September 21, 2015

SANTA FE COUNTY
IFB#2016-0067-PW/BT
Construction Services for the Stanley Cyclone Center Arena

ADDENDUM #6

Dear Proponents,

This addendum is issued to reflect the following immediately. It shall be the responsibility of interested bidders to adhere to any changes or revisions to the IFB as identified in this Addendum No. 6. This documentation shall become permanent and made part of the departmental files.

ATTACHMENT: GEOTECHNICAL ENGINEERING SERVICES REPORT

Please add this Addendum #6 to the original bid documents and refer to bid documents, hereto as such. This and all subsequent addenda will become part of any resulting contract documents and have effects as if original issued. All other unaffected sections will have their original interpretation and remain in full force and effect.
Responders are reminded that any questions or need for clarification must be addressed to Bill Taylor, Procurement Manager at wtaylor@santafecountnm.gov.

GEO-TEST

GEOTECHNICAL
ENGINEERING SERVICES
JOB NO. 1-50606
STANLEY CYCLONE CENTER PROJECT
NEW ARENA BUILDING
STANLEY, NEW MEXICO

PREPARED FOR:

SANTA FE COUNTY PUBLIC WORKS DEPARTMENT
Projects Division

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GEO-TEST

June 30, 2015
Job No. 1-50606

Santa Fe County
Public Works Dept. / Projects Division
Santa Fe, New Mexico 87504

ATTN: Mr. David Padilla

RE: Geotechnical Engineering Services Report
Stanley Cyclone Center Project
New Arena Building
Stanley, New Mexico

Dear Mr. Padilla:

Submitted herein is the Geotechnical Engineering Services Report for the above referenced project. The report contains the results of our field investigation, laboratory testing, and recommendations for foundation design, slab support, pavement design, as well as criteria for site grading.

It has been a pleasure to serve you on this project. If you should have any questions, please contact this office.

Respectfully submitted:

GEO-TEST, INC.

Patrick Whorton

Reviewed by:

Robert D Booth, P

ROBERT D. BOOTH
NEW MEXICO
5711
LICENSED PROFESSIONAL ENGINEER

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GEO-TEST

TABLE OF CONTENTS

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INTRODUCTION

This report presents the results of the geotechnical engineering services investigation performed for a proposed new arena to be located on the site of the Stanley Cyclone Center located in Stanley, New Mexico.

The objectives of this investigation were to:

1) Evaluate the nature and engineering properties of the subsurface soils underlying the site.

2) Provide recommendations for foundation design, slab support, pavement design, as well as criteria for site grading.

.

The investigation includes subsurface exploration, selected soil sampling, laboratory testing of the samples, performing an engineering analysis and preparation of this report.

PROPOSED CONSTRUCTION

It is understood that the project consists of a single story, pre-engineered, clear-span steel building approximately 52,500 square feet in plan area. Foundation loads on steel bent frames are estimated to be approximately 80 kips.

Should structural loads or other project details vary significantly from those outlined above, this firm should be notified for review and revision of recommendations contained herein.

FIELD EXPLORATION

Six exploratory borings were drilled on site. Four (4) to depths of 20 to 25 feet below existing site grades within the proposed building footprint and two (2) to depths of 5 feet within the parking area. The locations of the borings are shown on the attached Boring Location Map, Figure 1. During the test drilling, the soils encountered in the borings were continuously examined, visually classified, and logged. The boring logs are presented in a following section of this report. Drilling was accomplished with a truck mounted drill rig using 5.5-inch diameter continuous flight hollow stem auger. Subsurface materials were sampled at five foot intervals or less utilizing an open tube split barrel sampler and a brass ring-lined sampler driven by a standard penetration test hammer.

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LABORATORY TESTING

Selected soil samples were tested in the laboratory to determine certain engineering properties of the soils. Moisture contents and dry densities were determined to evaluate the various soil deposits with depth. The results of these tests are presented on the boring logs.

Sieve analysis and Atterberg limits tests were performed on selected samples to aid in soil classification. In addition, a consolidation test was performed on a selected sample to evaluate the volume change characteristics of the soil upon moisture increases. Results of these tests are presented in the Summary of Laboratory Results and on the individual test reports presented in a following section of this report.

SITE CONDITIONS

A brief site reconnaissance was performed during our site exploration. The site is flat with poor drainage sloping slightly to the west and populated by native grasses. There is an existing parking lot northeast of the site which appeared to be a good condition.

SUBSURFACE SOIL CONDITIONS

As indicated by the exploratory borings, the soils underlying the site consist of sandy clay with low to medium plasticity which extended to the full depths explored. These soils are generally moderately firm to firm near the surface and become firm to hard with depth.

No free groundwater was encountered in the borings and soil moisture contents were low throughout the extent of the borings.

CONCLUSIONS AND RECOMMENDATIONS

As indicated by the standard penetration test data, the soils underlying the site are moderately to very firm and are considered suitable to provide reliable support of the proposed structure. Accordingly, the proposed structure can be supported on shallow spread-type footings and slabs on-grade bearing directly on the native soils or on properly compacted structural fill. Detailed recommendations concerning site preparation and foundation design are presented in the following sections of this report.

Post-construction moisture increases in the supporting soils could cause some differential foundation movements. Therefore, moisture protection is

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considered an important design consideration and should be reflected in overall site grading and drainage details as recommended in the Moisture Protection section of this report.

FOUNDATIONS

Shallow spread-type footings bearing directly the native soils or on properly compacted structural fill are recommended for the support of the structure. An allowable bearing pressure of 2,500 pounds per square foot is recommended for footing design. This bearing pressure applies to full dead load plus realistic live loads, and can be safely increased by one-third for totals loads including wind and seismic forces.

Exterior footings should be established a minimum of 2.0 feet below lowest adjacent finished grade, while interior footings should be at least 12 inches below finished floor grade. The minimum recommended width of square and continuous footings is 2.0 and 1.33 feet, respectively.

Total settlements of foundations designed and constructed as recommended herein are estimated not to exceed ¾ inch for the soil moisture contents encountered during this investigation or moisture contents introduced during construction. Differential movements should be less than 75 percent of total movements. Significant post-construction moisture increases in the supporting soils could create additional movements, and thus, the moisture protection provisions as recommended in a following section of this report are considered important for the satisfactory performance of the structure.

LATERAL LOADS

Resistance to lateral forces will be provided by soil friction between the base of floor slabs and footings and the soil and by passive earth resistance against the sides of the footings and stem walls. A coefficient of friction of 0.40 should be used for computing the lateral resistance between bases of footings and slabs and the soil. With backfill placed as recommended in the site grading section of this report, a passive soil resistance equivalent to a fluid weighing 325 pounds per cubic foot should be used for analysis.

SLABS ON GRADE

Adequate support for lightly loaded slab-on-grade floors will be provided by the native soils when compacted as recommended in a following section of this report. Thus, the use of granular base for structural support of lightly loaded slabs is not considered necessary. However, should it be desired as

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a working surface, a course of granular base can be placed beneath concrete floor slabs.

Where granular base is used beneath the slabs, it should have a plasticity index of no greater than 3 and meet the following grading requirements:

Sieve Size Square Openings	Percent Passing by Dry Weight
1 Inch	100
¾ Inch	70-100
No. 4	35-85
No. 200	0-10

The granular base should be compacted to at least 95 percent of maximum dry density as determined in accordance with ASTM D1557.

The granular base will act as a capillary barrier, but will not totally eliminate the rise of moisture to the slabs. If floor coverings are proposed which are highly sensitive to moisture, it is recommended the slab be placed in accordance with the procedures recommended by the American Concrete Institute (ACI 302.1R-04).

