

SCDOT

DRILLED SHAFT LOG (REV 06-03-02)

Project Name _____	Page <u>1</u> of <u>6</u>
File No. _____	Bent No. _____
Contractor _____	Shaft No. _____
Completed By Contractor DS Foreman - _____	Date <u> </u> / <u> </u> / <u> </u> Station _____
Reviewed By SCDOT Inspector - _____	Date <u> </u> / <u> </u> / <u> </u> Offset _____

		Construction	Temporary
<div style="display: flex;"> <div style="flex: 1;"> Date Cased _____ Date Opened _____ Date Poured _____ </div> <div style="flex: 1;"> Casing Type: _____ Casing Dimension (OD): _____ Bottom of Casing Elevation (FT) _____ Top of Casing Elevation (FT) _____ Diameter of Rock Socket (IN) _____ Diameter of Shaft (IN) _____ Mud-line/Ground Surface Elevation (FT) _____ Wet & Dry Shaft Length (FT) _____ Rock Socket Length (FT) _____ Top of Shaft Elevation (FT) _____ Tip Elevation (FT) _____ Constructed Shaft Length (FT) _____ Testing/Other: _____ Volume of Concrete: _____ OP = VP - VT = _____ UP = VT - VP = _____ Reinforcement Cage Installed: _____ Duration of Pour (min) _____ Legend <div style="display: flex; justify-content: space-between;"> <div> TOC TOG TOS TOR BOC BOS BOR </div> <div> Top of Casing Top of Ground Top of Shaft Top of Rock Bottom of Casing Bottom of Shaft Bottom of Rock </div> <div> <div style="border: 1px solid black; width: 30px; height: 15px; margin-bottom: 5px;"></div> Sand <div style="border: 1px solid black; width: 30px; height: 15px; margin-bottom: 5px;"></div> Silt <div style="border: 1px solid black; width: 30px; height: 15px; margin-bottom: 5px;"></div> Clay <div style="border: 1px solid black; width: 30px; height: 15px; margin-bottom: 5px;"></div> Rock </div> </div> </div> </div> <div style="text-align: center; margin-top: 10px;"> ← Water Level </div>	<div style="border-left: 1px solid black; height: 500px; margin-left: 10px;"></div>		
Completed by _____ Contractor DS Foreman/Engineer Reviewed by _____ SCDOT Inspector/Engineer Notes: _____ Shaft location variance at top: _____			

HOW TO COMPLETE THE **DRILLED SHAFT LOG**



Project Name _____		Page _____ of _____	
Project No. _____		Plan No. _____	
Contract or _____		Sheet No. _____	
Inspected By _____		Date _____	Station _____
Approved By _____		Date _____	City/State _____

Date Cores _____ Date Opened _____ Date Poured _____	Cooring Type _____ Cooring Dimension _____ Bottom of Cooring Elevation (ft) _____ Diameter of Rock Socket (in) _____ Diameter of Overburden Shaft (in) _____ Measured Ground Surface Elevation (ft) _____ Overburden Shaft Length (ft) _____ Rock Socket Length (ft) _____ Cutoff Elevation (ft) _____ Top Elevation (ft) _____ Constructed Shaft Length (ft) _____ Facing Grade _____
Volume of Concrete: Theoretical (cy) _____ Actual (cy) _____ Reinforcement Cages Installed: Type _____ Duration of Pour (min) _____	
Legend: RGC Top of Cooring <input type="checkbox"/> Sand RGC Top of Ground <input type="checkbox"/> Soil RGS Top of Shaft <input type="checkbox"/> Clay RGR Top of Rock <input type="checkbox"/> Rock RGC Bottom of Cooring <input type="checkbox"/> Clay RGS Bottom of Shaft <input type="checkbox"/> Rock	
Water Level _____ Inspected by: _____ Approved by: _____ Distribution: _____	

Illustration (ft)

Fill in every blank on the form. If it does not apply put an "N/A" or a long dash.

Use pencil – but never erase. If you need to change something, strike a single line through the item and insert the correct information above it. If there is insufficient room to make a note, footnote the item and go to the bottom of the page, or use a separate page.

1. Heading:
 - Fill in before drilling starts.
 - Be sure to print your name and the start date of drilling.
 - The Geotechnical Engineer will sign approval line.
2. Shaft Data: - Fill in appropriate dates, elevations, and diameters.
3. Concrete Data: Record data from the Concrete Volumes form.
4. Construct Shaft Illustration using the symbols provided.
5. Fill in "Inspected by" and "Distribution".



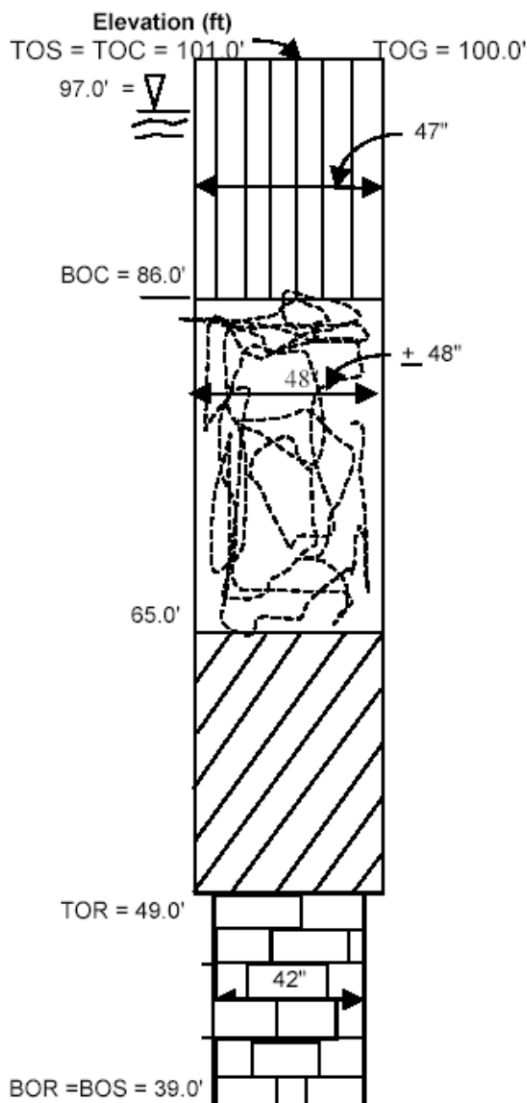
DRILLED SHAFT LOG (REV 06-03-02) SAMPLE 1 Construction Casing

Project Name	Replace Bridge over Cooper Creek along US-322		Page	1	of	6
File No.	4.995		Bent No.	3		
Contractor	Drilled Shaft, Inc.		Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36	
Reviewed By SCDOT	Inspector - John Smith	Date	06/05/02	Offset	24 FT. Right	

Date Cased 06/04/02
Date Opened 06/04/02
Date Poured 06/05/02

Casing Type:
Casing Dimension (OD):
Bottom of Casing Elevation (FT)
Top of Casing Elevation (FT)
Diameter of Rock Socket (IN)
Diameter of Shaft (IN)
Mud-line/Ground Surface Elev. (FT)
Wet & Dry Shaft Length (FT)
Rock Socket Length (FT)
Top of Shaft Elevation (FT)
Tip Elevation (FT)
Constructed Shaft Length (FT)

Construction	Temporary
Steel	
48.0 IN.	
86.0 FT. msl	
101.0 FT. msl	
42.0 IN.	
37 Ft. @ +48.0 IN. & 15 FT. @ 47 IN.	
100.0 FT. msl	
52.0 FT.	
10.0 FT. @ 42IN.	
101.0 FT. msl	
39.0 FT. msl	
62.0 FT.	



