



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT  
7400 LEAKE AVE  
NEW ORLEANS, LA 70118-3651

November 1, 2021

Regulatory Division  
Western Evaluation Branch

**SUBJECT:** MVN-2018-01129-WS

Mr. Sydney Dobson  
CPRA  
P.O. Box 44027  
Baton Rouge, LA 70804

Dear Mr. Dobson:

The proposed work to restore 125-acres of earthen ridge and to nourish and create 1,400-acres of coastal marsh, all as part of the (NRDA TE-0139) Terrebonne Basin Ridge and Marsh Creation Project, located off Bayou Terrebonne, south of Cocodrie, in Terrebonne Parish, Louisiana, as shown on the enclosed drawings, is authorized under **Category II** of the **Programmatic General Permit** provided that all conditions of the permit are met.

This authorization has a blanket water quality certification from the Louisiana Department of Environmental Quality (DEQ); therefore, no additional authorization from DEQ is required.

However, prior to commencing work on your project, you must obtain approvals from state and local agencies as required by law and by the terms of this permit. These approvals include, but are not limited to, a permit, consistency determination or determination of "no direct or significant impact (NDSI) on coastal waters" from the Louisiana Department of Natural Resources, Office of Coastal Management.

The following special conditions are made a part of this authorization:

1. The permittee is advised of the requirements set forth in the attached Memorandum for Record and the associated special conditions. All responsibilities and compliance related to the subject conditions are hereby directed to and have oversight by the USACE Navigation Office, Operations Manager, OD-S, Mr. Ray Newman, with this District. Should you have any questions on the requirements and restrictions stipulated, you shall contact the specified Operations Manager, who may be reached at 504-862-2050 or [Raymond.C.Newman@usace.army.mil](mailto:Raymond.C.Newman@usace.army.mil).

2. The permittee shall adhere to the attached special conditions for the West Indian Manatee, and to avoid and minimize potential impacts to the species.
3. All work shall be done in accordance with the approved plans and be confined to the permitted work area(s) represented within the attached drawings. If the authorized project requires additional work, modifications to the present plan, or deviations in the overall project scope, the permittee shall obtain an amendment and/or separate permit review and decision from this office, prior to commencement of those alterations.
4. The permittee is responsible for ensuring that all contractors and/or workers associated with project construction and implementation, are equally aware of the authorized plans, conditions, and/or restrictions associated with this approval.
5. Many local governing bodies have instituted laws and/or ordinances in order to regulate dredge and/or fill activities in floodplains to assure maintenance of floodwater storage capacity and avoid disruption of drainage patterns that may affect surrounding properties. Your project involves dredging and/or placement of fill; therefore, you must contact the local municipal and/or parish governing body regarding potential impacts to floodplains and compliance of your activities with local floodplain ordinances, regulations or permits.
6. To the greatest extent, the permittee shall avoid any inadvertent impacts to jurisdictional wetland areas not considered herein, due to access or project implementation. If inadvertent impacts occur during construction, the permittee shall immediately restore these areas to their pre-project elevations and conditions as soon as possible, and/or immediately following project construction. Should unintentional impacts occur, the permittee will immediately notify your project manager with this office following project completion, and shall provide a detailed description of the impacts, relevant aerial plats depicting location coordinates, acreages, and dimensions, and all remediation actions taken or proposed to be implemented. The obligation of additional remediation actions or further recommendations will be assessed by this office in coordination with other pertinent resource agencies, upon review of any necessary survey information submittals.
7. All authorized temporary impacts to existing wetland areas associated with project access, construction and dredge pipeline corridors shall be restored to their pre-existing contours and conditions as soon as possible, and/or immediately following project construction. Restoration activities may include but are not limited to grading and re-contouring of rutting or ground disturbance, removal of unauthorized and/or excess fill or debris, use of supplemental fills for elevation achievement, site monitoring, erosion control, control of exotic species encroachment, and/or re-planting of native vegetation if natural habitat regeneration does not readily show to occur or is not anticipated to occur. If replanting is required to restore these impacted wetland habitats, the permittee

shall provide your project manager with this office descriptive photographic evidence or drone footage of all impacted areas along with restoration results, within one growing season of plantings. The obligation of additional remediation actions will be assessed by this office in coordination with other pertinent resource agencies, upon review of any necessary survey information submittals.

8. The permittee is aware that dredge material deposited for the marsh creation and nourishment features of the project shall not be placed in a manner which would convert waters of the U.S. to uplands or degrade existing marsh habitats, upon achievement of post settlement conditions.
9. Containment dikes/berms associated with the marsh creation sites shall be breached or degraded, once the marsh creation areas have stabilized and/or attained sufficient vegetative growth or re-establishment, in order to allow the return of natural hydrologic tidal connectivity in these areas. The permittee shall notify your project manager with CEMVN of the outcome implemented (i.e. breaching, degrading, removal), and provide as-build plans that clearly specify the locations, footprint, and final elevations of any such actions.
10. The permittee shall provide your project manager with this office a **Notification of Completion** within five days of project construction being finalized. Notification shall reference your subject MVN permit # and may be submitted preferably via email or hard copy mail to: U.S. Army Corps of Engineers, New Orleans District, CEMVN-RGW, 7400 Leake Ave., New Orleans, LA 70118-3651.
11. To the greatest extent, equipment utilized to perform activities authorized under this permit shall stay within the access routes and work areas designated on the permit plats, utilizing the least damaging routes and/or open water areas to the greatest extent possible. Where access routes traverse vegetated wetlands, marsh buggy/tracked equipment access shall work to limit to one pass ingress and one pass egress and shall avoid utilization of the same tracks.
12. Before being brought to the site and before being moved from the site, equipment shall be inspected and cleaned as necessary if the presence of invasive aquatic weeds, including but not limited to giant salvinia (*Salvinia molesta*), water hyacinth (*Eichhornia spp*), and Esthwaite Waterweed (*Hydrilla verticillata*), or aquatic animals such as apple snails (Family *Ampulariidae*) are noticed, as to prevent the transport and spread of such species.
13. Any inadvertent and unauthorized damage to banklines, streams, berms, ridges, or existing surface contours and ground elevations, including hydrologic connections created from equipment moving across shorelines or banklines must be repaired and restored to pre-project conditions as soon as possible and/or upon project completion. This includes hauling in appropriate fill material and stabilizing damaged areas, if necessary.

14. As deemed essential or necessary for project implementation during equipment access through wetland areas, temporary board mats are authorized herein.
15. The permittee shall closely monitor discharge points of the dredge pipeline(s) as to prevent the excessive accumulation of sediments (i.e. settled elevations not to exceed the planned wetland creation and nourishment elevations in these areas.

This approval to perform work is valid for 5 years from the date of this letter.

Permittee is aware that this office may reevaluate its decision on this permit at any time the circumstances warrant.

Should you have any further questions concerning this matter, please contact Carrie Schott of this office at (504) 862-1153 or at [carrie.g.schott@usace.army.mil](mailto:carrie.g.schott@usace.army.mil).

Sincerely,

*Darrell S. Barbara*

For: Martin S. Mayer  
Chief, Regulatory Division

Enclosures

MEMORANDUM FOR RECORD: Chief, Regulatory Branch ATTN:

SUBJECT: MFR IN ACCORDANCE WITH EC 1165-2-220, APPENDIX G –CPRA, MVN-2018-01129-WA, P20200551

1. The Operations Manager for Bayou Terrebonne navigation project has reviewed the application CPRA to start increment one of a large scale restoration strategy for the Terrebonne Basin that would rebuild ridge and intertidal marsh habitat that has degrade in Terrebonne Parish, Louisiana.
2. It has been determined that the subject application is within the Bayou Terrebonne navigation servitude but is outside of the navigation fairway limits. Therefore, this request has no impact to the usefulness of the project and will not be injurious to the public interest.

The scope of this analysis for Section 408 evaluation is limited to the federal limits of the Federal Navigation Channel.

3. ODS has no objections to the subject request provided the following navigation conditions are included as part of the Section 10 permit documents as well as the standard Section 408 permit conditions as per EC 1165-2-220, APPENDIX K (enclosed):

PROJECT- SPECIFIC CONDITIONS:

- a. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.
- b. The applicant will, at his or her expense, install and maintain any safety light, signals, and signs prescribed by the United States Coast Guard, through regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.
- c. If the authorized project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.,) in the waterway, the applicant is advised to notify the appropriate Captain of the Port so that a Notice to Mariners, if required, may be provided about one month before you plan to start work. Contact information for the local Captain of the Port's offices may be located at <https://homeport.uscg.mil> under "port directory". In addition, a copy of your permit approval and drawings should be mailed to the Commander, Eight Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, or emailed to [D08-DG-District-DPW@uscg.mil](mailto:D08-DG-District-DPW@uscg.mil). Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2330.
- d. The applicant understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said work shall

cause unreasonable obstruction to the free navigation of the navigable waters, the applicant will be required upon due notice from the Corps of Engineers, to remove, relocate or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

4. The above Section 408 special conditions and standard conditions enclosed are enforceable by the USACE Navigation Manager for the Bayou Terrebonne as per Appendix G, EC 1165-2-220. The point of contact for enforcing such Section 408 conditions in the Section 10 permit is Raymond C Newman, 504 862-2050, [Raymond.c.newman@usace.army.mil](mailto:Raymond.c.newman@usace.army.mil).
5. If there are any questions regarding these conditions, please contact me, Jane Brown at 504 862-1297, [Jane.L.Brown@usace.army.mil](mailto:Jane.L.Brown@usace.army.mil).

*Jane L Brown*  
for Raymond C. Newman  
Operations Manager  
Operations Division

Enclosure (Standard 408 conditions)

**U.S. Army Corps of Engineers**  
**New Orleans District**  
**Section 408**  
**EC-1165-2-220 Appendix K**  
**Standard Terms and Conditions**

## LIMITS OF THE AUTHORIZATION

1. This permission only authorizes you, the requester, to undertake the activity described herein under the authority provided in Section 14 of the Rivers and Harbors Act of 1899, as amended (33 USC 408). This permission does not obviate the need to obtain other federal, state, or local authorizations required by law. This permission does not grant any property rights or exclusive privileges, and you must have appropriate real estate instruments in place prior to construction and/or installation.
2. The time limit for completing the work authorized end on 5 years from the date of the Regulatory permit if a Regulatory permit is required. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
3. Without prior written approval of the USACE, you must neither transfer nor assign this permission nor sublet the premises or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this permission. Failure to comply with this condition will constitute noncompliance for which the permission may be revoked immediately by USACE.
4. The requester understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration of the work herein authorized, or if, in the opinion of the Secretary of the Army or an authorized representative, said work will cause unreasonable conditions and/or obstruction of USACE project authorized design, the requester will be required upon due notice from the USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim can be made against the United States on account of any such removal or alteration.

## INDEMNIFICATION AND HOLD HARMLESS

5. The United States will in no case be liable for:
  - a. Any damage or injury to the structures or work authorized by this permission that may be caused or result from future operations undertaken by the United States, and no claim or right to compensation will accrue from any damage; or
  - b. Damage claims associated with any future modification, suspension, or revocation of this permission.
6. The United States will not be responsible for damages or injuries which may arise from or be incident to the construction, maintenance, and use of the project requested by you, nor for damages to the property or injuries to your officers, agents, servants, or employees, or others who may be on your premises or project work areas of the federal project(s) rights-of-way. By accepting this permission, you hereby agree to fully defend, indemnify and hold harmless the United States and USACE from any and all such claims, subject to any limitations in law.
7. Any damage to the water resources development project or other portions of any federal project(s) resulting from your activities must be repaired at your expense.

## REEVALUATION OF PERMISSION

8. The determination that the activity authorized by this permission would not impair the usefulness of the federal project and would not be injurious to the public interest was made in reliance on the information you provided.
9. This office, at its sole discretion, may reevaluate its decision to issue this permission at any time circumstances warrant, which may result in a determination that it is appropriate or necessary to modify or revoke this permission. Circumstances that could require a reevaluation include, but are not limited to, the following:
  - a. You fail to comply with the terms and conditions of this permission;
  - b. The information provided in support of your application for permission proves to have been inaccurate or incomplete; or
  - c. Significant new information surfaces which this office did not consider in reaching the original decision that the activity would not impair the usefulness of the water resources development project and would not be injurious to the public interest.

## CONDUCT OF WORK UNDER THIS PERMISSION

10. You are responsible for implementing any requirements for mitigation, reasonable and prudent alternatives, or other conditions or requirements imposed as a result of environmental compliance.
11. Work/usage allowed under this permission must proceed in a manner that avoids interference with inspection, operation, and maintenance of the federal project.
12. In the event of any deficiency in the design or construction of the requested activity, you are solely responsible for taking remedial action to correct the deficiency.
13. The right is reserved to the USACE to enter upon the premises at any time and for any purpose necessary or convenient in connection with government purpose, to make inspections, to operate and/or to make any other use of the lands as may be necessary in connection with government purposes, and you will have no claim for damages on account thereof against the United States or any officer, agent or employee thereof.
14. You must provide copied of pertinent design, construction, and/or usage submittal/documents. USACE may request that survey and photographic documentation of the alteration work and the impacted project area be provided before, during, and after construction and/or installation.
15. You may be required to perform an inspection of the federal project with the USACE, prior to your use of the structure, to document existing conditions.
16. USACE shall not be responsible for the technical sufficiency of the alteration design nor for the construction and/or installation work.
17. Once permission is granted, you must notify the USACE District at least 10 days before work/usage is started so that post-permission over sight can be performed by USACE.
18. You must schedule a final inspection with the USACE within 30 days after completion of the work/usage.
19. You must submit a copy of **“as-built” drawings within 30 days** of completion of work showing the new work as it relates to identifiable features of the federal project.



## **STANDARD MANATEE CONDITIONS FOR IN-WATER ACTIVITIES**

During in-water work in areas that potentially support manatees, all personnel associated with the project shall be instructed and aware of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with, and injury to, manatee. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel shall be instructed not to attempt to feed or otherwise interact with the animal.

All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). To minimize potential impacts to manatees in areas of their potential presence, the permittee shall insure the following are adhered to:

- All work, equipment, and vessel operation shall cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).
- If a manatee(s) is sighted in or near the project area, all vessels associated with the project shall operate at “no wake/idle” speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels shall follow routes of deep water whenever possible.
- If used, siltation or turbidity barriers shall be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.
- Temporary signs concerning manatees shall be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½ " X 11" reading language similar to the following: “CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT”. A second temporary sign measuring 8½ " X 11" shall be posted at a location prominently visible to all personnel engaged in water-related activities and shall read language similar to the following: “CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION”.
- Collisions with, injury to, or sightings of manatees shall be immediately reported to the U.S. Fish and Wildlife Service’s, Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

1. Activities authorized under this general permit shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single and complete project shall be treated together as constituting one single and complete project. All planned phases of multi-phased projects shall be treated together as constituting one single and complete project. This general permit shall not be used for any activity that is part of an overall project for which an individual permit is required.
2. No activity is authorized under this general permit which may adversely affect significant cultural resources listed or eligible for listing in the National Register of Historic Places until the requirements for Section 106 of the National Historic Preservation Act are met. Upon discovery of the presence of previously unknown historic and/or prehistoric cultural resources, all work must cease and the permittee must notify the State Historic Preservation Office and the Corps of Engineers. The authorization is suspended until it is determined whether or not the activity will have an adverse effect on cultural resources. The authorization may be reactivated or modified through specific conditions if necessary, if it is determined that the activity will have no adverse effect on cultural resources. The PGP authorization will be revoked if it is determined that cultural resources would be adversely affected, and an individual permit may be necessary.
3. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein. You must install and maintain, at your expense, any safety lights, signs and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on your authorized facilities. Any inquiries concerning a U.S. Coast Guard Private Aids to Navigation marking determination may be directed to the Eighth Coast Guard District (dpw), Hale Boggs Federal Building, 500 Poydras St., Suite 1230, New Orleans, Louisiana 70130, at (504) 671-2330 or via email to: [D8oanPATON@uscg.mil](mailto:D8oanPATON@uscg.mil). For general information related to Private Aids to Navigation, you may visit the Eighth CG District web site at: <http://www.atlanticarea.uscg.mil/district-8/district-divisions/waterways/PATON>
4. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the activity's primary purpose is to block or impound water.
5. If the **authorized** activity involves the installation of aerial transmission lines, submerged cable, or submerged pipelines across navigable waters of the United States the following is applicable:

The National Ocean Service (NOS) has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Your notification of completion must include a drawing which certifies the location and configuration of the completed activity (a certified permit drawing may be used). Notification to NOS will be sent to the following address: National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Spring, Maryland 20910-3282.

6. For pipelines under an anchorage or a designated fairway in the Gulf of Mexico the following is applicable: The NOS has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Within 30 days of completion of the pipeline, 'as built' drawings certified by a professional engineer registered in Louisiana or by a registered surveyor shall be furnished to this office, the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, and to the Director, National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Spring, Maryland 20910-3282. The plans must include the location, configuration and actual burial depth of the completed pipeline project.
7. If the authorized project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the Eighth Coast Guard District so that a Notice to Mariners, if required, may be prepared. Notification with a copy of this permit approval and drawings can be emailed to: [D8MarineInfo@uscg.mil](mailto:D8MarineInfo@uscg.mil), or mailed to the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Suite 1230, New Orleans, Louisiana 70130. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2118.
8. All activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Clean Water Act (PL 92-500:86 Stat 816), or pursuant to applicable state and local laws.
9. Substantive changes to the Louisiana Coastal Resources Program may require immediate suspension and revocation of this permit in accordance with 33 CFR 325.7.
10. Irrespective of whether a project meets the other conditions of this permit, the Corps of Engineers retains discretionary authority to require an individual Department of the Army permit when circumstances of the proposal warrant this requirement.
11. Any individual authorization granted under this permit may be modified, suspended, or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest.
12. The Corps of Engineers may suspend, modify, or revoke this general permit if it is found in the public interest to do so.
13. Activities proposed for authorization under the PGP must comply with all other necessary federal, state, and/or local permits, licenses, or approvals. Failure to do so would result in a violation of the terms and conditions of PGP.



14. The permittee shall permit the District Commander or his authorized representative(s) or designee(s) to make periodic inspections of the project site(s) and disposal site(s) if different from the project site(s) at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

15. This general permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and it does not authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations nor does it obviate the requirements to obtain state or local assent required by law for the activity authorized herein.

16. In issuing authorizations under this permit, the federal government will rely upon information and data supplied by the applicant. If, subsequent to the issuance of an authorization, such information and data prove to be false, incomplete, or inaccurate, the authorization may be modified, suspended, or revoked, in whole or in part.

17. For activities resulting in sewage generation at the project site, such sewage shall be processed through a municipal sewage treatment system or, in areas where tie-in to a municipal system is not practical, the on-site sewerage system must be approved by the local parish sanitarian before construction.

18. Any modification, suspension, or revocation of the PGP, or any individual authorization granted under this permit, will not be the basis for any claim for damages against the United States.

19. Additional conditions deemed necessary to protect the public interest may be added to the general permit by the District Commander at any time. If additional conditions are added, the public will be advised by public notice. Individual authorizations under the PGP may include special conditions deemed necessary to ensure minimal impact and compliance with the PGP.

20. The PGP is subject to periodic formal review by MVN and OCM in coordination with the Environmental Protection Agency, US Fish and Wildlife Service, the National Marine Fisheries Service, and the Louisiana Department of Wildlife and Fisheries. Comments from reviewing agencies will be considered in determination as to whether modifications to the general permit are needed. Should the District Commander make a determination not to incorporate a change proposed by a reviewing agency, after normal negotiations between the respective agencies, the District Commander will explain in writing to the reviewing agency the basis and rationale for his decision.

21. CEMVN retains discretion to review the PGP, its terms, conditions, and processing procedures, and decide whether to modify, reissue, or revoke the permit. If the PGP is not modified or reissued within 5 years of its effective date, it automatically expires and becomes null and void.

22. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

23. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party as described in Special Condition 25 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

24. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

25. If you sell the property associated with this permit, you must provide this office with a copy of the permit and a letter noting your agreement to transfer the permit to the new owner and the new owner's agreement to accept the permit and abide by all conditions of the permit. This letter must be signed by both parties.

26. Many local governing bodies have instituted laws and/or ordinances in order to regulate dredge and/or fill activities in floodplains to assure maintenance of floodwater storage capacity and avoid disruption of drainage patterns that may affect surrounding properties. Your project involves dredging and/or placement of fill; therefore, you must contact the local municipal and/or parish governing body regarding potential impacts to floodplains and compliance of your proposed activities with local floodplain ordinances, regulations or permits.

