



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CR1-212

TOTAL DEPTH 12.0

PROJECT # 4-110.09

PROJECT N. DOUGLAS

DATE 9/30/85

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

DRILLER B. WINK LOGGER McFADDEN

TIME STARTED 8:10 FINISHED 9:25

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

TOP OF BORING APPROX 5 FT ABOVE

CULVERT INVERT

GROUND WATER

DATE

TIME

DEPTH

Location Diagram

~ STA. 38



N. DOUGLAS HWY.

Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | MZ02 | 10 | 10 | 5 | | | SM | 15 | 120 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | | 5 | 50 | 10 | | | SM | 5 | 110 | |
| | | | | 11 | | | | | | |
| SS | | 10 | 50 | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

GRAVELLY SAND W/SOME SILT WET, MED. DENSE, BROWN, POOR SAMPLE-DRIVING STONE

HARD DRILLING BEGINING @ 7.0 FT.

SILTY SAND W/TRACE GRAVEL DAMP, DENSE TO VERY DENSE, GRAY.



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CB1-213

TOTAL DEPTH 6.5

PROJECT # 4-110.09

PROJECT N. DOUGLAS

DATE 9/80/85

MACHINE USED MOBILE B-30 METHOD USED 7" H.S. AUGER

DRILLER B. WINK LOGGER McFADDEN

TIME STARTED 9:30 FINISHED 10:00

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

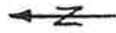
TOP OF BORING ~ 2.0 FT ABOVE
BOTTOM OF DITCH

GROUND WATER

| | | | | |
|-------|--|--|--|--|
| DATE | | | | |
| TIME | | | | |
| DEPTH | | | | |

Location Diagram

STA 41



N. DOUGLAS HWY

Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| SS 1 | | 12 | 85 | 6 | | | SM | 5 | 110 | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 0 | | | | | | |

STANDING WATER IN DITCH

SANDY GRAVEL w/SOME SILT TO GRAVELLY SAND w/SOME SILT WET MED DENSE BROWN SILTY SAND w/TRACE GRAVEL DAMP DENSE TO VERY DENSE GRAY



SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-214

MACHINE USED MORILE R-20 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 6.5

DRILLER B. WINK LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 10:15 FINISHED 11:00

PROJECT N. DOUGLAS

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

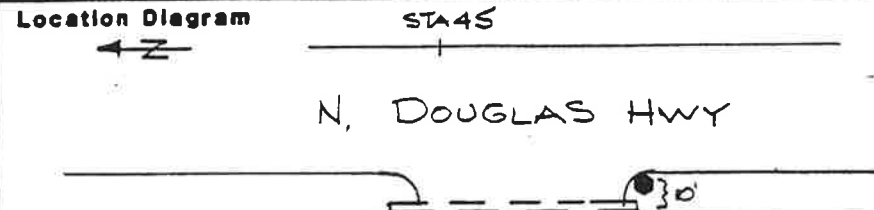
DATE 9/30/85

TOP OF BORING AT ~3.0 FT ABOVE CULVERT INVERT

GROUND WATER

| | | | | |
|-------|--|--|--|--|
| DATE | | | | |
| TIME | | | | |
| DEPTH | | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | SM | 15 | 120 | |
| SS 1 | | | 80 | 6 | | | SM | 5 | 110 | |
| | | | | 7 | | TD | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 0 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

STANDING WATER IN DITCH

GRAVELLY SAND W/SOME SILT, WET, MED. DENSE, BROWN.

SILTY SAND W/SOME GRAVEL, DAMP, DENSE TO VERY DENSE, GRAY



SOILS LOG

SHEET 1 OF 1

HOLE # CB-215

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 7.0 FT

DRILLER B. WINK LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 1:15 FINISHED 2:00

PROJECT N. DOUGLAS

DATE 9/30/85

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

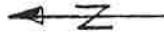
TOP OF HOLE ~ 5.0 FT. ABOVE
CULVERT INVERT

| DATE | TIME | DEPTH |
|------|------|-------|
| | | |
| | | |
| | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | SM | 12 | 120 | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | SM | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 10 | | | | | | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

Location Diagram

STA 58



N. DOUGLAS HWY.

Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

GRAVELLY SAND w/ SOME SILT, WET, MED DENSE, BROWN

SILTY SAND w/ SOME GRAVEL, DAMP, VERY DENSE, GRAY

COBBLE/BOULDER @ 7.0



SOILS LOG

SHEET 1 OF 1

HOLE # CB1-216

TOTAL DEPTH 10.5

PROJECT # 4-110.09

PROJECT N. DOUGLAS

DATE 9/30/85

MACHINE USED MOBILE R30 METHOD USED 7" H.S. AUGER

DRILLER B. WINK LOGGER McFADDEN

TIME STARTED 11:10 FINISHED 11:55

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

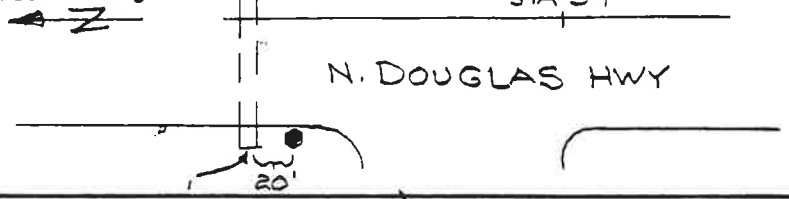
TOP OF BORING ~ 2.0 FT ABOVE CULVERT INVERT

