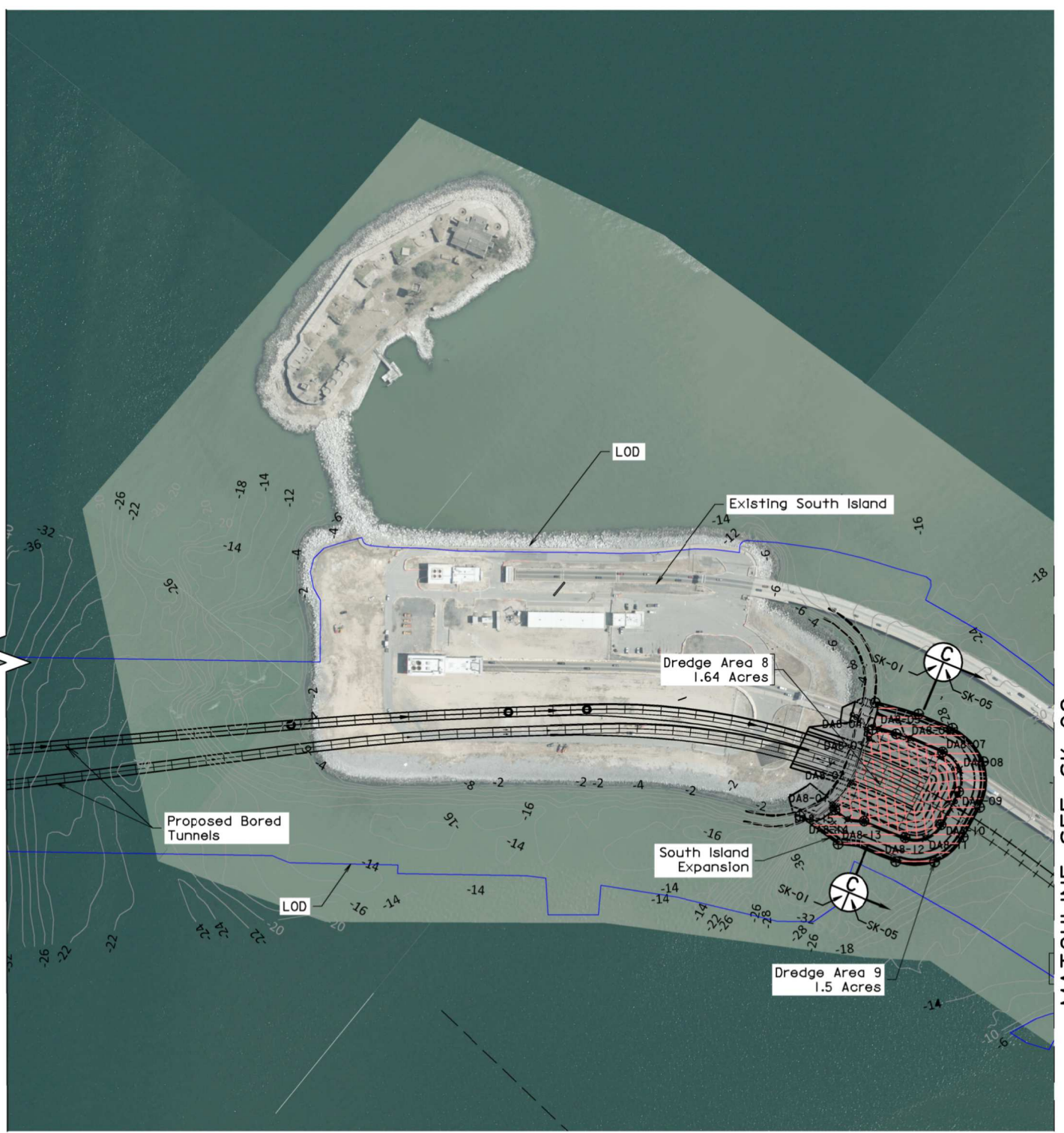
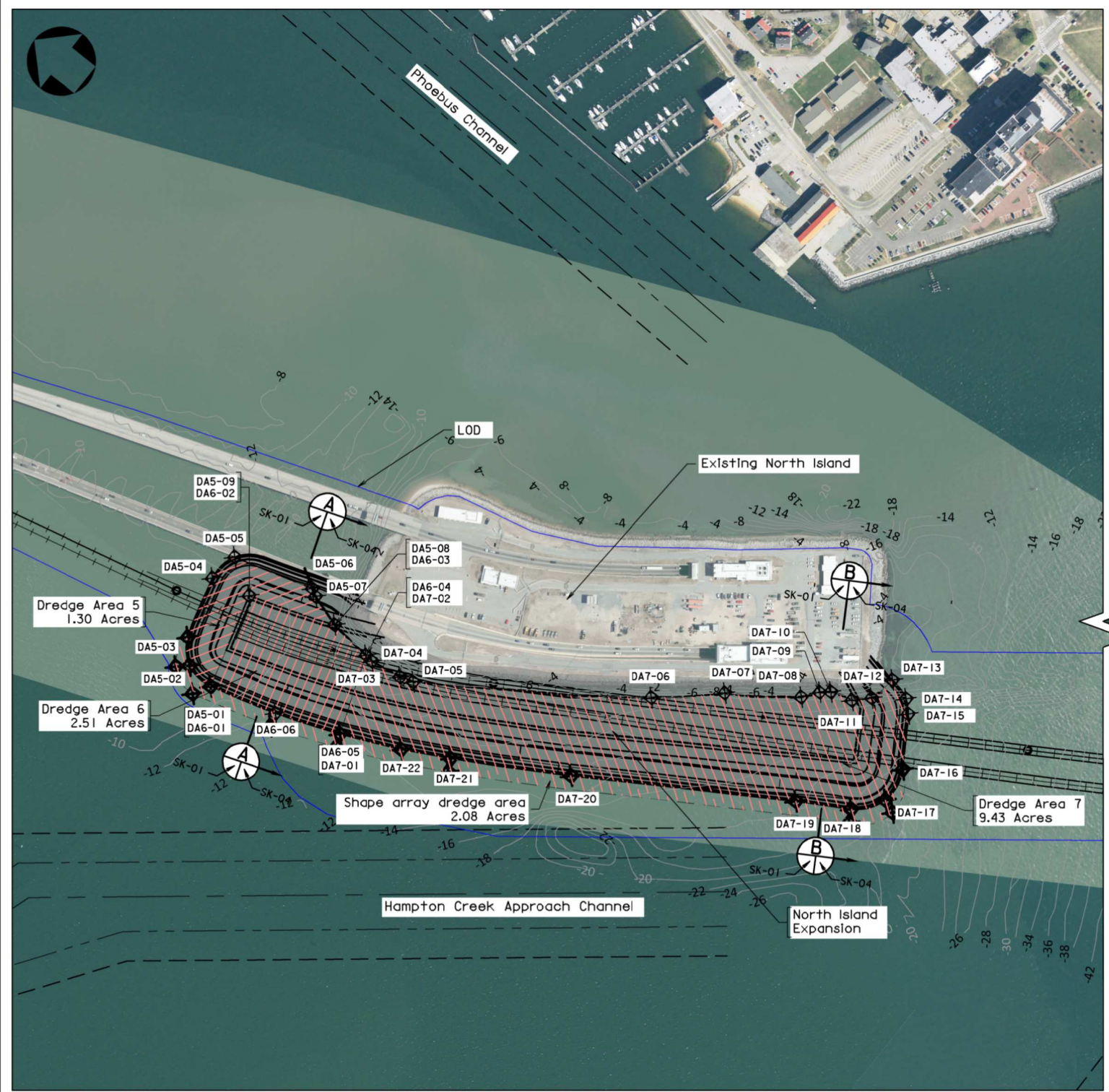


**ATTACHMENT L-4: DREDGING  
PLANS - ALL AREAS**

STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NHPP-5A03(992)	64	0064-M06-033-501,XXX	



MATCHLINE SEE SK-02

**NORTH AND SOUTH ISLAND EXPANSIONS - DREDGE PLAN**  
Scale: 1" = 400'

- NOTES:**
1. North and South Island Expansion dredge areas 5, 6, 7, 8, and 9 will be dredged and replaced with clean fill to improve foundation conditions for Island expansion.
  2. For dredge area coordinates and volumes tables see sheet SK-08.
  3. For dredging cross sections see sheets SK-03, SK-04, SK-05, SK-06, SK-07, AND SK-08.