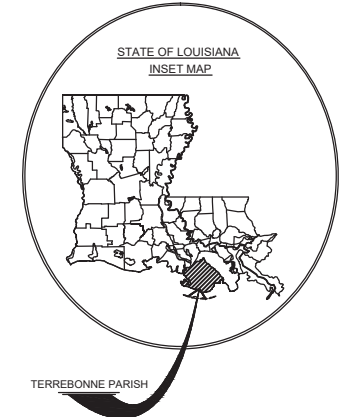
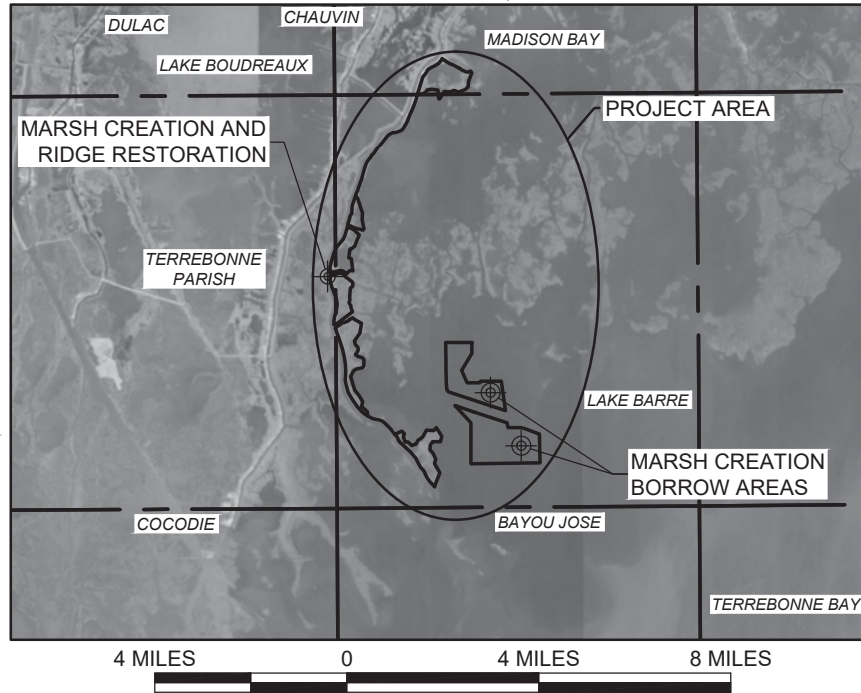
27. In issuing authorizations under this permit, the federal government does not assume any liability for: damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest; damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit, and; design or construction deficiencies associated with the permitted work.

PRELIMINARY - FOR PERMIT PURPOSES ONLY, NOT FOR CONSTRUCTION  
 STATE OF LOUISIANA  
 COASTAL PROTECTION AND RESTORATION AUTHORITY

**BAYOU TERREBONNE  
 INCREMENT**  
 TE-0139  
 TERREBONNE PARISH, LOUISIANA

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APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	VICINITY MAP
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139	DATE: JUNE 2021 SHEET 1 OF 31

# PRELIMINARY - FOR PERMIT PURPOSES ONLY, NOT FOR CONSTRUCTION

## GENERAL NOTES:

1. THE CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO CONTACT THE LOUISIANA ONE CALL SYSTEM (1-800-272-3020) A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY.
2. AS-BUILT DRAWINGS AND/OR PLATS WILL HAVE WRITTEN ON THEM THE DATE OF COMPLETION OF SAID ACTIVITIES AND WILL BE SUBMITTED TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE OF COASTAL MANAGEMENT, P.O. BOX 44487, BATON ROUGE, LOUISIANA 70804-4487 WITHIN 30 DAYS FOLLOWING PROJECT COMPLETION.
3. STRUCTURES WILL BE MARKED/LIGHTED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
4. PIPELINE INFORMATION SHOWN IS APPROXIMATE. CONTRACTOR WILL VERIFY LOCATIONS OF PIPELINES PRIOR TO BEGINNING CONSTRUCTION. EXCAVATION SHALL NOT OCCUR WITHIN 50 FEET OF PIPELINES.
5. EQUIPMENT ACCESS WILL BE THROUGH EXISTING WATERWAYS. TEMPORARY EQUIPMENT ACCESS CHANNELS ARE PROPOSED TO BE DREDGED AS SHOWN IN THESE DRAWINGS. ALL TEMPORARY ACCESS DREDGING WILL BE BACKFILLED UPON PROJECT COMPLETION.
6. ALL ELEVATIONS SHOWN ARE IN FEET AND REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD'88) GEOID 12B. ALL COORDINATES SHOWN ARE IN FEET AND REFERENCED TO STATE PLANE (NAD 83), LOUISIANA, SOUTH ZONE, US FOOT.
7. TIDAL DATUMS SHOWN BELOW ARE BASED ON CRMS STATION 355.
8. THE +4.0 FT CONSTRUCTED MARSH ELEVATION REPRESENTS PRE-SETTLED ELEVATION WHICH IS DESIGNED TO ACHIEVE TARGET POST-SETTLED ELEVATIONS. THE TARGET POST-SETTLED ELEVATIONS WERE CHOSEN BASED ON RESULTS OF THE HEALTHY MARSH SURVEY, INUNDATION ELEVATIONS OF WATER LEVELS AS RECORDED BY NEARBY GAGES, AND ANTICIPATED SEA LEVEL RISE. BASED ON THIS INFORMATION, A RANGE OF +0.6 TO +1.7 FT WAS CHOSEN AS THE TARGET POST-SETTLED ELEVATIONS AT THE END OF THE 20-YEAR DESIGN LIFE. THE DESIGN PRE-SETTLED ELEVATION WAS SELECTED TO MAXIMIZE THE AMOUNT OF TIME THE CONSTRUCTED MARSH STAYS WITHIN THE TARGETED RANGE FOR THE 20-YEAR PROJECT LIFE, HOWEVER POST-CONSTRUCTION ELEVATIONS WITHIN THE MCA WILL VARY SPATIALLY AND TEMPORALLY OVER THE 20-YR PROJECT DESIGN LIFE DEPENDING ON EXISTING MUDLINE, SOIL CONDITIONS, AND RELATIVE SEA LEVEL RISE.


## TIDAL DATUM

MEAN HIGH WATER (MHW) = ELEV. +0.96 FT. (NAVD88, GEOID 12B)  
 MEAN SEA LEVEL (MSL) = ELEV. +0.37 FT. (NAVD88, GEOID 12B)  
 MEAN LOW WATER (MLW) = ELEV. -0.26 FT. (NAVD88, GEOID 12B)

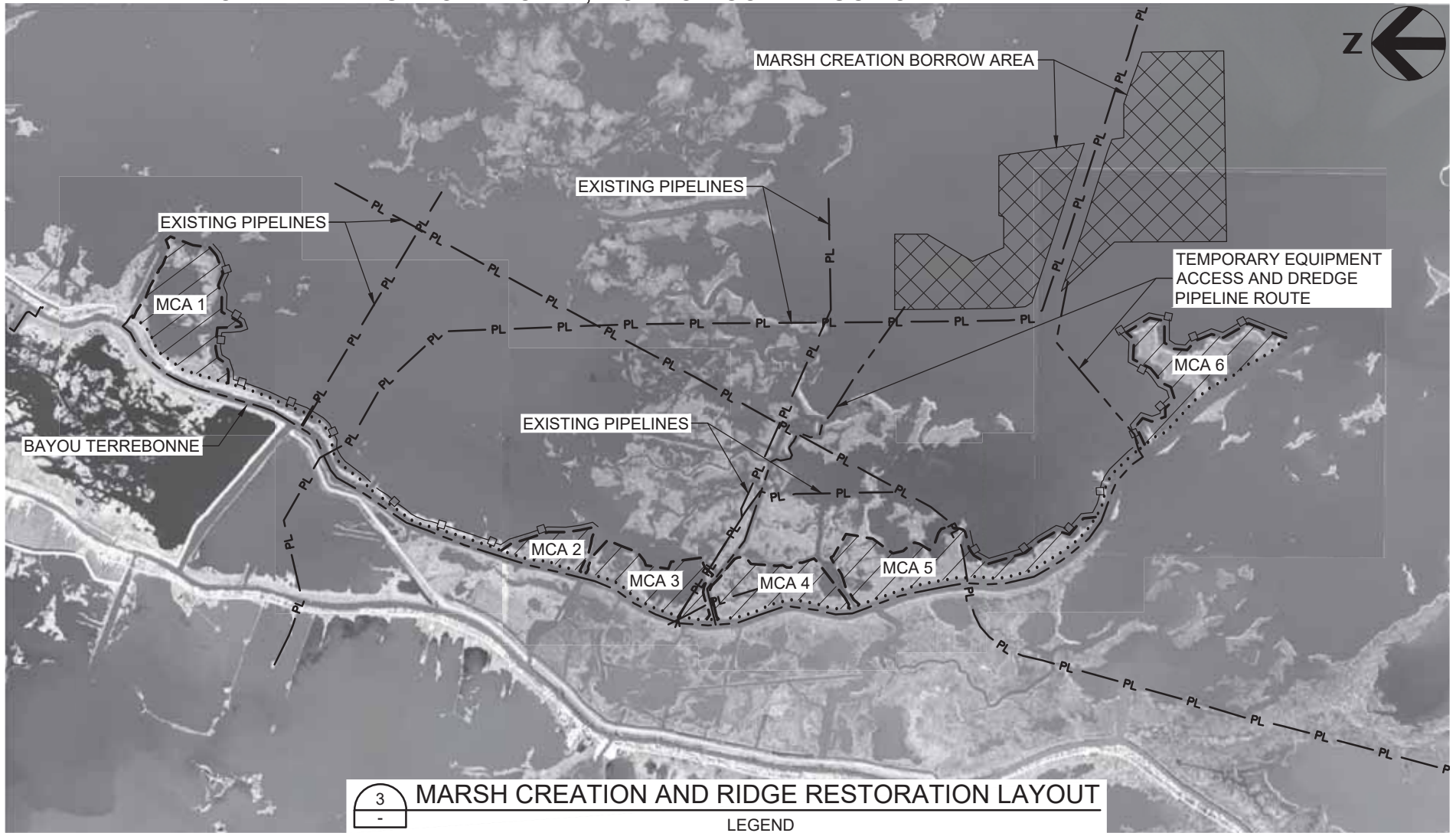
## ESTIMATED QUANTITIES TABLE NOTE

1. ALL BORROW AREA VOLUMES AND AREAS ARE MAXIMUM AVAILABLE. ACTUAL VOLUME AND AREA USED WILL BE LESS BASED ON FILL AREA REQUIREMENTS.

ESTIMATED QUANTITIES		
PROJECT FEATURE	AREA (ACRES)	VOLUME (CYS)
MARSH CREATION AREAS (FILL)	1,429	9,130,000
MARSH CREATION BORROW AREA (EXCAVATION)	1,461	36,050,000
RIDGE RESTORATION (FILL)	135	1,921,600
RIDGE BORROW AREA (AVAILABLE EXCAVATION OUTSIDE MARSH CREATION AREAS)	291	5,805,400
RIDGE BORROW AREA (AVAILABLE EXCAVATION INSIDE MARSH CREATION AREAS)	22	324,200
EARTHEN CONTAINMENT DIKE (FILL)	109	1,735,200
EARTHEN CONTAINMENT DIKE BORROW AREA (AVAILABLE EXCAVATION OUTSIDE MARSH CREATION AREAS)	252	4,094,100
EARTHEN CONTAINMENT DIKE BORROW AREA (AVAILABLE EXCAVATION INSIDE MARSH CREATION AREAS)	16	307,900
ARTICULATED CONCRETE BLOCK (ACB) MAT (FILL)	39	46,920
TEMPORARY ACCESS CHANNEL (EXCAVATION)	22	77,200
TEMPORARY ACCESS CHANNEL STOCKPILE (FILL)	41	77,200

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	GENERAL NOTES
			STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 2 OF 31

PRELIMINARY - FOR PERMIT PURPOSES ONLY, NOT FOR CONSTRUCTION



MARSH CREATION AND RIDGE RESTORATION LAYOUT



DATA SOURCE: AERIAL WAS PROVIDED BY CPRA, IMAGERY DATED: 2018

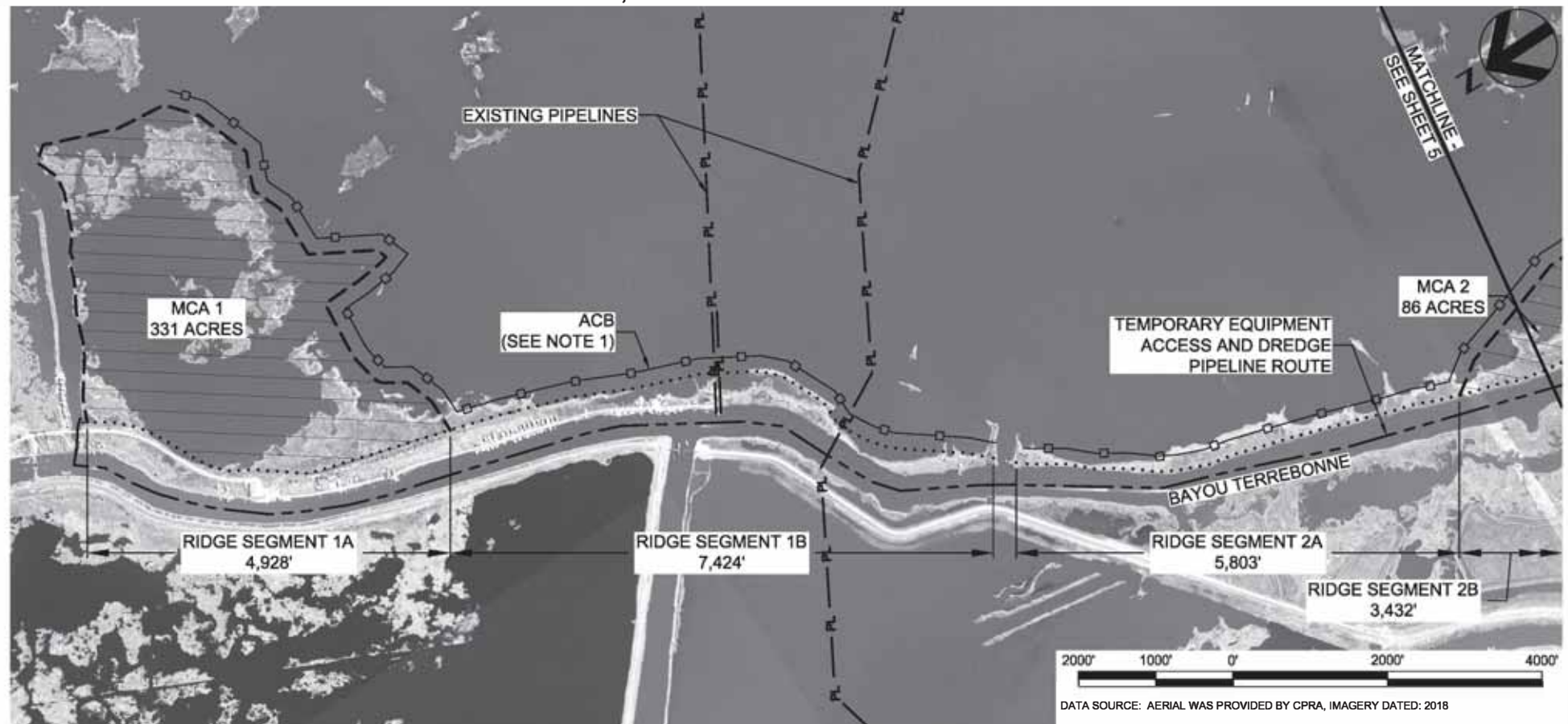
LEGEND

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- - - - - TEMPORARY EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- PL — EXISTING PIPELINE
- ▨ MARSH CREATION AREA (MCA)
- ▩ MARSH CREATION BORROW AREA

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH CREATION AND RIDGE RESTORATION LAYOUT
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139	DATE: JUNE 2021 SHEET 3 OF 31



PRELIMINARY - FOR PERMIT PURPOSES ONLY, NOT FOR CONSTRUCTION




MARSH CREATION AND RIDGE RESTORATION PLAN

NOTES

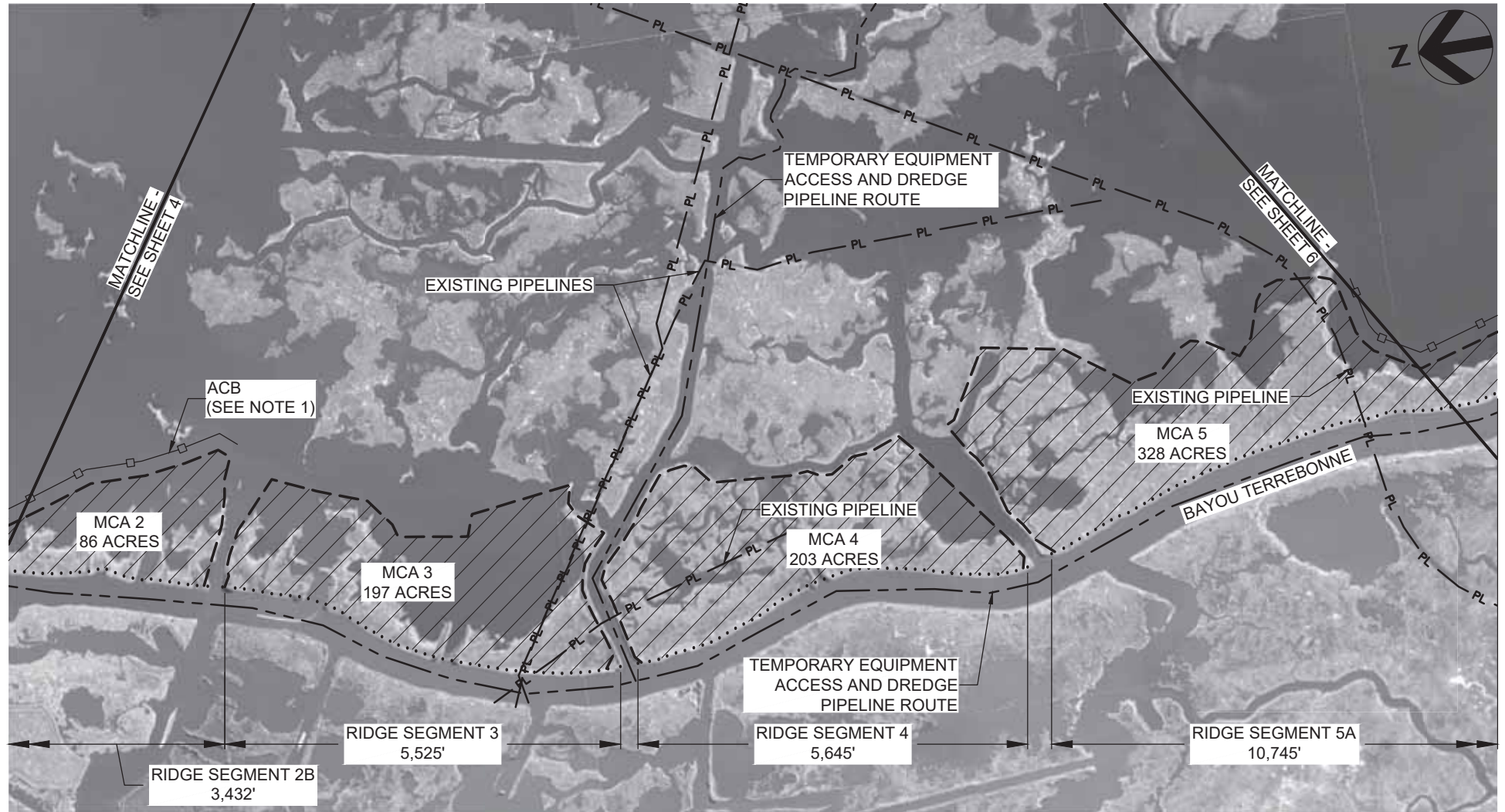
1. ARTICULATED CONCRETE BLOCK (ACB) MAT WILL BE PLACED ON EARTHEN CONTAINMENT DIKES AND EARTHEN RIDGE SEGMENTS. ACB MAT LINEWORK SHOWN OFFSET ON PLAN VIEWS FOR CLARITY.
2. EXCAVATION IN BAYOU TERREBONNE WILL BE LIMITED TO EXCAVATION FOR RIDGE RESTORATION. NO ADDITIONAL EXCAVATION WILL BE PERFORMED FOR TEMPORARY EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE.
3. UPON ACCEPTANCE OF THE MCAS, CPRA MAY REQUIRE UP TO 3,000 LINEAR FEET OF ECDS BE GAPPED OR DEGRADED. WHETHER A REACH OF ECDS SHOULD BE GAPPED OR DEGRADED WILL BE DETERMINED BY THE DESIGN ENGINEER ONCE CONSTRUCTION OF THE MCAS ARE COMPLETE. LOCATION AND WIDTH OF GAPS WILL BE DETERMINED BY THE DESIGN ENGINEER. SPOIL FROM ECDS DEGRADATION OR GAPPING WILL BE USED TO FILL NEARBY LOW-LYING AREAS WITHIN THE MCAS THAT MAY EXIST AS A RESULT OF THE ECD BORROW PITS, UNLESS OTHERWISE INSTRUCTED BY THE DESIGN ENGINEER.

