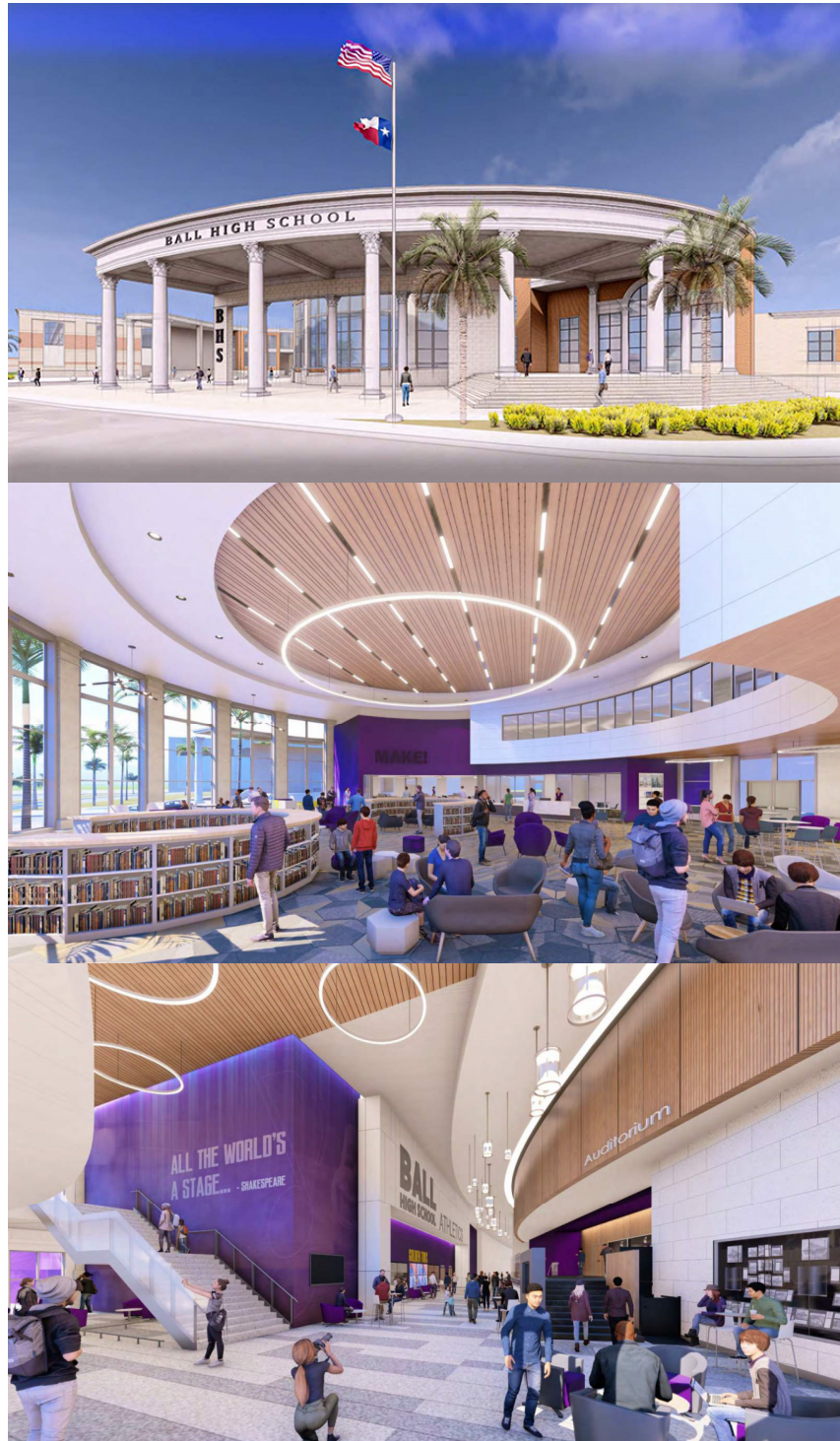


New Ball High School Packages 7C Natatorium and Competition Gymnasium – Foundation Redesign, Pool Redesign, Steel Redesign, Reallocation of Owner Assigned Work & Misc Changes

Published 11/14/2025



November 14, 2025

Galveston Independent School District
3904 Avenue T
Galveston, TX 77550

RE: New Ball Highschool and Natatorium
Project Number: J10001.000

Thank you for the opportunity to collaborate with GISD and the Design Team in the design development of this project. Please find attached the Partial Guaranteed Maximum Price increase of \$7,099,395 for work herein described as GMP 7C for the Natatorium and Competition Gymnasium South Campus Changes only. This increases the Ball South-related GMP work to \$52,979,121. Pricing is conditioned on the receipt of an executed GMP Change Order no later than November 21, 2025.

We look forward to our continued relationship as we construct your project. If you have any questions, please do not hesitate to contact us at any time.

Sincerely,

Matteo J. Alibrio

Gilbane Building Company

Matteo J. Alibrio

Operations Manager

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GMP Summary

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Clarifications

Clarifications

General

1. This Partial GMP excludes all work shown on the documents as follows;
 - All work associated with the Band Practice and Parking areas including flatwork concrete, curbs, curb cuts and removal, reinforcing, proof rolling, base preparation, layout, surveys, SWPP and any other work associated with these areas.
 - Addendum 6 - additional specialties including blocking.
 - Addendum 6 - all landscaping including all hardscaping, earthwork, pavers, seal slabs, mud slabs, mulch, grass, fertilizer, site preparation, trees, shrubs, ground cover, water supply and irrigation.
 - RFI 4 – change stair treads to terrazzo in lieu of Tile.
 - Addendum 6 - All additional storm water curb inlets, pipe size increases, stabilized sand, trenching, backfill, layout and any other requirements for storm water management of the Site.
 - Striping of pavement, including parking, band practice, approaches and directional information.
 - All fencing and gates associated with the project.
 - Pool sump Allowance (requested by the Architect of Record).
 - All work associated with bridge column covers including all finish paint, fireproofing, flashings, framing or sheathing of the bridge support columns.
 - Gymnasium Bleachers substructure and any modifications or additions to the racker beams previously awarded.
 - All steel required by the GFRC Supplier and Installers to properly install the GFRC at the Entry Canopy and Bridge.
 - Providing temporary sewer or permanent sewer for the Ball High South Renovation Project.
 - Addendum 6 – Changed Mechanical Requirements.
 - Addendum 9 - Complete

It is expressly understood that previously shared estimates for the items above are subject to price changes and escalation. All work not awarded in this GMP and work described above shall be priced as a Change Order to the project. Gilbane Building Company and its Subcontractors cannot guarantee the Schedule attached until all work has been awarded. A substantial completion certificate for Ball South can not be granted without the timely award of the work exclusions listed above.

2. Substantial Completion for Phase 2 is September 10, 2027. For more detailed schedule information and assumptions, see the attached detailed project schedule. This includes a start date for Demolition of February 16, 2026. Preparatory work may begin January 6, 2026.
3. The GMP does not include acceleration or related premium time for weather delays. Construction hours are assumed to be 1st shift other than occasional off-hours work to accommodate tie-ins or shutdowns / connections of major systems.
4. The GMP is based on Gilbane Building Company prequalified Trade Contractors and suppliers as indicated in Section 1 GMP Summary.
5. The Guaranteed Maximum Price (GMP) excludes the management or coordination of any contractors or subcontractors operating within or outside the defined permit areas or without a Gilbane Building Company Subcontract Agreement. All areas identified within the approved permit scope shall be

exclusively awarded to Gilbane Building Company. These areas may not be withheld or reassigned to separate contracts or entities outside of Gilbane's purview.

6. Rejection of a bid of a Trade Contractor used for the GMP, by the Owner, will require an adjustment to the GMP value to accommodate the next lowest responsible proposer.
7. This is not a line item GMP. Individual line-item savings within the GMP will be addressed in accordance with the contract.
8. A Contractor Construction Contingency is included in our cost. This contingency is intended for Gilbane's exclusive use for any items constituting Cost of the Work which are not the basis of a Change Order.
9. No Owners Contingency Allowance is included in this GMP at the Owners request. We recommend the Owner carry an Owner's Contingency of 4% outside of our GMP for design progression and changes not shown in the "For Proposal Drawings".
10. No costs or allowances are carried in this GMP for Emergency 1st Responder Broadcast System. If required by AHJ, the Owner shall pay all costs associated with this system.
11. All statements and lists of exclusions documented in previous GMP's and not shown in this document, shall still govern unless noted otherwise within this GMP 7C.

Insurance and Taxes

Insurance and taxes are clarified as follows:

Insurance and Taxes	Included	Not Included
Gross receipts tax.		*
Sales tax.		*
Subcontractor Default Insurance is included in lieu of Trade Contractor bonding at a fixed rate of 1.3% of subcontracted volume.	*	
Performance and Payment bond is included at a fixed rate of \$7.44/\$1000	*	
Builders Risk Insurance Policy is included for Phase 2 Ball South.	*	
General Liability Insurance is included at a fixed rate of 6.95 per 1000.	*	

Project Indirect Costs

Project indirect costs are clarified as follows:

Project Indirect Costs	Included	Not Included
Land acquisition		•
Permit fees are carried as an Allowance	•	
Impact fees, approval fees, licensing fees		•
Off-site improvements other than those indicated on the document set (Adjacent roadway improvements, traffic lights, turn lanes, public utility mains, etc.)		•
Geotechnical Surveys and testing		•
Independent material testing during construction		•
3rd Party Commissioning (In House Commissioning included w/ construction)		•
Environmental remediation costs (Asbestos)		•
Owner required furniture, fixtures and equipment – Including but not limited to loose equipment, furniture, workstations, computers, phones, voice/data/security equipment, indoor plantings and artwork.		•
Utility Infrastructure and Connection Fees (power, gas, telephone, data...)		•

Utility consumption (power, gas, telephone, data...) during construction		•
Offsite utility infrastructure and connection fees (Power, gas, telephone, data, etc.)		•
Stand alone mock-ups and model units that are not part of permanent construction		•
Owner legal and financing costs		•
Other Owner Insurance		•
Select Owner procured materials, including but not limited to: FFE, Artwork, Carpet, Decorative Fixtures...		•
Owner required furniture, fixtures and equipment – Including but not limited to loose equipment, furniture, workstations, computers, phones, voice/data/security equipment, indoor plantings and artwork.		•
Voice, Data, Audio Visual and Security wiring listed as Owner Installed.		•
Voice, Data, Audio Visual and Security Equipment and installation listed as Owner Installed.		•
Radio and distributed antenna systems.		•
Owner equipment		•
Guarantees on equipment operations and certifications on Equipment moved from the existing School to the New Ball High CTE area.		•

