

## PLSS GPS Observation Sheet

Project Name <b>SL T16S R10E</b> <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 <b>Lee M. Swasey</b>				Source Agency <b>JOHANSEN &amp; TUTTLE ENGINEERING</b>						Date <b>11/16/05</b>																									
Contacts Phone <b>(435) 381-2523</b>																																			
Control Station																																			
Name <b>ELM GPS 12</b>				Type <b>Other EMERY COUNTY</b>						Accuracy <b>Order</b>																									
USGS Quad Name <b>OLSEN RESERVOIR UTAH</b>				COR	HARN	TRI	Datum <b>Nad83 (1994)</b>						State <b>UTAH</b>																						
				Nad27	Nad83		WGS84	Local	County <b>EMERY</b>																										
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 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 <b>1711.15 M</b>				FT				Geoid Height <b>M</b>				<b>5671.75 FT</b>																							
Base Receiver																																			
Type <b>TRIMBLE</b>				Model <b>4000 SSI</b>				Serial Number																											
Logging Interval <b>5 SEC.</b>				Elevation Mask <b>13</b>				PDOP Mask <b>6</b>				Antenna Type <b>L1/L2 w/GROUND PLANE</b>																							
Start Time				AM				PM				End Time				AM				PM															
Antenna Height																																			
Session Beginning				1 <sup>st</sup>				M				2 <sup>nd</sup>				M				3 <sup>rd</sup>				M				Ave				<b>4.659 Feet M</b>			
Session End				1 <sup>st</sup>				M				2 <sup>nd</sup>				M				3 <sup>rd</sup>				M				Ave				<b>M</b>			
Rover Receiver																																			
Type <b>TRIMBLE</b>				Model <b>5800</b>				Serial Number <b>4253117118</b>																											
Approximate Distance From Base Station				Miles				Antenna Type <b>5800 INTERNAL</b>				Antenna Height <b>6.6 FT</b>																							
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)				6				0				0				4				0				0				Description <b>NE corner Sec. 23</b>							
Occupation time				PDOP Best				RMS Best																											
Number of Measurements <b>60</b>				PDOP Worst <b>2.0</b>				RMS Worst <b>11.4</b>																											
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 <b>2½ / 3¼</b>				Size <b>1969 BLM</b>				Size																							
Material				Material <b>steel / brass</b>				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 1610600400

# EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-16-05

County Reference No. 1610600400

Type of Monument:  Section Corner  
 Bench Mark

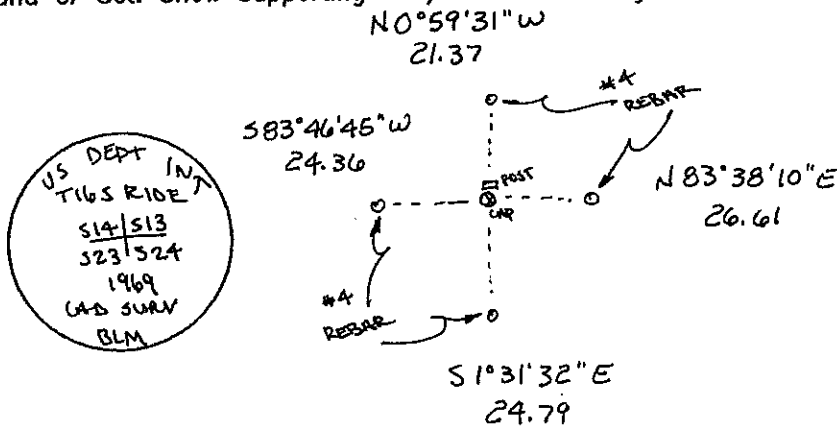
Quarter Corner  
 Other \_\_\_\_\_

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

1969 BLM BRASS CAP 3" 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.



Certification:

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

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

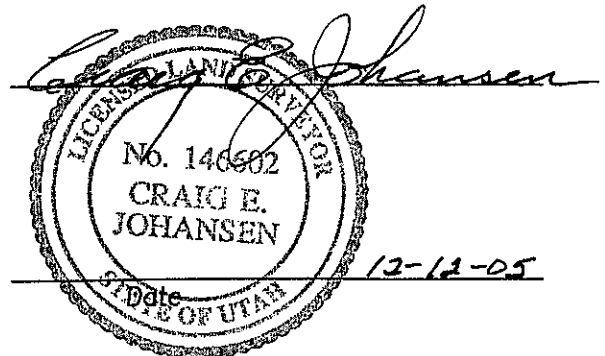
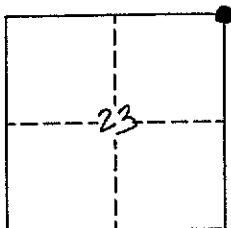
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 23

Township: 16S

Range: 10E



## PLSS GPS Observation Sheet

Project Name <b>SL T16S R10E</b> (Meridian Township Range)		Township <b>T 1 6</b>		1/2 <b>(2)</b>	N <b>S</b>	Range <b>1 0</b>		1/2 <b>(2)</b>	E <b>W</b>	Section		Meridian <b>(SL) US</b>																				
Contacts Name <b>Lee M. Swasey</b>		Source Agency <b>JOHANSEN &amp; TUTTLE ENGINEERING</b>						Date <b>11/16/05</b>																								
Contacts Phone <b>(435) 381-2523</b>																																
Control Station																																
Name <b>ELM GPS 12</b>		COR		HARN		TRI		Type <b>Other EMERY COUNTY</b>			Accuracy Order																					
USGS Quad Name <b>OLSEN RESERVOIR UTAH</b>		Nad27		Nad83		Datum <b>(Nad83 1994)</b>		WGS84		Local		State <b>UTAH</b>																				
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"		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		RTK		FAST STATIC		STATIC		OTHER																								
First Observation																																
Station Name (M1)		6		0	0	3	6	0	Description					N 1/16 corner Sec. 23 - Sec. 24																		
Occupation time		PDOP Best		RMS Best																												
Number of Measurements		60		PDOP Worst		1.3		RMS Worst					14.6																			
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 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 1610600360

# EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-16-05

County Reference No. 161060036D

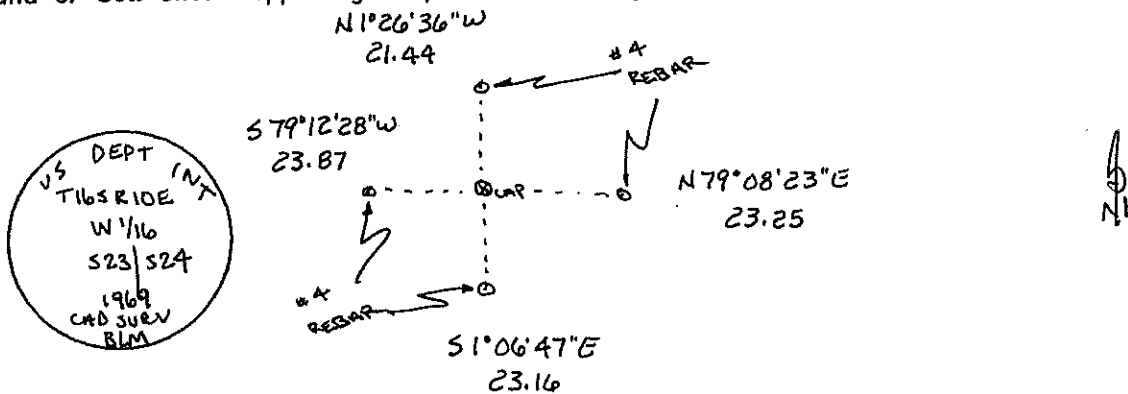
Type of Monument:  Section Corner  
 Bench Mark

Quarter Corner  
 Other 1/16 CORNER

Your Description and Observation of Monument Found ( Be Specific ):  
 1969 BLM BRASS CAP 10" 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:

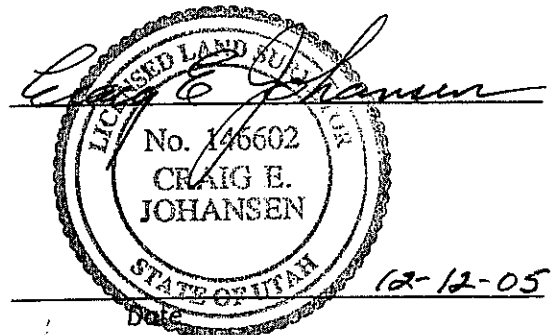
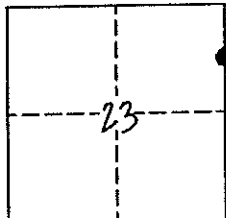
Firm name and/or Surveyor: Johansen & Tuttle Eng.