GROUND WATER

| | | | | |
|-------|--|--|--|--|
| DATE | | | | |
| TIME | | | | |
| DEPTH | | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | SM | 15 | 120 | |
| SS | MC02 | 12 | 100 | 5 | | | SM | 8 | 110 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | 50 | 100 | | 10 | | | SM | 3 | 110 | |
| | | | | 11 | | TD | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

Location Diagram



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

GRAVELLY SAND W/ SOME SILT, WET, MED. DENSE, BROWN

SILTY SAND W/ SOME GRAVEL, MOIST, DENSE TO VERY DENSE, GRAY

SILTY SAND W/ SOME GRAVEL, DAMP V. DENSE, GRAY



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-217

TOTAL DEPTH 9.0 FT
PROJECT # 4-110.09
PROJECT N. DOUGLAS
DATE 9/30/85

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

DRILLER B. WINK LOGGER McFADDEN

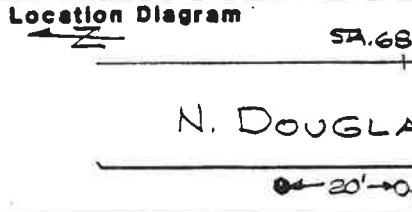
TIME STARTED 2:15 FINISHED 4:00

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

| | | | | |
|-------|--|--|--|--|
| DATE | | | | |
| TIME | | | | |
| DEPTH | | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | SL | 5 | 110 | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 0 | | TD | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 0 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SANDY GRAVEL, DAMP, BROWN

SILTY SAND W/ SOME GRAVEL DAMP DENSE GRAY (ROCK IN END OF SAMPLER) MAT'L IS GLACIAL TILL W/ INCREASE IN GRAVEL CONTENT OVER PREVIOUS BORINGS.

CUTSLOPE ABOVE AMC-JEEP DEALER GOOD EXPOSURE OF GLACIAL TILL

SPINNING ON ROCK @ 9.0



SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-218

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 16.5

DRILLER R. GREER LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 8:10 FINISHED 10:00

PROJECT N. DOUGLAS

DATE 10/1/85

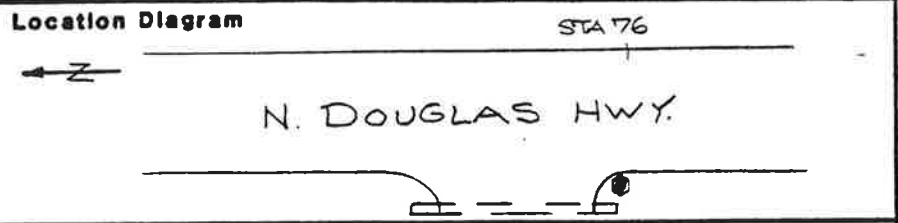
VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

TOP OF BORING ~ 5 FT ABOVE CULVERT
INVERT

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | MZ0Z | 10 | 8 | 5 | | | GP | 15 | 120 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | MZ0Z | 10 | 8 | 10 | | | SP | 12 | 115 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| SS | MZ0Z | 10 | 8 | 16 | | | SP | 15 | 115 | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SANDY GRAVEL, WET, MED. DENSE, BROWN

SAND W/ TRACE FINE GRAVEL, WET, MED. DENSE, BROWN, APPEARS WELL GRADED

INTERBEDDED AREAS OF INCREASING SILT CONTENT.

SAND W/ TRACE TO SOME SILT, TRACE FINE GRAVEL, WET, LOOSE TO MED. DENSE BROWN.

HOLE # CBJ-219

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 10.0 FT

DRILLER R. GREER LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 10:15 FINISHED 11:45

PROJECT N. DOUGLAS

DATE 10/1/85

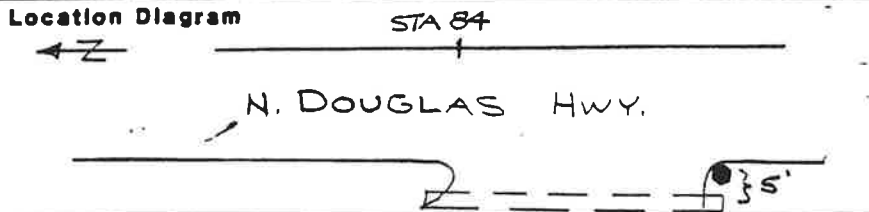
VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

TOP OF BORING ~ 3.5 FT ABOVE
CULVERT INVERT.

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | 202 | 10 | 60 | 5 | | | SM | 15 | 120 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 10 | | | SM | 5 | 110 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SAND W/SOME SILT, TRACE FINE GRAVEL
WET, MED DENSE, BROWN TO GRAY

SILTY SAND W/ SOME GRAVEL, DAMP, VERY
DENSE, GRAY.



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-220

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 16.5 FT.

DRILLER R. GREEP LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 1:00 FINISHED 1:55

PROJECT N. DOUGLAS

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

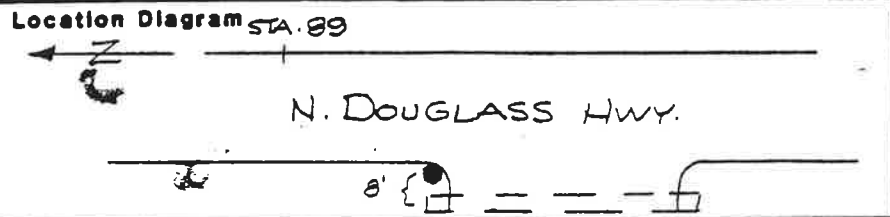
DATE 10/1/85

TOP OF BORING IS ~3 FT ABOVE CULVERT INVERT.

