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# CSP 25-011 South Texas ISD Athletic Field Mercedes Site
# Architect Project NO: S2000724

## Addendum #2

**We are issuing this addendum to address the following:**

***This addendum is issued for the purpose of modifying the plans and specifications for South Texas ISD Athletic Fields – Mercedes Site CSP 25-011. Please see page 2-81.***

Please, sign, date, and submit this addendum with your proposal response. We look forward to hearing from you.

Thank you.

South Texas ISD – Purchasing Department

June 19, 2024
**South Texas ISD Athletic Fields – Mercedes Site CSP 25-011**

GOMEZ MENDEZ SAENZ, INC.
1150 PAREDES LINE RD.
BROWNSVILLE, TEXAS 78526
(956) 546-0110


# ADDENDUM NO. 2

A. PURPOSE AND INTENT
This addendum is issued for the purpose of modifying the plans and specifications for *South Texas ISD Athletic Fields – Mercedes Site CSP 25-011.*

This addendum shall become part of the contract and all CONTRACTORS shall be bound by its content. All aspects of the specifications and drawings not covered herein shall remain the same. The General Conditions and the Special Conditions of the specifications shall govern all parts of the work and apply in full force to this Addendum.

B. SCOPE

## I. CLARIFICATIONS:

1. Track Sports Surface – Contractors can also provide *Plexitrac Accelerator by California Sports Surfaces.* Contact Gary Heffers, ICP Building Solutions Group gherrers@icpgroup.com

## II. SPECIFICATIONS:

1. Section 003132 Geotechnical Data
    a. Section 003132 Geotechnical Data attached to this Addendum shall be ADDED to Construction Documents.

2. Section 321800 Athletic Surface Coating System for Concrete Tennis Court
    a. Subject to compliance with this section: *California Sports Surfaces, a division of ICP Group, Plexipave System* shall be an approved manufacturer and product. Contact Gary Heffers, ICP Building Solutions Group gherrers@icpgroup.com

## II. PLANS:

1. Med High Civil Sheets
    a. DELETE previously issued C1, C2, C3, C4 and C5 sheets and REPLACE with Sheets C1, C2, C3, C4 and C5 Sheets attached to this Addendum.

2. Science Academy Civil Sheets
    a. DELETE previously issued C1, C2, C3, C4 and C5 sheets and REPLACE with Sheets C1, C2, C3, C4 and C5 Sheets attached to this Addendum.

3. <u>Mercedes Landscape Sheets</u>
    a. REVISIONS to Sheet L2.01, L3.01, L5.01 and L5.02.
    b. DELETE previously issued Sheet L2.02 and REPLACE with Sheet L2.02 attached to this Addendum.

End of Addendum 2

DOCUMENT 003132 - GEOTECHNICAL DATA

## 1.1 GEOTECHNICAL DATA

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information. This Document and its attachments are not part of the Contract Documents.

B. Because subsurface conditions indicated by the soil borings are a sampling in relation to the entire construction area, and for other reasons, the Owner, the Architect, the Architect's consultants, and the firm reporting the subsurface conditions do not warranty the conditions below the depths of the borings or that the strata logged from the borings are necessarily typical of the entire site. Any party using the information described in the soil borings and geotechnical report shall accept full responsibility for its use.

C. Soil-boring data for Project, obtained by MEG Engineering, dated June 19, 2024 is available for viewing as appended to this Document.

D. A geotechnical investigation report for Project, prepared by MEG Engineering, dated June 19, 2024 is available for viewing as appended to this Document.

1. The opinions expressed in this report are those of a geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by a geotechnical engineer. Owner is not responsible for interpretations or conclusions drawn from the data.
2. Any party using information described in the geotechnical report shall make additional test borings and conduct other exploratory operations that may be required to determine the character of subsurface materials that may be encountered.

END OF DOCUMENT 003132

# MEG GEOTECHNICAL ENGINEERING REPORT

**PROPOSED**
**SOUTH TEXAS ISD SCIENCE ACADEMY**
**NEW SPORTS FIELDS**

**MERCEDES, HIDALGO COUNTY, TEXAS**

**Geotechnical Engineering • Construction Materials Engineering & Testing**
**Environmental • Consulting • Forensics**

# GEOTECHNICAL ENGINEERING REPORT
# FOUNDATION RECOMMENDATIONS
# PROPOSED SOUTH TEXAS ISD SCIENCE ACADEMY
# NEW SPORTS FIELDS
# MERCEDES, HIDALGO COUNTY, TEXAS

**Prepared For**
**David Monreal**
**GMS Architects**

**MEG Report No. 01-24-29129**

**June 19, 2024**

MILLENNIUM ENGINEERS GROUP, INC.
TBPE FIRM NO. F-3913
5804 N. GUMWOOD AVENUE
PHARR, TEXAS 78577
TEL:956-702-8500
FAX:956-702-8140
WWW.MEGENGINEERS.COM

June 19, 2024

David Monreal, AIA
GMS Architects
1150 Paredes Line Road
Brownsville, TX 78521
(956)546-0110
dmonreal@gmsarchitects.com

**Subject:** **Geotechnical Engineering Report**
**MEG Report No. 01-24-29129**
**Foundation Recommendations**
**Proposed South Texas ISD Science Academy**
**New Sports Fields**
**Mercedes, Hidalgo County, Texas**

Dear Mr. Monreal(CLIENT):

Millennium Engineers Group, Inc. is pleased to submit the enclosed geotechnical engineering report that was prepared for the above subject project. This report addresses the procedures and findings of our geotechnical engineering study. Our recommendations should be incorporated into the design and construction documents for the proposed development.

We want to emphasize the importance that all our recommendations presented in this report and/or addendums to this report be followed. We look forward to continuing our involvement in the project by providing construction monitoring in accordance with the report recommendations and materials testing services during construction. We strongly recommend that we be a part of the preconstruction meeting to address any specific issues that are pertinent to this project.

Thank you for the opportunity to be of service to you in this phase of the project and we would like the opportunity to assist you in the upcoming phases of the project. If you have any questions, please contact our office at the address, telephone, fax or electronic address listed below.

Cordially,
**Millennium Engineers Group, Inc.**
TBPE Firm No. F-3913


Amos Emerson, P.E.
Geotechnical Department Manager

Quyet Thang Pham, Ph.D., P.E.
Geotechnical Engineer

*The seal appearing on this document was authorized by Quyet Thang Pham, P.E. 131836 on June 19, 2024. Alteration of a sealed document without proper notification to the responsible engineer is an offence under the Texas Engineering Practice Act*

Cc: 1 Original and PDF Document

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## 1.0 INTRODUCTION

Millennium Engineers Group, Inc. (MEG) has completed and is pleased to submit this document that presents our findings as a result of a geotechnical engineering study of this project to our client. The project site is located at 900 Med High Drive in Mercedes, Hidalgo County, Texas. The project location is shown on the Project Location Map, found in the Appendix section of this report. This report briefly describes the procedures utilized during this study and presents our findings along with our recommendation, for foundation design and construction considerations.

Our scope of services for the project was outlined in MEG proposal No. 01-24-144G, dated May 17, 2024 and approved by David Monreal, AIA on May 20, 2024.

## 2.0 PROJECT DESCRIPTION

It is our understanding that the proposed site will accommodate the construction of a new 400-meter athletic track and natural turf areas.

## 3.0 SCOPE AND LIMITATIONS OF STUDY

This engineering report has been prepared in accordance with accepted geotechnical engineering practices currently exercised by geotechnical engineers in this area. No warranty, expressed or implied, is made or intended. This report is intended for the exclusive use by the client and client's authorized project team for use in preparing design and construction documents for this project only. This report may only be reproduced in its entirety for inclusion in construction documents. This report in its entirety shall not be reproduced or used for any other purposes without the written consent of our firm. This report may not contain sufficient information for purposes of other parties or other uses and is not intended for use in determining construction means and methods.

The recommendations presented in this report are based on data obtained from the soil borings drilled at this site and our understanding of the project information provided to us by our client and other project team members, and the assumption that site grading will result in only minor changes in the existing topography. Subsurface soil conditions have been observed and interpreted at the boring locations only.

This report may not reflect the actual variations of the subsurface conditions across the subject site. It is important to understand that variations may occur due to real geologic conditions or previous uses of the site. The nature and extent of variations across the subject site may not become evident until specific design locations are identified and/or construction commences. The construction process itself may also alter subsurface conditions. If variations appear evident at the time during the design phase and/or construction phase, we should be notified immediately to determine if our opinions, conclusions and recommendations need to be reevaluated. It may be necessary to perform additional field and laboratory tests and engineering analyses to establish the engineering impact of such variations. These services are additional and are not a part of our project scope.

The engineering report was conducted for the proposed project site described in this report. The conclusions and recommendations contained in this report are not valid for any other project sites. If the project information described in this report is incorrect, is altered, or if new information becomes available, we should be retained to review and modify our recommendations. These services are additional and are not a part of our project scope.

Our scope of services was limited to the proposed work described in this report, and did not address other items or areas. The scope of our geotechnical engineering study does not include environmental assessment of the air, soil, rock or water conditions on or adjacent to the site. No environmental opinions are presented in this report. If the client is concerned with environmental risk at this project site, the client should perform an environmental site assessment.

If final grade elevations are significantly different from existing grades at the time of our field activities (more than plus or minus one (1) foot), our office should be informed about these changes. If desired, we will reexamine our analyses and make supplemental recommendations.

## 4.0 FIELD EXPLORATION PROCEDURES

Subsurface conditions at the subject site were evaluated by two (2) 10-foot soil borings and four (4) 12-inch soil grab samples. The Borings were drilled at the locations shown on the Borings Location Map, found in the Appendix section of this report. This location is approximate and distances were measured using a measuring wheel, tape, angles, and/or pacing from existing references. The structural soil borings were drilled in general accordance with American Society of Testing Materials (ASTM) D 420 procedures.

As part of our sampling procedures, the samples were collected in general conformance with ASTM D 1586 procedures. Representative portions of the samples were sealed in containers to reduce moisture loss, identified, packaged, and transported to our laboratory for subsequent testing. In the laboratory, each sample was evaluated and visually classified by a member of our Geotechnical Engineering staff. The geotechnical engineering properties of the strata were evaluated by a series of laboratory tests. The results of the laboratory and field-testing are tabulated on the boring logs and Summary of Soil Sample Analyses which are found in the Attachments section of this report.

Standard penetration test results are noted on the boring logs as blows per 12 inches of penetration. Two 6 inch increments are performed for each standard penetration test. The sum of the blows for the two 6 inch increments is considered the “standard penetration resistance value” or “N-value.” Where hard or very dense materials were encountered, the tests are terminated as follows: (1) when a total of 50 blows have been applied in any of the 6 inch increments, or (2) when a total of 100 blows have been applied, or (3) when there is no observed advance of the sampler in the application of 10 successive blows. The boring logs in the case of hard or very dense materials will be noted as follows: 50/3”, where 50 is the number of blows applied in 3 inches of penetration, or 100/7½” where 100 is the number of blows applied in a total of 7 ½ inches

of penetration, or 10/0", where 10 is the number of blows applied in 0 inches of penetration.

Samples will be retained in our laboratory for 30 days after submittal of this report. Other arrangements may be provided at the request of the Client.

## 5.0 GENERAL SITE CONDITIONS

### 5.1 Site Description

The project site is located at 900 Med High Drive in Mercedes, Hidalgo County, Texas. The project location is shown on the Project Location Map, found in the Appendix section of this report. At the time of our field operations, the subject site can be described as a developed tract of land. The general topography of the site is relatively flat sloping down to the southeast with a visually estimated vertical relief of less than 3 feet. Surface drainage is visually estimated to be poor to fair.

### 5.2 Site Geology

According to the Soil Survey of Hidalgo County, Texas, published by the United States Department of Agriculture – Soil Conservation Service, the project site appears to be located within the Hidalgo & Raymondville soil associations.

- The Harlingen series consist of deep, moderately well drained clayey soils, surface runoff is very slow and permeability is very slow, nearly level soil is on broad areas of ancient stream terraces. These soils formed in thick beds of clayey alluvium. Slopes range from 0 to 1 percent. Areas are small and irregular in shape and range from 25 to 900 acres. The corresponding soil symbol is 19, Harlingen clay.
- The Raymondville series consist of deep, well drained, clayey soils on uplands, nearly level soil is on plane to slightly concave uplands. These soils formed in calcareous clayey sediments. Slopes are mainly less than 0.5 percent but range from 0 to 1 percent. Areas are irregular in shape and range in size from 50 to 950 acres. Surface runoff is slow and permeability is slow. The corresponding soil symbol is 52, Raymondville clay loam.

### 5.3 Subsurface Conditions

On the basis of our borings, two (2) generalized strata that possess similar physical and engineering characteristics can describe the subsurface stratigraphy at this site. Table 5.1 summarizes the approximate strata range in our boring logs. These were prepared by visual classification and were aided by laboratory analyses of selected soil samples. The lines designating the interfaces between strata on the boring logs represent approximate boundaries. Transitions between strata may be gradual details for each of the borings can be found on the boring logs in the appendix of this report.

**Table 5.1. Approximate Subsurface Stratigraphy Depths.**

| Stratum | Range in Depth, ft[1] | Stratum Description[1] |
|---|---|---|
| I | 0 – 2 | fat CLAY, dk. brown, dry, stiff |
| II | 2 – 10 | lean CLAY w/ sand to clayey SAND, brown, dry to moist, soft to very stiff |

Note 1: The stratum thickness and depths to strata interfaces are approximate. Our measurements are rounded off to the nearest foot increment and are referenced from ground surface at the time of our drilling activities. Subsurface conditions may vary between the boring locations.

## 5.4 Groundwater Conditions

The dry auger drilling technique was used to complete the soil borings in an attempt to observe the presence of subsurface water. During our drilling operations we did not encounter the groundwater table below natural ground elevation for short term conditions. Moisture content test exhibited high moisture content at four (4) feet below natural ground elevation. Table 5.2 summarizes the approximate groundwater and cave in depths measured in our explorations. It should be noted that the groundwater level measurements recorded are accurate only for the specific dates on which measurement were obtained and does not show fluctuations throughout the year.

Fluctuations in Groundwater levels are influenced by variations in rainfall and surface water run-off from season to season. The construction process itself may also cause variations in the groundwater level. If the subsurface water elevation is critical to the construction process the contractor should check the subsurface water conditions just prior to construction excavation activities.

**Table 5.2. Approximate Groundwater and Cave-in Depths.**

| Boring No. | Depth to Subsurface Water, Ft[1] | Depth to Cave-In, Ft[1] |
|---|---|---|
| | Time of Drilling | Time of Drilling |
| B-1 | None | 10 |
| B-2 | None | 10 |

Note 1: Subsurface water levels and cave-in depths have been rounded to the nearest foot.

Based on the findings in our borings and on our experience in this region, we believe that groundwater seepage may not be encountered during site earthwork activities. If groundwater seepage is encountered during site earthwork activities, it may be controlled using temporary earthen berms and/or conventional sump-and-pump dewatering methods.

### 5.5 Top Soil Evaluation for Natural Turf Areas

Bulk Samples were taken at four (4) locations in order to perform an analysis of the available macronutrients and micronutrients within the soil samples for the TPSL® Soil Test for Turfgrass, Lawns & Athletic Fields. The locations are denoted on the bore location map presented in APPENDIX B Project Maps. The tests results are presented in APPENDIX F Plant Natural Soils & Soil Composts.

## 6.0 LABORATORY TESTING ANALYSIS

### 6.1 General

The analyses presented in this report are applicable specifically to the proposed project. The data gathered from both the field and laboratory testing programs on soil samples obtained from the borings was utilized to establish geotechnical engineering parameters for the proposed project.

### 6.2 Moisture Content Testing

The moisture content of a soil is defined as the ratio of the weight of the water in the sample to the dry weight of the soil sample expressed as a percentage. The moisture contents for the samples obtained as part of our geotechnical study were performed in accordance with ASTM D2216. The results varied from ten (10) percent to nineteen (19) percent. The boring and corresponding soil samples exhibited dry to moist field moisture conditions. A list of all the moisture contents by corresponding depth can be found on the boring log.

### 6.3 Plasticity Index Testing

The Plasticity Index (PI) is known as the difference between the liquid limit and the plastic limit of a soil. These limits are commonly referred to as the Atterberg limits, which describe the consistency of soils with respect to their varying moisture contents. The liquid limit is defined as the moisture content at which soil begins to transition from a plastic to a liquid state, and begins to behave as a liquid material. The plastic limit refers to the water content of a soil at the point of transition from a semisolid to a plastic state where soil starts to exhibit plastic behavior. The plasticity index testing performed in accordance with ASTM D4318 shows the range in which a soil acts in a plastic state. Plasticity Index values for the soils samples performed for this report were found to have a value of fifteen (15) to fifty-four (54) percent with a low to high plasticity rate.

### 6.4 Particle Size Analysis Testing (Determination of Fines Content)

Standard grain size analysis is used to determine the relative proportions of different grain sizes as they are distributed along a range of different sized sieves. The minus 200 sieve analysis is used commonly as a tool for soil classification and identification using the Unified Soil Classification System. Results for this test are reported as a percentage of soil passing the No. 200 sieve, which has openings 0.075mm wide. This test is also used

to determine the suitability of soil for construction purposes and to estimate probable seepage through soils. Generally a %- 200 less than 50% indicates a granular non-cohesive to cohesive soil with large amounts of varying sized grains in the soil composition having high seepage potential. Sieve analysis testing was performed in accordance with ASTM D1140. The % -200 soil values for the samples collected ranged from 43% passing (non-cohesive coarse grained materials such as sands) to 84% passing (cohesive fine grained materials such as clays).

## 7.0 ENGINEERING ANALYSIS

### 7.1 General

The analysis and recommendations presented in this report are applicable specifically to the proposed foundation structure. The data gathered from both the field and laboratory testing programs on soil samples obtained from the borings was utilized to establish geotechnical engineering parameters to develop recommendations for the proposed structure. The foundation system(s) considered in this report to provide support for the proposed structure must meet two independent criteria. One of the criteria is that the movement below the foundation structure due to compression (consolidation) or expansion (swell) of the underlying soils must be within tolerable limits. This criterion is addressed in the Soil Related Movements section of this report. The other criterion is that the dead and live loads must be distributed appropriately and the foundation structure designed with an acceptable factor of safety to minimize the potential for bearing capacity failure of the underlying soils.

Geotechnical and structural engineers in this general area consider soil movements or Potential Vertical Rise (PVR) of approximately one (1) inch or less to be within acceptable structural design tolerances for most structures but may be different depending on structure use and the desired performance of the foundation. Therefore, movements of the underlying soils are not eliminated and thus one should expect a slab foundation structure to exhibit differential vertical movements. However, structural engineers design slab foundations for the expected magnitude of soil movements without failure of the structure. More stringent soil movement criteria may be established but the owner should consider the exponential increase in cost required to design and construct a structure for such soil movements. Data obtained in this study indicate that the soils at this site have strength characteristics capable of supporting the foundation and structure if designed appropriately. Stratum I is composed of lean clay to sandy lean clay and has a moderate potential to exhibit volumetric changes (contraction and expansion). Stratum II is composed of fat clay and has a high potential to exhibit volumetric changes. The potential for soil volumetric changes is dependent on variations in moisture contents of the underlying soils. Based on this data, this site is suitable for a slab foundation provided the subgrade is modified in accordance with the recommendations established in this report to reduce the potential for these soil volumetric changes.

### 7.2 Soil-Related Movements for Natural Turf Areas

The anticipated ground movements due to swelling of the underlying soils at this site were estimated for slab foundation construction using the Texas Department of Transportation (TxDOT) procedures of test method TEX-124-E for determining Potential Vertical Rise (PVR). A PVR value of two and a half (2 ½) inches was estimated for the stratigraphic conditions encountered in our subsurface borings. A surcharge of 1 pound per square inch for the concrete slab, an active zone of 10 feet, and dry subsurface moisture conditions were assumed in estimating the above PVR values.

## 8.0 PROJECT REVIEW AND QUALITY CONTROL

Each project site is unique and it is important that the appropriate design data, construction drawings, specifications, change orders and related documents be reviewed by the respective design and construction professionals participating in this project. The performance of foundations, construction building pads and/or parking areas for this project will depend on correct interpretation of our geotechnical engineering report and proper compliance of and adherence to our geotechnical recommendations and to the construction drawings and specifications.

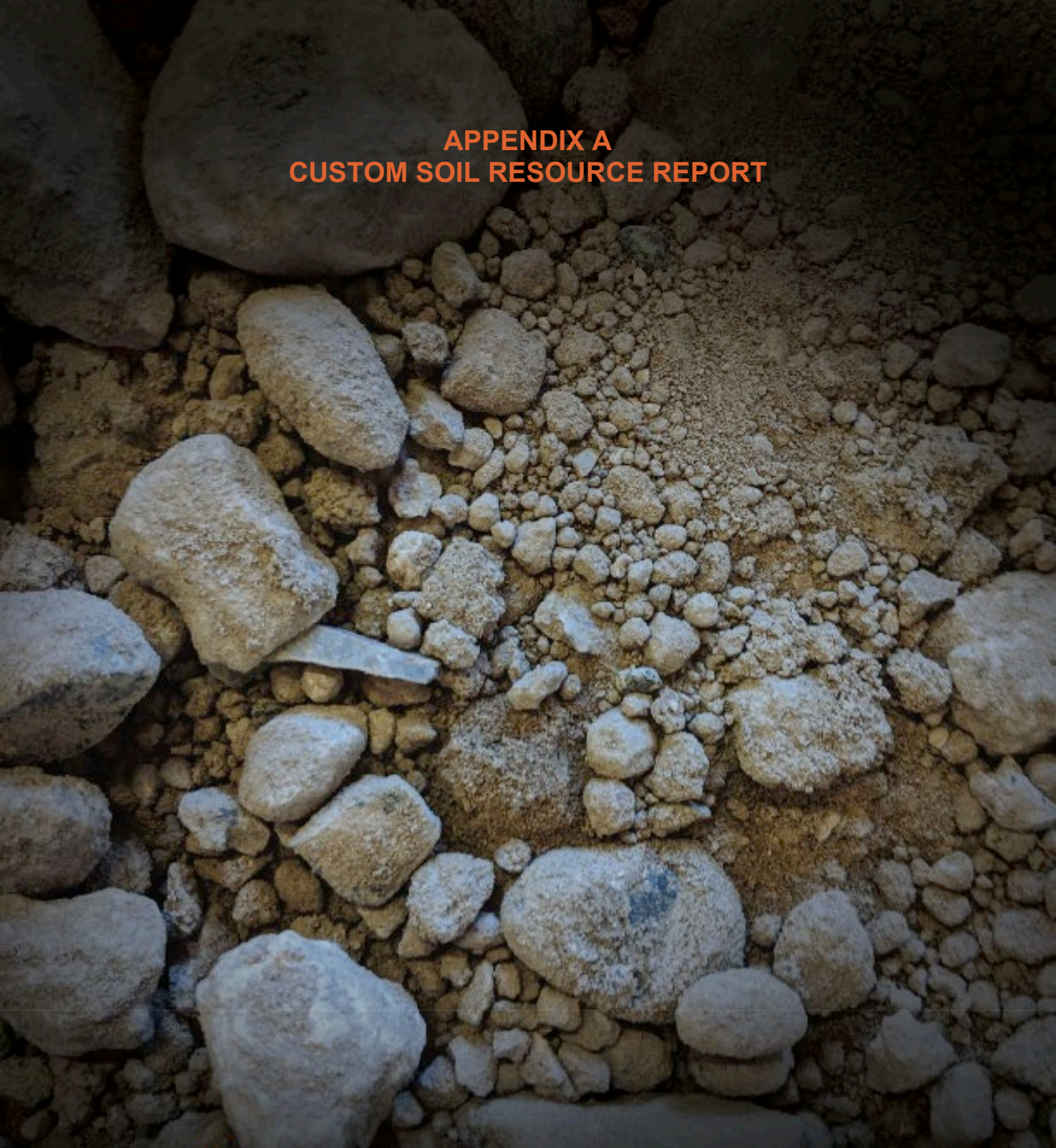
It is important that **MEG** be provided the opportunity to review the final design and construction documents to check that our geotechnical recommendations are properly interpreted and incorporated in the design and construction documents. We cannot be responsible for misinterpretations of our geotechnical recommendations if we have not had the opportunity to review these documents. This review is an additional service and not part of our project scope.

**MEG** should be retained to provide construction materials testing and observation services during all phases of the construction process of this project. As the Geotechnical Engineer of Record, it is important to let our technical personnel provide these services to make certain that our recommendations are interpreted properly and to ensure that actual field conditions are those described in our geotechnical report. Since our personnel are familiar with this project, **MEG**'s participation during the construction phase of this project would help mitigate any problems resulting from variations or anomalies in subsurface conditions, which are among the most prevalent on construction projects and often lead to delays, changes, costs overruns, and disputes. If the client does not follow all of our recommendations presented in this report and/or addendums to this report, the client assumes the responsibility and liability of such actions and will hold our firm harmless and without responsibility and liability for client's actions.

A construction testing frequency plan and budget needs to be developed for the required construction materials engineering and testing services for this project. Before construction, we recommend that **MEG**, the project design team members and the project general contractor meet and jointly develop the testing plan and budget, as well as review the testing specifications as it pertains to this project. **A failure to implement a complete testing plan will negate the recommendations provided in this report.**

**MEG** looks forward to the opportunity to provide continued support on this project.

# APPENDIX A
# CUSTOM SOIL RESOURCE REPORT



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Geotechnical | Environmental | Testing

5840 N. Gumwood Avenue ■ Pharr, Texas 78577 ■ Tel: 956-702-8500 ■ Fax: 956-702-8140

Soil Map—Hidalgo County, Texas
(01-24-29129 Proposed Academy Mercedes)


Map Scale: 1:1,350 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N 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 1:20,000.