PAVEMENTS

Based on the results of laboratory testing and in accordance with publications prepared by the Asphalt Institute, a minimum asphaltic pavement section of 3.0 inches of asphaltic concrete over 6 inches of aggregate base course over 8 inches of compacted subgrade is recommended for areas subject to light automobile traffic and parking areas. Where traffic lanes are subject to heavy automobile and truck traffic, the above section should be thickened by an additional one inch of asphalt pavement.

Areas subjected to truck traffic including delivery trucks (loading docks) and trash collection trucks (dumpster access) should be paved with a minimum of 6 inches of Portland cement concrete placed over 4 inches of compacted base course over 8 inches of compacted subgrade.

Increases in the subgrade moisture content can create weakening of the soils, thereby, shortening pavement life and causing localized failure. Therefore, all paved areas should be designed to drain completely and allow no ponding. Pavement materials should conform to materials as specified in the New Mexico Department of Transportation Standard Specifications for

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Highway and Bridge Construction. All native subgrade soils should be compacted to a minimum of 95 percent of the maximum dry density determined by ASTM D-1557 density. All asphaltic pavements should be compacted to between 92 and 96 percent of the maximum Marshall Density.

SITE-GRADING

The following general guidelines should be included in the project construction specifications to provide a basis for quality control during site grading. It is recommended that all structural fill and backfill be placed and compacted under engineering observation and in accordance with the following:

1) After site clearing and stripping, and any required site excavations, the native soils should be densified prior to construction or placement of structural fill.

2) Densification of the native soils should consist of scarifying to a depth of 8 inches, moisture conditioning to the optimum moisture content or above, and compacting the area to a minimum of 95 percent of maximum dry density as determined in accordance with ASTM D-698.

3) The results of this investigation indicate that most of the native soils will be suitable for use as structural fill; however, some blending may may be required to meet the requirements presented below. All structural fill and backfill should be free of vegetation and debris, and contain no rocks larger than 3 inches. Gradation of the backfill material, as determined in accordance with ASTM D-422, should be as follows:

Size	Percent Passing
3 inch	100
No. 4	60 - 100
No. 200	30 - 75

4) The plasticity index of the structural fill should be no greater than 16 when tested in accordance with ASTM D-4318.

5) Fill or backfill, consisting of soil approved by the geotechnical engineer, shall be placed in 8 inch loose lifts and compacted with approved compaction equipment. Loose lifts should be reduced to 4

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inches if hand held compaction equipment is used. All compaction of fill or backfill shall be accomplished to a minimum of 95 percent of the maximum dry density as determined in accordance with ASTM D-698. The moisture content of the structural fill during compaction should be within 2 percent of the optimum moisture content.

6) Tests for degree of compaction should be determined by the ASTM D-1556 method or ASTM D-6938. Observation and field tests should be carried on during fill and backfill placement by the geotechnical engineer to assist the contractor in obtaining the required degree of compaction. If less than 95 percent is indicated, additional compaction effort should be made with adjustment of the moisture content as necessary until 95 percent compaction is obtained.

MOISTURE PROTECTION

Precautions should be taken during and after construction to minimize moisture increases of foundation soils. Positive drainage should be established away from the exterior walls of the structure. A typical adequate slope is 6 inches in the first 5 feet with positive drainage being provided from those points to streets or natural water courses. If necessary to provide positive drainage, the building area should be raised above adjacent grade with structural fill. Backfill should be well compacted and should meet the specifications outlined in the site grading section of this report. Irrigation within 10 feet of foundations should be carefully controlled. All utility trenches leading into the structure should be backfilled with compacted fill. Special care should be taken during installation of the subfloor sewers and water lines to reduce the possibility of post-construction soil moisture increases beneath the structure.

Proper landscaping and drainage maintenance is required to preclude accumulation of excessive moisture in the soils below the structure. Accumulations of excessive moisture could be harmful to some types of interior flooring, to HVAC ductwork beneath the slabs, and can weaken or cause other changes in the soils supporting the foundations. This can cause additional differential movement of foundations and can result in cosmetic or structural damage to the structure.

If any water line leaks or if irrigation system leaks are detected, they should be promptly repaired. In addition, if any depressions develop from the settlement of soils in utility trenches or other areas, they should be promptly backfilled to maintain the grade so that surface water drains rapidly away from the structure.

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The foregoing recommendations should only be considered minimum requirements for overall site development. It is recommended that a civil/drainage engineer be consulted more detailed grading and drainage recommendations.

FOUNDATION REVIEW AND INSPECTION

This report has been prepared to aid in the evaluation of this site and to assist in the design of this project. It is recommended that the geotechnical engineer be provided the opportunity to review the final design drawings and specifications in order to determine whether the recommendations in this report are applicable to the final design. Review of the final design drawings and specifications should be noted in writing by the geotechnical engineer.

In order to permit correlation between the conditions encountered during construction and to confirm recommendations presented herein, it is recommended that the geotechnical engineer be retained to perform continuous observations and testing during the earthwork portion of this project. Observation and testing should be performed during construction to confirm that suitable fill soils are placed upon competent materials and properly compacted and foundation elements penetrate the recommended soils.

CLOSURE

Our conclusions, recommendations and opinions presented herein are:

1) Based upon our evaluation and interpretation of the findings of the field and laboratory program.

2) Based upon an interpolation of soil conditions between and beyond the explorations.

3) Subject to confirmation of the conditions encountered during construction.

4) Based upon the assumption that sufficient observation will be provided during construction.

5) Prepared in accordance with generally accepted professional geotechnical engineering principles and practice.

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This report has been prepared for the sole use of the Projects Division of the Santa Fe County Public Works Department specifically to aid in the design of the proposed new Arena Building be constructed as part the Stanley Cyclone Center in Stanley, New Mexico, and not for use by any third parties.

We make no other warranty, either express or implied. Any person using this report for bidding or construction purposes should perform such independent investigation as he deems necessary to satisfy himself as to the surface and subsurface conditions to be encountered and the procedures to be used in the performance of work on this project. If conditions encountered during construction appear to be different than indicated by this report, this office should be notified.

All soil samples will be discarded 60 days after the date of this report unless we receive a specific request to retain the samples for a longer period of time.

