

PLSS GPS Observation Sheet

Project Name SL T17S R10E (Meridian Township Range)		Township T 1 7		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 11/14/05																							
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"		M		2"		M		3"		M		Ave 4.692 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)		3		0		0		3		0		0		Description NE corner Sec. 29																	
Occupation time				PDOP Best				RMS Best																							
Number of Measurements 60				PDOP Worst 1.2				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 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 1710300300

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-15-05

County Reference No. 1710300300

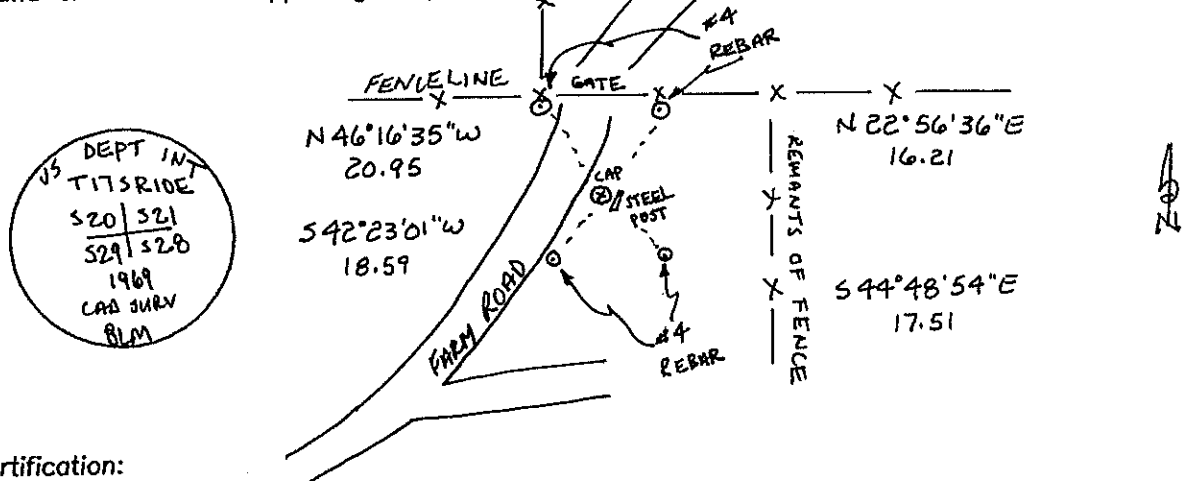
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

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

Description of Monument, Reference Monument or Accessories Established by You to Perpetuate the Location of this Point: SET 4 #4 REBAR AS SHOWN BELOW.
 DROVE A STEEL FENCE POST ALONGSIDE CAP.

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

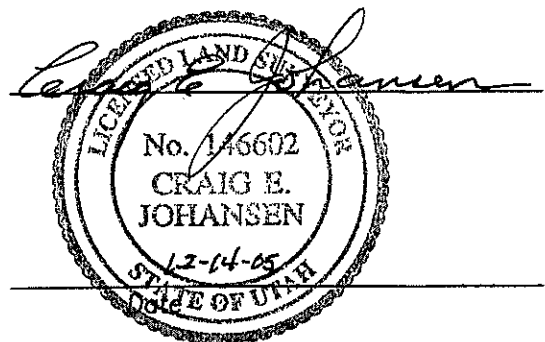
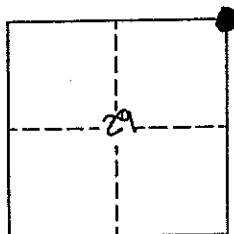


Certification:

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

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: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E <small>(Meridian Township Range)</small>		Township			½ (2)	N S	Range			½ (2)	E W	Section			Meridian																	
		T	1	7		S	1	0			E				(SL)	US																
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING								Date 11/15/05																						
Contacts Phone (435) 381-2523																																
Control Station																																
Name CLV GPS 11		Type										Accuracy																				
		COR	HARN	TRI	(Other) EMERY COUNTY							Order																				
USGS Quad Name CLEVELAND UTAH		Datum										State UTAH																				
		Nad27	Nad83	(Nad83 1994)	WGS84	Local	County EMERY																									
Latitude								Longitude																								
N	3	9	-	2	1	-	3	7	.	1	7	4	2	6	1	W	1	1	0	-	4	9	-	2	8	.	6	7	6	1	8	
Northing								Easting																								
6	9	3	6	4	6	8	.	5	7								1	8	3	1	3	7	2	.	4	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		1735.93 M				FT		Geoid Height				M		5752.63 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		4.587 Feet M																
Session End		1"		M		2 nd		M		3 rd		M		Ave		M																
Rover Receiver																																
Type TRIMBLE				Model 5800				Serial Number																								
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)		2		4	0	3	0	0	Description N 1/4 corner Sec. 29																							
Occupation time				PDOP Best				RMS Best																								
Number of Measurements				60				PDOP Worst				1.9				RMS Worst				19.7												
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		2 ½ / 3 ½		1969		BLM		Size		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 1710240300

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-15-05

County Reference No. 1710240300

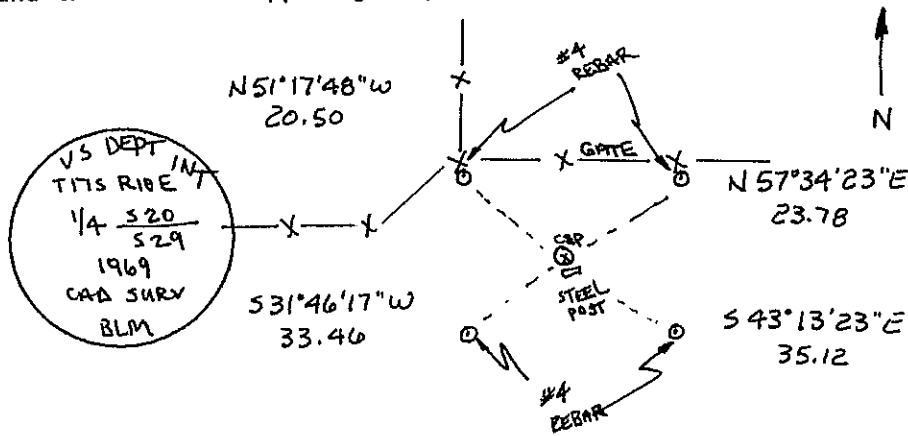
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP BURIED 3" UNDERGROUND

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

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



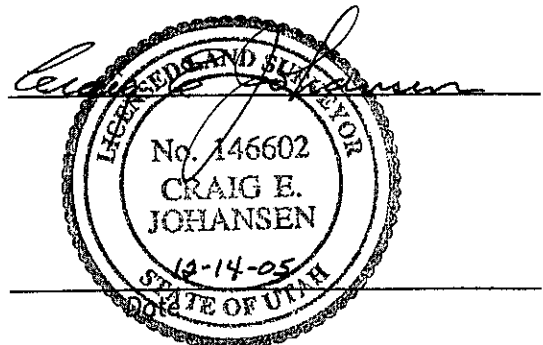
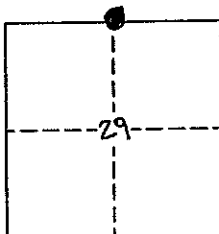
Certification:

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

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Location Diagram:

Section: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E <small>(Meridian Township Range)</small>				Township		1/2 (2)		N S		Range		1/2 (2)		E W		Section		Meridian																	
				T	I	7			S	1	0			E			(SL) US																		
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING								Date 11/08/05																							
Contacts Phone (435) 381-2523																																			
Control Station																																			
Name ELM GPS 12				Type COR HARN TRI <input checked="" type="checkbox"/> Other EMERY COUNTY								Accuracy Order																							
USGS Quad Name OLSEN RESERVOIR UTAH				Datum Nad27 Nad83 <input checked="" type="checkbox"/> Nad83 (1994) WGS84 Local								State UTAH																							
												County EMERY																							
Latitude										Longitude																									
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0				
Northing										Easting																									
6	9	4	7	5	8	7	.	6	3								1	8	5	2	2	5	7	.	0	6									
Units				Survey Foot				<input 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				4.718 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 2 0 0				Description																S 1/4 corner Sec. 29											
Occupation time				PDOP Best				RMS Best																											
Number of Measurements				60				PDOP Worst				2.0				RMS Worst								14.8											
Second Observation																																			
Station Name (M2)				Description																															
Occupation time				PDOP Best				RMS Best																											
Number of Measurements				PDOP Worst				RMS Worst																											
Inverse Distance Between M1 and M2										FT		Alternate Base Station Used								Yes		No													
Monument and Markings																																			
Type / Size																																			
Stone				Pipe/Cap								Post				Other																			
Size				Size 2 1/2 / 3/4 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 1710240200

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-8-05

County Reference No. 1710240200

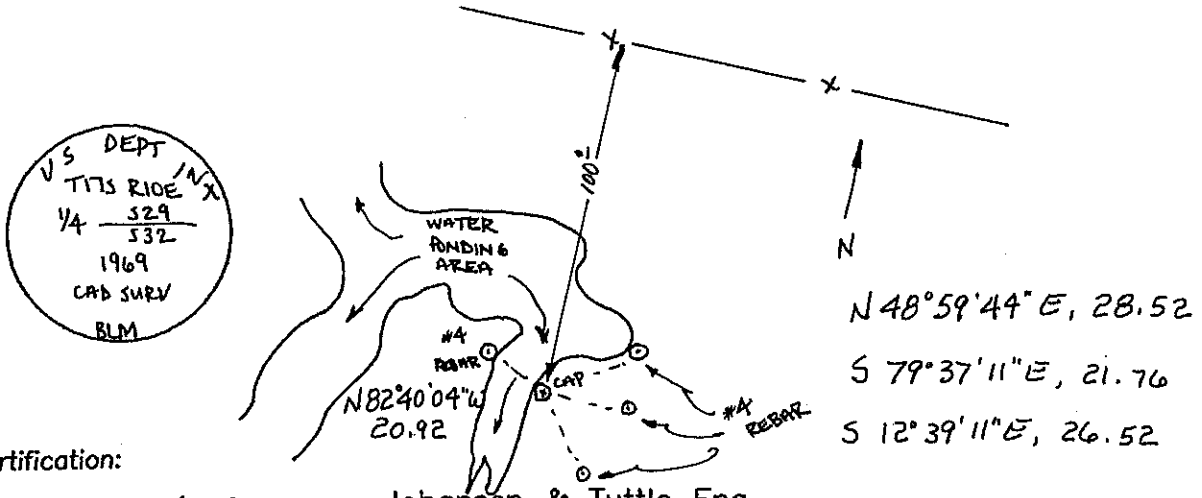
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):
1969 BLM BRASS CAP 14" 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:

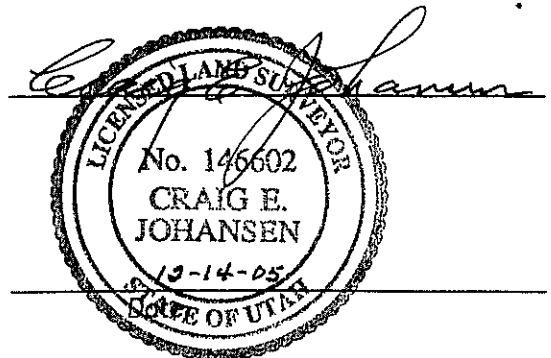
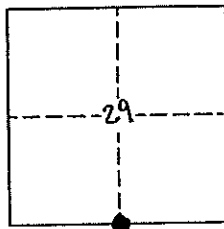
Firm name and/or Surveyor: Johansen & Tuttle Eng.

