

PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)		Township T 1 6			N (2) S	Range 1 0			E (2) W	Section			Meridian (SL) US	
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING							Date 11/18/05					
Contacts Phone (435) 381-2523														
Control Station														
Name ELM GPS 12		Type COR HARN TRI (Other) EMERY COUNTY							Accuracy Order					
USGS Quad Name OLSEN RESERVOIR UTAH		Datum Nad27 Nad83 (Nad83 1994) WGS84 Local							State UTAH					
		County EMERY												
Latitude							Longitude							
N 3 9 - 2 3 - 2 5 . 4 2 8 1 2 7							W 1 1 0 - 4 5 - 0 1 . 5 8 6 1 0							
Northing							Easting							
6 9 4 7 5 8 7 . 6 3							1 8 5 2 2 5 7 . 0 6							
Units Survey Foot (International Foot) Meter		Coordinate Type (State Plane) UTM												
Zone Utah North (Utah Central) Utah South		Vertical Datum NGVD29 (NAVD88)												
Ellipsoid Height 1711.15 M		Geoid Height FT M 5671.75 FT												
Base Receiver														
Type TRIMBLE				Model 4000 SSI				Serial Number						
Logging Interval 5 SEC.		Elevation Mask 13		PDOP Mask 6		Antenna Type L1/L2 w/GROUND PLANE								
Start Time AM PM				End Time AM PM										
Antenna Height														
Session Beginning		1" M		2" M		3" M		Ave		4.761 Feet M				
Session End		1" M		2" M		3" M		Ave		M				
Rover Receiver														
Type TRIMBLE				Model 5800				Serial Number 4253117118						
Approximate Distance From Base Station Miles				Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT						
Station Observation														
Observation Type (RTK) FAST STATIC STATIC OTHER														
First Observation														
Station Name (M1) 6 0 0 4 6 0		Description N 1/16 corner Sec. 14 - Sec. 13												
Occupation time		PDOP Best				RMS Best								
Number of Measurements 60		PDOP Worst 2.4				RMS Worst 16.6								
Second Observation														
Station Name (M2)		Description												
Occupation time		PDOP Best				RMS Best								
Number of Measurements		PDOP Worst				RMS Worst								
Inverse Distance Between M1 and M2 FT				Alternate Base Station Used Yes No										
Monument and Markings														
Type / Size														
Stone		Pipe/Cap				Post				Other				
Size		Size 2 1/2 / 3/4 1969 BLM				Size				Size				
Material		Material steel / brass				Material				Material				

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610600460

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-18-05

County Reference No. 1610600460

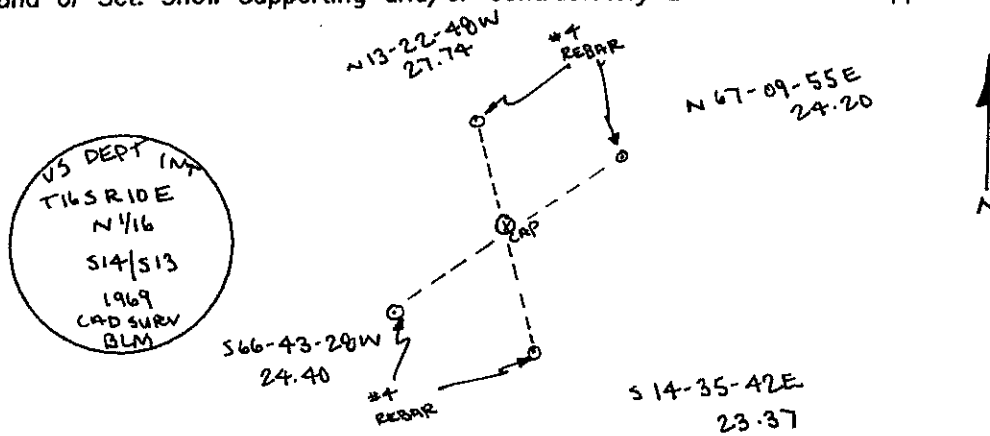
Type of Monument: _____ Section Corner
 _____ Bench Mark

_____ Quarter Corner
 Other 1/16 CORNER

Your Description and Observation of Monument Found (Be Specific):
1969 BLM BRASS CAP 2" ABOVE GROUND LEVEL

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET 4 #4 REBAR AS SHOWN BELOW

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



Certification:

Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513

Phone: (435) 381-2523

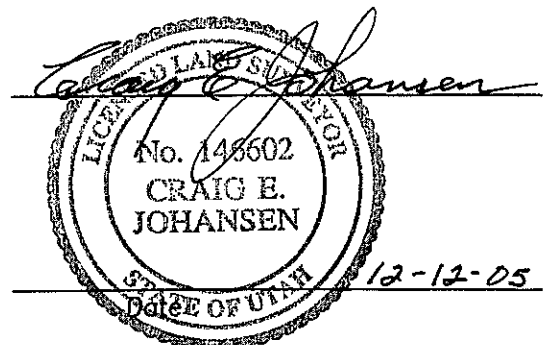
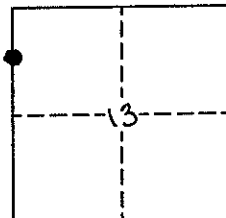
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 13

