

31435

Louisiana Historic Bridge

HAER Bridge

Base @ Modern

FS	Desc
500	60d set
501	PK nail set
502	60d set
503	60d set
504	60d set
505	PK nail set

Bridge 200865

A. Burns
R. Braden
R. Daumer

③

BK 16-10

9/21/16

31435c5092116 Modern

Processed by A.M.B

9/23/16

		31435	
	Louisiana	Historic Bridge	
		HAER	Bridge
		Scan 1	(Tripod)
Sta	503		
BS CK	500		
		Scan 2	(Tripod)
Sta	505		
BS CK	503	501	
		Scan 3	(Tripod)
Sta	504		
BS CK	502		
		Scan 4	(Tripod)
Sta	502		
BS CK	504	501	
		Scan 5	(Tripod)
Sta	501		
		BS CK	500, 502
		Scan 6	(Tripod)
Sta	500		
		BS CK	501, 503

A. Burns
R. Broden
R. Daumer

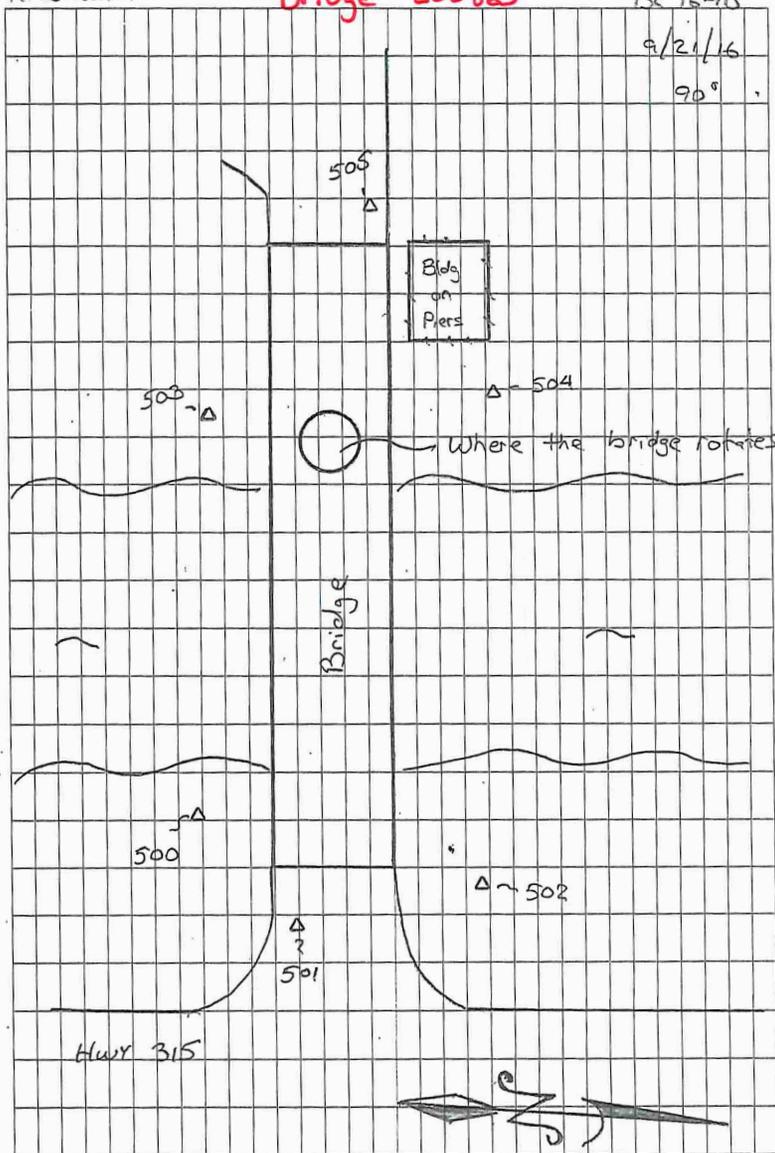
Bridge 200865

(4)

