ADDENDUM NO. 2

March 20, 2023

LIBERTY AND WESTCHESTER INTERMEDIATE SCHOOLS - ATHLETIC SITE PROJECTS
Chesterton, IN 46304

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated March 3, 2023 by Gibraltar Design. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 2-1 through ADD 2- and attached Addendum No. 2 from Gibraltar Design dated March 20, 2023 and consisting of 7 pages and 2 drawings.

A. SPECIFICATION SECTION 00 20 00 - INFORMATION AVAILABLE TO BIDDERS

1. **Add:**

   The attached Geotechnical Reports for both locations.

B. SPECIFICATION SECTION 00 31 00 - BID FORM

1. **Replace:**

   The Bid Form with the attached revised Bid Form.

C. SPECIFICATION SECTION 01 23 00 - ALTERNATES

1. **Delete:**

ALTERNATE NO. 4: Liberty and Westchester Intermediate/Middle School Additional Lanes 9 & 10 of Asphalt/Base Stone, and Latex Track Surface - Complete. **Base Bid:** Original 8-Len Track System as indicated.

REPORT OF
GEOTECHNICAL ENGINEERING EXPLORATION
Proposed Additions & Improvements
Liberty Intermediate School
50 West 900 North, Chesterton, Indiana
AES Project No. 2021-1118LIS

Prepared For

Duneland School Corporation
601 West Morgan Avenue
Chesterton, Indiana 46304

C/O Mr. Chris Muvceski
The Skillman Corporation

October 8, 2021

Advanced Engineering Services (AES) Inc.
7439 Calumet Avenue I Hammond, IN 46324
219.933.7888 I www.adv-engrs.com

October 8, 2021

Duneland School Corporation
601 West Morgan Avenue
Chesterton, Indiana 46304

C/O Mr. Chris Muvceski, The Skillman Corporation

Re: Report of Geotechnical Engineering Exploration
Proposed Additions & Improvements at Liberty Intermediate School
50 West 900 North, Chesterton, Indiana
AES Project No. 2021-1118LIS

Dear Mr. Muvceski:

Advanced Engineering Services (AES) is pleased to submit herewith a report of a geotechnical exploration for the proposed additions and improvements at Liberty Intermediate School located at the referenced address in Chesterton, Indiana. This study was performed in accordance with AES Proposal No. 2021-272G dated September 1, 2021, which was authorized by Mr. Chris Muvceski of The Skillman Corporation.

This report contains field and laboratory test results, an engineering interpretation of the data with respect to the available project characteristics and our geotechnical engineering recommendations to aid design and construction of the foundations and other earth-related phases of this project.

AES appreciates the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact us at your convenience.

Respectfully submitted,
Advanced Engineering Services (AES) Inc.

Caitlynn E Hunt
Staff Scientist
ceh@adv-engrs.com

AKHTAR ZAMAN REGISTERED No. 10001091 STATE OF INDIANA PROFESSIONAL ENGINEER

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Principal Engineer
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Distribution: (electronic copy) Mr. Chris Muvceski, email: cmuvceski@skillman.com

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APPENDIX

1.0 INTRODUCTION

This report presents the results of a geotechnical engineering exploration for the proposed additions & improvements at the existing Liberty Intermediate School located at 50 West 900 North in Chesterton, Indiana. This study was performed in accordance with AES Proposal No. 2021-272G dated September 1, 2021.

1.1 Purpose and Scope

The purpose of the study was to: obtain subsurface soil and groundwater information present at the site based on test borings, evaluate the suitability of the encountered materials to support the proposed development, provide geotechnical engineering recommendations based on the field and laboratory tests for the design of the proposed foundations and earth-related phases of the project.

The scope of this exploration includes: a limited site reconnaissance, field soil borings, field and laboratory testing and an engineering evaluation of the encountered subsurface conditions based on the soil borings.

Please note that our recommendations are prepared solely based on the results of the field test borings and in accordance with generally accepted geotechnical engineering principles and practices. It is important to understand that the subsurface soil conditions at other locations may be different and hence no warranties are expressed or implied in this report. We are not responsible for independent conclusions, opinions or recommendations made by others.

1.2 Site and Project Description

We understand that various additions and improvements are planned at Liberty Intermediate School in Chesterton, Indiana. The project will reportedly include building additions on the south side of the existing school building and related site improvements. Based on the topographic drawing, the existing ground is relatively flat with the surface elevations varying from about 655 ft and 656 ft, MSL, in the proposed addition areas.

The new additions will presumably be one-storied structures with no basements. We assume that the finished ground floor elevations of the new additions will match with the existing buildings, which are at or slightly higher than the existing grade. We assume that the maximum column and wall loads will not exceed about 100 kips and 4 kips per linear ft, respectively. Floor areas of the proposed additions or other information were not available at the time of the exploration.

2.0 FIELD AND LABORATORY EXPLORATIONS

2.1 Field Exploration

The field exploration program consisted of a total of eleven (11) soil test borings for the building addition completed at the approximate locations shown on the Boring Location Plan included in the Appendix (Figure No. 1). Boring SB-1, which was completed inside the existing courtyard, was hand augured to a depth of 4 ft below the existing grade as it was not accessible to conventional drilling equipment. Borings SB-2 through SB-11 were completed to a depth of 20 ft below existing ground surface.

All test locations were established at the site based on the drawings provided to us by estimating distances from various existing site features. Since these measurements are not precise, the test locations shown on the attached Boring Location Plan should be considered approximate. Ground elevations reported on the logs were by client.

Indiana 811 as well as a private utility locator was utilized to mark existing underground utilities near each test locations. The soil borings were completed using a truck-mounted CME-550 drill-rig. Conventional hollow-stem augers were used to advance the boreholes through the soil. Standard Penetration Tests (SPT) were performed in accordance with applicable ASTM standards. Representative split-spoon samples were obtained at 2.5 ft and 5 ft intervals. The SPT (N) value corresponding to each split-spoon sample provides general information about the strength and consistency of the naturally occurring materials. The Soil Classification Sheet provided in Appendix explains the SPT test procedure in brief.

Groundwater observations were made during and immediately after completion of the drilling operations. SPT values and groundwater observations are noted on the respective Test Boring Logs. The bore holes were backfilled with auger cuttings after the drilling.

2.2 Laboratory Explorations

Samples from the field were placed in sealed containers and brought to the laboratory for further analysis. The laboratory program included a supplementary visual classification on all samples and the field logs were edited accordingly. Moisture contents, organic contents, unconfined compressive strength, and plasticity index tests were completed on selected samples and included on the respective logs or in the Appendix.

The Test Boring Logs in the Appendix describe visual classifications of all soil strata encountered using the Unified Soil Classification System (USCS). Soil classification explaining terms and symbols used on the logs is provided in the Appendix. Please note that we will store the samples for sixty (60) days after which they will be discarded unless you request otherwise.

3.0 GENERAL SUBSURFACE CONDITIONS

3.1 General

The subsurface materials encountered and groundwater observations at each boring are described in detail on the Test Boring Logs provided in the Appendix. It should be noted that stratification lines shown on the boring logs represent approximate transitions between material types. In-situ strata changes could occur gradually or at slightly different levels. Also, it should be noted that the boring logs depict conditions at the soil boring locations only and the subsurface conditions at other locations may vary. Some conditions, such as groundwater conditions, could change with time.

3.2 Subsurface Soil Conditions

All borings revealed old fills consisting of dark brown sandy clay in most cases with topsoil from the existing ground surface to depths of about 6 inches and 6 ft below the existing ground surface. Moisture and organic contents of the fill samples were about 29% and 2.9%.

All soil borings then revealed interbedded layers of brown to gray sandy clay (CL), silt with clay (ML), and lean clay (CL) to the termination depths of 4 ft and 20 ft below existing ground surface. Based on the field Standard Penetration Test (SPT) values, the native clayey soils were soft to very stiff. Moisture contents of the native samples were between 12.1% and 22.9%.

3.3 Groundwater Profile

Groundwater observations were made during and immediately after drilling. Perched water was noted only in Boring SB-7 at a depth of about 19 ft below the existing grade immediately after drilling. Please note that short-term groundwater observations in test borings do not provide an accurate groundwater information and groundwater conditions may change due to precipitation and other hydro-geologic factors. Perched water trapped in granular seams or drain tiles are common in clayey soils and may be encountered at shallow depths during construction.

3.4 Laboratory Test Results

Various laboratory tests were completed to understand the engineering characteristics of the subsurface soil and reported on the Test Borings Logs or provided in the Appendix. Moisture contents of selected samples were discussed earlier. Unconfined compressive strength and Plasticity index tests completed on selected samples are summarized below:

Table-3.1: Summary of Unconfined Compression and Plasticity Index Test Results

Boring Nos.	Depth ft	Unconfined Compressive Strength, tsf	Shear Strength tsf	Dry Density, pcf	Moisture %	Liquid Limit	Plastic Limit	Plasticity Index	USCS
SB-5	3.5-5	0.5	0.25	89.7	29	37	14	23	CL
SB-8	3.5-5	0.9	0.45	112.8	21	28	14	14	CL

4.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

4.1 General

Based upon our analysis of the soil conditions revealed by the test borings and the available project information, the following recommendations were developed. Please note that if the project characteristics are changed from those assumed herein, our recommendations must be reviewed to see whether any modifications are needed.

4.2 Shallow Spread Foundation Recommendations

Provided all existing old fills, remnants of previous construction, vegetation, topsoil, organics, soft and otherwise unsuitable materials are removed completely from the footing areas, the proposed foundations may be supported on shallow spread footings designed for a net allowable bearing pressure not to exceed 3,000 psf provided the foundations bear on suitable natural soils of the type noted in the test borings or engineered fill bearing on such materials. Based on the recommended allowable bearing pressure, the anticipated footing sizes and depths, it is estimated that post-construction total and differential settlements will be on the order of about 1 inch and ½ inch, respectively, between similarly loaded columns or along continuous footings that are 30 ft long or less. While the test borings suggest that the old fills extend to as much as about 6 ft below current ground surface, depth of unsuitable materials may be different at other locations. All foundation subgrade should be observed by a representative of AES to verify that all unsuitable materials are removed and replaced from the foundation areas.

Since the proposed footings may be constructed adjacent to existing foundations, it is very important that the integrity of the existing structures like, existing footings and floor slabs, are protected as discussed in Section 5.3 of this report. All footings should be located so that the least clear distance between any two footings will be at least equal to the difference in their bearing elevations as illustrated in Figure No. 2 in the Appendix. If this distance cannot be maintained, the lower footings must be able to withstand the load imparted by the upper footings.

In using net allowable soil pressures, the weight of the footings and backfill over the footings, including the floor slab need not be included for dimensioning. The wall and column footings should be at least 18 inches wide and 30 inches square, respectively. The perimeter footings and footings in unheated areas must bear a minimum depth of 3.5 ft below the final exterior grade or as per applicable building code requirements, whichever is deeper, to provide frost protection. The interior footings may bear at a suitable depth provided they bear on suitable materials.

Uplift forces on the footings can be resisted by the weight of the footings and the soil material that is placed over the footings. It is recommended that the soil weight be limited to that immediately above and within the perimeter of the footings (unless a much higher factor of safety is used). A total soil unit weight of 120 pounds per cubic foot (pcf) can be used for the backfill material above the footings, provided it is compacted, as recommended in Section 5.4 of this report. It is also recommended that a factor of safety of at least 1.2 be used for calculating uplift resistance from the footings (provided only the weight of the footing and the soil immediately above are used to resist uplift forces).

Lateral forces on shallow spread footings can be resisted by the passive lateral earth pressure against the side of the footing and by friction between the subgrade soil and the base of the footing. An allowable passive pressure of 500 psf can be used for that portion of the footing that is below a depth of 2.5 ft below the final exterior grade (no portion of the footing above this depth should be used for lateral resistance). An allowable coefficient of friction value of 0.20 (which includes a factor of safety of 1.5) may be used between concrete and the underlying soil.

Geologic mapping and the results of the borings suggest that the subsurface conditions at this site meet the criteria for Site Class D with corresponding to a shear wave velocity of between 600 ft/sec and 1,200 ft/sec, based on Section 1613.5.2 of the 2014 International Building Code (IBC).

4.3 Ground Supported Floor Slabs

Ground supported floor slab can be supported on existing soils after removing existing vegetation, remnants of previous construction, topsoil, highly organic materials (over 5% organic), soft or otherwise unsuitable materials and provided they appear suitable under proof-roll observation or on new compacted structural fill. The slab subgrade should be prepared and observed as described in Section 5.2 of this report.

It is recommended that the ground supported floor slabs be supported on at least 6 inches of compacted granular materials such as sand and gravel or crushed stone. This is to help distribute concentrated loads and equalize moisture conditions beneath the slab. It is further recommended that all floor slabs be "floating", that is, fully ground supported and not structurally connected to walls or foundations. This is to minimize the possibility of cracking and displacement of the floor slabs because of differential movements between the slab and the foundation.

Based upon the soil conditions encountered at the proposed site and at least 6 inches of compacted granular coarse aggregate is placed below the floor slab and all existing unsuitable fill containing organics are replaced with engineered fill, the modulus of vertical subgrade reaction (k_{30}) for the shallow soil is estimated to be at least of 100 pounds per square inch per inch (psi/inch) of vertical deflection.

A vapor barrier may be placed immediately beneath the slab to facilitate the application of moisture sensitive floor coverings, if desired. The floor slab should be appropriately reinforced to support the loads proposed and should include control joints to preclude random cracking.

Particular attention should be given to the placement of backfill against the building foundations as inadequate compaction in these areas may cause cracking of the slab edges and corners due to subsidence of the backfill.

4.4 Drainage

Adequate drainage must be provided at the site to minimize any increase in moisture content of the foundation soils. Exterior grades should be sloped away from the structure to prevent ponding of water near foundations. Water from gutters must be diverted away from the foundations to minimize ponding of water near the foundations.

5.0 RECOMMENDED EARTHWORK PROCEDURES

5.1 General

The subsurface exploration identified actual subsurface conditions only at the test locations. It was necessary to extrapolate these conditions in order to characterize the entire project site. For this reason, the subsurface conditions encountered during construction may vary somewhat from the boring results and may in the extreme case, differ to the extent that modifications to the recommendations become necessary. Therefore, we suggest that AES be retained as the geotechnical consultant throughout the earth-related phases to correlate actual soil conditions with the test boring data, identify variations, conduct additional tests that may be needed and recommend solutions to earth-related problems that may develop during construction.

5.2 Site Preparation

All structural areas should be prepared properly for long-term performance. It is important to note that improper earthwork may deteriorate the otherwise suitable subgrade. This is especially important for this site as old fill materials were noted throughout the site. The time period between late spring and early fall are typically favorable for earthwork in the project area. Earthwork activities undertaken during late fall and winter often encounter substantial difficulties associated with snow, rain and cold temperatures. The contractor must take adequate precaution to minimize deterioration of an otherwise suitable subgrade especially from construction traffic.

Remnants of all previous construction, existing vegetation, topsoil, soft, highly organics (over 5%) or otherwise unsuitable materials, as well as frozen, wet, soft or loose soils should be removed from the structural areas. The mass grading operation should be performed in a manner consistent with good erosion and sediment control practice. The contractor must maintain the construction area in a well-drained condition both during and after construction. Positive drainage is an important part of successful earthwork operations and long-term performance. Improper site drainage can increase the need for remedial treatment of excessively wet soils. Disturbed areas should be sealed off with smooth drum roller at the end of each workday and prior to anticipated inclement weather to minimize infiltration of rain water.

After rough grade has been established in cut areas and prior to placement of fill, the exposed subgrade should be carefully observed by an AES representative by probing or other methods of testing. The exposed subgrade should furthermore be observed by proof-rolling with a tandem-axle dump truck loaded with at least 20 tons or similar, where practical. The purpose of the proof-rolling is to locate soft, weak, or excessively wet soils present at the surface or beneath a thin crust of relatively stronger soil during the construction. The proof-roll should cover the entire area in two perpendicular directions. If an area is too small to be proof-rolled, it must be observed by an AES representative, to establish its suitability. All unsuitable materials observed during the evaluation should be replaced or stabilized appropriately. Suitable exposed subgrade should be surface compacted prior to the placement of new fills, aggregate base or concrete.

The near surface materials encountered in the borings consist of silty and clayey materials. Depending on the weather conditions, these soils may become loose, soft and unstable under construction traffic, rain and poor drainage. It is very important for the contractor to realize that

construction traffic must be controlled within the structural areas (building and pavement areas) to minimize disturbance and deterioration of the subgrade. The extent to which this may be a problem is difficult to determine beforehand since it is dependent upon several factors including cut and fill depths, weather conditions, drainage provisions, variations in soil conditions across the site, sequencing and scheduling of the earthwork and construction traffic, etc. Proper crowning of subgrade soil helps to minimize water ponding and reduces the possibility of deteriorating subgrade or underlying soils.

In general, yielding subgrade problems are more prominent in cut areas (where saturated or nearly saturated clayey soils are exposed by the excavation) or where little or no fill is placed. Depending on these factors, it may be possible to stabilize some yielding subgrade soils by disking, aerating and then re-compacting the soils. However, this is often unsuccessful, particularly when the weather conditions do not permit drying of wet soil. In such case, it may be necessary to undercut and replace with coarse aggregate with geo-grid or to use chemical modification (such as lime, fly-ash, cement, etc.). An AES representative should be present during the earthwork to identify areas where special stabilization may be necessary and verify that these recommendations are implemented during construction.

5.3 Excavation and Slope Stability

There should not be any significant difficulty in excavating soils at this site with conventional equipment. Unless specified otherwise, all permanent cut slopes should be no steeper than 3 horizontal to 1 vertical. All temporary excavations for the construction of foundations, utilities, etc., should be properly laid back or braced in accordance with Occupational Safety and Health Administration (OSHA) requirements. Flatter cut slopes may be required in cases where there is ground water seepage or the foundation soils are particularly poor.

Where new fill is placed against existing slopes that are steeper than 4 (horizontal) to 1 (vertical), it will be necessary to bench (at least 10 ft wide) into the new fill into the existing slope in order to provide a good bond between the existing soil and the new fill and to prevent the development of a zone of weak soil at the interface. If spatial constraints will not permit an open cut, bracing will be required for any excavation deeper that 5 ft.

Care must be exercised when excavating near the existing buildings, streets, underground utilities, etc., to protect the integrity of the existing facilities. Bracing may be required if it becomes necessary to excavate below and in close proximity to such facilities. All temporary bracing for deep excavations should be designed and installed by an experienced specialty contractor.

5.4 Engineered Fill

Once the subgrade has been properly prepared, fill may be placed in order to attain desired final grades. In general, any non-organic, naturally occurring, non-expansive soils can be used for structural fill. However, it is recommended that only sand and gravel or preferably crushed limestone (INDOT 53 gradation or similar) or lean concrete be used in the footing areas.

The proposed soil fill materials should consist of soil with the following characteristics:

- Organic content less than 5% by dry weight of soil,
- Liquid Limit less than 50 and Plasticity Index less than 30,

- Free of large rock fragments (no particles larger than 3 inches in diameter), debris, roots, rubble, wood or any other deleterious materials,
- The amount retained on a ¾ inch sieve should be less than 30%,
- The maximum dry density (ASTM D-698) should be at least 100 pcf,
- The soil fill should meet the requirements of the Unified Soil Classification System (USCS) (ASTM D-2487) as either CL, CL-ML, SM, SC, SP, SW, SP-SM, SC-SM, SP-SC, SW-SM, SW-SC, GW, GW-GM or GW-GC,
- The use of an essentially one-size material should not be permitted.

All engineered fill with fines should be placed in about 8 to 10 inches loose horizontal lifts and compacted to at least 95% of the maximum dry density determined by the standard Proctor test (ASTM D-698). The soils should be placed and compacted at moisture contents within 3% of the optimum moisture content as determined by the specified Proctor test. Suitable equipment for either aerating or adding water should be available as the soil moisture and weather conditions dictate. In general, smooth-wheel vibratory rollers or skid-plates are suitable for compacting non-cohesive gravel and sand fill type soils.

It is recommended that AES should perform continuous review of the soils related phases of this project. Otherwise, AES can assume no responsibility for construction compliance with the design concepts, specifications, or our recommendations. As part of this review, field density tests should be performed as frequently as necessary to assist in the evaluation of the fill with respect to the above recommendations.

5.5 Shallow Foundation Subgrade Observation

The exposed foundation subgrade should be carefully observed to verify that the new footings are placed on suitable bearing materials. Representative hand auger borings may be performed in the excavations to verify that the materials at the foundation subgrade resemble those encountered in the test borings. Although the test borings revealed old fills to about 6 ft, deeper unsuitable materials may be present at other locations.

Remnants of all previous development, old fills, existing vegetation, topsoil, organics, soft and otherwise unsuitable materials should be completely removed from the footing areas and replaced with suitable compacted engineered fill (Section 5.4) or lean concrete. The dimensions of the undercut excavations base should be determined by imaginary planes extending outward and downward a 2 (vertical) to 1 (horizontal) slope from the perimeter of the footings. Please refer to Figure No. 3 in the Appendix. The use of lean concrete, does not require the excavation to be widened, but it does require that the concrete be allowed to set-up so that it can support the weight of the foundation concrete.

Special care should be exercised to remove any sloughed, loose or soft materials near the base of the excavation slopes. In additions, special care should be taken to "tie-in" the compacted fill with the excavation slopes, with benches as necessary, to ensure that no pockets of loose or soft materials will be left in place along the excavation slopes below the foundation bearing level.

All foundation bearing surfaces should be protected against freezing, flooding by surface water, and undue disturbance, since the foundation soils will tend to soften and loose strength when subjected to these conditions. Surface run-off water should be drained away from the excavation and not allowed to pond.

Footing concrete should be placed the same day that footing excavations are completed, unless lean concrete is used to backfill the excavations to design bearing elevation, in which case the footing concrete should be placed as soon as it can be suitably supported by the lean concrete.

5.6 Groundwater Control

Since perched groundwater was noted in one of the borings at a depth of about 19 ft, no major dewatering is expected. However, groundwater condition may change and the contractor must be prepared to handle both surface and groundwater during excavations and site work.

If water accumulates or ponds in the construction area, it should be promptly and properly removed. Water may be pumped directly from an excavation terminating in clayey soils. However, any dewatering should be performed with caution as improper dewatering may deteriorate the subgrade as well as nearby structures. An experienced dewatering contractor should be hired to design and install dewatering system.

6.0 LIMITATIONS OF STUDY

Differing Site Conditions
Geotechnical engineering recommendations were developed based on the information obtained from the test borings at the site. Please note that soil test borings only depict the subsurface soil and groundwater conditions at the specific locations and time at which they were made. The soil conditions at other locations at the site may differ from those occurring at the soil boring locations. Groundwater condition may change over time. If deviations from the noted subsurface conditions are encountered during construction, please notify us immediately for recommendations.

Not Final Design
This report and the recommendations included in the report are not a final design, but rather as a basis for the final design to be completed by others (architect, civil or structural engineers, etc.). It is the client's responsibility to ensure that the recommendations are properly integrated into the design, and that the geotechnical engineer is provided the opportunity for design input and comment, as needed. We recommend that this firm be retained to review the final construction documents to confirm that the proposed project design sufficiently reflects the recommendations presented in the report. We also suggest that our firm be represented at pre-bid and/or pre-construction meetings regarding this project to offer any needed clarification of the geotechnical information to all involved.

Changes in Plans
The recommendations presented herein are based on the preliminary design details furnished by the client and/or as assumed herein. Any revision in the plans for the proposed construction from those anticipated in this report should be brought to the attention of the geotechnical engineer to determine whether any changes in the foundation or earthwork recommendations are necessary.

