ANALYSIS OF CONTRACT PLANS

OVERVIEW

NOTE: Refer to "Conventions Used in this Manual", in Chapter 1, for terminology used in this chapter and/or the order of precedence of contract documentation.

- This chapter is an outline of the analysis of contract plans as it relates to the identification of standard procedures from the Location Division at the Nevada Department of Transportation. Many of the citations within this chapter have been directly referenced from the Location Division's *Special Instructions for Location Consultants*. The Location Division publishes this manual for the benefit of contractors wishing to provide consulting services for the Department, but it also serves as a guide for survey standards Department wide.

UNITS OF MEASUREMENT

Currently, the U.S. Survey Foot is the recognized unit of measurement at the Nevada Department of Transportation for all survey work, with sub units of tenths and hundredths of a foot. In years past, contracts may have been designed in meters as well, with sub units of millimeters. Current contracts that are to tie to legacy surveys in metric must also be in metric.

ACCURACY

Accuracy for construction stakeout surveys should adhere to the standards set forth in the *Special Instructions for Location Consultants*. The specific applicable reference in the manual is titled, "Minimum Engineering Survey Standards". An excerpt from that section concerning Positional Tolerance is shown in Table 1.

TABLE 1: CONTRACT STAKEOUT SURVEY POSITIONAL TOLERANCES

	HORIZONTAL (+/-)		VERTICAL (+/-)	
Rough Grade Stakes	0.15m	0.50ft	0.05m	0.16ft
Sub grade Red Head Stakes	0.05	0.16	0.01	0.03
Finish Grade Blue Top Stakes	0.05	0.16	0.01	0.03
Building Offset Stakes	0.005	0.03	0.01	0.03
Sewer Offset Stakes	0.05	0.16	0.01	0.03
Waterline Offset stakes	0.05	0.16	0.02	0.07
Hydrant Offset stakes	0.05	0.16	0.01	0.03
Street Lights	0.05	0.16	0.03	0.10
Curb Offsets	0.01	0.03	0.01	0.03
Structural Concrete	0.01	0.03	0.01	0.03

MONUMENT IDENTIFICATION

Survey Monuments at the Nevada Department of Transportation are to be set or located prior to construction by a Location Division Survey. These monuments may vary in character and location due to the type and age of the particular monument.

The specific location of each control point is identified by coordinates. NDOT uses three types of coordinate systems:

1. Geodetic: A coordinate system based on the shape of the earth being approximately a sphere, with coordinates being in latitudes and longitudes (39-15-5.10626, -119-58-24.50336)
2. Universal Transverse Mercator (UTM): A coordinate system based on the shape of the earth being approximately a cylinder, with coordinates measured in meters (4348892.17, 243412.25)\
3. State Plane Coordinate System: A coordinate system similar to the UTM, modified to reduce errors due to the curvature of the earth, with coordinates measured in feet (14765156.56, 2231013.09)

Federal law prohibits the willful damage or destruction of monuments established by federal government agencies. The following federal agencies have placed markers throughout the state to establish vertical and horizontal controls for future surveys:

- U.S. General Land Office (Bureau of Land Management) (USGLO)
- U.S. Bureau of Land management (BLM)
- United States Geological Survey (USGS)
- United States Coast and Geodetic Surveys (USC & GS)
- National Geodetic Survey (NGS)

Figure 2-1: Construction Control Feno Monument

For a complete list of potential monument types that may be encountered in the field, refer to the *Special Instructions for Location Consultants* under the sub-heading of "Instructions for Setting and Stamping of Control Monuments".

Any monuments pertinent to a contract will be listed in the contract plans' project control sheet, referred to as the Location Control (LC) sheet (refer to Figure 2-2 through Figure 2-9). The project control sheet is prepared by the Geodesy Section of the Location Division. These control sheets are generally completed when the design is 30 percent complete, and they are typically included in the 90 percent complete plans.

When control sheets are not available, the construction survey crew must use the original roadway reference monuments previously set by construction. If the crew cannot find the original survey monuments, the Resident Engineer may request that the Location Division establish control. Contact the Location Division's Geodesy Section for any questions concerning project control.

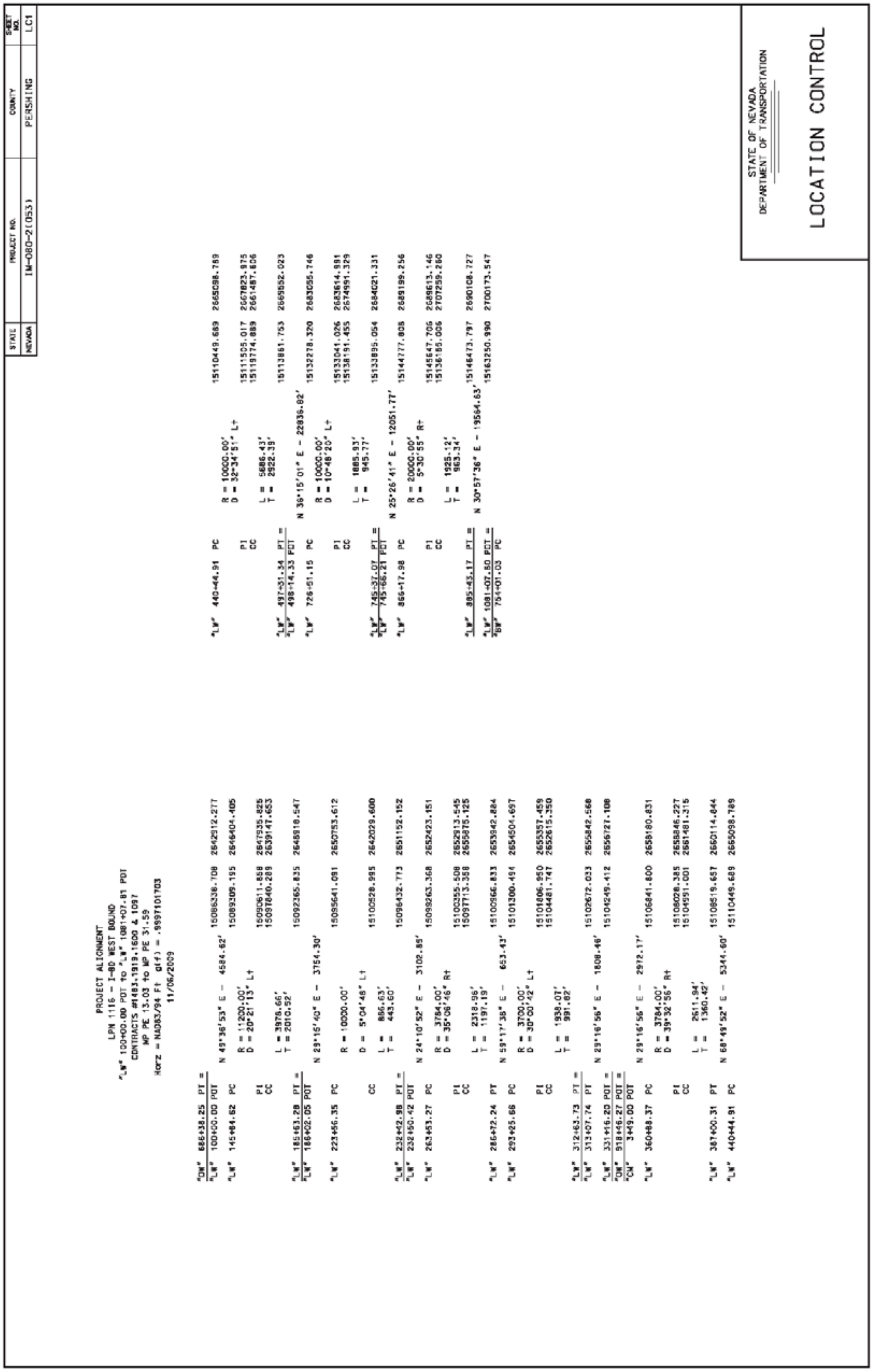


Figure 2-2: Project Control Sheet Sample (1 of 8)

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)	PERSHING	LC2

VERTICAL DATUM: ELEVATIONS ARE BASED UPON NAVD88 HOLDING PUBLISHED USC & GS BENCH MARK AND NDOT CONTROL MONUMENTS: 846003M(3982.082), K 317X(3958.056), Q 297Z(4026.422), V 145X(4164.818) AS FIXED.

BEARING SOURCE: BEARINGS OF THIS MAP WERE DERIVED FROM NEVADA STATE PLANE COORDINATES NAD 83/94 DATUM WEST ZONE, WITH A MEAN CONVERGENCY OF 0°05'57". USING LOCAL CONTROL POINTS: 846003M, FAA LOL AZ, K 317X, Q 297Z, V 145X AS FIXED AND IS FURTHER ARCHIVED AT NDOT UNDER FILE LPN 1116. COORDINATES AND DISTANCES REFLECT A SINGLE COMBINATION GROUND TO GRID FACTOR OF 0.9997101703 AND HAVE BEEN CONVERTED TO FEET. MONUMENTS ARE STAMPED WITH "NDOT" AND MONUMENT NAME UNLESS NOTED IN DESCRIPTION.

SPECIAL NOTE: PLSS MONUMENTS LISTED IN THIS CONTRACT ARE REQUIRED TO BE PERPETUATED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEVADA TO ASSURE COMPLIANCE WITH NEVADA REVISED STATUTES,CHAPTERS 329 & 625. ANY MONUMENTS FOUND DURING SURVEY, MAPPING, CONSTRUCTION OR MAINTENANCE PHASES OF NEVADA DEPARTMENT OF TRANSPORTATION PROJECTS NOT LISTED FOR PERPETUATION IN THE CONTRACT PLANS SHALL BE PERPETUATED IN ACCORDANCE WITH THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION. TRANSPORTATION POLICY (TP) 3-1-3, TITLED PERPETUATION OF SURVEY MONUMENTS, DATED JANUARY 13, 1999.