Township: 16S

Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)		Township T 1 6		1/2 (2)	N S	Range 1 0		1/2 (2)	E W	Section		Meridian (SL) US																				
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/18/05																								
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12		COR		HARN		TRI		Type Other EMERY COUNTY			Accuracy Order																					
USGS Quad Name OLSEN RESERVOIR UTAH		Nad27		Nad83		Datum (Nad83 1994)		WGS84		Local		State UTAH County EMERY																				
Latitude						Longitude																										
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0	
Northing													Easting																			
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6							
Units		Survey Foot		International Foot		Meter		Coordinate Type			State Plane		UTM																			
Zone		Utah North		Utah Central		Utah South		Vertical Datum			NGVD29		NAVD88																			
Ellipsoid Height		1711.15 M		FT		Geoid Height			M		5671.75 FT																					
Base Receiver																																
Type TRIMBLE			Model 4000 SSI			Serial Number																										
Logging Interval 5 SEC.		Elevation Mask 13		PDOP Mask 6		Antenna Type L1/L2 w/GROUND PLANE																										
Start Time			AM		PM		End Time						AM		PM																	
Antenna Height																																
Session Beginning		1"		M		2 nd		M		3 rd		M		Ave 4.761 Feet M																		
Session End		1"		M		2 nd		M		3 rd		M		Ave M																		
Rover Receiver																																
Type TRIMBLE			Model 5800			Serial Number 4253117118																										
Approximate Distance From Base Station			Miles		Antenna Type 5800 INTERNAL			Antenna Height 6.6 FT																								
Station Observation																																
Observation Type (RTK) FAST STATIC STATIC OTHER																																
First Observation																																
Station Name (M1)		6		0	0	4	4	0	Description W 1/4 corner Sec. 13																							
Occupation time		PDOP Best				RMS Best																										
Number of Measurements 60		PDOP Worst 2.2				RMS Worst 20.0																										
Second Observation																																
Station Name (M2)		Description																														
Occupation time		PDOP Best				RMS Best																										
Number of Measurements		PDOP Worst				RMS Worst																										
Inverse Distance Between M1 and M2			FT		Alternate Base Station Used			Yes No																								
Monument and Markings																																
Type / Size																																
Stone		Pipe/Cap				Post				Other																						
Size		Size 2 1/2 / 3/4 1969 BLM				Size				Size																						
Material		Material steel / brass				Material				Material																						

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610600440

PLSS GPS Observation Sheet

Project Name SL T16S R10E <small>(Meridian Township Range)</small>				Township			½ (2)	N S	Range			½ (2)	E W	Section			Meridian															
				T	1	6		S	1	0		E					(SL)	US														
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING								Date 11/22/05																				
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12				Type								Accuracy																				
				COR	HARN	TRI	(Other) EMERY COUNTY					Order																				
USGS Quad Name OLSEN RESERVOIR UTAH				Datum								State UTAH																				
Nad27		Nad83		(Nad83 1994)		WGS84		Local		County EMERY																						
Latitude								Longitude																								
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0	
Northing								Easting																								
6	9	4	7	5	8	7	.	6	3								1	8	5	2	2	5	7	.	0	6						
Units				Survey Foot		(International Foot)		Meter			Coordinate Type				(State Plane)		UTM															
Zone		Utah North		(Utah Central)		Utah South		Vertical Datum				NGVD29		(NAVD88)																		
Ellipsoid Height				1711.15 M				FT			Geoid Height				M		5671.75 FT															
Base Receiver																																
Type TRIMBLE				Model 4000 SSI				Serial Number																								
Logging Interval		5 SEC.		Elevation Mask		13		PDOP Mask		6		Antenna Type					L1/L2 w/GROUND PLANE															
Start Time				AM		PM		End Time				AM		PM																		
Antenna Height																																
Session Beginning				1"		M		2 nd		M		3 rd		M		Ave 4.685 Feet M																
Session End				1"		M		2 nd		M		3 rd		M		Ave M																
Rover Receiver																																
Type TRIMBLE				Model 5800				Serial Number 4253117118																								
Approximate Distance From Base Station				Miles		Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT																						
Station Observation																																
Observation Type				(RTK)		FAST STATIC		STATIC			OTHER																					
First Observation																																
Station Name (M1)				7		0		0		5		0		0		Description NE corner Sec. 13																
Occupation time				PDOP Best				RMS Best																								
Number of Measurements				60				PDOP Worst				1.8				RMS Worst				20.9												
Second Observation																																
Station Name (M2)				Description																												
Occupation time				PDOP Best				RMS Best																								
Number of Measurements				PDOP Worst				RMS Worst																								
Inverse Distance Between M1 and M2				FT		Alternate Base Station Used				Yes		No																				
Monument and Markings																																
Type / Size																																
Stone				Pipe/Cap				Post				Other																				
Size				Size 2½ / ¾				1969 BLM				Size		Size																		
Material				Material steel / brass				Material				Material																				