Testing/Other: Slurry, Slump, Air, Compression Cylinders, & CSL

Volume of Concrete:
OP = VP - VT = 0.6 CY UP = VT - VP=
Reinforcement Cage Installed:
Duration of Pour (min)

Theoretical (VT) CY 27.2
Actual (VP) CY 27.8
Type Spiral
100 Min.

Legend

TOC Top of Casing
TOG Top of Ground
TOS Top of Shaft
TOR Top of Rock
BOC Bottom of Casing
BOS Bottom of Shaft
BOR Bottom of Rock

Sand
Silt
Clay
Rock

Water Level

Completed by
Contractor DS Foreman/Engineer - John Q Doe
Reviewed by
SCDOT Inspector/Engineer - John Smith
Notes:

Shaft location variance at top: 2" after plan station & 1" right.



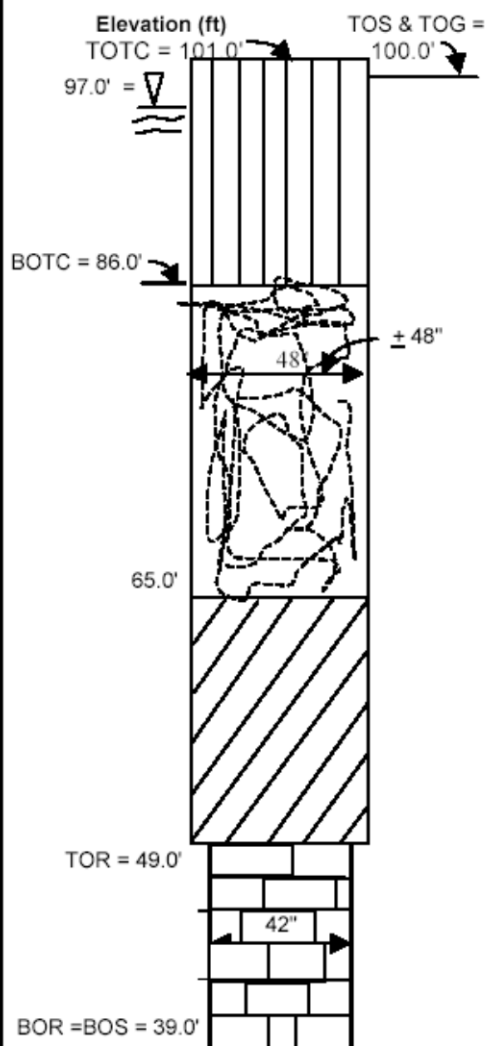
DRILLED SHAFT LOG (REV 06-03-02)
SAMPLE 2 Temporary Casing

Project Name	Replace Bridge over Cooper Creek along US-322		Page	1	of	6
File No.	4.995		Bent No.	6		
Contractor	Drilled Shaft, Inc.		Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36	
Reviewed By SCDOT	Inspector - Jane Smith	Date	06/05/02	Offset	24 FT. Right	

Date Cased 06/04/02
 Date Opened 06/04/02
 Date Poured 06/05/02

Casing Type:
 Casing Dimension (OD):
 Bottom of Casing Elevation (FT)
 Top of Casing Elevation (FT)
 Diameter of Rock Socket (IN)
 Diameter of Shaft (IN)
 Mud-line/Ground Surface Elev. (FT)
 Wet & Dry Shaft Length (FT)
 Rock Socket Length (FT)
 Top of Shaft Elevation (FT)
 Tip Elevation (FT)
 Constructed Shaft Length (FT)

Construction	Temporary
	Steel
	48.0 IN.
	86.0 FT.
	101.0 FT.
	42.0 IN.
	+ 48.0 IN.
	100.0 FT. msl
	51.0 FT.
	10.0 FT.
	100.0 FT. msl
	39.0 FT. msl
	61.0 FT.

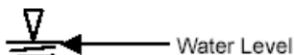


Testing/Other: Slurry, Slump, Air, Compression Cylinders, & CSL
 Volume of Concrete:
 OP = VP - VT = 0.5 CY UP = VT - VP =
 Reinforcement Cage Installed:
 Duration of Pour (min)

Theoretical (VT) CY 27.3
 Actual (VP) CY 27.8
 Type: Welded Hoops
 100 Min.

Legend

TOC	Top of Casing		Sand
TOG	Top of Ground		Silt
TOS	Top of Shaft		Clay
TOR	Top of Rock		Rock
BOC	Bottom of Casing		
BOS	Bottom of Shaft		
BOR	Bottom of Rock		



Completed by
 Contractor DS Foreman/Engineer - John Q Doe
 Reviewed by
 SCDOT Inspector/Engineer - Jane Smith
 Notes:

Shaft location variance at top: 1" after plan station & 4" left. Called Bridge Construction Engineer prior to pour. Received verbal approval to cast concrete from BCE. Contractor told to submit letter covering this shaft variance.



Note: Preaugering not allowed when using construction casing.				
Casing Information				
ID	OD	Top Elev.	Length	Bot. Elev.
Notes				

Soil Auger Diam.

Rock Core Diam.

Ground Surface Elev.

Water Table Elev.

Reference Elev.

Drilling Mud

Depth ()	Elev. ()	Time		Soil Description and Notes
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	

HOW TO COMPLETE THE DRILLED SHAFT EXCAVATION LOG



Project Name _____				Page _____ of _____	
Contract No. _____				Plan No. _____	
Inspected By _____				Station _____	
Approved By _____				Date _____	
Date _____				Sheet _____	
Casing Information					
ID _____	OD _____	Top Elev. _____	Length _____	Bot. Elev. _____	Soil Auger Diam. _____
				Ground Surface Elev. _____	Water Table Elev. _____
				Reference Elev. _____	Drilling Mud _____
Notes _____					
Soil Description and Notes					
Depth	Elev.	Time			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			
		In			
		Out			

Fill in every blank on the form. If it does not apply put an "N/A" or a long dash.

Use pencil – but never erase. If you need to change something, strike a single line through the item and insert the correct information above it. If there is insufficient room to make a note, footnote the item and go to the bottom of the page, or use a separate page.