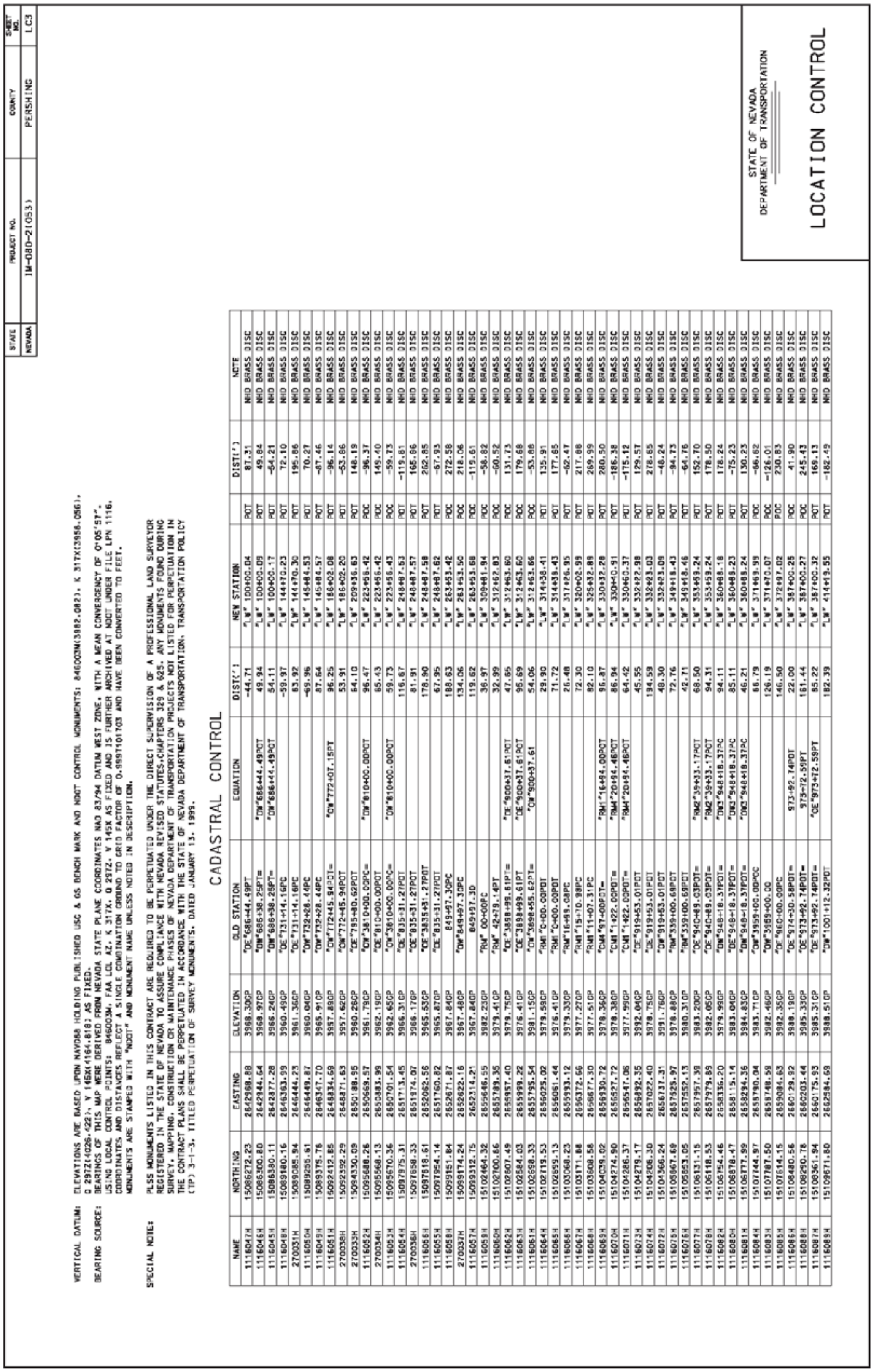
CONSTRUCTION CONTROL

NAME	NORTHING	EASTING	ELEVATION	EQUATION	OLD STATION	DIST(')	NEW STATION		DIST(')	NOTE
1116001M	15093590.81	2649758.41	3960.665				"LW" 200+81.24	POT	133.94	NDOT FENO
K_317X	15093788.86	2650003.95	3958.056				"LW" 203+74.03	POT	251.35	NGS BM
1116002M	15094851.03	2650481.66	3961.596				"LW" 215+34.17	POT	148.92	NDOT FENO
1116003M	15096793.68	2651440.47	3981.301				"LW" 236+97.94	POT	115.10	NDOT FENO
1116004M	15098737.62	2652374.36	3968.594				"LW" 258+53.85	POT	170.77	NDOT FENO
1116005M	15100039.18	2653067.90	3976.383				"LW" 273+74.37	POC	138.46	NDOT FENO
1116006M	15102222.30	2655701.34	3987.200				"LW" 308+16.34	POC	124.71	NDOT FENO
1116007M	15103676.47	2656725.28	3977.994				"LW" 326+15.58	POT	278.64	NDOT FENO
1116008M	15105221.92	2657470.56	3981.760				"LW" 343+28.08	POT	172.79	NDOT FENO
1116009M	15106562.23	2658213.68	3981.567				"LW" 358+60.59	POT	165.39	NDOT FENO
1116010M	15107968.28	2658984.84	3990.153				"LW" 374+57.95	POT	-101.43	NDOT FENO
1116011M	15108584.04	2660630.20	3989.123				"LW" 392+04.14	POT	126.07	NDOT FENO
1116012M	15109070.97	2662239.59	3987.453				"LW" 408+60.77	POT	253.17	NDOT FENO
1116013M	15109593.97	2663217.82	3992.088				"LW" 419+81.85	POT	118.72	NDOT FENO
1116014M	15109944.35	2664542.74	3993.483				"LW" 433+43.89	POT	270.44	NDOT FENO
1116015M	15110596.37	2666096.42	3991.862				"LW" 450+03.74	POC	270.66	NDOT FENO
1116016M	15111489.53	2667568.29	4004.739				"LW" 466+91.46	POT	277.25	NDOT FENO
1116017M	15112655.53	2668867.10	4007.836				"LW" 483+63.62	POT	253.89	NDOT FENO
1116018M	15113873.82	2669930.00	4011.908				"LW" 500+47.56	POT	297.68	NDOT FENO
1116019M	15115459.16	2670589.09	4014.018				"LW" 517+15.77	POT	-108.23	NDOT FENO
1116020M	15116684.42	2671956.84	4018.640				"LW" 535+12.64	POT	270.26	NDOT FENO
1116021M	15118080.61	2673068.88	4013.667				"LW" 552+96.15	POT	341.47	NDOT FENO
1116022M	15119399.41	2674022.74	4017.948				"LW" 569+23.72	POT	330.88	NDOT FENO
1116023M	15120671.95	2675015.29	4013.981				"LW" 585+36.86	POT	378.84	NDOT FENO
1116024M	15122011.73	2675973.17	4020.537				"LW" 601+83.72	POT	359.09	NDOT FENO
1116025M	15123221.17	2676870.87	4026.698				"LW" 616+89.88	POT	367.87	NDOT FENO
1116026M	15124539.85	2677826.57	4040.261				"LW" 633+18.44	POT	358.84	NDOT FENO
1116027M	15125765.85	2678746.87	4047.318				"LW" 648+51.32	POT	376.05	NDOT FENO
1116028M	15127178.91	2679652.62	4059.080				"LW" 665+26.46	POT	270.93	NDOT FENO
1116029M	15128647.47	2680316.61	4071.724				"LW" 681+03.39	POT	-61.98	NDOT FENO
1116030M	15129702.01	2681638.86	4099.979				"LW" 697+35.68	POT	380.77	NDOT FENO
1116031M	15131097.96	2682644.45	4111.252				"LW" 714+56.05	POT	366.28	NDOT FENO
1116032M	15132586.98	2683648.91	4123.909				"LW" 732+32.92	POC	313.29	NDOT FENO
1116033M	15134173.62	2684475.04	4132.305				"LW" 750+12.68	POT	290.02	NDOT FENO
1116034M	15135642.29	2685175.03	4146.442				"LW" 766+39.63	POT	291.11	NDOT FENO
1116035M	15137381.96	2685995.22	4161.393				"LW" 785+62.94	POT	284.31	NDOT FENO
1116036M	15138898.31	2686730.41	4172.111				"LW" 802+48.07	POT	296.70	NDOT FENO
1116037M	15140450.17	2687470.19	4214.457				"LW" 819+67.24	POT	297.98	NDOT FENO
1116038M	15142036.12	2688232.19	4251.967				"LW" 837+26.74	POT	304.68	NDOT FENO
1116039M	15143552.46	2688835.36	4192.639				"LW" 853+55.14	POT	197.86	NDOT FENO
1116040M	15145206.70	2689702.55	4155.973				"LW" 872+29.58	POC	260.98	NDOT FENO
1116041M	15146547.68	2690432.52	4155.953				"LW" 887+73.10	POT	239.65	NDOT FENO
1116042M	15147981.14	2691302.20	4157.629				"LW" 904+49.73	POT	248.00	NDOT FENO
1116043M	15149515.98	2692288.19	4166.035				"LW" 922+73.13	POT	303.93	NDOT FENO
1116044M	15150981.25	2693167.52	4175.638				"LW" 939+62.00	POT	304.18	NDOT FENO

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL

Figure 2-3: Project Control Sheet Sample (2 of 8)



STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)	PERSHING	LC3

VERTICAL DATUM: ELEVATIONS ARE BASED UPON NAVD88 HOLDING PUBLISHED USC & GS BENCH MARK AND NDOT CONTROL MONUMENTS: 846003M(3982.082), K 317X(3956.056), Q 297Z(4026.422), V 145X(4164.818) AS FIXED.