GROUND WATER

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | MZ07 | 10 | 8 | 5 | | | GM | 15 | 120 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | MZ02 | 10 | 8 | 10 | | | SM | 20 | 110 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| SS | MZ03 | 10 | 25 | 15 | | | SM | 20 | 110 | |
| | | | | 16 | | | TD | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SANDY GRAVEL W/SOME SILT, WET, MEDIUM DENSE, BROWN TO GRAY (DRIVING ROCK IN SAMPLER)

SILTY SAND W/SOME GRAVEL, V. WET, LOOSE, BROWN TO GRAY

SILTY SAND W/TRACE FINE GRAVEL, V. WET, DENSE TO VERY DENSE, GRAY



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-221

MACHINE USED MOBILE B30 METHOD USED 7"HS.AUGER

TOTAL DEPTH 12.5 FT

DRILLER R. GREER LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 2:00 FINISHED 3:00

PROJECT N. DOUGLAS

DATE 10/1/85

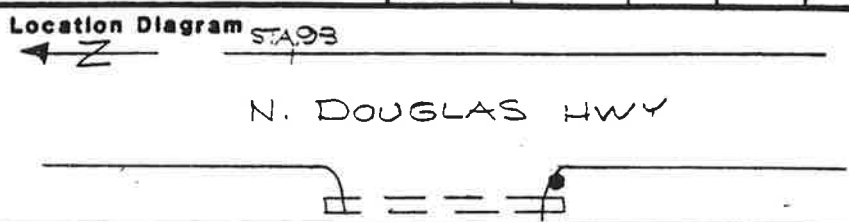
VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

TOP OF BORING ~ 5 FT ABOVE CULVERT
INVERT

GROUND WATER

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| SR | MZ02 | 18 | 80 | 5 | | | SM | 15 | 110 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | | 50 | 75 | 9 | | | | | | |
| | | | | 10 | | | | | | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SANDY GRAVEL W/SOME SILT, WET, MED. DENSE, BROWN

SILTY SAND W/TRACE GRAVEL, V. WET, MED. DENSE, GRAY (DRIVING ROCK IN SAMPLER)

SILTY SAND W/TRACE GRAVEL, DAMP, VERY DENSE, GREY



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-223

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 10.0

DRILLER R. GREER LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 8:15 FINISHED 9:25

PROJECT N. DOUGLAS

DATE 10/2/85

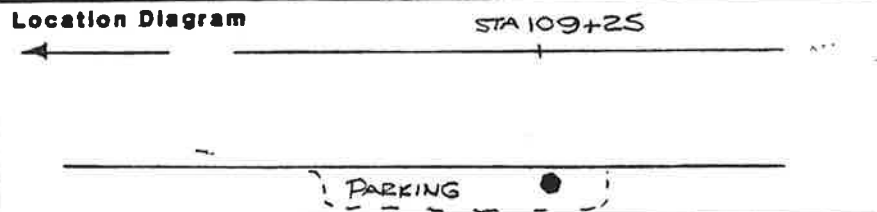
VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

TOP OF BORING ~ 2 FT ABOVE DITCH
BOTTOM

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | 102 | 318 | 5 | 5 | | | GM | 15 | 120 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | 103 | 25 | | 0 | | | SM | 5 | 110 | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 10 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SANDY GRAVEL w/ SOME SILT, WET, MED. DENSE, BROWN

SILTY SAND w/ TRACE TO SOME GRAVEL DAMP, VERY DENSE, GRAY



SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-224

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 15.0

DRILLER R GREER LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 8:00 FINISHED 10:45

PROJECT N. DOUGLAS HWY

DATE 10/2/85

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

TOP OF HOLE ~ 2 FT ABOVE DITCH
BOTTOM

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

Location Diagram
← Z → STA 120

N. DOUGLAS HWY.

Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | GM | 15 | 120 | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | 1002 | 10 | 100 | 5 | | | SM | 5 | 110 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | 1002 | 10 | 8 | 10 | | | SM | 5 | 110 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

SANDY GRAVEL W/SOME SILT, WET, MED. DENSE, BROWN

SILTY SAND W/ SOME GRAVEL, DAMP, VERY DENSE, GRAY

SILTY SAND W/TRACE TO SOME GRAVEL, DAMP, VERY DENSE, GRAY

AUGERED TO 15 FT - SAME MATERIAL TO DEPTH

TD



SOILS LOG

SHEET 1 OF 1HOLE # CBJ-225MACHINE USED MOBILE B30 METHOD USED 2" H.S. AUGERTOTAL DEPTH 10.5 FTDRILLER R. GREER LOGGER McFADDENPROJECT # 4-110.09TIME STARTED 11:00 FINISHED 11:40PROJECT N. DOUGLASDATE 10/2/85

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

TOP OF BORING ~ 2 FT ABOVE DITCH
BOTTOM

| DATE | TIME | DEPTH |
|------|------|-------|
| | | |
| | | |
| | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | GM | 15 | 120 | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | 75 | 10 | | 5 | | | SM | 8 | 110 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | 70 | 100 | | 10 | | | SM | 5 | 110 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