**LEGENDS:**

	DREDGE AREA 5		DREDGE AREA 7		DREDGE AREA 9
	DREDGE AREA 6		DREDGE AREA 8		SHAPE ARRAY (SETTLEMENT INSTRUMENTATION AREA)

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
ARLINGTON, VA  
STRUCTURAL ENGINEER

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/19	DG	General updates				



Designed: JG.....	DATE: September 30, 2019
Drawn: .....SW.....	
Checked: ..LP.....	

**NORTH ISLAND AND SOUTH ISLAND  
EXPANSION DREDGE PLAN**

Plan No.	Sheet No.
	SK-01

JPA\_APPX L\_DREDGE PLANS REVISIONS (SK-01).DWG

STATE	ROUTE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET NO.
VA.	—	NHPP-5A03(1992)	64	0064-M06-033-501,XXX	



SOUTH TRESTLE DREDGE PLAN - DEMOLITION AREA  
Scale: 1" = 400'

NOTES:

- FOR COORDINATE LOCATIONS AND VOLUMES FOR EACH DREDGE AREA SEE TABLES ON SHEET SK-08.
- FOR DEMOLITION AREA DREDGING CROSS SECTIONS SEE SHEETS SK-06.

LEGEND:

DREDGE AREA

PRELIMINARY PLANS  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
ARLINGTON, VA  
STRUCTURAL ENGINEER

Scale: As Shown

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/19	DG	REV Dredge areas				



Designed: DG.....	DATE: September 30, 2019
Drawn: .....SW.....	
Checked: J.P.....	

SOUTH TRESTLE  
DREDGE PLAN  
DEMOLITION AREA

Plan No.	Sheet No.
	SK-02

JPA\_APPX L\_DREDGE PLANS REVISIONS (SK-02).dwg

STATE	ROUTE	FEDERAL AID	PROJECT	ROUTE	STATE	PROJECT	SHEET NO.
VA.	—	NHPP-5A03(992)		64	0064-M06-033-501,XXX		



JPA\_APPX\_L\_DREDGE PLANS REVISIONS (SK-03).dwg

**NOTES:**

1. FOR COORDINATE LOCATIONS AND VOLUMES FOR EACH DREDGE AREA SEE TABLES ON SHEET SK-08.
2. FOR NEW CONSTRUCTION DREDGING CROSS SECTIONS SEE SHEETS SK-07 AND SK-08.

**LEGEND:**

- DREDGE AREA
- SHIP WRECK REMOVAL AREA

**SOUTH TRESTLE DREDGE PLAN - CONSTRUCTION**  
Scale: 1" = 200'

Scale: As Shown

PRELIMINARY PLANS  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
ARLINGTON, VA  
STRUCTURAL ENGINEER

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/19	DG	New drawing.				

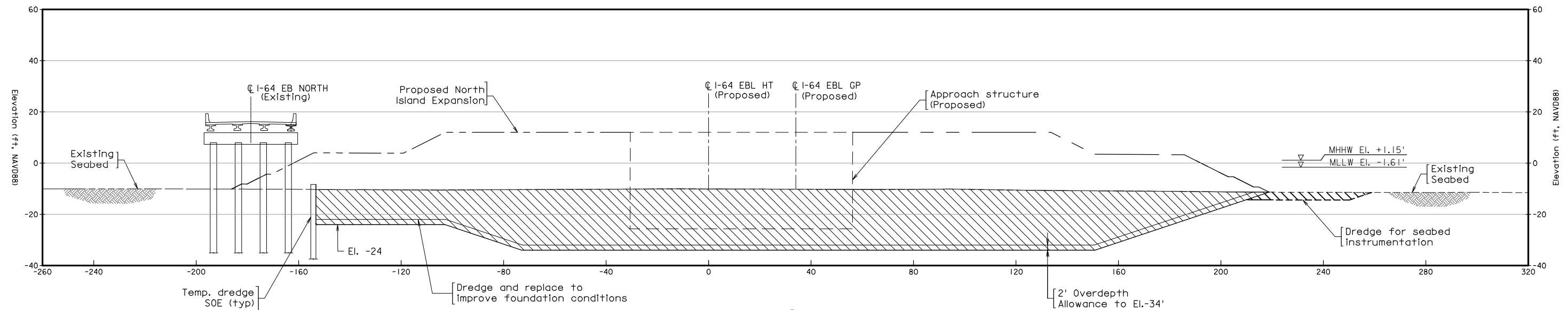


Designed: DG.....	DATE: September 30, 2019
Drawn: .....NW.....	
Checked: ..LP.....	

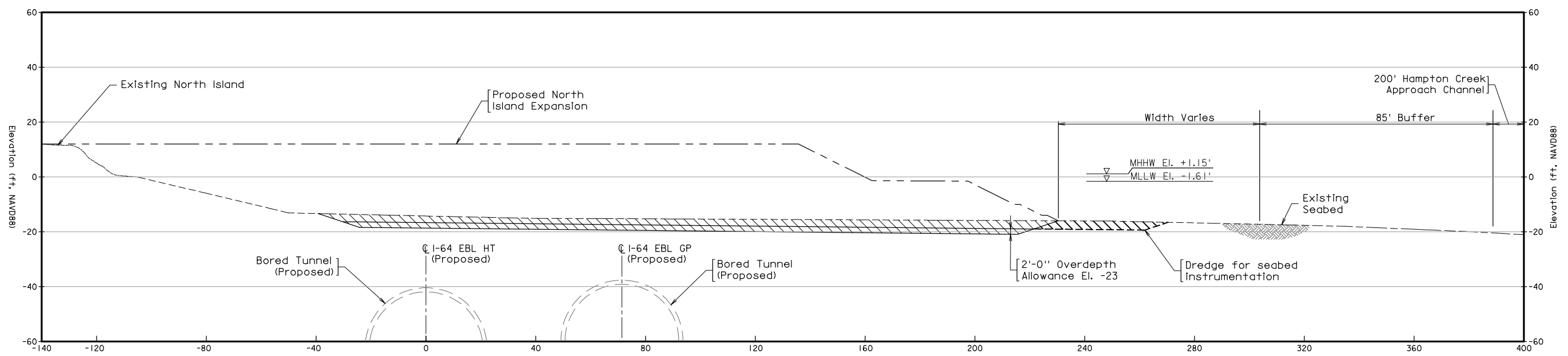
**SOUTH TRESTLE  
DREDGE PLAN  
CONSTRUCTION AREA**

Plan No.	Sheet No.
	SK-03

STATE	FEDERAL AID	STATE	SHEET NO.
VA.	PROJECT	ROUTE	PROJECT
	NHPP-5A03(1992)	64	0064-M06-033-501,XXX



**SECTION A**  
 SK-01 — SK-04  
 NORTH ISLAND EXPANSION DREDGE SECTION  
 Scale: 1" = 40'



**SECTION B**  
 SK-01 — SK-04  
 NORTH ISLAND EXPANSION DREDGE SECTION  
 Scale: 1" = 40'

**LEGEND:**  
 Dredge Area

**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION OR THE  
 ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
 ARLINGTON, VA  
 STRUCTURAL ENGINEER

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/19	DG	General Updates				



Designed: DG.....	DATE: September 30, 2019
Drawn: .....SW.....	
Checked: .J.P.....	