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CADASTRAL CONTROL

NAME	NORTHING	EASTING	ELEVATION	OLD STATION	EQUATION	DIST(')	NEW STATION		DIST(')	NOTE
1116047H	15086272.23	2642968.88	3968.30GP	"OE"686+44.49PT		-44.71	"LW" 100+00.04	POT	87.31	NHD BRASS DISC
1116046H	15086300.80	2642944.64	3968.97GP	"OW"686+38.25PT=	"OW"686+44.49POT	49.94	"LW" 100+00.09	POT	49.84	NHD BRASS DISC
1116045H	15086380.11	2642877.28	3966.24GP	"OW"686+38.25PT=	"OW"686+44.49POT	54.11	"LW" 100+00.17	POT	-54.21	NHD BRASS DISC
1116048H	15089180.16	2646363.99	3960.49GP	"OE"731+14.16PC		-59.97	"LW" 144+70.23	POT	72.10	NHD BRASS DISC
270031H	15089085.94	2646444.23	3961.36GP	"OE"731+14.16PC		63.92	"LW" 144+70.30	POT	195.86	NHD BRASS DISC
1116050H	15089255.61	2646449.87	3960.04GP	"OW"732+28.44PC		-69.96	"LW" 145+84.53	POT	70.27	NHD BRASS DISC
1116049H	15089375.76	2646347.70	3965.91GP	"OW"732+28.44PC		87.64	"LW" 145+84.57	POT	-87.46	NHD BRASS DISC
1116051H	15092412.85	2648834.69	3957.89GP	"OW"772+45.94POT=	"OW"772+07.15PT	96.25	"LW" 186+02.08	POT	-96.14	NHD BRASS DISC
270038H	15092392.29	2648871.63	3957.62GP	"OW"772+45.94POT		53.91	"LW" 186+02.20	POT	-53.86	NHD BRASS DISC
270033H	15094330.09	2650188.95	3960.26GP	"OE"795+80.62POT		64.10	"LW" 209+36.63	POT	148.19	NHD BRASS DISC
1116052H	15095688.26	2650669.57	3961.79GP	"OW"3810+00.00PC=	"OW"810+00.00POT	96.47	"LW" 223+56.42	POC	-96.37	NHD BRASS DISC
270034H	15095568.13	2650883.99	3962.19GP	"OE"810+00.00POT		65.43	"LW" 223+56.42	POC	149.40	NHD BRASS DISC
1116053H	15095670.36	2650701.54	3962.65GP	"OW"3810+00.00PC=	"OW"810+00.00POT	59.73	"LW" 223+56.43	POC	-59.73	NHD BRASS DISC
1116054H	15097975.31	2651713.45	3966.31GP	"OE"835+31.27POT		116.67	"LW" 248+87.53	POT	-119.81	NHD BRASS DISC
270036H	15097658.33	2651974.07	3966.17GP	"OE"835+31.27POT		81.91	"LW" 248+87.57	POT	165.86	NHD BRASS DISC
1116056H	15097818.61	2652062.56	3965.53GP	"OE"3835+31.27POT		178.90	"LW" 248+87.58	POT	262.85	NHD BRASS DISC
1116055H	15097954.14	2651760.82	3965.87GP	"OE"835+31.27POT		67.95	"LW" 248+87.62	POT	-67.93	NHD BRASS DISC
1116058H	15099151.84	2652671.87	3967.84GP	849+97.30PC		188.63	"LW" 263+53.42	POC	272.58	NHD BRASS DISC
270037H	15099174.24	2652622.16	3967.48GP	"OW"849+97.30PC		134.06	"LW" 263+53.50	POC	218.06	NHD BRASS DISC
1116057H	15099312.75	2652314.21	3967.84GP	849+97.30		119.62	"LW" 263+53.68	POC	-119.61	NHD BRASS DISC
1116059H	15102464.32	2655646.55	3982.23GP	"RM" 00+00PC		36.97	"LW" 309+81.94	POC	-58.82	NHD BRASS DISC
1116060H	15102700.86	2655789.35	3979.41GP	"RM" 42+79.14PT		32.99	"LW" 312+62.83	POC	-60.52	NHD BRASS DISC
1116062H	15102607.49	2655957.40	3979.75GP	"OE"3898+99.61PT=	"OE"900+37.61POT	47.65	"LW" 312+63.60	POC	131.73	NHD BRASS DISC
1116063H	15102584.03	2655999.22	3976.41GP	"OE"3898+99.61PT	"OE"900+37.61POT	95.69	"LW" 312+63.60	POC	179.68	NHD BRASS DISC
1116061H	15102698.33	2655795.54	3981.15GP	"OW"3898+55.62PT=	"OW"900+37.61	54.06	"LW" 312+63.66	POC	-53.88	NHD BRASS DISC
1116064H	15102719.53	2656025.02	3979.59GP	"RM1"0+00.00POT		29.90	"LW" 314+38.41	POT	135.91	NHD BRASS DISC
1116065H	15102699.13	2656061.44	3976.41GP	"RM1"0+00.00POT		71.72	"LW" 314+38.43	POT	177.65	NHD BRASS DISC
1116066H	15103068.23	2655993.12	3979.33GP	"RM"16+69.08PC		26.48	"LW" 317+26.95	POT	-62.47	NHD BRASS DISC
1116067H	15103171.88	2656372.66	3977.27GP	"RM1"15+70.98PC		72.30	"LW" 320+02.99	POT	217.88	NHD BRASS DISC
1116068H	15103608.58	2656677.30	3977.51GP	"RM1"11+07.31PC		82.10	"LW" 325+32.89	POT	269.99	NHD BRASS DISC
1116069H	15104039.02	2656930.72	3978.36GP	"CM4"97+00POT=	"RM1"16+94.00POT	96.87	"LW" 330+32.28	POT	280.50	NHD BRASS DISC
1116070H	15104274.90	2656527.72	3978.38GP	"CM1"1+22.00POT=	"RM4"20+94.46POT	86.94	"LW" 330+40.91	POT	-186.38	NHD BRASS DISC
1116071H	15104286.37	2656547.06	3977.99GP	"CM1"1+22.00POT=	"RM4"20+94.46POT	64.42	"LW" 330+60.37	POT	-175.12	NHD BRASS DISC
1116073H	15104279.17	2656892.35	3992.04GP	"OE"919+53.01POT		45.55	"LW" 332+22.98	POT	129.57	NHD BRASS DISC
1116074H	15104206.30	2657022.40	3978.75GP	"OE"919+53.01POT		194.59	"LW" 332+23.03	POT	278.65	NHD BRASS DISC
1116072H	15104366.24	2656737.31	3991.76GP	"OW"919+53.01POT		48.30	"LW" 332+23.09	POT	-48.24	NHD BRASS DISC
1116075H	15105867.69	2657525.97	3978.88GP	"RM"339+00.69POT		72.76	"LW" 349+18.43	POT	-94.73	NHD BRASS DISC
1116076H	15105853.05	2657552.13	3980.31GP	"RM"339+00.69POT		42.71	"LW" 349+18.46	POT	-64.76	NHD BRASS DISC
1116077H	15106131.15	2657957.39	3983.20GP	"OE"940+89.03POT=	"RM2"39+33.17POT	68.50	"LW" 353+59.24	POT	152.70	NHD BRASS DISC
1116078H	15106118.53	2657979.89	3982.05GP	"OE"940+89.03POT=	"RM2"39+33.17POT	94.31	"LW" 353+59.24	POT	178.50	NHD BRASS DISC
1116082H	15106754.46	2658336.20	3979.99GP	"OW"948+18.37POT=	"OW3"948+18.37PC	94.11	"LW" 360+88.18	POT	178.24	NHD BRASS DISC
1116080H	15106878.47	2658115.14	3983.04GP	"OE"948+18.37POT=	"OW3"948+18.37PC	85.11	"LW" 360+88.23	POT	-75.23	NHD BRASS DISC
1116081H	15106777.99	2658294.36	3984.83GP	"OW"948+18.37POT=	"OW3"948+18.37PC	46.21	"LW" 360+88.24	POT	130.23	NHD BRASS DISC
1116084H	15107744.97	2658790.04	3983.71GP	"OW"3959+00.00POC		66.79	"LW" 371+69.99	POC	-66.62	NHD BRASS DISC
1116083H	15107787.50	2658748.59	3982.46GP	"OW"3959+00.00		126.19	"LW" 371+70.07	POC	-126.01	NHD BRASS DISC
1116085H	15107614.15	2659084.63	3982.35GP	"OE"960+00.00PC		146.50	"LW" 372+97.02	POC	230.83	NHD BRASS DISC
1116086H	15108480.56	2660129.92	3988.19GP	"OE"974+30.58POT=	973+92.74POT	22.00	"LW" 387+00.25	POC	41.90	NHD BRASS DISC
1116088H	15108290.78	2660203.44	3985.33GP	"OE"973+92.74POT=	973+72.59PT	161.44	"LW" 387+00.27	POC	245.43	NHD BRASS DISC
1116087H	15108361.94	2660175.93	3985.31GP	"OE"973+92.74POT=	"OE"973+72.59PT	85.22	"LW" 387+00.32	POT	169.13	NHD BRASS DISC
1116089H	15109671.80	2662584.69	3988.51GP	"OW"1001+12.32POT		182.39	"LW" 414+19.55	POT	-182.49	NHD BRASS DISC