Assumptions

01 General Requirements

GENERAL

1. It is assumed that all substitutions and color selections for materials used on the Phase 1 portion of the project are approved for use at the Natatorium and Gymnasium. Based on the start date, it should be assumed that certain material selections will not be available. All cost increases based on discontinued materials will be paid for by the Owner.
2. Pricing is based through Addendum 8. Later released document (For Construction) sets are excluded. As the documents utilized for the GMP have not been reviewed or approved for Permit by the City of Galveston. All costs associated with changes made to the documents outside of the "For Proposal Documents" shall be borne by the Owner.
3. Certifications and activities for Commissioning, LEED, WELL, material sorting and weights or other standards are excluded. TAB by Owner.
4. Background checks or badging are excluded from this GMP.
5. Gilbane will endeavor to identify long lead items that have potential to push scheduled dates. If material availability issues are identified, Gilbane will propose equivalent materials and equipment, if available, with better availability in efforts to improve our schedule dates.
6. Renderings are included for information purposes only. Elevations, Finish Schedules, Door and Hardware Schedules and floor plans are the only basis of this GMP. Renderings are not included.
7. All monument signs are excluded from this project and are assumed to be by the renovation Team for Ball High South.
8. The Structural Engineer shall provide an Engineered design for supporting and bracing any areas of the existing structure to remain that require bracing. Note GR-4 Sheet S-001 is not recognized in this GMP.
9. All information in Addendum 7R1 is voided and replaced with Addendum 7R2. 7R1 is excluded from all GMP's.
10. Architect and its Consultants shall provide a complete set of dimensional documents.
11. Flood Loads listed on Sheet S-001. Building Finish Floor Elevations are less than the 13.50 FF in depressed areas, by design, and will not comply with Note CD-8 on Sheet S-001.
12. Torsion loads are assumed to be included in Structural design and adequate for MEP and other loads imposed.
13. Window washing Tiebacks and Davit Systems are excluded from this GMP.
14. It is assumed that all designs for this project have been coordinated with structural design to withstand the required

capacities for specified equipment, materials and wind uplift.

15. Existing Building stability and structure are the responsibility of the Architect of Record.
16. Special Inspections noted on Sheet S-004 shall be the responsibility of the Owner.
17. It is assumed that all requirements for TDI Windstorm are incorporated into the Design Documents and GBC is not to assume additional costs for windstorm requirements not specifically stated in the plans and specifications.
18. Windstorm (TDI) submittal review and approval shall be concurrent with the Architect and Engineers review and not be withheld or untimely.
19. Demo of the existing brick, new exterior skin and window opening on the North Elevation, facing Avenue O, of the existing school which connects to the new building, is excluded from this GMP.
20. Allowances included in this GMP are not inclusive of all work that may be required. Any additional work required shall be performed as a Change Order.
21. Relocation of the Gas Service shown is not included in this GMP. All work shall be by Owner.

Allowances - There are NO ALLOWANCES included in this GMP 7C

SPECIFIC EXCLUSIONS FROM THE PRICING

1. Haul Off of any soils. All cut soils are to be used on the site. GBC assumes this project to be a balanced site.
2. Relocation of any existing utilities not shown.
3. Any changes to technology outside of RFI 5.
4. Stainless steel connections at Glue Laminated Beams in pool area. Connections to be galvanized.
5. All Fire Alarm, Security, Data and Fire Suppression shown in the Contract Documents for the Existing Building (Renovation Area) is excluded from our GMP as agreed to by GISD. The cost and work is to be included in the renovation project.
6. Delays to the Project Schedule for easements not abated by the Owner or its Agents.
7. Registered Survey.
8. Health Department Permit Fees.
9. Testing of any City Required Tests or Project Required Tests/Inspections.
10. Maintenance of lawns before work begins in an area.
11. Utility Disconnects & Fees.
12. Road Closure Fees.
13. Parking Fees.
14. Acceleration caused by weather or Owner schedule impacts.
15. Domestic Water Fees.
16. Water Meters
17. Electrical Service Fees.
18. Electrical Meters.
19. Electrical Main.
20. Temporary utilities or services for Existing Buildings to remain.
21. Electrical Transformers.
22. Emergency Generators.
23. Vape Detection.
24. Dumpster Enclosures.
25. Raising the pavement elevation or repaving of Ave O.
26. Restriping of Ave O or 43rd Street.
27. Window Washing Equipment, Tie Backs or Davit Systems.

28. Additional structural bracing for MEP Loads.
29. City requested changes to the bid documents after submitted for Permit.
30. Painting of exposed fire suppression lines.
31. Delegated Design is restricted to the following: Steel Connections, Curtain Wall, Light Gauge Framing, Fire Suppression and Fire Alarm. No other activities or Trades are included in the current GMP pricing as Delegated Design.
32. Delegated design for all piping extended to the existing facility, scheduled for renovation, is not included in the Fire Suppression and Fire Alarm scheduled for this project. The Architect of Record shall supply sizing and scheduling of any required piping or zoning prior to the GMP being approved. Any adjustments in pricing for changes resulting in this late information shall be at an additional cost.
33. Changes in law or policies and resulting costs and schedule impacts are not reasonably foreseeable, calculable, or identifiable, and, as such, all such resulting costs and impacts are hereby specifically excluded from this GMP. More specifically, this GMP excludes, without limitation, costs and schedule impacts resulting from labor shortages, design delays, increased labor costs, supply chain disruptions, increased or new taxes or tariffs on goods and materials, resulting delivery delays, and other similar impacts resulting from such changes in laws or governmental policies. An Owner Escalation Allowance in the amount of \$515,735 has been removed from all GMP's at the direction of the Owner.
34. Delete the first sentence current of the AIA A133 Standard Form of Agreement Between Owner and Construction Manager as Constructor Section 6.1.2.1. Replace this sentence with the following language: The Construction Manager's General Conditions Fee for Phase 2 shall be converted to a lump sum value of \$ 2,026,013.00 (7A) plus \$50,000.00 (7C) based on a start of construction date of January 5, 2026, and Substantial Completion date of September 10, 2027. Increases in time beyond the Substantial Completion date caused by Change Orders that expand either the scope of the work beyond the original scope contained in the authorized GMP packages and other matters for which the Construction Manager is entitled to additional contract time by Change Order under the Contract Documents, or all other approved time extensions in accordance with Article 8 of the General Conditions shall be compensated on a per-diem basis as agreed upon by Owner and Construction Manager.
35. Coordination and Modeling of the Contract Documents between disciplines shall be by the Architect and their Consultants.
36. Gilbane Building Company nor the Trade Contractors accept Design Liability for Design Assist or Design Build for this project.
37. Gilbane Building Company shall rely on the Geotechnical Report provided during the proposal period and contracted for by the Owner, to be correct and accurate and represent the complete subsoil conditions at the project site. Given that the Geotechnical Report. Any changes or clarifications in the Final Document will be considered a Change Order.
38. Window Schedule is not provided on documents. Window Schedule Remarks 1 thru 5 are excluded from the GMP.

ESTIMATE – BY SYSTEM

01 SITEWORK DEMOLITION

1. Subsurface obstructions are Excluded.
2. No overlays of the existing foundation have been supplied to GBC. Foundations will only be demolished at -2' from existing grade.
3. Delays to the start date for salvage of existing furnishings is not included in this GMP.
4. Storage and salvage materials is Excluded.
5. Utilities scheduled for Demolition by Others is Excluded.
6. Utilities not identified on the Project Drawings are Excluded.
7. All hazardous waste other than Asbestos identified in the current work area and not quantified in the Owners Consultant's report is Excluded.
8. Demolition of Gas Manifold and Utility Meter feeding the existing buildings is by Owner.
9. Hot Water will not be available to the Existing Campus during construction of this project if the existing Gas manifold will need to be relocated. No temporary gas is included in our cost to feed the existing boilers or other equipment to remain.
10. No refurbishment of manholes or other City Required items not shown on this set of documents are included.

11. Providing Temporary, Domestic Water, Electrical Power and Sewer Services is not included in this GMP.

02 SITE PREPARATION AND IMPROVEMENTS

1. All work associated with the band practice area, parking and approaches is excluded from this GMP
2. Contaminated soils removal on the Project Site are Excluded.
3. Soil testing and compaction are Excluded.
4. All spoils shall remain on the current site and grades will need to be adjusted by the Civil Engineer.
5. Grading and construction of Building pads is Included.
6. Impact fees are excluded.
7. Work in existing easements is Excluded.
8. We assume reuse of existing soils is acceptable with no imported soil to establish new grades.
9. Work delays due to permitting issues are excluded.
10. Subsurface obstructions regarding existing foundations are excluded from the GMP. Obstructions shall be charged as an additional cost to the GMP.
11. All sitework, landscaping and hardscaping is excluded along 41st Street, O Street and Bernardo De Galvez Ave where future renovations may occur.
12. If Soil Density Tests performed after the demolition result in additional removal and replacement of soils, this shall be performed as an additional service and all costs shall be born by the Owner.
13. Dewatering is included for 3 months. Any additional Dewatering will be at an additional cost.

03 Excluded

1. Contaminated materials are Excluded.
2. Asbestos is included only as noted in the original Owners report and only for the immediate area scheduled for the complete demolition in this Phase of work. Abatement is excluded where enabling work is to occur.
3. Asbestos testing is Excluded.
4. All Hazardous and special waste materials abatement, testing and disposal is Excluded.
5. TDSHS ARU Fees are by Owner and Excluded in this GMP.
6. Impact fees are excluded.

04 HARDSCAPE/LANDSCAPE

1. EXCLUDED .

05 METALS

1. Handrails at bridge stairs shall match Phase 1 railing systems.

06 Soil Improvements/Auger Cast Piles

1. Auger cast piles at the Pool ONLY are included in this GMP.
2. All Building work to the existing structure is Excluded.

07 STRUCTURE

1. Coordination of Structural work with Architectural, Civil, MEP Documents shall be the responsibility of the Architect of Record.
2. S-001 Note GR-2 is not recognized in this GMP.

08 EXTERIOR WALLS

1. N/A

09 FINISHES

1. N/A

10 MISCELLANEOUS METALS

1. We included Misc. Metal as shown on the documents only. No allowances have been carried. We recommend that the Owner or Architect carry an allowance for this work.

11 ROUGH & FINISH CARPENTRY

1. Included only as shown.

12 FURNISHINGS

1. No window coverings are included in our GMP.
2. All FFE is by Owner.

13 INTERIOR FINISHES

1. N/A

14 SPECIALTIES

1. N/A

15 EQUIPMENT & FURNISHINGS

1. N/A

16 SPECIAL CONSTRUCTION

1. A conventional Shot Crete/Plaster pool is included in the GMP.
2. Two Additional lanes in Pool have been added. Additional Coffe Dam, Backfill and excavation has been included in this GMP.

