ADDENDUM NO. 1

Date: November 21, 2022

PROJECT: Sam Collins Park Phase 1B

BID NO.: RFB 25-1203

BID DATE: August 29, 2024 at 2PM

FROM: Kristina Malek
Project Manager – Landscape Architecture
Kimley-Horn
11700 Katy Fwy, Suite 800
Houston, Texas 77079

To: **Prospective Bidders and Interested Parties**

This addendum forms a part of the bidding documents and will be incorporated into the Contract Documents, as applicable. Insofar as the original Contract Documents, Specifications, and Drawings are inconsistent, this Addendum shall govern. Please acknowledge receipt of this Addendum on the Bid Proposal form.

FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA ON THE BID PROPOSAL FORM MAY BE CAUSE FOR DISQUALIFICATION.

PRE-BID AGENDA:

1. Bids due August 29, 2024 at 2:00 PM at the SRA Authority Toledo Bend Office of the Division Manager (450 TX-135 Spur, Burkeville TX 75932) (refer to Notice to Bidders). All bids shall be prepared, sealed and submitted in accordance with the instructions to bidders.

2. The Pre-Bid meeting is non-mandatory. Sign in sheet attached.

3. All questions regarding the project shall be submitted via email to: purchasing@sratx.org, or CIVCAST USA and due by end of day August 19, 2024 (10 days prior to bid opening).

4. Bid Documents required:
    - Signed Bid Proposal with acknowledgment of Addenda issued
    - Bid Bond
    - Bid Opening Form – This is the Bid Amount that will be publicly read
    - Vendor Compliance Form
    - Bonding Company Information
    - Non-Collusion Affidavit
    - Form W-9

- Conflict of Interest Questionnaire

5. Contract Time is **180 consecutive calendar days to Substantial Completion**

6. Contract includes liquidated damages in the amount of **$500.00 per calendar day** over contract time (excludes weather days)

7. General Conditions
   - Provide a competent resident superintendent to be ON SITE all times that work is under progress.
   - Subcontracts – Must be acceptable to the Owner prior to any work performed, and Contractor is solely responsible for any errors, acts and omissions by subcontractor.
   - Progress Payments – submit pay request at the end of each month, for all work completed to date. Contractor maybe paid for materials on hand or properly stored onsite as necessary with suitable documentation provided per the general conditions.
   - Retainage – 10% of amount due to contractor as noted in General Conditions
   - Final Payment – shall be made upon completion of all work, receipt of all release of liens, and approval for final payment is made by Owner.
   - Project Schedule – Contractor shall prepare and submit a contract schedule showing the work progression with dates of beginning and completion of major milestone.
   - Change Orders – Contractor shall submit all claim for additional work or contract time in writing per the General Conditions Section 6. All claims shall be made in writing in a timely manner.
   - Review by Owner and Inspections – Owner and authorized representatives of the Owner shall have access to the project site at all times to monitor and observe the progression of the project. All directives shall be given to the Contractors on site superintendent.
   - Insurance – Contractor shall provide all liability and workers compensation insurance coverages in the amounts indicated in Section 26.

8. Performance and Payment Bonds – Contractor to provide all bonds in accordance with the Contract conditions.

9. Scope of Work
   Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: site preparation, erosion control and tree protection, clearing and grubbing, demolition, grading, vehicular paving, parking lot striping and signage, pedestrian concrete paving, site furnishings, utilities construction, lighting and electrical connection, existing restroom renovations, existing pavilion renovations, sod re-stabilization and all items necessary to construct the Phase 1B Site Improvements, complete and in place as shown in the plans and specifications.

10. Project Timeline: This project must be complete by June 2025. Liquidated damages are in the contract for time exceeding contract time plus any approved time extensions.

11. This project includes a playground with long lead times. The playground must be purchased as soon as they are approved.

12. Sam Collins Park is anticipated to closed to the public during construction.

13. The contractor is required to secure the site as necessary to store material and equipment.

14. Grading: The contractor is expected to regrade all areas affected by construction and to reestablish grades that are smooth and uniform to ensure proper drainage and a pleasing aesthetic.

15. The contractor is required to field verify all existing utilities onsite especially the existing water line.

16. The contractor is expected to review the Alternates Plan and request any clarification necessary as to the scope of each alternate.

    - Alternate #1: Remove haul off and dispose of all existing concrete around pavilion; pavilion slab and adjacent sidewalks and install new concrete pavilion slab and adjacent concrete walks in their original locations. See Sheet C1.00, G0.02, and L1.00.
    - Alternate #2: Mill and Overlay of Ex. Asphalt from Entry Road to Site. See Sheet C1.01 and C2.01

17. SRA is sales tax exempt and will provide a form stating such.

18. SRA to provide construction testing via separate contract.

PRE-BID CONFERENCE QUESTION AND ANSWER

1. Question: Contact information for CXT and serial number/build number?
   Response: The building I.D. number is N0541182955

2. Question: Will the underside of the pavilion tongue and groove decking require staining?
   Response: Yes, provide staining. Color to be selected by owner. See Sheet L3.03 and G0.02.

3. Question: Replace R-panel roof?
   Response: Yes, replace metal R-panel roof ensure color to match existing. See Sheet L3.03 and G0.02.

4. Question: Would you please confirm if the pre-bid conference is at 1 PM or 2 PM on August 20th?
   Response: 2pm CST

5. Question: Add unit item at pavilion rehab for “Re-coating steel members” to the plans, SOW, and bid proposal sheet

Response: Re-coating steel members added on sheet G0.02 and L3.03

6. Question: Pavilion – specify the 1" x 6" tongue and groove panels
   Response: Note revised to include 1" x 6" on sheet G0.02 and L3.03

7. Question: Note that the 10" sleeve for daylight drain can be installed by open cut.
   Response: Note added on sheet L2.01

8. Question: Note Kraftsmen and Playwell are approved manufacturers for the playground equipment.
   Response: Note added on sheet G0.02

9. Question: Once removed, the picnic tables shall be stored on site for Owner's use (do not re-install)
   Response: Note added on sheet L3.03 and G0.02.

10. Question: Once removed, the pea gravel on the existing playground shall be stored on site for Owner's use.
    Response: Note added on sheet C1.00.

11. Question: Are all items to be installed/replaced at the restroom building to be purchased directly from CXT?
    Response: Items not limited exclusively to CXT, nameplate information included for reference at contractor discretion.

TECHNICAL SPECS:

1. Bid Opening Document - Added line for Alternate #2.
2. Scope of work – Revised.
3. Geotechnical Report – final report added.

CONSTRUCTION DRAWINGS:

1. RAS report updates.
   - Ramps – Note was added to Sheet L1.00 that ramps are ADA compliant.
   - Parking Spaces – Note was added to Sheet L1.00 that parking spaces are compliant. ADA van parking space added to plans.
   - Playground – Note added to Sheet G0.02 that playground vendor responsible for verifying play equipment compliance.
   - Water Fountains – Note added to Sheet L3.03 that new water fountains to comply with ADA requirements.
   - Plumbing – Note added to Sheet L3.03 that the new plumbing fixtures should comply with ADA requirements.
   - Bathroom Doorways – Note added on Sheet G0.02 and L3.03 that door hardware should be switched to other side of the doors to comply with ADA ramp requirement.

- Accessible Route – Note added on Sheet L1.00 that accessible route to restroom and ramps are compliant.

2. Tongue and Groove decking staining note added to viewport 'A' and pavilion notes on L3.03 and G0.02
3. Replace and Relocate Restroom door hardware note to comply with ADA added to viewport 'B' and restroom notes on L3.03 and G0.02

4. Note added on sheet L3.03 and G0.02 to replace R-panel roof and ensure color to match existing.

5. Note to Re-coat steel members added to sheet G0.02 and L3.03.

6. Note to specify 1"x6" tongue and groove panels added to sheet G0.02 and L3.03.

7. Note about playground equipment approved manufacturers added on sheet G0.02.

8. Note about picnic tables being stored on site for Owner's use added on G0.02 and L3.03.

9. Note about pea gravel being stored on site for Owner's use added on C1.00.

END OF ADDENDUM NO. 1

Kristina Malek
Project Manager – Landscape Architecture
Kimley-Horn

Sabine River Authority of Texas

Pre-Bid Conference
Sign-In Sheet

Sam Collins Park - Phase 1B (RFB #25-1203)
Tuesday, August 20, 2024
Toledo Bend Division Office

Printed Name	Signature	Company	Email Address	Phone Number
Mark Mann		SRA-TX	mmann@sratx.org	409-746-2192
Placido Ramos		SRA-TX	pramos@sratx.org	409-746-2192
Austin Williams		Apeck	austin w@apeckconstruction.com	337-718-9973
Stephanie Stanley	Stephanie Stanley	SRA-TX	sstanley@SRATX.ORG	409-746-2192
Mark Mann		SRA-TX	mmann@sratx.org	409-746-2192
Brenda Baker		Hartmann B.V.	bbaker@hbshd.net	409-659-8225
SIDNEY ERRINGTON		Atlas Technical Consultants	sidney.errington@oneatlas.com	409-622-0120
Shawn Santana		MK Constructors	Sales@MKConstructors.com	409-769-0089
Jimbo Williams		CHANCE CONSTRUCTION	Jimbow@chanceconstruction.com	409 594 6824
Randy Morgan		Construction Manager SETx	rmorgan@cmosetx.com	936-707-7508
Nick Moore		CMOST	nmoore@cmosetx.com	936-676-6144
Trent Wagstaff		CMOST	Twagstaff@cmosetx.com	409-289-4078
Don ILES		SRATX	diles@sratx.org	936-596-5269
Andrew Mills		SRATX	amills@sratx.org	409.565-2273

BID OPENING

In the space provided below, enter your total Base Bid amount for this project. Only this figure will be read publicly at the public bid opening.

It is understood and agreed by the bidder in signing the proposal that the total bid amount entered below is not binding on either the bidder or the Owner. It is further agreed that the official total bid amount for this proposal will be determined by multiplying the unit prices for each unit price pay item by the respective estimated quantities shown in this proposal, and then totaling all of the extended amounts plus the amounts bid for all lump sum items.

Project: Sam Collins Park- Phase 1B

Burkeville, Texas

Owner: Sabine River Authority of Texas

Orange County, Texas

$ _____

Total Base Bid Amount

$ _____

Alternate 1 Amount

$ _____

Alternate 2 Amount

Name of Bidder

Scope of Work

Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: site preparation, erosion control and tree protection, clearing and grubbing, demolition, grading, vehicular paving, parking lot striping and signage, pedestrian concrete paving, site furnishings, utilities construction, lighting and electrical connection, existing restroom renovations, existing pavilion renovations, sod re-stabilization and all items necessary to construct the Phase 1B Site Improvements, complete and in place as shown in the plans and specifications.

All work shall comply with the Texas Accessibility Standards (TAS) of the Architectural Barriers Act Article 9102, Texas Civil Statutes, effective April 1, 1994 and subsequent adopted updates. This standard is prepared and administered by the Texas Department of Licensing and Regulations, Policies and Standards Division, Architectural Barriers Section, PO Box 12157, Austin, Texas 78711, 920 Colorado, Fourth Floor, Austin, Texas 78701, (512) 463-3211.

GEOTECHNICAL ENGINEERING REPORT

SAM F. COLLINS PARK - PHASE 1B

BURKEVILLE, TEXAS

GEOTECHNICAL ENGINEERING REPORT

Sam F. Collins Park - Phase 1B

Burkeville, Texas

Prepared by:

Riner Engineering, Inc., a UES Company

Prepared for:

Kimley-Horn and Associates, Inc.
11700 Katy Freeway, Suite 800
Houston, Texas 77079

Attention: Ms. Emily Chisholm Luong, PLA

August 22, 2024

RINER Project No. 23-0525

TEXAS ENGINEERING FIRM REGISTRATION NO. F-17076

Riner Engineering
A UES Company

August 22, 2024

Ms. Emily Chisholm Luong, PLA
Kimley-Horn and Associates, Inc.
11700 Katy Freeway, Suite 800
Houston, Texas 77079

Re: GEOTECHNICAL ENGINEERING REPORT
Sam F. Collins Park - Phase 1B
Burkeville, Texas
RINER Project No. 23-0525

Dear Ms. Luong:

Riner Engineering, Inc. (RINER), a UES Company, is pleased to submit this Geotechnical Engineering Report for the referenced project. We appreciate the opportunity of working with you. Please contact us if you have any questions or require additional services.

Respectfully submitted,

Arif Mohammad Aziz, M.S., E.I.T.
Project Engineer

Gary Gai, Ph.D., P.E.
Engineering Manager

TABLE OF CONTENTS

APPENDICES

GEOTECHNICAL ENGINEERING REPORT

Sam F. Collins Park - Phase 1B
Burkeville, Texas

1.0 INTRODUCTION

Project Location. The project is located at Sam Forse Collins Recreational Park, in Burkeville, Texas. The general location and orientation of the site are provided in Appendix A - Project Location Diagrams.

Project Description. The project consists of the proposed asphalt parking lot, new asphalt road, repaved asphalt road, and assessment of existing asphalt pavement.

Project Authorization. This geotechnical study was authorized by Ms. Stephen Kelly with Kimley-Horn and Associates, Inc. and performed in accordance with RINER Proposal No. P23-0874 dated July 21, 2023.

Purpose and Methodology. The principal purposes of this study were to evaluate the general soil conditions at the proposed site and to develop geotechnical engineering design recommendations. To accomplish its intended purposes, the study was conducted in the following phases:

1. Drill sample borings to evaluate the soil conditions at the boring locations and to obtain soil samples;
2. Conduct laboratory tests on selected samples recovered from the borings to establish the pertinent engineering characteristics of the soils; and
3. Perform engineering analyses, using field and laboratory data, to develop design criteria.

Required Review. Detailed design plans were not available at the time of preparation of this report. Recommendations in our report are contingent upon RINER reviewing and approving in writing the following design items prior to construction:

- Site grading plan,
- Traffic study, and
- Finalized pavement plans and cross-sections.

Cautionary Statement Regarding Use of this Report. As with any geotechnical engineering report, this report presents technical information and provides detailed technical recommendations for civil and structural engineering design and construction purposes. RINER, by necessity, has assumed the user of this document possesses the technical acumen to understand and properly utilize the information and recommendations provided herein.

RINER strives to be clear in its presentation and, like the user, does not want potentially detrimental misinterpretation or misunderstanding of this report. Therefore, we encourage any user of this report with questions regarding its content to contact RINER for clarification. Clarification will be provided verbally and/or issued by RINER in the form of a report addendum, as appropriate.

Report Specificity. This report was prepared to meet the specific needs of the client for the specific project identified. Recommendations contained herein should not be applied to any other project at this site by the client or anyone else without the explicit approval of RINER.

This Report is NOT a Specification. Recommendations in this report are not specifications. Geotechnical engineering requires significant experience and professional judgment. Conditions vary in the field which require and/or allow modification to recommendations provided herein at the discretion of the Geotechnical Engineer.

2.0 FIELD STUDY

Subsurface Study. The subsurface study for this project is summarized in the following table. Boring locations are provided in Appendix B - Boring Location Diagram.

Boring Nos.	Depth, feet bgs[1]	Date Drilled	Location[2]
B-01 to B-07	6	9/14/2023	Along the Proposed Road Alignment and at parking lot

Notes:
1. bgs = below ground surface
2. Boring locations provided in Appendix B - Boring Location Diagram were not surveyed and should be considered approximate. Borings were located by recreational hand-held GPS unit. Horizontal accuracy of such units is typically on the order of 20-feet.