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

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Location Diagram:

Section: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E <small>(Meridian Township Range)</small>		Township T 1 7			1/2 N S (2) S		Range 1 0		1/2 E W (2) E		Section		Meridian (SL) US																		
Contacts Name Lee M. Swasey		Source Agency JOHANSEN & TUTTLE ENGINEERING						Date 11/08/05																							
Contacts Phone (435) 381-2523																															
Control Station																															
Name ELM GPS 12		COR			HARN			TRI			Type Other EMERY COUNTY			Accuracy Order																	
USGS Quad Name OLSEN RESERVOIR UTAH		Nad27			Nad83			Datum Nad83 (1994)			WGS84			Local State UTAH																	
Latitude						Longitude																									
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0
Northing														Easting																	
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6						
Units		Survey Foot			<input checked="" type="radio"/> International Foot			Meter			Coordinate Type			<input checked="" type="radio"/> State Plane			UTM														
Zone		Utah North			<input checked="" type="radio"/> Utah Central			Utah South			Vertical Datum			NGVD29			<input checked="" type="radio"/> NAVD88														
Ellipsoid Height		1711.15 M			FT			Geoid Height			M			5671.75 FT																	
Base Receiver																															
Type TRIMBLE				Model 4000 SSI				Serial Number																							
Logging Interval 5 SEC.		Elevation Mask 13		PDOP Mask 6		Antenna Type L1/L2 w/GROUND PLANE																									
Start Time				AM		PM		End Time				AM		PM																	
Antenna Height																															
Session Beginning		1"		M		2"		M		3"		M		Ave 4.718 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		FAST STATIC		STATIC		OTHER																							
First Observation																															
Station Name (M1)		2		0	0	3	0	0	Description NW corner Sec. 29																						
Occupation time		PDOP Best				RMS Best																									
Number of Measurements 60		PDOP Worst 1.9				RMS Worst 11.1																									
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 1710200300

