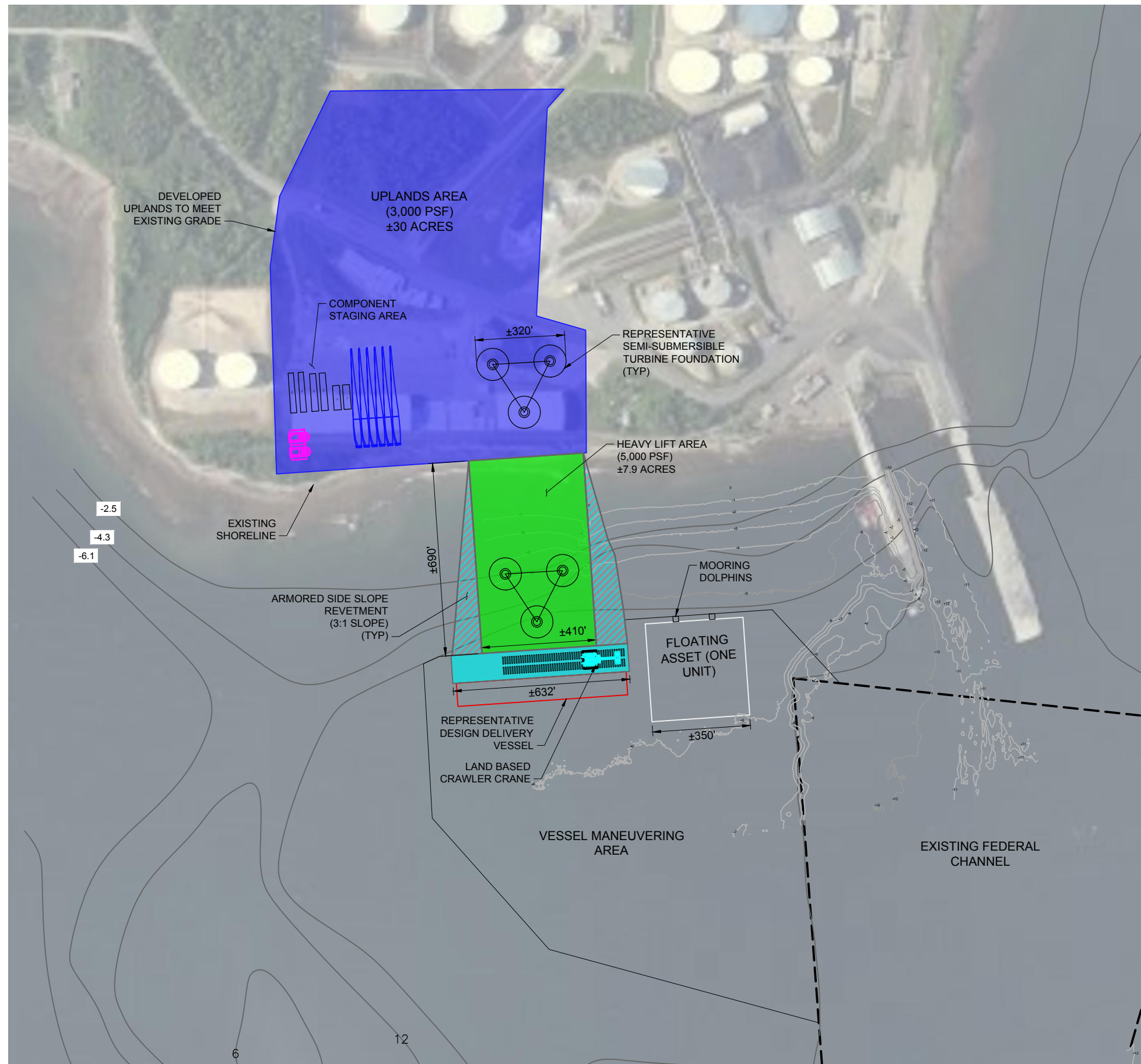


Appendix A – Conceptual Drawings



IMPACT QUANTITIES		
	QTY	UNIT
DREDGE	613,740	CY
INFILL	368,655	CY
SLOPES AND INFILL IMPORT	66,972	CY
HEAVY LIFT AREA	7.9	AC
ARMOR STONE	22,929	TON

LAYOUT NOTES

1. LAYOUT SHOWN IS FOR PHASE 1 OF TERMINAL BUILD OUT. THIS LEVEL OF BUILD OUT IS MEANT TO SUPPORT A DEMONSTRATION PROJECT OR PROJECTS.
2. PHASE 1 REPRESENTS THE MINIMUM QUAY LENGTH AND INFILL/UPLAND LAYDOWN AREA REQUIRED TO FABRICATE AND LOADOUT FLOATING FOUNDATIONS AND INSTALLATION OF WTG COMPONENTS ONTO THE FOUNDATION.
3. PHASE 1 BUILD OUT REQUIRES SHARING OF BERTH LENGTH FOR ALL ACTIVITIES:
 - 3.1. DELIVERY OF WTG COMPONENTS
 - 3.2. LOAD OUT OF FABRICATED FOUNDATION ONTO FLOATING ASSET
 - 3.3. INSTALLATION OF WTG COMPONENTS ONTO FLOATING FOUNDATION
4. ADDITIONAL BUILD OUT FOR COMMERCIAL SCALE INSTALLATIONS (PHASE 2) WILL LIKELY BE REQUIRED.
5. THIS LAYOUT SHOULD BE CONSIDERED PRELIMINARY AND IS BASED ON AVAILABLE INFORMATION.
6. WIND TURBINE COMPONENTS SHOWN ARE REPRESENTATIVE IN SIZE AND QUANTITY THAT WILL BE STAGED ON THE THE TERMINAL.
7. LENGTH OF QUAY ALLOWS FOR WTG COMPONENT DELIVERY BY EITHER BULK CARRIER VESSEL OR BARGE.
8. FABRICATION PROCESS AND LAYOUT IS NOT SHOWN. THIS WILL BE SPECIFIC TO TYPE AND MATERIAL OF FOUNDATION AND LOGISTICS PLAN OF THE TERMINAL USER.
9. FLOATING ASSET IS ASSUMED TO BE A SEMI-SUBMERSIBLE BARGE. SIZING IS TO ACCOMMODATE ASSUMED FOUNDATION SIZE.
10. FOUNDATION SIZE HAS BEEN SCALED FROM EXISTING SEMI-SUBMERSIBLE INSTALLATIONS TO ACCOMMODATE 12-MW TURBINE UNIT.

