951 and adjusted by National Geodetic Survey in June 1991.

COORDINATE DATUM: Project coordinates are modified Colorado State Plane Central Zone NAD '83(92) coordinates. State plane coordinates are modified to a mean project elevation of 2810.000 meters. The combined factor used to convert from state plane to project coordinates is 1.000475081. Conversion example: Conversion meters to feet: 3937/1200. State Plane Northing in USFT x 1.000475081 = Project Northing in USFT. State Plane Easting in USFT x 1.000475081 = Project Easting in USFT.

NOTE: This control survey is for the use of the Colorado Department of Transportation. The survey is not a Boundary Survey, Land Survey Plat, or Right of Way Plat. No determination has been made if the found monuments as shown are in their proper position or if they are at the corners they are intended to monument. Title Policy, Title commitment, and title research, are not a part of this survey, therefore easements, rights, and restrictions of record were not researched and are not shown on this diagram.

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

NOTE: 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.

NOTE: No guarantee as to the accuracy of the information contained on the attached drawing is either stated or implied unless this copy bears an original signature of the professional land surveyor hereon named.

SURVEYOR STATEMENT (LAND SURVEY CONTROL DIAGRAM)

I, Betty J. Claybrook, a Professional Land Surveyor in the State of Colorado do hereby state for and on the behalf of that Colorado Department of Transportaion 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.

Betty J. Claybrook
Colorado PLS No. 31150

Date

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STATE OF COLORADO
C.D.O.T. FORM 126Ro:
REVISED: JULY 1996

Colorado Department of Transportation



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Aurora, CO 80011
Phone: 303-365-7409 FAX: 303-365-7350

Region 1

DAVE A. STEWART

DAS

Sheet Revisions

SH 9 MP 93.12 to MP 95.43

Located in

Sec. 35, 36 of T.5S., R.78W.

Sec. 31 of T.5S., R.77W.