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-8-05

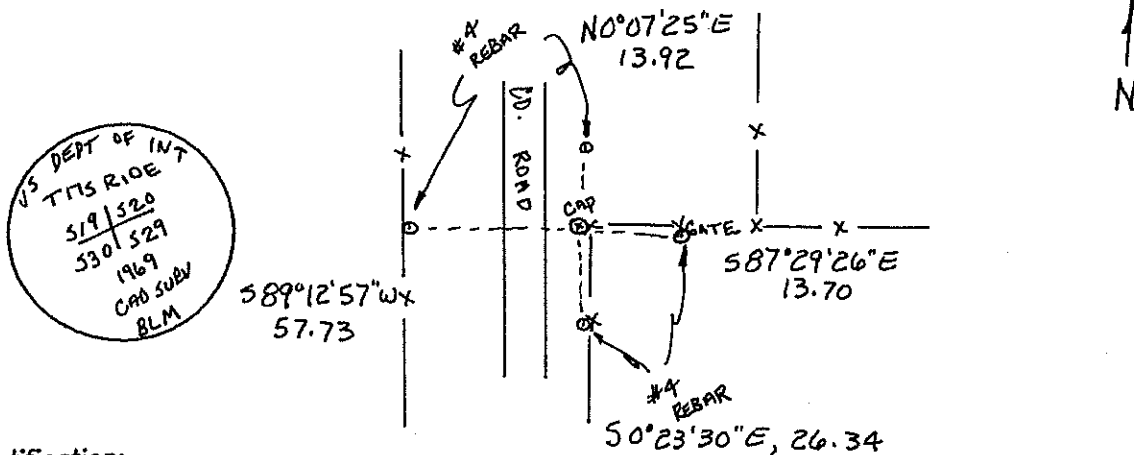
County Reference No. 1710200300

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

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

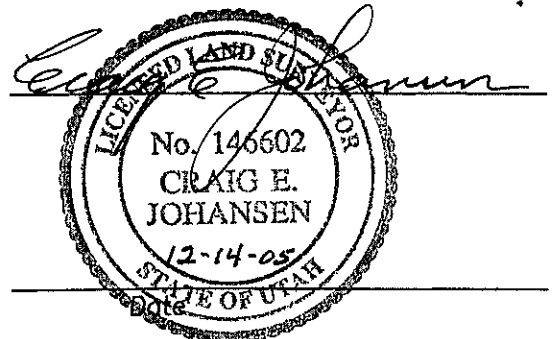
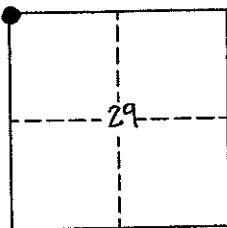


Certification:

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: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E (Meridian Township Range)		Township T 1 7		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 11/14/05					
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 N 3 9 - 2 3 - 2 5 . 4 2 8 1 2 7						Longitude W 1 1 0 - 4 5 - 0 1 . 5 8 6 1 0							
Northing 6 9 4 7 5 8 7 . 6 3						Easting 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				AM PM			
Antenna Height													
Session Beginning		1 st M		2 nd M		3 rd M		Ave		4.692 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 0 0 2 6 0		Description N 1/16 corner Sec. 30 - Sec. 29									
Occupation time		PDOP Best				RMS Best							
Number of Measurements 60		PDOP Worst 2.3				RMS Worst 15.4							
Second Observation													
Station Name (M2)		Description											
Occupation time		PDOP Best				RMS Best							
Number of Measurements		PDOP Worst				RMS Worst							
Inverse Distance Between M1 and M2						FT		Alternate Base Station Used				Yes No	
Monument and Markings													
Type / Size													
Stone		Pipe/Cap				Post		Other					
Size		Size 2 1/2 / 3/4 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 1710200260

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-14-05

County Reference No. 1710200260

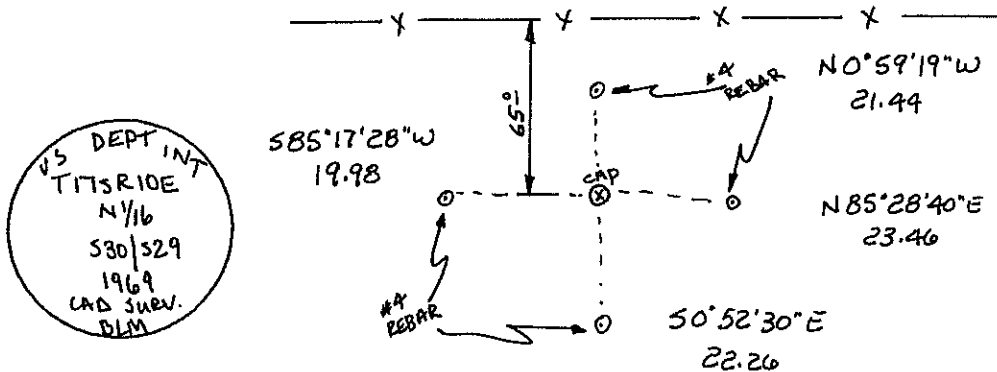
Type of Monument: Section Corner
 Bench Mark

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.