PHASE 1 TERMINAL OPERATIONS

- A. WTG COMPONENTS (TOWERS, TURBINES, AND BLADES) ARE DELIVERED TO THE TERMINAL VIA BARGE OR VESSEL AND STAGED ON THE UPLANDS.
- B. REQUIRED FOUNDATION MATERIAL IS DELIVERED TO THE SITE VIA DELIVERY VESSEL AND/OR UPLAND TRUCKS. FOUNDATIONS ARE FABRICATED IN SERIAL MANNER, MOVING FROM NORTH TO SOUTH. FOUNDATION MOVEMENT IS DONE VIA SELF PROPELLED MODULAR TRANSPORTER (SPMT) OR SKIDDING SYSTEM.
- C. COMPLETED FOUNDATION IS MOVED QUAYSIDE AND FLOATING ASSET IS BROUGHT TO BERTH (VIA TUG POWER) AND SECURED IN POSITION.
- D. FOUNDATION IS LOADED OUT ONTO FLOATING ASSET VIA SPMT OR SKID SYSTEM.
- E. FLOATING ASSET IS MOVED (VIA TUG) TO DEEP WATER TO THE SOUTH OF THE TERMINAL.
- F. FLOATING ASSET IS BALLASTED DOWN AND SUBMERGED UNTIL FOUNDATION BECOMES BUOYANT.
- G. FLOATING FOUNDATION IS ATTACHED TO TUGS AND TOWED BACK TO BERTH.
- H. WTG COMPONENTS ARE INSTALLED ONTO FOUNDATION VIA LAND BASED CRANE.
 - I.A. FOUNDATION SERIAL LINE IS INTERRUPTED TO ACCOMMODATE WTG COMPONENT MOVEMENT AND INSTALLATION
- J. COMPLETE FLOATING TURBINE ASSEMBLY IS CONNECTED TO OCEAN GOING TUGS AND TOWED TO INSTALLATION SITE.

DRAWING NOTES

1. TERMINAL GRADE AT THE BERTH IS +15.0'± NAVD88 IN ORDER TO BE ABOVE CURRENT FEMA 100 YEAR FLOOD ELEVATION.
2. ALL BOUNDARIES AND AREAS ARE APPROXIMATE.
3. BATHYMETRIC INFORMATION SHOWN IN METERS LAT.

LEGEND

- CELLULAR COFFERDAM
- HEAVY LIFT AREA
- SIDE SLOPE
- UPLANDS
- LIMIT OF FEDERAL CHANNEL



IMPACT QUANTITIES		
	QTY	UNIT
DREDGE	848,139	CY
INFILL	1,029,396	CY
SLOPES AND INFILL IMPORT	181,257	CY
HEAVY LIFT AREA	25.0	AC
ARMOR STONE	22,019	TON

LAYOUT NOTES

1. LAYOUT SHOWN IS FOR PHASE 2 OF TERMINAL BUILD OUT. THIS LEVEL OF BUILD OUT IS MEANT TO SUPPORT A FULL SCALE COMMERCIAL PROJECT.
2. PHASE 2 ALLOWS FOR SIMULTANEOUS ACTIVITIES AT THE BERTH.
 - 2.1. SERIAL PRODUCTION LINE AND FOUNDATION LOAD OUT
 - 2.2. DELIVERY VESSEL BERTHING
 - 2.3. INSTALLATION OF WTG COMPONENTS ON FLOATING FOUNDATION AT BERTH
3. LENGTH OF BERTH AND SIZE OF INFILL AND UPLANDS AREA ARE MEANT TO SUPPORT ACTIVITIES MENTIONED ABOVE. THESE ELEMENTS CAN BE ADJUSTED BASED ON FINANCIAL CONSTRAINTS AND/OR OPERATIONAL NEEDS.
4. THIS LAYOUT SHOULD BE CONSIDERED PRELIMINARY AND IS BASED ON AVAILABLE INFORMATION.
5. WIND TURBINE COMPONENTS SHOWN ARE REPRESENTATIVE IN SIZE AND QUANTITY THAT WILL BE STAGED ON THE THE TERMINAL.
6. LENGTH OF QUAY ALLOWS FOR WTG COMPONENT DELIVERY BY EITHER BULK CARRIER VESSEL OR BARGE.
7. FABRICATION PROCESS AND LAYOUT IS NOT SHOWN. THIS WILL BE SPECIFIC TO TYPE AND MATERIAL OF FOUNDATION AND LOGISTICS PLAN OF THE TERMINAL USER.
8. FLOATING ASSET IS ASSUMED TO BE A SEMI-SUBMERSIBLE BARGE. SIZING IS TO ACCOMMODATE ASSUMED FOUNDATION SIZE.
9. FOUNDATION SIZE HAS BEEN SCALED FROM EXISTING SEMI-SUBMERSIBLE INSTALLATIONS TO ACCOMMODATE 12-MW TURBINE UNIT.