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610700500

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-22-05

County Reference No. 1610700500

Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

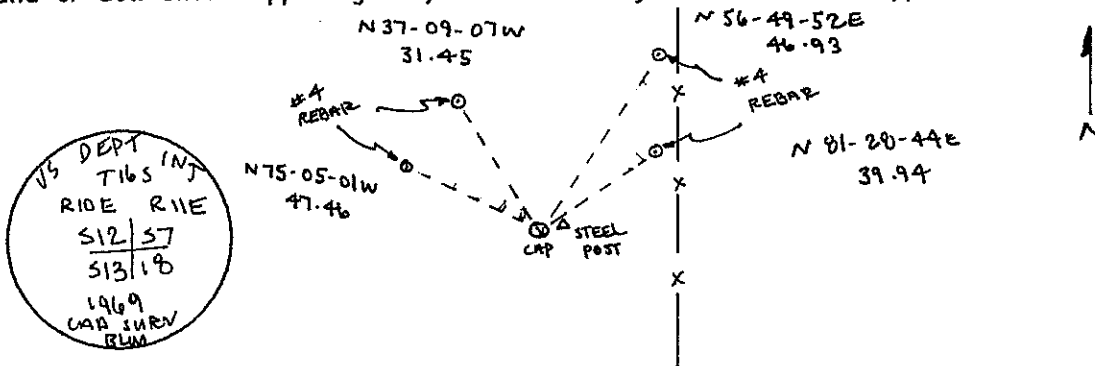
Your Description and Observation of Monument Found (Be Specific):

1969 BLM BRASS CAP 12" ABOVE GROUND LEVEL WITH A STEEL FENCE POST LYING ALONGSIDE

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET 4 #4 REBAR AS SHOWN BELOW

RE-SET STEEL FENCE POST ALONGSIDE CAP.

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



Certification:

Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513 Phone: (435) 381-2523

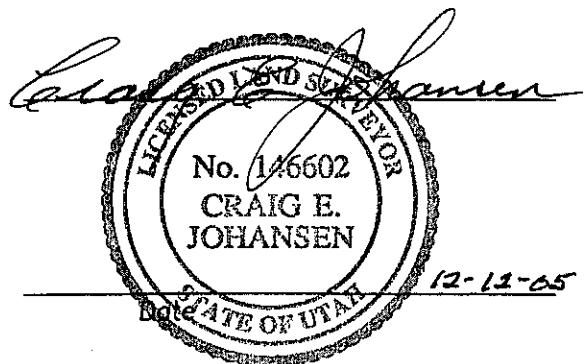
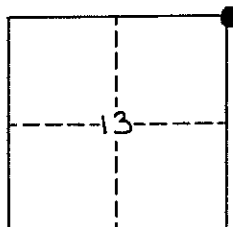
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Location Diagram:

Section: 13

Township: 16S

Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E <small>(Meridian Township Range)</small>		Township		½ (2)	N S	Range		½ (2)	E W	Section		Meridian																			
		T	1	6		S	1	0		E			(SL) US																		
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING							Date 11/22/05																						
Contacts Phone (435) 381-2523																															
Control Station																															
Name ELM GPS 12		COR		HARN	TRI	Type <input checked="" type="checkbox"/> Other EMERY COUNTY				Accuracy Order																					
USGS Quad Name OLSEN RESERVOIR UTAH		Datum						State UTAH																							
		Nad27	Nad83	<input checked="" type="checkbox"/> Nad83 (1994)		WGS84	Local		County EMERY																						
Latitude							Longitude																								
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0
Northing							Easting																								
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6						
Units		Survey Foot		<input checked="" type="checkbox"/> International Foot		Meter		Coordinate Type				<input checked="" type="checkbox"/> State Plane		UTM																	
Zone		Utah North		<input checked="" type="checkbox"/> Utah Central		Utah South		Vertical Datum				NGVD29		<input checked="" type="checkbox"/> NAVD88																	
Ellipsoid Height		1711.15 M		FT		Geoid Height				M		5671.75 FT																			
Base Receiver																															
Type TRIMBLE		Model 4000 SSI				Serial Number																									
Logging Interval 5 SEC.		Elevation Mask 13		PDOP Mask 6		Antenna Type L1/L2 w/GROUND PLANE																									
Start Time		AM		PM		End Time		AM		PM																					
Antenna Height																															
Session Beginning		1 st		M		2 nd		M		3 rd		M		Ave 4.685 Feet M																	
Session End		1 st		M		2 nd		M		3 rd		M		Ave M																	
Rover Receiver																															
Type TRIMBLE		Model 5800				Serial Number 4253117118																									
Approximate Distance From Base Station		Miles		Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT																							
Station Observation																															
Observation Type		<input checked="" type="checkbox"/> RTK		FAST STATIC		STATIC		OTHER																							
First Observation																															
Station Name (M1)		7		0	0	4	6	0	Description N 1/16 corner Sec. 13 - Sec. 18																						
Occupation time		PDOP Best				RMS Best																									
Number of Measurements 60		PDOP Worst 2.2				RMS Worst 11.5																									
Second Observation																															
Station Name (M2)		Description																													
Occupation time		PDOP Best				RMS Best																									
Number of Measurements		PDOP Worst				RMS Worst																									
Inverse Distance Between M1 and M2		FT		Alternate Base Station Used				Yes		No																					
Monument and Markings																															
Type / Size																															
Stone		Pipe/Cap				Post				Other																					
Size		Size 2½ / 3¼ 1969 BLM				Size				Size																					
Material		Material steel / brass				Material				Material																					

