

PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)		Township T 1 6		1/2 (2)	N S	Range 1 1		1/2 (2)	E W	Section		Meridian (SL) US																			
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/30/05																							
Contacts Phone (435) 381-2523																															
Control Station																															
Name CP - 1		Type COR HARN TRI <input checked="" type="radio"/> Other <input type="radio"/> Local Survey						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	6	-	1	6	.	2	0	1	4	5	W	1	1	0	-	4	2	-	2	8	.	1	7	5	6	3	
Northing							Easting																								
6	9	6	4	9	6	8	.	4	0						1	8	6	4	1	4	7	.	1	2							
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		M		5481.181 FT		Geoid Height		M		5538.90 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 4.157 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)		3		0		0		5		0		0		Description NE corner Sec. 17																	
Occupation time		PDOP Best				RMS Best																									
Number of Measurements 60		PDOP Worst 3.4				RMS Worst 17.3																									
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 1611300500

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-29-05

County Reference No. 1611300500

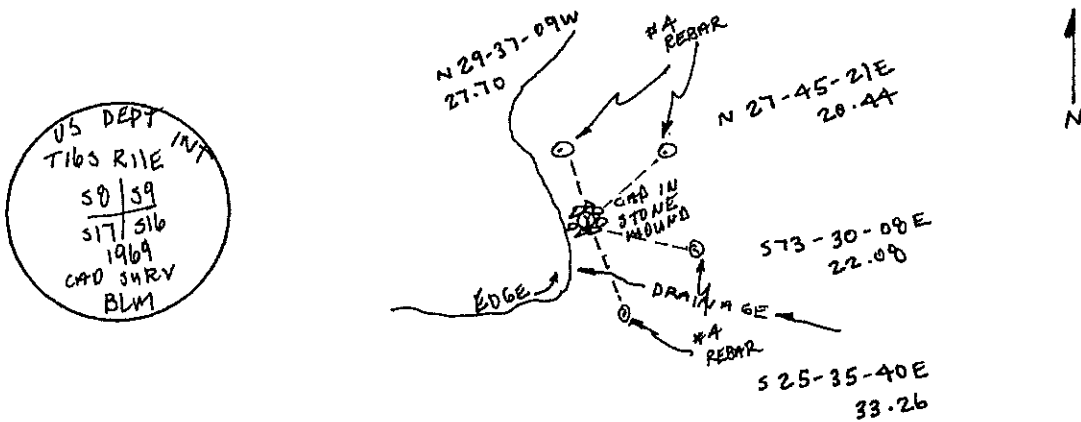
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 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:

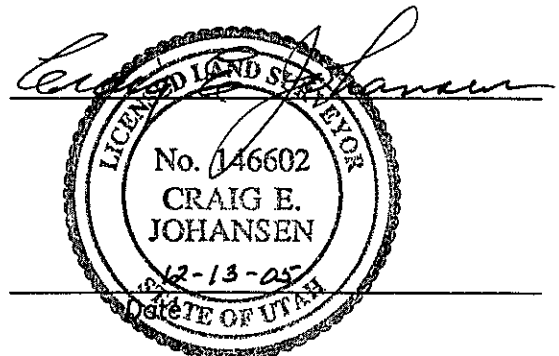
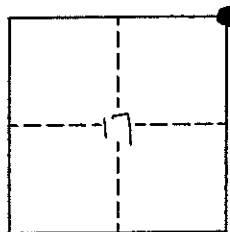
Firm name and/or Surveyor: Johansen & Tuttle Eng.

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

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: 17
 Township: 16S
 Range: 11E



PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)				Township		½ (2)	N S	Range		½ (2)	E W	Section		Meridian																		
				T	1	6	S	1	1		E			(SL)	US																	
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/30/05																						
Contacts Phone (435) 381-2523																																
Control Station																																
Name CP - 1				Type COR HARN TRI <input checked="" type="radio"/> Other Local Survey						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	6	-	1	6	.	2	0	1	4	5	W	1	1	0	-	4	2	-	2	8	.	1	7	5	6	3		
Northing								Easting																								
6	9	6	4	9	6	8	.	4	0						1	8	6	4	1	4	7	.	1	2								
Units Survey Foot <input type="radio"/> International Foot <input checked="" type="radio"/> Meter				Coordinate Type State Plane <input type="radio"/> UTM				Zone Utah North <input type="radio"/> Utah Central <input checked="" type="radio"/> Utah South				Vertical Datum NGVD29 <input type="radio"/> NAVD88 <input checked="" type="radio"/>																				
Ellipsoid Height M				5481.181 FT				Geoid Height M				5538.90 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 4.157 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)				3 0 0 4 4 0				Description E 1/4 corner Sec. 17																								
Occupation time				PDOP Best				RMS Best																								
Number of Measurements 60				PDOP Worst 3.4				RMS Worst 16.2																								
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 1611300440

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-30-05

County Reference No. 1611300440

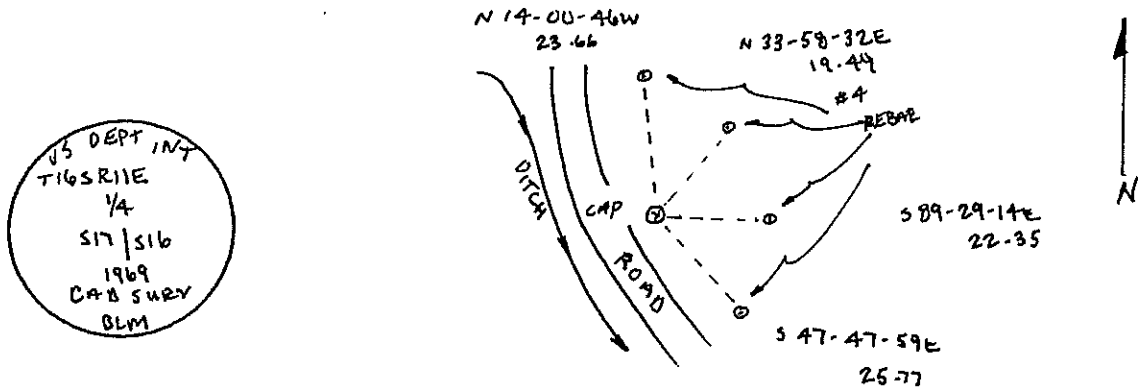
Type of Monument: _____ Section Corner
 _____ Bench Mark

Quarter Corner
 _____ Other _____

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

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:

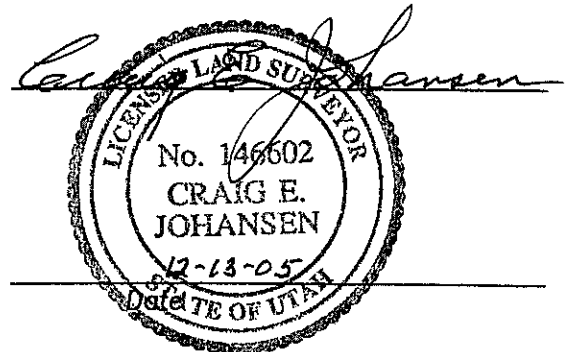
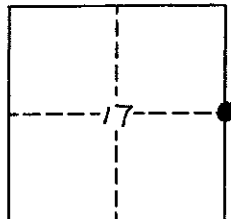
Firm name and/or Surveyor: Johansen & Tuttle Eng.

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

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Location Diagram:

Section: 17
 Township: 16S
 Range: 11E



PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)		Township		½ (2)	N S	Range		½ (2)	E W	Section	Meridian																				
Contacts Name Lee M. Swasey		T		1	6	S	1	1	E		(SL) US																				
Contacts Phone (435) 381-2523		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/30/05																							
Control Station																															
Name CP - 1		COR		HARN		TRI		Type <input checked="" type="checkbox"/> Other <input type="checkbox"/> Local Survey		Accuracy Order																					
USGS Quad Name OLSEN RESERVOIR UTAH		Nad27		Nad83		Datum <input checked="" type="checkbox"/> Nad83 (1994) <input type="checkbox"/> WGS84 <input type="checkbox"/> Local		State UTAH		County EMERY																					
Latitude						Longitude																									
N	3	9	-	2	6	-	1	6	.	2	0	1	4	5	W	1	1	0	-	4	2	-	2	8	.	1	7	5	6	3	
Northing						Easting																									
6	9	6	4	9	6	8	.	4	0						1	8	6	4	1	4	7	.	1	2							
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 M 5481.181 FT		Geoid Height M 5538.90 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 4.157 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="checkbox"/> RTK <input type="checkbox"/> FAST STATIC <input type="checkbox"/> STATIC <input type="checkbox"/> OTHER																															
First Observation																															
Station Name (M1)		3		0	0	4	2	0	Description S 1/16 corner Sec. 17 - Sec. 16																						
Occupation time		PDOP Best			RMS Best																										
Number of Measurements 60		PDOP Worst 4.0			RMS Worst 5.0																										
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 1611300420

