

**PRELIMINARY GEOTECHNICAL ENGINEERING REPORT**

**PROPOSED CECIL FARMS DEVELOPMENT  
WELD COUNTY ROAD 27, BETWEEN ROADS 74 AND 72  
SEVERANCE, COLORADO**

**NORTHERN COLORADO GEOTECH  
PROJECT NO. 015-16  
APRIL 20, 2016**

**Prepared for:**

**Baessler Homes  
3780 West 10th Street, Suite 200  
Greeley, Colorado 80634  
Attn: Kevin Archer**





2956 29th Street, Unit 21  
Greeley, Colorado 80631  
Phone: (970) 506-9244  
Fax: (970) 506-9242

April 20, 2016

Baessler Homes  
3780 West 10th Street, Suite 200  
Greeley, Colorado 80634

Attn: Kevin Archer

**Re: Preliminary Geotechnical Engineering Report  
Proposed Cecil Farms Development – WCR 27  
Northern Colorado Geotech Project No. 015-16**

Northern Colorado Geotech has completed a preliminary geotechnical engineering exploration for the proposed development to be located along Weld County Road 27 between Roads 74 and 72 east of Severance, Colorado.

The subsurface soils at the site generally consisted of varying layers of silty sand, silty clayey sand, clayey sand, sandy lean clay and lean clay with sand to depths of 8 feet to greater than 15 feet. Siltstone/sandstone bedrock was encountered below the soils in two of the test borings at depths of approximately 8 and 10 feet. Groundwater was encountered in four of the test bores at depths of 8 to 13 feet. The results of our field exploration and laboratory testing indicate that the soils appear to have low expansive potential and low load bearing capabilities.

Based on the proposed development plans and the results of our engineering exploration, it is our opinion that proposed residences will likely be supported on spread footing foundations. Based on the results of preliminary percolation tests, the majority of the proposed lots should be able to build standard septic systems.

If you have any questions concerning this report or any of our consulting services, please do not hesitate to contact us.

Sincerely,  
**NORTHERN COLORADO GEOTECH**

Prepared by:

Doug Leafgren, P.G.  
President

Reviewed by:

Gary G. Weeks, P.E.  
Vice President

Copies to: Addressee (3)

**TABLE OF CONTENTS**

	<b>Page No.</b>
Letter of Transmittal .....	ii
<b>SCOPE .....</b>	<b>1</b>
<b>SITE CONDITIONS.....</b>	<b>1</b>
<b>PROPOSED CONSTRUCTION .....</b>	<b>1</b>
<b>SITE EXPLORATION.....</b>	<b>2</b>
Laboratory Testing .....	2
<b>SUBSURFACE CONDITIONS .....</b>	<b>3</b>
Geology .....	3
Soil and Bedrock Conditions .....	3
Groundwater Conditions .....	3
Field Test Results .....	4
Laboratory Test Results .....	4
<b>PRELIMINARY DESIGN RECOMMENDATIONS.....</b>	<b>4</b>
Foundation Design.....	4
Below Grade Construction .....	4
Seismic Considerations.....	5
Pavement Design and Construction.....	5
General Earthwork .....	5
Site Preparation .....	5
Fill Materials and Placement.....	6
<b>GENERAL COMMENTS .....</b>	<b>7</b>
<b>ATTACHMENTS</b>	
Boring Location Plan	
Logs of Borings	
Laboratory Test Results	

## **PRELIMINARY GEOTECHNICAL ENGINEERING REPORT**

### **PROPOSED CECIL FARMS DEVELOPMENT WELD COUNTY ROAD 27, BETWEEN ROADS 74 AND 72 SEVERANCE, COLORADO**

**NORTHERN COLORADO GEOTECH  
PROJECT NO. 015-16  
APRIL 20, 2016**

#### **SCOPE**

This report contains the results of our preliminary geotechnical engineering exploration for the proposed residential development to be located along Weld County Road 27 between Roads 741 and 72, east of Severance, Colorado. The site is located in the east half of Section 6, Township 6 North, Range 66 West of the 6th Principal Meridian.

This report includes descriptions of, and geotechnical engineering recommendations relative to:

- subsurface soil and bedrock conditions
- groundwater conditions
- foundation construction
- basement construction
- drainage
- septic systems
- earthwork

The recommendations contained in this report are based upon the results of field and laboratory testing, engineering analyses, and experience with similar soil conditions, structures and our understanding of the proposed project.

#### **SITE CONDITIONS**

The site is currently occupied by a number of agricultural fields. Existing residences were observed near the southeast corner and along the northern boundary of the proposed development. Several oil/gas wells were observed throughout the site. A collection of well heads was observed near the northeast corner of the property. An irrigation ditch runs along the northeast portion of the project. Large overhead power lines run along the east side of the site as well as Weld County Road 27. The north and south property boundaries are bordered by Weld County Roads 74 and 72, respectively.

#### **PROPOSED CONSTRUCTION**

**Baessler Homes  
Cecil Farms – Weld County Road 27  
Northern Colorado Geotech Project No. 015-16**

As we understand it, the project will consist of developing approximately 60 single-family residential acreage lots at the site. The residences are currently anticipated to have on-site wastewater treatment systems (OWTS - septic systems). Preliminary plans show access to the site from one location on WCR 74 and two entrances from WCR 27.

## **SITE EXPLORATION**

A total of six test borings were drilled on March 5, 2016 to approximate depths of 15 feet. At each soil test bore location we also drilled one preliminary soil percolation boring to a depth of 3 feet in order to determine if the soils have reasonable percolation rates for OWTS. The borings were drilled at the approximate locations shown on the Site Plan, Figure 1. All borings were advanced with a truck-mounted drilling rig, utilizing 4-inch diameter solid stem augers.

The borings were located in the field by pacing from property lines and/or existing site features. The accuracy of boring locations should only be assumed to the level implied by the methods used.

Lithologic logs of each boring were recorded by a representative of Northern Colorado Geotech during the drilling operations. At selected intervals, samples of the subsurface materials were taken by driving split-spoon and/or ring samplers. Standard penetration measurements were recorded while driving a split-spoon and/or ring sampler into the subsurface materials. The standard penetration test is a useful index in estimating the density of the materials encountered.

Groundwater conditions were evaluated in each boring at the time of subsurface exploration, and two days after the drilling.

## **Laboratory Testing**

The samples retrieved during the subsurface exploration were returned to our laboratory for observation by the project manager. The soils were classified in general accordance with the Unified Soil Classification System. At that time, the field descriptions were confirmed or modified and an applicable laboratory testing program was formulated. Boring logs were prepared and are attached with this report.

Laboratory tests were conducted on selected samples and are presented on the boring logs and attached laboratory test sheets. The test results were used for the geotechnical engineering analyses, and the development of foundation and earthwork recommendations.

Selected samples were tested for the following engineering properties:

**Baessler Homes  
Cecil Farms – Weld County Road 27  
Northern Colorado Geotech Project No. 015-16**

- Water Content
- Dry Density
- Consolidation
- Compressive Strength
- Grain size
- Atterberg Limits
- Percent Fines
- Expansion

## **SUBSURFACE CONDITIONS**

### **Geology**

The proposed area is located within the Great Plains physiographic province. The Colorado Piedmont is located near the western border of the Great Plains province and was formed during Late Tertiary and Early Quaternary time (approximately 2,000,000 years ago). The Colorado Piedmont is a broad, erosional trench which separates the Southern Rocky Mountains from the High Plains. Structurally, the site lies along the western flank of the Denver Basin. During the mountain building of the Laramide Orogeny (approximately 70,000,000 years ago), intense tectonic activity occurred, causing the uplifting of the Front Range and associated downwarping of the Denver Basin to the east. Due to the erosional action of wind and streams, relatively flat uplands and broad valleys characterize the present-day topography of the Colorado Piedmont in this region.

