

57-F-226C

ALTA VISTA
DRIVE

QUEENSWAY
OTTAWA

MCROSTIE & ASSOCIATES

CONSULTING ENGINEERS
OTTAWA 1
CANADA

393 BELL STREET
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(C O P Y)

Foundation Report - Alta Vista Drive at Queensway

1. FIELD WORK

Six boreholes were made with our drilling equipment at the locations shown on Plate 1 attached. The boreholes were carried to depths up to 21 feet below the ground surface. Diamond drilling in shale was done at all boreholes to depths up to 14 feet. Split spoon samples were taken in the non-cohesive soils overlying the shale rock in connection with standard penetration tests and the non-cohesive samples were visually classified. Groundwater levels were observed during the field programme.

2. OBSERVATIONS

The site is overlain by one to two and one-half feet of top soil or fill. Below this is two and one-half to four feet of medium dense to dense till with occasional sand layers. In general, two to four feet depth of weathered or broken shale is found below the till layers referred to above. Shale rock with 77 to 100 percent core recoveries begins at depths of 5 to 10 feet. At all holes the laboratory test indicates some lime content was present in the shale, and this fact is an aid in interpreting the geology of the area. The dip of the bedding planes was small except in borehole No. 4 where an increase to 15° indicated that the fault zone mentioned in our recent reports on Tremblay Road and Avenue M, is nearby but probably passes somewhat outside the structure site. The relatively high core recovery percentage are a further indication that the site has not been disturbed by major faulting. Groundwater levels, observed during the boring programme, varied between 1 and 4 feet from the surface. These levels would probably be a few feet lower in the driest seasons and up to the ground surface in the wettest seasons.

3. DESIGN RECOMMENDATIONS

3.1 Strengths

Weathered shale above El. 185 - 5000 pounds per
sq. ft.

Sound shale below El. 185 - 15,000 pounds per
sq. ft.
(Sound shale, 80%
plus recovery, exists
in some holes up to
El. 190 and can be
used at 15,000 p.s.f.)

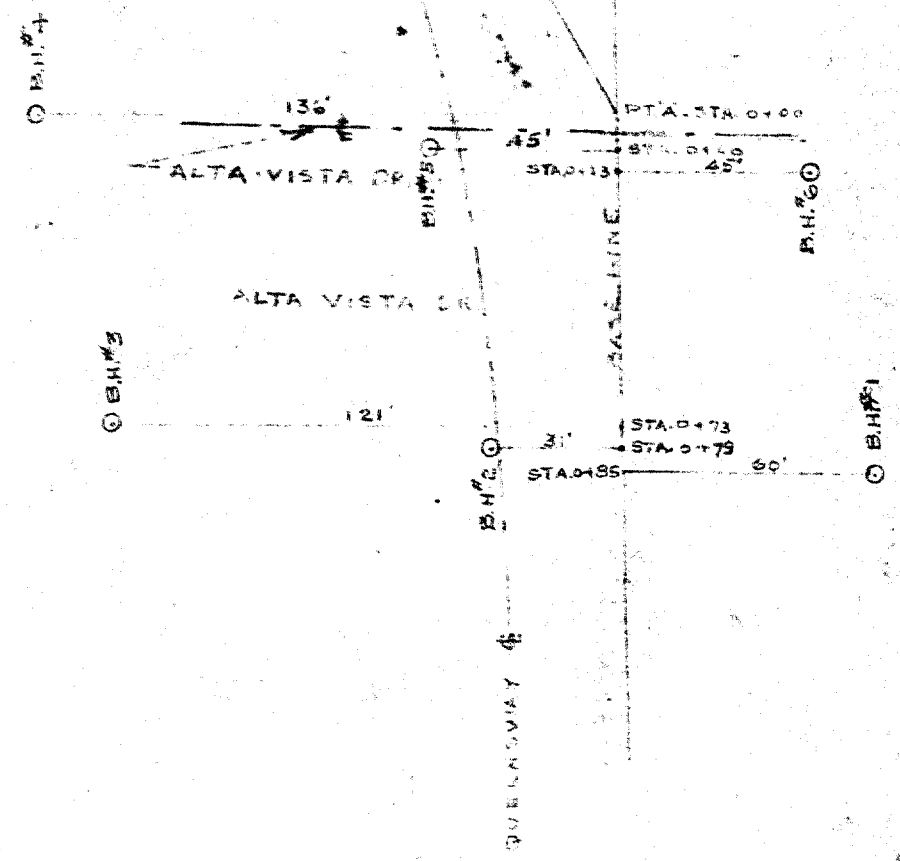
3.2 Foundation Types

It would appear that foundation piers resting
directly on the sound shale is the most likely type
of suitable foundation.

4. CONSTRUCTION PRECAUTIONS

A flow of water is to be expected in the upper
weathered shale but this can be controlled by pumping
from pits or trenches inside the excavation.

TEMPLE RD.
(100' x 100' LOT)



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BOREHOLE LOCATIONS
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SCALE : 1" = 40'

PLATE 1

SOIL PROFILE AND SUMMARY OF LABORATORY TESTS

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ELEVATION OF GROUND SURFACE (ZERO DEPTH) 196.7 (GEODETTIC DATUM) HOLE NO. _____
REMARKS SEE PLATE 2

DATE JULY 18, 1957

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UNCONFINED COMPRESSIVE STRENGTH KIPS/FT. ²	SMALL SCALE PENETROMETER KIPS/FT. ²	STANDARD PENETRATION BLOWS/FT.	SAMPLE NUMBER	DESCRIPTION OF SOIL	DEPTH IN FEET	ELEVATION	PENETRATION TEST	
						LB. HAMMER	NO CASING
						INCH DROP		INCH DIA. ROD
						BLOWS PER FOOT		
				GROUND SURFACE	0	196.7		
				FILL	1.2			
				MEDIUM DENSE TILL	3			
					5.2	191.7	← OVERNIGHT WATER LEVEL 4.3 (192.4)	
				DENSE TILL	6			
					13	189.4		
				WEATHERED SHALE (DRILLED-CORE RECOVERY 40%)	9	186.4		
				SHALE ROCK (LIMY) (DRILLED-CORE RECOVERY 24%) DIP 15°	12			
					15	181.0		
				SHALE ROCK (LIMY) (DRILLED-CORE RECOVERY 91%) DIP 15°	18			
					21	175.5		
				← BOTTOM OF HOLE				

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