17 CONVEYING

1. N/A

18 FIRE PROTECTION

1. Painting of Fire Suppression pipe is excluded in all areas.

19 PLUMBING

1. Capping of existing mechanical and plumbing lines not shown are Excluded.

20 HVAC & BUILDING CONTROLS

1. Capping of existing mechanical lines or ductwork not shown are Excluded.
2. All controls modifications that may be needed for the existing systems to remain are not included.

21 COMMUNICATIONS, A/V & SECURITY

1. All interactive displays are excluded and shall be by Owner.

22 ELECTRICAL & LIGHTING

1. Site/Parking lot lighting is excluded.

OTHER COSTS – BY OWNER, (NOT INCLUDED IN GMP)

1. Off-site improvements (Adjacent roadway Improvements, traffic lights, striping, turn and bike lanes, public utility mains, etc.)
2. Salvage of furnishings shall be by Owner and be completed before February 14, 2026. Demolition Contractor has the right to all Metals in the structure to be demolished.
3. Professional service fees and reimbursables (Architect, Engineering, Consulting, Owner's Representative, etc.)
4. Road Closures.
5. Geotechnical Surveys and all testing outlined in the Specifications.
6. Material testing
7. Regulatory and plan review fees.

8. Utility Tap Fees (sanitary sewer, domestic water and storm water) are by Owner.
9. Utility Taps within 5' of foundations.
10. All Fees for AT&T, CenterPoint and Natural Gas shall be by Owner.
11. Owner required furniture, fixtures and equipment – Including but not limited to loose equipment, furniture, workstations, computers, phones, voice/data/security equipment, TV's and Monitors, indoor plantings, signage and artwork.
12. Final Cleaning after furniture installation.
13. Environmental testing and Monitoring costs.
14. Disconnection or relocation Fees for Utilities.
15. Offsite utility infrastructure and connection fees (Power, gas, telephone, data, etc.) are by Owner.
16. Utility charges during construction are by Owner.
17. Expediting fees for materials, equipment, and overtime/nightwork manpower to meet schedule are by Owner.
18. Owner Contingency is excluded.

Document Enumeration

The following documents were used in the preparation of this GMP.

Plans & Other Documents

1. PBK Architects – 4/28/2025 Package 7C

DRAWING LOG



South Building - PKG 7 - South - Addendum 07 (09/12/25)

Drawing No.	Drawing Title	Revision	Drawing Date	Received Date	Set
Architectural					
AQ6.0	POOL SYSTEMS SCHEMATIC	1	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
Aquatics					
AQ0.0	POOL REFERENCE PLAN	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ1.0	POOL FOUNDATION PLAN	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ1.1	POOL STRUCTURAL PLAN	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ1.2	POOL STRUCTURAL DETAILS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ1.3	POOL STRUCTURAL SECTIONS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ2.0	POOL PLAN & SECTIONS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ2.1	POOL COURSE LAYOUTS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ2.2	POOL TIMING SYSTEM LAYOUT	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ2.3	POOL DETAILS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ2.4	POOL DETAILS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ3.0	POOL LOCATION POINT PLAN	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ4.0	POOL SUCTION PIPING PLAN	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ4.1	POOL RETURN PIPING PLAN	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ5.0	POOL MECHANICAL ROOM PLAN & SECTIONS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ5.1	SURGE TANK PLAN & SECTIONS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ5.2	POOL MECHANICAL DETAILS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ5.3	POOL MECHANICAL DETAILS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)
AQ5.4	POOL MECHANICAL DETAILS	2	09/12/2025	09/12/2025	South - Addendum 07 (09/12/25)



South Building - PKG 7 - South - Addendum 07R2 (09/16/25)

Drawing No.	Drawing Title					Revision	Drawing Date	Received Date	Set
Aquatics									
AQ1.0	POOL FOUNDATION PLAN					3	09/16/2025	09/16/2025	South - Addendum 07R2 (09/16/25)
AQ1.1	POOL STRUCTURAL PLAN					3	09/16/2025	09/16/2025	South - Addendum 07R2 (09/16/25)
AQ1.2	POOL STRUCTURAL DETAILS					3	09/16/2025	09/16/2025	South - Addendum 07R2 (09/16/25)
AQ1.3	POOL STRUCTURAL SECTIONS					3	09/16/2025	09/16/2025	South - Addendum 07R2 (09/16/25)

**REPORT
SOILS INVESTIGATION**

**PROPOSED SOUTH BUILDING ADDITION- BALL HIGH SCHOOL
AT NWC OF AVENUE O AND JACK JOHNSON BLVD, GALVESTON, TX**

FOR:

**MR. JAMES C. GRANT
OPERATIONS CHIEF-GALVESTON ISD**

C/O: ZERO/SIX CONSULTING LLC

**Report No.: 2508/128
Date: September 17, 2025**



COASTAL TESTING LABORATORIES, INC.

1217/1221 Georgika Ave. • 713-477-0121 • FAX 713-477-2277 • P.O. Box 148 • DEER PARK, TEXAS 77536

September 17, 2025

Mr. James C. Grant
Operations Chief-Galveston ISD
Galveston ISD
3904 Ave T, Galveston TX, 77550
☎ (409) 766-5150

Report No.: J25-128
Sent via email: jamesgrant@gisd.org

c/o: Zero/Six Consulting LLC
Mr. Zachary Johnson

Sent via email: zjohnson@z6consulting.com

**GEOTECHNICAL EVALUATION FOR THE PROPOSED SOUTH BUILDING
ADDITION- BALL HIGH SCHOOL
AT NWC OF AVENUE O AND JACK JOHNSON BLVD, GALVESTON, TX**

Dear Mr. Grant:

We are pleased to transmit the results of our soils investigation performed for the proposed development at the above referenced project. The enclosed report contains the results of our field investigation and laboratory testing and classification. Our efforts were directed toward soil classification and strength assessment to support foundation design.

In addition to our soils engineering capabilities, we can also provide complete concrete and asphalt testing and supervision services and Phase 1 & Phase 2 environmental studies. We would be pleased to work with you during the construction phase of this project.

We appreciate the opportunity to assist you in performing this study. If we can be of further assistance for this study or others, please contact us.

Yours very truly,
COASTAL TESTING LABORATORIES, INC.
Firm Reg: # 4132.

Noor Alam, M.Sc., P.Eng., P.E.
Principal Engineer
P. E#. Lic. # 155186



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1.0 INTRODUCTION

This report presents the results of a preliminary geotechnical investigation of the proposed south buildings addition, located at 4115 Avenue O Galveston, TX 77550. A new competition gym and a new natatorium building will be constructed in the middle portion of the existing building after demolition. Coastal Testing Laboratories (CTL) drilled two soil borings for this project. However, CTL also incorporated soil boring log data, drilled by others near the proposed South Building Addition, to prepare this preliminary report.

The purposes of the investigation were to:

- 1) determine the type and condition of the soil materials at the site;
- 2) determine subsurface index and strength properties of the materials;
- 3) determine groundwater conditions; and
- 4) provide recommendations for design and construction of the foundation for the proposed Building Addition.

We understand that a north middle portion of the existing building will be demolished to facilitate the proposed south building addition. The soil stratigraphy below the footprint of the existing building may vary from the boring locations. It should be noted that foundation elements of existing structures should be removed or cut off at least 2 ft below finished grade or 2 ft below the new structural elements, whichever is deeper. All abandoned utility lines should be either removed or positively sealed to prevent possible water seepage into subgrade soils. Coastal Testing Laboratories should be contacted to verify the subsurface soil condition during construction excavation.

Two (2) borings were drilled to a depth of twenty (20) feet utilizing a truck mounted and portable drilling rig on March 10, 2025. The approximate site location is presented on Plate 1.

The Finished Floor Elevation (FFE) is not provided to Coastal Testing, Inc. at this time. Recommendations provided hereafter are referenced from the existing grade.

2.0 SCOPE OF WORK

The scope of our services was specified by the client as follows:

- Drilling, sampling two (2) borings to a depth of twenty (20) feet in the proposed south building addition.
- Drill and obtain continuous soil samples up to a depth of ten (10) feet, and then at five (5) foot intervals thereafter to the borings' termination depth.
- Perform granular soil sampling utilizing the Standard Penetration Test, which consists of driving a split spoon sampler 18 inches into the ground using a 140-pound weight falling 30 inches

(ASTM D-1586). The number of blows necessary to drive the split spoon the final 12 inches will be recorded. Cohesive soils will be sampled using a thin-walled sampler (Shelby Tube) hydraulically pushed into the soil (ASTM D-1587).

- Performing laboratory tests on select, representative soil samples to develop the engineering properties of the soil. These tests may include pocket penetrometers, unconfined compression, present moisture content, percent passing #200 sieves, dry densities, Atterberg Limits, and swell tests, as deemed appropriate.
- Utilizing observations made in the field and the results of limited laboratory tests, Coastal Testing will author a report that will include the following:
 - Soil stratigraphy: soil encountered to a depth of 30 feet
 - Groundwater conditions and groundwater control during construction
 - Soil heave calculations using the potential vertical rise (PVR) method
 - Boring log information (will include all laboratory and in situ test results)
 - Preliminary suitable foundation design options and recommendations for the South Building
 - Construction considerations and recommendations, as deemed necessary
 - Back-fill material specifications and recommendations
 - Provided recommendations for retaining wall soil parameters.
- Incorporating all of the above into a geotechnical engineering report which is performed under the direction of, and signed by, a professional engineer registered in the State of Texas.

3.0 SUBSURFACE STRATIGRAPHY

3.1 Site Conditions

The subject site is located at 4115 Avenue O Galveston, TX 77550. The project site is occupied by several interconnect school buildings and is improved with paved and landscaped area.

3.2 Local Geology

Based on a review of literature and public maps in our library, as well as our experience, the project site lies within the Coastal Prairies Province of the Gulf Coastal Plains Physiographic Region of Texas and is underlain by soils common to the Beaumont Formation.

The Beaumont Formation is late Pleistocene in age. The Beaumont Formation outcrop covers a large part of the lower coastal plain except where cut by modern river valleys or covered by Holocene wind-blown sand in south Texas. The Beaumont Formation is composed of clay-rich sediments transected by sandy fluvial and deltaic-distributary channels. The Beaumont Formation also includes isolated segments of coast-parallel, sandy beach ridges known as the Ingleside barrier/strandplain system. The Beaumont depositional episode records a continuation of patterns that developed during deposition of the Lissie Formation including high-frequency, glacio-eustatic, sea-level fluctuations, and dominant fluvial sediment input. At sea-level highstand, the position of the Beaumont Formation shoreline approximately coincided with that of the modern shoreline.