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-30-05

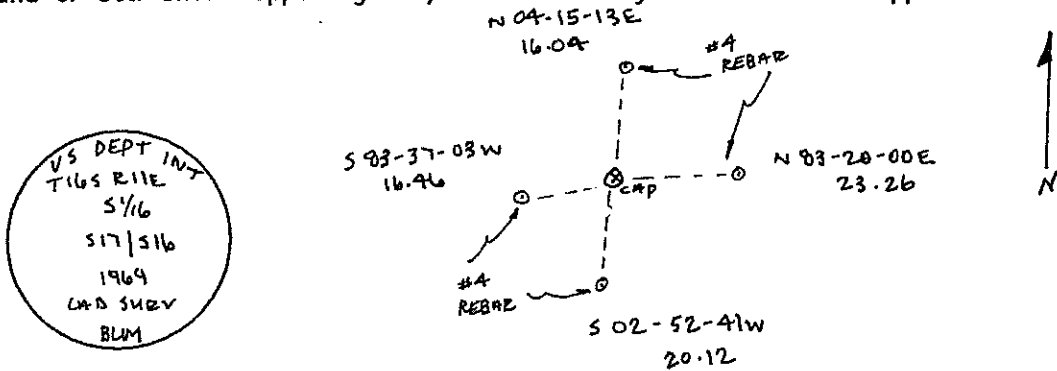
County Reference No. 1611300420

Type of Monument: _____ Section Corner _____ Quarter Corner
 _____ Bench Mark Other 1/16 CORNER

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.

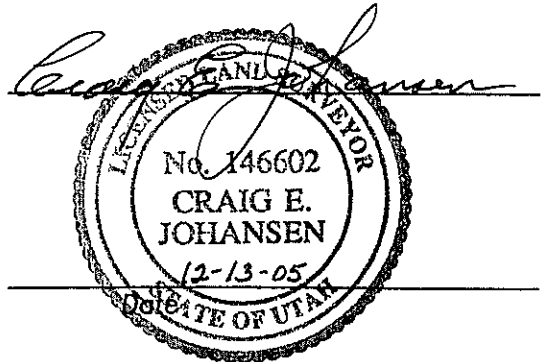
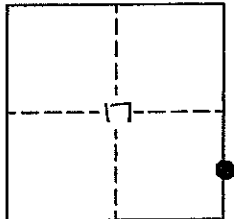


Certification:

Firm name and/or Surveyor: Johansen & Tuttle Eng.
 Address: 90 S. 100 E. Castle Dale, Utah 84513 Phone: (435) 381-2523

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Location Diagram:
 Section: 17
 Township: 16S
 Range: 11E



PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)		Township T 1 6			½ (2)	N S	Range 1 1		½ (2)	E W	Section		Meridian (SL) US																		
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING							Date 11/28/05																						
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		Nad27			Nad83			Datum <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 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"		M		2 nd		M		3 rd		M		Ave 4.678 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)		2 4 0 5 0 0			Description N 1/4 corner Sec. 17																										
Occupation time		PDOP Best				RMS Best																									
Number of Measurements 60		PDOP Worst 2.4				RMS Worst 26.4																									
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 1611240500