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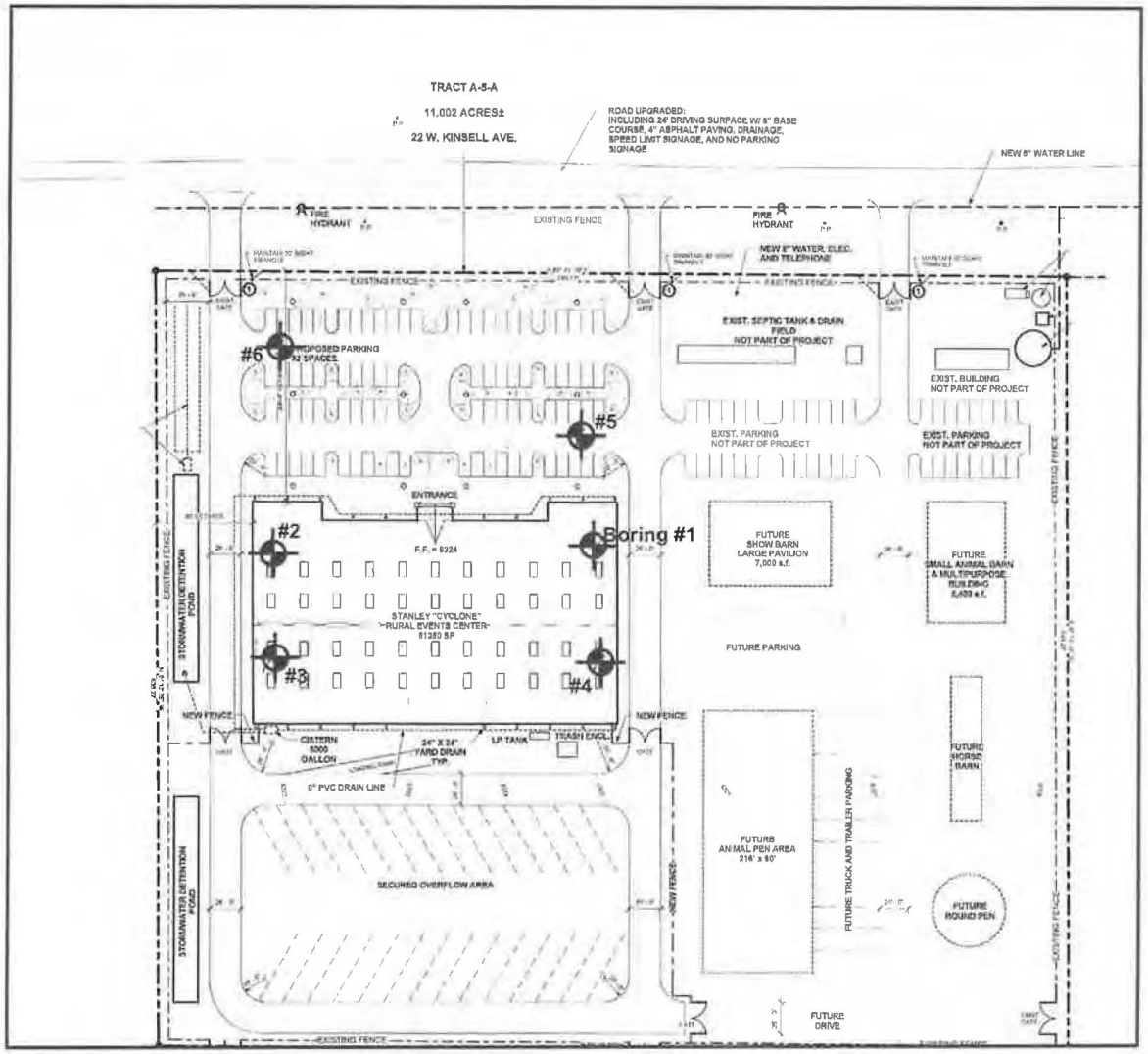
BORING LOCATION MAP



STANLEY CYCLONE CENTER ARENA
STANLEY, NEW MEXICO
JOB NO. 1-50606

Figure 1

GEO-TEST
GEOTECHNICAL ENGINEERING
AND MATERIAL TESTING
SANTA FE – ALBUQUERQUE – LAS CRUCES

GEO-TEST

Project: Stanley Cyclone Center Arena
Date: 06/11/2015 Project No: 1-50606
Elevation: Type: 5.5" OD HSA

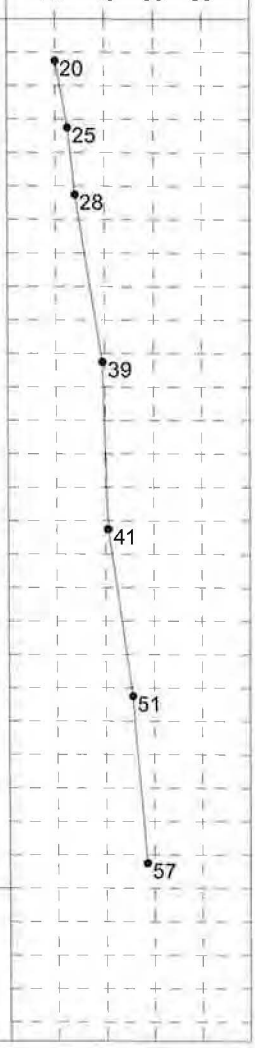
LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 1

During Drilling: None After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION
			SS	9-9-11 20	6			
			SS	8-11-14 25	7			
5			SS	11-12-16 28	7			
10			SS	14-16-23 39	10		CL	SANDY CLAY, low to medium plasticity, moderately cemented, firm to hard, slightly moist, tan/brown
15			SS	14-18-23 41	10			**Occasional subangular gravel from 7' to 10'
20			SS	18-23-28 51	10			
25			SS	16-25-32 57	8			STOPPED AUGER AT 24.5' STOPPED SAMPLER AT 26'
30								



LOG OF TEST BORING 1-50606 STANLEY CYCLONE CENTER ARENA GPJ GEO TEST GDT 6/22/15

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve
AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurments were made.

GEO-TEST

Project: Stanley Cyclone Center Arena
Date: 06/11/2015 Project No: 1-50606
Elevation: Type: 5.5" OD HSA

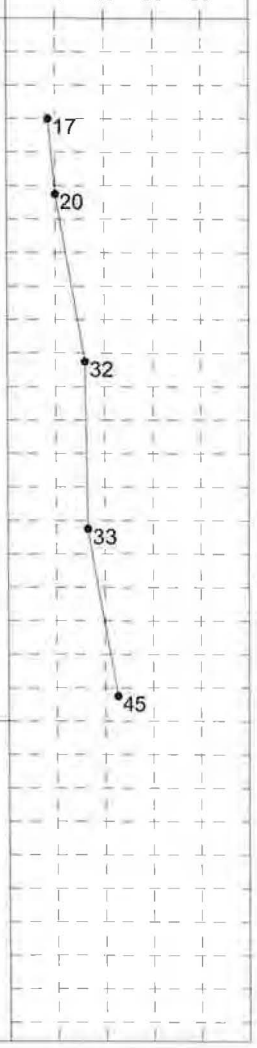
LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 2

During Drilling: None After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION
0			UD	7-10 17	6			
5			SS	7-9-11 20	8			
10			SS	11-14-18 32	6		CL	SANDY CLAY, low to medium plasticity, moderately cemented, firm to very firm, slightly moist, tan/brown
15			SS	12-14-19 33	10			
20			SS	16-21-24 45	8			
								STOPPED AUGER AT 19.5' STOPPED SAMPLER AT 21'
25								
30								



LOG OF TEST BORING 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15

LEGEND

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Project: Stanley Cyclone Center Arena
Date: 06/11/2015 Project No: 1-50606
Elevation: Type: 5.5" OD HSA

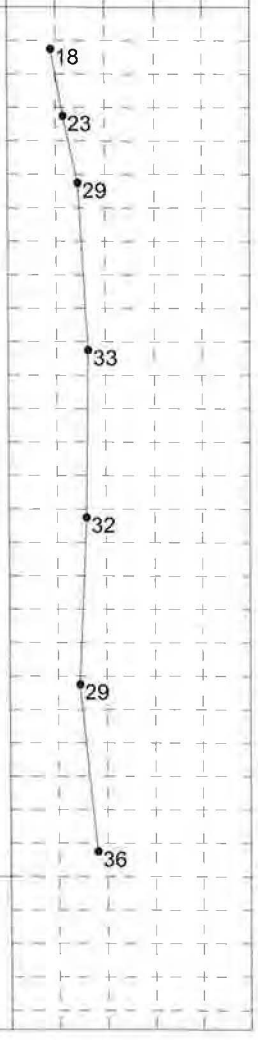
LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 3

During Drilling: None After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION
0			SS	6-8-10 18	5			
			SS	7-10-13 23	7			
5			SS	12-13-16 29	7			
10			SS	12-14-19 33	5		CL	SANDY CLAY, low to medium plasticity, moderately cemented, firm to very firm, slightly moist, tan/brown
15			SS	13-15-17 32	4			
20			SS	11-13-16 29	15			
25			SS	14-16-20 36	7			
30								STOPPED AUGER AT 24.5' STOPPED SAMPLER AT 26'



