Date: June 3, 2020

ADDENDUM NO. Two (2)

PROJECT NO: 127436
TITLE OF PROJECT: Beachside Redevelopment

FACILITY LOCATION: Galveston Island State Park
Galveston County Texas

NOTICE TO ALL OFFERORS:

This addendum shall be considered part of the Contract Documents and is issued to change, amplify, or delete from or otherwise explain the documents where provisions of this addendum differ from those of the original contract documents. This addendum shall have precedence over the original contract documents and shall govern.

Offerors are hereby notified that they shall incorporate this addendum in their proposal, and it shall be construed that the Contractor's Proposal shall reflect with full knowledge, all items, changes and modifications to the contract documents herein specified.

Offerors are advised to check for updates, addenda issuance, and proposal opening date changes at the TPWD Infrastructure Division Website:

http://www.tpwd.state.tx.us/business/bidops/current_bid_opportunities/construction/

1. DELETE the specification sections listed below, that were originally included in the referenced solicitation issued on May 13, 2020; and REPLACE with the attached specifications:

   Division 06  Wood, Plastics, and Composites
   06 15 34  Tongue & Groove Wood Soffit

   Division 10  Specialties
   10 28 00  Toilet Accessories

   Division 32  Exterior Improvements
   32 92 00  Turf and Grasses

2. The following specification sections are hereby incorporated into the referenced solicitation issued on May 13, 2020:

   Division 09  Finishes
   09 91 00  Semi-Transparent Stain
   Division 31  Earthwork
   31 22 15  Finish Grading

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.
3. **DELETE** the drawing sheets listed below, that were originally included in the referenced solicitation issued on May 13, 2020; and **REPLACE** with the attached drawings:

L5.03 SITE STRUCTURE DETAILS  
C.600 CIVIL SITE PLAN ( 4 OF 6 )  
A.221 FIRST FLOOR DIMENSION PLAN - PARK HEADQUARTERS  
A.222 FEE BOOTH & RESTROOMS DIMENSION PLAN  
A.231 FIRST FLOOR RCP - RESTROOMS  
A.241 ENLARGED FLOOR PLANS - PARK HEADQUARTERS  
A.242 ENLARGED FLOOR PLANS - RESTROOMS  
A.314 EXTERIOR ELEVATIONS - RESTROOMS  
A.412 BUILDING SECTIONS - RESTROOMS  
A.511 WALL SECTIONS - RESTROOMS  
A.523 PLAN & SECTION DETAILS - RESTROOMS  
A.526 WINDOW, LOUVER & ROOF DETAILS  
A.610 INTERIOR ELEVATIONS - PARK HEADQUARTERS  
A.611 INTERIOR ELEVATIONS - PARK HEADQUARTERS  
A.614 INTERIOR ELEVATIONS - RESTROOMS  
A.615 INTERIOR ELEVATIONS - RESTROOMS  
A.616 INTERIOR ELEVATIONS - RESTROOMS  
A.830 DOOR, WINDOW & LOUVER SCHEDULES  
M0.01 MECHANICAL SCHEDULES, LEGEND & NOTES  
M2.01 MECHANICAL FLOOR PLAN - PARK HEADQUARTERS  
M3.01 MECHANICAL FLOOR PLAN - RESTROOMS  
E2.01 ELECTRICAL POWER PLAN PARK HEADQUARTERS  
E3.01 ELECTRICAL POWER PLAN RESTROOMS  
E3.02 ELECTRICAL LIGHTING PLAN RESTROOMS  
E5.02 ELECTRICAL DETAILS  
E5.04 ELECTRICAL DETAILS  
E6.02 ELECTRICAL ONE-LINE DIAGRAMS  
E6.03 ELECTRICAL ONE-LINE DIAGRAMS  
E7.02 ELECTRICAL PANEL SCHEDULES  
P0.01 PLUMBING SCHEDULES, LEGEND & NOTES  
P2.01 PLUMBING UNDERFLOOR PLAN - PARK HEADQUARTERS  
P2.02 PLUMBING FLOOR PLAN - PARK HEADQUARTERS  
P3.01 PLUMBING UNDERFLOOR PLAN - RESTROOMS  
P3.02 PLUMBING FLOOR PLAN - RESTROOMS  
P4.01 PLUMBING FLOOR PLAN - CHANGING STATIONS  
P5.01 PLUMBING RISER DIAGRAM - PARK HEADQUARTERS  
P5.02 PLUMBING RISER DIAGRAM - RESTROOMS  
P5.03 PLUMBING DETAILS  
P5.04 PLUMBING DETAILS
4. The following Drawings are hereby incorporated into the referenced solicitation issued on May 13, 2020:

A.528 LOUVER DETAILS - RESTROOMS  
E6.04 ELECTRICAL ONE-LINE DIAGRAMS

Date, time and location for receipt of proposals has not changed.

Offerors shall acknowledge receipt of this addendum in the space provided on the Contractor's Price proposal form located above the signature block. WARNING: OFFEROR’S FAILURE TO ACKNOWLEDGE RECEIPT OF ADDENDA MAY RESULT IN REJECTION OF PROPOSAL.

END OF ADDENDUM NUMBER TWO (2)

Sincerely,

/s/ Kim Shelton

Kim Shelton, CTCD | CTCM  
Contracting Program Supervisor  
Infrastructure Division
PART 1 – GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Refer to Section 09 91 00 for additional info on Cabot Stain.

1.2 SCOPE
A. The Work of this Section includes:
1. 1X6 Tongue and groove wood soffit.

1.3 SUBMITTALS
A. Product Data: For each product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

1.4 CLOSEOUT SUBMITTALS
A. Maintenance Data: For each type of siding, panel, and related accessories to include in maintenance manuals.

1.5 QUALITY ASSURANCE
A. Labeling: Provide wood soffit that is tested and labeled according to by a qualified testing agency acceptable to authorities having jurisdiction.

B. Source Limitations: Obtain all types of wood soffit from single manufacturer.

1.6 COORDINATION
A. Coordinate installation with flashings and other adjoining construction to ensure proper sequencing.

1.7 WARRANTY
A. Special Warranty: Standard form in which manufacturer agrees to repair or replace soffit that fail in materials or workmanship within specified warranty period.
1. Failures to include, but not be limited to structural failures including cracking, deforming.

PART 2 - PRODUCT

2.1 GENERAL
A. Manufacturer: Subject to compliance with requirements.

2.2 1X6 TONGUE & GROOVE WOOD SOFFIT
A. Soffit material at exterior porches and eaves.
1x6 poplar, number 2AC or better, Tongue and Groove, stained. Stain color: Bluestone by Cabot Stains.
3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of siding and soffit and related accessories.
   1. Install water-resistive barriers and cladding to dry surfaces.
   2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
   3. Protect soffit from other trades.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with soffit manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
   1. Do not install damaged components.
   2. Use full-length horizontal trim boards wherever possible. Butt joint siding to vertical trim. Stagger butt joints in the middle of soffit areas.