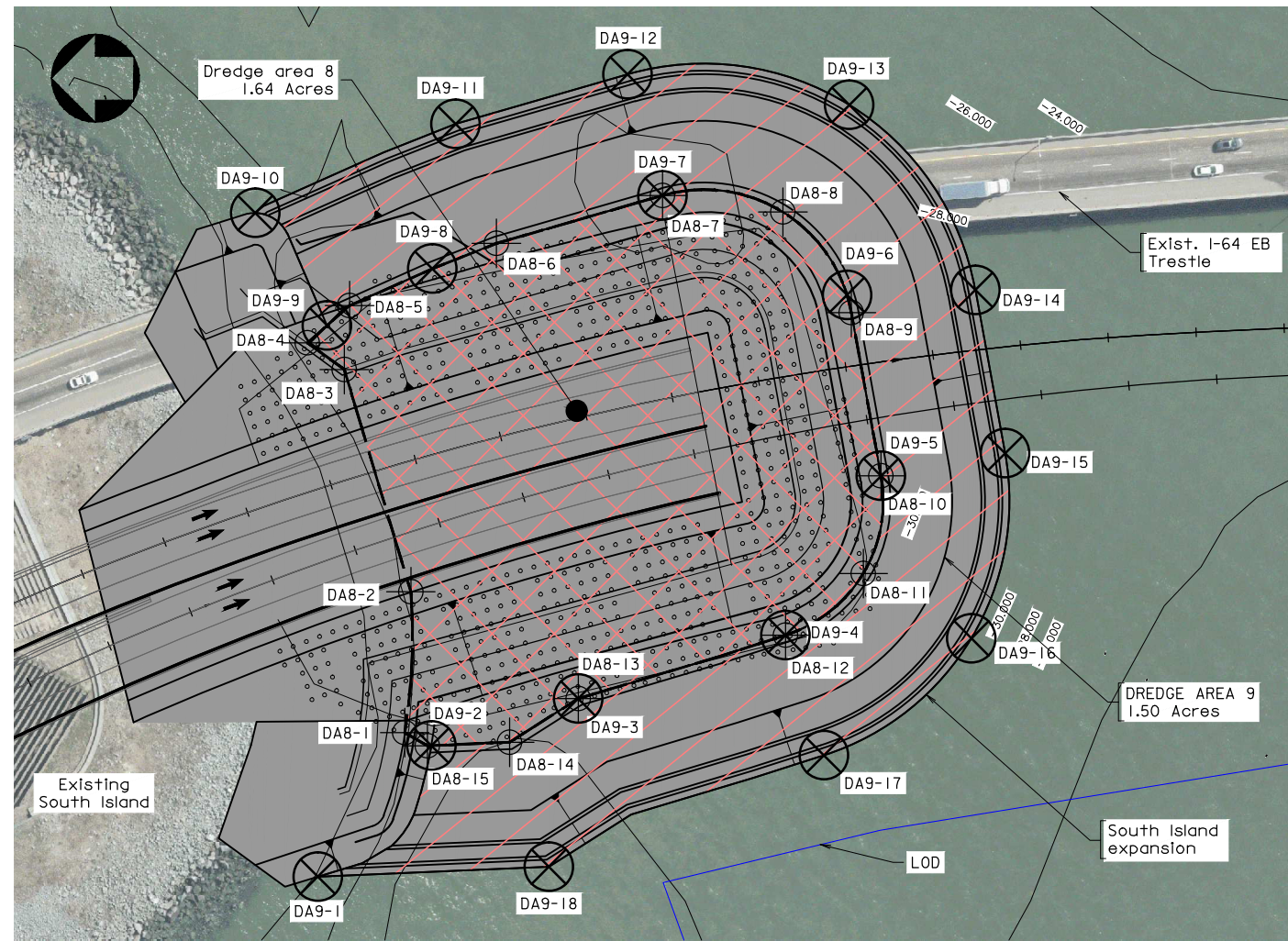
**NORTH ISLAND EPANSIONS  
 AND DREDGE SECTIONS**

Plan No.	Sheet No.
	SK-04

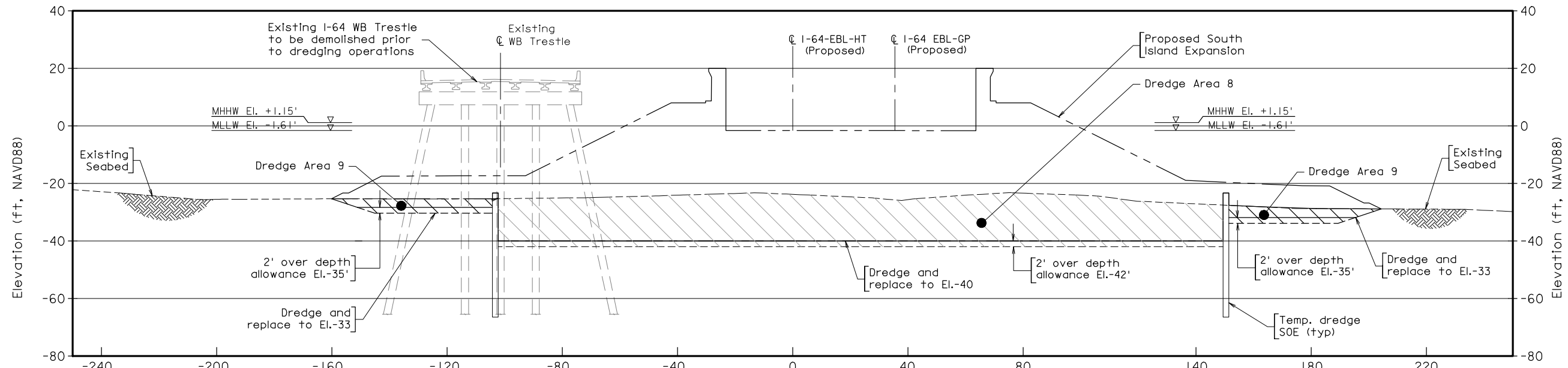
JFA\_APPX L\_DREDGE PLANS REVISIONS (SK-04).dwg

Scale: As shown

STATE	FEDERAL AID	STATE	SHEET
ROUTE	PROJECT	ROUTE	NO.
VA.	NHPP-5A03(992)	64	0064-M06-033-501,XXX



**SOUTH ISLAND EXPANSIONS - DREDGE AREA PLAN**  
Scale: 1" = 100'



LEGEND:

DREDGE AREA

NOTE:

(1) SEE SHEET SK-08 FOR DREDGE COORDINATE AND VOLUME TABLES.

**SECTION C**  
SK-01 — SK-05  
South Island Expansion Dredge Section  
Scale: 1" = 40'  
Scale: As Shown

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
ARLINGTON, VA  
STRUCTURAL ENGINEER

JPA\_APPX L\_DREDGE PLANS REVISIONS(SK-05).dwg

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/19	DG	General Updates				

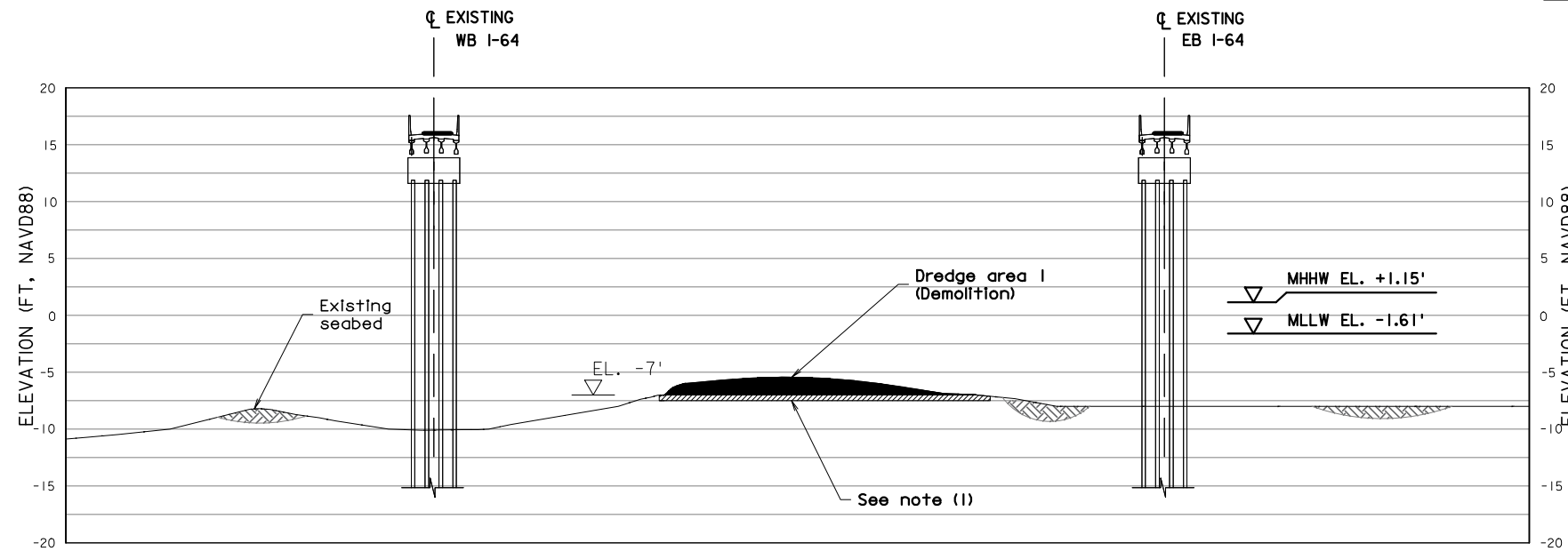


Designed: NS...	STRUCTURE AND BRIDGE DIVISION
Drawn: .....NW...	DATE: September...30, 2019
Checked: ...LP...	

