ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599
FAX (719) 531-5238

June 16, 2005

Realty Development Services
25 North Tejon Street, Suite 300
Colorado Springs, Colorado 80903

Attn: Mike Scott

Re: Groundwater Investigation
Falcon Highlands, Filing 2
Woodmen Road and Tamlin Road
El Paso County, Colorado

Dear Mr. Scott:

As requested, Entech Engineering, Inc. has investigated the above referenced site with respect to groundwater conditions. Test borings drilled as a part of a Soil and Geology Study for Falcon Highlands, revised January 24, 2002 (Entech Job No. 39431) were drilled during a dry period of the year. Areas of seasonal and potentially seasonal groundwater were mapped on the site. These areas and recommended mitigation were discussed in the Soils and Geology Study for Falcon Highlands Filing 2, dated November 22, 2004 (Entech Job No. 31784). The Colorado Geological Survey has requested additional drilling during a wet time of the year in a review letter dated January 21, 2005 (CGS Review No. EP-05-0034). This letter presents the results of the additional drilling as requested.

The additional test borings were drilled on June 2, 2005. Typically spring and early summer are the wettest times of the year in this region due to spring runoff and afternoon storms. The test borings were drilled in areas previously mapped as seasonal or potentially seasonal shallow groundwater areas. These areas are indicated on the Geology/Engineering Geology Map, Figure 1 as "psw" and "sw". The locations of the test borings are also indicated on Figure 1. The Test Boring Logs are presented in Figures 2 through 5. Laboratory testing, is presented in Figures 6 and 7. A Summary of Laboratory Test Results is presented in Table 1. A Summary of Depths to Groundwater and Bedrock is presented in Table 2.

Groundwater depths encountered in the test boring range from 6 to 14 feet below the existing ground surface. According to the proposed grading plan (Figure 1), the majority of these areas are to be filled, generally up to 2 feet. It may be desirable in some areas to further raise the building areas, particularly in areas where groundwater is currently 6 feet below the existing ground surface. The Colorado Geological Survey has recommended the ground floor of construction be a minimum of 4 feet above the groundwater level (CGS Review No. EP-05-0034). Crawlspaces or garden level walkout configurations are options in these areas to satisfy Colorado Geological Survey recommendations. Foundations should be kept as high as possible above the groundwater levels and should penetrate a minimum of 30 inches for frost protection. Where excavations approach the groundwater levels the use of shot rock may be necessary to stabilize the excavation. The use of underslab drains or capillary breaks may be recommended for deeper excavations in these areas. A typical drain detail is presented in Figure 8.

Based on information from the additional drilling and the proposed grading plan it is anticipated the majority of the areas mapped as seasonal and potentially seasonal shallow groundwater areas will experience groundwater depths greater than 10 feet after grading. Areas with shallower water will require additional drains as discussed above. Subsurface perimeter drains are recommended to help prevent the seepage of water into areas below grade. Typical perimeter drain details are presented in Figure 9.

In our opinion, the site conditions will impose some constraints on construction on this site. These conditions and recommended mitigation techniques have been discussed in the Soils and Geology Study (Entech Job No. 39431).

We trust this has provided you with the information you required. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Kristen A. Andrew-Hoeser
Professional Engineering Geologist

Reviewed by:

Joseph C. Goode, Jr., P.E.
President

COLORADO REGISTERED
JOSEPH COLLIN GOODE JR.
23725
PROFESSIONAL ENGINEER

KAH/han

Encl.