B. Install soffit, and related accessories:
   1. Place fasteners no closer than 3/8” from panel edges and 2” from panel corners.
   2. Allow minimum vertical clearances between the edge of siding and any other material in strict accordance with the manufacturer’s installation instructions.
   3. Specific framing and fastener requirements, refer to Tables 2 and 3 in National Evaluation Service Report No. NER-405.C. Install joint sealants as specified in Section 07 92 00 Joint Sealants and to produce a weathertight installation.

3.3 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION 06 15 34
SECTION 09 91 00 – SEMI-TRANSPARENT STAIN

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Refer to Section 06 15 34 TONGUE & GROOVE WOOD SOFFIT for additional info.

1.2 SCOPE

A. Surface preparation.
B. Exterior surface coatings.
C. Color schedule: refer to Section 3.7 SCHEDULE.

1.3 RELATED SECTIONS

A. Section 01300 - Submittals.

1.4 REFERENCES


1.5 SUBMITTALS

A. Submit product data and samples in compliance with Section 01300 – Submittals.

B. Product Data: Submit the following:
   1. Manufacturer’s descriptive literature including physical and performance characteristics.
   2. Installation instructions.

C. Samples: Submit three 1 ¼ inch x 5 inch samples of each color on each type of substrate specified.
   1. Apply number of finish coats specified; refer to Section 3.7 SCHEDULE.
   2. Identify each sample with product name, manufacturer, sheen, color name and number.
   3. Colors will be selected from the full range of Manufacturer’s standard colors for review and selection by the Architect.

1.6 QUALITY ASSURANCE

A. Applicator: Company specializing in commercial painting and finishing for (5) years completing work of similar scope.

B. Field Sample: Before proceeding with paint application, finish one complete surface of each color scheme required, including cleaning of surfaces, clearly indicating selected colors, materials, and quality of workmanship.
   1. Locate as directed by the Architect.
   2. Accepted area will serve as minimum standard for work.
   3. Accepted area may remain as part of work.
1.7 REGULATORY REQUIREMENTS

A. Conform to state regulatory requirements for finishes with a V.O.C. limit of 350 grams per liter.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in Manufacturer’s original sealed containers clearly labeled with product information.
   1. Label to include Manufacturer’s identification, product identification, color designation, preparation instructions, application instructions, drying time, coverage capacity, tinting and mixing instructions, cleaning and disposal instructions.

B. Store materials at a minimum ambient temperature of 50 degrees F and a maximum of 90 degrees F in a well ventilated area.

C. Store in UL listed storage locker to protect from fire hazards and spontaneous combustion.

D. DANGER: Rags, steel wool and waste soaked with Cabot Semi-Transparent Stain may spontaneously catch fire if improperly discarded. Immediately after each use, place rages, steel wool and waste in a sealed, water-filled metal container.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not apply exterior coatings when rain is imminent.

B. Minimum Air and Surface Temperatures: Temperature ranges shall be maintained a minimum of 24 hours prior to and 48 hours following application.
   1. Oil Stain: 50 degrees F not to exceed 90 degrees F.
   2. Accessory Products: 50 degrees F not to exceed 100 degrees F.

C. Do not apply to wet surfaces.

D. Do not apply in direct sunlight.

E. Provide adequate ventilation; not recommended for interior use.

1.10 WARRANTY

A. Manufacturer’s standard limited warranty when applied to new wood if product cracks, peels, or blisters.

B. One year warranty from defective workmanship from date of final acceptance.

1.11 EXTRA MATERIALS

A. Provide a one-gallon sealed container of each color to the Owner for future use. Product should be properly labeled and sealed and taken from the batch mix used for the work.
PART 2 - PRODUCT

2.1 MANUFACTURED UNITS

A. Exterior Stain: Semi-Transparent Stain #6300, as manufactured by Samuel Cabot Inc., Newburyport, Massachusetts.

B. Wood-Cleaning Agent: Cabot Problem-Solver Wood Cleaner #8002, as manufactured by Samuel Cabot Inc., Newburyport, Massachusetts.

2.2 MATERIALS

A. Coatings: Ready mixed, completely penetrating, water repellent, mildew resistant, capable of being readily and uniformly dispersed to a homogenous coating.

B. Coatings: Good flow and brushing qualities; capable of drying sag – and streak – free.

C. Accessory Materials: Other materials not specifically indicated but required to achieve the finished specified, of commercial quality.

2.3 MIXES

A. Tinting: In strict accordance with Manufacturer’s recommendations for each product specified.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine existing surfaces. Verify that surfaces have been properly prepared to receive stain.

B. Immediately report to the Architect conditions that may prevent satisfactory application of finish coatings.

C. Do not begin work until surfaces have been satisfactorily prepared. Start of installation indicates acceptance of surface conditions.

3.2 SURFACE PREPARATION

A. Apply to dry surfaces.
   1. Do not apply over wood with a moisture content exceeding 15 percent. Test using an electronic moisture meter within 24 hours of first application.

B. Apply to wood surfaces that have been properly weathered.

C. Remove surface-installed items that are not to receive finish.
   1. Store and protect from damage.
   2. Reinstall after completion of the work.

D. Prepare substrate in accordance with Manufacturer’s printed instructions.

E. Remove dirt, dust, and other foreign matter.
F. Spot clean wood blemishes.

G. Remove stains from extractive-prone wood species and rust spots using tannin-bleed discoloration and rust remover as recommended by the Manufacturer.

H. Remove chalky residue with a stiff bristle brush and wood-cleaning agent as recommended by the Manufacturer.

I. Mold, Algae, and Mildew: Test with a solution of 50 percent household bleach and water; if test area lightens, apply wood-cleaning agent.

3.3 PROTECTION

A. Protect shrubs, plants, landscaping items, adjacent surfaces, and items not part of this work from splattering, spillage, and overspray.

3.4 APPLICATION

A. Apply in strict accordance with Manufacturer’s application instructions.
   1. Batch mix multiple containers of a single color to assure a continuous balance of ingredients.

B. It is very important to only apply one coat of #630 Series Cabot-Semi-Transparent Stain.

C. On new wood apply (one coat) of stain.

D. Apply evenly with brush. When rolling or spraying, backbrush immediately after each section to ensure proper penetration.

E. Allow 24 to 48 hours drying time.

F. Back prime surfaces of exterior woodwork with stain.

3.5 FIELD TOUCH-UP

A. Review completed work with Architect. Touch up surfaces as directed by the Architect as well as surfaces damaged by the work of other trades.