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: 23  
 Township: 16S  
 Range: 10E



## PLSS GPS Observation Sheet

Project Name <b>SL T16S R10E</b> <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 <b>Lee M. Swasey</b>		Source Agency <b>JOHANSEN &amp; TUTTLE ENGINEERING</b>							Date <b>11/16/05</b>																								
Contacts Phone <b>(435) 381-2523</b>																																	
Control Station																																	
Name <b>ELM GPS 12</b>		COR		HARN		TRI		Type <b>Other EMERY COUNTY</b>			Accuracy Order																						
USGS Quad Name <b>OLSEN RESERVOIR UTAH</b>		Nad27		Nad83		Datum <b>(Nad83 1994)</b>		WGS84		Local		State <b>UTAH</b> County <b>EMERY</b>																					
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		<b>International Foot</b>		Meter		Coordinate Type			<b>State Plane</b>		UTM																				
Zone		Utah North		<b>Utah Central</b>		Utah South		Vertical Datum			NGVD29		<b>NAVD88</b>																				
Ellipsoid Height		1711.15		M		FT		Geoid Height			M		5671.75 FT																				
Base Receiver																																	
Type <b>TRIMBLE</b>				Model <b>4000 SSI</b>				Serial Number																									
Logging Interval <b>5 SEC.</b>		Elevation Mask <b>13</b>		PDOP Mask <b>6</b>		Antenna Type <b>L1/L2 w/GROUND PLANE</b>																											
Start Time				AM		PM		End Time						AM		PM																	
Antenna Height																																	
Session Beginning		1 <sup>st</sup>		M		2 <sup>nd</sup>		M		3 <sup>rd</sup>		M		Ave <b>4.659 Feet M</b>																			
Session End		1 <sup>st</sup>		M		2 <sup>nd</sup>		M		3 <sup>rd</sup>		M		Ave <b>M</b>																			
Rover Receiver																																	
Type <b>TRIMBLE</b>				Model <b>5800</b>				Serial Number <b>4253117118</b>																									
Approximate Distance From Base Station				Miles		Antenna Type <b>5800 INTERNAL</b>				Antenna Height <b>6.6 FT</b>																							
Station Observation																																	
Observation Type		<b>(RTK)</b>		FAST STATIC		STATIC		OTHER																									
First Observation																																	
Station Name (M1)		6		0		0		3		4		0		Description <b>E 1/4 corner Sec. 23</b>																			
Occupation time		PDOP Best				RMS Best																											
Number of Measurements <b>60</b>		PDOP Worst <b>1.6</b>				RMS Worst <b>12.1</b>																											
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 <b>2 1/2 / 3/4</b>				1969 BLM				Size																							
Material		Material <b>steel / brass</b>				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 1610600340



## PLSS GPS Observation Sheet

Project Name <b>SL T16S R10E</b> <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 <b>Lee M. Swasey</b>		Source Agency <b>JOHANSEN &amp; TUTTLE ENGINEERING</b>							Date <b>11/10/05</b>																						
Contacts Phone <b>(435) 381-2523</b>																															
Control Station																															
Name <b>ELM GPS 12</b>		Type COR HARN TRI <u>Other</u> <b>EMERY COUNTY</b>							Accuracy Order																						
USGS Quad Name <b>OLSEN RESERVOIR UTAH</b>		Datum Nad27 Nad83 <u>Nad83 (1994)</u> WGS84 Local							State <b>UTAH</b>																						
									County <b>EMERY</b>																						
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 <b>TRIMBLE</b>			Model <b>4000 SSI</b>				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 <sup>nd</sup>		M		3 <sup>rd</sup>		M		Ave		4.718 Feet		M													
Session End		1"		M		2 <sup>nd</sup>		M		3 <sup>rd</sup>		M		Ave		M															
Rover Receiver																															
Type <b>TRIMBLE</b>			Model <b>5800</b>				Serial Number <b>4253117118</b>																								
Approximate Distance From Base Station			Miles		Antenna Type <b>5800 INTERNAL</b>				Antenna Height <b>6.6 FT</b>																						
Station Observation																															
Observation Type		<u>RTK</u>		FAST STATIC		STATIC		OTHER																							
First Observation																															
Station Name (M1)		5		4		0		4		0		0		Description <b>N 1/4 corner Sec. 23</b>																	
Occupation time		PDOP Best				RMS Best																									
Number of Measurements		60				PDOP Worst				1.9				RMS Worst				13.8													
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 <b>2½ / 3¼ 1969 BLM</b>				Size				Size																					
Material		Material <b>steel / brass</b>				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 1610540400