Entech Job No. 49185
2MSW/ltrs/2005/49185gi

TABLE 1

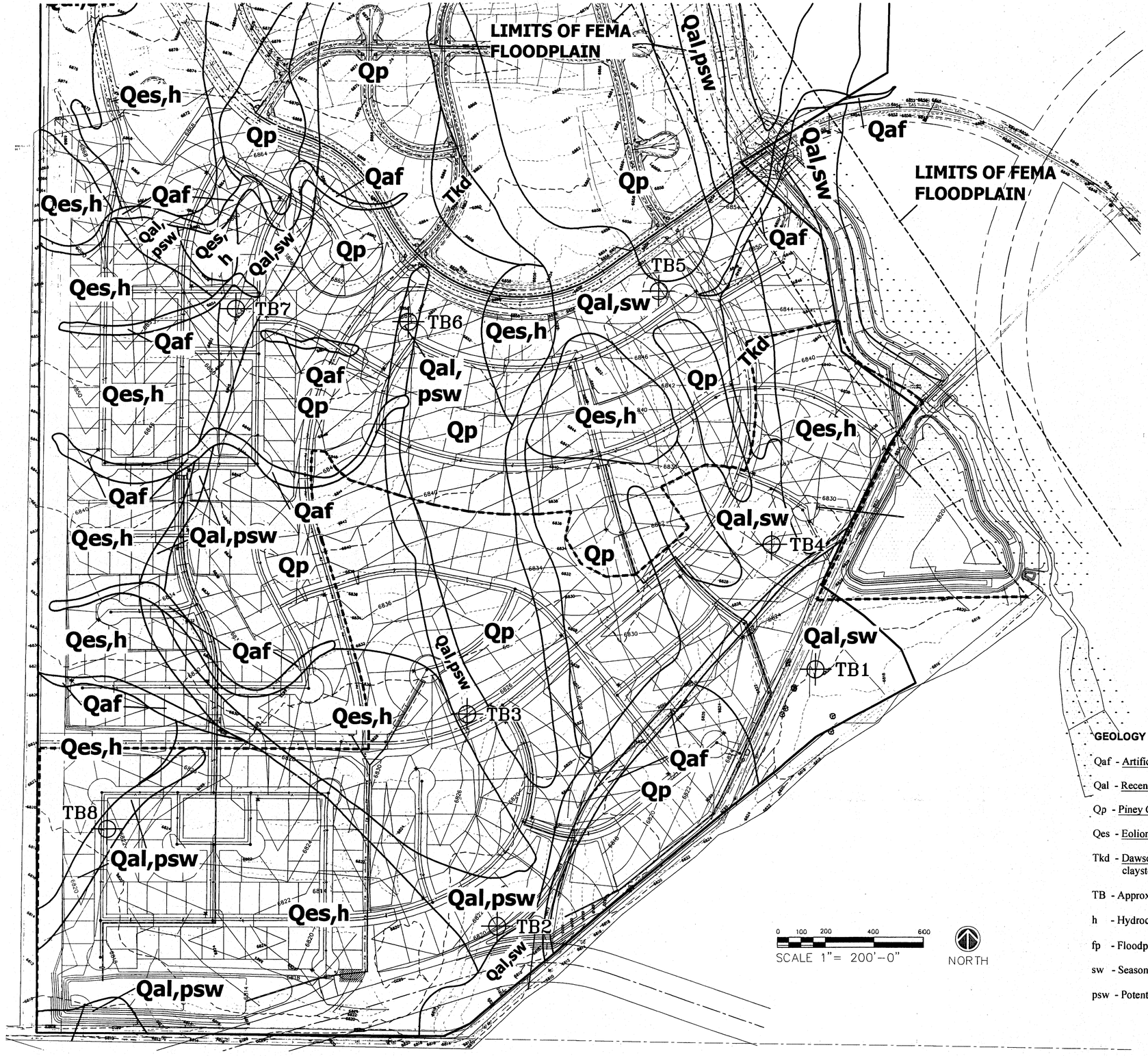
SUMMARY OF LABORATORY TEST RESULTS

CLIENT REALTY DEV. SERVICES
PROJECT FALCON HIGHLANDS, F2
JOB NO. 49185

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	FHA SWELL (PSF)	SWELL/ CONSOL (%)	UNIFIED CLASSIFICATION	SOIL DESCRIPTION
1	TB-5	5'			14.5%						SM	SAND, SILTY
1	TB-7	10'			12.1%						SM	SAND, SILTY

Table 2
Summary of Depths to Groundwater And Bedrock

Test Boring No.	Depth to Groundwater (ft.)	Depth to Bedrock (ft.)
1	8.5	8
2	8	8
3	9.5	8
4	6.5	8
5	13	7
6	14	9
7	6	>16
8	14	18



GEOLOGY LEGEND

Qaf - Artificial Fill of Holocene Age: man-made soils associated with erosion berms

Qal - Recent Alluvium of Holocene Age: recent stream deposits.

