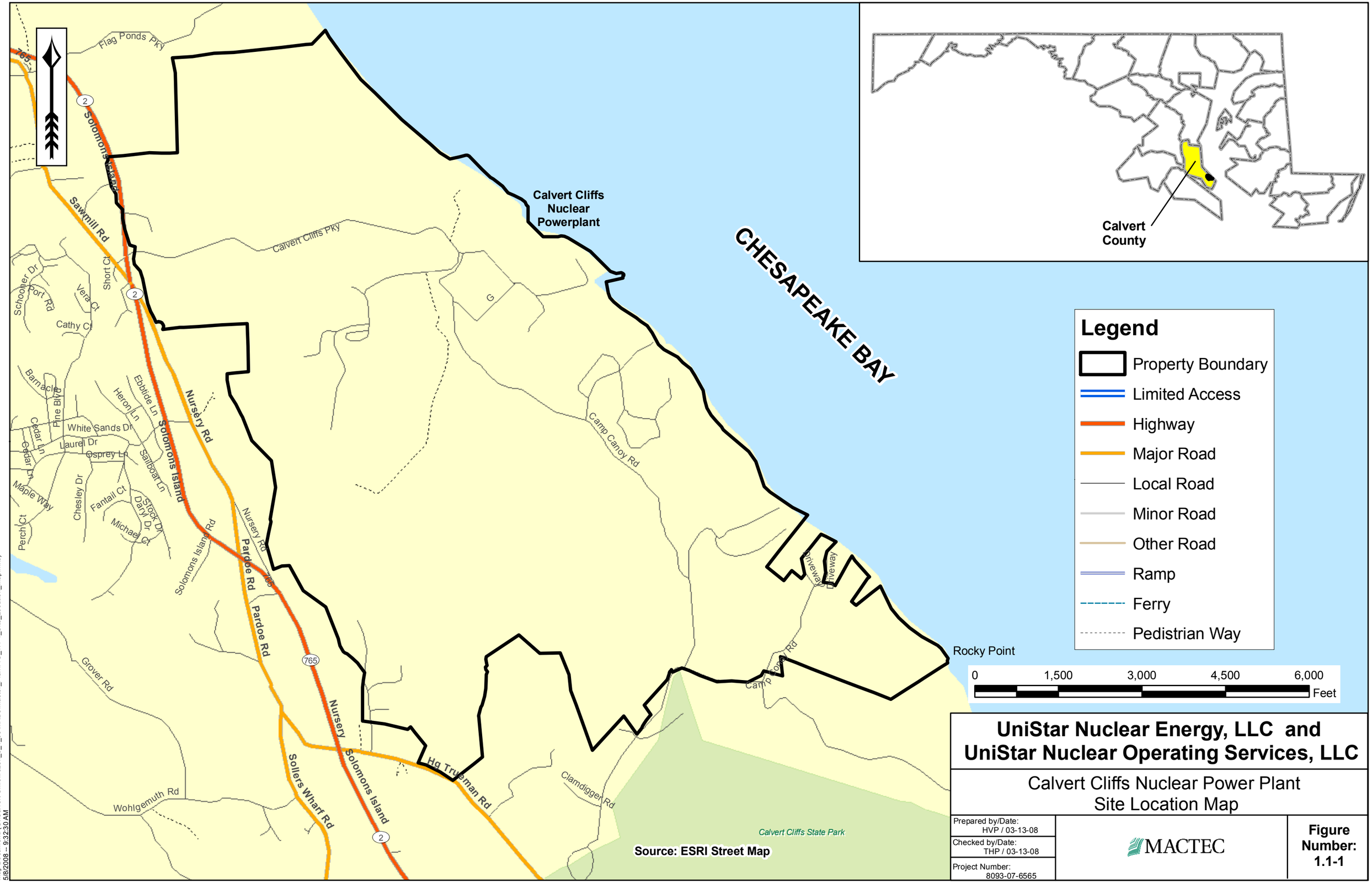
SUPPLEMENTAL ENVIRONMENTAL RESOURCE REPORT

FIGURES

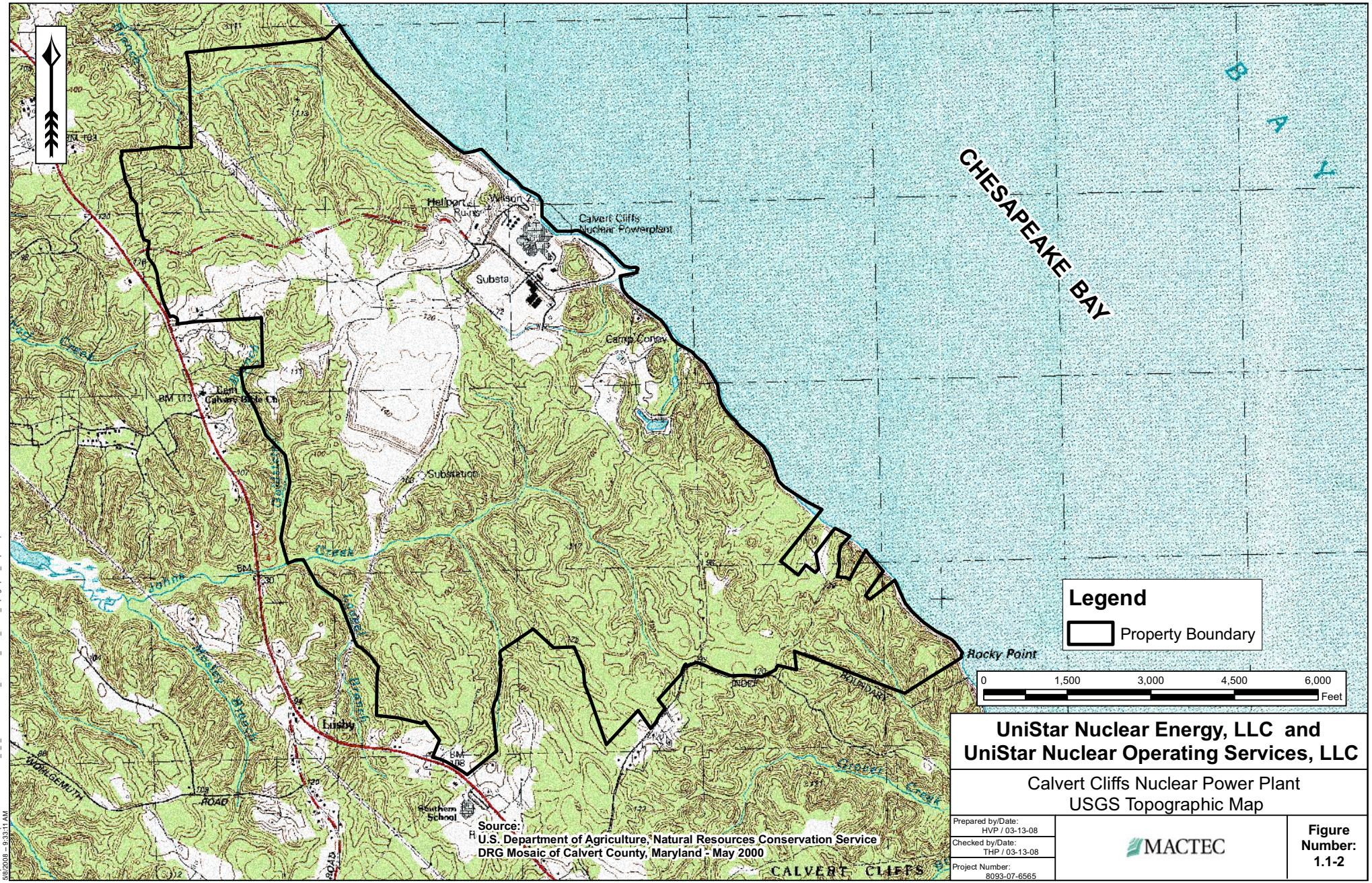


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Site Location Map

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 1.1-1
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_1.1-1_Site_Location_Map.mxd)
5/8/2008 -- 9:32:30 AM

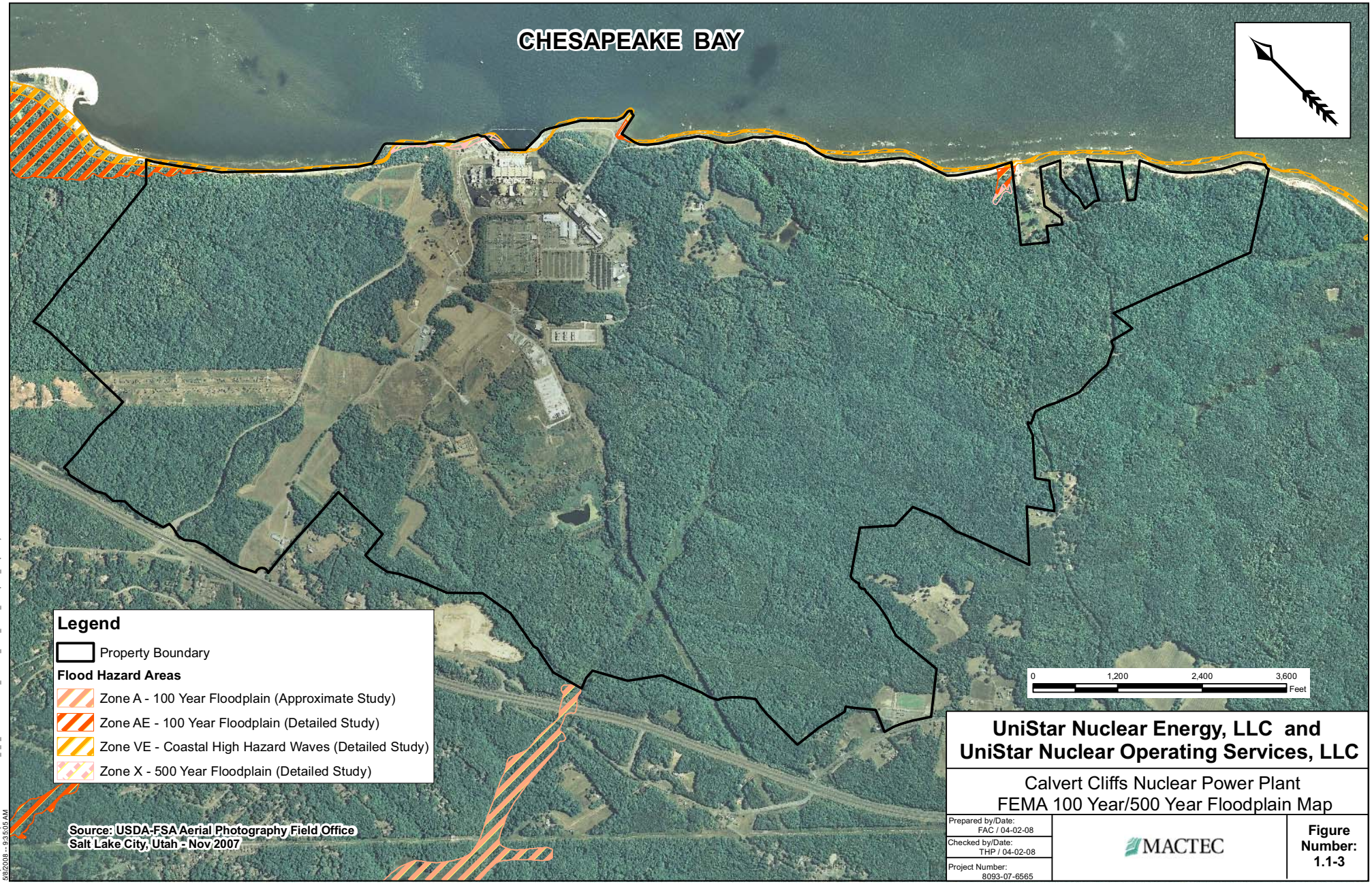


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
USGS Topographic Map

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 1.1-2
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_1.1-2_USGS_Topographic_Map.mxd)
03/12/2008 -- 3:33:11 AM

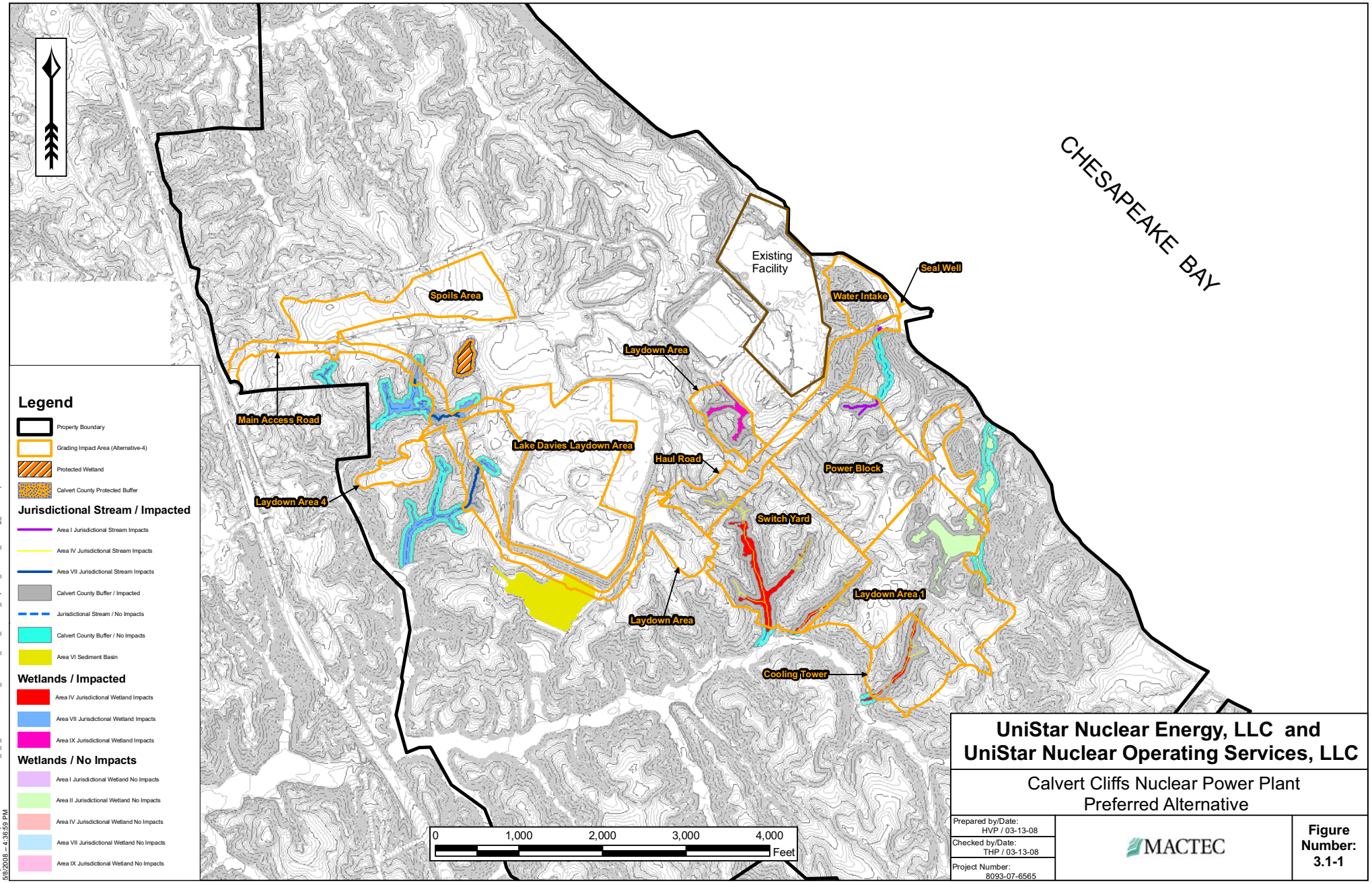


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
FEMA 100 Year/500 Year Floodplain Map