Location Diagram STA 124

N. DOUGLAS HWY

PARKING

Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SANDY GRAVEL W/SOME SILT, WET, MED. DENSE, BROWN

SILTY SAND W/SOME GRAVEL, DAMP TO MOIST, V. DENSE, GRAY

SILTY SAND W/TRACE GRAVEL, DAMP, VERY DENSE, GRAY



SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-226

MACHINE USED MOBILE B30 METHOD USED 2" H.S. AUGER

TOTAL DEPTH 11.0

DRILLER R. GEEER LOGGER McFADDEN

PROJECT # 4-110.09

TIME STARTED 1:00 FINISHED 4:00

PROJECT N. DOUGLAS

DATE 10/2/85

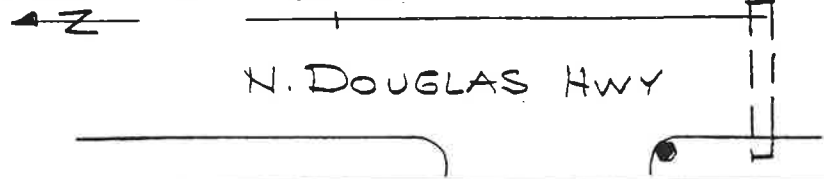
VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

TOP OF BORING ~ 10 FT ABOVE CULVERT
INVERT

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

Location Diagram SK-131



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| | | | | 5 | | | | | | |
| | | | | 6 | | | ML | 40 | 90 | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 10 | | | | | | |
| | | | | 11 | | | ST | 51 | 110 | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

SANDY GRAVEL W/SOME SILT, WET, MED DENSE, BROWN

ORGANIC SILT, WET, SOFT, BROWN

SILTY SAND W/TRACE GRAVEL, DAMP, VERY DENSE, GRAY



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-281

MACHINE USED MOBILE B30 METHOD USED 2" H.S. AUGER

TOTAL DEPTH 10.0

DRILLER D. WINK LOGGER McFADDEN

PROJECT # 4-110 09

TIME STARTED 11:00 FINISHED NOON

PROJECT CHANNEL X-ING

DATE 11/8/85

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

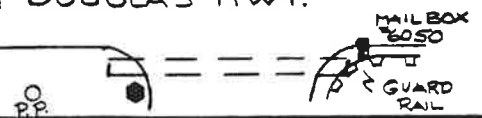
TOP OF BORING ~ 3.5 FT ABOVE DITCH
BOTTOM

| | | | | |
|-------|--|--|--|--|
| DATE | | | | |
| TIME | | | | |
| DEPTH | | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | SP | 10 | 120 | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS | 1 | 21/26 | 8 | 5 | | | SM | 20 | 110 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | 2 | 24/20 | | 10 | | | SM | 20 | 120 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

Location Diagram

NORTH DOUGLAS HWY.



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SAND w/ SOME GRAVEL, MOIST, MED. DENSE, BROWN

SILTY SAND w/ SOME GRAVEL, MOIST, LOOSE GRAY

HARDER DRILLING BELOW ~ 8 FT

DRIVING STONE - SUSPECT DENSE GRAY SILTY SAND w/ SOME GRAVE - AS ABOVE



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-282

TOTAL DEPTH 16.0 FT
PROJECT # 4-110.09
PROJECT CHANNEL X-ING
DATE 11/8/85

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

DRILLER D. WINK LOGGER MC FADDEN

TIME STARTED 1:15 FINISHED 2:10

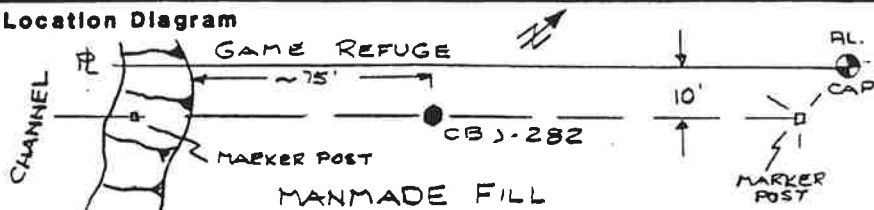
VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SR | MZ02 | 1 | 75 | 5 | | | SM | 10 | 120 | |
| | | | | 6 | | | | | | |
| SR | 1 | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| SS | MZ03 | 2 | 88 | 10 | | | SM | 10 | 120 | |
| | | | | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| SS | MZ04 | 1 | 50 | 14 | | | SM | 10 | 120 | |
| | | | | 15 | | | | | | |
| | | | | 16 | | | TD | | | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |

Location Diagram



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SAND W/SOME SILT, SOME GRAVEL, MOIST, V. DENSE, GRAY - DRIVING ROCK IN SAMPLER