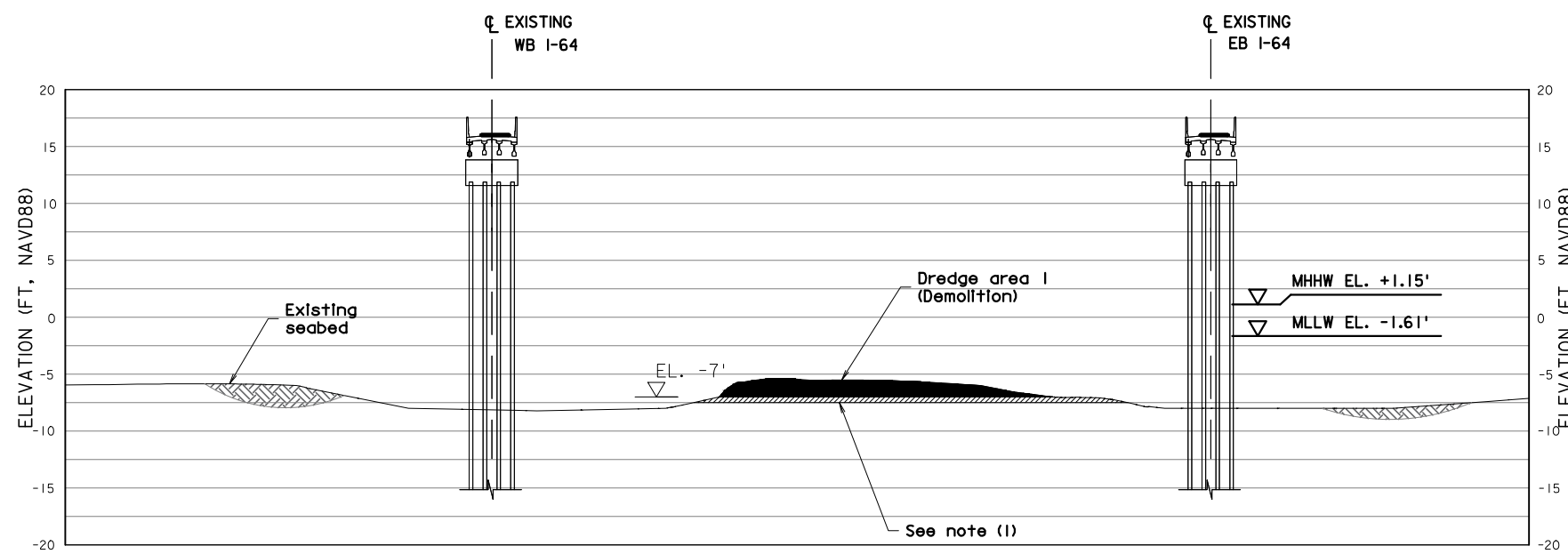
**SOUTH ISLAND AND EXPANSION  
DREDGE SECTION**

Plan No.	Sheet No.
	SK-05

STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-5A03(992)	64	0064-M06-033-501,XXX



SECTION **D**  
SK-02 — SK-06  
SOUTH TRESTLE DREDGE SECTION  
Scale: 1" = 60'



SECTION **E**  
SK-02 — SK-06  
SOUTH TRESTLE DREDGE SECTION  
Scale: 1" = 60'

NOTE:  
(1) 0.5 FT OVERDREDGE ALLOWANCE

**PRELIMINARY PLANS**  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
ARLINGTON, VA  
STRUCTURAL ENGINEER

Scale: AS SHOWN

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/2019	DG	General Updates				



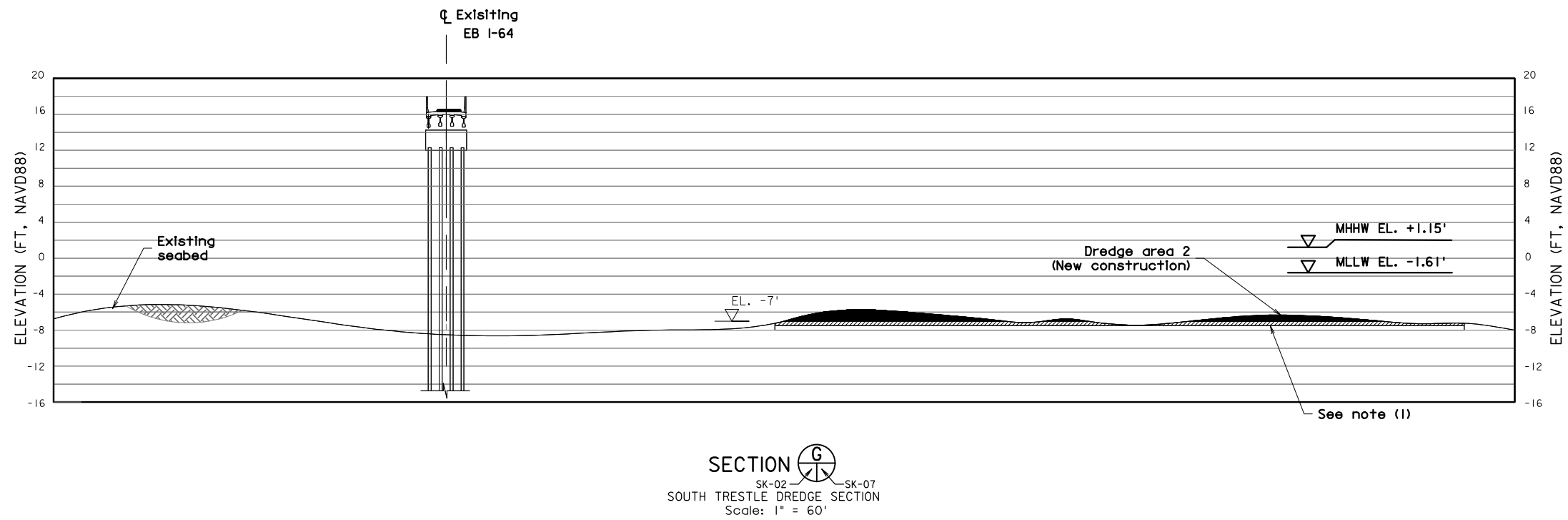
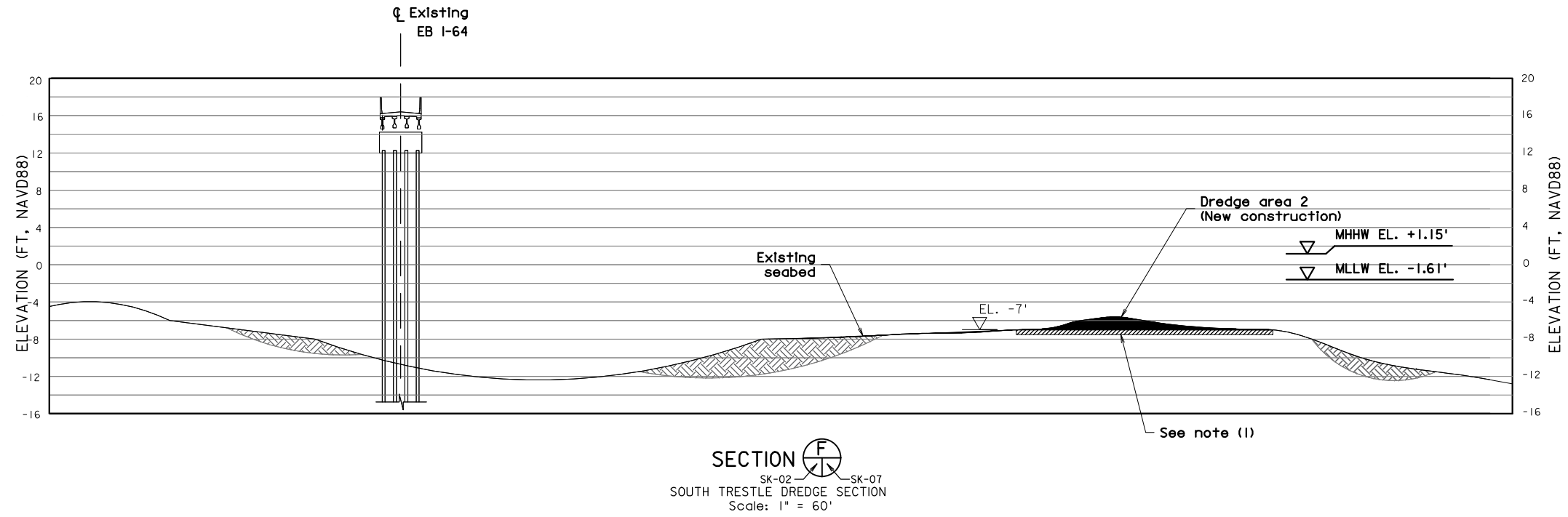
Designed: NW.....	DATE: September 30, 2019
Drawn: SW.....	
Checked: DG.....	