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:

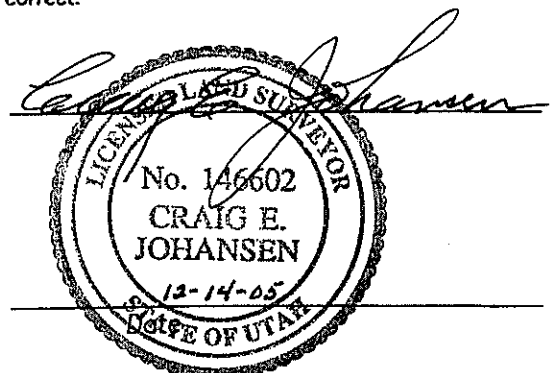
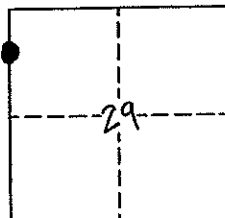
Firm name and/or Surveyor: Johansen & Tuttle Eng.

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

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Location Diagram:

Section: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E <small>(Meridian Township Range)</small>				Township T 1 7		Range S 1 0		Section E W		Meridian SL US																						
Contacts Name Lee M. Swasey				Source Agency JOHANSEN & TUTTLE ENGINEERING				Date 11/14/05																								
Contacts Phone (435) 381-2523																																
Control Station																																
Name ELM GPS 12				Type EMERY COUNTY				Accuracy Order																								
USGS Quad Name OLSEN RESERVOIR UTAH				Datum NAD83 (1994)				State UTAH																								
Nad27		Nad83		WGS84		Local		County EMERY																								
Latitude						Longitude																										
N	3	9	-	2	3	-	2	5	.	4	2	8	1	2	7	W	1	1	0	-	4	5	-	0	1	.	5	8	6	1	0	
Northing						Easting																										
6	9	4	7	5	8	7	.	6	3							1	8	5	2	2	5	7	.	0	6							
Units Survey Foot <input checked="" type="radio"/> International Foot <input type="radio"/> Meter				Coordinate Type State Plane <input type="radio"/> UTM <input type="radio"/>																												
Zone Utah North <input type="radio"/> Utah Central <input checked="" type="radio"/> Utah South <input type="radio"/>				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 4.692 Feet M																		
Session End		1 st		M		2 nd		M		3 rd		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 2 4 0				Description W 1/4 corner Sec. 29																												
Occupation time				PDOP Best				RMS Best																								
Number of Measurements 60				PDOP Worst 1.9				RMS Worst 15.5																								
Second Observation																																
Station Name (M2)				Description																												
Occupation time				PDOP Best				RMS Best																								
Number of Measurements				PDOP Worst				RMS Worst																								
Inverse Distance Between M1 and M2						FT		Alternate Base Station Used		Yes		No																				
Monument and Markings																																
Type / Size																																
Stone			Pipe/Cap			Post			Other																							
Size			Size 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 1710200240

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-14-05

County Reference No. 171D 20024D

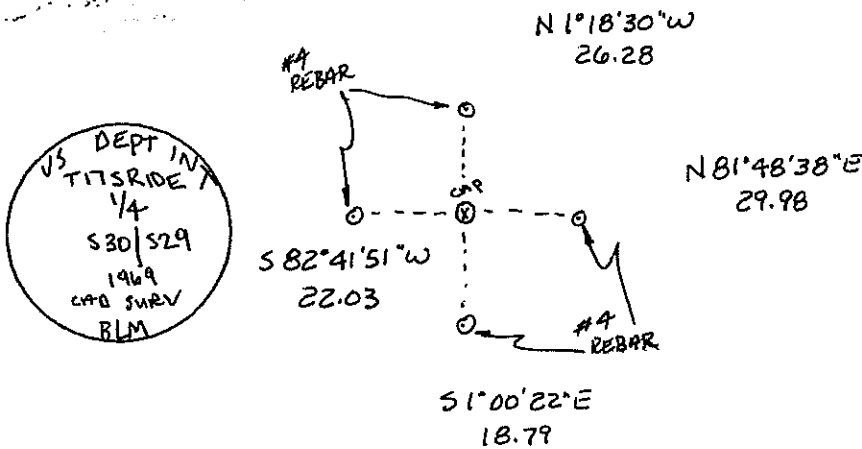
Type of Monument: Section Corner
 Bench Mark