Boring Logs. Subsurface conditions were defined using the sample borings. Boring logs generated during this study are included in Appendix C - Boring Logs and Laboratory Results. Borings were advanced between sample intervals using continuous flight auger drilling procedures.

Cohesive Soil Sampling. Cohesive soil samples were generally obtained using Shelby tube samplers in general accordance with American Society for Testing and Materials (ASTM) D1587. The Shelby tube sampler consists of a thin-walled steel tube with a sharp cutting edge connected to a head equipped with a ball valve threaded for rod connection. The tube is pushed into the undisturbed soils by the hydraulic pulldown of the drilling rig. The soil specimens were extruded from the tube in the field, logged, tested for consistency using a hand penetrometer, sealed, and packaged to maintain "in situ" moisture content.

Consistency of Cohesive Soils. The consistency of cohesive soil samples was evaluated in the field using a calibrated hand penetrometer. In this test a 0.25-inch diameter piston is

pushed into the undisturbed sample at a constant rate to a depth of 0.25-inch. The results of these tests are tabulated at the respective sample depths on the boring logs. When the capacity of the penetrometer is exceeded, the value is tabulated as 4.5+.

Granular Soil Sampling. Granular soil samples were generally obtained using split-barrel sampling procedures in general accordance with ASTM D1586. In the split-barrel procedure, a disturbed sample is obtained in a standard 2-inch outside diameter (OD) split barrel sampling spoon driven 18-inches into the ground using a 140-pound (lb) hammer falling freely 30 inches. The number of blows for the last 12-inches of a standard 18-inch penetration is recorded as the Standard Penetration Test resistance (N-value). The N-values are recorded on the boring logs at the depth of sampling. Samples were sealed and returned to our laboratory for further examination and testing.

Groundwater Observations. Groundwater observations are shown on the boring logs.

Borehole Plugging. Upon completion of the borings, the boreholes were backfilled from the top and plugged at the surface.

3.0 LABORATORY TESTING

RINER performs visual classification and any of several laboratory tests, as appropriate, to define pertinent engineering characteristics of the soils encountered. Tests are performed in general accordance with ASTM or other standards and the results included at the respective sample depths on the boring logs or separately tabulated, as appropriate, and included in Appendix C - Boring Logs and Laboratory Results. Laboratory tests and procedures routinely utilized, as appropriate, for geotechnical studies are tabulated in the following table.

Test Procedure	Description
ASTM D1140	Standard Test Methods for Amount of Material in Soils Finer than the No. 200 (75-µm) Sieve
ASTM D2166	Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
ASTM D2216	Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D2487	Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488	Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
ASTM D4220	Standard Practices for Preserving and Transporting Soil Samples
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
ASTM D4546	Standard Test Methods for One-Dimensional Swell or Settlement Potential of Cohesive Soils
ASTM D4643	Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Method
Manufacturer's Instructions	Soil Strength Determination Using a Torvane

4.0 SITE CONDITIONS

4.1 General

Review of Aerial Photographs. Historical aerial photographs of the site were reviewed for potential past alterations to the site which could impact geotechnical design conditions. Specifically, aerial photographs were reviewed to visually assess obvious areas of significant past fill on site. Aerial photographs reviewed for this study are identified in the following table and are included in Appendix D - Aerial Photographs.

Aerial Photographs Reviewed	
Year	Observations Since Prior Aerial Photograph
1996	Currently existing asphalt roadway and restroom with associated driveway were noted.
2004	No visible changes were noted.
2009	No visible changes were noted.
2012	No visible changes were noted.
2015	No visible changes were noted.
2021	No visible changes were noted.
2023	No visible changes were noted.

Site Fills. Our review of aerial photographs revealed no obvious areas of fill on-site.

Limitations. Due to the intermittent nature and relatively low resolution of aerial photographs, as well as our lack of detailed information regarding the past land use of the site, our review should not be interpreted as eliminating the possibility of cuts and/or fills on site which could detrimentally affect future construction.

Topography. A United States Geological Survey (USGS) topographic map of the site is provided in Appendix E - USGS Topographic Map. The map indicates the site is relatively flat.

Site Photographs. Representative photographs of the site at the time of this study are provided in "Appendix F - Site Photographs". Photographed conditions are consistent with the aerial photographs and topographic map.

4.2 Geology

Geologic Formation. Based on available surface geology maps and our experience, it appears this site is located in the Terrace Deposits near mapped contact with Catahoula Formation and Deweyville Formation. A geologic atlas and USGS formation description are provided in "Appendix G - Geologic Information". Soils within the Terrace Deposits can generally be characterized as sand, gravel, silt, and clay or mud. Soils within the Catahoula Formation can generally be characterized as mudstone, sand, and sandstone. Soils within

the Deweyville Formation can generally be characterized as sand, silt, clay or mud, and gravel.

Geologic Faults. *A geologic fault study was beyond the scope of this study.*

4.3 Soil

Stratigraphy. Descriptions of the various strata and their approximate depths and thickness per the Unified Soil Classification System (USCS) are provided on the boring logs included in "Appendix C - Boring Logs and Laboratory Results". Terms and symbols used in the USCS are presented in "Appendix H - Unified Soil Classification System". A summary of the stratigraphy indicated by the borings is provided in the following table.

Generalized Subsurface Conditions along Proposed Road Alignment and Parking Lot (Borings B-01 to B-07)			
Nominal Depth, feet bgs (Except as Noted)		General Description	Detailed Description of Soils/Materials Encountered
Top of Layer	Bottom of Layer		
0	4.5- to 13.5-inches	PAVEMENT	1.5- to 6.5-Inch ASPHALT over 3- to 8-Inch BASE.
4.5- to 13.5-inches	6	FAT CLAY AND CLAYEY SAND	Soft to hard FAT CLAY WITH SAND (CH) / FAT CLAY (CH) and soft to hard CLAYEY SAND (SC).
Note: Boring Termination Depth = 6 feet bgs.			

Moisture Change Susceptibility of Near Surface Soils. *The sandier soils encountered at and near the ground surface at this site are very susceptible to changes in moisture. The presence of surface water due to precipitation or groundwater may result in a decrease in the ability to compact and work with the soil. It is common for these soils to pump when subjected to high levels of moisture. In addition, these soils located at and near the ground surface will allow surface water to infiltrate until the water becomes perched on a less permeable layer at depth. Soils of this type are especially prone to requiring the implementation of wet weather/soft subgrade recommendations provided in this report.*

Swell Potential based on Atterberg Limits. Atterberg (plastic and liquid) limits were performed on 11 shallow soil samples obtained at depths between 0- and 6-feet bgs. The plasticity index of the samples was between 34 and 72 with an average of 51 indicating that the soils have a high potential for shrinking and swelling with changes in soil moisture content.

Swell Tests. Swell tests were performed on selected clay soil samples. Swell test details are provided in "Appendix C - Boring Logs and Laboratory Results". The results of the tests are summarized in the following table.

Boring No.	Avg. Depth (ft.)	Moisture Content, w, %	Liquid Limit, LL	Plasticity Index, PI	Applied Overburden Stress (psi)	Swell (%)
B-01	1	17	50	34	0.9	0.00
B-02	5	22	56	35	4.3	0.00
B-04	5	42	75	49	4.3	0.00
B-05	3	34	74	50	2.6	0.51
B-07	3	11	72	48	2.6	0.00

4.4 Groundwater

Groundwater Levels. The borings were advanced using auger drilling and intermittent sampling methods to observe groundwater seepage levels. Groundwater levels encountered in the borings during this study are identified in the following table.

Boring No.	Depth Groundwater Initially Encountered (feet, bgs) [1]	Groundwater Depth after 15 Minutes (feet, bgs) [1]
B-01 to B-07	Not Encountered	Not Measured

Note:
1. Bgs = below ground surface.

Long-term Groundwater Monitoring. Long-term monitoring of groundwater conditions via piezometers was not performed during this study and was beyond the scope of this study. Long-term monitoring can reveal groundwater levels materially different than those encountered during measurements taken while drilling the borings.

Groundwater Fluctuations. Future construction activities may alter the surface and subsurface drainage characteristics of this site. It is difficult to accurately predict the magnitude of subsurface water fluctuations that might occur based upon short-term observations. The groundwater level should be expected to fluctuate throughout the years with variations in precipitation.

5.0 Analysis and Recommendations

5.1 Seismic Site Classification

The seismic site classification is based on the 2018 International Building Code (IBC) and is a classification of the site based on the type of soil encountered at the site and their engineering properties. Per Table 20.3-1 of ASCE 7-16, the seismic site classification for this site is D.

5.2 Potential Vertical Rise (PVR)

Potential Vertical Rise. Potential Vertical Rise, PVR, is the calculated upward heave of the ground surface due to expansive soils related to weather-related changes in soil moisture in the active zone. PVR only applies to upward movement. The term settlement applies to downward movement related to loads on the soil.

Pavement Areas. Because heave is generally associated with a source of water, it can occur differentially. Edge lift, excessive cracking, corner breaks, and poor ride quality are just a few of the many examples of pavement issues that can occur when in-situ PVR values are high. Strategies available for reducing potential soil movements include soil stabilization with lime or cement, removal of the on-site expansive soils and replacement with select fill or moisture conditioned soils.

PVR or Equivalent Calculations. The PVR or its equivalent can be estimated in several ways. RINER utilizes the TxDOT method and swell tests to provide the best possible understanding of expected PVR and its variability. *The calculated PVR can vary considerably with prolonged wet or dry periods.*

Calculated PVR using TxDOT Method Tex-124-E. PVR calculations were performed in general accordance with the Texas Department of Transportation (TxDOT) Method Tex-124-E. The Tex-124-E method is empirical and is based on the Atterberg limits and moisture content of the subsurface soils. The calculated PVR is an empirical estimate of a soil's potential for swelling based upon the soil's plasticity index, applied loading (due to structures or overburden), and antecedent moisture condition. The PVR calculated using TxDOT Method Tex-124-E is about 2- to 3-inches assuming an average to dry antecedent moisture condition. The calculated PVR is consistent with soil moisture conditions at the time this study was conducted. An 8-feet zone of seasonal moisture variation was used in our analysis based on local experience.

Calculated PVR using Swell Test Results. The equivalent PVR based on the swell test results is about 1-inch. The PVR based on swell test results is dependent on the moisture conditions at the time of testing. An 8-feet zone of seasonal moisture variation was used in our analysis based on local experience.

5.3 Construction Excavations

Applicability. Recommendations in this section apply to short-term construction-related excavations for this project.

Sloped Excavations. All sloped short-term construction excavations on-site should be designed in accordance with Occupational Safety and Health Administration (OSHA)

excavation standards. Borings from this study indicated that the soils may be classified per OSHA regulations as Type B from the ground surface to a depth of 10-feet bgs. Short-term construction excavations may be constructed with a maximum slope of 1:1, horizontal to vertical (H:V), to a depth of 10-feet bgs. If excavations are to be deeper than 10-feet, we should be contacted to evaluate the excavation. Recommendations provided herein are not valid for any long-term or permanent slopes on-site.

Shored Excavations. As an alternative to sloped excavations, vertical short-term construction excavations may be used in conjunction with trench boxes or other shoring systems. Shoring systems should be designed using an equivalent fluid weight of 85 pounds per cubic feet (pcf) above the groundwater table and 105 pcf below the groundwater table. Surcharge pressures at the ground surface due to dead and live loads should be added to the lateral earth pressures where they may occur. Lateral surcharge pressures should be assumed to act as a uniform pressure along the upper 10-feet of the excavation based on a lateral earth coefficient of 0.5. Surcharge loads set back behind the excavation at a horizontal distance equal to or greater than the excavation depth may be ignored. We recommend that no more than 200-feet of unshored excavation should be open at any one time to prevent the possibility of failure and excessive ground movement to occur. We also recommend that unshored excavations do not remain open for a period longer than 24-hours.

Limitations. Recommendations provided herein assume there are no nearby structures or other improvements which might be detrimentally affected by the construction excavation. Before proceeding, we should be contacted to evaluate construction excavations with the potential to affect nearby structures or other improvements.

Excavation Monitoring. Construction excavations and their related safety are the responsibility of the Contractor. Excavations should be monitored and documented by a competent professional to confirm site soil conditions consistent with those encountered in the borings drilled as part of this study. Discrepancies in soil conditions should be brought to the attention of RINER for review and revision of recommendations, as appropriate.

5.4 Groundwater Control

Groundwater was not encountered during the subsurface investigation. However, groundwater can be encountered during excavation and dewatering to bring the groundwater below the bottom of excavations may be required. Dewatering could consist of standard sump pits and pumping procedures, which may be adequate to control seepage on a local basis during excavation. Supplemental dewatering will be required in areas where standard sump pits and pumping are not effective. Supplemental dewatering could include submersible pumps in slotted casings, well points, or eductors. The contractor should

submit a groundwater control plan, prepared by a licensed engineer experienced in that type of work.

5.5 Earthwork

5.5.1 Site Preparation

In the area of improvements, all concrete, trees, stumps, brush, debris, septic tanks, abandoned structures, roots, vegetation, rubbish, and any other undesirable matter should be removed and properly disposed. All vegetation should be removed, and the exposed surface should be scarified to an additional depth of at least 6 inches. It is the intent of these recommendations to provide a loose surface with no features that would tend to prevent uniform compaction by the equipment to be used.

5.5.2 Proofroll

Paving subgrades should be proofrolled with a fully loaded tandem axle dump truck or similar pneumatic-tire equipment to locate areas of loose subgrade. In areas to be cut, the proofroll should be performed after the final grade is established. In areas to be filled, the proofroll should be performed prior to fill placement. Areas of loose or soft subgrade encountered in the proofroll should be removed and replaced with engineered fill, moisture conditioned (dried or wetted, as needed) and compacted in place.

5.5.3 Grading and Drainage

Every attempt should be made to limit the extreme wetting or drying of the subsurface soils because swelling and shrinkage of these soils will result. Standard construction practices for providing good surface water drainage should be used. A positive slope of the ground away from any pavement should be provided. Ditches or swales should be provided to carry the run-off water both during and after construction.

Root systems from trees and shrubs can draw a substantial amount of water from the clay soils at this site, causing the clays to dry and shrink. This could cause settlement beneath grade-supported slabs such as walks and paving. Trees and large bushes should be located a distance equal to at least one-half their anticipated mature height away from grade slabs.

5.5.4 Wet Weather/Soft Subgrade

Soft and/or wet surface soils may be encountered during construction, especially following periods of wet weather. Wet or soft surface soils can present difficulties for compaction and other construction equipment. If specified compaction cannot be achieved due to soft or wet surface soils, one of the following corrective measures will be required:

1. Removal of the wet and/or soft soil and replacement with select fill,
2. Chemical treatment of the wet and/or soft soil to improve the subgrade stability, or
3. If allowed by the schedule, dry by natural means.

Chemical treatment is usually the most effective way to improve soft and/or wet surface soils. RINER should be contacted for additional recommendations if chemical treatment is planned due to wet and/or soft soils.

5.5.5 Fill

Fill. The fill should consist of material approved by the Geotechnical Engineer with a liquid limit of less than 50. Fill should be placed in loose lifts not exceeding 8-inches and should be uniformly compacted to a minimum of 95 percent maximum dry density (per ASTM D-698) and within ±2 percent of the optimum moisture content.