## PLSS GPS Observation Sheet

Project Name <b>SL T16S R10E</b> (Meridian Township Range)		Township T 1 6			1/2 (2)	N S	Range 1 0		1/2 (2)	E W	Section		Meridian <b>SL</b> US																			
Contacts Name <b>Lee M. Swasey</b>		Source Agency <b>JOHANSEN &amp; TUTTLE ENGINEERING</b>							Date <b>11/10/05</b>																							
Contacts Phone <b>(435) 381-2523</b>																																
Control Station																																
Name <b>ELM GPS 12</b>		COR			HARN			TRI			Type <b>Other</b> EMERY COUNTY		Accuracy Order																			
USGS Quad Name <b>OLSEN RESERVOIR UTAH</b>		Datum Nad27			Nad83			Nad83 (1994)		WGS84		Local		State <b>UTAH</b>																		
County <b>EMERY</b>																																
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 <b>TRIMBLE</b>				Model <b>4000 SSI</b>				Serial Number																								
Logging Interval <b>5 SEC.</b>		Elevation Mask <b>13</b>		PDOP Mask <b>6</b>		Antenna Type <b>L1/L2 w/GROUND PLANE</b>																										
Start Time				AM		PM		End Time						AM		PM																
Antenna Height																																
Session Beginning		1"		M		2 <sup>nd</sup>		M		3 <sup>rd</sup>		M		Ave <b>4.718 Feet M</b>																		
Session End		1"		M		2 <sup>nd</sup>		M		3 <sup>rd</sup>		M		Ave <b>M</b>																		
Rover Receiver																																
Type <b>TRIMBLE</b>				Model <b>5800</b>				Serial Number <b>4253117118</b>																								
Approximate Distance From Base Station				Miles		Antenna Type <b>5800 INTERNAL</b>				Antenna Height <b>6.6 FT</b>																						
Station Observation																																
Observation Type		<b>RTK</b>		FAST STATIC		STATIC		OTHER																								
First Observation																																
Station Name (M1)		5 2 0 4 0 0		Description <b>W 1/16 corner Sec. 14 / Sec. 23</b>																												
Occupation time		PDOP Best				RMS Best																										
Number of Measurements <b>60</b>		PDOP Worst <b>1.6</b>				RMS Worst <b>18.2</b>																										
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 <b>2 1/2 / 3 1/4 1969 BLM</b>				Size				Size																						
Material		Material <b>steel / brass</b>				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 1610520400

# EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-10-05

County Reference No. 1610520400

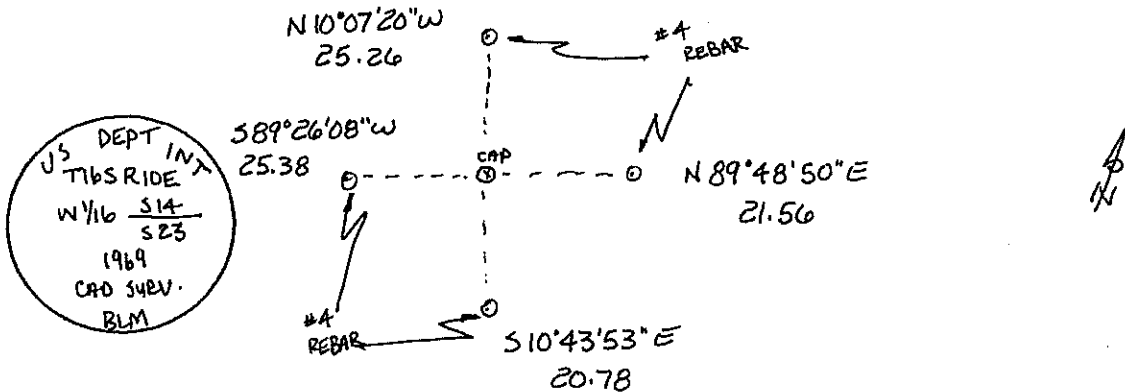
Type of Monument:            Section Corner  
           Bench Mark