Construction Issues
Although general constructability issues have been considered in this report, the means, methods, techniques, sequences and operations of construction, safety procedure, and all items incidental thereto and consequences of, are the responsibility of parties to the project other than AES. Please contact us if additionsal guidance is needed.

Report Interpretation
AES is not responsible for the conclusions, opinions, or recommendations made by others based upon the data included herein. It is the client's responsibility to seek any guidance and clarifications from the geotechnical engineer needed for proper interpretation of this report.

Environmental Considerations
The scope of our services does not include any environmental assessment or exploration for the presence or absence of hazardous or toxic materials in the soil, surface or groundwater, water within or beyond the site studied. Unless complete environmental information regarding the site is already available, an environmental assessment is recommended prior to the development of this site.

Standard of Care
Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This statement is made in lieu of all other warranties either expressed or implied.

APPENDIX

BORING LOCATION PLAN

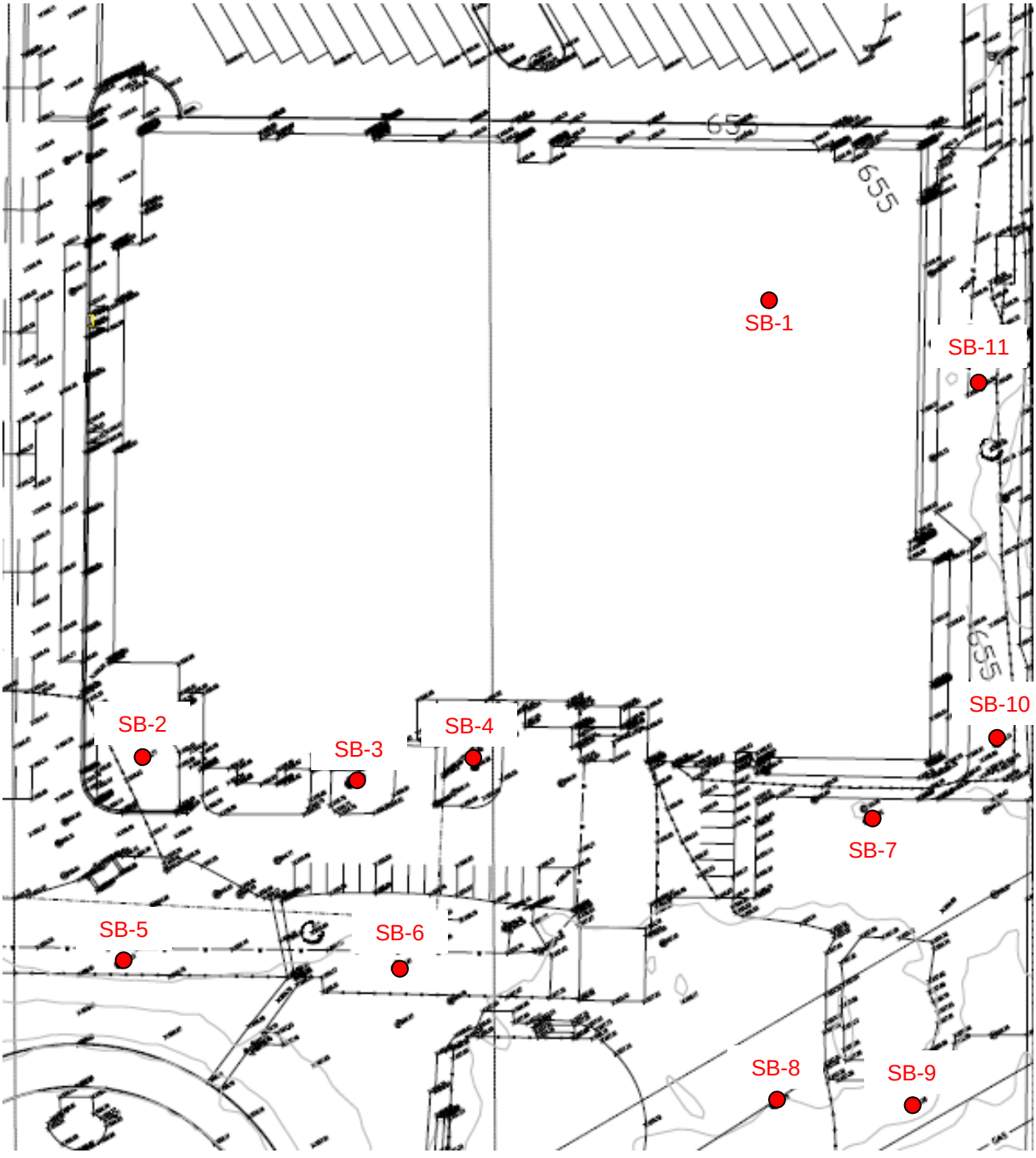
ADJACENT FOOTINGS

FOOTINGS IN UNDERCUT AREAS

TEST BORING LOGS

LABORATORY TEST RESULTS

FIELD CLASSIFICATION SYSTEM



N
W E
S

Scope of Work:
Courtyard: SB-1 to 4 ft.
Building Addition: SB-2 – SB-11 to 20 ft.

ORIGINAL DRAWING PROVIDED BY CLIENT
BORING LOCATIONS ARE APPROXIMATE

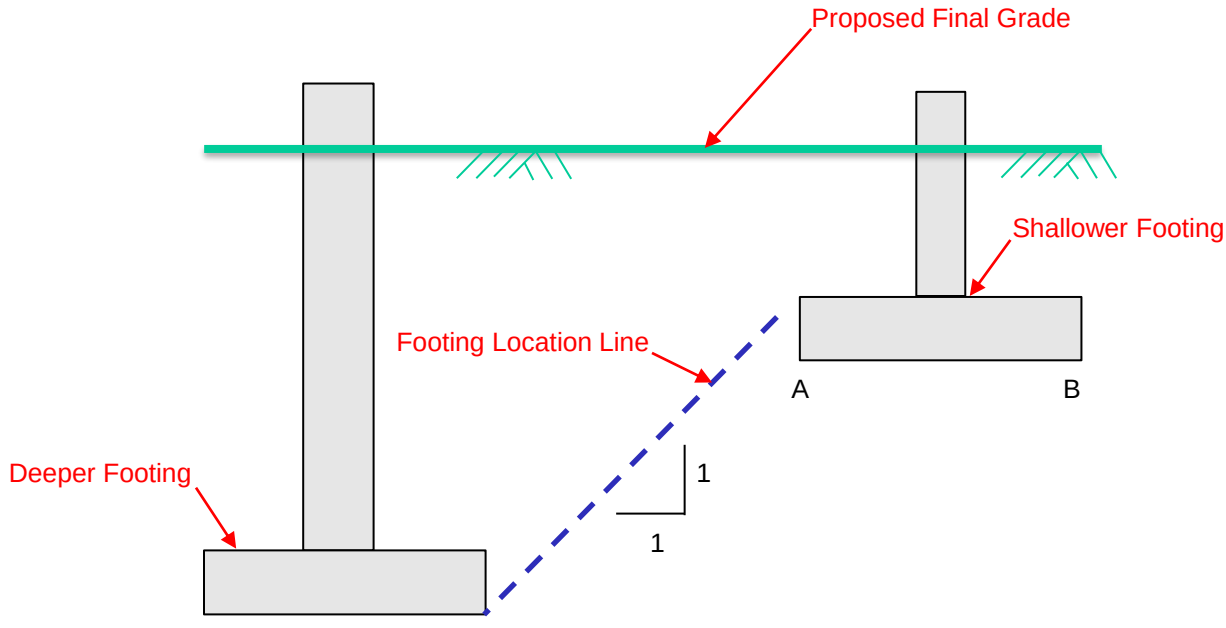
BORING LOCATION PLAN

PROPOSED ADDITIONS AND IMPROVEMENTS AT
LIBERTY INTERMEDIATE SCHOOL
50 W COUNTY ROAD 900 N
VALPARAISO, INDIANA
CLIENT: DUNELAND SCHOOL CORP. C/O: SKILLMAN

PROJECT NUMBER: 2021-1118G		DRAWN BY: CH
DATE: 10-06-21	SCALE: NONE	REVIEWED: AZ

aes advanced engineering services

FIGURE
1

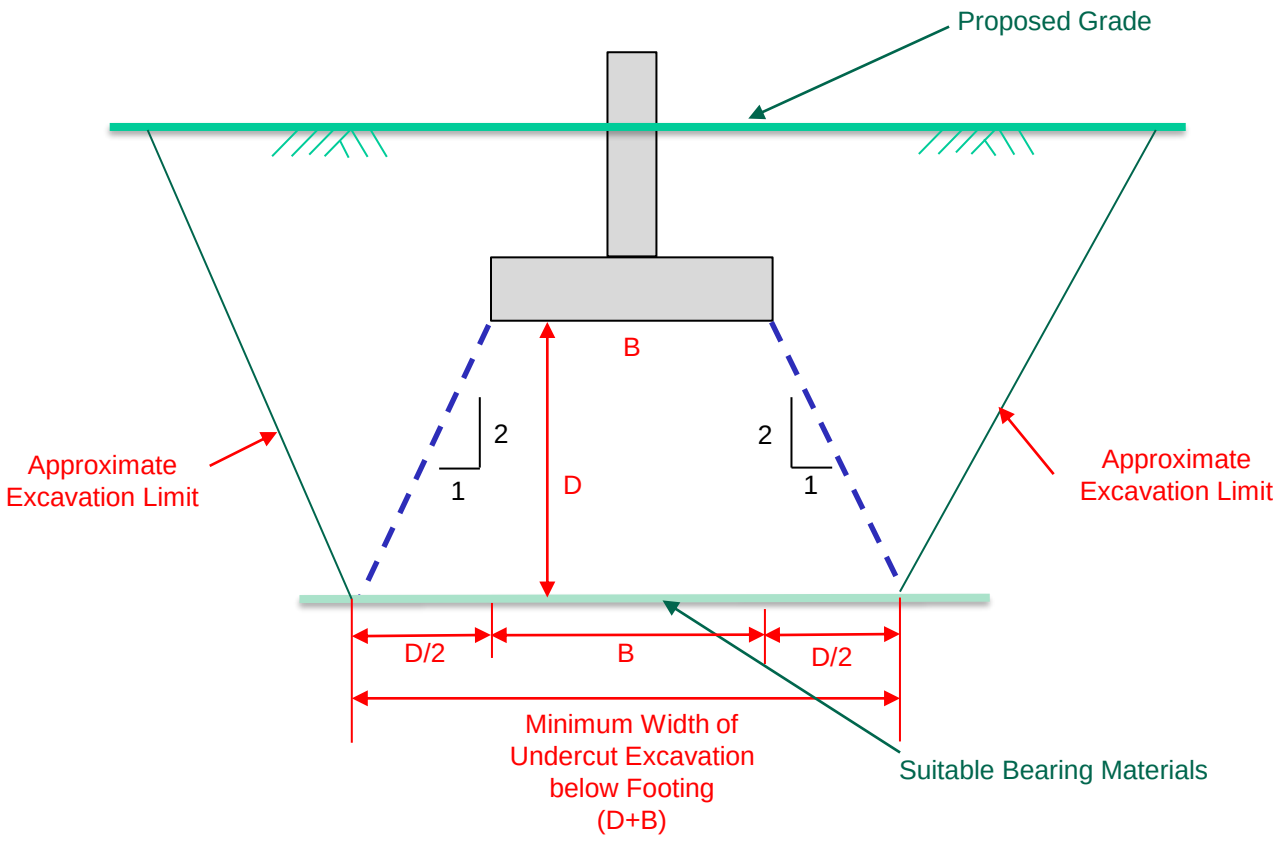


Bearing Surface AB of Shallower Footing Must be Below the Dashed Footing Location Line with respect to the Deeper Footing

ADJACENT FOOTINGS

PROPOSED ADDITIONS AND IMPROVEMENTS AT
LIBERTY INTERMEDIATE SCHOOL
50 COUNTY ROAD W 900 N, CHESTERTON, INDIANA
CLIENT: DUNELAND SCHOOL CORPORATION

PROJECT NUMBER: 2021-1118LIS		DRAWN BY: JV
DATE: 10/04/21	SCALE: NONE	APPROVED: AZ
aes advanced engineering services		Figure: 2



UNDERCUT IN FOOTING AREAS

PROPOSED ADDITIONS AND IMPROVEMENTS AT
LIBERTY INTERMEDIATE SCHOOL
50 COUNTY ROAD W 900 N, CHESTERTON, INDIANA
CLIENT: DUNELAND SCHOOL CORPORATION

PROJECT NUMBER: 2021-1118LIS		DRAWN BY: JV
DATE: 10/04/21	SCALE: NONE	APPROVED: AZ
aes advanced engineering services		FIGURE 3

Advanced Engineering Services
7439 Calumet Avenue
Hammond, IN, 46324
Telephone: 219 933 7888

BORING NUMBER SB-1

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/28/21 **COMPLETED** 9/28/21
GROUND ELEVATION 655 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR AES
GROUND WATER LEVELS:
DRILLING METHOD HA
AT TIME OF DRILLING --- None
LOGGED BY CH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client. Hand Auger Performed.
AFTER DRILLING --- None

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0.0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(CL) Brown Sandy Clay, Trace Gravel, Moist	GB 1			2.75		14.4				
2.5		(CL) Brown and Gray Lean Clay, Trace Gravel and Sand, Moist	GB 2			2.25		13.1				
			GB 3			2.5		14.8				
			GB 4			0.75		21.1				

Bottom of borehole at 4.0 feet.

Advanced Engineering Services
7439 Calumet Avenue
Hammond, IN, 46324
Telephone: 219 933 7888

BORING NUMBER SB-2

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 655.77 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- Dry Cave at 15 ft.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(FILL) Dark Brown to Black Silty Clay, Trace Organics and Gravel SS#1: Organic Content = 2.2%	SS 1		6-6-6 (12)			15.0				
		(ML) Brown and Gray Silt with Clay, Trace Gravel and Sand, Moist, Medium Stiff	SS 2		2-3-5 (8)	1.5		19.5				
5												
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Stiff	SS 3		4-5-6 (11)	3.5		13.0				
			SS 4		5-8-9 (17)	4.5		13.5				
10												
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Stiff	SS 5		4-5-6 (11)	4.0		13.2				
			SS 6		3-5-7 (12)	4.5		12.7				
15												
			SS 7		3-4-7 (11)	4.5		13.3				
20												

Bottom of borehole at 20.0 feet.

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BORING NUMBER SB-3

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 656.03 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- Dry Cave at 15 ft.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(ML) Brown Silt with Clay, Trace Gravel and Sand, Moist, Stiff	SS 1		5-5-6 (11)	3.0		15.4				
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Stiff to Very Stiff	SS 2		5-6-8 (14)	4.5		13.9				
5			SS 3		5-5-7 (12)	4.5		15.0				
			SS 4		3-5-9 (14)	4.5		14.5				
10			SS 5		4-6-13 (19)	4.5		15.0				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Stiff	SS 6		4-5-7 (12)	3.0		13.9				
15												
			SS 7		3-5-7 (12)	4.0		13.6				
20		Bottom of borehole at 20.0 feet.										

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BORING NUMBER SB-4

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 656.22 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- No Cave

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(CL) Brown Sandy Clay with Silt, Trace Gravel, Moist, Stiff	SS 1		3-5-6 (11)	4.5		13.4				
5		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Very Stiff	SS 2		2-5-7 (12)	4.5		14.0				
			SS 3		2-3-6 (9)	3.0		15.4				
10			SS 4		5-12-13 (25)	4.5		14.0				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Stiff	SS 5		4-7-7 (14)	4.5		13.2				
15			SS 6		4-5-9 (14)	4.5		12.1				
20			SS 7		3-7-8 (15)	4.5		14.3				

Bottom of borehole at 20.0 feet.

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BORING NUMBER SB-5

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/28/21 **COMPLETED** 9/28/21
GROUND ELEVATION 655.23 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- Dry Cave at 16 ft.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(FILL) Brown and Gray Lean Clay, Trace Organics, Gravel, Silt and Sand SS#1: Organic Content = 2.4%	SS 1		3-3-3 (6)			18.1				
5		SS#2: Organic Content = 2.9%	SS 2		2-3-4 (7)		89.7	29.0	37	14	23	0.5
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Stiff to Very Stiff	SS 3		4-6-7 (13)	3.75		14.6				
10			SS 4		4-5-7 (12)	4.5		15.2				
			SS 5		4-8-11 (19)	4.5		13.8				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Stiff to Very Stiff	SS 6		4-7-8 (15)	4.5		12.8				
15												
			SS 7		4-5-6 (11)	4.5		12.2				
20		Bottom of borehole at 20.0 feet.										

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BORING NUMBER SB-6

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/28/21 **COMPLETED** 9/28/21
GROUND ELEVATION 656.61 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- No Cave

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown to Black Sandy Clay with Topsoil, Gravel and Slag										
		(ML) Brown Silt with Clay, Trace Gravel and Sand, Moist, Stiff	SS 1		4-5-7 (12)	3.0		18.1				
		(CL) Brown Sandy Clay with Silt, Trace Gravel, Moist, Medium Stiff to Stiff	SS 2		4-5-6 (11)	3.5		14.6				
5			SS 3		3-3-5 (8)	3.5		15.3				
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Very Stiff	SS 4		3-6-10 (16)	3.0		19.4				
10			SS 5		3-7-11 (18)	3.5		13.2				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Stiff	SS 6		4-5-8 (13)	4.5		13.3				
15												
		Thin Layer of Brown and Gray Sand Noted at about 19 ft.	SS 7		4-4-5 (9)	4.5		13.9				
20												

Bottom of borehole at 20.0 feet.

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BORING NUMBER SB-7

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/28/21 **COMPLETED** 9/28/21
GROUND ELEVATION 655.82 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
▽ **AT TIME OF DRILLING** 19.00 ft / Elev 636.82 ft
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- Dry Cave at 16 ft.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		Asphalt: 2 inches Gravel, Sand and Slag: 7 inches										
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Stiff to Very Stiff	SS 1		4-8-7 (15)	4.5		14.5				
			SS 2		7-7-10 (17)	4.5		14.8				
5			SS 3		3-6-8 (14)	4.5		14.3				
			SS 4		3-7-10 (17)	4.5		13.2				
10			SS 5		7-9-14 (23)	4.5		13.3				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Very Stiff	SS 6		4-6-9 (15)	4.5		13.5				
15												
		▽	SS 7		3-4-5 (9)	2.5		22.3				
20		Bottom of borehole at 20.0 feet.										

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BORING NUMBER SB-8

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 657.18 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- Dry Cave at 15 ft.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(ML) Brown Silt with Clay, Trace Gravel and Sand, Moist, Medium Stiff	SS 1		4-4-4 (8)	2.5		21.5				
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Soft to Very Stiff	SS 2		2-2-3 (5)	0.75	112.8	21.0	28	14	14	0.9
5			SS 3		3-5-8 (13)	4.0		15.3				
			SS 4		4-6-9 (15)	4.5		15.4				
10			SS 5		3-8-11 (19)	4.5		13.5				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Stiff	SS 6		3-7-8 (15)	4.5		12.2				
15												
			SS 7		3-4-6 (10)	4.5		14.5				
20												

Bottom of borehole at 20.0 feet.

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BORING NUMBER SB-9

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 656.58 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- No Cave

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Brown to Dark Brown Sandy Clay with Topsoil										
		(FILL) Brown to Dark Brown Silt with Clay, Trace Gravel and Sand	SS 1		3-4-3 (7)			16.8				
5		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Very Stiff	SS 2		3-3-4 (7)	1.0		19.4				
			SS 3		4-7-9 (16)	4.5		15.4				
10			SS 4		4-8-9 (17)	4.5		15.4				
			SS 5		6-8-13 (21)	4.5		12.5				
		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Very Stiff	SS 6		8-11-11 (22)	4.5		13.3				
15												
			SS 7		5-7-9 (16)	4.5		14.4				
20												

Bottom of borehole at 20.0 feet.

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BORING NUMBER SB-10

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 655.05 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- Dry Cave at 16 ft.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Dark Brown Sandy Clay with Topsoil										
		(ML) Brown and Gray Silt with Clay, Trace Gravel and Sand, Moist, Medium Stiff	SS 1		4-4-6 (10)	3.5		16.1				
		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Stiff	SS 2		3-5-6 (11)	1.0		18.8				
5			SS 3		3-5-6 (11)	4.5		16.2				
			SS 4		4-6-9 (15)	4.5		14.8				
10		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Medium Stiff to Very Stiff	SS 5		6-8-9 (17)	2.5		13.4				
			SS 6		2-4-4 (8)	4.0		13.6				
15												
			SS 7		2-3-4 (7)	3.5		22.9				
20		Bottom of borehole at 20.0 feet.										

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BORING NUMBER SB-11

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 9/29/21 **COMPLETED** 9/29/21
GROUND ELEVATION 655.05 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY TH **CHECKED BY** AZ
AT END OF DRILLING --- None
NOTES Ground Elevation Provided by Client.
AFTER DRILLING --- No Cave

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Brown to Dark Brown Sandy Clay with Topsoil										
		(ML) Brown and Gray Silt with Clay, Trace Gravel and Sand, Moist	GB 1					18.6				
		Hand Auger Performed from Subgrade to a Depth of 6 ft.	GB 2					12.0				
5		(CL) Brown Lean Clay, Trace Gravel and Silt, Moist, Stiff	SS 3		4-7-8 (15)	4.0		14.0				
		(CL) Brown and Gray Sandy Clay with Silt, Trace Gravel, Moist, Stiff	SS 4		3-6-8 (14)	4.5		14.1				
10		(CL) Gray Lean Clay, Trace Gravel and Silt, Moist, Stiff	SS 5		4-6-8 (14)	4.5		12.9				
			SS 6		4-6-9 (15)	4.5		13.2				
15												
			SS 7		4-5-7 (12)	4.5		13.2				
20		Bottom of borehole at 20.0 feet.										