PHASE 2 TERMINAL OPERATIONS

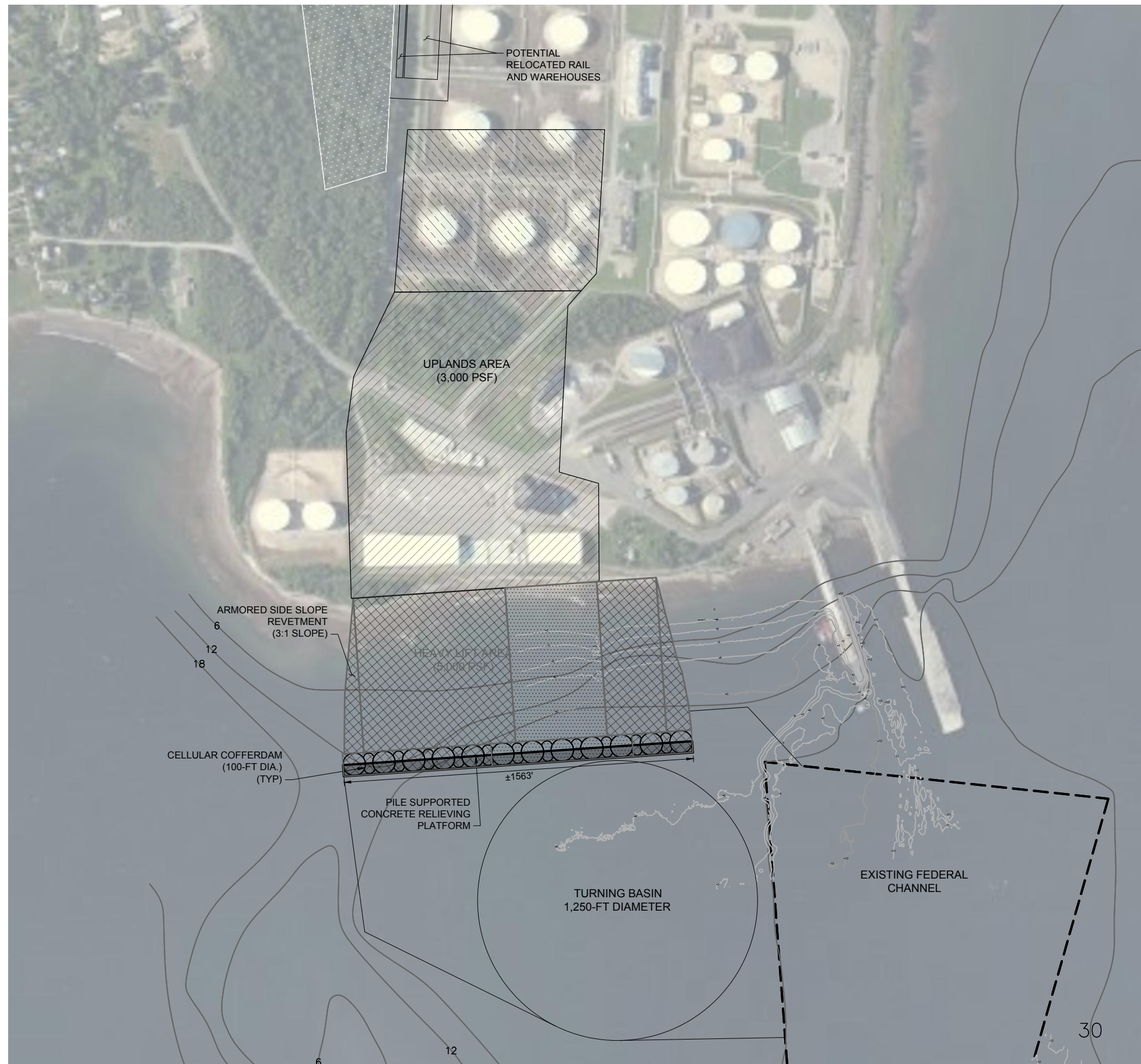
- A. WTG COMPONENTS (TOWERS, TURBINES, AND BLADES) ARE DELIVERED TO THE TERMINAL VIA BARGE OR VESSEL AND STAGED ON THE UPLANDS.
- B. REQUIRED FOUNDATION MATERIAL IS DELIVERED TO THE SITE VIA DELIVERY VESSEL AND/OR UPLAND TRUCKS.
- C. FOUNDATIONS ARE FABRICATED IN SERIAL MANNER, MOVING FROM NORTH TO SOUTH. FOUNDATION MOVEMENT IS DONE VIA SELF PROPELLED MODULAR TRANSPORTER (SPMT) OR SKIDDING SYSTEM.
- D. COMPLETED FOUNDATION IS MOVED QUAYSIDE.
- E. FOUNDATION IS LOADED OUT ONTO FLOATING ASSET VIA SPMT OR SKID SYSTEM.
- F. FLOATING ASSET IS MOVED (VIA TUG) TO DEEP WATER TO THE SOUTHEAST OF THE TERMINAL.
- G. FLOATING ASSET IS BALLASTED DOWN AND SUBMERGED UNTIL FOUNDATION BECOMES BUOYANT.
- H. FLOATING FOUNDATION IS ATTACHED TO TUGS AND TOWED BACK TO BERTH.
- I. WTG COMPONENTS ARE INSTALLED ONTO FOUNDATION VIA LAND BASED CRANE.
- J. COMPLETE FLOATING TURBINE ASSEMBLY IS CONNECTED TO OCEAN GOING TUGS AND TOWED TO INSTALLATION SITE.

DRAWING NOTES

1. TERMINAL GRADE AT THE BERTH IS +15.0'± NAVD88 IN ORDER TO BE ABOVE CURRENT FEMA 100 YEAR FLOOD ELEVATION.
2. ALL BOUNDARIES AND AREAS ARE APPROXIMATE.
3. BATHYMETRIC INFORMATION SHOWN IN METERS LAT.