Prepared by/Date: FAC / 04-02-08	MACTEC	Figure Number: 1.1-3
Checked by/Date: THP / 04-02-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_1.1-3_FEMA_Floodplain_Map.mxd)
5/8/2008 -- 9:35:05 AM



Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_3.1-1_Wetland_Impacts_Revised_Grading_Plan.mxd)
5/9/2008 -- 4:35:59 PM

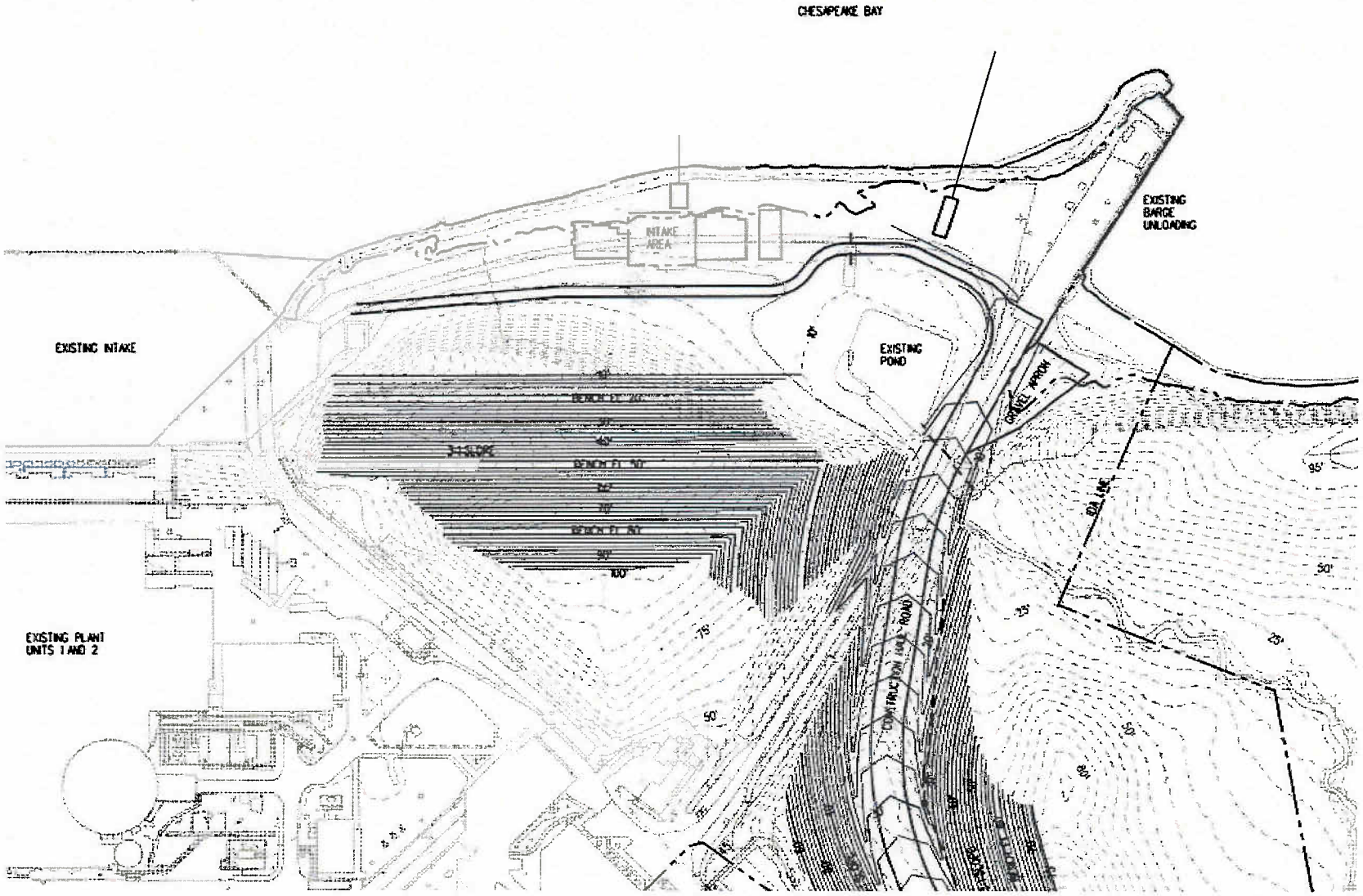
UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Preferred Alternative

Prepared by/Date: HVP / 03-13-08
Checked by/Date: THP / 03-13-08
Project Number: 8093-07-6565

MACTEC

Figure Number: 3.1-1



PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE / LONGITUDE:
38.424133 - 76.441598

FIGURE 3.7-1
DETAIL SITE PLAN
OF SHORELINE STRUCTURES

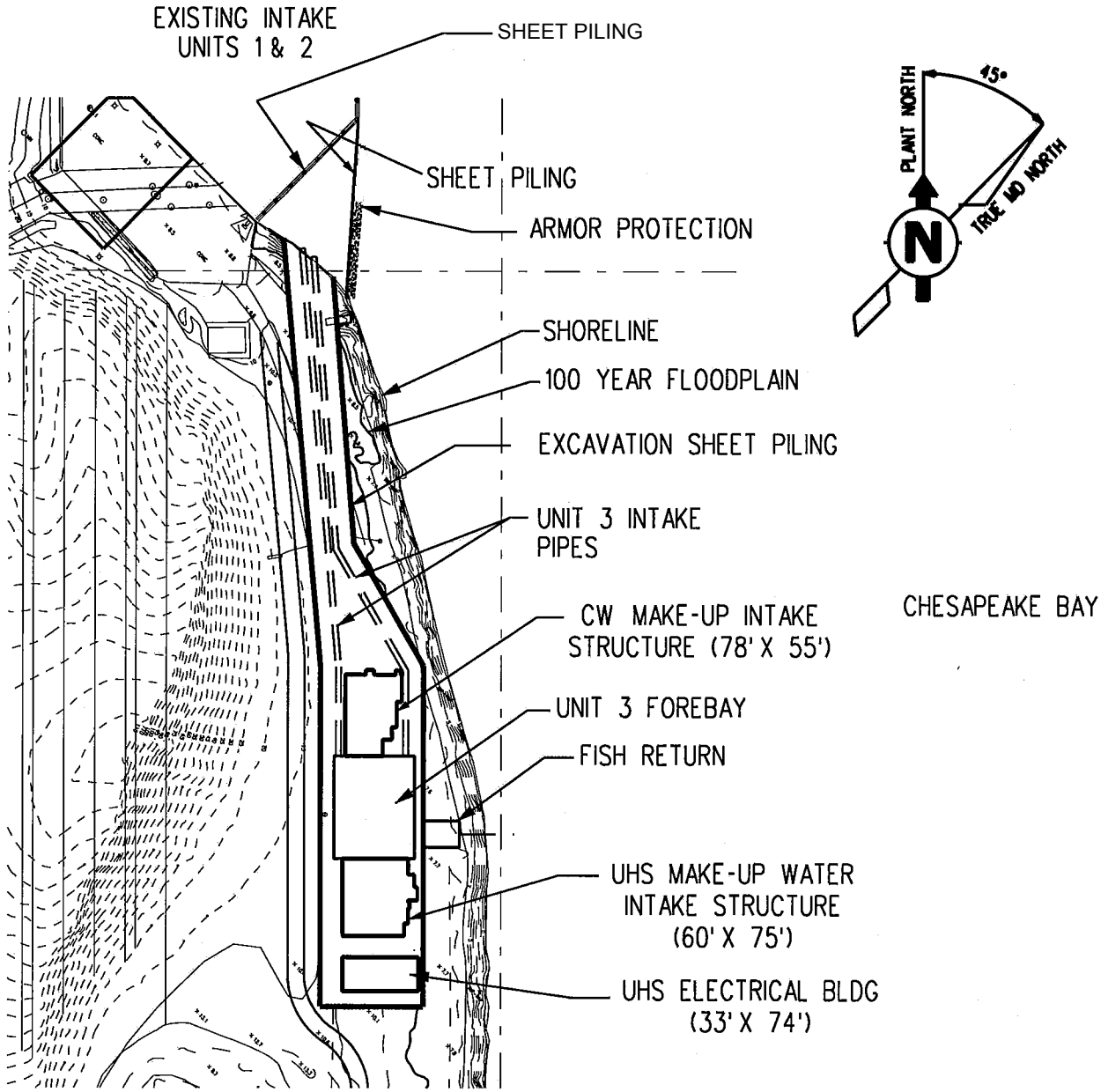
NOT TO SCALE

CALVERT CLIFFS NUCLEAR POWER PLANT
UNIT 3

IN: PATUXENT / WEST CHESAPEAKE BAY

COUNTY: CALVERT STATE: MD

DATE: 4/30/08



NOTES: 1. - MEAN HIGH WATERLINE: 0.57'
- MEAN LOW WATERLINE: -0.60'
- MAXIMUM SPRING WATERLINE: 1.47'

2. NAVIGATION CHANNEL (MIDDLE OF BAY) APPROX. 3 MILES FROM SHORELINE.

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

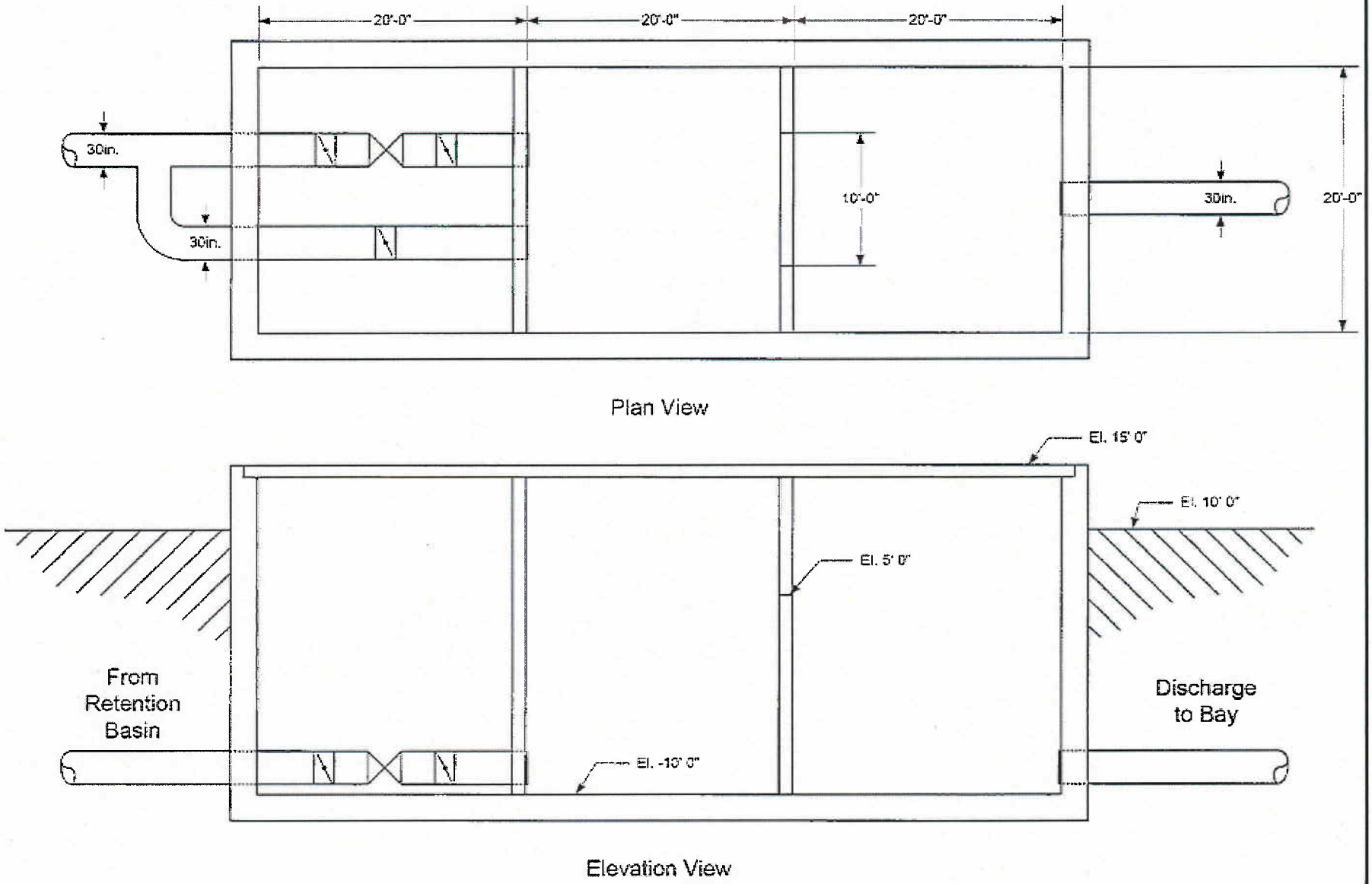
FIGURE 3.7-2
SITE PLAN
@ INTAKE STRUCTURE

0 150 300FT

CALVERT CLIFFS NUCLEAR
POWER PLANT UNIT 3

IN: PATUXENT/WEST CHEASPEAKE BAY

COUNTY OF: CALVERT STATE: MD



PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE / LONGITUDE:
38.424133 - 76.441598