Lime-treated Native Clay Soil. Based on the laboratory testing conducted for this investigation, the native clay on-site soils will not meet specifications for engineered fill outlined in the section titled "Fill". As an alternative to importing fill, the high plasticity native clay soil may be blended with lime to reduce the plasticity index to meet engineered fill requirements. Based on our experience, we expect that it will require between 3- and 5-percent lime (by dry unit weight) to reduce the plasticity index of the native clay soils to recommended fill requirements. Prior to selecting this alternative, lime series tests should be performed to assess the amount of lime required.

Fill Restrictions. The fill should consist of those materials meeting the requirements stated. Fill should not contain material greater than 4-inches in any direction, debris, vegetation, waste material, environmentally contaminated material, or any other unsuitable material.

Unsuitable Materials. Materials considered unsuitable for use as select fill or general fill include low and high plasticity silt (ML and MH), silty clay (CL-ML), organic clay and silt (OH and OL) and highly organic soils such as peat (Pt). These soils may be used for site grading and restoration in unimproved areas as approved by the Geotechnical Engineer. Soil placed in unimproved areas should be placed in loose lifts not exceeding 10-inches and should be compacted to at least 92 percent maximum dry density (per ASTM D-698) and at a moisture content within ±4 percentage points of optimum.

5.5.6 Testing

Required Testing and Inspections. Construction monitoring services must be provided for all construction activities according to TxDOT specifications. We recommended that at least three compaction tests (i.e. field density and moisture content test) be performed for every 1,000 linear feet of roadway per lift, per day.

Liability Limitations. Since proper field inspection and testing are critical to the design recommendations provided herein, RINER cannot assume responsibility or liability for recommendations provided in this report if construction inspection and/or testing is performed by another party.

5.6 Demolition Considerations

Applicability. Recommendations in this section apply to the removal of any existing utilities or pavement which may be present on this site.

General. Special care should be taken in the demolition and removal of existing floor slabs, foundations, utilities, and pavements to minimize disturbance of the subgrade. Excessive disturbance of the subgrade resulting from demolition activities can have serious detrimental effects on planned foundation and paving elements.

Existing Utilities. Existing utilities and bedding to be abandoned should be completely removed. Existing utilities and bedding may be abandoned in place if they do not interfere with planned development. Utilities which are abandoned in place should be properly pressure-grouted to completely fill the utility.

Backfill. Excavations resulting from the excavation of existing utilities should be backfilled in accordance with Section 5.5.5 - Fill.

Other Buried Structures. Other types of buried structures (wells, cisterns, etc.) could be located on the site. If encountered, RINER should be contacted to address these types of structures on a case-by-case basis.

5.7 Loading on Buried Structures

Uplift. Buried water-tight structures are subjected to uplift forces caused by differential water levels adjacent to and within the structure. Soils with any appreciable silt or sand content will likely become saturated during periods of heavy rainfall and the effective static water level will be at the ground surface. For design purposes, we recommend the groundwater level be assumed at the ground surface. Resistance to uplift pressure is provided by soil skin friction and the dead weight of the structure. Skin friction should be neglected for the upper 3 feet of soil. A skin friction of 200 pounds per square foot (psf) may be used below a depth of 3 feet.

Lateral Pressure. Lateral pressures on buried structures due to soil loading can be determined using an equivalent fluid weight of 105 pcf. This includes hydrostatic pressure

but does not include surcharge loads. The lateral load produced by a surcharge may be computed as 50 percent of the vertical surcharge pressure applied as a constant pressure over the full depth of the buried structure. Surcharge loads located a horizontal distance equal to or greater than the buried structure depth may be ignored.

Vertical Pressure. Vertical pressures on buried structures due to soil loading can be determined using an equivalent fluid weight of 125 pcf. This does not include surcharge loads. The vertical load produced by a surcharge may be computed as 100 percent of the vertical surcharge pressure applied as a constant pressure over the full width of the buried structure.

5.8 Pavement

Pavement design is the responsibility of the project Civil Engineer. We have recommended preliminary pavement sections based on geotechnical information and assumed/available traffic information. The applicability of our assumptions should be reviewed and approved by the project Civil Engineer before the pavement section is finalized. The recommended pavement sections assume good drainage quality prevails over the life of the pavement and that the pavement subgrade is exposed to moisture levels approaching saturation less than 25 percent of the time. Therefore, it is critical that the project Civil Engineer provide appropriate pavement drainage design to assure validity of the assumed drainage conditions.

Recommendations for flexible pavement and preparation of the pavement subgrade are provided in the following sections. Flexible asphaltic pavements subjected to soil-related shrinking and swelling do not perform as well as rigid pavements. As a result, the lifespan of flexible asphaltic pavement can be reduced substantially when compared to rigid pavement. The need for increased maintenance of flexible asphaltic pavements should be considered prior to its selection.

5.8.1 Existing Asphalt Pavement Assessment

Existing Asphalt Pavement Section. Five (5) borings were drilled in the existing pavement along the alignment of proposed paving improvement. The borings indicate the existing pavement consists of 1.5- to 6.5-inches of asphalt over 3- to 8-inches of base type material along the existing asphalt road. The subgrade soil encountered under the base material consists of clayey sand and fat clay. The lime check of subgrade soils at the boring locations was also conducted with phenolphthalein. No stabilized subgrade was encountered. The thickness and the subgrade stabilization type of the existing pavement at boring locations are summarized in the following table.

Boring Location	Approximate Asphalt Pavement Thickness (Inches)	Approximate Base Thickness (Inches)	Subgrade Stabilization under the Base
B-01	1.5	8.0	Not Encountered
B-02	4.0	7.0	Not Encountered
B-04	6.5	7.0	Not Encountered
B-05	4.5	Not Encountered	Not Encountered
B-07	5.5	3.0	Not Encountered

Site Observation. Based on our site observations, we noticed the existing asphalt pavement is distressed and heavily cracked with asphalt patches and overlays at many locations. Representative photographs of the distressed pavement at different locations along the existing asphalt road are provided in "Appendix F - Site Photographs". Overlaying the existing asphalt is not recommended since the existing cracks will progress into the asphalt overlay (reflection cracks). We recommend the existing asphalt pavement be removed and reconstructed per our recommendations provided in the next section.

5.8.2 Traffic Information

Traffic Information. A traffic study indicating the number and type of vehicles on which to base the pavement design was not available at the time of preparing this report. Therefore, our recommendations are based upon our experience with similar projects assuming normal vehicular loading. **Any unusual loading conditions should be brought to our attention prior to finalizing the pavement design so that we may assess and modify our recommendations as necessary.**

5.8.3 Flexible Pavement

General. Recommendations provided in this section are applicable to the proposed asphalt pavement and parking lot at Sam Forse Collins Recreational Park in Burkeville, Texas.

Pavement Section. The following Hot Mix Asphalt (HMA) paving sections are recommended:

Paving Use	Asphalt Thickness (inches)	Aggregate Base Thickness (inches)	Chemically Stabilized Subgrade[1] (inches)
Parking Areas for Automobiles and Light Trucks	2	8	6
Drive Lanes and Areas Receiving Medium to Heavy Trucks and Dumpsters	3	10	6

Note:
1. Details of subgrade treatment are provided in section 5.8.4.

Asphaltic concrete pavement should comply with TxDOT Standard Specifications, Item 340, "Dense-Graded Hot-Mix Asphalt (Method)", or local equivalent. The flexible base course

should comply with TxDOT Standard Specifications, Item 247, Grade 1-2, Type D, "Flexible Base", or equivalent. The flexible base material may consist of up to 20 percent of the Recycled Asphalt Pavement(RAP) provided that the mix meets the required gradation above.

Alternate Flexible Pavement Section. In the above provided flexible pavement sections, the 6-inch chemically stabilized subgrade can be substituted with a Tensar TriAx TX 5 Geogrid or equivalent placed under the base course (over the subgrade soil). **The prepared subgrade soil should be proof rolled no earlier than 72 hours prior to placement of the geogrid.**

5.8.4 Pavement Subgrade

Potential Vertical Soil Movements. We have assumed that site treatment will not be performed within the pavement areas for this project. As a result, pavements will be subjected to the calculated PVR for this site. Based on the information gathered during this study, a pavement constructed on-grade will be subject to potential vertical movements of up to about 3-inches. Because heave is generally associated with a source of water, it can occur differentially. Edge lift, excessive cracking, corner breaks, and poor ride quality are just a few of the many examples of pavement issues that can occur when in-situ PVR values are high. We should be contacted to provide PVR mitigation strategies to help reduce potential movements, if desired. Strategies available for reducing potential soil movements include soil stabilization with lime or cement, removal of the on-site expansive soils and replacement with select fill.

Subgrade Preparation. Clayey sand and fat clay soils are expected to be encountered or exposed at pavement subgrade. The pavement subgrade should be placed in loose lifts not exceeding 8-inches and should be uniformly compacted to a minimum of 95 percent maximum dry density (per ASTM D-698) and within ±2 percent of the optimum moisture content. We recommend the subgrade be stabilized using the following:

Reagent	Application Rate (pounds per square yard)	Application Depth (inches)
Lime	27	6

Lime stabilization should be performed in accordance with TxDOT Standard Specifications, Item 260, "Lime Stabilized Subgrade", or local equivalent.

Cement stabilized sand may be used as a substitute for in-place stabilized subgrade soil. Cement stabilized sand mixture should consist of not less than 1.5 sacks of Portland cement per ton of material mixture. Cement stabilized sand should confirm to the Harris County Specification Item 433, "Cement Stabilized Sand Bedding and Backfill Material".

Cautionary Note Regarding Stabilized Subgrades. Stabilized subgrades are not suitable for supporting heavy construction traffic. Stabilized subgrades that have been subjected to

heavy construction traffic should be re-inspected and re-stabilized as necessary prior to the construction of overlying pavement.

6.0 GENERAL COMMENTS

Data Assumptions. By necessity, geotechnical engineering design recommendations are based on a limited amount of information about subsurface conditions. In the analysis, the geotechnical engineer must assume subsurface conditions are similar to those encountered in the borings. The analyses, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of the field study and on the assumption that the exploratory borings are representative of the subsurface conditions throughout the site; that is, the subsurface conditions everywhere are not significantly different from those disclosed by the borings at the time they were completed. As a result, estimated movements provided in this study are not guarantees of performance. Actual movements may be more or less than estimates provided in this study.

Subsurface Anomalies. Anomalies in subsurface conditions are often revealed during construction. If during construction, different subsurface conditions from those encountered in our borings are observed, or appear to be present in excavations, we must be advised promptly so that we can review these conditions and reconsider our recommendations where necessary.

Change of Conditions. If there is a substantial lapse of time between submission of this report and the start of the work at the site, if conditions have changed due either to natural causes or to construction operations at or adjacent to the site, or if structure locations, structural loads or finish grades are changed, we should be promptly informed and retained to review our report to determine the applicability of the conclusions and recommendations, considering the changed conditions and/or time lapse.

Design Review. Recommendations in our report are contingent upon RINER reviewing and approving in writing the following design items prior to construction:

- Site grading plan,
- Traffic study, and
- Finalized pavement plans and cross-sections.

Construction Materials Testing and Inspection. RINER should be retained to observe earthwork and foundation installation and perform materials evaluation and testing during the construction phase of the project. This enables RINER's geotechnical engineer to stay abreast of the project and to be readily available to evaluate unanticipated conditions, to conduct additional tests if required and, when necessary, to recommend alternative solutions to unanticipated conditions. It is proposed that construction phase observation

and materials testing commence by the project geotechnical engineer (RINER) at the outset of the project. Experience has shown that the most suitable method for procuring these services is for the owner to contact the geotechnical engineer directly. This results in a clear, direct line of communication between the owner and the owner's design engineers and the geotechnical engineer.

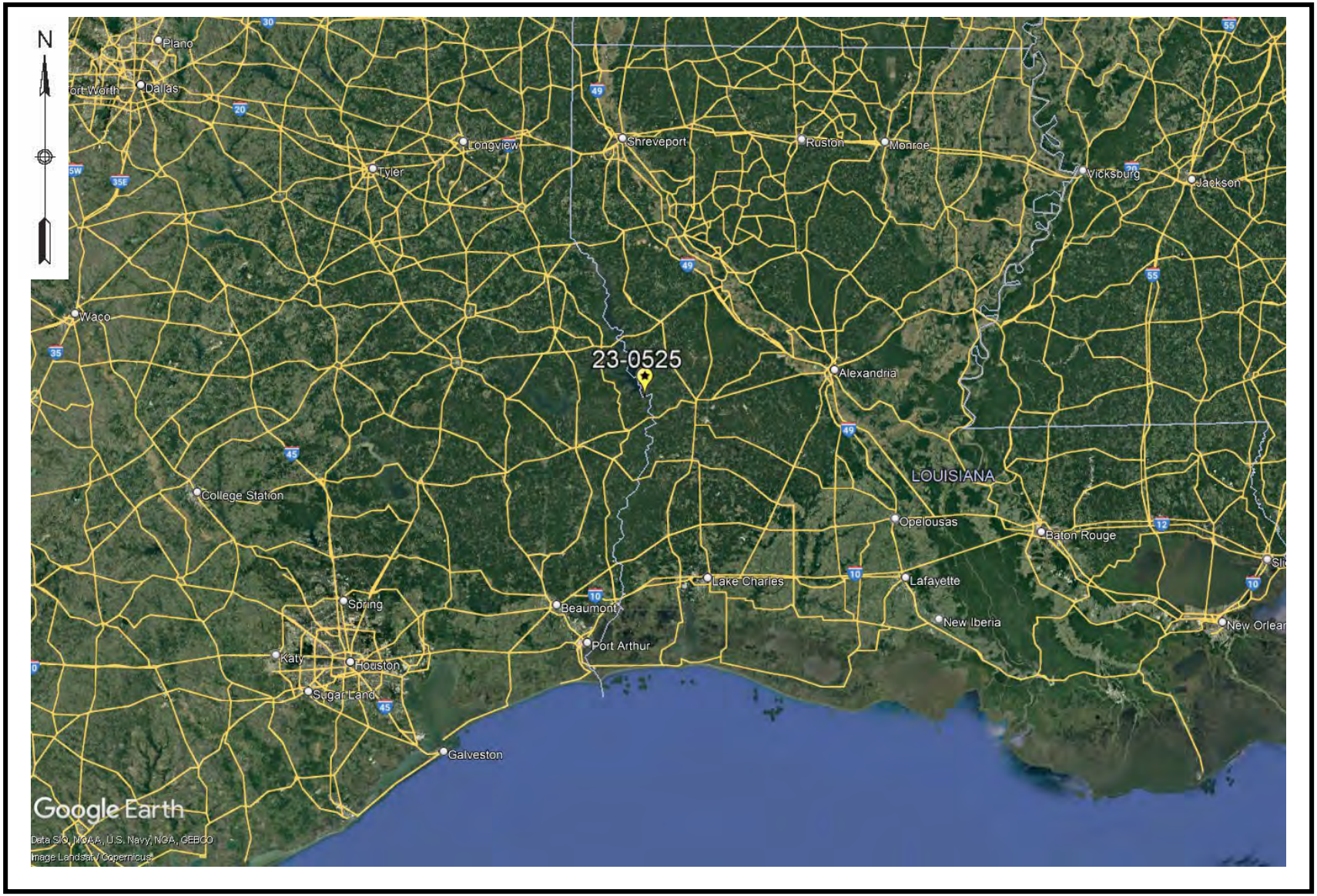
Report Recommendations are Preliminary. Until the recommended construction phase services are performed by RINER, the recommendations contained in this report on such items as final foundation bearing elevations, final depth of undercut of expansive soils for non-expansive earth fill pads and other such subsurface-related recommendations should be considered as preliminary.