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: Hidalgo County, Texas
Survey Area Data: Version 22, Sep 5, 2023

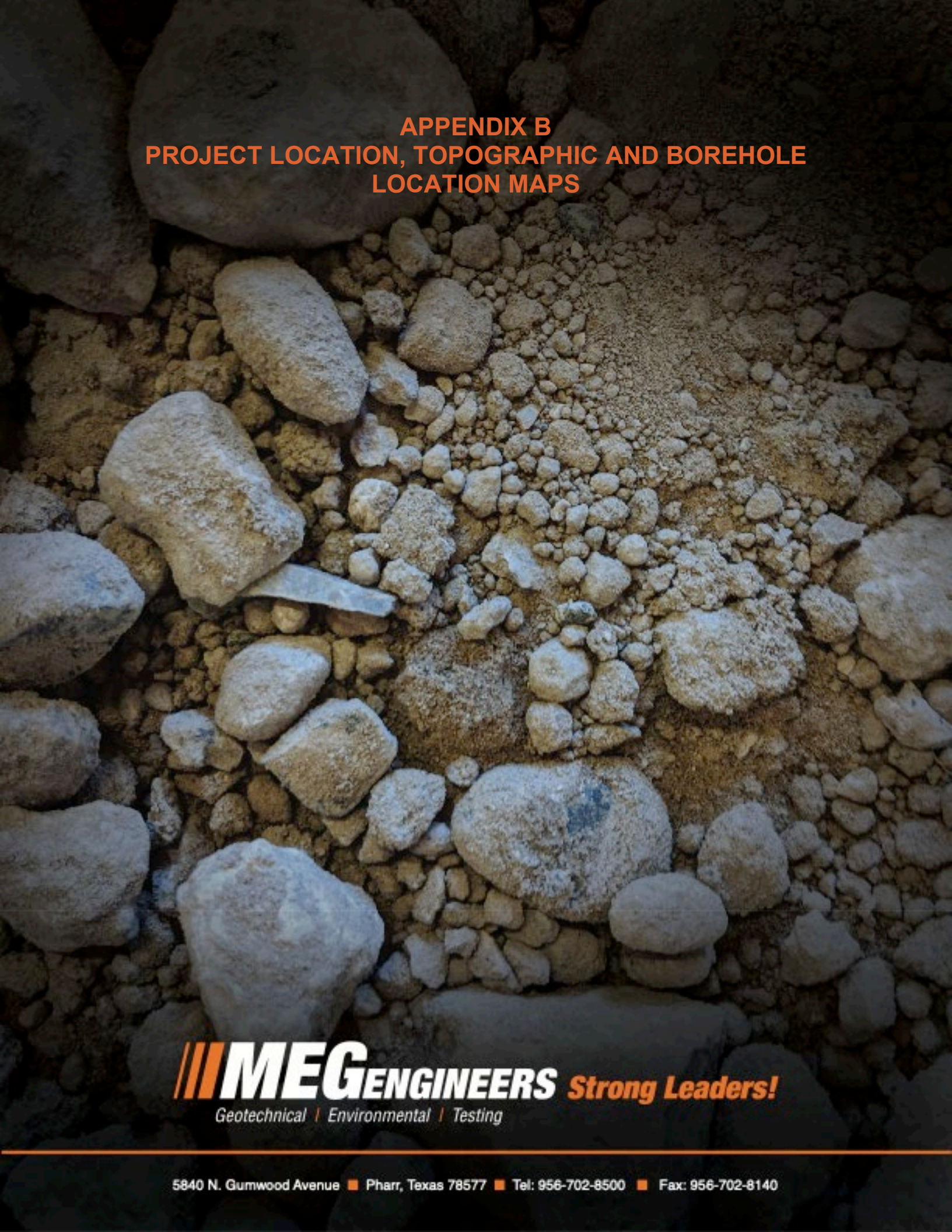
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 21, 2021—Mar 2, 2022

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 |
|---|---|---|---|
| 19 | Harlingen clay | 4.8 | 55.5% |
| 52 | Raymondville clay loam, 0 to 1 percent slopes | 3.9 | 44.5% |
| **Totals for Area of Interest** | | **8.7** | **100.0%** |



# APPENDIX B
# PROJECT LOCATION, TOPOGRAPHIC AND BOREHOLE LOCATION MAPS

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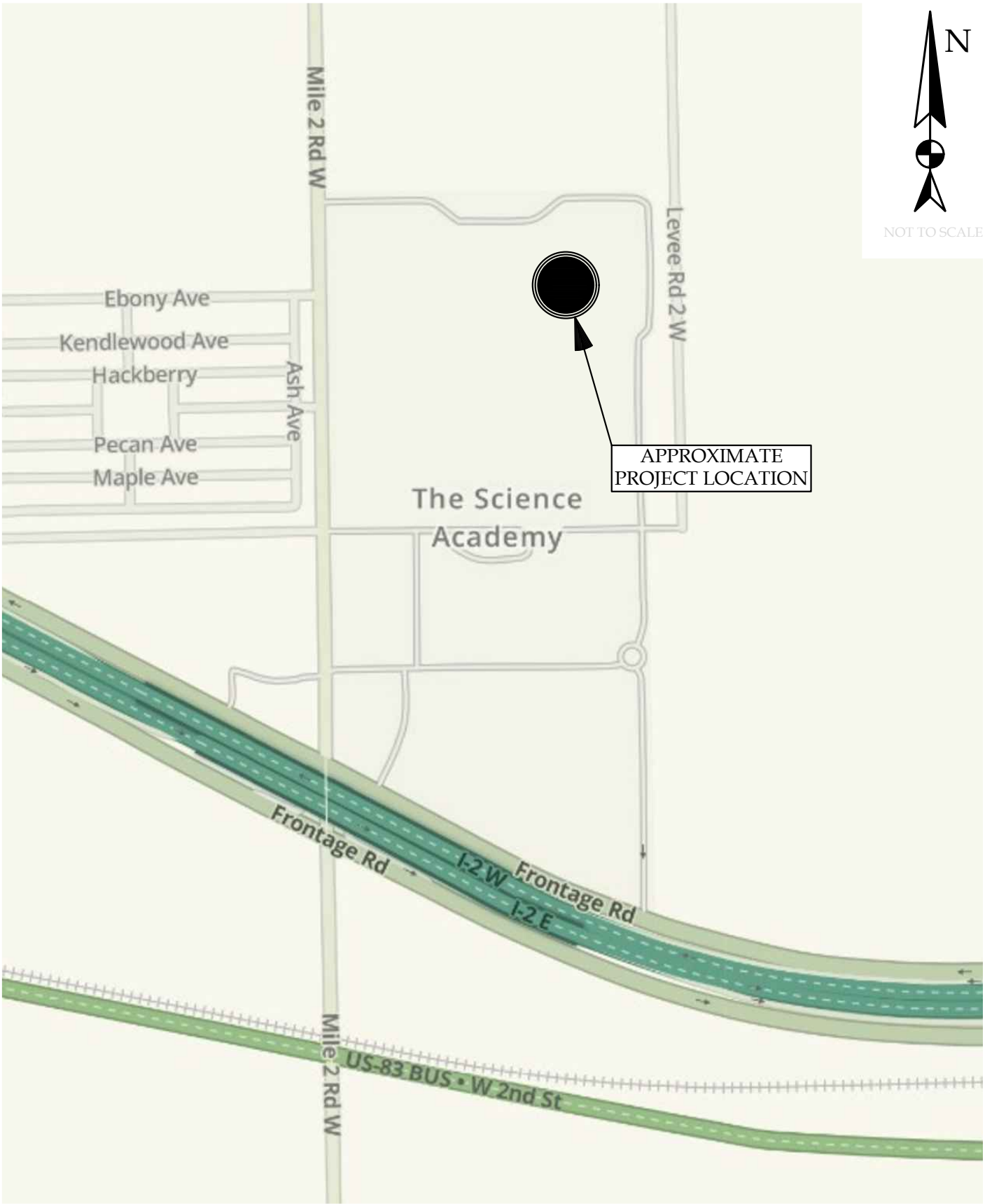


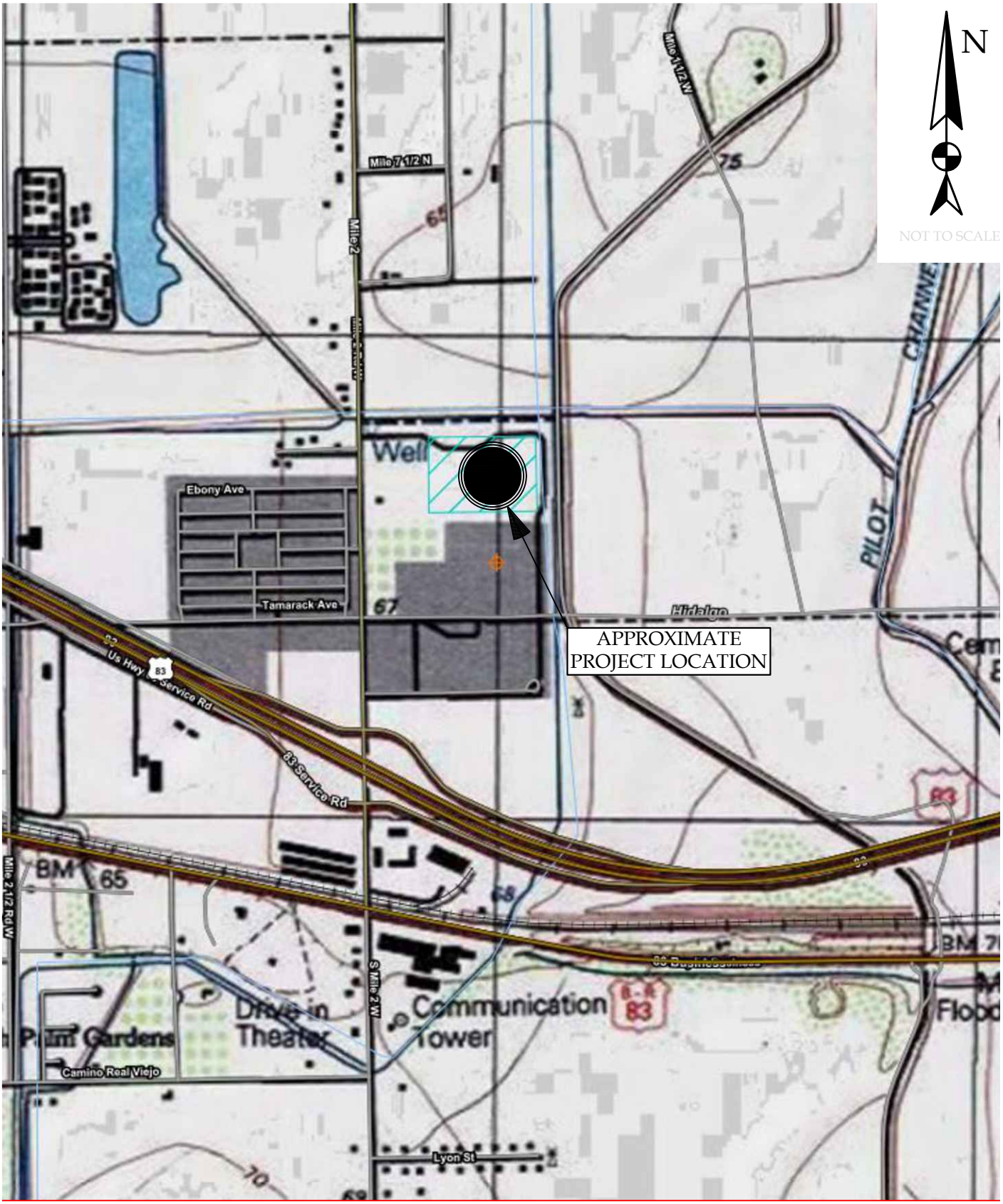

**PROJECT SITE LOCATION MAP**

PROPOSED
SCIENCE ACADEMY MERCEDES

MERCEDES, HIDALGO COUNTY, TEXAS

MILLENNIUM ENGINEERS GROUP, INC.
5804 N. GUMWOOD AVENUE
PHARR, TEXAS 78577
WWW.MEGENGINEERS.COM
TEL: 956-702-8500
FAX: 956-702-8140

MEG PROJECT: 01-24-29129 / DATE: 5/22/2024 / APPROVED BY: A. PALMA / DRAWN BY: D. GARCIA




**PROJECT TOPOGRAPHY MAP**

PROPOSED
SCIENCE ACADEMY MERCEDES

MERCEDES, HIDALGO COUNTY, TEXAS

MILLENNIUM ENGINEERS GROUP, INC.
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PHARR, TEXAS 78577
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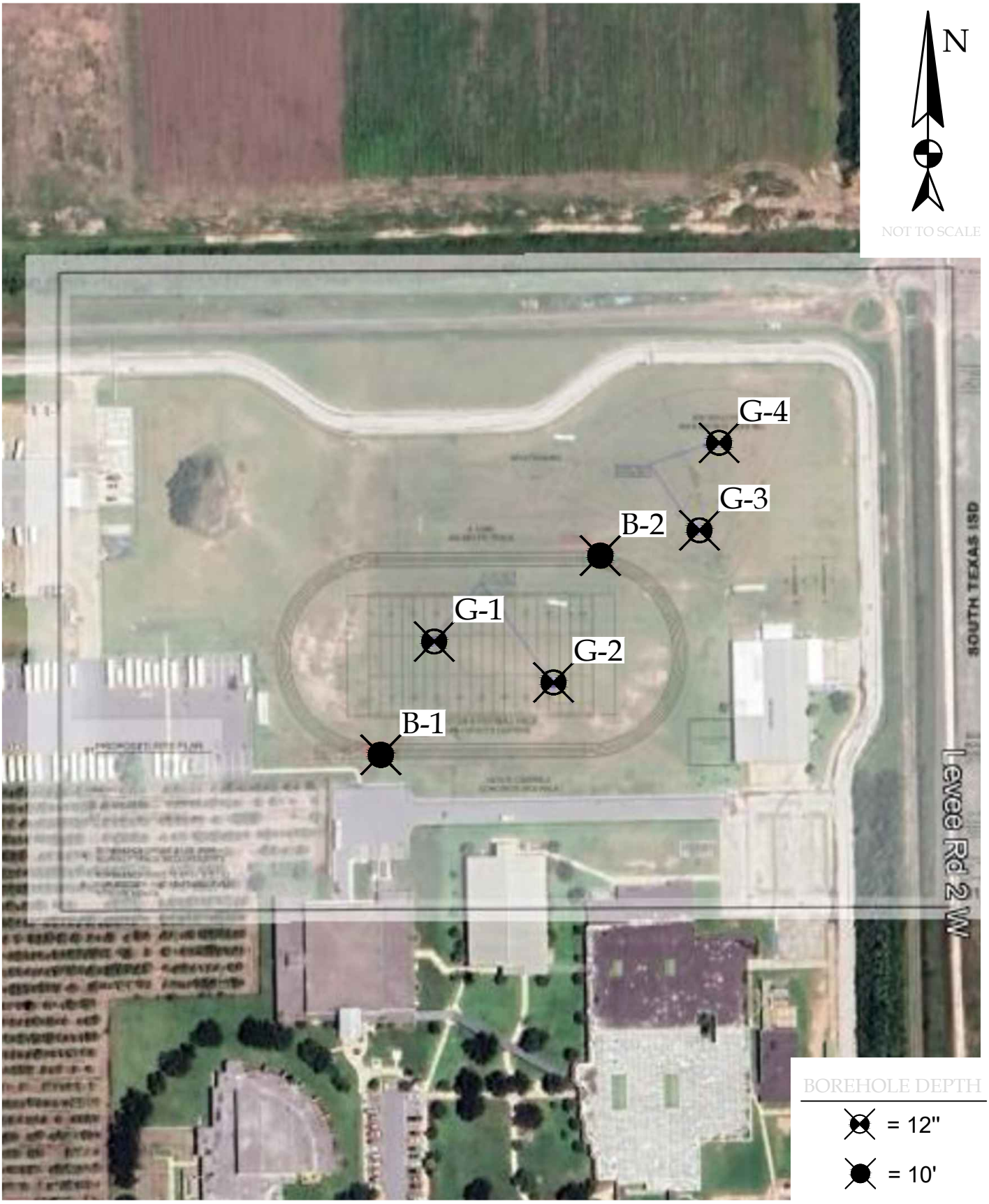
MEG PROJECT: 01-24-29129 / DATE: 5/22/2024 / APPROVED BY: A. PALMA / DRAWN BY: D. GARCIA




**PROJECT BOREHOLE LOCATION MAP**

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MEG PROJECT: 01-24-29129 / DATE: 5/22/2024 / APPROVED BY: A. PALMA / DRAWN BY: D. GARCIA

# APPENDIX C
# PROJECT BORING LOGS AND PROFILE



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Geotechnical | Environmental | Testing

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Project: **Proposed South Texas ISD Science Academy New Sport Fields**

Project Location: **Mercedes, Hidalgo County, Texas**

Project Number: **01-24-29129**

# Log of Boring B-1

**Sheet 1 of 1**

| | | |
|---|---|---|
| Date(s) Drilled **5/24/2024** | Logged By **Ayme Guerrero** | Checked By **Raul Palma** |
| Drilling Method **Straight Flight** | Drill Bit Size/Type **4" soil bit** | Total Depth of Borehole **10 feet bgs** |
| Drill Rig Type **Simco 2800** | Drilling Contractor **MEG Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **Not Encountered** | Sampling Method(s) **SPT** | Hammer Data **140 lb., 30 in. drop, auto trip** |
| Borehole Backfill **Subgrade Cuttings** | Location **See Boring Location Map** | |

| Elevation (feet) | Depth (feet) | Sample Type | Sample Number | Sampling Resistance, blows/ft | Material Type | Graphic Log | MATERIAL DESCRIPTION | Water Content, % | LL, % | PI, % | Percent Fines | UC, ksf |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | CH | | fat CLAY, dk. brown, dry, stiff | | | | | |
| | 1 | | 1 | 15 | | | | 10 | 53 | 34 | | |
| | 2 | | | | SC-CL | | lean CLAY w/ sand to fat CLAY, brown, dry o moist, soft to very stiff | | | | | |
| | 3 | | 2 | 18 | | | | 14 | | | 69 | |
| | 4 | | | | | | | | | | | |
| | 5 | | 3 | 3 | | | | 13 | 28 | 15 | | |
| | 6 | | | | | | | | | | | |
| | 7 | | 4 | 3 | | | | 15 | | | 82 | |
| | 8 | | | | | | | | | | | |
| | 9 | | 5 | 7 | | | | 15 | | | | |
| | 10 | | | | | | BORE TERMINATION | | | | | |
| | 11 | | | | | | | | | | | |
| | 12 | | | | | | | | | | | |
| | 13 | | | | | | | | | | | |
| | 14 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |
| | 16 | | | | | | | | | | | |
| | 17 | | | | | | | | | | | |
| | 18 | | | | | | | | | | | |
| | 19 | | | | | | | | | | | |
| | 20 | | | | | | | | | | | |
| | 21 | | | | | | | | | | | |
| | 22 | | | | | | | | | | | |
| | 23 | | | | | | | | | | | |
| | 24 | | | | | | | | | | | |
| | 25 | | | | | | | | | | | |
| | 26 | | | | | | | | | | | |
| | 27 | | | | | | | | | | | |
| | 28 | | | | | | | | | | | |
| | 29 | | | | | | | | | | | |
| | 30 | | | | | | | | | | | |

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| | |
|---|---|
| Project: **Proposed Science Academy Mercedes**<br>Project Location: **Mercedes, Hidalgo County, Texas**<br>Project Number: **01-24-29129** | Log of Boring B-2<br>**Sheet 1 of 1** |

| | | |
|---|---|---|
| Date(s) Drilled **5/24/2024** | Logged By **Ayme Guerrero** | Checked By **Raul Palma** |
| Drilling Method **Straight Flight** | Drill Bit Size/Type **4" soil bit** | Total Depth of Borehole **10 feet bgs** |
| Drill Rig Type **Simco 2800** | Drilling Contractor **MEG Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **Not Encountered** | Sampling Method(s) **SPT** | Hammer Data **140 lb., 30 in. drop, auto trip** |
| Borehole Backfill **Subgrade Cuttings** | Location **See Boring Location Map** | |

| Elevation (feet) | Depth (feet) | Sample Type | Sample Number | Sampling Resistance, blows/ft | Material Type | Graphic Log | MATERIAL DESCRIPTION | Water Content, % | LL, % | PI, % | Percent Fines | UC, ksf |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | CH | | fat CLAY, dk. brown, dry, stiff | | | | | |
| | 1 | | 1 | 15 | | | | 15 | 73 | 54 | | |
| | 2 | | | | CL | | lean CLAY w/ sand to clayey SAND, brown, dry to moist, soft to very stiff | | | | | |
| | 3 | | 2 | 22 | | | | 19 | | | | |
| | 4 | | | | | | | | | | | |
| | 5 | | 3 | 11 | | | | 21 | | | 84 | |
| | 6 | | | | | | | | | | | |
| | 7 | | 4 | 13 | | | | 10 | 29 | 17 | | |
| | 8 | | | | | | | | | | | |
| | 9 | | 5 | 6 | | | | 15 | | | 43 | |
| | 10 | | | | | | BORE TERMINATION | | | | | |
| | 11 | | | | | | | | | | | |
| | 12 | | | | | | | | | | | |
| | 13 | | | | | | | | | | | |
| | 14 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |
| | 16 | | | | | | | | | | | |
| | 17 | | | | | | | | | | | |
| | 18 | | | | | | | | | | | |
| | 19 | | | | | | | | | | | |
| | 20 | | | | | | | | | | | |
| | 21 | | | | | | | | | | | |
| | 22 | | | | | | | | | | | |
| | 23 | | | | | | | | | | | |
| | 24 | | | | | | | | | | | |
| | 25 | | | | | | | | | | | |
| | 26 | | | | | | | | | | | |
| | 27 | | | | | | | | | | | |
| | 28 | | | | | | | | | | | |
| | 29 | | | | | | | | | | | |
| | 30 | | | | | | | | | | | |

MEG ENGINEERS

Project: **Proposed South Texas ISD Science Academy New Sport Fields**

Project Location: **Mercedes, Hidalgo County, Texas**

Project Number: **01-24-29129**

# Key to Log of Boring

**Sheet 1 of 1**

| Elevation (feet) | Depth (feet) | Sample Type | Sample Number | Sampling Resistance, blows/ft | Material Type | Graphic Log | MATERIAL DESCRIPTION | Water Content, % | LL, % | PI, % | Percent Fines | UC, ksf |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

## COLUMN DESCRIPTIONS

1. Elevation (feet): Elevation (MSL, feet).
2. Depth (feet): Depth in feet below the ground surface.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample Number: Sample identification number.
5. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
6. Material Type: Type of material encountered.
7. Graphic Log: Graphic depiction of the subsurface material encountered.
8. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
9. Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
10. LL, %: Liquid Limit, expressed as a water content.
11. PI, %: Plasticity Index, expressed as a water content.
12. Percent Fines: The percent fines (soil passing the No. 200 Sieve) in the sample. WA indicates a Wash Sieve, SA indicates a Sieve Analysis.
13. UC, ksf: Unconfined compressive strength, in kips per square foot.

## FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

## MATERIAL GRAPHIC SYMBOLS

Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)

Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)

Clayey SAND to Sandy CLAY (SC-CL)

## TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler

Bulk Sample

3-inch-OD California w/ brass rings

CME Sampler

Grab Sample

Hand auger sampler

2.5-inch-OD Modified California w/ brass liners

Pitcher Sample

2-inch-OD unlined split spoon (SPT)

Texas Cone Penetrometer

Shelby Tube (Thin-walled, fixed head)

## OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)

Water level (after waiting, AW)

Minor change in material properties within a stratum

Inferred/gradational contact between strata

Queried contact between strata

## GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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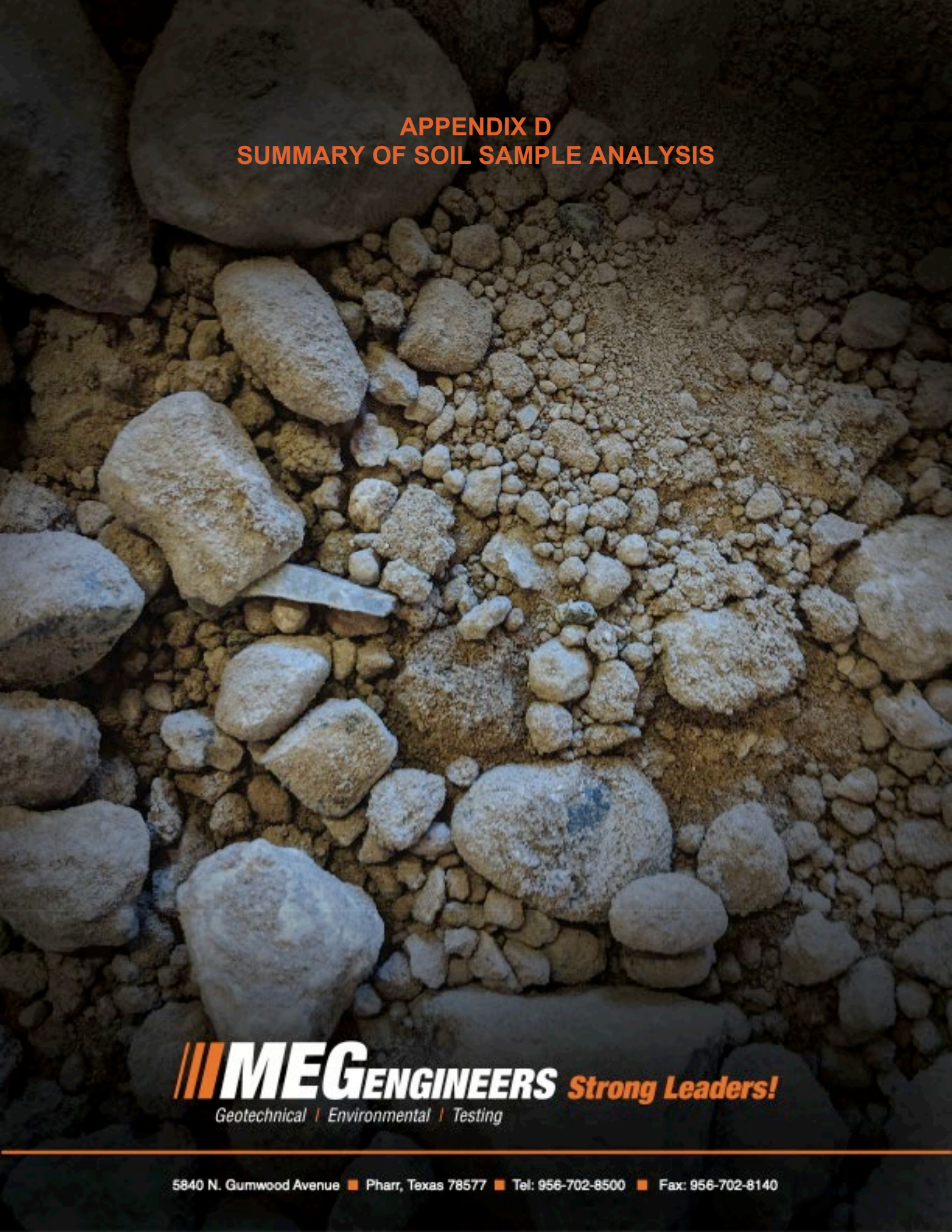
**Figure B-1**



# APPENDIX D
# SUMMARY OF SOIL SAMPLE ANALYSIS

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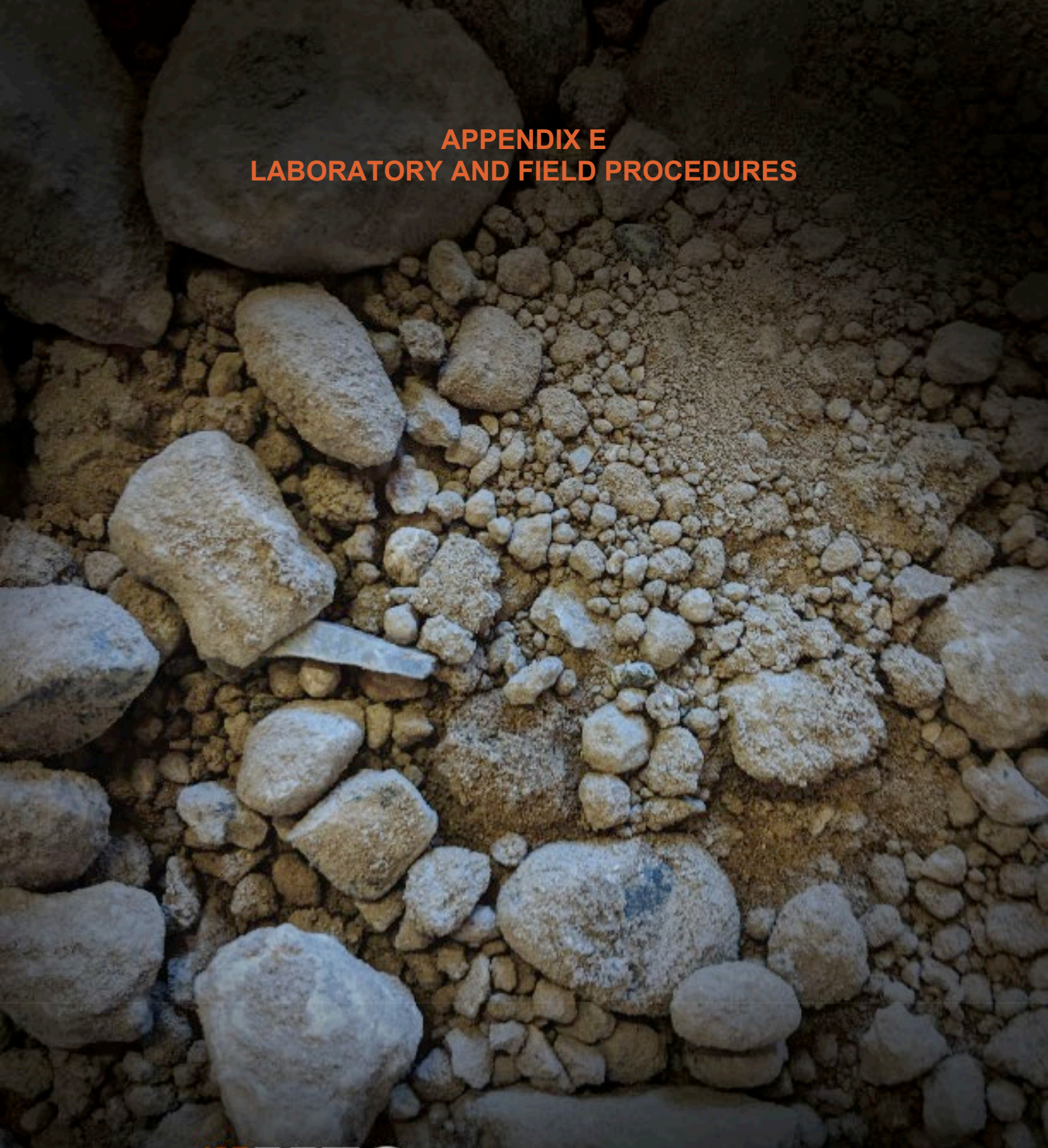
## Summary of Soil Sample Analyses

**Project Name: Proposed South Texas ISD Science Academy New Sport Fields**

| Boring No. | Sample Depth (ft) | Blows Per (ft) | Moisture Content | Liquid Limit | Plastic Limit | Plasticity Index | -200% Sieve | Shear Strength (tsf) | Sulfate Content (ppm) | USCS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-1 | .5 - 2 | 15 | 10 | 53 | 18 | 34 | | | 20 | CH |
| | 2.5 - 4 | 18 | 14 | | | | 69 | | | |
| | 4.5 - 6 | 3 | 13 | 28 | 13 | 15 | | | | CL |
| | 6.5 - 8 | 3 | 15 | | | | 82 | | | |
| | 8.5 - 10 | 7 | 15 | | | | | | | |
| B-2 | .5 - 2 | 15 | 15 | 73 | 19 | 54 | | | 40 | CH |
| | 2.5 - 4 | 22 | 19 | | | | | | | |
| | 4.5 - 6 | 11 | 21 | | | | 84 | | | |
| | 6.5 - 8 | 13 | 10 | 29 | 12 | 17 | | | | CL |
| | 8.5 - 10 | 6 | 15 | | | | 43 | | | |

# APPENDIX E
# LABORATORY AND FIELD PROCEDURES



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# Laboratory and Field Test Procedures

**Soil Classification Per ASTM D2487-93:**

This soil-testing standard was used for classifying soils according to the Unified Soil Classification System. The soil classifications of the earth materials encountered are as noted in the attached boring logs.

**Soil Water Content Per ASTM D2216-92:**

This test determines the water content of soil or rock expressed as a percentage of the solid mass of the soil. The test results are listed under **MC** in the attached boring logs.

**Soil Liquid Limit Per ASTM D4318-93:**

The soil Liquid Limit identifies the upper limit soil water content at which the soil changes from a moldable (plastic) physical state to a liquid state. The Liquid Limit water content is expressed as a percentage of the solid mass of the soil. The test results are listed under **LL** in the attached boring logs.

**Soil Plastic Limit Per ASTM D4318-93:**

The soil Plastic Limit identifies lower limit soil water content at which the soil changes from a moldable (plastic) physical state to a non-moldable (semi-solid) physical state. The Plastic Limit water content is expressed as a percentage of the solid mass of the soil. The test results are listed under **PL** in the attached boring logs.

**Plasticity Index Per ASTM D4318-93:**

This is the numeric difference between the Liquid Limit and Plastic Limit. This index also defines the range of water content over which the soil-water system acts as a moldable (plastic) material. Higher Plasticity Index (PI) values indicate that the soil has a greater ability to change in soil volume or shrink and swell with lower or higher water contents, respectively. The test results are listed under **PI** in the attached boring logs.

**Standard Penetration Test (SPT) and Split Spoon Sampler (SS) per ASTM D 1586**:

This is the standard test method for both the penetration test and split-barrel (spoon) sampling of soils. This sampling method is used for soils or rock too hard for sampling using Shelby Tubes. The method involves penetration of a split spoon sampler into the soil or rock through successive blows of a 140-pound hammer in a prescribed manner.

**Blow Counts (N) per ASTM D 1586:**

This is the number of blows required to drive a Split Spoon Sampler by means of a 140 pound hammer for a distance of 12 inches in accordance with the variables stated in the test procedures.

**Shelby Tube (ST) per ASTM D 1587**:

This procedure is for using a thin-walled metal tube to recover relatively undisturbed soil samples suitable for laboratory tests of physical properties.

**Dry Density (DD) per ASTM D 2937:**

This procedure is for the determination of in-place density of soil. The test results are measured in pounds per cubic foot, pcf.