LOG OF TEST BORING 1-50606 STANLEY CYCLONE CENTER ARENA GPJ GEO TEST GDT 6/22/15

LEGEND

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Project: Stanley Cyclone Center Arena
Date: 06/11/2015 Project No: 1-50606
Elevation: Type: 5.5" OD HSA

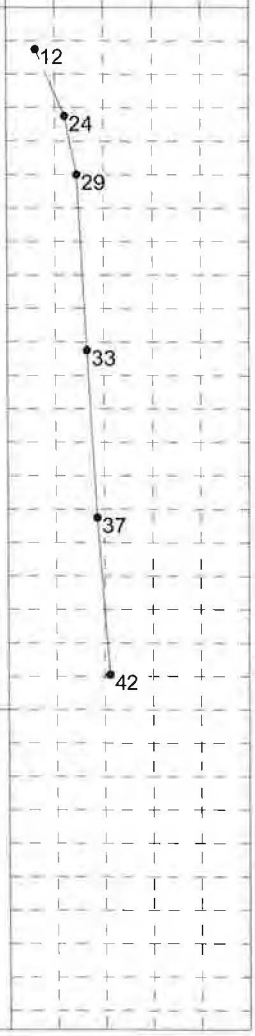
LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 4

During Drilling: None After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE INTERVAL	TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION
			SS	5-6-6 12	10			
			SS	7-11-13 24	10			
5			UD	9-20 29	9			
10			SS	11-15-18 33	13		CL	SANDY CLAY, low to medium plasticity, cemented, moderately firm to very firm, slightly moist, tan/brown
15			SS	14-16-21 37	12			
20			SS	13-19-23 42	11			
								STOPPED AUGER AT 19.5' STOPPED SAMPLER AT 21'
25								
30								



LOG OF TEST BORING 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15

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GEO-TEST

Project: Stanley Cyclone Center Arena
Date: 06/11/2015 Project No: 1-50606
Elevation: Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 5

During Drilling: None After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE INTERVAL	SAMPLE TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	DESCRIPTION	N blows/ft 20 40 60 80
			AC		9		CL	SANDY CLAY, moderately cemented, low to medium plasticity, firm, slightly moist, tan/brown	
5								STOPPED AUGER AT 4.5'	
10									
15									
20									
25									
30									

LOG OF TEST BORING 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15

LEGEND

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Project: Stanley Cyclone Center Arena
Date: 06/11/2015 Project No: 1-50606
Elevation: Type: 5.5" OD HSA

LOG OF TEST BORINGS

GROUNDWATER DEPTH

NO: 6

During Drilling: None After 24 Hours:

DEPTH (Ft)	LOG	SAMPLE INTERVAL	SAMPLE TYPE	N. BLOWS/FT	MOISTURE %	DRY DENSITY (pcf)	USC	SUBSURFACE PROFILE DESCRIPTION	N blows/ft 20 40 60 80
			AC		9		CL	SANDY CLAY, moderately cemented, low to medium plasticity, firm, slightly moist, tan/brown	
5								STOPPED AUGER AT 4.5'	
10									
15									
20									
25									
30									

LOG OF TEST BORING 1-50606 STANLEY CYCLONE CENTER ARENA GPJ GEO TEST GDT 6/22/15

LEGEND

SS - Split Spoon
AC - Auger Cuttings
UD/SL - Undisturbed Sleeve
AMSL - Above Mean Sea Level
CS - Continuous Sampler
UD - Undisturbed
ST - Shelby Tube

Stratification lines represent approximate boundaries between soil types. Transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurments were made.

SUMMARY OF LABORATORY RESULTS

						SIEVE ANALYSIS PERCENT PASSING											
TEST HOLE	DEPTH (FEET)	UNIFIED CLASS	(%) MOIST	LL	PI	NO 200	NO 100	NO 40	NO 10	NO 4	3/8"	1/2"	3/4"	1"	1 1/2"	2"	4"
1	0.5		6.1														
1	2.5	CL	6.9	28	12	67	77	87	96	99	100						
1	4.5	CL	6.8	30	16	73	80	88	96	99	100						
1	9.5	CL	10.2	29	16	87	91	95	98	98	98	100					
1	14.5	CL	9.7	33	19	59	68	77	85	88	92	92	100				
1	19.5		10.3														
1	24.5		7.9														
2	2.5	CL-ML	6.0	21	7	67	84	95	99	100							
2	4.5	CL	7.7	27	13	71	81	92	99	100							
2	9.5	CL	6.3	25	15	58	67	82	90	94	97	97	100				
2	14.5		9.8														
2	19.5		8.1														
3	0.5		5.2														
3	2.5	CL	7.1	29	13	73	84	94	99	99	100						
3	4.5		6.5														
3	9.5	CL	5.3	27	14	57	61	82	93	95	97	100					
3	14.5		4.0														
3	19.5	CL	15.2	37	21	84	92	98	99	100							
3	24.5		7.1														

GEO-TEST

LL = LIQUID LIMIT
PI = PLASTICITY INDEX
NP = NON PLASTIC or NO VALUE

Project: Stanley Cyclone Center Arena
Location: Stanley, New Mexico
Number: 1-50606

SUMMARY OF LABORATORY RESULTS 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15

