

PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)		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 11/18/05																								
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12		Type COR HARN TRI <input checked="" type="radio"/> Other EMERY COUNTY						Accuracy Order																								
USGS Quad Name OLSEN RESERVOIR UTAH		Datum Nad27 Nad83 <input checked="" type="radio"/> 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 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 4.761 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 <input checked="" type="radio"/> RTK <input type="radio"/> FAST STATIC <input type="radio"/> STATIC <input type="radio"/> OTHER																																
First Observation																																
Station Name (M1)		5	0	0	5	4	0	Description E 1/4 corner Sec. 10																								
Occupation time		PDOP Best				RMS Best																										
Number of Measurements 60		PDOP Worst 1.9				RMS Worst 17.0																										
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 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 1610500540

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-19-05

County Reference No. 1610500540

Type of Monument: Section Corner
 Bench Mark

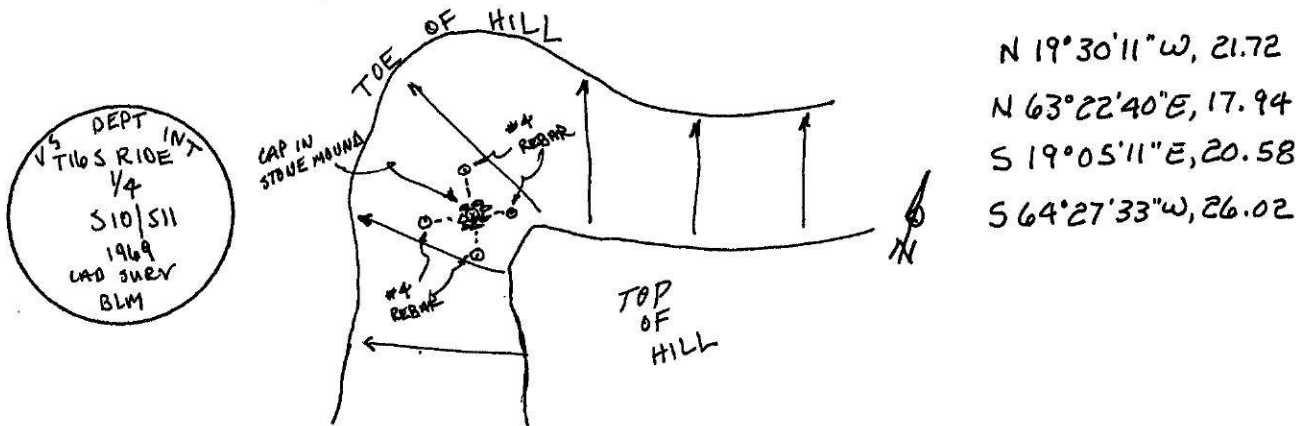
Quarter Corner
 Other _____

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

1969 BLM BRASS CAP 4" ABOVE GROUND LEVEL WITH A STONE MOUND 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

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.



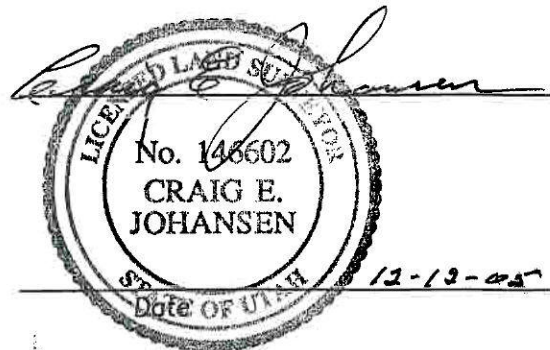
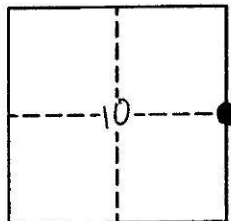
Certification:

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: 10
 Township: 16S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E <small>(Meridian Township Range)</small>		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 11/29/05																									
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 <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 st M		2 nd M		3 rd M		Ave 4.780 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		<input type="checkbox"/> FAST STATIC		<input type="checkbox"/> STATIC		<input type="checkbox"/> OTHER																											
First Observation																																	
Station Name (M1)		4 0 0 5 4 0		Description W 1/4 corner Sec. 10																													
Occupation time		PDOP Best				RMS Best																											
Number of Measurements 60		PDOP Worst 2.7				RMS Worst 13.4																											
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 1610400540