LEGEND

- CELLULAR COFFERDAM
- HEAVY LIFT AREA
- SIDE SLOPE
- UPLANDS
- LIMIT OF FEDERAL CHANNEL








CONSTRUCTION SEQUENCE NOTES

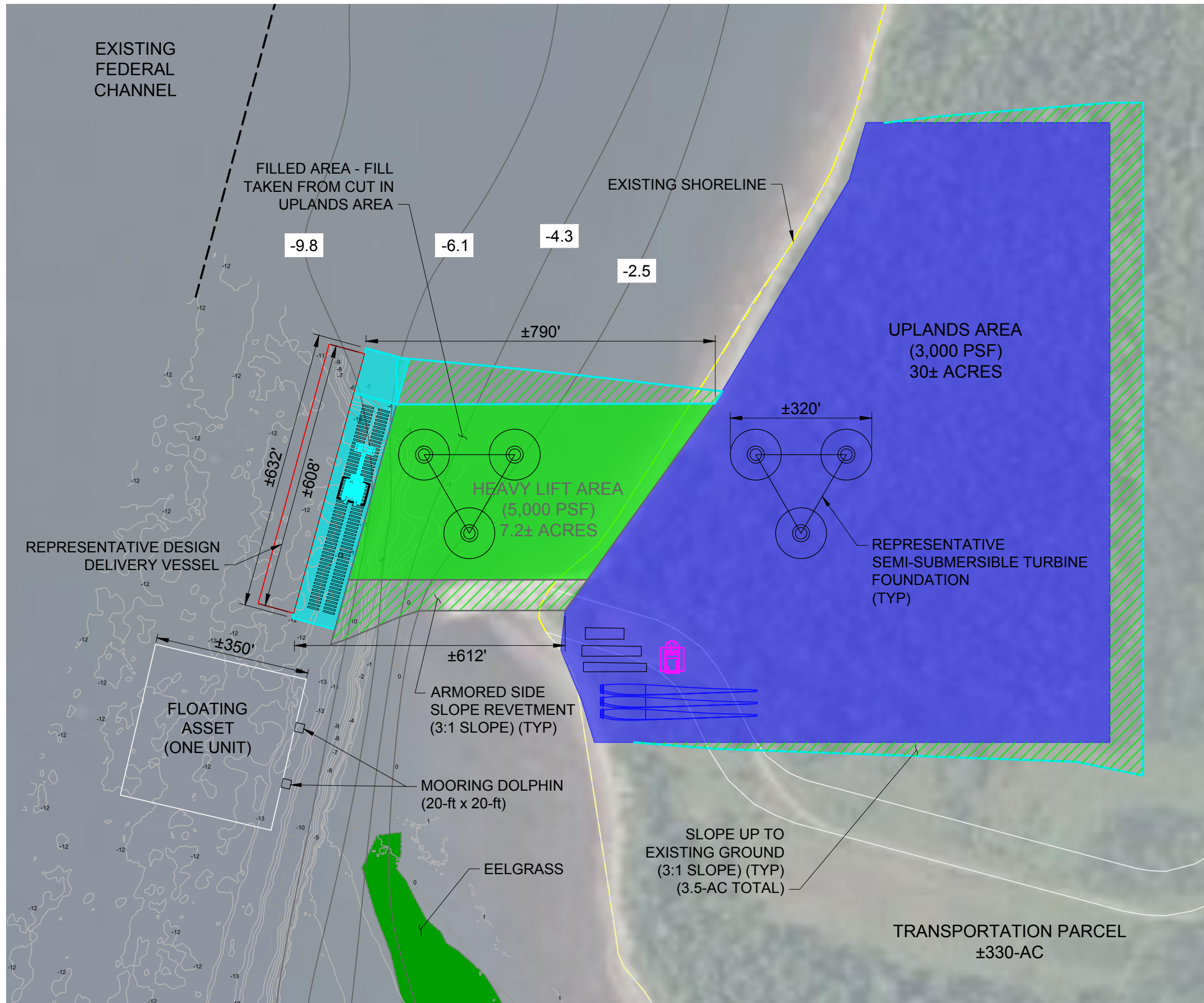
1. STEEL CELLULAR COFFERDAMS ARE INSTALLED AND FILLED VIA BARGE.
2. UPLANDS STRUCTURES ARE DEMOLISHED, LAND IS GRADED AND COMPACTED.
3. ACCESS CHANNEL IS DREDGED.
4. DREDGED MATERIAL IS DEWATERED AND AMENDED TO BE PREPARED FOR USE IN INFILL AREA.
5. BERMS AT EASTERN AND WESTERN EXTENTS OF CONSTRUCTION PHASE ARE PLACED FIRST IN ORDER TO RETAIN ADDITIONAL FILL.
6. AMENDED DREDGE MATERIAL IS PLACED IN INFILL AREA.
7. INFILL AREA IS COMPACTED IN LIFTS.
8. FINAL DENSE GRADED AGGREGATE TOPPING SURFACE IS PLACED.

DRAWING NOTES

1. FULL BUILDOUT WITH BOTH PHASE 1 AND 2 INSTALLED IS SHOWN. REFER TO PHASE PLANS FOR SPECIFIC PHASE DETAILS.
2. PROJECT DATUM IS NAVD88.
3. TERMINAL GRADE AT THE BERTH IS +15.0'± IN ORDER TO BE ABOVE CURRENT FEMA 100 YEAR FLOOD ELEVATION.
4. ALL BOUNDARIES AND AREAS ARE APPROXIMATE.

LEGEND

-  PHASE 1 UPLANDS
-  PHASE 2 UPLANDS
-  PHASE 1 INFILL AREA
-  PHASE 2 INFILL AREA
-  CONCRETE RELIEVING PLATFORM



- LAYOUT NOTES**
- LAYOUT SHOWN IS FOR PHASE 1 OF TERMINAL BUILD OUT. THIS LEVEL OF BUILD OUT IS MEANT TO SUPPORT A DEMONSTRATION PROJECT OR PROJECTS.
 - PHASE 1 REPRESENTS THE MINIMUM QUAY LENGTH AND INFILL/UPLAND LAYDOWN AREA REQUIRED TO FABRICATE AND LOADOUT FLOATING FOUNDATIONS AND INSTALLATION OF WTG COMPONENTS ONTO THE FOUNDATION.
 - PHASE 1 BUILD OUT REQUIRES SHARING OF BERTH LENGTH FOR ALL REQUIRED ACTIVITIES:
 - DELIVERY OF WTG COMPONENTS
 - LOAD OUT OF FABRICATED FOUNDATION ONTO FLOATING ASSET
 - INSTALLATION OF WTG COMPONENTS ONTO FLOATING FOUNDATION
 - ADDITIONAL BUILD OUT FOR COMMERCIAL SCALE INSTALLATIONS (PHASE 2) WILL LIKELY BE REQUIRED.
 - THIS LAYOUT SHOULD BE CONSIDERED PRELIMINARY AND IS BASED ON AVAILABLE INFORMATION.
 - WIND TURBINE COMPONENTS SHOWN ARE REPRESENTATIVE IN SIZE AND QUANTITY THAT WILL BE STAGED ON THE TERMINAL.
 - LENGTH OF QUAY ALLOWS FOR WTG COMPONENT DELIVERY BY EITHER BULK CARRIER VESSEL OR BARGE.
 - FABRICATION PROCESS AND LAYOUT IS NOT SHOWN. THIS WILL BE SPECIFIC TO TYPE AND MATERIAL OF FOUNDATION AND LOGISTICS PLAN OF THE TERMINAL USER.
 - FLOATING ASSET IS ASSUMED TO BE A SEMI-SUBMERSIBLE BARGE. SIZING IS TO ACCOMMODATE ASSUMED FOUNDATION SIZE.
 - FOUNDATION SIZE HAS BEEN SCALED FROM EXISTING SEMI-SUBMERSIBLE INSTALLATIONS TO ACCOMMODATE 12-MW TURBINE UNIT.