**Unconfined Compression Test (Uc) per ASTM D 2166:**

This test method covers the determination of the unconfined compressive strength of cohesive soil in the undisturbed, remolded, or compacted condition, using strain-controlled application of the axial load.

**Minus No. 200 Sieve per ASTM D 1140:**

This test method covers determination of the amount of material finer than a Number 200 sieve by washing. The results are stated as a percent of the total dry weight of the sample.

**Pocket Penetrometer (PP):**

This test method is an accepted modification of ASTM D 1558 test method for establishing the moisture-penetration resistance relationships of fine-grained soils. The test results are measured in tons per square foot, tsf. The strength values provided by this method should be considered qualitatively.

**Rock Quality Designation (RQD):**

The measure of the quality of a rock mass defined by adding intact rock core pieces greater than four inches in length by the total length of core advance.

**Recovery Ratio (REC):**

The Recovery Ratio is equal to the total length of core recovered divided by the total length of core advance.

**Boring Logs:**

This is a summary of the above-described information at each boring location.

# APPENDIX F
# PLANT NATURAL SOILS & SOIL COMPOSTS

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# Client #: 4564

## Lab #: 73376 - 73379

**Client:** Millennium Engineers Group, Inc
Leticia Puentes
**Field:** Science Academy Mercedes, Texas
**Crop:** Grasses-Turf ,
**Date:** June 7, 2024

PLANT NATURAL®
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| Low | Marginal |
|---|---|
| Optimal | High |


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*Refer to guide* — * *Carbon Dioxide (CO2) Mimics plant roots natural extraction*

| Sample Identification | | Text. | Free Lime $CO_3$ | Percent - (%) Organic Matter Total | Organic Matter Active | pH Std Unit | Salts E.C. mmhos/cm | Ammonium $NH_4$-N lbs/ac | Nitrate $NO_3$-N lbs/ac | Phosphate $P_2O_5$ lbs/ac | Parts Per Million (ppm) Potassium K $H_2O$ | K $CO_2$ * | Sodium Na $H_2O$ | Na $CO_2$ * | Calcium Ca $H_2O$ | Ca $CO_2$ * | Magnesium Mg $H_2O$ | Mg $CO_2$ * | Water Soluble - W.S. Bicarbonates $HCO_3$ | Sulfates $SO_4$ - S | Ratios Na:Ca | Na:Mg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | G-1 | 3 | H | | 1.73 | 8.04 | 1.15 | | 20 | 6 | 12 | 68 | 221 | 274 | 53 | 1328 | 9 | 122 | | 7 | 5 | 31 |
| 2 | G-2 | 4 | H | | 1.63 | 8.23 | 1.05 | | 2 | 5 | 7 | 57 | 243 | 294 | 11 | 1372 | 7 | 119 | | 6 | 27 | 43 |
| 3 | G-3 | 5 | H | | 2.04 | 7.98 | 1.66 | | 3 | 8 | 1 | 38 | 338 | 374 | 47 | 1143 | 10 | 122 | | 5 | 8 | 39 |
| 4 | G-4 | 5 | Vh | | 1.82 | 8.12 | 1.27 | | 2 | 5 | 4 | 32 | 284 | 349 | 41 | 1267 | 7 | 121 | | 6 | 8 | 53 |
| | Optimal-General | | | 2.8-4.8 | 2.8-4.8 | 6.3-6.8 | 0.18-1.00 | | 35-90 | 50-100 | 75-100 | 80-125 | < 100 | < 175 | 60-120 | 300-800 | 13-20 | 60-100 | < 150 | 25-55 | 2 - 6 | 5 - 8 |

***SALT CATIONS:** $H_2O$ = ***Immediately Available*** (water soluble extract); **$CO_2$** [Plants' roots give off $CO_2$] = ***Available Reserve*** (carbonic acid extract). Plant Natural™ Extraction calibrates well to plant uptake (availability). These values are the nutrients available in the sample provided to our lab. Availability ratings have been calibrated by multiple plant analyses (crop logging) during a growing season by numerous crops on hundreds of fields both domestic and foreign. TPS Lab is guided by ***ASK THE PLANT***® with precision sampling and lab methods. Was this a **COMPOSITE SAMPLE**, representative of your plants' major root zone provided? Rev032118

Parts Per Million (ppm)

| Sample Identification | | MICRONUTRIENTS - DTPA Extraction Zinc Zn | Iron Fe | Manganese Mn | Copper Cu | Cobalt Co | Molybdenum Mo | Selenium Se | Nickel Ni | Hot Water Boron B | Calcium Chloride Silicon Si | Aluminum Al | W.S. Chlorides Cl | Solvita Burst $C-CO_2$ | SLAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | G-1 | 0.66 | 12.50 | 5.66 | 1.25 | | | | | 1.34 | | | | | |
| 2 | G-2 | 0.53 | 11.32 | 4.30 | 1.31 | | | | | 1.77 | | | | | |
| 3 | G-3 | 0.66 | 11.12 | 4.54 | 1.35 | | | | | 2.06 | | | | | |
| 4 | G-4 | 0.50 | 10.57 | 4.20 | 1.25 | | | | | 1.62 | | | | | |
| | Optimal-General | 3.10 - 6.10 | 11.10 - 18.10 | 10.10 - 15.10 | 2.60 - 3.60 | 15.00 - 40.00 | 1.50 - 2.00 | 1.50 - 2.00 | 5.00 - 7.00 | 1.30 - 2.00 | 60 - 100 | < 6 | 20 - 200 | > 82 | |

# Client #: 4564

## Lab #: 73376 - 73379

**Client:** Millennium Engineers Group, Inc
Leticia Puentes
**Field:** Science Academy Mercedes, Texas
**Crop:** Grasses-Turf ,
**Date:** June 7, 2024

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| | | Most crop nutrient removal rates are from International Plant Nutrition Institute. | | | | | | These fertilizer guidelines are ANNUAL RATES to be applied in multiple split applications over the entire growing season. | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Identification | | Plant Removal Rates | | Total Nutrient Plant Uptake lbs/1000 sqft | | | | Fertilizer Guidelines For Maximum Economic Yields Recommendations lbs/1000 sqft | | | | | | | | | | | Ounces per Acre | | | | | |
| | | Plant/Crop | Yield | N | $P_2O_5$ | $K_2O$ | Mg | Gypsum | Lime | Sulfur | N | $P_2O_5$ | $K_2O$* | Mg | Zn♦ | Fe♦ | Mn♦ | Cu♦ | B♦ | Co | Mo | Se | Ni | Si |
| 1 | G-1 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3X | 5.18 | 1.62 | 1.11 | | 0.11 | | 0.07 | 0.07 | | | | | | |
| 2 | G-2 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3x | 5.74 | 1.64 | 1.72 | | 0.14 | | 0.07 | 0.05 | | | | | | |
| 3 | G-3 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3x | 5.67 | 1.57 | 2.76 | | 0.11 | | 0.07 | 0.05 | | | | | | |
| 4 | G-4 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3X | 5.78 | 1.64 | 3.09 | | 0.14 | 0.05 | 0.07 | 0.07 | | | | | | |

Fertilizer Recommendations (N-P-K) are adjusted to reflect efficiency of recovery by plant and Estimated Nitrogen Release from Organic Matter. ENR estimates a 60% mineralization with optimum microbial activity, moisture and temperature.

♦ Micronutrient recommendations may have to be adjusted according to method of application and chleation of products. Ask The Plant® can determine actual plant uptake of these nutrients during the growing season.

* Potassium recommendations are for a rebuilding program and should be applied in split applications over a few years. We dorecommend at least a 1:1 ratio of N:K2O each year during the rebuilding phase.

Subsoils: While most plant roots feed in the 4 to 12 inch depth, the next 12-24 inches may also be a major contributor. For the most accurate soil test recommendations, sample topsoil and subsoil separately in 12 inch increments.

***A detailed write-up of interpretations and recommendations for this soil report is available upon request of item SAO-00. Refer to fee schedule for current price.***

***SOIL INOCULANTS - Activators*** (in the absence of adequate soil humus or in sterile conditions) of soil inoculants/ compost teas containing naturally occurring beneficial soil micro-organisms and/or enzymes, hormones, polymers, wetting agents and carboxyl's may improve nutrient uptake and the soil's physical condition (tilth) for better plant performance, possibly disease resistance and salt leaching. Feeding microbes with humic substances, carbohydrates, and other organic materials aid soil tilth and releases soil nutrients while helping some bacteria fix atmospheric N. [A combination of products may be best – follow product labels on your own test plots for the most effective products.]

CALCIUM - Samples 1, 2, 3, 4: SULFUR use recommended rate at least 2 or 3 times a year. (S effect lasts only 45-90 days in most cases.) Sulfur improves the physical condition (tilth) of the soil for better water and root penetration and increase nutrient availability. Sulfur activates Ca and Mg by solubilizing them to the available water (H2O) soluble form. Soluble Ca helps sodium to leach. S can also release P and Micronutrients.

SODIUM - Samples 2, 3, 4: Soil analysis excessively high extractable (CO2 Na) Sodium that needs soil treatment and thorough leaching of harmful Sodium. Irrigation water may be the source – a water analysis is recommended to verify. INTERNAL DRAINAGE is the major requirement for leaching salts. Take an in depth 4 foot soil profile in 1 foot increments for soil suitability determination for natural percolation or if drainage tiles are needed. An outlet is needed for drain water. Apply a Soil Inoculant (Microbes) at the label recommended rate for the 1st application + 1 qt/A Humic Acid + 1 qt/A Molasses (energy) and/or fish follow on a 4-6 week schedule with ½ or ¼ of above rates. Use Good Water Management by soaking thoroughly but as infrequently as possible to physically push salts down away from the major root zone. Deep watering can help prevent surface salt build up by leaching soluble salts from previous irrigation.

# MEG GEOTECHNICAL ENGINEERING REPORT

**PROPOSED**
**SOUTH TEXAS ISD MED HIGH**
**NEW SPORTS FIELDS**

**MERCEDES, HIDALGO COUNTY, TEXAS**

**Geotechnical Engineering • Construction Materials Engineering & Testing**
**Environmental • Consulting • Forensics**

# GEOTECHNICAL ENGINEERING REPORT
# FOUNDATION RECOMMENDATIONS
# PROPOSED SOUTH TEXAS ISD MED HIGH
# NEW SPORTS FIELDS
# MERCEDES, HIDALGO COUNTY, TEXAS

**Prepared For**
**David Monreal**
**GMS Architects**

**MEG Report No. 01-24-29130**

**June 19, 2024**

MILLENNIUM ENGINEERS GROUP, INC.
TBPE FIRM NO. F-3913
5804 N. GUMWOOD AVENUE
PHARR, TEXAS 78577
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FAX:956-702-8140
WWW.MEGENGINEERS.COM

June 19, 2024

David Monreal, AIA
GMS Architects
1150 Paredes Line Road
Brownsville, TX 78521
(956)546-0110
dmonreal@gmsarchitects.com

**Subject:** **Geotechnical Engineering Report**
**MEG Report No. 01-24-29130**
**Foundation Recommendations**
**Proposed South Texas ISD Med High**
**New Sports Fields**
**Mercedes, Hidalgo County, Texas**

Dear Mr. Monreal(CLIENT):

Millennium Engineers Group, Inc. is pleased to submit the enclosed geotechnical engineering report that was prepared for the above subject project. This report addresses the procedures and findings of our geotechnical engineering study. Our recommendations should be incorporated into the design and construction documents for the proposed development.

We want to emphasize the importance that all our recommendations presented in this report and/or addendums to this report be followed. We look forward to continuing our involvement in the project by providing construction monitoring in accordance with the report recommendations and materials testing services during construction. We strongly recommend that we be a part of the preconstruction meeting to address any specific issues that are pertinent to this project.

Thank you for the opportunity to be of service to you in this phase of the project and we would like the opportunity to assist you in the upcoming phases of the project. If you have any questions, please contact our office at the address, telephone, fax or electronic address listed below.

Cordially,
**Millennium Engineers Group, Inc.**
TBPE Firm No. F-3913


Amos Emerson, P.E.
Geotechnical Department Manager

Quyet Thang Pham, Ph.D., P.E.
Geotechnical Engineer

*The seal appearing on this document was authorized by Quyet Thang Pham, P.E. 131836 on June 19, 2024. Alteration of a sealed document without proper notification to the responsible engineer is an offence under the Texas Engineering Practice Act*

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## 1.0 INTRODUCTION

Millennium Engineers Group, Inc. (MEG) has completed and is pleased to submit this document that presents our findings as a result of a geotechnical engineering study of this project to our client. The project site is located at 700 Med High Drive in Mercedes, Hidalgo County, Texas. The project location is shown on the Project Location Map, found in the Appendix section of this report. This report briefly describes the procedures utilized during this study and presents our findings along with our recommendation, for foundation design and construction considerations.

Our scope of services for the project was outlined in MEG proposal No. 01-24-145G, dated May 17, 2024 and approved by David Monreal, AIA on May 20, 2024.

## 2.0 PROJECT DESCRIPTION

It is our understanding that the proposed site will accommodate the construction of a new 400-meter athletic track and natural turf areas.

## 3.0 SCOPE AND LIMITATIONS OF STUDY

This engineering report has been prepared in accordance with accepted geotechnical engineering practices currently exercised by geotechnical engineers in this area. No warranty, expressed or implied, is made or intended. This report is intended for the exclusive use by the client and client's authorized project team for use in preparing design and construction documents for this project only. This report may only be reproduced in its entirety for inclusion in construction documents. This report in its entirety shall not be reproduced or used for any other purposes without the written consent of our firm. This report may not contain sufficient information for purposes of other parties or other uses and is not intended for use in determining construction means and methods.

The recommendations presented in this report are based on data obtained from the soil borings drilled at this site and our understanding of the project information provided to us by our client and other project team members, and the assumption that site grading will result in only minor changes in the existing topography. Subsurface soil conditions have been observed and interpreted at the boring locations only.

This report may not reflect the actual variations of the subsurface conditions across the subject site. It is important to understand that variations may occur due to real geologic conditions or previous uses of the site. The nature and extent of variations across the subject site may not become evident until specific design locations are identified and/or construction commences. The construction process itself may also alter subsurface conditions. If variations appear evident at the time during the design phase and/or construction phase, we should be notified immediately to determine if our opinions, conclusions and recommendations need to be reevaluated. It may be necessary to perform additional field and laboratory tests and engineering analyses to establish the engineering impact of such variations. These services are additional and are not a part of our project scope.

The engineering report was conducted for the proposed project site described in this report. The conclusions and recommendations contained in this report are not valid for any other project sites. If the project information described in this report is incorrect, is altered, or if new information becomes available, we should be retained to review and modify our recommendations. These services are additional and are not a part of our project scope.

Our scope of services was limited to the proposed work described in this report, and did not address other items or areas. The scope of our geotechnical engineering study does not include environmental assessment of the air, soil, rock or water conditions on or adjacent to the site. No environmental opinions are presented in this report. If the client is concerned with environmental risk at this project site, the client should perform an environmental site assessment.

If final grade elevations are significantly different from existing grades at the time of our field activities (more than plus or minus one (1) foot), our office should be informed about these changes. If desired, we will reexamine our analyses and make supplemental recommendations.

## 4.0 FIELD EXPLORATION PROCEDURES

Subsurface conditions at the subject site were evaluated by two (2) 10-foot soil borings and four (4) 12-inch soil grab samples. The Borings were drilled at the locations shown on the Borings Location Map, found in the Appendix section of this report. This location is approximate and distances were measured using a measuring wheel, tape, angles, and/or pacing from existing references. The structural soil borings were drilled in general accordance with American Society of Testing Materials (ASTM) D 420 procedures.

As part of our sampling procedures, the samples were collected in general conformance with ASTM D 1586 procedures. Representative portions of the samples were sealed in containers to reduce moisture loss, identified, packaged, and transported to our laboratory for subsequent testing. In the laboratory, each sample was evaluated and visually classified by a member of our Geotechnical Engineering staff. The geotechnical engineering properties of the strata were evaluated by a series of laboratory tests. The results of the laboratory and field-testing are tabulated on the boring logs and Summary of Soil Sample Analyses which are found in the Attachments section of this report.

Standard penetration test results are noted on the boring logs as blows per 12 inches of penetration. Two 6 inch increments are performed for each standard penetration test. The sum of the blows for the two 6 inch increments is considered the “standard penetration resistance value” or “N-value.” Where hard or very dense materials were encountered, the tests are terminated as follows: (1) when a total of 50 blows have been applied in any of the 6 inch increments, or (2) when a total of 100 blows have been applied, or (3) when there is no observed advance of the sampler in the application of 10 successive blows. The boring logs in the case of hard or very dense materials will be noted as follows: 50/3”, where 50 is the number of blows applied in 3 inches of

penetration, or 100/7½" where 100 is the number of blows applied in a total of 7 ½ inches of penetration, or 10/0", where 10 is the number of blows applied in 0 inches of penetration.

Samples will be retained in our laboratory for 30 days after submittal of this report. Other arrangements may be provided at the request of the Client.

## 5.0 GENERAL SITE CONDITIONS

### 5.1 Site Description

The project site is located at 700 Med High Drive in Mercedes, Hidalgo County, Texas. The project location is shown on the Project Location Map, found in the Appendix section of this report. At the time of our field operations, the subject site can be described as a developed tract of land. The general topography of the site is relatively flat sloping down to the northeast with a visually estimated vertical relief of less than 3 feet. Surface drainage is visually estimated to be poor to fair.

### 5.2 Site Geology

According to the Soil Survey of Hidalgo County, Texas, published by the United States Department of Agriculture – Soil Conservation Service, the project site appears to be located within the Raymondville soil association.

- The Raymondville series consist of deep, well drained, clayey soils on uplands, nearly level soil is on plane to slightly concave uplands. These soils formed in calcareous clayey sediments. Slopes are mainly less than 0.5 percent but range from 0 to 1 percent. Areas are irregular in shape and range in size from 50 to 950 acres. Surface runoff is slow and permeability is slow. The corresponding soil symbol is 52, Raymondville clay loam.

### 5.3 Subsurface Conditions

On the basis of our borings, two (2) generalized strata that possess similar physical and engineering characteristics can describe the subsurface stratigraphy at this site. Table 5.1 summarizes the approximate strata range in our boring logs. These were prepared by visual classification and were aided by laboratory analyses of selected soil samples. The lines designating the interfaces between strata on the boring logs represent approximate boundaries. Transitions between strata may be gradual details for each of the borings can be found on the boring logs in the appendix of this report.

**Table 5.1. Approximate Subsurface Stratigraphy Depths.**

| Stratum | Range in Depth, ft[1] | Stratum Description[1] |
|---|---|---|
| I | 0 – 4 | fat CLAY, brown, dry, stiff |
| II | 4 – 10 | clayey SAND, brown, dry to moist, soft to stiff |

Note 1: The stratum thickness and depths to strata interfaces are approximate. Our measurements are rounded off to the nearest foot increment and are referenced from ground surface at the time of our drilling activities. Subsurface conditions may vary between the boring locations.

## 5.4 Groundwater Conditions

The dry auger drilling technique was used to complete the soil borings in an attempt to observe the presence of subsurface water. During our drilling operations we did not encounter the groundwater table below natural ground elevation for short term conditions. Moisture content test exhibited high moisture content at eight (8) feet below natural ground elevation. Table 5.2 summarizes the approximate groundwater and cave in depths measured in our explorations. It should be noted that the groundwater level measurements recorded are accurate only for the specific dates on which measurement were obtained and does not show fluctuations throughout the year.

Fluctuations in Groundwater levels are influenced by variations in rainfall and surface water run-off from season to season. The construction process itself may also cause variations in the groundwater level. If the subsurface water elevation is critical to the construction process the contractor should check the subsurface water conditions just prior to construction excavation activities.

**Table 5.2. Approximate Groundwater and Cave-in Depths.**

| Boring No. | Depth to Subsurface Water, Ft[1] | Depth to Cave-In, Ft[1] |
|---|---|---|
| | Time of Drilling | Time of Drilling |
| B-1 | None | None |
| B-2 | None | None |

Note 1: Subsurface water levels and cave-in depths have been rounded to the nearest foot.

Based on the findings in our borings and on our experience in this region, we believe that groundwater seepage may not be encountered during site earthwork activities. If groundwater seepage is encountered during site earthwork activities, it may be controlled using temporary earthen berms and/or conventional sump-and-pump dewatering methods.

## 5.5 Top Soil Evaluation

Bulk Samples were taken at four (4) locations in order to perform an analysis of the available macronutrients and micronutrients within the soil samples for the TPSL® Soil

Test for Turfgrass, Lawns & Athletic Fields. The locations are denoted on the bore location map presented in APPENDIX B Project Maps. The tests results are presented in APPENDIX F Plant Natural Soils & Soil Composts.

## 6.0 LABORATORY TESTING ANALYSIS

### 6.1 General

The analyses presented in this report are applicable specifically to the proposed project. The data gathered from both the field and laboratory testing programs on soil samples obtained from the borings was utilized to establish geotechnical engineering parameters for the proposed project.

### 6.2 Moisture Content Testing

The moisture content of a soil is defined as the ratio of the weight of the water in the sample to the dry weight of the soil sample expressed as a percentage. The moisture contents for the samples obtained as part of our geotechnical study were performed in accordance with ASTM D2216. The results varied from nine (9) percent to eighteen (18) percent. The boring and corresponding soil samples exhibited dry to moist field moisture conditions. A list of all the moisture contents by corresponding depth can be found on the boring log.

### 6.3 Plasticity Index Testing

The Plasticity Index (PI) is known as the difference between the liquid limit and the plastic limit of a soil. These limits are commonly referred to as the Atterberg limits, which describe the consistency of soils with respect to their varying moisture contents. The liquid limit is defined as the moisture content at which soil begins to transition from a plastic to a liquid state, and begins to behave as a liquid material. The plastic limit refers to the water content of a soil at the point of transition from a semisolid to a plastic state where soil starts to exhibit plastic behavior. The plasticity index testing performed in accordance with ASTM D4318 shows the range in which a soil acts in a plastic state. Plasticity Index values for the soils samples performed for this report were found to have a value of seven (7) to forty-two (42) percent with a low to moderate plasticity rate.

### 6.4 Particle Size Analysis Testing (Determination of Fines Content)

Standard grain size analysis is used to determine the relative proportions of different grain sizes as they are distributed along a range of different sized sieves. The minus 200 sieve analysis is used commonly as a tool for soil classification and identification using the Unified Soil Classification System. Results for this test are reported as a percentage of soil passing the No. 200 sieve, which has openings 0.075mm wide. This test is also used to determine the suitability of soil for construction purposes and to estimate probable seepage through soils. Generally a %- 200 less than 50% indicates a granular non-cohesive to cohesive soil with large amounts of varying sized grains in the soil composition having high seepage potential. Sieve analysis testing was performed in

accordance with ASTM D1140. The % -200 soil values for the samples collected ranged from 37% passing (non-cohesive coarse grained materials such as sands) to 66% passing (cohesive fine grained materials such as clays).

## 7.0 ENGINEERING ANALYSIS

### 7.1 General

The analysis and recommendations presented in this report are applicable specifically to the proposed foundation structure. The data gathered from both the field and laboratory testing programs on soil samples obtained from the borings was utilized to establish geotechnical engineering parameters to develop recommendations for the proposed structure. The foundation system(s) considered in this report to provide support for the proposed structure must meet two independent criteria. One of the criteria is that the movement below the foundation structure due to compression (consolidation) or expansion (swell) of the underlying soils must be within tolerable limits. This criterion is addressed in the Soil Related Movements section of this report. The other criterion is that the dead and live loads must be distributed appropriately and the foundation structure designed with an acceptable factor of safety to minimize the potential for bearing capacity failure of the underlying soils.

Geotechnical and structural engineers in this general area consider soil movements or Potential Vertical Rise (PVR) of approximately one (1) inch or less to be within acceptable structural design tolerances for most structures but may be different depending on structure use and the desired performance of the foundation. Therefore, movements of the underlying soils are not eliminated and thus one should expect a slab foundation structure to exhibit differential vertical movements. However, structural engineers design slab foundations for the expected magnitude of soil movements without failure of the structure. More stringent soil movement criteria may be established but the owner should consider the exponential increase in cost required to design and construct a structure for such soil movements. Data obtained in this study indicate that the soils at this site have strength characteristics capable of supporting the foundation and structure if designed appropriately. Stratum I is composed of lean clay to sandy lean clay and has a moderate potential to exhibit volumetric changes (contraction and expansion). Stratum II is composed of fat clay and has a high potential to exhibit volumetric changes. The potential for soil volumetric changes is dependent on variations in moisture contents of the underlying soils. Based on this data, this site is suitable for a slab foundation provided the subgrade is modified in accordance with the recommendations established in this report to reduce the potential for these soil volumetric changes.

### 7.2 Soil-Related Movements

The anticipated ground movements due to swelling of the underlying soils at this site were estimated for slab foundation construction using the Texas Department of Transportation (TxDOT) procedures of test method TEX-124-E for determining Potential Vertical Rise (PVR). A PVR value of two and a half (2 ½) inches was estimated for the stratigraphic conditions encountered in our subsurface borings. A surcharge of 1 pound per square

inch for the concrete slab, an active zone of 10 feet, and dry subsurface moisture conditions were assumed in estimating the above PVR values.

## 8.0 PROJECT REVIEW AND QUALITY CONTROL

Each project site is unique and it is important that the appropriate design data, construction drawings, specifications, change orders and related documents be reviewed by the respective design and construction professionals participating in this project. The performance of foundations, construction building pads and/or parking areas for this project will depend on correct interpretation of our geotechnical engineering report and proper compliance of and adherence to our geotechnical recommendations and to the construction drawings and specifications.

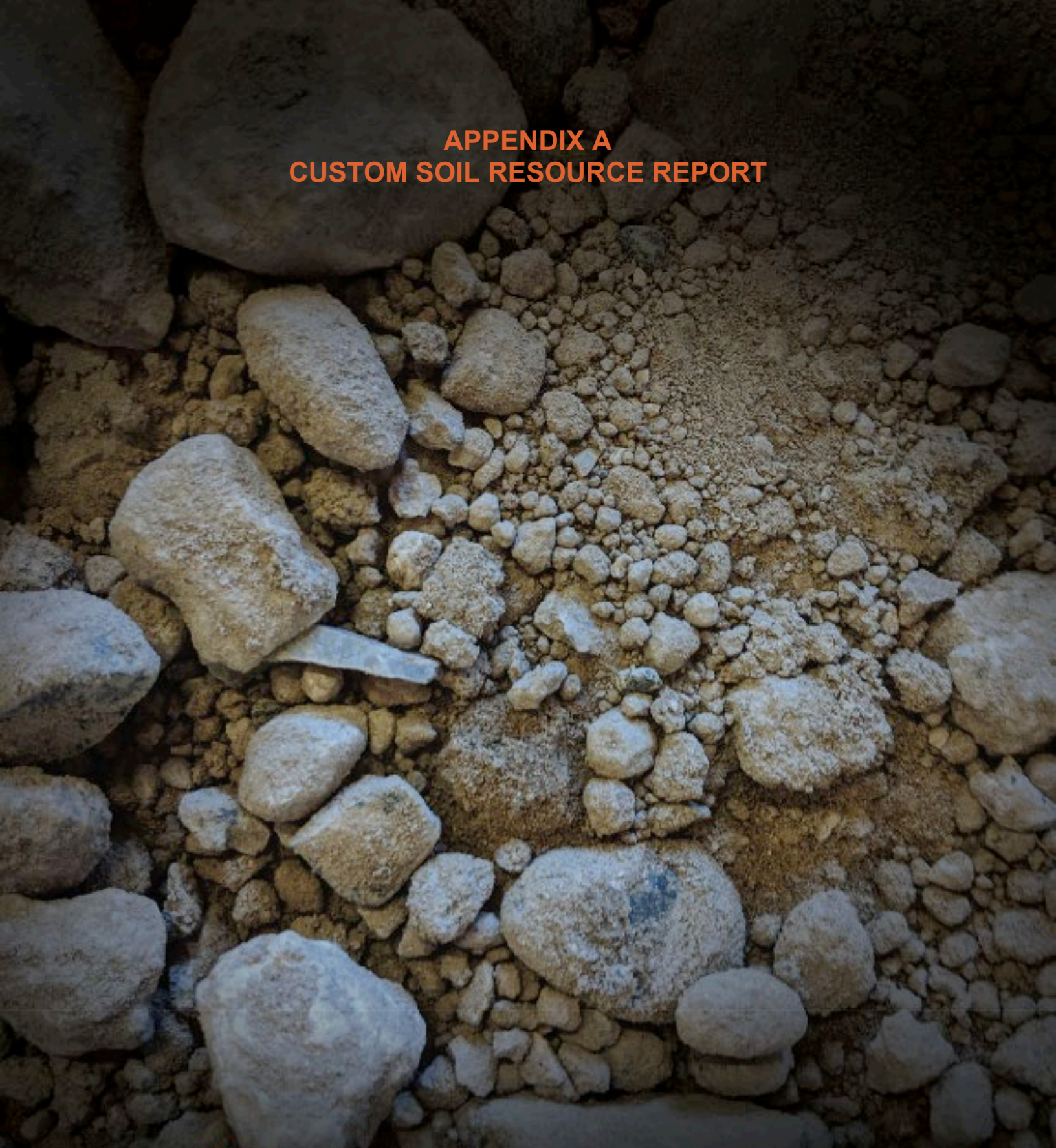
It is important that **MEG** be provided the opportunity to review the final design and construction documents to check that our geotechnical recommendations are properly interpreted and incorporated in the design and construction documents. We cannot be responsible for misinterpretations of our geotechnical recommendations if we have not had the opportunity to review these documents. This review is an additional service and not part of our project scope.

**MEG** should be retained to provide construction materials testing and observation services during all phases of the construction process of this project. As the Geotechnical Engineer of Record, it is important to let our technical personnel provide these services to make certain that our recommendations are interpreted properly and to ensure that actual field conditions are those described in our geotechnical report. Since our personnel are familiar with this project, **MEG**'s participation during the construction phase of this project would help mitigate any problems resulting from variations or anomalies in subsurface conditions, which are among the most prevalent on construction projects and often lead to delays, changes, costs overruns, and disputes. If the client does not follow all of our recommendations presented in this report and/or addendums to this report, the client assumes the responsibility and liability of such actions and will hold our firm harmless and without responsibility and liability for client's actions.