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-29-05

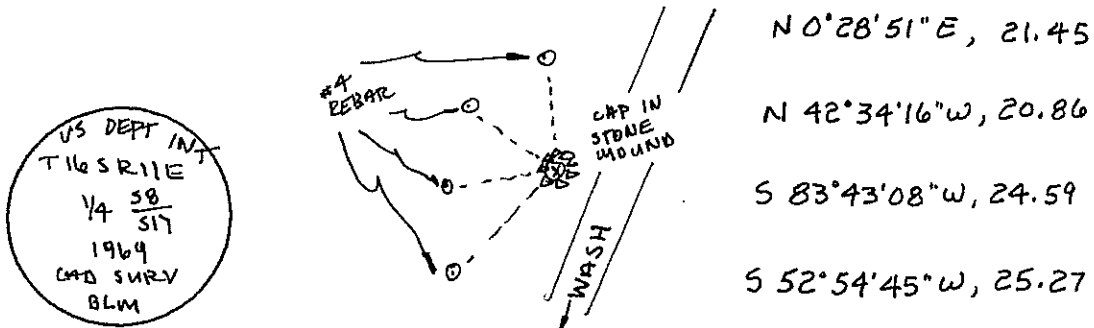
County Reference No. 1611240500

Type of Monument: Section Corner Quarter Corner
 Bench Mark Other

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP IN A STONE MOUND
 STAMPING ON CAP FACES SOUTH.

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.



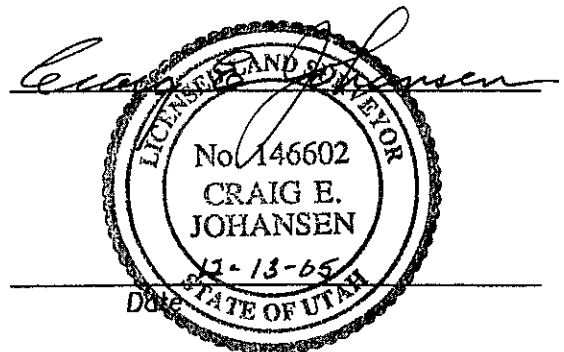
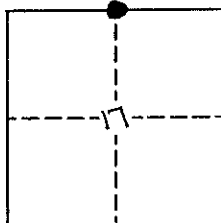
Certification:

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: 17
 Township: 16 S
 Range: 11 E



PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)		Township T 1 6		1/2 (2)	N S	Range 1 1		1/2 (2)	E W	Section		Meridian (SL) US
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/30/05				
Contacts Phone (435) 381-2523												
Control Station												
Name CP - 1		Type COR HARN TRI <u>Other</u> Local Survey							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 6 - 1 6 . 2 0 1 4 5						W 1 1 0 - 4 2 - 2 8 . 1 7 5 6 3						
Northing						Easting						
6 9 6 4 9 6 8 . 4 0						1 8 6 4 1 4 7 . 1 2						
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 M 5481.181 FT			Geoid Height M 5538.90 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 4.157 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 <u>RTK</u> FAST STATIC STATIC OTHER												
First Observation												
Station Name (M1)		3 0 0 4 0 0		Description SE corner Sec, 17								
Occupation time		PDOP Best				RMS Best						
Number of Measurements 60		PDOP Worst 2.6				RMS Worst 10.9						
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 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 1611300400

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-30-05

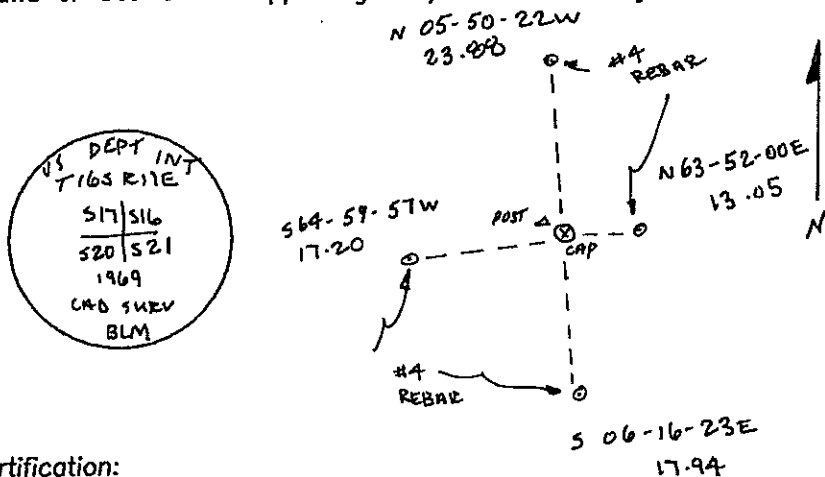
County Reference No. 1611300400

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

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 8" ABOVE GROUND LEVEL WITH A STEEL FENCE 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.