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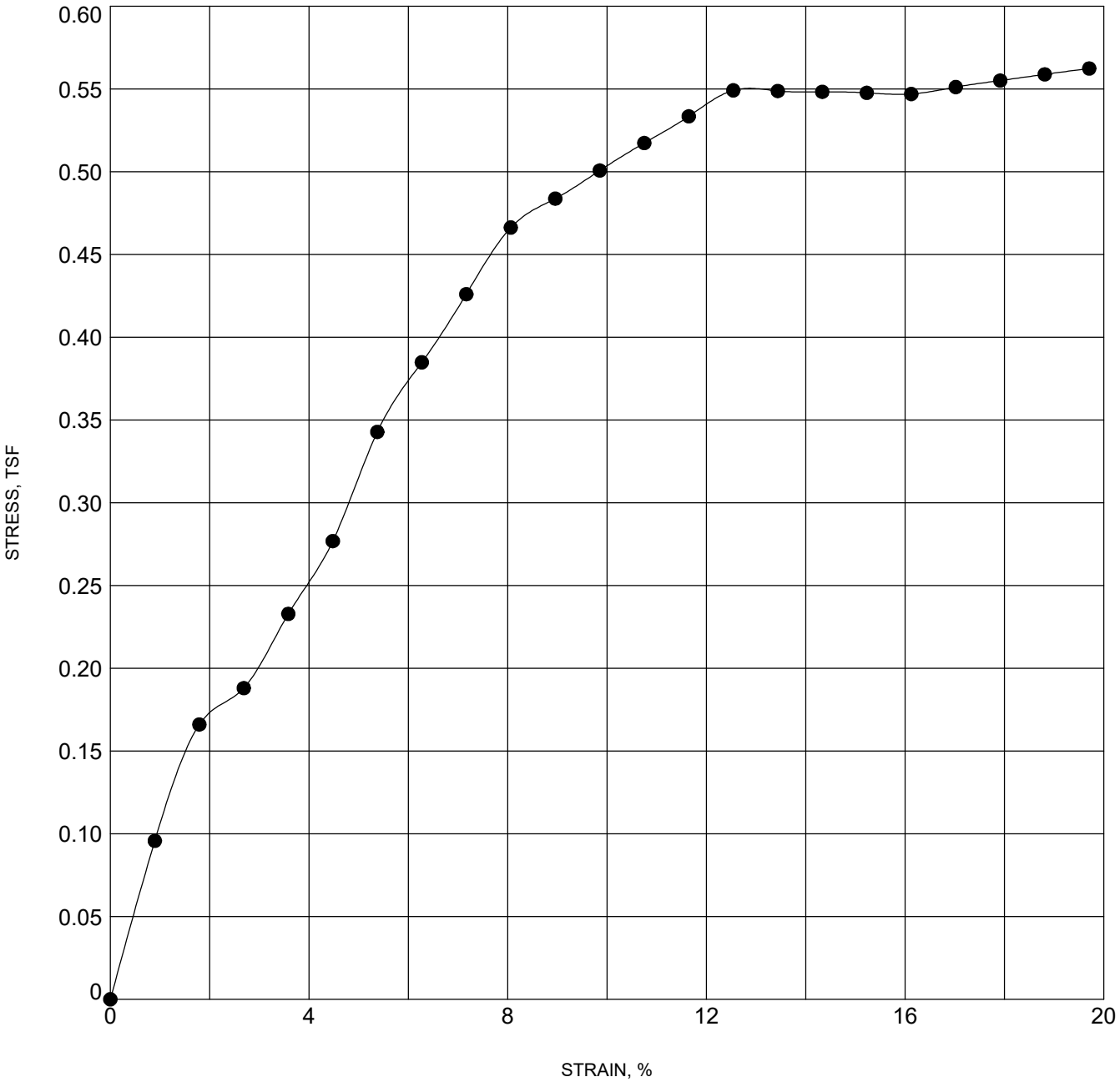
UNCONFINED COMPRESSION TEST

CLIENT Duneland School Corportation **PROJECT NAME** Proposed Additions at Liberty Intermediate School

PROJECT NUMBER 2021-1118G **PROJECT LOCATION** 50 W 900 N County Road, Chesterton, Indiana



BOREHOLE	DEPTH	Classification	γ_d	MC%
● SB-5	3.5	**BROWN AND GRAY LEAN CLAY (CL)**	**90**	**29**

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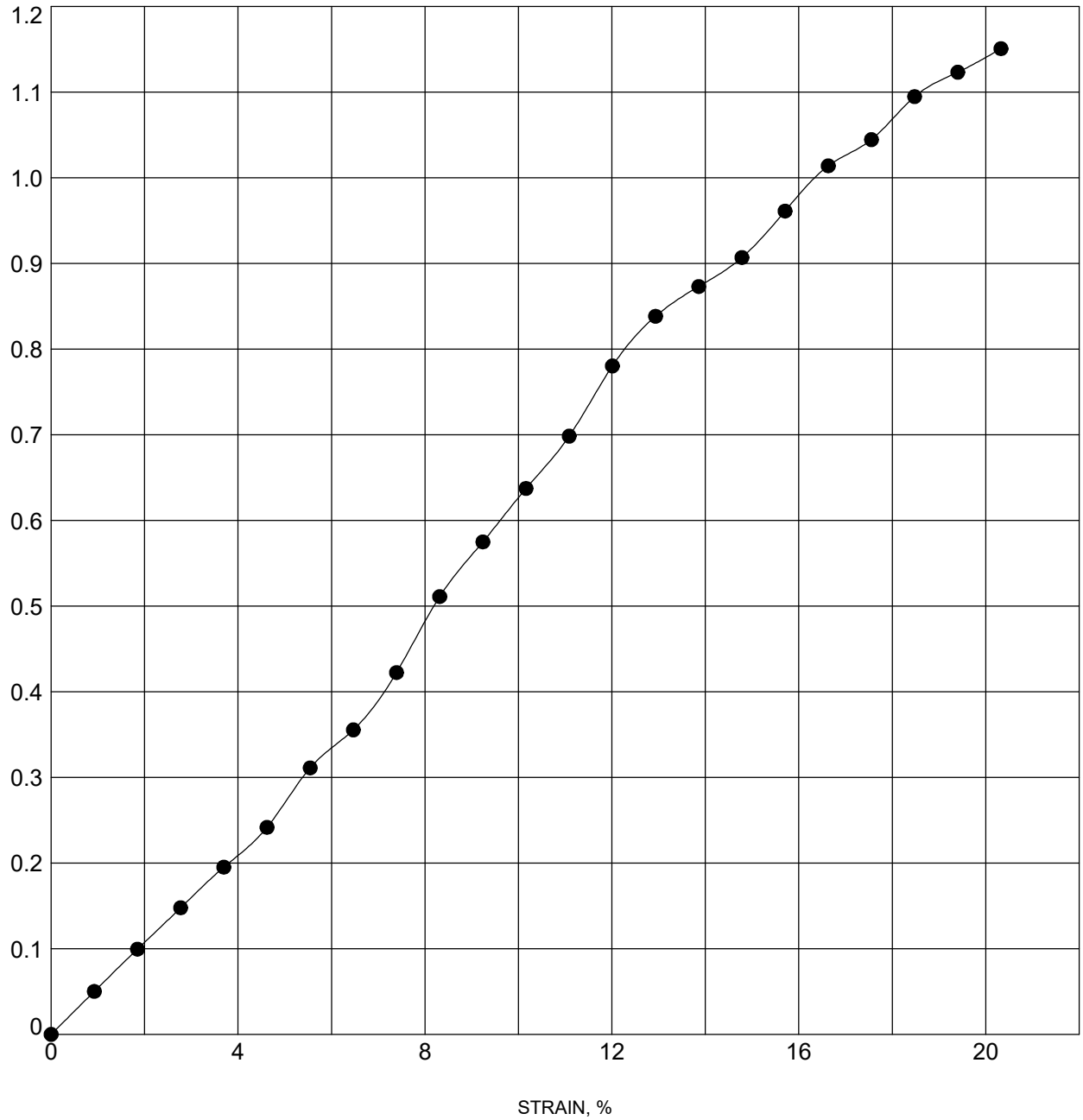
UNCONFINED COMPRESSION TEST

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions at Liberty Intermediate School
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana



BOREHOLE	DEPTH	Classification	γ_d	MC%
● SB-8	3.5	**BROWN LEAN CLAY (CL)**	**113**	**21**

ATTERBERG LIMITS' RESULTS

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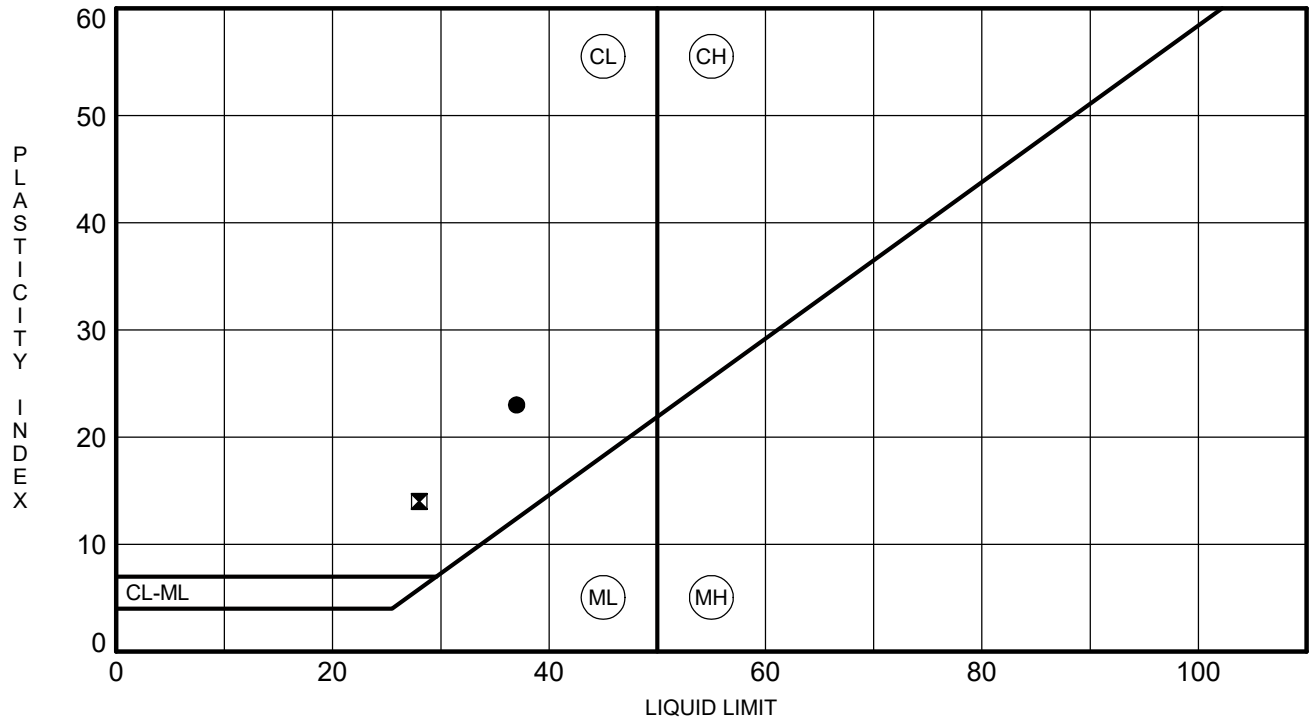
CLIENT Duneland School Corportation **PROJECT NAME** Proposed Additions at Liberty Intermediate School

PROJECT NUMBER 2021-1118G **PROJECT LOCATION** 50 W 900 N County Road, Chesterton, Indiana



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**SB-5**	**3.5**	**37**	**14**	**23**		**BROWN AND GRAY LEAN CLAY (CL)**
⊠	**SB-8**	**3.5**	**28**	**14**	**14**		**BROWN LEAN CLAY (CL)**

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON-COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density	
Very Loose	5 blows/ft or less
Loose	6 to 10 blows/ft
Medium Dense	11 to 30 blows/ft
Dense	31 to 50 blows/ft
Very Dense	51 blows/ft or more

Relative Proportions	
Descriptive	Percent
Trace	1 to 10
Little	11 to 20
Some	21 to 35
And	36 to 50

Particle Size Identification		
Boulders	12 inch diameter or more	
Cobbles	12 to 3 inch diameter	
Gravel	Coarse	3 to 3/4 inch
	Fine	3/4 inch to 4.75mm (No. 4)
Sand	Course	4.75mm to 2mm (No. 10) (dia. Of pencil lead)
	Medium	2.00mm to 0.425mm (No.40) (Dia. of broom straw)
	Fine	0.425mm to 0.075mm (No.200) (dia. of human hair)
Silt/Clay		0.075mm or Smaller (cannot see particles)

COHESIVE SOILS
(Clay, Silt and combinations)

Consistency	
Very Soft	3 blows/ft or less
Soft	4 to 5 blows/ft
Medium Stiff	6 to 10 blows/ft
Stiff	11 to 15 blows/ft
very Stiff	16 to 30 blows/ft
Hard	31 blows/ft or more

Plasticity	
Degree of Plasticity	Plasticity Index
None to slight	0 to 4
Slight	5 to 7
Medium	8 to 22
High to Very High	over 22

Classification on logs are made by visual inspection of samples.

Standard Penetration Test (SPT)- Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 1ft into undisturbed soil with a 140 pound hammer free falling a distance of 30.0 inches. It is customary for ATC to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6.0 inches of penetration on the drill log (Example-6/8/9). The standard penetration test result can be obtgained by adding the last two figures (i.e., 8+9=17 blows/ft). (ASTM D-1586-08).

Stara Changes - In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (____) represents an actually observed change. A dashed line (_ _ _ _) represents an estimated change.

Groundwater observations were made at the times indicated. Porosity of soil strata, weather conditions, site topographjy, etc,, may cause changes in the water levels indicated on the logs.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Advanced Engineering Services (AES) Inc.
7439 Calumet Avenue I Hammond, IN 46324
(219) 933-7888 I www.adv-engrs.com

December 28, 2021

Duneland School Corporation
601 West Morgan Avenue
Chesterton, Indiana 46304

C/O: Mr. James Burggraf, (*Email: JBurggraf@Skillman.com)*
The Skillman Corporation
8006 Aetna Street
Merrillville, Indiana 46410

Re: Addendum No. 1 to the Report of Geotechnical Engineering Exploration
Proposed Additions and Improvements at LIS and LES
50 and 50-1 West 900 North
Chesterton, Indiana
AES Project No. 2021-1118G

Dear Mr. Burggraf:

Advanced Engineering Services (AES) is pleased to submit herewith our Addendum No. 1 to the report of a geotechnical engineering exploration for the proposed detention ponds at the Liberty Intermediate and Elementary Schools in Chesterton, Indiana. As you know, AES completed a geotechnical exploration for the project and the findings were summarized via reports dated October 8, 2021. The current study was performed in accordance with AES Proposal No. 2021-272G (Add-1) dated December 1, 2021, which was authorized by Mr. Chip Pettit, Superintendent, on December 3, 2021.

PURPOSE

The purpose of the current study was to obtain additional subsurface soil information for the proposed detention ponds at the referenced schools. No other geotechnical engineering evaluation was included in the scope of work.

FIELD AND LABORATORY EXPLORATION

The field exploration consisted of drilling a total of three (3) soil borings at the approximate locations shown on the attached Boring Location Plan. Borings DP-1, DP-2 and DP-3 were drilled to a depth of 20 ft below the current grade.

All test locations were established at the site based on the available drawings, estimating distances from existing features, adjusting for accessibility and existing utilities. Since these measurements are not precise, the soil boring locations shown on the attached drawing should be considered approximate. Boring DP-2 was moved outside the existing wooded area due to an accessibility issue. Ground elevations reported on the logs were estimated from Google Earth®.

Indiana 811 as well as a private utility locator was utilized to mark existing underground utilities near each test location. The soil borings were completed using an ATV-mounted drill-rig. Conventional hollow-stem augers were used to advance the boreholes through the soil. Standard Penetration Tests

(SPT) were performed in accordance with applicable ASTM standards. Representative split-spoon samples were obtained at 2.5 ft and 5 ft intervals. The SPT (N) value corresponding to each split-spoon sample provides general information about the strength and consistency of the naturally occurring materials. The Soil Classification Sheet provided in Appendix explains the SPT test procedure in brief.

Groundwater observations were made during and immediately after completion of the drilling operations. SPT values and groundwater observations are noted on the respective Test Boring Logs. The bore holes were backfilled with auger cuttings after the drilling.

Samples from the field were placed in sealed containers and brought to the laboratory for further analysis. The laboratory program included a supplementary visual classification on all samples and the field logs were edited accordingly. Moisture and organic contents, unconfined compressive strength, tests were completed on selected samples and included on the respective logs or in the Appendix.

The Test Boring Logs in the Appendix describe visual classifications of all soil strata encountered using the Unified Soil Classification System (USCS). Soil classification explaining terms and symbols used on the logs is provided in the Appendix. Please note that we will store the samples for sixty (60) days after which they will be discarded unless you request otherwise.

SUBSURFACE CONDITIONS

The subsurface materials encountered and groundwater observations at each boring are described in detail on the Test Boring Logs provided in the Appendix. It should be noted that stratification lines shown on the boring logs represent approximate transitions between material types. In-situ strata changes could occur gradually or at slightly different levels. Also, it should be noted that the boring logs depict conditions at the soil boring locations only and the subsurface conditions at other locations may vary. This is especially important for this project, as the test locations are widely spaced. Some conditions, such as groundwater conditions, could change with time.

Borings DP-1, DP-2 and DP-3 revealed brown to dark brown sandy clay in most cases mixed with topsoil or organics from the existing ground surface to depths of about 6 inches to as much as about 5 ft below the existing ground surface. Moisture and organic contents of the fill samples were as high as about 33.3% and 4.1%.

All soil borings then revealed interbedded layers of brown to gray sandy clay (CL), sandy silt (ML) or lean clay (CL) to the termination depth of 20 ft below existing ground surface. Based on the field Standard Penetration Test (SPT) values, the native sandy soil was loose and the clayey soils were soft to hard. Moisture contents of the native clayey samples were generally between 12.4% and 27.8%.

Groundwater observations were made during and immediately after drilling. No free water was noted in the borings during or immediately after drilling. However, all three boreholes caved-in at depths varying between about 2 ft and 9 ft below the existing ground surface. Caving of boreholes may sometimes indicate presence of perched water and should be considered when designing the detention ponds.

Please note that short-term groundwater observations in test borings do not provide an accurate groundwater information and groundwater conditions may change due to precipitation and other hydro-geologic factors. Perched water trapped in granular seams or drain tiles are common in clayey soils and may be encountered at shallow depths during construction.

CONCLUSION

AES appreciates the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact us at your convenience.

Respectfully submitted,
Advanced Engineering Services (AES) Inc.

Aaron R. Lee
Staff Engineer
arl@adv-engrs.com

Akhtar (Art) Zaman, PE
Principal Engineer
anz@adv-engrs.com

Distribution (email): Mr. James Burggraf, The Skillman Corporation, (Email: JBurggraf@skillman.com)

APPENDIX

Boring Location Plan

Test Boring Logs and Laboratory Test Results

Field Classification System for Soil Exploration

N
W E
S

ORIGINAL DRAWING PROVIDED BY CLIENT
BORING LOCATIONS ARE APPROXIMATE

BORING LOCATION PLAN (PONDS)

PROPOSED ADDITIONS AND IMPROVEMENTS AT
LIBERTY INTERMEDIATE & ELEMENTARY SCHOOLS
50 W CR 900 N/50-1 CR W 900 N
CHESTERTON, INDIANA
CLIENT: DUNELAND SCHOOL CORP. C/O: TSC

PROJECT NUMBER: 2021-1118G		DRAWN BY: CH
DATE: 12-07-21	SCALE: NONE	REVIEWED: AZ

aes advanced engineering services

FIGURE
1

Advanced Engineering Services (AES)
7439 Calumet Avenue
Hammond, IN 46324
Telephone: 219.933.7888

BORING NUMBER DP-1

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions and Improvements at LIS and LES
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 12/21/21 **COMPLETED** 12/21/21
GROUND ELEVATION 645 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY AL **CHECKED BY** AZ
AT END OF DRILLING --- Dry Cave at 2 ft.
NOTES Ground Elevation interpolated from Google Earth.
AFTER DRILLING --- None

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Brown to Dark Brown Sandy Clay, Trace Organics										
		Organic= 3.3%	SS 1		2-2-2 (4)	0.25		26.6				
		(CL) Brown Sandy Clay, Moist, Soft										
		(CL) Brown to Gray Lean Clay, Trace Sand, Moist, Soft to Medium Stiff	SS 2		2-2-3 (5)	1.25		18.2				
5			SS 3		2-3-2 (5)	1.0		16.8				
			SS 4		1-2-3 (5)	0.5		15.7				
10			SS 5		2-3-4 (7)	1.0		14.3				
			SS 6		2-4-4 (8)	1.0		14.2				
15												
			SS 7		2-3-4 (7)	1.0		14.7				
20												

Bottom of borehole at 20.0 feet.

Advanced Engineering Services (AES)
7439 Calumet Avenue
Hammond, IN 46324
Telephone: 219.933.7888

BORING NUMBER DP-2

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions and Improvements at LIS and LES
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 12/21/21 **COMPLETED** 12/21/21
GROUND ELEVATION 644 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY AL **CHECKED BY** AZ
AT END OF DRILLING --- Dry Cave at 9 ft.
NOTES Ground Elevation interpolated from Google Earth.
AFTER DRILLING --- None

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Brown to Dark Brown Sandy Clay, Trace Organics										
		SS#1: Organic=2.0%	SS 1		2-1-2 (3)			21.0				
		SS#2: Organic=4.1%	SS 2		1-2-2 (4)			33.3				
5		(CL) Brownish Gray Sandy Clay, Moist, Soft	SS 3		2-2-3 (5)	1.25		27.8				
		(ML) Brownish Gray Sandy Silt, Moist, Loose	SS 4		3-3-3 (6)			19.3				
10		(CL) Brown to Gray Lean Clay, Trace Sand, Moist, Medium Stiff to Stiff	SS 5		3-5-5 (10)	1.75		13.9				
			SS 6		2-3-4 (7)	0.5		15.5				
15												
			SS 7		5-6-9 (15)	3.0		13.7				
20												

Bottom of borehole at 20.0 feet.

Advanced Engineering Services (AES)
7439 Calumet Avenue
Hammond, IN 46324
Telephone: 219.933.7888

BORING NUMBER DP-3

CLIENT Duneland School Corportation
PROJECT NAME Proposed Additions and Improvements at LIS and LES
PROJECT NUMBER 2021-1118G
PROJECT LOCATION 50 W 900 N County Road, Chesterton, Indiana
DATE STARTED 12/21/21 **COMPLETED** 12/21/21
GROUND ELEVATION 651 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR GTC
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING --- None
LOGGED BY AL **CHECKED BY** AZ
AT END OF DRILLING --- Dry Cave at 7 ft.
NOTES Ground Elevation interpolated from Google Earth.
AFTER DRILLING --- None

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY %	STD. PEN. TEST SPT (N VALUE)	HAND PEN. (TSF)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	UNCONF. COMP STRENGTH (TSF)
0		(FILL) Brown to Dark Brown Sandy Clay, Trace Organics										
		(CL) Brown Sandy Clay, Moist, Medium Stiff	SS 1		2-2-6 (8)	0.75		27.7				
		(CL) Brown to Gray Lean Clay, Moist, Stiff to Hard	SS 2		4-5-10 (15)	3.5		15.5				
5			SS 3		10-15-19 (34)	4.5		15.3				
			SS 4		5-9-10 (19)	4.5		12.5				
10			SS 5		4-8-11 (19)	4.5		15.3				
			SS 6		5-6-8 (14)	2.25		12.4				
15												
			SS 7		4-4-8 (12)	4.0		14.1				
20												

Bottom of borehole at 20.0 feet.

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON-COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density	
Very Loose	5 blows/ft or less
Loose	6 to 10 blows/ft
Medium Dense	11 to 30 blows/ft
Dense	31 to 50 blows/ft
Very Dense	51 blows/ft or more

Relative Proportions	
Descriptive	Percent
Trace	1 to 10
Little	11 to 20
Some	21 to 35
And	36 to 50

Particle Size Identification		
Boulders	12 inch diameter or more	
Cobbles	12 to 3 inch diameter	
Gravel	Coarse	3 to 3/4 inch
	Fine	3/4 inch to 4.75mm (No. 4)
Sand	Course	4.75mm to 2mm (No. 10) (dia. Of pencil lead)
	Medium	2.00mm to 0.425mm (No.40) (Dia. of broom straw)
	Fine	0.425mm to 0.075mm (No.200) (dia. of human hair)
Silt/Clay		0.075mm or Smaller (cannot see particles)

COHESIVE SOILS
(Clay, Silt and combinations)

Consistency	
Very Soft	3 blows/ft or less
Soft	4 to 5 blows/ft
Medium Stiff	6 to 10 blows/ft
Stiff	11 to 15 blows/ft
very Stiff	16 to 30 blows/ft
Hard	31 blows/ft or more

Plasticity	
Degree of Plasticity	Plasticity Index
None to slight	0 to 4
Slight	5 to 7
Medium	8 to 22
High to Very High	over 22

Classification on logs are made by visual inspection of samples.