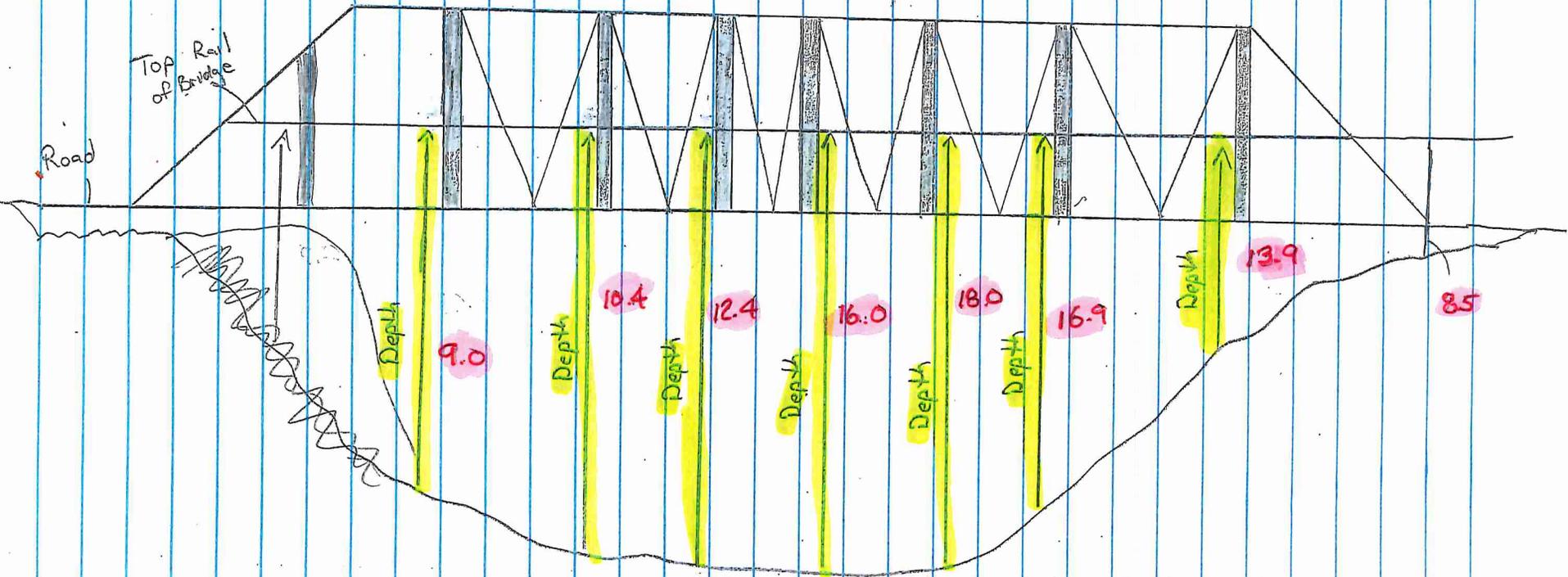
BK 16-10

9/21/16

90°



Bridge 200865



If you choose to do the measure down method, please do your measurements at the vertical beams as shown. Make a sketch with the depths also.



Status: VALID Registration

Mean Absolute Error:

for Enabled Constraints = 0.026 ft

for Disabled Constraints = 0.000 ft

Date: 2017.10.05 10:30:50

Database name : BRIDGE 200865

ScanWorlds

31435c5092116.txt (Leveled)

500: SW-006 (Leveled)

501: SW-005 (Leveled)

502: SW-004 (Leveled)

503: SW-001 (Leveled)

504: SW-003 (Leveled)

505: SW-002 (Leveled)

Constraints

Name	ScanWorld	ScanWorld	Type	On/Off	Weight	Error	Error Vector	Horz	Vert
505	31435c5092116.txt (Leveled)	505: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(-0.006, 0.004, 0.004) ft	0.008 ft	0.004 ft
504	31435c5092116.txt (Leveled)	502: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.011 ft	(-0.009, 0.006, 0.002) ft	0.011 ft	0.002 ft
504	31435c5092116.txt (Leveled)	504: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.038 ft	(-0.031, 0.022, -0.007) ft	0.038 ft	-0.007 ft
503	31435c5092116.txt (Leveled)	500: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.045 ft	(-0.027, 0.017, -0.032) ft	0.032 ft	-0.032 ft
503	31435c5092116.txt (Leveled)	503: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.055 ft	(-0.017, 0.011, -0.051) ft	0.020 ft	-0.051 ft
502	31435c5092116.txt (Leveled)	502: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.011 ft	(0.009, -0.006, -0.002) ft	0.011 ft	-0.002 ft
502	31435c5092116.txt (Leveled)	504: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.038 ft	(0.031, -0.022, 0.007) ft	0.038 ft	0.007 ft
501	31435c5092116.txt (Leveled)	501: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.026 ft	(-0.022, -0.003, 0.015) ft	0.022 ft	0.015 ft
501	31435c5092116.txt (Leveled)	505: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.010 ft	(-0.008, -0.003, 0.005) ft	0.008 ft	0.005 ft
500	31435c5092116.txt (Leveled)	500: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.037 ft	(0.030, -0.012, 0.018) ft	0.032 ft	0.018 ft
500	31435c5092116.txt (Leveled)	501: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.031 ft	(0.029, -0.006, 0.008) ft	0.030 ft	0.008 ft
500	31435c5092116.txt (Leveled)	503: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.040 ft	(0.022, -0.008, 0.032) ft	0.023 ft	0.032 ft
503	500: SW-006 (Leveled)	503: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.022 ft	(0.010, -0.006, -0.019) ft	0.012 ft	-0.019 ft
500	500: SW-006 (Leveled)	501: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.011 ft	(0.000, 0.006, -0.009) ft	0.006 ft	-0.009 ft
500	500: SW-006 (Leveled)	503: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.017 ft	(-0.008, 0.005, 0.014) ft	0.009 ft	0.014 ft
500	501: SW-005 (Leveled)	503: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.025 ft	(-0.007, -0.002, 0.024) ft	0.007 ft	0.024 ft
501	501: SW-005 (Leveled)	505: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.017 ft	(0.014, -0.001, -0.010) ft	0.014 ft	-0.010 ft
504	502: SW-004 (Leveled)	504: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.028 ft	(-0.022, 0.016, -0.009) ft	0.027 ft	-0.009 ft
502	502: SW-004 (Leveled)	504: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.028 ft	(0.022, -0.016, 0.009) ft	0.027 ft	0.009 ft