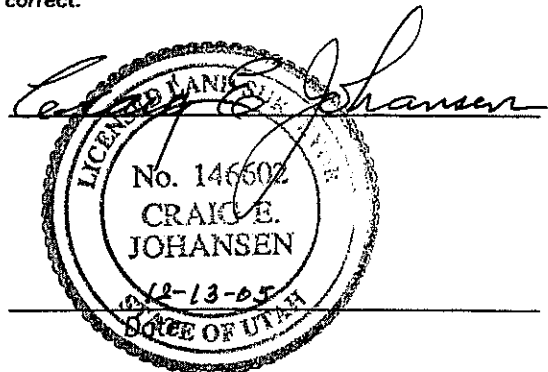
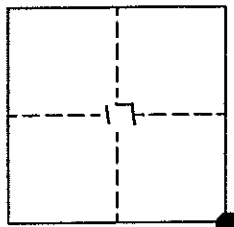


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Location Diagram:
 Section: 17
 Township: 16S
 Range: 11E



PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)		Township T 1 6		1/2 (2)	N S	Range 1 1		1/2 (2)	E W	Section		Meridian (SL) US																			
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 12/07/05																							
Contacts Phone (435) 381-2523																															
Control Station																															
Name CP-WEST		Type COR HARN TRI <input checked="" type="radio"/> Other LOCAL SURVEY						Accuracy Order																							
USGS Quad Name ELMO UTAH		Datum Nad27 Nad83 <input checked="" type="radio"/> Nad83 (1994) WGS84 Local						State UTAH County EMERY																							
Latitude						Longitude																									
N	3	9	-	2	8	-	0	8	.	2	2	8	1	8	W	1	1	0	-	4	7	-	1	5	.	1	3	2	7	7	
Northing						Easting																									
6	9	7	6	1	1	2	.	8	0						1	8	4	1	5	4	5	.	4	0							
Units Survey Foot <input type="radio"/> International Foot <input checked="" type="radio"/> Meter		Coordinate Type State Plane <input type="radio"/> UTM																													
Zone Utah North <input type="radio"/> Utah Central <input checked="" type="radio"/> Utah South		Vertical Datum NGVD29 <input type="radio"/> NAVD88 <input checked="" type="radio"/>																													
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 4.311 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="radio"/> RTK <input type="radio"/> FAST STATIC <input type="radio"/> STATIC <input type="radio"/> OTHER																															
First Observation																															
Station Name (M1)		2		4		0		4		0		0		Description S 1/4 corner Sec. 17																	
Occupation time			PDOP Best				RMS Best																								
Number of Measurements 60			PDOP Worst 3.3				RMS Worst 10.3																								
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 2005 ECS				Size			Size																					
Material			Material alum. / alum.				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 1611240400

PLSS GPS Observation Sheet

Project Name SL T16S R11E <small>(Meridian Township Range)</small>				Township		½ (2)	N S	Range		½ (2)	E W	Section		Meridian																	
				T	1	6		S	1	1		E				(SL)	US														
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/28/05																					
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 4.678 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="radio"/> RTK <input type="radio"/> FAST STATIC <input type="radio"/> STATIC <input type="radio"/> OTHER																															
First Observation																															
Station Name (M1)		2		0		0		4		4		0		Description W 1/4 corner Sec. 17																	
Occupation time				PDOP Best				RMS Best																							
Number of Measurements 60				PDOP Worst 1.5				RMS Worst 9.7																							
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 1611200440