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL

Figure 2-4: Project Control Sheet Sample (3 of 8)

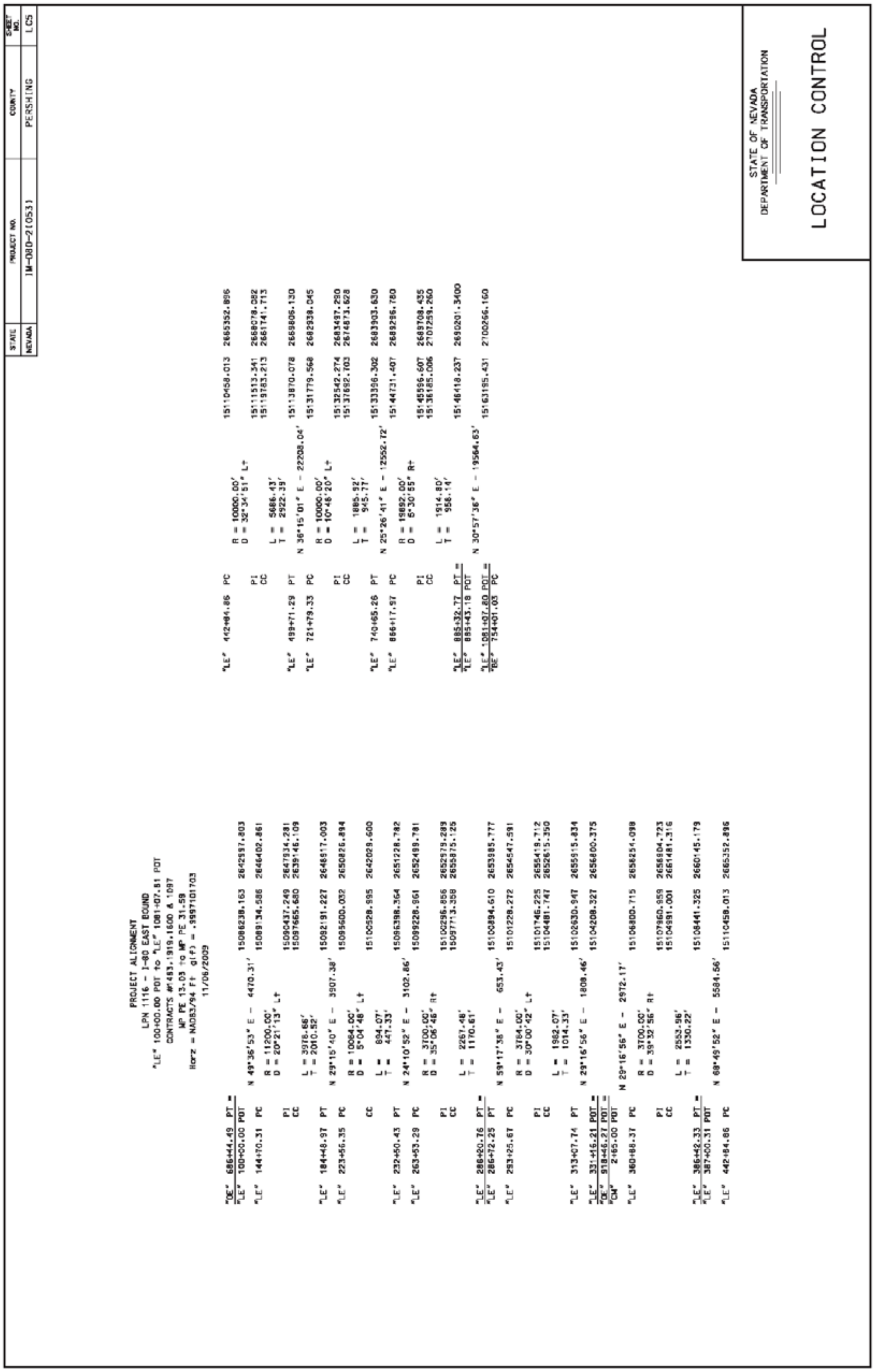
STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)	PERSHING	LC4

NAME	NORTHING	EASTING	ELEVATION	OLD STATION	EQUATION	DIST(')	NEW STATION		DIST(')	NOTE
1116090H	15109572.12	2662623.34	3986.12GP	"OW"1001+12.32POT		75.47	"LW" 414+19.60	POT	-75.58	NHD BRASS DISC
1116092H	15110533.98	2665066.23	3991.12GP	"OW"37.49PC		90.25	"LW" 440+44.99	POC	-90.36	NHD BRASS DISC
1116091H	15110610.80	2665036.54	3990.92GP	"OW"1027+37.49PC		172.57	"LW" 440+45.04	POC	-172.72	NHD BRASS DISC
1116094H	15110279.87	2665421.82	3990.62GP	"OE"1029+77.47PC		151.04	"LW" 442+78.35	POC	277.81	NHD BRASS DISC
1116093H	15110369.38	2665387.20	3990.58GP	"OE"1029+77.47PC		95.09	"LW" 442+80.59	POC	181.87	NHD BRASS DISC
1116095H	15113946.29	2669437.00	4005.54GP	"OW"1084+87.47POT=	"OW"1084+67.47PT	142.72	"LW" 498+14.48	POT	-142.75	NHD BRASS DISC
1116096H	15113900.61	2669499.33	4005.88GP	"OW"1084+87.47POT=	"OW"1084+24.35PT	65.93	"LW" 498+14.50	POT	-65.47	NHD BRASS DISC
1116097H	15113820.56	2669873.90	4007.84GP	"OE"1086+44.45POT=	"OE"1086+64.33PC	83.91	"LW" 499+71.44	POT	283.93	NHD BRASS DISC
1116098H	15113777.30	2669932.95	4006.69GP	"OE"1086+44.45POT=	"OE"1086+64.33PC	157.10	"LW" 499+71.47	POT	357.13	NHD BRASS DISC
1116100H	15119805.63	2674360.68	4012.85GP	"OE"1161+23.64POT		103.14	"LW" 574+51.14	POT	363.21	NHD BRASS DISC
1116099H	15119854.23	2674294.63	4013.35GP	"OE"1161+23.64POT		81.14	"LW" 574+51.28	POT	281.20	NHD BRASS DISC
1116102H	15121006.72	2674692.41	4011.86GP	"OW"1172+88.32POT		79.67	"LW" 586+15.90	POT	-79.49	NHD BRASS DISC
1116101H	15121061.91	2674617.23	4011.83GP	"OW"1172+86.32POT		172.94	"LW" 586+15.96	POT	-172.76	NHD BRASS DISC
1116103H	15123254.55	2676783.13	4026.07GP	"OE"1203+37.25POT		77.23	"LW" 616+64.92	POT	277.38	NHD BRASS DISC
1116104H	15123202.98	2676853.50	4026.65GP	"OE"1203+37.25POT		164.52	"LW" 616+64.94	POT	364.62	NHD BRASS DISC
1116105H	15124287.45	2676968.84	4029.59GP	"OW"1212+79.99POT		183.86	"LW" 626+07.71	POT	-183.63	NHD BRASS DISC
1116106H	15124228.00	2677049.93	4029.82GP	"OW"1212+79.99POT		-83.26	"LW" 626+07.71	POT	-83.08	NHD BRASS DISC
1116108H	15126344.93	2678593.45	4044.09GP	"OW"1239+00.00POT		-90.28	"LW" 652+27.60	POT	-90.09	NHD BRASS DISC
1116107H	15126395.25	2678524.86	4043.92GP	"OW"1239+00.00POT		-175.36	"LW" 652+27.62	POT	-175.16	NHD BRASS DISC
1116109H	15126420.03	2679116.86	4046.65GP	"OE"1242+70.00POT		87.17	"LW" 655+97.66	POT	287.60	NHD BRASS DISC
1116110H	15126369.39	2679186.03	4049.24GP	"OE"1242+70.00POT		173.21	"LW" 655+97.72	POT	373.33	NHD BRASS DISC
1116111H	15128683.75	2680600.29	4076.94GP	"OE"1269+72.79POT		-54.78	"LW" 683+00.39	POT	145.34	NHD BRASS DISC
1116112H	15128565.93	2680761.01	4080.09GP	"OE"1269+72.79POT		144.65	"LW" 683+00.41	POT	344.62	NHD BRASS DISC
1116113H	15129396.77	2680739.16	4078.06GP	"OW"1276+30.00POT		-164.34	"LW" 689+57.62	POT	-164.29	NHD BRASS DISC
1116114H	15129350.08	2680802.93	4079.57GP	"OW"1276+30.00POT		-85.36	"LW" 689+57.57	POT	-85.26	NHD BRASS DISC
1116116H	15131684.55	2683068.19	4113.53GP	"OE"1308+51.76PC		161.13	"LW" 721+79.66	POT	361.14	NHD BRASS DISC
1116115H	15131709.10	2683034.75	4113.17GP	"OE"1308+51.76PC		119.71	"LW" 721+79.69	POT	319.66	NHD BRASS DISC
1116117H	15132384.21	2682912.30	4102.71GP	"OW"1313+23.74PC		173.21	"LW" 726+51.73	POC	-178.30	NHD BRASS DISC
1116118H	15132336.20	2682977.83	4109.10GP	"OW"1313+23.74PC		96.95	"LW" 726+51.76	POC	-97.06	NHD BRASS DISC
1116119H	15133356.13	2683986.97	4124.34GP	"OE"1327+37.15POT		92.60	"LW" 740+45.91	POC	212.83	NHD BRASS DISC
1116120H	15133324.58	2684053.24	4126.09GP	"OE"1327+37.15POT		165.01	"LW" 740+49.40	POC	286.14	NHD BRASS DISC
1116121H	15133674.37	2684162.60	4125.91GP	"OE"1330+99.93POT=	"OE"1330+93.52PT	114.46	"LW" 744+01.51	POC	223.32	NHD BRASS DISC
1116122H	15133642.30	2684229.96	4127.80GP	"OE"1330+99.93POT=	"OE"1330+93.52PT	189.11	"LW" 744+02.48	POC	297.92	NHD BRASS DISC
1116124H	15133927.62	2683951.97	4120.26GP	"OW"1332+31.82POT=	1332+09.13PT	76.54	"LW" 745+36.68	POC	-76.62	NHD BRASS DISC
1116123H	15133970.32	2683862.29	4116.86GP	"OW"1332+31.82POT=	1332+09.13PT	175.93	"LW" 745+36.70	POC	-175.95	NHD BRASS DISC
1116128H	15135487.78	2684689.90	4128.86GP	"OW"1349+57.50POT		80.54	"LW" 762+91.68	POT	-80.58	NHD BRASS DISC
1116127H	15135366.27	2684945.29	4140.72GP	"OE"1349+57.50POT		94.21	"LW" 762+91.68	POT	202.24	NHD BRASS DISC
1116125H	15135626.38	2684608.61	4125.33GP	"OW"1349+57.50POT		170.37	"LW" 762+91.69	POT	-170.39	NHD BRASS DISC
1116126H	15135337.08	2685006.73	4144.37GP	"OE"1349+57.50POT		162.22	"LW" 762+91.72	POT	270.26	NHD BRASS DISC
1116129H	15137715.57	2686041.78	4152.37GP	"OE"1375+50.00POT		74.95	"LW" 788+84.19	POT	183.02	NHD BRASS DISC
1116130H	15137674.37	2686128.50	4159.98GP	"OE"1375+50.00POT		171.11	"LW" 788+84.25	POT	279.03	NHD BRASS DISC
PEF001H	15138452.36	2686420.19	4162.48GP	"BF"470+15.00		100.00	"LW" 797+12.10	POT	208.17	NHD BRASS DISC
1116132H	15141906.38	2687700.61	4213.83GP	"BW"506+84.56POT		119.94	"LW" 833+81.28	POT	-119.42	NHD BRASS DISC
1116133H	15141776.60	2687973.70	4227.81GP	"BF"506+84.56POT		74.35	"LW" 833+81.34	POT	182.76	NHD BRASS DISC
1116135H	15144685.87	2689385.78	4164.03GP	"BE"539+18.38PC		100.00	"LW" 866+15.09	POT	207.93	NHD BRASS DISC
1116134H	15144830.26	2689082.47	4154.68GP	"BW"539+18.38PC		127.97	"LW" 866+15.16	POT	-127.99	NHD BRASS DISC
1116136H	15146546.36	2689992.49	4136.59GP	"BW"558+38.48POT=	558+48.91PT	137.04	"LW" 885+45.60	POT	-137.01	NHD BRASS DISC
1116137H	15146381.72	2690266.93	4141.49GP	"BE"558+38.48PT		75.04	"LW" 885+45.60	POT	183.03	NHD BRASS DISC
1116139H	15151859.93	2693565.28	4174.39GP	"BW"622+33.12POT		34.97	"LW" 949+40.11	POT	193.25	NHD BRASS DISC
1116138H	15151997.94	2693335.52	4170.55GP	"BW"622+33.12POT		75.00	"LW" 949+40.26	POT	-74.78	NHD BRASS DISC
1116140H	15157427.80	2696598.42	4142.46GP	"BW"685+68.03POT		69.98	"LW"1012+75.08	POT	-70.09	NHD BRASS DISC
1116141H	15157284.92	2696836.99	4157.49GP	"BE"685+68.03POT		100.00	"LW"1012+75.28	POT	208.00	NHD BRASS DISC
1116143H	15159626.44	2698212.48	4156.20GP	"BW"712+83.70POT		75.00	"LW"1039+90.80	POT	182.94	NHD BRASS DISC
1116142H	15159759.09	2697991.37	4156.97GP	"BW"712+83.70POT		75.00	"LW"1039+90.81	POT	-74.90	NHD BRASS DISC
1116145H	15163156.85	2700330.47	4167.18GP	"BW"754+01.03POT		75.00	"LW"1081+07.80	POT	182.99	NHD BRASS DISC

