

ITEM SPECIAL

DRILLED SHAFT LATERAL LOAD TESTS

DESCRIPTION

THIS ITEM CONSISTS OF PERFORMING TWO LATERAL LOAD TESTS. THE LOCATION OF EACH TEST IS AS SHOWN ON THE PLANS. THE LOAD TEST SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM D3966-90 EXCEPT AS MODIFIED HEREIN. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND APPURTENANCES REQUIRED TO COMPLETE THE WORK AS SPECIFIED.

TESTING COMPANY

THE CONTRACTOR SHALL ENGAGE THE SERVICES OF ONE OF THE TESTING COMPANIES LISTED BELOW TO FURNISH, INSTALL, AND OPERATE INSTRUMENTATION FOR THE MONITORING OF EACH LATERAL LOAD TEST. THE TESTING COMPANY'S FIELD REPRESENTATIVE SHALL BE A REGISTERED PROFESSIONAL ENGINEER OR WORK UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER.

GAI CONSULTANTS, INCORPORATED
570 BEATTY ROAD
MONROEVILLE, PA 15146
(412) 856-6400

BBC&M, INCORPORATED
6190 ENTERPRISE COURT
DUBLIN, OH 43017
(614) 793-2226

H.C. NUTTING COMPANY
4120 AIRPORT ROAD
CINCINNATI, OH 45226
(513) 321-5816

GOBLE RAUSCHE LIKINS AND ASSOCIATES, INCORPORATED
4535 EMERY INDUSTRIAL PARKWAY
CLEVELAND, OH 44128
(216) 831-6131

BRIDGE DIAGNOSTICS, INCORPORATED
5398 MANHATTAN CIRCLE, SUITE 280
BOULDER, CO 80303
(303) 494-3230

WORK REQUIREMENTS

EACH LATERAL LOAD TEST SHALL BE PERFORMED BY EITHER PULLING TWO DRILLED SHAFTS TOGETHER OR BY JACKING TWO DRILLED SHAFTS APART. DRILLED SHAFTS THAT ARE PULLED TOGETHER SHALL BE SPACED NOT LESS THAN 20 FEET CENTER TO CENTER. DRILLED SHAFTS THAT ARE JACKED APART SHALL BE SPACED NOT LESS THAN 15 FEET CENTER TO CENTER. THE DEFLECTIONS OF BOTH DRILLED SHAFTS UTILIZED IN EACH LOAD TEST SHALL BE MEASURED DURING EACH TEST. EACH SHAFT TESTED SHALL HAVE AN INCLINOMETER INSTALLED IN THE CENTER OF THE SHAFT FOR THE ENTIRE LENGTH OF THE SHAFT. READINGS FOR THE INCLINOMETER SHALL BE TAKEN WHEN THE LOAD REACHES 100%, 200%, 300% AND 400% OF THE DESIGN LOAD DURING LOADING CYCLE.

THE LATERAL LOADS SHALL NOT BE APPLIED TO THE DRILLED SHAFTS UNTIL AFTER THE DRILLED SHAFT CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4,000 PSI.

THE LATERAL LOADS SHALL BE APPLIED IN ACCORDANCE WITH SECTION 6.3 OF ASTM D3966-90. IN SECTION 6.3 USE THE CYCLIC LOADING SCHEDULE FOR A MAXIMUM APPLIED LOAD EQUAL TO 300 PERCENT OF THE DESIGN LOAD. IF APPROPRIATE, THE FINAL LOAD INCREMENT SHALL BE FROM 0 TO 400 PERCENT AND HELD FOR 30 MINUTES AS DETERMINED BY THE ENGINEER.

THE TESTING COMPANY SHALL SUBMIT A TESTING PLAN, WHICH CONSISTS OF A NARRATIVE AND SKETCHES OF THE PROPOSED WORK. WORK SHALL NOT BEGIN UNTIL AFTER THE TESTING PLAN HAS BEEN APPROVED BY THE DIRECTOR. ALLOW FOR 2 WEEKS REVIEW TIME BY THE DIRECTOR.

DESIGN LOAD

THE DESIGN LOAD IS 50,000 POUNDS. THE DESIGN LOAD SHALL BE APPLIED TO EACH DRILLED SHAFT AT AN ELEVATION 9 FEET DOWN FROM THE TOP OF THE DRILLED SHAFT.