GRAB SAMPLE FROM AUGER RETURNS

SAND W/SOME SILT, SOME GRAVEL, MOIST, LOOSE, GRAY

APPROX. BOTTOM OF FILL

SAND W/SOME SILT, TRACE GRAVEL, MOIST, LOOSE, TO MED. DENSE, BROWN, TRACE ORGANICS



**SOIL & AGGREGATE WORKSHEET
(CONSTRUCTION)**

TYPE SAMPLE

- ACCEPTANCE
- INFORMATION
- ASSURANCE

ITEM NO. B50-325 SAMPLE NO. CST 282 S#1
 MATERIAL _____
 SAMPLED FROM DEPTH 6-7.5'
 SOURCE NATIVE

QUANTITY REPRESENTED _____
 DATE SAMPLED 11-8-85 TESTED 11-29-85

PROJECT NAME WORTH DOUGLASS DISTRIBUTION

PROJECT NO. 4-110-09
CHANNEL CROSSING

PLEASE INITIAL BY EACH TEST PERFORMED

| OVERSIZE | |
|-----------|--|
| WT. - | |
| WT. + | |
| TOTAL WT. | |
| % | |

| GRADATION | | | | |
|------------|-------------|------------|--------------|-------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS TOTAL | SPECS |
| 4" | | | | |
| 3" | | | | |
| 2" | | | | |
| 1 1/2" | | | | |
| 1" | | | | |
| 3/4" | -0- | -0- | 100 | |
| 5/8" | | | | |
| 1/2" | 27.3 | 3 | 97.1 | |
| 3/8" | 51.6 | 6 | 94 | |
| #4 | 127.4 | 14 | 86 (86.8) | |
| PAN | | | A | X |
| TOTAL | 926.8 | | | |

| FRACTURE | | | | BASE ON GRADING AT RIGHT | | |
|---------------------------|--------------|------------------|------------------|--------------------------|--------------|------------------|
| WORK FROM RIGHT TO LEFT | | | | | | |
| WT'D AVER. FRACTURE 1 x 2 | % FRACTURE 2 | FRACTURED WEIGHT | WT. TEST PORTION | % GROUP 1 | GROUP WEIGHT | INDIV. WEIGHT |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| TOTAL % FRACTURE | | | | ADD TO 100 | | TOTAL WEIGHT * 8 |

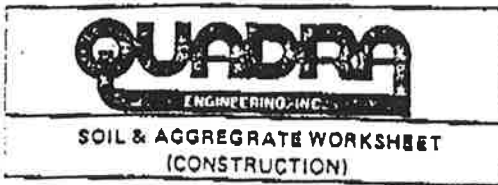
| COARSE WASH | | | | FINE WASH | | | | | | |
|-------------|-------------|------------|----------|-----------|------------|-------------|------------|----------|-------|------------------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS B | A x B | SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS Y | X x Y | A x B PLUS X x Y |
| # 4 | | | | | # 4 | 0.4 | 0.1 | 99.9 | 86.2 | 86 |
| # 8 | | | | | # 8 | | | | | |
| # 10 | | | | | # 10 | 104.1 | 13.0 | 87.0 | 75.1 | 75 |
| # 16 | | | | | # 16 | | | | | |
| # 20 | | | | | # 20 | 199.5 | 25.0 | 75.0 | 64.7 | 65 |
| # 30 | | | | | # 30 | | | | | |
| # 40 | | | | | # 40 | 265.0 | 33.2 | 66.8 | 57.6 | 58 |
| # 50 | | | | | # 50 | | | | | |
| # 60 | | | | | # 60 | 330.1 | 41.3 | 58.7 | 50.7 | 51 |
| # 80 | | | | | # 80 | | | | | |
| # 100 | | | | | # 100 | 394.5 | 49.4 | 50.6 | 48.7 | 44 |
| # 200 | | | | | # 200 | 481.6 | 60.3 | 39.7 | 34.3 | 30 |
| TOTAL | | | | | TOTAL | 799.3 | | | | |

| FINE | | SPECIFIC GRAVITY | | COARSE | |
|--------------------------------------|---|------------------|--|--------------------------------------|---|
| WT. PYC. & H ₂ O | B | | | WT. SSD AGG | B |
| WT. SSD AGG. | D | | | WT. AGG IN H ₂ O | C |
| WT. PYC. AGG & H ₂ O | C | | | WT. DRY AGG | A |
| WT. DRY AGG | A | | | BULK $\frac{A}{B-C}$ | |
| BULK $\frac{A}{B-D-C}$ | | | | SSD $\frac{B}{B-C}$ | |
| SSD $\frac{B-D-C}{B-D-C}$ | | | | APP. $\frac{A-C}{B-C}$ | |
| APP. $\frac{B-A-C}{B-A-C}$ | | | | % ABSORP. $\frac{B-A}{A} \times 100$ | |
| % ABSORP. $\frac{B-A}{A} \times 100$ | | | | | |

| ATTERBURG LIMITS | | | NATURAL MOISTURE |
|------------------|----|----|------------------|
| NO. BLOWS | | | |
| TARE NO. | | | |
| WET WT. + TARE | | | 1009.9 |
| DRY WT. + TARE | | | 926.8 |
| WT. MOIST | | | 83.1 |
| TARE | | | |
| DRY WT. SOIL | | | 926.8 |
| % MOIST | | | 9.0 |
| | PI | LL | PL |
| SPECS. | | | |

| CONCRETE AGG. | DELETERIOUS MATERIAL | FRIABLE FINE | STICKS & ROOTS COARSE |
|----------------|----------------------|--------------|-----------------------|
| FM - FINE | WT. BEFORE | | |
| MIX DESIGN FM | WT. AFTER | | |
| MIX DESIGN NO. | DIFFERENCE | | |
| % VARIANCE | % DEL. | | |
| SPECS | SPECS. | | |