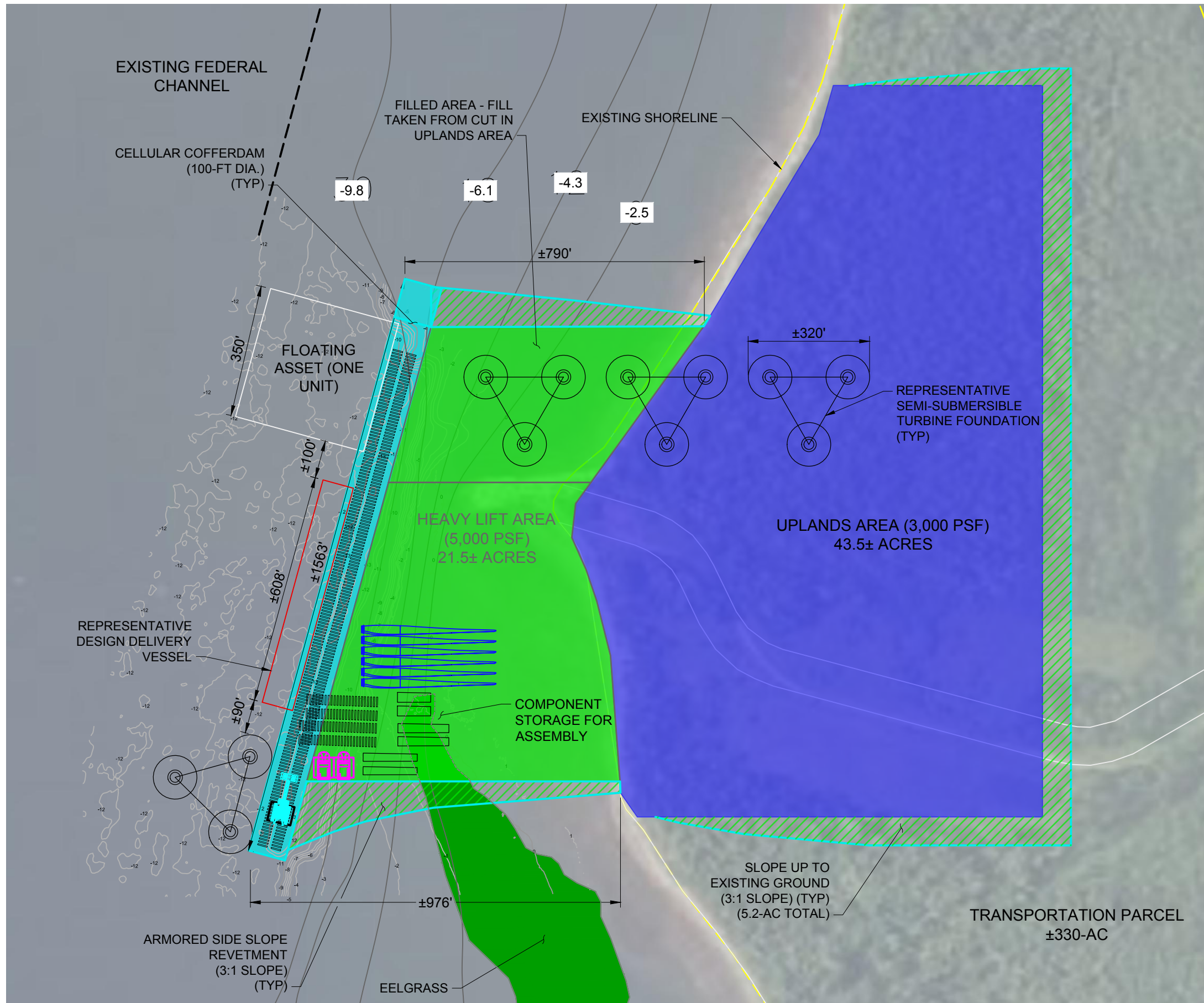
- PHASE 1 TERMINAL OPERATIONS**
- WTG COMPONENTS (TOWERS, TURBINES, AND BLADES) ARE DELIVERED TO THE TERMINAL AND STAGED ON THE UPLANDS.
 - REQUIRED FOUNDATION MATERIAL IS DELIVERED TO THE SITE VIA DELIVERY VESSEL AND/OR UPLAND TRUCKS.
 - FOUNDATIONS ARE FABRICATED IN SERIAL MANNER, MOVING FROM EAST TO WEST. FOUNDATION MOVEMENT IS DONE VIA SELF PROPELLED MODULAR TRANSPORTER (SPMT) OR SKIDDING SYSTEM.
 - COMPLETED FOUNDATION IS MOVED QUAYSIDE AND FLOATING ASSET IS BROUGHT TO BERTH (VIA TUG POWER) AND SECURED IN POSITION.
 - FOUNDATION IS LOADED OUT ONTO FLOATING ASSET VIA SPMT OR SKID SYSTEM.
 - FLOATING ASSET IS MOVED (VIA TUG) TO DEEP WATER TO SOUTH OF THE TERMINAL.
 - FLOATING ASSET IS BALLASTED DOWN AND SUBMERGED UNTIL FOUNDATION BECOMES BUOYANT.
 - FLOATING FOUNDATION IS ATTACHED TO TUGS AND TOWED BACK TO BERTH.
 - WTG COMPONENTS ARE INSTALLED ONTO FOUNDATION VIA LAND BASED CRANE.
 - FOUNDATION SERIAL LINE IS INTERRUPTED TO ACCOMMODATE WTG COMPONENT MOVEMENT AND INSTALLATION
 - COMPLETE FLOATING TURBINE ASSEMBLY IS CONNECTED TO OCEAN GOING TUGS AND TOWED TO INSTALLATION SITE.