1. Heading:
 - Fill in before drilling starts.
 - Be sure to print your name and the start date for drilling.
 - The Geotechnical Engineer will sign approval line.
2. Casing:
 - Measure Length (L) in the field.
 - Surveyor provides Top of Casing elevation (TE).
 - Compute bottom elevation(BE): $TE - L = BE$
3. Site Data
 - Soil Auger diameter – measure and record in inches.
 - Ground surface elev. – provided by surveyor.
 - Water table elev. – measure w/tape in hole before slurry is introduced (if applicable).
 - Water table may need to be estimated from seepage in dry hole method.
 - Reference Elevation – provided by surveyor.
 - Drill mud – If used, complete the "**Slurry Inspection Log**"; compare to Installation Plan
4. Depth/Elevation:

Depth (D) can be measured by:

 - 1) Contractor has kelly bar marked (spot checking only)
 - 2) Weighted tape (for accurate measurements)

Reference elevation is always known; i.e., template, top of casing, or top of ground.

Elevation (E) – compute $TE - D = E$

Enter Depth/Elev. For EVERY change in the soil/rock condition.
5. Time:

May use military or 24 hour clock. Be consistent and correct! Remember that shaft drilling can occur over several days, so be sure to mark date changes.
6. Material:

Use this form to record all activity during shaft excavation. Label all major soil strata.



DRILLED SHAFT EXCAVATION LOG (REV 06-03-02)
SAMPLE 1 Construction Casing

Project Name	Replace Bridge over Cooper Creek along US-322		Page	2	of	6
File No.	4.995		Bent No.	3		
Contractor	Drilled Shaft, Inc.		Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/03/02	Station	508 + 36	
Reviewed By SCDOT	Inspector - John Smith	Date	06/03/02	Offset	24 Ft. Right	

Note: Preaugering not allowed when using construction casing.

Casing Information: Construction <input checked="" type="checkbox"/> Temporary <input type="checkbox"/>					Soil Auger Diam.	46"
ID	OD	Top Elev.	Length	Bot. Elev.	Rock Core Diam.	42"
47"	48"	101.0 MSL	15'	86.0 MSL	Ground Surface Elev.	100.0 MSL
					Water Table Elev.	97.0 MSL
					Reference Elev.	101.0 MSL
					Drilling Mud	Slurry
Notes Switched to 42" Rock Core @ 52.0' (49.0' MSL) at 1:50 pm.						

Depth (Feet)	Elev. (Ft. MSL)	Time		Soil Description and Notes
1.0	100.0	7:30 am	In	Tan Silty Sand
15.0	86.0	9:00 am	Out	Tan Silty Sand
15.0	86.0	9:10 am	In	Dark Tan Sand
36.0	65.0	11:30 am	Out	Dark Tan Sand
36.0	65.0	11:40 am	In	Dense Silty Sand (PWR) w/Mica
52.0	49.0	1:30 pm	Out	Dense Silty Sand (PWR) w/Mica
52.0	49.0	1:50 pm	In	Very Dense Rock (Granite)
61.0	40.0	4:50 pm	Out	Very Dense Rock (Granite)
61.0	40.0	7:15 am	In	Very Dense Rock (Granite) Continued drilling from previous day
62.0	39.0	7:30 am	Out	Very Dense Rock (Granite) Continued drilling from previous day
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	



DRILLED SHAFT EXCAVATION LOG (REV 06-03-02)
SAMPLE 2 Temporary Casing

Project Name	Replace Bridge over Cooper Creek along US-322	Page	2	of	6
File No.	4,995	Bent No.	6		
Contractor	Drilled Shaft, Inc.	Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/03/02	Station	508 + 36
Reviewed By SCDOT	Inspector - Jane Smith	Date	06/03/02	Offset	24 Ft. Right

Note: Preaugering not allowed when using construction casing.

Casing Information: Construction _____ Temporary X

ID	OD	Top Elev.	Length	Bot. Elev.
47"	48"	101.0 MSL	15'	86.0 MSL

Soil Auger Diam.	46"
Rock Core Diam.	42"
Ground Surface Elev.	100.0 MSL
Water Table Elev.	97.0 MSL
Reference Elev.	101.0 MSL
Drilling Mud	Slurry

Notes Switched to 42" Rock Core @ 52.0' (49.0' MSL) at 1:50 pm.

Depth (Feet)	Elev. (Ft. MSL)	Time		Soil Description and Notes
1	100.0	7:30 am	In	Tan Silty Sand
15.0	86.0	9:00 am	Out	Tan Silty Sand
15.0	86.0	9:10 am	In	Dark Tan Sand
36.0	65.0	11:30 am	Out	Dark Tan Sand
36.0	65.0	11:40 am	In	Dense Silty Sand (PWR) w/Mica
52.0	49.0	1:30 pm	Out	Dense Silty Sand (PWR) w/Mica
52.0	49.0	1:50 pm	In	Very Dense Rock (Granite)
61.0	40.0	4:50 pm	Out	Very Dense Rock (Granite)
61.0	40.0	7:15 am	In	Very Dense Rock (Granite) Continued drilling from previous day
62.0	39.0	7:30 am	Out	Very Dense Rock (Granite) Continued drilling from previous day
			In	
			Out	
			In	
			Out	
			In	
			Out	
			In	
			Out	



SLURRY INSPECTION LOG (REV 06-03-02)

Project Name _____

File Number _____

Bent No. _____

Shaft No. _____

Water Source: * _____

Date of Initial Hydration _____ / _____ / _____ Time _____

Composition:	Brand	Type	Proportions
Mineral Type			
Additives			

TEST PROPERTIES

Sampling	Before Introduction of Slurry	First 8 Hours During Construction **				Additional Testing		At End of Excavation	Before Concreting	
		Test 1	Test 2	Test 3	Test 4	Test 1	Test 2		Test 1	Test 2
Date:										
Time:										
Test Depth at Levels:	Holding Tank							At Bottom	At Bottom	At Bottom
Density										
Viscosity										
% Sand										
pH										
Cake / Filtrate	N/A									

Notes: * Salt water shall not be used to hydrate the slurry or stabilize the excavation.

** A minimum of 4 sets of tests shall be made during the first 8 hours of slurry use. Slurry sampling and testing shall be observed by the Engineer. When the results show consistent behavior, the testing frequency may be decreased to 1 set every 4 hours of slurry use.

Contractor DS Foreman: _____

Date: _____ / _____ / _____

SCDOT Inspector: _____

Date: _____ / _____ / _____

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HOW TO COMPLETE THE SLURRY INSPECTION LOG

SLURRY INSPECTION LOG

Project No. _____	1	Composition: _____	Brand _____	Type _____	Proportions _____
Drilled Shaft No. _____		Mineral Type _____			
Start Location _____		Additives _____			
Water Source: " " _____					

TEST PROPERTIES

Sampling	Before Introduction of Slurry	First 8 Hours During Construction *				Additional Testing		At End of Excavation	Before Concreting Test 1	Before Concreting Test 2
		Test 1	Test 2	Test 3	Test 4	Test 1	Test 2			
Date:										
Time:										
Properties	Test Depth at Level: _____		3					At Bottom	At Bottom	At Bottom
Density										
Viscosity										
% Sand										
pH										
Cake / Filtrate										

Notes: * A minimum of 4 sets of tests shall be made during the first 8 hours of slurry use. Slurry sampling and testing shall be observed by the Engineer. When the results show consistent behavior, the testing frequency may be decreased to 1 set every 4 hours of slurry use.

