

SAPELO ISLAND BARGE LANDING IMPROVEMENTS WATER QUALITY CERTIFICATION AND STATEMENTS

1. A plan showing the location and size of any facility, existing or proposed, for handling any sanitary or industrial waste waters generally on your property. **Not applicable**
2. A plan of the existing or proposed project and your adjacent property for which permits are being requested. **Attached**
3. A plan showing the location of all points where petro-chemical products (gasoline, oils, cleaners) used and stored. Any aboveground storage areas must be diked, and there should be no storm drain catch basins within the dike areas. All valving arrangements on any petro-chemical transfer lines should be shown. **Not Applicable**
4. A contingency plan delineating action to be taken by you in the event of spillage of petro-chemical products or other materials from your operation. **Not Applicable**
5. Plan and profile drawings showing limits of areas to be dredged, areas to be used for placement of spoil, locations of any dikes to be constructed showing locations of any weir(s), and typical cross sections of the dikes. **Not Applicable**

Required Statements:

All activities will be performed in a manner to minimize turbidity in the stream.

There will be no oils or other pollutants released from the proposed activities which will reach the stream.

All work performed during construction will be done in a manner to prevent interference with any legitimate water uses.

REQUEST FOR JD LINE
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
BARGE LANDING IMPROVEMENTS
SAPELO ISLAND, GEORGIA

The JD line was determined by a field survey. Contour elevation 5.1 feet, NAVD88, was delineated as a conversion of CMPA 5.6 feet MTL in NOAA's VDATUM transformation. This approach was approved by the Coastal Resources Division.

PROJECT SUMMARY
COASTAL MARSHLANDS PROTECTION PERMIT APPLICATION
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The project consists of the following project elements to improve the barge landing on Sapelo Island:

- Installing a roughly 24' by 10' by 8" thick concrete slab at the top of the barge landing on an existing gravel surface. The slab will have six (6) inches of Graded Aggregate Base (GAB) underneath and backfill from the existing grade to the underside of the GAB.
- Extending the existing landing by constructing a new 24' wide by 45' long by 8" thick concrete slab. The extended landing will be encircled by steel sheet piles on three sides and there will be a 2.5-foot wide reinforced concrete cap on top of the steel sheet piles. There will be twelve (12) inches of #4 stone and four (4) inches of #57 stone under the new concrete slab and backfill from the existing grade to the underside of the stone. The overall dimensions of the new section of landing will be 45' by 29' including the concrete cap.
- Placing approximately 25 linear feet of rip rap on both sides of the new slab. There will be 11 feet on the west side and 14 feet on the east side.
- Installing two new timber pile cluster mooring dolphins near the edge of the extended landing.

The distance of the project into the waterway from MLW ranges from zero to seven (7) feet with seven feet being the maximum projection into the waterway.

The distance of the project from the navigable channel (Doboy Sound) is 3.5 miles as measured along the Duplin River.

The depth of the waterway at MLW is three feet on the west side of the project and 6.5 feet on the east side of the project.

The total width of waterway from MLW to MLW is 700 feet and is 697.5 feet at the maximum projection of the project into the waterway.

The distance to the next structure on either side of the proposed project is 730 feet to the south and 17,000 feet to the north.

This permit should be granted. The proposed project will benefit the residents of Sapelo Island as well as the Georgia Department of Natural Resources and the University of Georgia. The barge landing is the lifeline for Sapelo Island and the primary way equipment, materials, vehicles, etc. are delivered to the island. It must be maintained and be able to function under all types of weather and tidal conditions. The proposed improvements will ensure the landing can function as needed for many years to come. There is minimal impact to the upland areas or marshlands. The proposed project is consistent with the intent and requirements of the Coastal Marshlands Protection Act and issuance of the permit is recommended.

Marshland Component of Project:

The DNR Marsh Jurisdiction Line is shown on the drawings and was determined by a field survey. Contour elevation 5.1 feet, NAVD88, was delineated as a conversion of CMPA 5.6 feet MTL in NOAA's VDATUM transformation. This approach was approved by the Coastal Resources Division.

The existing features within the jurisdictional area is a small amount of gravel, 44 square feet, and an existing wood dock structure of 1,840 square feet. The total area of existing features in the jurisdictional area is 1,884 square feet. There are also various unconsolidated materials that will remain in place.

The proposed features within the jurisdictional area include the barge landing, rip-rap, and timber pile cluster dolphins. Details of each component are provided below.

Barge Landing: The barge landing is a 29' by 45' concrete and stone barge landing. It consists of an 8-inch-thick reinforced concrete slab on 12 inches of #4 stone and 4 inches of #57 stone. Backfill will be placed from the underside of the stone to the existing grade. The concrete slab is 24' by 45'. The slab is encircled on three sides (not on top or landward side) by 20-foot-long steel sheet piles. There is a 30-inch wide by 27-inch minimum depth reinforced concrete cap on top of the sheet piles. The top of the cap and the top of the slab are at the same elevation. The total width of the structure is 29 feet, the 24-foot slab and the 30 inch or 2.5' wide- concrete cap on both sides of the slab. The area of the landing in the jurisdictional area is 1,124 square feet. This includes 878.8 square feet for the slab and 245.2 square feet for the concrete cap.