Qp - Piney Creek Alluvium of Holocene Age: brown to dark brown, silty to clayey sands.

Qes - Eolion Sand of Quaternary Age: wind blown sand deposits.

Tkd - Dawson-Denver Formations of Tertiary to Cretaceous Age (undifferentiated): Sandstone, claystone and siltstone.

TB - Approximate Test Boring location

h - Hydrocompaction

fp - Floodplain

sw - Seasonal High Groundwater Area

psw - Potentially Seasonal High Groundwater Area

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GEOLOGY/ ENGINEERING GEOLOGY MAP
FALCON HIGHLANDS FILING #2
EL PASO COUNTY, COLORADO
FOR: REALTY DEVELOPMENT SERVICES

DRAWN BY:	R.J. OLSON
CHECKED BY:	
DATE:	14JUN05
SCALE:	AS SHOWN
JOB NO.:	49185
FIGURE No.:	1

TEST BORING NO. 1
DATE DRILLED 6/2/2005
Job # 49185

TEST BORING NO. 2
DATE DRILLED 6/2/2005
CLIENT REALTY DEV. SERVICES
LOCATION FALCON HIGHLANDS, F2

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 8.5', 6/3/05						
SAND, SILTY, FINE TO COARSE GRAINED, BROWN	0					1
	5					
CLAY, SILTY, TAN, STIFF, MOIST				32	27.4	2
CLAYSTONE, SILTY, LIGHT GRAY, MOIST	10					3
	15					
	20					

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 8', 6/3/05						
SAND, SILTY, FINE TO MEDIUM GRAINED, DARK TO LIGHT BROWN	0					1
	5					
CLAYSTONE, LIGHT GRAY						3
SANDSTONE, SILTY, FINE GRAINED, GRAY, VERY DENSE, MOIST	10			50	18.7	4
	15					
	20					

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		KAH	6/14/05

JOB NO.: 49185
FIG NO.: 2

TEST BORING NO. 3
DATE DRILLED 6/2/2005
Job # 49185

REMARKS

WATER @ 9.5', 6/3/05

CLAY, SANDY, BROWN

SANDSTONE, CLAYEY, FINE TO MEDIUM GRAINED, LIGHT GRAY, VERY DENSE, MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
10			50 / 10"	14.2	4
5					2
15					
20					

TEST BORING NO. 4
DATE DRILLED 6/2/2005
CLIENT REALTY DEV. SERVICES
LOCATION FALCON HIGHLANDS, F2

REMARKS

WATER @ 6.5', 6/3/05

SAND, SILTY, FINE TO COARSE GRAINED, BROWN TO TAN

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, WET

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
10			50 / 11"	17.5	4
5					1
15					
20					

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		BAR	6/14/05

JOB NO.: 49185
FIG NO.: 3

TEST BORING NO. 5
DATE DRILLED 6/2/2005
Job # 49185

REMARKS

WATER @ 13', 6/3/05

SAND, SILTY, FINE TO COARSE GRAINED, BROWN TO TAN, MEDIUM DENSE, MOIST

CLAYSTONE, SANDY, LIGHT GRAY BROWN

SANDSTONE, CLAYEY, LIGHT BROWN,
CLAYSTONE, DARK BROWN

Depth (ft)	Blows per foot	Watercontent %	Soil Type
5	18	3.3	1
			3
10			4
15			3
20			

TEST BORING NO. 6
DATE DRILLED 6/2/2005
CLIENT REALTY DEV. SERVICES
LOCATION FALCON HIGHLANDS, F2

REMARKS

WATER @ 14', 6/3/05

SAND, SILTY, FINE TO COARSE GRAINED, BROWN

CLAY, SANDY, LIGHT GRAY

SANDSTONE, CLAYEY, FINE TO MEDIUM GRAINED, LIGHT GRAY-BROWN, VERY DENSE, MOIST

Depth (ft)	Blows per foot	Watercontent %	Soil Type
			1
5			2
10	50/7"	11.7	4
15			
20			