Liability Limitation. RINER cannot assume responsibility or liability for recommendations provided in this report if construction inspection and/or testing recommended herein is performed by another party.

Warranty. This report has been prepared for the exclusive use of the Client and their designated agents for specific application to design of this project. We have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended.

Appendix A - Project Location Diagrams

PROJECT LOCATION DIAGRAM - GENERAL



RINER Project No. 23-0525

Sam F. Collins Park - Phase 1B

PROJECT LOCATION DIAGRAM - LOCAL

RINER Project No. 23-0525

Sam F. Collins Park - Phase 1B

Appendix B - Boring Location Diagram

BORING LOCATION DIAGRAM

RINER Project No. 23-0525

Sam F. Collins Park - Phase 1B

Appendix C - Boring Logs and Laboratory Results

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-01

CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		PAVEMENT - 1.5-Inch ASPHALT over 8-Inch BASE.	RC												
1		CLAYEY SAND (SC) - Soft, gray.	ST			1.00	0.6				17	50	16	34	44
2															
3		FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Firm to stiff, light gray, with iron nodules.	ST			1.50	0.5	1.1		81	39				
4															
5			ST			2.00	0.9								
6															

Bottom of hole at 6.0 feet.

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-02

CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0															
1		PAVEMENT - 4-Inch ASPHALT over 7-Inch BASE.	RC												
2		FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Soft, light gray, with sand seams.	ST			0.50	0.4				38	70	24	46	81
3			ST			0.25	0.3								
4															
5		CLAYEY SAND (SC) - Soft, gray and brown.	ST			1.00	0.3				22	56	21	35	43
6															

Bottom of hole at 6.0 feet.

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-03

CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Very stiff to hard, gray and light brown, with calcareous nodules.	ST			4.50+	2.4				34	73	22	51	98
1															
2		With silt seams at 2-feet to 6-feet.	ST			3.50	1.0	2.6		79	33				
3															
4			ST			3.50	0.4				45				
5															
6															

Bottom of hole at 6.0 feet.

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-04

CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		PAVEMENT - 6.5-Inch ASPHALT over 7-Inch BASE.	RC												
1		FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Firm to stiff, gray and reddish brown.	ST			2.00	0.8				36	98	26	72	98
2															
3			ST			2.50	1.3								
4															
5			ST			1.50	0.5				42	75	26	49	98
6															

Bottom of hole at 6.0 feet.

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-05

CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		PAVEMENT - 4.5-Inch ASPHALT.	RC												
1		FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Stiff to very stiff, gray and light gray, with sand seams.	ST			2.50	1.3				38	99	30	69	93
2															
3			ST			3.25	1.1				34	74	24	50	83
4															
5			ST			3.00	1.3								
6															

Bottom of hole at 6.0 feet.

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-06

CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0															
1		CLAYEY SAND (SC) - Hard, gray and brown, with calcareous nodules.	ST			4.50+	2.4				11	59	20	39	39
2															
3		FAT CLAY (CH) / FAT CLAY WITH SAND (CH) - Very stiff to hard, gray, with sand seams.	ST			4.50+	2.4	5.9		93	26				
4															
5			ST			4.50	2.3				25				
6															

Bottom of hole at 6.0 feet.

Riner Engineering, Inc.
4641 Kennedy Commerce Drive, Houston, TX 77032
Telephone: 281-469-3347; Fax: 281-469.3594

BORING NUMBER B-07

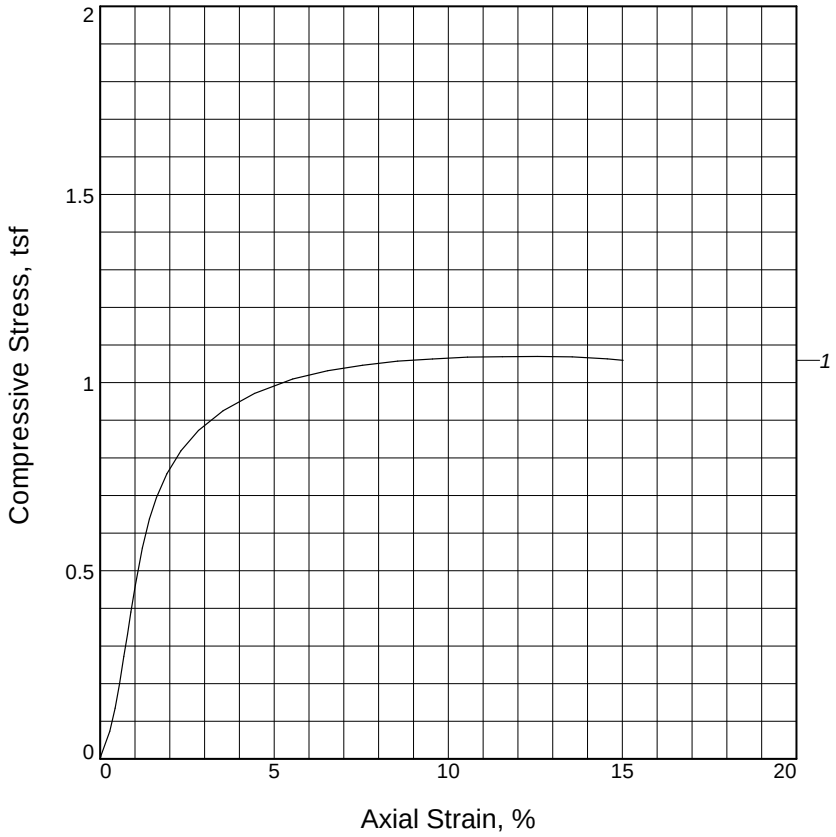
CLIENT Kimley-Horn and Associates, Inc.
PROJECT NAME Sam F. Collins Park - Phase 1B
PROJECT NUMBER 23-0525
PROJECT LOCATION Burkeville, Texas
DATE STARTED 9/14/23 **COMPLETED** 9/14/23
GROUND ELEVATION _____ **NORTHING** _____
CONTRACTOR RINER
GROUND WATER LEVELS: **EASTING** _____
METHOD _____
INITIALLY ENCOUNTERED Not Encountered
LOGGED BY CH **CHECKED BY** A.A.
AFTER 15 MIN. Not Measured
NOTES Auger 0 to 6-feet
AFTER ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	TORVANE (tsf)	Compressive Strength (tsf)	Confining Pressure (psi)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
												LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		PAVEMENT - 5.5-Inch ASPHALT over 3-Inch BASE.	RC												
1		CLAYEY SAND (SC) - Very stiff, reddish brown.	ST			4.50	0.8				11	89	24	65	23
2		With minor gravel content up to 2-feet.													
3			ST			3.50	0.5				11	72	24	48	23
4															
5			ST			3.50	0.3								
6															

Bottom of hole at 6.0 feet.

ABSORPTION SWELL TEST (ASTM D4546) RESULTS						
Boring No.	B-01	B-02	B-04	B-05	B-07	
Average Sample Depth (ft)	1	5	5	3	3	
Sample Height (in)	0.8	0.8	0.8	0.8	0.8	
Sample Diameter (in)	2.5	2.5	2.5	2.5	2.5	
Initial Sample Volume (cu in)	3.93	3.93	3.93	3.93	3.93	
Initial Sample Weight (gr)	117.6	111.0	113.6	109.4	126.5	
Initial Moisture (%)	17	22	42	34	11	
Final Moisture (%)	35	24	46	47	17	
Initial Wet Unit Weight (pcf)	114	108	110	106	123	
Initial Dry Unit Weight (pcf)	97	88	77	79	111	
Applied Over Burden (psi)	0.9	4.3	4.3	2.6	2.6	
Initial Dial Reading (in)	0.0558	0.0355	0.1378	0.0565	0.0386	
Final Dial Reading (in)	0.0558	0.0355	0.1378	0.0606	0.0386	
Swell (%)	0.00	0.00	0.00	0.51	0.00	

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	1.070			
Undrained shear strength, tsf	0.535			
Failure strain, %	12.6			
Strain rate, %/min.	1.00			
Water content, %	39.0			
Wet density, pcf	111.9			
Dry density, pcf	80.5			
Saturation, %	95.7			
Void ratio	1.1083			
Specimen diameter, in.	2.71			
Specimen height, in.	5.75			
Height/diameter ratio	2.12			

Description: Light gray FAT CLAY (CH)

LL =	**PL =**	**PI =**	**Assumed GS=** 2.72	**Type:** Shelby Tube

Project No.: 23-0525
Date Sampled: 9/14/23
Remarks:

Figure _____

Client: Kimley-Horn and Associates, Inc

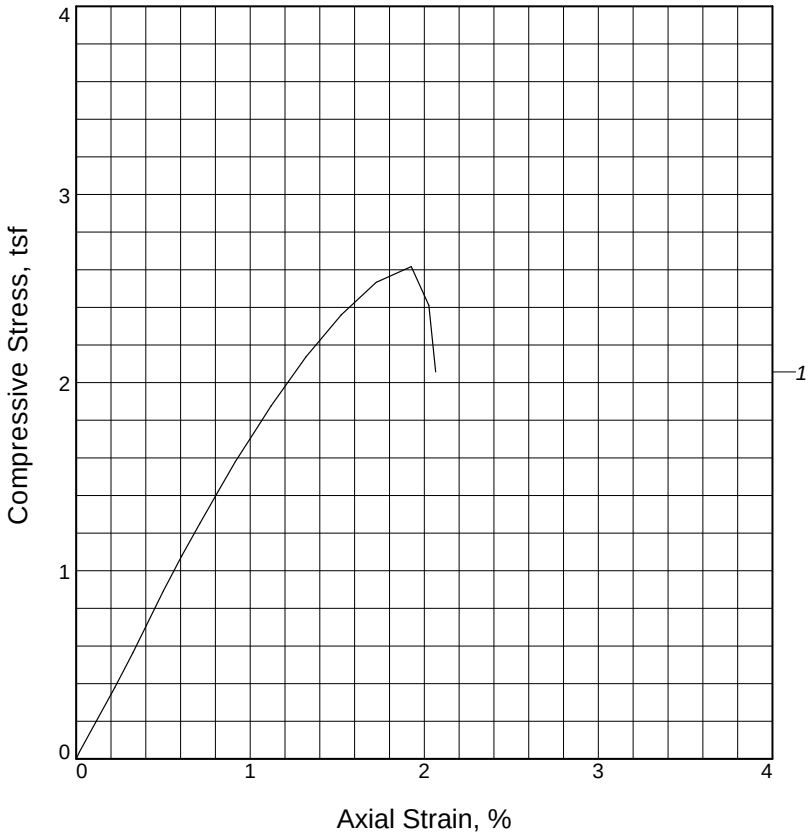
Project: Sam F. Collins Park - Phase 1B

Location: Boring B-01
Sample Number: 2 **Depth:** 2' - 4'

UNCONFINED COMPRESSION TEST
Riner Engineering, Inc.
Houston, Texas

Tested By: A.C. **Checked By:** A.A.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	2.617			
Undrained shear strength, tsf	1.308			
Failure strain, %	1.9			
Strain rate, %/min.	1.00			
Water content, %	33.0			
Wet density, pcf	104.9			
Dry density, pcf	78.9			
Saturation, %	77.8			
Void ratio	1.1526			
Specimen diameter, in.	2.76			
Specimen height, in.	5.75			
Height/diameter ratio	2.08			

Description: Gray and light brown FAT CLAY (CH)

LL =	**PL =**	**PI =**	**Assumed GS=** 2.72	**Type:** Shelby Tube

Project No.: 23-0525
Date Sampled: 9/14/23
Remarks:

Figure _____

Client: Kimley-Horn and Associates, Inc

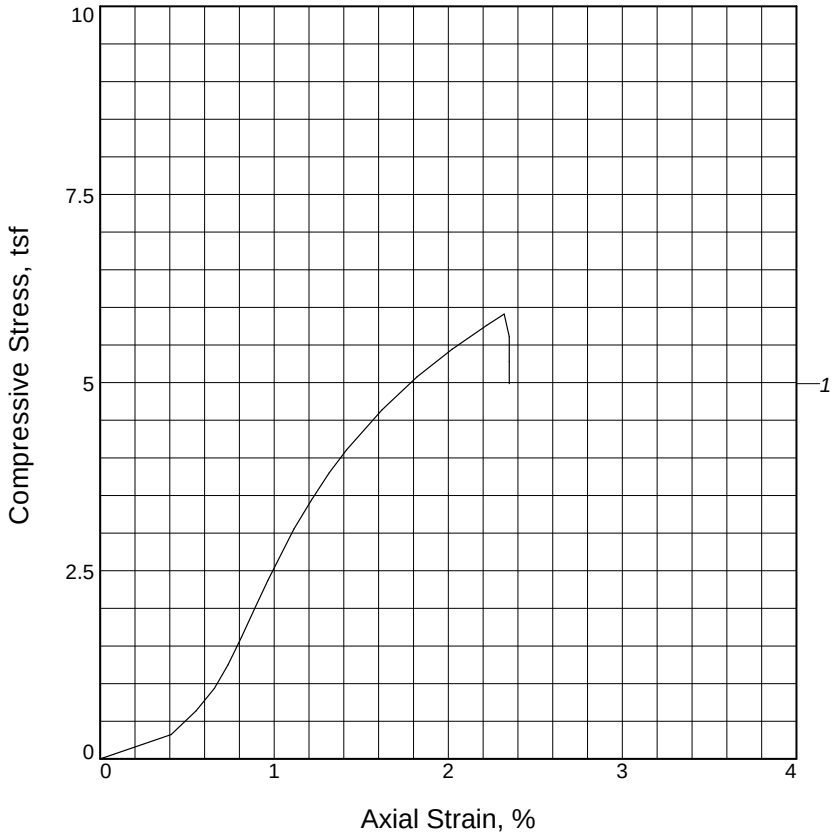
Project: Sam F. Collins Park - Phase 1B

Location: Boring B-03
Sample Number: 2 **Depth:** 2' - 4'

UNCONFINED COMPRESSION TEST
Riner Engineering, Inc.
Houston, Texas

Tested By: A.C. **Checked By:** A.A.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	5.911			
Undrained shear strength, tsf	2.956			
Failure strain, %	2.3			
Strain rate, %/min.	1.00			
Water content, %	26.4			
Wet density, pcf	117.6			
Dry density, pcf	93.1			
Saturation, %	87.1			
Void ratio	0.8246			
Specimen diameter, in.	2.74			
Specimen height, in.	5.75			
Height/diameter ratio	2.10			

Description: Gray FAT CLAY WITH SAND (CH)

LL =	**PL =**	**PI =**	**Assumed GS=** 2.72	**Type:** Shelby Tube

Project No.: 23-0525
Date Sampled: 9/14/23
Remarks:

Figure _____

Client: Kimley-Horn and Associates, Inc

Project: Sam F. Collins Park - Phase 1B

Location: Boring B-06
Sample Number: 2 **Depth:** 2' - 4'

UNCONFINED COMPRESSION TEST
Riner Engineering, Inc.
Houston, Texas

Tested By: A.C. **Checked By:** A.A.