SUMMIT COUNTY, COLORADO

LAND SURVEY CONTROL DIAGRAM

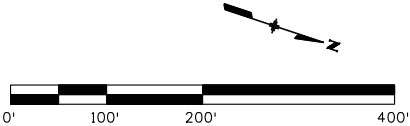
STA 0091-024 Phase II

Swan Mtn. Rd. to Frisco

PROJECT CODE: 14927

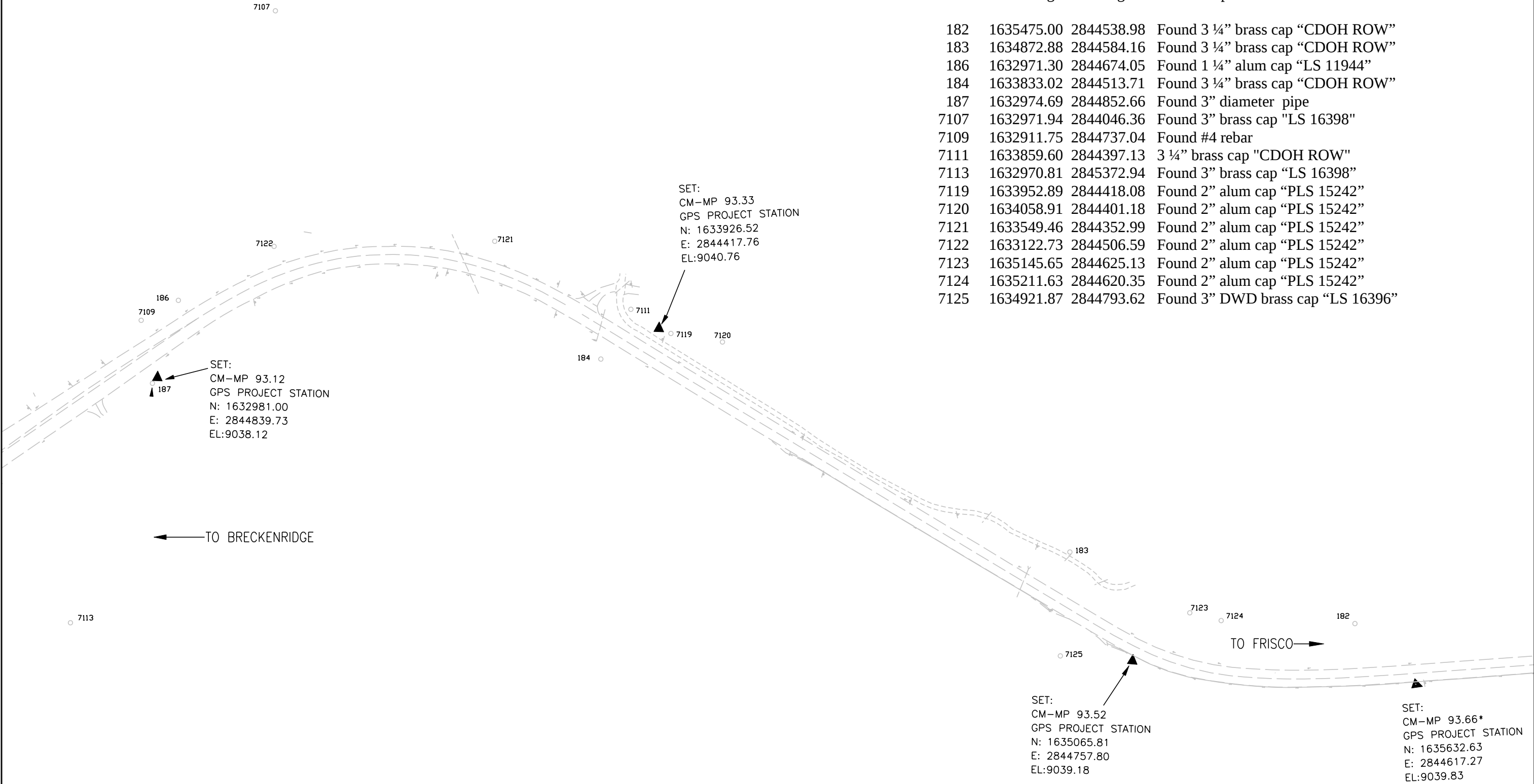
Sheet Subset: 2 of 5

Sheet Number: 3A



Point # Northing Easting Description

182	1635475.00	2844538.98	Found 3 ¼” brass cap “CDOH ROW”
183	1634872.88	2844584.16	Found 3 ¼” brass cap “CDOH ROW”
186	1632971.30	2844674.05	Found 1 ¼” alum cap “LS 11944”
184	1633833.02	2844513.71	Found 3 ¼” brass cap “CDOH ROW”
187	1632974.69	2844852.66	Found 3” diameter pipe
7107	1632971.94	2844046.36	Found 3” brass cap "LS 16398"
7109	1632911.75	2844737.04	Found #4 rebar
7111	1633859.60	2844397.13	3 ¼” brass cap "CDOH ROW"
7113	1632970.81	2845372.94	Found 3” brass cap “LS 16398”
7119	1633952.89	2844418.08	Found 2” alum cap “PLS 15242”
7120	1634058.91	2844401.18	Found 2” alum cap “PLS 15242”
7121	1633549.46	2844352.99	Found 2” alum cap “PLS 15242”
7122	1633122.73	2844506.59	Found 2” alum cap “PLS 15242”
7123	1635145.65	2844625.13	Found 2” alum cap “PLS 15242”
7124	1635211.63	2844620.35	Found 2” alum cap “PLS 15242”
7125	1634921.87	2844793.62	Found 3” DWD brass cap “LS 16396”



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Region 1 DAVE A. STEWART DAS