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		KAH	6/14/05

JOB NO.: 49185
FIG NO.: 4

TEST BORING NO. 7
DATE DRILLED 6/2/2005
Job # 49185

REMARKS

WATER @ 6', 6/3/05

SAND, GRAVELLY, SILTY, FINE TO COARSE GRAINED, BROWN TO TAN, MEDIUM DENSE, MOIST TO WET

SAND, CLAYEY, FINE TO COARSE GRAINED, GRAY, VERY MOIST

* - BULK SAMPLE TAKEN

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5					
10			27	13.0	1
15			*	15.1	1
20					

TEST BORING NO. 8
DATE DRILLED 6/2/2005
CLIENT REALTY DEV. SERVICES
LOCATION FALCON HIGHLANDS, F2

REMARKS

WATER @ 14', 6/3/05

SAND, SILTY, DARK BROWN

SAND, SILTY, FINE TO COARSE GRAINED, TAN, DENSE, MOIST TO WET

SILTSTONE, CLAYEY, BLUE GRAY, MOIST

* - BULK SAMPLE TAKEN

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
5					
10			40	9.3	1
15					
20			*	17.4	5

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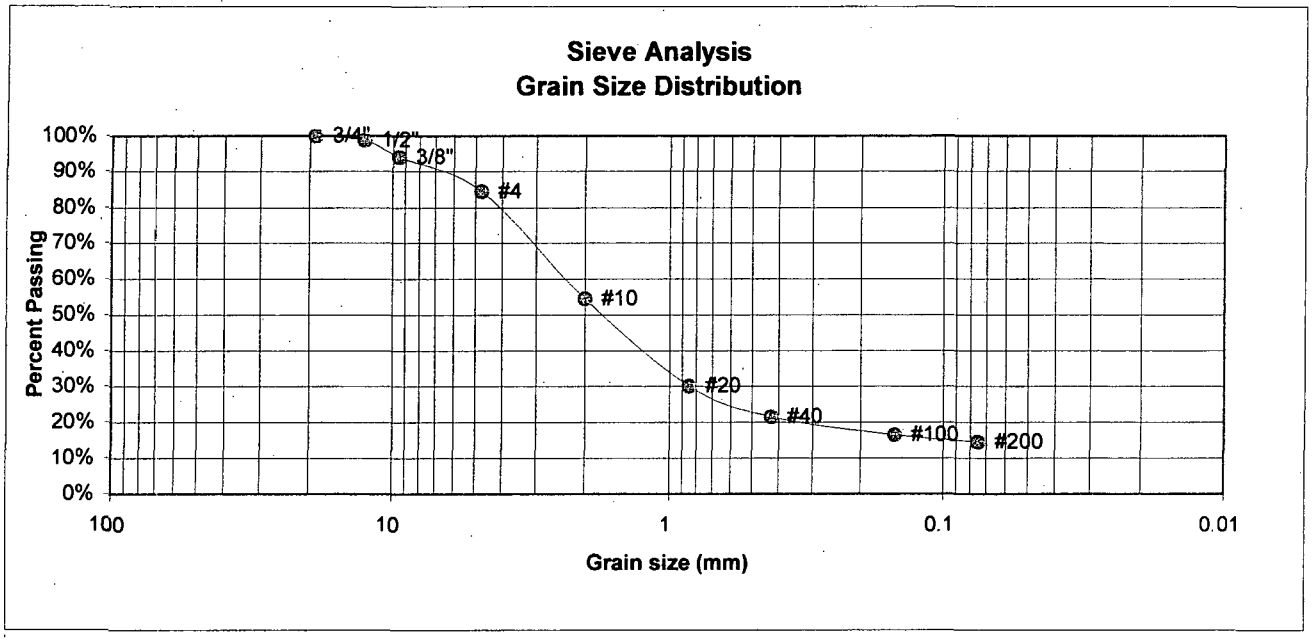
TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		KSH	6/14/05