3.6 CLEANING

A. Remove spills and overspray from adjacent surfaces. Restore to original condition or replace with new materials to the satisfaction of the Architect.

B. Remove the empty cans and containers from the site each day.
   1. Store unused materials in a closed UL listed container or remove from the site each day.
   2. Clean brushes, rollers, sprayers, and other materials at the end of each day.
   3. DANGER: Rags, steel wool and waste soaked with Cabot Semi-Transparent Stain may spontaneously catch fire if improperly discarded. Immediately after each use, place rags, steel wool and waste in a sealed, water-filled metal container.

C. Legally dispose of debris in accordance with local, state and federal regulations.
3.7 SCHEDULE

A. Wood:
   1. (One coat) penetrating, natural linseed oil-based stain.

B. Colors:
   1. Facia, Soffits and Trim: Bluestone.

END OF SECTION 09 91 00
SECTION 10 28 00 - TOILET ACCESSORIES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SCOPE

A. The work of this Section includes:
      b. Grab Bars.
      c. Baby Changing Station.
      d. Electric Hand Dryer.
      e. Clothes Hook.
      f. Mirrors.
      g. Soap Dispensers.
      h. Paper Towel Dispenser & Waste Receptacle.
      i. Circular Waste Chute
      j. ADA Shower Bench.
      k. Restroom Partitions.
      l. Shower Rod & Curtain.
      m. Trench Drain.

B. Related Work: RE: Section 08 80 00 Glazing and Mirrors for frameless, wall-mounted mirrors.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required. Identify locations and products using designations indicated.

C. Samples: Manufacturer’s finish samples of standard color options for toilet compartments.

1.4 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

1.5 WARRANTY

A. Manufacturer’s Standard:
   1. One year: Against material defects and workmanship; full replacement.
   2. 25 years: Against breakage, corrosion, delamination, and factory workmanship.
PART 2 – PRODUCTS

2.1 WASHROOM ACCESSORIES

A. Surface Mounted Toilet Tissue Dispenser (TP1): Bobrick, B-2892.
   1. Twin Jumbo Roll
   2. Unit 20 13/16" W, 11 3/8" H, 5 5/16" D
   3. For use with 3" diameter rolls.

   2. Material: 18-gauge, Type 304 stainless steel tubing.
   4. Concealed mounting flange: 1/8" thick x 2" wide x 3 1/8" high, with screw holes for concealed anchors.
   5. Cover: 22-gauge, Type 304 stainless steel with satin finish, 3 1/4" diameter. Cover snaps over mounting flange to conceal screws.

C. Baby Changing Station (BC): Koala Kare, KB110-SSRE.
   1. Mounting: Recess Wall-mounted, horizontal.
   2. Finish: Stainless steel.
   3. Location: As indicated at UNI1 – UNI5.

D. Electric Hand Dryer (HD): WORLD DRYER, SLIMdri.
   1. Mounting: Surface Mounted.
   2. Location: Indicated in Interior Elevation.
   4. Material Type: 304 Stainless
   5. Finish: Brushed.

   1. Material: Type 304 Stainless Steel.

F. Mirror (MR): Bobrick B-165.
   1. Mounting: Surface.
   2. Size: 30" x 42" (Park Headquarters), Size: 24" x 48" (Restrooms).
   3. Material: Type 304 Stainless Steel
   4. Finish: Satin
   5. Location: Refer to Interior Elevations.

G. Surface Mounted Soap Dispenser (SD1): Bobrick B-4112.
   1. Material: Type 304 Stainless Steel.
   2. Finish: Satin.

   1. Stainless Steel.
   2. Finish: Satin.
   3. Location: Refer to Enlarged Plans

   1. Stainless Steel.
   2. Finish: Bright Polished.
   3. Location: Refer to Enlarged Plans
J. ADA Shower Bench (SBCH).
   1. 32” x 22 ½” shower seat.
   2. with swing down legs
   3. Almond seat with marine grade plywood.
   4. Teak phenolic.

   1. 413 Freestanding-Floor Mounted/Overhead Braced.
   2. Location: Refer to Enlarged Plans
   3. Manufacturer: METPAR
   5. Vandal resistant.

L. Shower Rod & Curtain (SR)
   1. 2” diameter galvanized steel tube.
   2. Location: Refer to Enlarged Plans

M. Trench Drain (TD6 = 6’ length & TD9 = 9’ length)
   1. Manufacturer: NDS.

2.2 UNDERLAVATORY GUARDS

A. Underlavatory Guard:
   1. Description: Insulating pipe covering for supply and drain piping assemblies that prevent direct contact with and burns from piping; allow service access without removing coverings.
   2. Material and Finish: Antimicrobial, molded plastic, white

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers’ written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer.

B. Install units level, plumb, and firmly anchored in locations and at heights indicated.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 10 28 00
SECTION 312215 – FINISH GRADING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.1 SUMMARY

A. Section Includes
   1. Machinery restrictions.
   2. Excavation, filling and backfilling of on-site material.
   3. Subgrade preparation and spreading of topsoil.
   4. Finished grading.
   6. Drainage.
   7. Wetland creation process and requirements.

B. Related Sections
   1. Site Clearing – Section 311000
   2. Lawns and Grasses - Section 329200

1.2 GENERAL PROVISIONS

A. Finished grading shall be defined as placing and grading of additional soil that will be required to bring the grade to the required grades for lawns, native plantings and wetland creation.

B. Additional fill materials shall generally be defined as topsoil as specified herein unless otherwise specified.

C. Where practicable and as directed, the use of heavy machinery shall be kept to a minimum.

D. Site disturbance shall be limited to the Limits of Work indicated on the drawings unless approved in writing by the TPWD Construction Manager.

PART 2 - PRODUCTS

2.1 FILL

A. General Qualifications: Fill shall be dry existing topsoil of a sandy loam character, well drained and well graded with a plasticity index not to exceed 20 or fall below 8. Fill material shall contain no oils, alkalies, acids, rubbish or other deleterious materials.

2.2 TOPSOIL

A. Topsoil material that will be required for finish grading operations shall conform to the requirements included within this Section and shall come from on site stockpiles.

B. General Qualifications for Topsoil:
“On-Site” Topsoil shall be considered as material conforming to the following minimum criteria:
1. Natural, friable, loamy soil, typical of local topsoil which produces heavy vegetative growth, free from subsoil, weeds, sods, stiff clay, stones larger than 1”, toxic substances, debris, or other substances which may be harmful to plant growth. Do not deliver in muddy condition.
2. Acidity/Alkalinity: pH 6.0 to pH 7.5.