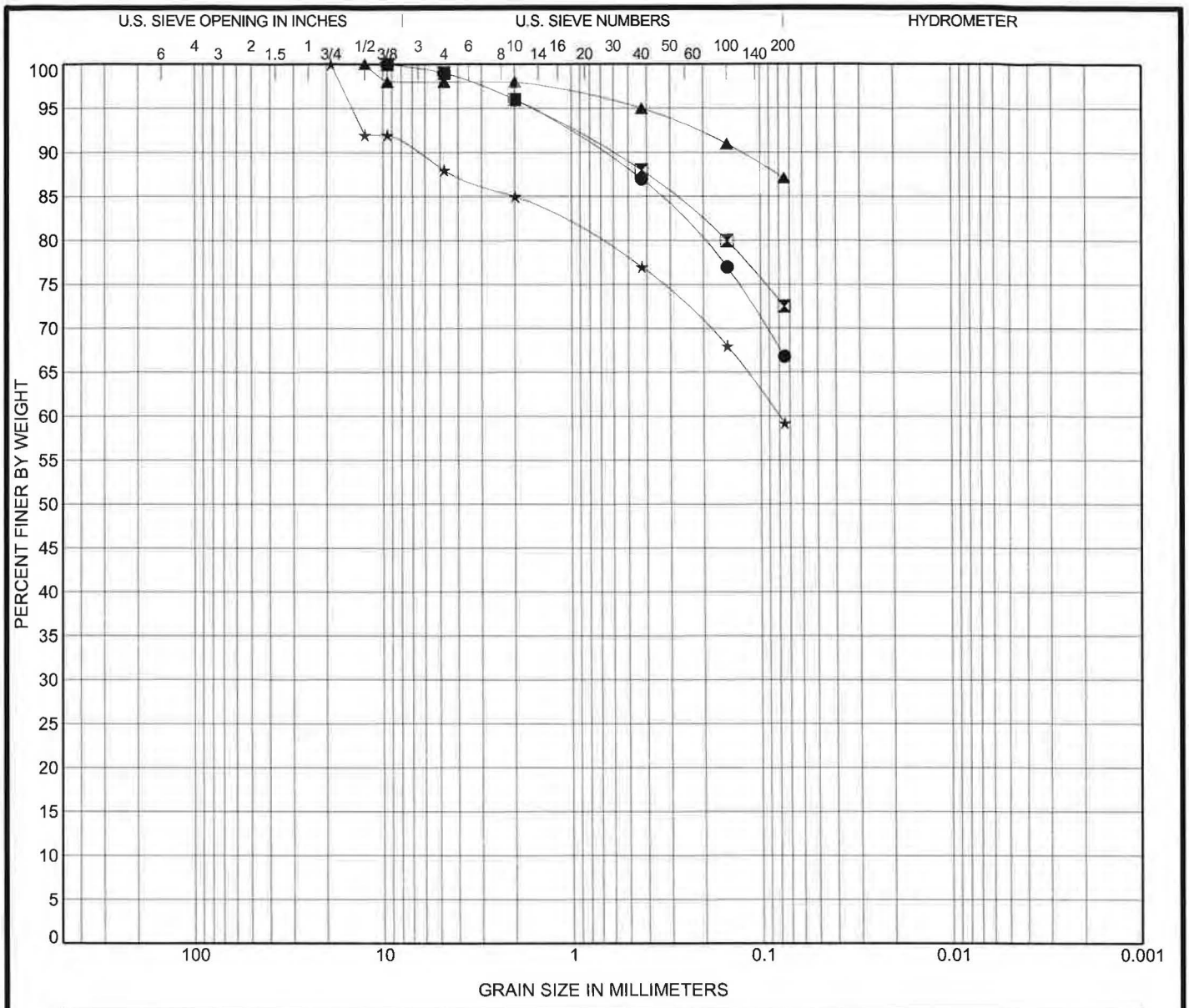
SUMMARY OF LABORATORY RESULTS

						SIEVE ANALYSIS PERCENT PASSING											
TEST HOLE	DEPTH (FEET)	UNIFIED CLASS	(%) MOIST	LL	PI	NO 200	NO 100	NO 40	NO 10	NO 4	3/8"	1/2"	3/4"	1"	1 1/2"	2"	4"
4	0.5		9.5														
4	2.5		10.0														
4	4.5	CL	9.0	32	17	74	87	94	98	100							
4	9.5	CL	12.6	32	18	80	89	97	100								
4	14.5	CL	11.7	33	18	85	89	95	99	100							
4	19.5		10.5														
5	0-4.5	CL	8.5	28	13	72	81	88	94	97	98	100					
6	0-4.5	CL	8.7	30	14	74	81	88	93	95	96	97	100				

GEO-TEST

LL = LIQUID LIMIT
PI = PLASTICITY INDEX
NP = NON PLASTIC or NO VALUE

Project: Stanley Cyclone Center Arena
Location: Stanley, New Mexico
Number: 1-50606



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	1	2.5	**SANDY LEAN CLAY(CL)**	**28**	**16**	**12**		
⊠	1	4.5	**LEAN CLAY with SAND(CL)**	**30**	**14**	**16**		
▲	1	9.5	**LEAN CLAY(CL)**	**29**	**13**	**16**		
★	1	14.5	**SANDY LEAN CLAY(CL)**	**33**	**14**	**19**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	1	2.5	**9.5**				**1.0**	**32.2**	**66.8**	
⊠	1	4.5	**9.5**				**1.0**	**26.5**	**72.5**	
▲	1	9.5	**12.5**				**2.0**	**10.9**	**87.1**	
★	1	14.5	**19**	**0.08**			**12.0**	**28.8**	**59.2**	

GEO-TEST

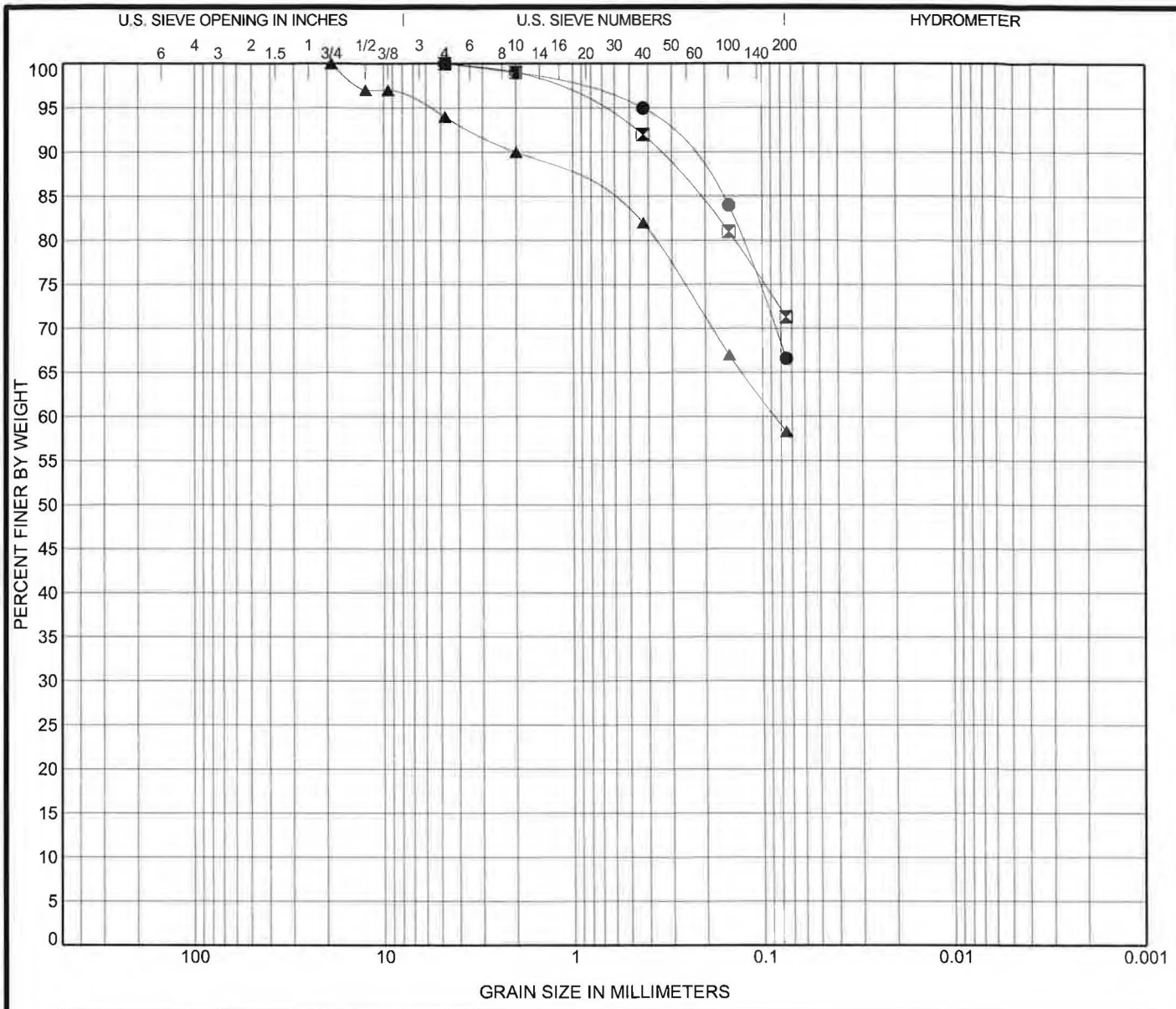
GRAIN SIZE DISTRIBUTION

Project: Stanley Cyclone Center Arena

Location: Stanley, New Mexico

Number: 1-50606

US GRAIN SIZE 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	2	2.5	**SANDY SILTY CLAY(CL-ML)**	21	14	7		
⊠	2	4.5	**LEAN CLAY with SAND(CL)**	27	14	13		
▲	2	9.5	**SANDY LEAN CLAY(CL)**	25	10	15		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	2	2.5	4.75				0.0	33.4	66.6	
⊠	2	4.5	4.75				0.0	28.7	71.3	
▲	2	9.5	19	0.086			6.0	35.7	58.3	