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-29-05

County Reference No. 1610400540

Type of Monument: Section Corner
 Bench Mark

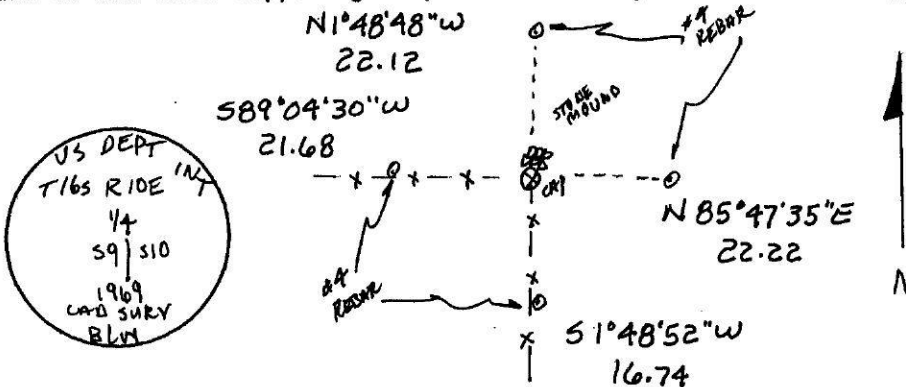
Quarter Corner
 Other

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

1969 BLM BRASS CAP 8" ABOVE GROUND LEVEL WITH A MOUND OF STONE TO THE NORTH.

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

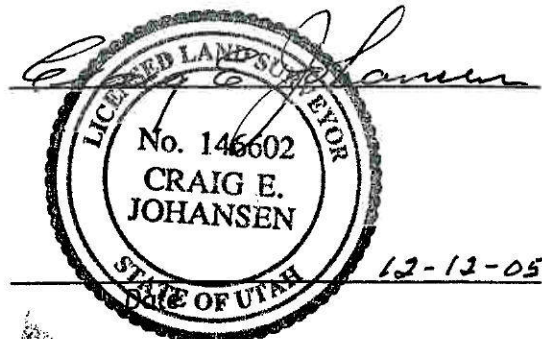
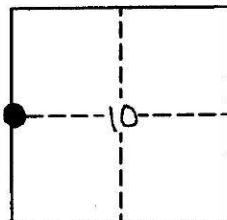
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 10

Township: 16S

Range: 1DE



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																					
Contacts Name Lee M. Swasey		T		1	6	S		1	0	E	(SL) US																					
Contacts Phone (435) 381-2523		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/11/05																								
Control Station																																
Name ELM GPS 12		COR		HARN		TRI		Type Other		Accuracy EMERY COUNTY																						
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 st		M		2 nd		M		3 rd		M		Ave		4.718 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		(RTK)		FAST STATIC		STATIC		OTHER																								
First Observation																																
Station Name (M1)		4		4		0		6		0		0		Description				N 1/4 corner Sec. 10														
Occupation time		PDOP Best		RMS Best																												
Number of Measurements		60		PDOP Worst		1.4		RMS Worst		13.7																						
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 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 1610440600