C. Grading Analysis: 2” sieve, 100% minimum passing. Number 4 sieve, 90% minimum passing. Number 10 sieve, 80% minimum passing.
1. Sand, Silt, and Clay Content (from ASSHTO M146):
   a. Sand 20 to 75 percent
   b. Silt 10 to 60 percent
   c. Clay 5 to 30 percent
2. All topsoil shall be free from all herbicides and insecticides which might adversely affect subsequent growth of turf or plantings or which might otherwise contain materials toxic to humans and pets.

D. Non-Conforming Material: The Contractor shall not be permitted to use on-site material which does not conform to the above minimum criteria for fine grade operations. At the discretion of the TPWD Construction Manager, such material can either be amended to meet the minimum requirements or shall be removed from the site and replaced with suitable material as specified herein.

E. It shall be the Contractor's responsibility to verify that the existing topsoil conforms to these specifications. Topsoil determined to be non-conforming subsequent to the award of a contract shall not be means for extra compensation unless otherwise provided for herein.

F. Soil Analysis: The Contractor shall obtain an agricultural soil analysis of topsoil taken from three areas of the site. These samples shall be submitted to an accredited and approved soils laboratory at Contractor's cost. Submit results of soil analysis to the Owner for review. The soil analysis shall include recommendations for amendments to the soil to produce optimum plant growth from the variety of plants and grasses proposed. These amendments shall be made at the Contractor's expense and shall be included in the bid.

PART 3 - EXECUTION

3.1 WORKMANSHIP

A. Work shall be performed by personnel trained and experienced in this work and shall be done under the direction of a superintendent on Contractor's staff.

B. The contractor shall research and understand the timing of high and low water tables on the site and schedule grading operations accordingly.

C. The use of a Ducks Unlimited approved subcontractor for wetland restoration/creation operations is recommended.
3.2 PREPARATION OF SUBGRADE AND SPREADING OF TOPSOIL

A. The subgrade soil when at optimum soil moisture shall be loosened to a depth of 4" by disking or tilling and then graded to remove all ridges and depressions so that it will be everywhere parallel to the proposed finished grade. All stones over 1 1/2" in any dimensions, sticks, rubbish and other extraneous matter shall be removed during this operation. If soil clumps over 2" in diameter remain, then make additional passes with a harrow or other approved equipment to reduce below the 2" size. No heavy objects except rollers shall be moved over lawn areas after the subgrade soil has been prepared before topsoil is spread.

B. After the subgrade soil has been prepared, topsoil from the stockpile areas shall be spread evenly therein to depth of 4" by an approved method. No topsoil shall be spread in a muddy condition. Areas to receive topsoil are defined as follows:
   1. Turf/Lawn areas
   2. Native vegetation restoration areas
   3. Proposed and restored wetlands
   4. All disturbed areas to be re-vegetated

C. On all grass areas, the finished surface of the topsoil shall conform to the finished grade and shall be free from hollows or other inequalities, stones, sticks and other extraneous matter.

3.3 FINISH GRADING

A. In areas to receive lawns and native vegetation, the Contractor shall till, disc, or otherwise scarify the soil to a depth of 4" removing all clods, stones, and related material 1" or larger. After all nonconforming materials have been removed place 4" layer of topsoil over all areas to vegetated.

B. The Contractor shall be responsible for minor adjustments to the finished subgrade if such treatment is required in the opinion of the TPWD Construction Manager.

C. The Contractor may use machinery acceptable to the TPWD Construction Manager to complete the work to re-establish finished grade. Machinery shall be of sufficient size to remain within the boundaries of the Limit of Work to avoid unnecessary disturbance to the site.

D. Hand-rake the surface, removing all clods and undesirable material greater than 1/2" from ground surface. Fill all low spots and cut irregularities to the acceptance of the Owner’s representative. Roll the entire surface evenly with a 200 pound water ballast roller or other means acceptable.

E. During the finished grading operations, all swales and additional swales that may be required to drain areas where there are existing plant materials, shall be finished. In general, all grade adjustments shall be made so there are no areas that will have standing water.

F. It is the Contractors responsibility to maintain finished grades through construction operations until final acceptance. Any erosion or damage otherwise to finish grades will require re-grading, topsoil and vegetation at no additional cost to the Owner.

G. To prevent excessive weed growth in the lawn areas, the Contractor should be prepared to immediately proceed with seeding operations upon the completed and acceptable finished grade.
H. Prior to approval of finished grade of wetland areas, the Contractor shall provide the TPWD Construction Manager with digital elevation models of each created or restored wetland.

I. Prior to installation of grass or native vegetative areas, contact TPWD Construction Manager and Landscape Architect to inspect and approve finish grade.

END OF SECTION 312215
SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Seeding.
2. Hydrosedding.
4. Meadow grasses and wildflowers.

B. Related Requirements:

1. Uniform General Conditions for State of Texas Contracts including Supplementary General Conditions for projects administered by the TPWD
2. Section 31 23 00 "Earthwork" for grading of lawns and native planting areas.

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and mollusccides. They also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

   1. Certification of each turfgrass sod. Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf and meadows during a calendar year. Submit before expiration of required maintenance periods.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf and meadow establishment.

   1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
   2. Experience: Five years’ experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
   3. Installer’s Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
   4. Personnel Certifications: Installer’s field supervisor shall have certification in one of the following categories from the Professional Landcare Network:

      a. Landscape Industry Certified Technician - Exterior.
      b. Landscape Industry Certified Lawncare Manager.
      c. Landscape Industry Certified Lawncare Technician.

   5. Pesticide Applicator: State licensed, commercial.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.
B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:
   1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
   2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
   3. Accompany each delivery of bulk materials with appropriate certificates.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: As indicated on the drawings.

C. Grass-Seed Mix: Proprietary seed mixes as indicated on the drawings.

2.2 TURFGRASS

A. Turfgrass Species: As indicated on the drawings.

2.3 MEADOW GRASSES AND WILDFLOWERS

A. Wildflower and Native-Grass Seed: Fresh, clean, and dry new seed, of mixed species as indicated on the drawings.

B. Seed Carrier: Inert material, sharp clean sand or perlite.

2.4 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorus, and potassium in the following composition:
1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 MULCHES

A. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

B. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.6 PESTICIDES

A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Herbicide for Native Vegetation Restoration and turf grasses:

1. Plateau Herbicide (Ammonium salt of Imazapic23.6%) or approved equal.
2. Methylated Seed Oil as a surfactant.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.
C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by TPWD Construction Manager and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
   1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
   2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

B. Before planting, obtain TPWD Construction Manager and Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 HYDROSEEDING

A. Hydroseeding: Mix specified seed, commercial fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.
   1. Mix slurry with nonasphaltic tackifier.
   2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.

