PROJECT GOALS & OBJECTIVES

- Use borrow material from Lake Mechant to create and nourish marsh on the south side of Bayou DuLarge – Approximately 660 Acres
  Final Design – 628 Acres (including Alternate 1)

- Restore ridge along the southern bank line of Bayou DuLarge – Approximately 22,300 feet
  Final Design – 22,736 feet

- Reestablish historic hydrologic and salinity conditions by reducing the size of the Grand Pass opening from 900 ft wide x 36 ft deep to approximately 150 ft wide x 16 ft deep
  Final Design – Existing Pass 1100 ft wide x 49 ft deep, Anchored sheet pile wall with wingwall top at Elev. +2 and 200 ft wide boat passage weir with top of weir Elev. -16.
CONCEPTUAL PROJECT FEATURES

SIGMA CONSULTING GROUP, INC.
95% DESIGN PROJECT FEATURES
### TIDES/WATER SURFACE ELEVATIONS

- CRMS 4455 station is located within the western marsh creation area, south of Bayou DuLarge and west of Grand Pass.

- Data analyzed from January 2015 to January 2020

- Tidal datums were projected from TY-0 to TY-25 based on ESLR

#### Tidal Datum Table

<table>
<thead>
<tr>
<th>Tidal Datum</th>
<th>TY (-2) 2020 (Elevation in ft, NAVD88)</th>
<th>TY (0) 2022 (Elevation in ft, NAVD88)</th>
<th>TY (25) 2047 (Elevation in ft, NAVD88)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean High Water (MHW)</td>
<td>0.94</td>
<td>0.99</td>
<td>1.63</td>
</tr>
<tr>
<td>Mean Tide Level (MTL)</td>
<td>0.53</td>
<td>0.58</td>
<td>1.22</td>
</tr>
<tr>
<td>Mean Low Water (MLW)</td>
<td>-0.03</td>
<td>0.02</td>
<td>0.66</td>
</tr>
</tbody>
</table>
SEA LEVEL RISE & SUBSIDENCE

• The National Research Council (NRC) provides 3 different sea level rise scenarios
  • The intermediate scenario was selected
  • Sea level change of 3.28 ft by the year 2100

• The subsidence rate of 0.021 ft/year (6.4 mm/year) was taken from the 2012 Coastal Master Plan (which remained in the 2017 Master Plan)
DATA COLLECTION PHASE

- Secondary Monument Establishment
- Topo/Bathy Surveys
- Magnetometer Surveys at Boreholes
- Geophysical & Magnetometer Surveys
- Geotechnical Investigations
- Existing Utilities & Pipeline Infrastructure
SECONDARY MONUMENT ESTABLISHMENT

SM-01 is situated on the southern bank line of Bayou DuLarge, approximately 2000 feet west from Grand Pass.

SM-02 is situated on the southern bank line of Bayou DuLarge, approximately 1.9 miles west from Grand Pass.
TOPO/BATHY SURVEYS

Lake Mechant

Caillou Lake

LEGEND
- PROPOSED MULTIBEAM SURVEY AREA
- PROPOSED BATHYMETRIC SURVEY AREA
- HYDROLOGIC RESTORATION STRUCTURE
- BATHYMETRIC/TOPOGRAPHIC SURVEY TRANSIENT

NOTES:
BACKGROUND IMAGERY REPRODUCED FROM 2015 DDQQ AERIAL PHOTOGRAPHY.
HYDROGRAPHIC SURVEYS

SIGMA CONSULTING GROUP, INC.
TOPOGRAPHIC/BATHYMETRIC DATA

SIGMA CONSULTING GROUP, INC.
GRAND PASS MULTIBEAM DATA

SIGMA CONSULTING GROUP, INC.
ADDITIONAL TOPO SURVEY
MCA 3 AND AUX 1 SITES

- Additional topographic surveying performed at MCA 3, Aux 1 and Bayou DuLarge for design purposes.
- These sites were not included in the original survey.
ADDITIONAL MAGNETOMETER SURVEY
MCA 3 AND AUX 1 SITES

- Additional magnetometer surveying performed at MCA 3, Aux 1 and Bayou DuLarge for design purposes.
- No pipelines or hazards to construction were located.
- Anomalies were mostly debris within Bayou DuLarge, which is consistent with previously performed mag survey finding.
MAGNETOMETER SURVEY - BOREHOLES