Due to the relatively flat nature of the site, geologic hazards at the site are anticipated to be low. Seismic activity in the area is anticipated to be low; and from a structural standpoint, the property should be relatively stable. With proper site grading around proposed structures, erosional problems at the site should be minimal.

### **Soil and Bedrock Conditions**

Soils at the site generally consisted of varying layers of silty sand, silty clayey sand, clayey sand, sandy lean clay and lean clay with sand to depths of approximately 8 feet to greater than 15 feet. Siltstone/sandstone bedrock was encountered below the site soils in two of the test borings at approximate depths of 8 to 10 feet. Summary boring logs are attached with this report.

### **Groundwater Conditions**

Groundwater was encountered in four of the test borings at depths of approximately 8 to 13 feet. These observations represent groundwater conditions at the time of the field exploration, and may not

**Baessler Homes  
Cecil Farms – Weld County Road 27  
Northern Colorado Geotech Project No. 015-16**

be indicative of other times, or at other locations. Groundwater conditions can be expected to fluctuate with varying seasonal and weather conditions, and other factors.

### **Field Test Results**

Field test results indicate that the clay soils are medium stiff in consistency. The sand soils are generally loose in relative density. The bedrock varies from soft to moderately hard in hardness.

Preliminary percolation testing is summarized as follows:

<b>Percolation Test Results</b>			
<b>Test Hole</b>	<b>Depth (inches)</b>	<b>Soil Classification</b>	<b>Percolation Rate (minutes/inch)</b>
1	36	CL	20
2	36	CL	35
3	36	CL	20
4	36	SC	15
5	36	SC	12
6	36	SC	10

### **Laboratory Test Results**

Laboratory test results indicate that the soils generally have low expansive potential and low load bearing capabilities.

## **PRELIMINARY DESIGN RECOMMENDATIONS**

### **Foundation Design**

Based on the results of our subsurface exploration and the results of the laboratory testing, it is our opinion that spread footing foundations will likely be feasible for the majority of the proposed residences. Potentially expansive soils and relatively shallow groundwater will require particular attention in the design and construction of the development.

### **Below Grade Construction**

Groundwater was encountered at depths of 8 to 13 feet in four of the six test borings. Site grading may also affect the final depths of the groundwater from site grade. Basements should generally be feasible although site grading and lot specific criteria for structures will have an impact on the final

**Baessler Homes  
Cecil Farms – Weld County Road 27  
Northern Colorado Geotech Project No. 015-16**

grades of proposed structures. Lot specific soils investigations will be necessary to determine groundwater depths and the foundation grades of proposed structures.

### **Seismic Considerations**

Based upon the nature of the subsurface materials, a site class of C should be used for the design of structures for the proposed project as indicated by the 2009 International Building Code.

### **Pavement Design and Construction**

The required total thickness for the pavement structure is dependent primarily upon the foundation soil or subgrade and upon traffic conditions. Based on the soil conditions encountered at the site, the anticipated type and volume of traffic it is our opinion that “normal” asphalt street construction is considered feasible at the site. Additional subsurface exploration and final pavement design should be performed after the site has been placed to final street subgrade, wet utilities have been installed and roadway classifications are completed.

### **General Earthwork**

All earthwork on the project should be observed and evaluated by Northern Colorado Geotech. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

#### **Site Preparation**

Strip and remove existing vegetation, debris, and other deleterious materials from proposed building and pavement areas. All exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

Stripped materials consisting of vegetation and organic materials should be wasted from the site, or used to revegetate landscaped areas or exposed slopes after completion of grading operations.

Demolition of any improvements that may be encountered on the site should include removal of all foundation systems within the proposed construction area. This should include removal of any loose backfill found adjacent to existing foundations. All materials derived from the demolition of existing structures and pavements should be removed from the site, and not be allowed for use in any on-site fills.



If unexpected fills or underground facilities are encountered, such features should be removed and the excavation thoroughly cleaned prior to backfill placement and/or construction.

It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment.

Groundwater seepage should be anticipated for excavations approaching the level of bedrock. Pumping from sumps may be utilized to control water within the excavations. Well points may be required for significant groundwater flow, or where excavations penetrate groundwater to a significant depth.

The individual contractor(s) is responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom. All excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

**Fill Materials and Placement**

The site should be graded to create a relatively level surface to receive fill, and to provide for a relatively uniform thickness of fill beneath proposed building structures.

All exposed areas which will receive fill should be scarified to a minimum depth of eight inches, conditioned to near optimum moisture content, and compacted.

The placement of soils on the site should be observed by Northern Colorado Geotech. The fill should be assessed for suitability of use in the proposed fill and tested for placement including compaction percentage and moisture content.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Recommended compaction criteria for engineered fill materials are as follows:

Clean on-site soils or approved imported materials may be used as fill material.

Imported soils (if required) should conform to the following:

<u>Gradation</u>	<u>Percent fines by weight (ASTM C136)</u>
6" .....	100
3" .....	70-100

**Baessler Homes  
 Cecil Farms – Weld County Road 27  
 Northern Colorado Geotech Project No. 015-16**

No. 4 Sieve.....	50-100
No. 200 Sieve.....	60 (max)
• Liquid Limit .....	30 (max)
• Plasticity Index.....	15 (max)

<u>Material</u>	<u>Minimum Percent (ASTM D698)</u>
Scarified subgrade soils .....	95
On-site and imported fill soils:	
Beneath foundations.....	95
Beneath slabs .....	95
Beneath pavements.....	95

On-site or imported clay soils should be compacted within a moisture content range of 2 percent below, to 2 percent above optimum. Granular soils should be compacted within a moisture range of 3 percent below to 3 percent above optimum unless modified by the project geotechnical engineer.

**GENERAL COMMENTS**

The analysis and recommendations presented in this report are based upon data obtained from borings performed to obtain representative subsurface conditions at the site. Variations in the soil between borings will occur. Northern Colorado Geotech should be present during construction to observe the excavation and construction procedures and confirm or modify our recommendations.

The scope of services for this project does not include either specifically or by implication any environmental assessment of the site.

This report is intended exclusively for the use by the client. Any use or reuse of the findings and/or recommendations of this report by parties other than the client without the written consent of Northern Colorado Geotech is undertaken at said parties' sole risk.

This report has been prepared in accordance with generally accepted geotechnical engineering practices in this area at this time. No warranties, either express or implied, are intended or made.