A construction testing frequency plan and budget needs to be developed for the required construction materials engineering and testing services for this project. Before construction, we recommend that **MEG**, the project design team members and the project general contractor meet and jointly develop the testing plan and budget, as well as review the testing specifications as it pertains to this project. **A failure to implement a complete testing plan will negate the recommendations provided in this report.**

**MEG** looks forward to the opportunity to provide continued support on this project.

# APPENDIX A
# CUSTOM SOIL RESOURCE REPORT



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5840 N. Gumwood Avenue ■ Pharr, Texas 78577 ■ Tel: 956-702-8500 ■ Fax: 956-702-8140

Soil Map—Hidalgo County, Texas
(01-24-29130 Proposed Med High Mercedes)


Map Scale: 1:2,180 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N 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 1:20,000.

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: Hidalgo County, Texas
Survey Area Data: Version 22, Sep 5, 2023

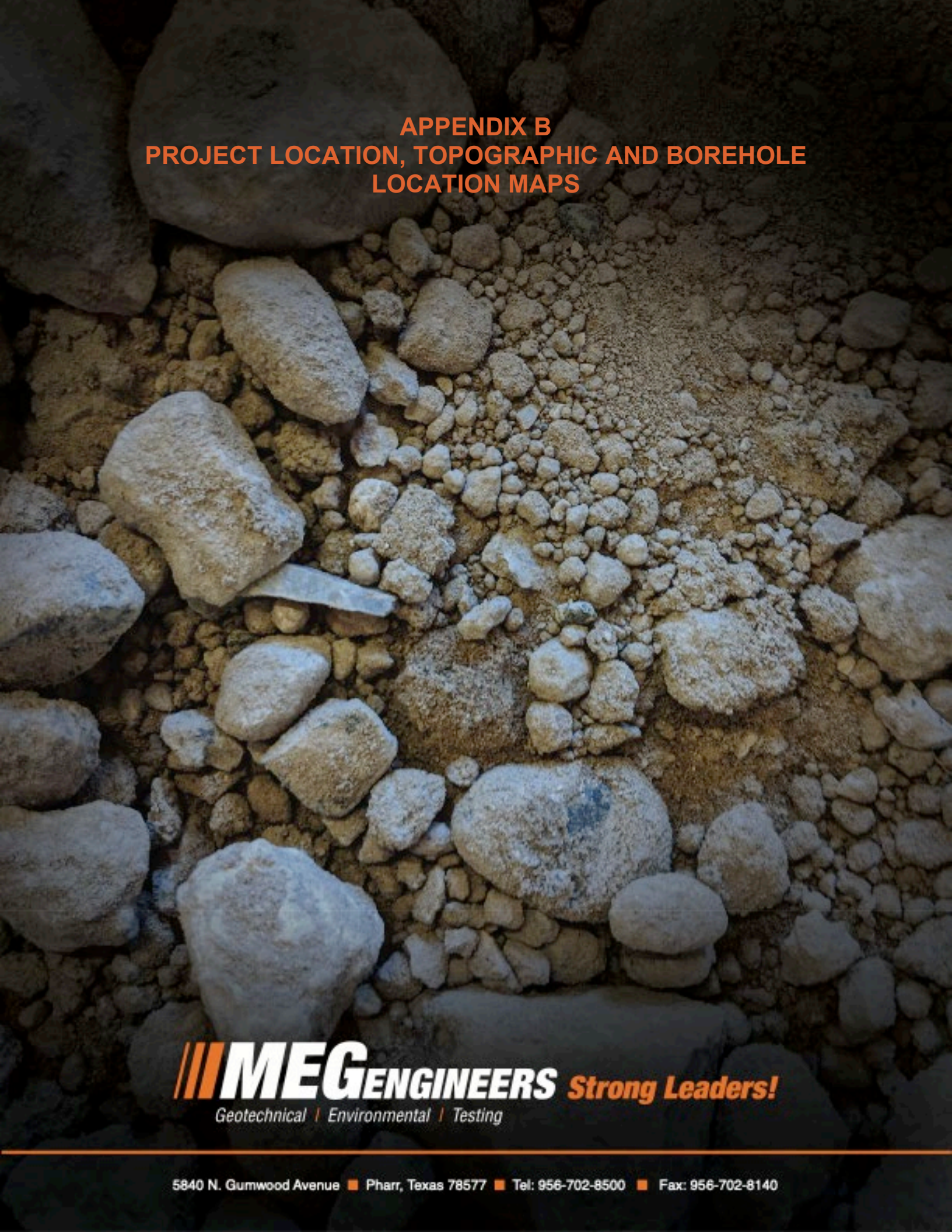
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 21, 2021—Mar 2, 2022

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 |
|---|---|---|---|
| 52 | Raymondville clay loam, 0 to 1 percent slopes | 11.2 | 100.0% |
| **Totals for Area of Interest** | | **11.2** | **100.0%** |



# APPENDIX B
# PROJECT LOCATION, TOPOGRAPHIC AND BOREHOLE LOCATION MAPS

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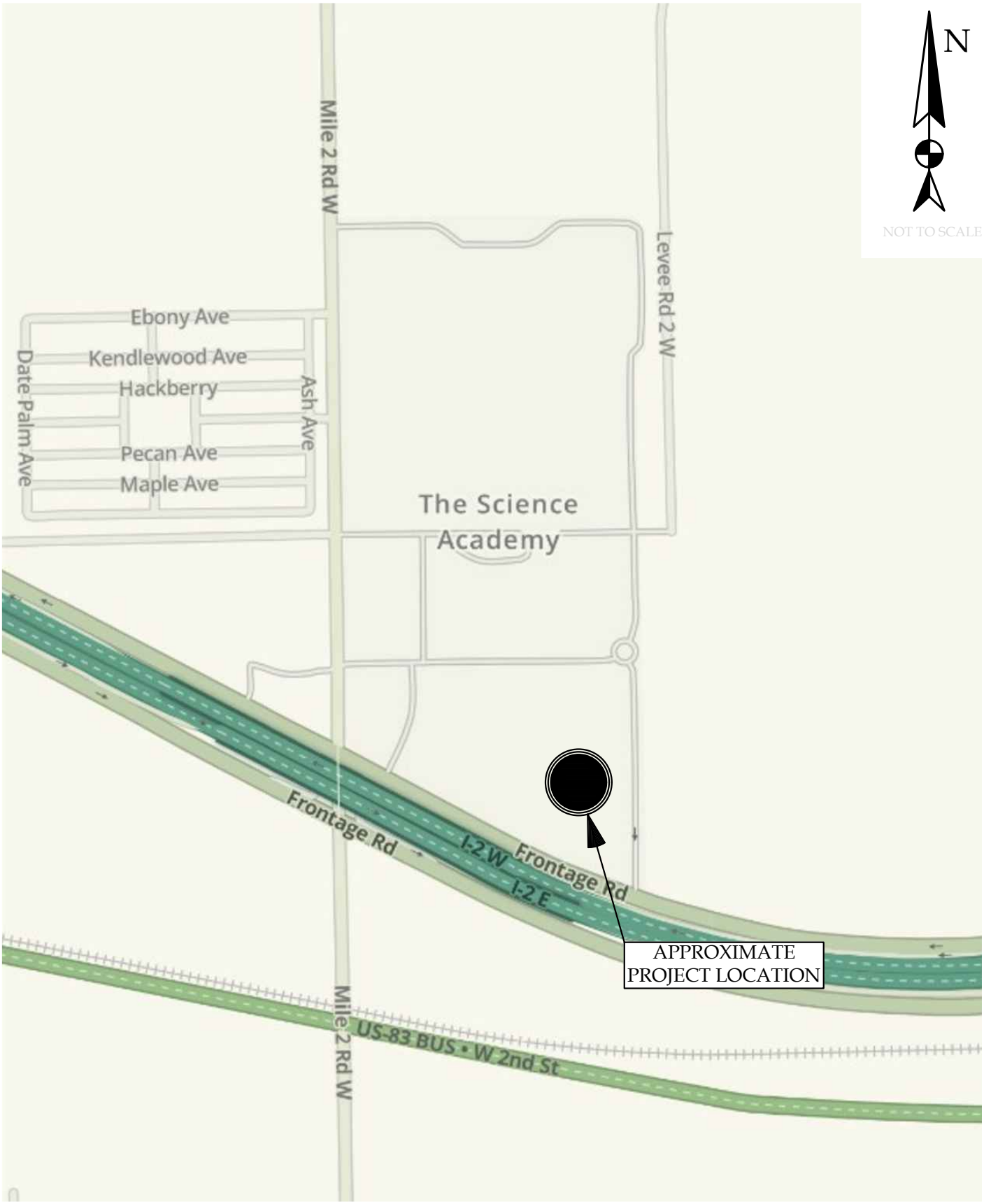


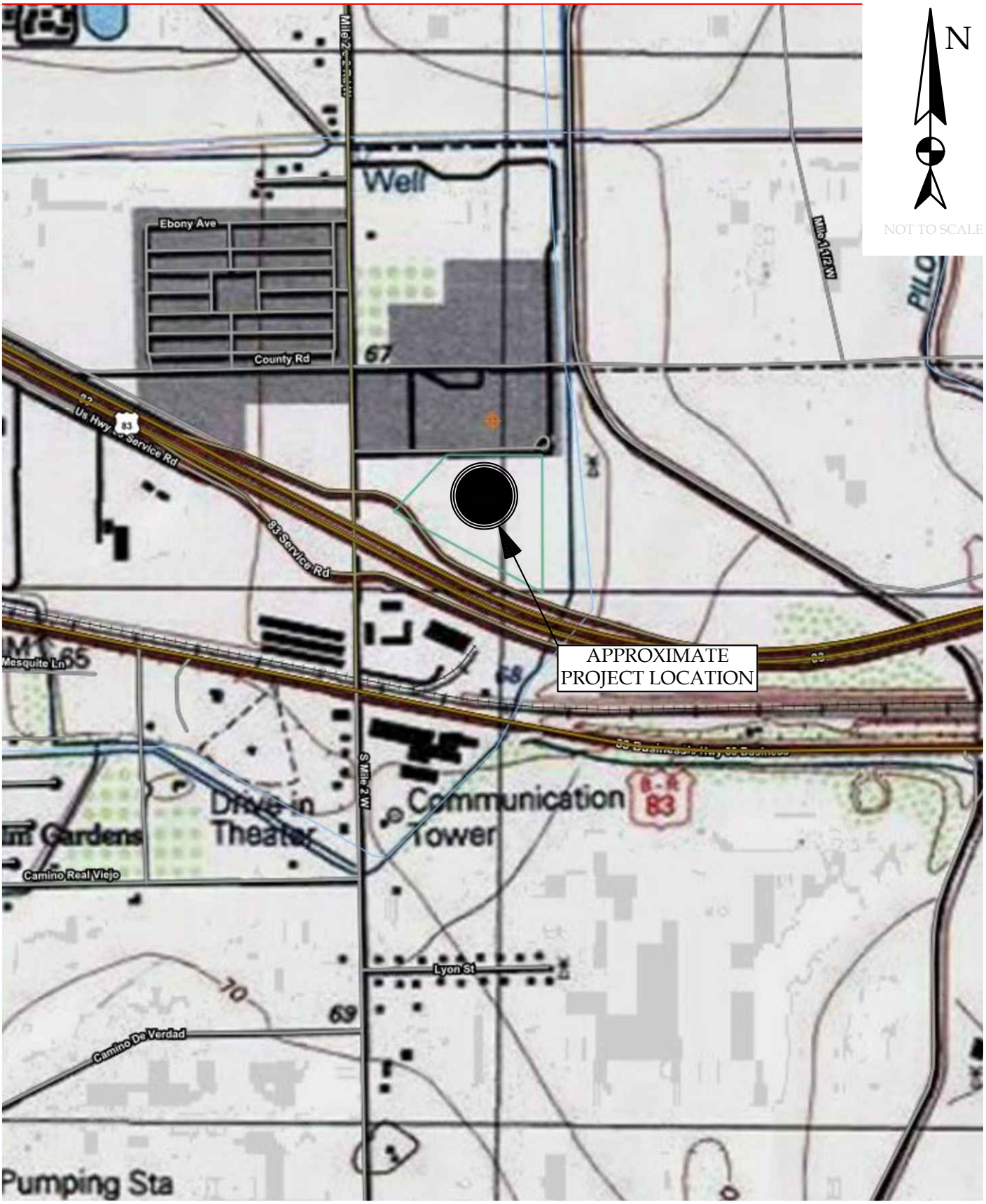

MEG PROJECT: 01-24-29130 / DATE: 6/17/2024 / APPROVED BY: A. PALMA / DRAWN BY: L. PUENTES

**PROJECT SITE LOCATION MAP**

PROPOSED
MED HIGH MERCEDES

MERCEDES, HIDALGO COUNTY, TEXAS

MILLENNIUM ENGINEERS GROUP, INC.
5804 N. GUMWOOD AVENUE
PHARR, TEXAS 78577
WWW.MEGENGINEERS.COM
TEL: 956-702-8500
FAX: 956-702-8140



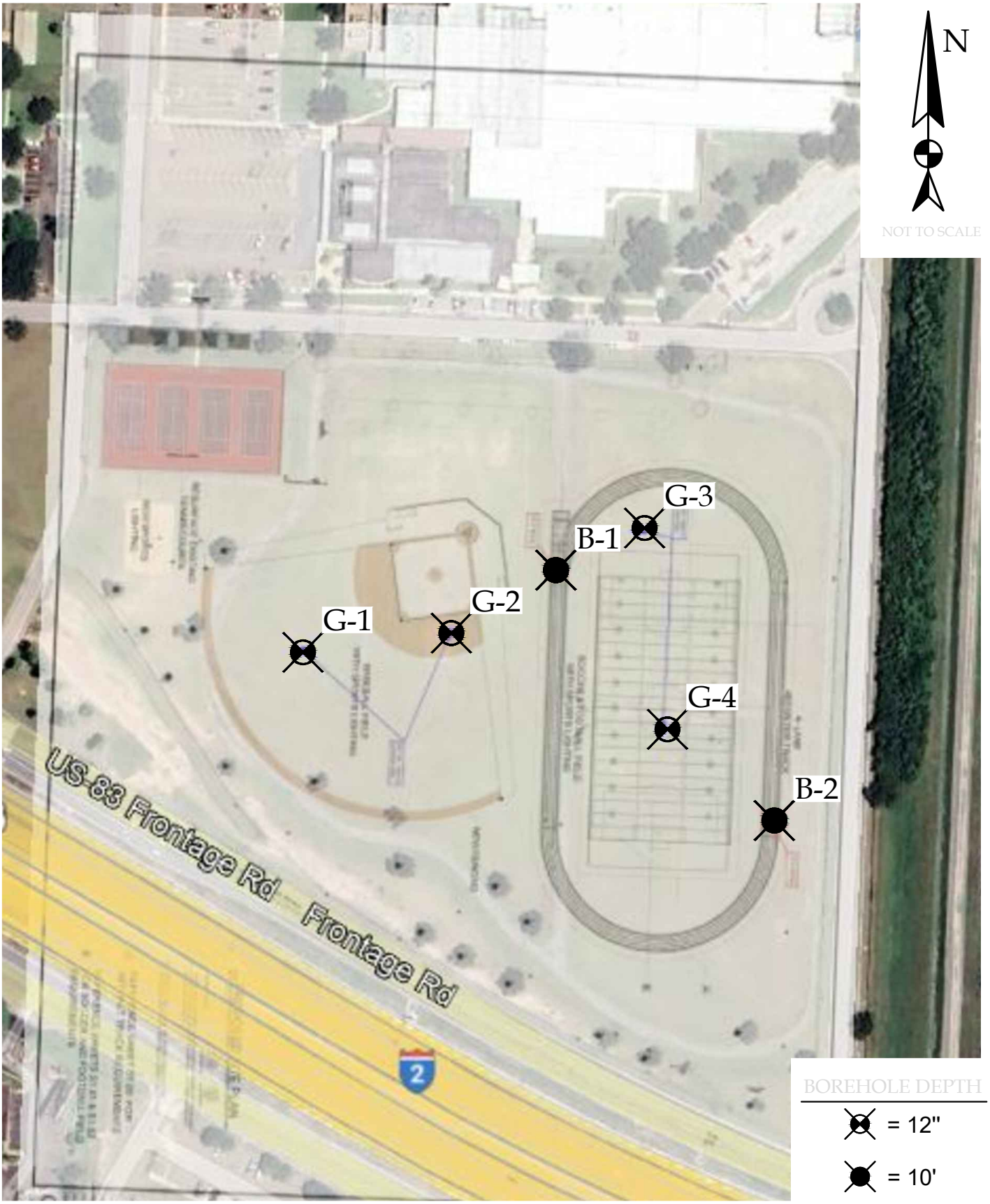

**PROJECT TOPOGRAPHY MAP**

PROPOSED
MED HIGH MERCEDES

MERCEDES, HIDALGO COUNTY, TEXAS

MILLENNIUM ENGINEERS GROUP, INC.
5804 N. GUMWOOD AVENUE
PHARR, TEXAS 78577
WWW.MEGENGINEERS.COM
TEL: 956-702-8500
FAX: 956-702-8140

MEG PROJECT: 01-24-29130 / DATE: 6/17/2024 / APPROVED BY: A. PALMA / DRAWN BY: L. PUENTES




**PROJECT BOREHOLE LOCATION MAP**

PROPOSED
MED HIGH MERCEDES

MERCEDES, HIDALGO COUNTY, TEXAS

MILLENNIUM ENGINEERS GROUP, INC.
5804 N. GUMWOOD AVENUE
PHARR, TEXAS 78577
WWW.MEGENGINEERS.COM
TEL: 956-702-8500
FAX: 956-702-8140

MEG PROJECT: 01-24-29130 / DATE: 6/17/2024 / APPROVED BY: A. PALMA / DRAWN BY: L. PUENTES

# APPENDIX C
# PROJECT BORING LOGS AND PROFILE



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Project: **Proposed South Texas ISD Med High New Sport Fields**

Project Location: **Mercedes, Hidalgo County, Texas**

Project Number: **01-24-29130**

# Log of Boring B-1

**Sheet 1 of 1**

| | | |
|---|---|---|
| Date(s) Drilled **5/24/2024** | Logged By **Ayme Guerrero** | Checked By **Raul Palma** |
| Drilling Method **Straight Flight** | Drill Bit Size/Type **4" soil bit** | Total Depth of Borehole **10 feet bgs** |
| Drill Rig Type **Simco 2800** | Drilling Contractor **MEG Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **Not Encountered** | Sampling Method(s) **SPT** | Hammer Data **140 lb., 30 in. drop, auto trip** |
| Borehole Backfill **Subgrade Cuttings** | Location **See Boring Location Map** | |

| Elevation (feet) | Depth (feet) | Sample Type | Sample Number | Sampling Resistance, blows/ft | Material Type | Graphic Log | MATERIAL DESCRIPTION | Water Content, % | LL, % | PI, % | Percent Fines | UC, ksf |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | CH | | fat CLAY, brown, dry, stiff | | | | | |
| | 1 | | 1 | 14 | | | | 13 | 57 | 40 | | |
| | 2 | | | | | | | | | | | |
| | 3 | | 2 | 13 | | | | 13 | | | 66 | |
| | 4 | | | | SC | | clayey SAND, brown, dry to moist, loose to med. dense | | | | | |
| | 5 | | 3 | 4 | | | | 9 | | | | |
| | 6 | | | | | | | | | | | |
| | 7 | | 4 | 5 | | | | 12 | | | 37 | |
| | 8 | | | | | | | | | | | |
| | 9 | | 5 | 8 | | | | 14 | 18 | 7 | | |
| | 10 | | | | | | BORE TERMINATION | | | | | |
| | 11 | | | | | | | | | | | |
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| | 30 | | | | | | | | | | | |

MEG ENGINEERS

Project: **Proposed South Texas ISD Med High New Sport Fields**

Project Location: **Mercedes, Hidalgo County, Texas**

Project Number: **01-24-29130**

# Log of Boring B-2

**Sheet 1 of 1**

| | | |
|---|---|---|
| Date(s) Drilled **5/24/2024** | Logged By **Ayme Guerrero** | Checked By **Raul Palma** |
| Drilling Method **Straight Flight** | Drill Bit Size/Type **4" soil bit** | Total Depth of Borehole **10 feet bgs** |
| Drill Rig Type **Simco 2800** | Drilling Contractor **MEG Drilling** | Approximate Surface Elevation |
| Groundwater Level and Date Measured **Not Encountered** | Sampling Method(s) **SPT** | Hammer Data **140 lb., 30 in. drop, auto trip** |
| Borehole Backfill **Subgrade Cuttings** | Location **See Boring Location Map** | |

| Elevation (feet) | Depth (feet) | Sample Type | Sample Number | Sampling Resistance, blows/ft | Material Type | Graphic Log | MATERIAL DESCRIPTION | Water Content, % | LL, % | PI, % | Percent Fines | UC, ksf |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | | | | CH | | fat CLAY, brown, dry, stiff | | | | | |
| | 1 | | 1 | 14 | | | | 13 | 58 | 42 | | |
| | 2 | | | | | | | | | | | |
| | 3 | | 2 | 9 | | | | 11 | | | | |
| | 4 | | | | SC | | clayey SAND, brown, dry to moist, loose to med. dense | | | | | |
| | 5 | | 3 | 6 | | | | 12 | | | 46 | |
| | 6 | | | | | | | | | | | |
| | 7 | | 4 | 4 | | | | 13 | 22 | 12 | | |
| | 8 | | | | | | | | | | | |
| | 9 | | 5 | 5 | | | | 18 | | | 49 | |
| | 10 | | | | | | BORE TERMINATION | | | | | |
| | 11 | | | | | | | | | | | |
| | 12 | | | | | | | | | | | |
| | 13 | | | | | | | | | | | |
| | 14 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |
| | 16 | | | | | | | | | | | |
| | 17 | | | | | | | | | | | |
| | 18 | | | | | | | | | | | |
| | 19 | | | | | | | | | | | |
| | 20 | | | | | | | | | | | |
| | 21 | | | | | | | | | | | |
| | 22 | | | | | | | | | | | |
| | 23 | | | | | | | | | | | |
| | 24 | | | | | | | | | | | |
| | 25 | | | | | | | | | | | |
| | 26 | | | | | | | | | | | |
| | 27 | | | | | | | | | | | |
| | 28 | | | | | | | | | | | |
| | 29 | | | | | | | | | | | |
| | 30 | | | | | | | | | | | |

MEG ENGINEERS

Project: **Proposed South Texas ISD Med High New Sport Fields**
Project Location: **Mercedes, Hidalgo County, Texas**
Project Number: **01-24-29130**

# Key to Log of Boring

**Sheet 1 of 1**

| Elevation (feet) | Depth (feet) | Sample Type | Sample Number | Sampling Resistance, blows/ft | Material Type | Graphic Log | MATERIAL DESCRIPTION | Water Content, % | LL, % | PI, % | Percent Fines | UC, ksf |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

## COLUMN DESCRIPTIONS

1 Elevation (feet): Elevation (MSL, feet).
2 Depth (feet): Depth in feet below the ground surface.
3 Sample Type: Type of soil sample collected at the depth interval shown.
4 Sample Number: Sample identification number.
5 Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
6 Material Type: Type of material encountered.
7 Graphic Log: Graphic depiction of the subsurface material encountered.
8 MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
9 Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.
10 LL, %: Liquid Limit, expressed as a water content.
11 PI, %: Plasticity Index, expressed as a water content.
12 Percent Fines: The percent fines (soil passing the No. 200 Sieve) in the sample. WA indicates a Wash Sieve, SA indicates a Sieve Analysis.
13 UC, ksf: Unconfined compressive strength, in kips per square foot.

## FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

## MATERIAL GRAPHIC SYMBOLS

Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)

Clayey SAND (SC)

## TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler
Bulk Sample
3-inch-OD California w/ brass rings
CME Sampler
Grab Sample
Hand auger sampler
2.5-inch-OD Modified California w/ brass liners
Pitcher Sample
2-inch-OD unlined split spoon (SPT)
Texas Cone Penetrometer
Shelby Tube (Thin-walled, fixed head)

## OTHER GRAPHIC SYMBOLS

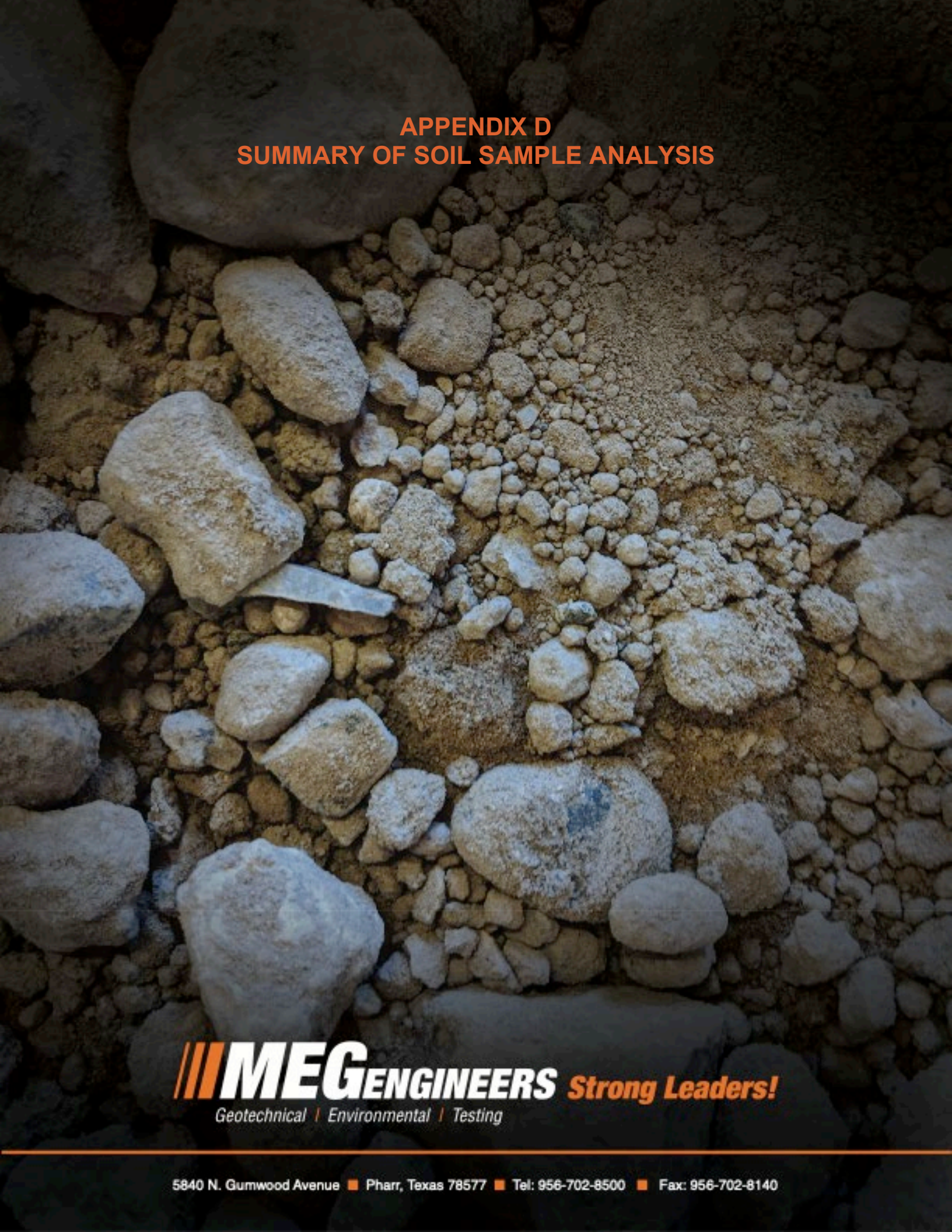
Water level (at time of drilling, ATD)
Water level (after waiting, AW)
Minor change in material properties within a stratum
Inferred/gradational contact between strata
Queried contact between strata

## GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

MEG ENGINEERS

**Figure B-1**



# APPENDIX D
# SUMMARY OF SOIL SAMPLE ANALYSIS

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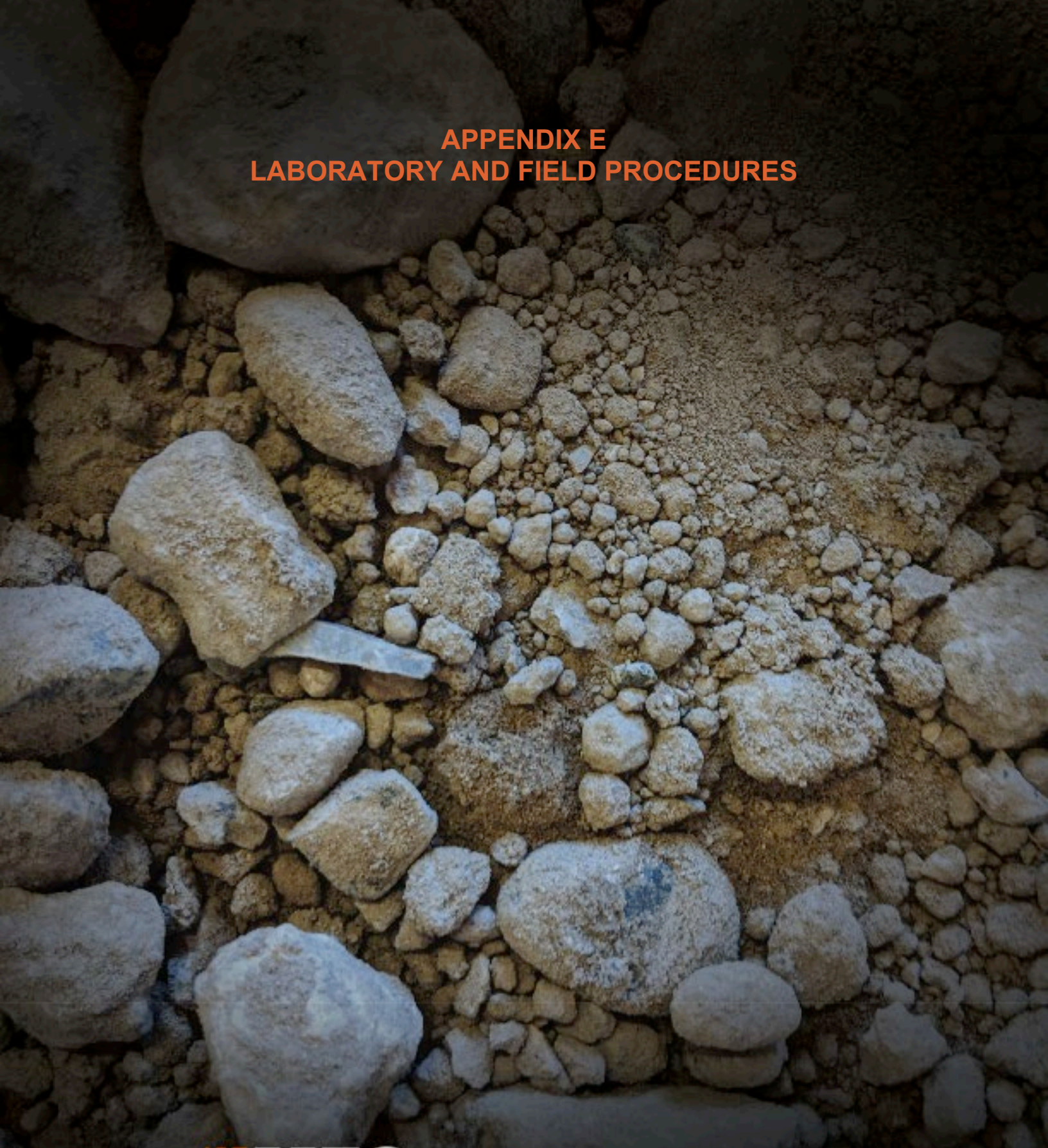
## Summary of Soil Sample Analyses

**Project Name: Proposed South Texas ISD Med High New Sport Fields**

| Boring No. | Sample Depth (ft) | Blows Per (ft) | Moisture Content | Liquid Limit | Plastic Limit | Plasticity Index | -200% Sieve | Shear Strength (tsf) | Sulfate Content (ppm) | USCS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-1 | .5 - 2 | 14 | 13 | 57 | 17 | 40 | | | 20 | CH |
| | 2.5 - 4 | 13 | 13 | | | | 66 | | | |
| | 4.5 - 6 | 4 | 9 | | | | | | | |
| | 6.5 - 8 | 5 | 12 | | | | 37 | | | |
| | 8.5 - 10 | 8 | 14 | 18 | 11 | 7 | | | | CL |
| B-2 | .5 - 2 | 14 | 13 | 58 | 17 | 42 | | | 20 | CH |
| | 2.5 - 4 | 9 | 11 | | | | | | | |
| | 4.5 - 6 | 6 | 12 | | | | 46 | | | |
| | 6.5 - 8 | 4 | 13 | 22 | 11 | 12 | | | | CL |
| | 8.5 - 10 | 5 | 18 | | | | 49 | | | |

# APPENDIX E
# LABORATORY AND FIELD PROCEDURES



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# Laboratory and Field Test Procedures

**Soil Classification Per ASTM D2487-93:**

This soil-testing standard was used for classifying soils according to the Unified Soil Classification System. The soil classifications of the earth materials encountered are as noted in the attached boring logs.