**SOUTH TRESTLE  
DEMOLITION DREDGE SECTIONS**

Plan No.	Sheet No.
	SK-06

JPA\_APPX L\_DREDGE PLANS REVISIONS (SK-06 - 07).dwg

STATE	FEDERAL AID	STATE	SHEET NO.
ROUTE	PROJECT	ROUTE	PROJECT
VA.	NHPP-5A03(992)	64	0064-M06-033-501,XXX



NOTE:  
(1) 0.5 FT OVERDREDGE ALLOWANCE

PRELIMINARY PLANS  
THESE PLANS NOT TO BE USED  
FOR CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
ARLINGTON, VA  
STRUCTURAL ENGINEER

Scale: AS SHOWN

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
1	12/19/2019	DG	General Updates				

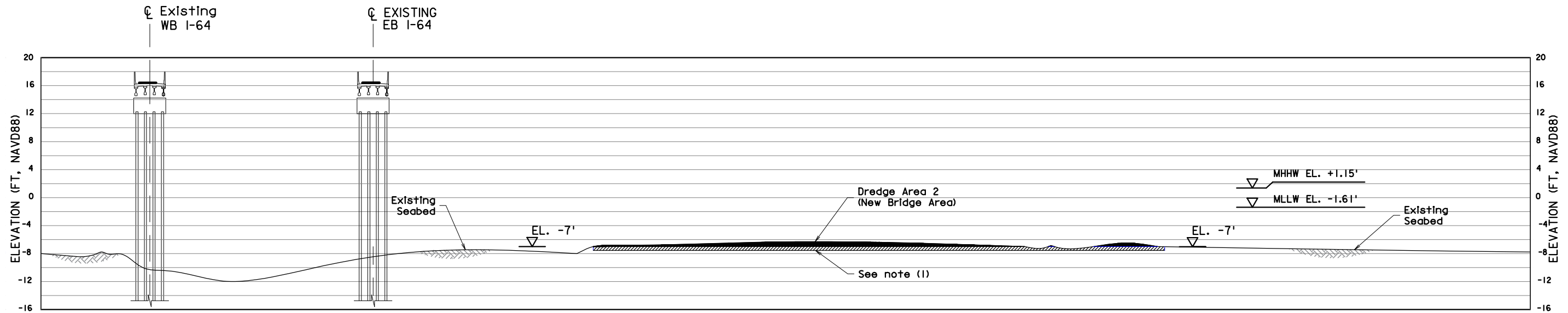


Designed: NW	DATE: September 30, 2019
Drawn: SW	
Checked: DG	

SOUTH TRESTLE  
CONSTRUCTION DREDGE SECTIONS

Plan No.	Sheet No.
	SK-07





**SECTION H**  
 SK-02 — SK-08  
 South Trestle Dredge Section  
 Scale: 1" = 30'

NOTE:  
 (I) 0.5 FT OVERDREDGE ALLOWANCE

DREDGE AREA 1 - South Trestle Demolition		
Location	Northing	Easting
DA1-01	3523412.78	12125180.78
DA1-02	3523089.34	12125357.00
DA1-03	3522643.64	12125415.08
DA1-04	3522157.74	12125472.21
DA1-05	3521766.63	12125497.02
DA1-06	3521515.65	12125509.34
DA1-07	3521210.47	12125513.35
DA1-08	3520796.61	12125484.95
DA1-09	3520545.69	12125451.46
DA1-10	3520562.48	12125403.53
DA1-11	3520703.24	12125389.40
DA1-12	3520939.97	12125367.68
DA1-13	3521165.35	12125346.27
DA1-14	3521469.45	12125324.61
DA1-15	3521789.52	12125356.58
DA1-16	3522176.31	12125328.15
DA1-17	3522462.36	12125285.66
DA1-18	3522990.43	12125250.97
Area (sf):	382021.66	
Area (acres):	8.77	

DREDGE AREA 2 - South Trestle NEW Construction		
Location	Northing	Easting
DA2-01	3523555.85	12124592.36
DA2-02	3523378.79	12124899.76
DA2-03	3523110.62	12124890.41
DA2-04	3522669.87	12124992.06
DA2-05	3522199.39	12125063.30
DA2-06	3521648.86	12125180.45
DA2-07	3521421.89	12125225.38
DA2-08	3521086.73	12125193.74
DA2-09	3520847.10	12125162.55
DA2-10	3520496.99	12125116.51
DA2-11	3520140.52	12125267.23
DA2-12	3519666.84	12125685.78
DA2-13	3519546.53	12125465.54
DA2-14	3519614.09	12125270.64
DA2-15	3519816.24	12125294.47
DA2-16	3520101.27	12125149.67
DA2-17	3520313.48	12124988.67
DA2-18	3520625.06	12125014.75
DA2-19	3521040.53	12125061.48
DA2-20	3521030.19	12124848.48
DA2-21	3521334.17	12125090.14
DA2-22	3521672.85	12125133.67
DA2-23	3522240.19	12124962.19
DA2-24	3522646.64	12124796.35
DA2-25	3522864.15	12124845.23
DA2-26	3523099.17	12124783.48
DA2-27	3523443.69	12124623.10
Area (sf):	439808.23	
Area (acres):	10.10	

DREDGE AREA 5 - North Island Expansion		
Location	Northing	Easting
DA5-01	3532171.02	12118961.38
DA5-02	3532255.64	12118970.12
DA5-03	3532310.27	12119031.50
DA5-04	3532360.94	12119208.81
DA5-05	3532348.60	12119296.18
DA5-06	3532116.99	12119364.77
DA5-07	3532095.72	12119352.20
DA5-08	3532001.70	12119322.27
DA5-09	3532246.94	12119234.72
Area (sf):	56845.28	
Area (acres):	1.30	

DREDGE AREA 6 - North Island Expansion		
Location	Northing	Easting
DA6-01	3532171.02	12118961.38
DA6-02	3532246.94	12119234.72
DA6-03	3532001.70	12119322.27
DA6-04	3531875.51	12119310.49
DA6-05	3531794.20	12119085.66
DA6-06	3531976.40	12119017.61
Area (sf):	109466.61	
Area (acres):	2.51	

DREDGE AREA 7 - North Island Expansion		
Location	Northing	Easting
DA7-01	3531794.20	12119085.66
DA7-02	3531875.51	12119310.49
DA7-03	3531850.73	12119308.55
DA7-04	3531759.33	12119323.75
DA7-05	3531720.77	12119336.10
DA7-06	3531155.13	12119727.25
DA7-07	3530998.33	12119868.74
DA7-08	3530818.83	12119996.74
DA7-09	3530785.63	12120040.64
DA7-10	3530760.53	12120062.14
DA7-11	3530696.93	12120081.94
DA7-12	3530656.63	12120122.24
DA7-13	3530642.44	12120199.75
DA7-14	3530578.11	12120181.87
DA7-15	3530546.02	12120151.32
DA7-16	3530459.19	12120016.31
DA7-17	3530442.67	12119916.29
DA7-18	3530503.21	12119834.97
DA7-19	3530644.35	12119751.76
DA7-20	3531196.04	12119407.08
DA7-21	3531498.56	12119230.69
DA7-22	3531626.84	12119162.03
Area (sf):	410705.31	
Area (acres):	9.43	

DREDGE AREA 8 - South Island Expansion		
Location	Northing	Easting
DA8-01	3524340.50	12124854.48
DA8-02	3524337.02	12124854.48
DA8-03	3524374.78	12124980.66
DA8-04	3524395.76	12124995.84
DA8-05	3524371.78	12125016.98
DA8-06	3524288.42	12125052.26
DA8-07	3524194.15	12125079.50
DA8-08	3524125.77	12125070.08
DA8-09	3524086.93	12125013.03
DA8-10	3524070.08	12124920.31
DA8-11	3524080.19	12124864.85
DA8-12	3524124.36	12124829.83
DA8-13	3524241.98	12124793.85
DA8-14	3524280.93	12124769.08
DA8-15	3524327.66	12124767.06
Area (sf):	71406.31	
Area (acres):	1.64	

SHIP WRECK DEBRIS REMOVAL AREA		
Location	Northing	Easting
AVR-01	3519373.47	12126058.78
AVR-02	3519069.45	12126096.42
AVR-03	3518941.62	12126188.28
AVR-04	3518887.33	12126144.61
AVR-05	3519031.82	12126039.20
AVR-06	3519459.26	12125957.89
Area (sf):	38879.59	
Area (acres):	0.89	