FIGURE 3.8-1
SEAL WELL DETAILS

NOT TO SCALE

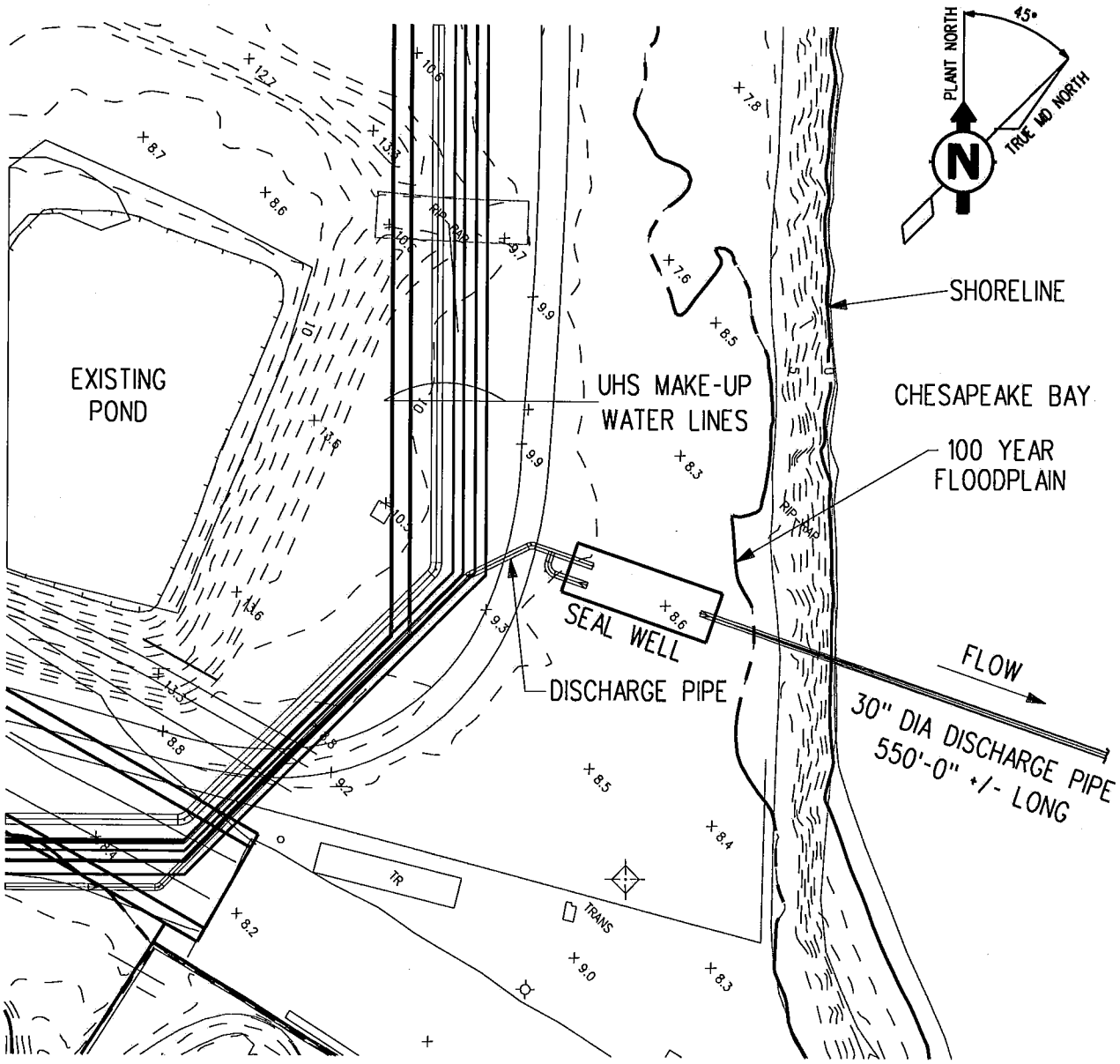
CALVERT CLIFFS NUCLEAR POWER PLANT
UNIT 3

IN: PATUXENT / WEST CHESAPEAKE BAY

COUNTY: CALVERT

STATE: MD

DATE: 4/30/08



NOTES: 1. - MEAN HIGH WATERLINE: 0.57'
- MEAN LOW WATERLINE: -0.60'
- MAXIMUM SPRING WATERLINE: 1.47'

2. NAVIGATION CHANNEL (MIDDLE OF BAY) APPROX. 3 MILES FROM SHORELINE.

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

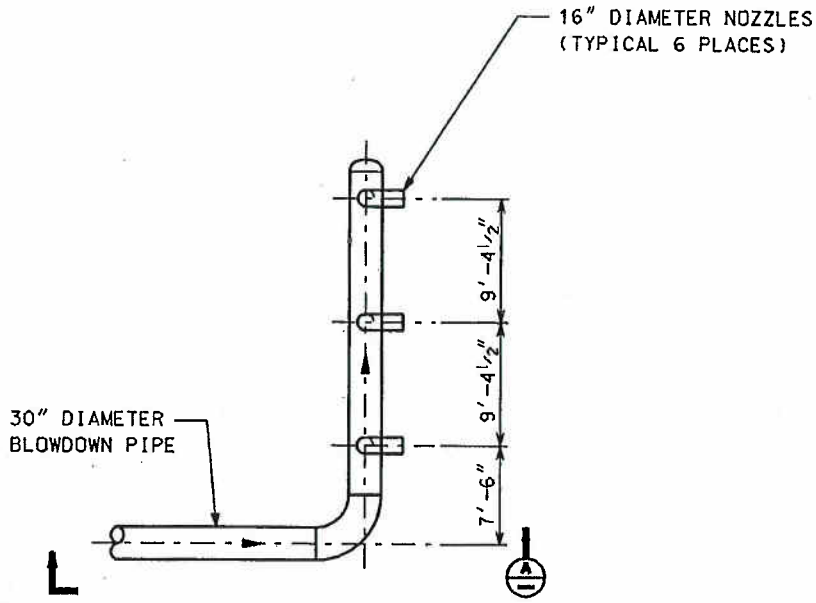
FIGURE 3.8-2
SEAL WELL & DISCHARGE PIPING

0 60 120 FT

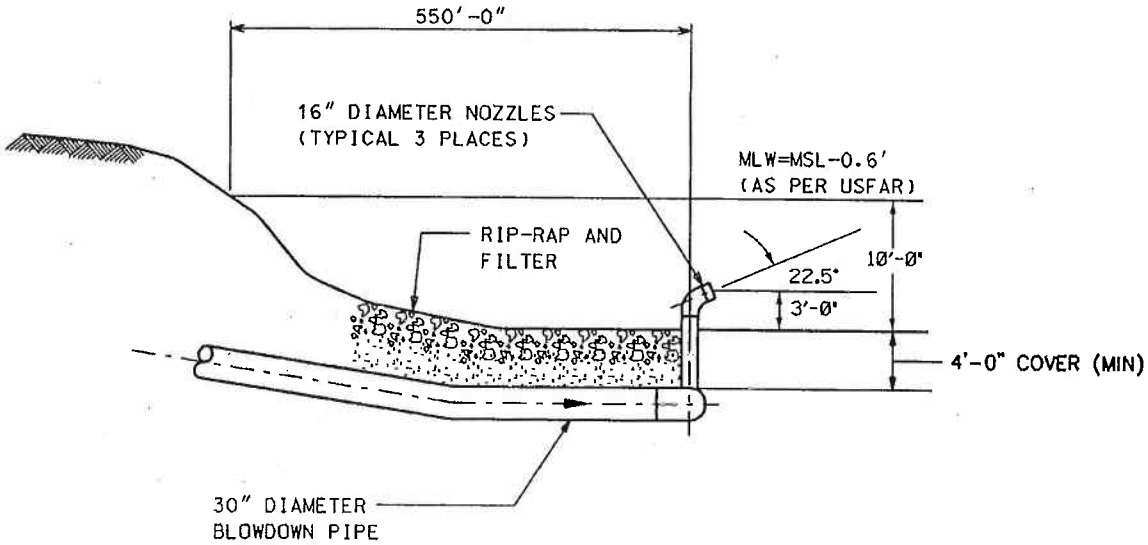
CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3

IN: PATUXENT/WEST CHEASPEAKE BAY

COUNTY OF: CALVERT STATE: MD

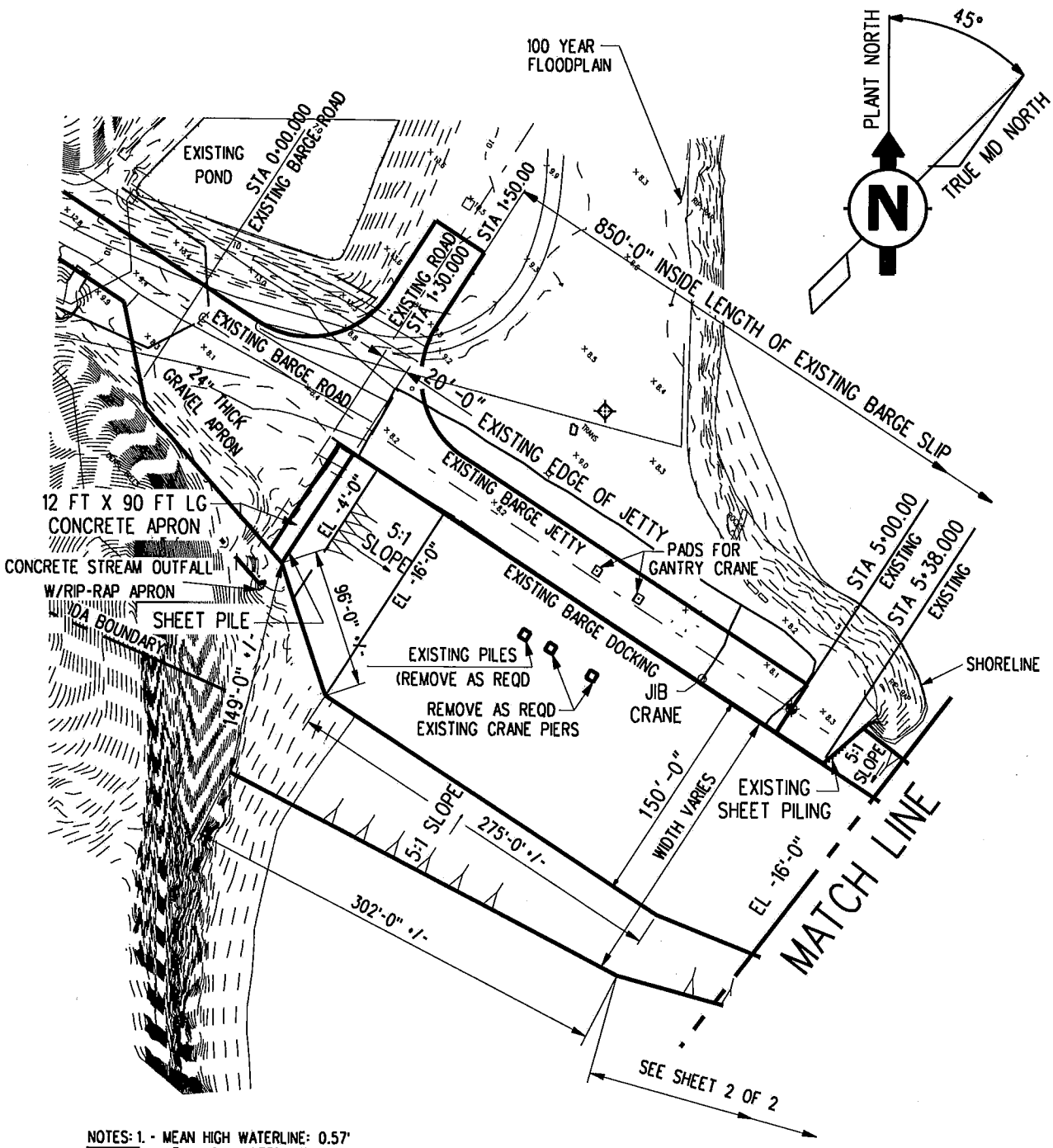


DIFFUSER PLAN VIEW



SECTION A

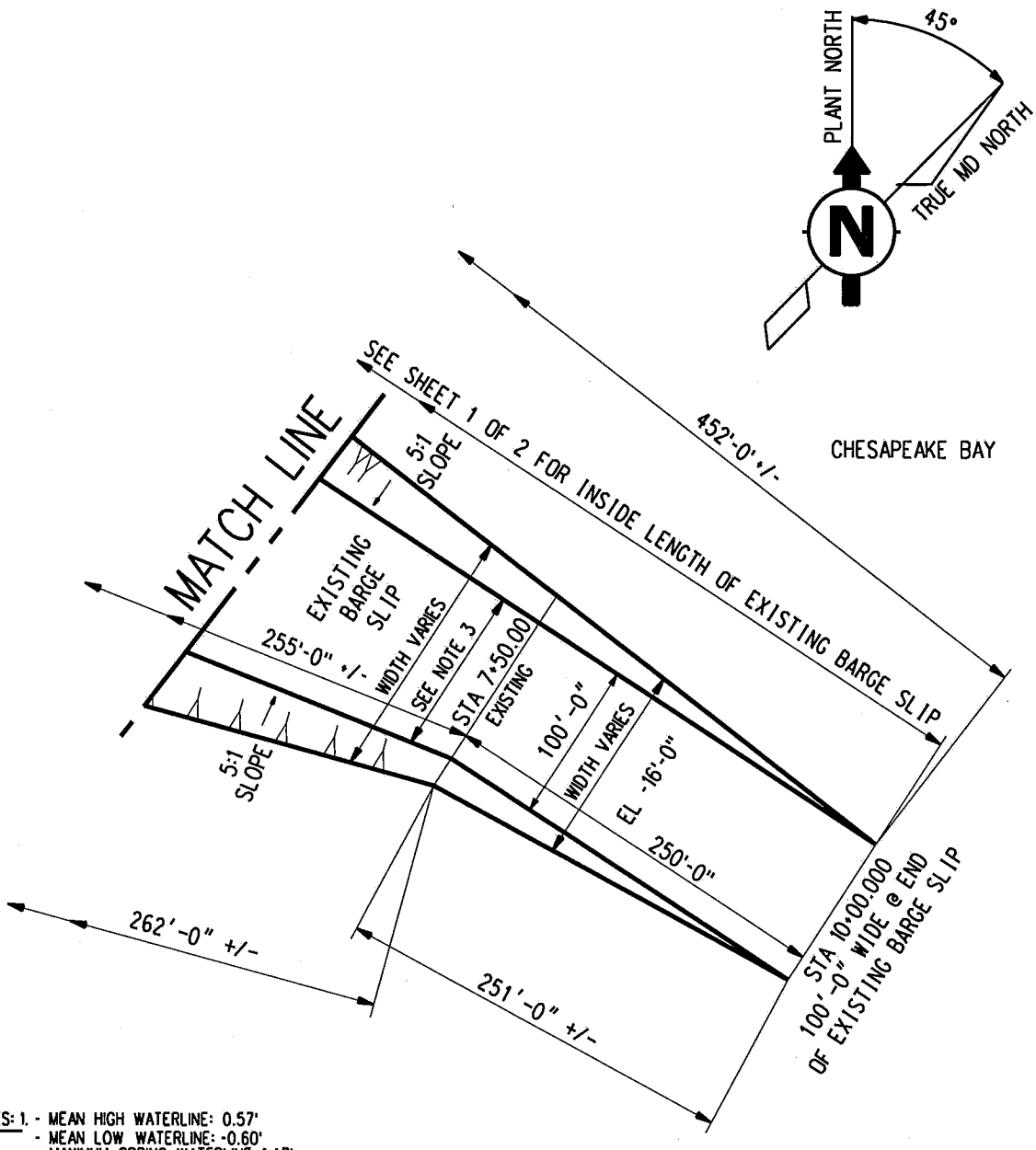
PURPOSE: PLANT EXPANSION DATUM: (NAVD 27) PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598	**FIGURE 3.8-3** DISCHARGE OUTFALL DETAILS NOT TO SCALE	CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3 IN: PATUXENT/ WEST CHESAPEAKE BAY COUNTY OF: CALVERT STATE: MD



NOTES: 1. - MEAN HIGH WATERLINE: 0.57'
- MEAN LOW WATERLINE: -0.60'
- MAXIMUM SPRING WATERLINE: 1.47'

2. NAVIGATION CHANNEL (MIDDLE OF BAY) APPROX. 3 MILES FROM SHORELINE.

PURPOSE: PLANT EXPANSION DATUM: (NAVD 27) PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598	**FIGURE 3.9-1A** MODIFICATIONS @ EXISTING BARGE UNLOADING FACILITY 0 50 100 150FT	CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3 IN: PATUXENT/WEST CHEASPEAKE BAY COUNTY OF: CALVERT STATE: MD