3.5 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
   1. Lay sod across slopes exceeding 1:3.
   2. Anchor sod on slopes exceeding 1:6 with wood pegs spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.
3.6 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by TPWD Construction Manager and Landscape Architect:
   
   1. Satisfactory Seeded Turf: At substantial completion, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
   
   2. Satisfactory Sodded Turf: At substantial completion, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.7 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer’s written recommendations. Coordinate applications with Owner’s operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer’s written recommendations.

C. Herbicide for Native Vegetation Restoration and turf grasses shall be applied post emergence of plants when the emerged grasses are 8” tall for all disturbed areas. Application shall be as directed on the herbicide label under the section “Revegetation with Prairie Grasses and other Forage Grasses” and using Methylated Seed Oil as a surfactant.

3.8 ESTABLISHMENT

A. It is the Contractors responsibility to provide adequate moisture levels to the proposed vegetated areas as well as any disturbed areas to adequately establish the vegetation as specified.

B. The Contractor shall be responsible for costs of water inclusive of labor, trucking, permitting, etc.

3.9 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner’s property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

D. Remove nondegradable erosion-control measures after grass establishment period.
END OF SECTION 329200
NOTES TO SHEET:

1. ALL ELECTRICAL, DATA, AND VOICE OUTLETS AT 48" AFF U.N.O.
2. ENTIRE ROOF TO RECEIVE 1X6 T&G WOOD SOFFIT, STAINED.

LEGEND

- SWITCH
- DUPLEX OUTLET
- GFI OUTLET
- SMOKE & CO DETECTOR
- PA SYSTEM OUTLET
- DOWNLIGHT
- CEILING FAN
- PENDANT FIXTURE
- WALL MOUNTED FIXTURE
- LIGHTING FIXTURE SCHEDULE - RESTROOMS

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<td>Statco</td>
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SEALED:

GALVESTON ISLAND STATE PARK
BEACHSIDE REDEVELOPMENT

GALVESTON, TX 77550

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A.231

FIRST FLOOR RCP - RESTROOMS
01
### Door Schedule - Park Headquarters

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<th>Material</th>
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<th>Remarks</th>
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<tr>
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<td>6' - 0&quot;</td>
<td>3' - 0&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>Aluminum</td>
<td>White</td>
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<tr>
<td>W2</td>
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<td>1/2&quot;</td>
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### Window Schedule - Park Headquarters

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<td>7' - 0&quot;</td>
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<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>Vinyl</td>
<td>White</td>
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### Door Schedule - Restrooms

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### Window Schedule - Restrooms

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<tr>
<td>W1</td>
<td>3' - 0&quot;</td>
<td>7' - 0&quot;</td>
<td>1/2&quot;</td>
<td>Dual</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td>Vinyl</td>
<td>White</td>
<td>Low-E</td>
<td>Standard</td>
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</tbody>
</table>

### Door Schedule - Additional Information

- **Note:** L1 51, L1 53, L1 56, L1 57, L1 61, L1 63, L1 64, L1 65, L1 76, L1 79, L1 83 & L1 86 are not used.
1. PROVIDE UNIT WITH MULTIPLE COOLING / HEATING SPEEDS, 4-WAY AIR DIRECTION, REMOTE CONTROL.

2. PROVIDE ELECTRIC COIL WITH SCR CONTROL WITH DISCONNECT SWITCH AND DOOR INTERLOCK. NC AT 1" STATIC <25 RADIATED.

3. MINIMUM STATIC PRESSURE NOT TO EXCEED 0.25".

4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE EQUIPMENT REPORT FOR THE BUILDING PRIOR TO SUBSTANTIAL COMPLETION.

5. DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER IN ACCORDANCE WITH DRAWINGS: AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE EXTERNALLY INSULATED. ALL DUCTS INSTALLED IN UNCONDITIONED SPACE OR EXTERNALLY INSULATED. ALL DUCTS INSTALLED IN CONDITIONED SPACE SHALL BE INSULATED WITH A MINIMUM OF 4" FIBERGLASS INSULATED BLANKET AND AIR FLOW AS SHOWN ON PLANS. EGGCRATE TYPE WITH OPPOSED BLADE DAMPER, FLOW AND NECK SIZE AS SHOWN ON PLANS. REFER TO FLOW AND NECK SIZE AS SHOWN ON PLANS. REFER TO PLAN FOR LOCATIONS.

6. PROVIDE DISCONNECT SWITCH WITHIN FAN HOUSING, INLET GRILLE, HANGER WITH ISOLATORS, LIGHTS ARE ON THE EXHAUST FAN IS ON WITH A 15-MINUTE OCCUPANCY TIME DELAY. STRUCTURE. EF-5 TO BE CONTROLLED BY TWO (2) THERMOSTATS, SETPOINT AT 85°F (ADJ.).

7. METHOD OF OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF MECHANICAL EQUIPMENT AND PIPING.

8. PROVIDE DISCONNECT SWITCH WITHIN FAN HOUSING, HANGER WITH ISOLATORS, LIGHTS ARE ON THE EXHAUST FAN IS ON WITH A 15-MINUTE OCCUPANCY TIME DELAY. STRUCTURE. EF-5 TO BE CONTROLLED BY TWO (2) THERMOSTATS, SETPOINT AT 85°F (ADJ.).

9. MECHANICAL MACHINES, PIPING, AND AUXILIARY MATERIALS SHALL BE FABRICATED, INSTALLED, AND TESTED IN ACCORDANCE WITH THE Dropbox ACCEPTANCE REPORT FOR EACH RECIPE DOCUMENT.

10. PROVIDE ELECTRIC COIL WITH SCR CONTROL WITH DISCONNECT SWITCH AND DOOR INTERLOCK. NC AT 1" STATIC <25 RADIATED.

11. MECHANICAL EQUIPMENT AND PIPING SHALL MEET THE REQUIREMENTS OF THE EXISTING MECHANICAL SYSTEMS AND BUILDING CODES.

12. PROVIDE DEPARTMENT OR CHANGE SIGNALS AND FIRE STOP MATERIALS TO PREVENT THE SPREAD OF SMOKE, FIRE, TOXIC GAS, OR WATER. SEAL WITH DOW CORNING OR 3M FIRE STOP FOAM.

13. PROVIDE EGGCRATE TYPE WITH OPPOSED BLADE DAMPER, FLOW AND NECK SIZE AS SHOWN ON PLANS. REFER TO FLOW AND NECK SIZE AS SHOWN ON PLANS. REFER TO PLAN FOR LOCATIONS.