WELD COUNTY ROAD 74

WELD COUNTY ROAD 27

WELD COUNTY ROAD 72

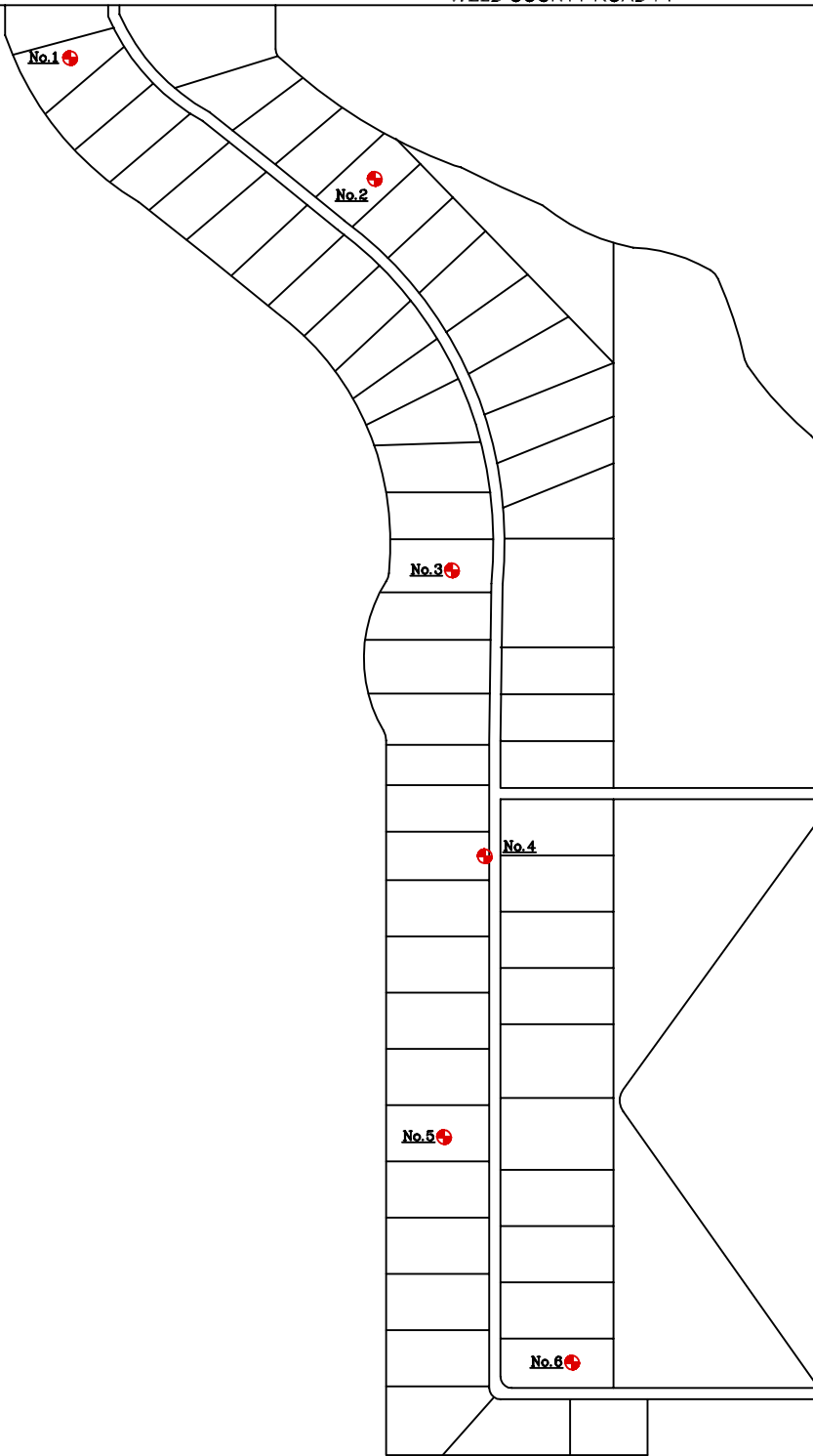


DIAGRAM IS FOR GENERAL LOCATION ONLY,  
AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

**BORING LOCATION PLAN  
PRELIMINARY EXPLORATION**

WELD COUNTY ROAD 29 - CECIL FARMS  
SEVERANCE, COLORADO  
FOR BAESSLER HOMES



2956 29th Street, Unit 21  
Greeley, Colorado 80631  
Phone: (970) 506-9244  
Fax: (970) 506-9242

Project No.	015-16
Scale:	1" = 600'
Date:	4-8-16
Project Mgr:	DML
Figure No.	1

# LOG OF BORING No. 1

Sheet 1 of 1

CLIENT <p style="text-align: center;"><b>Baessler Homes</b></p>	ARCHITECT/ENGINEER									
SITE <p style="text-align: center;"><b>Cecil Farms - Weld County Road 27 Severance, Colorado</b></p>	PROJECT <p style="text-align: center;"><b>Preliminary Soils and Groundwater Exploration</b></p>									
	GRAPHIC LOG									
		DEPTH (FT.)	BLOWS/12" N-VALUE	NUMBER	TYPE	IN. DRIVEN IN. RECOVERED	MOISTURE, %	DRY DENSITY PCF	HAND PENE- TROMETER psf	LIQUID LIMIT PLASTIC INDEX PERCENT FINES
0.5 6" TOPSOIL <u>SANDY LEAN CLAY</u> Brown, moist, medium		8	1	SS	18	16				
		20	2	RS	12	10	105	9,000	1.8% Swell	
7.0 <u>SILTY CLAYEY SAND</u> Tan, moist to wet, loose		7	3	SS	12	13				
		4	4	SS	12	27				
15.0 BOTTOM OF BORING		15								

<b>WATER LEVEL OBSERVATIONS</b>			<p style="text-align: center;">Northern Colorado Geotech</p> 2956 29th Street, Unit 21 Greeley, Colorado 80631 Phone: 970-506-9244 Fax: 970-506-9242	STARTED	3/5/16	FINISHED	3/5/16
WL	None	W.D.		DRILL co. Drilling Eng		DRILL RIG GeoProbe	
WL	▼ 12.0	A.B.		LOGGED BY TK		APPROVED DML	
When Checked 2 Days A.B.				NCG PROJECT NO.		015-16	

015-16.GPJ

# LOG OF BORING No. 2

Sheet 1 of 1

CLIENT <b>Baessler Homes</b>		ARCHITECT/ENGINEER								
SITE <b>Cecil Farms - Weld County Road 27 Severance, Colorado</b>		PROJECT <b>Preliminary Soils and Groundwater Exploration</b>								
		GRAPHIC LOG	SAMPLES				TESTS			
			DEPTH (FT.)	BLOWS/12" N-VALUE	NUMBER	TYPE	IN. DRIVEN IN. RECOVERED	MOISTURE, %	DRY DENSITY PCF	HAND PENE- TROMETER psf
0.5	6" TOPSOIL <u>LEAN CLAY WITH SAND</u> Brown, moist, medium	9	1	SS	18	12				
		10	2	RS	12	13	114	6,000	32/15/82	0.3% Swell
5.0	<u>CLAYEY SAND</u> Brown, moist, loose	5								
8.0	<u>WEATHERED SANDSTONE/SILTSTONE</u> Tan, moist, soft	18	3	SS	12	23				
11.0	<u>SANDSTONE/SILTSTONE</u> Tan, moist, moderately hard	37	4	SS	12	27				
15.0	BOTTOM OF BORING	15								

<b>WATER LEVEL OBSERVATIONS</b>				<b>Northern Colorado Geotech</b>				STARTED	3/5/16	FINISHED	3/5/16
WL	▽	14.0	W.D.	2956 29th Street, Unit 21 Greeley, Colorado 80631 Phone: 970-506-9244 Fax: 970-506-9242				DRILL co. Drilling Eng		DRILL RIG GeoProbe	
WL	▼	9.0	A.B.					LOGGED BY TK		APPROVED DML	
When Checked 2 Days A.B.								NCG PROJECT NO.		015-16	