**Soil Water Content Per ASTM D2216-92:**

This test determines the water content of soil or rock expressed as a percentage of the solid mass of the soil. The test results are listed under **MC** in the attached boring logs.

**Soil Liquid Limit Per ASTM D4318-93:**

The soil Liquid Limit identifies the upper limit soil water content at which the soil changes from a moldable (plastic) physical state to a liquid state. The Liquid Limit water content is expressed as a percentage of the solid mass of the soil. The test results are listed under **LL** in the attached boring logs.

**Soil Plastic Limit Per ASTM D4318-93:**

The soil Plastic Limit identifies lower limit soil water content at which the soil changes from a moldable (plastic) physical state to a non-moldable (semi-solid) physical state. The Plastic Limit water content is expressed as a percentage of the solid mass of the soil. The test results are listed under **PL** in the attached boring logs.

**Plasticity Index Per ASTM D4318-93:**

This is the numeric difference between the Liquid Limit and Plastic Limit. This index also defines the range of water content over which the soil-water system acts as a moldable (plastic) material. Higher Plasticity Index (PI) values indicate that the soil has a greater ability to change in soil volume or shrink and swell with lower or higher water contents, respectively. The test results are listed under **PI** in the attached boring logs.

**Standard Penetration Test (SPT) and Split Spoon Sampler (SS) per ASTM D 1586**:

This is the standard test method for both the penetration test and split-barrel (spoon) sampling of soils. This sampling method is used for soils or rock too hard for sampling using Shelby Tubes. The method involves penetration of a split spoon sampler into the soil or rock through successive blows of a 140-pound hammer in a prescribed manner.

**Blow Counts (N) per ASTM D 1586:**

This is the number of blows required to drive a Split Spoon Sampler by means of a 140 pound hammer for a distance of 12 inches in accordance with the variables stated in the test procedures.

**Shelby Tube (ST) per ASTM D 1587**:

This procedure is for using a thin-walled metal tube to recover relatively undisturbed soil samples suitable for laboratory tests of physical properties.

**Dry Density (DD) per ASTM D 2937:**

This procedure is for the determination of in-place density of soil. The test results are measured in pounds per cubic foot, pcf.

**Unconfined Compression Test (Uc) per ASTM D 2166:**

This test method covers the determination of the unconfined compressive strength of cohesive soil in the undisturbed, remolded, or compacted condition, using strain-controlled application of the axial load.

**Minus No. 200 Sieve per ASTM D 1140:**

This test method covers determination of the amount of material finer than a Number 200 sieve by washing. The results are stated as a percent of the total dry weight of the sample.

**Pocket Penetrometer (PP):**

This test method is an accepted modification of ASTM D 1558 test method for establishing the moisture-penetration resistance relationships of fine-grained soils. The test results are measured in tons per square foot, tsf. The strength values provided by this method should be considered qualitatively.

**Rock Quality Designation (RQD):**

The measure of the quality of a rock mass defined by adding intact rock core pieces greater than four inches in length by the total length of core advance.

**Recovery Ratio (REC):**

The Recovery Ratio is equal to the total length of core recovered divided by the total length of core advance.

**Boring Logs:**

This is a summary of the above-described information at each boring location.

# APPENDIX F
# PLANT NATURAL SOILS & SOIL COMPOSTS

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# Client #: 4564

## Lab #: 73372 - 73375

**Client:** Millennium Engineers Group, Inc
Leticia Puentes
**Field:** Med High Mercedes, Texas
**Crop:** Grasses-Turf ,
**Date:** June 7, 2024

PLANT NATURAL®
Soil & Compost Tests

| Low | Marginal |
|---|---|
| Optimal | High |


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* *Carbon Dioxide (CO2) Mimics plant roots natural extraction*

| Sample Identification | | Refer to guide: Text. | Free Lime $CO_3$ | Percent - (%) Organic Matter: Total | Organic Matter: Active | pH Std Unit | Salts E.C. mmhos/cm | Ammonium $NH_4$-N lbs/ac | Nitrate $NO_3$-N lbs/ac | Phosphate $P_2O_5$ lbs/ac | Parts Per Million (ppm) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Potassium K | | Sodium Na | | Calcium Ca | | Magnesium Mg | | Water Soluble - W.S. Bicarbonates $HCO_3$ | Water Soluble - W.S. Sulfates $SO_4$ - S | Ratios Na:Ca | Ratios Na:Mg |
| | | | | | | | | | | | $H_2O$ | $CO_2$ * | $H_2O$ | $CO_2$ * | $H_2O$ | $CO_2$ * | $H_2O$ | $CO_2$ * | | | | |
| 1 | G-1 | 5 | L | | 1.71 | 7.95 | 0.85 | | 1 | 7 | 17 | 78 | 127 | 169 | 60 | 1439 | 11 | 135 | | 5 | 3 | 16 |
| 2 | G-2 | 5 | L | | 1.71 | 7.91 | 0.78 | | 5 | 6 | 19 | 77 | 84 | 110 | 74 | 1422 | 11 | 125 | | 5 | 2 | 10 |
| 3 | G-3 | 5 | H | | 2.46 | 8.04 | 0.82 | | 2 | 5 | 49 | 135 | 77 | 98 | 68 | 1502 | 10 | 122 | | 5 | 1 | 10 |
| 4 | G-4 | 5 | H | | 2.55 | 8.06 | 0.72 | | 5 | 12 | 32 | 105 | 76 | 86 | 54 | 1503 | 8 | 109 | | 5 | 2 | 11 |
| | Optimal-General | | | 2.8-4.8 | 2.8-4.8 | 6.3-6.8 | 0.18-1.00 | | 35-90 | 50-100 | 75-100 | 80-125 | < 100 | < 175 | 60-120 | 300-800 | 13-20 | 60-100 | < 150 | 25-55 | 2 - 6 | 5 - 8 |

***SALT CATIONS:** **$H_2O$** = ***Immediately Available*** (water soluble extract); **$CO_2$** [Plants' roots give off $CO_2$] = ***Available Reserve*** (carbonic acid extract). Plant Natural™ Extraction calibrates well to plant uptake (availability). These values are the nutrients available in the sample provided to our lab. Availability ratings have been calibrated by multiple plant analyses (crop logging) during a growing season by numerous crops on hundreds of fields both domestic and foreign. TPS Lab is guided by ***ASK THE PLANT***® with precision sampling and lab methods. Was this a **COMPOSITE SAMPLE**, representative of your plants' major root zone provided? Rev032118

| Sample Identification | | Parts Per Million (ppm) — MICRONUTRIENTS - DTPA Extraction: Zinc Zn | Iron Fe | Manganese Mn | Copper Cu | Cobalt Co | Molybdenum Mo | Selenium Se | Nickel Ni | Hot Water: Boron B | Calcium Chloride: Silicon Si | Calcium Chloride: Aluminum Al | W.S.: Chlorides Cl | Solvita: Burst $C\text{-}CO_2$ | Solvita: SLAN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | G-1 | 0.80 | 12.07 | 5.55 | 1.18 | | | | | 1.25 | | | | | |
| 2 | G-2 | 0.62 | 11.42 | 5.94 | 1.10 | | | | | 1.16 | | | | | |
| 3 | G-3 | 0.67 | 9.31 | 6.32 | 1.11 | | | | | 1.30 | | | | | |
| 4 | G-4 | 0.83 | 4.63 | 6.20 | 0.87 | | | | | 0.51 | | | | | |
| | Optimal-General | 3.10 - 6.10 | 11.10 - 18.10 | 10.10 - 15.10 | 2.60 - 3.60 | 15.00 - 40.00 | 1.50 - 2.00 | 1.50 - 2.00 | 5.00 - 7.00 | 1.30 - 2.00 | 60 - 100 | < 6 | 20 - 200 | > 82 | |

# Client #: 4564

## Lab #: 73372 - 73375

**Client:** Millennium Engineers Group, Inc
Leticia Puentes
**Field:** Med High Mercedes, Texas
**Crop:** Grasses-Turf ,
**Date:** June 7, 2024

PLANT NATURAL® Soil & Compost Tests

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| | | Most crop nutrient removal rates are from International Plant Nutrition Institute. | | | | | | These fertilizer guidelines are ANNUAL RATES to be applied in multiple split applications over the entire growing season. | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sample Identification | Plant Removal Rates | | Total Nutrient Plant Uptake lbs/1000 sqft | | | | Fertilizer Guidelines For Maximum Economic Yields Recommendations lbs/1000 sqft | | | | | | | | | | | Ounces per Acre | | | | | |
| | | Plant/Crop | Yield | N | $P_2O_5$ | $K_2O$ | Mg | Gypsum | Lime | Sulfur | N | $P_2O_5$ | $K_2O$* | Mg | Zn♦ | Fe♦ | Mn♦ | Cu♦ | B♦ | Co | Mo | Se | Ni | Si |
| 1 | G-1 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3X | 5.84 | 1.59 | 0.55 | | 0.11 | | 0.07 | 0.07 | 0.02 | | | | | |
| 2 | G-2 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3X | 5.74 | 1.62 | 0.61 | | 0.11 | | 0.07 | 0.07 | 0.02 | | | | | |
| 3 | G-3 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3X | 5.57 | 1.64 | | | 0.11 | 0.05 | 0.07 | 0.07 | 0.02 | | | | | |
| 4 | G-4 | Grasses-Turf | 4.05 lbs | 5.06 | 1.35 | 4.05 | 0.34 | | | 2-3X | 5.48 | 1.47 | | | 0.11 | 0.07 | 0.07 | 0.09 | 0.03 | | | | | |

Fertilizer Recommendations (N-P-K) are adjusted to reflect efficiency of recovery by plant and Estimated Nitrogen Release from Organic Matter. ENR estimates a 60% mineralization with optimum microbial activity, moisture and temperature.

♦ Micronutrient recommendations may have to be adjusted according to method of application and chleation of products. Ask The Plant® can determine actual plant uptake of these nutrients during the growing season.

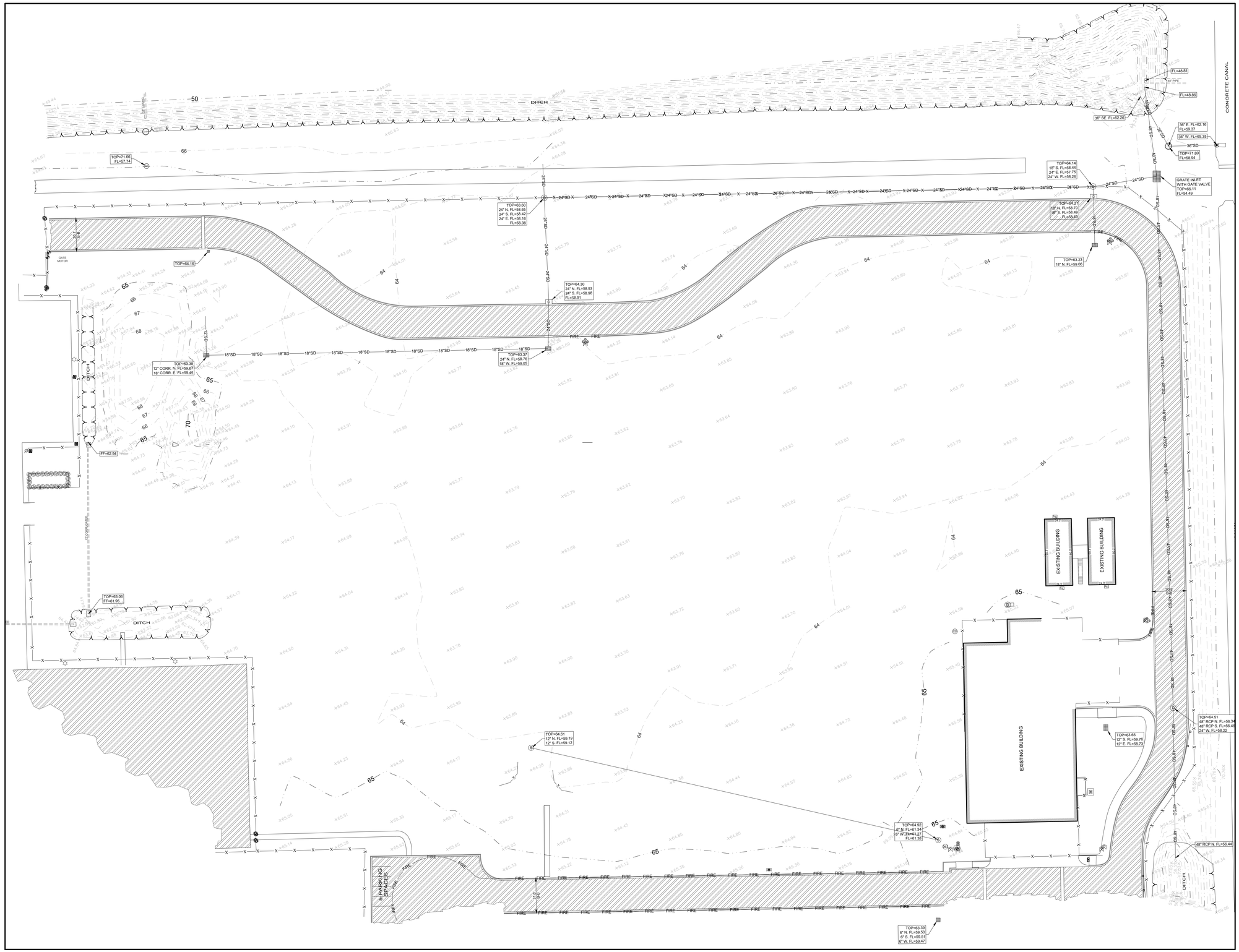
* Potassium recommendations are for a rebuilding program and should be applied in split applications over a few years. We do recommend at least a 1:1 ratio of N:K2O each year during the rebuilding phase.

Subsoils: While most plant roots feed in the 4 to 12 inch depth, the next 12-24 inches may also be a major contributor. For the most accurate soil test recommendations, sample topsoil and subsoil separately in 12 inch increments.

***A detailed write-up of interpretations and recommendations for this soil report is available upon request of item SAO-00. Refer to fee schedule for current price.***

***SOIL INOCULANTS - Activators*** (in the absence of adequate soil humus or in sterile conditions) of soil inoculants/ compost teas containing naturally occurring beneficial soil micro-organisms and/or enzymes, hormones, polymers, wetting agents and carboxyl's may improve nutrient uptake and the soil's physical condition (tilth) for better plant performance, possibly disease resistance and salt leaching. Feeding microbes with humic substances, carbohydrates, and other organic materials aid soil tilth and releases soil nutrients while helping some bacteria fix atmospheric N. [A combination of products may be best – follow product labels on your own test plots for the most effective products.]

CALCIUM - Samples 1, 2, 3, 4: SULFUR use recommended rate at least 2 or 3 times a year. (S effect lasts only 45-90 days in most cases.) Sulfur improves the physical condition (tilth) of the soil for better water and root penetration and increase nutrient availability. Sulfur activates Ca and Mg by solubilizing them to the available water (H2O) soluble form. Soluble Ca helps sodium to leach. S can also release P and Micronutrients.




N

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## LEGEND

- FOUND No.4 REBAR
- SERVICE POLE
- LIGHT POLE
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- WATER CONTROL VALVE
- GATE VALVE
- CLEANOUT
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- TYPE "A" INLET
- GRATE INLET
- IRRIGATION CONTROL VALVE
- IRRIGATION STAND PIPE (SIZE AS NOTED)
- ELECTRIC BOX
- BELL BOX
- TRANSFORMER
- AIR CONDITION UNIT
- STEEL GUARD POST
- CHAIN LINK FENCE POST
- GATE POST
- GUARD RAIL
- CHAIN LINK FENCE
- WOOD FENCE
- EDGE OF DITCH TOP
- 18"SD — 18" STORM SEWER LINE
- 24"SD — 24" STORM SEWER LINE
- 36"SD — 36" STORM SEWER LINE
- 48"SD — 48" STORM SEWER LINE
- FIRE — FIRE LANE
- ASPHALT AREA
- CONCRETE AREA
- GRAVEL DRIVEWAY

| No. | REVISIONS | BY |
|---|---|---|
| #1 | Addendum #1 | C.P. |


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texas 78526
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# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

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MERCEDES
CSP 25-011

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TEXAS REGISTRATION F-1435

STATE OF TEXAS
KELLEY A. HELLER-VELA
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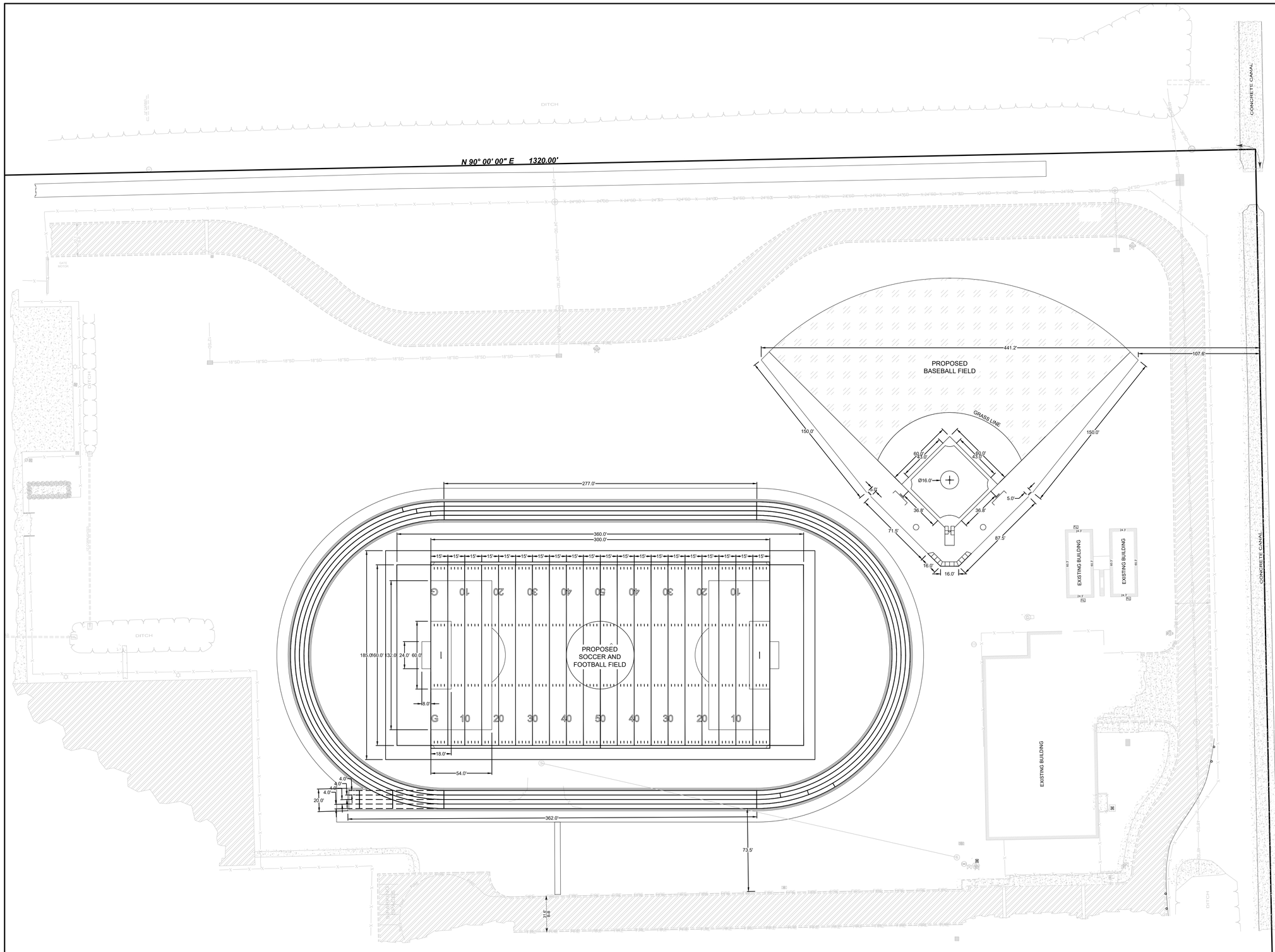


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Drawn By: IO
Job No.: STISD SPORTS FIELDS
Sheet: **SITE PLAN**

C2

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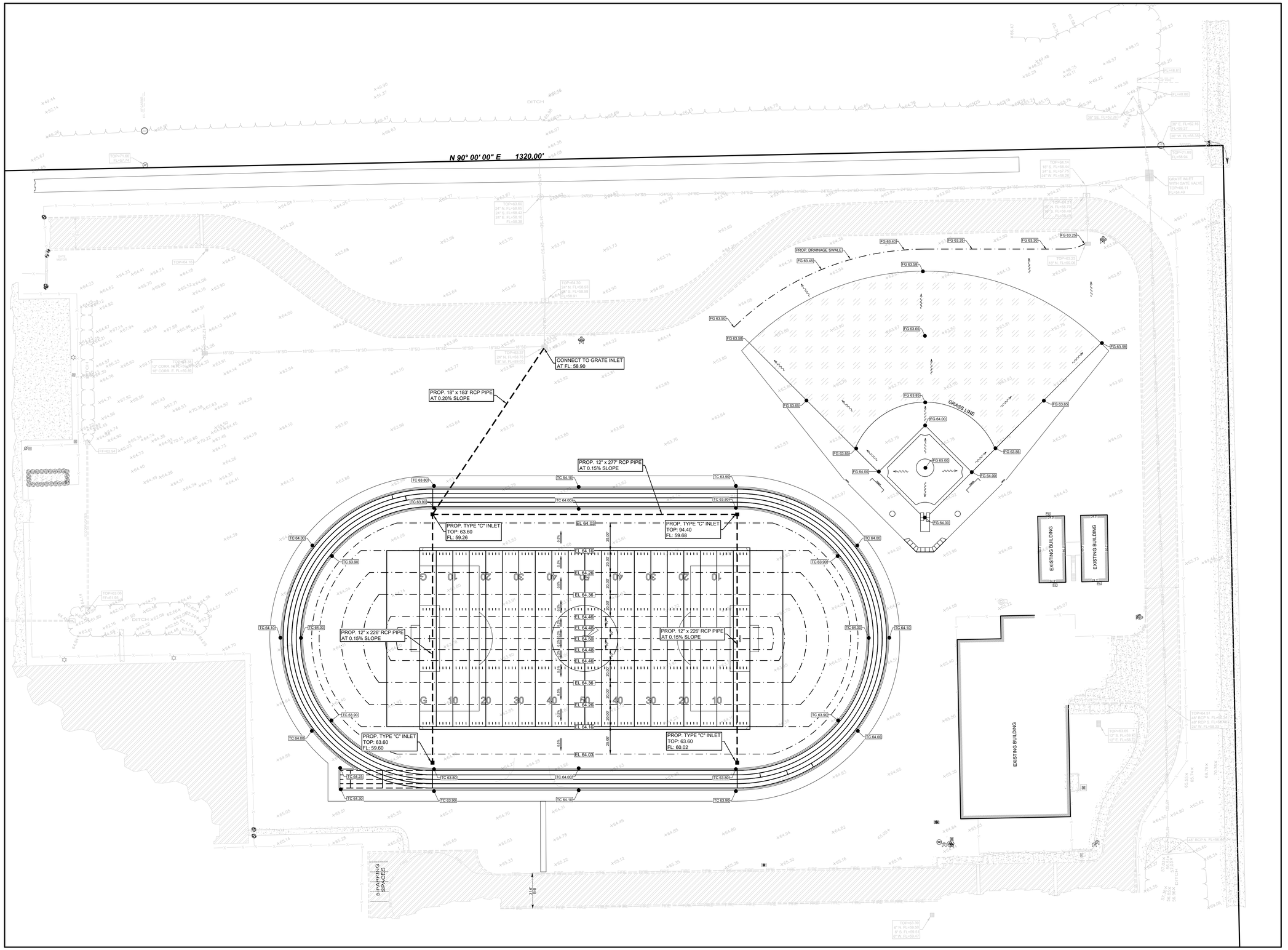


SCALE: 1" = 40'

| No. | REVISIONS | BY |
|---|---|---|
| #1 | Addendum #1 | C.P. |

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fax (956) 546-0196

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C3

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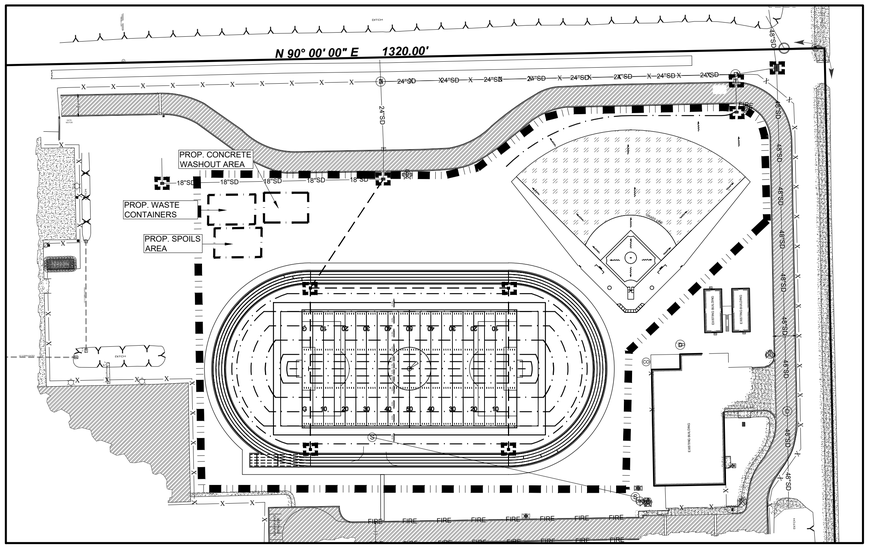
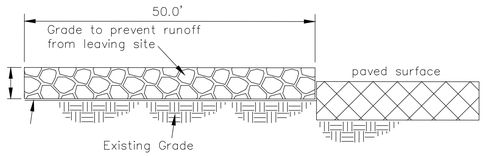
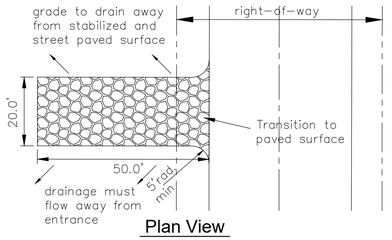



SCALE:1"=100'




Profile View




Plan View

LEGEND

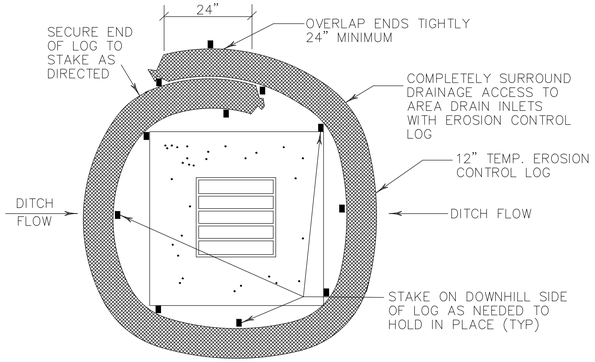
- SEDIMENT CONTROL FENCE
- CONSTRUCTION ENTRANCE
- -SOCK FOR INLET
- SEDIMENT CONTROL FENCE FOR OUTFALLS

## 2/C5 STABILIZED CONSTRUCTION ENTRANCE

SCALE: NOT TO SCALE

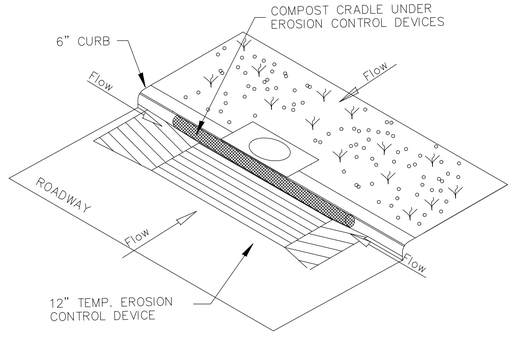
Notes :

1. Contruction entrance(s) shall be locted at the time of pre-contruction meeting.
2. Stone shall be 4 to 6 inch diameter crushed rock or acceptable crushed Portland Cement Concrete.
3. When necessary, vehicles shall be cleaned to remove sediment prior to entrance onto a public roadway. When washing is required, it shall be done on a area stabilized with crushed stone with drainage flowing away form both the street and the stabilized entrance. All sediment shall be prevented from entering any storm drain, ditch or watercourse using approved methods.
4. The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces. This may require periodic top dressing with additional stone as conditions demand. All sediment spilled, dropped, washed or tracked onto paved surfaces, must be removed immediately.
5. The entrance must be properly graded or incorporate a drainage swale to prevent runoff from leaving the construction site.