DREDGE AREA 9 - South Island Expansion		
Location	Northing	Easting
DA9-01	12124793.85	3524241.98
DA9-02	12124829.83	3524124.36
DA9-03	12124920.31	3524070.09
DA9-04	12125023.78	3524086.93
DA9-05	12125079.50	3524194.15
DA9-06	12125037.94	3524324.79
DA9-07	12125005.72	3524384.57
DA9-08	12125069.57	3524425.29
DA9-09	12125120.12	3524311.54
DA9-10	12125148.29	3524214.03
DA9-11	12125130.94	3524088.05
DA9-12	12125025.83	3524016.48
DA9-13	12124933.11	3523999.64
DA9-14	12124828.02	3524018.79
DA9-15	12124761.65	3524102.49
DA9-16	12124698.37	3524258.69
DA9-17	12124635.08	3524414.89
DA9-18	12124571.80	3524571.09
Area (sf):	65444.88	
Area (acres):	1.50	

North Island - Shape Array		
Location	Northing	Easting
SA-01	12119031.50	3532310.27
SA-02	12118970.12	3532255.64
SA-03	12118961.38	3532171.02
SA-04	12118979.58	3531963.98
SA-05	12119085.66	3531794.20
SA-06	12119162.03	3531626.84
SA-07	12119230.69	3531498.56
SA-08	12119407.08	3531196.04
SA-09	12119751.76	3530644.35
SA-10	12119834.97	3530503.21
SA-11	12119916.29	3530442.67
SA-12	12120016.31	3530459.19
SA-13	12119901.00	3530404.30
SA-14	12119800.44	3530483.02
SA-15	12119195.63	3531479.31
SA-16	12119048.78	3531778.69
SA-17	12118912.56	3532198.19
SA-18	12118943.68	3532284.32
Area (sf):	90453.96	
Area (acres):	2.08	

Location	Area	Depth NAVD 88	Volume (in situ) Cubic yards
North Island Expansion	577,017 SF 13.25 acres	-34 ft	112,225
North Island Shape Array	90,454 SF 2.08 acres	-23 ft	20,101
South Island Expansion	136,851 SF 3.14 acres	-42 ft	52,900
South Trestle (Construction Phase)	439,808 SF 10.10 acres	-7.5 ft	19,550
South Trestle (Demolition phase ~2024)	382,021 SF 8.77 acres	-7.5 ft	33,957
Shipwreck Debris Removal	38,880 SF 0.89 acres	-7.5 ft	13,000

**PRELIMINARY PLANS**  
 THESE PLANS NOT TO BE USED  
 FOR CONSTRUCTION OR THE  
 ACQUISITION OF RIGHT OF WAY

MOTT MACDONALD  
 ARLINGTON, VA  
 STRUCTURAL ENGINEER

Scale: As Shown

FINAL PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH.	DESCRIPTION	NO.	DATE	AUTH.	DESCRIPTION
I	12/19/19	DG	General Updates				



Designed: NW	DATE: September 30, 2019
Drawn: SW	
Checked: LP	

**SOUTH TRESTLE DREDGE SECTION AND TABLES**

Plan No.	Sheet No.
	SK-08

JFA-APPX L-DREDGE PLANS REVISIONS (SK-08).DWG

**ATTACHMENT L-5: PORT TOBACCO  
AT WEANACK (SHIRLEY  
PLANTATION) DISPOSAL  
REQUIREMENTS**

**Attachment L-5**  
**Material Criteria for Disposal at Shirley Plantation - Sediment**

		Dredge Sediment Criteria								
PARAMETER	NJDEP (1997) Residential Soil Cleanup Criteria <sup>3</sup>	EPA Region 3 Screening Levels (EPA, 2014) <sup>4</sup>		EPA Part 503 Biosolids	USGS soil background metals <sup>5</sup>	Exclusion Criteria <sup>6</sup>	Clean Upland Fill Criteria <sup>7</sup>	VA DEQ 305 (b) Screening Criteria	More stringent of preceding two columns <sup>8</sup>	
		Industrial Soil	Residential Soil	Exceptional Quality	VA background metal levels					
<b>Metals (mg kg<sup>-1</sup>)</b>										
Aluminum	NA	110,000	7,700			NA	NA			
Antimony	14	47	3.1			410	14		14	
Arsenic	20	3.0	0.67	41	5	41	20	33	20	
Barium	700	22,000	1,500		244	19,000	700		700	
Beryllium	1	230	16		<1	2,000	160		160	
Cadmium	39	98	7	39	<0.1	810	39	4.98	4.98	
Calcium	NA	NA	NA			NA	NA			
Chromium	NA	NA	NA	0.3	23	1,200	200	111	111	
Cobalt	NA	35	2.3			300	NA			
Copper	600	4,700	310	1,500	9	4,300	1,500	149	149	
Iron	NA	82,000	5,500			150,000	150,000		150,000	
Lead	400	800	400	300	26	800	300	128	128	
Magnesium	NA	NA	NA			NA	NA			
Manganese	NA	NA	NA		295	NA	NA			
Mercury	14	12	0.78	17	0.06	100	14	1.06	1.06	
Nickel	250	1,100	82	420	9	1,000	250.0	48.6	48.6	
Potassium	NA	NA	NA			NA	NA			
Selenium	63	580	39	100		5,100	63		63	
Silver	110	580	39			5,100	110	NA	110	
Sodium	NA	NA	NA			NA	NA			
Thallium	2	NA	NA		0.5	5	1		1	
Vanadium	370	580	39			5,200	370		370	
Zinc	1,500	35,000	2,300	2,800	41	7,500	1,500	459	459	
<b>PCBS (mg kg<sup>-1</sup>)</b>										
Aroclor 1016	NA	5.2	0.4			21	NA			
Aroclor 1221	NA	0.66	0.15			0.62	NA			
Aroclor 1232	NA	0.66	0.15			0.62	NA			
Aroclor 1242	NA	1.0	0.24			0.74	NA			
Aroclor 1248	NA	1.0	0.24			0.74	NA			
Aroclor 1254	NA	1.0	0.11			0.74	NA			
Aroclor 1260	NA	1.0	0.24			0.74	NA			
Total Aroclor <sup>9</sup>	0	10.5	1.50			25.2	0.49		0.49	
Total PCBs, all congeners	0.49					NA	0.676	0.676	0.676	
<b>Pesticides (mg kg<sup>-1</sup>)</b>										
4,4'-DDD	3	9.6	2.2			7.2	3	0.028	0.028	
4,4'-DDE	2	6.8	1.6			5.1	2	0.0313	0.0313	
4,4'-DDT	2	8.6	1.9			7	2	0.0629	0.0629	
DDT, Total								0.5720	*	
Aldrin	0.04	0.14	0.031			0.11	0.04		0.04	
alpha-Chlordane	NA	NA	NA			NA	NA			
gamma-Chlordane	NA	NA	NA			NA	NA			
Chlordane	NA	8.0	1.8					0.0176	0.0176	
Chloropyrifos	NA	82.0	6.2							
delta-BHC	NA	NA	NA			NA	NA			
Diazinon	NA	58	4							
Dieldrin	0.042	0.14	0.03			0.11	0.042	0.0618	0.042	
Endosulfan	NA	490	37			3,700	NA			
alpha-Endosulfan	NA	NA	NA			NA	NA			
beta-Endosulfan	NA	NA	NA			NA	NA			
Endosulfan sulfate	NA	NA	NA			NA	NA			
Endrin	17	25	1.8			180	17	0.207	0.207	
Endrin aldehyde	NA	NA	NA			NA	NA			
Guthion		250	18							
Endrin ketone	NA	NA	NA			NA	NA			
Heptachlor	0.15	0.51	0.12			0.38	0.15		0.15	
Heptachlor epoxide	NA	0.25	0.059			0.19	NA	0.016	0.016	
alpha-BHC (Hexachlorocyclohexane)	NA	NA	NA							
beta-BHC (Hexachlorocyclohexane)	NA	NA	NA							
gamma-BHC (Lindane, Hexachlorocyclohexane)	0.52	NA	NA			0.52	0.52	0.00499	0.00499	
Kepone	NA	0.23	0.053							
Malathion		1300	120							
Methoxychlor	280	410	31			3,100	280		280	
Mirex	NA	0.13	0.03							
Parathion	NA	490	37							
Toxaphene	0.1	2.1	0.48			1.6	0.1		0.1	