Quarter Corner
 Other _____

Your Description and Observation of Monument Found (Be Specific):
 1969 BLM BRASS CAP 3" ABOVE GROUND LEVEL

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:

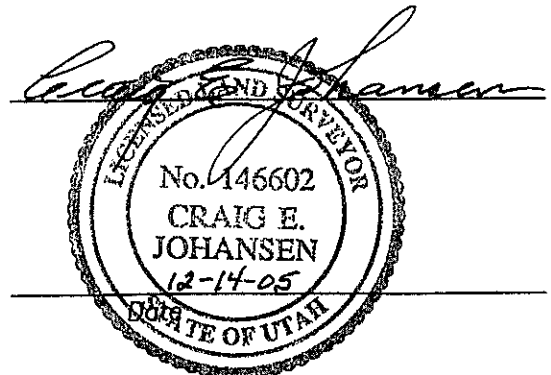
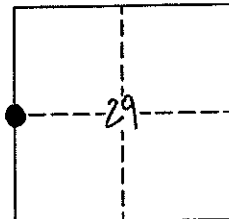
Firm name and/or Surveyor: Johansen & Tuttle Eng.

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: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E (Meridian Township Range)		Township T 1 7		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 11/08/05				
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 N 3 9 - 2 3 - 2 5 . 4 2 8 1 2 7						Longitude W 1 1 0 - 4 5 - 0 1 . 5 8 6 1 0						
Northing 6 9 4 7 5 8 7 . 6 3						Easting 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 4.718 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)		2 0 0 2 0 0		Description SW corner Sec. 29								
Occupation time		PDOP Best				RMS Best						
Number of Measurements 60		PDOP Worst 2.3				RMS Worst 14.7						
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 1710200200

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-8-05

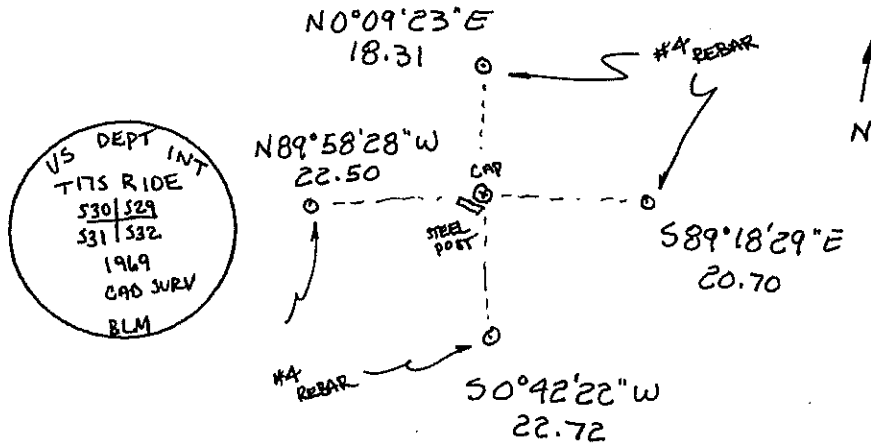
County Reference No. 1710200200

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.

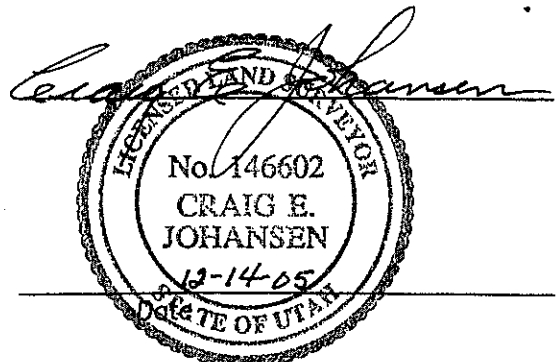
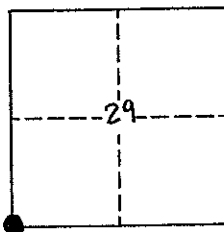