GEO-TEST

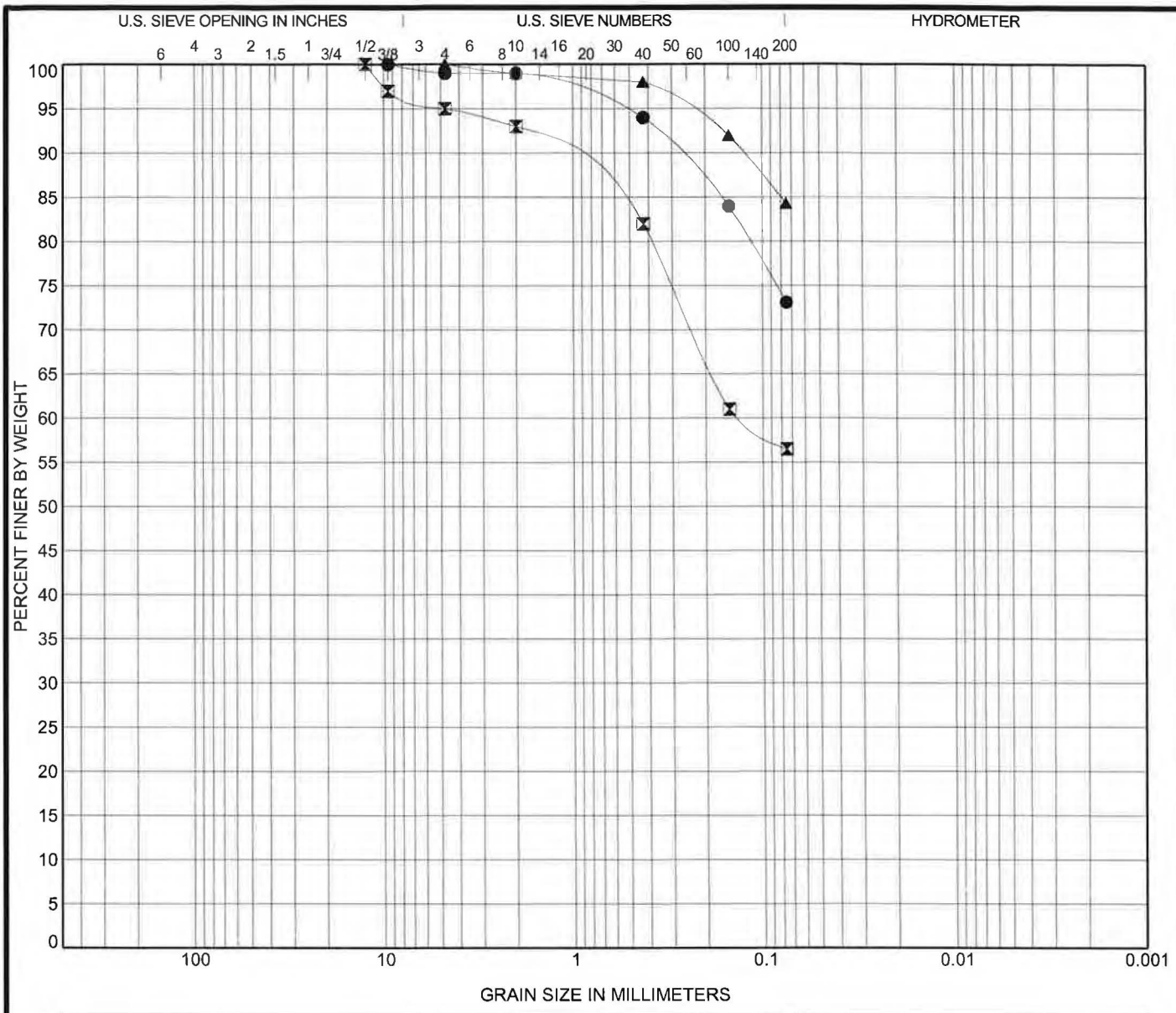
GRAIN SIZE DISTRIBUTION

Project: Stanley Cyclone Center Arena

Location: Stanley, New Mexico

Number: 1-50606

US GRAIN SIZE 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	3	2.5	**LEAN CLAY with SAND(CL)**	**29**	**16**	**13**		
⧓	3	9.5	**SANDY LEAN CLAY(CL)**	**27**	**13**	**14**		
▲	3	19.5	**LEAN CLAY with SAND(CL)**	**37**	**16**	**21**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	3	2.5	**9.5**				**1.0**	**25.9**	**73.1**	
⧓	3	9.5	**12.5**	**0.129**			**5.0**	**38.5**	**56.5**	
▲	3	19.5	**4.75**				**0.0**	**15.7**	**84.3**	