Rip-Rap: Rip-rap will be placed on both sides of the barge landing. The rip-rap will consist of 5 cubic yards of Georgia DOT, Type 3 rip-rap, dumped into place on each side. There will be 5 linear feet and 4.5 square feet of rip-rap in the jurisdictional area on the west side of the landing 14 linear feet and 71 square feet of rip-rap in the jurisdictional area on the east side of the landing.

The volume of rip-rap to be placed in the jurisdictional area was calculated as follows based on 1 cubic foot per piece of stone:

East Side – $(4.5 \text{ ft}^2)(1 \text{ foot deep}) = 4.5 \text{ ft}^3 = 0.17 \text{ cubic yards} = 0.03 \text{ cubic yards per linear foot.}$

West Side – $(71 \text{ ft}^2)(1 \text{ foot deep}) = 71 \text{ ft}^3 = 2.6 \text{ cubic yards} = 0.19 \text{ cubic yards per linear foot.}$

Total rip-rap in the jurisdictional area = 75.5 square feet = 75.5 cubic feet = 2.8 cubic yards.

Timber Pile Cluster Dolphins: There will be two timber pile cluster mooring dolphins on each side of the landing. They will be constructed with seven, 14-inch butt diameter timber piles, driven to a minimum tip penetration of 20 feet. It is estimated these structures will have a top area of 5 square feet and a bottom area of 15 square feet. The area for two piles is 30 square feet.

The total area of features in the jurisdictional area is 1,229.5 square feet $(1,124 + 75.5 + 30)$. It should be noted that the stone and backfill under the concrete are not included in this total since they are underneath the slab and do not increase the square footage of impact.

The area of features over vegetated marshlands are the rip areas of 75.5 square feet.

The depth of water at the water-ward face of the proposed project ranges from 3 to 6.5 feet.

The volume of material in the jurisdictional area is as follows:

Rip-rap – 2.8 cubic yards

Stone – 43.4 cubic yards

Concrete Slab – 21.7 cubic yards

Concrete Cap – 20.4 cubic yards

Backfill – 107.4 cubic yards

Total = 195.7 cubic yards

Upland Component of Project:

The only existing facilities within the upland component of the project are a gravel drive. All of the proposed facilities are within the 50-foot marshland buffer and are discussed in detail in the following section.

Marshlands Buffers for Upland Component:

The 50-foot marshland buffer is shown on the plans. The existing conditions within the buffer include a gravel drive and minimal vegetation. Best Management Practices will be implemented during construction to minimize adverse impacts to the buffer. These include silt fence that will be removed after construction. The existing gravel will remain in place.

Permanent structures in the buffer include the following:

Rip-rap – 65 square feet (27 square feet on the west side and 38 east side on the east side)

New concrete with six inches of GAB underneath - 353 square feet

Existing Gravel – 2,810 square feet

Total permanent structures/surfaces in the buffer = 3,228 square feet

Total volume of additional structures in the buffer includes the following:

Concrete and GAB – 353 square feet, 1.17 feet thick = 413 cubic feet = 15.3 cubic yards

Rip-Rap – 65 square feet, 1 foot deep = 65 cubic feet = 2.4 cubic yards

Total volume of additional structures in the buffer = 17.7 cubic yards

During construction there will be an 11 foot long by 3 feet wide disturbance area on both sides of the new concrete for silt fence and concrete form placement representing a disturbance area of 66 square feet.

Total land disturbance in the buffer, both the 25 and 50-foot buffer is 65 square feet plus 353 square feet plus 66 square feet equals 484 square feet. Since the buffer disturbance is less than 500 square feet the project qualifies for Coastal Marshland Buffer Variance by Rule.

Stormwater Management Plan of the Upland Component:

Since the majority of the work will occur at or near the water's edge it is not possible to capture stormwater runoff. Considering the small increase in impervious surface the proposed project will have no adverse impact on stormwater quantity or quality.

Impervious Surface Calculations of the Upland Component:

Runoff coefficients for the upland component before and after construction were calculated as follows:

Pre-construction

Gravel: Area (A) = 3,066 square feet, C = 0.50, CA = 1,533

Minimal Vegetation: Area (A) = 162 square feet, C = 0.10, CA = 16.2

Total Area = 3,066 + 162 = 3,228 square feet

Composite C (Runoff Coefficient) = $(1,533 + 16.2)/3,228 = 0.48$

Post-construction

Concrete: Area (A) = 353 square feet, C = 0.95, CA = 335.4

Gravel and Rip-rap: Area (A) = 2,875 square feet, C = 0.50, CA = 1,437.5

Composite C (Runoff Coefficient) = $(335.4 + 1,437.5)/3,228 = 0.55$

As a result of this project the runoff coefficient in the 50-foot buffer increases slightly from 0.48 to 0.55.