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL

Figure 2-5: Project Control Sheet Sample (4 of 8)



STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)1	PERSHING	LC5

PROJECT ALIGNMENT
LPN 1116 - I-80 EAST BOUND
"LE" 100+00.00 POT to "LE" 1081+07.81 POT
CONTRACTS #1483.1919.1600 & 1097
MP PE 13.03 to MP PE 31.59
Horz = NAD83/94 Ft g(f) = .99971017O3
11/06/2009

"OE"	686+44.49	PT =			
"LE"	100+00.00	POT	N 49°36'53" E - 4470.31'	15086238.163	2642597.803
"LE"	144+70.31	PC		15089134.586	2646402.861
			R = 11200.00'		
			D = 20°21'13" Lt		
		PI		15090437.249	2647934.281
		CC		15097665.680	2639146.109
			L = 3978.66'		
			T = 2010.52'		
"LE"	184+48.97	PT	N 29°15'40" E - 3907.38'	15092191.227	2648917.003
"LE"	223+56.35	PC		15095600.032	2650826.894
			R = 10084.00'		
			D = 5°04'48" Lt		
		CC		15100528.995	2642029.600
			L = 894.07'		
			T = 447.33'		
"LE"	232+50.43	PT	N 24°10'52" E - 3102.86'	15096398.364	2651228.782
"LE"	263+53.29	PC		15099228.961	2652499.781
			R = 3700.00'		
			D = 35°06'46" Rt		
		PI		15100296.856	2652979.289
		CC		15097713.358	2655875.125
			L = 2267.48'		
			T = 1170.61'		
"LE"	286+20.76	PT =			
"LE"	286+72.25	PT	N 59°17'38" E - 653.43'	15100894.610	2653985.777
"LE"	293+25.67	PC		15101228.272	2654547.591
			R = 3784.00'		
			D = 30°00'42" Lt		
		PI		15101746.225	2655419.712
		CC		15104481.747	2652615.350
			L = 1982.07'		
			T = 1014.33'		
"LE"	313+07.74	PT	N 29°16'56" E - 1808.46'	15102630.947	2655915.834
"LE"	331+16.21	POT =		15104208.327	2656800.375
"OE"	918+46.27	POT =			
"CM"	2+65.00	POT	N 29°16'56" E - 2972.17'		
"LE"	360+88.37	PC		15106800.715	2658254.098
			R = 3700.00'		
			D = 39°32'56" Rt		
		PI		15107960.959	2658904.723
		CC		15104991.001	2661481.316
			L = 2553.96'		
			T = 1330.22'		
"LE"	386+42.33	PT =		15108441.325	2660145.179
"LE"	387+00.31	POT	N 68°49'52" E - 5584.56'		
"LE"	442+84.86	PC		15110458.013	2665352.896

"LE"	442+84.86	PC		15110458.013	2665352.896
			R = 10000.00'		
			D = 32°34'51" Lt		
		PI		15111513.341	2668078.082
		CC		15119783.213	2661741.713
			L = 5686.43'		
			T = 2922.39'		
"LE"	499+71.29	PT	N 36°15'01" E - 22208.04'	15113870.078	2669806.130
"LE"	721+79.33	PC		15131779.568	2682938.045
			R = 10000.00'		
			D = 10°48'20" Lt		
		PI		15132542.274	2683497.290
		CC		15137692.703	2674873.628
			L = 1885.92'		
			T = 945.77'		
"LE"	740+65.26	PT	N 25°26'41" E - 12552.72'	15133396.302	2683903.630
"LE"	866+17.97	PC		15144731.407	2689296.780
			R = 19892.00'		
			D = 5°30'55" Rt		
		PI		15145596.607	2689708.435
		CC		15136185.006	2707259.260
			L = 1914.80'		
			T = 958.14'		
"LE"	885+32.77	PT =		15146418.237	2690201.3400
"LE"	885+43.18	POT	N 30°57'36" E - 19564.63'		
"LE"	1081+07.80	POT =			
"BE"	754+01.03	PC		15163195.431	2700266.160

STATE OF NEVADA
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LOCATION CONTROL

Figure 2-6: Project Control Sheet Sample (5 of 8)

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)	PERSHING	LC6

VERTICAL DATUM: ELEVATIONS ARE BASED UPON NAVD88 HOLDING PUBLISHED USC & GS BENCH MARK AND NDOT CONTROL MONUMENTS: 846003M(3982.082), K 317X(3958.056), G 297Z(4026.422), V 145X(4164.818) AS FIXED.

BEARING SOURCE: BEARINGS OF THIS MAP WERE DERIVED FROM NEVADA STATE PLANE COORDINATES NAD 83/94 DATUM WEST ZONE, WITH A MEAN CONVERGENCY OF 0°05'57". USING LOCAL CONTROL POINTS: 846003N, FAA LOL AZ, K 317X, G 297Z, V 145X AS FIXED AND IS FURTHER ARCHIVED AT NDOT UNDER FILE LPN 1116. COORDINATES AND DISTANCES REFLECT A SINGLE COMBINATION GROUND TO GRID FACTOR OF 0.9997101703 AND HAVE BEEN CONVERTED TO FEET. MONUMENTS ARE STAMPED WITH "NDOT" AND MONUMENT NAME UNLESS NOTED IN DESCRIPTION.