LEGEND

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- - - - - TEMPORARY EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- PL- PL EXISTING PIPELINE
- ▨ MARSH CREATION AREA (MCA)

<p>APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802</p>	 <p>HDR HDR ENGINEERING, INC.</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802</p>	<p>TE-0139 BAYOU TERREBONNE INCREMENT</p> <p>STATE PROJECT NUMBER: TE-0139</p>	<p>MARSH CREATION AND RIDGE RESTORATION PLAN</p> <p>DATE: JUNE 2021</p>
<p>DRAWN BY: J. BEAUGH</p>	<p>DESIGNED BY: E. ROONEY, P.E.</p>	<p>APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)</p>	<p>FEDERAL PROJECT NUMBER: TE-0139</p>	<p>SHEET 4 OF 31</p>

PRELIMINARY - FOR PERMIT PURPOSES ONLY, NOT FOR CONSTRUCTION



NOTES

1. SEE NOTES ON SHEET 4.

5 MARSH CREATION AND RIDGE RESTORATION PLAN

LEGEND

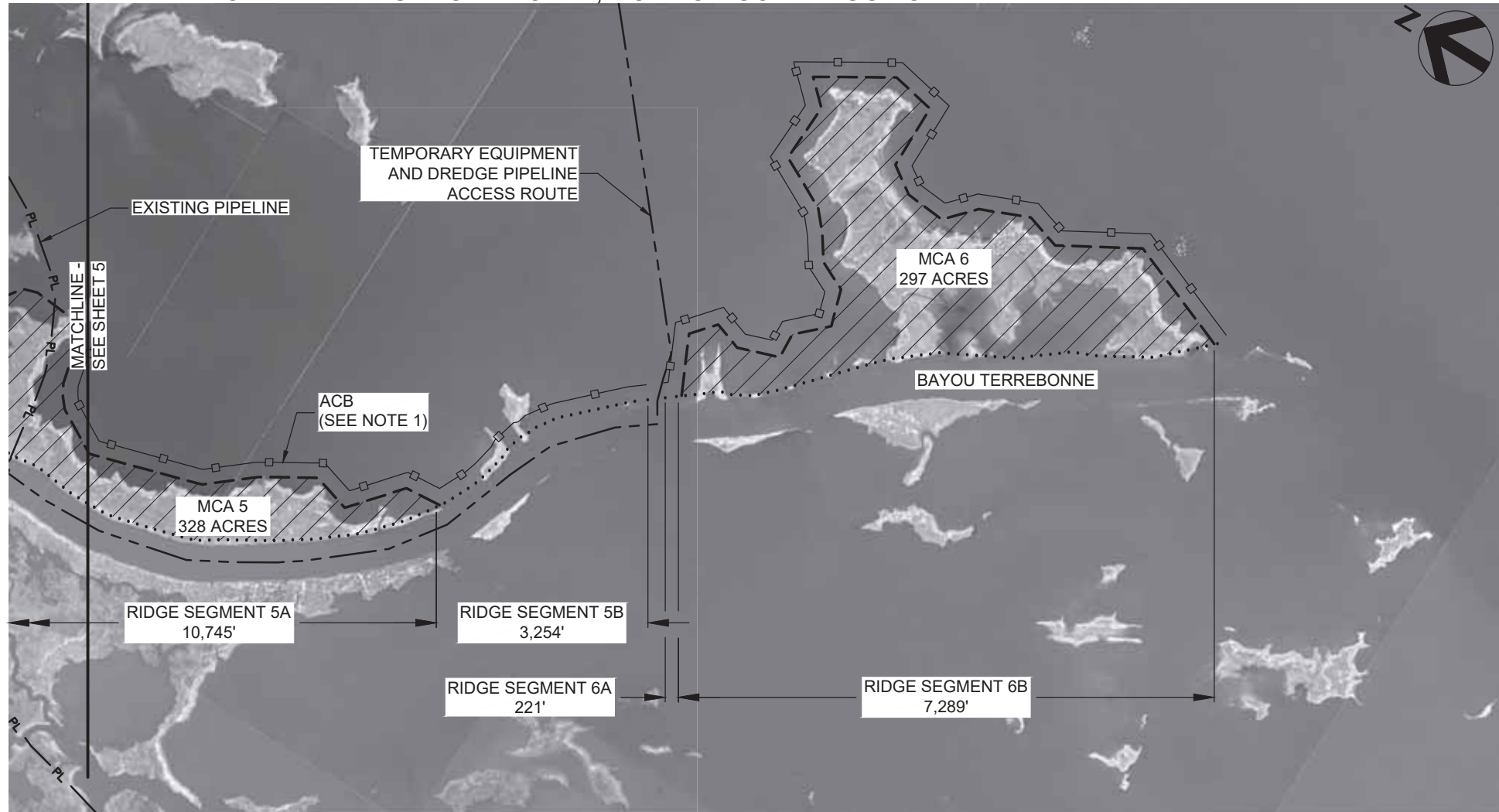
- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- - - - - TEMPORARY EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- PL — EXISTING PIPELINE
- ▨ MARSH CREATION AREA (MCA)



DATA SOURCE: AERIAL WAS PROVIDED BY CPRA, IMAGERY DATED: 2018

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH CREATION AND RIDGE RESTORATION PLAN
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 5 OF 31

PRELIMINARY - FOR PERMIT PURPOSES ONLY, NOT FOR CONSTRUCTION



NOTES

1. SEE NOTES ON SHEET 4.

6 MARSH CREATION AND RIDGE RESTORATION PLAN

LEGEND

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- - - - - TEMPORARY EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- PL — EXISTING PIPELINE
- ▨ MARSH CREATION AREA (MCA)



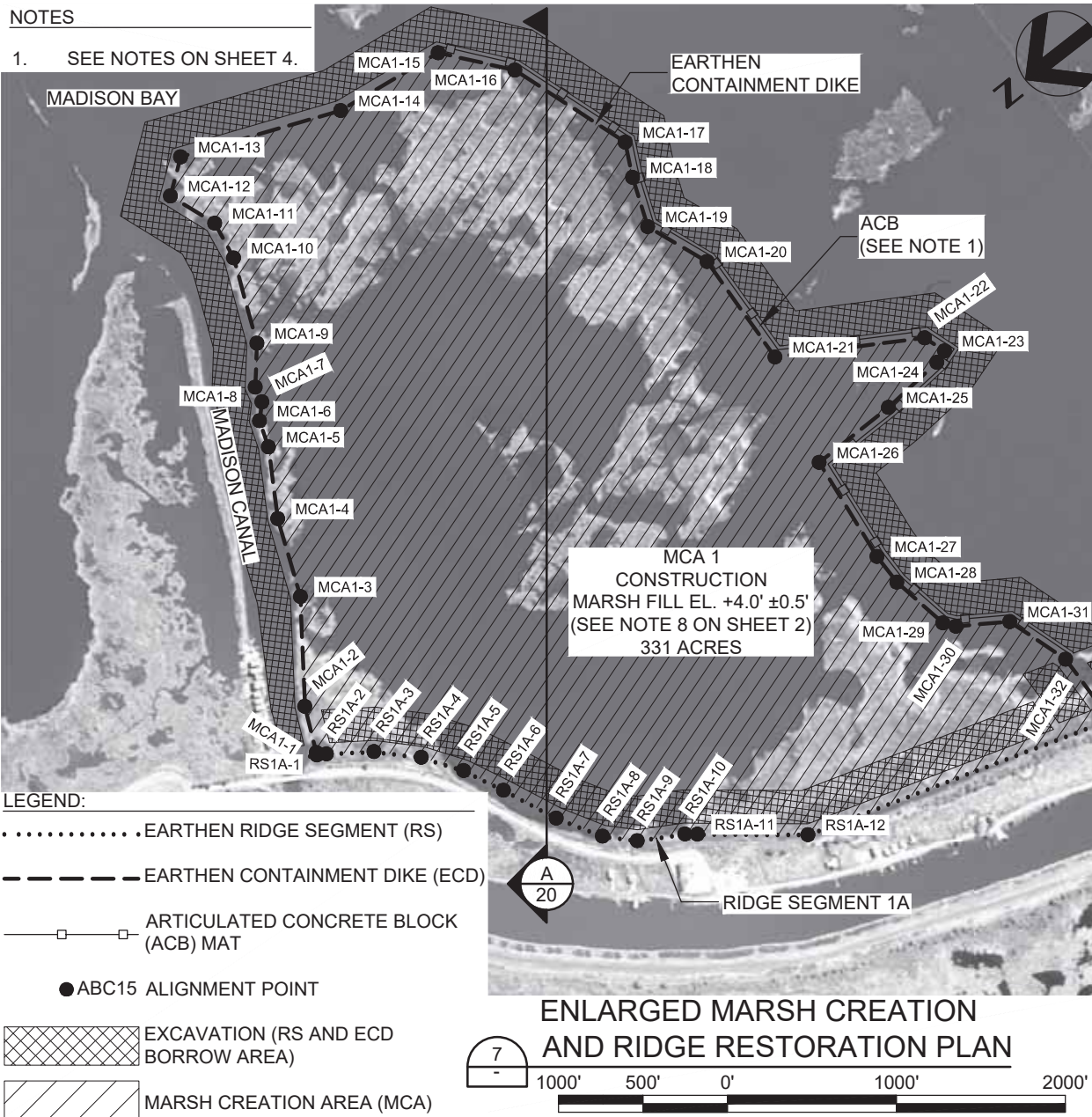
DATA SOURCE: AERIAL WAS PROVIDED BY CPRA, IMAGERY DATED: 2018

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT STATE PROJECT NUMBER: TE-0139	MARSH CREATION AND RIDGE RESTORATION PLAN DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 6 OF 31



**NOTES**

1. SEE NOTES ON SHEET 4.



MARSH CREATION AREA 1			MARSH CREATION AREA 1		
POINT NO.	LATITUDE	LONGITUDE	POINT NO.	LATITUDE	LONGITUDE
MCA1-1	N29° 23' 08"	W90° 35' 16"	MCA1-18	N29° 22' 33"	W90° 34' 58"
MCA1-2	N29° 23' 07"	W90° 35' 13"	MCA1-19	N29° 22' 34"	W90° 35' 02"
MCA1-3	N29° 23' 04"	W90° 35' 07"	MCA1-20	N29° 22' 33"	W90° 35' 06"
MCA1-4	N29° 23' 02"	W90° 35' 02"	MCA1-21	N29° 22' 33"	W90° 35' 14"
MCA1-5	N29° 23' 00"	W90° 34' 58"	MCA1-22	N29° 22' 25"	W90° 35' 19"
MCA1-6	N29° 22' 59"	W90° 34' 56"	MCA1-23	N29° 22' 25"	W90° 35' 20"
MCA1-7	N29° 22' 58"	W90° 34' 55"	MCA1-24	N29° 22' 26"	W90° 35' 21"
MCA1-8	N29° 22' 58"	W90° 34' 54"	MCA1-25	N29° 22' 29"	W90° 35' 21"
MCA1-9	N29° 22' 56"	W90° 34' 52"	MCA1-26	N29° 22' 35"	W90° 35' 21"
MCA1-10	N29° 22' 54"	W90° 34' 46"	MCA1-27	N29° 22' 35"	W90° 35' 28"
MCA1-11	N29° 22' 54"	W90° 34' 44"	MCA1-28	N29° 22' 35"	W90° 35' 31"
MCA1-12	N29° 22' 55"	W90° 34' 41"	MCA1-29	N29° 22' 35"	W90° 35' 35"
MCA1-13	N29° 22' 53"	W90° 34' 39"	MCA1-30	N29° 22' 34"	W90° 35' 35"
MCA1-14	N29° 22' 44"	W90° 34' 43"	MCA1-31	N29° 22' 32"	W90° 35' 37"
MCA1-15	N29° 22' 38"	W90° 34' 44"	MCA1-32	N29° 22' 30"	W90° 35' 42"
MCA1-16	N29° 22' 35"	W90° 34' 48"	MCA1-33	N29° 22' 30"	W90° 35' 46"
MCA1-17	N29° 22' 32"	W90° 34' 56"			

**LEGEND:**

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- ABC15 ALIGNMENT POINT
- [Cross-hatched box] EXCAVATION (RS AND ECD BORROW AREA)
- [Diagonal lines box] MARSH CREATION AREA (MCA)

RIDGE SEGMENT 1A			RIDGE SEGMENT 1A		
POINT NO.	LATITUDE	LONGITUDE	POINT NO.	LATITUDE	LONGITUDE
RS1A-1	N29° 23' 08"	W90° 35' 16"	RS1A-8	N29° 22' 58"	W90° 35' 32"
RS1A-2	N29° 23' 08"	W90° 35' 16"	RS1A-9	N29° 22' 57"	W90° 35' 34"
RS1A-3	N29° 23' 06"	W90° 35' 18"	RS1A-10	N29° 22' 54"	W90° 35' 35"
RS1A-4	N29° 23' 04"	W90° 35' 20"	RS1A-11	N29° 22' 54"	W90° 35' 36"
RS1A-5	N29° 23' 02"	W90° 35' 23"	RS1A-12	N29° 22' 48"	W90° 35' 40"
RS1A-6	N29° 23' 01"	W90° 35' 26"	RS1A-13	N29° 22' 30"	W90° 35' 47"
RS1A-7	N29° 23' 00"	W90° 35' 29"			

**ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**



APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

**HDR**  
 HDR ENGINEERING, INC.

COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

TE-0139  
 BAYOU TERREBONNE INCREMENT

STATE PROJECT NUMBER: TE-0139

FEDERAL PROJECT NUMBER: TE-0139

ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN

DATE: JUNE 2021

SHEET 7 OF 31

DRAWN BY: J. BEAUGH

DESIGNED BY: E. ROONEY, P.E.

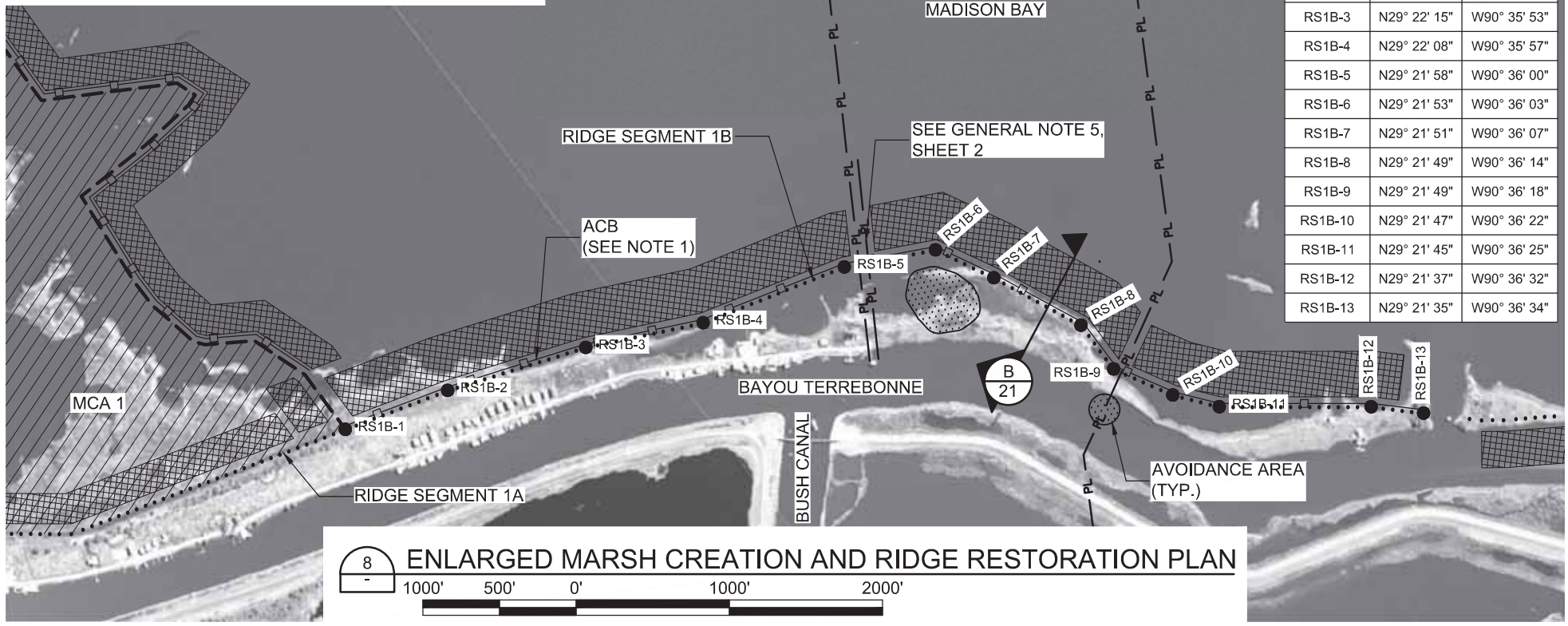
APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)

**LEGEND:**

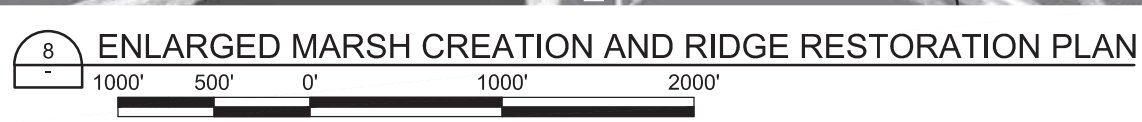
- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- PL — PIPELINE LOCATION
- □ — ARTICULATED CONCRETE BLOCK (ACB) MAT
- ABC15 ALIGNMENT POINT
- ▨ EXCAVATION (RS AND ECD BORROW AREA)
- ▩ MARSH CREATION AREA (MCA)
- ⊙ AVOIDANCE AREA

**NOTES**

1. SEE NOTES ON SHEET 4.



RIDGE SEGMENT 1B		
POINT NO.	LATITUDE	LONGITUDE
RS1B-1	N29° 22' 30"	W90° 35' 47"
RS1B-2	N29° 22' 24"	W90° 35' 49"
RS1B-3	N29° 22' 15"	W90° 35' 53"
RS1B-4	N29° 22' 08"	W90° 35' 57"
RS1B-5	N29° 21' 58"	W90° 36' 00"
RS1B-6	N29° 21' 53"	W90° 36' 03"
RS1B-7	N29° 21' 51"	W90° 36' 07"
RS1B-8	N29° 21' 49"	W90° 36' 14"
RS1B-9	N29° 21' 49"	W90° 36' 18"
RS1B-10	N29° 21' 47"	W90° 36' 22"
RS1B-11	N29° 21' 45"	W90° 36' 25"
RS1B-12	N29° 21' 37"	W90° 36' 32"
RS1B-13	N29° 21' 35"	W90° 36' 34"



APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139	DATE: JUNE 2021 SHEET 8 OF 31



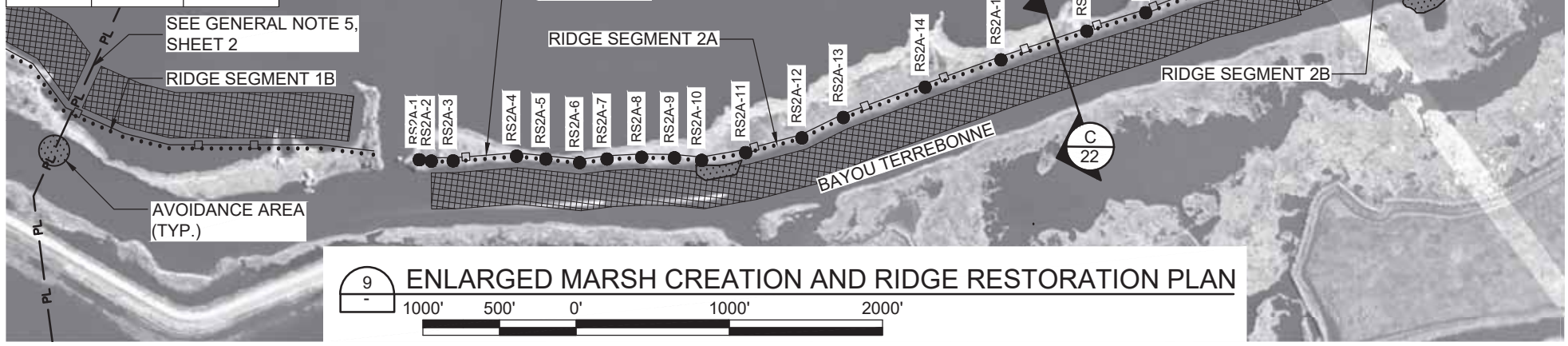
RIDGE SEGMENT 2A		
POINT NO.	LATITUDE	LONGITUDE
RS2A-1	N29° 21' 32"	W90° 36' 37"
RS2A-2	N29° 21' 32"	W90° 36' 37"
RS2A-3	N29° 21' 31"	W90° 36' 38"
RS2A-4	N29° 21' 27"	W90° 36' 41"
RS2A-5	N29° 21' 26"	W90° 36' 42"
RS2A-6	N29° 21' 24"	W90° 36' 44"
RS2A-7	N29° 21' 23"	W90° 36' 45"
RS2A-8	N29° 21' 21"	W90° 36' 47"
RS2A-9	N29° 21' 19"	W90° 36' 48"
RS2A-10	N29° 21' 18"	W90° 36' 49"
RS2A-11	N29° 21' 15"	W90° 36' 51"
RS2A-12	N29° 21' 12"	W90° 36' 53"
RS2A-13	N29° 21' 09"	W90° 36' 53"
RS2A-14	N29° 21' 04"	W90° 36' 55"
RS2A-15	N29° 20' 59"	W90° 36' 57"
RS2A-16	N29° 20' 53"	W90° 36' 59"
RS2A-17	N29° 20' 49"	W90° 37' 01"
RS2A-18	N29° 20' 46"	W90° 37' 02"
RS2A-19	N29° 20' 44"	W90° 37' 03"
RS2A-20	N29° 20' 43"	W90° 37' 03"
RS2A-21	N29° 20' 40"	W90° 37' 05"

**LEGEND:**

- ..... EARTHEN RIDGE
- EARTHEN CONTAINMENT DIKE
- PL — PIPELINE LOCATION
- □ — ARTICULATED CONCRETE BLOCK (ACB) MAT
- ABC15 ALIGNMENT POINT
- [Cross-hatched] EXCAVATION (RS AND ECD BORROW AREA)
- [Diagonal lines] MARSH CREATION AREA (MCA)
- [Circle with dots] AVOIDANCE AREA

**NOTES**

1. SEE NOTES ON SHEET 4.



**9 ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**

1000' 500' 0' 1000' 2000'

APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

DRAWN BY: J. BEAUGH

**HDR**  
 HDR ENGINEERING, INC.

DESIGNED BY: E. ROONEY, P.E.