Appendix D - Aerial Photographs

AERIAL PHOTOGRAPH - 2023

RINER Project No. 23-0525

Sam F. Collins Park - Phase 1B

AERIAL PHOTOGRAPH - 2021

AERIAL PHOTOGRAPH - 2015

AERIAL PHOTOGRAPH - 2012

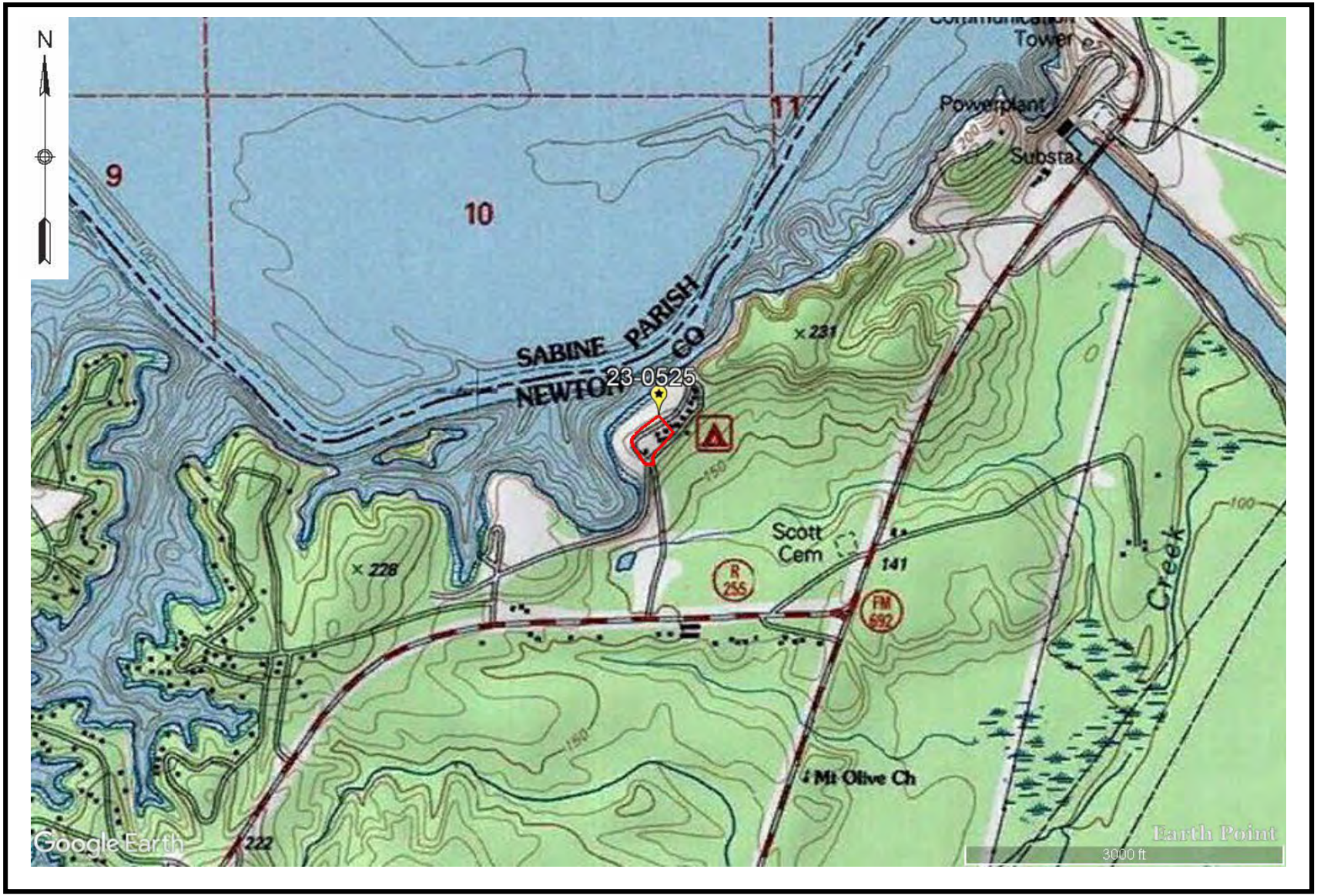
AERIAL PHOTOGRAPH - 2009

AERIAL PHOTOGRAPH - 2004

AERIAL PHOTOGRAPH - 1996

Appendix E - USGS Topographic Map

USGS TOPOGRAPHIC MAP



RINER Project No. 23-0525

Sam F. Collins Park - Phase 1B

Appendix F - Site Photographs

SITE PHOTOGRAPHS

Facing Northwest at Boring B-01

Facing Northeast at Boring B-02

Facing Northwest at Boring B-03

Facing North at Boring B-04

SITE PHOTOGRAPHS

Facing Northeast at Boring B-05

Facing Northwest at Boring B-06

Facing Southwest at Boring B-07

SITE PHOTOGRAPHS - DISTRESSED PAVEMENT

Distressed Pavement Near Boring B-01

Distressed Pavement Near Boring B-02

Asphalt Overlay Near Boring B-03

Distressed Pavement Near Boring B-03

SITE PHOTOGRAPHS - DISTRESSED PAVEMENT

Distressed Pavement Near Boring B-04

Longitudinal Crack Near Boring B-05

Distressed Pavement Near Boring B-06

Distressed Pavement Near Boring B-07

Appendix G - Geologic Information

GEOLOGIC ATLAS

RINER Project No. 23-0525

Sam F. Collins Park - Phase 1B

Mineral Resources On-Line Spatial Data

Terrace deposits

Terrace deposits

State	Texas
Name	Terrace deposits
Geologic age	Phanerozoic | Cenozoic | Quaternary | Pleistocene Holocene
Original map label	Qt
Comments	Sand, silt, clay, and gravel in various proportions, with gravel more prodominent in older, higher terrace deposits. Locally indurated with calcium carbonate (caliche) in terraces along streams. Along Colorado River clasts mostly limest., chert, quartz, and various igneous and metamorphic rocks from Llano region and Edwards Plateau. Includes point bar, natural levee, stream channel deposits along valley walls; probably in large part correlatives of Deweyville, Beaumont, Lissie, and Willis deposits. In upland regions (Rolling Plains, Edwards Plateau, etc.) unit includes fluvial terrace deposits, undivided. Light-brown, reddish-brown, gray, or yellowish-brown, gravelly quartz and lithic sand and silt to sandy gravel (Moore and Wermund, 1993). Deposits become increasingly fine grained on Coastal and Nueces Plains. Locally, calcium carbonate-cemented quartz sand, silt, clay, and gravel intermixed and interbedded. Low terraces of major rivers are capped by 2-4 m of clayey sand and silt. Sandy gravel on higher terraces varies somewhat in composition from river to river. Gravel commonly is rounded to angular limestone and chert pebbles and cobbles, some boulders, sparse igneous pebbles along Brazos river in places. In Bastrop Co., a deposit 27 m above Colorado River contains the Lava Creek B (Pearlette O) volcanic ash (age 0.6 Ma). Along the Frio, Leona, and Sabinal Rivers east of Uvalde, gravel is chiefly basalt and pyclastic clasts, locally cemented by iro oxide. Gravel along the Rio Grande is subrounded clasts of locally derived limestone and chert and rounded clasts of basalt, volcanic

porphyry, quartzite, milky quartz, and banded chalcedony derived from the west.

Primary rock type terrace

Secondary rock type sand

Other rock types gravel; silt; clay or mud

Lithologic constituents

Major

Unconsolidated > Fine-detrital > Silt *(Bed)*
Unconsolidated > Coarse-detrital > Sand *(Bed)*

Minor

Unconsolidated > Coarse-detrital > Gravel *(Bed)*
Unconsolidated > Fine-detrital > Clay *(Bed)*

Map references Bureau of Economic Geology, 1992, Geologic Map of Texas: University of Texas at Austin, Virgil E. Barnes, project supervisor, Hartmann, B.M. and Scranton, D.F., cartography, scale 1:500,000

Unit references Moore, D.W. and Wermund, E.G., Jr., 1993a, Quaternary geologic map of the Austin 4 x 6 degree quadrangle, United States: U.S. Geological Survey Miscellaneous Investigations Series Map I-1420 (NH-14), scale 1:1,000,000.
[http://pubs.er.usgs.gov/publication/i1420(NH14)]

Bureau of Economic Geology, 1975, Beeville-Bay City Sheet, Geologic Atlas of Texas, Bureau of Economic Geology, University of Texas at Austin, scale 1:250,000.

Bureau of Economic Geology, 1974, Seguin Sheet, Geologic Atlas of Texas, University of Texas, Bureau of Economic Geology, scale 1:250,000.

Counties Anderson - Angelina - Archer - Armstrong - Atascosa - Austin - Bandera - Bastrop - Baylor - Bee - Bell - Bexar - Blanco - Borden - Bosque - Bowie - Brazos - Brewster - Briscoe - Brown - Burleson - Burnet - Caldwell - Callahan - Camp - Cass - Cherokee - Childress - Clay - Coke - Coleman - Collin - Collingsworth - Colorado - Comal - Comanche - Concho - Cooke - Coryell - Cottle - Crane - Crosby - Dallam - Dallas - Delta - Denton - DeWitt - Dickens - Dimmit - Donley - Duval - Eastland - Ellis - Erath - Falls - Fannin - Fayette - Fisher - Foard - Franklin - Freestone - Frio - Garza - Gillespie - Glasscock - Goliad - Gonzales - Gray - Grayson - Gregg - Grimes - Guadalupe - Hall - Hamilton - Hansford - Hardeman - Hardin - Harris - Harrison - Hartley - Haskell - Hays - Hemphill - Henderson - Hidalgo - Hill - Hood - Hopkins - Houston - Hunt - Hutchinson - Jackson - Jasper - Jeff Davis - Jim Wells - Johnson - Jones - Karnes - Kaufman - Kendall - Kent - Kerr - Kimble - Kinney - Knox - Lamar - Lampasas - La Salle - Lavaca - Lee - Leon - Limestone - Lipscomb - Live Oak - Llano - McCulloch - McLennan - McMullen - Madison - Marion - Mason - Maverick - Medina - Menard - Midland - Milam - Mills - Mitchell - Montague - Montgomery - Moore - Morris - Motley - Nacogdoches - Navarro - Newton - Nolan - Oldham - Palo Pinto - Panola - Parker - Pecos - Polk - Potter - Rains - Reagan - Red River - Reeves - Refugio - Roberts - Robertson - Rockwall - Runnels - Rusk - Sabine - San Augustine - San Jacinto - San Patricio - San Saba - Schleicher - Scurry - Shackelford - Shelby -

Smith - Somervell - Starr - Stephens - Stonewall - Tarrant - Taylor - Throckmorton - Titus - Tom Green - Travis - Trinity - Tyler - Upshur - Uvalde - Val Verde - Van Zandt - Victoria - Walker - Waller - Washington - Webb - Wheeler - Wichita - Wilbarger - Williamson - Wilson - Wise - Wood - Young - Zapata - Zavala

Show this information as [XML] - [JSON]

Mineral Resources On-Line Spatial Data

Catahoula Formation

Catahoula Formation

State	Texas
Name	Catahoula Formation
Geologic age	Phanerozoic | Cenozoic | Tertiary | Oligocene
Original map label	Oc
Comments	Crystal City-Eagle Pass Sheet (1976), upper member, Chusa Tuff Mbr is tuffaceous mudstone and sand and sandstone about 180 ft thick. next member descending is Soledad Volcanic Conglo. Mbr, abdt. pebbles, cobbles, and boulders up to one foot in size, rhyolite, trachyte, trachyandesite, thickness up to 75 ft; Fant Tuff Mbr, lowest mbr., tuff, claystone, and sandstone about 600 ft thick. Catahoula Fm. 120-300 ft thick on Seguin Sheet (1974) thins northward. In East Texas and Gulf Coast to Rio Grande: Mudstone and sand. Upper 300-500 ft mudst., tuffaceous, sandy, lt. gray, weathers dk gray. Some bentonitic clay. Lower 10-80 ft quartz sand, coarse grained, grains polished, opal cement common; fossil wood abdt. forms cuesta. Thickness 300-600 ft.
Primary rock type	mudstone
Secondary rock type	sand
Other rock types	tuff; sandstone; conglomerate
Lithologic constituents	Major Sedimentary > Clastic > Mudstone *(Bed)* Unconsolidated > Coarse-detrital > Sand *(Bed)* Minor Sedimentary > Clastic > Conglomerate *(Bed)* Incidental Igneous > Volcanic > Felsic-volcanic > Trachyte Igneous > Volcanic > Felsic-volcanic > Rhyolite Sedimentary > Clastic > Mudstone > Claystone > Bentonite *(Bed)*

Igneous > Volcanic > Mafic-volcanic > Andesite
(Pyroclastic, tuff)

Map references Bureau of Economic Geology, 1992, Geologic Map of Texas: University of Texas at Austin, Virgil E. Barnes, project supervisor, Hartmann, B.M. and Scranton, D.F., cartography, scale 1:500,000

Unit references Bureau of Economic Geology, 1976, Crystal City-Eagle Pass Sheet, Geologic Atlas of Texas, University of Texas, Bureau of Economic Geology, scale 1:250,000.

Bureau of Economic Geology, 1967, Palestine Sheet, Geologic Atlas of Texas, Bureau of Economic Geology, University of Texas at Austin, scale 1:250,000.

Counties Angelina - Atascosa - Bee - Brazos - DeWitt - Fayette - Gonzales - Grimes - Jasper - Karnes - Live Oak - McMullen - Newton - Polk - Sabine - Trinity - Tyler - Walker - Washington - Webb

Show this information as [XML] - [JSON]

Mineral Resources On-Line Spatial Data

Deweyville Formation

Deweyville Formation

State	Texas
Name	Deweyville Formation
Geologic age	Phanerozoic | Cenozoic | Quaternary | Pleistocene Holocene (?)
Original map label	Qd
Comments	sand, silt, clay, and gravel. locally indurated with calcium carbonate (caliche); includes point bar, natural levee, stream channel, and locally, Recent and older sand dune deposits; surface shows relict meanders of much larger radius of curvature than those of present streams; thickness 50+ ft. Present at places along Guadalupe, Nueces, Jacinto, Trinity, Neches, and Sabine Rivers.
Primary rock type	sand
Secondary rock type	silt
Other rock types	clay or mud
Lithologic constituents	Major Unconsolidated > Fine-detrital *(Bed)* Unconsolidated > Coarse-detrital *(Bed)*
Map references	Bureau of Economic Geology, 1992, Geologic Map of Texas: University of Texas at Austin, Virgil E. Barnes, project supervisor, Hartmann, B.M. and Scranton, D.F., cartography, scale 1:500,000
Unit references	Bureau of Economic Geology, 1975, Beeville-Bay City Sheet, Geologic Atlas of Texas, Bureau of Economic Geology, University of Texas at Austin, scale 1:250,000. Bureau of Economic Geology, 1968, Beaumont Sheet, Geologic Atlas of Texas, Bureau of Economic Geology, University of Texas at Austin, scale 1:250,000.
Geographic coverage	Calhoun - Goliad - Hardin - Harris - Houston - Jackson - Jasper - Jefferson - Jim Wells - Liberty - Live Oak - Madison - Montgomery - Newton - Nueces - Orange - Polk - Refugio - San Jacinto - San Patricio

- Trinity - Tyler - Victoria - Walker

Show this information as [XML] - [JSON]

Appendix H - Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

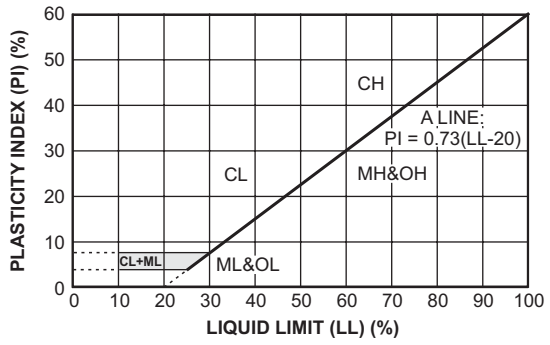
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



TERMS DESCRIBING SOIL CONSISTENCY

Fine Grained Soils		Coarse Grained Soils		
Description	Penetrometer Reading (tsf)	Penetration Resistance (blows/ft)	Description	Relative Density
Soft	0.0 to 1.0	0 to 4	Very Loose	0 to 20%
Firm	1.0 to 1.5	4 to 10	Loose	20 to 40%
Stiff	1.5 to 3.0	10 to 30	Medium Dense	40 to 70%
Very Stiff	3.0 to 4.5	30 to 50	Dense	70 to 90%
Hard	4.5+	Over 50	Very Dense	90 to 100%

Kimley-Horn and Associates, Inc.

