

#F-58-41

WP. #48-58

Q.E.W. & HWY #10

CROSSING

Mr. A. Tove

Nov. 10, 1938

Bridge Engineer

Materials and Research Section

Re: Foundation Investigation at S.E.W. and Hwy. 10 Crossing

S.P. 48-58      W.J. 7-58-41

CHANGED TO 57F 37

Subsoil investigations were carried at the above mentioned site. During these investigations, four sugar holes and two borholes were made, (one borhole at the S.W. corner and the other at the S.E. corner of the existing overpass bridge).

The explorations revealed the following stratigraphy: the top layer is moist fine sand reaching elevation 312 ft. in S.W. hole and elevation 308.75 ft. in S.E. hole. The layer is fine becoming dense by depth. The sand layer is underlain by a layer of pebbly clay loam till which reaches bedrock (shale) at elevation 307.5 ft. in S.W. hole and elevation 304 ft. in S.E. hole. The underlying bedrock is shale.

According to the new arrangement on the profile, the Hwy. 10 will underpass the S.E.W. at elevation 317.5 ft. Assuming that the footings will be placed some six ft. below this elevation, i.e. at about elevation 311 ft. it appears that the northern end of the footings will be placed on stiff clay till layer and the southern ends on the dense sand layer. At this elevation the soil can provide 2 t.s.f. bearing value with a safety factor of 3. If the continuation of footings on two different kinds of soil is calculated to be undesirable, the second alternative will be placing the footings on bedrock. In this case it will be convenient to use 4 t.s.f. bearing value. This in turn will mean the use of smaller size of footings. It will be noted, also, that in case it is decided to place the footings on the bedrock, all precautions will be necessary to avoid exposing the shale to any water.

A. Dutka

Materials and Research Engineer

C.C. to

A. Tove

H. Tregaskes

A. T. Ramsey

I. Fraser

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Mr. J. Harrow

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Foundation Section

Chief

Mr. A. Toye

Nov. 10, 1958

Bridge Engineer

Materials and Research Section

Re: Foundation Investigation at C.R.W. and Hwy. 10 Crossing  
R.P. 45-58 W.D. 7-58-41

Subsoil investigations were carried at the above mentioned site. During these investigations, four auger holes and two boroholes were made, (one borohole at the S.W. corner and the other at the S.E. corner of the existing overpass bridge).

The explorations revealed the following stratigraphy: the top layer is moist fine sand reaching elevation 312 ft. in N.W. hole and elevation 306.75 ft. in S.E. hole. The layer is firm becoming denser by depth. The sand layer is underlain by a layer of pebbly clay loam till which reaches bedrock (shale) at elevation 307.5 ft. in N.W. hole and elevation 306 ft. in S.E. hole. The underlying bedrock is shale.

According to the new arrangement on the profile, the Hwy. 10 will underpass the C.R.W. at elevation 317.5 ft. Assuming that the footings will be placed some six ft. below this elevation, i.e. at about elevation 311 ft. it appears that the northern end of the footings will be placed on stiff clay till layer and the southern ends on the dense sand layer. At this elevation the soil can provide 2 t.s.f. bearing value with a safety factor of 3. If the continuation of footings on two different kinds of soil is calculated to be undesirable, the second alternative will be placing the footings on bedrock. In this case it will be convenient to use 4 t.s.f. bearing value. This in turn will mean the use of smaller size of footings. It will be noted, also, that in case it is decided to place the footings on the bedrock, all precautions will be necessary to avoid exposing the shale to any water.

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C.C. to A. Toye      W. Fregankee  
D.C. Ramsay      C. Fraser  
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Dr. F. Harrow  
Foundation Section  
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per:

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