Certification:

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: 29
 Township: 17S
 Range: 10E



PLSS GPS Observation Sheet

Project Name SL T17S R10E <small>(Meridian Township Range)</small>		Township T 1 7		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 11/08/05																							
Contacts Phone (435) 381-2523																															
Control Station																															
Name ELM GPS 12		Type (Other) EMERY COUNTY						Accuracy Order																							
USGS Quad Name OLSEN RESERVOIR UTAH		Datum (Nad83) (1994)						State UTAH																							
		COR	HARN	TRI	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 4.718 Feet M																	
Session End		1"		M		2 nd		M		3 rd		M		Ave M																	
Rover Receiver																															
Type TRIMBLE				Model 5800				Serial Number 4253117118																							
Approximate Distance From Base Station				Miles		Antenna Type 5800 INTERNAL				Antenna Height 6.6 FT																					
Station Observation																															
Observation Type		(RTK)		FAST STATIC		STATIC		OTHER																							
First Observation																															
Station Name (M1)		3 0 0 2 0 0		Description SE corner Sec. 29																											
Occupation time				PDOP Best				RMS Best																							
Number of Measurements 60				PDOP Worst 1.9				RMS Worst 17.8																							
Second Observation																															
Station Name (M2)		Description																													
Occupation time				PDOP Best				RMS Best																							
Number of Measurements				PDOP Worst				RMS Worst																							
Inverse Distance Between M1 and M2						FT		Alternate Base Station Used				Yes		No																	
Monument and Markings																															
Type / Size																															
Stone		Pipe/Cap				Post				Other																					
Size		Size 2 1/2 / 3 1/4 1969 BLM				Size				Size																					
Material		Material steel / brass				Material				Material																					

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

See Emery County Land Survey Monument Record Sheet 1710300200

EMERY COUNTY LAND SURVEY MONUMENT RECORD

Date of field work: 11-09-05

County Reference No. 1710300200

Type of Monument: Section Corner
 Bench Mark

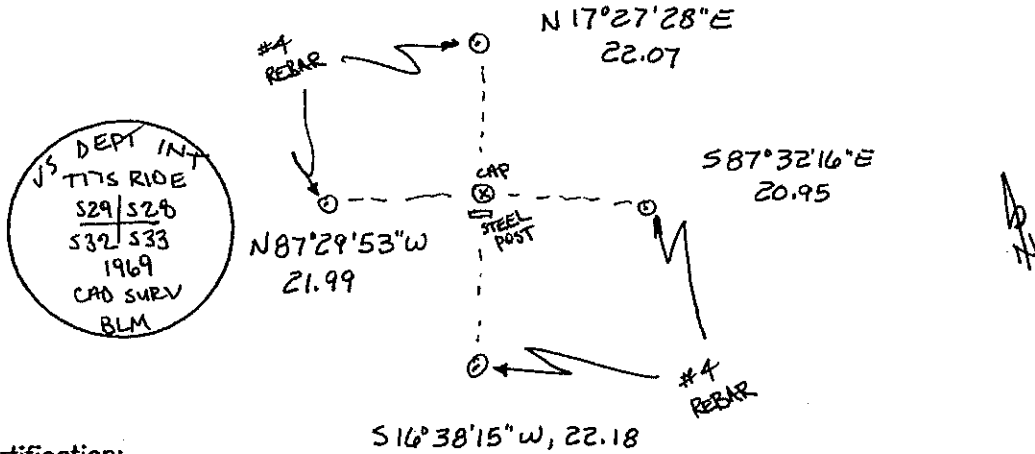
Quarter Corner
 Other _____

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

1969 BLM BRASS CAP 8" ABOVE GROUND LEVEL WITH A 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: 29

Township: 17S

Range: 10E