- A magnetometer survey was performed at each of the proposed 55 bore locations.
- Crossing magnetometer survey transects were run at each bore location and anomalies were documented.
- *No pipelines were found in the vicinity of the bore locations.*
GEOPHYSICAL & MAGNETOMETER SURVEYS

- Magnetometer Surveys:
  - MCA/MNAs – 19.9 nautical miles
  - Grand Pass – 2.6 nautical miles
  - Bayou DuLarge Ridge & Channel – 11.6 nautical miles
  - Equipment Access & Dredge Pipeline Corridors – 61 nautical miles

- Hydro/Sidescan Sonar Survey:
  - Borrow Area – 23.4 nautical miles
  - Equipment Access & Dredge Pipeline Corridors – 61 nautical miles

- **No anomalies or hazards were identified that indicate critical infrastructure, abandoned wellheads, or other potential project constraints.**
GEOTECHNICAL INVESTIGATION

Thirty-one (31) undisturbed soil borings
Fourteen (14) cone penetration tests (CPTs)
Ten (10) vibracores
The majority of the project area consists of:

- extremely soft to soft dark gray, gray and brown humus, peat and organic clay depths of 0 to 4 ft below the mudline.

- underlain by extremely soft to soft gray clay and silty clay with interbedded strata of very loose to loose gray silty sand, clayey sand, and fine sand and very loose to loose sandy silt and clayey silt to boring termination depths of 40 ft below the mudline.
EXISTING UTILITIES – SLECA POWER
PROJECT CONSTRUCTION UNITS

- **CONSTRUCTION UNIT 1 (CU-1)**
  - Grand Pass Structure
  - Bank Stabilization & Scour Protection @ Grand Pass
  - Ridge Restoration
  - Marsh Creation & Earthen Containment
  - Herbaceous Vegetative Planting of the Ridge Feature

- **CONSTRUCTION UNIT 2 (CU-2)**
  - Woody Vegetative Planting of the Ridge Feature
  - Earthen Containment Dike Gapping
  - Herbaceous Vegetative Planting of Marsh Creation Areas
GRAND PASS STRUCTURE

- Structure Alternatives
- Hydraulic Modeling
- Anchored Sheet Pile Wall
STRUCTURE ALTERNATIVES

- Rock Structures
  - Trapezoidal Section
  - Stepped Section

- Sheet Pile Wall Structures
  - Anchored Sheet Pile Wall (SELECTED)
  - Combi-Wall Structure (Pipe Piles + Sheet Pile Cantilevered)

- Boat Passage Weir Widths
  - 150 ft wide
  - 200 ft wide (SELECTED)
HYDRAULIC MODELING OF STRUCTURAL ALTERNATIVES

Based on velocity and discharge considerations, the anchored sheet pile wall was selected as the final design alternative. Scour protection and bank stabilization features are recommended.
GRAND PASS STRUCTURE LAYOUT
ANCHORED SHEET PILE WALL
GRAND PASS STRUCTURE - SECTION
RIDGE RESTORATION

- Ridge Layout
- Ridge & Ridge Borrow Design
- Ridge Borrow
- Ridge Sheet Pile Wall
- Ridge Vegetative Planting
Segment 1 – West of Grand Pass: approximately 6,300 ft in length
Segment 2 – East of Grand Pass: approximately 14,300 ft in length
Segment 3 – West Ridge Restoration: approximately 2,200 ft
RIDGE & RIDGE BORROW DESIGN

- 15 ft crest width
- 5H:1V side slopes
- Crest elevation of +5.0
- Proposed vertical tolerance of +0.5 ft
RIDGE BORROW

- Main ridge borrow source is from MCA internal areas
- Bayou DuLarge borrow source used where MCA internal areas do not exist
RIDGE SHEET PILE WALLS

- Required due to excessive water bottom depths near the No Work Area
- PZ-27 sheet pile section with a top elevation of +5.0 NAVD88
- Vertical tolerance: top of sheet pile wall +0.5 ft
RIDGE VEGETATIVE PLANTING
CU-1

Bayou DuLarge Side Plantings
Only Required Where Newly
Constructed Ridge Toe Abuts
Bayou Water Line