14. CONTRACTOR SHALL PROVIDE TO THE OWNER A COMPLETE SET OF PLANS AND SPECIFICATIONS FOR THE BUILDING INCLUDING DRAWING ANDCALCULATION INFORMATION, OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF MECHANICAL EQUIPMENT AND PIPING.
KEYED NOTES:
1. PROVIDE AND INSTALL EXHAUST FAN AND ASSOCIATED GRAVITY DAMPER TO BACK OF 3'-0" x 5'-4" LOUVER. COVER REMAINING LOUVER OPENING WITH INSULATED SHEET METAL.
2. CEILING MOUNTED OCCUPANCY SENSOR PROVIDED BY ELECTRICAL CONTRACTOR. INTERLOCK EXHAUST FAN EF-6 WITH OCCUPANCY SENSOR SUCH THAT WHEN THE LIGHTS ARE ON, THE EXHAUST FAN IS ON WITH A 15-MINUTE OCCUPANCY TIME DELAY. EXHAUST FAN SHALL DE-ENERGIZE WHEN LIGHTS ARE OFF IN BOTH RESTROOMS. COORDINATE WORK WITH ELECTRICAL CONTRACTOR.
3. PROVIDE AND INSTALL THERMOSTAT AT FIVE (5) FEET ABOVE FINISHED FLOOR WITH SUB-BASE AND LOCKING COVER. INTERLOCK EXHAUST FAN EF-5 SUCH THAT THERMOSTAT WILL START FAN WHEN TEMPERATURE REACHES SETPOINT OF 85° F (ADJUSTABLE). EXHAUST FAN SHALL DE-ENERGIZE WHEN BOTH THERMOSTATS ARE BELOW SETPOINT TEMPERATURE. THERMOSTAT SHALL BE HONEYWELL PRO 1000, MODEL NO. TH1100DV1000 OR APPROVED EQUAL.
4. PROVIDE ALUMINUM DUCTWORK FOR EXHAUST SYSTEM. ALUMINUM SHEET SHALL COMPLY WITH ASTM-B-209.
GENERAL NOTES:

1. PROVIDE COMBINATION FLOOR BOX IN SLAB FOR HARDWIRE CONNECTION TO RESTROOM 1 & 2.

2. ROUTE CIRCUIT FOR EXHAUST FAN EF-3 VIA WALL MOUNTED OCCUPANCY SENSOR OF RESTROOM 3 & 4.

3. RTU-1 SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.

4. NEMA 4X DISCONNECT SWITCH AND OUTLET FOR DECK MOUNTED ROOF TOP UNIT FINISHED FLOOR UNLESS OTHERWISE NOTED BY ARCHITECT. COORDINATE EXACT CONNECTION. COORDINATION EXACT LOCATION OF ALL EQUIPMENT WITH OWNER.

5. CEILING WITH JUNCTION BOX AND PULL CABLES. PROVIDE COMBINATION POWER CONFERENCE TABLE, HUBBELL MODEL S1PFB, COVER MODEL S1SPFFTAL WITH ALL DEVICES (RECEPTACLES, SWITCHES, ETC.) IN WALL SHALL BE LOCATED 48" ABOVE 0'-0" = 1'-0"
1. All devices (receptacles, switches, etc.) in wall shall be located 44" (minimum) above finished floor. Coordinate exact location and requirements with architect.

General Notes:

2. Provide wall mounted NEMA 4X disconnect switch for water heater EWH-3. Coordinate exact location with architect.

3. Provide junction box for hand dryer. Refer to architectural drawings for exact location of hand dryer.

4. Route each ceiling fan circuit via a motor rated switch.

5. Provide convenience outlet below counter. Coordinate exact location with owner.

6. Manual motor starter switch for exhaust fan (EF-5 or EF-6) shall be provided by fan manufacturer and installed by electrical contractor.
**GENERAL NOTES:**

1. All devices (receptacles, switches, etc.) shall be located at least 44" (minimum) above finished floor. Coordinate exact location and requirements with Architect.

2. Provide photoelectric and timeclock override for exterior lighting circuit(s). Refer to Sheet No. E5.02, Detail No. 4 for additional information.

**ELECTRICAL LIGHTING PLAN - RESTROOMS (BID ALTERNATE #2 SIMILAR)**
**Short Circuit Calculations**

(Point to Point Method)

- **Electrical Service Rack "EP1"**
- **Electrical Service Rack "EP2"**

**Electrical Service Rack "EP1"**

- **Inrush Current (I x M)**
- **Fault Current from CPE Utility Transformer**
- **1-Phase CPE Transformer LET-THRU Short Circuit Current**

**Electrical Service Rack "EP2"**

- **Fault Current from CPE Transformer LET-THRU Short Circuit Current**

**Electrical Load Analysis**

(Point to Point Method)

- **Electrical Service Rack "EP3" & "EP4"**

**Electrical One-Line Diagrams**

- **EP1**
- **EP2**

**Electrical Load Analysis**

- **PROPOSED 120/240V, 1ɸ, 3-WIRE SERVICE**

**Key Notes:**

- Energy (CPE) Standards and coordinate all work with CPE. Contractor to provide a permanently affixed arc flash warning label based on 55,955A available fault current and dated May 1, 2020 in accordance with NFPA 70E.

- Provide prints of all work as construction documents for new electrical service. Submit prints to the Energy (CPE) office for approval and signature.

- Provide a commercial meter can with PT and CT can, 400A, 120/240V, 1ɸ, 3W service. Install conduit and wiring in accordance with Centerpoint and TPWD Electrical Engineer for any and all work involving CPE.

- Provide and install a commercial meter can with PT and CT can, 400A, 120/240V, 1ɸ, 3W service. Install conduit and wiring in accordance with Centerpoint and TPWD Electrical Engineer for any and all work involving CPE.
**Short Circuit Calculations**
(Point to Point Method)
Electrical Service Rack “EPS” & “EP6”

**Volts**: 240/120 V

**Service**: 120/240 V / 1ɸ / 3W

**Incoming Service - 4- #350 KCMIL**

**Total Load**

**RV Receptacles**

**Fault @ Disconnect Switch From CPE Utility Transformer:**

1-Phase CPE Transformer Let-Thru Short Circuit Current ("I" Ultimate)

**Voltage** "E" (Line to Line)

**Multiplier** "M" (1 / 1 + F)

**Factor** "F" (2 x L x I) / (C x N x E)

**No. of Parallel Runs** "N"

**Value for Conductors** "C" (2- #500 KCMIL)

**Feeder Length** "L" (Utility Transformer to Disconnect Switch)

**Short Circuit Current @ Disconnect Switch (I x M)**

**Electrical Load Analysis**
Electrical Service Rack “EPS” & “EP6”

**Service** 120/240V / 1ɸ / 3W

**Load Description**

**Main Distribution Wireway**

**Ground Bus**

**RV Receptacles**

**Fault @ Disconnect Switch From CPE Transformer**

**Incoming Service - 4- #350 KCMIL**

**Total Load**

**RV Receptacles**

**Fault @ Disconnect Switch From CPE Utility Transformer:**

1-Phase CPE Transformer Let-Thru Short Circuit Current ("I" Ultimate)