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-28-05

County Reference No. 1011200440

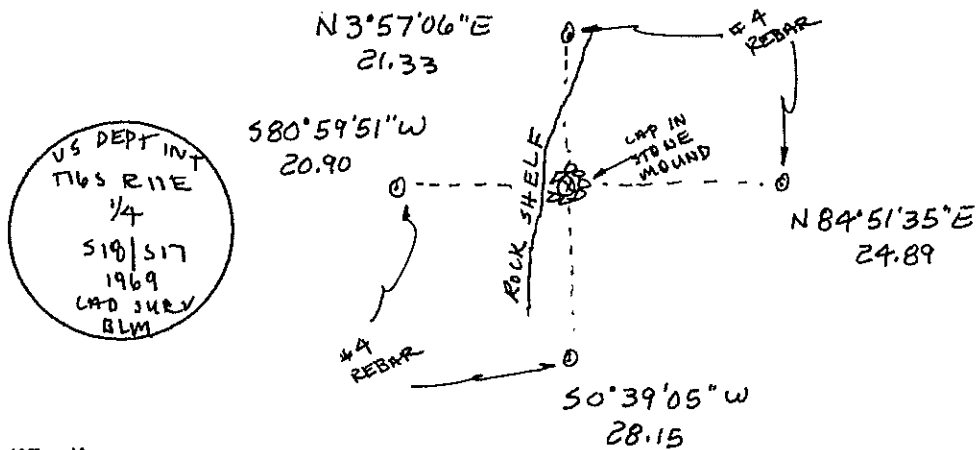
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP IN LARGE 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

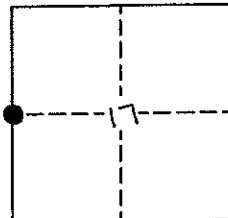
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 17

Township: 16S

Range: 11E



Craig E. Johansen
 LICENSED LAND SURVEYOR
 No. 146602
 CRAIG E. JOHANSEN
 STATE OF UTAH
 Date: 12-13-05

PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)		Township T 1 6		1/2 (2)	N S	Range 1 1		1/2 (2)	E W	Section		Meridian (SL) US																			
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/28/05																							
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 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		Coordinate Type State Plane <input checked="" type="checkbox"/> UTM																													
Zone Utah North <input type="checkbox"/> Utah Central <input checked="" type="checkbox"/> Utah South		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		4.678 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)		2		0	0	5	0	0		Description NW corner Sec. 17																					
Occupation time		PDOP Best				RMS Best																									
Number of Measurements 60		PDOP Worst 4.8				RMS Worst 8.7																									
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 / 3/4 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 1611200500

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-29-05

County Reference No. 1611200500

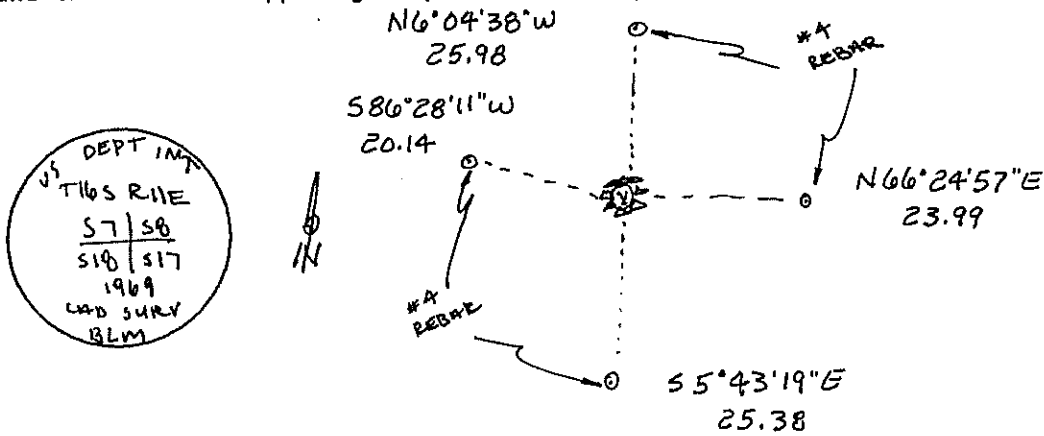
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP IN A STONE MOUND