SIGMA CONSULTING GROUP, INC.
RIDGE VEGETATIVE PLANTING
CU-2

<table>
<thead>
<tr>
<th>Plant Species</th>
<th>No. of Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Oak (<em>Quercus virginiana</em>)</td>
<td>790</td>
</tr>
<tr>
<td>Red Mulberry (<em>Morus rubra</em>)</td>
<td>470</td>
</tr>
<tr>
<td>Wax Myrtle (<em>Myrica cerifera</em>)</td>
<td>470</td>
</tr>
<tr>
<td>Sugarberry (<em>Celtis laevigata</em>)</td>
<td>470</td>
</tr>
<tr>
<td>French Mulberry (<em>Callicarpa americana</em>)</td>
<td>470</td>
</tr>
<tr>
<td>Matrimony Vine (<em>Lycium barbarum</em>)</td>
<td>470</td>
</tr>
<tr>
<td><strong>TOTAL PLANTS</strong></td>
<td><strong>3,140</strong></td>
</tr>
</tbody>
</table>

NOTES

1. WOODY-STEM PLANTS SHALL BE INSTALLED ON THE CREST OF THE RIDGE IN TWO PARALLEL ROWS SEVEN FEET (7') APART (3.5 FEET ON EACH SIDE OF RIDGE CREST CENTERLINE). PLANTS SHALL BE INSTALLED ON FOURTEEN-FOOT (14') CENTERS TO THE EXTENT WITH ALTERNATING CENTERS.

2. SPECIES AND PERCENTAGES SHALL BE AS FOLLOWS: LIVE OAK (*Quercus virginiana*) 25%; RED MULBERRY (*Morus rubra*) 15%; WAX MYRTLE (*Myrica cerifera*) 15%, SUGARBERRY (*Celtis laevigata*) 15%; FRENCH MULBERRY (*Callicarpa americana*) 15%, AND MATRIMONY VINE (*Lycium barbarum*) 15%.

3. PLANTS SHALL HAVE COMPLETED TWO GROWING SEASONS, WITH AT LEAST ONE FULL GROWING SEASON IN TRADE-GALLON-SIZED POTS OR IN PLANT TUBES WITH A MINIMUM SIZE OF 2.7 INCHES DIAMETER BY 8 INCHES DEEP, AND PLANTS SHALL HAVE A MINIMUM ROOT COLLAR DIAMETER OF THREE-EIGHTHS INCH.

4. ANY PLANT THAT IS LESS THAN THREE-QUARTERS OF AN INCH (3/4") IN DIAMETER AT THE STEM-ROOT INTERFACE SHALL BE SUPPORTED BY A WOODEN STAKE WITH MINIMUM DIMENSIONS OF ONE INCH (1") BY ONE INCH (1") BY FORTY-EIGHT INCHES (48") IN LENGTH OR BY A SEGMENT OF CANE WITH MINIMUM DIMENSIONS OF THREE-FOURTHS INCH (3/4") SMALL END DIAMETER AND FORTY-EIGHT INCHES (48") IN LENGTH.

SIGMA CONSULTING GROUP, INC.
MARSH CREATION / NOURISHMENT AREAS

- Delineation
- CMFE Design
- % Inundation
- MCA Design Summary
- Vegetative Plantings
MCA DELINEATION
MCA 1

- MCA 1 is a 178-acre site with the ridge acting as the northern containment dike
- MCA 1B is an optional 109-acre site and surrounds an area of existing open water – Add Alternate for CU-1
- Both areas are fully contained either by ECDs or the Ridge
### MCA DELINEATION

#### MCA 2

- MCA 2 is a 307-acre site with the ridge acting as the northern containment dike
- MCA 2 segmented into 3 cells
- All areas are fully contained either by ECDs or the ridge
MCA DELINEATION
MCA 3

- MCA 3 is a 35-acre site with the ridge acting as the northern containment dike
- MCA 3 is fully contained either by ECDs or the Ridge
AUXILIARY DISPOSAL SITE 1

12 Acre site between MCA 3 and MCA 1 to be used for unconfined marsh creation if the plan quantity for marsh fill dredging exceeds the field fill requirements.
Marsh % Inundation values for design were calculated and projected throughout the project life based on RSLR. These ranges were used to define marsh performance over time.
CMFE DESIGN

For single stage construction the CMFE’s were determined based on 25-year elevation on the settlement curves produced by Eustis.