" " Saltwater shall not be used to hydrate the slurry _____ the excavation.

4

Contractor Representative: _____ **5** _____ Date: ____/____/____

State Inspector: _____ Date: ____/____/____

1. Heading: - Fill in before drilling starts.
 - The Project Resident Engineer will sign approval line.
2. Slurry Data: - Fill in appropriate brands, types, and proportion.
3. Test Data: - Record test data as the testing Inspector performs the tests.
 - Note the depth at which the samples were obtained.
 - Make sure that a minimum of 4 tests are performed within
 the first 8 hours of slurry use.
4. Notes: Record any unusual events or results.
5. Fill in "Contractor Representative" and "State Inspector".

Fill in every blank on the form. If it does not apply put an "N/A" or a long dash.

Use pencil – but never erase. If you need to change something, strike a single line through the item and insert the correct information above it. If there is insufficient room to make a note, footnote the item and go to the bottom of the page, or use a separate page.



SLURRY INSPECTION LOG (REV 06-03-02)
SAMPLE 1 Construction Casing

Project Name Replace Bridge over Cooper Creek along US-322

File Number 4.995
Bent No. 3 Shaft No. 3
Water Source: * Hydrant (City water)
Date of Initial Hydration 06/03/02 Time 9:00 am

Composition:	Brand	Type	Proportions
Mineral Type	Augua Gel	Bentonite	1400 LBS / 5000 GAL
Additives			

TEST PROPERTIES

Sampling	Before Introduction of Slurry	First 8 Hours During Construction **				Additional Testing		At End of Excavation	Before Concreting	
		Test 1	Test 2	Test 3	Test 4	Test 1	Test 2		Test 1	Test 2
Date:	06/04/02	06/04/02	06/04/02	06/04/02	06/04/02			06/05/02	06/05/02	06/05/02
Time:	11:00 am	1:30 pm	2:30 pm	4:00 pm	5:00 pm			7:30 am	8:15 am	9:20 am
Test Depth at Levels:	Holding Tank	50 FT	53 FT	58 FT	60 FT			At Bottom	At Bottom	At Bottom
Density	65	67.1	67.3	65.8	66.3			69.1	66.1	66.3
Viscosity	33	37	38	36	37			42	38	37
% Sand	0%	3%	4%	2%	2.5%			10%	2%	2%
pH	10	9	9	9	9			9	10	10

Notes: * Salt water shall not be used to hydrate the slurry or stabilize the excavation.

** A minimum of 4 sets of tests shall be made during the first 8 hours of slurry use. Slurry sampling and testing shall be observed by the Engineer. When the results show consistent behavior, the testing frequency may be decreased to 1 set every 4 hours of slurry use.

Note: Side of shaft caked. Cleaned shaft sides.

Contractor DS Foreman: John Q. Doe

Date: 06/05/02

SCDOT Inspector: John Smith

Date: 06/05/02

Page 3 of 6



SLURRY INSPECTION LOG (REV 06-03-02)
SAMPLE 2 Temporary Casing

Project Name Replace Bridge over Cooper Creek along US-322

File Number 4.995

Bent No. 6 Shaft No. 3

Water Source: * Hydrant (City water)

Date of Initial Hydration 06/03/02 Time 9:00 am

Composition:	Brand	Type	Proportions
Mineral Type	Augua Gel	Bentonite	1400 LBS / 5000 GAL
Additives			

TEST PROPERTIES

Sampling	Before Introduction of Slurry	First 8 Hours During Construction **				Additional Testing		At End of Excavation	Before Concreting	
		Test 1	Test 2	Test 3	Test 4	Test 1	Test 2		Test 1	Test 2
Date:	06/04/02	06/04/02	06/04/02	06/04/02	06/04/02			06/05/02	06/05/02	06/05/02
Time:	11:00 am	1:30 pm	2:30 pm	4:00 pm	5:00 pm			7:30 am	8:15 am	9:20 am
Test Depth at Levels:	Holding Tank	50 FT	53 FT	58 FT	60 FT			At Bottom	At Bottom	At Bottom
Density	65	67.1	67.3	65.8	66.3			69.1	66.1	66.3
Viscosity	33	37	38	36	37			42	38	37
% Sand	0%	3%	4%	2%	2.5%			10%	2%	2%
pH	10	9	9	9	9			9	10	10

Notes: * Salt water shall not be used to hydrate the slurry or stabilize the excavation.

** A minimum of 4 sets of tests shall be made during the first 8 hours of slurry use. Slurry sampling and testing shall be observed by the

Engineer. When the results show consistent behavior, the testing frequency may be decreased to 1 set every 4 hours of slurry use.

Note: Side of shaft caked. Cleaned shaft sides.

Contractor DS Foreman: John Q. Doe

Date: 06/05/02

SCDOT Inspector: Jane Smith

Date: 06/05/02

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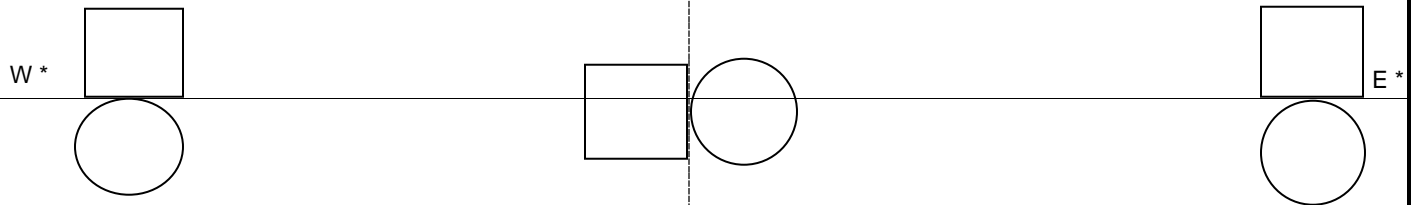


DRILLED SHAFT INSPECTION LOG (REV 06-03-02)

Project Name _____ Page 4 of 6
File No. _____ Bent No. _____
Contractor _____ Shaft No. _____
Completed By Contractor DS Foreman - Date _____ Station _____
Reviewed By SCDOT Inspector - Date _____ Offset _____

Type of Drilling Fluid _____ Shaft Plumbness Check/4' _____
DS Location Variance at Top _____ Rebar Cage: Proper # Vert. Bars _____
Bottom Cleanout Method _____ Proper # Horiz. Bars _____
Time/Date Final Cleanout _____ Side Spacers _____
Shaft Bottom Elev. _____ Bottom Spacers _____
Est. Shaft Bottom Dia. _____ Ties & Connections _____

Inspected By: _____ Visual _____ Sounding _____ N *
Time Test Started _____
Time Test Finished _____
Time Test Started _____
Time Test Finished _____
* Based on Compass Direction
Test just prior to placing Rebar cage ☐ (inches)
Test just prior to placing concrete ☐ (inches)
* Direction



Note: 50% of base shall have < 1/2 Inch of sediment.
No area of shaft bottom shall be more than 1 1/2 Inches.