Client: Sabine River Authority of Texas
Project: Sam Collins Park - 1B

1B PHASE 1

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Mobilization	1	LS		$ -
2	SWPPP and Erosion Control Allowance	1	LS		$ -
3	Demolition, Removal and Haul Off	1	LS		$ -
4	Asphalt Demolition Haul Off and Removal	1	LS		$ -
5	Fine Grade and Topsoil around Asphalt Demolition	1	LS		$ -
6	Tree Removal	2	EA		$ -
7	Tree Protection	1	LS		$ -
8	Site Grading Allowance	1	LS		$ -
9	Mill and Overlay of Ex. Asphalt	864	SY		$ -
10	Asphalt Type D	7,881	SF		$ -
11	Asphalt Stabilized Base	7,881	SF		$ -
12	Misc. Lane Markings & Pavement Markers	1	LS		$ -
13	4" Concrete Sidewalk	2,000	SF		$ -
14	2" SCH 40 PVC Water Line, All Joints, All Bends, Thrust Restraint, Fittings, All Depths, Trench Safety System, Complete in Place	320	LF		$ -
15	Bore 2" SCH 40 PVC Water Line, All Depths, Complete in Place	53	LF		$ -
16	Waterline Connection Complete and and In Place	1	LS		$ -
17	Hose Bibs	4	EA		$ -
18	2" RPZ Backflow Preventer, Complete in Place	1	EA		$ -
19	Renovation of Existing Shade Pavilion	1	LS		$ -
20	Renovation of Existing Restrooms	1	LS		$ -
21	Renovation Restroom - Chain Link Fence at Septic System	150	LF		$ -
22	Renovation Restroom - Chain Link Bi-Parting Vehicular Gate at Septic System	1	LS		$ -
23	Renovation Restroom - Chain Link Pedestrian Gate at Septic System	1	LS		$ -
24	Concrete Curb at Playground	390	LF		$ -
25	Concrete Mow Strip	90	LF		$ -
26	Playground Equipment	1	LS		$ -
27	Playground Surfacing PIP	4,532	SF		$ -
28	Playground Surface EWF	260	CY		$ -
29	Playground Sand	38	CY		$ -
30	Playground Subdrainage Complete and in Place	1	LS		$ -
31	Playground Toddler Fence and Gate	380	LF		$ -
32	Site Furniture Complete and in Place	1	LS		$ -
33	Landscape Boulders (By Playground, Parking Lot and Wheel Stops)	22	EA		$ -
34	Landscape Moss Boulders (By Playground)	50	EA		$ -
35	Boulder with Plaque on Cut Stone Complete and in Place	1	LS		$ -
36	Water Fountain Complete and in Place	1	LS		$ -
37	Re-Establish Turf with Sod	10,500	SF		$ -
1B PHASE 1 Subtotal					**$ -**

Cost Subtotal:	$	-
Total:	**$**	**-**

1B PHASE ALTERNATE 1

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
1	Remove, Haul off and Replace 4" Concrete Pavement around Pavilion	2,500	SF		
1B PHASE Alternate 1 Subtotal					**$ -**

1B PHASE ALTERNATE 2

2	Mill and Overlay of Ex. Asphalt from Entry Road to Site	3,753	SY		
1B PHASE Alternate 2 Subtotal					**$ -**

Cost Subtotal:	$	-
Total:	**$**	**-**

RENOVATION:

PAVILION: REF L3.03

ITEMS LISTED ARE TO BE BID AS A PART OF THE OVERALL RENOVATION.

1. PRESSURE WASH PAVILION
2. PRESSURE WASH ALL CONCRETE PAVING UNDER AND AROUND PAVILION
3. ADD COLUMN MASONRY CLADDING AT ALL COLUMNS SEE H/L3.01
4. REPLACE METAL R-PANEL ROOF ENSURE COLOR TO MATCH EXISTING
5. ADD 6" GUTTERS AND DOWNSPOUTS
6. ADD 1X8 TO CLAD EDGE OF ROOF
7. REPLACE IN KIND 1" X 6" TONGUE IN GROOVE DECKING UNDER PAVILION ROOF
8. PROVIDE STAINING TO TONGUE AND GROOVE DECKING UNDER PAVILION ROOF. COLOR TO BE SELECTED BY OWNER.
9. RE-COAT STEEL MEMBERS OF PAVILION

RESTROOM: REF L3.03

ITEMS LISTED ARE TO BE BID AS A PART OF THE OVERALL RENOVATION.

1. PRESSURE WASH BUILDING
2. REPLACE IN KIND RESTROOM DOORS AND DOOR FRAMES
3. REPLACE IN KIND RESTROOM WINDOWS AND WINDOW FRAMES
4. PAINT EXISTING ROOF
5. REPLACE IN KIND ALL LIGHTS INSIDE RESTROOMS WITH COMPARABLE LED FIXTURES
6. REPLACE TOILETS AND SINKS WITH STAINLESS STEEL FIXTURES (NEW FIXTURES MUST BE ADA COMPLIANT)
7. REPLACE IN KIND HANDLES, CHANGING TABLES, HOLDERS, AND ADA BENCHES
8. REPLACE IN KIND EXHAUST FAN SYSTEM IN RESTROOMS
9. RE-PAINT EXTERIOR OF BUILDING
10. RE-PAINT WINDOW FRAMES AND GRATES
11. REPLACE IN KIND ALL BUILDING SIGNAGE
12. REMOVE ANCHORS AND PATCH EXTERIOR WALLS
13. PRESSURE WASH FLOOR OF BATHROOMS AND APPLY NEW EPOXY COATING
14. ADD FROST-PROOF HOSE BIBS
15. REPLACE IN KIND DRINKING FOUNTAIN ATTACHED TO RESTROOM BUILDING (NEW DRINKING FOUNTAIN TO BE ADA COMPLIANT)
16. REPLACE IN KIND EXTERIOR PACK LIGHTS ON RESTROOM BUILDING
17. ADD OR REPLACE ELASTOMERIC COATING AROUND SKY LIGHTS AND VENT PENETRATIONS
18. REPLACE IN KIND AND RELOCATE RESTROOM HARDWARE FOR DOORS TO OTHER SIDE OF DOOR TO COMPLY WITH ADA REQUIREMENTS.

MISCELLANEOUS

1. SALVAGE 'SAM R COLLINS' SIGN SECURE STORE
2. INSTALL SAM R COLLINS SIGN ON GRANITE BLOCK, REF. DETAIL E/L3.01
3. KRAFTSMEN AND PLAYWELL ARE BOTH APPROVED MANUFACTURERS FOR THE PLAYGROUND EQUIPMENT.
4. PICNIC TABLES SHALL BE STORED ON SITE FOR OWNER'S USE (CONTRACTOR TO NOT REINSTALL)
5. PLAYGROUND VENDOR TO VERIFY COMPLIANCE OF PLAYGROUND EQUIPMENT.

ALTERNATES

1. REMOVE HAUL OFF AND DISPOSE OF ALL EXISTING CONCRETE AROUND PAVILION; PAVILION SLAB AND ADJACENT SIDEWALKS AND INSTALL NEW CONCRETE PAVILION SLAB AND ADJACENT CONCRETE WALKS IN THEIR ORIGINAL LOCATIONS
2. REMILL AND ADD ASPHALT OVERLAY TO ENTRY ROAD FROM 255 TO PROJECT SITE REF C2.01

MATERIAL LEGEND:

PAVING

P-1 CONCRETE PAVING (STANDARD)

COLOR:	NATURAL GRAY
FINISH:	MEDIUM BROOM FINISH 3000 PSI
CONTROL JOINTS:	SAWCUT (1/4 DEPTH OF CONCRETE) @ REGULAR INTERVALS (TYPICAL JOINT SPACING TO BE EQUAL TO WIDTH OF WALK)
EXPANSION JOINTS:	SEE PLANS FOR LOCATION, 30' MAX.
JOINT SEALANT:	COLOR TO MATCH CONCRETE
APPROVAL:	***SEE SPECIFICATIONS***

P-2 ASPHALT PAVING (AT PARKING LOT)

TYPE:	TYPE D, DENSE GRADED HOT MIX REF. PLAN AND DETAILS FOR DEPTH
APPROVAL:	***SEE SPECIFICATIONS***

P-3 ADA PAVER (AT ADA RAMP)

TYPE:	CONCRETE PAVER
MANUFACTURER:	KEYSTONE OR APPROVED EQUAL
STYLE:	TRUNCATED DOME PAVERS
COLOR:	TO BE SELECTED BY OWNER
SIZE:	4" X 8"
PATERN:	GRID
INSTALL:	4" CONCRETE SUBBASE, REF. DETAILS
SUPPLIER:	KEYSTONE
CONTACT:	DAVE HASNESS (713.467.6436)
APPROVAL:	***CUT SHEET, SAMPLE, MOCKUP***

MISCELLANEOUS

M-1 PLAYGROUND EQUIPMENT PACKAGE

TYPE:	LANDSCAPE STRUCTURES
INSTALL:	PER MANUFACTURER'S DETAILS AND RECOMMENDATIONS PRIORITIZE SUBMITTAL IF THERE ARE LONG LEAD TIMES
SUPPLIER:	LONE STAR RECREATION OR KRAFTSMEN OR PLAYWELL
CONTACT:	VANESSA ZELAYA PH: 281-970-9010 E:VANESSA.ZELAYA@LONESTARRECREATION.COM
COLORS:	REFER TO MANUFACTURER SPECS FOR ALL FINISHES, CONNECTION DETAILS, HARDWARE, AND INSTALL INSTRUCTIONS
APPROVAL:	***CUT SHEETS, COLORS, AND SITE LAYOUT***

M-2 BOULDERS

TYPE:	HICKORY BEAM
INSTALL:	PER DETAIL I/L3.00
SUPPLIER:	APEX STONE OR APPROVED EQUAL
SIZES:	REFERENCE DETAIL
APPROVAL:	***PHOTOGRAPHS, AND SITE LAYOUT***

M-3 BOULDERS AT PLAYGROUND

TYPE:	MOSS BOULDERS
INSTALL:	PER DETAIL D/L3.01
SUPPLIER:	APEX STONE OR APPROVED EQUAL
COLORS:	REFERENCE DETAIL
APPROVAL:	***PHOTOGRAPHS, AND SITE LAYOUT***

M-4 OUTDOOR DRINKING FOUNTAIN

TYPE:	FRONT APPROACH DRINKING FOUNTAIN
MODEL:	440 SMFA
COLORS:	TO BE DECIDED BY OWNER
INSTALL:	PER MANUFACTURER'S SPECIFICATIONS
SUPPLIER:	MOST DEPENDABLE FOUNTAINS, INC. OR APPROVED EQUAL
APPROVAL:	***CUT SHEET***

M-5 POUR IN PLACE PLAYGROUND SURFACING

TYPE:	DURAPLAY OR APPROVED EQUAL
MODEL:	CONFIRM WITH LA PRIOR TO PURCHASE
INSTALL:	PER MANUFACTURER'S SPECIFICATIONS
SUPPLIER:	LONESTAR RECREATION OR APPROVED EQUAL
APPROVAL:	***SAMPLE***

M-6 ENGINEERED WOOD FIBER MULCH

MODEL:	KIDDIE KUSHION OR APPROVED EQUAL
INSTALL:	PER MANUFACTURER'S SPECIFICATIONS
SUPPLIER:	NEW EARTH (281.574.0316) OR APPROVED EQUAL MUST CONFORM WITH ASTM F1292, ASTM F1951, ASTM F2075
APPROVAL:	***CUT SHEET***

M-7 PLAYGROUND FENCING

TYPE:	CUSTOM FABRICATED
HEIGHT:	4'-0"
COLOR:	BLACK VINYL COATED
APPROVAL:	***ONSITE MOCK UP OF INITIAL INSTALL***

M-8 LANDSCAPE BENCHES

TYPE:	B79 SERIES CONTOUR 8' BENCH, PERFORATED STEEL W/ CUSTOM LOGO, THERMO-PLASTIC COATED
HEIGHT:	B79/CW-8RN
FRAME:	IN-GROUND; COLOR: BROWN
SEAT & BACK:	COLOR: FOREST GREEN
INSTALL:	PER MANUFACTURER'S SPECIFICATIONS
SUPPLIER:	PLAYWELL OR APPROVED EQUAL
APPROVAL:	***CUT SHEET***

M-9 TRASH RECEPTACLES

TYPE:	IN-GROUND MOUNTED TRASH RECEPTACLE
MODEL:	CN-R/RN-32 ROUND TRASH RECEPTACLE W/ PLASTIC DOME LID, LINER, & CHAIN KIT
FINISH:	THERMOPLASTIC COATED PERFORATED STEEL W/ SRA LOGO
INSTALL:	PER MANUFACTURER'S SPECIFICATIONS
SUPPLIER:	BJ'S PARKS AND RECREATION PRODUCTS OR APPROVED EQUAL
CONTACT:	KEVIN HANES PH: 281-356-2110 E: KEVIN@BJSPARK.COM
APPROVAL:	***CUT SHEET AND COLORS***
NOTE:	**INSTALL TO MEET OR EXCEED ADA AND TAS REQUIREMENTS**

MISCELLANEOUS CONT.