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610700460

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-22-05

County Reference No. 1610700460

Type of Monument: Section Corner
 Bench Mark

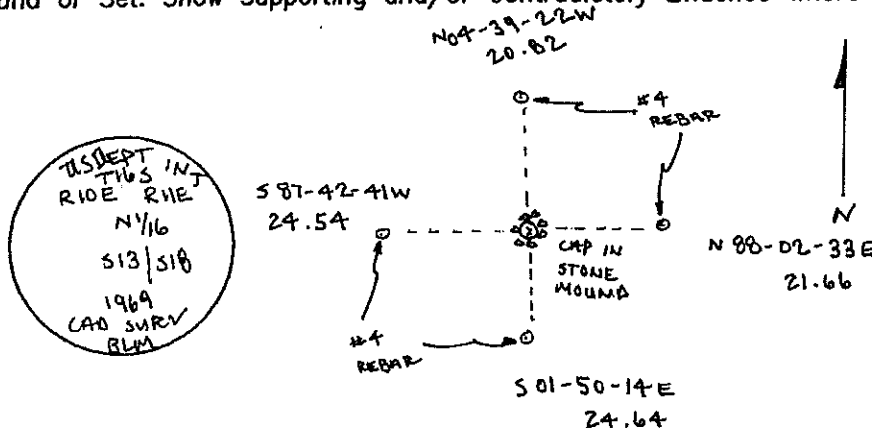
Quarter Corner
 Other 1/16 CORNER

Your Description and Observation of Monument Found (Be Specific):

1969 BLM BRASS 6" ABOVE GROUND LEVEL IN A STONE MOUND

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET 4 #4 REBAR AS SHOWN BELOW

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



Certification:

Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513 Phone: (435) 381-2523

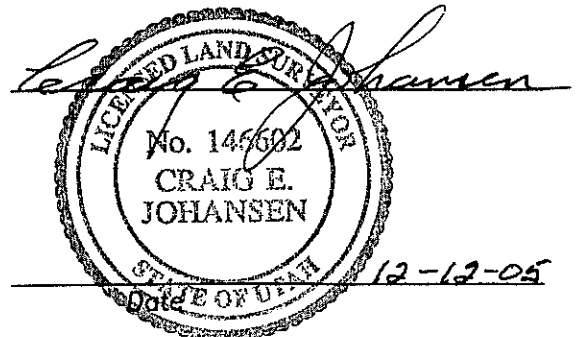
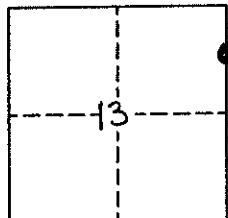
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Location Diagram:

Section: 13

Township: 16S

Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)		Township T 1 6		1/2 (2)	N S	Range 1 0		1/2 (2)	E W	Section		Meridian (SL) US																					
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/22/05																									
Contacts Phone (435) 381-2523																																	
Control Station																																	
Name ELM GPS 12		Type COR HARN TRI <input checked="" type="checkbox"/> Other EMERY COUNTY						Accuracy Order																									
USGS Quad Name OLSEN RESERVOIR UTAH		Datum Nad27 Nad83 <input checked="" type="checkbox"/> Nad83 (1994) WGS84 Local						State UTAH County EMERY																									
Latitude						Longitude																											
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0		
Northing						Easting																											
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6								
Units Survey Foot <input type="checkbox"/> International Foot <input checked="" type="checkbox"/> Meter <input type="checkbox"/>			Coordinate Type State Plane <input checked="" type="checkbox"/> UTM <input type="checkbox"/>																														
Zone Utah North <input type="checkbox"/> Utah Central <input checked="" type="checkbox"/> Utah South <input type="checkbox"/>			Vertical Datum NGVD29 <input type="checkbox"/> NAVD88 <input checked="" type="checkbox"/>																														
Ellipsoid Height 1711.15 M FT			Geoid Height M 5671.75 FT																														
Base Receiver																																	
Type TRIMBLE			Model 4000 SSI			Serial Number																											
Logging Interval 5 SEC.		Elevation Mask 13		PDOP Mask 6		Antenna Type L1/L2 w/GROUND PLANE																											
Start Time AM PM			End Time AM PM																														
Antenna Height																																	
Session Beginning		1" M 2 nd M 3 rd M		Ave 4.685 Feet M																													
Session End		1" M 2 nd M 3 rd M		Ave M																													
Rover Receiver																																	
Type TRIMBLE			Model 5800			Serial Number 4253117118																											
Approximate Distance From Base Station Miles			Antenna Type 5800 INTERNAL			Antenna Height 6.6 FT																											
Station Observation																																	
Observation Type <input checked="" type="checkbox"/> RTK <input type="checkbox"/> FAST STATIC <input type="checkbox"/> STATIC <input type="checkbox"/> OTHER																																	
First Observation																																	
Station Name (M1)		7 0 0 4 4 0		Description E 1/4 corner Sec. 13																													
Occupation time		PDOP Best			RMS Best																												
Number of Measurements 60		PDOP Worst 1.5			RMS Worst 15.4																												
Second Observation																																	
Station Name (M2)		Description																															
Occupation time		PDOP Best			RMS Best																												
Number of Measurements		PDOP Worst			RMS Worst																												
Inverse Distance Between M1 and M2 FT			Alternate Base Station Used			Yes No																											
Monument and Markings																																	
Type / Size																																	
Stone		Pipe/Cap			Post			Other																									
Size		Size 2 1/2 / 3 1/4 1969 BLM			Size			Size																									
Material		Material steel / brass			Material			Material																									

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610700440

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-22-05

County Reference No. 1610700440

Type of Monument: _____ Section Corner
 _____ Bench Mark

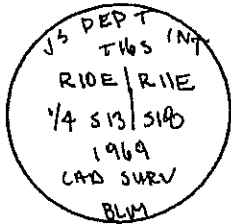
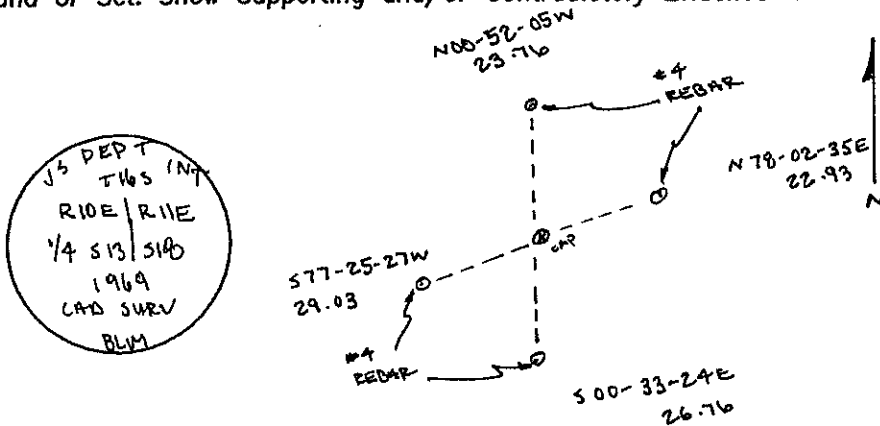
Quarter Corner
 _____ Other _____

Your Description and Observation of Monument Found (Be Specific):

1969 BLM BRASS CAP 4" ABOVE GROUNDLEVEL IN A STONE MOUND.

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET 4 #4 REBAR AS SHOWN BELOW.

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



Certification:

Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513

Phone: (435) 381-2523

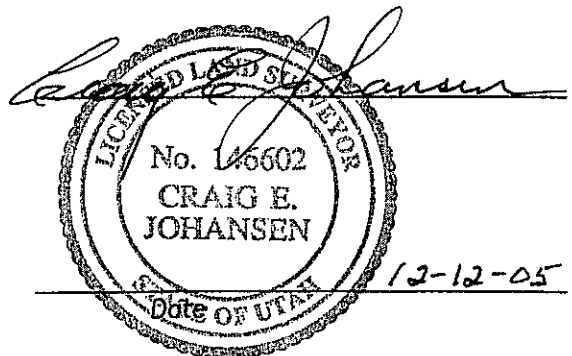
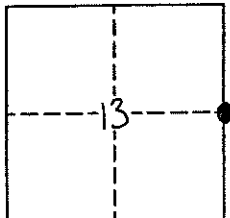
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Location Diagram:

Section: 13

Township: 11.5

Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E <small>(Meridian Township Range)</small>				Township		1/2 (2)	N S	Range		1/2 (2)	E W	Section		Meridian																					
				T	1	6	S	1	0		E			(SL)	US																				
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/16/05																									
Contacts Phone (435) 381-2523																																			
Control Station																																			
Name ELM GPS 12				Type EMERY COUNTY						Accuracy Order																									
USGS Quad Name OLSEN RESERVOIR UTAH				COR	HARN	TRI	Datum UTAH						State																						
				Nad27	Nad83	(Nad83 1994)	WGS84	Local	County EMERY																										
Latitude								Longitude																											
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0				
Northing								Easting																											
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6										
Units Survey Foot				<input checked="" type="radio"/> International Foot				<input type="radio"/> Meter				Coordinate Type <input checked="" type="radio"/> State Plane				<input type="radio"/> UTM																			
Zone Utah North				<input checked="" type="radio"/> Utah Central				<input type="radio"/> Utah South				Vertical Datum NGVD29				<input checked="" type="radio"/> NAVD88																			
Ellipsoid Height 1711.15 M				FT				Geoid Height M				5671.75 FT																							
Base Receiver																																			
Type TRIMBLE				Model 4000 SSI				Serial Number																											
Logging Interval 5 SEC.				Elevation Mask 13				PDOP Mask 6				Antenna Type L1/L2 w/GROUND PLANE																							
Start Time				AM				PM				End Time				AM				PM															
Antenna Height																																			
Session Beginning				1"				M				2"				M				3"				M				Ave				4.659 Feet M			
Session End				1"				M				2"				M				3"				M				Ave				M			
Rover Receiver																																			
Type TRIMBLE				Model 5800				Serial Number 4253117118																											
Approximate Distance From Base Station				Miles				Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT																							
Station Observation																																			
Observation Type <input checked="" type="radio"/> RTK				<input type="radio"/> FAST STATIC				<input type="radio"/> STATIC				<input type="radio"/> OTHER																							
First Observation																																			
Station Name (M1)				7 0 0 4 0 0				Description SE corner Sec. 13																											
Occupation time				PDOP Best				RMS Best																											
Number of Measurements 60				PDOP Worst 2.7				RMS Worst 12.8																											
Second Observation																																			
Station Name (M2)								Description																											
Occupation time				PDOP Best				RMS Best																											
Number of Measurements				PDOP Worst				RMS Worst																											
Inverse Distance Between M1 and M2				FT				Alternate Base Station Used				Yes No																							
Monument and Markings																																			
Type / Size																																			
Stone				Pipe/Cap				Post				Other																							
Size				Size 2 1/2 / 3 1/4 1969 BLM				Size				Size																							
Material				Material steel / brass				Material				Material																							

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610700400

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-16-05

County Reference No. 1610 700400

Type of Monument: Section Corner
 Bench Mark

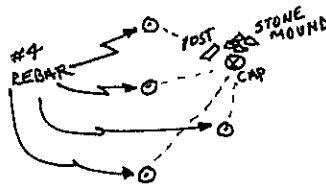
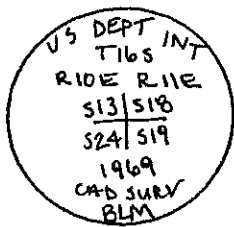
Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):

1969 BLM BRASS CAP 8" ABOVE GROUNDLEVEL WITH A STEEL FENCE POST DRIVEN ALONGSIDE. A SMALL STONE MOUND SETS TO THE NORTH OF CORNER.

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET A #4 REBAR AS SHOWN BELOW

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



563°15'39"W
25.00
522°50'34"W
27.07
52°55'26"W
47.44
522°28'34"E
21.14



Certification:

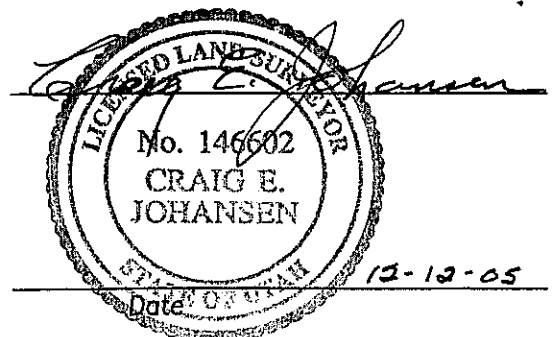
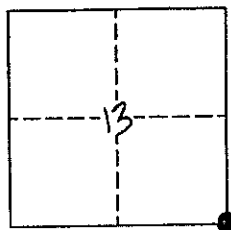
Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513 Phone: (435) 381-2523

This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 13
 Township: 16 S
 Range: 10 E



PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)				Township T 1 6			¼ N (2) S		Range 1 0		¼ E (2) W		Section		Meridian SL US																	
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/22/05																						
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12				Type Other EMERY COUNTY				Accuracy Order																								
USGS Quad Name OLSEN RESERVOIR UTAH				Datum Nad83 (1994)				State UTAH																								
				Nad27		Nad83		WGS84		Local		County EMERY																				
Latitude								Longitude																								
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0	
Northing								Easting																								
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6							
Units Survey Foot				<input checked="" type="radio"/> International Foot				Meter				Coordinate Type <input checked="" type="radio"/> State Plane				UTM																
Zone Utah North				<input checked="" type="radio"/> Utah Central				Utah South				Vertical Datum NGVD29				<input checked="" type="radio"/> NAVD88																
Ellipsoid Height 1711.15 M				FT				Geoid Height M				5671.75 FT																				
Base Receiver																																
Type TRIMBLE				Model 4000 SSI				Serial Number																								
Logging Interval 5 SEC.				Elevation Mask 13				PDOP Mask 6				Antenna Type L1/L2 w/GROUND PLANE																				
Start Time AM				PM				End Time AM				PM																				
Antenna Height																																
Session Beginning 1"				M				2"				M				3"				M				Ave 4.685 Feet M								
Session End 1"				M				2"				M				3"				M				Ave M								
Rover Receiver																																
Type TRIMBLE				Model 5800				Serial Number 4253117118																								
Approximate Distance From Base Station Miles				Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT																								
Station Observation																																
Observation Type <input checked="" type="radio"/> RTK				<input type="radio"/> FAST STATIC				<input type="radio"/> STATIC				<input type="radio"/> OTHER																				
First Observation																																
Station Name (M1) 6 4 0 5 0 0				Description N 1/4 corner Sec. 13																												
Occupation time				PDOP Best				RMS Best																								
Number of Measurements 60				PDOP Worst 1.1				RMS Worst 27.6																								
Second Observation																																
Station Name (M2)				Description																												
Occupation time				PDOP Best				RMS Best																								
Number of Measurements				PDOP Worst				RMS Worst																								
Inverse Distance Between M1 and M2				FT				Alternate Base Station Used				Yes No																				
Monument and Markings																																
Type / Size																																
Stone				Pipe/Cap				Post				Other																				
Size				Size 2½ / 3¼ 1969 BLM				Size				Size																				
Material				Material steel / brass				Material				Material																				

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610640500

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-22-05

County Reference No. 1610640500

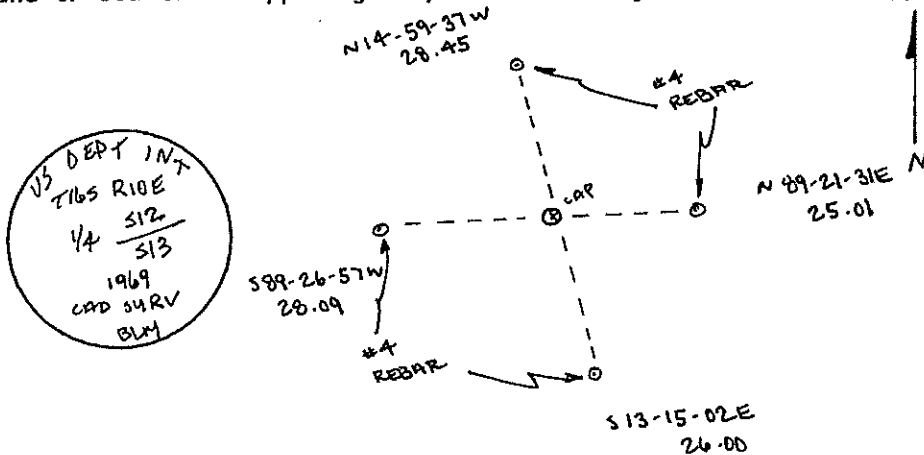
Type of Monument: _____ Section Corner
 _____ Bench Mark

Quarter Corner
 _____ Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 4" ABOVE GROUND LEVEL

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET 4 #4 REBAR AS SHOWN BELOW

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



Certification:

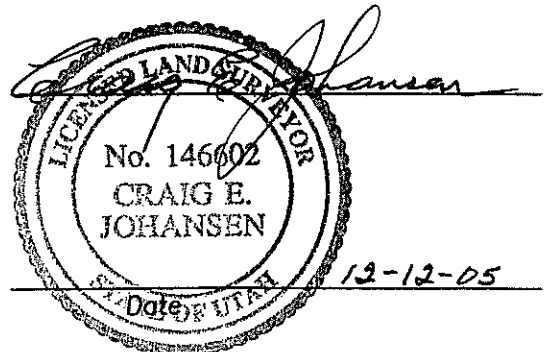
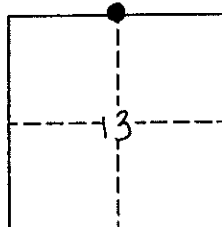
Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513 Phone: (435) 381-2523