- DRAWING NOTES**
- TERMINAL GRADE IS +15.0± NAVD88 IN ORDER TO BE ABOVE CURRENT FEMA 100 YEAR FLOOD ELEVATION.
 - ALL BOUNDARIES AND AREAS ARE APPROXIMATE.
 - BATHYMETRIC INFORMATION SHOWN IN METERS LAT.

LEGEND

- CELLULAR COFFERDAM
- HEAVY LIFT AREA
- SIDE SLOPE
- UPLANDS
- LIMIT OF FEDERAL CHANNEL

IMPACT QUANTITIES		
	QTY	UNIT
DREDGE	-	CY
INFILL	314,554	CY
SLOPES AND INFILL IMPORT	56,185	CY
HEAVY LIFT AREA	7.2	AC
ARMOR STONE	25,884	TON



- LAYOUT NOTES**
- LAYOUT SHOWN IS FOR PHASE 2 OF TERMINAL BUILD OUT. THIS LEVEL OF BUILD OUT IS MEANT TO SUPPORT A FULL SCALE COMMERCIAL PROJECT.
 - PHASE 2 ALLOWS FOR SIMULTANEOUS ACTIVITIES AT THE BERTH.
 - SERIAL PRODUCTION LINE AND FOUNDATION LOAD OUT
 - DELIVERY VESSEL BERTHING
 - INSTALLATION OF WTG COMPONENTS ON FLOATING FOUNDATION AT BERTH
 - LENGTH OF BERTH AND SIZE OF INFILL AND UPLANDS AREA ARE MEANT TO SUPPORT ACTIVITIES MENTIONED ABOVE. THESE ELEMENTS CAN BE ADJUSTED BASED ON FINANCIAL CONSTRAINTS AND/OR OPERATIONAL NEEDS.
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 - WIND TURBINE COMPONENTS SHOWN ARE REPRESENTATIVE IN SIZE AND QUANTITY THAT WILL BE STAGED ON THE TERMINAL.
 - LENGTH OF QUAY ALLOWS FOR WTG COMPONENT DELIVERY BY EITHER BULK CARRIER VESSEL OR BARGE.
 - FABRICATION PROCESS AND LAYOUT IS NOT SHOWN. THIS WILL BE SPECIFIC TO TYPE AND MATERIAL OF FOUNDATION AND LOGISTICS PLAN OF THE TERMINAL USER.
 - FLOATING ASSET IS ASSUMED TO BE A SEMI-SUBMERSIBLE BARGE. SIZING IS TO ACCOMMODATE ASSUMED FOUNDATION SIZE.
 - FOUNDATION SIZE HAS BEEN SCALED FROM EXISTING SEMI-SUBMERSIBLE INSTALLATIONS TO ACCOMMODATE 12-MW TURBINE UNIT.

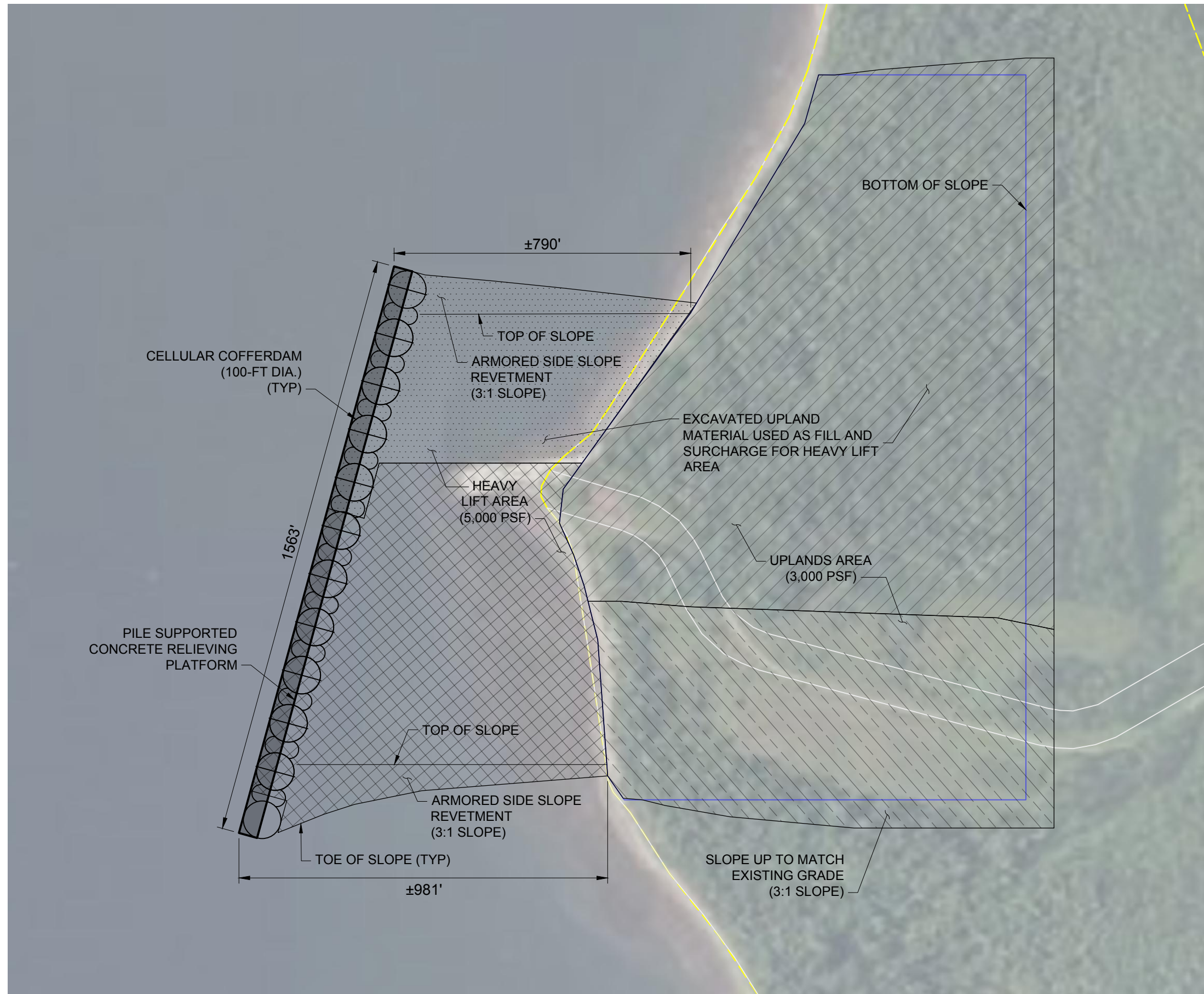
- PHASE 2 TERMINAL OPERATIONS**
- WTG COMPONENTS (TOWERS, TURBINES, AND BLADES) ARE DELIVERED TO THE TERMINAL AND STAGED ON THE UPLANDS.
 - REQUIRED FOUNDATION MATERIAL IS DELIVERED TO THE SITE VIA DELIVERY VESSEL AND/OR UPLAND TRUCKS.
 - FOUNDATIONS ARE FABRICATED IN SERIAL MANNER, MOVING FROM EAST TO WEST. FOUNDATION MOVEMENT IS DONE VIA SELF PROPELLED MODULAR TRANSPORTER (SPMT) OR SKIDDING SYSTEM.
 - COMPLETED FOUNDATION IS MOVED QUAYSIDE.
 - FOUNDATION IS LOADED OUT ONTO FLOATING ASSET VIA SPMT OR SKID SYSTEM.
 - FLOATING ASSET IS MOVED (VIA TUG) TO DEEP WATER TO SOUTH OF TERMINAL.
 - FLOATING ASSET IS BALLASTED DOWN AND SUBMERGED UNTIL FOUNDATION BECOMES BUOYANT.
 - FLOATING FOUNDATION IS ATTACHED TO TUGS AND TOWED BACK TO BERTH.
 - WTG COMPONENTS ARE INSTALLED ONTO FOUNDATION VIA LAND BASED CRANE.
 - COMPLETE FLOATING TURBINE ASSEMBLY IS CONNECTED TO OCEAN GOING TUGS AND TOWED TO INSTALLATION SITE.