M-10 PLAYGROUND SAND

TYPE:	SAFE SAND
CLASS:	UNDYED, NATURALLY WHITE
SIZE:	NG
PRODUCT NUMBER:	SAND
NOTE:	MUST COMPLY WITH ASTM F963 STANDARD CUSTOMER SAFETY SPEC FOR TOY SAFETY
APPROVAL:	***SAMPLE***

M-11 CHAIN LINK FENCE AND GATES AT EXISTING SEPTIC

TYPE:	CUSTOM FABRICATED
HEIGHT:	8'-0"
COLOR:	BLACK VINYL COATED WITH PRIVACY SLATS
APPROVAL:	***ONSITE MOCK UP OF INITIAL INSTALL***

M-12 BRASS PLAQUE

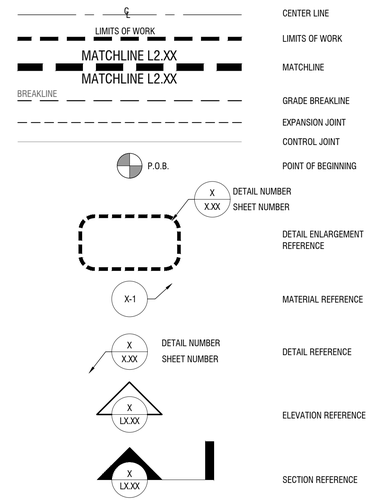
TYPE:	OWNER PROVIDED
INSTALL:	REF DETAIL E/L3.01

M-13 STONE VENEER

TYPE:	OKLAHOMA SUNSET CHOPPED STONE
SIZE:	2-5" HT X 6-18" WIDTH
CONTACT:	5-STAR STONE TYLER TX OR APPROVED EQUAL PH: 903-266-9230
INSTALL:	REF DETAIL H/L3.01
APPROVAL:	***ONSITE MOCK UP OF INITIAL INSTALL***

SYMBOLS LEGEND:

GENERAL



ABBREVIATIONS

735.46 / ME	PROPOSED SPOT GRADE / EXISTING SPOT GRADE
TW	TOP OF WALL
BW	BOTTOM OF WALL
EW	END OF WALL
TF	TOP OF FOOTING
COL	TOP OF COLUMN
TS	TOP STEP
BS	BOTTOM STEP
TR	TOP OF RAMP
BR	BOTTOM OF RAMP
TC	TOP OF CURB
BC	BOTTOM OF CURB
TB	TOP OF BAND
TP	TOP OF PAVEMENT
TGr	TOP OF GRAVEL
TG	TOP OF GRADE
FL	FLOWLINE/INVERT ELEVATION
EJ	EXPANSION JOINT
CJ	CONTROL JOINT
CL	CENTER LINE
POB	POINT OF BEGINNING
FG	FINISH GRADE

No.	DATE	BY
1	8/22/2024	MNW
	ADDENDA 1	

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
11700 KATY FREEWAY, SUITE 800, HOUSTON, TX 77079
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION F-928

REGISTERED LANDSCAPE ARCHITECT
KRISTINA N. MAYER
2988
STATE OF TEXAS

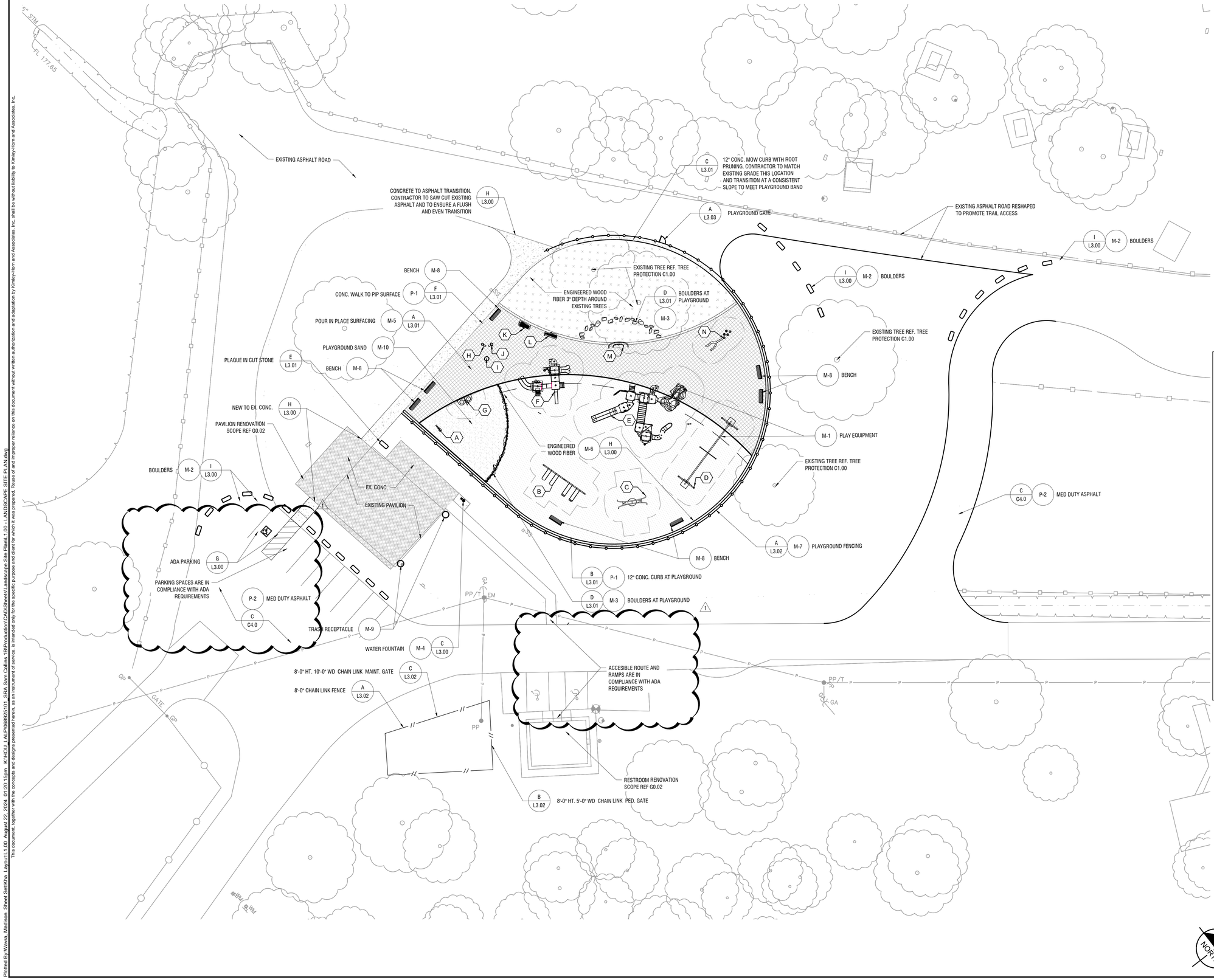
8/7/2024

KHA PROJECT 068925100		DESIGNED BY	ECL
DATE	8/22/2024	DRAWN BY	MNW
SCALE	AS SHOWN	CHECKED BY	ECL

SAM COLLINS PARK
PHASE 1B
PREPARED FOR
THE SABINE RIVER AUTHORITY OF TEXAS
BURKEVILLE TEXAS

MATERIALS LEGEND

SHEET NUMBER
G0.02



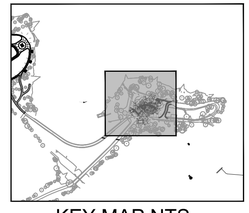
PAVING MATERIAL LEGEND	
	POURED IN PLACE SURFACING REF. DETAIL SHEET A/L3.01
	ENGINEERED WOOD FIBER 3" DEPTH
	ENGINEERED WOOD FIBER FULL DEPTH REF H/L3.00
	PLAYGROUND SAND 12" DEPTH
	STANDARD PROPOSED CONCRETE
	EXISTING CONCRETE AT PAVILION TO BE REMOVED AND REPLACED ALTERNATE 1

PLAY EQUIPMENT SCHEDULE

A	123831	SUPER SCOOPER
B	1180274-01-01	SWINGS - 2 LAP SEATS AND 2 BUCKET SEATS
C	173592	OCCLE SWING
D	194663	ZIP KROOZ 34'
E	1180274-01-01	5-12 PLAY BOOSTER
F	1180274-01-01	2-5 PLAY SHAPER
G	136233	ELEVATED SAND TABLE
H	214444	KUNDU DRUM
I	214445	KETTLE DRUM
J	214443	GOBLET DRUM
K	214441	VIVO METALLOPHONE
L	214438	ANIMATO METALLOPHONE
M	214442	GRANDIOSO CHIMES
N	173596	LOG BALANCE BEAM AND LOG STEPPERS

PLAYGROUND EQUIPMENT INSTALLATION NOTES:

1. CONTRACTOR INSTALLING THE PLAYGROUND MUST HAVE AT LEAST THREE YEARS OF EXPERIENCE IN INSTALLATION OF SIMILAR PLAY EQUIPMENT.
2. CONTRACTOR IS RESPONSIBLE FOR SAFE AND APPROPRIATE INTERIM STORAGE AS REQUIRED TO KEEP ALL EQUIPMENT IN LINK NEW CONDITION PRIOR TO INSTALL.
3. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EQUIPMENT DURING AND AFTER INSTALLATION TO REMAIN IN LINK NEW CONDITION UNTIL FINAL ACCEPTANCE.
4. CONTRACTOR TO PROVIDE ADEQUATE PROTECTION TO PREVENT PUBLIC ACCESS TO AND USE OF THE EQUIPMENT UNTIL FINAL ACCEPTANCE.
5. CONTRACTOR SHALL ENGAGE AND PAY ALL RELATED COSTS FOR A CERTIFIED NATIONAL PLAYGROUND SAFETY INSPECTOR TO CONDUCT A SAFETY AUDIT OF ALL EQUIPMENT AND ACCESS ROUTES BETWEEN AND TO PLAY EQUIPMENT. CONTRACTOR TO SUBMIT 3 COPIES OF THE APPROVED SAFETY AUDIT TO THE OWNER'S REPRESENTATIVE.
6. IF ANY PLAY EQUIPMENT DOES NOT PASS THE SAFETY AUDIT, THE CONTRACTOR AT THEIR OWN EXPENSE SHALL REPAIR OR REPLACE THOSE FAILING ITEMS AS REQUIRED TO PASS THE AUDIT. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOLLOW UP AUDITS AS REQUIRED TO PROVIDE AN APPROVED AUDIT.
7. CONTRACTOR SHALL COORDINATE THE GRADES OF EQUIPMENT WITH SURROUNDING GRADES AND DEPTH OF WOOD FINER MULCH, SAND AND POURED IN PLACE SURFACING TO ENSURE THE EQUIPMENT IS PLACED AT THE PROPER ELEVATION RELATIVE TO THE PLAY SURFACING AND SUBGRADE.
8. CONTRACTOR SHALL LAYOUT THE EQUIPMENT AND CONFIRM THAT THERE ARE NO OBSTRUCTIONS IN THE REQUIRED SAFETY ZONES. THIS LAYOUT MUST BE APPROVED PRIOR TO INSTALLING PLAY AREA CURBS.
9. CONTRACTOR SHALL INSTALL PLAY EQUIPMENT IN FULL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE CPSC AND ASTM REGULATIONS.
10. REFERENCE L.2.01 FOR PLAYGROUND DRAINAGE PLAN AND DETAILS A AND B ON L3.01 FOR PLAY SURFACE DETAILS.



KEY MAP NTS

No.	DATE	BY
1	8/22/2024	MNW
	ADDENDA 1	

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
11700 KATY FREEWAY, SUITE 800, HOUSTON, TX 77079
PHONE: 281-499-6200
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION F-928

REGISTERED LANDSCAPE ARCHITECT
KRISTINA N. NAEGER
2988
STATE OF TEXAS

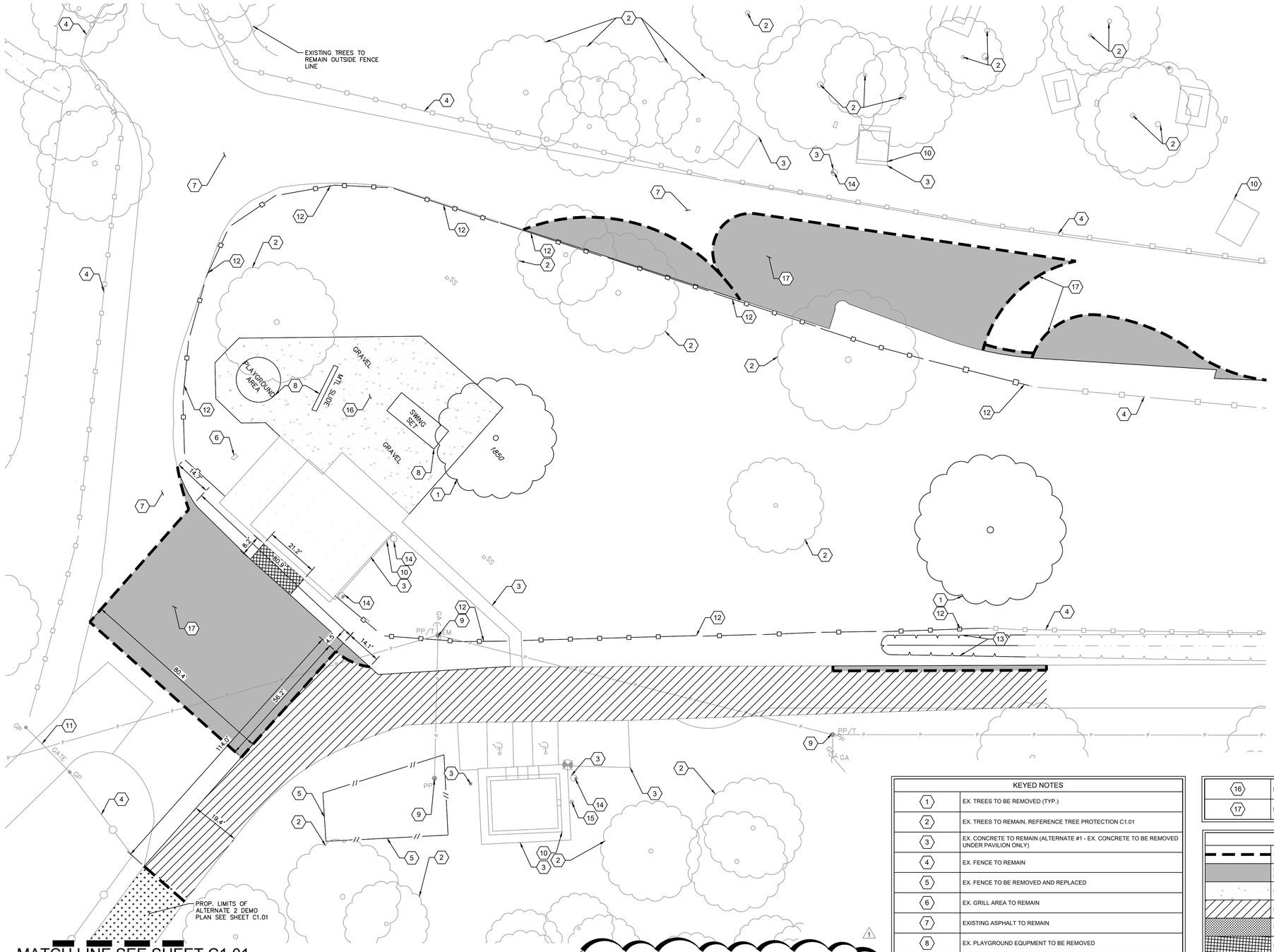
8/7/2024

KHA PROJECT 068925100			
DATE 8/22/2024	SCALE	AS SHOWN	
	DESIGNED BY	ECL	
	DRAWN BY	MNW	
	CHECKED BY	ECL	

LANDSCAPE SITE PLAN

SAM COLLINS PARK
PHASE 1B
PREPARED FOR
THE SABINE RIVER AUTHORITY OF TEXAS
BURKEVILLE TEXAS

SHEET NUMBER
L1.00



NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.

2. LOCATIONS OF PUBLIC AND PRIVATE UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. CONTRACTOR SHALL CALL TEXAS 811 AT LEAST 48 HOURS PRIOR TO COMMENCING DEMOLITION OR CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL CONTACT ANY OTHER UTILITY COMPANIES WHO DO NOT SUBSCRIBE TO THE TEXAS ONE CALL PROGRAM FOR LINE MARKINGS. THE CONTRACTOR BEAR SOLE RESPONSIBILITY FOR VERIFYING LOCATIONS OF EXISTING UTILITIES, SHOWN OR NOT SHOWN, AND FOR ANY DAMAGES DONE TO THESE FACILITIES.

3. ALL EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME THE DRAWINGS ARE PREPARED AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTORS RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK, IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGE DUE TO THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.

4. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.

5. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES AND APPROVED BY THE OWNER.

6. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED PER THE PLANS.

7. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.

8. ALL DEMOLITION WORK OR CONSTRUCTION VEHICLE TRAFFIC WITHIN 10 FEET OF THE CANOPY OF ANY TREE TO BE SAVED SHALL BE CLOSELY COORDINATED WITH TREE PRESERVATION ACTIVITIES.

9. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS FOR EXCAVATION AND TRENCHING PROCEDURES. CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, ETC. AS NECESSARY FOR THESE OPERATIONS, AND SHALL COMPLY WITH ALL OSHA PERFORMANCE CRITERIA.

10. CONTRACTOR TO REMOVE FULL DEPTH OF PAVEMENT (ASPHALT AND CONCRETE). REFERENCE SURVEY FOR LIMITS OF PAVEMENT.

11. CONTRACTOR TO EPOXY ALL EXPOSED REBAR.

12. CONTRACTOR IS RESPONSIBLE FOR MANAGING STORM WATER RUNOFF WITHIN THE PROJECT AREA DURING CONSTRUCTION, INCLUDING PROVIDING MEASURES FOR TEMPORARY CONVEYANCE OF FLOW WHICH MAY CONSIST OF DIVERSION SWALES OR PUMPING OF WATER TO EXISTING STORM OUTFALL LOCATIONS FROM PROJECT AREA TO MATCH EXISTING DRAINAGE PATTERNS PER THE EXISTING CONDITIONS DRAINAGE AREA MAP.

13. CONTRACTOR SHALL SUBMIT A SEQUENCING/PHASING PLAN FOR THE PROPOSED STORM SEWER MODIFICATIONS IN THE SCOPE OF THIS PROJECT TO KIMLEY-HORN FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION. THE STORM SEWER SEQUENCING/PHASING PLAN SHALL INCLUDE THE PROPOSED MEASURES TO BE IMPLEMENTED BY CONTRACTOR FOR MANAGING STORM WATER RUNOFF WITHIN THE PROJECT AREA DURING CONSTRUCTION TO ENSURE RUNOFF IS ROUTED TO MATCH THE EXISTING DRAINAGE PATTERNS.

14. CONTRACTOR TO STOCKPILE ALL DEMOED EXISTING ASPHALT PAVEMENT AND BASE MATERIAL ON SRA PROPERTY WITHIN TWO MILES OF THE SITE, AS DIRECTED BY THE PROPERTY OWNER.

C1.00
C1.01
KEY MAP NTS

KEYED NOTES	
1	EX. TREES TO BE REMOVED (TYP.)
2	EX. TREES TO REMAIN, REFERENCE TREE PROTECTION C1.01
3	EX. CONCRETE TO REMAIN (ALTERNATE #1 - EX. CONCRETE TO BE REMOVED UNDER PAVILION ONLY)
4	EX. FENCE TO REMAIN
5	EX. FENCE TO BE REMOVED AND REPLACED
6	EX. GRILL AREA TO REMAIN
7	EXISTING ASPHALT TO REMAIN
8	EX. PLAYGROUND EQUPMENT TO BE REMOVED
9	EX. POWER TO REMAIN
10	EX. BUILDING TO REMAIN
11	EX. GATE TO REMAIN
12	EX. FENCE TO BE REMOVED
13	EX. DITCH TO BE REGRADED. REF SHEET C3.00 FOR DETAILS
14	EX. TRASH CAN TO REMAIN
15	EX. WATER STRUCTURE TO REMAIN
16	EX. PEA GRAVEL TO BE REMOVED
17	EX. ASPHALT TO BE REMOVED

LEGEND	
	CONTRACTOR TO SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT
	EXISTING PAVEMENT TO BE REMOVED. CONTRACTOR TO REMOVE FULL DEPTH OF PAVEMENT.
	EXISTING PEA GRAVEL TO BE REMOVED
	PROPOSED MILL AND OVERLAY OF EXISTING ASPHALT
	PROPOSED MILL AND OVERLAY OF EXISTING ASPHALT (ALTERNATE 2 PLAN)
	EXISTING CONCRETE TO BE REMOVED

UTILITY COMPANY CONTACTS
NOTE: THE FOLLOWING LIST OF UTILITY CONTACTS IS NOT A COMPLETE LIST OF ALL UTILITY COMPANIES WITH FACILITIES IN THE ARE. IT IS SIMPLY A LIST OF THOSE UTILITY COMPANIES THAT KIMLEY-HORN & ASSOCIATES HAS KNOWLEDGE OF. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL UTILITIES TO BE AFFECTED. NOT JUST THOSE LISTED BELOW.
ELECTRIC PROVIDER- DEEP EAST TX CO OP
WATER PROVIDER - BROOKLYN FRESH WATER

CONTRACTOR NOTES
THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING TREES NOT MARKED FOR REMOVAL.
THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL BOLLARDS AND CONCRETE POSTS
ONCE REMOVED, PEA GRAVEL ON THE EXISTING PLAYGROUND SHALL BE STORED ON SITE FOR OWNER'S USE.

Know what's **below.** **Call** before you dig.

CAUTION!!

EXISTING UNDERGROUND UTILITIES IN THE AREA CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES DUE TO DAMAGE INCURRED DURING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES ON THE PLANS.

DEMOLITION PLAN
Scale: 1:20

No.	DATE	BY
1	ADDENDA 1 8/22/2024	MNW

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
11700 KATY FREEWAY, SUITE 600, HOUSTON, TX 77079
PHONE: 281-558-8700
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION F-928

STATE OF TEXAS
MILES HENNINGTON
139644
LICENSED
PROFESSIONAL ENGINEER
8/7/2024

KHA PROJECT	068925100
DATE	8/22/2024
SCALE	AS SHOWN
DESIGNED BY	ECL
DRAWN BY	MNW
CHECKED BY	ECL

DEMOLITION PLAN

SAM COLLINS PARK
PHASE 1B
PREPARED FOR
THE SABINE RIVER AUTHORITY OF TEXAS
BURKEVILLE TEXAS

SHEET NUMBER
C1.00

DAYLIGHT OUTFALL
REF. DETAIL G/L3.01

10" SLEEVE UNDER EX. ASPHALT ROAD
(10" SLEEVE CAN BE INSTALLED BY OPEN CUT)

4" TO 8" PIPE TRANSITION

HP

SS

PP/T

EM

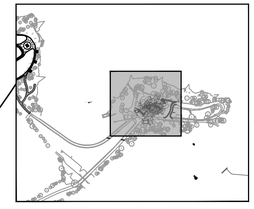
GA

4" ADS PERF. PIPE
20'-0" O.C. REF B/L3.01

CENTER RELATIVE HIGHPOINTS
BETWEEN DRAIN PIPES ENSURE
2% POSITIVE DRAINAGE TO PIPES

CONTRACTOR TO LAYOUT
DRAINAGE PIPES FOR OWNER
APPROVAL

PIPES TO BE LOCATED AFTER
PLAYGROUND INSTALL
CONTRACTOR TO COORDINATE
INSTALL WITH PLAYGROUND
MANUFACTURER



KEY MAP NTS

NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

No.	DATE	BY
1	8/22/2024	MNW

ADDENDA 1

Kimley»Horn

© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
11700 KATY FREEWAY, SUITE 600, HOUSTON, TX 77079
PHONE: (713) 783-3636
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION F-928

REGISTERED LANDSCAPE ARCHITECT
KRISTINA N. MAYER
2988
STATE OF TEXAS

8/7/2024

KHA PROJECT	068925100
DATE	8/22/2024
SCALE	AS SHOWN
DESIGNED BY	ECL
DRAWN BY	MNW
CHECKED BY	ECL

LANDSCAPE DRAINAGE PLAN - ENLARGEMENT

SAM COLLINS PARK
PHASE 1B

PREPARED FOR
THE SABINE RIVER AUTHORITY OF TEXAS

BURKEVILLE, TEXAS

SHEET NUMBER
L2.01

RESTROOM

ITEMS LISTED ARE TO BE BID AS A PART OF THE OVERALL RENOVATION.

1. PRESSURE WASH BUILDING
2. REPLACE IN KIND RESTROOM DOORS AND DOOR FRAMES
3. REPLACE IN KIND RESTROOM WINDOWS AND WINDOW FRAMES
4. PAINT EXISTING ROOF
5. REPLACE IN KIND ALL LIGHTS INSIDE RESTROOMS WITH COMPARABLE LED FIXTURES
6. REPLACE TOILETS AND SINKS WITH STAINLESS STEEL FIXTURES (NEW FIXTURES MUST BE ADA COMPLIANT)
7. REPLACE IN KIND HANDLES, CHANGING TABLES, HOLDERS, AND ADA BENCHES
8. REPLACE IN KIND EXHAUST FAN SYSTEM IN RESTROOMS
9. RE-PAINT EXTERIOR OF BUILDING
10. RE-PAINT WINDOW FRAMES AND GRATES
11. REPLACE IN KIND ALL BUILDING SIGNAGE
12. REMOVE ANCHORS AND PATCH EXTERIOR WALLS
13. PRESSURE WASH FLOOR OF BATHROOMS AND APPLY NEW EPOXY COATING
14. ADD FROST-PROOF HOSE BIBS
15. REPLACE IN KIND DRINKING FOUNTAIN ATTACHED TO RESTROOM BUILDING (NEW DRINKING FOUNTAIN TO BE ADA COMPLIANT)
16. REPLACE IN KIND EXTERIOR PACK LIGHTS ON RESTROOM BUILDING
17. ADD OR REPLACE ELASTOMERIC COATING AROUND SKY LIGHTS AND VENT PENETRATIONS
18. REPLACE IN KIND AND RELOCATE RESTROOM HARDWARE FOR DOORS TO OTHER SIDE OF DOOR TO COMPLY WITH ADA REQUIREMENTS.

EXISTING RESTROOM RENOVATIONS

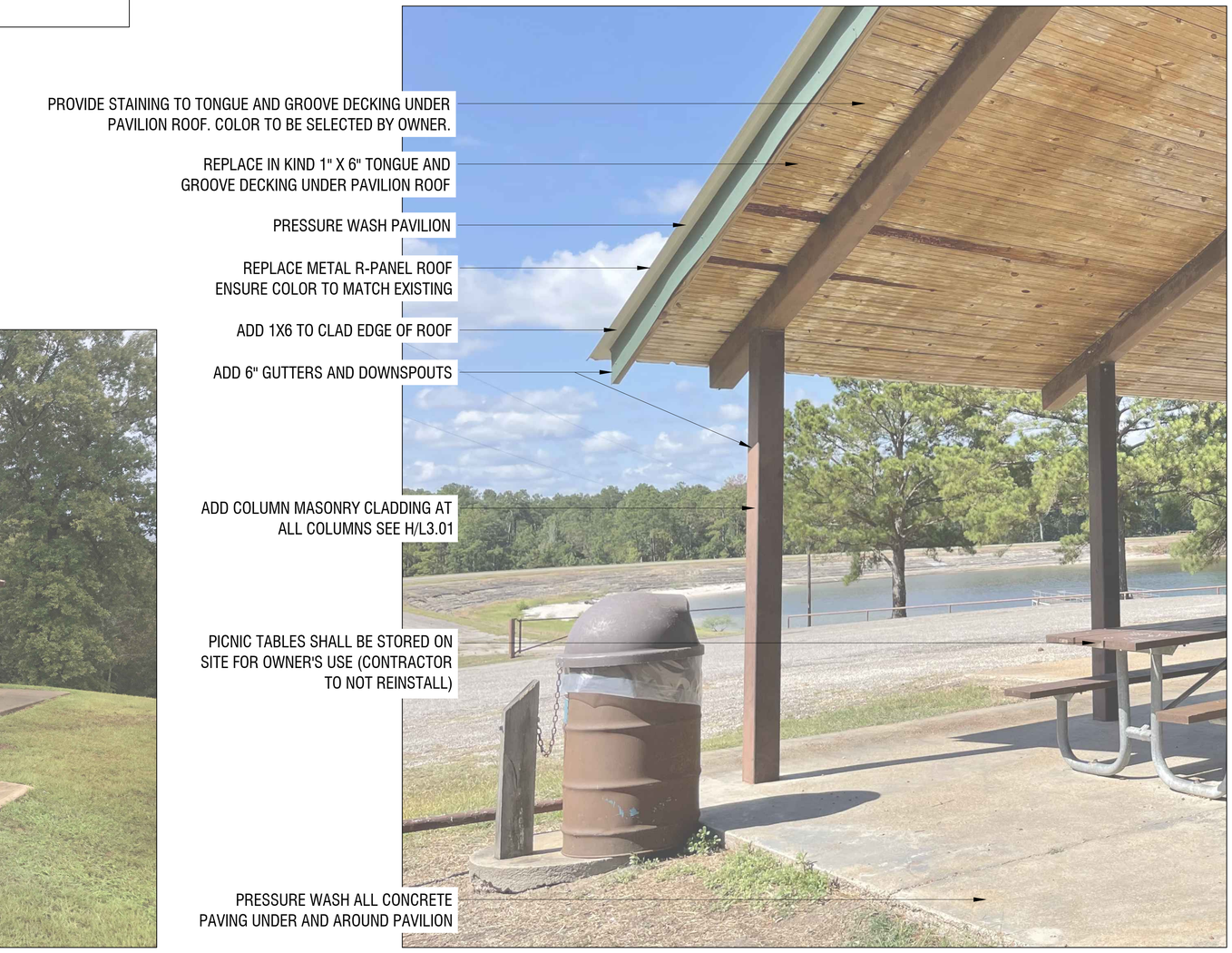
Scale: 1"=1'-0"

B

PAVILION:

ITEMS LISTED ARE TO BE BID AS A PART OF THE OVERALL RENOVATION.

1. PRESSURE WASH PAVILION
2. PRESSURE WASH ALL CONCRETE PAVING UNDER AND AROUND PAVILION
3. ADD COLUMN MASONRY CLADDING AT ALL COLUMNS SEE H/L3.01
4. REPLACE METAL R-PANEL ROOF ENSURE COLOR TO MATCH EXISTING
5. ADD 6" GUTTERS AND DOWNSPOUTS
6. ADD 1X6 TO CLAD EDGE OF ROOF
7. REPLACE IN KIND 1" X 6" TONGUE IN GROOVE DECKING UNDER PAVILION ROOF
8. PROVIDE STAINING TO TONGUE AND GROOVE DECKING UNDER PAVILION ROOF. COLOR TO BE SELECTED BY OWNER.
9. PICNIC TABLES SHALL BE STORED ON SITE FOR OWNER'S USE (CONTRACTOR TO NOT REINSTALL)
10. RE-COAT STEEL MEMBERS OF PAVILION



EXISTING PAVILION RENOVATIONS

Scale: 1"=1'-0"

A

No.	DATE	BY
1	8/22/2024	MNW

Kimley»Horn

11700 KATY FREEWAY, SUITE 600, HOUSTON, TX 77079
PHONE: (281) 558-8700
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION F-928

REGISTERED LANDSCAPE ARCHITECT
KRISTINA N. MAEK
2988
STATE OF TEXAS

8/7/2024

KHA PROJECT 068925100

DATE	8/22/2024
SCALE	AS SHOWN
DESIGNED BY	ECL
DRAWN BY	MNW
CHECKED BY	ECL

LANDSCAPE DETAILS (4 OF 4)

SAM COLLINS PARK
PHASE 1B
PREPARED FOR
THE SABINE RIVER AUTHORITY OF TEXAS
BURKEVILLE TEXAS

SHEET NUMBER
L3.03