**Voltage** "E" (Line to Line)

**Multiplier** "M" (1 / 1 + F)

**Factor** "F" (2 x L x I) / (C x N x E)

**No. of Parallel Runs** "N"

**Value for Conductors** "C" (2- #500 KCMIL)

**Feeder Length** "L" (Utility Transformer to Disconnect Switch)

**Short Circuit Current @ Disconnect Switch (I x M)**

**Electrical Load Analysis**
Electrical Service Rack “EP7”

**Service** 120/240V / 1ɸ / 3W

**Load Description**

**Main Distribution Wireway**

**Ground Bus**

**RV Receptacles**

**Fault @ Disconnect Switch From CPE Transformer**

**Incoming Service - 4- #350 KCMIL**

**Total Load**

**RV Receptacles**

**Fault @ Disconnect Switch From CPE Utility Transformer:**

1-Phase CPE Transformer Let-Thru Short Circuit Current ("I" Ultimate)

**Voltage** "E" (Line to Line)

**Multiplier** "M" (1 / 1 + F)

**Factor** "F" (2 x L x I) / (C x N x E)

**No. of Parallel Runs** "N"

**Value for Conductors** "C" (2- #500 KCMIL)

**Feeder Length** "L" (Utility Transformer to Disconnect Switch)

**Short Circuit Current @ Disconnect Switch (I x M)**
**GALVESTON ISLAND STATE PARK**

**MOUNTING**
- 12
- 12
- 2

**CKT**
- SPARE
- SPARE
- SPARE

**SERVES**
- 3/4"
- 2
- 15000
- 2
- 9000
- 2
- 2
- 15000
- 2

**PHASE A**
- 3/4"
- 20
- 15000
- 2
- 12

**HAND DRYER - WOMEN'S RESTROOM**

**SPARE**
- SPARE
- SPARE
- SPARE

**CEILING FAN - EXTERIOR (2)**

**BUS AMPS**
- 1
- 200
- 225

**WIRE**
- 120/208
- THWN COPPER

**BREAKER**
- 1
- 20
- 20
- 15
- 4

**COND**
- 3/4"

**TOTAL**
- 23,171 WATTS

**PHASE C**

**L1**
- 20,044 WATTS

**PHASE B**

**L**
- 99,820 WATTS

**LIFT STATION NO. 3 CONTROL PANEL**

**LIGHTING & FAN CONTROLS (PLUMBING CHASE)**

**RECEPTACLE - ADA TENT PLATFORM (1)**

**RECEPTACLE - WOMEN'S RESTROOM (4)**

**RECEPTACLE - MEN'S RESTROOM (4)**

**EXHAUST FAN EF-6 (PLUMBING CHASE)**

**HOT WATER RECIRCULATION PUMP (HWRP-1)**

**SPARE**
- SPARE
- SPARE
- SPARE

**(PLUMBING CHASE)**

**ENCLOSURE TYPE:**
- PANEL
- PANEL
- PANEL

**MODEL:**
- TBPE Firm No. F-3446
- UNT

**SHEET NUMBER**
- ELECTRICAL

**OF BEACHSIDE REDEVELOPMENT**

**CC.127436.SP**

**PAGE A**
- 2/2
- 2/2
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**PAGE B**
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**PAGE C**
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**PAGE D**
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### Plumbing Fixture Schedule

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<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-1</td>
<td>Drinking Fountain (Non-Handicap)</td>
</tr>
<tr>
<td>L-2</td>
<td>Electronic Valve - Unit - Electric Drinking Fountain - Faucet - Handicap Use.</td>
</tr>
<tr>
<td>SH-1</td>
<td>1.25-Gallon Flush: AMERICAN STANDARD Model 3461.001.</td>
</tr>
<tr>
<td>EAPMO (UPC), SBCCI (Standard Plumbing Code), Tested and Certified by NSF INTERNATIONAL: WATTS Model LF909QTS, Size 2 1/2&quot;.</td>
<td></td>
</tr>
<tr>
<td>UPSTREAM OF THE NO. 1 SHUT OFF VALVE. SHALL MEET THE REQUIREMENTS OF COCKS, 909 CELCON CHECK SEAT, STAINLESS STEEL 909HW RELIEF VALVE (2) TIGHTLY CLOSING SHUT OFF VALVES AND A PROTECTIVE STRAINER WALL MOUNTED WITH FLUSH VALVE, ADA AND TAS COMPLIANT.</td>
<td></td>
</tr>
<tr>
<td>ASSE STANDARD 1013, AWWA C-511-92, FCCCHR OF USC MANUAL SECTION 10, AMERICAN STANDARD ALLBROOK MODEL 6550.</td>
<td></td>
</tr>
<tr>
<td>ELONGATED, WITH OPEN FRONT, CONCEALED CHECK &amp; SELF-SUSTAINING HINGE, UNDER MOUNT, ADA COMPLIANT.</td>
<td></td>
</tr>
<tr>
<td>CLEANING PISTON, CR-P2 LITHIUM BATTERY: AMERICAN STANDARD MODEL FIXTURE</td>
<td></td>
</tr>
</tbody>
</table>

### Plumbing Materials

<table>
<thead>
<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
<td>B.O.M.</td>
<td>High Efficiency, Electronic Urinal Flush Valve, 0.5-Gallon Wall Mounted Dual Height Handicap Accessible.</td>
</tr>
<tr>
<td>C.W.</td>
<td>Stainless Steel Matte Finish with Chrome Handle: Outdoor Shower Company Model WM-442-ADA.</td>
</tr>
<tr>
<td>B.O.M.</td>
<td>Push Button Single Lever Flushing Valve.</td>
</tr>
<tr>
<td>T.P.</td>
<td>Spray with 59&quot; Long Plastic Hose, Elevated In-Line ASME A112.18.3 Stainless Steel Slid Bar/Grab Bar.</td>
</tr>
<tr>
<td>C.W.</td>
<td>Stainless Steel Matte Finish with Chrome Handle: Outdoor Shower Company Model WM-442-ADA.</td>
</tr>
</tbody>
</table>

### Electrical Water Heater Schedule

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<tbody>
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<td>D.E.F.</td>
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</tr>
<tr>
<td>T.P.</td>
<td>T.P.</td>
</tr>
<tr>
<td>C.W.</td>
<td>C.W.</td>
</tr>
<tr>
<td>B.O.M.</td>
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</tr>
</tbody>
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### General Notes