NOTES: 1. - MEAN HIGH WATERLINE: 0.57'
- MEAN LOW WATERLINE: -0.60'
- MAXIMUM SPRING WATERLINE: 1.47'

2. NAVIGATION CHANNEL (MIDDLE OF BAY) APPROX. 3 MILES FROM SHORELINE.

3. INSIDE WIDTH OF EXISTING BARGE SLIP VARIES FROM STATION 5+00.00 TO STATION 7+50.00 (LENGTH = 250'-0")

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE/LONGITUDE:
38.424133
-76.441598

FIGURE 3.9-1B
MODIFICATIONS @ EXISTING BARGE UNLOADING FACILITY

0 50 100 150FT

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3

IN: PATUXENT/WEST CHEASPEAKE BAY

COUNTY OF: CALVERT STATE: MD

PURPOSE: PLANT EXPANSION

DATUM: (NAVD 27)

PROJECT LATITUDE / LONGITUDE:
38.424133 - 76.441598

FIGURE 3.9-2

AERIAL VIEW OF BARGE UNLOADING FACILITY (1971)

NOT TO SCALE

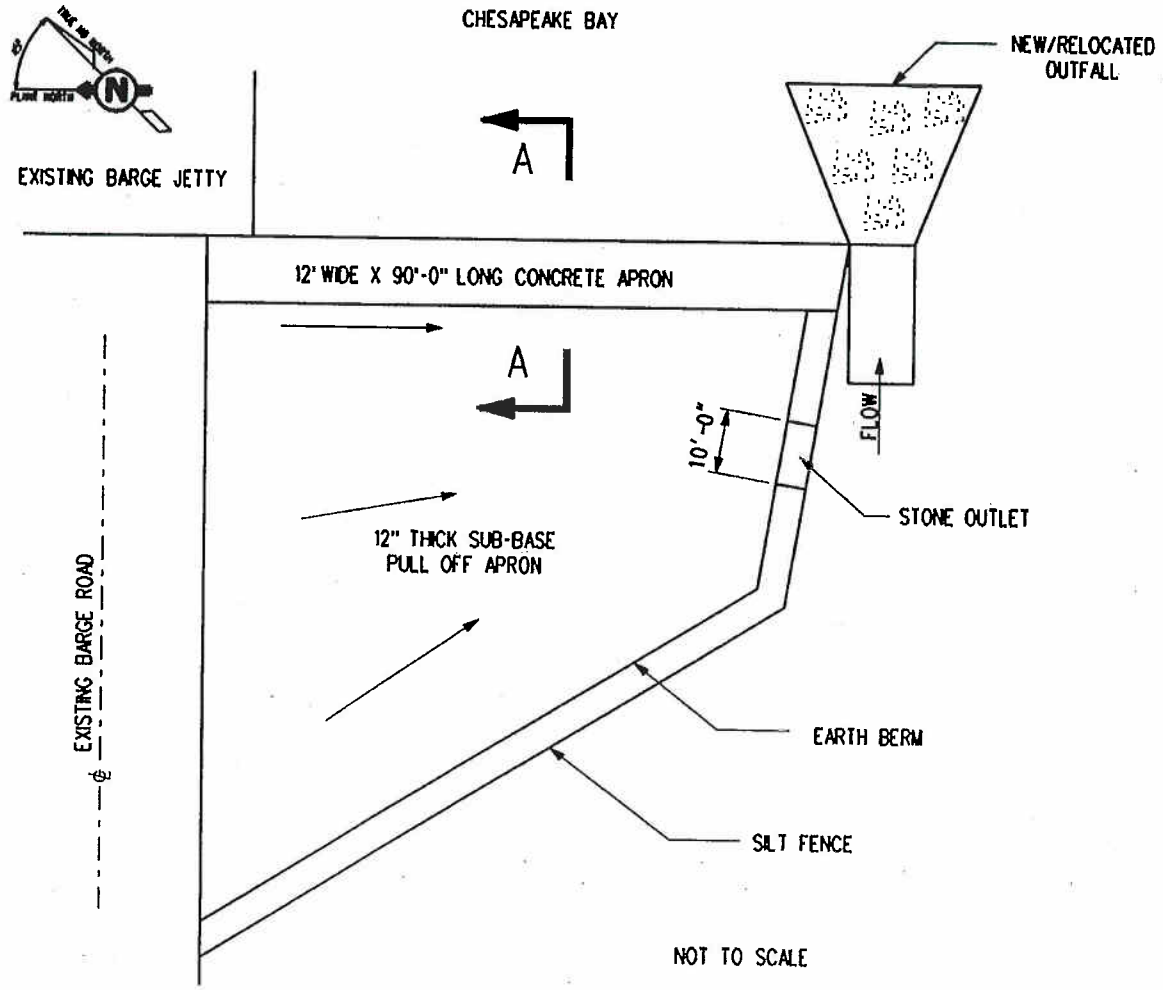
CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3

IN: PATUXENT / WEST CHESAPEAKE BAY

COUNTY: CALVERT

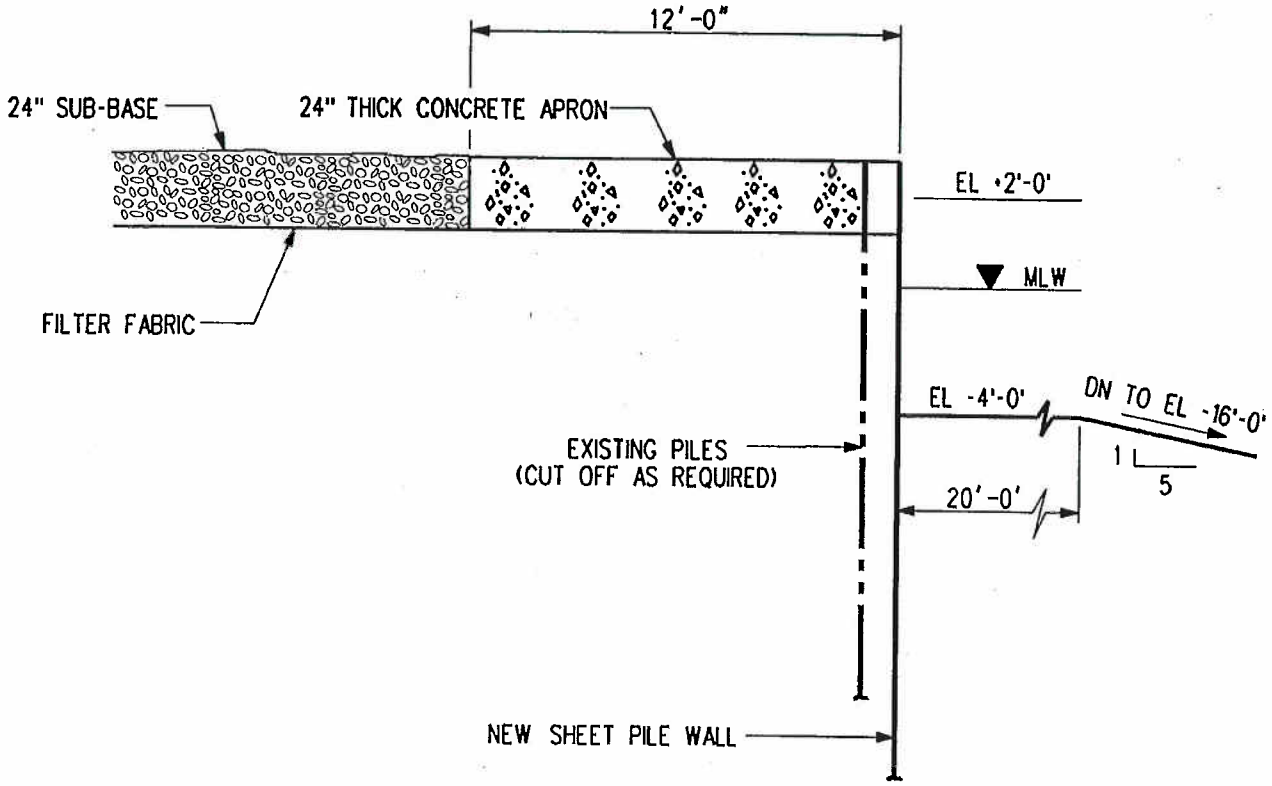
STATE: MD

DATE: 4/30/08



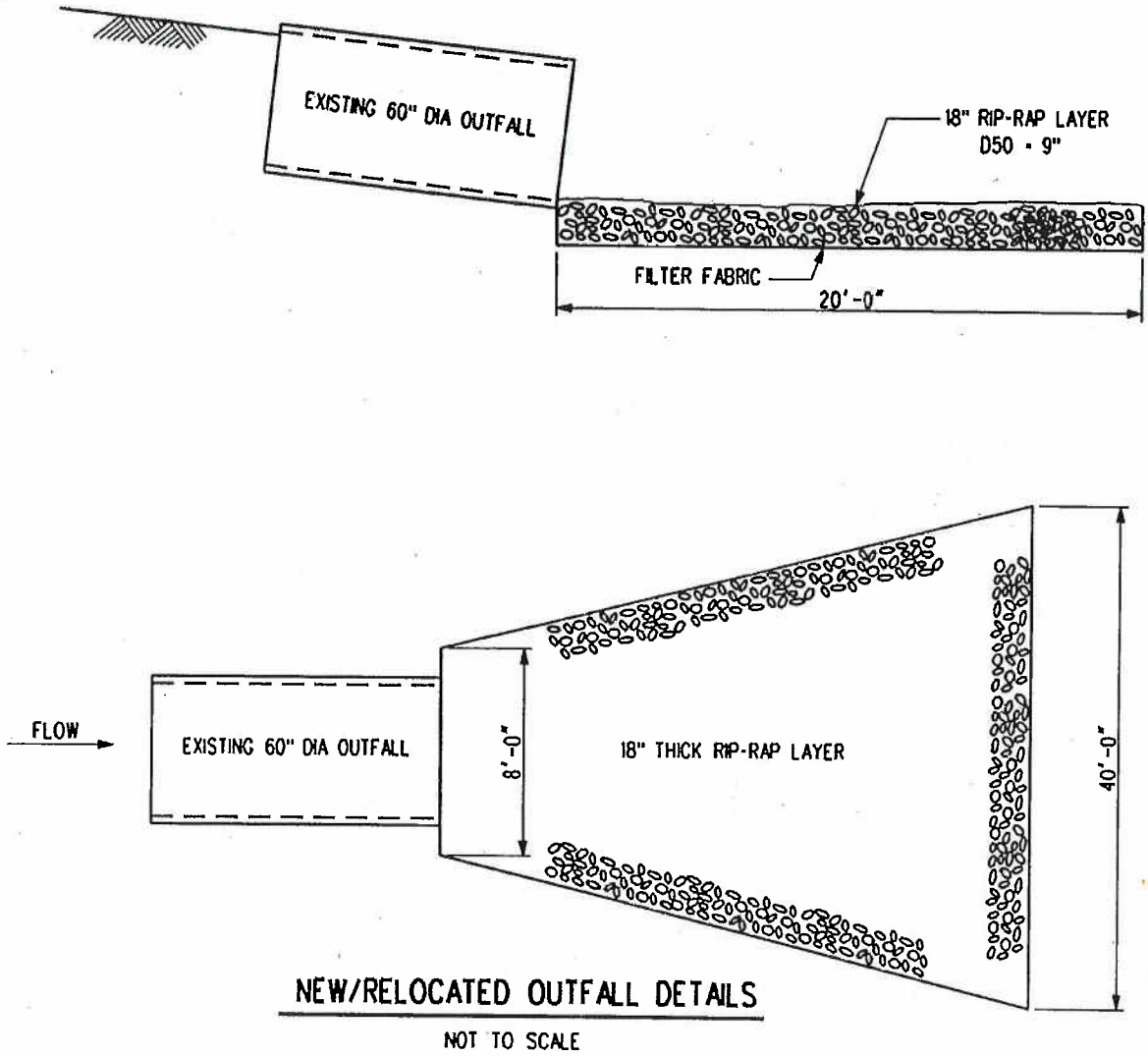
PLANE EARTH BERM & STONE OUTLET

PURPOSE: PLANT EXPANSION DATUM: (NAVD 27) PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598	**FIGURE 3.9-3** MODIFICATIONS TO NEW BULKHEAD & APRON NOT TO SCALE	CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3 IN: PATUXENT/ WEST CHESAPEAKE BAY COUNTY OF: CALVERT STATE: MD

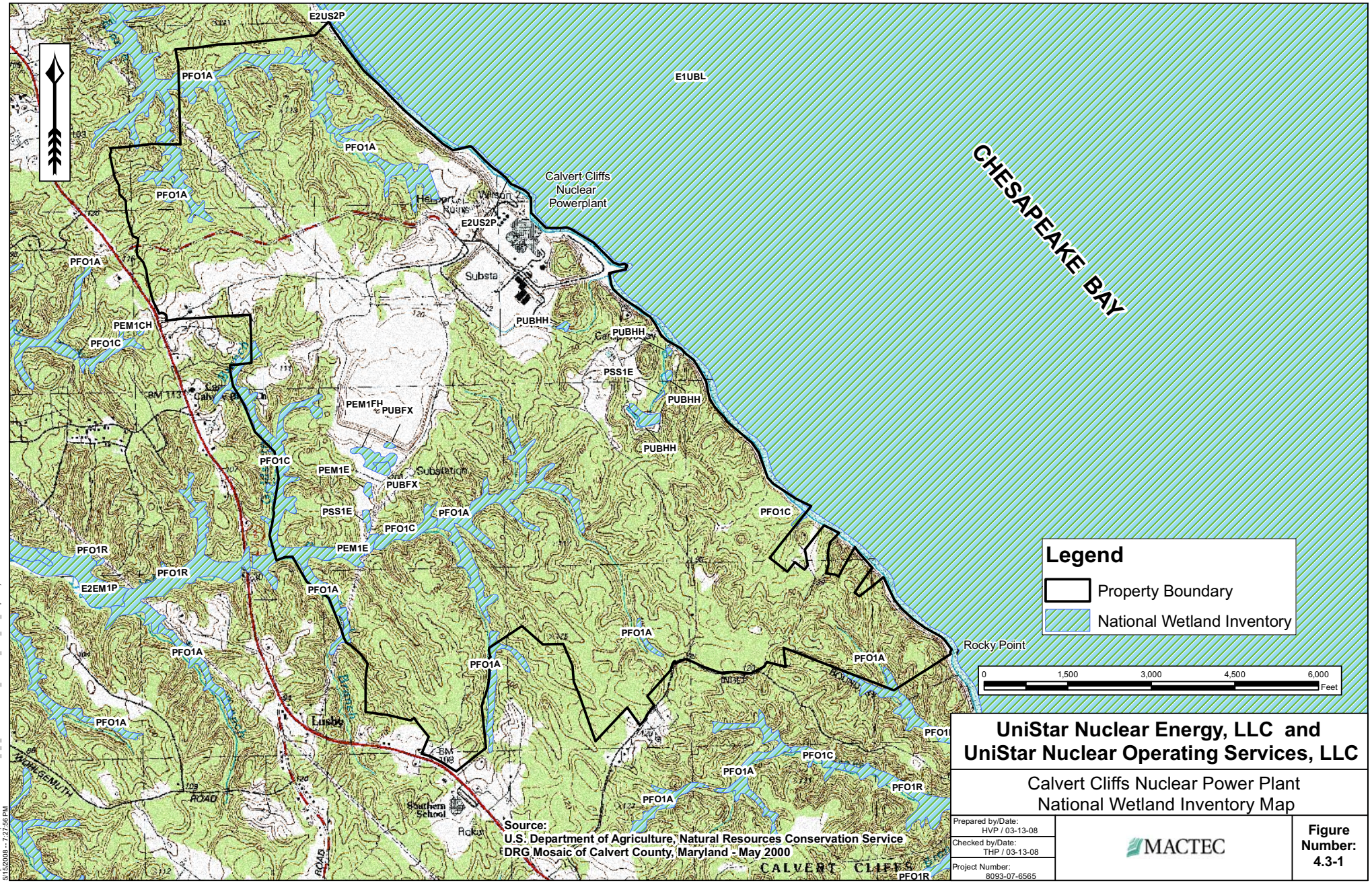


SECTION A-A

PURPOSE: PLANT EXPANSION DATUM: (NAVD 27) PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598	**FIGURE 3.9-4** SECTION A-A THRU CONCRETE APRON NOT TO SCALE	CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3 IN: PATUXENT/ WEST CHESAPEAKE BAY COUNTY OF: CALVERT STATE: MD



