TRIAXIAL COMPUTATION

KW. Machine

Cap. Corr. 0.91

$V = L + \frac{P'}{A'}\left(1 - \frac{\Delta h}{h}\right)$

Lab. No.	L	Ref.	Dial	Cap Corr.	P'	P'/.065	$1 - \frac{\Delta h}{h}$	$\frac{V-L}{2}$	$\frac{V+L}{2}$
C422		7	.2			132	.998	130	
		20				263	.995	260	
		34				395	.991	390	
		52				526	.987	520	
		69				658	.983	645	
		86				789	.978	770	
		99				921	.975	895	
	500	113				1052	.972	1020	
		132				1184	.967	1145	
		150				1315	.962	1265	
		168				1447	.958	1385	
		188				1578	.953	1505	
		218				1710	.945	1615	
		240				1841	.940	1730	
	1000	275				1973	.931	1835	
		297				2104	.926	1950	
		325				2236	.919	2055	
		363				2367	.909	2150	
	2000	410	3.8			2499	.897	2240	

S. F. No. 4339—10-63—25M. 82336.

Materials Lab.
Attn: Art Peters

WASHINGTON
STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS

Inter-departmental Communication

Office at 450 Spokane Street, Seattle

Date January 5, 1967, *19*

To Mr. Heckard

From Kenneth A. Johnson

Subject I-1978, Woodinville Interchange, Main Line Roadway, Station 863 to 890

Following are tentative recommendations for subsurface treatment in the above section. The suggestions are based on recent phone conversations with Mr. Peters and will require a small amount of additional field work to determine if longitudinal and depth limits are correct. Back of Station 888, it is intended that only the upper fiberous peat member will be removed and that other, deeper compressible members will be retained under the fill. Ahead of Station 889, all of the peat should be removed down to the contact with sand or an organic silt member which was encountered in several of the Shannon and Wilson borings in the vicinity of the North Creek structure. The special provisions should include statements defining these removal considerations.

We anticipate that this procedure will entail some long term settlement, however, it appears that the settlement will be of small magnitude and fairly uniform, consequently, the roadway should not experience excessive distortion. If at all possible, it would be preferable to reduce the initial pavement thickness and schedule a resurfacing project 1 or 2 years after traffic opening.

Eighteen inch diameter, Vertical Sand Drains, spaced 10' in both directions will be required from the south end of the embankment, approximately Station 863, to Station 871. The vertical drains should penetrate to Elv -20' up to Station 865 and should reduce gradually in depth to Elv +7' at Station 871. Lateral rows should begin at a point where fill height is approximately 5'.

S. F. No. 4339—10-63—25M. 82336.

WASHINGTON
STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS

Inter-departmental Communication

Office at.....

Date....., 19.....

To.....

From.....

Subject Continued Page 2

Removal should begin at Station 870+50 and taper gradually to Elv +18' at Station 871. This removal elevation should be maintained ahead to Station 884. From Station 884 to Station 888, the removal bottom should be at Elv 16'. In the section between station 888 and 889 the removal cavity should be tapered down to approximately Elv +8' and all of the peat removed ahead as noted above. The removal cavity should be full depth laterally to a point where fill height is about 3'. Sides of the cavity can be sloped about ½:1. Settlement Torpedo and Pore Pressure devices should be installed immediately after backfilling when fill height is approximately 1' above original ground surface.

The embankment over the partial removal area will have to be constructed in stages to facilitate strengthening of the retained soft, subsurface soils and allow over-loading. The first stage should be built with 2:1 side slopes to subgrade Elv. After a six month period, during which time the fill will probably subside about 2', the fill should be built up to a point about 5' above subgrade. The overload should be imposed a minimum 4 month period prior to removal. We expect an additional 1' to 2' of settlement will occur during this period. The remaining portion of the overload can be used to flatten the side slopes. The overload should be compacted to Method "C" specifications.

cc: C. Schuettke
K. Dodge
A. Peters

Foundation

STATE OF WASHINGTON
DANIEL J. EVANS, GOVERNOR

WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS

C. G. PRAHL, DIRECTOR
HIGHWAYS-LICENSES BUILDING
OLYMPIA

September 19, 1967

Mr. E. I. Roberts
District Engineer
509 Fairview Avenue North
Seattle, Washington 98109

C.S. 1753, SR 405, L-1978
N.E. 132nd St. to N. E. 195th St.
Woodinville Interchange
Drilled Shaft Bearing

Dear Sir:

As a result of our meeting Friday, I have prepared the attached charts for the consultants use in evaluating the State's proposal for eliminating the belled ends from the drilled shafts supporting piers 1,2, 3 and 4 of the N.B. and S.B., N.W. and N.E. and E.S. and W.S. structures.

A chart has been prepared for end bearing in granular materials as well as end bearing and skin friction in clay since the end support for piers 3 and 4 of the E.S. and W.S. ramp will possibly be developed in sand. Skin friction should only be applied to that portion of the pile in the clay below the slide plane. The depth (D_f) indicated on the chart should be measured from the assumed slide plane, letter dated December 28, 1966.

Very truly yours,

C.G. PRAHL, P.E.
DIRECTOR OF HIGHWAYS

By: R. V. LECLERC, P.E.
Materials Engineer

CGP:ar
AJP

cc: Mr. K. A. Johnson
Mr. George Stevens
BPR

Attach: 3 Bearing Charts

C.3.175 PSHIRE(SR405)
Woodenville Interchange

End Bearing Clay.

$P_{EB} = \pi r^2 (5 + 0.025 D_f)$

Factor of Safety = 3