COASTAL PROTECTION  
 AND RESTORATION  
 AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

APPROVED BY: BRETT L. GEESEY, P.E.  
 (LIC# 35172)

TE-0139  
 BAYOU TERREBONNE INCREMENT

STATE PROJECT NUMBER: TE-0139

FEDERAL PROJECT NUMBER: TE-0139

ENLARGED MARSH  
 CREATION AND RIDGE  
 RESTORATION PLAN

DATE: JUNE 2021

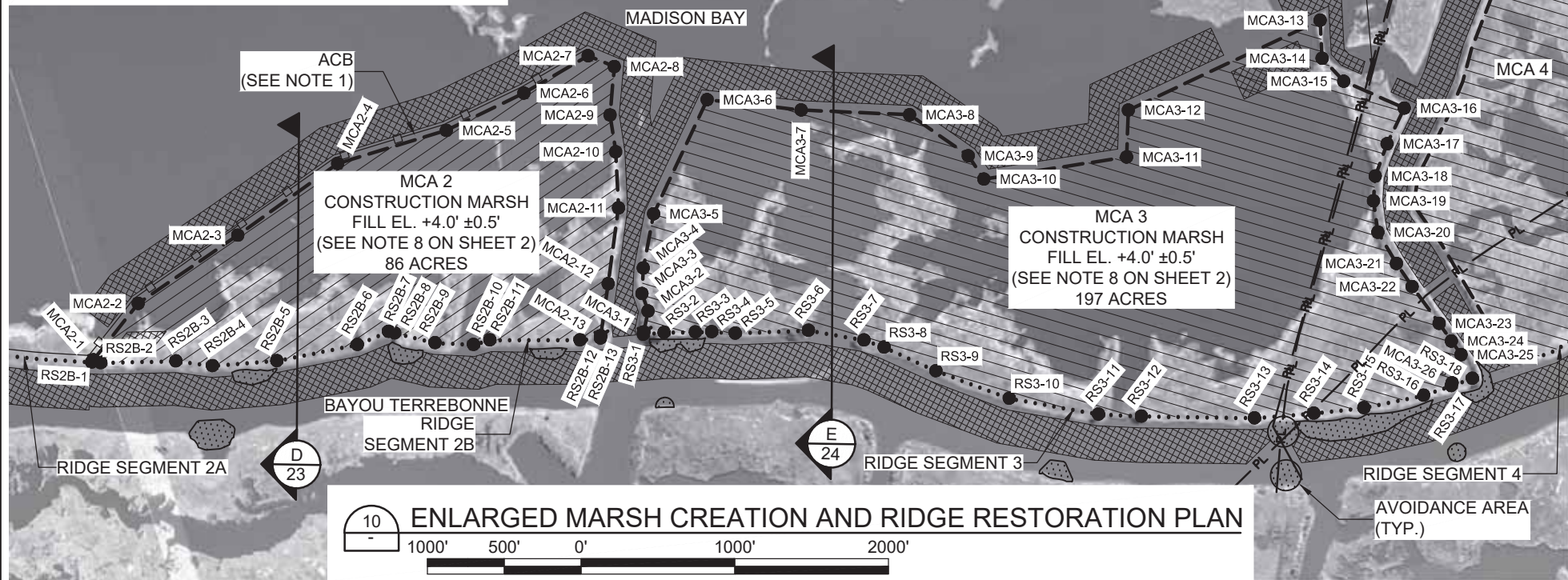
SHEET 9 OF 31

**LEGEND:**

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- PL — PIPELINE LOCATION
- □ — ARTICULATED CONCRETE BLOCK (ACB) MAT
- ABC15 ALIGNMENT POINT (DATA ON SHEET 11)
- [Cross-hatched box] EXCAVATION (RS AND ECD BORROW AREA)
- [Diagonal hatched box] MARSH CREATION AREA (MCA)
- [Dotted circle] AVOIDANCE AREA

**NOTES**

1. SEE NOTES ON SHEET 4.



**ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**

<p>APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802</p>	 <p>HDR ENGINEERING, INC.</p>	<p>COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802</p>	<p>TE-0139 BAYOU TERREBONNE INCREMENT</p>	<p>ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN</p>
<p>DRAWN BY: J. BEAUGH</p>	<p>DESIGNED BY: E. ROONEY, P.E.</p>	<p>APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)</p>	<p>STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139</p>	<p>DATE: JUNE 2021 SHEET 10 OF 31</p>

RIDGE SEGMENT 2B		
POINT NO.	LATITUDE	LONGITUDE
RS2B-1	N29° 20' 40"	W90° 37' 05"
RS2B-2	N29° 20' 40"	W90° 37' 05"
RS2B-3	N29° 20' 35"	W90° 37' 06"
RS2B-4	N29° 20' 33"	W90° 37' 08"
RS2B-5	N29° 20' 29"	W90° 37' 09"
RS2B-6	N29° 20' 24"	W90° 37' 09"
RS2B-7	N29° 20' 22"	W90° 37' 09"
RS2B-8	N29° 20' 21"	W90° 37' 09"
RS2B-9	N29° 20' 19"	W90° 37' 11"
RS2B-10	N29° 20' 17"	W90° 37' 12"
RS2B-11	N29° 20' 16"	W90° 37' 12"
RS2B-12	N29° 20' 10"	W90° 37' 14"
RS2B-13	N29° 20' 09"	W90° 37' 14"

MARSH CREATION AREA 2		
POINT NO.	LATITUDE	LONGITUDE
MCA2-1	N29° 20' 40"	W90° 37' 05"
MCA2-2	N29° 20' 36"	W90° 37' 02"
MCA2-3	N29° 20' 29"	W90° 36' 59"
MCA2-4	N29° 20' 21"	W90° 36' 56"
MCA2-5	N29° 20' 14"	W90° 36' 56"
MCA2-6	N29° 20' 09"	W90° 36' 56"
MCA2-7	N29° 20' 04"	W90° 36' 54"
MCA2-8	N29° 20' 03"	W90° 36' 56"
MCA2-9	N29° 20' 04"	W90° 36' 59"
MCA2-10	N29° 20' 04"	W90° 37' 02"
MCA2-11	N29° 20' 05"	W90° 37' 06"
MCA2-12	N29° 20' 07"	W90° 37' 11"
MCA2-13	N29° 20' 09"	W90° 37' 14"




RIDGE SEGMENT 3		
POINT NO.	LATITUDE	LONGITUDE
RS3-1	N29° 20' 06"	W90° 37' 15"
RS3-2	N29° 20' 05"	W90° 37' 15"
RS3-3	N29° 20' 03"	W90° 37' 16"
RS3-4	N29° 20' 02"	W90° 37' 17"
RS3-5	N29° 20' 00"	W90° 37' 17"
RS3-6	N29° 19' 56"	W90° 37' 19"
RS3-7	N29° 19' 53"	W90° 37' 21"
RS3-8	N29° 19' 52"	W90° 37' 21"
RS3-9	N29° 19' 49"	W90° 37' 24"
RS3-10	N29° 19' 45"	W90° 37' 28"
RS3-11	N29° 19' 40"	W90° 37' 31"
RS3-12	N29° 19' 37"	W90° 37' 32"
RS3-13	N29° 19' 30"	W90° 37' 35"
RS3-14	N29° 19' 27"	W90° 37' 36"
RS3-15	N29° 19' 23"	W90° 37' 37"
RS3-16	N29° 19' 19"	W90° 37' 37"
RS3-17	N29° 19' 18"	W90° 37' 37"
RS3-18	N29° 19' 16"	W90° 37' 37"

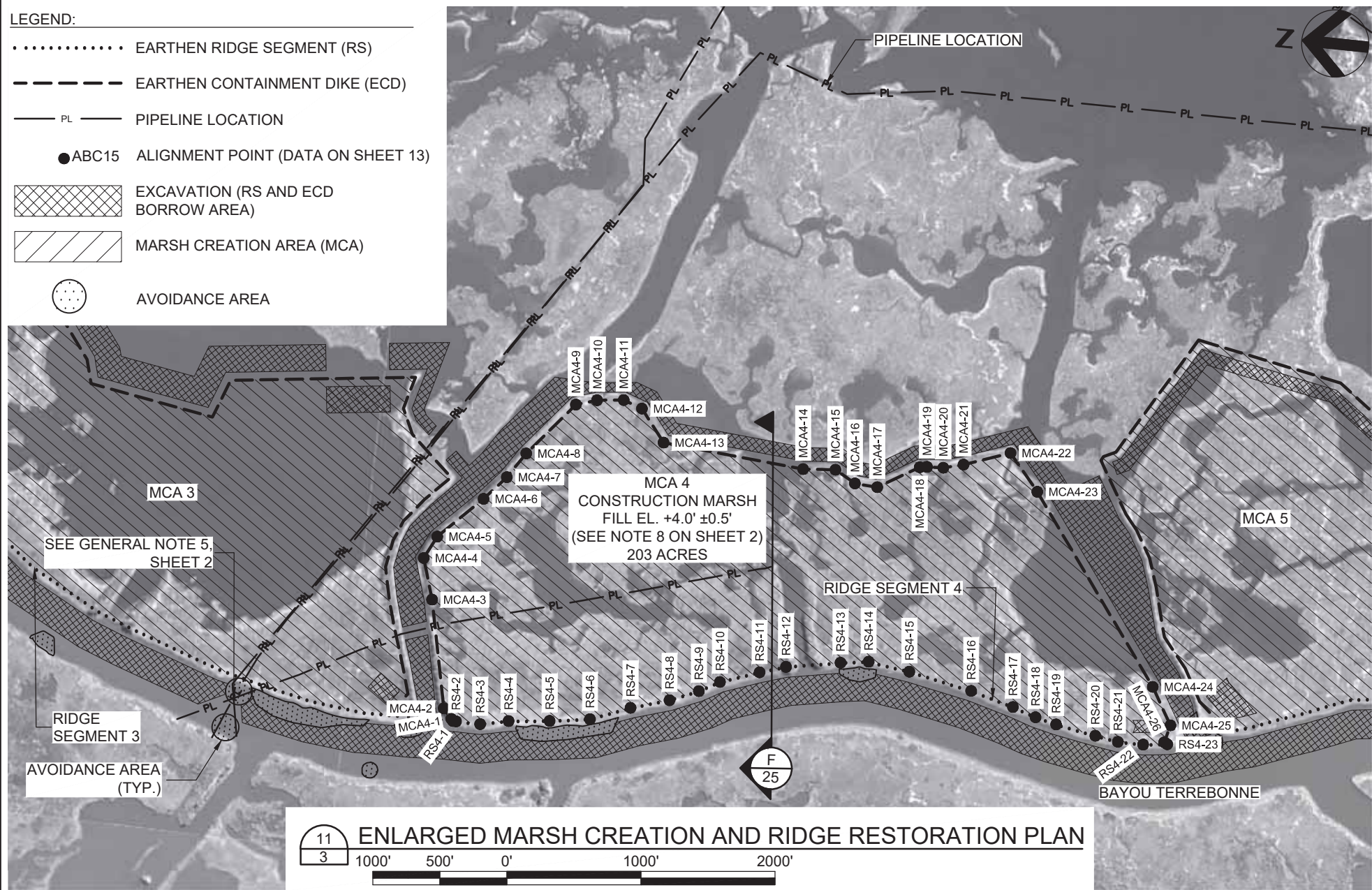
MARSH CREATION AREA 3		
POINT NO.	LATITUDE	LONGITUDE
MCA3-1	N29° 20' 06"	W90° 37' 15"
MCA3-2	N29° 20' 05"	W90° 37' 14"
MCA3-3	N29° 20' 05"	W90° 37' 12"
MCA3-4	N29° 20' 05"	W90° 37' 11"
MCA3-5	N29° 20' 03"	W90° 37' 07"
MCA3-6	N29° 19' 58"	W90° 37' 00"
MCA3-7	N29° 19' 52"	W90° 37' 03"
MCA3-8	N29° 19' 45"	W90° 37' 06"
MCA3-9	N29° 19' 43"	W90° 37' 10"
MCA3-10	N29° 19' 42"	W90° 37' 12"
MCA3-11	N29° 19' 33"	W90° 37' 14"
MCA3-12	N29° 19' 32"	W90° 37' 10"
MCA3-13	N29° 19' 18"	W90° 37' 08"
MCA3-14	N29° 19' 19"	W90° 37' 11"
MCA3-15	N29° 19' 18"	W90° 37' 13"
MCA3-16	N29° 19' 15"	W90° 37' 17"
MCA3-17	N29° 19' 17"	W90° 37' 19"
MCA3-18	N29° 19' 18"	W90° 37' 21"
MCA3-19	N29° 19' 19"	W90° 37' 22"
MCA3-20	N29° 19' 19"	W90° 37' 25"
MCA3-21	N29° 19' 19"	W90° 37' 27"
MCA3-22	N29° 19' 18"	W90° 37' 29"
MCA3-23	N29° 19' 17"	W90° 37' 32"
MCA3-24	N29° 19' 17"	W90° 37' 34"
MCA3-25	N29° 19' 16"	W90° 37' 35"
MCA3-26	N29° 19' 17"	W90° 37' 37"

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	ALIGNMENT POINT DATA RIDGE SEGMENTS 2B / 3 AND MCA 2 / MCA 3 LOCATED ON SHEET 10
			STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 11 OF 31



**LEGEND:**

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- PL — PIPELINE LOCATION
- ABC15 ALIGNMENT POINT (DATA ON SHEET 13)
-  EXCAVATION (RS AND ECD BORROW AREA)
-  MARSH CREATION AREA (MCA)
-  AVOIDANCE AREA



**ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**

11  
3

1000' 500' 0' 1000' 2000'

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
			FEDERAL PROJECT NUMBER: TE-0139	SHEET 12 OF 31




MARSH CREATION AREA 4		
POINT NO.	LATITUDE	LONGITUDE
MCA4-1	N29° 19' 13"	W90° 37' 37"
MCA4-2	N29° 19' 14"	W90° 37' 36"
MCA4-3	N29° 19' 15"	W90° 37' 27"
MCA4-4	N29° 19' 16"	W90° 37' 24"
MCA4-5	N29° 19' 15"	W90° 37' 22"
MCA4-6	N29° 19' 12"	W90° 37' 18"
MCA4-7	N29° 19' 11"	W90° 37' 16"
MCA4-8	N29° 19' 10"	W90° 37' 14"
MCA4-9	N29° 19' 06"	W90° 37' 09"
MCA4-10	N29° 19' 05"	W90° 37' 09"
MCA4-11	N29° 19' 03"	W90° 37' 08"
MCA4-12	N29° 19' 02"	W90° 37' 09"
MCA4-13	N29° 19' 00"	W90° 37' 12"
MCA4-14	N29° 18' 49"	W90° 37' 13"
MCA4-15	N29° 18' 47"	W90° 37' 12"
MCA4-16	N29° 18' 45"	W90° 37' 13"
MCA4-17	N29° 18' 44"	W90° 37' 13"
MCA4-18	N29° 18' 41"	W90° 37' 11"
MCA4-19	N29° 18' 40"	W90° 37' 11"
MCA4-20	N29° 18' 39"	W90° 37' 11"
MCA4-21	N29° 18' 37"	W90° 37' 11"
MCA4-22	N29° 18' 34"	W90° 37' 09"
MCA4-23	N29° 18' 32"	W90° 37' 12"
MCA4-24	N29° 18' 22"	W90° 37' 28"
MCA4-25	N29° 18' 20"	W90° 37' 31"
MCA4-26	N29° 18' 20"	W90° 37' 32"

RIDGE SEGMENT 4		
POINT NO.	LATITUDE	LONGITUDE
RS4-1	N29° 19' 13"	W90° 37' 37"
RS4-2	N29° 19' 13"	W90° 37' 37"
RS4-3	N29° 19' 11"	W90° 37' 37"
RS4-4	N29° 19' 09"	W90° 37' 36"
RS4-5	N29° 19' 06"	W90° 37' 36"
RS4-6	N29° 19' 03"	W90° 37' 35"
RS4-7	N29° 19' 00"	W90° 37' 34"
RS4-8	N29° 18' 57"	W90° 37' 33"
RS4-9	N29° 18' 55"	W90° 37' 32"
RS4-10	N29° 18' 54"	W90° 37' 31"
RS4-11	N29° 18' 51"	W90° 37' 30"
RS4-12	N29° 18' 49"	W90° 37' 29"
RS4-13	N29° 18' 45"	W90° 37' 28"
RS4-14	N29° 18' 43"	W90° 37' 28"
RS4-15	N29° 18' 40"	W90° 37' 29"
RS4-16	N29° 18' 35"	W90° 37' 30"
RS4-17	N29° 18' 32"	W90° 37' 31"
RS4-18	N29° 18' 30"	W90° 37' 31"
RS4-19	N29° 18' 29"	W90° 37' 32"
RS4-20	N29° 18' 26"	W90° 37' 32"
RS4-21	N29° 18' 24"	W90° 37' 32"
RS4-22	N29° 18' 22"	W90° 37' 32"
RS4-23	N29° 18' 20"	W90° 37' 32"

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	ALIGNMENT POINT DATA RIDGE SEGMENT 4 / MCA 4 LOCATED ON SHEET 12
			STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 13 OF 31

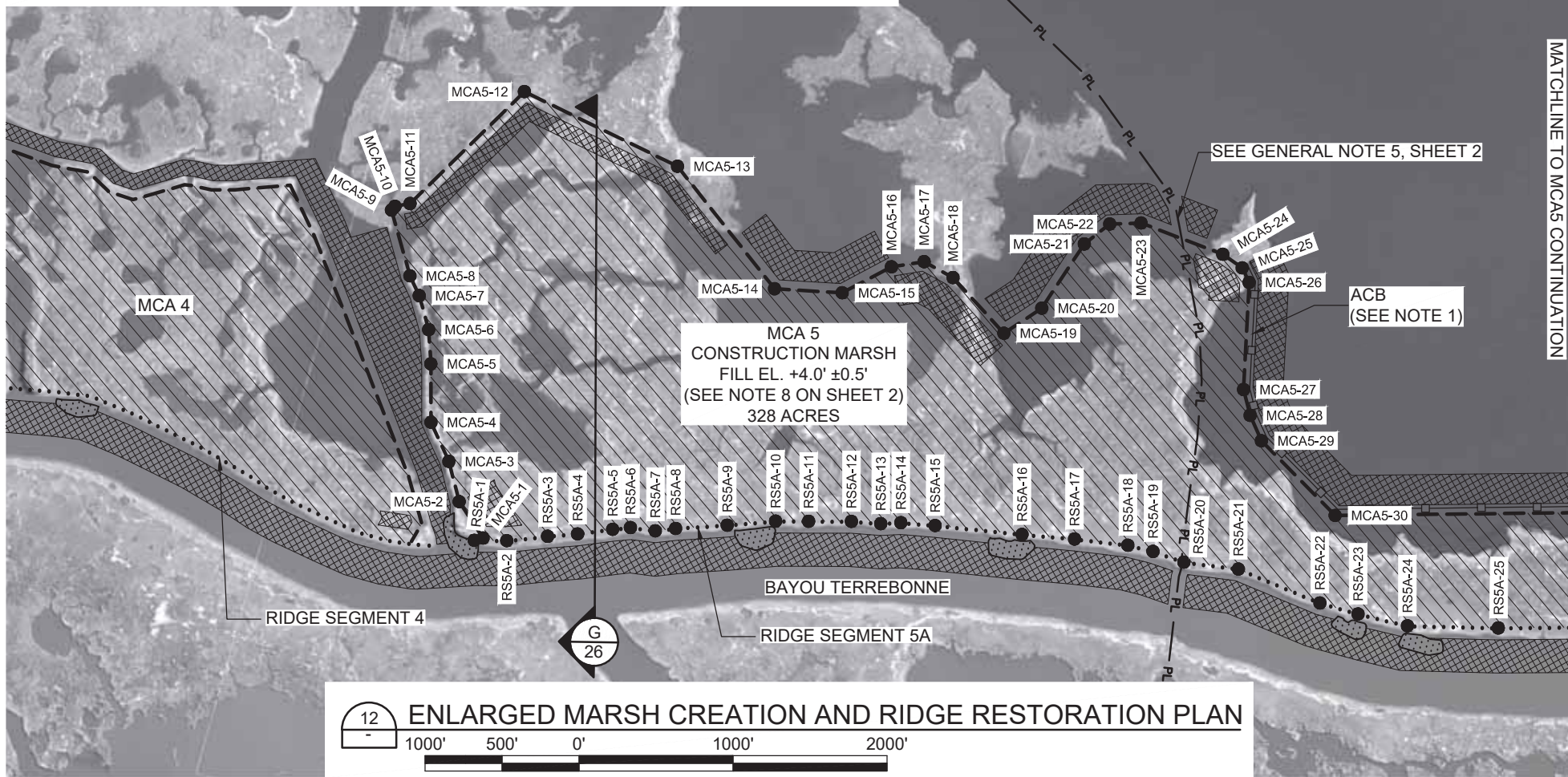


**LEGEND:**

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- PL — PIPELINE LOCATION
- □ — ARTICULATED CONCRETE BLOCK (ACB) MAT
-  EXCAVATION (RS AND ECD BORROW AREA)
-  MARSH CREATION AREA (MCA)
- ABC15
- ABC15 ALIGNMENT POINT (DATA LOCATED ON SHEET 16)
-  AVOIDANCE AREA