Standard Penetration Test (SPT)- Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 1ft into undisturbed soil with a 140 pound hammer free falling a distance of 30.0 inches. It is customary for ATC to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6.0 inches of penetration on the drill log (Example-6/8/9). The standard penetration test result can be obtgained by adding the last two figures (i.e., 8+9=17 blows/ft). (ASTM D-1586-08).

Stara Changes - In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (____) represents an actually observed change. A dashed line (_ _ _ _) represents an estimated change.

Groundwater observations were made at the times indicated. Porosity of soil strata, weather conditions, site topographjy, etc,, may cause changes in the water levels indicated on the logs.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SUBSURFACE INVESTIGATION &
GEOTECHNICAL RECOMMENDATIONS

PROPOSED ADDITIONS
WESTCHESTER INTERMEDIATE SCHOOL
1050 S. 5TH STREET
CHESTERTON, INDIANA
A&W PROJECT NO.: 21SB0077

PREPARED FOR:
DUNELAND SCHOOL CORPORATION C/O THE SKILLMAN GROUP
VALPARAISO, INDIANA

PREPARED BY:
ALT & WITZIG ENGINEERING, INC.
GEOTECHNICAL DIVISION

OCTOBER 13, 2021

Alt & Witzig Engineering, Inc.
1418 86th Place • Merrillville, Indiana 46410
Ph (219) 314-9028 • Fax (800) 875-6028

October 13, 2021

Duneland School Corporation
c/o The Skillman Group
8006 Aetna Street
Merrillville, Indiana 46410
Attn: Mr. Chris Muvceski

Report of Subsurface Investigation and Geotechnical Recommendations

RE: Proposed Additions
Westchester Intermediate School
1050 S. 5th Street
Chesterton, Indiana
A&W Project No.: **21SB0077**

Dear Mr. Muvceski:

In compliance with your request, Alt & Witzig Engineering, Inc. has completed a subsurface investigation for the Proposed Additions. The Statement of Objectives, Scope of Work, and results of our investigation are presented in the following report. It is our pleasure to transmit an electronic (.pdf) copy of the report.

The results of our test borings and laboratory tests completed to date are presented in the appendix of the report. Our recommendations for the project are presented in the "Geotechnical Analysis and Recommendations" section of the report. If you have any questions or comments regarding this matter, please contact us at your convenience.

Sincerely,
ALT & WITZIG ENGINEERING, INC.

Daniel E. Desper, P.E.

DANIEL EUGENE DESPER
REGISTERED
PE11700784
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Jason R. Bennett, P.E.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Alt & Witzig Engineering, Inc. has performed a subsurface investigation and geotechnical analysis for the Proposed Additions to Westchester Intermediate School in Chesterton, Indiana in conformance with the scope and limitations of our proposal (*Alt & Witzig Engineering Proposal 2108SB013*). This investigation was performed for Duneland School Corporation c/o The Skillman Group. Authorization to perform this investigation was in the form of an Alt & Witzig Engineering proposal accepted by of Duneland School Corporation c/o The Skillman Group and an executed agreement.

In compliance with your request, a total of fourteen (14) borings were completed for the proposed building additions and two (2) borings for the proposed parking and drive areas. It is understood that the proposed building additions will be a single-story structure constructed as slab-on-grade. Paved parking and drive areas will be constructed northeast of the existing school.

The purpose of this investigation was to determine the various soil profile components, the engineering characteristics of the subsurface materials, and to provide geotechnical recommendations for design and construction of the proposed additions.

The following conditions and concerns are relevant for this project.

- Our borings encountered four (4) to twelve (12) inches of topsoil. Below the topsoil, fills and possible fills, consisting of stiff to very stiff clays with varying amounts sand, gravel, and slag, were encountered in borings B-02 through B-04, B-07, B-09, and B-14 to a depth as great as six and one-half (6½) feet. Beneath the fills and possible fills in these borings and the topsoil in the remaining borings, soft to stiff clays and silts, exhibiting moisture content ranging from 11.2% to 27.8%, were encountered with intermittent sand and gravel layers to the termination of the borings as deep as twenty (20) feet.

- It is assumed that final grade will be established at or near the current ground surface to match that of the existing school building. Therefore, footings will be founded at a depth where medium stiff to stiff clays, noted as fills, possible fills, and natural soils, or loose sands were encountered. A net allowable soil bearing capacity of 1,500 psf is recommended for design of conventional spread and continuous wall footings. It is also recommended that a representative of Alt & Witzig Engineering, Inc. be present to inspect the base of all footing excavations. The base of all footings bearing on sand and gravel should be compacted as indicated in *Section 4.3*. Where soft soils are encountered during footing excavation it is recommended that footings either be extended beneath these soft soils to bear on stiff natural soils or that the soft soils be removed and replaced with approved structural fill or lean concrete in accordance with *Undercut Detail for Footing Excavation in Unstable Materials* in *Appendix A.*

1.0 INTRODUCTION

In compliance with your request, we have completed a subsurface investigation and geotechnical analysis at the above referenced site for the proposed addition to Westchester Intermediate School located at the street address of 1050 S. 5th Street in Chesterton, Indiana.

This investigation was performed for Duneland School Corporation c/o The Skillman Group. The proposed statement of objectives and scope of work were outlined in the form of an A&W Proposal Number 2108SB013 accepted by Duneland School Corporation c/o The Skillman Group.

The purpose of this subsurface investigation was to determine the soil profile and the engineering characteristics of the subsurface materials and provide geotechnical parameters for design and construction of the proposed additions.

The scope of this investigation included a review of geological maps of the area and a review of geologic and related literature; a reconnaissance of the immediate site; subsurface exploration; field and laboratory testing; and engineering analysis and evaluation of the materials. The scope or purpose of the investigation did not specifically or by implication provide an environmental assessment of the site.

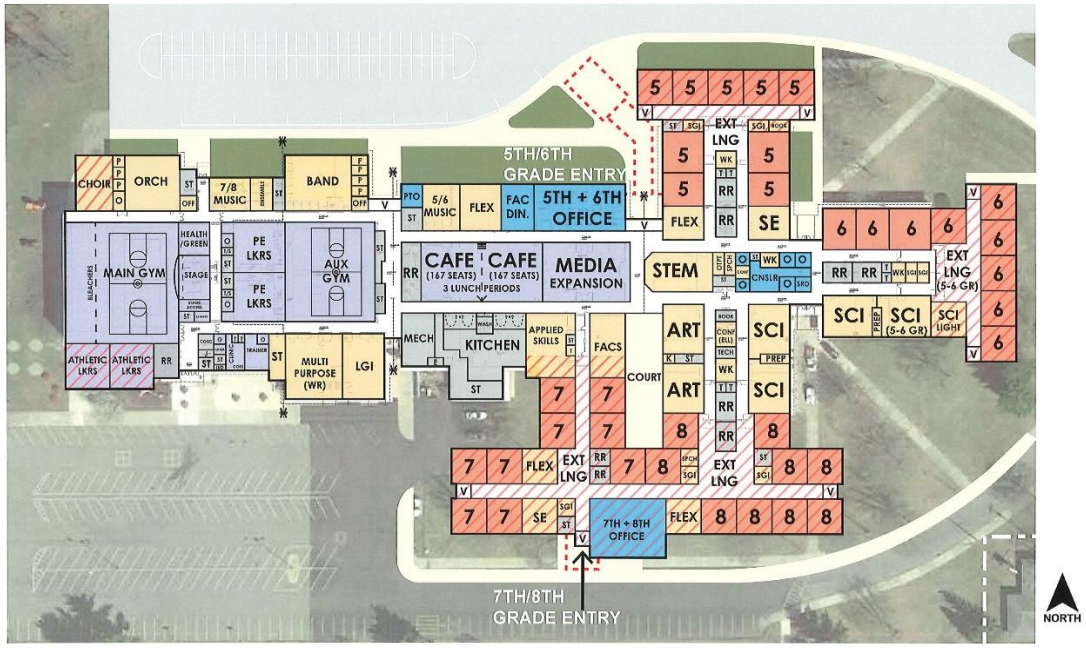
1.1 Project Description

Provided plans indicate single-story, slab-on-grade building additions will be constructed surrounding the existing school building. Paved parking and drive areas will be constructed northeast of the existing school building.

Structural loading was not available at the time of this investigation. Therefore, maximum structural loads of 150 kips and 5 kips per lineal foot for column and wall footings, respectively, were assumed. If structural loads differ from those mentioned above, they should be submitted to Alt & Witzig Engineering, Inc. for review.

At the time of this investigation, grading plans were not available. It is assumed that final grade will be established to match the finished floor elevation of the existing school at or near the current ground surface.

Exhibit 1: Preliminary Concept Plan Provided by the Client



1.2 Site Location

The site is located in Porter County in northwest Indiana. More specifically, the site is located in Chesterton, Indiana at the street address of 1050 S. 5th Street (*Exhibit 2*).

Exhibit 2: Site Location; Google Earth 2021

1.3 Site History

A review of historical aerials and historical information was completed as part of this investigation. Based on this review, the existing school was originally constructed between aerial photographs dated 1962 and 1967. Additions to the school to the existing building footprint were constructed between aerial photographs dated 1967 and 1981. Prior to the construction of the school, the site was an agricultural field.

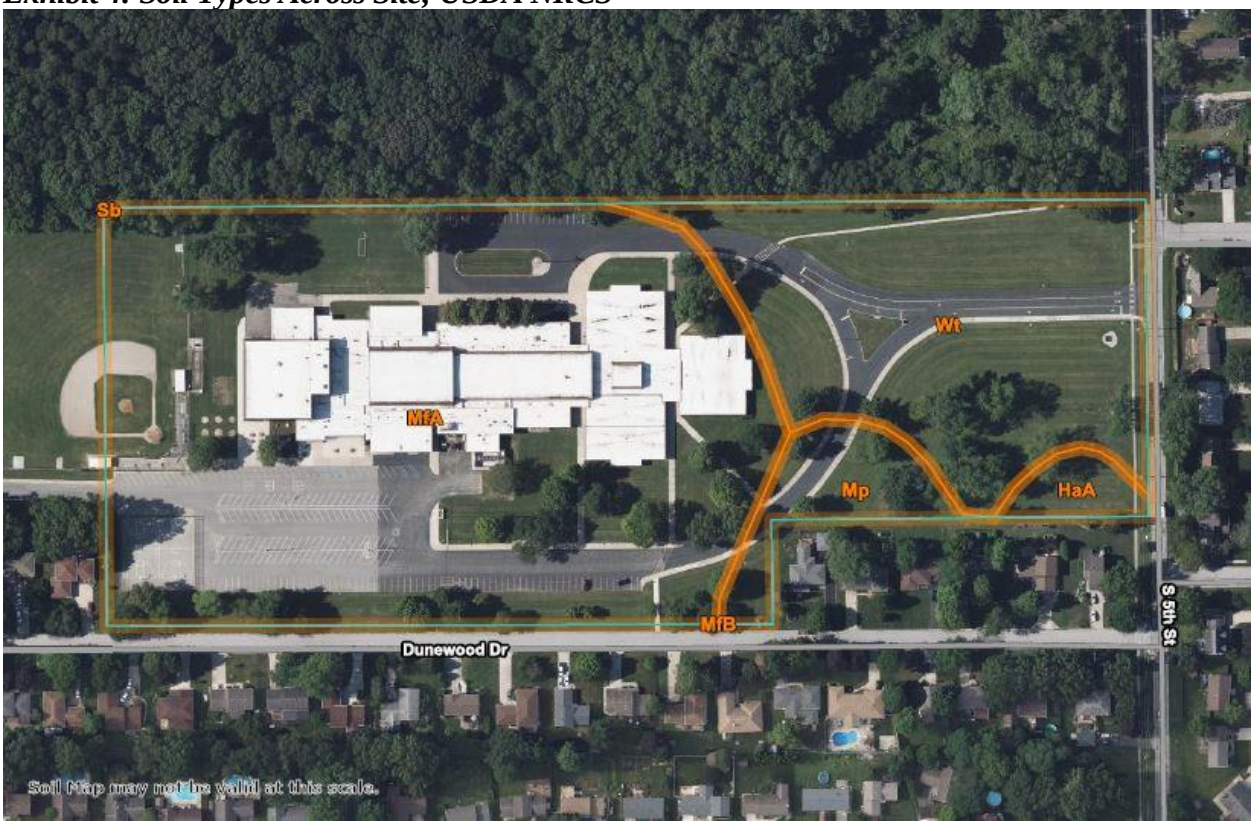
1.4 Regional Setting

At the time of the field investigation, the site was an asphalt recess area with concrete walkways and grass landscape areas. The existing ground surface across the site relatively flat with an estimated ground surface elevation of 645 feet according to Google Earth. Drainage along the project site typically runs across the ground surface into low-lying areas and storm water collectors.

The project site lies within the Valparaiso Morainal Complex of the Northern Moraine and Lake Physiographic Region of the State of Indiana. According to the Indiana Geological Survey bedrock at this site is at an elevation of approximately 550 feet consisting of Ellsworth Shale from the Devonian Age. A review of the *Custom Soil Resource Report for Porter County, Indiana* indicated that the shallow natural soils over the project area consist mostly of Hanna sandy loam (HaA), Martinsville loam (MfA/MfB), Milfrod silty clay loam (Mp), Sebawa loam (Sb), and

Whitaker loam (Wt) as shown in *Exhibit 4*, below. The *Custom Soil Resource Report for Porter County, Indiana* has been included in *Appendix B* of this report.

Exhibit 4: Soil Types Across Site; USDA NRCS

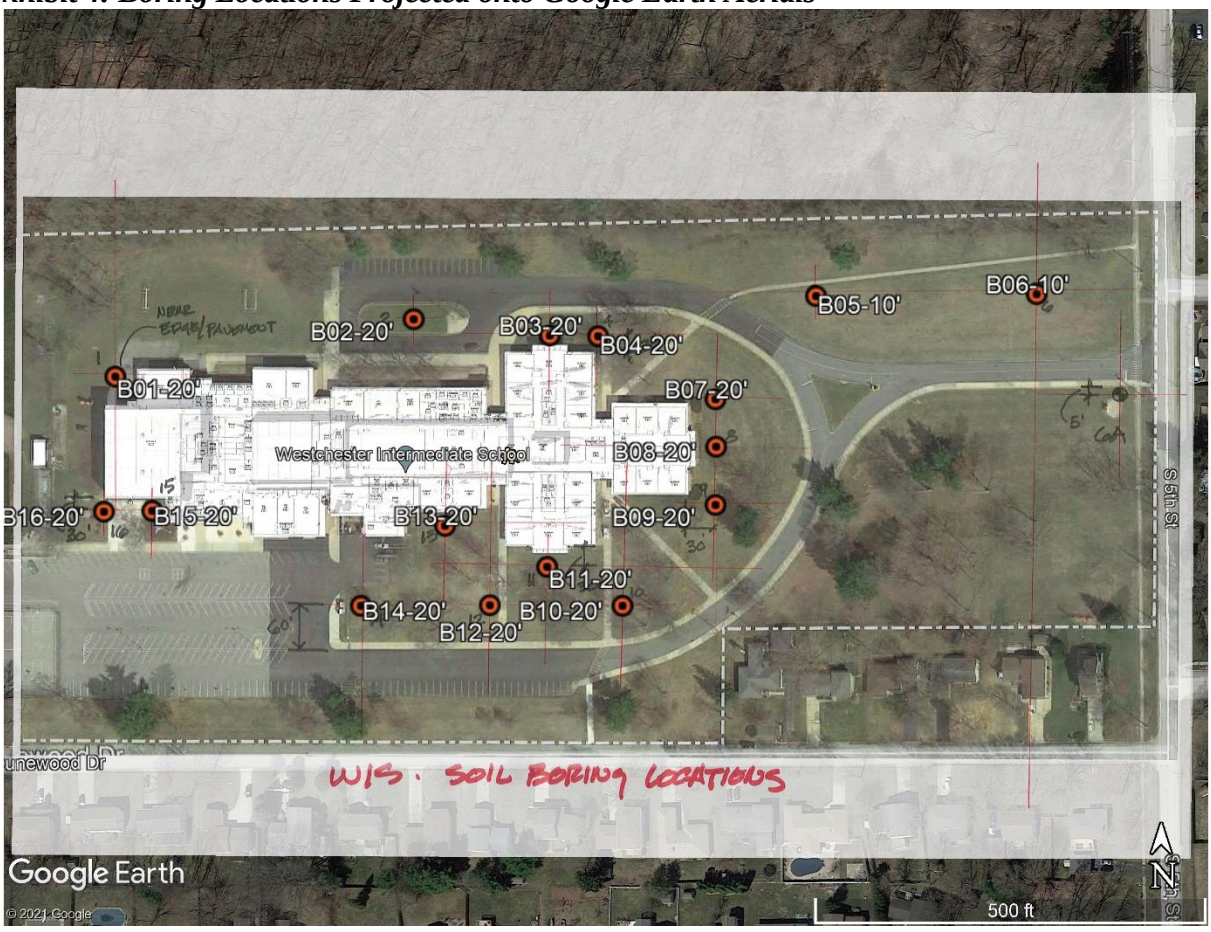


2.0 WORK PERFORMED

2.1 Boring Locations

Alt & Witzig Engineering, Inc. staked the locations of borings based upon the undated "WIS Soil Boring Locations," provided by The Skillman Group. The "WIS Soil Boring Locations" with the requested boring locations was projected onto aerials provided by the Google Earth website allowing for the correlation of the approximate latitude and longitude coordinates with each boring location, as shown in *Exhibit 4*, below.

Exhibit 4: Boring Locations Projected onto Google Earth Aerials



2.2 Soil Sampling

The soil borings were performed with an ATV-mounted drilling rig equipped with a rotary head. Conventional hollow-stem augers were used to advance the holes. During the sampling procedure, standard penetration tests were performed at regular intervals in accordance with ASTM Method D-1586 to obtain the standard penetration value of the soil. The standard penetration value is defined as the number of blows a one hundred forty (140)-pound hammer, falling thirty (30) inches, required to advance the split-spoon sampler twelve (12) inches into the soil. The results of the standard penetration tests indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components.

Soil samples were field classified and placed in unpreserved glass jars with Teflon-lined lids for transport to our geotechnical laboratory for further analysis.

2.3 Laboratory Analyses for Soil Samples

A supplementary laboratory investigation was conducted to ascertain additional pertinent engineering characteristics of the subsurface materials necessary in analyzing the behavior of the proposed building addition. The laboratory-testing program also included:

- Samples of the cohesive soil were frequently tested in unconfined compression by use of a calibrated spring testing machine.
- A calibrated soil penetrometer was used as an aid in determining the strength of the soil.
- Moisture content tests were performed in accordance with ASTM D-2216.
- Loss-on-ignition determinations in accordance with AASHTO T-267.

2.4 Groundwater Elevation

Initial depths to groundwater were estimated based on where water was observed on the sampling rods. Upon completion, and up to twenty-four (24) hours after the completion of drilling activities, the depth to water was measured using a tape measure with a weighted end. It should be noted that in granular soils, borings often experience caving or 'plugging' of the borehole opening due to sloughing. The depth of cave/plug is also recorded on the *Boring Logs*. The depths presented on the *Boring Logs* are accurate only for the day on which they were recorded.

3.0 INVESTIGATION RESULTS

The types of subsurface materials encountered have been visually classified and are described in detail on the *Boring Logs*. The results of the field penetration tests, strength tests, water level observations and laboratory water contents are presented on the *Boring Logs* in numerical form. Representative samples of the soils encountered in the field were placed in sample jars and are now stored in our laboratory for further analysis if desired. Unless notified to the contrary, all samples will be disposed of after two (2) months.

3.1 Site-Specific Geologic Results

At the ground surface, our borings encountered four (4) to twelve (12) inches of topsoil. Below the topsoil, fills and possible fills, consisting of stiff to very stiff clays with varying amounts sand, gravel, and slag, were encountered in borings B-02 through B-04, B-07, B-09, and B-14 to a depth as great as six and one-half (6½) feet. Beneath the fills and possible fills in these borings and the topsoil in the remaining borings, soft to stiff clays and silts, with moisture content results ranging from 11.2% to 27.8%, were encountered to the termination of the borings as deep as twenty (20) feet. Within the clay and silt matrix, intermittent layers of sand with varying amounts of silt, clay, and gravel were encountered.

3.2 Site-Specific Groundwater Elevations

Typically, groundwater level measurements taken during, immediately upon completion, and up to twenty-four (24) hours after the completion of the drilling operations indicated groundwater a shallow as five (5) feet below current grade. The exact location of the water table shall be anticipated to fluctuate somewhat depending upon normal seasonal variations in precipitation and surface runoff.

3.3 Seismic Consideration

Based on information obtained in the subsurface investigation and experience on other projects in this area, the Seismic Site Class D is appropriate for design in accordance with the Indiana Building Code guidelines. Maximum spectral response values of S_s=0.115 and S_1=0.062 may be used for seismic design.

4.0 GEOTECHNICAL ANALYSES AND RECOMMENDATIONS

4.1 Project Description

Provided plans indicate single-story, slab-on-grade building additions will be constructed surrounding the existing school building. Paved parking and drive areas will be constructed northeast of the existing school building.

The location of the soil borings in relation to preliminary configuration of the site is shown on the enclosed *Boring Location Plan*.

Structural loading was not available at the time of this investigation. Therefore, maximum structural loads of 150 kips and 5 kips per lineal foot for column and wall footings, respectively, were assumed. If structural loads differ from those mentioned above, they should be submitted to Alt & Witzig Engineering, Inc. for review.

At the time of this investigation, grading plans were not available. It is assumed that final grade will be established to match that of the existing school building, at or near the current ground surface.

4.2 Site Preparation

At the ground surface, the borings within the proposed building footprint encountered up to twelve (12) inches of topsoil. The topsoil depths on our boring logs are not exact and may not represent variations between boring locations. Therefore, the thicknesses should be used for estimating purposes only. No soil borings were conducted within the existing paved areas. Additional stripping may be necessary in paved areas. The amount of stripping will also be dependent on the condition of the subgrade during earthmoving operations. A representative of Alt & Witzig Engineering, Inc. should be present prior to and during stripping operations to aide in determining where suitable soils are encountered.

Prior to the placement of fill, the exposed subgrade should be proof-rolled with equipment approved by a representative of Alt & Witzig Engineering, Inc. This proof-rolling will assist in determining if any pockets of soft unstable materials exist beneath this exposed subgrade. Where soft, yielding materials are encountered, it will be necessary to remediate the area prior to placement of fill materials. Remediation of these unstable areas will be dictated by the field conditions at that time and the proposed grading.

All fill placed with the intent of supporting foundations, floor slabs, and pavements should be placed to in accordance with *Section 4.*3.

4.3 Compaction Specifications

After remediation of soil/yielding soils identified in the proof-roll inspection, the site should be raised to subgrade elevation. Using approved material, it is recommended that the minimum dry density as determined in accordance with ASTM D-1557 be achieved in the various areas across the site mentioned in the following table. The following table illustrates the recommended compaction percentage in several areas of the site.