Subsidence at 6.4 mm/yr (0.525 ft) was included in the settlement curves. (Therefore, subsidence was added back to the 25-year elevation shown on the curve.)

Construction settlement of 0.1 ft was added to the modeled 25 yr elevation shown on the curve.
CMFE DESIGN

Settlement curves developed by Eustis were used to determine the optimal CMFE that maximized time within the intertidal zone.

The settlement curve for the existing ground elevation and construction staging technique were evaluated to determine which target slurry elevation provided the most economical approach and longest duration within the intertidal zone.
CMFE DESIGN – SETTLEMENT CURVES
(TYPICAL SINGLE STAGE WEST MCA 1 & MCA 3)

Legend:
- 20% Inundation
- 80% Inundation
- Single Stage to EL 2
- Single Stage to EL 2.5
- Single Stage to EL 3.0

Selected Curve
CMFE DESIGN – SETTLEMENT CURVES
(TYPICAL TWO STAGE WEST MCA 1B)

LEGEND
- 20 Percent Inundation
- 80 Percent Inundation
- Estimated Existing Mulch
- INITIAL PUMPING STAGE TO EL 3 (ILLUSTRATIVE)
- FINAL PUMPING STAGE TO EL 3
- INITIAL PUMPING STAGE TO EL 2.5 (ILLUSTRATIVE)
- FINAL PUMPING STAGE TO EL 2.5
- INITIAL PUMPING STAGES TO EL 2 (ILLUSTRATIVE)
- FINAL PUMPING STAGE TO EL 2

Selected Curve

SIGMA CONSULTING GROUP, INC.
CMFE DESIGN – SETTLEMENT CURVES
(TYPICAL SINGLE STAGE EAST MCA 2-1 AND 2-3)

Selected Curve
CMFE DESIGN – SETTLEMENT CURVES
(TYPICAL TWO STAGE EAST MCA 2-2)
## MARSH FILL DESIGN TABLE

<table>
<thead>
<tr>
<th>MCA</th>
<th>Acreage</th>
<th>Anticipated Dredge Slurry Elev $^1$ (ft)</th>
<th>TY-0 CMFE $^2$ (ft)</th>
<th>TY-25 Elev $^3$ (ft)</th>
<th>Intertidal Zone Duration $^4$ (Yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCA 1</td>
<td>178</td>
<td>+3.0</td>
<td>+1.3</td>
<td>+0.65</td>
<td>20</td>
</tr>
<tr>
<td>MCA 1B</td>
<td>109</td>
<td>Stage 1: +1.5 Stage 2: +2.5</td>
<td>+1.3</td>
<td>+0.70</td>
<td>18</td>
</tr>
<tr>
<td>(Alternate 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCA 2-1</td>
<td>92</td>
<td>+2.0</td>
<td>+1.3</td>
<td>+0.60</td>
<td>20</td>
</tr>
<tr>
<td>MCA 2-2</td>
<td>88</td>
<td>Stage 1: +1.5 Stage 2: +2.5</td>
<td>+1.3</td>
<td>+0.7</td>
<td>20</td>
</tr>
<tr>
<td>MCA 2-3</td>
<td>127</td>
<td>+2.0</td>
<td>+1.3</td>
<td>+0.6</td>
<td>20</td>
</tr>
<tr>
<td>MCA 3</td>
<td>34</td>
<td>+3.0</td>
<td>+1.3</td>
<td>+0.65</td>
<td>20</td>
</tr>
</tbody>
</table>

1. Selected Curve from Settlement Curves
2. Calculated Value: TY-25 + Subsidence + 0.1 ft Construction Settlement
3. Year 25 value for selected settlement curve
4. Duration of time between the 20% and 80% inundation curves
MARSH DESIGN SUMMARY

- All marsh creation areas will be constructed to a TY-0 CMFE of +1.3 ft NAVD88.
- All marsh creation fill areas will be fully contained by earthen containment dikes or earthen ridges constructed to an elevation 1 foot above the Maximum Slurry Elevation.
- The majority of the marsh creation sites are projected to remain in the intertidal zone for twenty (20) years of the design life.
- Marsh Fill Quantity of approximately 2.1 Million CY is required for the base bid project.
- Marsh Fill Quantity of 2.7 Million CY is required for the base bid plus MCA 1B.