           Quarter Corner  
 Other 1/16 CORNER

Your Description and Observation of Monument Found ( Be Specific ):  
 1969 BLM BRASS CAP 8" 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

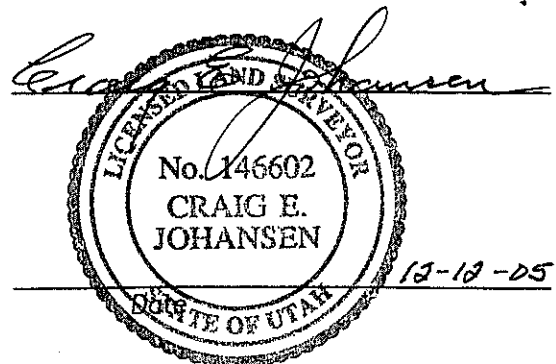
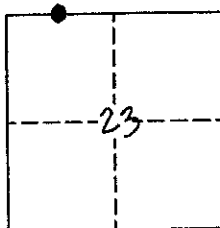
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

Location Diagram:

Section: 23

Township: 16 S

Range: 10 E



# UTAH LAND SURVEY MONUMENT RECORD

County EMERY

County Reference No. <sup>1610</sup> ~~1076~~ 500 300

1. Date of Field Work: 12-19-00

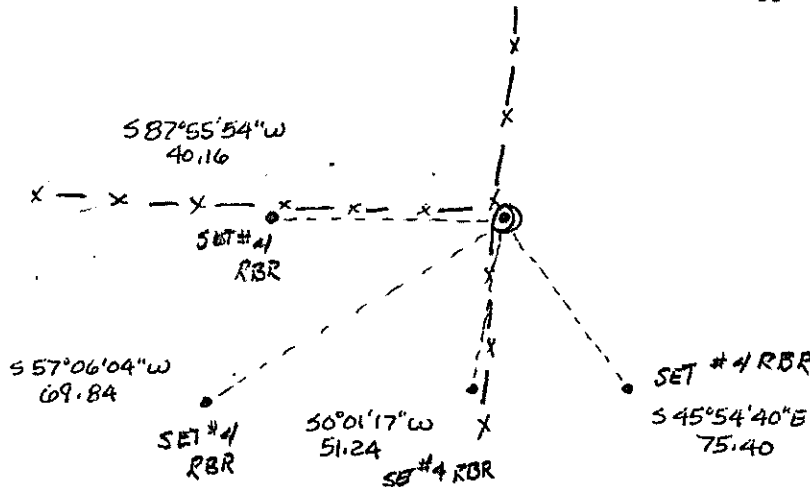
2. Type of Monument: (Check one)  
 Section Corner       Quarter Corner  
 Bench Mark                       Other

3. Your Description and Observation of Monument Found (Be Specific):  
Found STD BLM CAP AT A North-South-WEST FENCE CORNER

4. Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point:

SET A #4 REBAR SE-S-SW-E-W OF MONUMENT

5. 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.



6. Certification:

Firm Name and/or Surveyor: JOHANSEN & TUTTLE ENG Phone: 381-2523  
 Address: 90 S 100 E CASTLE DALE UTAH

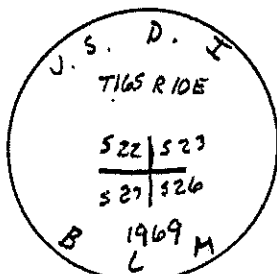
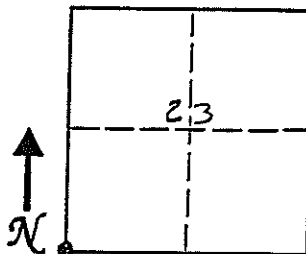
This is to certify that I was in responsible charge of the surveying work described in this record and that to the best of my knowledge the information presented herein is true and correct.