Notes

Comments/Recommendations

Results: _____ Satisfactory _____ DS Foreman _____
_____ Unsatisfactory _____ SCDOT Inspector _____ Time _____ Date _____

NOTE: Specification Tolerances - Location Variance at Top = 3 inches Max. Vertical (Plumbness) = 1 inch per 4 Ft. Max.

SCDOT
DRILLED SHAFT INSPECTION LOG

Use pencil – but never erase. If you need to change something, strike a single line through the item and insert the correct information above it. If there is insufficient room to make a note, footnote the item and go to the bottom of the page, or use a separate page.

1. Heading:
 - Fill in before drilling starts.
 - Be sure to print your name and the start date of drilling.
 - The Project Resident Engineer or designated representative will sign approval line.
2. Shaft Status: Drill Fluid Check – Responsibility of Contractor. Record density check performed by Contractor or Inspector.

Type of Drill Fluid – record	
a)	Natural
b)	Mineral (commercial)
c)	Plain water
Remember: Polymer slurry not allowed	

 - Bottom Cleanout Method: Observe and record equipment type (i.e., cleanout bucket, air lift, submersible pump, etc.). Must match Installation Plan.
 - Time/Date Final Cleanout: Record when last cleanout performed prior to rebar cage placement.
 - Shaft Bottom Elevation – Use weighted tape to measure; record.
 - Estimate Shaft Bottom Diameter – record auger diameter.
3. Cage Check:
 - Reinforcing cage usually checked by others.
 - Proper number of Vertical bars – count and record # of vertical bars in hole; compare to plan.
 - Epoxy – you should never see coated rebar
4. Shaft Cleaniness: – check procedure being used, record
 - 1) Using S.I.D., visually inspect the shaft bottom in each of a minimum of 5 locations as shown on form.
 - 2) Using a weighted tape, sound the shaft in each of a minimum of 5 locations as shown on form. “Feel” for hard bottom – it translates to clean hole. Remember specifications.
5. Record Results:



DRILLED SHAFT INSPECTION LOG (REV 06-03-02)
SAMPLE 1 Construction Casing

Project Name	Replace Bridge over Cooper Creek along US-322		Page	4	of	6
File No.	4.995		Bent No.	3		
Contractor	Drilled Shaft, Inc.		Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36	
Reviewed By SCDOT	Inspector - John Smith	Date	06/05/02	Offset	24 FT. Right	

Type of Drilling Fluid	Bentonite	Shaft Plumbness Check/4'	1/2 In. per 4 Ft.
DS Location Variance at Top	2" After Sta. & 1" Right	Rebar Cage: Proper # Vert. Bars	16 EA # 36 Bars
Bottom Cleanout Method	Airlift	Proper # Horiz. Bars	# 19 Bar @ 4 3/8" Spiral
Time/Date Final Cleanout	7:45 am on 06/05/02	Side Spacers	4 EA every 10 Ft.
Shaft Bottom Elev.	39.0 msl	Bottom Spacers	16 EA @ 6" Length
Est. Shaft Bottom Dia.	42 Inches	Ties & Connections	Checked and okay.

Inspected By: JQD Visual ☐ Sounding ☒ N * * Based on Compass Direction

Time Test Started 7:45 am

Time Test Finished 8:00 am

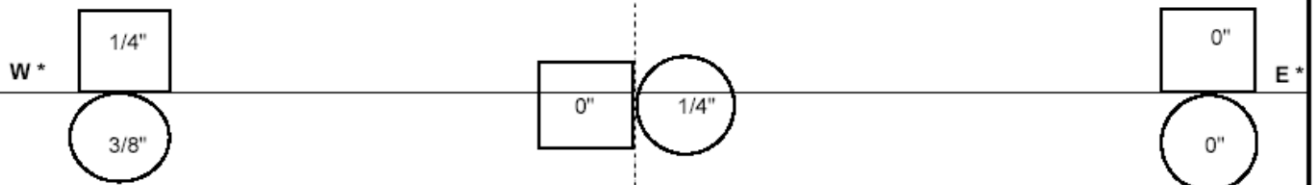
Time Test Started 9:10 am

Time Test Finished 9:25 am

Test just prior to placing Rebar cage ☐ (inches)

Test just prior to placing concrete ☐ (inches)

* Direction



Note: 50% of base shall have < 1/2 Inch of sediment.
No area of shaft bottom shall be more than 1 1/2 Inches.

Notes	Comments/Recommendations
80% area < 1/2", first test okay.	Rebar cage placed & concrete ordered after first test.
60% area < 1/2", second test okay.	Concrete placed after second test was okay.

Results: ☒ Satisfactory DS Foreman John Q Doe

☐ Unsatisfactory SCDOT Inspector John Smith Time 9:25 am Date 06/05/02

NOTE: Specification Tolerances - Location Variance at Top = 3 inches Max. Vertical (Plumbness) = 1 inch per 4 Ft. Max.



DRILLED SHAFT INSPECTION LOG (REV 06-03-02)
SAMPLE 2 Temporary Casing

Project Name	Replace Bridge over Cooper Creek along US-322	Page	4	of	6
File No.	4.995	Bent No.	6		
Contractor	Drilled Shaft, Inc.	Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36
Reviewed By SCDOT	Inspector - Jane Smith	Date	06/05/02	Offset	24 FT. Right

Type of Drilling Fluid	Bentonite	Shaft Plumbness Check/4'	1/2 In. per 4 Ft.
DS Location Variance at Top	1" Before Sta. & 4" Left**	Rebar Cage: Proper # Vert. Bars	16 EA # 36 Bars
Bottom Cleanout Method	Airlift	Proper # Horiz. Bars	# 19 W Hoops @ 7 IN.
Time/Date Final Cleanout	7:45 am on 06/05/02	Side Spacers	4 EA every 10 Ft.
Shaft Bottom Elev.	39.0 msl	Bottom Spacers	16 EA @ 6" Length
Est. Shaft Bottom Dia.	42 Inches	Ties & Connections	Checked and okay.

Inspected By: JQD Visual ☐ Sounding ☒ N *

Time Test Started 7:45 am

Time Test Finished 8:00 am

Time Test Started 9:10 am

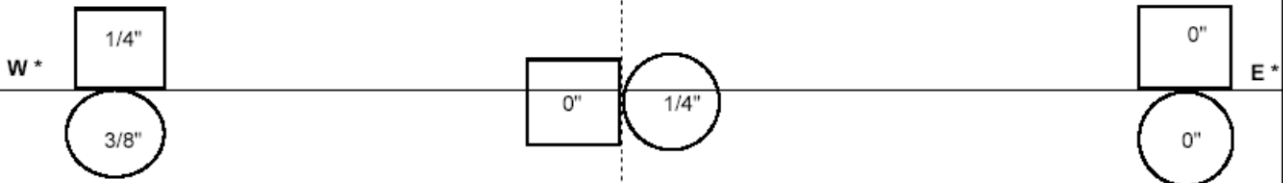
Time Test Finished 9:25 am

* Based on Compass Direction

Test just prior to placing Rebar cage ☐ (inches)

Test just prior to placing concrete ☐ (inches)

* Direction



Note: 50% of base shall have < 1/2 Inch of sediment.
No area of shaft bottom shall be more than 1 1/2 Inches.