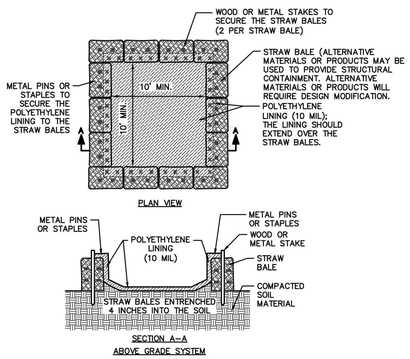

DROP INLET SEDIMENT TRAP

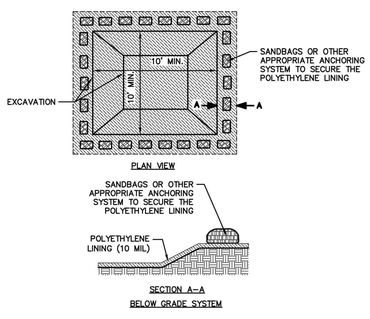
NTS




CURB INLET SEDIMENT TRAP

NTS




CONCRETE WASH OUT

- CONTRACTOR SHALL PRESENT SWP3 INSPECTION SCHEDULE TO ENGINEER AT PRE CONSTRUCTION MEETING.
- CONTRACTOR SHALL MAINTAIN SWPPP (SWP3) ON-SITE AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL SUBMIT N.O.I. TO T.C.E.Q. AND KEEP ON SITE AT ALL TIMES.
- "NOI" SHALL ALSO BE ONSITE AT ALL TIMES.
- CONTRACTOR SHALL ABIDE BY TPDES REQUIREMENTS.

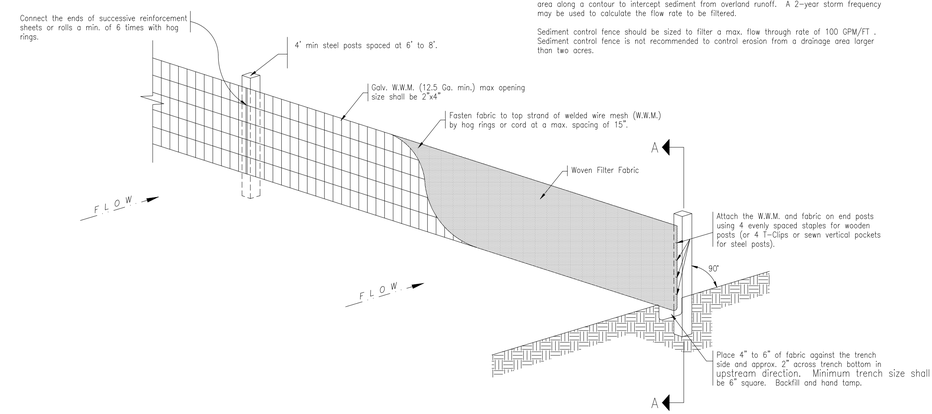
GENERAL NOTES :

1. The guidelines shown hereon are suggestions only and may be modified by the engineer.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2-year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT . Sediment control fence is not recommended to control erosion from a drainage area larger than two acres.




TEMPORARY SEDIMENT CONTROL FENCE

## GENERAL NOTES

1. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED. MAXIMUM LENGTH OF LOGS SHALL BE 30' FOR 12" DIAMETER LOGS.
2. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
3. STUFF LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE DENSITY THAT WILL HOLD SHAPE WITHOUT EXCESSIVE DEFORMATION.
4. STAKES SHALL BE 2" X 2" WOOD 4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG.
5. COMPOST CRADLE MATERIAL IS INCIDENTAL AND WILL NOT BE PAID FOR SEPARATELY.

| No. | REVISIONS | BY |
|---|---|---|
| #1 | Addendum #1 | C.P. |

GMS ARCHITECTS
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texas 78526
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# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

SCIENCE ACADEMY
MERCEDES
CSP 25-011

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

STATE OF TEXAS
KELLEY A. HELLER-VELA
97421
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KELLEY A. HELLER-VELA, P.E. 97421

JUNE 18, 2024

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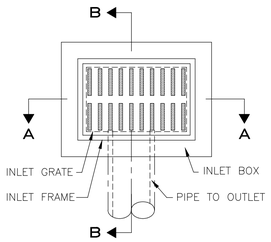
Date: JUNE 18, 2024
Scale: As Noted
Project Architect: David Monreal, AIA
Drawn By: IO
Job No. STISD SPORTS FIELDS
Sheet: **EROSION CONTROL**

C4




PLAN

NOTE:

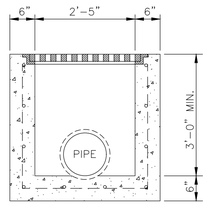
ALL STEEL TO BE No. 4 BARS @ 12" SPACING IN BOTH DIRECTIONS

INLET GRATE and FRAME TO BE "ALAMO" PATTERN 847-02

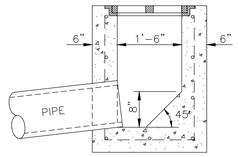
CLEAR OPEINING LENGTH OF FRAME - 29 1/4"

CLEAR OPENING WIDTH OF FRAME - 17"

TOTAL WEIGHT FRAME AND GRATE - 240 lbs.




SECTION "A-A"

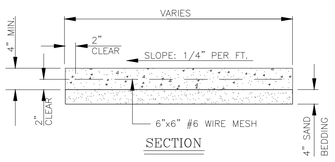



SECTION "B-B"

## TYPE "B" INLET




PLAN




SECTION

## SIDEWALK DETAILS

SIDEWALK NOTES:

MINIMUM 5'-0" WIDE SIDEWALK.

SIDEWALK GRADIENT SHALL NOT EXCEED 1:20.

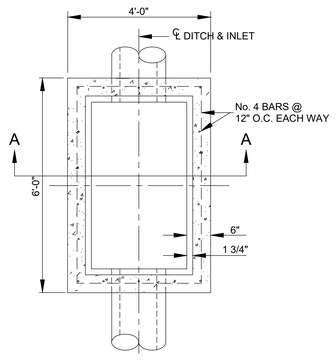
SIDEWALK CONCRETE SHALL BE 5 SACK CEMENT MIX AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi.

CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF EXISTING UTILITY LINES WITH APPROPRIATE COMPANIES TO AVOID PLACING SIDEWALKS ON TOP OF LINES.

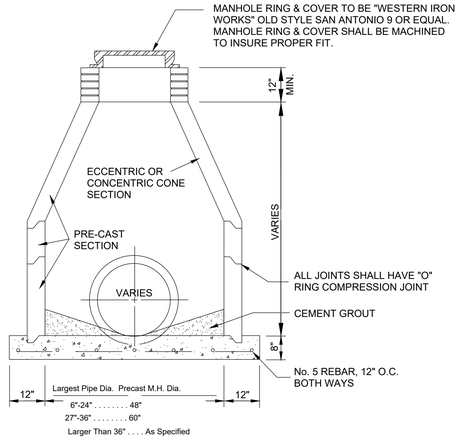
PROVIDE DROP CURBS AT INTERSECTIONS.

4" SAND BEDDING

CONTRACTOR SHALL COMPLY WITH LATEST REGULATIONS AS SET FORTH IN AMERICANS WITH DISABILITIES ACT (ADA).



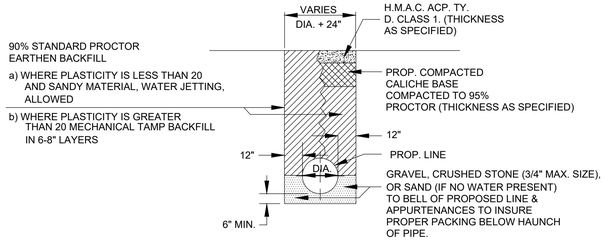

TOP VIEW OF INLET



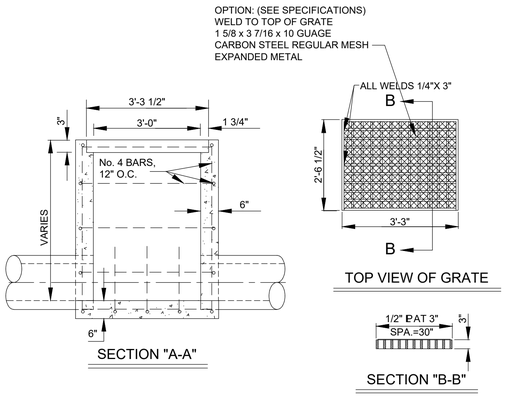

## STANDARD STORM SEWER PRE-CAST CONCRETE MANHOLE

## FIELD DRAINAGE NOTES

1. AFTER EXCAVATION OF EXISTING SOIL TO THE PROPER ELEVATIONS REQUIRED THE NEW SUBGRADE WILL BE SHAPED AND COMPACTED TO DESIGNED DENSITY WITH A 0.5% SLOPE TO ALLOW FOR DRAINAGE.
2. A NEW CONCRETE CURB AND NAILER WILL BE INSTALLED AROUND THE PERIMETER TO PROVIDE A SECURE EDGE FOR FASTENING THE SYNTHETIC TURF. IN ALL CASES THE NAILER AND STONE ARE AT THE SAME ELEVATION.
3. A GEOTEXTILE FABRIC WILL BE PLACED OVER THE SUBGRADE, AND COMPOSITE DRAINS WILL BE INSTALLED AT 30 FEET ON CENTER AT A 45 DEGREE ANGLE TO THE FIELD. REFER TO THE FIELD DRAINAGE PLAN. (HERRINGBONE DESIGN)
4. THE COMPOSITE DRAINS WILL DRAIN TO AN 8" (MIN) PERIMETER COLLECTOR WHICH WILL BE CONNECTED TO THE EXISTING DRAINAGE SYSTEM.
5. FREE DRAINING AGGREGATE SHALL BE PLACED OVER THE COMPOSITE DRAINS AND THE PERIMETER COLLECTORS AND FINE GRADED FOR A FIELD WITH A 0.5% SLOPE.
6. ALL PIPE SIZING SHALL BE COMPLETED BY A QUALIFIED CIVIL ENGINEER.




## PIPE BEDDING DETAILS




## TYPE "C-C" GRATED INLET

( TWO GRATES PER INLET )

| No. | REVISIONS | BY |
|---|---|---|
| #1 | Addendum #1 | C.P. |
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# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

SCIENCE ACADEMY
MERCEDES
CSP 25-011

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435

STATE OF TEXAS
KELLEY A. HELLER-VELA
97421
LICENSED PROFESSIONAL ENGINEER

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JUNE 18, 2024

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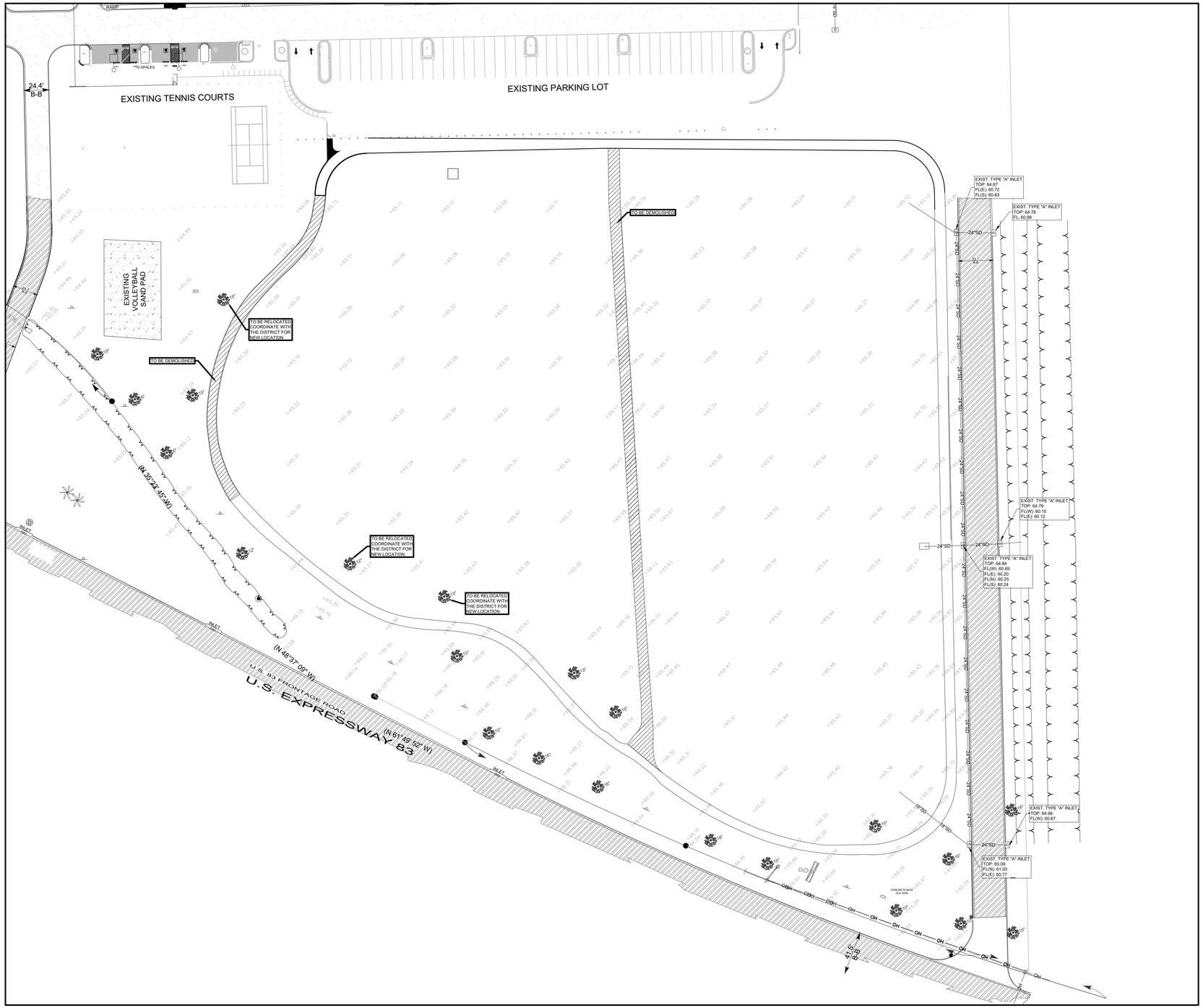
Date: JUNE 18, 2024
Scale: As Noted
Project Architect: David Monreal, AIA
Drawn By: IO
Job No.: STISD SPORTS FIELDS
Sheet: **CONSTRUCTION DETAILS**

C5




N

SCALE: 1" = 50'

LEGEND

- FOUND No.4 REBAR
- FOUND No.5 REBAR
- FOUND 5/8" PIPE
- FOUND R.O.W. MARKER
- FOUND SURVER MONUMENT
- POWER POLE
- LIGHT POLE
- SERVICE POLE
- GUY WIRE
- UNDERGROUND CABLE MARKER
- AT&T UNDERGROUND CABLE MARKER
- 15" POST FOR LED STISD SIGN
- SINGLE POST SIGN
- DOUBLE POST SIGN
- STOP SIGN
- MAIL BOX
- FIRE HYDRANT
- WATER METER
- WATER VALVE
- 3" AIR VENT
- STORM SEWER MANHOLE
- TYPE "A" INLET
- GRATE INLET
- SANITARY SEWER MANHOLE
- 12" IRRIGATION VALVE
- TRAFFIC SIGNAL BOX
- FIBER OPTIC BOX
- TRAFFIC LIGHT POLE
- GAS MARKER
- GAS VENT
- GATE MOTOR
- 3" VOLLEY BALL POST
- 12" IRRIGATION PIPE FULL OF DIRT
- GATE POST
- PVC PIPE
- X—X— CHAIN LINK FENCE
- VV— VV— EDGE OF SWALE
- OH— OH— OVERHEAD POWER LINE
- [GAS]— [GAS]— SPOTTED GAS LINE [APPROXIMATE LOCATION]
- ASPHALT AREA
- CONCRETE AREA

A-A - EDGE OF ASPHALT TO EDGE OF ASPHALT
B-B - BACK OF CURB TO BACK OF CURB

- OAK TREE (SIZE AS NOTED)
- PALM TREE (SIZE AS NOTED)

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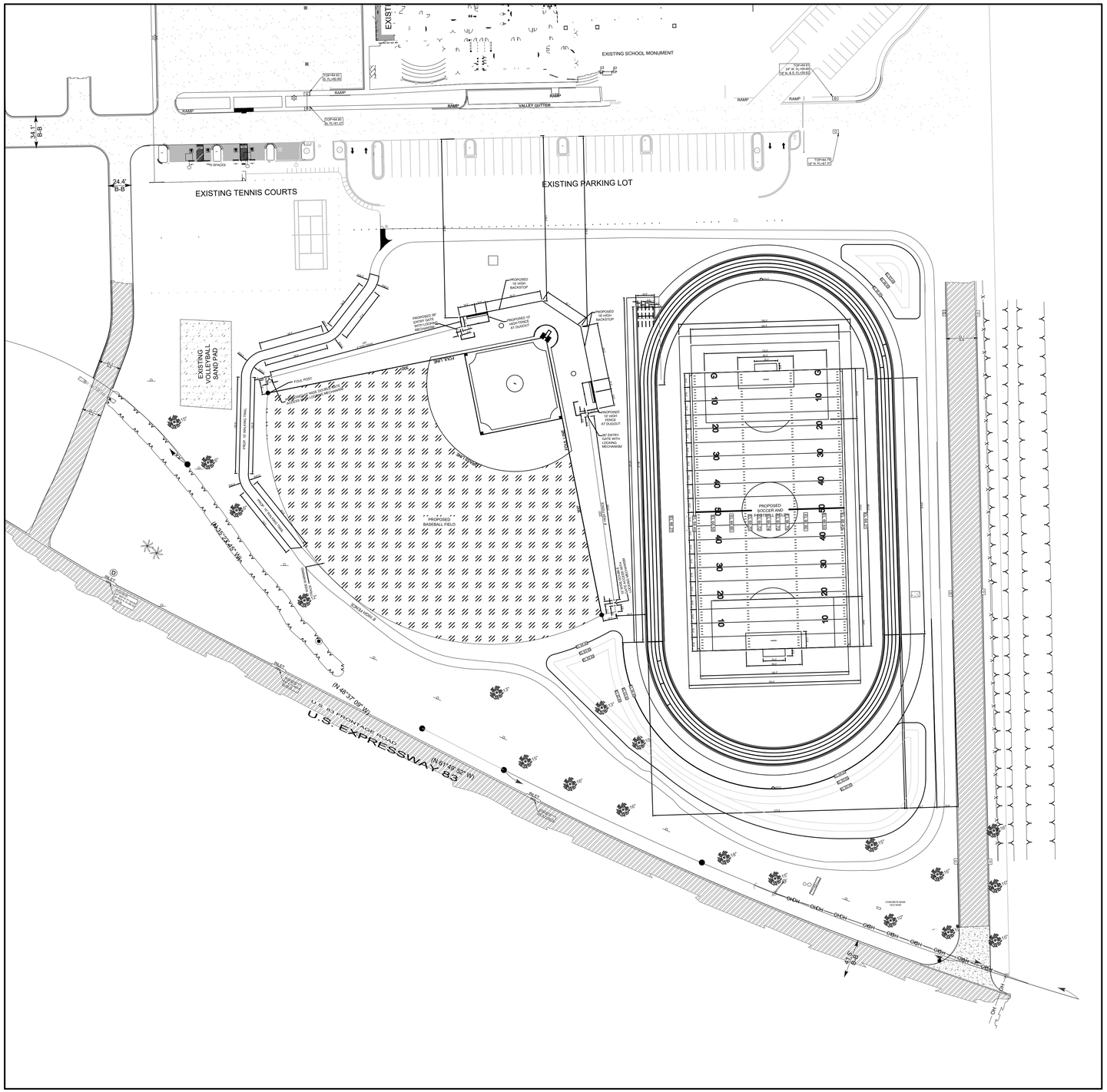
# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

MED
HIGH
MERCEDES
CSP 25-011



| | |
|---|---|
| Date: | JUNE 18, 2024 |
| Scale: | As Noted |
| Project Architect: | David Monreal, AIA |
| Drawn By: | IO |
| Job No. | STISD SPORTS FIELDS |
| Sheet: | **EXISTING** C1 |

Y:\Miscellaneous Engineering\Educational Institutions\STISD\24037 - STISD Med High\Autocad Files\24037.dwg, 6/18/2024 8:44:08 AM, DWG To PDF.pc3




N

SCALE: 1" = 30'

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JUNE 18, 2024



| | |
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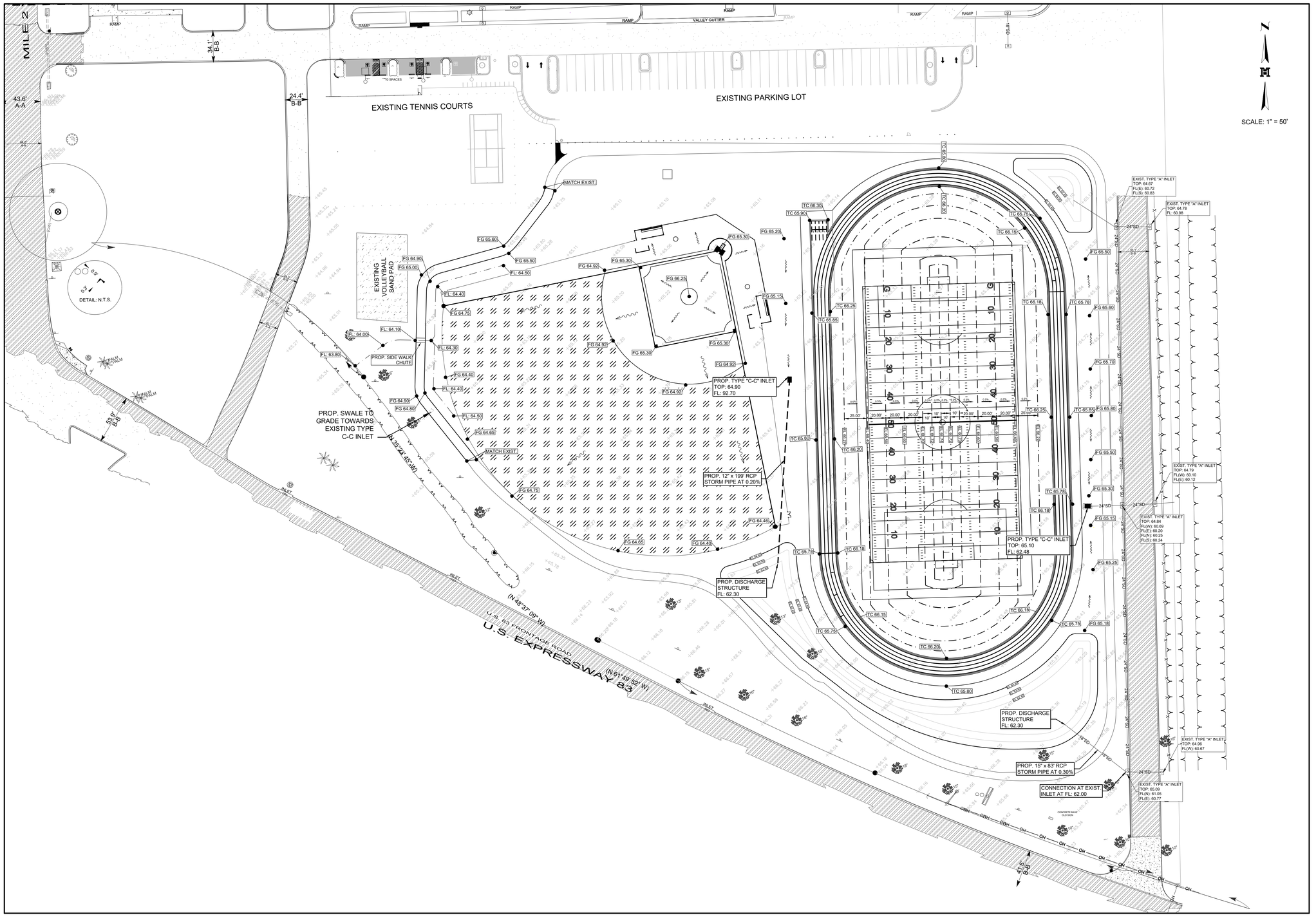
| Scale: | As Noted |
| Project Architect: | David Monreal, AIA |
| Drawn By: | IO |
| Job No. | STISD SPORTS FIELDS |
| Sheet: | **PROPOSED SITE** C2 |

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Date: JUNE 18, 2024
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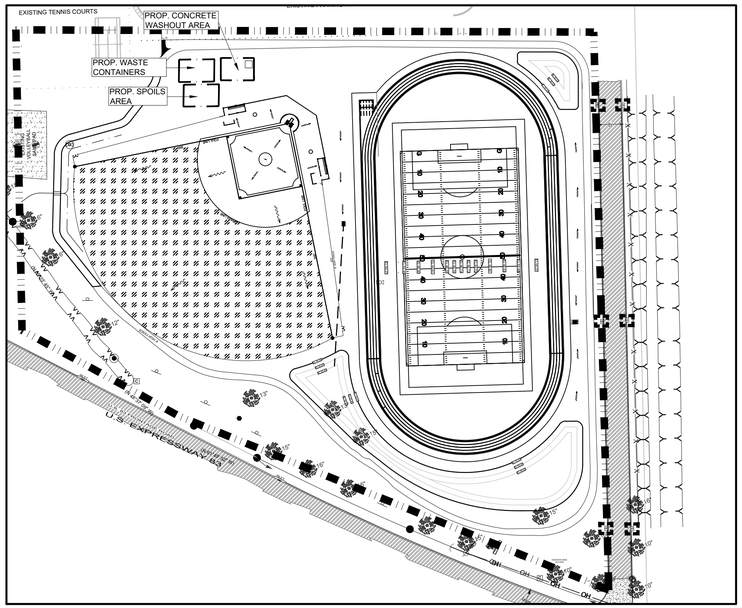
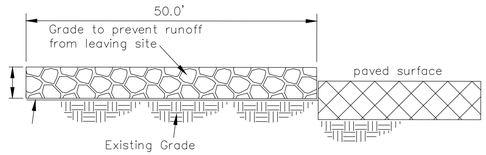
Drawn By: IO
Job No. STISD SPORTS FIELDS
Sheet:

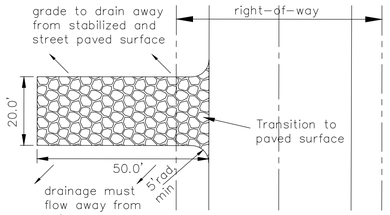
**DRAINAGE AND GRADING**

C3




Profile View




Plan View

LEGEND

- SEDIMENT CONTROL FENCE
- CONSTRUCTION ENTRANCE
- -SOCK FOR INLET
- SEDIMENT CONTROL FENCE FOR OUTFALLS

## STABILIZED CONSTRUCTION ENTRANCE

(2/C5) SCALE: NOT TO SCALE

Notes :

1. Contruction entrance(s) shall be locted at the time of pre-contruction meeting.
2. Stone shall be 4 to 6 inch diameter crushed rock or acceptable crushed Portland Cement Concrete.
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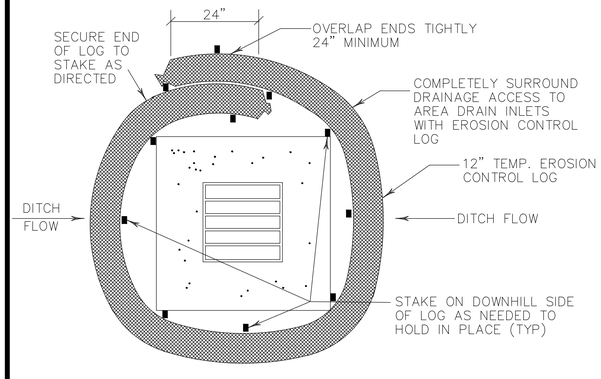
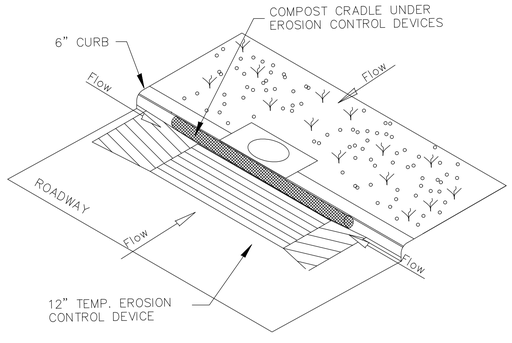



DROP INLET SEDIMENT TRAP

NTS




CURB INLET SEDIMENT TRAP

NTS

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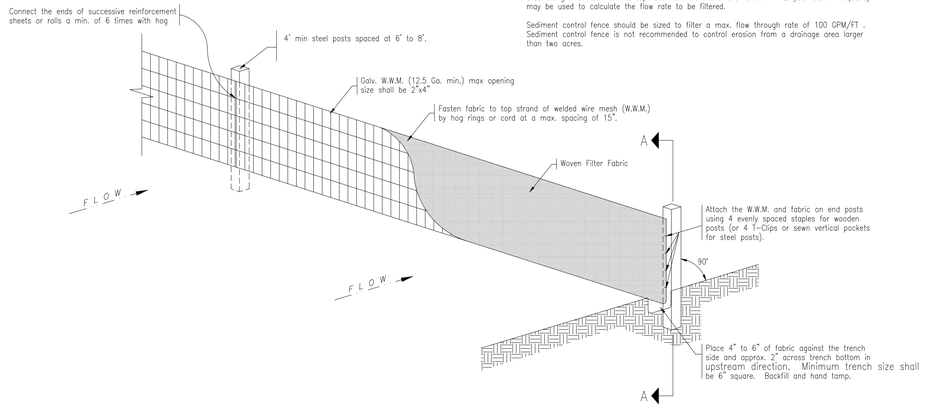


TEMPORARY SEDIMENT CONTROL FENCE

| No. | REVISIONS | BY |
|---|---|---|
| #1 | Addendum #1 | C.P. |
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fax (956) 546-0196

# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

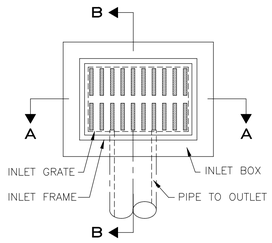
MED
HIGH
MERCEDES
CSP 25-011

MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435
KELLEY A. HELLER-VELA
97421
LICENSED PROFESSIONAL ENGINEER
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KELLEY A. HELLER-VELA, P.E. 97421
JUNE 18, 2024



Date: JUNE 18, 2024
Scale: As Noted
Project Architect: David Monreal, AIA
Drawn By: IO
Job No. STISD SPORTS FIELDS
Sheet: **EROSION CONTROL**

C4




PLAN

NOTE:

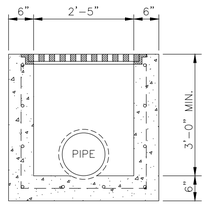
ALL STEEL TO BE No. 4 BARS @ 12" SPACING IN BOTH DIRECTIONS

INLET GRATE and FRAME TO BE "ALAMO" PATTERN 847-02

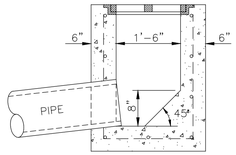
CLEAR OPENING LENGTH OF FRAME - 29 1/4"

CLEAR OPENING WIDTH OF FRAME - 17"

TOTAL WEIGHT FRAME AND GRATE - 240 lbs.