The Beaumont Formation ranges in thickness from a thin veneer in updip areas to about 500 ft near the modern coast, and thickens to the northeast. The Beaumont Formation dips coastward from 1 to 10 ft per mile. Individual sands range from 20 to 50 ft thick, stacking locally to reach 150 ft in thickness. Interbedded muddy intervals are generally of similar thickness to the sands. Thicknesses of individual sands increase updip, whereas thicknesses of individual shales increase downdip..

According to the United States Department of Agriculture (USDA) Web Soil Survey, the surficial soils at the site are described as being Lake Charles clay. The plasticity index varies from low 26 to a maximum of 44.

3.3 Subsurface Conditions

The subsurface conditions were investigated a total of one (1) boring drilled at the subject site. Soil stratigraphy details are presented on the Log of Boring, Plates 3.

Stratum No.	Range* of Depth, ft.	Soil Description and Classification (Based on Unified Soil Classification System)	Plasticity Index
I	0-4 at B-2 13-20 at B-2	POORLY GRADED SAND (SP), loose, dry to damp, dark gray, brown	Non-Plastic
II	4-13 at B-2	FAT CLAY (CH)/ SANDY LEAN CLAY (CL), firm to stiff, dry to damp, dark gray, brown	19 to 35

Note: boring B-1 was terminated at a depth of 2 feet due to encountered obstruction

3.4 Groundwater Conditions

The borings were drilled using a flight auger (dry method) to better assess the groundwater conditions. Groundwater was encountered at a depth of 2 feet during drilling activities on March 2, 2025. However, it is assumed the shallow water is a perched water.

Groundwater fluctuations in an area can be caused by several factors including seasonal rainfall quantity in the area, the presence of wells near the site, the relative location (upstream or downstream) and proximity of the site to any bayous or streams. *The groundwater level should be verified before drilled piers excavation and the commencement of utility construction.*

3.5 Possible Existing Fill

The subject site is improved with an existing building. Considering the site was previously developed there is a possibility that fill may be present in other areas of the site since it was previously developed.

It is difficult to accurately delineate fill soils that are similar to the native soils based on discrete test boreholes. To assess the potential for fill, it is recommended to perform test pits prior to construction. Coastal Testing can assist with a test pit program if desired.

If uncontrolled fill is found during construction, it should be removed from the building areas. The floor slab supported on uncontrolled fill soils are susceptible to differential movements.

- Remove the fill soils from the ground surface to a depth of competent native bearing soils. Place back in loose eight (8) inch lifts and compact each lift to 95% of the maximum dry density as specified in ASTM D-698, or
- Utilize a structural slab with eight (8) inch void.

Please note that the recommendation presented in section 6.0 will supersede this section in foundation areas.

4.0 LABORATORY TESTING

The laboratory testing program was designed and directed towards evaluating the index, physical and engineering properties of the subsoils. Physical properties include Atterberg limits (liquid limits and plastic limits), moisture content for clays, and percent passing #200 sieve for sands. Engineering properties include the shear strength of the soil, compressibility of the soils, and the swell characteristics of the soils. It should be noted that the testing program varies for each project and depends solely on the project budget and emphasis. The tests undertaken in this program included the following:

Laboratory Test	Applicable Test Standard	Number of Test
Atterberg limits	ASTM D-4318 Method B	2
Moisture Content	ASTM D-2216	8
Finer than 75- μ m (No. 200) Sieve	ASTM D 1140	4

Laboratory test results are presented on the Log of Borings, Plates 3 and 4, and. a Key to Log Terms and Symbols is presented in Plate 5. It should be noted that the soils were classified in accordance with the Unified Soil Classification System (ASTM D-2487).

4.1 Atterberg Limits

Select samples were tested to determine the Atterberg Limits following ASTM D-4318-10 (Tex 104E, and 105E). The Atterberg Limit test is used to classify the soil using the Unified Soil Classification System (USCS). The Atterberg Limit test consists of two parts: a liquid limit test and a plastic limit test. The liquid limit equipment setup consists of a brass cup partially filled with soil which is grooved with a specialized grooving tool and then dropped freely from a specified height to the rubber base below at a constant rate of 2 drops per second.

The liquid limit test is performed on soil that has been sieved through the No. 40 sieve and brought to a moisture content that would close the 1/2-inch groove within 20-30 blows for two consecutive tests. The moisture content of the soil is then measured and recorded as the liquid limit. The second part of the tests consists of rolling a remolded sample between the tips of the fingers and a glass plate until transverse cracks appear at a rolled diameter of 1/8-inch. The moisture content of the rolled sample is taken and recorded as the plastic limit.

4.2 Percent Passing the No. 200 Sieve

Select soil samples were tested following ASTM D-1140-00 (Tex 111E) to determine the amount of material finer than the No. 200 sieve for use in classification. An oven-dried sample of material is weighed then washed over a 75-μm (No. 200) sieve, allowing clay and other particles to be dispersed and removed from the soil. The retained material is oven-dried then reweighed. The loss in mass resulting from the washing is calculated as a mass percent of the original sample and is reported as the percentage of material finer than a No. 200 sieve.

4.3 Moisture Content

Moisture content testing was performed on select soil samples to determine the in situ state of moisture of the soil. A fresh sample was weighed before being placed in an oven with a controlled temperature of 203°F and dried back to a constant mass. Upon the drying and reweighing of the sample, the total mass of water lost was recorded. The ratio of the water loss to the dried mass is recorded as the moisture content. This test was performed following ASTM D-2216-10 (Tex 103E).

5.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTIONS

5.1 General

A new competition gym and a new natatorium building will be constructed in the middle portion of the existing building after demolition.

5.2 Foundation Types and Associated Risks

It is our understanding that a north middle portion of the existing building will be demolished to facilitate the proposed south building addition. It is important to account for potential differential movements between the existing building and the proposed new south addition. Proper methods should be implemented to accommodate any potential differential movement that may occur

between the foundation systems of the existing building and the new addition. Additionally, precautionary measures should be taken during construction activities to prevent damage or adverse effects on the integrity of the existing foundation system. Therefore, it is recommended that the new addition should be constructed with the same foundation system. Coastal Testing Laboratories was not provided with the existing building foundation system.

5.3 Foundation Recommendations

Based on the subsurface conditions, anticipated large foundation loads, and information provided, deep pile foundation system are the best foundation systems to be utilized for support of the proposed building addition. Groundwater was encountered at a depth of 2 feet during drilling operations on 03/10/2025, which is happened to be perched water condition. More exploratory soil borings are required to be drilled to obtain a more accurate assessment of groundwater conditions.

Ultimate axial capacities for the design of the foundation can be computed using the static method of analysis. According to this method, ultimate capacity, Q_{ult} , at a given penetration is taken as the sum of the skin friction on the shaft wall, Q_s , and the end bearing at the shaft tip, Q_p , so that:

$$Q_{ult} = Q_s + Q_p = f'D + q \cdot A_p$$

Where D and A_p represent, respectively, the perimeter and the end area of the shaft; and f and q represent, respectively, the unit skin friction per foot of perimeter and the unit end bearing.

The Drilled Shafts were analyzed utilizing the following shaft width:

- 16 inch
- 18 inch
- 20 inch

The calculated axial capacity of drilled shaft is illustrated in appendix Plates 7 and 8.

Notes:

- Slurry method should be utilized during construction due to the encountered of shallow groundwater at a depth of 2 feet below the existing grade.
- The drilled shafts should be founded at least two (2) shafts diameters measured center to center

5.3.1 Lateral Load Analyses of the straight shafts

The following soil parameter should be used in the LPILE to perform the lateral load and deflection (p-y) analyses.

Soil Parameters

Depth	General Soil Type	γ Effective Unit Weight (pcf)	ϕ (deg)	S_u (psf)	K (lb/ft ³)	e_{50}
0-13	Clay	125	0	1500	400	0.007
13-20	Sand	60	20	0	60	0.007

Legend

γ	Soil Unit Weight
C	Cohesion of soil
K	Modulus of Subgrade
e_{50}	Strain at 50% deflection in P-Y curve (Only used in the lateral analysis for cohesive soils)
N_{spt}	N value (No. of blow for a 140# hammer to penetrate 12" of soil) of Corrected Standard Penetration Test (SPT)

5.4 Potential Floor Slabs Associated with Drilled Shaft Piers

5.4.1 Potential Vertical Rise and Slab Supported on Fill Soils

The potential of soil to heave is critical in determining the amount of fill necessary for a slab on-fill system. The potential soil heave was estimated using the Potential Vertical Rise (PVR) method. The PVR method was a result of extensive research by the Texas Department of Highways and Public Transportation in 1971 and 1972. Based on this method (TDHPT Method TEX-124-E), PVR was estimated with different fill thickness. The PVR analysis was performed based on the following moisture conditions.

- Existing moisture in the field during the time of drilling on 3/10/2025
- Wet moisture conditions (lower bound envelope) during prolonged rainy season
- Dry moisture conditions (upper bound envelope) during prolonged drought

Potential Vertical Rise (PVR) is a function of the Plasticity Index (PI) and the moisture content of the soils. While plasticity index of the soil is constant the moisture content varies depending on seasonal rainfall quantity, presence of trees in the vicinity as well as site drainage.

The general acceptable practice in Houston and the surrounding area is to limit the PVR to one inch or less. The amount of fill required to limit the PVR to one inch can lower the risk of heave to an acceptable level. The one (1) inch tolerable (design) heave is a serviceability index only.

Foundation movements resulting from potential vertical rise (PVR) of one (1) inch or less do not account for the movement criteria required by the owner or occupants of the facility. The operational

performance criteria may often be more restrictive than the structural criteria of one (1) inch of PVR. If a more stringent criterion is required of less than one (1) inch of PVR; Coastal Testing should be contacted to revise the recommendations to fit the new movement criteria.

In past projects, the author of this report has observed cracks in slabs that were caused by a heave of about one-fourth (1/4) inch. However, a combination of a sound structural design coupled with sound construction methods, proper drainage, and proper maintenance will reduce the possibility of heave.

Based on the one soil boring drilled onsite either the existing or dry condition can be used to estimate the amount of heave. The PVR for the site is estimated to be about **1.36 inches and 1.07 inches** for dry moisture conditions and existing moisture conditions, respectively. Based on existing or dry moisture condition, we highly recommend the following remedial action.

1. ***Excavate and remove at least four (3) feet of silty sand and backfill with select structural fill compacted in 8-inches lift to 95% of the maximum proctor density. Select fill soil should have Plasticity Index between 12 to 20***

5.4.2 Structural Slab Supported on Grade

Based on the existing soil conditions, a structural floor system with a 6-inch void/crawl space under the slab and the grade beams is always the most suitable for any the structure. However, economic considerations should also be considered during the design phases. Therefore, a slab on grade system will be presented as an alternative. Slab on grade system will inherently is riskier than the structural slab since it is in direct contact with the existing soils.