REMARKS: _____



TYPE SAMPLE
 ACCEPTANCE
 INFORMATION
 ASSURANCE

ITEM NO. 85Q-334 SAMPLE NO. CBT 2B2 S#2
 MATERIAL _____
 SAMPLED FROM DEPTH 9.5-11.0'
 SOURCE NATIVE

PROJECT NAME MENDENHALL PENINSULA
 PROJECT NO. 4-110.07

QUANTITY REPRESENTED _____
 DATE: SAMPLED 11-8-85 TESTED 11-29-85

PLEASE INITIAL BY EACH TEST PERFORMED

| OVERSIZE | |
|-----------|--|
| WT. - | |
| WT. + | |
| TOTAL WT. | |
| % + | |

| FRACTURE | | | | BASE ON GRADING AT RIGHT | | |
|--------------------------|--------------|------------------|------------------|--------------------------|------------------|---------------|
| INT'D AVER. FRACTURE 1x2 | % FRACTURE 2 | FRACTURED WEIGHT | WT. TEST PORTION | % GROUP 1 | GROUP WEIGHT | INDIV. WEIGHT |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| TOTAL % FRACTURE | | | | ADD TO 100 | TOTAL WEIGHT + 4 | |

| GRADATION | | | | |
|------------|-------------|------------|--------------|--------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS TOTAL | SPECS. |
| 4" | | | | |
| 3" | | | | |
| 2" | | | | |
| 1 1/2" | | | | |
| 1" | -0- | -0- | 100 | |
| 3/4" | 34.7 | 6 | 94 | |
| 5/8" | | | | |
| 1/2" | 78.9 | 13 | 87 | |
| 3/8" | 88.1 | 13 | 87 | |
| #4 | 120.0 | 19 | 81 | |
| PAN | | | | |
| TOTAL | 619.3 | | | |

| COARSE WASH | | | | |
|-------------|-------------|------------|----------|-------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS B | A x B |
| #4 | | | | |
| #8 | | | | |
| #10 | | | | |
| #16 | | | | |
| #20 | | | | |
| #30 | | | | |
| #40 | | | | |
| #50 | | | | |
| #60 | | | | |
| #80 | | | | |
| #100 | | | | |
| #200 | | | | |
| TOTAL | | | | |

| FINE WASH | | | | | |
|------------|-------------|------------|----------|-------|------------------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS Y | X x Y | A x B PLUS X x Y |
| #4 | 0.4 | 0.1 | 99.9 | 30.5 | 81 |
| #8 | | | | | |
| #10 | 49.7 | 10.0 | 90.0 | 72.5 | 73 |
| #16 | | | | | |
| #20 | 96.3 | 19.3 | 80.7 | 65.0 | 65 |
| #30 | | | | | |
| #40 | 134.5 | 27.0 | 73.0 | 58.8 | 59 |
| #50 | | | | | |
| #60 | 189.5 | 38.0 | 62.0 | 50.0 | 50 |
| #80 | | | | | |
| #100 | 246.7 | 49.4 | 50.6 | 40.8 | 41 |
| #200 | 308.9 | 61.9 | 38.1 | 30.7 | 31 |
| TOTAL | 499.0 | | | | |

| FINE | | SPECIFIC GRAVITY | | COARSE | |
|---------------------------------|-----------------------|-----------------------------|----------------------------|-------------|----------------------------|
| WT. PYC. & H ₂ O | B | WT. SSD AGG | B | WT. SSD AGG | B |
| WT. SSD AGG. | D | WT. AGG IN H ₂ O | C | WT. DRY AGG | A |
| WT. PYC. AGG & H ₂ O | C | WT. DRY AGG | A | BULK | $\frac{A}{B-C}$ |
| WT. DRY AGG | A | BULK | $\frac{A}{B-C}$ | SSD | $\frac{B-C}{B-D-C}$ |
| BULK | $\frac{A}{B-D-C}$ | SSD | $\frac{B-C}{B-D-C}$ | APP. | $\frac{A-C}{B-D-C}$ |
| SSD | $\frac{B-D-C}{B-D-C}$ | APP. | $\frac{A-C}{B-D-C}$ | % ABSORP. | $\frac{B-A}{A} \times 100$ |
| APP. | $\frac{B-A}{B-D-C}$ | % ABSORP. | $\frac{B-A}{A} \times 100$ | | |

| ATTERBURG LIMITS | | | NATURAL MOISTURE |
|------------------|--|----|------------------|
| NO. BLOWS | | | |
| TARE NO. | | | |
| WET WT. + TARE | | | 685.3 |
| DRY WT. + TARE | | | 619.3 |
| WT. MOIST | | | 66.0 |
| TARE | | | |
| DRY WT. SOIL | | | 619.3 |
| % MOIST | | | 10.7 |
| PI | | LL | PL |
| SPECS. | | | |

| CONCRETE AGG. | DELETERIOUS MATERIAL | FRIABLE FINE | STICKS & ROOTS COARSE |
|----------------|----------------------|--------------|-----------------------|
| FM - FINE | WT. BEFORE | | |
| MIX DESIGN FM | WT. AFTER | | |
| MIX DESIGN NO. | DIFFERENCE | | |
| % VARIANCE | % DEL. | | |
| SPECS. | SPECS. | | |

REMARKS: _____



ENGINEERING, INC.

SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-285

MACHINE USED MOBILE B30 METHOD USED 7" H.S. AUGER

TOTAL DEPTH 20.0 FT

DRILLER D. WINK LOGGER McFADDEN

PROJECT # 4-110 09

TIME STARTED 3:00 FINISHED 4:30

PROJECT CHANNEL X-ING

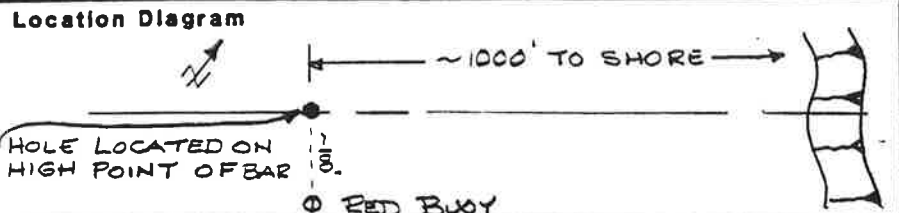
DATE 11/11/85

VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

GROUND WATER

| | | | | |
|-------|--|--|--|--|
| DATE | | | | |
| TIME | | | | |
| DEPTH | | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|
| | | | | 0 | | | | | | |
| | | | | 1 | | | | | | |
| | | | | 2 | | | | | | |
| | | | | 3 | | | | | | |
| | | | | 4 | | | | | | |
| SS 1 | 1 | 5-16 | 80 | 5 | | | SM | - | 110 | |
| | | | | 6 | | | | | | |
| | | | | 7 | | | | | | |
| | | | | 8 | | | | | | |
| | | | | 9 | | | | | | |
| | | | | 10 | | | SM | - | 110 | |
| | 2 | 5-10 | 25 | 11 | | | | | | |
| | | | | 12 | | | | | | |
| | | | | 13 | | | | | | |
| | | | | 14 | | | | | | |
| | | | | 15 | | | | | | |
| SS 3 | 3 | 14-18 | 80 | 16 | | | SM | - | 120 | |
| | | | | 17 | | | | | | |
| | | | | 18 | | | | | | |
| | | | | 19 | | | | | | |
| | | | | 20 | | | | | | |
| SS 4 | 4 | 16-21 | 80 | 21 | | | SM | - | 120 | |
| | | | | 22 | | | | | | |
| | | | | 23 | | | | | | |
| | | | | 24 | | | | | | |
| | | | | 25 | | | | | | |
| | | | | 26 | | | | | | |
| | | | | 27 | | | | | | |
| | | | | 28 | | | | | | |
| | | | | 29 | | | | | | |
| | | | | 30 | | | | | | |



Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes

SAND W/SOME SILT, MED DENSE, GRAY

SAND W/SOME SILT, MED DENSE, GRAY

~2 FT OF HEAVE
SAND W/SOME GRAVEL, SOME SILT, MED DENSE, GRAY

~2.5 FT OF HEAVE
SAND W/SOME SILT, TRACE TO SOME GRAVEL
MED. DENSE, GRAY

TD



SOILS LOG

SHEET 1 OF 1

HOLE # CBJ-284

MACHINE USED MOBILE B30 METHOD USED 2" H.S. AUGER
 DRILLER D WINK LOGGER McFADDEN
 TIME STARTED 3:00 FINISHED 4:30
 VEGETATION, DRAINAGE & GENERAL TOPOGRAPHY

TOTAL DEPTH 20.0 FT
 PROJECT # A-110.09
 PROJECT CHANNEL X-ING
 DATE 11/10/85

GROUND WATER

| | | | |
|-------|--|--|--|
| DATE | | | |
| TIME | | | |
| DEPTH | | | |

| Sampling Method | Sample No. | Blows / 6" | Recovery % | Depth | Frost | Graphic Log | USCS Symbol | Est. Total Moisture % | Est. Dry Density PCF | Visible Ice % | Location Diagram | Soil Description, Moisture or Ice, Density or Cohesion, Color, Particle Shape, Odor, Drilling Notes |
|-----------------|------------|------------|------------|-------|-------|-------------|-------------|-----------------------|----------------------|---------------|------------------|---|
| | | | | 0 | | | | | | | | |
| | | | | 1 | | | | | | | | |
| | | | | 2 | | | | | | | | |
| | | | | 3 | | | | | | | | |
| | | | | 4 | | | | | | | | |
| SS | MZ02 | 10 | 80 | 5 | | | SM | - | 110 | | | SAND W/SOME SILT, TRACE GRAVEL, LOOSE TO MED DENSE, GRAY |
| | | | | 6 | | | | | | | | |
| | | | | 7 | | | | | | | | |
| | | | | 8 | | | | | | | | |
| | | | | 9 | | | | | | | | |
| SS | MZ01 | 10 | 80 | 10 | | | SM | - | 110 | | | SAND W/SOME SILT, TRACE GRAVEL, MED. DENSE, GRAY |
| | | | | 11 | | | | | | | | |
| | | | | 12 | | | | | | | | |
| | | | | 13 | | | | | | | | |
| | | | | 14 | | | | | | | | |
| | | | | 15 | | | | | | | | |
| | | | | 16 | | | | | | | | |
| | | | | 17 | | | | | | | | |
| | | | | 18 | | | | | | | | |
| | | | | 19 | | | | | | | | |
| | | | | 20 | | | | | | | | |

TD



SOIL & AGGREGATE WORKSHEET
(CONSTRUCTION)