SPECIAL NOTE: PLSS MONUMENTS LISTED IN THIS CONTRACT ARE REQUIRED TO BE PERPETUATED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEVADA TO ASSURE COMPLIANCE WITH NEVADA REVISED STATUTES,CHAPTERS 329 & 625. ANY MONUMENTS FOUND DURING SURVEY, MAPPING, CONSTRUCTION OR MAINTENANCE PHASES OF NEVADA DEPARTMENT OF TRANSPORTATION PROJECTS NOT LISTED FOR PERPETUATION IN THE CONTRACT PLANS SHALL BE PERPETUATED IN ACCORDANCE WITH THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION, TRANSPORTATION POLICY (TP) 3-1-3, TITLED PERPETUATION OF SURVEY MONUMENTS, DATED JANUARY 13, 1999.

CONSTRUCTION CONTROL

NAME	NORTHING	EASTING	ELEVATION	EQUATION	OLD STATION	DIST(')	NEW STATION		DIST(')	NOTE
1116001M	15093590.81	2649756.41	3960.655				"LE" 200+81.24	POT	49.94	NDOT FENO
K_317X	15093788.86	2650003.95	3958.056				"LE" 203+74.04	POT	167.35	NGS BM
1116002M	15094851.03	2650481.66	3961.596				"LE" 215+34.18	POT	64.92	NDOT FENO
1116003M	15096793.88	2651440.47	3981.301				"LE" 236+97.95	POT	31.10	NDOT FENO
1116004M	15098737.82	2652374.36	3968.594				"LE" 258+53.86	POT	86.77	NDOT FENO
1116005M	15100039.18	2653067.90	3976.383				"LE" 273+51.72	POC	54.46	NDOT FENO
1116006M	15102222.30	2655701.34	3987.200				"LE" 308+50.20	POC	40.71	NDOT FENO
1116007M	15103676.47	2656725.28	3977.994				"LE" 326+15.58	POT	194.64	NDOT FENO
1116008M	15105221.92	2657470.56	3981.760				"LE" 343+28.08	POT	88.79	NDOT FENO
1116009M	15106562.23	2658213.68	3981.567				"LE" 358+60.59	POT	81.39	NDOT FENO
1116010M	15107968.28	2658984.84	3990.153				"LE" 374+27.55	POC	-185.43	NDOT FENO
1116011M	15108584.04	2660630.20	3989.123				"LE" 392+04.13	POT	42.07	NDOT FENO
1116012M	15109070.97	2662239.59	3987.453				"LE" 408+60.76	POT	169.17	NDOT FENO
1116014M	15109593.97	2663217.82	3992.088				"LE" 419+81.84	POT	34.72	NDOT FENO
1116015M	15109944.35	2664542.74	3993.483				"LE" 433+43.88	POT	186.44	NDOT FENO
1116016M	15110596.37	2666096.42	3991.862				"LE" 450+16.64	POC	166.69	NDOT FENO
1116013M	15111489.53	2667568.29	4004.739				"LE" 467+14.43	POC	135.79	NDOT FENO
1116017M	15112655.53	2668867.10	4007.836				"LE" 484+42.57	POC	78.44	NDOT FENO
1116018M	15113873.62	2669930.00	4011.908				"LE" 500+47.56	POT	97.68	NDOT FENO
1116019M	15115459.16	2670589.09	4014.018				"LE" 517+15.77	POT	-306.23	NDOT FENO
1116020M	15116684.42	2671956.84	4018.640				"LE" 535+12.64	POT	70.26	NDOT FENO
1116021M	15118080.61	2673068.88	4013.667				"LE" 552+96.15	POT	141.47	NDOT FENO
1116022M	15119399.41	2674022.74	4017.948				"LE" 569+23.72	POT	130.88	NDOT FENO
1116023M	15120671.95	2675015.29	4013.981				"LE" 585+36.85	POT	178.84	NDOT FENO
1116024M	15122011.73	2675973.17	4020.537				"LE" 601+83.71	POT	159.09	NDOT FENO
1116025M	15123221.17	2676870.87	4026.898				"LE" 616+89.88	POT	167.87	NDOT FENO
1116026M	15124539.85	2677826.57	4040.261				"LE" 633+18.44	POT	158.84	NDOT FENO
1116027M	15125765.85	2678746.87	4047.318				"LE" 648+51.32	POT	176.05	NDOT FENO
1116028M	15127178.91	2679652.62	4059.080				"LE" 665+26.45	POT	70.93	NDOT FENO
1116029M	15128647.47	2680316.61	4071.724				"LE" 681+03.39	POT	-261.98	NDOT FENO
1116030M	15129702.01	2681638.86	4099.979				"LE" 697+35.68	POT	180.77	NDOT FENO
1116031M	15131097.96	2682644.45	4111.252				"LE" 714+56.05	POT	166.28	NDOT FENO
1116032M	15132586.98	2683648.91	4123.909				"LE" 732+36.68	POC	152.54	NDOT FENO
1116033M	15134173.62	2684475.04	4132.305				"LE" 750+12.68	POT	182.02	NDOT FENO
1116034M	15135642.29	2685175.03	4146.442				"LE" 766+39.63	POT	183.11	NDOT FENO
1116035M	15137381.96	2685995.22	4161.393				"LE" 785+62.94	POT	176.31	NDOT FENO
1116036M	15138898.31	2686730.41	4172.111				"LE" 802+48.07	POT	188.70	NDOT FENO
1116037M	15140450.17	2687470.19	4214.457				"LE" 819+67.24	POT	189.98	NDOT FENO
1116038M	15142036.12	2688232.19	4251.967				"LE" 837+26.74	POT	196.68	NDOT FENO
1116039M	15143552.46	2688835.36	4192.639				"LE" 853+55.14	POT	89.86	NDOT FENO
1116040M	15145206.70	2689702.55	4155.973				"LE" 872+26.27	POC	152.98	NDOT FENO
1116041M	15146547.68	2690432.52	4155.953				"LE" 887+73.10	POT	131.65	NDOT FENO
1116042M	15147981.14	2691302.20	4157.629				"LE" 904+49.73	POT	140.00	NDOT FENO
1116043M	15149515.98	2692288.19	4166.035				"LE" 922+73.13	POT	195.93	NDOT FENO
1116044M	15150981.25	2693167.52	4175.638				"LE" 939+62.00	POT	196.18	NDOT FENO

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL

Figure 2-7: Project Control Sheet Sample (6 of 8)

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)	PERSHING	LC7

VERTICAL DATUM: ELEVATIONS ARE BASED UPON NAVD88 HOLDING PUBLISHED USC & GS BENCH MARK AND NDOT CONTROL MONUMENTS: 846003M(3982.082), K 317X(3958.056), Q 2972(4026.422), V 145X(4164.818) AS FIXED.

BEARING SOURCE: BEARINGS OF THIS MAP WERE DERIVED FROM NEVADA STATE PLANE COORDINATES NAD 83/94 DATUM WEST ZONE, WITH A MEAN CONVERGENCY OF 0°05'57". USING LOCAL CONTROL POINTS: 846003M, FAA LOL AZ, K 317X, Q 2972, V 145X AS FIXED AND IS FURTHER ARCHIVED AT NDOT UNDER FILE LPN 1116. COORDINATES AND DISTANCES REFLECT A SINGLE COMBINATION GROUND TO GRID FACTOR OF 0.9997101703 AND HAVE BEEN CONVERTED TO FEET. MONUMENTS ARE STAMPED WITH "NDOT" AND MONUMENT NAME UNLESS NOTED IN DESCRIPTION.

SPECIAL NOTE: PLSS MONUMENTS LISTED IN THIS CONTRACT ARE REQUIRED TO BE PERPETUATED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF NEVADA TO ASSURE COMPLIANCE WITH NEVADA REVISED STATUTES.CHAPTERS 329 & 625. ANY MONUMENTS FOUND DURING SURVEY, MAPPING, CONSTRUCTION OR MAINTENANCE PHASES OF NEVADA DEPARTMENT OF TRANSPORTATION PROJECTS NOT LISTED FOR PERPETUATION IN THE CONTRACT PLANS SHALL BE PERPETUATED IN ACCORDANCE WITH THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION. TRANSPORTATION POLICY (TP) 3-1-3, TITLED PERPETUATION OF SURVEY MONUMENTS, DATED JANUARY 13, 1999.