**NOTES**

1. SEE NOTES ON SHEET 4.



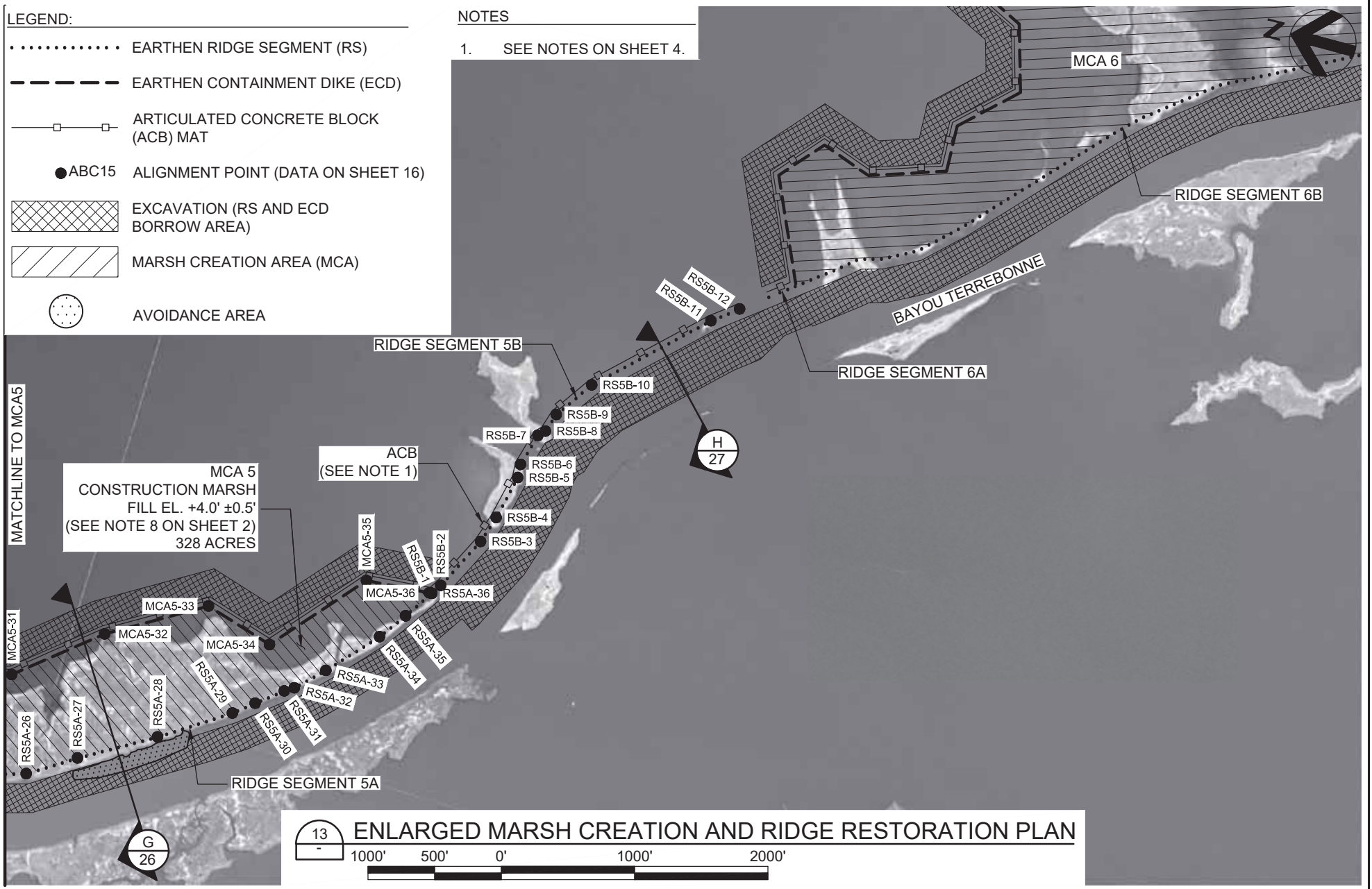
**12 ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
			FEDERAL PROJECT NUMBER: TE-0139	SHEET 14 OF 31

- LEGEND:**
- ..... EARTHEN RIDGE SEGMENT (RS)
  - EARTHEN CONTAINMENT DIKE (ECD)
  - ARTICULATED CONCRETE BLOCK (ACB) MAT
  - ABC15 ALIGNMENT POINT (DATA ON SHEET 16)
  - ▨ EXCAVATION (RS AND ECD BORROW AREA)
  - ▩ MARSH CREATION AREA (MCA)
  - ⊙ AVOIDANCE AREA

**NOTES**

1. SEE NOTES ON SHEET 4.



**13 ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**

APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

**HDR**  
 HDR ENGINEERING, INC.

COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

TE-0139  
 BAYOU TERREBONNE INCREMENT

STATE PROJECT NUMBER: TE-0139

FEDERAL PROJECT NUMBER: TE-0139

ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN

DATE: JUNE 2021

SHEET 15 OF 31

MARSH CREATION AREA 5		
POINT NO.	LATITUDE	LONGITUDE
MCA5-1	N29° 18' 16"	W90° 37' 30"
MCA5-2	N29° 18' 18"	W90° 37' 28"
MCA5-3	N29° 18' 20"	W90° 37' 26"
MCA5-4	N29° 18' 21"	W90° 37' 23"
MCA5-5	N29° 18' 22"	W90° 37' 19"
MCA5-6	N29° 18' 23"	W90° 37' 17"
MCA5-7	N29° 18' 24"	W90° 37' 15"
MCA5-8	N29° 18' 25"	W90° 37' 13"
MCA5-9	N29° 18' 27"	W90° 37' 09"
MCA5-10	N29° 18' 27"	W90° 37' 09"
MCA5-11	N29° 18' 26"	W90° 37' 08"
MCA5-12	N29° 18' 21"	W90° 36' 58"
MCA5-13	N29° 18' 10"	W90° 37' 00"
MCA5-14	N29° 18' 02"	W90° 37' 07"
MCA5-15	N29° 17' 58"	W90° 37' 06"
MCA5-16	N29° 17' 55"	W90° 37' 03"
MCA5-17	N29° 17' 54"	W90° 37' 02"
MCA5-18	N29° 17' 51"	W90° 37' 03"

MARSH CREATION AREA 5		
POINT NO.	LATITUDE	LONGITUDE
MCA5-19	N29° 17' 47"	W90° 37' 06"
MCA5-20	N29° 17' 45"	W90° 37' 03"
MCA5-21	N29° 17' 44"	W90° 36' 58"
MCA5-22	N29° 17' 43"	W90° 36' 56"
MCA5-23	N29° 17' 41"	W90° 36' 55"
MCA5-24	N29° 17' 35"	W90° 36' 56"
MCA5-25	N29° 17' 34"	W90° 36' 56"
MCA5-26	N29° 17' 33"	W90° 36' 57"
MCA5-27	N29° 17' 32"	W90° 37' 05"
MCA5-28	N29° 17' 31"	W90° 37' 07"
MCA5-29	N29° 17' 30"	W90° 37' 08"
MCA5-30	N29° 17' 24"	W90° 37' 12"
MCA5-31	N29° 17' 09"	W90° 37' 07"
MCA5-32	N29° 17' 03"	W90° 37' 02"
MCA5-33	N29° 16' 56"	W90° 36' 57"
MCA5-34	N29° 16' 51"	W90° 36' 59"
MCA5-35	N29° 16' 45"	W90° 36' 52"
MCA5-36	N29° 16' 40"	W90° 36' 51"

RIDGE SEGMENT 5A		
POINT NO.	LATITUDE	LONGITUDE
RS5A-1	N29° 18' 17"	W90° 37' 31"
RS5A-2	N29° 18' 15"	W90° 37' 30"
RS5A-3	N29° 18' 12"	W90° 37' 29"
RS5A-4	N29° 18' 10"	W90° 37' 28"
RS5A-5	N29° 18' 08"	W90° 37' 27"
RS5A-6	N29° 18' 07"	W90° 37' 27"
RS5A-7	N29° 18' 06"	W90° 37' 27"
RS5A-8	N29° 18' 04"	W90° 37' 26"
RS5A-9	N29° 18' 01"	W90° 37' 25"
RS5A-10	N29° 17' 58"	W90° 37' 24"
RS5A-11	N29° 17' 56"	W90° 37' 23"
RS5A-12	N29° 17' 54"	W90° 37' 22"
RS5A-13	N29° 17' 52"	W90° 37' 22"
RS5A-14	N29° 17' 50"	W90° 37' 21"
RS5A-15	N29° 17' 48"	W90° 37' 21"
RS5A-16	N29° 17' 43"	W90° 37' 20"
RS5A-17	N29° 17' 39"	W90° 37' 19"
RS5A-18	N29° 17' 36"	W90° 37' 18"

RIDGE SEGMENT 5A		
POINT NO.	LATITUDE	LONGITUDE
RS5A-19	N29° 17' 34"	W90° 37' 18"
RS5A-20	N29° 17' 32"	W90° 37' 18"
RS5A-21	N29° 17' 29"	W90° 37' 18"
RS5A-22	N29° 17' 23"	W90° 37' 19"
RS5A-23	N29° 17' 21"	W90° 37' 19"
RS5A-24	N29° 17' 17"	W90° 37' 19"
RS5A-25	N29° 17' 12"	W90° 37' 17"
RS5A-26	N29° 17' 06"	W90° 37' 15"
RS5A-27	N29° 17' 02"	W90° 37' 13"
RS5A-28	N29° 16' 57"	W90° 37' 09"
RS5A-29	N29° 16' 52"	W90° 37' 05"
RS5A-30	N29° 16' 51"	W90° 37' 04"
RS5A-31	N29° 16' 49"	W90° 37' 02"
RS5A-32	N29° 16' 48"	W90° 37' 02"
RS5A-33	N29° 16' 46"	W90° 37' 00"
RS5A-34	N29° 16' 43"	W90° 36' 56"
RS5A-35	N29° 16' 42"	W90° 36' 54"
RS5A-36	N29° 16' 40"	W90° 36' 51"

RIDGE SEGMENT 5B		
POINT NO.	LATITUDE	LONGITUDE
RS5B-1	N29° 16' 40"	W90° 36' 51"
RS5B-2	N29° 16' 40"	W90° 36' 50"
RS5B-3	N29° 16' 38"	W90° 36' 46"
RS5B-4	N29° 16' 37"	W90° 36' 43"
RS5B-5	N29° 16' 36"	W90° 36' 40"
RS5B-6	N29° 16' 36"	W90° 36' 39"
RS5B-7	N29° 16' 36"	W90° 36' 36"
RS5B-8	N29° 16' 35"	W90° 36' 35"
RS5B-9	N29° 16' 35"	W90° 36' 34"
RS5B-10	N29° 16' 33"	W90° 36' 30"
RS5B-11	N29° 16' 26"	W90° 36' 23"
RS5B-12	N29° 16' 24"	W90° 36' 21"

APPLICATION BY:  
COASTAL PROTECTION AND RESTORATION AUTHORITY  
150 TERRACE AVENUE  
BATON ROUGE, LOUISIANA 70802



COASTAL PROTECTION  
AND RESTORATION  
AUTHORITY  
150 TERRACE AVENUE  
BATON ROUGE, LOUISIANA 70802

TE-0139  
BAYOU TERREBONNE INCREMENT

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STATE PROJECT NUMBER: TE-0139

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FEDERAL PROJECT NUMBER: TE-0139

ALIGNMENT POINT DATA  
RIDGE SEGMENTS 5A / 5B  
AND MCA 5  
LOCATED ON SHEETS 14 AND 15

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DATE: JUNE 2021

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SHEET 16 OF 31



DRAWN BY: J. BEAUGH

DESIGNED BY: E. ROONEY, P.E.

APPROVED BY: BRETT L. GEESEY, P.E.  
(LIC# 35172)



**LEGEND:**

- ..... EARTHEN RIDGE SEGMENT (RS)
- EARTHEN CONTAINMENT DIKE (ECD)
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- ABC15 ALIGNMENT POINT
-  EXCAVATION (RS AND ECD BORROW AREA)
-  MARSH CREATION AREA (MCA)

**NOTES**

1. SEE NOTES ON SHEET 4.



RIDGE SEGMENT 6B			RIDGE SEGMENT 6B		
POINT NO.	LATITUDE	LONGITUDE	POINT NO.	LATITUDE	LONGITUDE
RS6B-1	N29° 16' 20"	W90° 36' 18"	RS6B-14	N29° 15' 39"	W90° 35' 41"
RS6B-2	N29° 16' 17"	W90° 36' 15"	RS6B-15	N29° 15' 36"	W90° 35' 40"
RS6B-3	N29° 16' 16"	W90° 36' 14"	RS6B-16	N29° 15' 35"	W90° 35' 39"
RS6B-4	N29° 16' 15"	W90° 36' 14"	RS6B-17	N29° 15' 33"	W90° 35' 38"
RS6B-5	N29° 16' 12"	W90° 36' 12"	RS6B-18	N29° 15' 29"	W90° 35' 35"
RS6B-6	N29° 16' 10"	W90° 36' 09"	RS6B-19	N29° 15' 23"	W90° 35' 29"
RS6B-7	N29° 16' 01"	W90° 35' 58"	RS6B-20	N29° 15' 23"	W90° 35' 29"
RS6B-8	N29° 15' 59"	W90° 35' 56"	<b>RIDGE SEGMENT 6A</b>		
POINT NO.	LATITUDE	LONGITUDE			
RS6B-9	N29° 15' 54"	W90° 35' 52"	RS6A-1	N29° 16' 22"	W90° 36' 19"
RS6B-10	N29° 15' 49"	W90° 35' 49"	RS6A-2	N29° 16' 20"	W90° 36' 18"
RS6B-11	N29° 15' 44"	W90° 35' 46"			
RS6B-12	N29° 15' 43"	W90° 35' 45"			
RS6B-13	N29° 15' 41"	W90° 35' 43"			

**MARSH CREATION AREA 6**

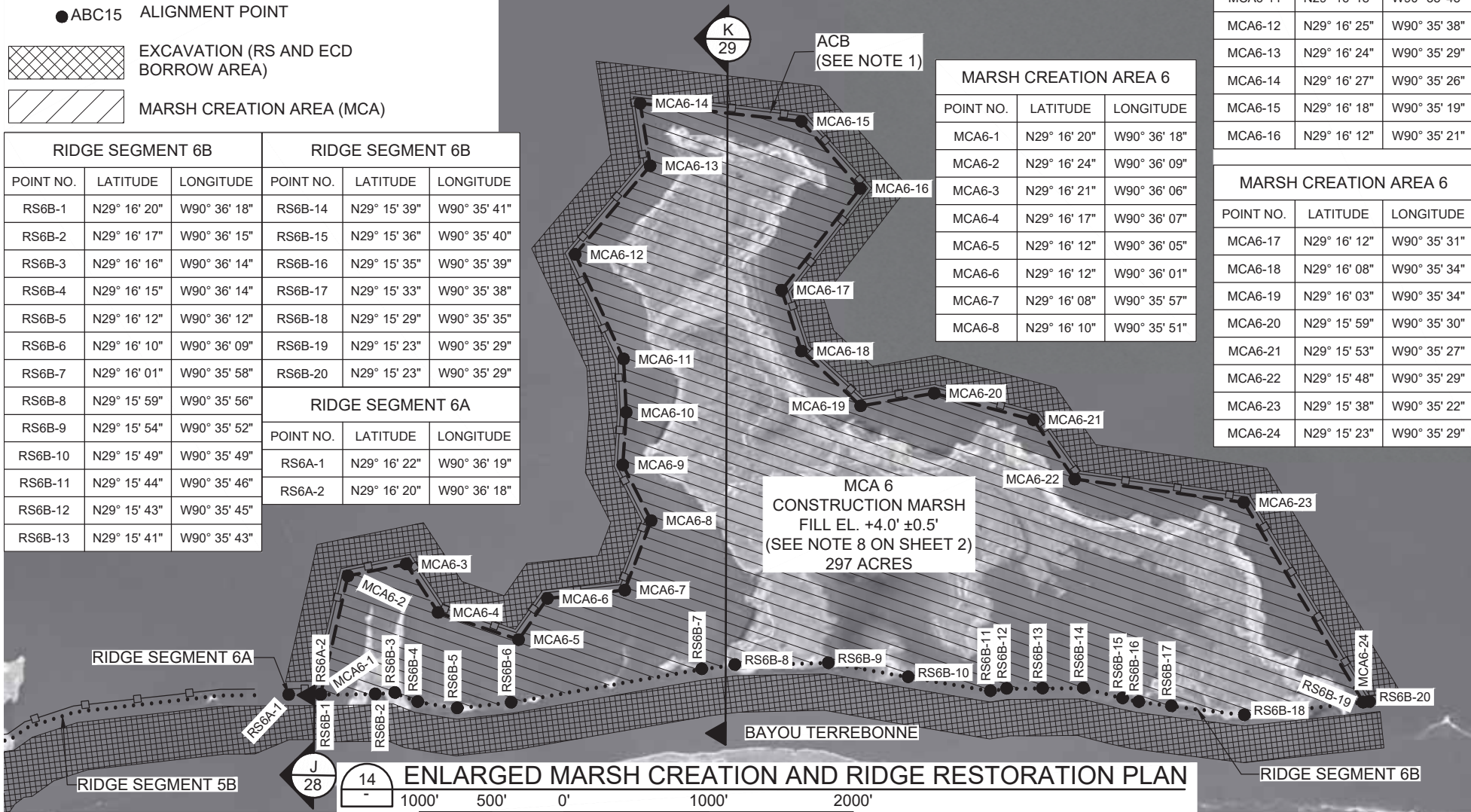
POINT NO.	LATITUDE	LONGITUDE
MCA6-1	N29° 16' 20"	W90° 36' 18"
MCA6-2	N29° 16' 24"	W90° 36' 09"
MCA6-3	N29° 16' 21"	W90° 36' 06"
MCA6-4	N29° 16' 17"	W90° 36' 07"
MCA6-5	N29° 16' 12"	W90° 36' 05"
MCA6-6	N29° 16' 12"	W90° 36' 01"
MCA6-7	N29° 16' 08"	W90° 35' 57"
MCA6-8	N29° 16' 10"	W90° 35' 51"

**MARSH CREATION AREA 6**

POINT NO.	LATITUDE	LONGITUDE
MCA6-9	N29° 16' 13"	W90° 35' 49"
MCA6-10	N29° 16' 15"	W90° 35' 46"
MCA6-11	N29° 16' 18"	W90° 35' 43"
MCA6-12	N29° 16' 25"	W90° 35' 38"
MCA6-13	N29° 16' 24"	W90° 35' 29"
MCA6-14	N29° 16' 27"	W90° 35' 26"
MCA6-15	N29° 16' 18"	W90° 35' 19"
MCA6-16	N29° 16' 12"	W90° 35' 21"