Area	Min. Percentage of Compaction ASTM D 1557	Acceptable Material	Typical Maximum Lift Thickness
Roads, Drives, & Parking Areas (including future areas)	95%	Any besides ML, MH, CH, OL, OH	8"
Under Foundations and Footings	95%	Any besides ML, MH, CH, OL, OH	8"
Sub grade Below Slab-On-Grade	95%	INDOT #53 or other coarse-grained material approved by the geotechnical engineer	8"
Construction of Permanent Slopes	95%	Any besides ML, MH, CH, OL, OH	8”
Green Space (not including permanent slopes)	85%	Any	12"
Landscaped Areas (Upper 1 ft)	Maximum 90%	Any	12"
Utility Trench Backfill	98%	SW, SP, GW, GP	10"

USCS Classifications:		
GW-Well Graded Gravel	SW-Well Graded Sand	ML-Silt
GP-Poorly Graded Gravel	SP-Poorly Graded Sand	CH-Fat Clay
GM-Silty Gravel	SM-Silty Sand	MH-Elastic Silt
GC-Clayey Gravel	SC-Clayey Sand	OL-Organic Clay/Silt
	CL-Lean Clay	OH-Organic Clay/Silt

The ability to obtain the above-mentioned compaction requirements are dependent upon the moisture contents of the fill soils.

4.4 Foundation Recommendations

As mentioned in *Section 4.*1, the current ground surface elevations and proposed finished floor elevations were not available at the time of this investigation. It is assumed that final grade will be established at or near the current ground surface to match that of the existing school building. Therefore, footings will be founded at a depth where medium stiff to stiff clays, noted as fills, possible fills, and natural soils, or loose sands were encountered.

A net allowable soil bearing capacity of 1,500 psf is recommended for design of conventional spread and continuous wall footings. It is also recommended that a representative of Alt & Witzig Engineering, Inc. be present to inspect the base of all footing excavations. The base of all footings bearing on sand and gravel should be compacted as indicated in *Section 4.3*. Where soft soils are encountered during footing excavation it is recommended that footings either be extended beneath these soft soils to bear on stiff natural soils or that the soft soils be removed and replaced with approved structural fill or lean concrete in accordance with *Undercut Detail for Footing Excavation in Unstable Materials* in *Appendix A.*

The recommended bearing pressure will help reduce differential settlements associated with footings founded on soil with varying stiffness across the building pad. In utilizing the above-mentioned net allowable pressure for dimensioning footings, it is necessary to consider only those loads applied above the finished floor elevation.

In order to alleviate the effects of frost action and seasonal variations in moisture content, all exterior foundations should be founded a minimum of three (3) feet below the final grade. Interior footings in heated areas may be founded at a nominal depth below the finished floor slab, provided suitable bearing materials are encountered.

4.5 Floor Slab Recommendations

After preparation of the subgrade as recommended in *Section 3.1* and final grade has been established, a four (4) to six (6)-inch compacted granular fill should be placed immediately beneath all floor slabs. This granular fill will provide a uniform surface for construction of the floor slab and minimize capillary rise of water through the slab.

All finished subgrades should be proof-roll inspected before placing concrete to verify that the sub-grade is suitable to support the slab. If the subgrade should become disturbed, or excessively wet or dry prior to construction of the floor slabs, the affected materials should be removed and replaced with suitable structural fill. Final conditioning of the finished subgrade should be performed immediately prior to placing the floor slab base course.

4.6 Proposed Parking Area Preparation/Design

A proof-roll inspection is critical to determine the stability of these shallow soil conditions for placement of asphalt pavements. Any undercutting or modifications will be determined at the time of the proof-roll inspection. After any undercutting or modifications, final grade may be established. Based upon experience with soils having a similar consistency and laboratory tests, a design CBR value of 3.0 is recommended for the pavement design.

All paved areas should be designed to prevent water from collecting or ponding immediately beneath the pavement. It is suggested that underdrains be installed in the pavement areas to minimize potential saturation of the soils identified across the site. Underdrains should be considered around all storm structures, at asphalt to concrete interfaces, and under pavements where any slopes will drain onto a pavement surface. For underdrains to be effective, minimum installation depths of eighteen (18) inches are suggested. The drains should consist of a four (4) inch perforated plastic pipe encased in a clean granular washed No. 8 stone.

5.0 STATEMENT OF LIMITATIONS

This report is solely for the use of Duneland School Corporation c/o The Skillman Group and their assigned agents. Any reliance of this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties for other uses. This report shall only be presented in full and may not be used to support any other objectives than those set out in the scope of work, except where written approval and consent are provided by Duneland School Corporation c/o The Skillman Group and Alt & Witzig Engineering.

Our subsurface investigation was conducted in accordance with guidelines set forth in the scope of services and applicable industry standards. The scope or purpose of this geotechnical investigation did not, either specifically or by implication, provide any environmental assessment of the site.

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The geotechnical parameters provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and on the particular date indicated on the boring logs. Soil conditions at other locations may differ from conditions encountered at these boring locations and groundwater levels shall be expected to vary with time. The nature and extent of variations between the borings may not become evident until the course of construction.

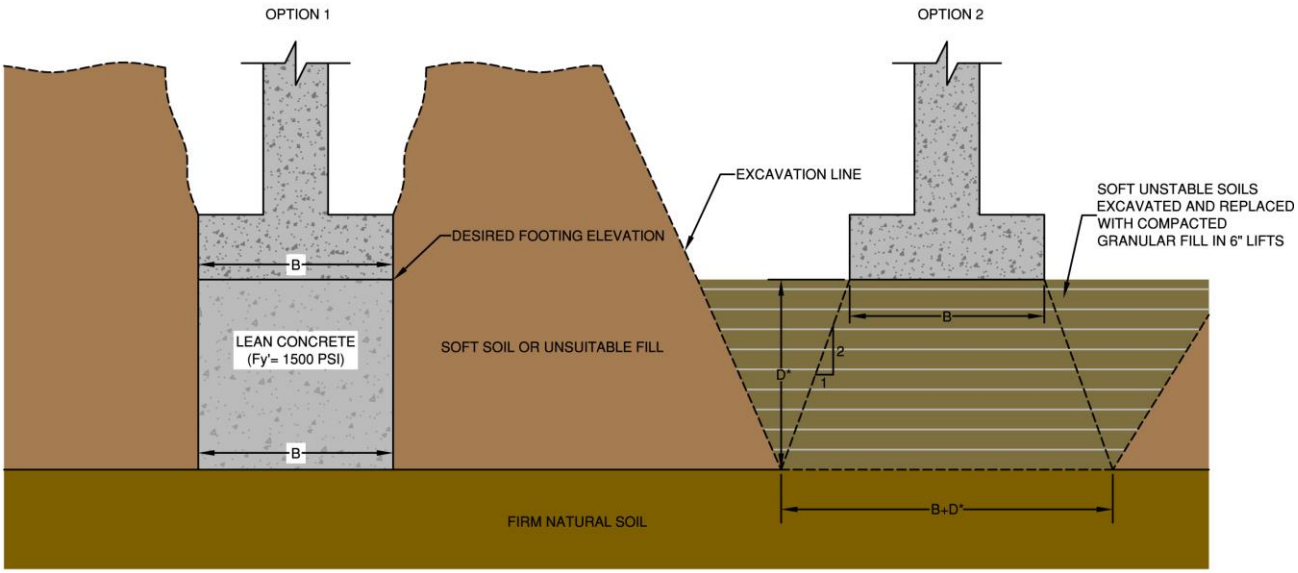
The exploration and analysis reported herein is considered in sufficient detail and scope to form a reasonable basis for design. The recommendations submitted are based on the available soil information and assumed design details enumerated in this report. If actual design details differ from those specified in this report, this information should be brought to the attention of Alt & Witzig Engineering, Inc. so that it may be determined if changes in the recommendations herein are required. If deviations from the noted subsurface conditions are encountered during construction, they should also be brought to the attention of Alt & Witzig Engineering, Inc.

We appreciate the opportunity to work with you on this project. Often, because of design and construction details that occur, questions arise concerning the soils conditions. If we can give further service in these matters, please contact us at your convenience.

APPENDIX A

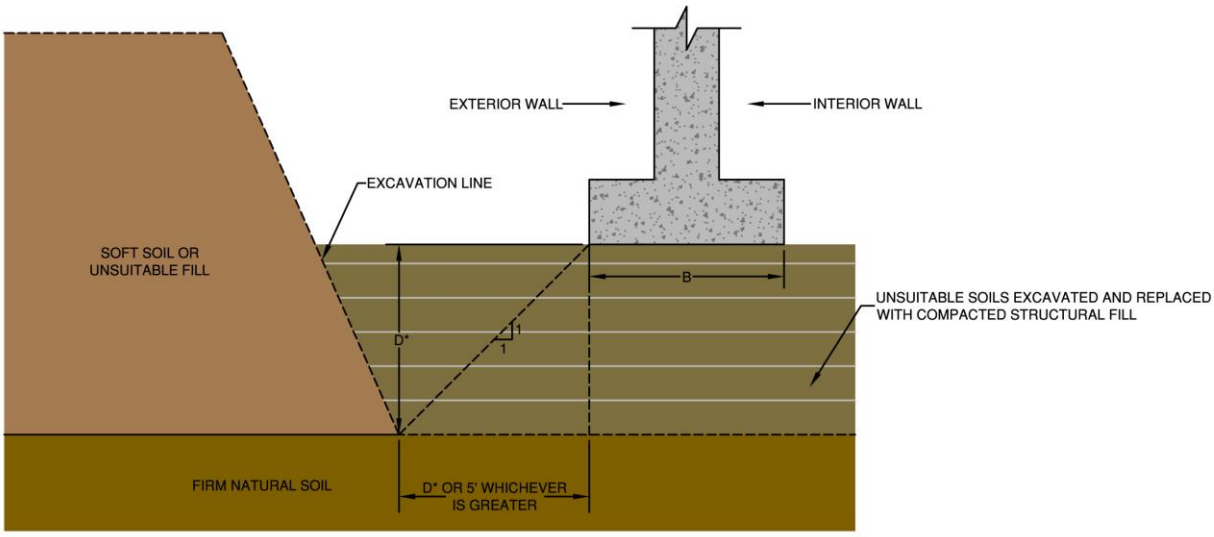
Undercut Detail for Footing Excavation in Unstable Materials
Boring Location Plan
Boring Logs
General Notes

UNDERCUT EXCAVATION FOR ISOLATED FOOTINGS IN UNSTABLE MATERIALS



D* IS DEPTH FOR SUITABLE SOILS

MASS EXCAVATION FOR FOOTINGS IN UNSTABLE MATERIALS

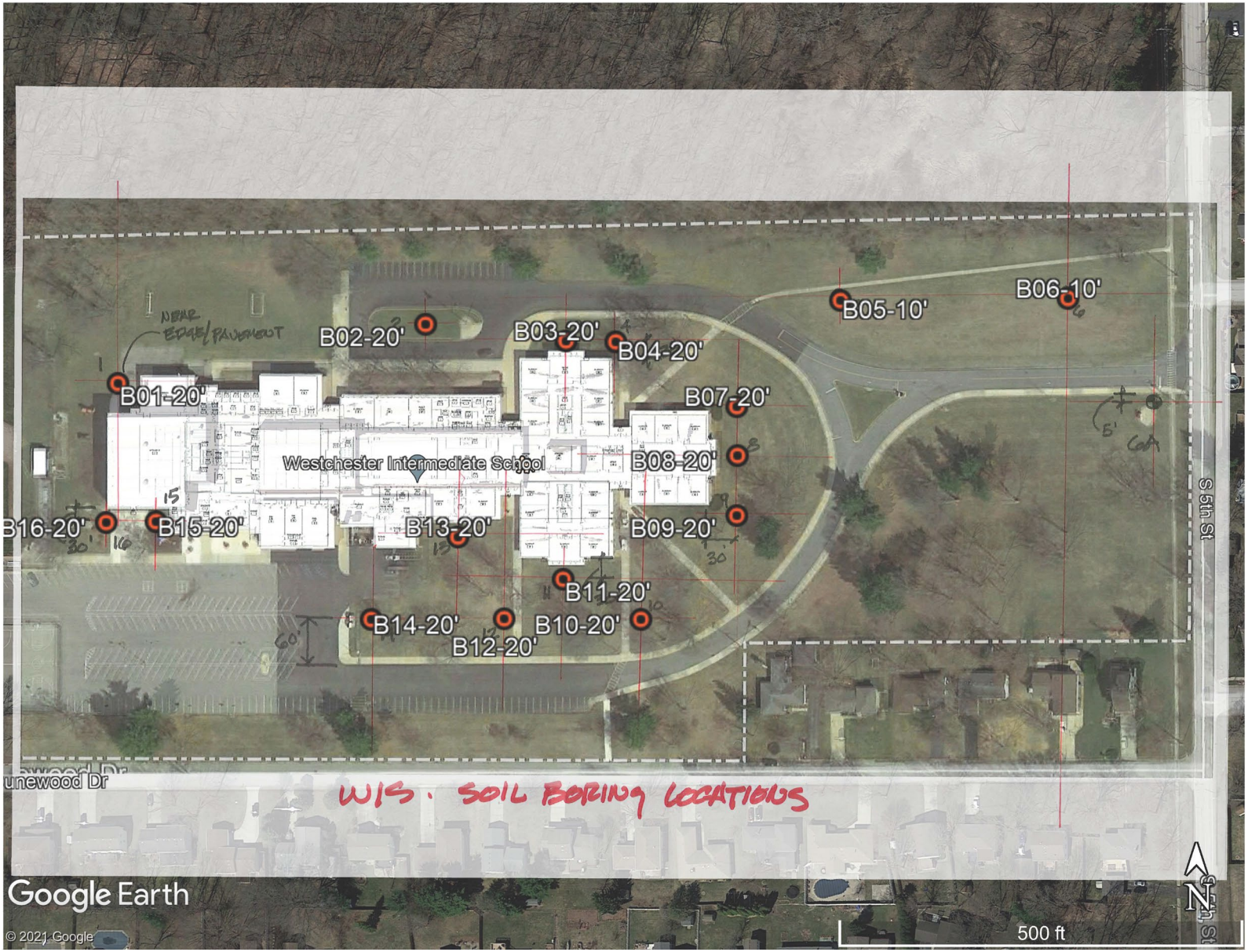


D* IS DEPTH FOR SUITABLE SOILS

Undercut Detail for Footing Excavation in Unstable Material

PROJECT: **Proposed Addition**
LOCATION: 1050 S. 5th Street, Chesterton, Indiana
CLIENT: Duneland School Corporation c/o The Skillman Group
A&W File No.: 21SB0077

Alt & Witzig Engineering Inc.
1418 86th Place
Merrillville, Indiana 46410
TEL (219)314-9028
www.altwitzig.com



BORING LOCATION PLAN

PROJECT: **Proposed Addition**
LOCATION: 1050 S. 5th Street, Chesterton, Indiana
CLIENT: Duneland School Corporation c/o The Skillman Group
A&W File No.: 21SB0077

Alt & Witzig Engineering Inc.
1418 86th Place
Merrillville, Indiana 46410
TEL (219)314-9028
www.altwitzig.com

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-01**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.3										
Brown Sandy CLAY			1	SS			8			9.5	
	4.0		2	SS			6				
Brown SAND		5	3	SS			10				
	9.0		4	SS			5				
Brown, Wet SAND with a Trace of Clay		10									
	11.0		5	SS			2				
Brown, Wet SAND			6	SS			2				
		15									
	19.5		7	SS			16				
Gray, Wet SAND	20.0	20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
During Drilling *11.0 ft.*
At Completion *11.0 ft.*
Caved At Completion *11.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-02**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/23/21**
Date Completed **9/23/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	1.0										
Brown and Gray Silty CLAY *(FILL)*	4.0		1	SS			23		4.5	6.3	
		5	2	SS			11		3.5	20.0	
Brown and Gray Silty CLAY with a Trace of Sand and Gravel	9.0		3	SS			16		2.8	18.9	
		10	4	SS		▽ ▩	15		3.8	21.6	
Brown Clayey SILT	12.0		5	SS			9		1.0	23.2	
		15	6	SS			5		1.0	23.8	
Gray Silty CLAY	18.0					○					
Brown, Wet Fine SAND	20.0	20	7	SS			11				
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *18.0 ft.*
▽ At Completion *9.0 ft.*
▩ Caved At Completion *10.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-03**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.6										
Brown Silty CLAY with a Trace of Sand and Gravel *(Possible Fill)*	4.0		1	SS			11		3.5	14.2	
			2	SS			14		2.8	19.3	
Dark Brown Silty CLAY	5.5	5	3	SS			15		4.0	22.4	
Brown and Gray Silty CLAY with a Trace of Sand and Gravel			4	SS			13		3.5	22.7	
	11.5	10	5	SS			9		1.3	22.1	
Brown and Gray Silty CLAY	13.5		6	SS		▨	6		0.5	23.0	
Gray Clayey SILT	19.0	15	7	SS			14				
Gray Sandy SILT	20.0	20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*
▨ Caved At Completion *15.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-04**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.6										
Brown and Gray Silty CLAY with a Trace of Sand and Gravel *(FILL)*	4.0		1	SS			15		4.5	8.2	
		5	2	SS			15		3.0	18.0	LOI=2.3%
			3	SS			12		3.5	20.0	
Brown and Gray Silty CLAY with a Trace of Sand and Gravel		10	4	SS			12		2.5	24.2	
			5	SS			10		2.5	20.7	
	14.0		6	SS			7		1.0	25.9	
Gray Silty CLAY with a Trace of Sand and Gravel		15									
	19.0		7	SS		○	18				
Gray Sandy SILT	20.0	20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *19.0 ft.*
▽ At Completion *Dry ft.*
Caved At Completion *6.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-05**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

TEST DATA

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	0.6										
			1	SS			7		1.3	13.8	
Brown and Gray Silty CLAY with a Trace of Sand			2	SS			7		3.0	20.4	
	6.0	5									
			3	SS			8		3.0	22.5	
Brown Silty CLAY with a Trace of Sand and Gravel	9.0										
			4	SS			8		1.0	20.8	
Gray Silty CLAY with a Trace of Sand and Gravel	10.0	10									
End of Boring at 10 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-06**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.3										
				1	SS			11		3.0	13.1	
				2	SS			12		4.0	18.5	
	Brown Silty CLAY with a Trace of Sand and Gravel		5									
				3	SS		▨	11		2.5	22.4	
		9.0		4	SS			9		1.5	19.5	
	Gray Silty CLAY with a Trace of Sand and Gravel	10.0	10									
	End of Boring at 10 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*
▨ Caved At Completion *7.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-07**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

TEST DATA

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.5		1	SS			8		2.5	13.5	
Brown Silty CLAY with a Trace of Sand and Gravel *(Possible Fill)*			2	SS			11		2.5	13.9	LOI=2.5%
	6.0	5	3	SS			6				
Brown and Gray SAND with a Trace of Clay *(Possible Fill)*	8.5		4	SS			11		2.3	21.7	
		10	5	SS			15		2.5	23.1	
Gray Silty CLAY with a Trace of Sand and Gravel			6	SS			9		2.0	23.5	
		15									
			7	SS			11		2.0	24.5	
	20.0	20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*
Caved At Completion *8.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-08**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/23/21**
Date Completed **9/23/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

TEST DATA

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	0.3										
Dark Brown Silty CLAY with a Trace of Sand and Gravel			1	SS			9		2.3	18.7	
	4.0		2	SS			10		2.3	16.6	LOI=2.5%
Black Silty CLAY with a Trace of Sand and Gravel	5.5	5									
Brown Fine SAND with a Trace of Gravel			3	SS		▼	15				
	9.0		4	SS			10		1.5	20.7	
		10	5	SS			13		2.8	21.3	
Gray Clayey SILT			6	SS		▽	7		1.0	23.5	
		15									
			7	SS			8		1.3	24.2	
	20.0	20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *13.5 ft.*
▼ After *24* hours *7.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-09**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.8										
Dark Brown Silty CLAY with a Trace of Sand and Gravel *(Possible Fill)*	4.0		1	SS			11		3.5	15.5	
			2	SS			12		2.0	18.1	LOI=2.3%
Gray Silty CLAY with a Trace of Sand and Gravel *(Possible Fill)*	6.5	5	3	SS			10		1.8	20.7	
Gray Clayey SILT	9.0		4	SS			12		3.0	20.0	
Gray Silty CLAY	12.0	10	5	SS			11				
Gray SILT	13.5		6	SS			8		1.8	25.3	
Gray Clayey SILT	16.0	15									
Gray Silty CLAY	20.0		7	SS			9		1.5	24.6	
End of Boring at 20 feet		20									

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
During Drilling *Dry ft.*
At Completion *Dry ft.*
Caved At Completion *8.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-10**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/23/21**
Date Completed **9/23/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.3										
Brown Silty CLAY with a Trace of Sand and Gravel	4.0		1	SS			13		4.5	13.1	
			2	SS			17		4.5	19.0	
Brown and Gray Silty CLAY with a Trace of Sand and Gravel	6.0	5	3	SS			17		2.5	22.8	
Brown and Gray Clayey SILT			4	SS			12		2.5	25.0	
	11.5	10	5	SS		▼ ▽	7		1.5	21.7	
			6	SS			5		1.5	26.3	
Gray Silty CLAY with a Trace of Sand and Gravel		15									
			7	SS			5		1.3	27.5	
	23.5	20				○					
Gray, Wet Fine SAND	25.0		8	SS			9				
End of Boring at 25 feet		25									

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling 23.5 ft.
▽ At Completion 13.0 ft.
▼ After 24 hours 12.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-11**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
	TOPSOIL	0.6										
	Brown Sandy CLAY			1	SS			15		2.0	14.7	
		4.0		2	SS			8		2.0	14.3	
	Brown and Gray Silty CLAY with a Trace of Sand and Gravel		5	3	SS			11		3.5	20.9	
				4	SS			12		3.3	21.3	
		11.0	10									
	Brown Silty CLAY with a Trace of Sand and Gravel			5	SS			9		1.8	23.5	
		13.5		6	SS			5		1.0	22.6	
	Gray Silty CLAY with a Trace of Sand and Gravel		15									
				7	SS			6		1.0	25.9	
		20.0	20									
	End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
During Drilling *Dry ft.*
At Completion *Dry ft.*
Caved At Completion *8.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-12**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.5										
Brown Silty CLAY with a Trace of Sand and Gravel			1	SS			13		4.5	11.1	
	4.0		2	SS			8		4.0	16.6	
		5	3	SS			11		2.8	19.4	
Brown and Gray Silty CLAY with a Trace of Sand and Gravel			4	SS			11		3.5	21.4	
		10	5	SS			7		1.0	27.8	
	12.0		6	SS			5		0.8	25.0	
Gray Silty CLAY with a Trace of Sand and Gravel		15									
	19.0		7	SS			19				
Gray SILT	19.5										
Gray Sandy SILT	20.0	20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
During Drilling *Dry ft.*
At Completion *Dry ft.*
Caved At Completion *8.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-13**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/24/21**
Date Completed **9/24/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.6										
	Brown, Moist SAND with a Trace of Clay			1	SS			17				
		4.0		2	SS			10		1.5	19.5	
	Brown and Gray Silty CLAY with a Trace of Sand and Gravel		5									
		6.5		3	SS			7		1.5	22.8	
	Brown and Gray Clayey SILT	8.0										
				4	SS			12		3.5	22.6	
	Brown and Gray Silty CLAY with a Trace of Sand and Gravel		10									
				5	SS			11		1.8	22.9	
		14.0		6	SS		▽	6		1.0	23.9	
	Gray Silty CLAY with a Trace of Sand and Gravel		15									
		18.5					○					
				7	SS			1				
	Gray, Wet SAND with a Trace of Gravel		20									
				8	SS			8				
		25.0	25									
	End of Boring at 25 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *18.5 ft.*
▽ At Completion *13.5 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-14**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/23/21**
Date Completed **9/23/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.6										
Brown Silty CLAY with Sand and Slag *(FILL)*	4.5		1	SS			17				
		5	2	SS			10		2.5	16.2	
Brown and Gray Silty CLAY *(Possible Fill)*	9.5		3	SS			4				
		10	4	SS			1		1.5	25.1	
Brown, Wet Fine SAND	11.5		5	SS			8		0.5	26.9	
Brown and Gray Clayey SILT	14.5		6	SS			15				
		15									
Brown, Wet SAND	18.0										
Brown, Wet SAND with a Trace of Silt	20.0		7	SS			17				
		20									
End of Boring at 20 feet											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
During Drilling *8.5 ft.*
At Completion *8.0 ft.*
After *24* hours *8.5 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation**
PROJECT NAME **Westchester Intermediate School**
PROJECT LOCATION **Chesterton, IN**