1. All plumbing fixtures, public hand wash basins, urinals, urinal slings, all plumbing traps, gauges, strainers, unions, and other plumbing accessories shall be provided and installed by contractor. |
2. All plumbing fixtures, public hand wash basins, urinals, urinal slings, all plumbing traps, gauges, strainers, unions, and other plumbing accessories shall be provided and installed by contractor. |
3. It is the responsibility of the contractor to ensure that all plumbing fixtures, public hand wash basins, urinals, urinal slings, all plumbing traps, gauges, strainers, unions, and other plumbing accessories are installed in accordance with the drawings and specifications. |
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KEYED NOTES:
1. SANITARY WASTE LINE DOWN TO BELOW SLAB, SIZE AS NOTED ON PLAN.
2. HUB DRAIN FOR CONDENSATE DRAIN LINE DOWN TO BELOW SLAB.
3. 2" DOMESTIC COLD WATER ENTRY.
4. PROVIDE FRENCH DRAIN FOR WINDOW A/C UNIT CONDENSATE. REFER TO SHEET NO. P5.04, DETAIL NO. 1 FOR ADDITIONAL INFORMATION. COORDINATE EXACT LOCATION OF FRENCH DRAIN WITH ARCHITECT.
5. ROUTE 2" PVC WASTE LINE BELOW CONCRETE TO FRENCH DRAIN.

GENERAL NOTES:
1. REFER TO SHEET NO. P5.01 FOR RISER DIAGRAM AND PIPING SIZES.
2. DOMESTIC WATER ENTRY, REFER TO CIVIL DRAWINGS FOR CONTINUATION.
3. SANITARY BUILDING DRAIN, REFER TO CIVIL DRAWINGS FOR CONTINUATION.

PLUMBING UNDERFLOOR PLAN - FIRST FLOOR
GENERAL NOTES:
1. CONDENSATE DRAIN LINE UP TO HUB DRAIN.
2. DOMESTIC COLD WATER ENTRY.
3. ROUTE 3/4" COPPER CONDENSATE LINE FROM WINDOW A/C UNIT DOWN TO FD-2.
4. ROUTE BACKFLOW PREVENTER DRAIN LINE TO FLOOR DRAIN. REFER TO SHEET NO. P5.03, DETAIL NO. 9 FOR ADDITIONAL INFORMATION.
5. PROVIDE 1/2" COLD WATER WITH SHUT-OFF VALVE AND FILTER DOWN TO ICE MAKER AT REFRIGERATOR.

KEYED NOTES:
1. REFER TO SHEET NO. P5.01 FOR RISER DIAGRAM AND PIPING SIZES.

GENERAL NOTES:
1. CONDENSATE DRAIN LINE UP TO HUB DRAIN.
2. DOMESTIC COLD WATER ENTRY.
3. ROUTE 3/4" COPPER CONDENSATE LINE FROM WINDOW A/C UNIT DOWN TO FD-2.
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KEYED NOTES:
1. REFER TO SHEET NO. P5.01 FOR RISER DIAGRAM AND PIPING SIZES.
PLUMBING FLOOR PLAN - RESTROOMS (BID ALTERNATE #2 SIMILAR)

KEYED NOTES:
1. PROVIDE BACKFLOW PREVENTER TO RESTROOMS, REFER TO SHEET NO. P5.03, DETAIL NO. 9 FOR ADDITIONAL INFORMATION.
2. PROVIDE WALL HYDRANT WH-1 WITH SHUT-OFF VALVE. PLACE WALL HYDRANT AT CHASE WALL, UNDER LAVATORY COUNTER.
3. PROVIDE ELECTRIC WATER HEATER EWH-3 AND TMV-1. REFER TO SHEET NO. P5.03, DETAIL NO. 6 AND SHEET NO. P5.04, DETAIL NO. 2 FOR ADDITIONAL INFORMATION.
4. PROPOSED SHOWER SHALL BE ADA / TAS COMPLIANT. REFER TO ARCHITECTURAL SHEET NO. A.242 FOR MOUNTING DETAILS.
5. REFER TO SHEET NO. P5.02 FOR RISER DIAGRAM AND PIPING SIZES.

GENERAL NOTES:
1. REFER TO SHEET NO. P5.02 FOR SHEET TITLE AND SHEET NUMBER.

SCALE: 1/4" = 1'-0"
PLUMBING FLOOR PLAN - CHANGING STATIONS

1. ROUTE COLD WATER BELOW SUBFLOOR.
2. 1" COLD WATER UP FOR SHOWER HEADS AND FOOT SHOWER.
3. COLD WATER DROPS BELOW CONCRETE FOOTING AND ROUTES TO BFP-2.
4. PROVIDE 4" CONCRETE PAD AND INSULATED LOCKING COVER FOR BFP-2.
5. PROPOSED SHOWER SHALL BE ADA / TAS COMPLIANT. REFER TO ARCHITECTURAL SHEET NO. L5.03 FOR MOUNTING DETAILS.

WATER RISER DIAGRAM - CHANGING STATIONS

2" = 1'-0"
1. Provide and install a UL approved fire safeguard assembly in accordance with fire safeguard manufacturer's requirements for type of floor sleeve, hour rating of floor sleeve and material of piping passing through floor sleeve. Fire safeguard assembly to be "3M" or approved equal.

NOTES:

1. Provide a section of high-compression strength insulation at each hanger point. Insulation may be half round or full round & extended 2" beyond galv. shield each way.

2. Provide copper or plastic coated hangers for non-insulated copper pipe.

3. Fire safeguard material (where required)

4. Insulation (if required by specifications)

5. Schedule 40 black steel pipe sleeve with welded 1/4" thick steel plate collar (hot dip galvanize after fabrication)

6. Epoxy sealant applied to bottom of sleeve collar

7. Annular space between inside of sleeve and pipe (or insulation for insulated pipe) shall be in accordance with fire safeguard manufacturer's requirements

8. Cold water inlet, see plumbing plan for continuation & riser diagram for pipe size

9. Hot water

---

**FLOOR DRAIN DETAIL**

1. Provide and install a UL approved fire safeguard assembly in accordance with fire safeguard manufacturer's requirements for type of floor sleeve, hour rating of floor sleeve and material of piping passing through floor sleeve. Fire safeguard assembly to be "3M" or approved equal.

NOTES:

1. Provide copper or plastic coated hangers for non-insulated copper pipe.

2. Fire safeguard material (where required)

3. Insulation (if required by specifications)

4. Schedule 40 black steel pipe sleeve with welded 1/4" thick steel plate collar (hot dip galvanize after fabrication)

5. Epoxy sealant applied to bottom of sleeve collar

6. Annular space between inside of sleeve and pipe (or insulation for insulated pipe) shall be in accordance with fire safeguard manufacturer's requirements

7. Cold water inlet, see plumbing plan for continuation & riser diagram for pipe size

8. Hot water
2 ELECTRIC WATER HEATER SCHEMATIC

1 CONDENSATE DRAIN DETAIL