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

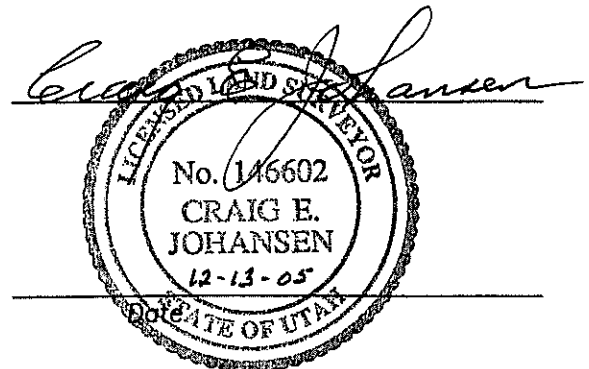
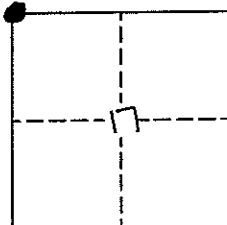
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 17

Township: 16S

Range: 11E



PLSS GPS Observation Sheet

Project Name SL T16S R11E (Meridian Township Range)				Township		1/2 (2)	N S	Range		1/2 (2)	E W	Section		Meridian																	
				T	1	6	S	1	1		E			(SL)	US																
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/30/05																					
Contacts Phone (435) 381-2523																															
Control Station																															
Name CP - 1				Type COR HARN TRI <u>Other</u> Local Survey							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	6	-	1	6	.	2	0	1	4	5	W	1	1	0	-	4	2	-	2	8	.	1	7	5	6	3	
Northing								Easting																							
6	9	6	4	9	6	8	.	4	0						1	8	6	4	1	4	7	.	1	2							
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 M 5481.181 FT				Geoid Height M 5538.90 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 4.157 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)				2	2	0	4	0	0	W	C	Description Witness Corner to W 1/16 corner Sec. 17 / Sec. 20																			
Occupation time				PDOP Best				RMS Best																							
Number of Measurements 60				PDOP Worst 1.8				RMS Worst 8.6																							
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 1611220400 WC

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-30-05

County Reference No. 1611220400

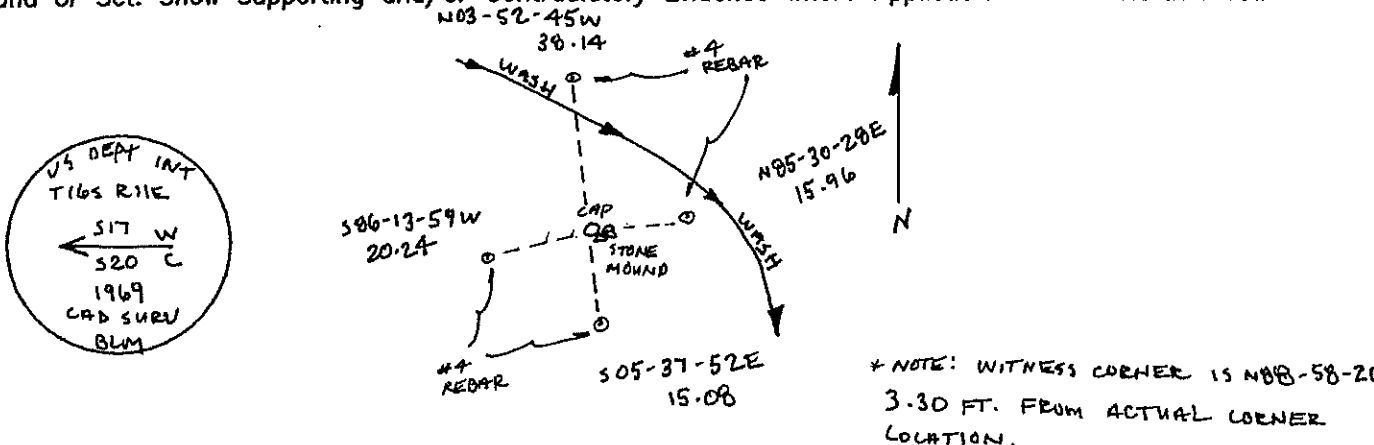
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other WITNESS CORNER

Your Description and Observation of Monument Found (Be Specific):
1969 BLM BRASS CAP 3" ABOVE GROUND LEVEL WITH A STONE MOUND TO THE SOUTHEAST

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: 17
 Township: 16S
 Range: 11E