This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 13
 Township: 16S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E <small>(Meridian Township Range)</small>		Township T 1 6		¼ (2)	N S	Range 1 0		¼ (2)	E W	Section		Meridian (SL) US																				
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/16/05																								
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12		COR		HARN		TRI		Type Other EMERY COUNTY			Accuracy Order																					
USGS Quad Name OLSEN RESERVOIR UTAH		Nad27		Nad83		Datum (Nad83 1994)		WGS84		Local		State UTAH																				
County EMERY																																
Latitude						Longitude																										
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0	
Northing						Easting																										
6	9	4	7	5	8	7	.	6	3								1	8	5	2	2	5	7	.	0	6						
Units Survey Foot		International Foot		Meter		Coordinate Type			State Plane		UTM																					
Zone Utah North		Utah Central		Utah South		Vertical Datum			NGVD29		NAVD88																					
Ellipsoid Height 1711.15 M		FT		Geoid Height			M		5671.75 FT																							
Base Receiver																																
Type TRIMBLE		Model 4000 SSI				Serial Number																										
Logging Interval 5 SEC.		Elevation Mask 13		PDOP Mask 6		Antenna Type L1/L2 w/GROUND PLANE																										
Start Time		AM		PM		End Time						AM		PM																		
Antenna Height																																
Session Beginning		1"		M		2 nd		M		3 rd		M		Ave		4.659 Feet M																
Session End		1"		M		2 nd		M		3 rd		M		Ave		M																
Rover Receiver																																
Type TRIMBLE		Model 5800				Serial Number 4253117118																										
Approximate Distance From Base Station		Miles		Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT																								
Station Observation																																
Observation Type		(RTK)		FAST STATIC		STATIC		OTHER																								
First Observation																																
Station Name (M1)		6 4 0 4 0 0		Description S 1/4 corner Sec. 13																												
Occupation time		PDOP Best				RMS Best																										
Number of Measurements 60		PDOP Worst 1.8				RMS Worst 20.7																										
Second Observation																																
Station Name (M2)		Description																														
Occupation time		PDOP Best				RMS Best																										
Number of Measurements		PDOP Worst				RMS Worst																										
Inverse Distance Between M1 and M2		FT		Alternate Base Station Used		Yes		No																								
Monument and Markings																																
Type / Size																																
Stone		Pipe/Cap				Post				Other																						
Size		Size 2½ / 3¼ 1969 BLM				Size				Size																						
Material		Material steel / brass				Material				Material																						

Sketch/Rubbing or Attach Photo of GPS Station Occupied
Show rotation of stampings/markings relative to North and describe briefly

See Emery County Land Survey Monument Record Sheet 1610640400

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-22-05

County Reference No. 1610620500

Type of Monument: Section Corner
 Bench Mark

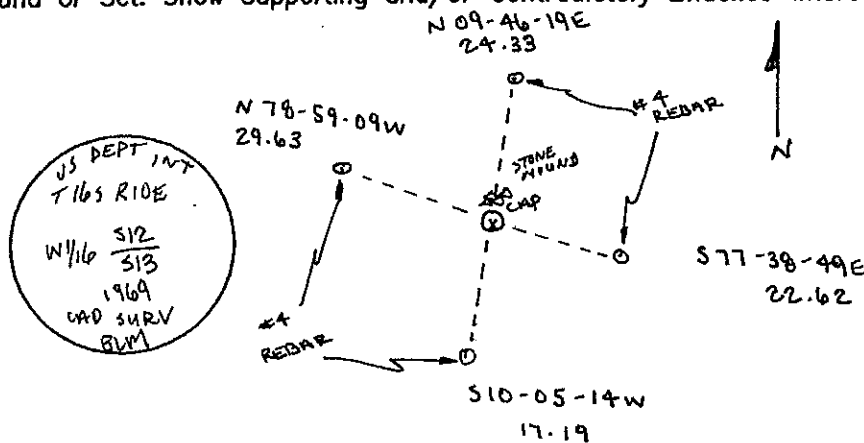
Quarter Corner
 Other 1/16 CORNER

Your Description and Observation of Monument Found (Be Specific):

1969 BLM BRASS CAP 6" ABOVE GROUND LEVEL WITH #4 STONE MOUND TO THE NORTH

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET #4 REBAR AS SHOWN BELOW.

Sketch showing Relative Location of Monument Accessories and Two Reference Points Stating Whether Found or Set. Show Supporting and/or Contradictory Evidence where Applicable. Include North Arrow.



Certification:

Firm name and/or Surveyor: Johansen & Tuttle Eng.

Address: 90 S. 100 E. Castle Dale, Utah 84513 Phone: (435) 381-2523

This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 13
 Township: 16S
 Range: 10E