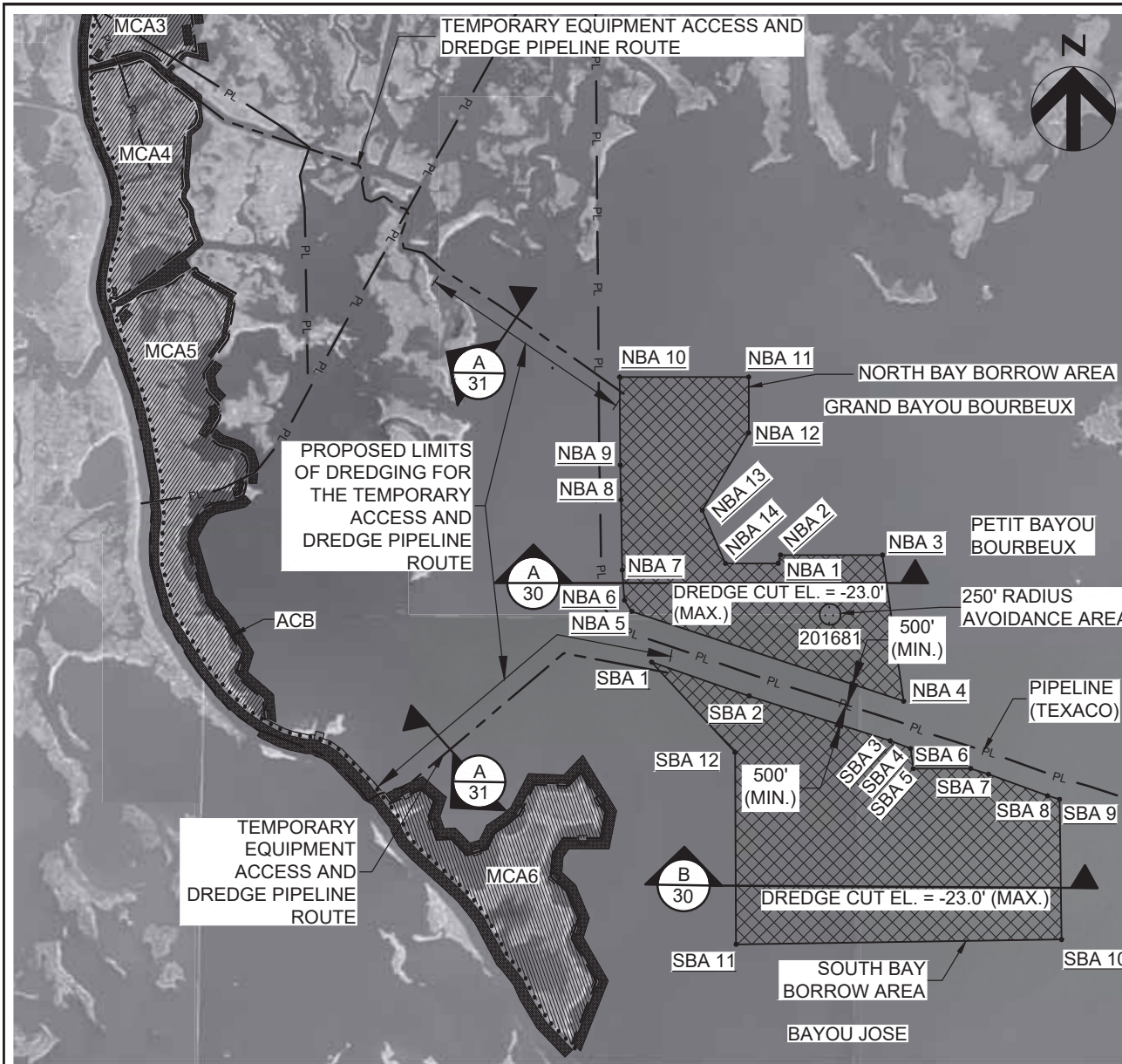
**MARSH CREATION AREA 6**

POINT NO.	LATITUDE	LONGITUDE
MCA6-17	N29° 16' 12"	W90° 35' 31"
MCA6-18	N29° 16' 08"	W90° 35' 34"
MCA6-19	N29° 16' 03"	W90° 35' 34"
MCA6-20	N29° 15' 59"	W90° 35' 30"
MCA6-21	N29° 15' 53"	W90° 35' 27"
MCA6-22	N29° 15' 48"	W90° 35' 29"
MCA6-23	N29° 15' 38"	W90° 35' 22"
MCA6-24	N29° 15' 23"	W90° 35' 29"



**ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN**

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	ENLARGED MARSH CREATION AND RIDGE RESTORATION PLAN	
DRAWN BY: J. BEAUGH		DESIGNED BY: E. ROONEY, P.E.		APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	
			STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021	
			FEDERAL PROJECT NUMBER: TE-0139	SHEET 17 OF 31	



ENLARGED BORROW AREA PLAN

NOTES

1. THE NORTH AND SOUTH BAY BORROW AREAS CONTAIN APPROXIMATELY 33 M CUBIC YARDS OF MATERIAL. NO DREDGING WILL BE PERFORMED WITHIN 500 FT OF PIPELINE AND 250 FT OF WELL.
2. DREDGING FOR THE TEMPORARY EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE WILL BE PERFORMED IN THE BAY, FROM THE BAY BORROW AREA TO THE RESPECTIVE BAYOU AS SHOWN ON SHEET 18. NO ADDITIONAL DREDGING WILL BE PERFORMED IN BAYOU TERREBONNE, OR OTHER BAYOUS, BEYOND THE LIMITS SHOWN FOR THE RIDGE SEGMENT BORROW AREAS AND EARTHEN CONTAINMENT DIKE BORROW AREAS.
3. SEE NOTES ON SHEET 4.

LEGEND:

- ..... EARTHEN RIDGE SEGMENT (RS)
- - - - - EARTHEN CONTAINMENT DIKE (ECD)
- PL — PIPELINE LOCATION
- - - - - EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE
- ARTICULATED CONCRETE BLOCK (ACB) MAT
- SBA5 • ALIGNMENT POINT
- ▨ EXCAVATION
- (with dots) AVOIDANCE AREA



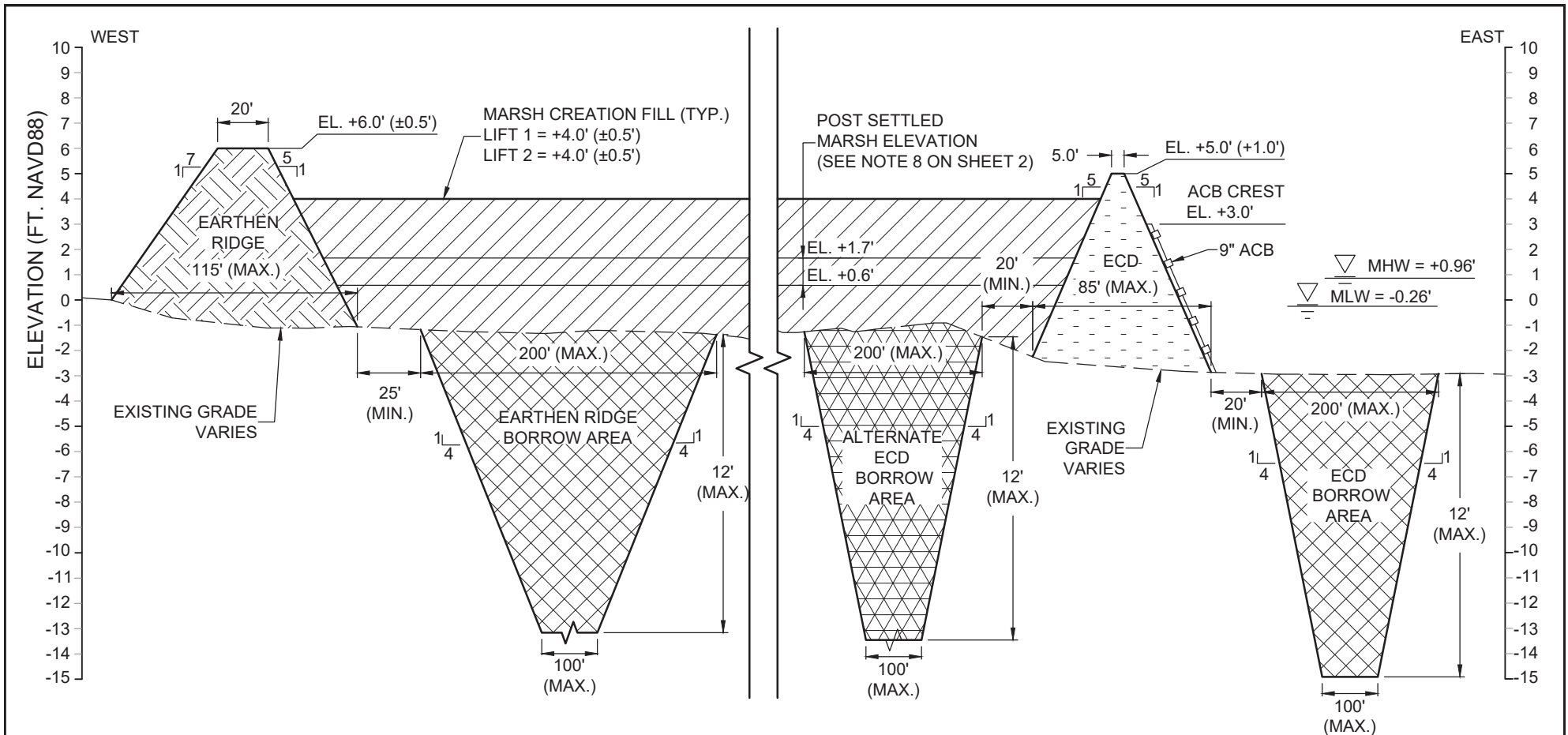
APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT STATE PROJECT NUMBER: TE-0139	ENLARGED BORROW AREA PLAN DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 18 OF 31

NORTH BORROW AREA POINTS TABLE		
POINT NO.	LATITUDE	LONGITUDE
NBA 1	N29° 17' 17"	W90° 34' 32"
NBA 2	N29° 17' 19"	W90° 34' 32"
NBA 3	N29° 17' 18"	W90° 34' 04"
NBA 4	N29° 16' 44"	W90° 33' 59"
NBA 5	N29° 17' 05"	W90° 35' 12"
NBA 6	N29° 17' 08"	W90° 35' 14"
NBA 7	N29° 17' 15"	W90° 35' 14"
NBA 8	N29° 17' 32"	W90° 35' 15"
NBA 9	N29° 17' 40"	W90° 35' 15"
NBA 10	N29° 18' 01"	W90° 35' 15"
NBA 11	N29° 18' 01"	W90° 34' 40"
NBA 12	N29° 17' 48"	W90° 34' 40"
NBA 13	N29° 17' 29"	W90° 34' 53"
NBA 14	N29° 17' 17"	W90° 34' 47"

SOUTH BORROW AREA POINTS TABLE		
POINT NO.	LATITUDE	LONGITUDE
SBA 1	N29° 16' 53"	W90° 35' 07"
SBA 2	N29° 16' 45"	W90° 34' 40"
SBA 3	N29° 16' 34"	W90° 34' 02"
SBA 4	N29° 16' 33"	W90° 33' 57"
SBA 5	N29° 16' 28"	W90° 33' 56"
SBA 6	N29° 16' 28"	W90° 33' 41"
SBA 7	N29° 16' 26"	W90° 33' 36"
SBA 8	N29° 16' 21"	W90° 33' 20"
SBA 9	N29° 16' 20"	W90° 33' 17"
SBA 10	N29° 15' 47"	W90° 33' 17"
SBA 11	N29° 15' 47"	W90° 34' 44"
SBA 12	N29° 16' 32"	W90° 34' 44"

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT STATE PROJECT NUMBER: TE-0139	POINT DATA NORTH AND SOUTH BORROW AREA LOCATED ON SHEET 18 DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 19 OF 31





**A**  
**7** TYPICAL SECTIONS - MARSH CREATION AREA 1 AND RIDGE SEGMENT 1A  
NOT TO SCALE

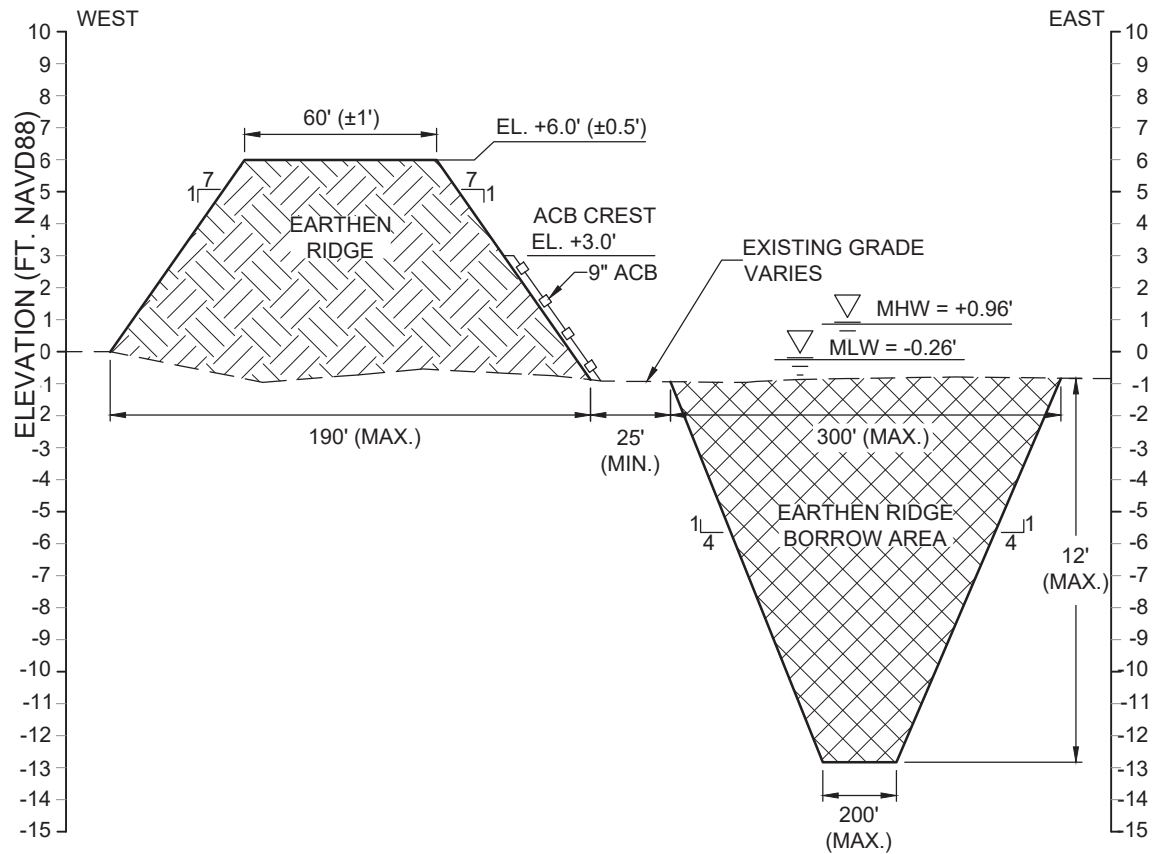
**LEGEND:**

- EARTHEN RIDGE
- EARTHEN CONTAINMENT DIKE (ECD)
- BORROW AREAS
- MARSH CREATION FILL AREA
- ALTERNATE BORROW AREA
- ARTICULATED CONCRETE BLOCK (ACB) MAT

**NOTE:**




1. ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA WILL BE USED TO MINIMIZE EXCAVATION WITHIN VEGETATED AREAS OUTSIDE OF THE MARSH CREATION AREA LIMITS. LOCATIONS OF ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA ARE SHOWN ON ENLARGED PLAN SHEETS.

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH RIDGE AND CANAL TYPICAL SECTIONS
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
			FEDERAL PROJECT NUMBER: TE-0139	SHEET 20 OF 31

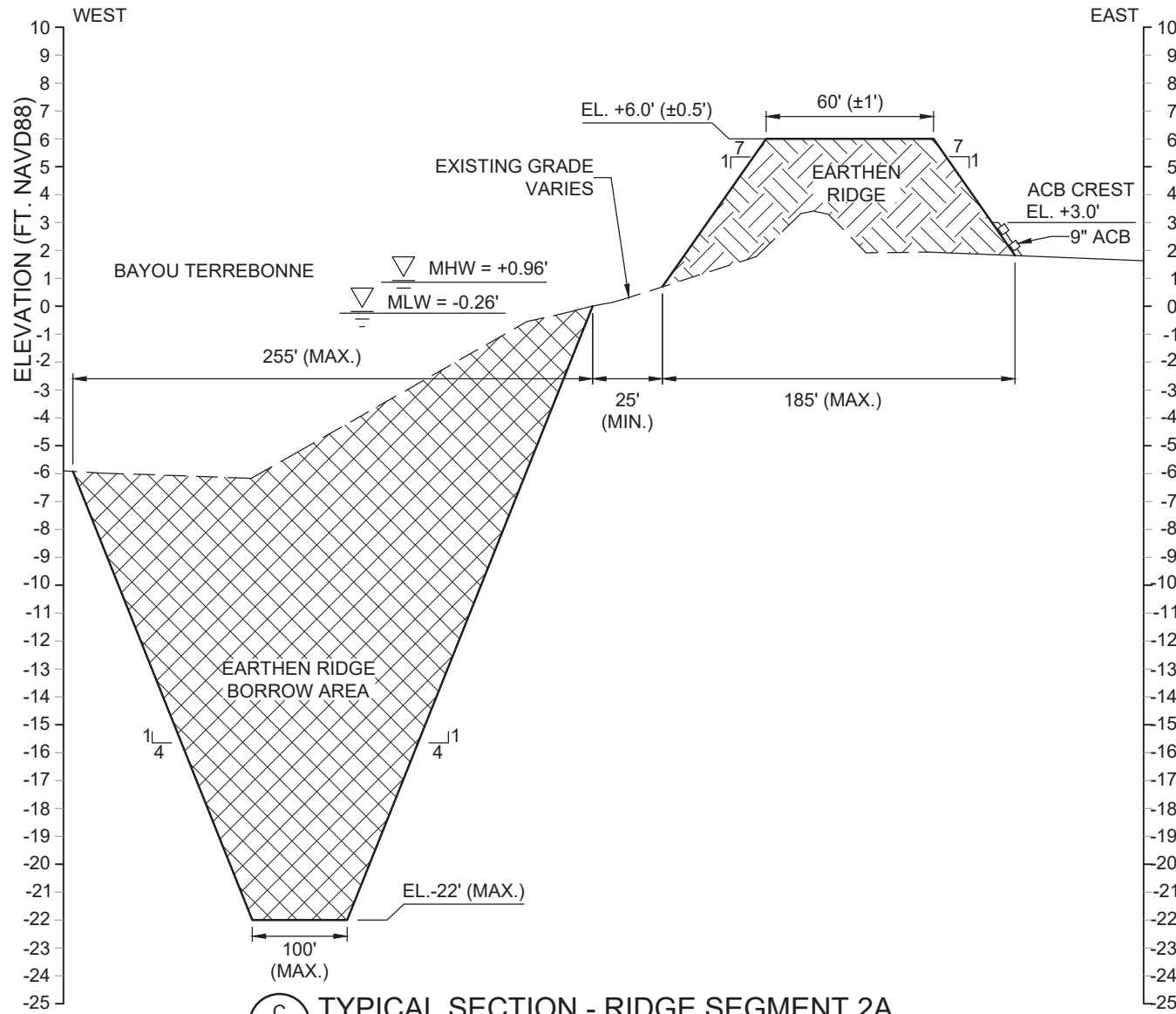


**TYPICAL SECTION - RIDGE SEGMENT 1B**  
 NOT TO SCALE




**LEGEND:**

-  EARTHEN RIDGE
-  BORROW AREA
-  ARTICULATED CONCRETE BLOCK (ACB) MAT

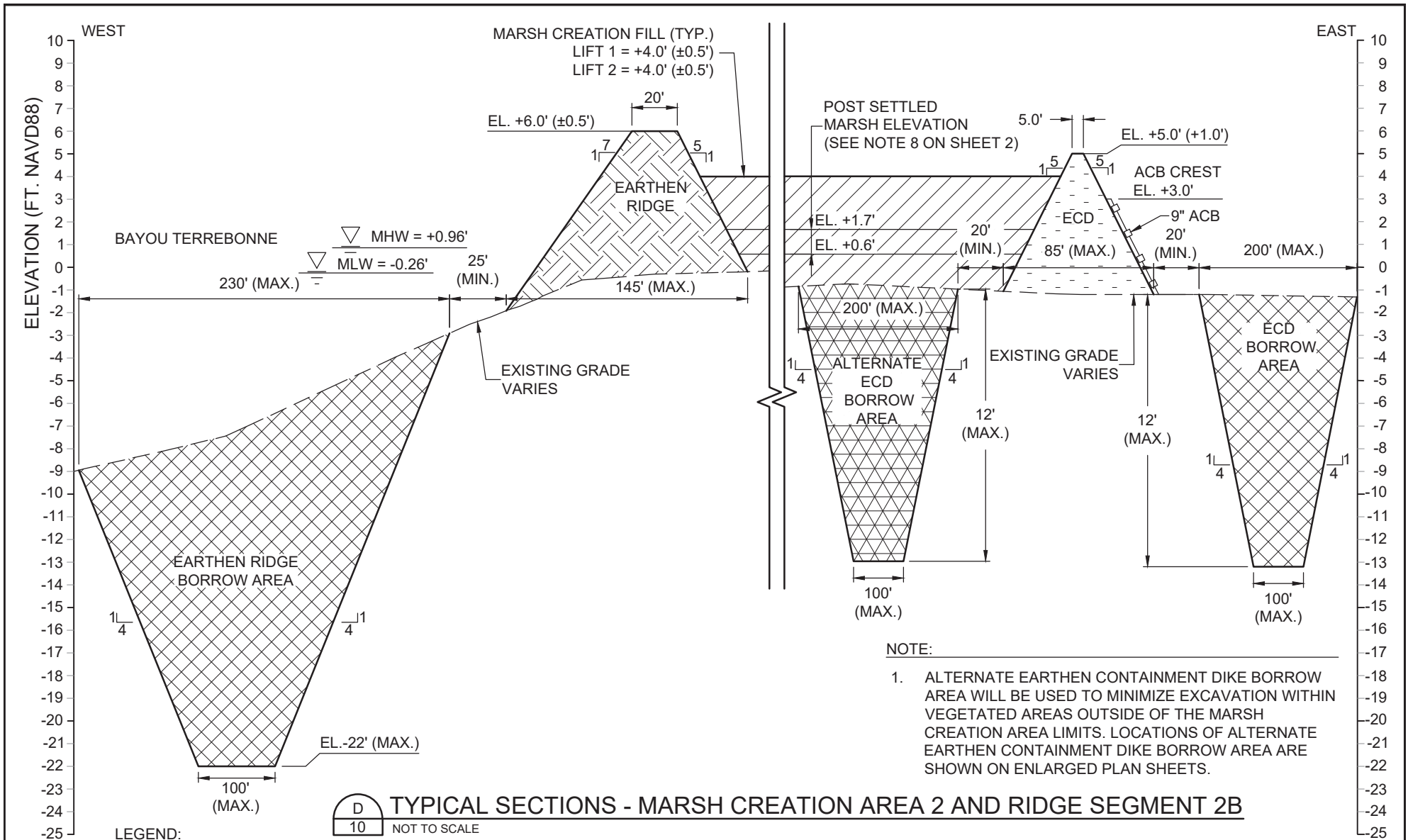
APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH RIDGE AND CANAL TYPICAL SECTIONS
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139	DATE: JUNE 2021 SHEET 21 OF 31