015-16.GPJ

# LOG OF BORING No. 3

Sheet 1 of 1

CLIENT <b>Baessler Homes</b>		ARCHITECT/ENGINEER							
SITE <b>Cecil Farms - Weld County Road 27 Severance, Colorado</b>		PROJECT <b>Preliminary Soils and Groundwater Exploration</b>							
0.5 6" TOPSOIL  SANDY LEAN CLAY Brown, moist, medium to stiff	GRAPHIC LOG	SAMPLES				TESTS			
		DEPTH (FT.)	BLOWS/12" N-VALUE	NUMBER	TYPE	IN. DRIVEN IN. RECOVERED	MOISTURE, %	DRY DENSITY PCF	HAND PENE-TROMETER psf
	↓ ↓ ↓	5	1	SS	18	16			
		7	2	SS	12	18			
		5							
		19	3	RS	12	15	116	9,000	0.7% Swell
		10							
		5	4	SS	12	22			
15.0		15							
BOTTOM OF BORING									

WATER LEVEL OBSERVATIONS			 Northern Colorado Geotech 2956 29th Street, Unit 21 Greeley, Colorado 80631 Phone: 970-506-9244 Fax: 970-506-9242	STARTED	3/5/16	FINISHED	3/5/16
WL	None	W.D.		DRILL co. Drilling Eng		DRILL RIG GeoProbe	
WL	None	A.B.		LOGGED BY TK		APPROVED DML	
When Checked 2 Days A.B.				NCG PROJECT NO.		015-16	

015-16.GPJ

# LOG OF BORING No. 4

Sheet 1 of 1

CLIENT <b>Baessler Homes</b>		ARCHITECT/ENGINEER								
SITE <b>Cecil Farms - Weld County Road 27 Severance, Colorado</b>		PROJECT <b>Preliminary Soils and Groundwater Exploration</b>								
		GRAPHIC LOG	SAMPLES				TESTS			
			DEPTH (FT.)	BLOWS/12" N-VALUE	NUMBER	TYPE	IN. DRIVEN IN. RECOVERED	MOISTURE, %	DRY DENSITY PCF	HAND PENE- TROMETER psf
0.5	6" TOPSOIL <u>CLAYEY SAND</u> Brown, moist, loose	5	1	SS	18	13				
		12	2	RS	12	11	107	6,000	0.1% Swell	
		5								
		6	3	SS	12	19				
9.0	<u>SILTY CLAYEY SAND</u> Tan, moist, loose	10								
		4	4	SS	12	20				
15.0	BOTTOM OF BORING	15								

WATER LEVEL OBSERVATIONS			 Northern Colorado Geotech 2956 29th Street, Unit 21 Greeley, Colorado 80631 Phone: 970-506-9244 Fax: 970-506-9242			STARTED	3/5/16	FINISHED	3/5/16
WL	None	W.D.				DRILL co. Drilling Eng		DRILL RIG GeoProbe	
WL	None	A.B.				LOGGED BY TK		APPROVED DML	
When Checked 2 Days A.B.						NCG PROJECT NO.		015-16	

015-16.GPJ

# LOG OF BORING No. 5

Sheet 1 of 1

CLIENT <b>Baessler Homes</b>		ARCHITECT/ENGINEER								
SITE <b>Cecil Farms - Weld County Road 27 Severance, Colorado</b>		PROJECT <b>Preliminary Soils and Groundwater Exploration</b>								
		GRAPHIC LOG	SAMPLES				TESTS			
			DEPTH (FT.)	BLOWS/12" N-VALUE	NUMBER	TYPE	IN. DRIVEN IN. RECOVERED	MOISTURE, %	DRY DENSITY PCF	HAND PENE- TROMETER psf
0.5	6" TOPSOIL <u>CLAYEY SAND</u> Brown, moist, loose	↓	6	1	SS	18	12			
		↓	4	2	RS	12	12	114	7,000	0.3% Swell
		↓								
6.0	<u>SANDY SILT</u> Tan, moist to wet, medium	↓	8	3	SS	12	13			23/0/61
		↓								
		↓	4	4	SS	12	27			
15.0	BOTTOM OF BORING	↓								

<b>WATER LEVEL OBSERVATIONS</b>				<b>Northern Colorado Geotech</b>				STARTED	3/5/16	FINISHED	3/5/16
WL	▽	14.0	W.D.	2956 29th Street, Unit 21 Greeley, Colorado 80631 Phone: 970-506-9244 Fax: 970-506-9242				DRILL co. Drilling Eng		DRILL RIG GeoProbe	
WL	▼	13.0	A.B.					LOGGED BY TK		APPROVED DML	
When Checked 2 Days A.B.								NCG PROJECT NO.		015-16	