JOB NO.: 49185
FIG NO.: 5

UNIFIED CLASSIFICATION	SM	CLIENT	REALTY DEV. SERVICES
SOIL TYPE #	1	PROJECT	FALCON HIGHLANDS, F2
TEST BORING #	TB-5	JOB NO.	49185
DEPTH	5'	TEST BY	DG



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	100.0%
1/2"	98.9%
3/8"	94.1%
4	84.4%
10	54.5%
20	30.1%
40	21.5%
100	16.4%
200	14.5%

Atterberg Limits

Plastic Limit

Liquid Limit

Plastic Index

Swell

Moisture at start

Moisture at finish

Moisture increase

Initial dry density (pcf)

Swell (psf)

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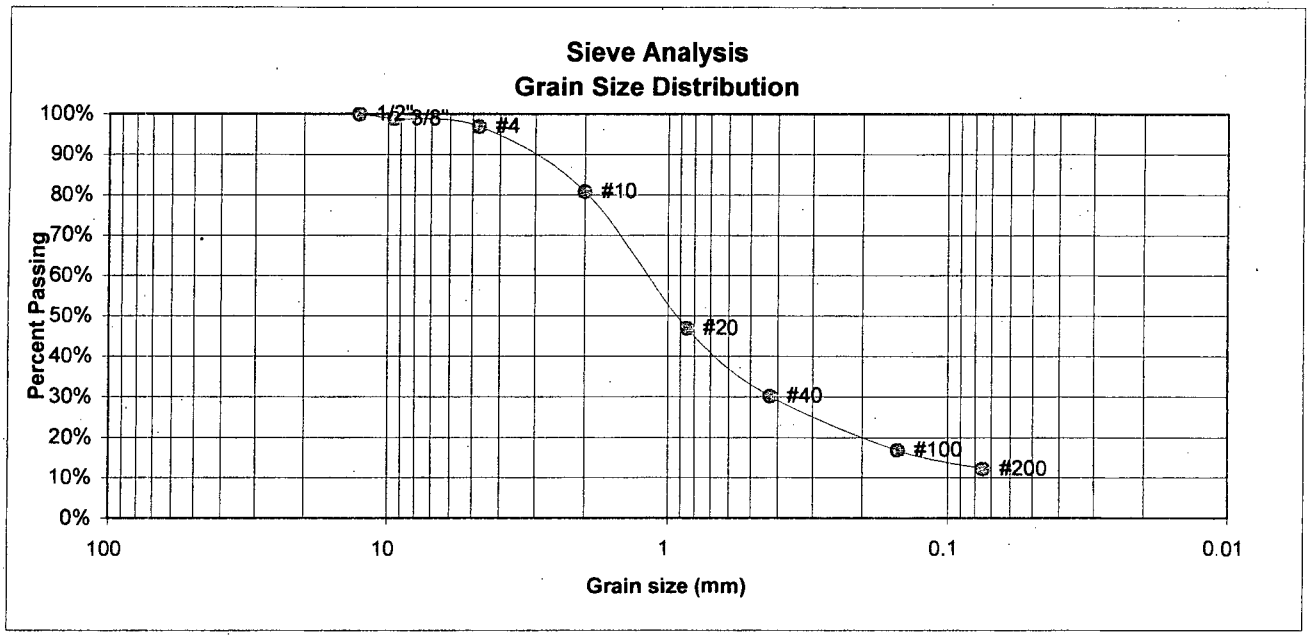
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		LAH	6/14/05

JOB NO.: 49185

FIG NO.: 6

UNIFIED CLASSIFICATION	SM	CLIENT	REALTY DEV. SERVICES
SOIL TYPE #	1	PROJECT	FALCON HIGHLANDS, F2
TEST BORING #	TB-7	JOB NO.	49185
DEPTH	10'	TEST BY	DG