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-11-05

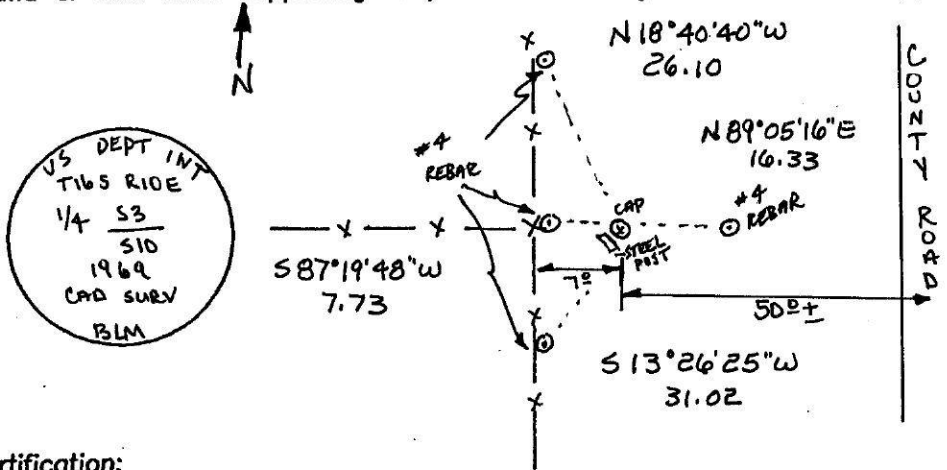
County Reference No. 1610 440 600

Type of Monument: Section Corner ✓ Quarter Corner
 Bench Mark Other

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 6" ABOVE GROUND LEVEL WITH A STEEL POST DRIVEN 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.

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.



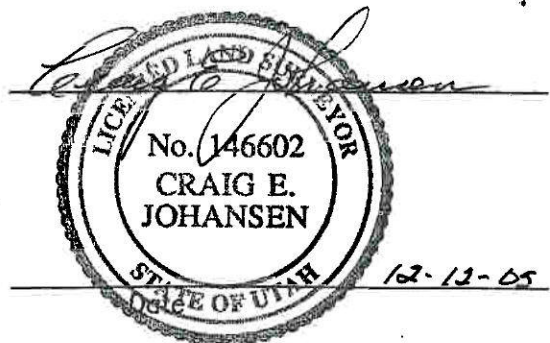
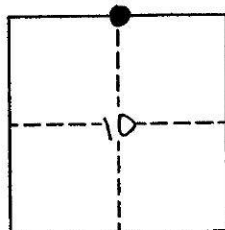
Certification:

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: 10
 Township: 16S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)		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 11/18/05																								
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12		Type COR HARN TRI <u>Other</u> EMERY COUNTY						Accuracy Order																								
USGS Quad Name OLSEN RESERVOIR UTAH		Datum Nad27 Nad83 <u>Nad83 (1994)</u> 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		<u>International Foot</u>		Meter		Coordinate Type		<u>State Plane</u>		UTM																				
Zone		Utah North		<u>Utah Central</u>		Utah South		Vertical Datum		NGVD29		<u>NAVD88</u>																				
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																										
Session Beginning		1 st		M		2 nd		M		3 rd		M		Ave 4.761 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		<u>RTK</u>		FAST STATIC		STATIC		OTHER																								
First Observation																																
Station Name (M1)		5	0	0	5	0	0	Description SE corner Sec. 10																								
Occupation time		PDOP Best				RMS Best																										
Number of Measurements 60		PDOP Worst 2.0				RMS Worst 16.0																										
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 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 1610500500

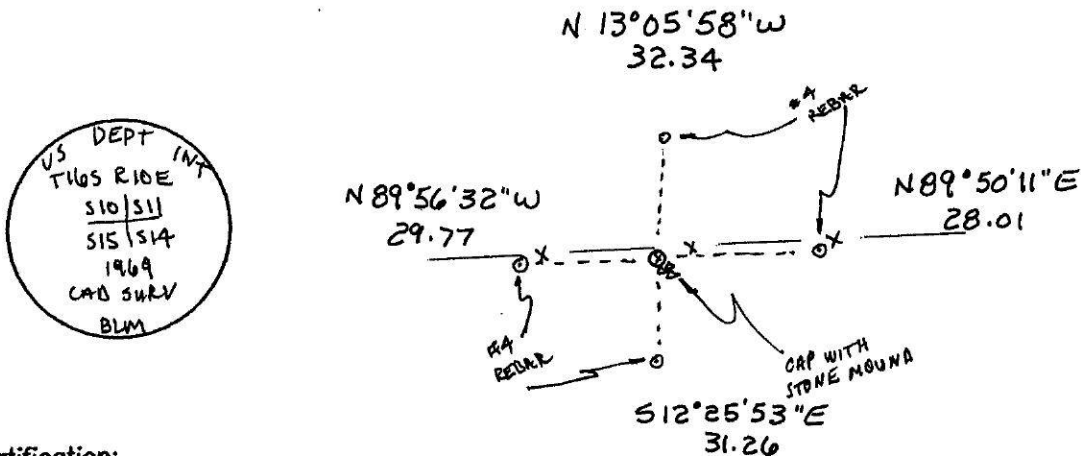
EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-18-05 County Reference No. 1610500500
 Type of Monument: Section Corner Quarter Corner
 Bench Mark Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 6" ABOVE GROUND LEVEL WITH A STONE MOUND 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