015-16.GPJ



# LOG OF BORING No. 6

Sheet 1 of 1

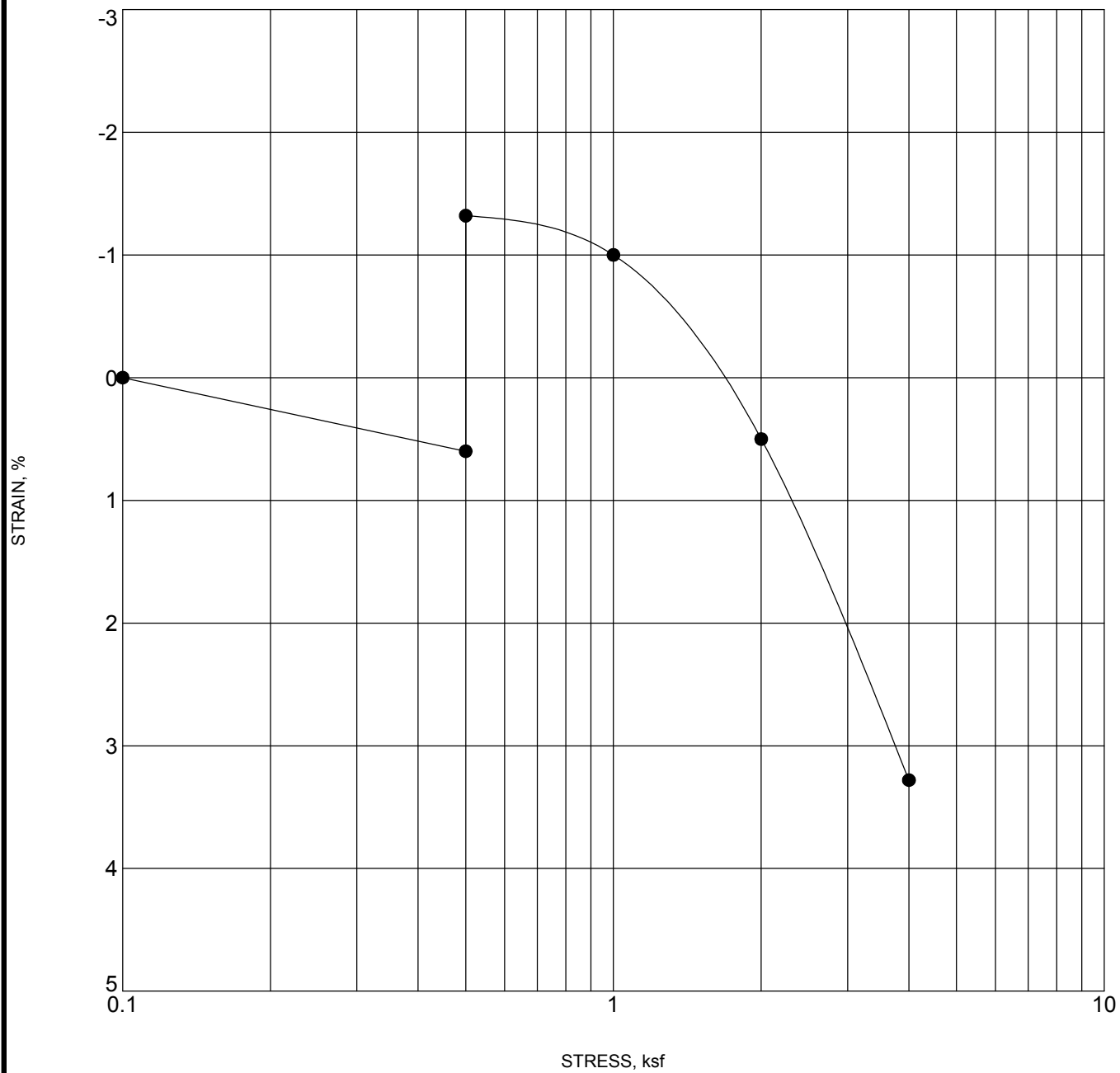
CLIENT <b>Baessler Homes</b>		ARCHITECT/ENGINEER								
SITE <b>Cecil Farms - Weld County Road 27 Severance, Colorado</b>		PROJECT <b>Preliminary Soils and Groundwater Exploration</b>								
		GRAPHIC LOG	SAMPLES				TESTS			
			DEPTH (FT.)	BLOWS/12" N-VALUE	NUMBER	TYPE	IN. DRIVEN IN. RECOVERED	MOISTURE, %	DRY DENSITY PCF	HAND PENE- TROMETER psf
0.5	6" TOPSOIL <u>CLAYEY SAND</u> Brown, moist to wet, loose	↓	4	1	SS	18	14			
		↓	6	2	SS	12	19			28/13/44
		▽								
		▼	6	3	RS	12	22	101	9,000	0% Swell
10.0	<u>WEATHERED SANDSTONE/SILTSTONE</u> Tan, moist, soft									
13.0	<u>SANDSTONE/SILTSTONE</u> Tan, moist, moderately hard									
15.0	BOTTOM OF BORING		43	4	SS	12	26			

WATER LEVEL OBSERVATIONS			
WL	▽	7.0	W.D.
WL	▼	8.0	A.B.
When Checked 2 Days A.B.			


  
**Northern Colorado Geotech**  
 2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

STARTED	3/5/16	FINISHED	3/5/16
DRILL CO.	Drilling Eng	DRILL RIG	GeoProbe
LOGGED BY	TK	APPROVED	DML
NCG PROJECT NO.	015-16		

015-16.GPJ



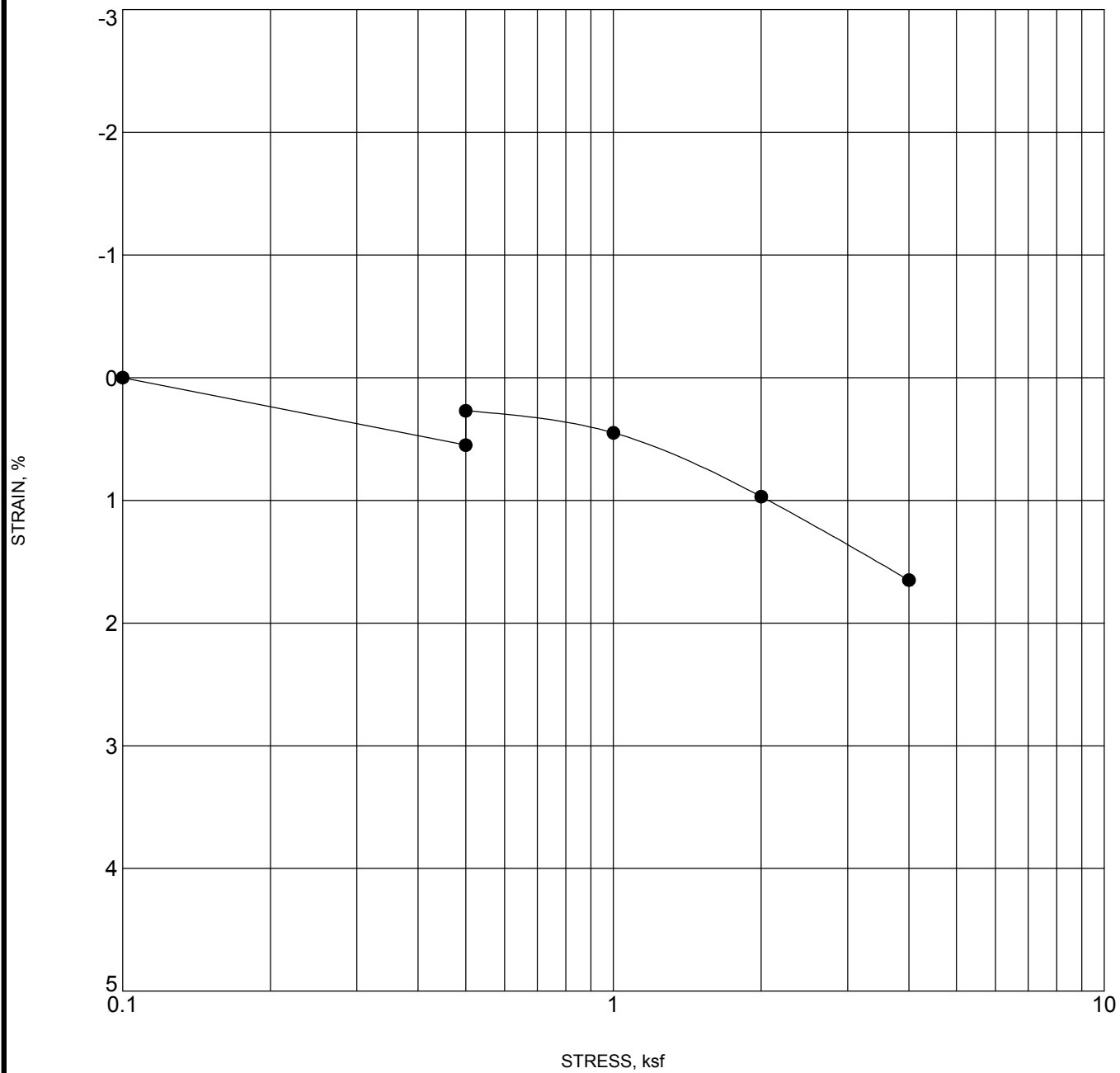
Specimen Identification	Classification	$\gamma_d$	MC%
● 1      3.0	<b>Sandy Lean Clay</b>	<b>105</b>	<b>10</b>



2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

### CONSOLIDATION TEST

Client: Baessler Homes    Number: 015-16  
 Project: Preliminary Soils and Groundwater Exploration  
 Location: Cecil Farms - Weld County Road 27