**Attachment L-5**  
**Material Criteria for Disposal at Shirley Plantation - Sediment**

		Dredge Sediment Criteria								
PARAMETER	NJDEP (1997) Residential Soil Cleanup Criteria <sup>3</sup>	EPA Region 3 Screening Levels (EPA, 2014) <sup>4</sup>		EPA Part 503 Biosolids	USGS soil background metals <sup>5</sup>	Exclusion Criteria <sup>6</sup>	Clean Upland Fill Criteria <sup>7</sup>	VA DEQ 305 (b) Screening Criteria	More stringent of preceding two columns <sup>8</sup>	
		Industrial Soil	Residential Soil	Exceptional Quality	VA background metal levels					
<b>Base Neutral Extractables (mg kg<sup>-1</sup>)</b>										
Acenaphthene	3,400	4,500	350			33,000	3,400	NA	3,400	
Acenaphthylene	NA	NA	NA			NA	NA	NA		
Anthracene	10,000	23,000	1,700			170,000	10,000	0.845	0.845	
Benzidine	NA	0.01	0.00052			NA	NA			
Benzo(a)anthracene	0.9	2.9	0.15			2.1	0.9	1.05	0.9	
Benzo(b)fluoranthene	0.9	2.9	0.15			2.1	0.9		0.9	
Benzo(k)fluoranthene	0.9	29	1.5			21	0.9		0.9	
Benzo(ghi)perylene	NA	NA	NA			NA	NA			
Benzo(a)pyrene	0.66	0.29	0.015			0.66	0.21	1.45	0.21	
bis(2-Chloroethoxy)methane	NA	250	18			1,800	NA			
bis(2-Chloroethyl) ether	0.66	1.0	0.23			0.9	0.66		0.66	
2,2'-oxybis(1-Chloropropane) (Bis-2-Chloroisopropyl et	2,300	NA	NA			2,300	2,300		2,300	
bis(2-Ethylhexyl) phthalate	49	160	38			120	49		49	
4-Bromophenyl phenyl ether	NA	NA	NA			NA	NA			
Butyl benzyl phthalate	1,100	1,200	280			1,100	910		910	
Carbazole	NA	NA	NA			NA	NA			
4-Chloroaniline	230	NA	NA			230	230		230	
2-Chloronaphthalene	NA	NA	NA			NA	NA			
4-Chlorophenyl phenyl ether	NA	NA	NA			NA	NA			
Chrysene	9	290	15			210	9	1.29	1.29	
Dibenz(a,h)anthracene	0.66	0.29	0.015			0.66	0.21	NA	0.21	
Dibenzofuran	NA	100	7.2			NA	NA			
Di-n-butyl phthalate (dibutyl phthalate)	5,700	NA	NA			5,700	5,700		5,700	
1,2-Dichlorobenzene	5,100	930	180			10,000	5,100		5,100	
1,3-Dichlorobenzene	5,100	NA	NA			5,100	5,100		5,100	
1,4-Dichlorobenzene	570	820	62.0			570	13		13	
3,3'-Dichlorobenzidine	2	5.1	1.2			3.8	2		2	
Diethyl phthalate	10,000	66,000	4,900			490,000	10,000		10,000	
Dimethyl phthalate	10,000	NA	NA			10,000	10,000		10,000	
Di-n-octyl phthalate	1,100	820	62			1,100	1,100		1,100	
2,4-Dinitrotoluene	NA	7.4	1.7			1,200	NA			
2,6-Dinitrotoluene	1	1.5	0.36			620	61		61	
1,2-Diphenylhydrazine	NA	2.9	0.67							
Fluoranthene	2,300	3,000	230			22,000	2,300	2.23	2.23	
Fluorene	2,300	3,000	230			22,000	2,300	0.536	0.536	
Hexachlorobenzene	0.66	1.4	0.33			1.1	0.66		0.66	
Hexachlorobutadiene	1	30	6.2			22	1		1	
Hexachlorocyclopentadiene	400	490	37			3,700	400		400	
Hexachloroethane	6	58	4.3			120	6		6	
Indeno(1,2,3-cd)pyrene	0.9	2.9	0.15			2.1	0.9		0.9	
Isophorone	1,100	2,400	560			1,800	1,100		1,100	
2-Methylnaphthalene	NA	300	23			4,100	NA	NA		
Naphthalene	230	17	3.8			230	20	0.561	0.561	
2-Nitroaniline	NA	NA	NA			NA	NA			
3-Nitroaniline	NA	82	18			82	NA			
4-Nitroaniline	NA	120	25			82	NA			
Nitrobenzene	28	22	5.1			280	28			
2-Nitrophenol	NA	NA	NA							
4-Nitrophenol	NA	NA	NA							
N-Nitroso-dimethylamine	NA	0.045	0.0023							
N-Nitroso-di-N-propylamine	0.66	0.33	0.076			0.66	0.25		0.25	
N-Nitrosodiphenylamine	140	470	110			350	140		140	
Phenanthrene	NA	NA	NA			NA	NA	1.17	1.17	
Pyrene	1,700	2,300	170			17,000	1,700	1.52	1.52	
1,2,4-Trichlorobenzene	68	26	5.8			400	68		68	
<b>Acid Extractables (mg kg<sup>-1</sup>)</b>										
4-Chloro-3-methylphenol	10,000	NA	NA			10,000	10,000		10,000	
2-Chlorophenol	280	580	39			5,100	280		280	
2,4-Dichlorophenol	170	250	18			1,800	170		170	
2,4-Dimethylphenol	1,100	1,600	120			12,000	1,100		1,100	
2,4-Dinitrophenol	110	160	12			1,200	110		110	
4,6-Dinitro-2-methylphenol	NA	NA	NA			NA	NA			
2-Methylphenol	2,800	NA	NA			2,800	2,800		2,800	
4-Methylphenol	2,800	NA	NA			2,800	2,800		2,800	
Nonylphenol	NA	NA	NA							
Pentachlorophenol	6	4.0	0.99			9	6		6	
Phenol	10,000	25,000	1,800			180,000	10,000		10,000	
2,4,5-Trichlorophenol	5,600	8,200	620			62,000	5,600		5,600	
2,4,6-Trichlorophenol	62	82	6.2			160	62		62	

**Attachment L-5**  
**Material Criteria for Disposal at Shirley Plantation - Sediment**

		<b>Dredge Sediment Criteria</b>								
<b>PARAMETER</b>	<b>NJDEP (1997) Residential Soil Cleanup Criteria<sup>3</sup></b>	<b>EPA Region 3 Screening Levels (EPA, 2014)<sup>4</sup></b>		<b>EPA Part 503 Biosolids</b>	<b>USGS soil background metals<sup>5</sup></b>	<b>Exclusion Criteria<sup>6</sup></b>	<b>Clean Upland Fill Criteria<sup>7</sup></b>	<b>VA DEQ 305 (b) Screening Criteria</b>	<b>More stringent of preceding two columns<sup>8</sup></b>	
		<b>Industrial Soil</b>	<b>Residential Soil</b>	<b>Exceptional Quality</b>	<b>VA background metal levels</b>					
<b>Miscellaneous (mg kg<sup>-1</sup>)</b>										
Ammonia as NH <sub>3</sub> -N	NA	NA	NA							
Chloride	NA	NA	NA							
Cyanide, Free										
<b>Cyanide, Total</b>	1,100	20,000	1,600			20,000	1,100			1,100
2,4-Dichlorophenoxy Acetic Acid (2,4-D)	NA	970	69.0							
Fluoride	NA	4,700	310							
Hydrogen sulfide		1,200,000	280,000							
Nitrate (as N)	NA	190,000	13,000							
Nitrite (as N)	NA	12,000	780							
Total PAHs	NA	NA	NA			NA	23			
Total phenols (phenolic compounds)	NA	NA	NA			NA				
Low molecular weight PAHs	NA	NA	NA			NA				
High molecular weight PAHs	NA	NA	NA			NA				
Total PAHS	NA	NA	NA					22.8		22.8
Sulfate	NA	NA	NA							
2-(2,4,5 Trichlorophenoxy) Propionic acid (Silvex)	NA	660	49			NA	NA			
<b>Dioxin and Furans (ng kg<sup>-1</sup>)</b>										
<b>2,3,7,8-TCDD</b>	NA	22	4.9			18	4.3			4
<b>Tributyltin (mg kg<sup>-1</sup>)</b>										
Tributyltin Compounds	N	25	1.8							
<b>Petroleum (mg kg<sup>-1</sup>)</b>										
Total petroleum hydrocarbons (TPH)										
TPH-DRO										

**Attachment L-5**  
**Material Criteria for Disposal at Shirley Plantation - Sediment**

	Dredge Sediment Criteria								
PARAMETER	NJDEP (1997) Residential Soil Cleanup Criteria <sup>3</sup>	EPA Region 3 Screening Levels (EPA, 2014) <sup>4</sup>		EPA Part 503 Biosolids	USGS soil background metals <sup>5</sup>	Exclusion Criteria <sup>6</sup>	Clean Upland Fill Criteria <sup>7</sup>	VA DEQ 305 (b) Screening Criteria	More stringent of preceding two columns <sup>5</sup>
		Industrial Soil	Residential Soil	Exceptional Quality	VA background metal levels				