CADASTRAL CONTROL

NAME	NORTHING	EASTING	ELEVATION	OLD STATION	EQUATION	DIST(')	NEW STATION		DIST(')	NOTE
1116047H	15086272.23	2642968.88	3968.30GP	"OE"686+44.49PT		-44.71	"LE" 100+00.04	POT	-44.69	NHD BRASS DISC
1116046H	15086300.80	2642944.64	3968.97GP	"CW"686+38.25PT=	"OW"686+44.49POT	49.94	"LE" 100+00.09	POT	-82.16	NHD BRASS DISC
1116045H	15086380.11	2642877.28	3966.24GP	"CW"686+38.25PT=	"OW"686+44.49POT	54.11	"LE" 100+00.17	POT	-186.21	NHD BRASS DISC
1116048H	15089180.16	2646363.99	3960.49GP	"OE"731+14.16PC		-59.97	"LE" 144+70.23	POT	-59.90	NHD BRASS DISC
270031H	15089085.94	2646444.23	3961.36GP	"OE"731+14.16PC		63.92	"LE" 144+70.30	POT	63.86	NHD BRASS DISC
1116050H	15089255.61	2646449.87	3960.04GP	"OW"732+28.44PC		-69.96	"LE" 145+65.16	POC	-61.14	NHD BRASS DISC
1116049H	15089375.78	2646347.70	3965.91GP	"OW"732+28.44PC		87.64	"LE" 145+66.85	POC	-218.86	NHD BRASS DISC
1116051H	15092412.85	2648834.69	3957.89GP	"OW"772+45.94POT=	"CW"772+07.15PT	96.25	"LE" 186+02.08	POT	-180.14	NHD BRASS DISC
270038H	15092392.29	2648871.63	3957.62GP	"OW"772+45.94POT		53.91	"LE" 186+02.20	POT	-137.86	NHD BRASS DISC
270033H	15094330.09	2650188.95	3960.26GP	"OE"795+80.62POT		64.10	"LE" 209+36.63	POT	64.19	NHD BRASS DISC
1116052H	15095688.26	2650669.57	3961.79GP	"OW3"810+00.00PC=	"OW"810+00.00POT	96.47	"LE" 223+56.43	POC	-180.37	NHD BRASS DISC
270034H	15095568.13	2650883.99	3962.19GP	"OE"810+00.00POT		65.43	"LE" 223+56.43	POC	65.40	NHD BRASS DISC
1116053H	15095670.36	2650701.54	3962.65GP	"OW3"810+00.00PC=	"OW"810+00.00POT	59.73	"LE" 223+56.44	POC	-143.73	NHD BRASS DISC
1116054H	15097975.31	2651713.45	3966.31GP	"OE"835+31.27POT		116.67	"LE" 248+67.54	POT	-203.81	NHD BRASS DISC
270036H	15097858.33	2651974.07	3966.17GP	"OE"835+31.27POT		81.91	"LE" 248+67.58	POT	81.86	NHD BRASS DISC
1116056H	15097818.61	2652062.56	3965.53GP	"OE3"835+31.27POT		178.90	"LE" 248+67.59	POT	178.85	NHD BRASS DISC
1116055H	15097954.14	2651760.82	3965.87GP	"OE"835+31.27POT		67.95	"LE" 248+67.63	POT	-151.93	NHD BRASS DISC
1116058H	15099151.84	2652671.87	3967.84GP	849+97.30PC		188.63	"LE" 263+53.43	POC	188.58	NHD BRASS DISC
270037H	15099174.24	2652622.16	3967.46GP	"OW"849+97.30PC		134.06	"LE" 263+53.50	POC	134.06	NHD BRASS DISC
1116057H	15099312.75	2652314.21	3967.84GP	849+97.30		119.62	"LE" 263+53.69	POC	-203.61	NHD BRASS DISC
1116059H	15102464.32	2655646.55	3982.23GP	"RM" 00+00PC		36.97	"LE" 310+19.55	POC	-142.62	NHD BRASS DISC
1116060H	15102700.86	2655789.35	3979.41GP	"RM" 42+79.14PT		32.99	"LE" 313+06.82	POC	-144.52	NHD BRASS DISC
1116063H	15102584.03	2655999.22	3976.41GP	"OE3"898+99.61PT	"OE"900+37.61POT	95.69	"LE" 313+07.61	POC	95.68	NHD BRASS DISC
1116062H	15102607.49	2655957.40	3979.75GP	"OE3"898+99.61PT=	"OE"900+37.61POT	47.65	"LE" 313+07.62	POC	47.73	NHD BRASS DISC
1116061H	15102698.33	2655795.54	3981.15GP	"OW3"898+55.62PT=	"OW"900+37.61	54.06	"LE" 313+07.68	POC	-137.88	NHD BRASS DISC
1116064H	15102719.53	2656025.02	3979.59GP	"RM1"0+00.00POT		29.90	"LE" 314+38.41	POT	51.91	NHD BRASS DISC
1116065H	15102699.13	2656061.44	3976.41GP	"RM1"0+00.00POT		71.72	"LE" 314+38.43	POT	93.65	NHD BRASS DISC
1116066H	15103068.23	2655993.12	3979.33GP	"RM1"6+89.08PC		26.48	"LE" 317+26.95	POT	-146.47	NHD BRASS DISC
1116067H	15103171.88	2656372.66	3977.27GP	"RM1"15+70.98PC		72.30	"LE" 320+03.00	POT	133.88	NHD BRASS DISC
1116068H	15103608.58	2656677.30	3977.51GP	"RM1"11+07.31PC		82.10	"LE" 325+32.90	POT	185.99	NHD BRASS DISC
1116069H	15104039.02	2656930.72	3978.36GP	"CM4"97+00POT=	"RM1"16+94.00POT	96.87	"LE" 330+32.29	POT	196.50	NHD BRASS DISC
1116070H	15104274.90	2656527.72	3978.38GP	"CM1"1+22.00POT=	"RM4"20+94.46POT	86.94	"LE" 330+40.91	POT	-270.38	NHD BRASS DISC
1116071H	15104286.37	2656547.06	3977.99GP	"CM1"1+22.00POT=	"RM4"20+94.46POT	64.42	"LE" 330+60.38	POT	-259.12	NHD BRASS DISC
1116073H	15104279.17	2656892.35	3992.04GP	"OE"919+53.01POT		45.55	"LE" 332+22.98	POT	45.57	NHD BRASS DISC
1116074H	15104206.30	2657022.40	3978.75GP	"OE"919+53.01POT		194.59	"LE" 332+23.03	POT	194.65	NHD BRASS DISC
1116072H	15104366.24	2656737.31	3991.76GP	"OW"919+53.01POT		48.30	"LE" 332+23.10	POT	-132.24	NHD BRASS DISC
1116075H	15105867.69	2657525.97	3978.88GP	"RM3"39+00.69POT		72.76	"LE" 349+18.43	POT	-178.73	NHD BRASS DISC
1116076H	15105853.05	2657552.13	3980.31GP	"RM3"39+00.69POT		42.71	"LE" 349+18.46	POT	-148.76	NHD BRASS DISC
1116077H	15106131.15	2657957.39	3983.20GP	"OE"940+89.03POT=	"RM2"39+33.17POT	68.50	"LE" 353+59.24	POT	68.70	NHD BRASS DISC
1116078H	15106118.53	2657979.89	3982.05GP	"OE"940+89.03POT=	"RM2"39+33.17POT	94.31	"LE" 353+59.24	POT	94.49	NHD BRASS DISC
1116082H	15106754.46	2658336.20	3979.99GP	"OW"948+18.37POT=	"OW3"948+18.37PC	94.11	"LE" 360+68.19	POT	94.24	NHD BRASS DISC
1116080H	15106878.47	2658115.14	3983.04GP	"OE"948+18.37POT=	"OW3"948+18.37PC	85.11	"LE" 360+68.23	POT	-159.23	NHD BRASS DISC
1116081H	15106777.99	2658294.36	3984.83GP	"OW"948+18.37POT=	"OW3"948+18.37PC	46.21	"LE" 360+68.25	POT	46.23	NHD BRASS DISC
1116084H	15107744.97	2658790.04	3983.71GP	"OW3"959+00.00POC		66.79	"LE" 371+45.98	POC	-150.62	NHD BRASS DISC
1116083H	15107787.50	2658748.59	3982.46GP	"OW3"959+00.00		126.19	"LE" 371+46.06	POC	-210.01	NHD BRASS DISC

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL

Figure 2-8: Project Control Sheet Sample (7 of 8)