BORING # **B-15**
ALT & WITZIG FILE # **21SB0077**

DRILLING and SAMPLING INFORMATION

Date Started **9/23/21**
Date Completed **9/23/21**
Boring Method **HSA**
Driller **GROFF**

Hammer Wt. **140** lbs.
Hammer Drop **30** in.
Spoon Sampler OD **2** in.
Rig Type **CME-550**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	0.4										
Brown Silty CLAY with a Trace of Sand and Gravel			1	SS			18		3.5	11.2	
			2	SS		○	8		2.0	13.5	
	6.0	5	3	SS			12				
Brown, Moist SAND			4	SS			12				
	11.5	10	5	SS		▨	3				
Brown, Wet SAND	13.5		6	SS			8				
Brown, Wet SAND with a Trace of Silt		15									
	19.5		7	SS			14				
Gray, Wet SAND End of Boring at 20 feet	20.0	20									

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Groundwater
○ During Drilling *5.0 ft.*
▽ At Completion *Dry ft.*
▨ Caved At Completion *11.0 ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **The Skillman Corporation** BORING # **B-16**

PROJECT NAME **Westchester Intermediate School** ALT & WITZIG FILE # **21SB0077**

PROJECT LOCATION **Chesterton, IN**

DRILLING and SAMPLING INFORMATION

Date Started	9/23/21	Hammer Wt.	140 lbs.
Date Completed	9/23/21	Hammer Drop	30 in.
Boring Method	HSA	Spoon Sampler OD	2 in.
Driller	GROFF	Rig Type	CME-550

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.4										
	Brown Sandy CLAY			1	SS			17		4.5	8.3	
		4.0		2	SS			11				
	Brown SAND with a Trace of Clay		5									
		6.5		3	SS			12				
	Brown, Wet SAND			4	SS			6				
			10									
				5	SS		○	1				
		13.5		6	SS			9				
	Brown, Wet SAND with a Trace of Silt		15									
		19.5		7	SS			27				
	Gray, Wet SAND	20.0	20									
	End of Boring at 20 feet											

Sample Type

SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

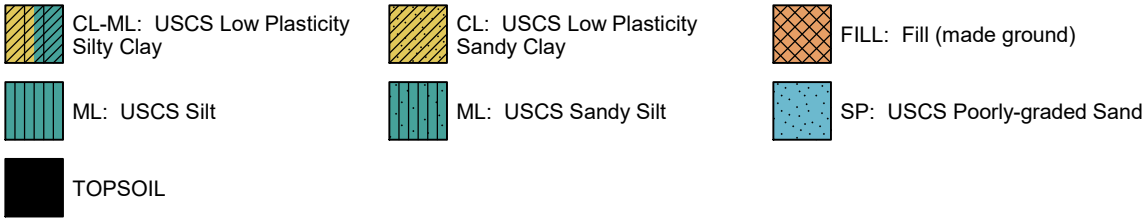
Groundwater

○ During Drilling *11.5 ft.*
▽ At Completion *Dry ft.*
Caved At Completion *12.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

MATERIAL GRAPHICS LEGEND



SOIL PROPERTY SYMBOLS

N: *Standard "N" penetration value. Blows per foot of a 140-lb hammer falling 30" on a 2" O.D. split-spoon.*

Qu: *Unconfined Compressive Strength, tsf* PP: *Pocket Penetrometer, tsf*

LL: *Liquid Limit, %* PL: *Plastic Limit, %* PI: *Plasticity Index, %*

DRILLING AND SAMPLING SYMBOLS

GROUNDWATER SYMBOLS

- ○ *Apparent water level noted while drilling.*
- ▽ *Apparent water level noted upon completion.*
- ▼ *Apparent water level noted upon delayed time.*

SAMPLER SYMBOLS

- ⊠ SS: Split Spoon

RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (NON-COHESIVE SOILS)

TERM	*BLOWS PER FOOT*
Very Loose	0 - 5
Loose	6 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>51

RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (COHESIVE SOILS)

TERM	*BLOWS PER FOOT*
Very Soft	0 - 3
Soft	4 - 5
Medium Stiff	6 - 10
Stiff	11 - 15
Very Stiff	16 - 30
Hard	>31

Alt & Witzig Engineering, Inc.
4105 West 99th St.
Carmel, IN 46032
Telephone: 317-875-7000
Fax:

GENERAL NOTES

Project: Westchester Intermediate School

Location: Chesterton, IN

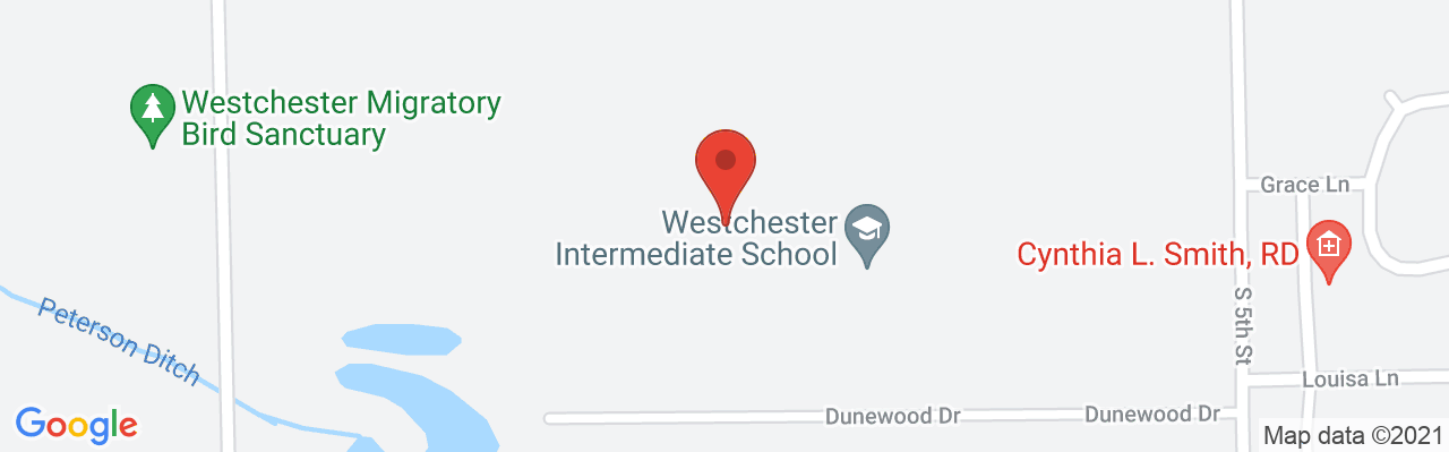
Number: 21SB0077

APPENDIX B

U.S. Seismic Design Maps
Custom Soil Resource Report for Porter County, Indiana

Proposed Addition

Latitude, Longitude: 41.599455, -87.062246



Date	10/12/2021, 9:43:43 AM
Design Code Reference Document	IBC-2012
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.115	MCE_R ground motion. (for 0.2 second period)
S_1	0.062	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.184	Site-modified spectral acceleration value
S_{M1}	0.148	Site-modified spectral acceleration value
S_{DS}	0.123	Numeric seismic design value at 0.2 second SA
S_{D1}	0.099	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.4	Site amplification factor at 1.0 second
PGA	0.054	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.087	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.115	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.125	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.062	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.071	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.918	Mapped value of the risk coefficient at short periods
C_{R1}	0.869	Mapped value of the risk coefficient at a period of 1 s

DISCLAIMER

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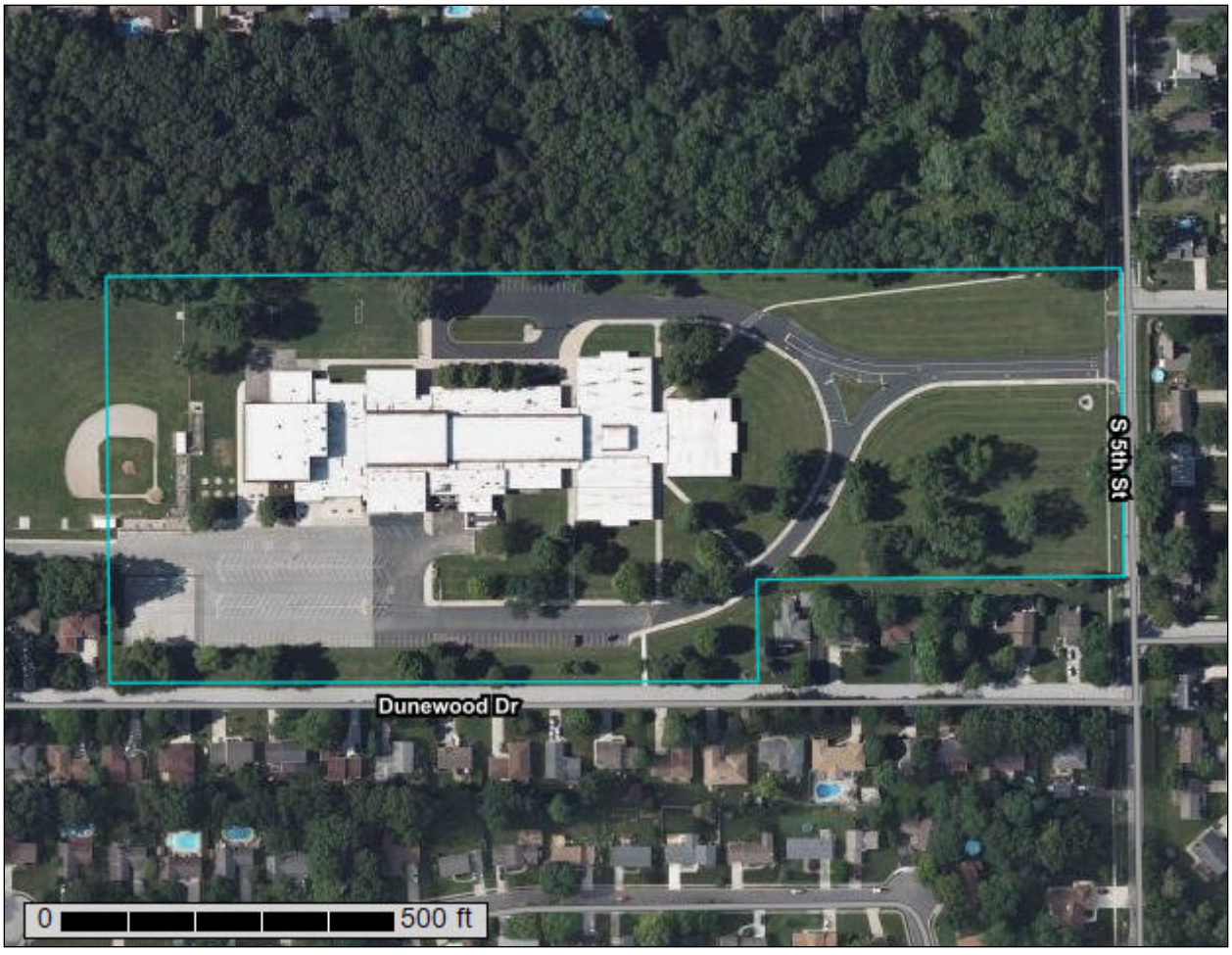
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Porter County, Indiana



September 27, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,570 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 24, Jun 10, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 5, 2020—Jul 29, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HaA	Hanna sandy loam, 0 to 3 percent slopes	0.4	1.9%
MfA	Martinsville loam, 0 to 2 percent slopes	13.2	67.0%
MfB	Martinsville loam, 2 to 6 percent slopes	0.0	0.0%
Mp	Milford silty clay loam, 0 to 2 percent slopes	0.9	4.8%
Sb	Sebewa loam, shaly sand substratum	0.0	0.0%
Wt	Whitaker loam	5.2	26.3%
Totals for Area of Interest		**19.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Porter County, Indiana

HaA—Hanna sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 5d57
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hanna and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanna

Setting

Landform: Outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 42 inches: loam
H3 - 42 to 54 inches: sandy loam
H4 - 54 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F098XA017MI - Moist Acidic Drift Flats
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Pinhook

Percent of map unit: 5 percent
Landform: Flats
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Gilford

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

MfA—Martinsville loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 5d5h
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 165 to 175 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Martinsville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Martinsville

Setting

Landform: Terraces on lake plains, terraces on outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

H1 - 0 to 12 inches: loam
H2 - 12 to 36 inches: clay loam
H3 - 36 to 46 inches: sandy clay loam
H4 - 46 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 45 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: R097XB046IL - Chicago Moist Clayey Flats
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Rensselaer

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

MfB—Martinsville loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5d5j
Elevation: 570 to 870 feet
Mean annual precipitation: 36 to 40 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 165 to 175 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Martinsville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Martinsville

Setting

Landform: Terraces on lake plains, terraces on outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

H1 - 0 to 12 inches: loam

H2 - 12 to 36 inches: clay loam
H3 - 36 to 46 inches: sandy clay loam
H4 - 46 to 60 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 45 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R097XB046IL - Chicago Moist Clayey Flats
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Washtenaw

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Rensselaer

Percent of map unit: 5 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Mp—Milford silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2smzk
Elevation: 510 to 930 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 155 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Milford, drained, and similar soils: 93 percent

Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Milford, Drained

Setting

Landform: Depressions on lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Parent material: Clayey lacustrine deposits

Typical profile

Ap - 0 to 9 inches: silty clay loam
A - 9 to 22 inches: silty clay
Bg - 22 to 50 inches: silty clay loam
Cg - 50 to 60 inches: stratified sandy loam to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

Minor Components

Peotone, drained

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 1 percent
Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve

Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Urban land
Percent of map unit: 1 percent
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Sb—Sebewa loam, shaly sand substratum

Map Unit Setting
National map unit symbol: 5d6c
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Sebewa and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sebewa

Setting
Landform: Depressions on outwash plains
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy outwash over sandy and gravelly outwash

Typical profile
H1 - 0 to 12 inches: loam
H2 - 12 to 37 inches: gravelly clay loam
H3 - 37 to 60 inches: very gravelly loamy sand

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: R098XB034IN - Kankakee Wet Drift Flats
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Wt—Whitaker loam

Map Unit Setting

National map unit symbol: 5d70
Elevation: 570 to 870 feet
Mean annual precipitation: 34 to 40 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 140 to 170 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Whitaker and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitaker

Setting

Landform: Terraces, lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

H1 - 0 to 9 inches: loam
H2 - 9 to 41 inches: clay loam
H3 - 41 to 60 inches: stratified sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 45 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: R097XB046IL - Chicago Moist Clayey Flats
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Sebewa

Percent of map unit: 10 percent
Landform: Depressions
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

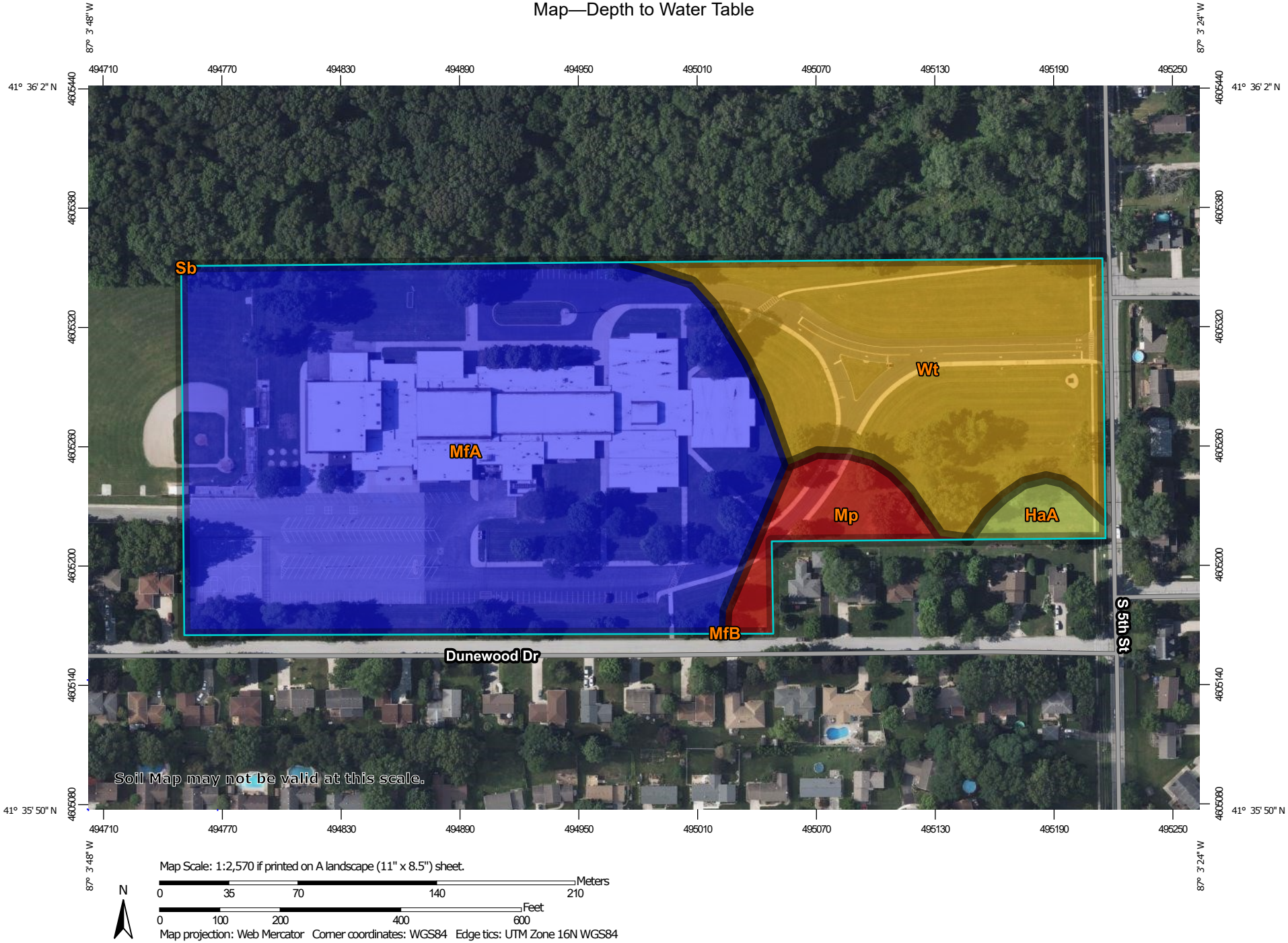
Water Features

Water Features include ponding frequency, flooding frequency, and depth to water table.

Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.



Map Scale: 1:2,570 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Porter County, Indiana
Survey Area Data: Version 24, Jun 10, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 5, 2020—Jul 29, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
HaA	Hanna sandy loam, 0 to 3 percent slopes	69	0.4	1.9%
MfA	Martinsville loam, 0 to 2 percent slopes	>200	13.2	67.0%
MfB	Martinsville loam, 2 to 6 percent slopes	>200	0.0	0.0%
Mp	Milford silty clay loam, 0 to 2 percent slopes	15	0.9	4.8%
Sb	Sebewa loam, shaly sand substratum	0	0.0	0.0%
Wt	Whitaker loam	38	5.2	26.3%
Totals for Area of Interest			**19.6**	**100.0%**

Rating Options—Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

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CONTRACTOR'S BID FOR PUBLIC WORKS FORM NO. 96

Format (Revised 2013)
(Amended for DSC)

Liberty and Westchester Intermediate Schools – Athletic Site Projects

Duneland School Corporation
Porter, IN

PART I

(To be completed for all bids. Please type or print)

Date (month, day, year):_____

BIDDER (Firm) _____

Address _____ P.O. Box _____

City/State/Zip _____

Telephone Number: _____ Email Address: _____

Person to contact regarding this Bid_____

Pursuant to notices given, the undersigned offers to furnish labor and/or materials necessary to complete the public works project of:

_____
Insert Category No. (s) and Name(s)

Of public works project, ***Liberty and Westchester Intermediate/Middle Schools – Athletic Site Projects***, in accordance with Plans and Specifications prepared by ***Gibraltar Design, 9102 N. Meridian St., Ste. #300, Indianapolis, IN 46260***, as follows:

BASE BID

For the sum of _____
(Sum in words)

_____DOLLARS ($_____)
(Sum in figures)

The undersigned acknowledges receipt of the following Addenda:
Receipt of Addenda No. (s) _____

PROPOSAL TIME

Bidder agrees that this Bid shall remain in force for a period of sixty (60) consecutive calendar days from the due date, and Bids may be accepted or rejected during this period. Bids not accepted within said sixty (60) consecutive calendar days shall be deemed rejected.

Attended pre-bid conference YES _____ NO_____

Has visited the jobsite YES _____ NO_____

The Bidder has reviewed the Guideline Schedule in Section 01 32 00 and the intent Of the schedule can be met.

YES _____ NO_____

Bidder has included their Written Drug Testing Plan that covers all employees of the bidder who will perform work on the public work project and meets or exceeds the requirements set in IC 4-13-18-5 or IC 4-13-18-6.

YES _____ NO_____

The Skillman Corporation's diversity initiative is to create a program to encourage, assist and measure the active participation of Minority- Owned, Women-Owned, Veteran – Owned and Disabled Individual-Owned Businesses. The Program is to ensure that MWVDBEs are provided full and equal opportunity to participate in all Skillman Corporation's Projects.

Bidder has included:

DBE:	YES _____%	NO _____
MBE:	YES _____%	NO _____
WBE:	YES _____%	NO _____
VBE:	YES _____%	NO _____

The undersigned further agrees to furnish a bond or certified check with this Bid for an amount specified in the Notice to Bidders. If Alternate Bids apply, submit a proposal for each in accordance with the Plans and Specifications.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit bases, the itemization of the units shall be shown on a separate attachment.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin, or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(if applicable)

I, the undersigned bidder, or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ALTERNATE BIDS

A blank entry or an entry of "No Bid", "N/A", or similar entry on any Alternate will cause the bid to be rejected as non-responsive only if that Alternate is selected. If no change in the bid amount is required, indicate "No Change".

****MARK "ADD" OR "DEDUCT" FOR EACH ALTERNATE****

Alternate Bid No. 1 – WIMS & LIMS Grandstands & Press Box System

Change the Base Bid the sum of_____
(sum in words)

_____DOLLARS ($_____) ADD DEDUCT
(sum in figures)

Alternate Bid No. 2 – LIMS Community Building

Change the Base Bid the sum of_____
(sum in words)

_____DOLLARS ($_____) ADD DEDUCT
(sum in figures)

Alternate Bid No. 3 – WIMS Community Building

Change the Base Bid the sum of_____
(sum in words)

_____DOLLARS ($_____) ADD DEDUCT
(sum in figures)

~~Alternate Bid No. 4 – LIMS & WIMS Additional Lanes 9 & 10 of Asphalt/Base Stone, and Latex Track Surface - complete.~~

~~Change the Base Bid the sum of _____~~
~~(sum in words)~~

~~_____ DOLLARS ($_____)~~ ~~ADD~~ ~~DEDUCT~~
~~(sum in figures)~~

Alternate Bid No. 5 – LIMS New T – Ball Field system.