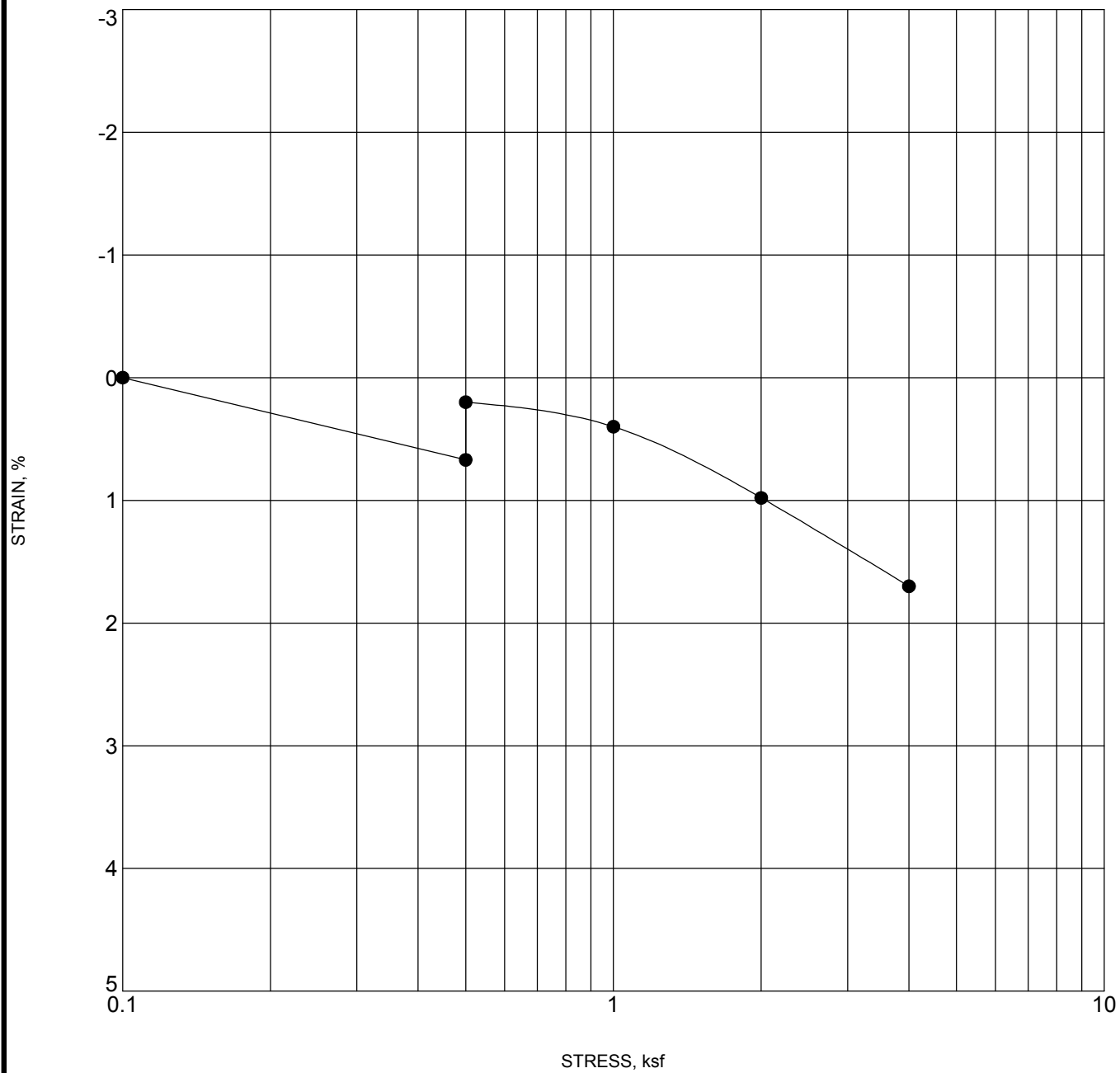
Specimen Identification	Classification	$\gamma_d$	MC%
● 2                      3.0	<b>Lean Clay with Sand</b>	<b>114</b>	<b>13</b>



2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

**CONSOLIDATION TEST**

Client: Baessler Homes    Number: 015-16  
 Project: Preliminary Soils and Groundwater Exploration  
 Location: Cecil Farms - Weld County Road 27



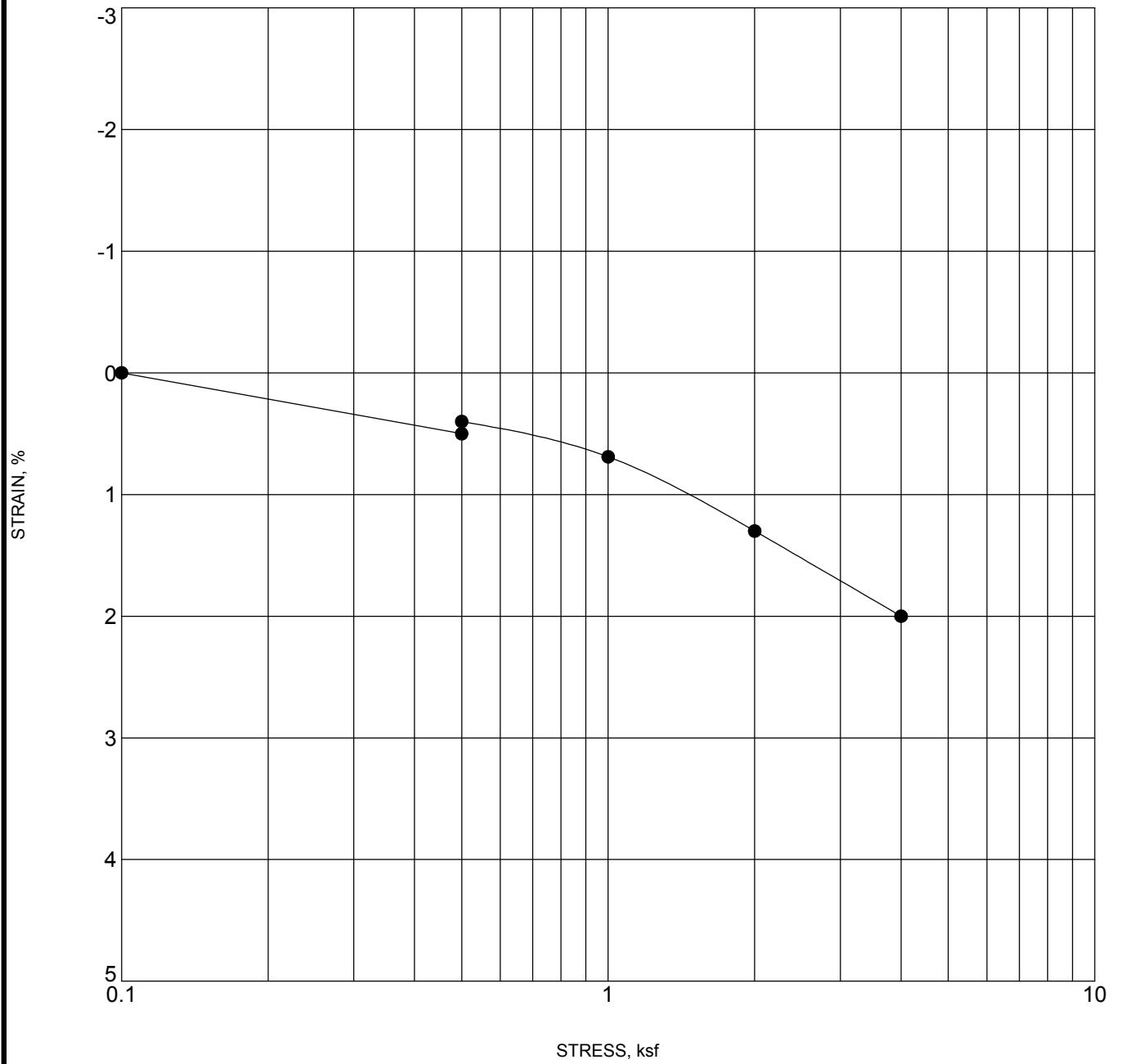
Specimen Identification	Classification	$\gamma_d$	MC%
● 3      8.0	<b>Clayey Sand</b>	<b>116</b>	<b>15</b>