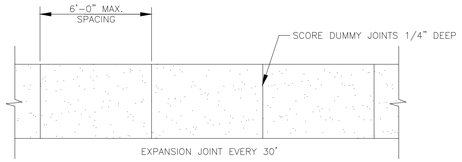



SECTION "A-A"

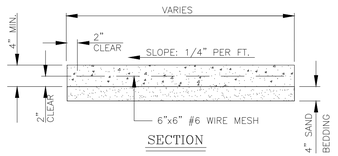



SECTION "B-B"

## TYPE "B" INLET




PLAN




SECTION

## SIDEWALK DETAILS

SIDEWALK NOTES:

MINIMUM 5'-0" WIDE SIDEWALK.

SIDEWALK GRADIENT SHALL NOT EXCEED 1:20.

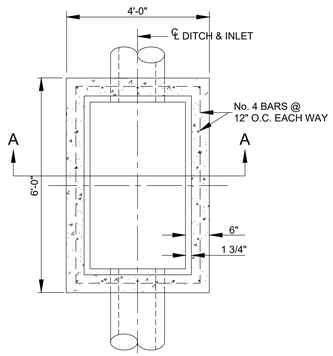
SIDEWALK CONCRETE SHALL BE 5 SACK CEMENT MIX AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 psi.

CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF EXISTING UTILITY LINES WITH APPROPRIATE COMPANIES TO AVOID PLACING SIDEWALKS ON TOP OF LINES.

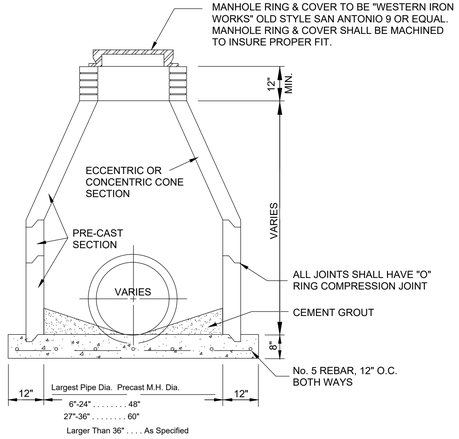
PROVIDE DROP CURBS AT INTERSECTIONS.

4" SAND BEDDING

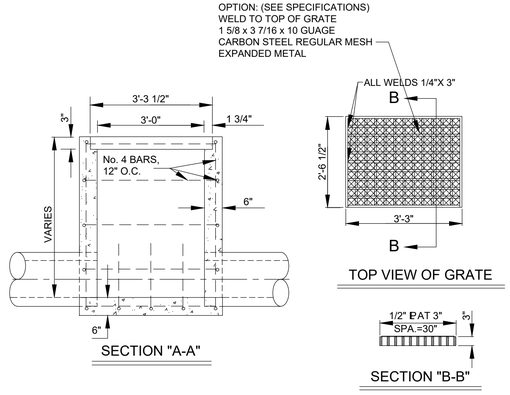
CONTRACTOR SHALL COMPLY WITH LATEST REGULATIONS AS SET FORTH IN AMERICANS WITH DISABILITIES ACT (ADA).




TOP VIEW OF INLET




## STANDARD STORM SEWER PRE-CAST CONCRETE MANHOLE

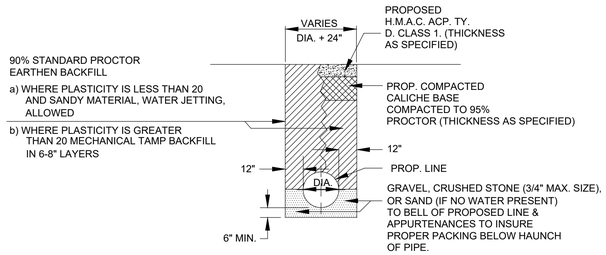



## TYPE "C-C" GRATED INLET

( TWO GRATES PER INLET )

## FIELD DRAINAGE NOTES

1. AFTER EXCAVATION OF EXISTING SOIL TO THE PROPER ELEVATIONS REQUIRED THE NEW SUBGRADE WILL BE SHAPED AND COMPACTED TO DESIGNED DENSITY WITH A 0.5% SLOPE TO ALLOW FOR DRAINAGE.
2. A NEW CONCRETE CURB AND NAILER WILL BE INSTALLED AROUND THE PERIMETER TO PROVIDE A SECURE EDGE FOR FASTENING OF ARTIFICIAL TURF. IN ALL CASES THE NAILER AND STONE ARE AT THE SAME ELEVATION.
3. A GEOTEXTILE FABRIC WILL BE PLACED OVER THE SUBGRADE, AND COMPOSITE DRAINS WILL BE INSTALLED AT 30 FEET ON CENTER AT A 45 DEGREE ANGLE TO THE FIELD. REFER TO THE FIELD DRAINAGE PLAN. (HERRINGBONE DESIGN)
4. THE COMPOSITE DRAINS WILL DRAIN TO AN 8" (MIN) PERIMETER COLLECTOR WHICH WILL BE CONNECTED TO THE EXISTING DRAINAGE SYSTEM.
5. FREE DRAINING AGGREGATE SHALL BE PLACED OVER THE COMPOSITE DRAINS AND THE PERIMETER COLLECTORS AND FINE GRADED FOR A FIELD WITH A 0.5% SLOPE.
6. ALL PIPE SIZING SHALL BE COMPLETED BY A QUALIFIED CIVIL ENGINEER.




## PIPE BEDDING DETAILS

| No. | REVISIONS | BY |
|---|---|---|
| #1 | Addendum #1 | C.P. |

GMS ARCHITECTS
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MELDEN & HUNT, INC.
TEXAS REGISTRATION F-1435


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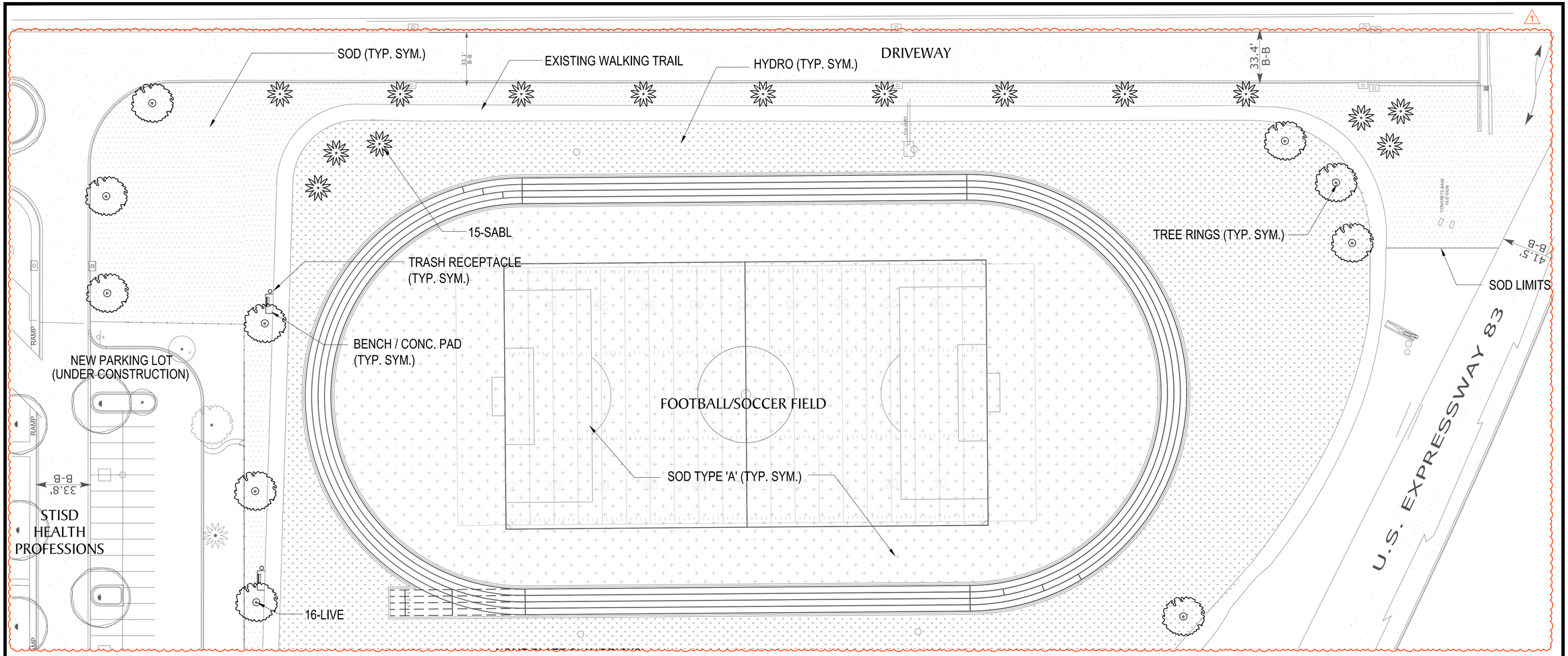
JUNE 18, 2024

ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE LAW



Date: JUNE 18 2024
Scale: As Noted
Project Architect: David Monreal, AIA
Drawn By: IO
Job No. STISD SPORTS FIELDS
Sheet: **DETAILS**

C5



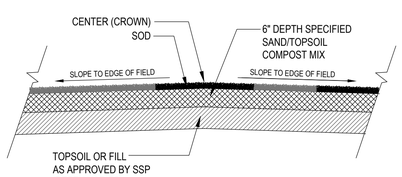

## LANDSCAPE PLAN (1 of 2)

SCALE: 1" =30' - 0"

## MATERIAL SCHEDULE - SPORTS FIELDS

| DESCRIPTION | NOTES | QUANTITY |
|---|---|---|
| HERBICIDE | ALL LANDSCAPE AREAS (ROUNDUP OR APPROVED EQUAL) | 110,000 S.F. |
| CLEAR/GRUB/SITE PREP | CLEAR ALL DEBRIS FROM TOP LAYER OF SPORTS FIELD AREA | 110,000 S.F. |
| GRADING | GRADING & LASER LEVELING OF SPORTS FIELD PER PLANS | 110,000 S.F. |
| SCREENED TOP SOIL | SCREENED TOPSOIL FOR SOCCER FIELDS (35% of 6" MIX - TO FINISHED GRADES) | 430 C.Y. |
| SAND * | MASONRY SAND FOR SOCCER FIELDS (50% OF 6" MIX - TO FINISHED GRADES) | 700 C.Y. |
| COMPOST ** | PREMIUM COMPOST (3 KIDS COMPOST MIX (15% OF 6" MIX - TO FINISHED GRADES) | 210 C.Y. |
| FIELD STRIPING | SHERWIN-WILLIAMS 'SHERSTRIPE' 4" WIDTH FIELD STRIPING PER PLANS (FOOTBALL & SOCCER) | 1 |
| FIELD MARKERS | PIONEER ATHLETICS 'FLEEFIX' FIELD MARKERS (4 CORNERS) | 4 |
| SOD TYPE 'A' *** | TIFWAY 419' BERMUDA LARGE ROLLS 42", TIGHT SEAMS, SAND FILLED JOINTS, TOP DRESS | 21,900 S.Y. |
| MAINTENANCE | 60 DAY MAINTENANCE OF FIELDS WITH REEL MOWERS & FERTILIZATION PER SPECS | 1 |

* MASONRY SAND - WRIGHT MATERIALS PLANT 3 (361) 387-0293
** NINE KIDS COMPOST (956) 432-4883 OR CITY OF MCALLEN COMPOST (956) 681-4000
*** KING RANCH TURFGRASS (830) 665-6780

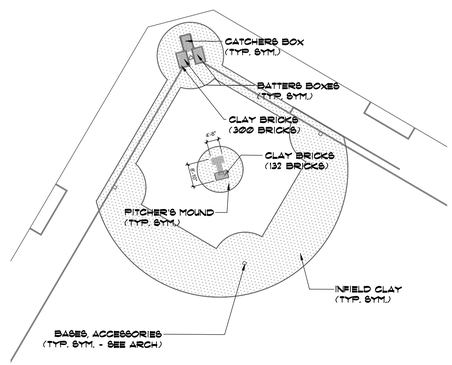



## 1 SPORTS FIELD SECTION

NOT TO SCALE

## SPORTS FIELD NOTES

1. APPLY HERBICIDE/ROUNDUP TO ENTIRE FIELD AREA UNTIL ALL VEGETATED MATTER IS ERADICATED
2. CLEAR AND GRUB (REMOVE ALL DEBRIS) FROM FIELD AREAS
3. RIP/TILL SOIL WITH AN AGRICULTURAL CULTIVATOR TO A DEPTH OF 6" ON FOOTBALL FIELD, 3" ON BASEBALL OUTFIELD
4. ROUGH GRADE INFIELDS TO PREPARE FOR 6" LAYER OF INFIELD MIX
5. APPLY/INSTALL INFIELD CLAY. TILL IN CONDITIONER INTO TOP 2". FINE GRADE TO FINISHED ELEVATIONS ON CIVIL PLANS. WATER IN/COMPACT WITH PLATE COMPACTOR. DRAG TO LOOSEN AND EXPOSE CONDITIONER.
6. CONTRACTOR TO GRADE SPORTS FIELDS WITH SPECIFIED CROWN/SLOPES UTILIZING FULLY AUTOMATED COMPUTERIZED DUAL GPS SYSTEM WITH LASER AUGMENTATION TO ACHIEVE GRADES WITHIN 1/4" TOLERANCE. FIELD MUST DRAIN SMOOTHLY WITH NO BIRD BATHS OR LOW SPOTS
7. INSTALL IRRIGATION PER PLANS/SPECS, THOROUGHLY WATER IN WITH MULTIPLE WATERINGS
8. FIELD DRAINAGE WILL BE TESTED AND REVIEWED BY SSP PRIOR TO SOD OR HYDROMULCH.
9. INSTALL SOD OR HYDROMULCH AS PER PLANS AND SPECIFICATIONS. SOD TO BE LARGE 42" ROLLS.
10. ROLL/COMPACT/LEVEL FIELDS WITH 2 OR 3 TON MECHANICAL ROLLER/VIBRATOR. TOP DRESS WITH CLEAN SAND ALL LOW SPOTS OR DIVOTS. ALL JOINTS TO BE TIGHT AND SAND FILLED.
11. MONITOR WATERING FOR CONTINUOUS MOISTURE ON HYDROMULCH (MULTIPLE SHORT CYCLES UNTIL FULL GERMINATION).
12. COMMENCE MOWING USING A REEL TYPE MOWER ONLY. MOWING SHALL BE AT LEAST ONCE PER WEEK AND CLIPPINGS REMOVED/BLOWN. DOCUMENT/PHOTO EACH CYCLE FOR REVIEW, CHECK AND APPROVAL BY SSP. 4 FERTILIZATION APPLICATIONS REQUIRED INCL. STARTED FERTILIZER FOR HYDRO AND REMAINDER SHALL BE TURF BUILDER AND PRE-EMERGENT BLENDS SUCH AS HJ 25-0-0 WITH WOLFTRAX OR APPROVED EQUAL AT MANUFACTURERS RATES




## 2 INFIELD DETAIL PLAN

NOT TO SCALE

SSP Design
700 EAST WASHINGTON STREET
BROWNSVILLE, TEXAS 78520
TEL(956) 547-0788
FAX(956) 547-0877
SSPDESIGN.COM

| No. | REVISIONS | BY |
|---|---|---|
| 1 | ADDENDUM # 1 JUNE 19, 2024 | |

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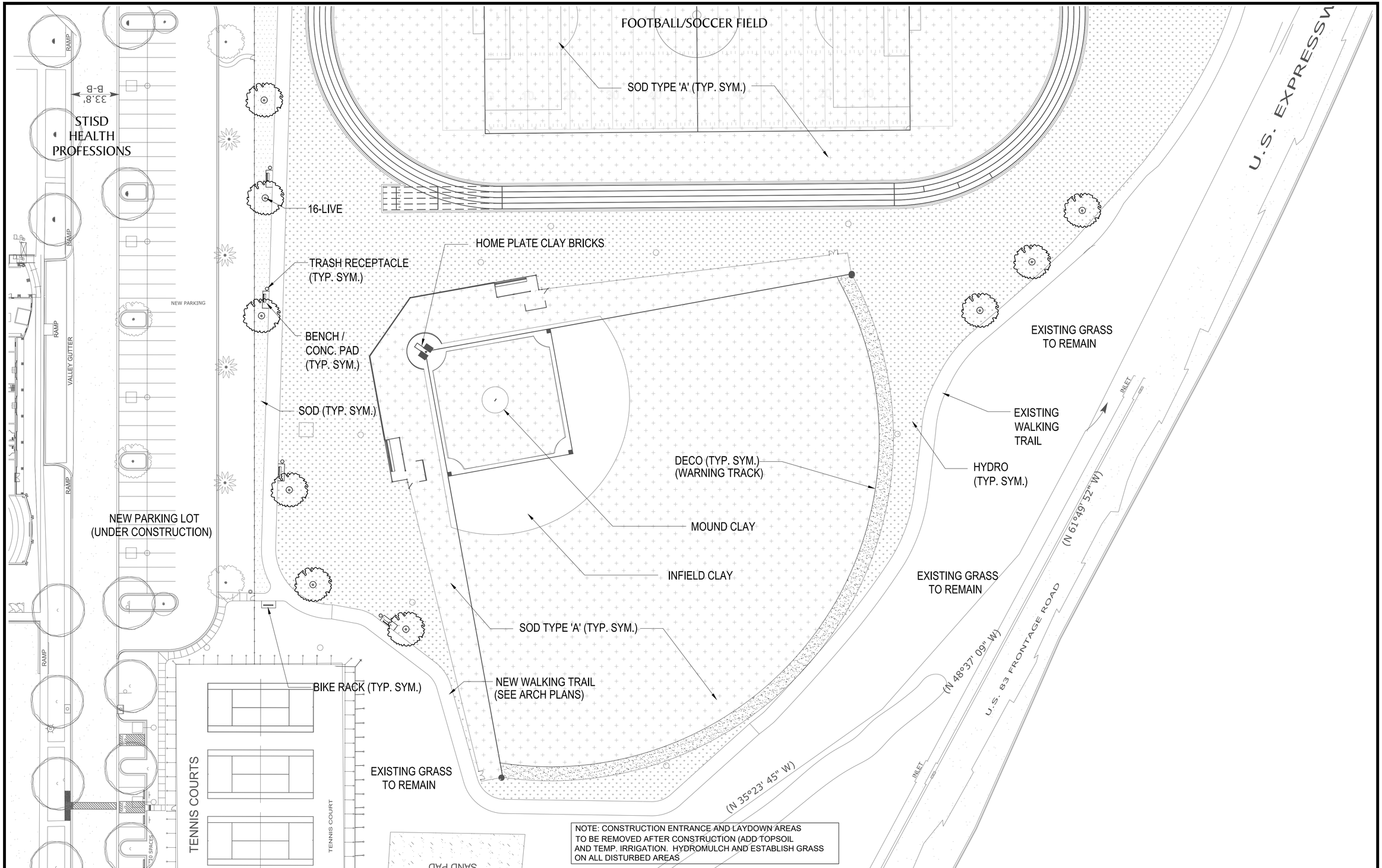
## NEW SPORT FIELDS AT MERCEDES CAMPUS

MERCEDES
CSP 25-011



Date: March, 2024
Scale: As Noted
Project Architect: David Monreal, AIA
Drawn By: IO
Job No. STISD SPORTS FIELDS
Sheet: L2.01




NOTE: CONSTRUCTION ENTRANCE AND LAYDOWN AREAS TO BE REMOVED AFTER CONSTRUCTION (ADD TOPSOIL AND TEMP. IRRIGATION. HYDROMULCH AND ESTABLISH GRASS ON ALL DISTURBED AREAS

## LANDSCAPE PLAN (2 OF 2)

SCALE: 1" =30' - 0"

| No. | REVISIONS | BY |
|---|---|---|
| 1 | ADDENDUM # 1 JUNE 19, 2024 | |

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MERCEDES
CSP 25-011



| | |
|---|---|
| Date: | March, 2024 |
| Scale: | As Noted |
| Project Architect: | David Monreal, AIA |
| Drawn By: | IO |
| Job No. | STISD SPORTS FIELDS |
| Sheet: | L2.02 |

CSP Design
700 EAST WASHINGTON STREET
BROWNSVILLE, TEXAS 78520
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FAX(956) 547-5977
SSPDESIGN.COM

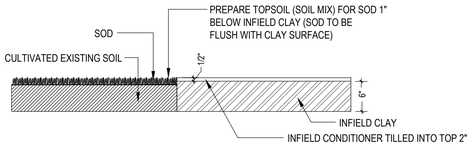
## PLANT SCHEDULE

| CODE | BOTANICAL NAME | COMMON NAME | TYPE | SIZE | SPACING | QTY |
|---|---|---|---|---|---|---|
| | PALMS | | | | | |
| SABL | SABAL TEXANA | TEXAS SABAL PALM | B/B | 6-8' TRUNK | AS. | 15 |
| | TREES | | | | | |
| LIVE | QUERCUS VIRGINIANA | SOUTHERN LIVE OAK (CONTAINER GROWN) | 24" BOX | 3-4" CAL., 12'HT., 6'W | AS. | 16 |
| | GRASS | | | | | |
| HYDRO | CYNODON DACTYLON | COMMON BERMUDA GRASS (HYDROMULCH) | | | 119,350 SQUARE FEET | |
| SOD | CYNODON DACTYLON 'TIFWAY' | # 1 CERTIFIED TIFWAY '419' HYBRID BERMUDA SOD | | | 4,475 SQUARE YARDS | |

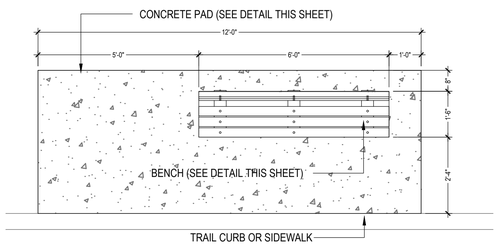
## MATERIAL SCHEDULE

| DESCRIPTION | NOTES | QUANTITY |
|---|---|---|
| PREMIUM COMPOST | MIX WITH BACKFILL ON ALL TREES/PALMS | 1 C.Y. |
| SCREENED TOP SOIL | AS REQUIRED TO FILL LOW SPOTS, LEVELING OF OUTFIELD (ALLOWANCE) | 50 C.Y. |
| MULCH (HARDWOOD) | 2" MIN. FOR ALL TREE/PALM WATERING BASINS (TEXAS NATIVES SHREDDED HARDWOOD MULCH) | 62 BAGS (2 C.F.) |
| HERBICIDE | ERADICATION OF ALL EXISTING WEEDS/GRASSES PRIOR TO GRADING/LEVELING | --- |
| FERTILIZER | PER DETAILS / AS SPECIFIED | - |
| PLANTING TABLETS | PER DETAILS / AS SPECIFIED | -- |
| PRE-EMERGENT | PER DETAILS / AS SPECIFIED | --- |
| GUYING / STAKING | ALL TREES/PALMS WITH GATOR-TIE CAPS ON POSTS PER DETAILS | --- |
| TREE RINGS | 36" DIA. 5" COMMERCIAL GRADE ALUMINUM EDGE 'DREAMSCAPE' TREE RINGS PER PLAN/DETAILS | 16 |
| CONCRETE PADS | 4" THICK CONCRETE PADS FOR PARK BENCHES AS PER PLANS/DETAILS | 205 S.F. |
| INFIELD MIX | 6" LAYER OF INFIELD CLAY - 60% SAND, 20% SILT, 20 % CLAY 1/4" MINUS RED COLOR | 210 C.Y. |
| INFIELD CONDITIONER | 1/2" MIXED/TILLED DIAMOND PRO RED INFIELD CONDITIONER (11,300 S.F.) | 20 C.Y. |
| INFIELD GRADING | COMPLETE INFIELD LASER GRADING PER NOTES BELOW | --- |
| CLAY BRICKS | 4 X 8" HOME PLATE/MOUND CLAY BRICKS (DIAMONDPRO.COM TEL. # 1-800-228-2987) | 432 BRICKS |
| BENCHES | DU MOR 6' LENGTH 138-60PL RECYCLED PLASTIC SLATS (GREY) 8-1 EMBEDMENT MOUNT WITH POWDER COATED POST (BLACK) | 5 |
| DECO | 4" DEPTH COMPACTED DECOMPOSED GRANITE FINES' 1/4" MINUS PER PLANS (WARNING TRACK) | 5,270 S.F. |
| TRASH RECEPTACLES | DU MOR 41-32PL, BLACK POWDER COATED, RECYCLED PLASTIC (GREY), 8-1 EMBEDMENT | 5 |
| BIKE RACK | DU MOR 130-40 BLACK POWDER COATED, 8-1 EMBEDMENT | 1 |
| IRRIGATION SYSTEM | COMPLETE AUTOMATIC IRRIGATION SYSTEM PER PLANS/DETAILS BY LICENSED CONTRACTOR | 1 |

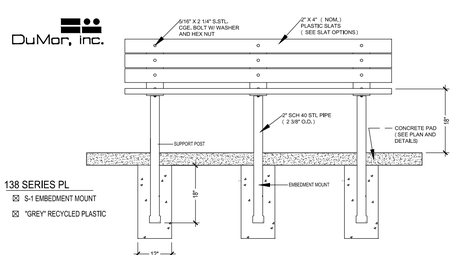
NOTE: CONTRACTORS MUST REVIEW TECHNICAL SPECIFICATIONS FOR ADDITIONAL PROJECT INFORMATION AND REQUIREMENTS.
* NINE KIDS COMPOST (365) 432-4983 OR CITY OF MCALLEN COMPOST (956) 681-4000
** SOUTHERN STONE AND SOIL - DONNA, TEXAS (956) 464-0777




### 1 FIELD CLAY/SOD TRANSITION DETAIL
NOT TO SCALE




### 2 CONCRETE PAD/BENCH PLAN
NOT TO SCALE




### 3 BENCH DETAIL
NOT TO SCALE

## SPORTS FIELD NOTES

1. APPLY HERBICIDE/ROUNDUP TO ENTIRE FIELD AREA UNTIL ALL VEGETATED MATTER IS ERADICATED
2. CLEAR AND GRUB (REMOVE ALL DEBRIS) FROM FIELD AREA
3. RIP/TILL SOIL WITH AN AGRICULTURAL CULTIVATOR TO A DEPTH OF 6" ON FIELD, 3" ON OUTFIELD
4. ROUGH GRADE INFIELDS TO PREPARE FOR 6" LAYER OF INFIELD MIX
5. APPLY INFIELD MIX/TILL IN CONDITIONER INTO TOP 2". FINE GRADE TO FINISHED ELEVATIONS ON CIVIL PLANS. WATER IN/COMPACT WITH PLATE COMPACTOR. DRAG TO LOOSEN AND EXPOSE CONDITIONER.
6. CONTRACTOR TO GRADE FIELD WITH SPECIFIED CROWN/SLOPES UTILIZING FULLY AUTOMATED COMPUTERIZED DUAL GPS SYSTEM WITH LASER AUGMENTATION TO ACHIEVE GRADES WITHIN 1/4" TOLERANCE. FIELD MUST DRAIN SMOOTHLY WITH NO BIRD BATHS OR LOW SPOTS
7. INSTALL IRRIGATION PER PLANS/SPECS. THOROUGHLY WATER IN WITH MULTIPLE WATERINGS
8. FIELD DRAINAGE WILL BE TESTED AND REVIEWED BY SSP PRIOR TO SOD OR HYDORMULCH.
9. INSTALL SOD OR HYDROMULCH AS PER PLANS AND SPECIFICATIONS
10. ROLL FIELDS WITH 2 OR 3 TON MECHANICAL ROLLER/VIBRATOR. TOP DRESS WITH CLEAN SAND ALL LOW SPOTS OR DIVOTS. ALL JOINTS TO BE TIGHT AND SAND FILLED.
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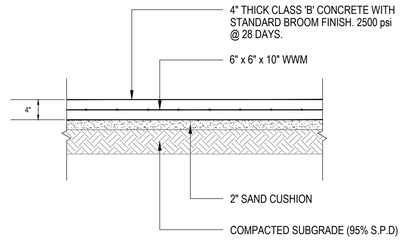
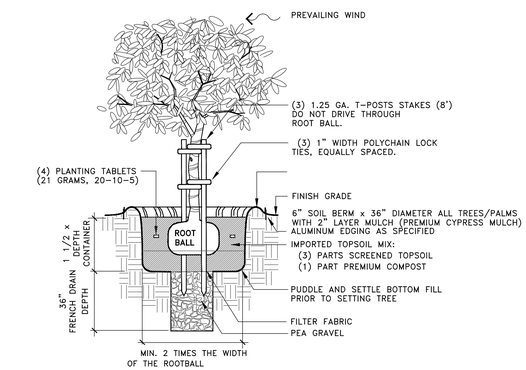
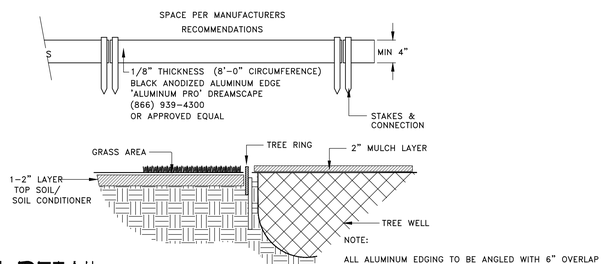