STATE	PROJECT NO.	COUNTY	SHEET NO.
NEVADA	IM-080-2(053)	PERSHING	LC8

NAME	NORTHING	EASTING	ELEVATION	OLD STATION	EQUATION	DIST(')	NEW STATION	POC	DIST(')	NOTE
1116085H	15107614.15	2659084.63	3982.35GP	"OE"960+00.00PC		146.50	"LE" 372+70.19	POC	146.83	NHD BRASS DISC
1116086H	15108480.56	2660129.92	3988.19GP	"OE"974+30.58POT=	973+92.74POT	22.00	"LE" 386+42.27	POC	-42.10	NHD BRASS DISC
1116088H	15106290.78	2660203.44	3985.33GP	"OE"973+92.74POT=	973+72.59PT	161.44	"LE" 386+42.29	POT	161.43	NHD BRASS DISC
1116087H	15106361.94	2660175.93	3985.31GP	"OE"973+92.74POT=	"OE"973+72.59PT	85.22	"LE" 386+42.34	POT	85.13	NHD BRASS DISC
1116089H	15109671.80	2662584.69	3988.51GP	"OW"1001+12.32POT		182.39	"LE" 414+19.54	POT	-266.49	NHD BRASS DISC
1116090H	15109572.12	2662623.34	3988.12GP	"OW"1001+12.32POT		75.47	"LE" 414+19.59	POT	-159.58	NHD BRASS DISC
1116092H	15110533.98	2665066.23	3991.12GP	"OW"37.49PC		90.25	"LE" 440+44.98	POT	-174.36	NHD BRASS DISC
1116091H	15110610.80	2665036.54	3990.92GP	"OW"1027+37.49PC		172.57	"LE" 440+45.03	POT	-256.72	NHD BRASS DISC
1116094H	15110279.87	2665421.82	3990.62GP	"OE"1029+77.47PC		191.04	"LE" 442+64.81	POT	191.01	NHD BRASS DISC
1116093H	15110369.38	2665387.20	3990.58GP	"OE"1029+77.47PC		95.09	"LE" 442+64.85	POC	95.04	NHD BRASS DISC
1116095H	15113946.29	2669437.00	4005.54GP	"OW"1084+87.47POT=	"OW"1084+87.47PT	142.72	"LE" 498+08.93	POC	-341.47	NHD BRASS DISC
1116096H	15113900.61	2669499.33	4005.88GP	"OW"1084+87.47POT=	"OW"1084+24.35PT	65.93	"LE" 498+10.24	POT	-264.21	NHD BRASS DISC
1116097H	15113820.56	2669873.90	4007.84GP	"OE"1086+44.45POT=	"OE"1086+64.33PC	83.91	"LE" 499+71.43	POT	83.93	NHD BRASS DISC
1116098H	15113777.30	2669932.95	4006.69GP	"OE"1086+44.45POT=	"OE"1086+64.33PC	157.10	"LE" 499+71.46	POT	157.13	NHD BRASS DISC
1116100H	15119805.63	2674360.68	4012.85GP	"OE"1161+23.64POT		103.14	"LE" 574+51.14	POT	163.21	NHD BRASS DISC
1116099H	15119854.23	2674294.63	4013.35GP	"OE"1161+23.64POT		81.14	"LE" 574+51.27	POT	81.20	NHD BRASS DISC
1116102H	15121006.72	2674692.41	4011.86GP	"OW"1172+88.32POT		79.67	"LE" 586+15.90	POT	-279.49	NHD BRASS DISC
1116101H	15121061.91	2674617.23	4011.83GP	"OW"1172+88.32POT		172.94	"LE" 586+15.95	POT	-372.76	NHD BRASS DISC
1116103H	15123254.55	2676783.13	4026.07GP	"OE"1203+37.25POT		77.23	"LE" 616+64.92	POT	77.38	NHD BRASS DISC
1116104H	15123202.98	2676853.50	4026.65GP	"OE"1203+37.25POT		164.52	"LE" 616+64.94	POT	164.62	NHD BRASS DISC
1116105H	15124287.45	2676968.84	4029.59GP	"OW"1212+79.99POT		183.86	"LE" 626+07.70	POT	-383.63	NHD BRASS DISC
1116106H	15124228.00	2677049.93	4029.82GP	"OW"1212+79.99POT		-83.26	"LE" 626+07.71	POT	-283.08	NHD BRASS DISC
1116108H	15126344.93	2678593.45	4044.09GP	"OW"1239+00.00POT		-90.28	"LE" 652+27.60	POT	-290.09	NHD BRASS DISC
1116107H	15126395.25	2678524.86	4043.92GP	"OW"1239+00.00POT		-175.36	"LE" 652+27.62	POT	-375.16	NHD BRASS DISC
1116109H	15126420.03	2679116.86	4048.65GP	"OE"1242+70.00POT		87.17	"LE" 655+97.66	POT	87.60	NHD BRASS DISC
1116110H	15126369.39	2679186.03	4049.24GP	"OE"1242+70.00POT		173.21	"LE" 655+97.72	POT	173.33	NHD BRASS DISC
1116111H	15128683.75	2680600.29	4076.94GP	"OE"1269+72.79POT		-54.78	"LE" 683+00.39	POT	-54.66	NHD BRASS DISC
1116112H	15128565.93	2680761.01	4080.09GP	"OE"1269+72.79POT		144.65	"LE" 683+00.41	POT	144.62	NHD BRASS DISC
1116113H	15129396.77	2680739.16	4078.06GP	"OW"1276+30.00POT		-164.34	"LE" 689+57.51	POT	-364.29	NHD BRASS DISC
1116114H	15129350.08	2680802.93	4079.57GP	"OW"1276+30.00POT		-85.36	"LE" 689+57.57	POC	-285.26	NHD BRASS DISC
1116116H	15131684.55	2683068.19	4113.53GP	"OE"1308+51.76PC		161.13	"LE" 721+79.66	POC	161.14	NHD BRASS DISC
1116115H	15131709.10	2683034.75	4113.17GP	"OE"1308+51.76PC		119.71	"LE" 721+79.68	POC	119.66	NHD BRASS DISC
1116118H	15132336.20	2682977.83	4109.10GP	"OW"1313+23.74PC		96.95	"LE" 726+65.83	POC	-285.57	NHD BRASS DISC
1116117H	15132384.21	2682912.30	4102.71GP	"OW"1313+23.74PC		173.21	"LE" 726+69.90	POC	-366.71	NHD BRASS DISC
1116120H	15133324.58	2684053.24	4126.09GP	"OE"1327+37.15POT		165.01	"LE" 740+64.78	POC	165.91	NHD BRASS DISC
1116119H	15133356.13	2683986.97	4124.34GP	"OE"1327+37.15POT		92.60	"LE" 740+64.79	POT	92.52	NHD BRASS DISC
1116122H	15133642.30	2684229.96	4127.80GP	"OE"1330+99.93POT=	"OE"1330+93.52PT	189.11	"LE" 744+27.60	POT	188.99	NHD BRASS DISC
1116121H	15133674.37	2684162.60	4125.91GP	"OE"1330+99.93POT=	"OE"1330+93.52PT	114.46	"LE" 744+27.62	POT	114.38	NHD BRASS DISC
1116124H	15133927.62	2683951.97	4120.26GP	"OW"1332+31.82POT=	1332+09.13PT	76.54	"LE" 745+65.81	POT	-184.62	NHD BRASS DISC
1116123H	15133970.32	2683862.29	4116.86GP	"OW"1332+31.82POT=	1332+09.13PT	175.93	"LE" 745+65.83	POT	-283.95	NHD BRASS DISC
1116126H	15135487.78	2684689.90	4128.86GP	"OW"1349+57.50POT		80.54	"LE" 762+91.68	POT	-188.58	NHD BRASS DISC
1116127H	15135366.27	2684945.29	4140.72GP	"OE"1349+57.50POT		94.21	"LE" 762+91.68	POT	94.24	NHD BRASS DISC
1116125H	15135526.38	2684606.81	4125.33GP	"OW"1349+57.50POT		170.37	"LE" 762+91.69	POT	-278.39	NHD BRASS DISC
1116128H	15135337.08	2685006.73	4144.37GP	"OE"1349+57.50POT		162.22	"LE" 762+91.72	POT	162.26	NHD BRASS DISC
1116129H	15137715.57	2686041.78	4152.37GP	"OE"1375+50.00POT		74.95	"LE" 788+64.19	POT	75.02	NHD BRASS DISC
1116130H	15137674.37	2686128.50	4159.98GP	"OE"1375+50.00POT		171.11	"LE" 788+64.25	POT	171.03	NHD BRASS DISC
PEF001H	15138452.36	2686420.19	4162.48GP	"BF"470+15.00		100.00	"LE" 797+12.09	POT	100.17	NHD BRASS DISC
1116132H	15141906.38	2687700.81	4213.83GP	"BW"506+84.56POT		119.94	"LE" 833+61.28	POT	-227.42	NHD BRASS DISC
1116133H	15141776.60	2687973.70	4227.81GP	"BF"506+84.56POT		74.35	"LE" 833+61.33	POT	74.76	NHD BRASS DISC
1116135H	15144685.87	2689385.78	4164.03GP	"BE"539+18.38PC		100.00	"LE" 866+15.09	POT	99.93	NHD BRASS DISC
1116134H	15144830.26	2689082.47	4154.68GP	"BW"539+18.38PC		127.97	"LE" 866+15.16	POT	-235.99	NHD BRASS DISC
1116136H	15146546.36	2689992.49	4136.59GP	"BW"556+38.48POT=	558+48.91PT	137.04	"LE" 885+45.60	POT	-245.01	NHD BRASS DISC
1116137H	15146381.72	2690266.93	4141.49GP	"BE"558+38.48PT		75.04	"LE" 885+45.60	POT	75.03	NHD BRASS DISC
1116139H	15151859.93	2693565.28	4174.39GP	"BW"622+33.12POT		34.97	"LE" 949+40.11	POT	85.25	NHD BRASS DISC
1116138H	15151997.94	2693335.52	4170.55GP	"BW"622+33.12POT		75.00	"LE" 949+40.26	POT	-182.78	NHD BRASS DISC
1116140H	15157427.80	2696598.42	4142.46GP	"BW"685+68.03POT		69.98	"LE" 1012+75.06	POT	-178.09	NHD BRASS DISC
1116141H	15157284.92	2696836.99	4157.49GP	"BE"685+68.03POT		100.00	"LE" 1012+75.26	POT	100.00	NHD BRASS DISC
1116143H	15159626.44	2698212.48	4156.20GP	"BW"712+83.70POT		75.00	"LE" 1039+90.80	POT	74.94	NHD BRASS DISC
1116142H	15159759.09	2697991.37	4156.97GP	"BW"712+83.70POT		75.00	"LE" 1039+90.81	POT	-182.90	NHD BRASS DISC
1116145H	15163156.85	2700330.47	4167.18GP	"BW"754+01.03POT		75.00	"LE" 1081+07.80	POT	75.00	NHD BRASS DISC

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LOCATION CONTROL

Figure 2-9: Project Control Sheet Sample (8 of 8)

DATA INPUT – LOIS FILE RESEARCH

Data input for project control is critical in today's age of GPS Surveying. Most information needed to set up a new contract can be found on the Location Information System or "LoIS" as mentioned previously. The information contained in this database can be queried either by map or by attributes. The attributes can be queried by Point Name, LPN Name, UTM Coordinates/Radius, Lat-Long/Radius and PLSS Sections. LoIS is a valuable resource, because it provides essential information concerning a monument's Ground and Grid coordinates, Ortho and Ellipsoidal Elevations, Horizontal and Vertical Datum, State Plane Zone, Units, Area Combination Factor and descriptions and pictures of the monument. Questions concerning LoIS and its contents should be directed to the Geodesy Section of the Location Division.