Foundation recommendations and associated risks were discussed in previous paragraphs. The structural slab usually entails the least risk because it is isolated from the on-site soils. If a structural (suspended) floor system is selected, structural fill will not be required to reduce the Potential Vertical Rise (PVR).

It is structural engineer's discretion to decide if using void box below the grade beams. Please note that if the void box will not be used below the grade beams, the grade beams should be designed to resist uplift pressures ranging from 500 to 600 psf.

5.5 **Slab on Fill Important Construction Considerations**

- Backfill adjacent to exterior footings, foundation walls, grade beams and pile caps and within 8 inches of final grade should comprise high-plastic cohesive fill with Plasticity Index minimum of 30. If a sidewalk is proposed around the building, impervious clay layer is not required as the sidewalk is to limit infiltration into the fill soils. Rainwater infiltration through the fill soils will create bath-tub effects (perched water conditions) under the slab. Coastal Testing should notify inspecting the impervious clay layer during construction.

- The fill soils placed on the site should consist of low plasticity sandy clays with plasticity indices (PI's) ranging between 12 and 20. Sands, or silts, are not considered fill and, therefore, should not be used in lieu of sandy clays. The fill soils should be placed in loose eight (8) inch lifts and compacted to 95% of the maximum density as determined by ASTM D-698. The moisture contents of the structural fill should be within ± 3 percent of the optimum moisture content.
- The floor slab should be installed as soon as the structure pad is prepared. The slab should be protected from inclement weather at all times by providing proper drainage and placing plastic sheeting on top of the slab. If the structure pad is left exposed to rainfall, perched groundwater conditions may develop which will undermine the integrity of the floor slab. Therefore, the floor pad should be covered with a plastic sheet, if the floor slab is not placed immediately.
- In the event that the floor slab is not installed after structural slab is prepared, the in-situ slab densities must be retested at several locations within the slab areas prior to slab placement. All densities must be at least 95% of the maximum dry density and the optimum moisture contents should be with $\pm 3\%$ of the optimum moisture content. If the densities fail, then the deeper layers must also be retested. All the failed areas must be excavated, aerated or chemically stabilized, then placed in eight (8) inch loose lift and re-compacted to 95% of maximum dry density and within $\pm 3\%$ of optimum moisture content.
- All trenches (sanitary, water, cable, electrical) should be properly backfilled and compacted to 95% of the maximum dry densities. Sand or other permeable materials should not be used as backfill. Improperly backfilled and improperly compacted trenches, if left exposed, can also lead to the development of perched groundwater conditions. In general, perched water tends to be trapped within the fill. The trapped groundwater tends to soften the subgrade. The excess moisture promotes clay expansion (heave) which may be a detriment to the integrity of the slab foundation and structure. Positive drainage should be maintained across the entire structure pad.
- All trenches (sanitary, water, cable, electrical) should be properly backfilled and compacted to 95% of the maximum dry densities. Sand, or permeable materials, should not be used as backfill. Improperly backfilled, and improperly compacted trenches, if left exposed, will also be another source for perched groundwater conditions. In general, perched water tends to be trapped within the fill. The trapped groundwater tends to soften the subgrade. The excess moisture promotes clay expansion (heave) which may be detriment to the integrity of the slab foundation and structure. Positive drainage should be maintained across the entire structure pad.
- Clay plugs must be utilized at the entrance and exit of all pipes under the building area to prevent water intrusion into the slab bedding soils. Plumbing leak tests should be performed periodically to detect any leaks within the system.

5.6 Grade Beams Associated with Drilled Shaft

We recommend extending the exterior and interior grade beams to a depth of 24 inches below the final grade at the site. A system of grade beams should be incorporated in the design of the slab at the discretion of the structural engineer. The number and the dimension of the grade beams are also left to the discretion of the structural engineer.

The project team (Architect, Structural Engineer, Project Manager, Contractor and the Owner) must recognize that poor drainage, plumbing leakages, sanitary sewer leakages, and sprinkler systems around the structures are potential sources of moisture that could easily migrate under the exterior grade beams into the slab area. This type of excess moisture promotes clay expansion (heave), which may be detrimental to the integrity of the slab, foundation, and structure.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 Site Preparation

- Soft soils should be removed until firm soil is reached. The soft soils can be aerated and placed back in eight-inch loose lifts and compacted to 95% as specified by ASTM D-698.
- Where silty sand and silty sandy clay with PI 15 or less are encountered at the subgrade level, the exposed surface of the pad subgrade soils should be scarified to a depth of at least 8 inches. Then, the scarified soils in these areas should be chemically treated (lime-fly ash or cement modification) as described below and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698) and within the range of 2 percent below to 2 percentage points above the material's optimum moisture content.
- Proof rolling should be performed using a heavy tired loaded truck or pneumatic rubber-tired weighting about 20 to 25 tons equipment.
- The fill soils placed on the site should consist of low plasticity sandy clays with plasticity indices ranging between 12 and 20.
- Sands or silts are not considered fill and therefore, should not be used in lieu of sandy clays.
- A qualified soil technician should monitor all earthwork operations. Field density tests should be conducted on each lift using a nuclear density gauge. The gauge should be calibrated every day.
- Prior to field density tests, a 50-pound sample from the subgrade soils should be obtained. A similar sample should be obtained from the fill soils. A Standard Moisture Density Relationship (ASTM D-698) should be performed on each sample in order to obtain an optimum moisture content and a maximum dry density. The field density tests should be compared to these results every time the soils are tested in the field.

The above recommendations are applicable to slabs, pavements and any structures that are supported directly on-grade.

6.2 Excavations

6.2.1 General

We understand that the existing storm sewers will be replaced beneath the proposed street section using the open-cut method. The invert depths of the storm sewer lines were not provided; however, we understood that the anticipated invert depth is expected to be 15 feet or less.

6.2.2 Excavations Regulations

Excavation or trenching operations should be performed in accordance with the Occupational Safety and Health Act (OSHA) requirements as detailed in 29 CFR part 1926, subpart p, as amended, including rules published in accordance with the Federal Register, Volume 54, number 209, dated October 31, 1989 as a minimum. In addition, the provisions of the Legislature (H. B. No. 662 and H. B. No. 665) should be satisfied.

The OSHA classification system accounts for soil and rock as follows:

- in-situ soil properties (shear strength)
- the presence of fissures in the soil matrix
- the classification of the soil (sands, clay, rock)
- construction considerations, including vibrations from heavy traffic, pile driving, or similar effects
- submerged soil and seepage

The OSHA system classifies the soils into three categories: A, B, and C. It should be noted that OSHA classification categories are valid for trenches with maximum depth of 20 feet. Maximum allowable slopes are presented below.

MAXIMUM ALLOWABLE SLOPES

OSHA Classification	Short-Term Slope ¹ (H:V)	Long-Term Slope ² (H:V)
A	½ : 1	¾ : 1
B	¾ : 1	1 : 1
C	1 ½ : 1	2 : 1

1) 48 hours or less

2) up to 72 hours

Based on the above discussion, most of the soils encountered in this site can be classified as follows:

Soil Description	OSHA Classification
Fat Clay	B

Alternatively, the excavations can be made vertical by shoring and bracing. The shoring and bracing of the excavations should be designed in accordance with the Pressured Diagram presented on Plate 30.

6.3 Groundwater Control

Groundwater was encountered at a depth of 2 feet during drilling operations within the subject development during drilling operation in August 2025.

Firm soils were encountered at the project site during drilling operation. In addition, from our experience, groundwater seepage could be encountered in excavations for utilities and other general excavations at this site. The risk of seepage increases with depth of excavation and during or after periods of precipitation. Standard sump pits and pumping may be adequate to control seepage on a local basis. Groundwater generally fluctuates due to seasonal rainfall quantity, the presence of wells in the vicinity of the site, location (upstream or downstream) and the close proximity of the site to a bayou, or a stream, if any.

In general, the bottom of the excavations should be dry prior to placement of sanitary and storm sewers. The groundwater level should be lowered at least 3 feet below the bottom of the excavation. The excavations should be dry until all concrete and mortar is set. At most of the boring locations, any surface water in-flow may be removed using sump-pumps. At any excavation locations where water is encountered, de-watering using well points will be required.

It should be noted that de-watering and groundwater control, if required, are the contractor's responsibility. The comments and suggestions given in this report are for informational purposes only and may be used to review the contractor's proposed construction procedures.

6.4 Excavation Backfill

Sand backfill used in the cement-stabilized sand and sand backfill sections should be free of deleterious materials and clay lumps. For random fill zones above the pipe and box culvert should be placed in loose eight inch lifts and compacted to 95% of the maximum dry density in accordance with ASTM D-698.

The moisture content of these soils should be $\pm 3\%$ of the optimum moisture content as determined by ASTM D-698.

6.5 Drilled Shaft Excavations

Groundwater was encountered at a depth of 2 feet during drilling operations on 3/10/2025. It should be noted that the groundwater level usually fluctuates with seasonal moisture conditions.

Therefore, the groundwater level may rise upward several feet during the rainy season. It is highly recommended to perform five (5) test piers (one in the center and one at each corner) before construction to verify the following:

- ❖ **the most current groundwater conditions just before construction**
- ❖ **the stability of the under-ream and shaft**
- ❖ **verify the presence of sand layers or thick sand seams**

An experienced drilling contractor should perform drilled pier excavations. The piers should be checked for levelness to prevent eccentric loading conditions. To prevent concrete segregation and bearing area disturbance, it is recommended to use a tremie to pour the concrete if the depth of the pier exceeds eight (8) feet.

Soil stratigraphy and groundwater level may vary within the proposed construction site. Therefore, it is recommended to install four (4) corner piers and one (1) center pier before construction begins to verify the groundwater level and soil stratigraphy. The depths of the other piers may be adjusted accordingly.

6.6 Site Drainage

Site drainage should be established during the first phase of construction. Water should not be allowed to collect or pond on the construction site. The site should be graded in such a manner to shed all rainwater away from the construction site. Positive site drainage should be maintained throughout the life of the structural development.

6.7 Effect of the New Construction on Existing Adjacent Foundations

Construction adjacent to existing foundations involves special considerations. The primary concern is that construction activities may cause movement in an existing foundation. This is especially true if the existing foundation has experienced some movement prior to the new construction. Although it is virtually impossible to eliminate all risk of additional movement and distress associated with the new construction, the following are some procedures that are commonly employed to reduce the effect of the new construction on existing adjacent foundations:

- Minimize use of vibrating or impact equipment.
- Do not undermine or encroach on existing foundations.
- Minimize the “open time” of all excavations.
- Monitor the existing foundation for movement during the new construction.

The Geotechnical Consultant should review foundation layouts and excavation details and should be involved in the implementation and evaluation of the monitoring program during construction.