Notes

60% area < 1/2", first test okay.

60% area < 1/2", second test okay.

Comments/Recommendations

Rebar cage placed & concrete ordered after first test.

Concrete placed after second test was okay.

** - See note on Page 1.

Results:	X	Satisfactory	DS Foreman	John Q Doe	Time	9:25 am	Date	06/05/02
		Unsatisfactory	SCDOT Inspector	Jane Smith				

NOTE: Specification Tolerances - Location Variance at Top = 3 inches Max. Vertical (Plumbness) = 1 inch per 4 Ft. Max.



DRILLED SHAFT CONCRETE PLACEMENT LOG (REV 06-03-02)

Project Name _____ Page 5 of 6
 File No. _____ Bent No. _____
 Contractor _____ Shaft No. _____
 Completed By Contractor DS Foreman - Date _____ Station _____
 Reviewed By SCDOT Inspector - Date _____ Offset _____

Placement Method _____ Tremie _____ Volume in Pump Truck _____ # _____ ID _____ Length _____ Volume _____
 _____ Pumped _____ Pump Truck Lines _____
 De-airing Method _____ Relief Valve _____ Pump Truck _____
 _____ Plug _____
 _____ Cap _____
 Total Volume in Lines + Pump Truck Σ = _____

Reference Elev. _____
 Shaft Top Elev. _____ Time First Truck Batched: _____
 Top of Rock Elev. _____ Depth of Water Per Hr. Inside Shaft (Dry Hole Check) _____
 Shaft Bottom Elev. _____ Rebar Cage Top Elev. At Start - At Finish

Truck No.	Concrete Volume	Arrival Time	Start Time	Finish Time	Tremie Depth	Depth To Concrete	Notes

_____ Concrete Volume Delivered Total Placement Time (Temp. Casing Removed) _____

	OD	Top Elev.	Bot. Elev.	Start	Finish	Rebar Cage Centered*	YES	NO
T Casing Removal**	_____	_____	_____	_____	_____	Rebar Cage Re-centered	_____	_____
	_____	_____	_____	_____	_____			
	_____	_____	_____	_____	_____			

Notes * If no, then re-center rebar cage. ** If unable to remove temporary casing, then call Bridge Construction Office.

[illegible]

Use pencil – but never erase. If you need to change something, strike a single line through the item and insert the correct information above it. If there is insufficient room to make a note, footnote the item and go to the bottom of the page, or use a separate page.

1. Heading:
 - Fill in before drilling starts.
 - Be sure to print your name and the start date of drilling.
 - The Project Resident Engineer or designated representative will sign approval line.
2. Indicate correct "Placement" and "Deairing" method.
3. Compute and fill in Concrete Volumes: $V = (\pi d^2 / 4) \times L$
4. Fill in as much as possible prior to pour.
5. Record Truck number and amount of concrete.
6. Time:
 - May be military or standard clock. Be consistent and correct.
 - Watch for date changes on late night pours.
7. Depths:
 - Tremie embedment may be measured by markings on the tremie. Depth to concrete may be measured by weighted tape.
8. Notes: Record any unusual events or items.
9. Casing/Rebar Data:
 - The rebar cage fabrication will normally be performed on-site. Observe the lifting to make sure deformation or damage does not occur (especially to CSL tubes). Check that the correct cage is being used. Check reinforcing steel diagram against the actual cage to be sure cage is correct. When the cage is being placed, observe the spacing to assure the cage is set to the proper elevation.



Project Name	Replace Bridge over Cooper Creek along US-322						Page	5	of	6	
File No.	4.995						Bent No.	3			
Contractor	Drilled Shaft, Inc.						Shaft No.	3			
Completed By Contractor	DS Foreman - John Q. Doe			Date	06/05/02		Station	508 + 36			
Reviewed By SCDOT	Inspector - John Smith			Date	06/05/02		Offset	24 FT. Right			
Placement Method	Tremie	Volume in Pump Truck				#	ID	Total Length	Volume		
X	Pumped	Pump Truck Lines (6" x 10')				17	6"	170'	1.2 CY		
De-airing Method	Relief Valve	Pump Truck							0.2 CY		
X	Plug										
Total Volume in Lines + Pump Truck								$\Sigma =$		1.4 CY	
Reference Elev.	101.0 msl		Time First Truck Batched: 9:10 am								
Shaft Top Elev.	101.0 msl		Depth of Water Per Hr. Inside Shaft (Dry Hole Check): NA - Slurry used.								
Top of Rock Elev.	49.0 msl		Rebar Cage Top Elev. At Start - 108.0 msl At Finish - 108.0 msl								
Shaft Bottom Elev.	39.0 msl										
Truck No.	Concrete Volume	Arrival Time	Start Time	Finish Time	Tremie/ Pump Lines Total Length	Depth To Concrete from Casing Top	Notes				
17	9.0 CY	9:20 am	9:25 am	9:40 am	160 FT	41.0 FT	Removed 10' of pump line.				
22	9.0 CY	9:30 am	9:45 am	10:00 am	160 FT	21.7 FT	Removed 20' of pump line.				
8	9.0 CY	9:40 am	10:05 am	10:20 am	130 FT	2.4 FT	Removed 20' of pump line.				
17	4.0 CY	10:30 am	10:35 am	10:50 am	120 FT	0	Waste 2.0 CY (Removing pump lines and overflow.)				
31.0 CY Concrete Volume Delivered					Total Placement Time (Temp. Casing Removed)					100 Min.	
OD		Top Elev.	Bot. Elev.	Start	Finish	Rebar Cage Centered*	YES	NO			
NA						Rebar Cage Re-centered	X				

Notes * If no, then re-center rebar cage. ** If unable to remove temporary casing, then call Bridge Construction Office.