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.

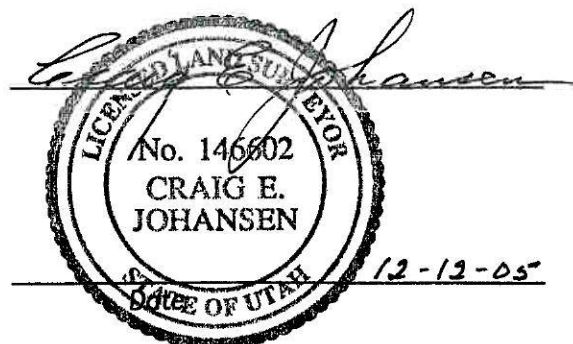
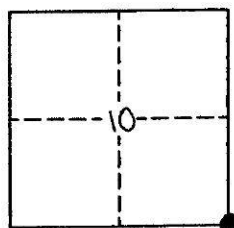


Certification:

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: 10
 Township: 16 S
 Range: 10 E



PLSS GPS Observation Sheet

Project Name SL T16S R10E (Meridian Township Range)		Township T 1 6		½ (2) N S	Range 1 0		½ (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		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		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 4.761 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 (RTK) FAST STATIC STATIC OTHER										
First Observation										
Station Name (M1)		5 0 0 5 6 0 Description N 1/16 corner Sec. 10 - Sec. 11								
Occupation time		PDOP Best				RMS Best				
Number of Measurements 60		PDOP Worst 1.8				RMS Worst 22.4				
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 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 1610500560

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-18-05

County Reference No. 1610500560

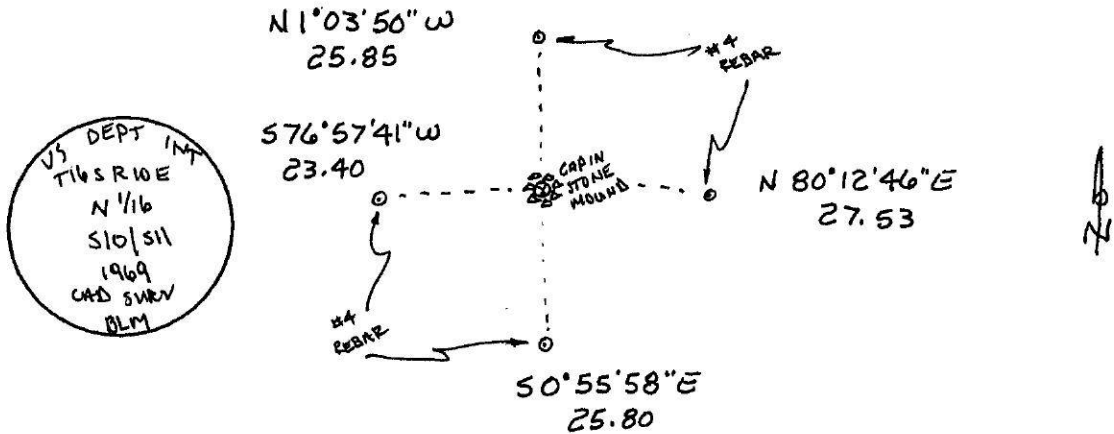
Type of Monument: Section Corner
 Bench Mark

 Quarter Corner
 Other 1/16 CORNER

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 6" ABOVE GROUND LEVEL

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

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: 10
 Township: 16S
 Range: 10E