It should also be pointed out that the expected settlement of new foundations could cause movements in the old foundation or its interface with the new structure. Such movements could cause some distress during or after construction. We recommend designing a “flexible” joint

between the new and the existing structures to allow for some differential settlement. The Structural Engineer or Architect on the project should address these issues.

7.0 DESIGN REVIEW

Coastal Testing request the opportunity to review the final construction design documents—particularly those related to utilities and pavement—prior to the bid phase. This review helps ensure our recommendations have been accurately understood and properly incorporated. If this review is not provided, we cannot accept responsibility for any misapplication or misinterpretation of our recommendations by others. Please note that such a review falls outside the scope of our current services and would incur an additional fee.

8.0 LIMITATIONS

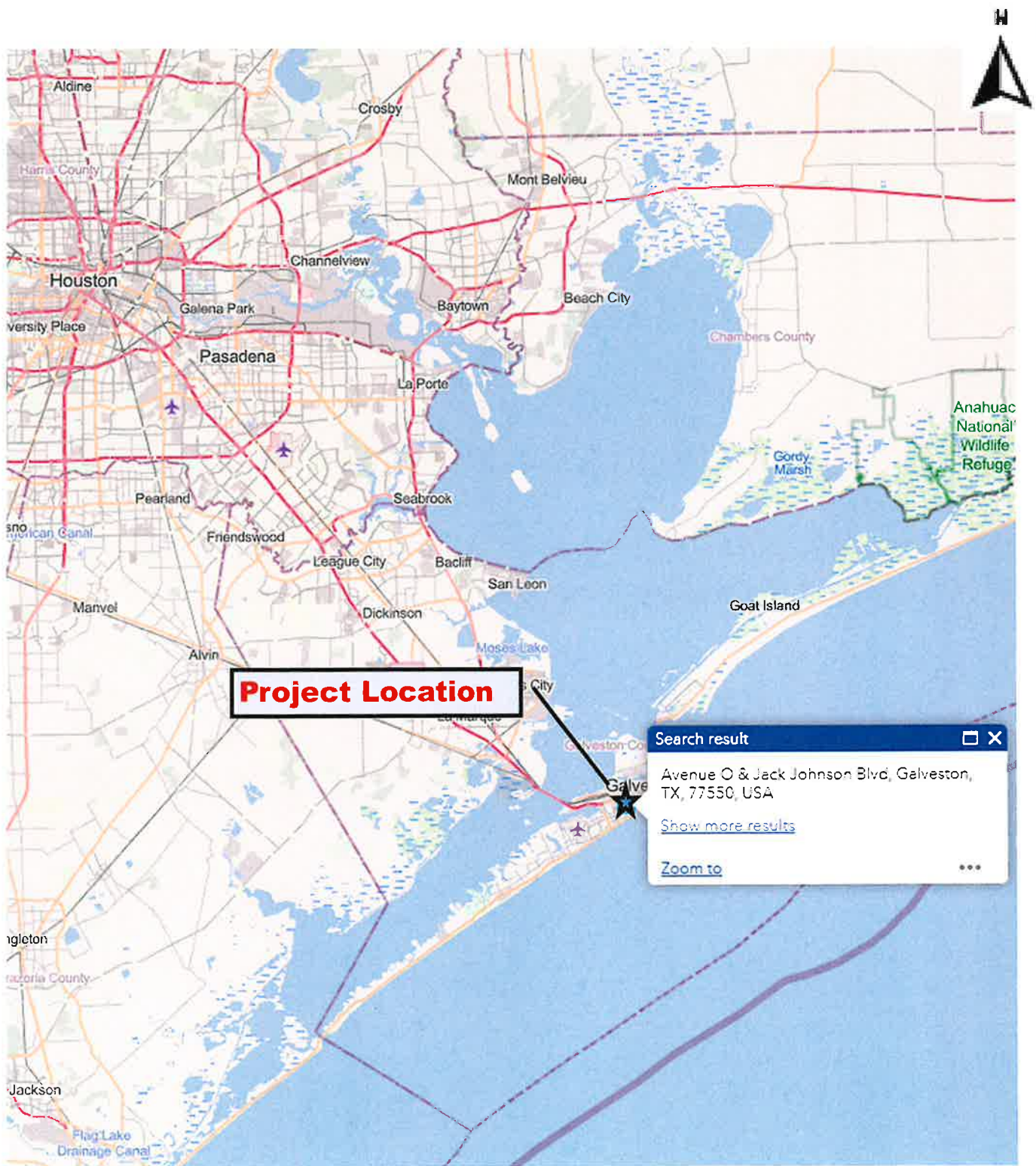
When available. Any updated project details that impact our scope of services are incorporated into the final report to reflect actual site conditions. Our site exploration was based on two (2) boring at the select location. Soil stratigraphy may change within the site.

In the event that different soil conditions are encountered in the field, Coastal Testing Laboratories, Inc., should be immediately notified. It should be noted that fault study is not within the scope of work. This study was performed in accordance with generally accepted geotechnical engineering practices for design purposes only under the supervision of a licensed professional engineer in the State of Texas. Foundation recommendations presented herein are valid for one (1) year from the date of the report. After one (1) year, Coastal Testing Laboratories, Inc. should be contacted to verify the validity of the recommendations prior to construction.

9.0 CONSTRUCTION MATERIALS TESTING

Quality control (QC) is extremely important in the construction industry. A quality control program should be initiated at the beginning of the project. The program should be designed by an accredited laboratory to cover all stages of construction. Coastal Testing Laboratories, Inc., will be pleased to provide you with these services.

- Soil Compaction (fill under-slab, utility backfill, etc.)
- Soil Stabilization (lime or lime/fly-ash)
- Concrete Inspection & Monitoring
- Rebar Inspection
- Structural Steel Welding Visual Inspection and Non-Destructive Testing
- Maturity Probes and Thermocouplers to Measure Concrete Temperature and Strength
- Utility installation inspection and monitoring
- Drilled Straight Shaft Installation Inspection and Monitoring



SITE LOCATION

**PROPOSED SOUTH BUILDING ADDITION-
BALL HIGH SCHOOL AT NWC OF AVENUE O
AND JACK JOHNSON BLVD, GALVESTON, TX**

Coastal Testing Laboratories Inc.

Project Number:

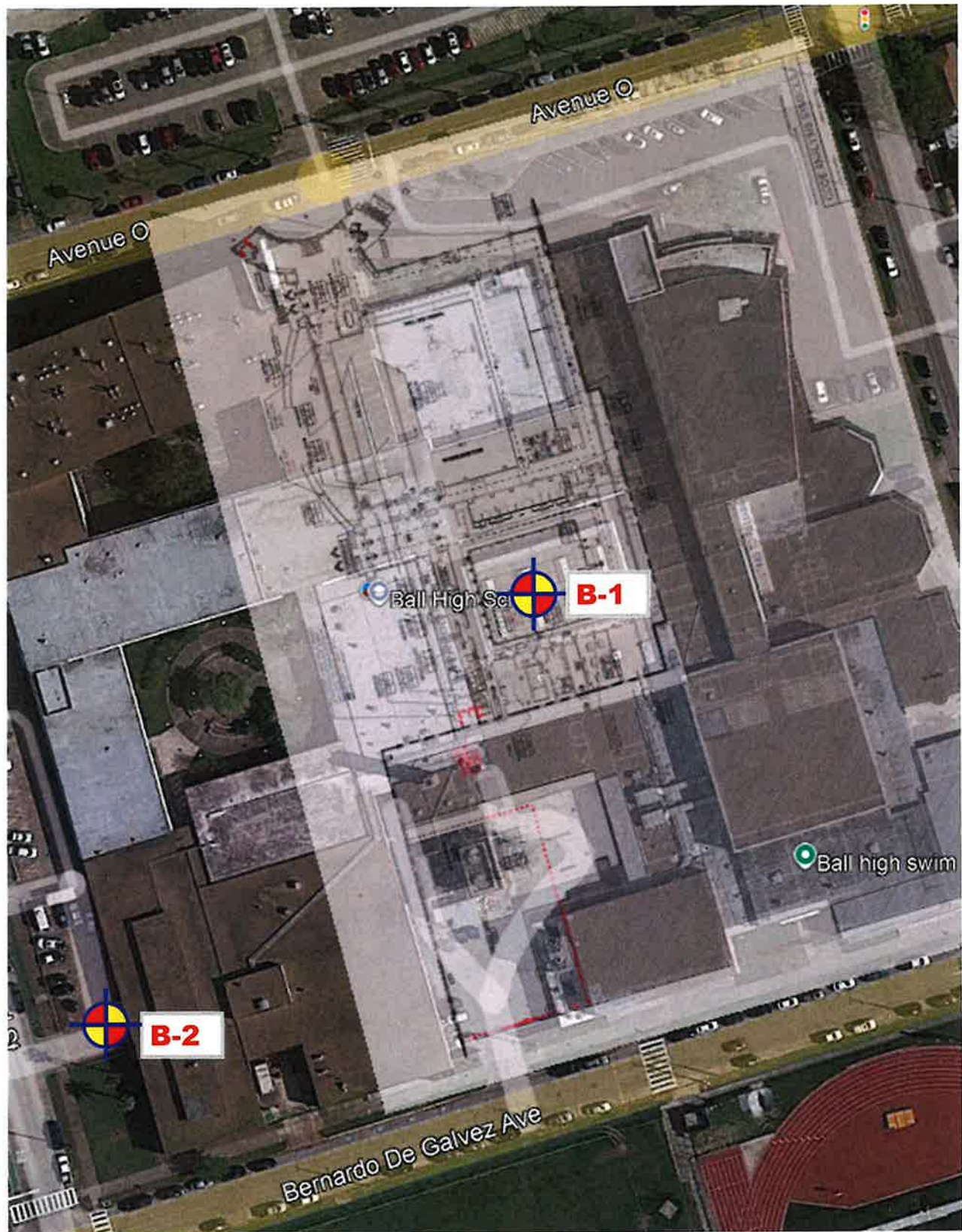
J25-128

Date:

09/17/2025

Plate Number:

Plate 1



BORING LOCATIONS

**PROPOSED SOUTH BUILDING ADDITION- BALL
HIGH SCHOOL AT NWC OF AVENUE O AND
JACK JOHNSON BLVD, GALVESTON, TX**

Coastal Testing Laboratories Inc.

Project Number:

J25-128

Date:

09/17/2025

Plate Number:

Plate 2

This information pertains only to this boring and should not be interpreted as being indicative of the site.