GEO-TEST

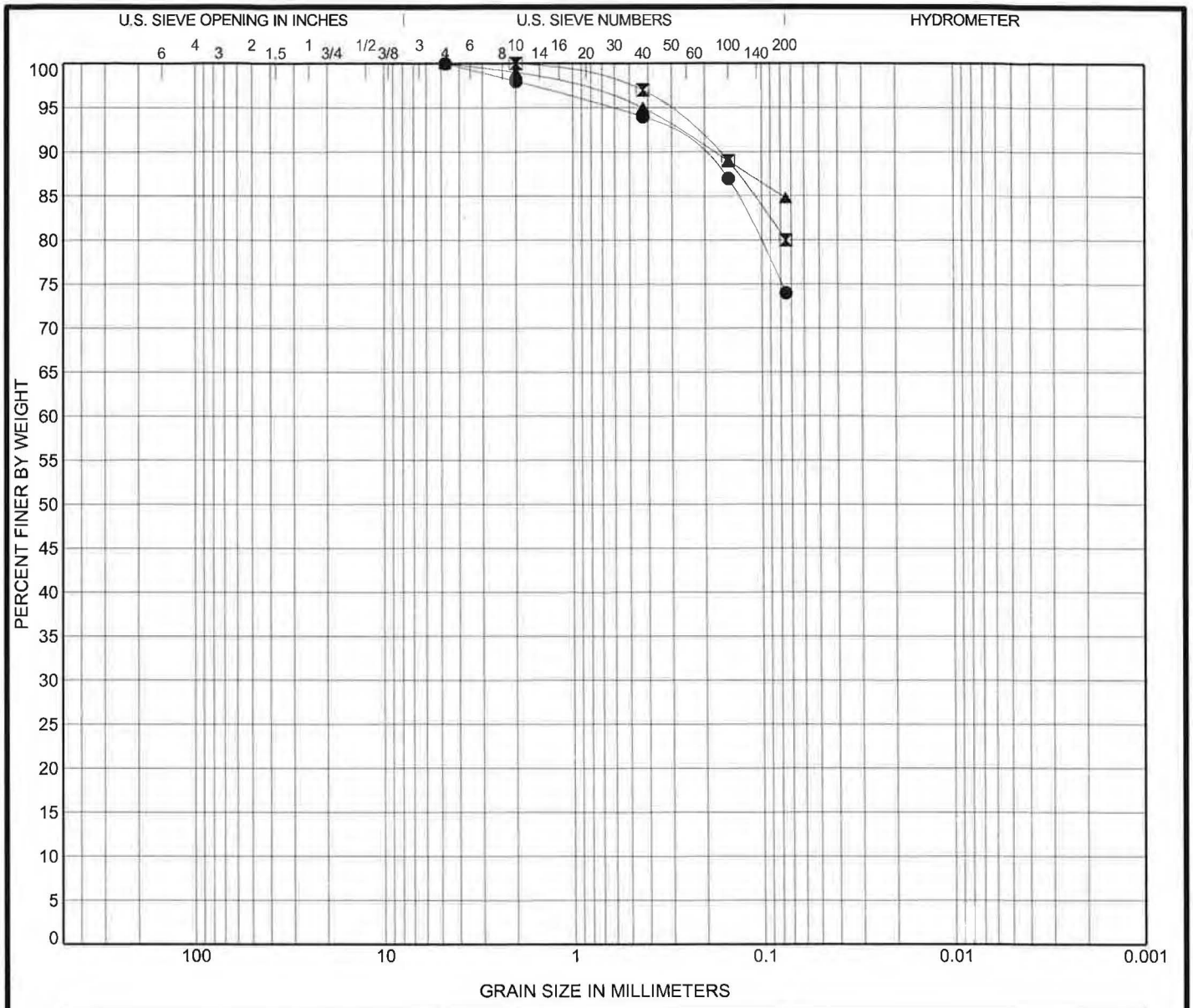
GRAIN SIZE DISTRIBUTION

Project: Stanley Cyclone Center Arena

Location: Stanley, New Mexico

Number: 1-50606

US GRAIN SIZE 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification			Classification	LL	PL	PI	Cc	Cu
●	4	4.5	**LEAN CLAY with SAND(CL)**	**32**	**15**	**17**		
⊠	4	9.5	**LEAN CLAY with SAND(CL)**	**32**	**14**	**18**		
▲	4	14.5	**LEAN CLAY with SAND(CL)**	**33**	**15**	**18**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	4	4.5	**4.75**				**0.0**	**26.0**	**74.0**	
⊠	4	9.5	**2**				**0.0**	**20.0**	**80.0**	
▲	4	14.5	**4.75**				**0.0**	**15.2**	**84.8**	

GEO-TEST

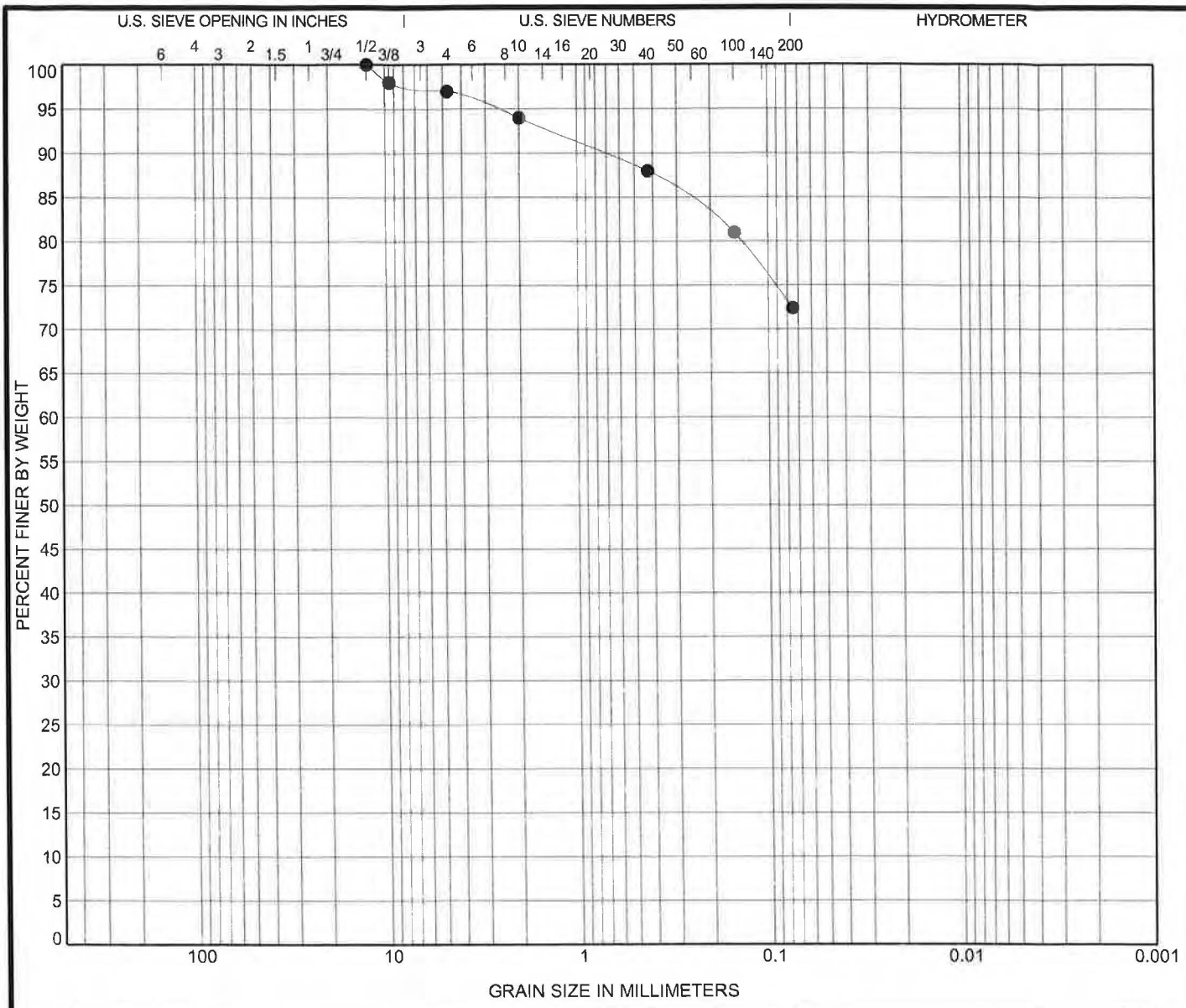
GRAIN SIZE DISTRIBUTION

Project: Stanley Cyclone Center Arena

Location: Stanley, New Mexico

Number: 1-50606

US GRAIN SIZE 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO_TEST.GDT 6/22/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● 5	0-4.5	**LEAN CLAY with SAND(CL)**	**28**	**15**	**13**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 5	0-4.5	**12.5**				**3.0**	**24.6**	**72.4**	