TEST REPORT

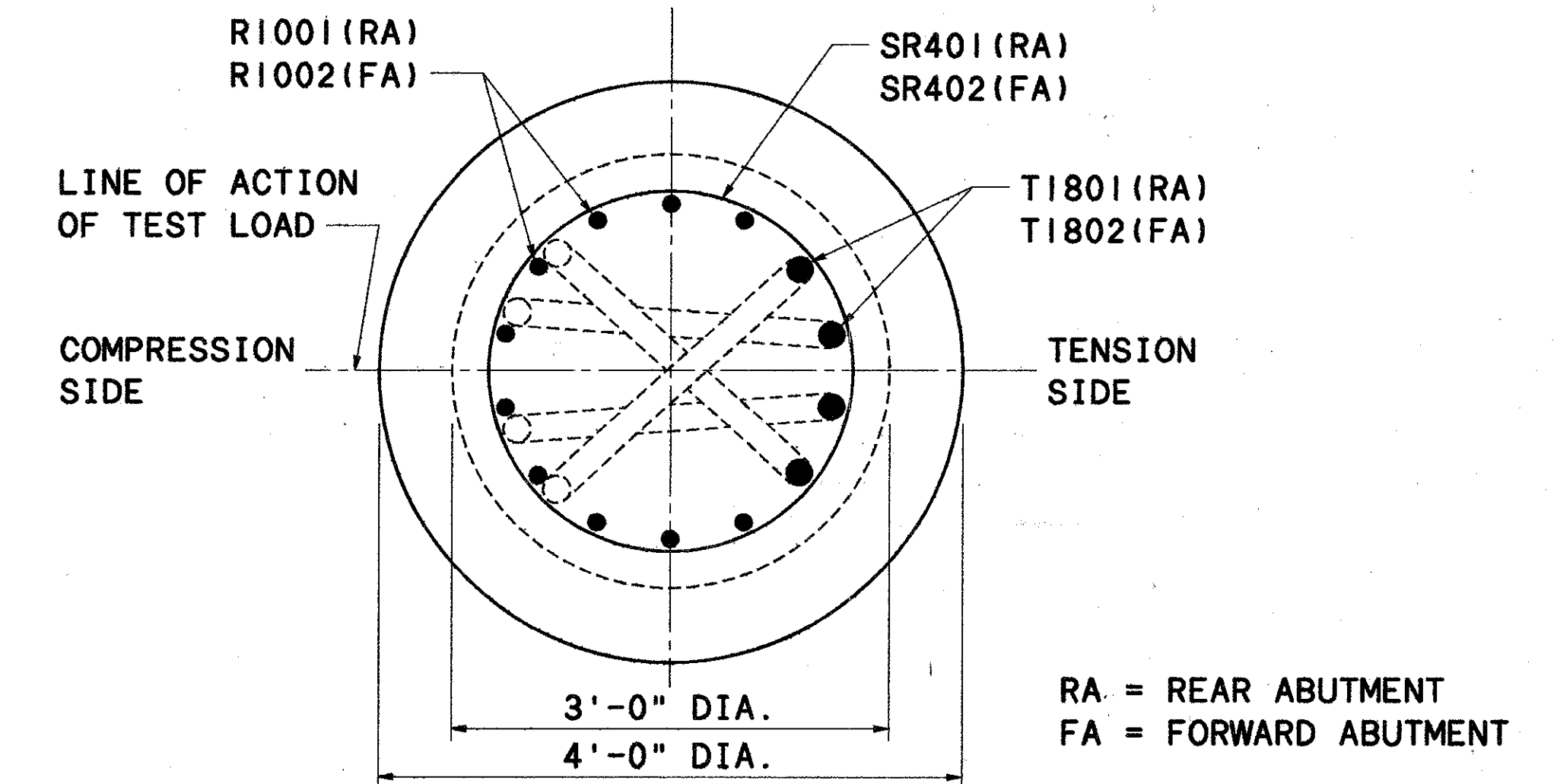
THE TESTING COMPANY SHALL PREPARE A REPORT AS PER SECTION 9 OF ASTM D3966-90. IN ADDITION TO THE REQUIREMENTS OF SECTION 9, THE REPORT SHALL INCLUDE THE FOLLOWING:

1. PROCEDURES
2. DATA
3. GRAPH OF LOAD VS. LATERAL DISPLACEMENT
4. ANALYSIS
5. CONCLUSIONS
6. RECOMMENDATIONS

FOUR COPIES OF THE REPORT SHALL BE FURNISHED TO THE CENTRAL OFFICE, BUREAU OF BRIDGES (ATTENTION FOUNDATION ENGINEER).

BASIS OF PAYMENT

PAYMENT FOR PROVIDING PERSONNEL, FURNISHING INSTRUMENTATION, APPLICATION OF LOAD, MONITORING THE INSTRUMENTATION DURING THE LOAD TEST AND FOR PREPARATION OF THE REPORT WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM "SPECIAL - DRILLED SHAFT LATERAL LOAD TESTS."



TEST SHAFT REINFORCING

NOTES:

1. TEST SHAFT REINFORCING SIMILAR TO PRODUCTION SHAFT REINFORCING EXCEPT FOR 4-#18 BARS LOCATED ON TENSION SIDE.
2. TEST SHAFT REINFORCING SHALL BE POSITIONED SUCH THAT THE 4-#18 BARS ARE ON THE TENSION SIDE OF THE SHAFT SYMMETRIC TO THE LINE OF ACTION OF THE TEST LOAD AS SHOWN.
3. THE #18 BARS SHALL BE CONTINUOUS WITH NO SPLICE AND 180 DEGREE HOOKS SHALL BE POSITIONED AS SHOWN WITH THE HOOK END AT THE BOTTOM OF THE TEST SHAFT.
4. CONCRETE FOR THE TEST SHAFTS SHALL NOT BE ALLOWED TO FREE-FALL ONTO THE #18 HOOK BARS, AND THE CONCRETE IN THE LOWER 5 FEET OF THE TEST SHAFTS SHALL BE VIBRATED WITH ONLY MINIMAL VIBRATORY EFFORT.

09-23-92 FILE MAIN/PER PR11609DRLSHF4-2(DRLSHF4),FILE AUX/MTN PR11609DRLSHF4-4(DRLSHF4),FILE REC/MTN PR11609DRLSHF4-5(DRLSHF4),FILE REC/MTN PR11609DRLSHF4-6(DRLSHF4)

Burgess & Niple, Limited Engineers and Architects		bn 1912	10/24
EMBANKMENT STABILIZATION DRILLED SHAFT LATERAL LOAD TEST			
BRIDGE NO. LAK-91-0423 SR.91 OVER N&W R.R. & CONRAIL R.R.			
DESIGNED	DRAWN	TRACED	CHECKED
VEA	TWD		WBC 6/19/92
			REVIEWED DATE 9/24/92