PURPOSE: PLANT EXPANSION DATUM: (NAVD 27) PROJECT LATITUDE/LONGITUDE: 38.424133 -76.441598	**FIGURE 3.9-5** STREAM OUTFALL DETAILS NOT TO SCALE	CALVERT CLIFFS NUCLEAR POWER PLANT UNIT 3 IN: PATUXENT/ WEST CHESAPEAKE BAY COUNTY OF: CALVERT STATE: MD

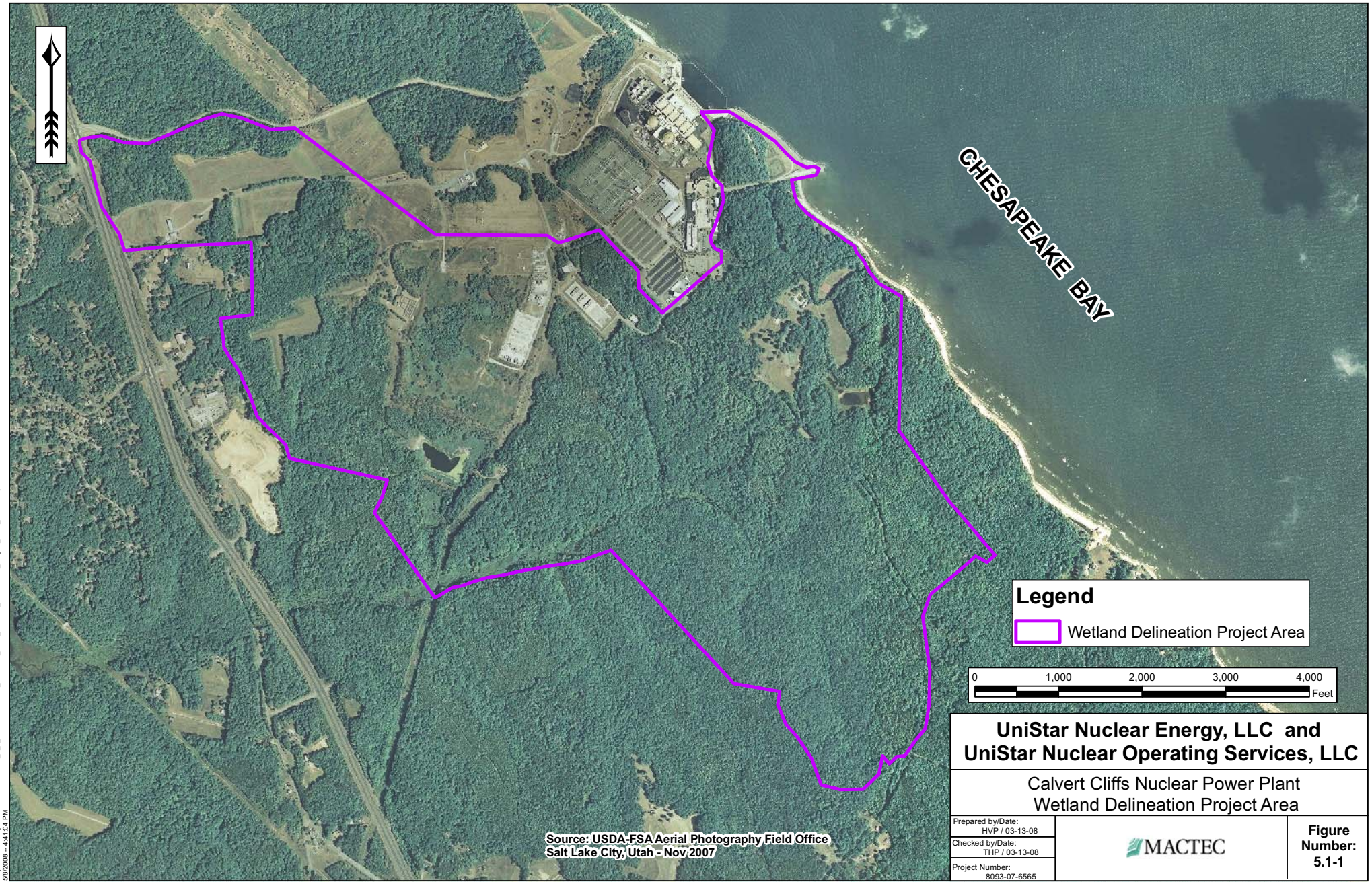


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
National Wetland Inventory Map

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 4.3-1
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_4.3-1_NWI_Map.mxd)
5/5/2008 -- 7:27:50 PM

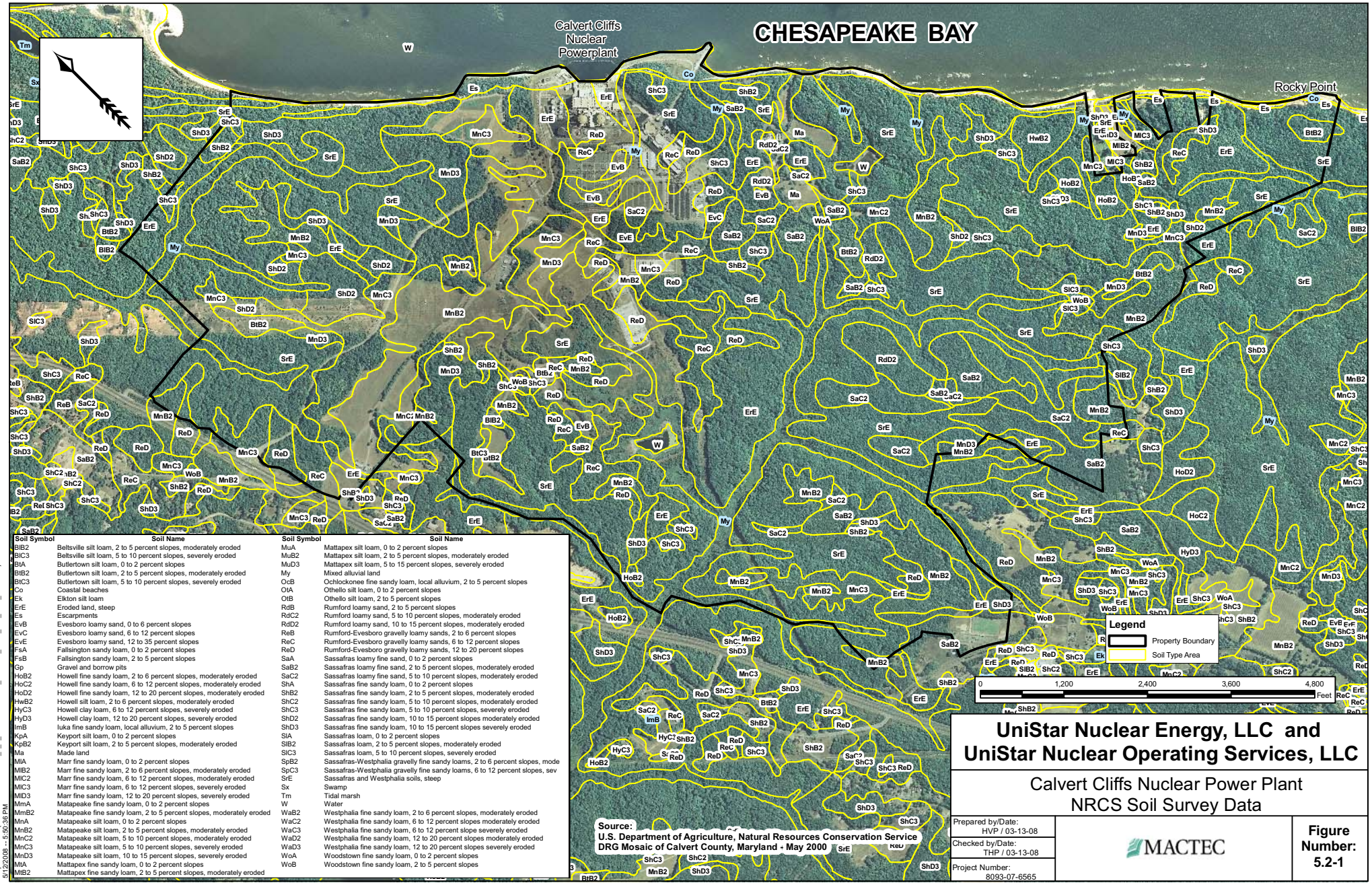


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Wetland Delineation Project Area

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 5.1-1
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_5.1-1_Wetland_Delineation_Project_Area_MAP.mxd)
3/6/2008 -- 4:41:04 PM



Soil Symbol	Soil Name	Soil Symbol	Soil Name
BlB2	Beltsville silt loam, 2 to 5 percent slopes, moderately eroded	MuA	Mattapex silt loam, 0 to 2 percent slopes
BlC3	Beltsville silt loam, 5 to 10 percent slopes, severely eroded	MuB2	Mattapex silt loam, 2 to 5 percent slopes, moderately eroded
BtA	Butlertown silt loam, 0 to 2 percent slopes	MuD3	Mattapex silt loam, 5 to 15 percent slopes, severely eroded
BtB2	Butlertown silt loam, 2 to 5 percent slopes, moderately eroded	My	Mixed alluvial land
BtC3	Butlertown silt loam, 5 to 10 percent slopes, severely eroded	OcB	Ochlockonee fine sandy loam, local alluvium, 2 to 5 percent slopes
Co	Coastal beaches	OtA	Othello silt loam, 0 to 2 percent slopes
Ek	Elkton silt loam	OtB	Othello silt loam, 2 to 5 percent slopes
ErE	Eroded land, steep	RdB	Rumford loamy sand, 2 to 5 percent slopes
Es	Escarpments	RdC2	Rumford loamy sand, 5 to 10 percent slopes, moderately eroded
EvB	Evesboro loamy sand, 0 to 6 percent slopes	RdD2	Rumford loamy sand, 10 to 15 percent slopes, moderately eroded
EvC	Evesboro loamy sand, 6 to 12 percent slopes	ReB	Rumford-Evesboro gravelly loamy sands, 2 to 6 percent slopes
EvE	Evesboro loamy sand, 12 to 35 percent slopes	ReC	Rumford-Evesboro gravelly loamy sands, 6 to 12 percent slopes
FsA	Fallsington sandy loam, 0 to 2 percent slopes	ReD	Rumford-Evesboro gravelly loamy sands, 12 to 20 percent slopes
FsB	Fallsington sandy loam, 2 to 5 percent slopes	SaA	Sassafras loamy fine sand, 0 to 2 percent slopes
Gp	Gravel and borrow pits	SaB2	Sassafras loamy fine sand, 2 to 5 percent slopes, moderately eroded
HoB2	Howell fine sandy loam, 2 to 6 percent slopes, moderately eroded	SaC2	Sassafras loamy fine sand, 5 to 10 percent slopes, moderately eroded
HoC2	Howell fine sandy loam, 6 to 12 percent slopes, moderately eroded	ShA	Sassafras fine sandy loam, 0 to 2 percent slopes
HoD2	Howell fine sandy loam, 12 to 20 percent slopes, moderately eroded	ShB2	Sassafras fine sandy loam, 2 to 5 percent slopes, moderately eroded
HwB2	Howell silt loam, 2 to 6 percent slopes, moderately eroded	ShC2	Sassafras fine sandy loam, 5 to 10 percent slopes, moderately eroded
HyC3	Howell clay loam, 6 to 12 percent slopes, severely eroded	ShC3	Sassafras fine sandy loam, 5 to 10 percent slopes, severely eroded
HyD3	Howell clay loam, 12 to 20 percent slopes, severely eroded	ShD2	Sassafras fine sandy loam, 10 to 15 percent slopes moderately eroded
ImB	Iuka fine sandy loam, local alluvium, 2 to 5 percent slopes	ShD3	Sassafras fine sandy loam, 10 to 15 percent slopes severely eroded
KpA	Keyport silt loam, 0 to 2 percent slopes	SlA	Sassafras loam, 0 to 2 percent slopes
KpB2	Keyport silt loam, 2 to 5 percent slopes, moderately eroded	SlB2	Sassafras loam, 2 to 5 percent slopes, moderately eroded
Ma	Made land	SlC3	Sassafras loam, 5 to 10 percent slopes, severely eroded
MlA	Marr fine sandy loam, 0 to 2 percent slopes	SpB2	Sassafras-Westphalia gravelly fine sandy loams, 2 to 6 percent slopes, mode
MlB2	Marr fine sandy loam, 2 to 6 percent slopes, moderately eroded	SpC3	Sassafras-Westphalia gravelly fine sandy loams, 6 to 12 percent slopes, sev
MlC2	Marr fine sandy loam, 6 to 12 percent slopes, moderately eroded	SrE	Sassafras and Westphalia soils, steep
MlC3	Marr fine sandy loam, 6 to 12 percent slopes, severely eroded	Sx	Swamp
MlD3	Marr fine sandy loam, 12 to 20 percent slopes, severely eroded	Tm	Tidal marsh
MmA	Matapeake fine sandy loam, 0 to 2 percent slopes	W	Water
MmB2	Matapeake fine sandy loam, 2 to 5 percent slopes, moderately eroded	WaB2	Westphalia fine sandy loam, 2 to 6 percent slopes, moderately eroded
MnA	Matapeake silt loam, 0 to 2 percent slopes	WaC2	Westphalia fine sandy loam, 6 to 12 percent slopes moderately eroded
MnB2	Matapeake silt loam, 2 to 5 percent slopes, moderately eroded	WaC3	Westphalia fine sandy loam, 6 to 12 percent slope severely eroded
MnC2	Matapeake silt loam, 5 to 10 percent slopes, moderately eroded	WaD2	Westphalia fine sandy loam, 12 to 20 percent slopes moderately eroded
MnC3	Matapeake silt loam, 5 to 10 percent slopes, severely eroded	WaD3	Westphalia fine sandy loam, 12 to 20 percent slopes severely eroded
MnD3	Matapeake silt loam, 10 to 15 percent slopes, severely eroded	WoA	Woodstown fine sandy loam, 0 to 2 percent slopes
MtA	Mattapex fine sandy loam, 0 to 2 percent slopes	WoB	Woodstown fine sandy loam, 2 to 5 percent slopes
MtB2	Mattapex fine sandy loam, 2 to 5 percent slopes, moderately eroded		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_5.2-1_Soil_Data_MAP.mxd)
5/12/2008 -- 5:50:36 PM