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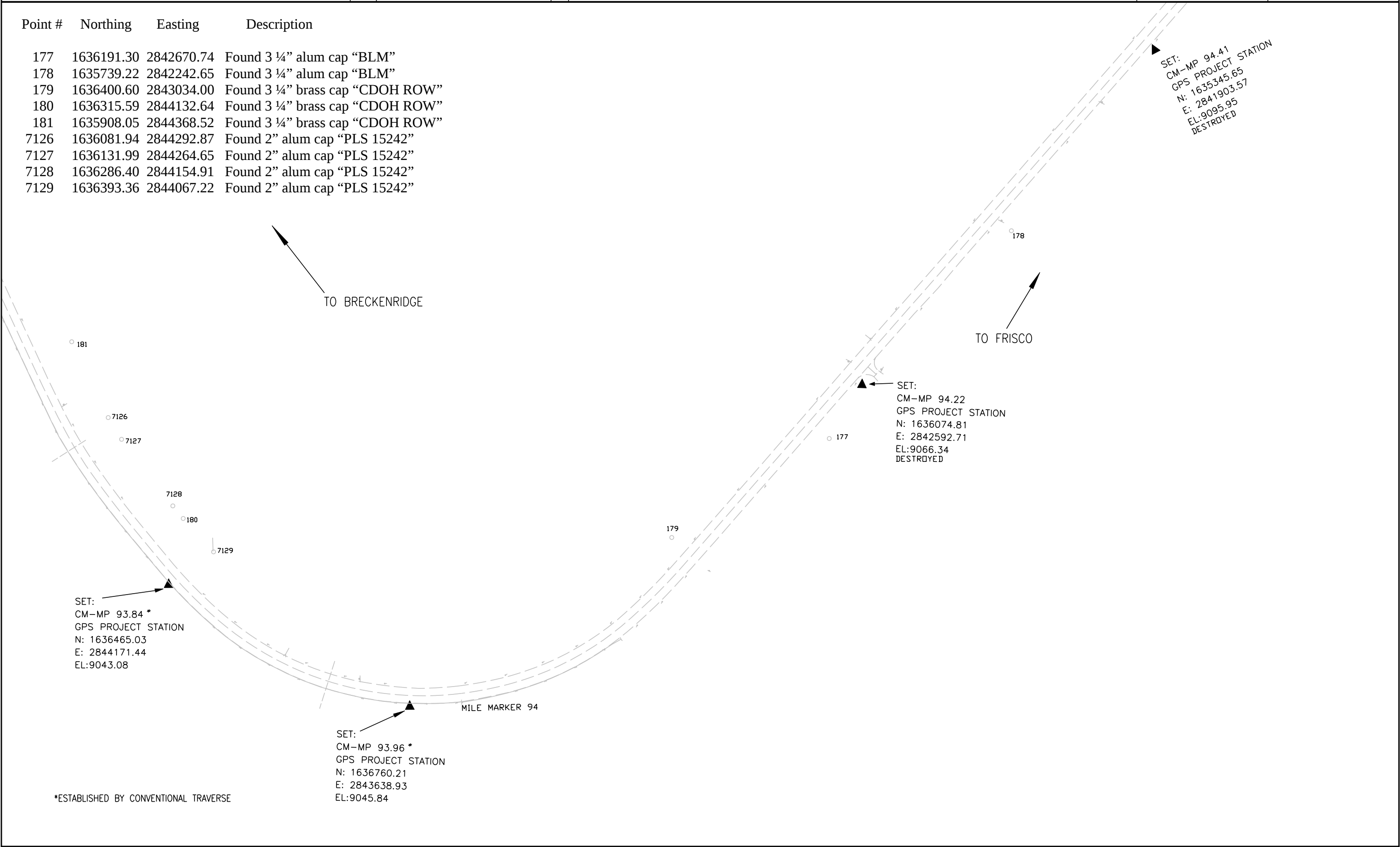
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Sheet Subset: 3 of 5 Sheet Number: 38