DRILLED SHAFT CONCRETE PLACEMENT LOG (REV 06-03-02)
SAMPLE 2 Temporary Casing

Project Name	Replace Bridge over Cooper Creek along US-322		Page	5	of	6
File No.	4.995		Bent No.	6		
Contractor	Drilled Shaft, Inc.		Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36	
Reviewed By SCDOT	Inspector - Jane Smith	Date	06/05/02	Offset	24 FT. Right	

Placement Method	<input type="checkbox"/> Tremie	Volume in Pump Truck	#	ID	Total Length	Volume
	<input checked="" type="checkbox"/> Pumped	Pump Truck Lines (6" x 10')	17	6"	170'	1.2 CY
De-airing Method	<input type="checkbox"/> Relief Valve	Pump Truck				0.2 CY
	<input checked="" type="checkbox"/> Plug					
Total Volume in Lines + Pump Truck						Σ = 1.4 CY

Reference Elev.	101.0 msl	Time First Truck Batched:	9:10 am
Shaft Top Elev.	100.0 msl	Depth of Water Per Hr. Inside Shaft (Dry Hole Check):	NA - Slurry used.
Top of Rock Elev.	49.0 msl	Rebar Cage Top Elev. At Start -	108.0 msl
Shaft Bottom Elev.	39.0 msl	At Finish -	108.0 msl

Truck No.	Concrete Volume	Arrival Time	Start Time	Finish Time	Tremie/ Pump Lines Total Length	Depth To Concrete from Casing Top	Notes
17	9.0 CY	9:20 am	9:25 am	9:40 am	160 FT	41.0 FT	Removed 10' of pump line.
22	9.0 CY	9:30 am	9:45 am	10:00 am	160 FT	21.7 FT	Removed 20' of pump line.
8	9.0 CY	9:40 am	10:05 am	10:20 am	130 FT	2.4 FT	Removed 20' of pump line.
17	4.0 CY	10:30 am	10:35 am	10:50 am	120 FT	0	Waste 2.0 CY (Removed the temporary casing, pump lines and concrete overflow.)

31.0 CY Concrete Volume Delivered	Total Placement Time (Temp. Casing Removed)	100 Min.
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	OD	Top Elev.	Bot. Elev.	Start	Finish	Rebar Cage Centered*	YES	NO
T Casing Removal**	48"	101.0 msl	85.0 msl	10:25 am	10:35 am	Rebar Cage Re-centered		X

Notes * If no, then re-center rebar cage. ** If unable to remove temporary casing, then call Bridge Construction Office.



DRILLED SHAFT CONCRETE VOLUMES LOG (REV 06-03-02)

Project Name _____ Page 6 of 6
File No. _____ Bent No. _____
Contractor _____ Shaft No. _____
Completed By Contractor DS Foreman - Date / / Station _____
Reviewed By SCDOT Inspector - Date / / Offset _____

Concreting Curve

Depth (ft)						

Concrete Volume Placed (cy)

Volume Delivered	VD	_____ cy
Volume In Pump Truck + Lines	VP TL	_____ cy
Volume of CSL Tubes	VC SLT	_____ cy
Wastage	VW	_____ cy
Volume Placed	VP	_____ cy
= VD-VP TL-VC SLT-VW =	VTh	_____ cy
Theoretical Volume	OP	_____ cy
Over Pour (VP-VTh \geq 1.00)	UP	_____ cy
Under Pour (VP-VTh < 1.00)		

HOW TO COMPLETE THE DRILLED SHAFT CONCRETE VOLUMES LOG



DRILLED SHAFT CONCRETE VOLUMES LOG

Project Name _____	1	Page _____ of _____
Project No. _____		Pier No. _____
Contractor _____		Shaft No. _____
Inspected By _____		Date ____/____/____
Approved By _____		Station _____
		Offset _____

Top of Shaft _____

Bottom of Shaft _____

Concrete Curve

Concrete Volume Placed (cy)

Volume Delivered	VD	_____	CY
Volume in Lines	VL	_____	CY
Volume of CSL Tubing	VT	_____	CY
Wastage	WN	_____	CY
Volume Placed	VP	_____	CY
$= VD - VL - VT - WN =$			
Theoretical Volume	VTH	_____	CY
Discrepancy (VP - VTH)	QIP	_____	CY

Fill in every blank on the form. If it does not apply put an "N/A" or a long dash.

Use pencil – but never erase. If you need to change something, strike a single line through the item and insert the correct information above it. If there is insufficient room to make a note, footnote the item and go to the bottom of the page, or use a separate page.

1.	Heading:	-Fill in <u>before</u> drilling starts.
		-Be sure to print your name and the start date of drilling.
		-The Project Resident Engineer or designated representative will sign approval line.
2.	Concrete curve:	-compute Theoretical Volume of Concrete based on shaft size:
		$V_{th} = (\pi d^2 / 4) \times L$
		-locate points based on known cubic yards of concrete placed at measured "bottom" depth.
		-must be plotted during concrete placement.

Note: Plotted line should closely parallel Theoretical line.

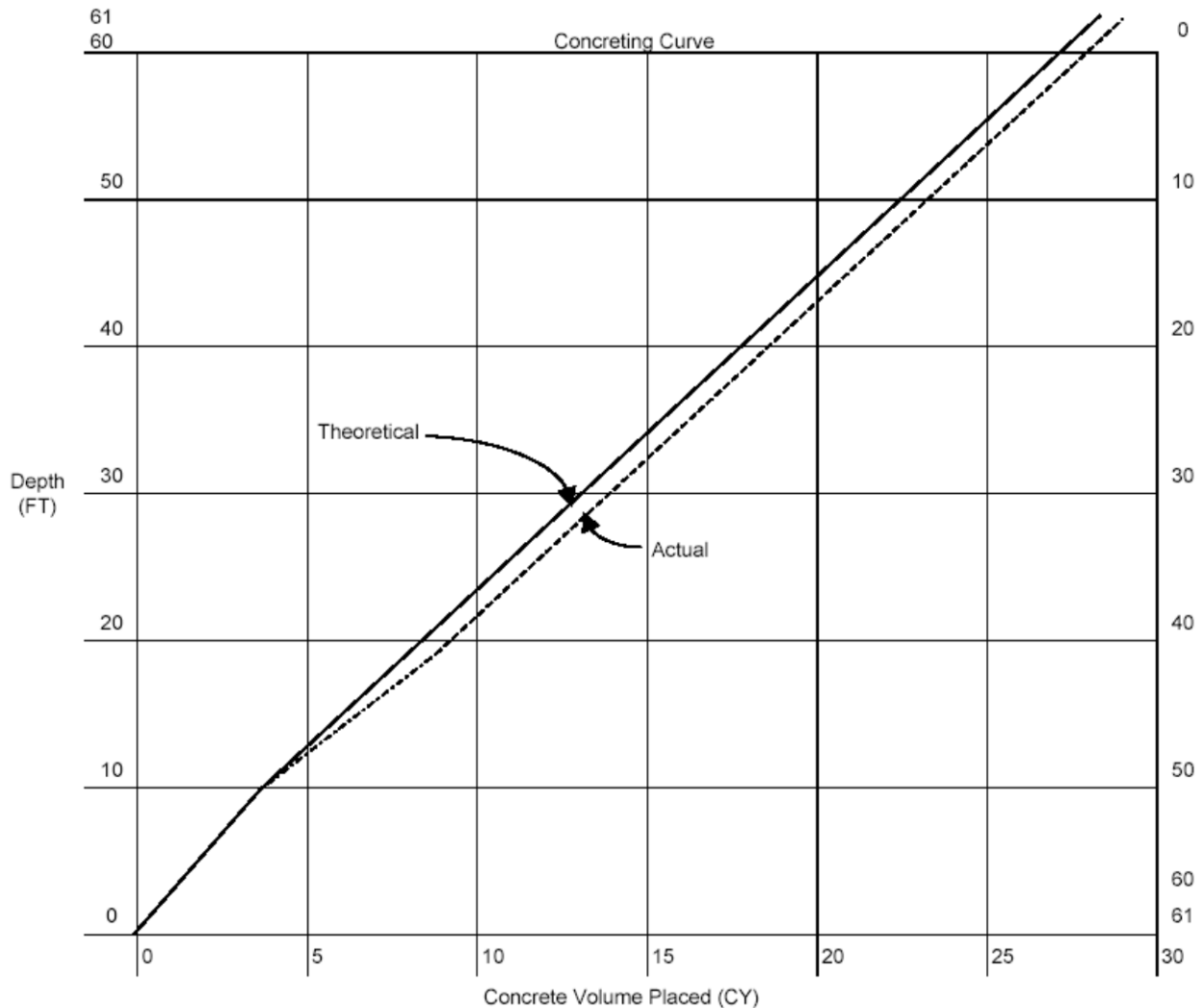
There is a problem if:

- a point plots way above or below the Theoretical line and/or
- there is a significant rise or fall in an otherwise straight line (change in slope of line).