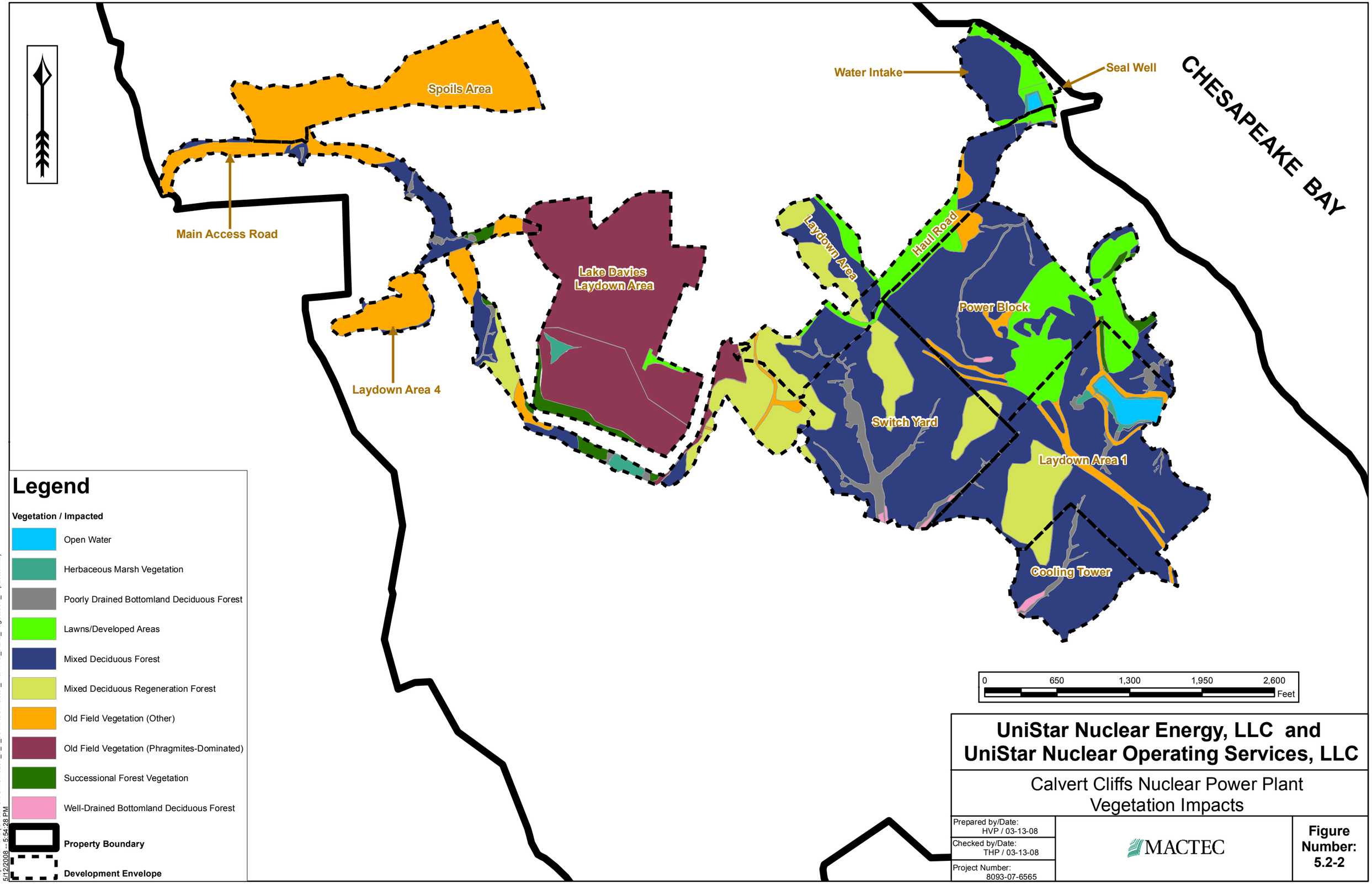
UniStar Nuclear Energy, LLC and
UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
NRCS Soil Survey Data

Prepared by/Date: HVP / 03-13-08
Checked by/Date: THP / 03-13-08
Project Number: 8093-07-6565

MACTEC

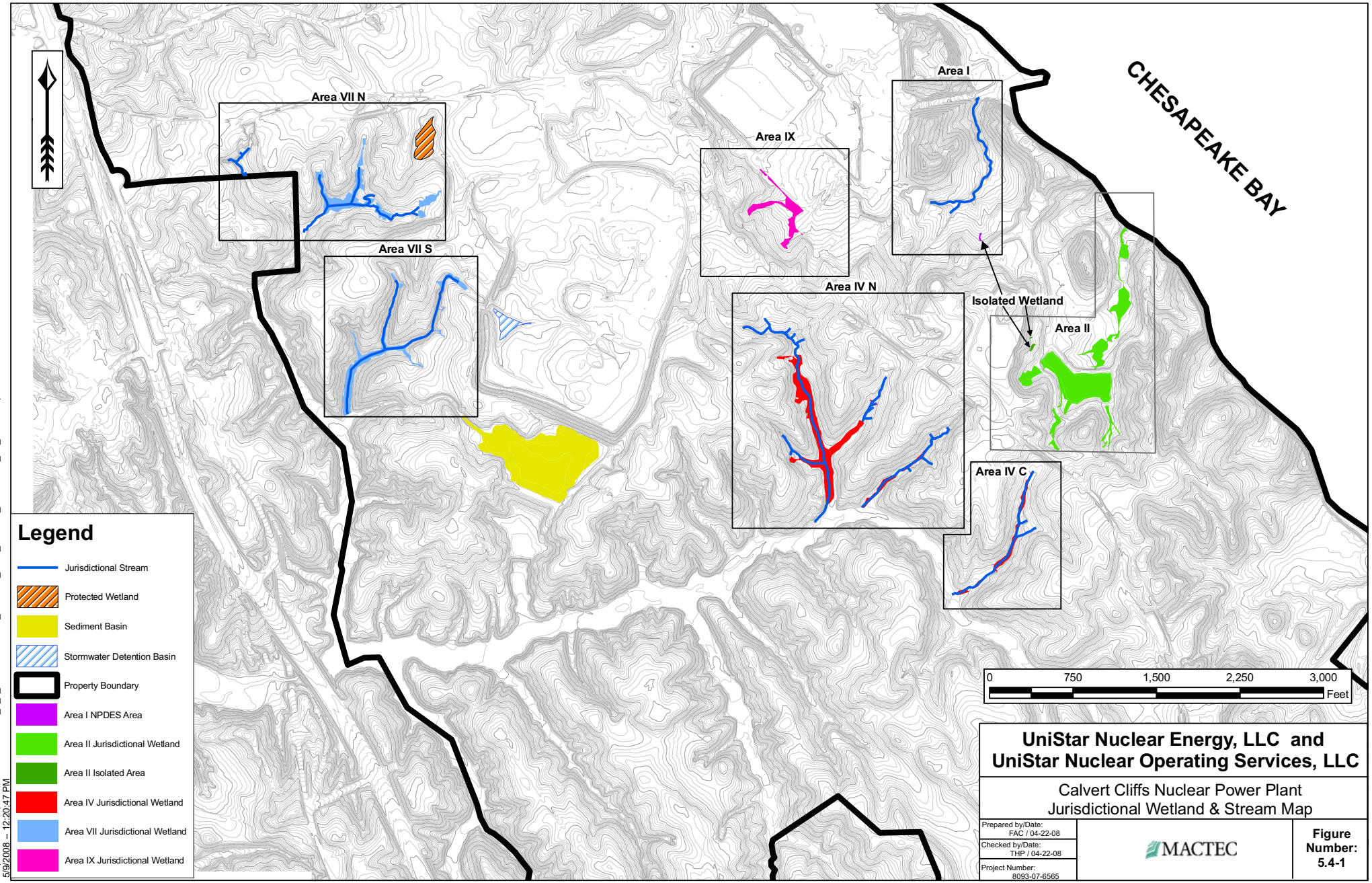
Figure Number: 5.2-1



UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Vegetation Impacts

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 5.2-2
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		



UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

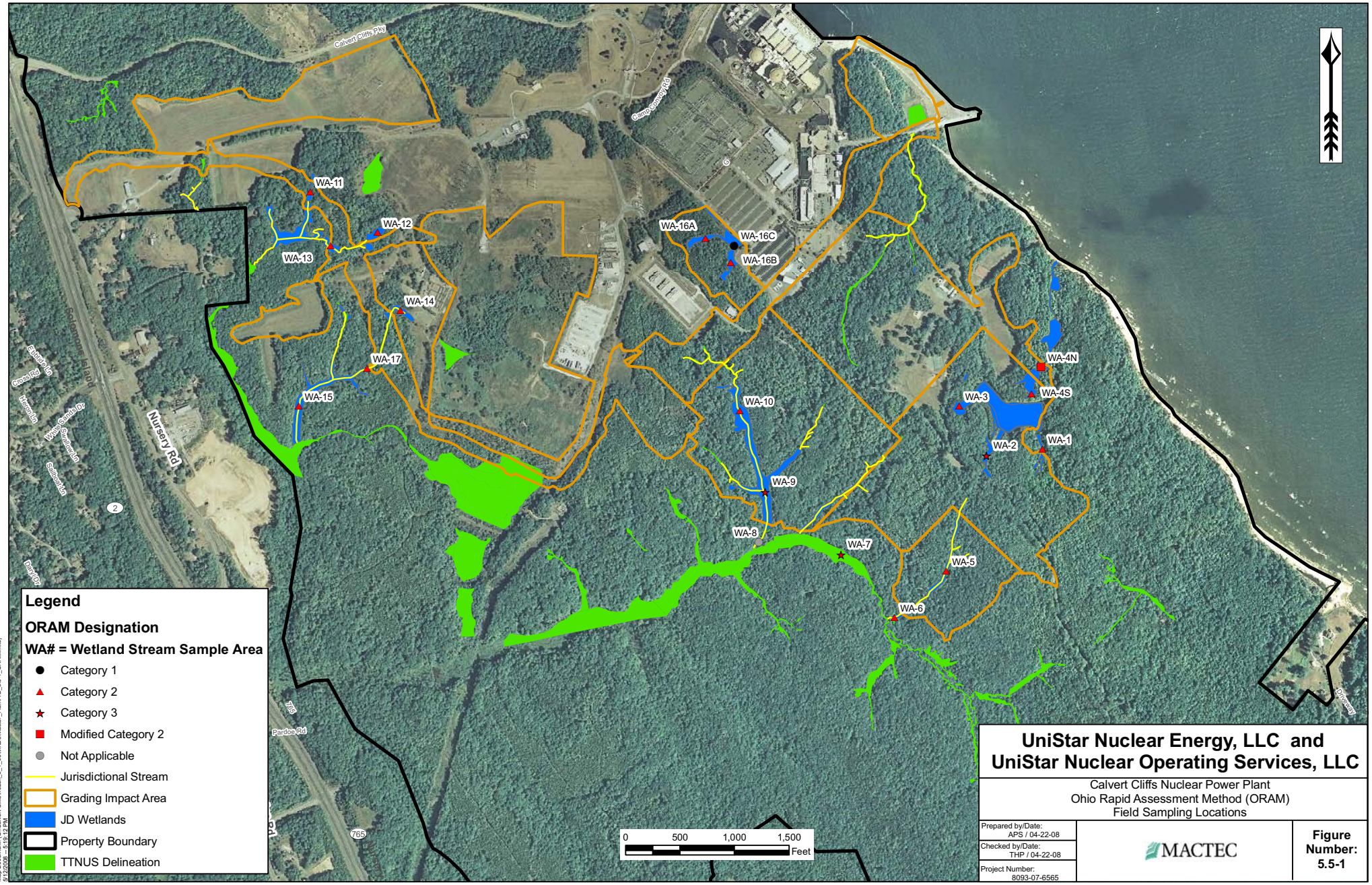
Calvert Cliffs Nuclear Power Plant
Jurisdictional Wetland & Stream Map

Prepared by/Date: FAC / 04-22-08
Checked by/Date: THP / 04-22-08
Project Number: 8093-07-6565

MACTEC

Figure Number: 5.4-1

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_5.4-1_Wetland_Delineation_JD_MAP.mxd)
5/9/2008 -- 12:20:47 PM

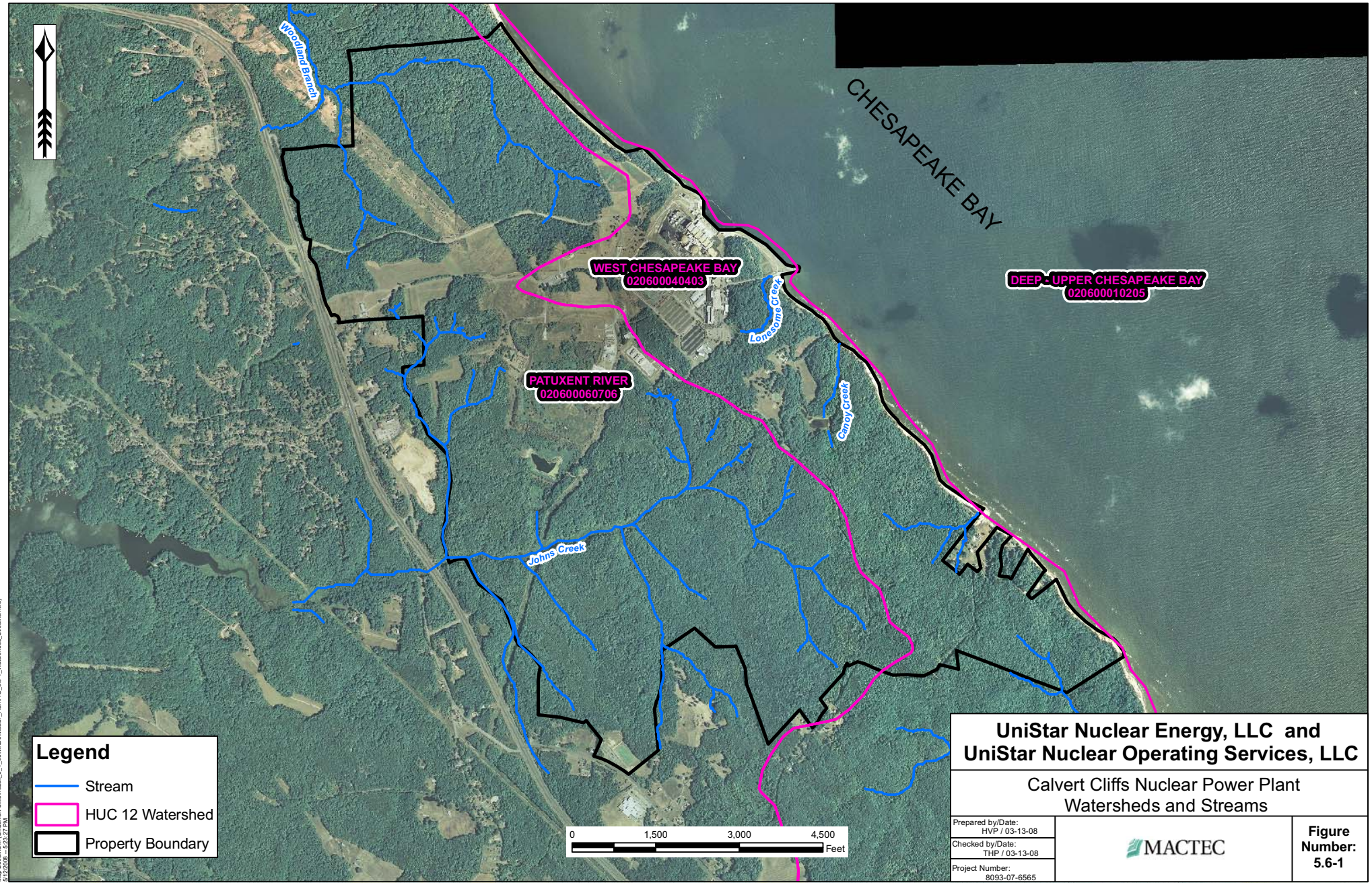


Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_5.5-1_ORAM.mxd)
5/12/2008 -- 5:19:12 PM

UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Ohio Rapid Assessment Method (ORAM)
Field Sampling Locations

Prepared by/Date: APS / 04-22-08	MACTEC	Figure Number: 5.5-1
Checked by/Date: THP / 04-22-08		
Project Number: 8093-07-6565		

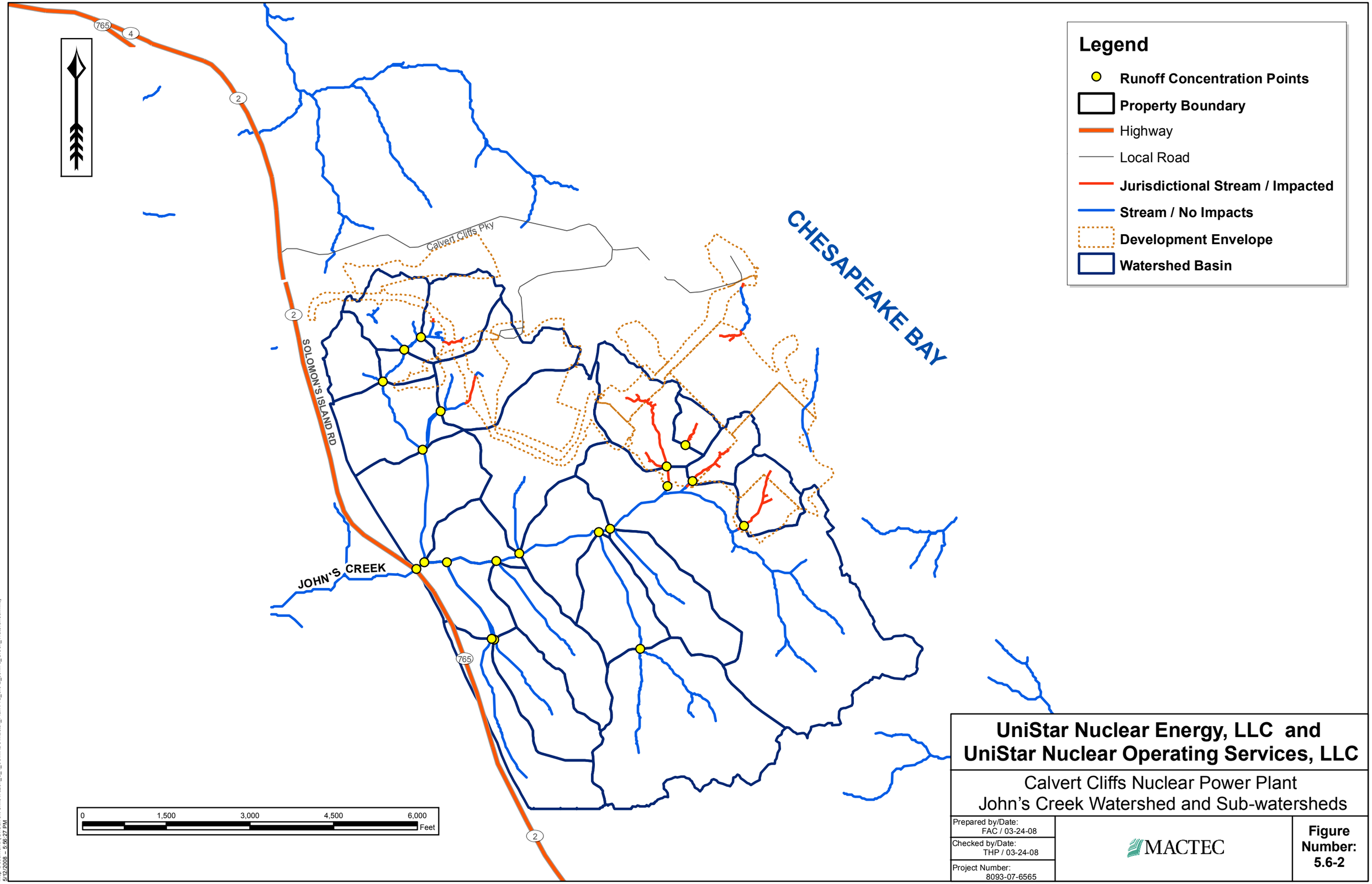


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Watersheds and Streams

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 5.6-1
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_5.6-1_Watersheds_Streams.mxd)
5/12/2008 -- 5:23:27 PM



UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

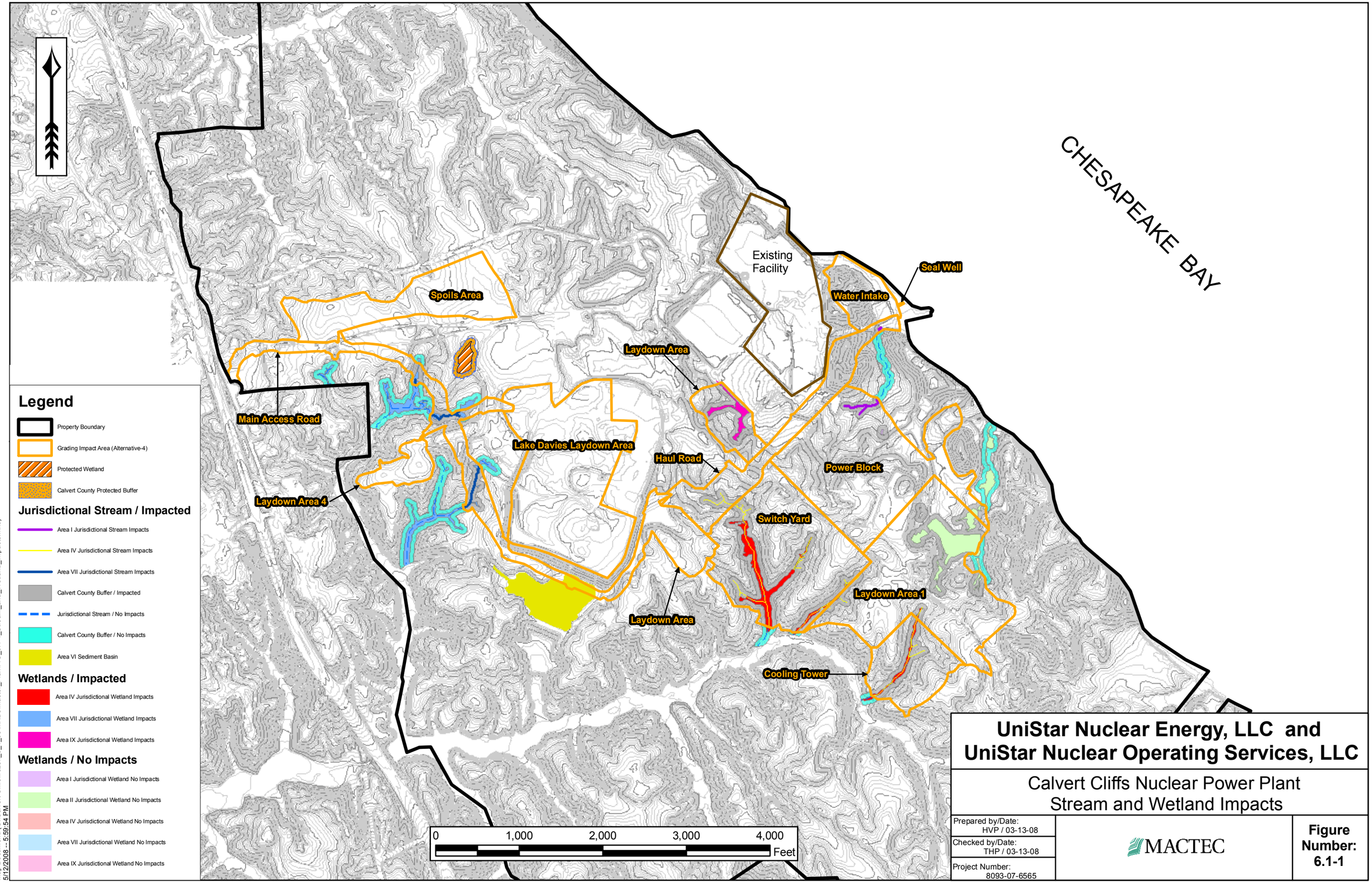
Calvert Cliffs Nuclear Power Plant
John's Creek Watershed and Sub-watersheds

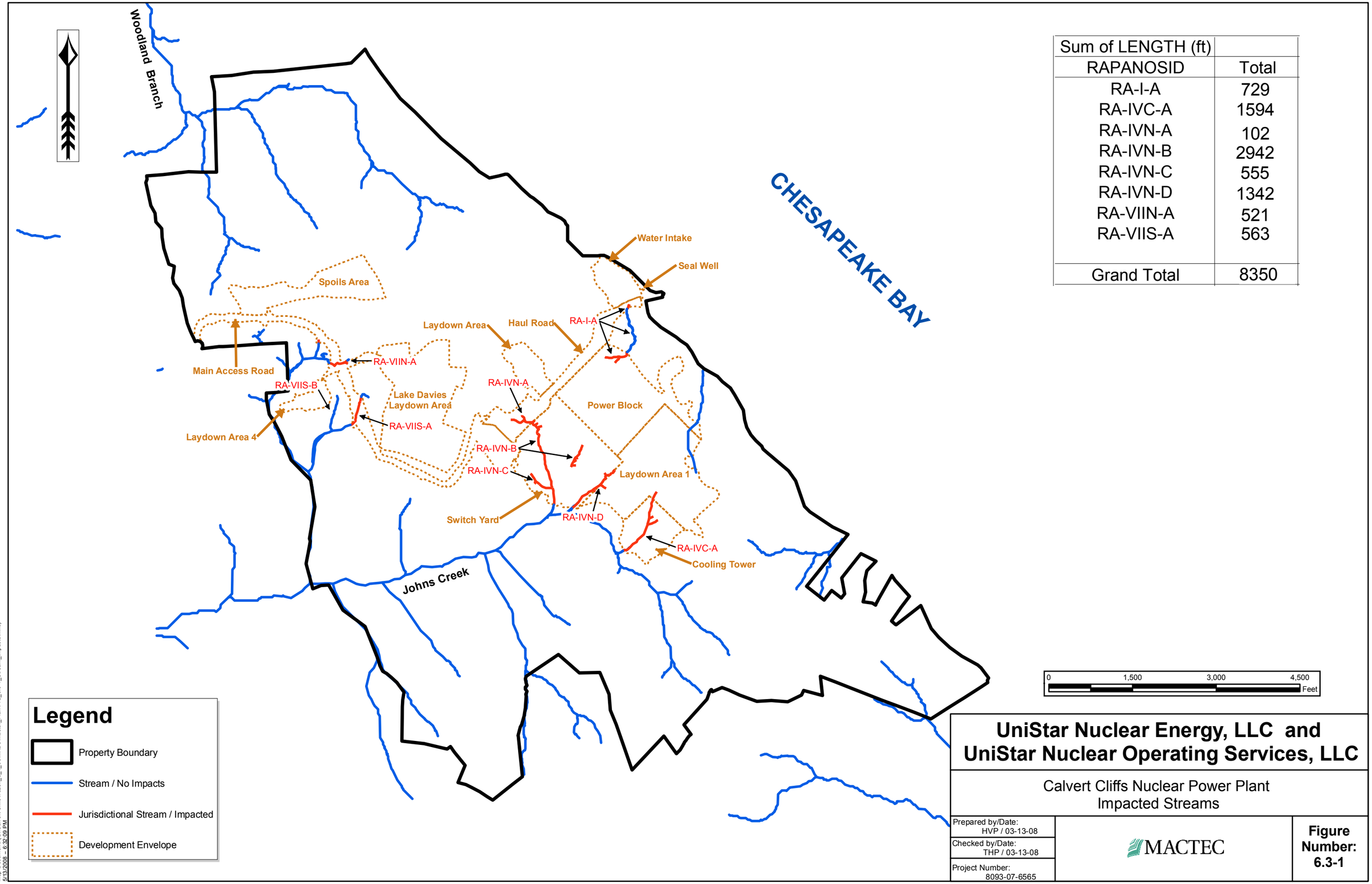
Prepared by/Date: FAC / 03-24-08
Checked by/Date: THP / 03-24-08
Project Number: 8093-07-6565