BORING NO. B-1		PROJECT: <u>Proposed Building Addition</u>		PROJECT NO.: <u>J25-128</u>												
 COASTAL TESTING LABORATORIES, INC. ENGINEERING + CONSULTING + TESTING		CLIENT: <u>Galveston ISD c/o: Mr. James Grant</u>		DATE: <u>03/10/2025</u>												
		LOCATION: <u>NWC of Avenue O and Jack Johnson Blvd, Galveston, TX</u>		ELEVATION: <u>9 feet (Google)</u>												
		BH LOCATION: <u>29.286681, -94.812187</u>		LOGGED BY: <u>Pat</u>												
		DRILLER: <u>CTL</u>		DRILLING METHOD: <u>Augur With Unit 186</u>												
DEPTH TO - WATER> INITIAL: <u>∅</u>		Dry AFTER 24 HOURS: <u>∅</u>		Dry CAVING> <u>∅</u> No												
File: J25-128		Date Printed: 9/17/2025														
Depth (ft.)	Description	Soil Type	Samplers	TEST RESULTS				Pocket Penetrometer	Moisture Content	Liquid Limit	Plastic Limit	Plasticity Index	SPT (N-Value)	Unconfined Compression (TSF)	Sieve #200	
				Pocket Pene.	Plastic Limit	Water Content	SPT									Liquid Limit
0	CONCRETE PAVEMENT: 6 inches thickness of concrete pavement SANDY LEAN CLAY (CL), brown, gray, dry Boring Terminated @ 2 feet due to obstacle Boring Terminated @ 2 feet															
5																
10																
15																
20																
25																
30																

PLATE: 3

This information pertains only to this boring and should not be interpreted as being indicative of the site.

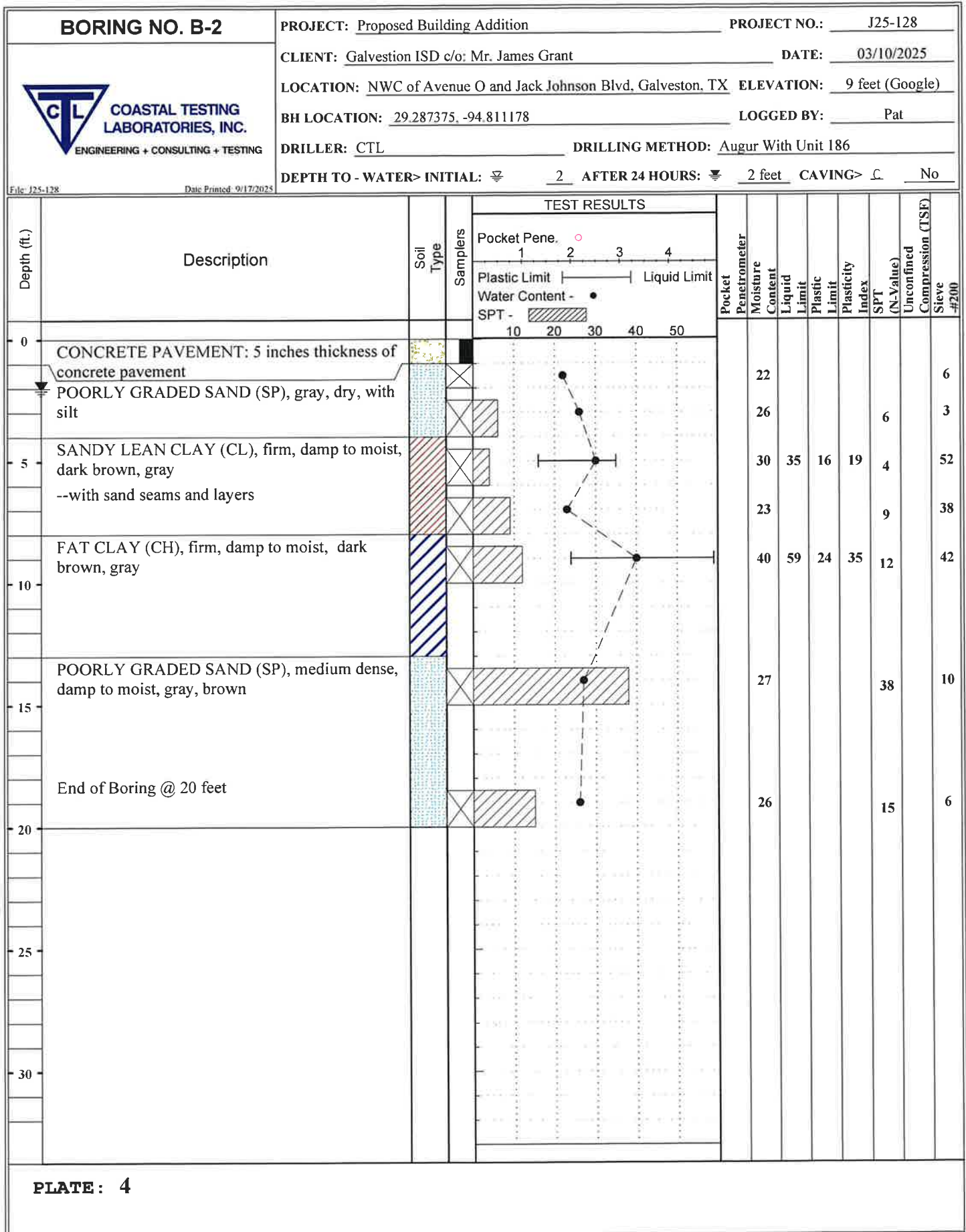
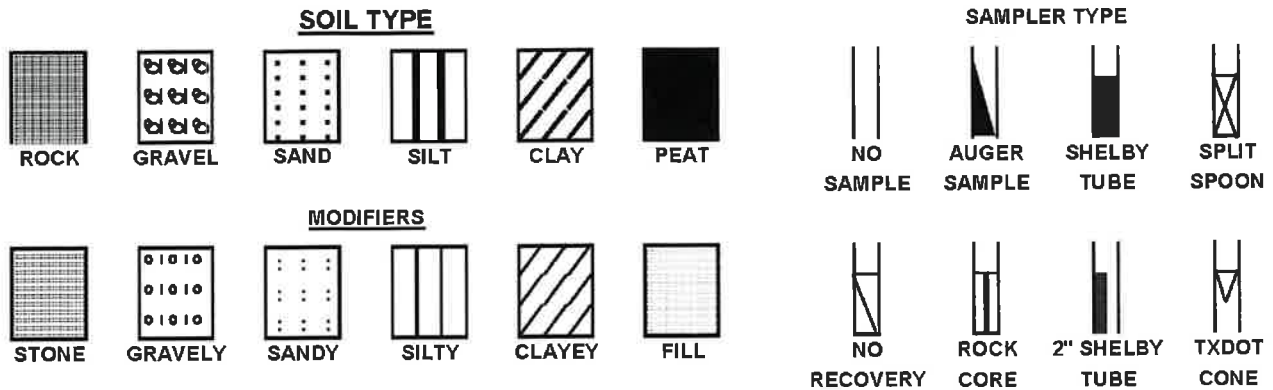


PLATE: 4

KEY TO LOG TERMS AND SYMBOLS



UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487

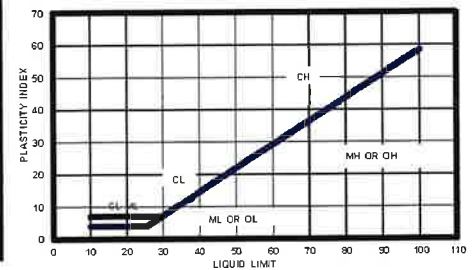
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL 4	CLEAN	GW	WELL GRADED GRAVELS, GRAVEL-SAND
	GRAVELLY SOILS	GRAVELS (LITTLE OR NO FINES)		MIXTURES WITH LITTLE OR NO FINES
	LESS THAN 50% PASSING NO. 4 SIEVE	W/ APPRECIATE- BLE FINES	GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
	50% PASSING NO. 200 SIEVE	CLEAN SANDS	GM	SILTY GRAVELS, GRAVEL-SAND SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
		LITTLE FINES	SW	WELL GRADED SAND, GRAVELLY SAND (LITTLE FINES)
			SP	POORLY GRADED SANDS, GRAVELLY SAND (L. FINES)
	50% PASSING NO. 200 SIEVE	SANDS WITH APPREA. FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
	FINE GRAINED SOILS	SILTS AND CLAYS		ML
				SILTY OR CLAYEY FINE SANDS OR CLAYEY SILT W/PI
CL				INORGANIC CLAY OF LOW TO MEDIUM PL. CLEAN CLAY
LIQUID LIMIT LESS THAN 50		OL	GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS	
			ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PI	
		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS	
LIQUID LIMIT GREATER THAN 50			FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
		CH	INORGANIC CLAYS OF HIGH PLASTICITY	
		OH	FAT CLAYS	
50% PASSING NO. 200 SIEVE	GREATER THAN 50			ORGANIC CLAYS OF MED TO HIGH PI, ORGANIC SILT
HIGHLY ORGANIC SOIL			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS				ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS
				FILL MATERIALS

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	UNCONFINED COMP. STRENGTH IN TSF
VERY SOFT	0 TO 0.25
SOFT	0.25 TO 1.0
FIRM	1.0 TO 1.75
STIFF	1.75 TO 3
VERY STIFF	3.0 TO 4.5
HARD	4.5+