2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

**CONSOLIDATION TEST**

Client: Baessler Homes    Number: 015-16  
 Project: Preliminary Soils and Groundwater Exploration  
 Location: Cecil Farms - Weld County Road 27



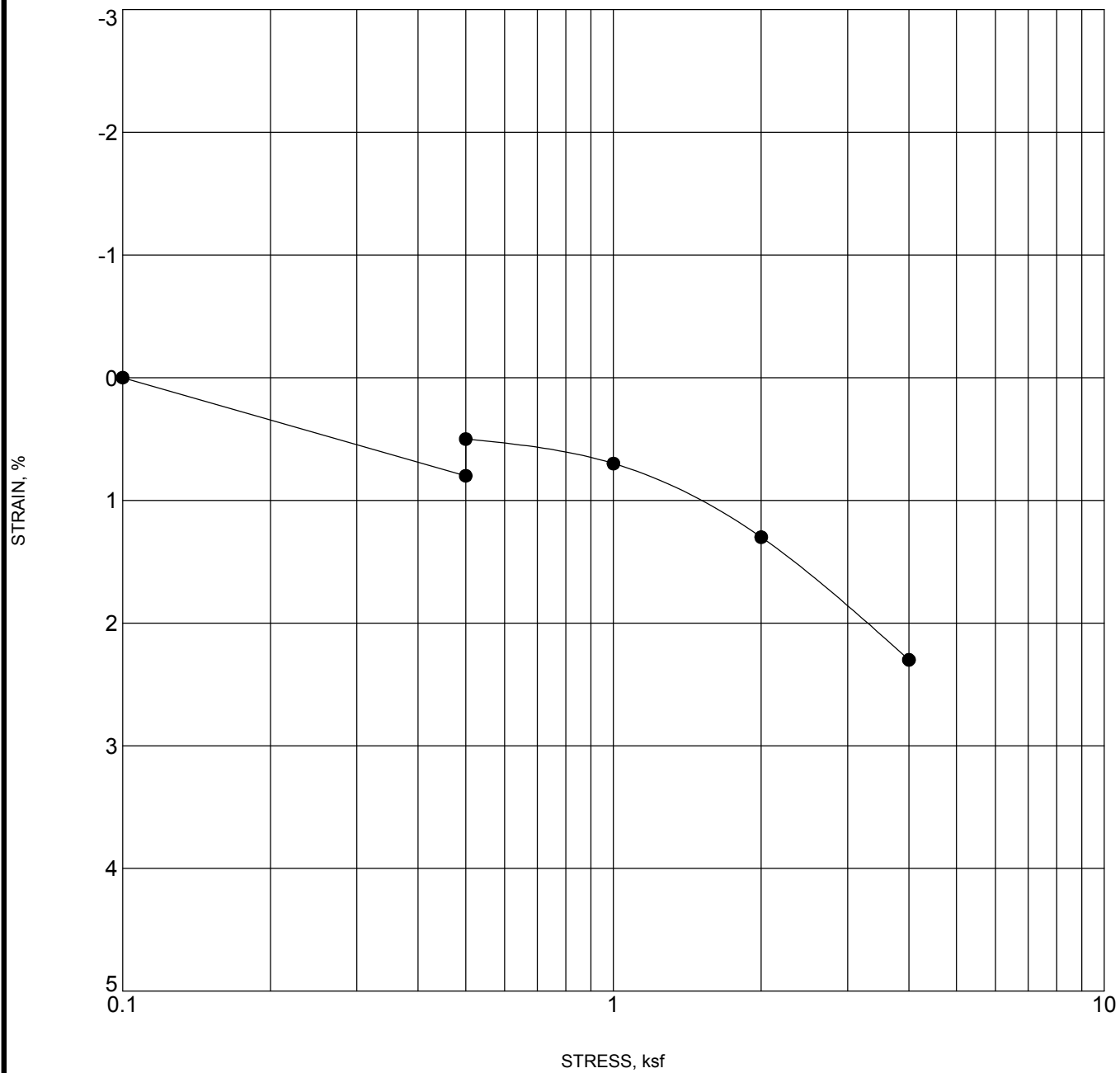
Specimen Identification	Classification	$\gamma_d$	MC%
● 4      3.0	<b>Silty Sand</b>	<b>107</b>	<b>11</b>



2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

### CONSOLIDATION TEST

Client: Baessler Homes    Number: 015-16  
 Project: Preliminary Soils and Groundwater Exploration  
 Location: Cecil Farms - Weld County Road 27