TYPE SAMPLE

- ACCEPTANCE
 INFORMATION
 ASSURANCE

ITEM NO. 25Q-329 SAMPLE NO. CBT 204 S# 4

MATERIAL _____

SAMPLED FROM DEPTH 15.0-16.5'

SOURCE NATIVE

QUANTITY REPRESENTED _____

DATE: SAMPLED 11-10-85 TESTED 11-29-85

PROJECT NAME NORTH DOUGLAS DISTRIBUTION

PROJECT NO. 4-110.09
CHANNEL CROSSING

PLEASE INITIAL BY EACH TEST PERFORMED

| OVERSIZE | |
|-----------|--|
| WT. - | |
| WT. + | |
| TOTAL WT. | |
| % + | |

| GRADATION | | | | |
|------------|-------------|------------|--------------|--------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS TOTAL | SPECS. |
| 4" | | | | |
| 3" | | | | |
| 2" | | | | |
| 1 1/2" | | | | |
| 1" | 0 | 0 | 100 | |
| 3/4" | 21.0 | 4 | 96 | |
| 5/8" | | | | |
| 1/2" | 23.4 | 5 | 95 | |
| 3/8" | 36.5 | 8 | 92 | |
| #4 | 67.1 | 14 | 86 | |
| PAN | | | | A X |
| TOTAL | 467.4 | | | |

| FRACTURE | | | | BASE ON GRADING AT RIGHT | | |
|-------------------------|--------------|-----------|------------------|--------------------------|------------------|---------------|
| WORK FROM RIGHT TO LEFT | | FRACTURED | | GROUP | | |
| WT. OVER FRACTURE 1 x 2 | % FRACTURE 2 | WEIGHT | WT. TEST PORTION | % GROUP 1 | GROUP WEIGHT | INDIV. WEIGHT |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| TOTAL % FRACTURE | | | SPECS. | ADD TO 100 | TOTAL WEIGHT * 4 | |

| COARSE WASH | | | | | FINE WASH | | | | | |
|-------------|-------------|------------|----------|-------|------------|-------------|------------|----------|-------|------------------|
| SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS B | A + B | SIEVE SIZE | CUM. WEIGHT | % RETAINED | % PASS Y | X + Y | A + B PLUS X + Y |
| # 4 | | | | | # 4 | 0.1 | 0.0 | 100.0 | 35.6 | 86 |
| # 8 | | | | | # 8 | | | | | |
| # 10 | | | | | # 10 | 63.9 | 16.0 | 84.0 | 71.9 | 72 |
| # 16 | | | | | # 16 | | | | | |
| # 20 | | | | | # 20 | 148.0 | 37.0 | 63.0 | 53.9 | 54 |
| # 30 | | | | | # 30 | | | | | |
| # 40 | | | | | # 40 | 217.1 | 54.3 | 45.7 | 39.1 | 39 |
| # 50 | | | | | # 50 | | | | | |
| # 60 | | | | | # 60 | 213.2 | 66.3 | 31.7 | 27.1 | 27 |
| # 80 | | | | | # 80 | | | | | |
| # 100 | | | | | # 100 | 309.3 | 77.3 | 22.7 | 19.4 | 19 |
| # 200 | | | | | # 200 | 342.6 | 85.7 | 14.3 | 12.2 | 12 |
| TOTAL | | | | | TOTAL | 399.9 | | | | |

| FINE | | SPECIFIC GRAVITY | | COARSE | |
|--------------------------------------|---|--------------------------------------|---|--------|--|
| WT. PYC. & H ₂ O | B | WT. SSD AGG | B | | |
| WT. SSD AGG. | D | WT. AGG IN H ₂ O | C | | |
| WT. PYC. AGG & H ₂ O | C | WT. DRY AGG | A | | |
| WT. DRY AGG | A | BULK $\frac{A}{B-C}$ | | | |
| BULK $\frac{A}{B-D-C}$ | | SSD $\frac{B}{B-C}$ | | | |
| SSD $\frac{D}{B-D-C}$ | | APP. $\frac{A}{A-C}$ | | | |
| APP. $\frac{A}{B-A-C}$ | | % ABSORP. $\frac{B-A}{A} \times 100$ | | | |
| % ABSORP. $\frac{B-A}{A} \times 100$ | | | | | |

| ATTERBURG LIMITS | | | NATURAL MOISTURE |
|------------------|----|----|------------------|
| NO. BLOWS | | | |
| TARE NO. | | | |
| WET WT. + TARE | | | |
| DRY WT. + TARE | | | |
| WT. MOIST | | | |
| TARE | | | |
| DRY WT. SOIL | | | |
| % MOIST | | | |
| | PI | LL | PL |
| SPECS. | | | |

| CONCRETE AGG. | DELETERIOUS MATERIAL | FRIABLE FINE | STICKS & ROOTS COARSE |
|----------------|----------------------|--------------|-----------------------|
| FM - FINE | WT. BEFORE | | |
| MIX DESIGN FM | WT. AFTER | | |
| MIX DESIGN NO. | DIFFERENCE | | |
| % VARIANCE | % DEL. | | |
| SPECS. | SPECS. | | |

REMARKS: RESULTS ON # 40 - # 200 MAY BE INACCURATE DUE TO HIGH AMOUNT OF WHITE, FLUFFY SUBSTANCE WHICH IS PROBABLY CALCIUM