Change the Base Bid the sum of _____
(sum in words)

_____ DOLLARS ($_____) ADD DEDUCT
(sum in figures)

Alternate Bid No. 6 – LIMS New 200' Softball Field system,

Change the Base Bid the sum of _____
(sum in words)

_____ DOLLARS ($_____) ADD DEDUCT
(sum in figures)

Alternate Bid No. 7 – LIMS/WIMS Irrigation Water Line

Change the Base Bid the sum of _____
(sum in words)

_____ DOLLARS ($_____) ADD DEDUCT
(sum in figures)

PART II

(For projects of $150,000 or more – IC 36-1-12-4)

These statements to be submitted under oath by each bidder with and as a part of his bid. (Attach additional pages for each section as needed.)

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you?_____If so, where and why?

_____

_____

_____

4. List references from private firms for which you have performed work.

_____

_____

_____

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed Work. (Examples could include a narrative of when you could begin, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)

2. Please list the names and addresses of all subcontractors (i.e. persons or firms outside your own firm who have performed part of the work) that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

3. If you intend to sublet any portion of the work, state the name and addresses of each subcontractor, equipment to be used by the subcontractor, and whether you will required a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

4. What equipment do you have available to use for the proposed Project? Any equipment used by subcontractors may also be required to be listed by the governmental unit.

_____

_____

_____

_____

5. Have you into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which corroborate the process listed.

_____

_____

_____

_____

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of Bidder's financial statement is mandatory. Any Bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the Contract must be specific enough in detail so that said governing body can make a proper determination of the Bidder's capability for completing the Project if awarded.

SECTION IV CONTRACTOR NON-COLLUSION AFFIDAVIT

The undersigned Bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this Bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporations has, have, or will receive directly or indirectly, any rebate, fee, gift, commission, or thing of value on account of such contract.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT

Dated at _____this _____ day of _____, 20

_____
(Name of Organization)

By

_____

_____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) SS:
COUNTY OF _____)

Before me, a Notary Public, personally appeared the above-named

_____

Swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this _____ day of _____,

_____
(Title)

_____
Notary Public

My Commission Expires: _____

County of Residence: _____

END OF SECTION 00 31 00

ADDENDUM TWO

Addendum Two (AD.02) to the drawings and specifications prepared by Gibraltar Design for **Liberty and Westchester Intermediate Schools Athletic Site Projects** for Duneland School Corporation, Chesterton, Indiana.

All Contractors bidding on this project shall read all of the items covered below and shall comply with all of the requirements as set forth, including any necessary refinements or additions generated by Addendum #1, this Addendum, and required by the intent of the original contract documents. All Contractors shall acknowledge on their bid form that they have received this Addendum and include the appropriate content of same within their bid proposal.

CONTRACTOR QUESTIONS

1 - Contractor Comments

At Liberty, the TC Energy 30" DIA Line has a 655.84 top. The EOP elevation on the outside of the track is 658.00. This means from finish grade there is 2.16' of cover over that line. At the bottom of the stone (-12.5") there will be 1.12' of cover over that pipeline, excluding any more cuts.

The concern is two fold:

1. There does not appear to be enough cover (1.78') to place the track, specifically the asphalt, safely with mechanized equipment.
2. Placing that material by hand, one shovel at a time, will not provide the quality product that the owner is expecting. Since this cannot be provided, a price for the work cannot be submitted.

Response to 1

The overall grading plan for the Liberty Intermediate School will not be altered. TC Energy has reviewed the elevation differences between the track and pipeline, and finds the proposed work to be acceptable. Construction installation methods will need to be coordinated between TC Energy and Skillman. The use of heavy mechanized equipment will likely be limited within isolated areas above the existing gas pipelines.

2 - Contractor Questions

1. Please advise is HDPE pipe acceptable for all storm sewer pipe?
2. Westchester plan C-3.2 calls out catch basins around the field. Detail page C-4.1 shows an INDOT Type E, one piece catch basin; however, in the specifications, 334000-2.4A, it calls out a two piece structure. Please specify which is correct.

Response to 2

The storm sewer pipe is permitted to be HDPE so long as it's a dual wall pipe with a smooth interior. The Westchester Intermediate School catch basins are to be single piece structures as detailed on Sheet C-4.1.

3 – Contractor Questions

1. Drawing C1.2 – please clarify that the dugouts and concrete pads are being removed.
2. Drawing C-3.2 is showing 208' of 15" RCP pipe and 147' of 15" RCP with 3 structures being installed. Was this installed on a previous phase.

Response to 3

The Westchester Intermediate School baseball dugouts and concrete pads require demolition. The 208' and 147' storm sewer segments on Sheet C-3.2 were previously installed as part of the prior school project.

4 – Specification Clarification

The following language is hereby added to the Asphaltic Concrete Paving specification section (32 12 16);

Track Surface Field Quality Control
A. Resiliency agent manufacturer shall provide a factory representative to be on hand at project site during mixing and installation.
1. Violation of this provision will be cause for rejection of installation.
B. Resiliency course shall not deviate more than 1/4 inch from true in any direction when tested with a 10 foot straightedge.
C. Do not exceed 0.1 percent pitch in the running direction (longitudinal) or 2.0 percent transverse for the resiliency course.
D. Provide written certification that slopes and elevations meet the requirements of these specifications.
E. Rough, coarse, or uneven finish, or poor quality workmanship will be cause for rejection.

5 – Work Scope Clarification

Additional scope clarification is hereby provided to define the work limits for the water/sewer utility limits at the Liberty and Westchester school projects.

Liberty

Water – Project begins at the 8"x4"x8" tee connecting to the existing 8" ductile iron water main.

Sewer – Project begins at the existing sanitary sewer Manhole G extending west to the concession building.

Westchester

Water – Project begins at the 6"x4"x6" tee connecting to the existing 6" ductile iron water main at the center of the existing school building.

Sewer – An existing sanitary sewer stub exists at the north end of the proposed concession building.

6 – Contractor Questions

1. Plan sheet C-2.1 depicts mill and resurface for the existing drive and portion of the parking lot. I have highlighted some existing and proposed elevations in the following screen shot and you can see the there is fill in upwards of 2' in these areas. This cannot be a mill and overlay but needs to be a total reconstruction of the cross section due to the amount of fill that will be placed. Is my assumption correct and the plans are wrong?

2. There are no proposed grades on the inside the track at Westchester just arrows showing that the track is to slope inwards, how much is the track to slope? Are we to assume a .05% inward slope like Liberty? If so, the "D" zone on the east side of the site will more than likely trap water.

3. There is no asphalt replacement shown for the water line that is to be installed outside of the disturbance limits through the existing parking lot.

4. Proposed topo lines still do not tie back into existing grade. Currently the top of the proposed pond on the west side of the project will have a 1' lip that will be higher than existing grade. No surface water will be able to drain into the pond. Existing grade is 643 and the proposed top of the pond is 644.

5. The detail plans call for underdrains in the shot-put pits but the plans for Liberty do not depict where these lines are to be tied into.

Response to 6

1. The drive portion south of the proposed event parking will require full pavement reconstruction and not mill/overlay as the plans indicate.
2. The proposed track is to slope internally at 1%. Potential areas where water may become trapped should be addressed with the engineer during construction.

3. The proposed Westchester water line will require pavement removal/replacement. Contractors should plan for a removal limit of 8' wide, or as required.
4. The proposed detention pond should be built up to an elevation of 643 to tie into the surrounding field elevations.
5. The Liberty shot put pits will not have underdrains as these lie within the gas pipeline limits.

7 – Contractor Question

Drawing C-1.2. The existing athletic track has a curb around it. There is no note on the drawing designating the removal of a curb. Please confirm. The note 13 is to remove the athletic track & field only.

Response to 7

The curb surrounding the existing track and field areas shall be included with the required demolition work.

8 – Contractor Questions

1. Sheet 3.2 states to "replace casting with flat casting and adjust to grade" please confirm what type casting is needed at these 3 locations.

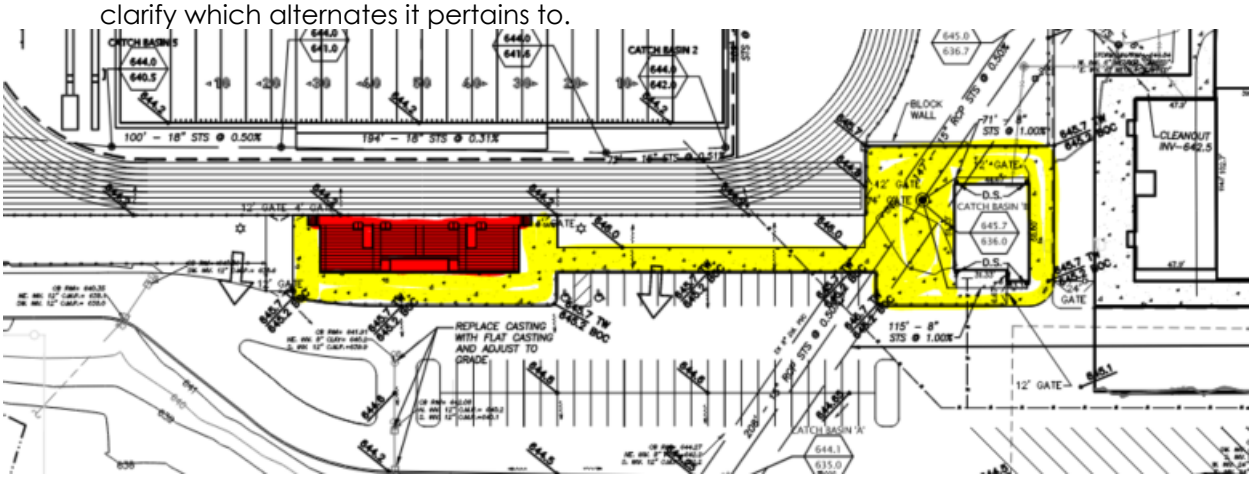
2. C2.1 to mill existing asphalt, in some areas the elevation change is 2 feet. How would you like us to address milling these areas? Do we need to do a completely new asphalt section in these areas?

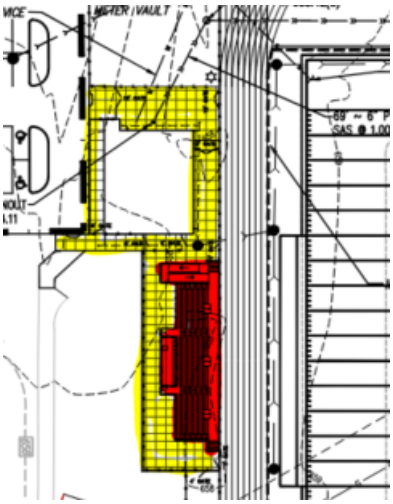
Response to 8

1. The required flat casting types shall be EJ1020 round open grate, or approved equal.
2. See above response.

9 – Contractor Questions

1. Please clarify is the all the concrete highlighted in yellow base bid? If not please clarify which alternates it pertains to.





2. Please advise for alternates #2 and #3 states that the base bid building footprint will be 6" of stone base. What elevation do you want the 6" of stone? Should the stone be left at the same elevation as the adjacent sidewalk?
3. Please provide a layout and details for alternate #4 adding lanes 9&10, will the lanes be added to the outside or the inside of the track. How does adding the lanes affect the grading plan of the field? Adding lanes will offset the bleachers and possibly the community building at liberty.
4. MH/OG 40 at Liberty part of alternate #2 or base bid?
5. Please provide Geotechnical report for both locations.

Response to 9

1. All Concrete Highlighted is base bid.
2. The stone for the footprint of the concessions building for base bid is to equal the total depth of the concrete walk and drainage stone below and is to be the same elevation as the top of the concrete walk.
3. 9&10 lane track alternate is to be removed from the project,
4. MH/OG 40 is to be base bid
5. Skillman to provide.

SPECIFICATIONS

1. Specification Section 04 20 00 Unit Masonry

A. Add new Paragraph 2.1.H. as follows:

"H. Mortar Coloring : Color Flamingo Masonry cement, utilizing a hydrated hydraulic lime base, as manufactured by Riverton Corporation, Riverton, Virginia, or as approved by the Architect; mill mixed and prepacked, meeting ASTM C270, Type N.

1. Submit manufacturer's full range of colored mortar for selection by Architect.

2. Locations: Liberty IS – Matching existing mortar on school brick veneer. Westchester IS – Compliment color of Colored Masonry selected."

B. Paragraph 2.5.A.2. clarification: Interior masonry walls color is to match the exterior split-faced masonry color and is to utilize the integral water repellant colored mortar like the exterior units.

C. Paragraph 2.5.C.1. clarification:

1. Location of Bullnose block for exterior corners – on interior lightweight block units, bullnose is required. For Split-faced block units on exterior at door locations, Contractor is to orient the door frames to within 1" of the face of the masonry unit on the side of the direction of the door swing, the units do not require to be bullnosed.

DRAWINGS

2. Sheet A-101

A. Refer to attached full-sized drawing for the addition of fire extinguishers.

3. Sheet A-102

A. Refer to attached full-sized drawing for the addition of fire extinguishers.

Pages 1 through 7, inclusive, and two (2) Full-Size Drawings, constitute the total makeup of **Addendum Two**.

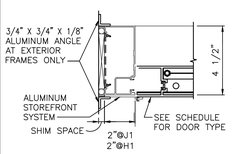
GIBRALTAR DESIGN

Joseph P. Briggs

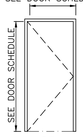
Y:\21-139 Duneland SC - Liberty Intermediate School Additions and Renovations\Specs - Site\ADDENDUM ONE\AD01.doc

NOTES - ALUMINUM STOREFRONT (SF)

1. PROVIDE SHIM SPACE, BACKER ROD AND SEALANT AROUND PERIMETER OF ALL STOREFRONT FRAMING WHERE FRAMING ABUTES DISIMILAR MATERIALS.
2. PROVIDE FOAM INSULATION IN SHIM SPACE AROUND PERIMETER OF ALL EXTERIOR STOREFRONT FRAMING.
3. DIMENSIONS SHOWN ARE NOMINAL. FIELD VERIFY ALL DIMENSIONS SHOWN PRIOR TO FABRICATION AND INSTALLATION.
4. ALL FRAMES IN EXTERIOR WALLS SHALL BE THERMALLY BROKEN



JAMB J1 & HEAD H1



SF1

DOOR NO	DESCRIPTION	TYPE	DOOR SIZE (WxH) (INCHES)	MATERIAL	LOU	GLASS DOOR	GLASS SIDE LGT	GLASS TRA	FRAME MAT'L	FRAME WIDTH	FRAME JAMB	FRAME HEAD	FRAME SILL	FRAME ELEV	LABEL	HARDWARE EXIT DEVICE	HARDWARE CLOSER	NOTES
A–106A	SINGLE	1	42 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
A–107A	OVERHEAD DOOR		96 x 96								2/ A–401	1/ A–401					AD–01	
A–107B	OVERHEAD DOOR		120 x 96								2/ A–401	1/ A–401						
A–107C	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
A–107D	OVERHEAD DOOR		96 x 96								2/ A–401	1/ A–401					AD–01	
A–108A	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
A–108B	OVERHEAD DOOR		40 x 62								3/ A–401	3/ A–401	3/ A–401					

GENERAL DOOR NOTES

A. JAMB, HEAD, AND SILL DO NOT SHOW WALL CONSTRUCTION. SEE FLOOR PLAN FOR WALL MATERIALS. REFER TO A800 SERIES DRAWINGS FOR WALL FINISHES.
B. SEAL ALL JAMBS AND HEADS WHERE FRAMES MEET EXPOSED MASONRY AND/OR GYPSUM BOARD.
C. PROVIDE A SCRIBE MOLD AT ALL EXTERIOR DOOR FRAMES AND WHERE NOTED ON DRAWINGS. SCRIBE MOLD TO BE 3/4" X 3/4" METAL AT EXTERIOR OF METAL FRAMES AND AT BOTH SIDES OF ALUMINUM FRAMES. SET SCRIBE MOLDS IN SEALANT.
D. PROVIDE GLAZING AND GLASS STOPS AS REQUIRED.
E. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS, BOTH NEW AND EXISTING.
F. SHIM SPACE IS NOT SHOWN ON DOOR FRAME ELEVATIONS FOR ALUMINUM STOREFRONT. TAKE THESE DIMENSIONS INTO ACCOUNT AND ADJUST DIMENSIONS ACCORDINGLY.

DOOR SCHEDULE NOTES (REMARKS):

1. PROVIDE ALUMINUM THRESHOLD SET IN FULL BED OF MASTIC.

GLASS SCHEDULE MK	GLASS TYPES

LOUVER SCHEDULE MK	LOUVER SIZE

DOOR AND FRAME SCHEDULE

DOOR NO	DESCRIPTION	TYPE	DOOR SIZE (WxH) (INCHES)	MATERIAL	LOU	GLASS DOOR	GLASS SIDE LGT	GLASS TRA	FRAME MAT'L	FRAME WIDTH	FRAME JAMB	FRAME HEAD	FRAME SILL	FRAME ELEV	LABEL	HARDWARE EXIT DEVICE	HARDWARE CLOSER	NOTES
A–101A	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
A–101B	OVERHEAD DOOR		120 x 96								2/ A–401	2/ A–401					AD–01	
A–102A	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1			YES	1
A–103A	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1			YES	1
A–104A	SINGLE	1	42 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
A–105A	SINGLE	1	42 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
A–105B	OVERHEAD DOOR		96 x 62								3/ A–401	3/ A–401	3/ A–401					

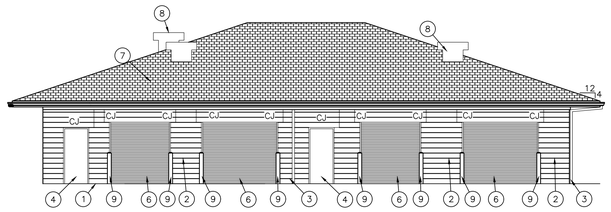
ELEVATION KEY NOTES:

(ALL PLAN NOTES MAY NOT BE INDICATED ON THIS SHEET.)

1. FINISH GRADE
2. SPLIT–FACED CMU WITH INTEGRAL COLOR AND WATERPROOFING
3. ALUMINUM DOWNSPOUT AND GUTTER – 4" x 5" TYPICAL DOWNSPOUT
4. ALUMINUM FRAMED OPENINGS WITH ALUMINUM DOORS.
5. COILING COUNTER DOOR.
6. COILING OVERHEAD DOOR.
7. ASPHALT SHINGLE ROOF SYSTEM.
8. EXHAUST FAN – REFER TO MECHANICAL DRAWINGS.
9. PIPE BOLLARD — 6 / A–401
10. MECHANICAL LOUVER, REFER TO MECHANICAL DRAWINGS.

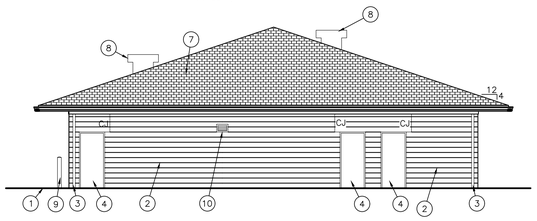
GENERAL ELEVATION NOTES:

A. REFER TO STRUCTURAL. DRAWINGS FOR FOUNDATION WALLS AND FOOTINGS.
B. REFER TO FLOOR PLANS FOR EXTERIOR WALL SECTIONS CUTS, UNLESS INDICATED OTHERWISE.
C. FOR LOCATION AND MOUNTING HEIGHTS OF CAMERAS, SPEAKERS, LIGHTS, HORNS, ETC. REFER TO ELECTRICAL AND TECHNOLOGY DRAWINGS.
D. ALL NEW FACE BRICK SHALL BE MODULAR RUNNING BOND UNLESS NOTED OTHERWISE.
E. FINISH GRADE INDICATES ON ELEVATIONS ARE FOR DRAWING PURPOSES ONLY. REFER TO CIVIL DRAWINGS FOR ACTUAL GRADES. COORDINATE STEPPED FLASHINGS WITH ACTUAL GRADES AS REQUIRED FOR CELL VENTS TO BE ABOVE GRADE.
F. STEP BRICK LEDGE DOWN AS REQUIRED FOR LEDGE TO BE BELOW GRADE OR CONCRETE WALK. COORDINATE WITH CIVIL DRAWINGS.
G. (CJ) INDICATES CONTROL JOINT. REFER TO DETAIL



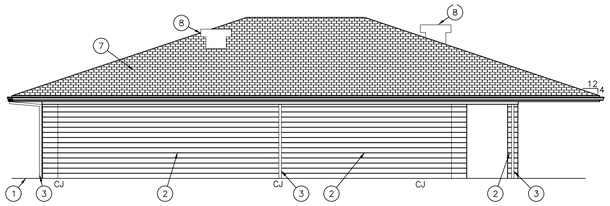
WEST ELEVATION

SCALE: 1/8" = 1'–0"



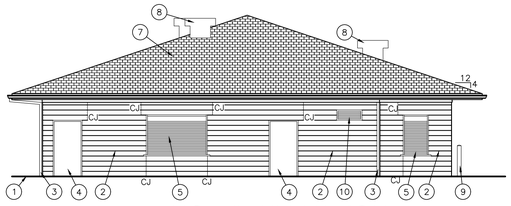
SOUTH ELEVATION

SCALE: 1/8" = 1'–0"



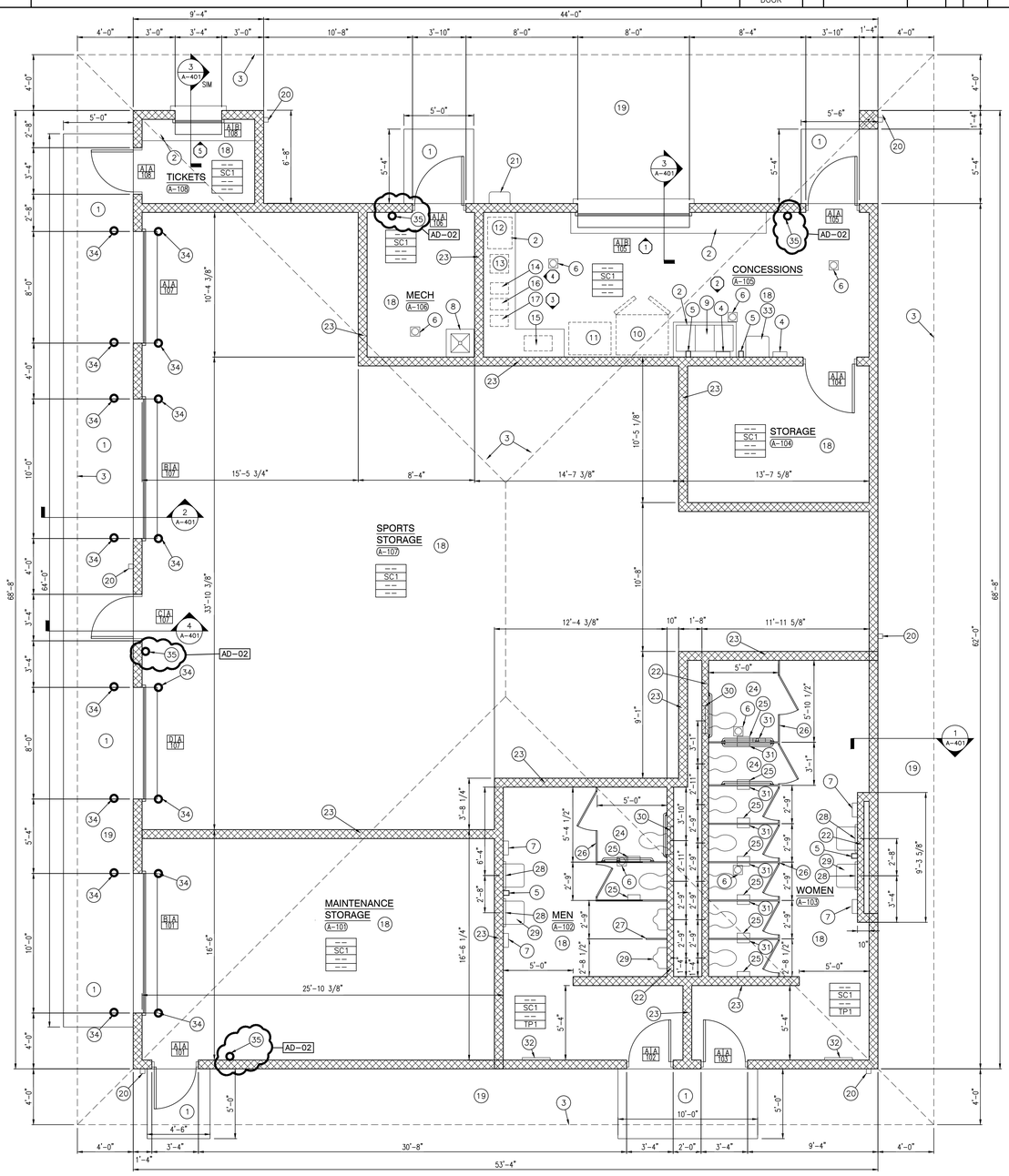
EAST ELEVATION

SCALE: 1/8" = 1'–0"



NORTH ELEVATION

SCALE: 1/8" = 1'–0"



LIS COMMUNITY BUILDING - ARCHITECTURAL FLOOR PLAN

SCALE: 1/4" = 1'–0"

NORTH

GENERAL PLAN NOTES:

A. FOR GENERAL PROJECT NOTES, MATERIAL INDICATIONS LEGEND, SYMBOL LEGEND, ABBREVIATIONS, ETC., REFER TO GI SERIES SHEETS.
B. PLAN DIMENSIONS TO MASONRY WALLS ARE TO FACE OF ROUGH MASONRY.
C. ALL CMU WALLS THAT DO NOT LAY OUT IN FULL OR HALF LENGTHS SHOULD BE BALANCED SO AS NOT TO HAVE ANY PIECES LESS THAN 4" IN SIZE EXPOSED TO VIEW.
D. MASONRY WALLS BEARING ON A THICKENED SLAB AT SLAB DEPRESSIONS REQUIRE CUT MASONRY UNITS SO THAT COURSING BEGINS AT THE FLOOR LINE.
E. THE BASE FIRST FLOOR ELEVATION INDICATED FOR THE PROJECT IS 100'–0". REFER TO SITE PLAN FOR CORRELATION TO USGS DATUM.
F. HINGE SIDE OF DOOR JAMB AT CMU WALLS SHALL BE LOCATED 8" MINIMUM FROM ADJACENT WALL
G. INTERIOR CMU WALLS ARE TO BE RUNNING BOND UNLESS NOTED OTHERWISE.
H. ALL EXPOSED CONCRETE MASONRY UNITS (CMU) CORNERS ARE TO BE BULLNOSED, EXCEPT AT MASONRY BULKHEADS AND EXTERIOR WINDOW JAMBS.