### 4 CONCRETE PAD DETAIL
NOT TO SCALE



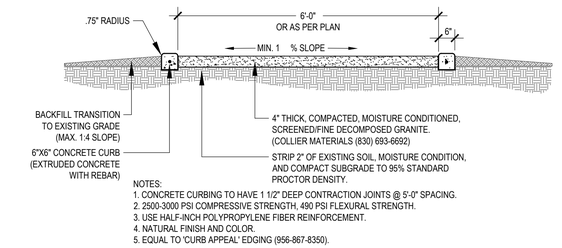

### 5 TREE PLANTING DETAIL
NOT TO SCALE




### 6 TREE RING DETAIL
NOT TO SCALE

## CONSTRUCTION NOTES

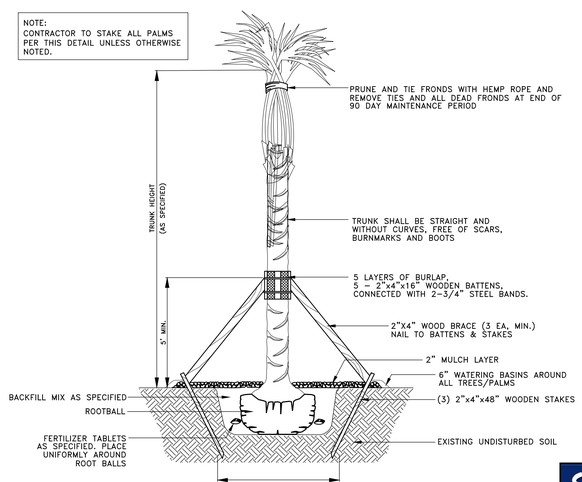
1. WORK UNDER THIS CONTRACT INCLUDES SITE REVIEW AND COORDINATION WITH EXISTING CONDITIONS, SITE CLEANUP, EXCAVATION, BED PREP, FILLING, PLANTING, STAKING, EDGING, IRRIGATION, TREE RINGS, INFIELD CLAY, SITE FURNITURE, MAINTENANCE, AND GUARANTEE.
2. LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND DIMENSIONS PRIOR TO BIDDING. QUANTITIES SHOWN IN SCHEDULE ARE FOR CONVENIENCE ONLY.
3. NOTIFY SSP DESIGN OF ANY DISCREPANCIES IN DRAWINGS/DETAILS OR INSUFFICIENT QUANTITIES DUE TO DIFFERENCES IN PLAN AND ACTUAL FIELD CONDITIONS.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES. SPOTTING OF ALL UTILITIES IS REQUIRED.
5. NOTIFY AND MEET WITH SSP DESIGN PRIOR TO ANY CONSTRUCTION FOR VERIFICATION/INTERPRETATION OF PLANS.
6. LANDSCAPE CONTRACTOR SHALL STAKE OUT ALL BEDS, TREES, PALM LOCATIONS PRIOR TO INSTALLATION FOR APPROVAL BY SSP DESIGN.
7. CONTRACTOR TO COORDINATE WITH SSP DESIGN TO ENSURE PROPER PLACEMENT OF PLANT MATERIAL AND IRRIGATION EQUIPMENT.
8. CONTRACTOR TO INSTALL EXTRUDED CONCRETE EDGE AND TREE RINGS AS SHOWN ON PLANS.
9. NOTIFY SSP DESIGN/OWNER PRIOR TO PLANTING OPERATIONS FOR APPROVAL OF ALL PLANT MATERIAL ON SITE. ANY PLANT MATERIAL NOT APPROVED BY SSP DESIGN/OWNER WILL BE SUBJECT TO REJECTION.
10. IRRIGATION CONTRACTOR SHALL SUPPLY AND INSTALL COMPLETE AUTOMATIC IRRIGATION SYSTEM INCLUDING WATER METER, BACKFLOW DEVICE, CONTROLLER, MAINLINE, SLEEVES, DRIP, TO COVER ALL LANDSCAPE AREAS PER PLANS/DETAILS. IRRIGATION SYSTEM SHALL BE INSTALLED BY A TEXAS LICENSED IRRIGATOR ONLY.
11. CONTRACTOR SHALL REMOVE ALL EXISTING GRASS/WEEDS IN BEDS BY HERBICIDING PRIOR TO BED PREP AND SOIL REPLACEMENT.
12. CONTRACTOR SHALL PRUNE ALL EXISTING PALMS/TREES BY A CERTIFIED ARBORIST AS DIRECTED BY SSP DESIGN.
13. CONTRACTOR SHALL REMOVE ALL EXISTING GRASS AND WEEDS BY HERBICIDING, DISKING, FLOATING AND LIGHT GRADING OF ENTIRE PROJECT AREA PRIOR TO HYDROMULCHING/SODDING.
14. CONTRACTOR SHALL REMOVE 12" OF EXST'G SOIL WITHIN ALL BED AREAS AND REPLACE WITH IMPORTED TOP SOIL/PREMIUM COMPOST MIX.
15. LANDSCAPE CONTRACTOR SHALL CONSTRUCT 6'x36" WATERING BASINS AROUND ALL TREES/PALMS WITH A MIN. 2" LAYER OF CYPRESS MULCH.
16. LANDSCAPE CONTRACTOR SHALL LOOSEN / GRADE ALL LAWN AREAS PRIOR TO HYDRO-MULCHING/SODDING TO ENSURE PROPER DRAINAGE AND UNIFORM SURFACE.
17. LANDSCAPE CONTRACTOR SHALL ESTABLISH AND MAINTAIN ALL PLANT MATERIAL FOR 90 DAYS AFTER 'SUBSTANTIAL COMPLETION' AND SHALL GUARANTEE ALL TREES/PALMS FOR A PERIOD OF ONE YEAR.
18. IRRIGATION CONTRACTOR SHALL GUARANTEE ALL SYSTEM COMPONENTS FOR A PERIOD OF ONE YEAR.
19. SEE SPECIFICATION FOR FURTHER INSTRUCTIONS/REQUIREMENTS.




NOTES:
1. CONCRETE CURBING TO HAVE 1 1/2" DEEP CONTRACTION JOINTS @ 5'-0" SPACING.
2. 2500-3000 PSI COMPRESSIVE STRENGTH, 490 PSI FLEXURAL STRENGTH.
3. USE HALF-INCH POLYPROPYLENE FIBER REINFORCEMENT.
4. NATURAL FINISH AND COLOR.
5. EQUAL TO 'CURB APPEAL' EDGING (956-867-8350).

### 7 TRAIL/CURB DETAIL
NOT TO SCALE

NOTE:
CONTRACTOR TO STAKE ALL PALMS PER THIS DETAIL UNLESS OTHERWISE NOTED.




### 8 PALM PLANTING DETAIL
NOT TO SCALE

SSP Design
789 EAST WASHINGTON STREET
BROWNSVILLE, TEXAS 78520
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| No. | REVISIONS | BY |
|---|---|---|
| 1 | ADDENDUM # 1 JUNE 19, 2024 | |

GMS ARCHITECTS
1150 paredes line rd.
brownsville
texas 78526
(956) 546-0110
fax (956) 546-0196

# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

MERCEDES
CSP 25-011



Date: March, 2024
Scale: As Noted
Project Architect: David Monreal, AIA
Drawn By: IO
Job No. STISD SPORTS FIELDS
Sheet: L3.01

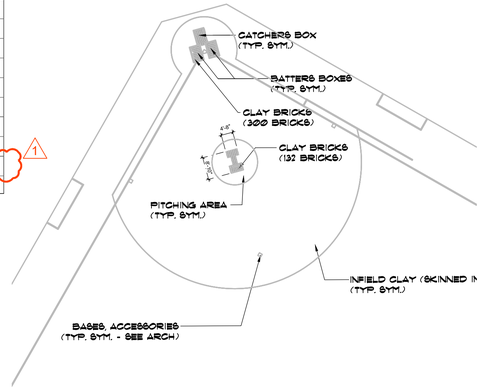
## MATERIAL SCHEDULE - SPORTS FIELDS

| DESCRIPTION | NOTES | QUANTITY |
|---|---|---|
| HERBICIDE | ALL LANDSCAPE AREAS (ROUNDUP OR APPROVED EQUAL) | 110,000 S.F. |
| CLEAR/GRUB/SITE PREP | CLEAR ALL DEBRIS FROM TOP LAYER OF SPORTS FIELD AREA | 110,000 S.F. |
| GRADING | GRADING & LASER LEVELING OF SPORTS FIELD PER PLANS | 110,000 S.F. |
| SCREENED TOP SOIL | SCREENED TOPSOIL FOR SOCCER FIELDS (35% of 6" MIX - TO FINISHED GRADES) | 490 C.Y. |
| SAND * | MASONRY SAND FOR SOCCER FIELDS (50% OF 6" MIX - TO FINISHED GRADES) | 700 C.Y. |
| COMPOST ** | PREMIUM COMPOST (9 KIDS COMPOST MIX (15% OF 6" MIX - TO FINISHED GRADES) | 210 C.Y. |
| FIELD STRIPING | SHERWIN-WILLIAMS 'SHERSTRIPE' 4" WIDTH FIELD STRIPING PER PLANS (FOOTBALL & SOCCER) | 1 |
| FIELD MARKERS | PIONEER ATHLETICS, PLEEPIX FIELD MARKERS (4 CORNERS) | 4 |
| SOD TYPE 'A' *** | TIFWAY '419' BERMUDA LARGE ROLLS 42", TIGHT SEAMS, SAND FILLED JOINTS, TOP DRESS | 16200 S.Y. |
| MAINTENANCE | 90 DAY MAINTENANCE OF FIELDS WITH REEL MOWERS & FERTILIZATION PER SPECS | 1 |

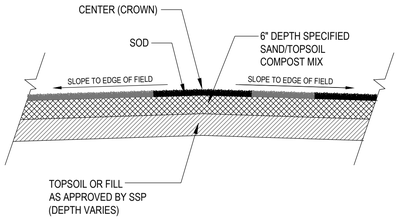
* MASONRY SAND - WRIGHT MATERIALS PLANT 3 (361) 387-0293
** NINE KIDS COMPOST (956) 432-4983 OR CITY OF MCALLEN COMPOST (956) 681-4000
*** KING RANCH TURFGRASS (830) 665-6290

## SPORTS FIELD NOTES

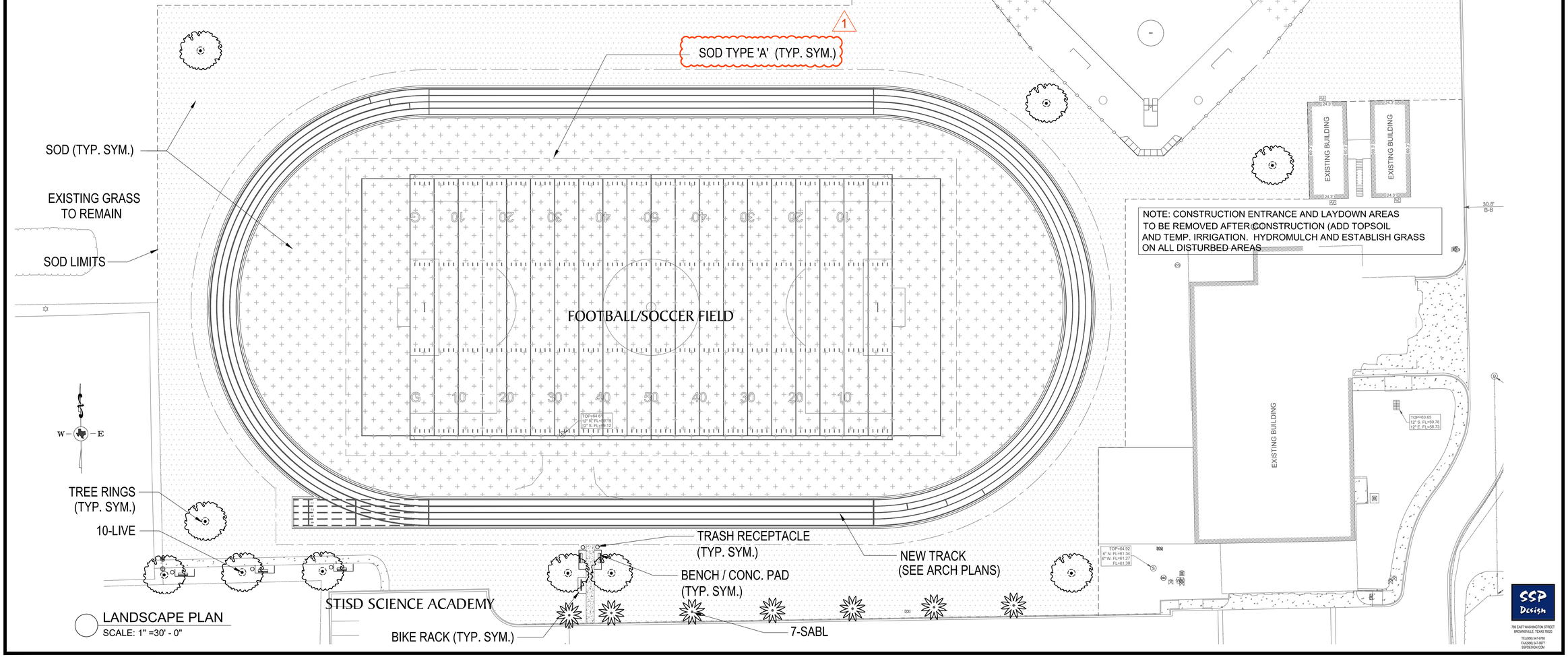
1. APPLY HERBICIDE/ROUNDUP TO ENTIRE FIELD AREA UNTIL ALL VEGETATED MATTER IS ERADICATED
2. CLEAR AND GRUB (REMOVE ALL DEBRIS) FROM FIELD AREAS
3. RIP/TILL SOIL WITH AN AGRICULTURAL CULTIVATOR TO A DEPTH OF 6" ON FOOTBALL FIELD, 3" ON BASEBALL OUTFIELD
4. ROUGH GRADE INFIELDS TO PREPARE FOR 6" LAYER OF INFIELD MIX
5. APPLY/INSTALL INFIELD CLAY. TILL IN CONDITIONER INTO TOP 2". FINE GRADE TO FINISHED ELEVATIONS ON CIVIL PLANS. WATER IN/COMPACT WITH PLATE COMPACTOR. DRAG TO LOOSEN AND EXPOSE CONDITIONER.
6. CONTRACTOR TO GRADE SPORTS FIELDS WITH SPECIFIED CROWN/SLOPES UTILIZING FULLY AUTOMATED COMPUTERIZED DUAL GPS SYSTEM WITH LASER AUGMENTATION TO ACHIEVE GRADES WITHIN 1/4" TOLERANCE. FIELD MUST DRAIN SMOOTHLY WITH NO BIRD BATHS OR LOW SPOTS
7. INSTALL IRRIGATION PER PLANS/SPECS. THOROUGHLY WATER IN WITH MULTIPLE WATERINGS
8. FIELD DRAINAGE WILL BE TESTED AND REVIEWED BY SSP PRIOR TO SOD OR HYDORMULCH.
9. INSTALL SOD OR HYDROMULCH AS PER PLANS AND SPECIFICATIONS. SOD TO BE LARGE 42" ROLLS.
10. ROLL/COMPACT/LEVEL FIELDS WITH 2 OR 3 TON MECHANICAL ROLLER/VIBRATOR. TOP DRESS WITH CLEAN SAND ALL LOW SPOTS OR DIVOTS. ALL JOINTS TO BE TIGHT AND SAND FILLED.
11. MONITOR WATERING FOR CONTINUOUS MOISTURE ON HYDROMULCH (MULTIPLE SHORT CYCLES UNTIL FULL GERMINATION).
12. COMMENCE MOWING USING A REEL TYPE MOWER ONLY. MOWING SHALL BE AT LEAST ONCE PER WEEK AND CLIPPINGS REMOVED/BLOWN. DOCUMENT/PHOTO EACH CYCLE FOR REVIEW, CHECK AND APPROVAL BY SSP. 4 FERTILIZATION APPLICATIONS REQUIRED INCL STARTED FERTILIZER FOR HYDRO AND REMAINDER SHALL BE TURF BUILDER AND PRE-EMERGENT BLENDS SUCH AS HJ 25-0-0 WITH WOLFTRAX OR APPROVED EQUAL AT MANUFACTURERS RATES




2 INFIELD DETAIL PLAN
NOT TO SCALE




1 SPORTS FIELD SECTION
NOT TO SCALE




LANDSCAPE PLAN
SCALE: 1" =30' - 0"

| No. | REVISIONS | BY |
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| 1 | ADDENDUM # 1 JUNE 19, 2024 | |

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# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

MERCEDES
CSP 25-011



Date: March, 2024
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SSP Design
709 EAST WASHINGTON STREET
BROWNSVILLE, TEXAS 78520
TEL(956) 547-9788
FAX(956) 547-9077
SSPDESIGN.COM

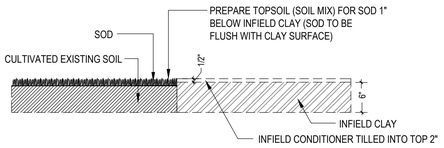
## PLANT SCHEDULE

| CODE | BOTANICAL NAME | COMMON NAME | TYPE | SIZE | SPACING | QTY |
|---|---|---|---|---|---|---|
| | PALMS | | | | | |
| SABL | SABAL TEXANA | TEXAS SABAL PALM | B/B | 6-8' TRUNK | AS. | 7 |
| | TREES | | | | | |
| LIVE | QUERCUS VIRGINIANA | SOUTHERN LIVE OAK (CONTAINER GROWN) | 24" BOX | 3-4" CAL., 12'HT., 6'W | AS. | 10 |
| | GRASS | | | | | |
| SOD | CYNODON DACTYLON 'TIFWAY' | # 1 CERTIFIED TIFWAY '419' HYBRID BERMUDA SOD | | | 16,200 SQUARE YARDS | |

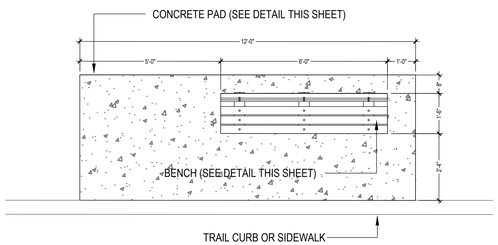
## MATERIAL SCHEDULE

| DESCRIPTION | NOTES | QUANTITY |
|---|---|---|
| PREMIUM COMPOST | MIX WITH BACKFILL ON ALL TREES/PALMS | 1/2 C.Y. |
| SCREENED TOP SOIL | AS REQUIRED TO FILL LOW SPOTS, LEVELING OF OUTFIELD (ALLOWANCE) | 50 C.Y. |
| MULCH (HARDWOOD) | 2" MIN. FOR ALL TREE/PALM WATERING BASINS (TEXAS NATIVES SHREDDED HARDWOOD MULCH) | 34 BAGS (2 C.F.) |
| HERBICIDE | ERADICATION OF ALL EXISTING WEEDS/GRASSES PRIOR TO GRADING/LEVELING | --- |
| FERTILIZER | PER DETAILS / AS SPECIFIED | - |
| PLANTING TABLETS | PER DETAILS / AS SPECIFIED | -- |
| PRE-EMERGENT | PER DETAILS / AS SPECIFIED | --- |
| GUYING / STAKING | ALL TREES/PALMS WITH GATOR-T CAPS ON POSTS PER DETAILS | --- |
| TREE RINGS | 36" DIA. 5" COMMERCIAL GRADE ALUMINUM EDGE 'DREAMSCAPE' TREE RINGS PER PLAN/DETAILS | 16 |
| CONCRETE PADS | 4" THICK CONCRETE PADS FOR PARK BENCHES/BIKE RACKS AS PER PLANS/DETAILS | 275 S.F. |
| INFIELD MIX | 6" LAYER OF INFIELD CLAY - 60% SAND, 20% SILT, 20 % CLAY 1/4" MINUS RED COLOR | 250 C.Y. |
| INFIELD CONDITIONER | 1/2" MIXED/TILLED DIAMOND PRO RED INFIELD CONDITIONER (11,300 S.F.) | 25 C.Y. |
| INFIELD GRADING | COMPLETE INFIELD LASER GRADING PER NOTES BELOW | --- |
| CLAY BRICKS | 4 X 8" HOME PLATE/MOUND CLAY BRICKS (DIAMONDPRO.COM TEL. # 1-800-228-2987) | 432 BRICKS |
| BENCHES | DU MOR 6' LENGTH 138-60PL RECYCLED PLASTIC SLATS (GREY) 8-1 EMBEDMENT MOUNT WITH POWDER COATED POST (BLACK) | 5 |
| DECO | 4" DEPTH COMPACTED DECOMPOSED GRANITE FINES' 1/4" MINUS PER PLANS (WARNING TRACK) | 5,270 S.F. |
| TRASH RECEPTACLES | DU MOR 41-32PL, BLACK POWDER COATED, RECYCLED PLASTIC (GREY), 8-1 EMBEDMENT | 5 |
| BIKE RACK | DU MOR 130-40 BLACK POWDER COATED, 8-1 EMBEDMENT | 1 |
| IRRIGATION SYSTEM | COMPLETE AUTOMATIC IRRIGATION SYSTEM PER PLANS/DETAILS BY LICENSED CONTRACTOR | 1 |

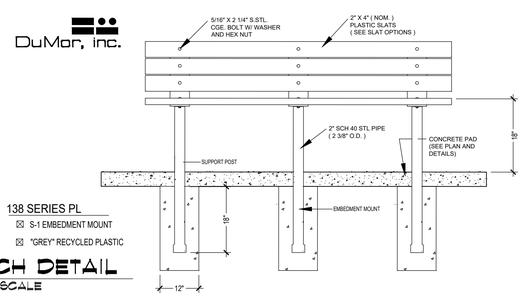
NOTE: CONTRACTORS MUST REVIEW TECHNICAL SPECIFICATIONS FOR ADDITIONAL PROJECT INFORMATION AND REQUIREMENTS.
* NINE KIDS COMPOST (365) 432-4983 OR CITY OF MCALLEN COMPOST (956) 681-4000
** SOUTHERN STONE AND SOIL - DONNA, TEXAS (956) 464-0777




1 FIELD CLAY/SOD TRANSITION DETAIL
NOT TO SCALE




2 CONCRETE PAD/BENCH PLAN
NOT TO SCALE




3 BENCH DETAIL
NOT TO SCALE

## SPORTS FIELD NOTES

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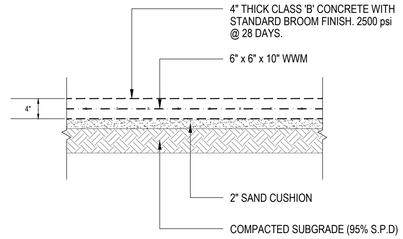
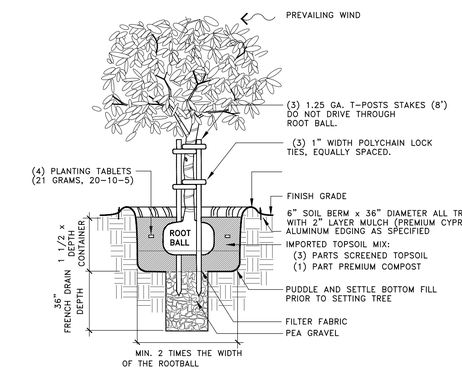
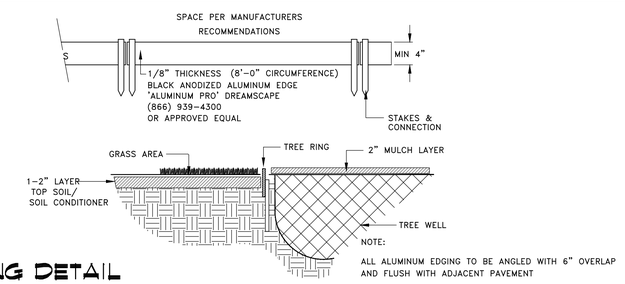



4 CONCRETE PAD DETAIL
NTS FOR BIKE RACKS & BENCHES




5 TREE PLANTING DETAIL
NOT TO SCALE




6 TREE RING DETAIL
NOT TO SCALE

## CONSTRUCTION NOTES

1. WORK UNDER THIS CONTRACT INCLUDES SITE REVIEW AND COORDINATION WITH EXISTING CONDITIONS, SITE CLEANUP, EXCAVATION, BED PREP, TILLING, PLANTING, STAKING, EDGING, IRRIGATION, TREE RINGS, INFIELD CLAY, SITE FURNITURE, MAINTENANCE, AND GUARANTEE.
2. LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND DIMENSIONS PRIOR TO BIDDING. QUANTITIES SHOWN IN SCHEDULE ARE FOR CONVENIENCE ONLY.
3. NOTIFY SSP DESIGN OF ANY DISCREPANCIES IN DRAWINGS/DETAILS OR INSUFFICIENT QUANTITIES DUE TO DIFFERENCES IN PLAN AND ACTUAL FIELD CONDITIONS.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES. SPOTTING OF ALL UTILITIES IS REQUIRED.
5. NOTIFY AND MEET WITH SSP DESIGN PRIOR TO ANY CONSTRUCTION FOR VERIFICATION/INTERPRETATION OF PLANS.
6. LANDSCAPE CONTRACTOR SHALL STAKE OUT ALL BEDS, TREES, PALM LOCATIONS PRIOR TO INSTALLATION FOR APPROVAL BY SSP DESIGN.
7. CONTRACTOR TO COORDINATE WITH SSP DESIGN TO ENSURE PROPER PLACEMENT OF PLANT MATERIAL AND IRRIGATION EQUIPMENT.
8. CONTRACTOR TO INSTALL EXTRUDED CONCRETE EDGE AND TREE RINGS AS SHOWN ON PLANS.
9. NOTIFY SSP DESIGN/OWNER PRIOR TO PLANTING OPERATIONS FOR APPROVAL OF ALL PLANT MATERIAL ON SITE. ANY PLANT MATERIAL NOT APPROVED BY SSP DESIGN/OWNER WILL BE SUBJECT TO REJECTION.
10. IRRIGATION CONTRACTOR SHALL SUPPLY AND INSTALL COMPLETE AUTOMATIC IRRIGATION SYSTEM INCLUDING WATER METER, BACKFLOW DEVICE, CONTROLLER, MAINLINE, SLEEVES, DRIP, TO COVER ALL LANDSCAPE AREAS PER PLANS/DETAILS. IRRIGATION SYSTEM SHALL BE INSTALLED BY A TEXAS LICENSED IRRIGATOR ONLY.
11. CONTRACTOR SHALL REMOVE ALL EXISTING GRASS/WEEDS IN BEDS BY HERBICIDING PRIOR TO BED PREP AND SOIL REPLACEMENT.
12. CONTRACTOR SHALL PRUNE ALL EXISTING PALMS/TREES BY A CERTIFIED ARBORIST AS DIRECTED BY SSP DESIGN.
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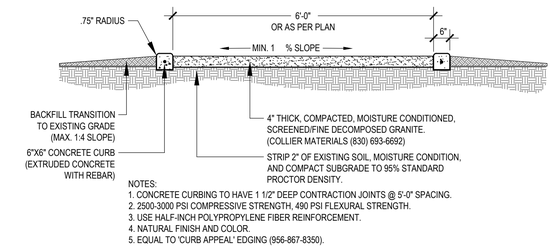


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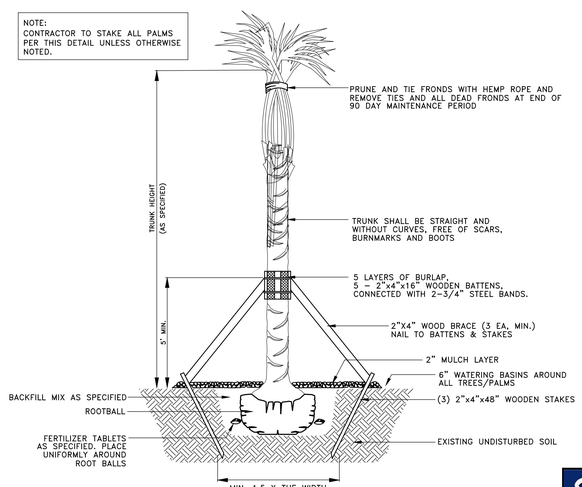


8 PALM PLANTING DETAIL
NOT TO SCALE

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|---|---|---|
| 1 | ADDENDUM # 1 JUNE 19, 2024 | |

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# SOUTH TEXAS ISD
## NEW SPORT FIELDS AT MERCEDES CAMPUS

MERCEDES
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P: 956.565.2454
STISD.NET

# CSP 25-011 South Texas ISD Athletic Field Mercedes Site
# Architect Project NO: S2000724

## Addendum # 2

## ACKNOWLEDGEMENT OF ADDENDUM # 2

Company Name: _____

Company Representative: _____

Company Representative Signature: _____

Phone Number: _____

Date: _____