<table>
<thead>
<tr>
<th>Designation</th>
<th>Total Area (Ac.)</th>
<th>Composite Estimated Dredge Volumes (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment 1</td>
<td>178</td>
<td>734,451</td>
</tr>
<tr>
<td>Segment 2</td>
<td>307</td>
<td>1,239,967</td>
</tr>
<tr>
<td>Segment 3</td>
<td>34</td>
<td>124,776</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td>519</td>
<td>2,099,194</td>
</tr>
<tr>
<td>MCA 1B (Alternate 1)</td>
<td>109</td>
<td>642,140</td>
</tr>
<tr>
<td>TOTAL</td>
<td>628</td>
<td>2,741,334</td>
</tr>
</tbody>
</table>
EARTHEN CONTAINMENT DIKES

- ECD & ECD Borrow Design
- ECD Sheet Pile Walls
ECD AND ECD BORROW AREA DESIGN

EARTHEN CONTAINMENT DIKE

- 5-foot wide crest
- 4H:1V side slopes
- The crest elevation is set 1 foot above the max slurry elevation established for the MCA
- Vertical tolerance for crest elevation is +0.5 ft.
ECD AND ECD BORROW AREA DESIGN

ECD Borrow Area
- 15-foot wide bottom excavation
- 3H:1V side slopes
- -8.0 ft. NAVD88 bottom of cut
- Bench width from toe of ECD to ECD borrow area = 35.0 ft.

**Table:**

<table>
<thead>
<tr>
<th>MCA</th>
<th>Anticipated Dredge Slurry Elev (ft)</th>
<th>TY-0 CMFE Elev. (ft)</th>
<th>ECD Crest Elev. (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCA 1</td>
<td>+3.0</td>
<td>+1.3</td>
<td>+4.0</td>
</tr>
<tr>
<td>MCA 2-1</td>
<td>+2.0</td>
<td>+1.3</td>
<td>+3.0</td>
</tr>
<tr>
<td>MCA 2-2</td>
<td>+2.0</td>
<td>+1.3</td>
<td>+3.0</td>
</tr>
<tr>
<td>MCA 2-3</td>
<td>+2.0</td>
<td>+1.3</td>
<td>+3.0</td>
</tr>
<tr>
<td>MCA 3</td>
<td>+3.0</td>
<td>+1.3</td>
<td>+4.0</td>
</tr>
<tr>
<td>MCA 1B (Alternate 1)</td>
<td>+2.5</td>
<td>+1.3</td>
<td>+3.5</td>
</tr>
</tbody>
</table>
A 254 ft long sheet pile wall is required at the location shown below to protect against erosion and tidal surge from the existing waterway.
ECD SHEET PILE WALL
MCA 1B

An 818 ft long sheet pile wall is required at the location shown due to water depths and to protect against erosion, fetch and tidal surge from the existing waterway.
BORROW AREA DESIGN

- Borrow Area Delineation
- Borrow Area Design Summary
BORROW AREA DELINEATION

- Located 1.2 miles north of the western marsh creation areas
- 7.45 MCY of marsh compatible material
- No hazardous areas of concern were found during geophysical investigations
- No pipelines, well locations, common travel corridors, or no work/restricted zones appear to be impacted by the borrow area location.
BORROW AREA DESIGN SUMMARY

- Bathymetry ranges from -5.0 to -6.0 ft NAVD88.
- 5.53 million cubic yards of very soft clays and silts with little sands
- Proposed after dredge elevation of -23.0 ft NAVD88
- Material thickness: 14.0 ft to 15.0 ft.
- Max. width = 2,260 ft
- Max. length = 6,070 ft.
- 238 acres
DREDGE PIPELINE CORRIDOR ALIGNMENT

- Begins at the southern end of the borrow area and runs southeast to Grand Pass.
- At the northern end of Grand Pass, this alternative splits to allow access to the eastern and western marsh restoration areas.
- Total Length = 16,260 linear ft or 3.1 miles.
- Width = 100 ft.
DREDGE PIPELINE CORRIDOR EVALUATION

- Pipeline can be maneuvered by contractor personnel without interfering with structural operations.
- Minimizes impacts to property owners along Bayou DuLarge.
- Location facilitates optimal Y-Valve placement and usage, which is ideal when filling multiple marsh creation areas.
- Provides the contractor flexibility during dredging operations and allow the marsh fill to settle and dewater in one area while pumping to other areas.
EQUIPMENT ACCESS CORRIDOR DESIGN

- Alignment
- Potential Dredging
EQUIPMENT ACCESS CORRIDOR
ALIGNMENT

• Evaluated based on the following:
  o estimated draft minimums required for site access
  o minimizing impacts
  o total distance to be traveled

• Access from Grand Bayou DuLarge and Caillou Lake to Grand Pass and the borrow area.