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	98.9%
4	97.0%
10	80.8%
20	46.9%
40	30.2%
100	16.8%
200	12.1%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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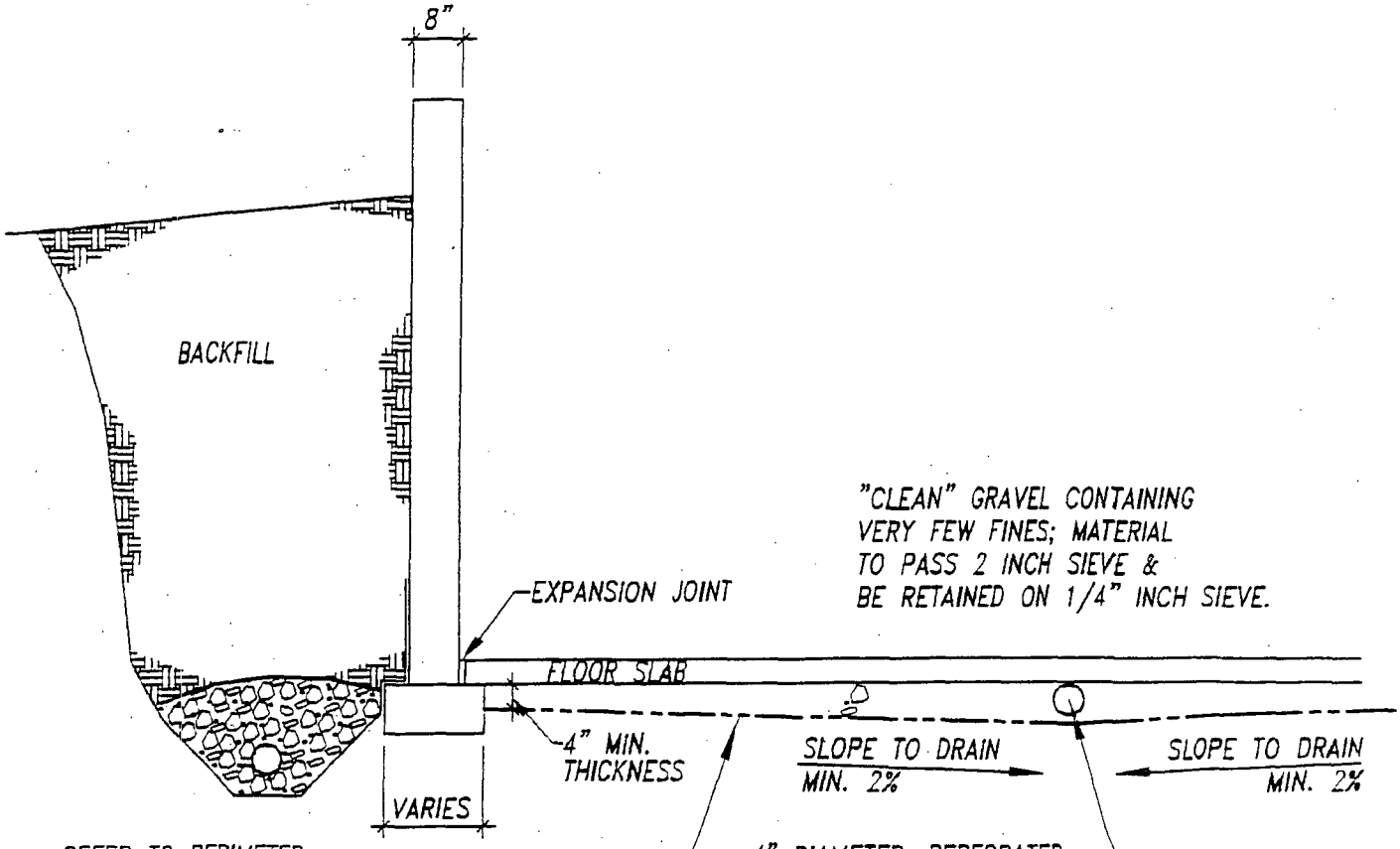
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		KAA	6/14/05