PLAN LEGEND:

(→) INDICATES CASEWORK ELEVATION SYMBOL – REFER TO A–401 FOR ELEVATIONS.

P1	WALL FINISH
C1	FLOOR FINISH
B1	BASE FINISH
––	MISC FINISH INFORMATION

PLAN NOTES:

(ALL PLAN NOTES MAY NOT BE INDICATED ON THIS SHEET.)

1. CONCRETE STOOP, PROVIDE SCORED JOINTS ON SURFACE TO ALINE WITH CONCRETE SIDEWALK JOINTS, REFER TO STRUCTURAL DRAWINGS.
2. CASEWORK AND/OR MILLWORK, REFER TO ELEVATIONS
3. LINE OF ROOF.
4. PAPER TOWEL DISPENSER. OFCI
5. SOAP DISPENSER. OFCI
6. FLOOR DRAIN, REFER TO PLUMBING.
7. ELECTRIC HAND DRYER
8. MOP SINK, REFER TO PLUMBING.
9. THREE COMPARTMENT SINK REFER TO PLUMBING.
10. SODA COOLER BY OWNER
11. POPCORN MACHINE BY OWNER.
12. HOT DOG WARMER BY OWNER.
13. PRETZEL WARMER BY OWNER.
14. CHEESE DISPENSER BY OWNER.
15. MICROWAVE BY OWNER.
16. COFFEE MAKER BY OWNER.
17. HOT CHOCOLATE MAKER BY OWNER.
18. CEILING TO BE GYPSUM BOARD AT 10'–7/8" AFF PAINT P1.
19. PERFORATED ALUMINUM SOFFIT.
20. ALUMINUM DOWNSPOUT AND BOOT.
21. BOTTLE FILLER, REFER TO PLUMBING.
22. 6" CMU WITH INTEGRAL COLOR TO BOTTOM OF GYPSUM BOARD CEILING.
23. 8" CMU WITH INTEGRAL COLOR TO BOTTOM OF GYPSUM BOARD CEILING
24. ACCESSIBLE FACILITIES. — 5 / A–401
25. TOILET PAPER HOLDER. (OFCI)
26. TOILET PARTITION.
27. URINAL SCREEN WALL.
28. 2'–0" W x 3'–0" H MIRROR WITH BOTTOM OF REFLECTIVE SURFACE MOUNTED AT 40"A.F.F.
29. ACCESSIBLE FIXTURE (LAVATORY/URNAL). SEE PLUMBING DRAWINGS.
30. 24"x24" ACCESS PANEL. MOUNT TOP OF PANEL AT 5'–4" A.F.F. COORDINATE LOCATION W/ SENSOR HEIGHT.
31. FEMININE NAPKIN DISPOSAL.
32. 2'–0" x 5'–0" MIRROR BOTTOM @ 1'–4" A.F.F.
33. UTILITY SINK, REFER TO PLUMBING.
34. PIPE BOLLARD — 6 / A–401
35. WALL MOUNTED FIRE EXTINGUISHER — AD–02

ROOM FINISHES:

P1 (PAINT), SHERWIN WILLIAMS, CEILING BRIGHT WHITE 7007.

P2 (PAINT), SHERWIN WILLIAMS, GRIZZLE GRAY SW7068, DOOR FRAMES.

SC1 (SEALED CONCRETE), REFER TO CONCRETE SPECIFICATIONS FOR SEALER AND FINISH.

PL1 (PLASTIC LAMINATE), PIONITE, SABLE AG021, SUEDE FINISH.

SS1 (SOLID SURFACE), CORIAN, RAIN CLOUD.

TP1 (TOILET PARTITION) ASI ACCURATE PARTITION, SOLID PLASTIC, BURGUNDY 9211.

GIBRALTAR DESIGN
ARCHITECTURE • ENGINEERING • INTERIOR DESIGN

PROJECT

LIBERTY & WESTCHESTER INTERMEDIATE SCHOOLS - ATHLETIC SITE PROJECTS

DUNELAND SCHOOL CORPORATION
CHESTERTON, INDIANA

GIBRALTAR DESIGN
9102 N. Meridian St., Ste. 300
Indianapolis, IN 46260
Homepage www.GibraltarDesign.com
Email info@GibraltarDesign.com
Phone 317.580.5777 Fax 317.580.5778

PROJECT 21–139 21–141
DATE 03/03/23
COORDINATED BY DTB
DRAWN BY DTB
CHECKED BY DTB JPB

JOSEPH P. BRIGGS REGISTERED NO. 11600109 STATE OF INDIANA ARCHITECT

REVISIONS

MARK	DATE	ISSUED FOR
AD–1	03/14/23	ADDENDUM NO. 1
AD–2	03/20/23	ADDENDUM NO. 2

DRAWING
COMMUNITY BUILDING - ARCHITECTURAL PLAN, ELEVATIONS, AND SCHEDULE

PROJECT
LIBERTY & WESTCHESTER INTERMEDIATE SCHOOLS - ATHLETIC SITE PROJECTS

SHEET
LIS A–101

Monday, 3/20/2023 – 10:55 AM – LAST SAVED BY:DBURNS
Y:\21–139 DUNELAND SC – LIBERTY INTERMEDIATE SCHOOL ADDITIONS AND RENOVATIONS\21–139 DRAWINGS–SITE\05 ARCH\A–101.DWG

GENERAL DOOR NOTES

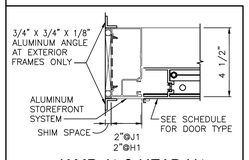
A. JAMB, HEAD, AND SILL DO NOT SHOW WALL CONSTRUCTION. SEE FLOOR PLAN FOR WALL MATERIALS. REFER TO A800 SERIES DRAWINGS FOR WALL FINISHES.
B. SEAL ALL JAMBS AND HEADS WHERE FRAMES MEET EXPOSED MASONRY AND/OR GYPSUM BOARD.
C. PROVIDE A SCRIBE MOLD AT ALL EXTERIOR DOOR FRAMES AND WHERE NOTED ON DRAWINGS. SCRIBE MOLD TO BE 3/4" X 3/4" METAL AT EXTERIOR OF METAL FRAMES AND AT BOTH SIDES OF ALUMINUM FRAMES. SET SCRIBE MOLDS IN SEALANT.
D. PROVIDE GLAZING AND GLASS STOPS AS REQUIRED.
E. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS, BOTH NEW AND EXISTING.
F. SHIM SPACE IS NOT SHOWN ON DOOR FRAME ELEVATIONS FOR ALUMINUM STOREFRONT. TAKE THESE DIMENSIONS INTO ACCOUNT AND ADJUST DIMENSIONS ACCORDINGLY.

DOOR SCHEDULE NOTES (REMARKS):

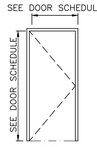
1. PROVIDE ALUMINUM THRESHOLD SET IN FULL BED OF MASTIC.

NOTES - ALUMINUM STOREFRONT (SF)

1. PROVIDE SHIM SPACE, BACKER ROD AND SEALANT AROUND PERIMETER OF ALL STOREFRONT FRAMING WHERE FRAMING ABUTES DISIMILAR MATERIALS.
2. PROVIDE FOAM INSULATION IN SHIM SPACE AROUND PERIMETER OF ALL EXTERIOR STOREFRONT FRAMING.
3. DIMENSIONS SHOWN ARE NOMINAL. FIELD VERIFY ALL DIMENSIONS SHOWN PRIOR TO FABRICATION AND INSTALLATION.
4. ALL FRAMES IN EXTERIOR WALLS SHALL BE THERMALLY BROKEN



JAMB J1 & HEAD H1



SF1

GLASS SCHEDULE

MK	GLASS TYPES

LOUVER SCHEDULE

MK	LOUVER SIZE

DOOR AND FRAME SCHEDULE

		DOOR				GLASS			FRAME						HARDWARE		
NO	DESCRIPTION	TYPE	DOOR SIZE (WxH) (INCHES)	MATERIAL	LOU	DOOR	SIDE LGT	TRA	MAT'L	WIDTH	JAMB	HEAD	SILL	ELEV	LABEL	EXIT DEVICE	CLOSER	NOTES
B-101A	SINGLE	1	36 x 86	AL					AL	4 1/2"		H1	J1	SF1				1
B-101B	OVERHEAD DOOR		40 x 62								3/A-402	3/A-402	3/A-402					
B-102A	SINGLE	1	42 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
B-103A	SINGLE	1	42 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
B-103B	OVERHEAD DOOR		96 x 62								3/A-402	3/A-402	3/A-402					
B-104A	SINGLE	1	42 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
B-105A	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
B-105B	OVERHEAD DOOR		120 x 96								2/A-402	2/A-402					AD-01	
B-106A	SINGLE	1	36 x 86	AL					AL	4 1/2"	J1	H1		SF1				1
B-106B	OVERHEAD DOOR		120 x 96								2/A-402	2/A-402					AD-01	

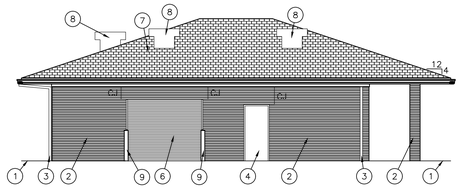
ELEVATION KEY NOTES:

(ALL PLAN NOTES MAY NOT BE INDICATED ON THIS SHEET.)

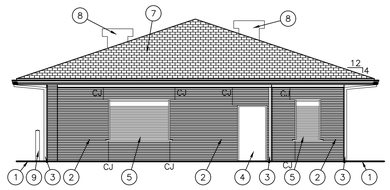
1. FINISH GRADE
2. FACE BRICK COLOR A
3. ALUMINUM DOWNSPOUT AND GUTTER – 4" x 5" TYPICAL DOWNSPOUT
4. ALUMINUM FRAMED OPENINGS WITH ALUMINUM DOORS.
5. COILING COUNTER DOOR.
6. COILING OVERHEAD DOOR.
7. ASPHALT SHINGLE ROOF SYSTEM.
8. EXHAUST FAN – REFER TO MECHANICAL DRAWINGS.

GENERAL ELEVATION NOTES:

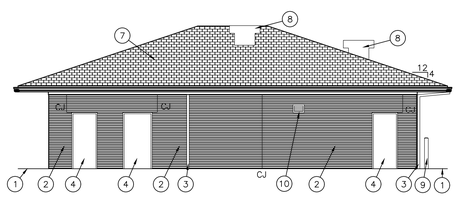
A. REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION WALLS AND FOOTINGS.
B. REFER TO FLOOR PLANS FOR EXTERIOR WALL SECTIONS CUTS, UNLESS INDICATED OTHERWISE.
C. FOR LOCATION AND MOUNTING HEIGHTS OF CAMERAS, SPEAKERS, LIGHTS, HORNS, ETC. REFER TO ELECTRICAL AND TECHNOLOGY DRAWINGS.
D. ALL NEW FACE BRICK SHALL BE MODULAR RUNNING BOND UNLESS NOTED OTHERWISE.
E. FINISH GRADE INDICATES ON ELEVATIONS ARE FOR DRAWING PURPOSES ONLY. REFER TO CIVIL DRAWINGS FOR ACTUAL GRADES. COORDINATE STEPPED FLASHINGS WITH ACTUAL GRADES AS REQUIRED FOR CELL VENTS TO BE ABOVE GRADE.
F. STEP BRICK LEDGE DOWN AS REQUIRED FOR LEDGE TO BE BELOW GRADE OR CONCRETE WALK. COORDINATE WITH CIVIL DRAWINGS.
G. (CJ) INDICATES CONTROL JOINT. REFER TO DETAIL



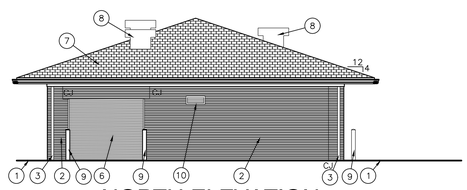
WEST ELEVATION
SCALE: 1/8" = 1'-0"



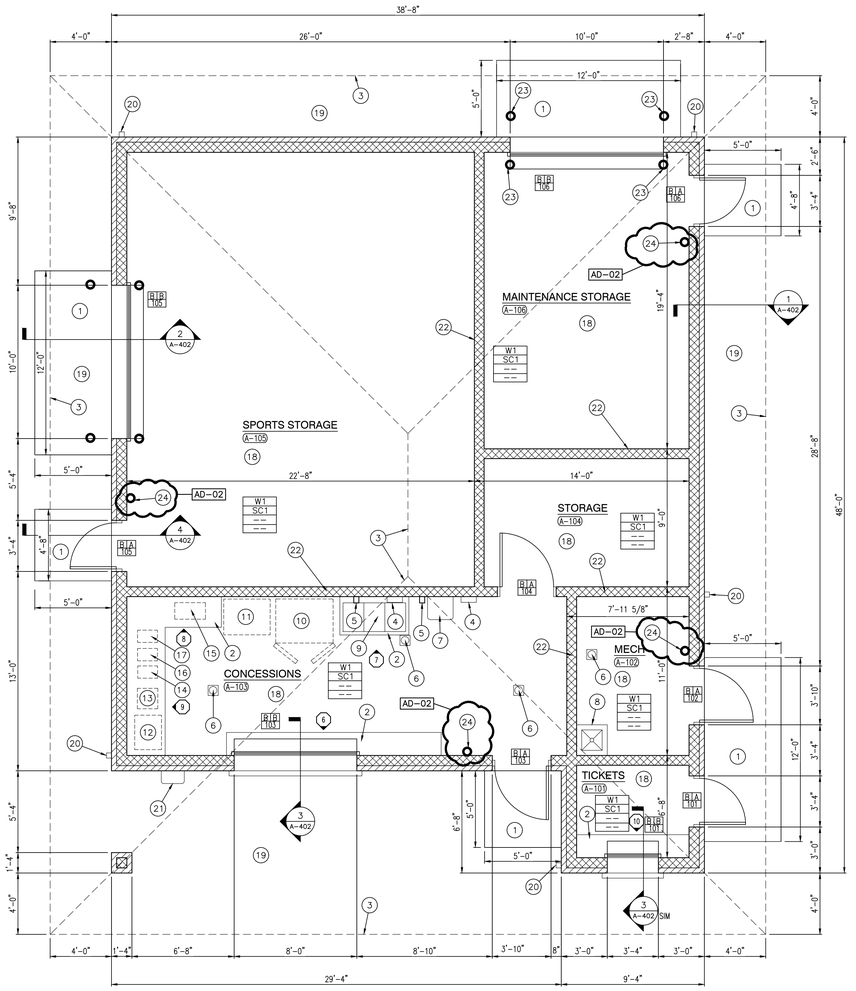
SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



EAST ELEVATION
SCALE: 1/8" = 1'-0"



NORTH ELEVATION
SCALE: 1/8" = 1'-0"



WIS COMMUNITY BUILDING - ARCHITECTURAL FLOOR PLAN
SCALE: 1/4" = 1'-0"

NORTH

GENERAL PLAN NOTES:

A. FOR GENERAL PROJECT NOTES, MATERIAL INDICATIONS LEGEND, SYMBOL LEGEND, ABBREVIATIONS, ETC., REFER TO GI SERIES SHEETS.
B. PLAN DIMENSIONS TO MASONRY WALLS ARE TO FACE OF ROUGH MASONRY.
C. ALL CMU WALLS THAT DO NOT LAY OUT IN FULL OR HALF LENGTHS SHOULD BE BALANCED SO AS NOT TO HAVE ANY PIECES LESS THAN 4" IN SIZE EXPOSED TO VIEW.
D. MASONRY WALLS BEARING ON A THICKENED SLAB AT SLAB DEPRESSIONS REQUIRE CUT MASONRY UNITS SO THAT COURSING BEGINS AT THE FLOOR LINE.
E. THE BASE FIRST FLOOR ELEVATION INDICATED FOR THE PROJECT IS 100'-0". REFER TO SITE PLAN FOR CORRELATION TO USGS DATUM.
F. HINGE SIDE OF DOOR JAMB AT CMU WALLS SHALL BE LOCATED 8" MINIMUM FROM ADJACENT WALL.
G. INTERIOR CMU WALLS ARE TO BE RUNNING BOND UNLESS NOTED OTHERWISE.
H. ALL EXPOSED CONCRETE MASONRY UNITS (CMU) CORNERS ARE TO BE BULLNOSED, EXCEPT AT MASONRY BULKHEADS AND EXTERIOR WINDOW JAMBS.

PLAN LEGEND:

INDICATES CASEWORK ELEVATION SYMBOL – REFER TO A-401 FOR ELEVATIONS.

P1	WALL FINISH
C1	FLOOR FINISH
B1	BASE FINISH
--	MISC FINISH INFORMATION

PLAN NOTES:

(ALL PLAN NOTES MAY NOT BE INDICATED ON THIS SHEET.)

1. CONCRETE STOOP, PROVIDE SCORED JOINTS ON SURFACE TO ALINE WITH CONCRETE SIDEWALK JOINTS, REFER TO STRUCTURAL DRAWINGS.
2. CASEWORK AND/OR MILLWORK, REFER TO ELEVATIONS
3. LINE OF ROOF.
4. PAPER TOWEL DISPENSER. OFCI
5. SOAP DISPENSER. OFCI
6. FLOOR DRAIN, REFER TO PLUMBING.
7. UTILITY SINK, REFER TO PLUMBING.
8. MOP SINK, REFER TO PLUMBING.
9. THREE COMPARTMENT SINK, REFER TO PLUMBING.
10. SODA COOLER BY OWNER
11. POPCORN MACHINE BY OWNER.
12. HOT DOG WARMER BY OWNER.
13. PRETZEL WARMER BY OWNER.
14. CHEESE DISPENSER BY OWNER.
15. MICROWAVE BY OWNER.
16. COFFEE MAKER BY OWNER.
17. HOT CHOCOLATE MAKER BY OWNER.
18. CEILING TO BE GYPSUM BOARD AT 10'-7/8" AFF PAINT P1.
19. PERFORATED ALUMINUM SOFFIT.
20. ALUMINUM DOWNSPOUT AND BOOT.
21. BOTTLE FILLER, REFER TO PLUMBING.
22. 8" CMU WALL TO BOTTOM OF GYPSUM BOARD CEILING.
23. PIPE BOLLARD. (5 A-402)
24. WALL MOUNTED FIRE EXTINGUISHER. AD-02

ROOM FINISHES:

P1 (PAINT), SHERWIN WILLIAMS, CEILING BRIGHT WHITE 7007.

P2 (PAINT), SHERWIN WILLIAMS, GRIZZLE GRAY SW7068, DOOR FRAMES.

W1 (WALL COATING), SHERWIN WILLIAMS, WORLDLY GRAY SW7043.

SC1 (SEALED CONCRETE), REFER TO CONCRETE SPECIFICATIONS FOR SEALER AND FINISH.

PL2 (PLASTIC LAMINATE), WILSONART, GRAPHITE NEBULA 4623-60, SUEDE FINISH.

SS2 (SOLID SURFACE), CORIAN, NEUTRAL AGGREGATE.

GIBRALTAR DESIGN
ARCHITECTURE • ENGINEERING • INTERIOR DESIGN

PROJECT
LIBERTY & WESTCHESTER INTERMEDIATE SCHOOLS - ATHLETIC SITE PROJECTS
DUNELAND SCHOOL CORPORATION
CHESTERTON, INDIANA

GIBRALTAR DESIGN
9102 N. Meridian St., Ste. 300
Indianapolis, IN 46260
Homepage www.GibraltarDesign.com
Email info@GibraltarDesign.com
Phone 317.580.5777 Fax 317.580.5778

PROJECT
21-139
21-141
DATE
02/20/23
COORDINATED BY
DTB
DRAWN BY
DTB
CHECKED BY
DTB JPB

JOSEPH P. BRIGGS REGISTERED NO. 11600109 STATE OF INDIANA ARCHITECT

REVISIONS

MARK	DATE	ISSUED FOR
AD-1	03/14/23	ADDENDUM NO. 1
AD-2	03/20/23	ADDENDUM NO. 2

DRAWING
COMMUNITY BUILDING - ARCHITECTURAL PLAN, ELEVATIONS, AND SCHEDULE

PROJECT
LIBERTY & WESTCHESTER INTERMEDIATE SCHOOLS - ATHLETIC SITE PROJECTS

SHEET
WIS A-102

Monday, 3/20/2023 - 10:56 AM - LAST SAVED BY:DBURNS
Y:\21-141 DUNELAND SC - WESTCHESTER INTERMEDIATE SCHOOL ADDITIONS AND RENOVATIONS\21-141 DRAWINGS-SITE\DS ARCH\A-102.DWG