GEO-TEST

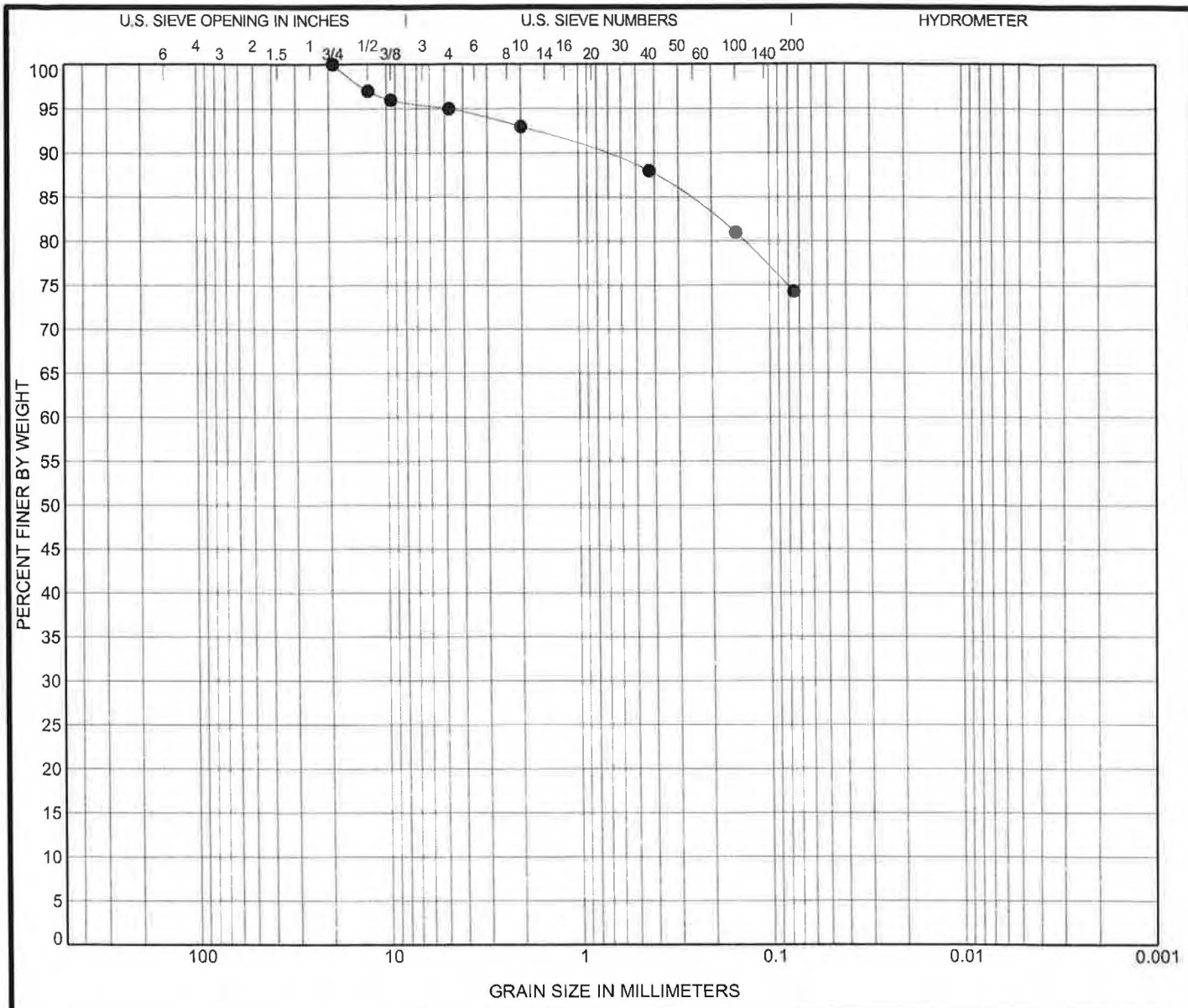
GRAIN SIZE DISTRIBUTION

Project: Stanley Cyclone Center Arena

Location: Stanley, New Mexico

Number: 1-50606

US GRAIN SIZE 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● 6	0-4.5	**LEAN CLAY with SAND(CL)**	**30**	**16**	**14**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 6	0-4.5	**19**				**5.0**	**20.7**	**74.3**	

GEO-TEST

GRAIN SIZE DISTRIBUTION

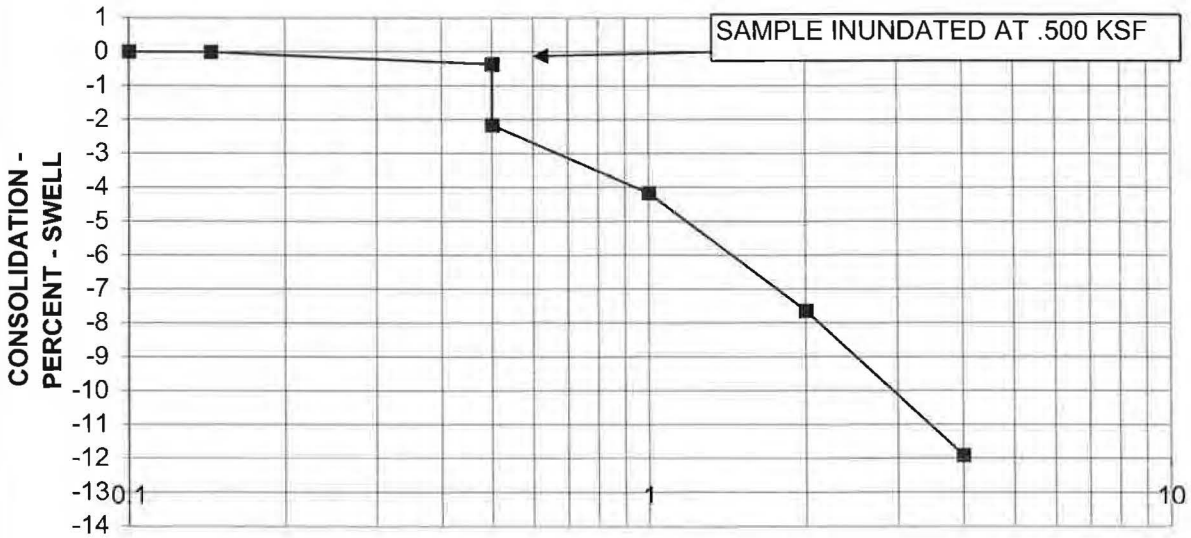
Project: Stanley Cyclone Center Arena

Location: Stanley, New Mexico

Number: 1-50606

US GRAIN SIZE 1-50606 STANLEY CYCLONE CENTER ARENA.GPJ GEO TEST.GDT 6/22/15

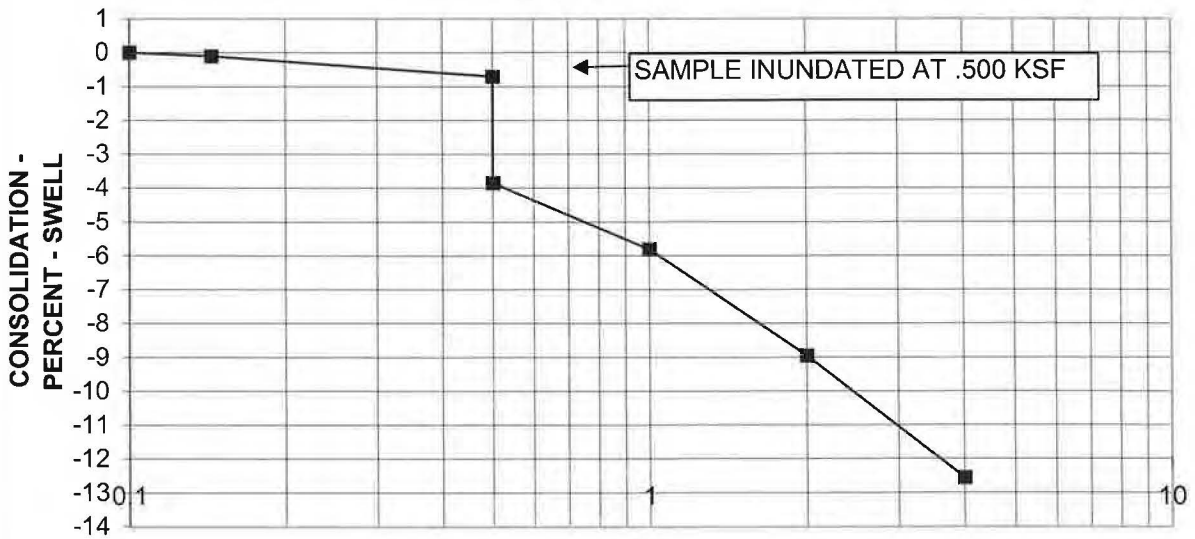
CONSOLIDATION TEST RESULT
STANLEY CYCLONE CENTER PROJECT
JOB NO. 1-50606



INITIAL MOISTURE CONTENT = 5.7 %
INITIAL DRY DENSITY = 88.1 PCF

Boring #2 @ 2.5'

CONSOLIDATION TEST RESULT
STANLEY CYCLONE CENTER PROJECT
JOB NO. 1-50606



INITIAL MOISTURE CONTENT = 8.0 %
INITIAL DRY DENSITY = 92.0 PCF

Boring #4 @ 2.5'