7. Location Diagram:

8. Section: 23

9. Township: 16 S

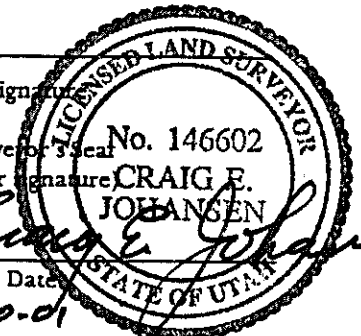
10. Range: 10 E



11. Monument Inscription:

12. Diagram Coordinate from Master Index for Townships: \_\_\_\_\_

Signature: \_\_\_\_\_  
 Surveyor's Seal (over signature): **CRAIG E. JOHANSEN**  
 Date: 11-30-01



Report one monument per form.  
 Type or use permanent black ink.  
 Fill in all items.

# UTAH LAND SURVEY MONUMENT RECORD

County EMERY

County Reference No. <sup>1610</sup> ~~1010~~ 500 340

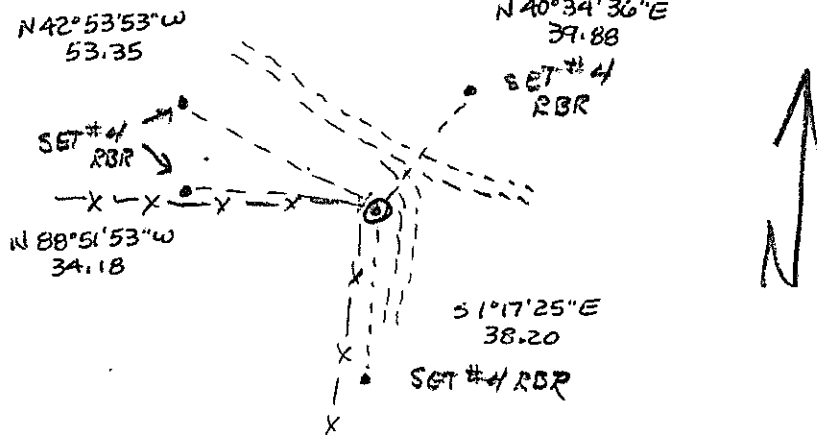
1. Date of Field Work: 12-19-00

2. Type of Monument: (Check one)  
 Section Corner       Quarter Corner  
 Bench Mark             Other

3. Your Description and Observation of Monument Found (Be Specific):  
Found STD BLM CAP AT SOUTH & WEST FENCE CORNER

4. Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET A #4 REBAR SOUTH, WEST, NW & NE OF CORNER

5. 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.

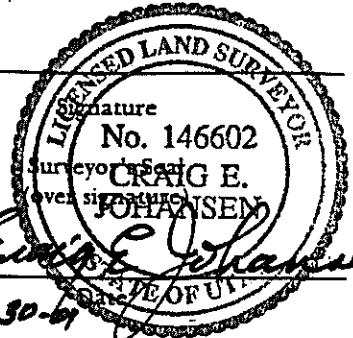
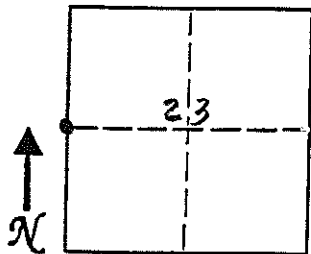
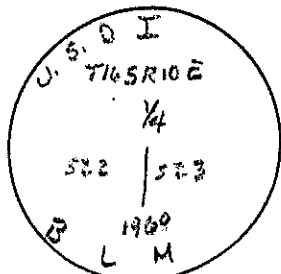


6. Certification:

Firm Name and/or Surveyor: JOHANSEN & TUTTLE ENG Phone: 381-2523  
 Address: 90 S 100 E CASTLE NALE UTAH

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.

7. Location Diagram:  
 8. Section: 23  
 9. Township: 16 S  
 10. Range: 10 E



11. Monument Inscription:

12. Diagram Coordinate from Master Index for Townships: \_\_\_\_\_

Report one monument per form. Type or use permanent black ink. Fill in all items.