**C**  
**9** TYPICAL SECTION - RIDGE SEGMENT 2A  
NOT TO SCALE

- LEGEND:
-  EARTHEN RIDGE
  -  BORROW AREA
  -  ARTICULATED CONCRETE BLOCK (ACB) MAT

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH RIDGE AND CANAL TYPICAL SECTIONS
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139	DATE: JUNE 2021 SHEET 22 OF 31



**NOTE:**

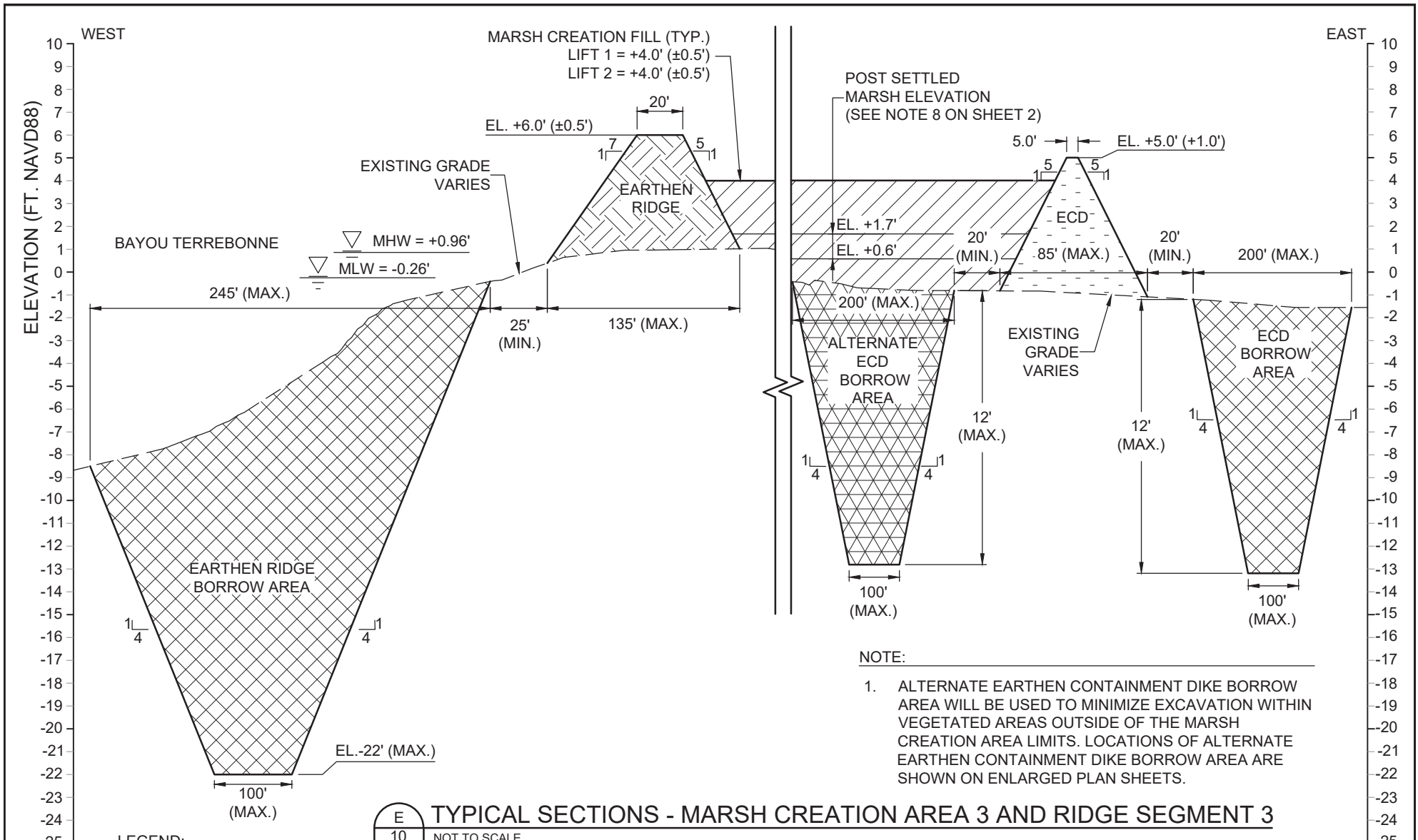
1. ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA WILL BE USED TO MINIMIZE EXCAVATION WITHIN VEGETATED AREAS OUTSIDE OF THE MARSH CREATION AREA LIMITS. LOCATIONS OF ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA ARE SHOWN ON ENLARGED PLAN SHEETS.

**D**  
10  
TYPICAL SECTIONS - MARSH CREATION AREA 2 AND RIDGE SEGMENT 2B  
NOT TO SCALE

**LEGEND:**

	EARTHEN RIDGE		BORROW AREAS		ALTERNATE BORROW AREA
	EARTHEN CONTAINMENT DIKE (ECD)		MARSH CREATION FILL AREA		ARTICULATED CONCRETE BLOCK (ACB) MAT

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH RIDGE AND CANAL TYPICAL SECTIONS	
DRAWN BY: J. BEAUGH		DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
FEDERAL PROJECT NUMBER: TE-0139			SHEET 23 OF 31		



**NOTE:**

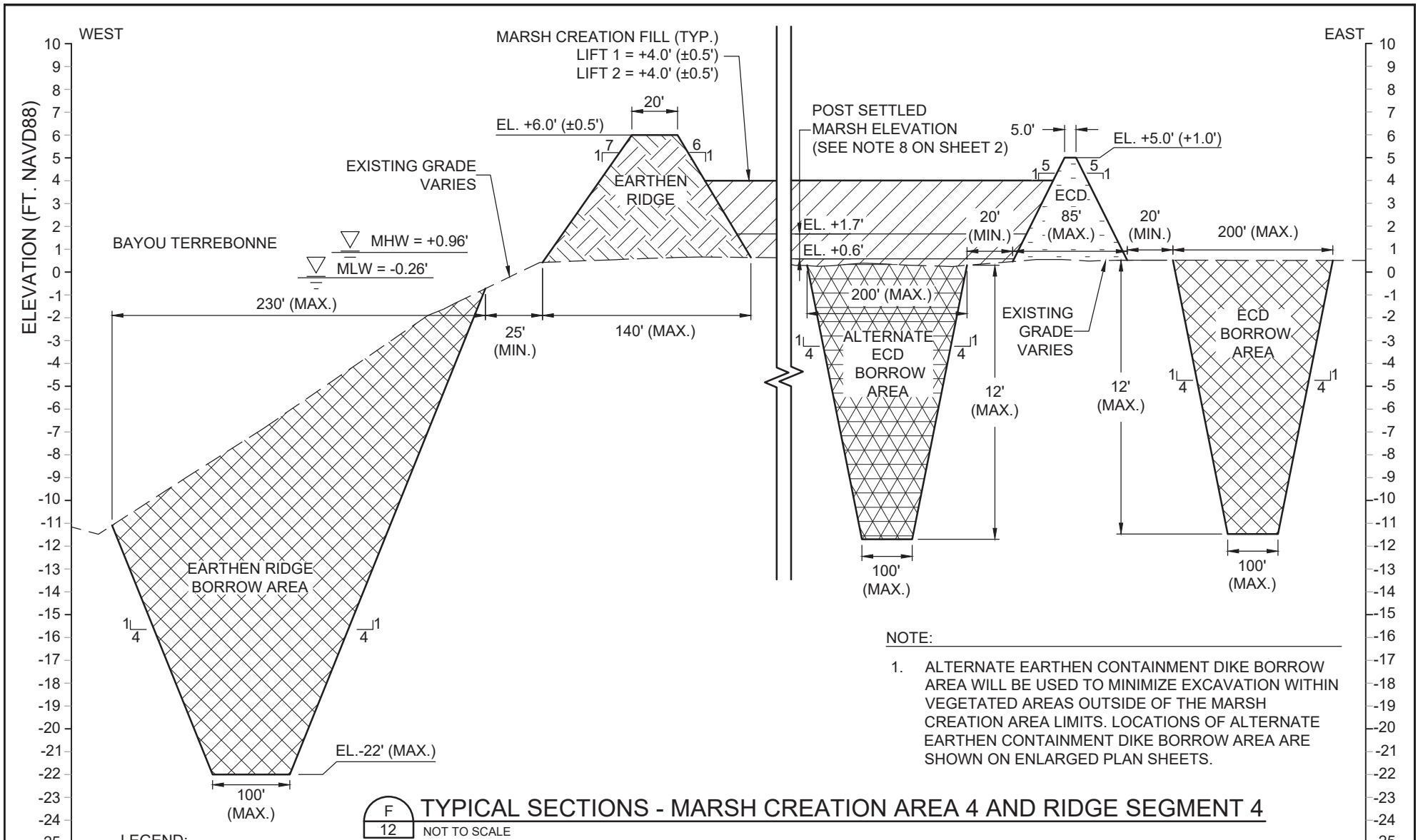
1. ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA WILL BE USED TO MINIMIZE EXCAVATION WITHIN VEGETATED AREAS OUTSIDE OF THE MARSH CREATION AREA LIMITS. LOCATIONS OF ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA ARE SHOWN ON ENLARGED PLAN SHEETS.

**TYPICAL SECTIONS - MARSH CREATION AREA 3 AND RIDGE SEGMENT 3**

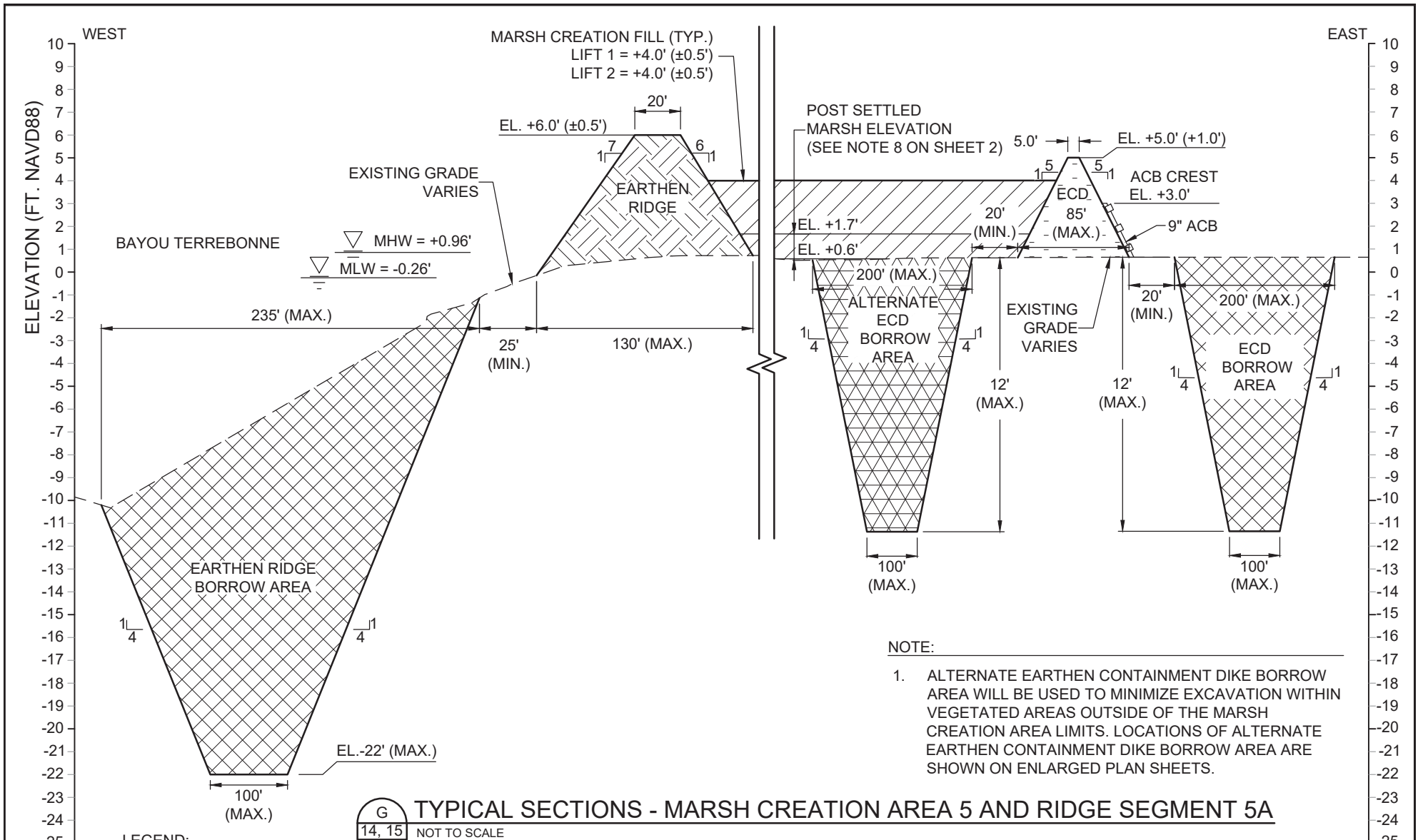
**LEGEND:**

	EARTHEN RIDGE		BORROW AREAS		ALTERNATE BORROW AREA
	EARTHEN CONTAINMENT DIKE (ECD)		MARSH CREATION FILL AREA		

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH RIDGE AND CANAL TYPICAL SECTIONS
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139 FEDERAL PROJECT NUMBER: TE-0139	DATE: JUNE 2021 SHEET 24 OF 31





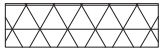

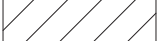

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT STATE PROJECT NUMBER: TE-0139	MARSH RIDGE AND CANAL TYPICAL SECTIONS DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 25 OF 31



**NOTE:**

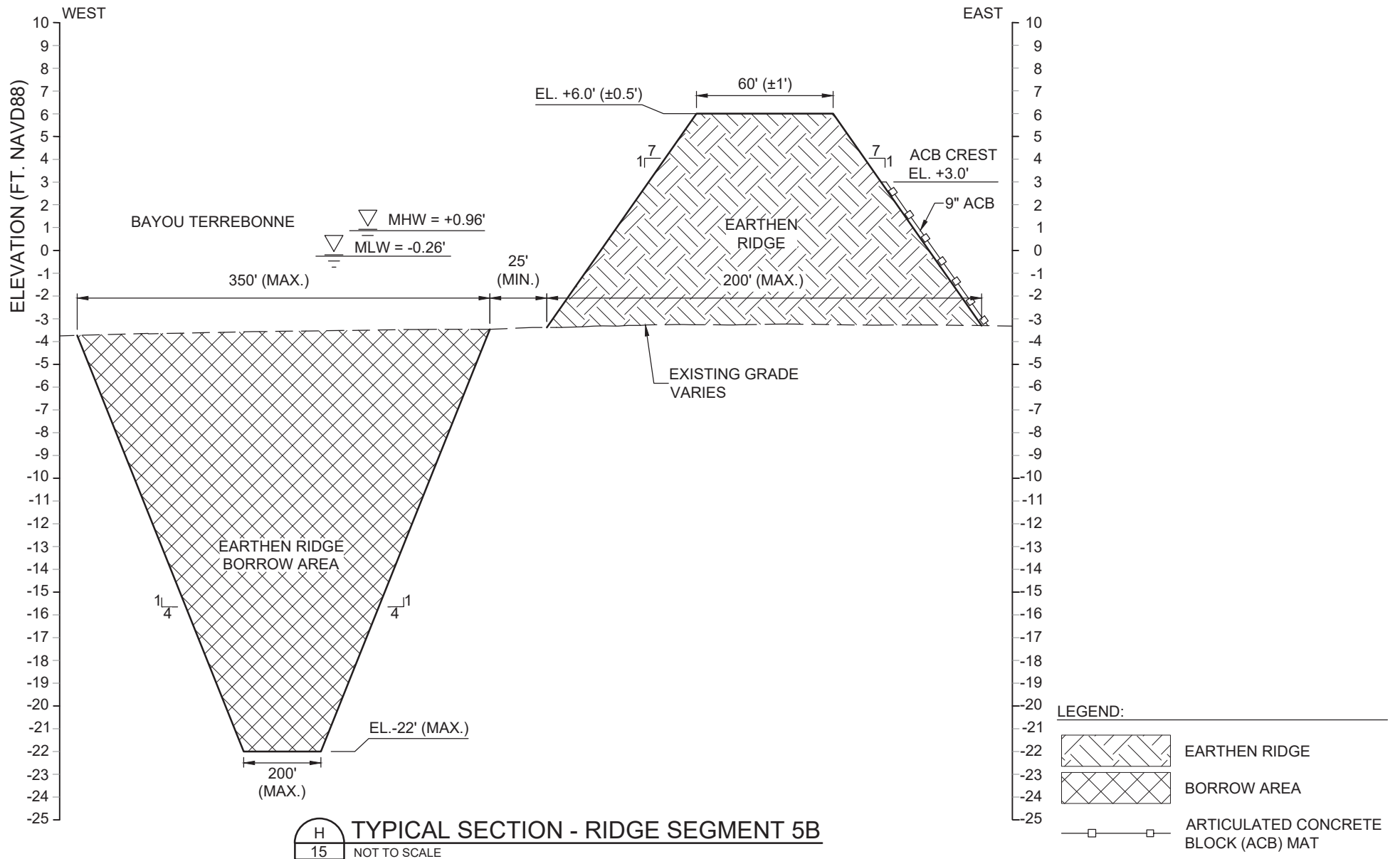
1. ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA WILL BE USED TO MINIMIZE EXCAVATION WITHIN VEGETATED AREAS OUTSIDE OF THE MARSH CREATION AREA LIMITS. LOCATIONS OF ALTERNATE EARTHEN CONTAINMENT DIKE BORROW AREA ARE SHOWN ON ENLARGED PLAN SHEETS.

**TYPICAL SECTIONS - MARSH CREATION AREA 5 AND RIDGE SEGMENT 5A**

- LEGEND:**
-  EARTHEN RIDGE
  -  BORROW AREAS
  -  ALTERNATE BORROW AREA
  -  EARTHEN CONTAINMENT DIKE (ECD)
  -  MARSH CREATION FILL AREA
  -  ARTICULATED CONCRETE BLOCK (ACB) MAT

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	MARSH RIDGE AND CANAL TYPICAL SECTIONS
DRAWN BY: J. BEAUGH		DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	DATE: JUNE 2021
			STATE PROJECT NUMBER: TE-0139	FEDERAL PROJECT NUMBER: TE-0139
			SHEET 26 OF 31	





APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

DRAWN BY: J. BEAUGH

**HDR**  
 HDR ENGINEERING, INC.

DESIGNED BY: E. ROONEY, P.E.

COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

APPROVED BY: BRETT L. GEESEY, P.E.  
 (LIC# 35172)

TE-0139  
 BAYOU TERREBONNE INCREMENT

STATE PROJECT NUMBER: TE-0139

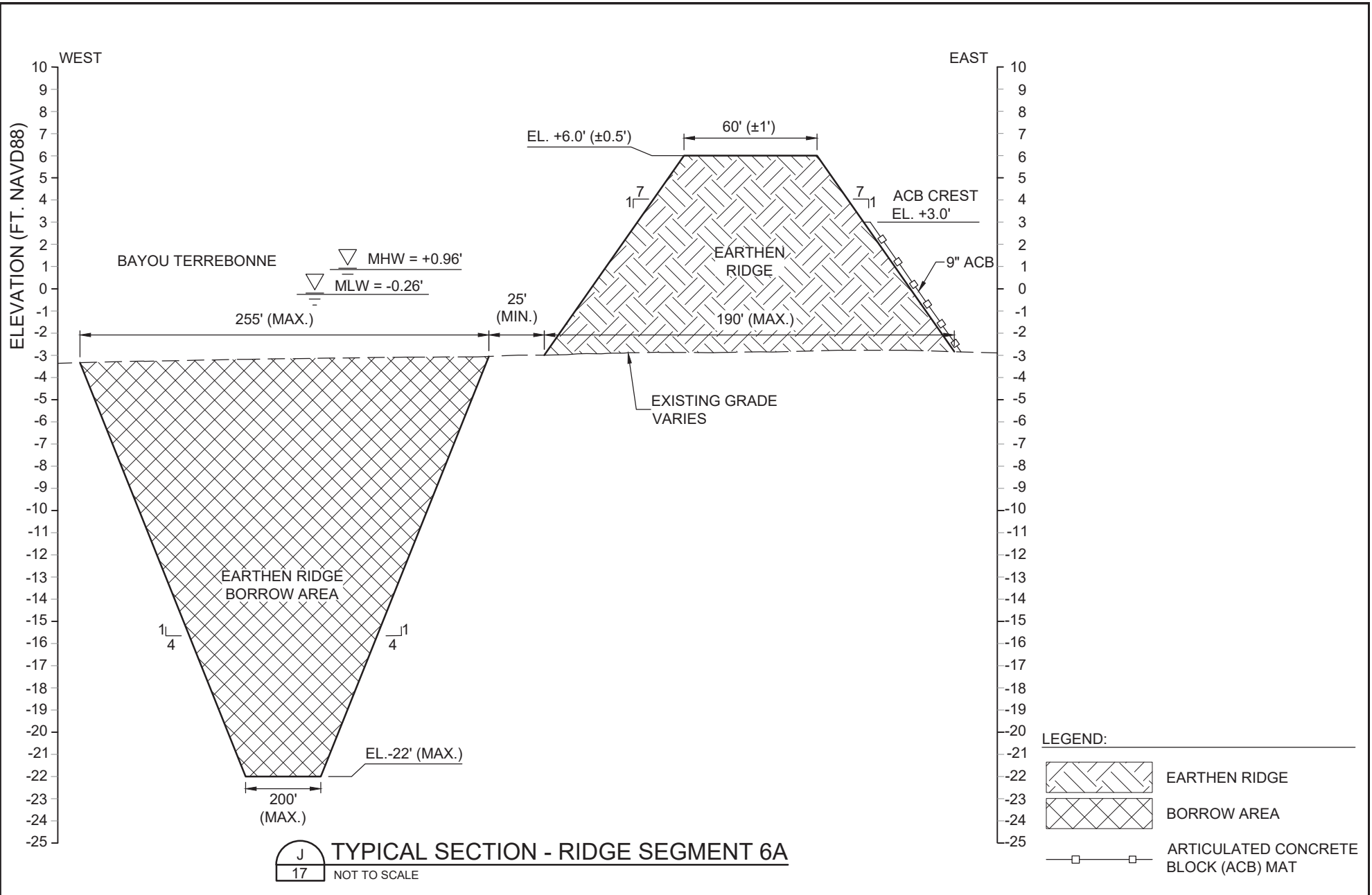
FEDERAL PROJECT NUMBER: TE-0139

MARSH RIDGE AND CANAL TYPICAL SECTIONS

DATE: JUNE 2021

SHEET 27 OF 31





APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

DRAWN BY: J. BEAUGH

**HDR**  
 HDR ENGINEERING, INC.

DESIGNED BY: E. ROONEY, P.E.

COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

APPROVED BY: BRETT L. GEESEY, P.E.  
 (LIC# 35172)

TE-0139  
 BAYOU TERREBONNE INCREMENT

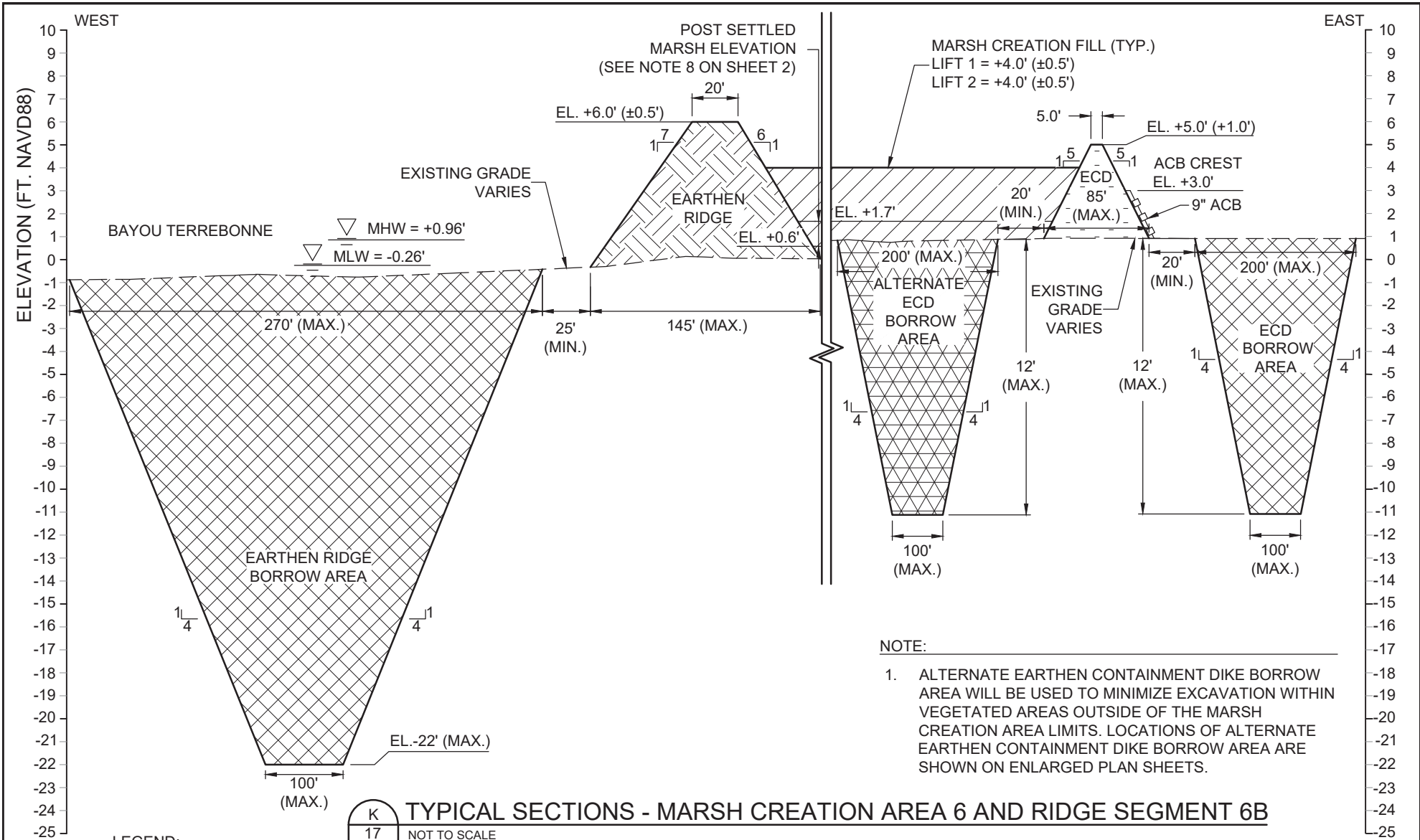
STATE PROJECT NUMBER: TE-0139

FEDERAL PROJECT NUMBER: TE-0139

MARSH RIDGE AND CANAL TYPICAL SECTIONS

DATE: JUNE 2021

SHEET 28 OF 31



APPLICATION BY:  
 COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

**HDR**  
 HDR ENGINEERING, INC.

COASTAL PROTECTION  
 AND RESTORATION  
 AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

TE-0139  
 BAYOU TERREBONNE INCREMENT

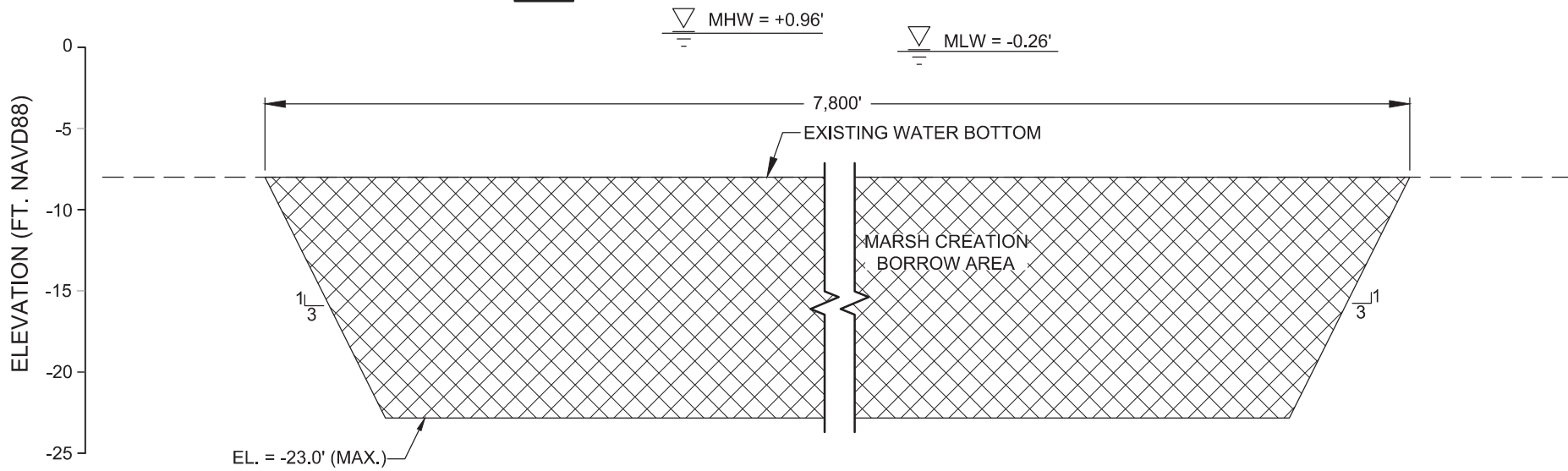
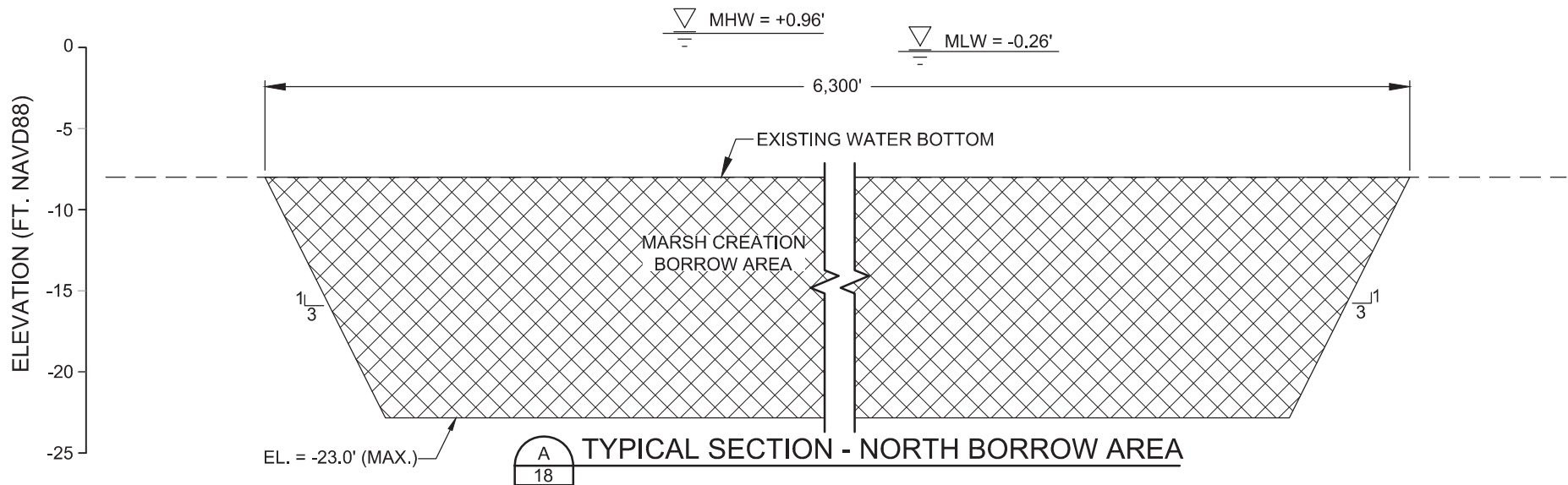
STATE PROJECT NUMBER: TE-0139

FEDERAL PROJECT NUMBER: TE-0139

MARSH RIDGE AND CANAL  
 TYPICAL SECTIONS

DATE: JUNE 2021

SHEET 29 OF 31




**LEGEND:**

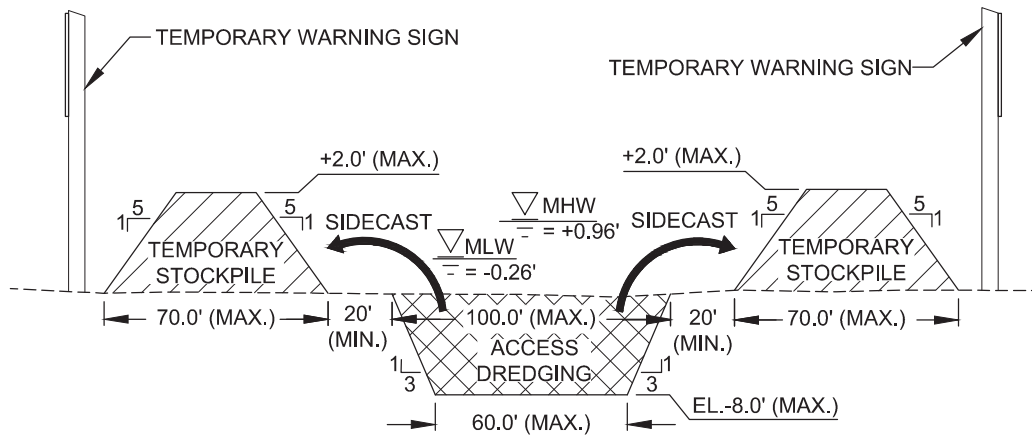


BORROW AREAS



**TYPICAL SECTION - SOUTH BORROW AREA**

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT	NORTH AND SOUTH BAY BORROW AREA TYPICAL SECTIONS
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	STATE PROJECT NUMBER: TE-0139	DATE: JUNE 2021
FEDERAL PROJECT NUMBER: TE-0139			SHEET 30 OF 31	



**A**  
18  
**TYPICAL SECTION - EQUIPMENT ACCESS AND DREDGE PIPELINE ROUTE**

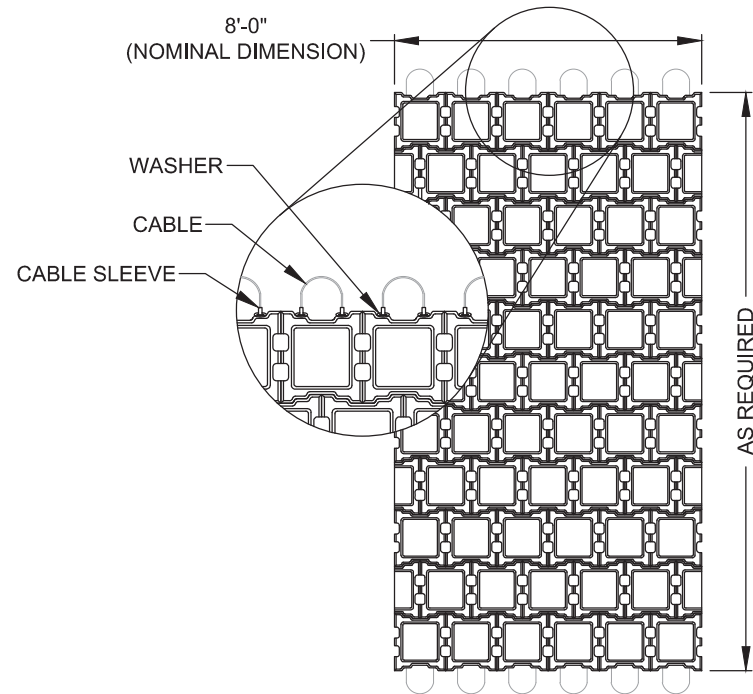
COASTAL PROTECTION AND RESTORATION AUTHORITY  
 150 TERRACE AVENUE  
 BATON ROUGE, LOUISIANA 70802

BAYOU TERREBONNE INCREMENT TE-0139

MAT #XXXX

MAT INSTALLED: XXXX, 202X

**B**  
-  
**TYPICAL ACB MAT TAG**



**B**  
-  
**TYPICAL DETAIL - ARTICULATED CONCRETE BLOCK (ACB) MAT**

**NOTES:**

1. ACCESS DREDGING WILL BE BACKFILLED WITH PREVIOUSLY EXCAVATED/STOCKPILED MATERIAL (TEMPORARY STOCKPILE) AS PROMPTLY AS WORK PERMITS.
2. ACB MAT TAGS WILL BE CONNECTED TO EACH ACB MAT PLACED. TAGS WILL BE MADE FROM CORROSION RESISTANT MATERIAL SUCH AS STAINLESS STEEL.

APPLICATION BY: COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	 HDR ENGINEERING, INC.	COASTAL PROTECTION AND RESTORATION AUTHORITY 150 TERRACE AVENUE BATON ROUGE, LOUISIANA 70802	TE-0139 BAYOU TERREBONNE INCREMENT STATE PROJECT NUMBER: TE-0139	TYPICAL SECTIONS AND DETAILS DATE: JUNE 2021
DRAWN BY: J. BEAUGH	DESIGNED BY: E. ROONEY, P.E.	APPROVED BY: BRETT L. GEESEY, P.E. (LIC# 35172)	FEDERAL PROJECT NUMBER: TE-0139	SHEET 31 OF 31



## TE-0139 Bayou Terrebonne Increment

10 a. PERMITTED EXCAVATIONS				
Construction Feature	Area (acre)	Total Volume (CY)	Habitat Type	Area (acre)
Marsh Creation Borrow Areas	1,461.0	36,050,000	Wetland	0.0
			Non-Vegetated Water Bottoms	1,461.0
			Land/Non-Wetlands	0.0
Ridge Borrow Area (Outside Marsh Creations Areas)	291.4	5,805,400	Wetland	7.2
			Non-Vegetated Water Bottoms	284.2
			Land/Non-Wetlands	0.0
Ridge Borrow Area (Inside Marsh Creations Areas)	22.2	324,200	Wetland	14.1
			Non-Vegetated Water Bottoms	8.0
			Land/Non-Wetlands	0.0
Earthen Containment Dike Borrow (Outside Marsh Creation Areas)	251.9	4,094,100	Wetland	3.4
			Non-Vegetated Water Bottoms	248.5
			Land/Non-Wetlands	0.0
Earthen Containment Dike Borrow (Inside Marsh Creation Areas)	16.2	307,900	Wetland	7.1
			Non-Vegetated Water Bottoms	9.0
			Land/Non-Wetlands	0.0
Temporary Access Channel Dredging	21.8	77,200	Wetland	0.0
			Non-Vegetated Water Bottoms	21.8
			Land/Non-Wetlands	0.0
<b>Total Permitted Excavations</b>	<b>2,065</b>	<b>46,658,800</b>		

10 b. FILLS				
Construction Feature	Area (acre)	Total Volume (CY)	Habitat Type	Area (acre)
Marsh Creation Fill	1,429.1	9,130,000	Wetland	704.3
			Non-Vegetated Water Bottoms	724.8
			Land/Non-Wetlands	0.0
Ridge Restoration	135.2	1,921,600	Wetland	84.0
			Non-Vegetated Water Bottoms	51.1
			Land/Non-Wetlands	0.0
Earthen Containment Dikes	109.3	1,791,400	Wetland	29.0
			Non-Vegetated Water Bottoms	80.3
			Land/Non-Wetlands	0.0
Articulated Concrete Block (ACB) Mat	38.8	46,920	Wetland	0.0
			Non-Vegetated Water Bottoms	38.8
			Land/Non-Wetlands	0.0
Temporary Placement of Access Dredged Fill	41.0	77,200	Wetland	0.0
			Non-Vegetated Water Bottoms	41.0
			Land/Non-Wetlands	0.0
<b>Total Fills</b>	<b>1,753</b>	<b>12,967,120</b>		

CONSTRUCTION EXCAVATIONS				
Construction Feature	Area (acre)	Total Volume (CY)	Habitat Type	Area (acre)
Marsh Creation Borrow Area (req'd)		9,130,000		
Earthen Ridge Borrow Area (req'd)		1,921,600		
Earthen Containment Dikes Borrow Area (req'd)		1,791,400		
Access Dredging		77,200		
<b>Total Construction Excavations</b>		<b>12,920,200</b>		

**Notes**

Permitted Excavations in 10a are based on available volume in the borrow areas

Permitted Fills in 10b are based on neatline

template requirements for ridge, ECD, and

temporary access. Ridge and ECD include a 2:1 cut

to fill. Marsh creation fill is based on required cut.