DRILLED SHAFT CONCRETE VOLUMES LOG (REV 06-03-02)
SAMPLE 1 Construction Casing

Project Name	Replace Bridge over Cooper Creek along US-322		Page	6	of	6
File No.	4.995		Bent No.	3		
Contractor	Drilled Shaft, Inc.		Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36	
Reviewed By SCDOT	Inspector - John Smith	Date	06/05/02	Offset	24 FT. Right	

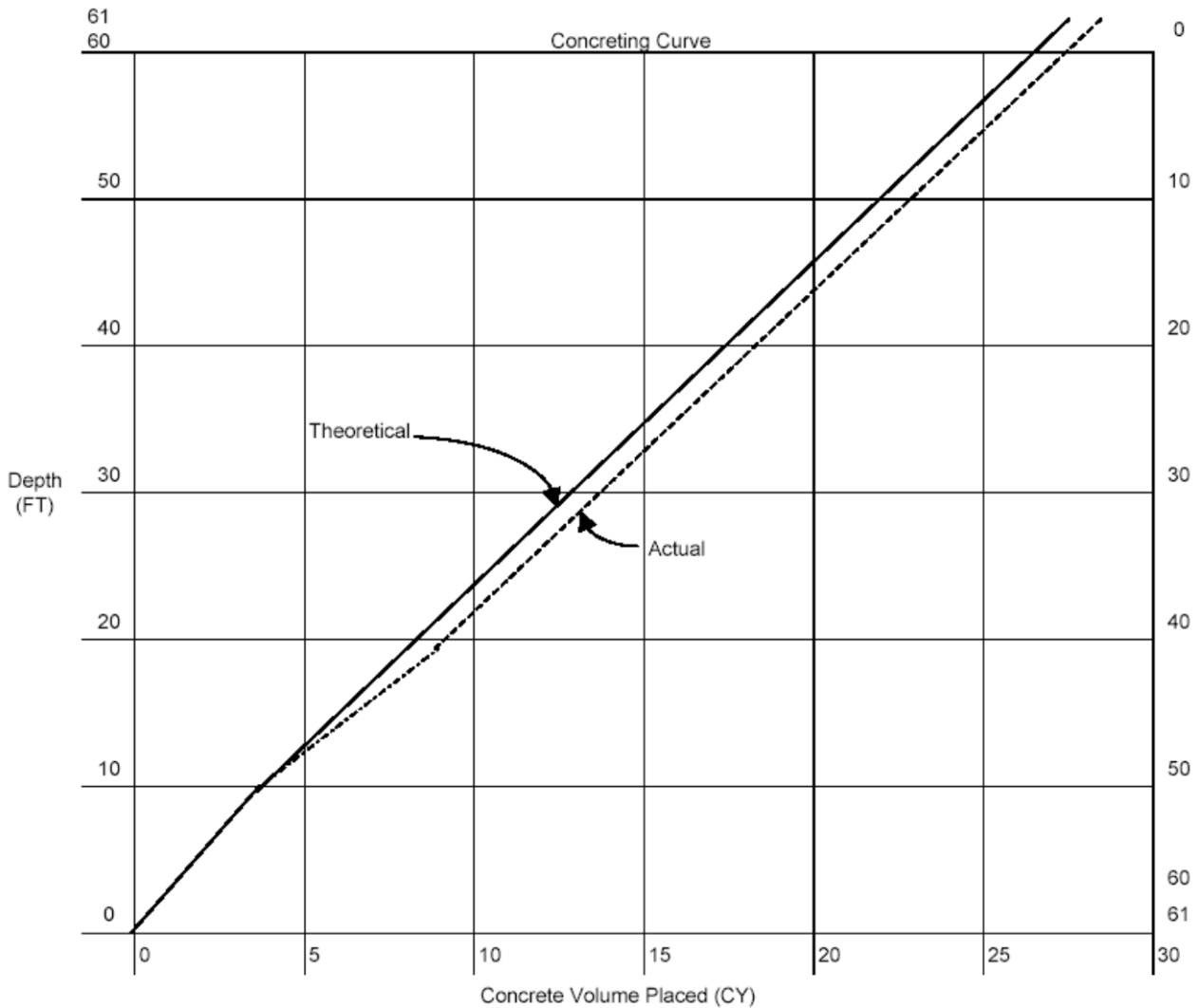


Volume Delivered	VD	31.0	CY
Volume In Pump Truck + Lines	VPTL	-1.4	CY - Volume left in pump truck and lines.
Volume of CSL Tubes	VCSLT	+0.2	CY
Wastage	VW	-2.0	CY - Removed pump lines and concrete overflow.
Volume Placed	VP	27.8	CY
= VD-VPTL-VCSLT-VW =	VTh	27.2	CY
Theoretical Volume	OP	0.6	CY
Over Pour (VP-VTh >= 1.00)	UP	NA	CY
Under Pour (VP-VTh < 1.00)			



DRILLED SHAFT CONCRETE VOLUMES LOG (REV 06-03-02)
SAMPLE 2 Temporary Casing

Project Name	Replace Bridge over Cooper Creek along US-322	Page	6	of	6
File No.	4.995	Bent No.	6		
Contractor	Drilled Shaft, Inc.	Shaft No.	3		
Completed By Contractor	DS Foreman - John Q. Doe	Date	06/05/02	Station	508 + 36
Reviewed By SCDOT	Inspector - Jane Smith	Date	06/05/02	Offset	24 FT. Right



Volume Delivered	VD	31.0	CY
Volume In Pump Truck + Lines	VPTL	-1.4	CY - Volume left in pump truck and lines.
Volume of CSL Tubes	VCSLT	+0.2	CY
Wastage	VW	-2.0	CY - Removed pump lines and concrete overflow.
Volume Placed	VP	27.8	CY
= VD-VPTL-VCSLT-VW =	VTh	27.3	CY
Theoretical Volume	OP	0.5	CY
Over Pour (VP-VTh \geq 1.00)	UP	NA	CY
Under Pour (VP-VTh $<$ 1.00)			