RELATIVE DENSITY - GRANULAR SOILS

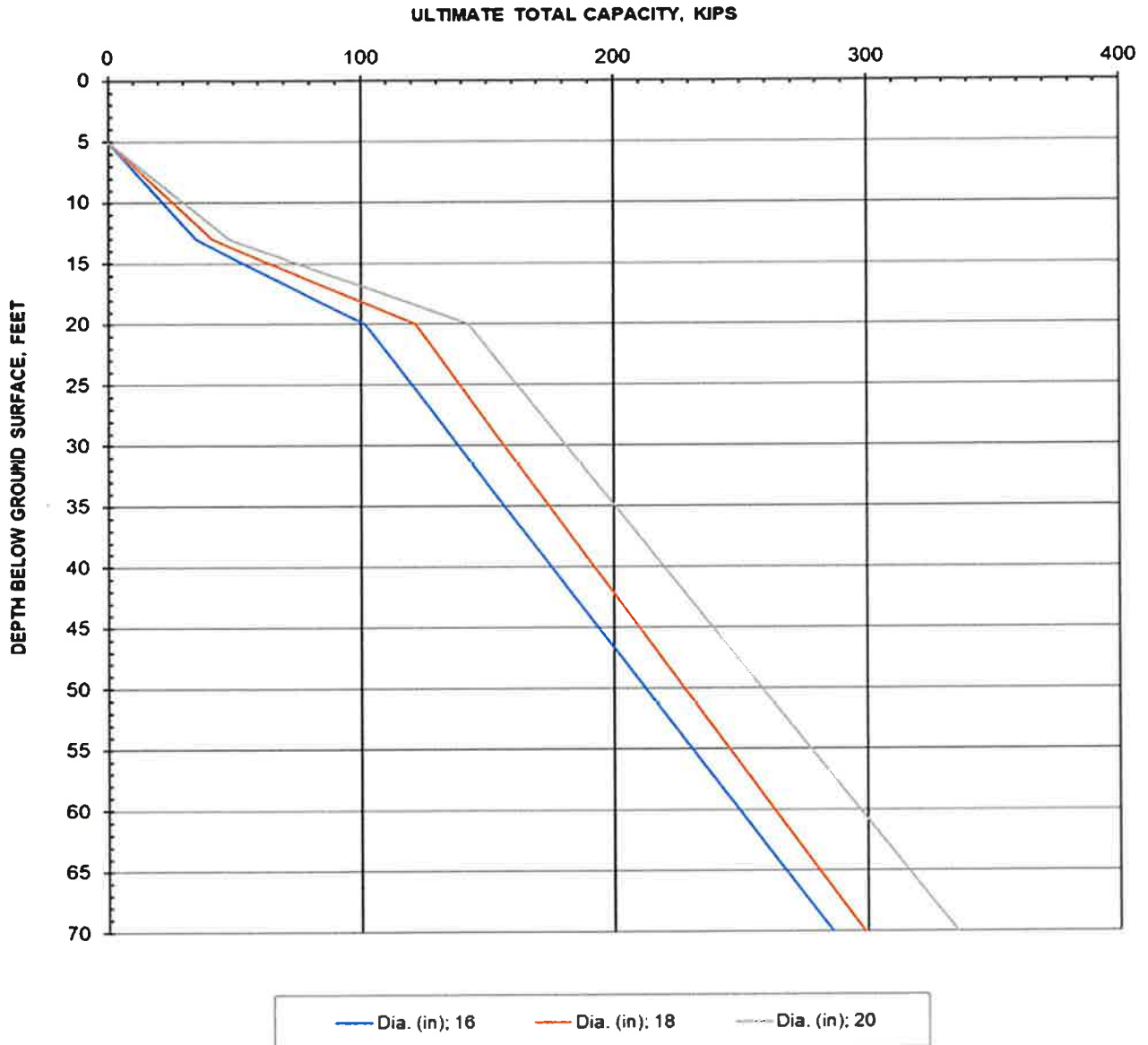
CONSISTENCY	N-VALUE (BLOWS PER FT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

6"		3"		3/4"		4		10		40		200			
BOUL- -DERS	COBBLES	GRAVEL				SAND				SILT OR CLAY				CLAY	
		COARSE		FINE		COARSE		MEDIUM							FINE
152		76.2		19.1		4.76		2.0		0.42		0.074		0.002	
GRAIN SIZE IN MM															



AXIAL PILE CAPACITY-ULTIMATE

Coastal Testing Laboratories Inc.

**PROPOSED SOUTH BUILDING ADDITION- BALL
HIGH SCHOOL AT NWC OF AVENUE O AND
JACK JOHNSON BLVD, GALVESTON, TX**

Project Number:

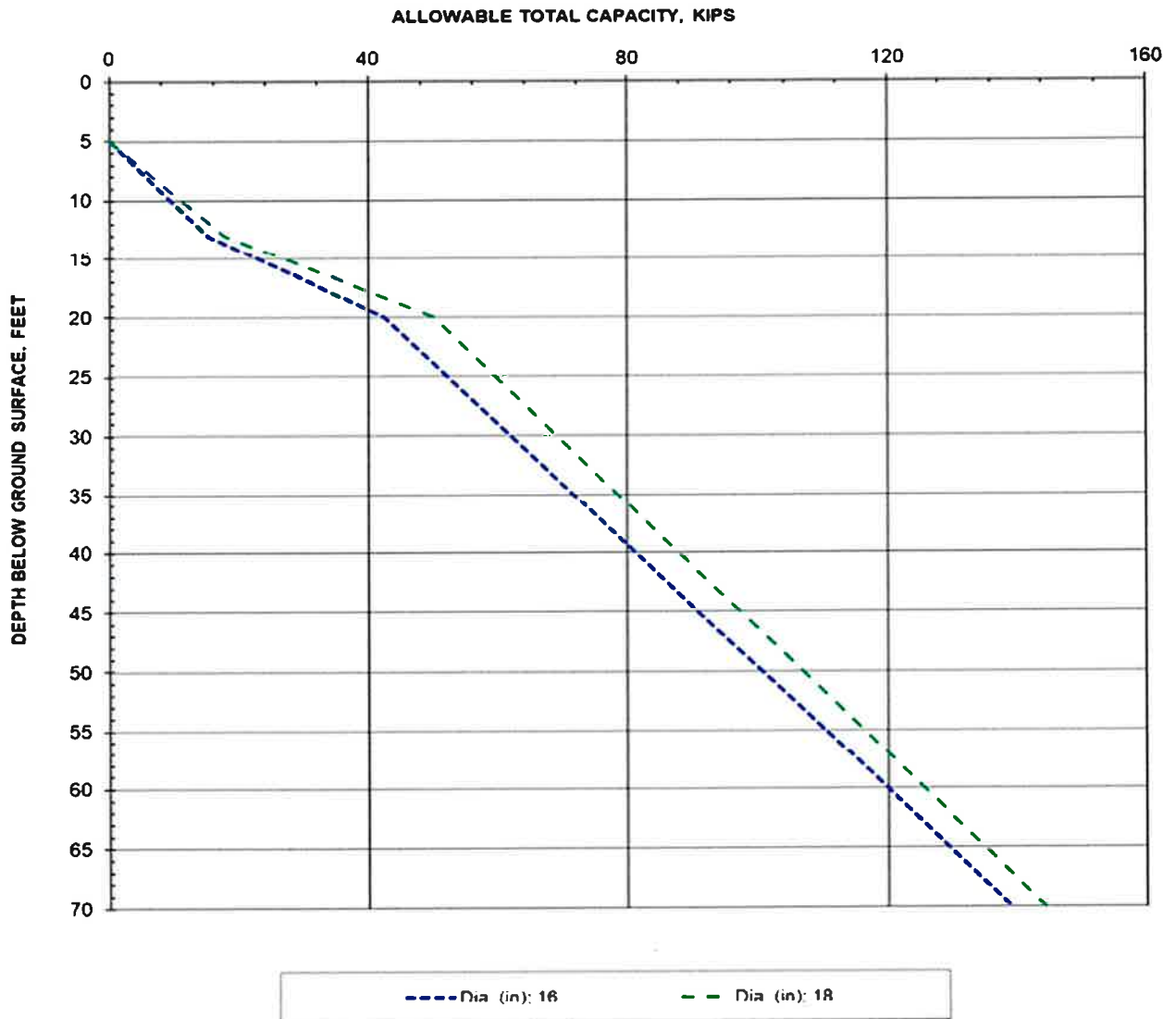
J25-128

Date:

09/17/2025

Plate Number:

Plate 6



AXIAL PILE CAPACITY-ALLOWABLE

**PROPOSED SOUTH BUILDING ADDITION- BALL
HIGH SCHOOL AT NWC OF AVENUE O AND
JACK JOHNSON BLVD, GALVESTON, TX**

Coastal Testing Laboratories Inc.

Project Number:

J25-128

Date:

09/17/2025

Plate Number:

Plate 7

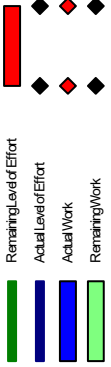


DRILLING PICTURE		Coastal Testing Laboratories Inc.		
PROPOSED SOUTH BUILDING ADDITION- BALL HIGH SCHOOL AT NWC OF AVENUE O AND JACK JOHNSON BLVD, GALVESTON, TX	Project Number:	Date:	Plate Number:	
	J25-128	09/17/2025	Plate 8	

PROJECT SCHEDULE

Activity ID	Activity Name	Orig Dur	Rem Dur	Start	Finish	Expected Finish	2026												2027											
							N	D	J	F	M	A	M	J	J	A	S	N	D	J	F	M	A	M	J	J	A	S	N	D
A1310	Gym - Building Pads	15	15	28-Jul-26	17-Aug-26																									
A1300	Gym - Dewatering	15	15	28-Jul-26	17-Aug-26																									
A1320	Gym - Floor Excavation	10	10	18-Aug-26	31-Aug-26																									
A6100	Gym - Form Foundation	30	30	01-Sep-26	13-Oct-26																									
A6110	Gym - Place Foundation	10	10	14-Oct-26	27-Oct-26																									
A1360	Gym - Structural Steel	25	25	07-Dec-26	12-Jan-27																									
A1390	Gym - LWIC	15	15	13-Jan-27	02-Feb-27																									
A1400	Gym - Fireproofing	15	15	13-Jan-27	02-Feb-27																									
A1430	Roofing	20	20	03-Feb-27	02-Mar-27																									
A1420	CMU Masonry	30	30	03-Feb-27	16-Mar-27																									
A1550	Frame Walls	20	20	17-Mar-27	13-Apr-27																									
A1500	MEPF Rough-In & Trim-Out	25	25	14-Apr-27	18-May-27																									
A1330	Elevator	10	10	14-Apr-27	27-Apr-27																									
A2070	Waterproofing	10	10	14-Apr-27	27-Apr-27																									
A2090	Brick Masonry	30	30	28-Apr-27	09-Jun-27																									
A1570	Frame and Install Ceilings	15	15	19-May-27	09-Jun-27																									
A1490	Doors and Windows	10	10	10-Jun-27	23-Jun-27																									
A2080	GFRC	30	30	10-Jun-27	22-Jul-27																									
A1480	Paint and Finishes	20	20	24-Jun-27	22-Jul-27																									
A1470	Flooring - Terrazo	20	20	23-Jul-27	19-Aug-27																									
A1880	Flooring - Wood	20	20	23-Jul-27	19-Aug-27																									
A1590	Graphics	7	7	20-Aug-27	30-Aug-27																									
A1600	Punch List	2	2	31-Aug-27	01-Sep-27																									
A1530	Final Inspections	5	5	02-Sep-27	09-Sep-27																									
A1890	Commissioning	1	1	10-Sep-27	10-Sep-27																									
CONNECTOR BRIDGE		145	145	13-Jan-27	05-Aug-27																									
A1440	Steel Erection	10	10	13-Jan-27	26-Jan-27																									
A1910	LWIC	15	15	27-Jan-27	16-Feb-27																									
A1920	Fireproofing	15	15	27-Jan-27	16-Feb-27																									
A1930	Roofing	20	20	17-Feb-27	16-Mar-27																									
A1940	Frame Walls	10	10	17-Feb-27	02-Mar-27																									

Finish Date: 10-Sep-27
 Data Date: 22-Oct-25
 Run Date: 17-Oct-25 08:38
 Page 3 of 4



Ball High School Construction Schedule - South Campus





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