Point #	Northing	Easting	Description
177	1636191.30	2842670.74	Found 3 ¼” alum cap “BLM”
178	1635739.22	2842242.65	Found 3 ¼” alum cap “BLM”
179	1636400.60	2843034.00	Found 3 ¼” brass cap “CDOH ROW”
180	1636315.59	2844132.64	Found 3 ¼” brass cap “CDOH ROW”
181	1635908.05	2844368.52	Found 3 ¼” brass cap “CDOH ROW”
7126	1636081.94	2844292.87	Found 2” alum cap “PLS 15242”
7127	1636131.99	2844264.65	Found 2” alum cap “PLS 15242”
7128	1636286.40	2844154.91	Found 2” alum cap “PLS 15242”
7129	1636393.36	2844067.22	Found 2” alum cap “PLS 15242”



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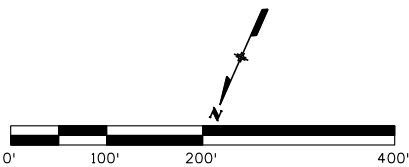
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Region 1 DAVE A. STEWART DAS

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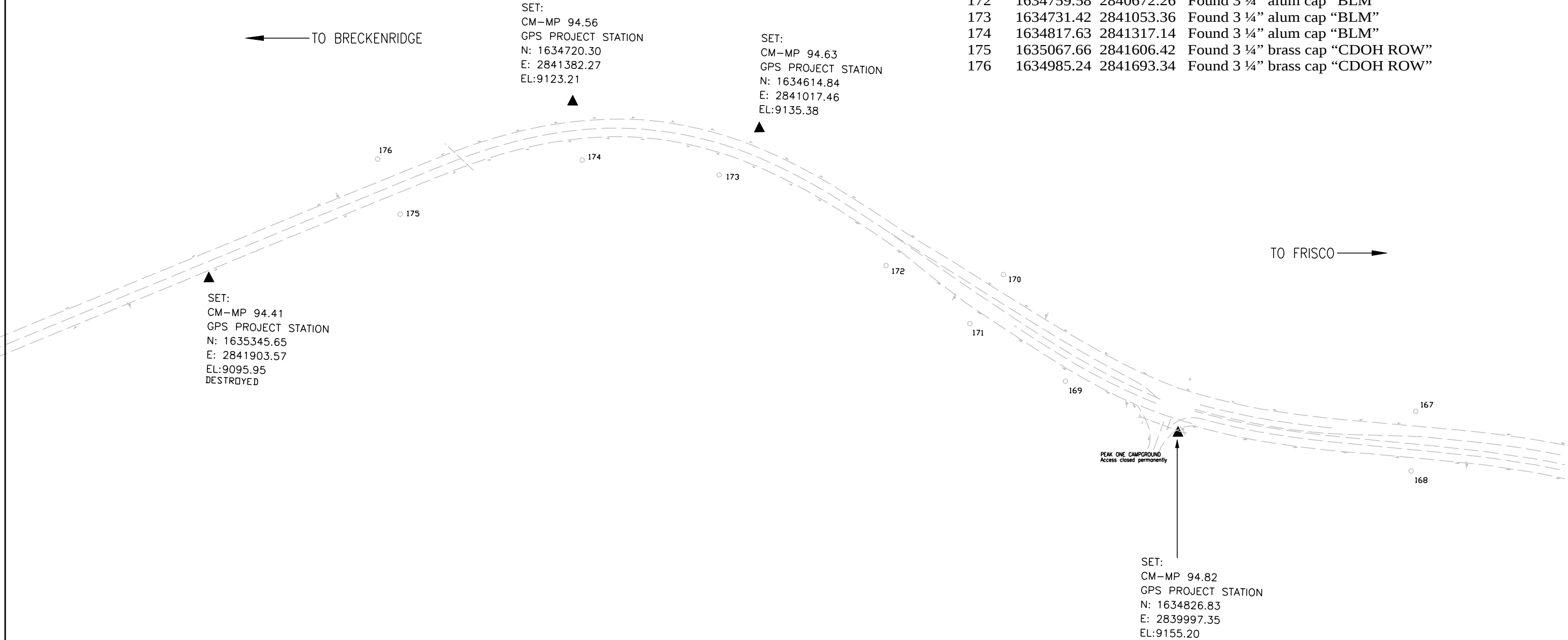
Swan Mtn. Rd. to Frisco