- DRAWING NOTES**
- TERMINAL GRADE IS +15.0± NAVD88 IN ORDER TO BE ABOVE CURRENT FEMA 100 YEAR FLOOD ELEVATION.
 - ALL BOUNDARIES AND AREAS ARE APPROXIMATE.
 - BATHYMETRIC INFORMATION SHOWN IN METERS LAT.
 - PHASE 2 BUILD OUT AFFECTS APPROXIMATELY 0.7 ACRES OF EXISTING EELGRASS BED.

LEGEND

- CELLULAR COFFERDAM
- HEAVY LIFT AREA
- SIDE SLOPE
- UPLANDS
- LIMIT OF FEDERAL CHANNEL

IMPACT QUANTITIES		
	QTY	UNIT
DREDGE	-	CY
INFILL	817,797	CY
SLOPES AND INFILL IMPORT	64,731	CY
HEAVY LIFT AREA	21.5	AC
ARMOR STONE	33,938	TON

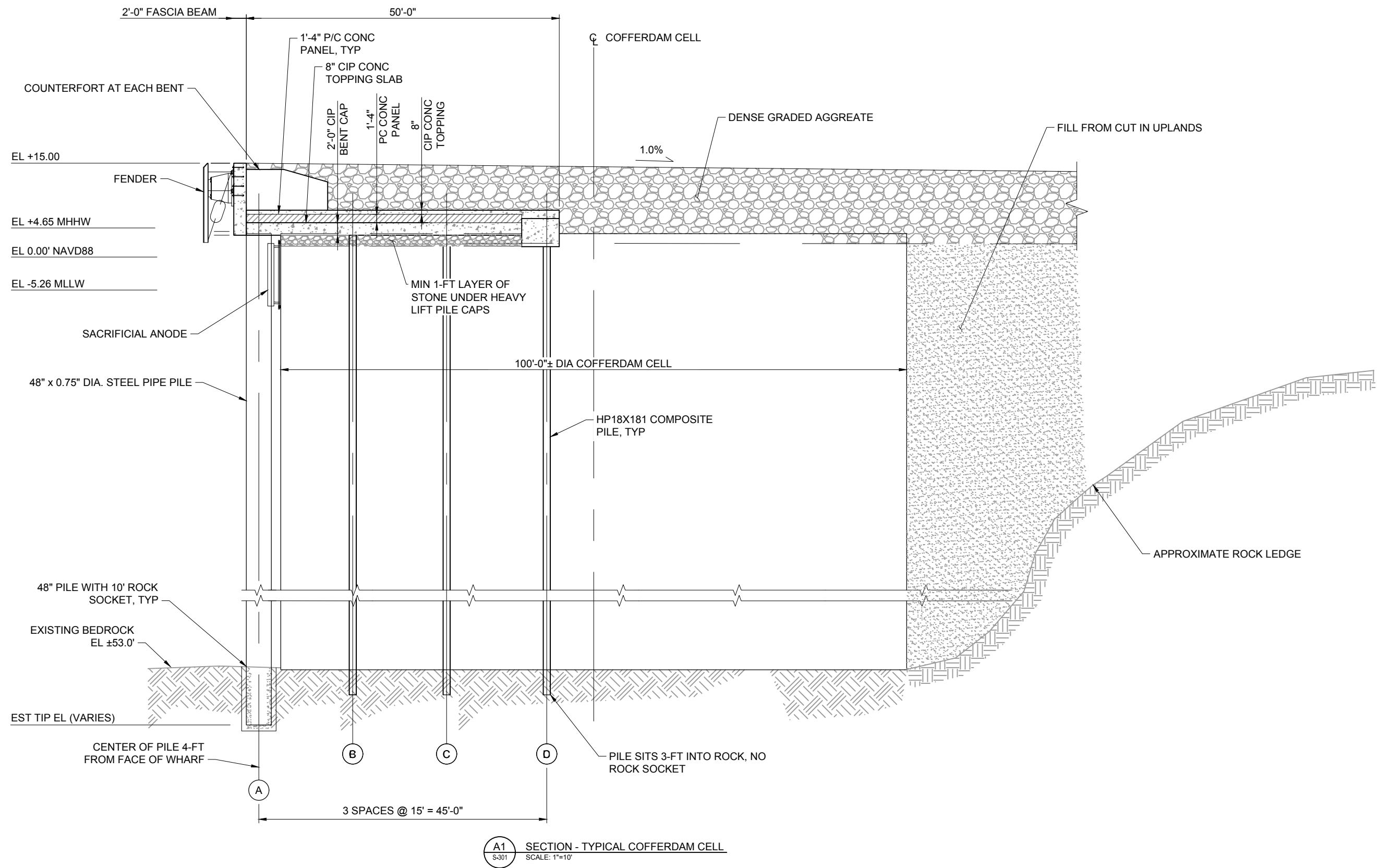


- CONSTRUCTION SEQUENCE NOTES**
1. STEEL CELLULAR COFFERDAMS ARE INSTALLED AND FILLED VIA BARGE.
 2. UPLANDS AREA IS CLEARED.
 3. UPLANDS CUT IS EXCAVATED AND PLACED IN INFILL AREA. BERMS AT NORTHERN AND SOUTHERN EXTENT OF CONSTRUCTION ARE PLACED FIRST IN ORDER TO RETAIN ADDITIONAL FILL.
 4. EXCAVATED CUT MATERIAL IS PLACED IN REMAINING INFILL AREA AND SIDE SLOPES ARE ARMORED.
 5. WICK DRAINS ARE INSTALLED AND SOIL SURCHARGE IS PLACED ON TOP OF INFILL AREA.