• Route includes two options: a dredged corridor with temporary side cast disposal and a no-excavation corridor.
EQUIPMENT ACCESS CORRIDOR ALIGNMENT

- Corridor begins in the Gulf of Mexico, passes through Grand Bayou DuLarge, through Caillou Lake and Grand Pass, to the borrow area.
- 500 ft wide corridor
- Total length = 27,175 linear feet (5.1 miles)
POTENTIAL DREDGING FOR ACCESS CORRIDOR

The proposed access corridor dredging includes a 60-foot wide section of the access corridor cut to a -12.0 ft NAVD88 elevation.

- Side slopes = 2:1 H:V
- Distance to be dredged = 20,700 LNFT
- Volume dredged = 276,900 CY
- Bid as a lump sum item to allow contractor to decide means and methods for access and flexibility to price accordingly
SCOUR PROTECTION & BANK STABILIZATION
SCOUR APRON

- Extends 85 ft north and south of structure
- (2) layers 12-inch marine mattress
- 3 ft Class V Riprap
  - nominal diameter 1.5 ft
  - $W_{50}$ of 556 lbs
  - Extend 15 ft beyond marine mattress both north & south
- Bankline between elevations -5 and -17 in Grand Pass are too steep for armoring.
RIDGE TIE-IN REVETMENT
WEST BANK

- Increased current velocities govern design conditions along the ridge to structure tie-in
- Scour protection required between Elev. +5 (top of ridge) to the -5 contour
- 2.5 ft Class IV Riprap with a 1 ft Class I Filter Layer
  - nominal diameter 1.25 ft
  - W50 of 335 lbs
  - 50’ key trench at the -5 contour for stability
RIDGE TIE-IN REVETMENT
EAST BANK

- Increased current velocities govern design conditions along the ridge to structure tie-in
- Scour protection required between Elev. +5 (top of ridge) to the -5 contour
- 2.5 ft Class IV Riprap with a 1 ft Class I Filter Layer
  - nominal diameter 1.25 ft
  - W\text{50} of 335 lbs
  - 50’ key trench at the -5 contour for stability
BANK STABILIZATION GABIONS

- Min Height of 1 ft, Width of 5.5 ft, Length of 10 ft for weight stability
- Provide stability along banks with an equal distribution of weight across the armored slope
- Nominal diameter of stone to be 3 in to 6 in
CONSTRUCTION

- METHODOLOGY
- SEQUENCE
- CONCEPTUAL TIMELINE
- COST ESTIMATE
CONSTRUCTION METHODOLOGY
MARSH & RIDGE

- Cuttersuction/hydraulic dredge to construct marsh fill
- Marsh fill material will be pumped hydraulically to the project area via submerged pipeline.
- Flexible HDPE pipe anticipated within marsh creation areas

- Shallow draft limits use of mechanical dredge; therefore,
- Ridge and earthen containment construction expected to be performed by marsh buggies
- Anticipated multiple lifts of material will be required to construct ridge and ECDs
CONSTRUCTION METHODOLOGY
STRUCTURE

- Barge-mounted equipment is anticipated for the installation of the wingwalls
- Vibratory hammers for the Z-shaped sheet pile and pile hammers for the batter piles
- Soil conditions for Borings GP1 – GP5 indicate soil conditions that are suitable for vibratory installation of sheet pile as well as hammer-type equipment for batter piles
- Batter piles are anticipated to also be driven via barge mounted equipment
CONSTRUCTION SEQUENCE

- Anticipated that ridge and earthen containment dike construction will occur simultaneously following completion of mobilization
- Installation of the dredge pipeline will likely be accomplished during ridge and ECD construction
- Marsh fill placement will begin once each MCA has been completely enclosed
- It is anticipated that the Grand Pass structure will be constructed independently of the marsh and ridge restoration