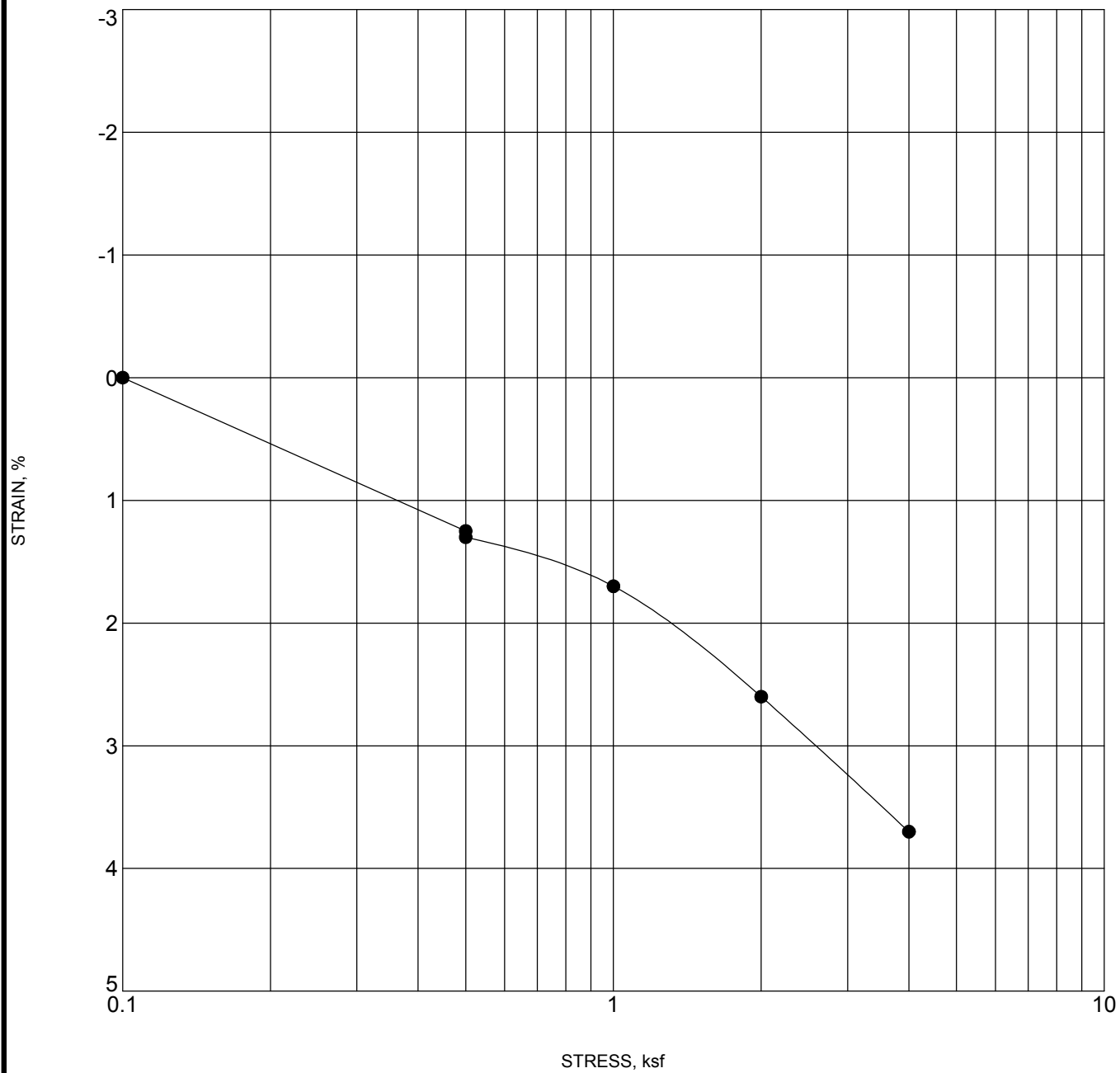
Specimen Identification	Classification	$\gamma_d$	MC%
● 5      3.0	<b>Silty Clayey Sand</b>	<b>114</b>	<b>12</b>



2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

**CONSOLIDATION TEST**

Client: Baessler Homes    Number: 015-16  
 Project: Preliminary Soils and Groundwater Exploration  
 Location: Cecil Farms - Weld County Road 27



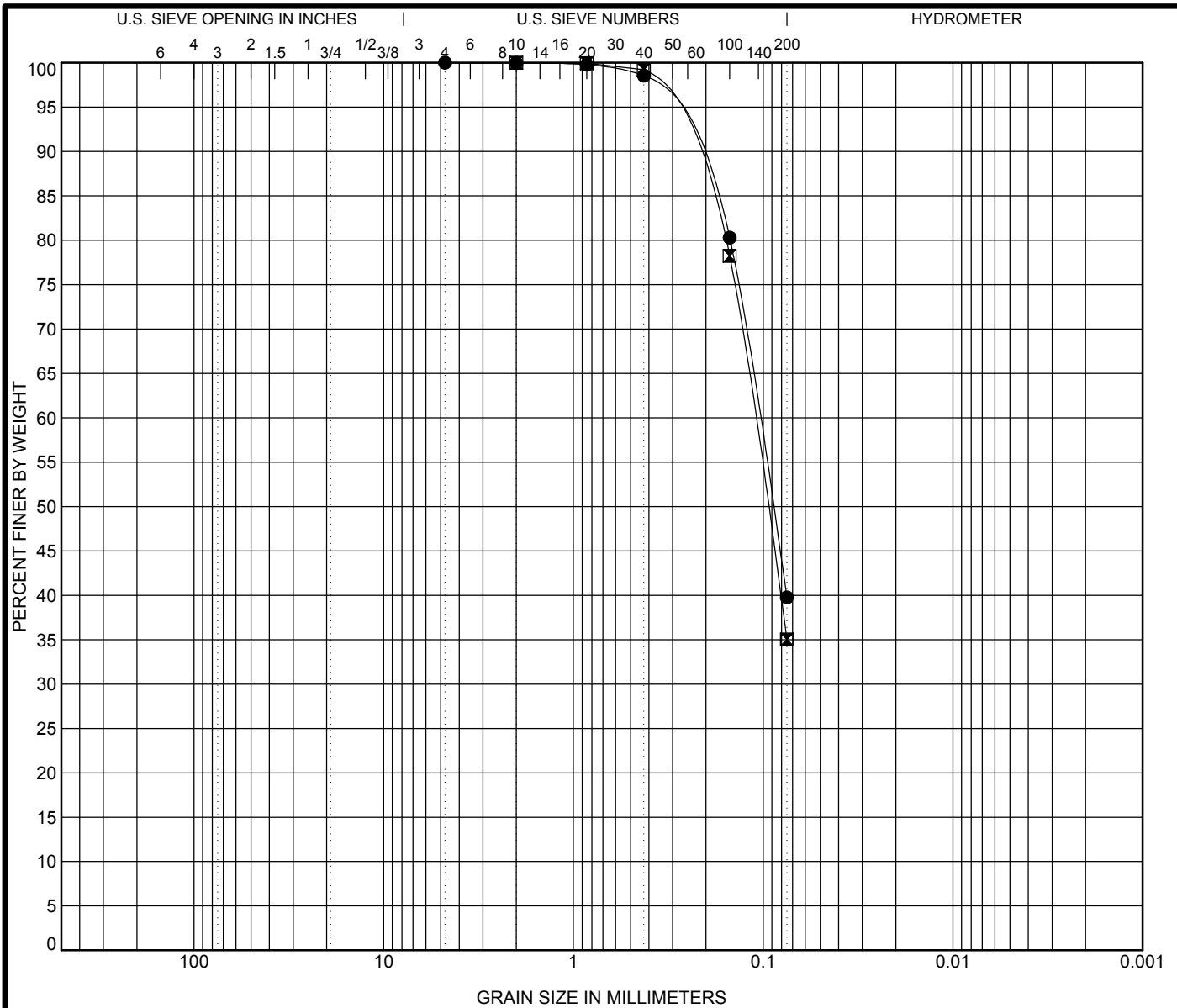
Specimen Identification	Classification	$\gamma_d$	MC%
● 6      8.0	<b>Clayey Sand</b>	<b>101</b>	<b>22</b>



2956 29th Street, Unit 21  
 Greeley, Colorado 80631  
 Phone: 970-506-9244  
 Fax: 970-506-9242

### CONSOLIDATION TEST


Client: Baessler Homes    Number: 015-16  
 Project: Preliminary Soils and Groundwater Exploration  
 Location: Cecil Farms - Weld County Road 27



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● 1 8.0	<b>Silty Clayey Sand</b>					
☒ 3 8.0	<b>Clayey Sand</b>					

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 1 8.0	4.75	0.106			0.0	60.2	39.8	
☒ 3 8.0	2	0.112			0.0	65.0	35.0	



2956 29th Street, Unit 21  
Greeley, Colorado 80631  
Phone: 970-506-9244  
Fax: 970-506-9242

### GRAIN SIZE DISTRIBUTION

Client: Baessler Homes Number: 015-16  
Project: Preliminary Soils and Groundwater Exploration  
Location: Cecil Farms - Weld County Road 27

015-16.GPJ