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Sheet Subset: 4 of 5

Sheet Number: 3C

Point #	Northing	Easting	Description
167	1634588.72	2839579.58	Found 3 ¼” brass cap “CDOH ROW”
168	1634701.84	2839538.66	Found 3 ¼” brass cap “CDOH ROW”
169	1634823.28	2840247.35	Found 3 ¼” alum cap “BLM”
170	1634678.85	2840449.19	Found 3 ¼” brass cap “CDOH ROW”
171	1634796.83	2840470.39	Found 3 ¼” brass cap “CDOH ROW”
172	1634759.58	2840672.26	Found 3 ¼” alum cap “BLM”
173	1634731.42	2841053.36	Found 3 ¼” alum cap “BLM”
174	1634817.63	2841317.14	Found 3 ¼” alum cap “BLM”
175	1635067.66	2841606.42	Found 3 ¼” brass cap “CDOH ROW”
176	1634985.24	2841693.34	Found 3 ¼” brass cap “CDOH ROW”



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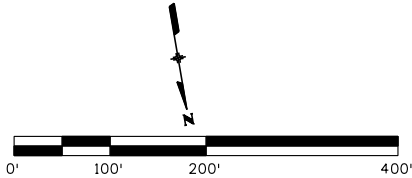
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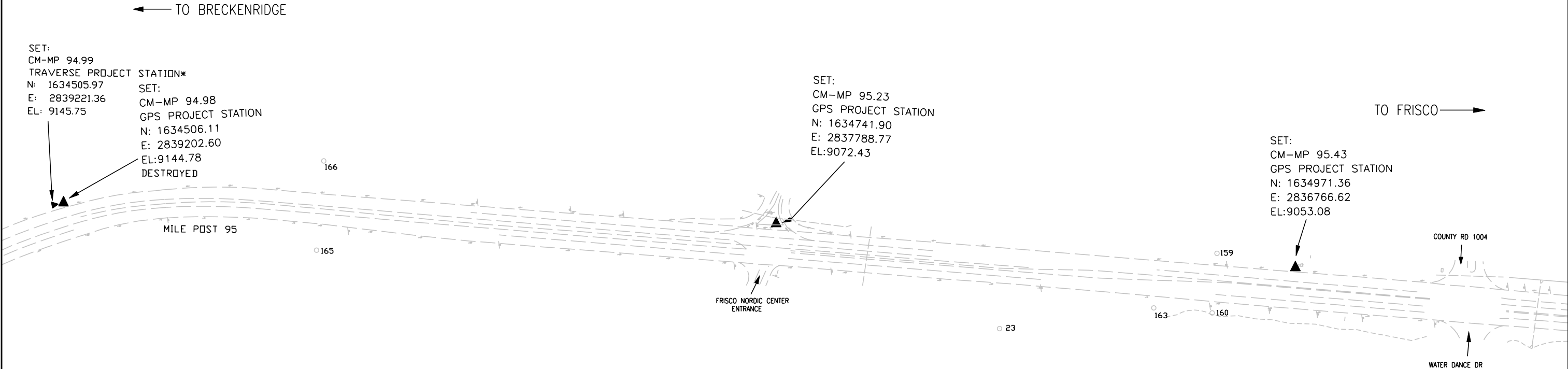
Swan Mtn. Rd. to Frisco

PROJECT CODE: 14927

Sheet Subset: 5 of 5

Sheet Number: 30

Point #	Northing	Easting	Description
23	1635010.51	2837371.99	Found 3 ¼” brass cap “BLM”
159	1634920.01	2836918.39	Found 3 ¼” brass cap “CDOH ROW”
160	1635037.28	2836944.24	Found 3 ¼” brass cap “CDOH ROW”
163	1635011.35	2837059.17	Found 1” red plastic cap “PLS 15242”
165	1634667.95	2838711.12	Found 3 ¼” brass cap “CDOH ROW”
166	1634492.20	2838672.39	Found 3 ¼” brass cap “CDOH ROW”



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