JOB NO.: 49185
FIG NO.: 7



D:\~C:\DETAILS\DETAIL 11

DRAWN	C. WALTON
CHECKED	
DATE	
SCALE	NTS
JOB NO.	4916.5
SHEET	6

TYP. UNDERSLAB DRAINAGE
LAYER (CAPILLARY BREAK)

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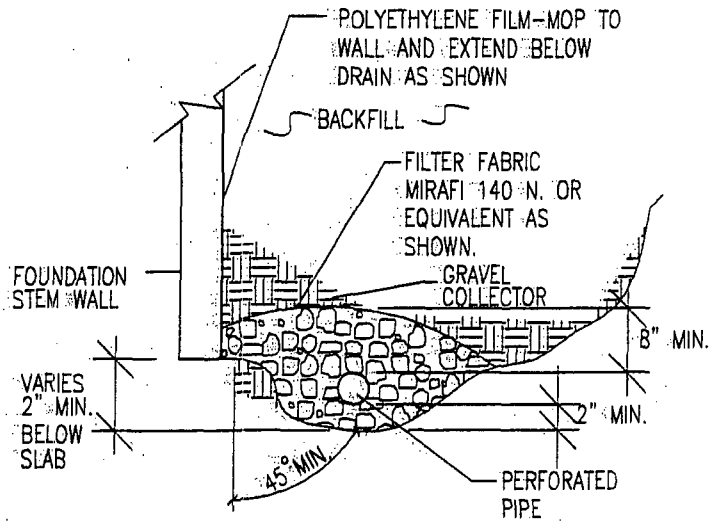

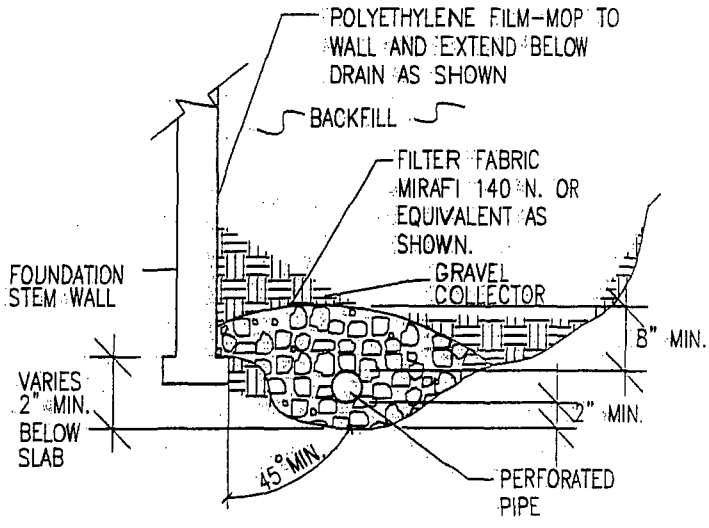

NOTES:

–GRAVEL SIZE IS RELATED TO DIAMETER OF PIPE PERFORATIONS–85% GRAVEL GREATER THAN 2x PERFORATION DIAMETER.

–PIPE DIAMETER DEPENDS UPON EXPECTED SEEPAGE. 4–INCH DIAMETER IS MOST OFTEN USED.

–ALL PIPE SHALL BE PERFORATED PLASTIC. THE DISCHARGE PORTION OF THE PIPE SHOULD BE NON–PERFORATED PIPE.

–FLEXIBLE PIPE MAY BE USED UP TO 8 FEET IN DEPTH, IF SUCH PIPE IS DESIGNED TO WITHSTAND THE PRESSURES. RIGID PLASTIC PIPE WOULD OTHERWISE BE REQUIRED.

–MINIMUM GRADE FOR DRAIN PIPE TO BE 1% OR 3 INCHES OF FALL IN 25 FEET.

–DRAIN TO BE PROVIDED WITH A FREE GRAVITY OUTFALL, IF POSSIBLE. A SUMP AND PUMP MAY BE USED IF GRAVITY OUT FALL IS NOT AVAILABLE.

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PERIMETER DRAIN DETAIL

DRAWN:	DATE:	DESIGNED:	CHECKED:
R.J. OLSON			

JOB NO.: 49185

FIG NO.: 9