ScanWorld Transformations

31435c5092116.txt (Leveled)

translation: (0.000, 0.000, 0.000) ft

rotation: (0.0000, 1.0000, 0.0000):0.000 deg

500: SW-006 (Leveled)

translation: (3455018.591, 331209.849, 8.891) ft

rotation: (0.0000, 0.0000, 1.0000):-120.904 deg

501: SW-005 (Leveled)

translation: (3455049.818, 331211.262, 12.355) ft

rotation: (-0.0000, -0.0000, -1.0000):33.146 deg

502: SW-004 (Leveled)

translation: (3455052.819, 331236.422, 10.863) ft

rotation: (-0.0000, -0.0000, -1.0000):-128.312 deg

503: SW-001 (Leveled)

translation: (3454934.144, 331262.640, 8.618) ft

rotation: (0.0000, 0.0000, 1.0000):47.266 deg

504: SW-003 (Leveled)

translation: (3454961.411, 331301.535, 8.982) ft

rotation: (0.0000, 0.0000, 1.0000):-118.307 deg

505: SW-002 (Leveled)
translation: (3454913.522, 331303.910, 12.324) ft
rotation: (-0.0000, -0.0000, -1.0000):-133.473 deg

Unused ControlSpace Objects : none

State Project No. H.007020
Historic Bridge Inventory

SJB Group performed terrestrial laser scanning and created deliverables in accordance with HAER 4.0 Measured Drawings for six bridges throughout Louisiana. The six bridges surveyed under this contract were bridge numbers 008970, 009130, 014900, 058710, 200865 and 200896. The following sections are a description of the equipment and procedures used for this project.

Section I – Equipment

The equipment used in the establishment of the primary control network for this project was manufactured by Leica. Real-time kinematic GPS observations were collected using a Leica GS15 Smart Antenna “Performance” and CS15 3.5G Field Controller. Figure 12 is an image of the equipment used.



Figure 1: Photograph of Leica TS15 Total Station and Leica CS/GS15 GPS uni

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Below is a table of the serial numbers for the equipment used for this project.

Description	Model Number	Serial Number
Leica ScanStation	C10	1260997
Leica Base	GS15	1508955
Leica Rover	GS15	1509134
Leica Controller	CS15	25022556

Section II – Field Procedures

Marks set via real-time kinematic GPS observations were established through a series of ten (10) second observations. Each mark was occupied three (3) times throughout the day from at least two (2) different base stations for a total of six (6) observations. Primary control marks were periodically cross checked throughout the day to ensure an accurate basis of measurement.

Section III – Equipment

Scanning was performed with the Leica ScanStation C-10, serial number 120997, in conjunction with HDS 6 inch circular planar fixed height (1.472 meters) targets



Figure 2: Photograph of Leica ScanStation C10

Section IV – Field Procedures

Scanning observations were made by independent instrument locations which included a minimum of four HDS targets on Secondary Control Marks. At each scanning location the C10 collects observed data relative to the instrument and builds a data set which identifies the HDS target marks. Each data set is called a “Scan World” for the purposes of computation.

Section V – Data Processing

The separate Scan Worlds were “registered” using Leica Cyclone Version 8.0 software which merges the independent observations by resection and statistical comparison of the State Plane values associated with each of the HDS target locations. The State Plane resolution data set which merges all scanned information is presented in Appendix “E.” TopoDOT version 9.0.0.0 was used to extract features from the point cloud registered in Leica Cyclone.