 6. UPLANDS AREA IS GRADED AND PREPARED.
 7. SOIL SURCHARGE IS REMOVED.
 8. FINAL DENSE GRADED AGGREGATE TOPPING SURFACE IS PLACED.

- DRAWING NOTES**
1. FULL BUILDOUT WITH BOTH PHASE 1 AND 2 INSTALLED IS SHOWN. SEE PHASING PLANS FOR SPECIFIC PHASE DETAILS.
 2. PROJECT DATUM IS NAVD88.
 3. TERMINAL GRADE IS +15.0'± IN ORDER TO BE ABOVE CURRENT FEMA 100 YEAR FLOOD ELEVATION.
 4. ALL BOUNDARIES AND AREAS ARE APPROXIMATE.

LEGEND

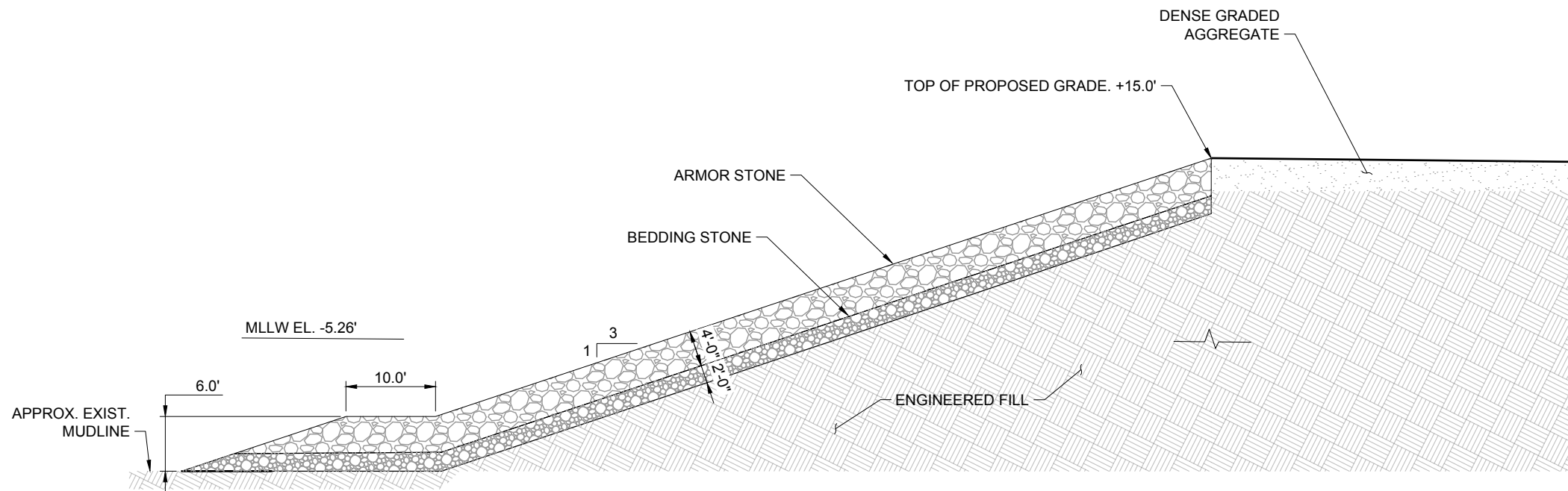
	PHASE 1 UPLANDS
	PHASE 2 UPLANDS
	PHASE 1 INFILL AREA
	PHASE 2 INFILL AREA
	CONCRETE RELIEVING PLATFORM



NOTES

1. ELEVATIONS ARE IN NAVD88.
2. COFFERDAM SECTION IS SHOWN FOR SEARS ISLAND. MACK POINT HAS A SIMILAR SECTION.

CONCEPTUAL DRAWING
NOT TO BE USED FOR CONSTRUCTION

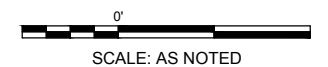


A1
S-301 **SIDE SLOPE REVETMENT DETAIL**
SCALE: 1-1/2"=1'-0"

NOTES

1. ALL ELEVATIONS ARE IN NAVD88

CONCEPTUAL DRAWING
NOT TO BE USED FOR CONSTRUCTION



ORIGINAL SHEET SIZE METRIC EQUIVALENT (ANSI D) 863.6mm x 559.8mm
DRAWING SCALES ARE BASED ON THIS SHEET SIZE