MACTEC

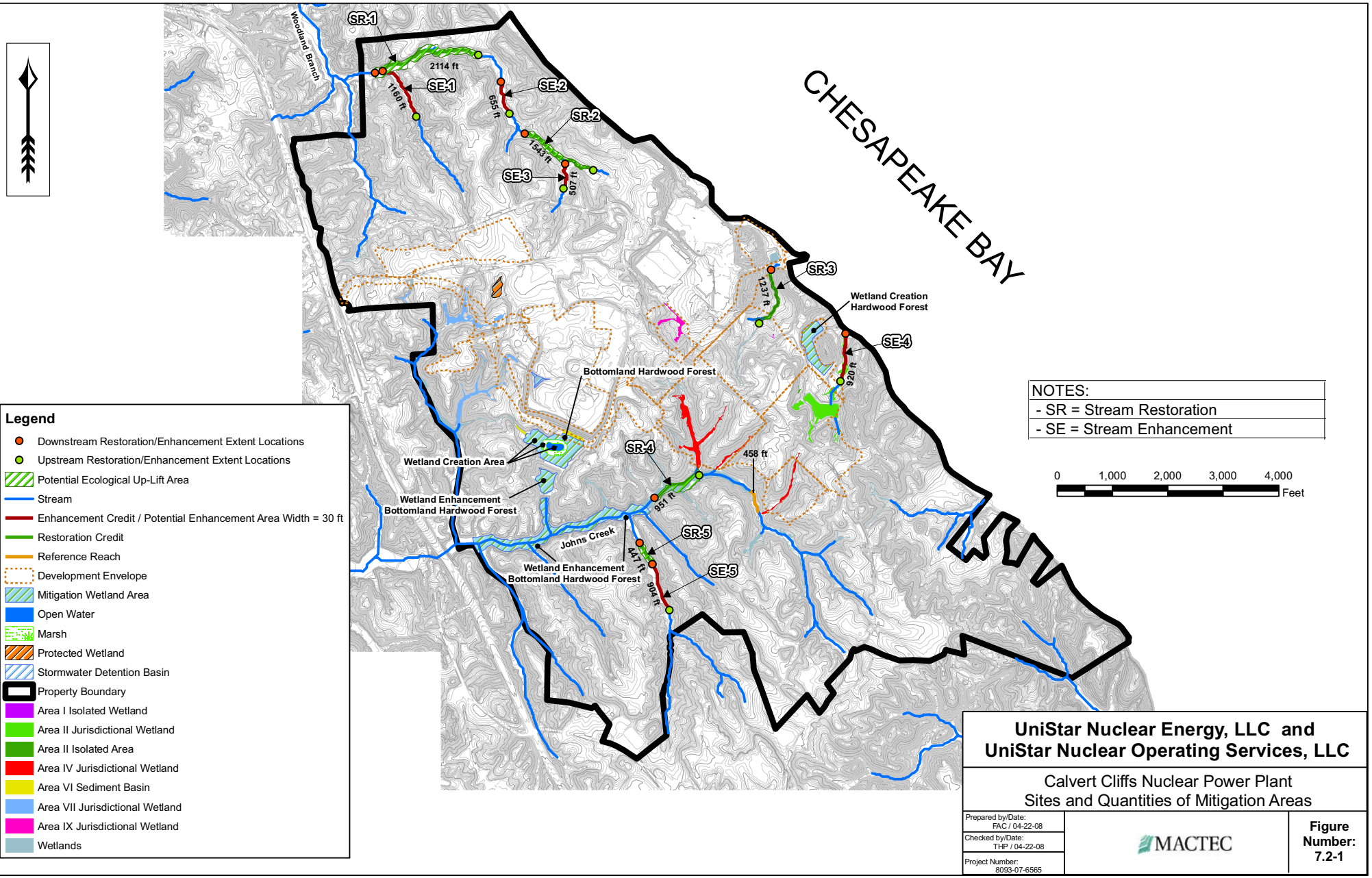
Figure Number: 5.6-2

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_5.6-2_John's_Creek_Watershed.mxd)
5/12/2008 -- 5:56:27 PM


CHESAPEAKE BAY
Existing Facility
Seal Well
Water Intake
Spoils Area
Laydown Area
Main Access Road
Lake Davies Laydown Area
Haul Road
Power Block
Laydown Area 4
Switch Yard
Laydown Area 1
Laydown Area
Cooling Tower
Legend
Property Boundary
Grading Impact Area (Alternative-4)
Protected Wetland
Calvert County Protected Buffer
Jurisdictional Stream / Impacted
Area I Jurisdictional Stream Impacts
Area IV Jurisdictional Stream Impacts
Area VII Jurisdictional Stream Impacts
Calvert County Buffer / Impacted
Jurisdictional Stream / No Impacts
Calvert County Buffer / No Impacts
Area VI Sediment Basin
Wetlands / Impacted
Area IV Jurisdictional Wetland Impacts
Area VII Jurisdictional Wetland Impacts
Area IX Jurisdictional Wetland Impacts
Wetlands / No Impacts
Area I Jurisdictional Wetland No Impacts
Area II Jurisdictional Wetland No Impacts
Area IV Jurisdictional Wetland No Impacts
Area VII Jurisdictional Wetland No Impacts
Area IX Jurisdictional Wetland No Impacts
0
1,000
2,000
3,000
4,000
Feet
UniStar Nuclear Energy, LLC and
UniStar Nuclear Operating Services, LLC
Calvert Cliffs Nuclear Power Plant
Stream and Wetland Impacts
Prepared by/Date:
HVP / 03-13-08
Checked by/Date:
THP / 03-13-08
Project Number:
8093-07-6565
MACTEC
Figure Number:
6.1-1
Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_6.1-1_Stream_and_Wetland_Impacts.mxd)
5/12/2008 -- 5:59:54 PM



Sum of LENGTH (ft)	
RAPANOSID	Total
RA-I-A	729
RA-IVC-A	1594
RA-IVN-A	102
RA-IVN-B	2942
RA-IVN-C	555
RA-IVN-D	1342
RA-VIIN-A	521
RA-VIIS-A	563
Grand Total	8350

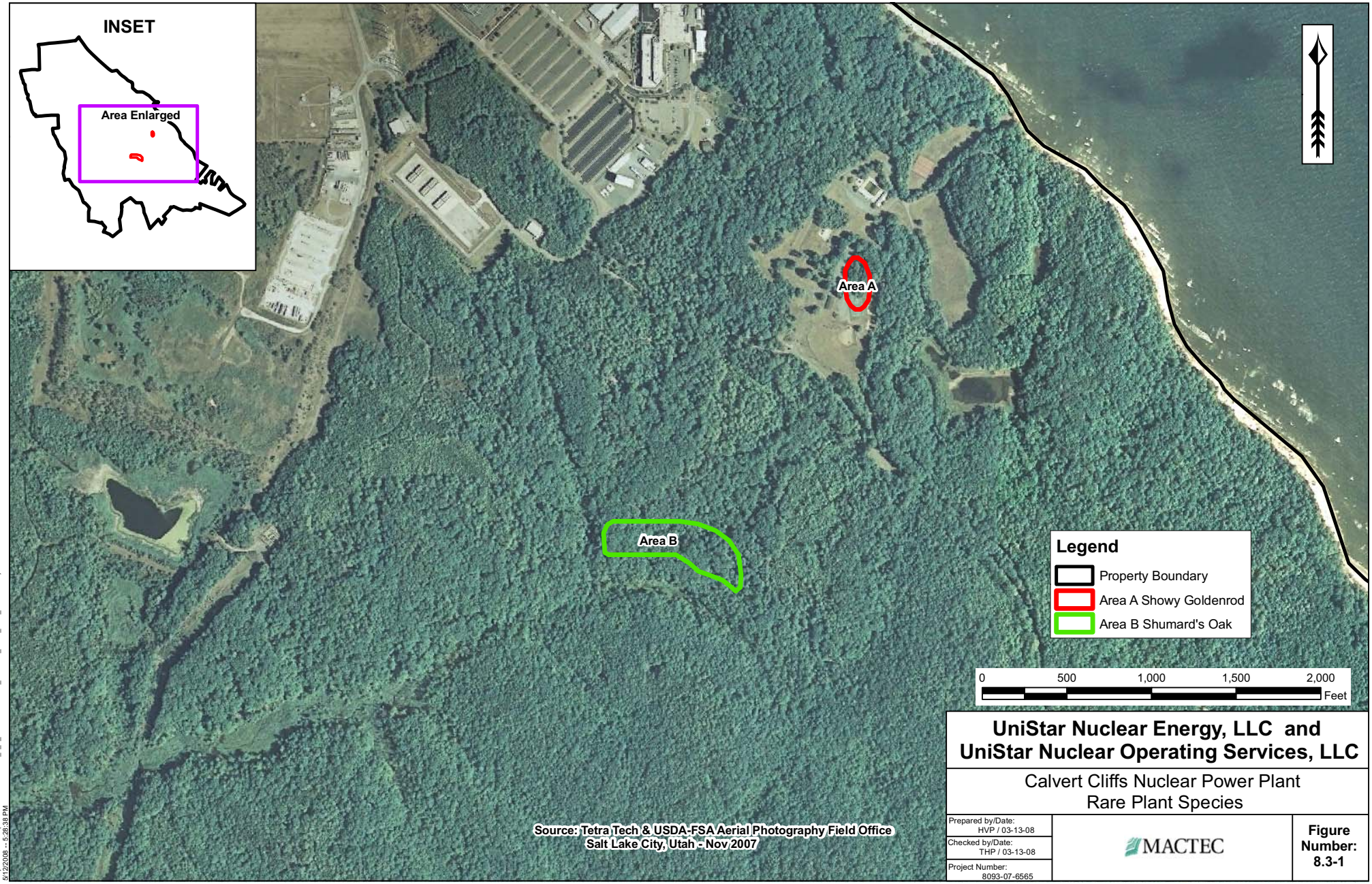


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Sites and Quantities of Mitigation Areas

Prepared by/Date: FAC / 04-22-08	MACTEC	Figure Number: 7.2-1
Checked by/Date: THP / 04-22-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_7.2-1_Stream_Mitigation_Map_11X17.mxd)
5/12/2008 -- 6:08:34 PM

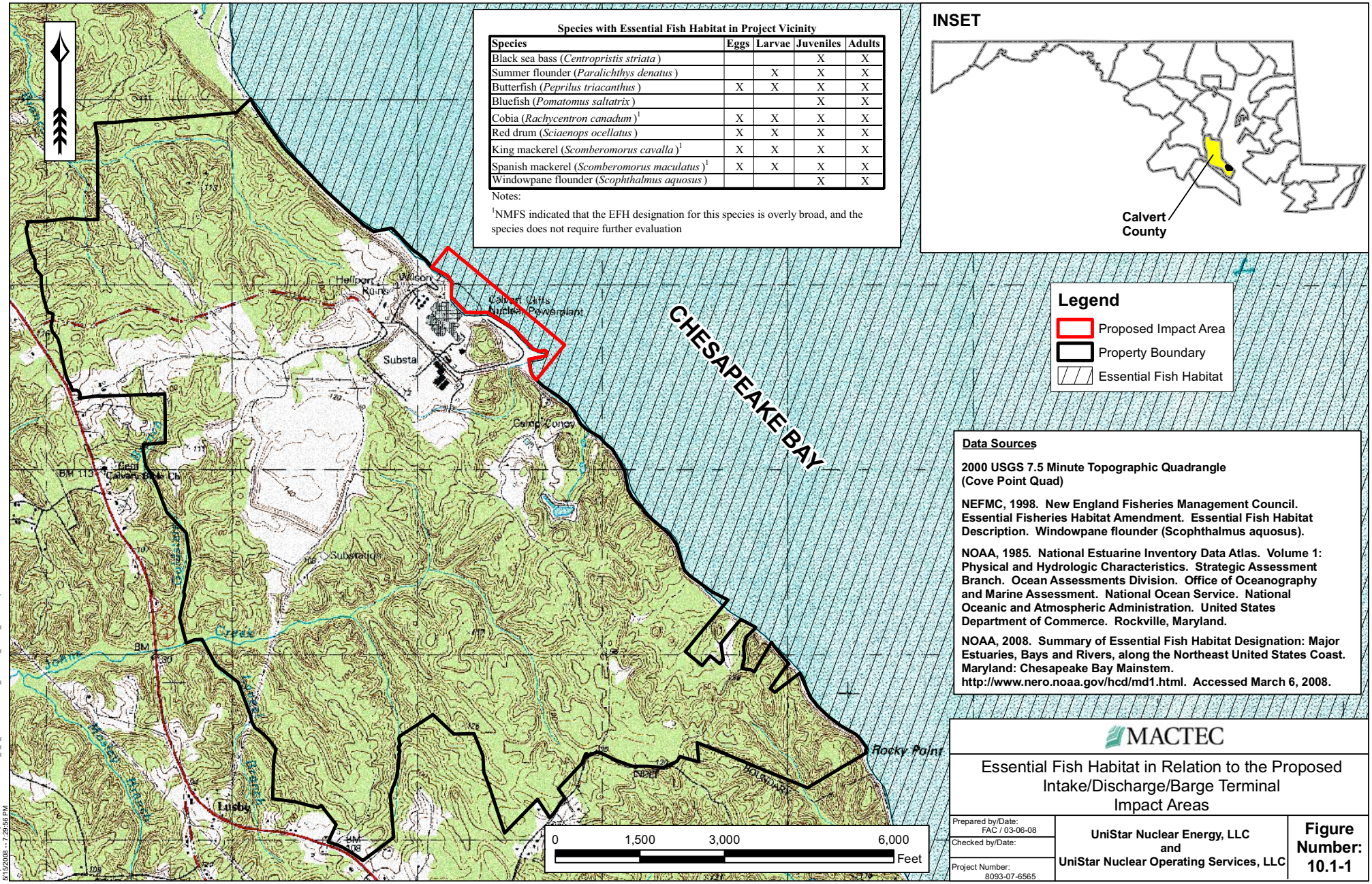


UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Calvert Cliffs Nuclear Power Plant
Rare Plant Species

Prepared by/Date: HVP / 03-13-08	MACTEC	Figure Number: 8.3-1
Checked by/Date: THP / 03-13-08		
Project Number: 8093-07-6565		

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_8.3-1_Rare_Plants.mxd)
5/12/2008 -- 5:28:38 PM



Species with Essential Fish Habitat in Project Vicinity

Species	Eggs	Larvae	Juveniles	Adults
Black sea bass (*Centropristis striata*)			X	X
Summer flounder (*Paralichthys denatus*)		X	X	X
Butterfish (*Peprilus triacanthus*)	X	X	X	X
Bluefish (*Pomatomus saltatrix*)			X	X
Cobia (*Rachycentron canadum*)[1]	X	X	X	X
Red drum (*Sciaenops ocellatus*)	X	X	X	X
King mackerel (*Scomberomorus cavalla*)[1]	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)[1]	X	X	X	X
Windowpane flounder (*Scophthalmus aquosus*)			X	X

Notes:

[1]NMFS indicated that the EFH designation for this species is overly broad, and the species does not require further evaluation

Data Sources

2000 USGS 7.5 Minute Topographic Quadrangle (Cove Point Quad)

NEFMC, 1998. New England Fisheries Management Council. Essential Fisheries Habitat Amendment. Essential Fish Habitat Description. Windowpane flounder (Scophthalmus aquosus).

NOAA, 1985. National Estuarine Inventory Data Atlas. Volume 1: Physical and Hydrologic Characteristics. Strategic Assessment Branch. Ocean Assessments Division. Office of Oceanography and Marine Assessment. National Ocean Service. National Oceanic and Atmospheric Administration. United States Department of Commerce. Rockville, Maryland.

NOAA, 2008. Summary of Essential Fish Habitat Designation: Major Estuaries, Bays and Rivers, along the Northeast United States Coast. Maryland: Chesapeake Bay Mainstem. http://www.nero.noaa.gov/hcd/md1.html. Accessed March 6, 2008.

MACTEC

Essential Fish Habitat in Relation to the Proposed Intake/Discharge/Barge Terminal Impact Areas

Prepared by/Date: FAC / 03-06-08

Checked by/Date:

Project Number: 8093-07-6565

UniStar Nuclear Energy, LLC and UniStar Nuclear Operating Services, LLC

Figure Number: 10.1-1

Map Document: (G:\Calvert Cliffs\frozen_5_1_08\MXDs\Master_Plan\FIG_10.1-1_EFH.mxd)
5/15/2008 -- 7:29:56 PM