Additional Analyses <sup>10</sup>		Units and Reporting convention	Method	Exclusion Criteria <sup>6</sup>	Clean Fill Criteria <sup>7</sup>
Acid-Base Accounting (ABA) (all samples > 0.25% total S) or H <sub>2</sub> O <sub>2</sub> Potential Acidity (PPA) <sup>12</sup> for samples < 5% total-C		Tons CCE acid demand per 1000 Tons Material	EPA 600-2-78-054 or Orndorff et al. (2008)	-10 unless under water table	-5
Pyritic S	Optional; may be substituted for Total-S for ABA	%	EPA 600-2-78-054	2.00	< 0.25
Calcium Carbonate Equivalence		% CCE	AOAC 955.01	NA	NA
Soluble Salts		mmhos cm <sup>-1</sup> or dS m <sup>-1</sup>	Saturated paste extract	NA	4 for freshwater sediments. NA for saltwater sed.
Total Organic Carbon		%		NA	≤ 5%
Particle Size Analysis (<2 mm)		% Sand	<2 mm samples	NA	NA
		% Silt		NA	NA
		% Clay		NA	NA
Coarse fragments (>2 mm)			>2 mm samples	NA	

**Attachment L-5**  
**Material Criteria for Disposal at Shirley Plantation - Sediment**

	Dredge Sediment Criteria								
PARAMETER	NJDEP (1997) Residential Soil Cleanup Criteria <sup>3</sup>	EPA Region 3 Screening Levels (EPA, 2014) <sup>4</sup>		EPA Part 503 Biosolids	USGS soil background metals <sup>5</sup>	Exclusion Criteria <sup>6</sup>	Clean Upland Fill Criteria <sup>7</sup>	VA DEQ 305 (b) Screening Criteria	More stringent of preceding two columns <sup>8</sup>
		Industrial Soil	Residential Soil	Exceptional Quality	VA background metal levels				

NA= Indicates that criteria are not available.

1. Enter values for **each discrete or composite sample into a separate column**. Also provide an overall average for all samples in the right-hand data column. For samples <RL, use 50% of RL for data entry column. One-half the RL is assumed for chemicals reported as non-detect or < RL; however, these values will **not** be used for exclusionary purposes unless other evidence indicates such. Values in *italics* are not "real" values, but an arbitrary entry.
2. Use **bold highlight** for all individual samples entered in working area and average sample values that exceed the "proposed VA upland fill criteria" in far right column. Highlight all values exceeding proposed VA exclusion criteria in **bold highlight red**. Put arbitrary values calculated as 50% the RL in *italics*. Tip: when copying numbers from your lab analytical results spreadsheets to this spreadsheet, samples with a "<" in front of them are typically at the RL and should reported as 50% RL and put in *italics*.
3. New Jersey Department of Environmental Protection, The Management and Regulation of Dredging Activities and Dredged Material in New Jersey's Tidal Waters. 1997. <http://www.njstatelib.org/digit/r588/r5881997.html>
4. EPA Region 3 SSLs have been merged into a regional document developed with input from Regions III, VI, and IX. Values from May 2014 version. Values listed for: antimony (metallic), arsenic (inorganic), chromium VI (particulates), lead and compounds, manganese and cadmium values are for diet, methyl mercury, nickel refinery dust, vanadium and compounds. Website: [http://www.epa.gov/reg3hwm/risk/human/rb-concentration\\_table/Generic\\_Tables/index.htm](http://www.epa.gov/reg3hwm/risk/human/rb-concentration_table/Generic_Tables/index.htm)
5. Background metal levels specific to the state of Virginia based on Smith, D.B. et al. 2005. Major- and Trace-Element Concentrations in Soils from Two Continental-Scale Transects of the United States and Canada. USGS Open File Report 2005-1253. <http://pubs.usgs.gov/of/2005/1253/pdf/OFR1253.pdf>
6. The exclusion standards generally represent the higher of EPA RBC Industrial, NJDEP or EPA 503 EQ levels for a given parameter. Values exceeding these limits are questionable for acceptance. Values proposed by Virginia Tech.
7. Clean fill criteria are based primarily on NJDEP residential cleanup criteria and manually adjusted for known issues with agricultural production/bioavailability. Values between the clean fill and exclusion criteria require a variation of the current management strategy. Values proposed by Virginia Tech.
8. More stringent of VA DEQ and clean fill criteria. These values carried forward to Part I.A of draft 2012 permit.
9. Total Aroclor concentrations are reported as sum of seven individual aroclors.
10. Additional analyses for these basic properties are essential for determining the management or acceptance of dredge material
11. Not needed, give screening levels for DDD, DDE, DDT
12. PPA method is Orndorff Z. W., W. L. Daniels and D. Fanning. 2008. Reclamation of Disturbed Sulfidic Coastal Plain Sediments Using Lime-Stabilized Biosolids *Journal of Environmental Quality* 37:1447-1455. PPA analysis also available from Univ. of KY Extension Soil Testing Lab.

Note: Minimum sampling is one composite sample per 50,000 yards of material in situ. A minimum of three samples per material is required regardless of volume. Specific information on sampling procedures should go into the brief descriptions box at the top of the spreadsheet.

**ATTACHMENT L-6: DISPOSAL SITE  
INFORMATION AND MATERIAL  
ACCEPTANCE LETTERS**



---

## Dominion Recycling Center, LLC

November 29, 2018

Mr. Igor Zikus  
Project Manager  
Hampton Roads Connector Partners  
5701 Thurston Avenue, Suite 100  
Virginia Beach, Virginia 23455

Re: Materials Management Proposal – Hampton Roads Bridge Tunnel Expansion Project

Dear Mr. Zikus:

Dominion Recycling Center, LLC (DRC) is pleased to provide this Materials Management Proposal associated with the upcoming Hampton Roads Bridge Tunnel (HRBT) Expansion Project. It is our understanding that upwards of 2.8 million cubic yards of excess excavation materials will be generated on the project that will require disposal at an approved facility. These materials may include general excavation spoils, dredge spoils, slurry wall material, jet grout material, and tunnel boring material, some of which may be mixed with or amended with various nonhazardous treatments or conditioners. Our facility is currently equipped to receive and handle this entire volume of material. All materials would be accepted at our facility that is located at 5444 Bainbridge Boulevard in Chesapeake, Virginia. The following is included with our proposal:

### 1. Permits

There are various operations that are currently performed at our facility, but the primary operations that are applicable to the HRBT expansion project consist of our landfill and borrow pit operations. The landfill is permitted by the Virginia Department of Environmental Quality (VDEQ) as a construction, demolition and debris (CDD) landfill under VDEQ Permit Number 493. Based on the most recent Solid Waste Information and Assessment report that was submitted to VDEQ, the facility has a remaining airspace capacity of 2,300,000 cubic yards. This capacity consists of approximately 300,000 cubic yards of airspace in the existing cell and approximately 2,000,000 cubic yards airspace in the five lined cells that are permitted to be constructed within the existing 45-acre landfill footprint.

The borrow pit operations are permitted by the Virginia Department of Mines, Minerals and Energy (DMME) under Permit Number 06183AA and encompass approximately 26.2 acres of active sand mining and reclamation on the 43-acre parcel. The DMME permit was amended in February 2018 to allow for acceptance of slurry wall spoils, jet grout spoils, and excavated sand from the Chesapeake Bay Bridge Tunnel Parallel Thimble Shoals Tunnel Project as reclamation fill materials in the borrow pit. The permit amendment allowed for these materials to be conditioned with various polymers and bentonite products

---

## **Dominion Recycling Center, LLC**

on the project prior to being accepted at our facility as reclamation fill materials. We are currently accepting each material type at our facility. Once the project provides us with additional chemical test data on the tunnel boring material, we will submit an additional amendment to the DMME permit to allow us to accept those materials. The additional amendment will allow us to dispose of the tunnel boring materials as reclamation fill in the borrow pit and prevent unnecessary filling of the landfill airspace, however, the tunnel boring materials would be acceptable for disposal in the landfill without requiring any permit amendments should this be required.

### **2. Acceptance Criteria**

The acceptance criteria at our facility is dependent on the location in which the material will be disposed of. In general, all materials that are accepted for disposal at our facility must be characterized as nonhazardous waste materials. The Management and Reuse of Contaminated Media guidance that has been provided by the VDEQ provides the general acceptance criteria for materials that are permitted for use as reclamation fill in the borrow pit. The Beneficial Fill Industrial Screening Levels would be most applicable to our facility. The concentration of Total Petroleum Hydrocarbons (TPH) must be less than 50 mg/kg to be accepted in the borrow pit and less than 500 mg/kg to be accepted in the lined landfill cells (although VDEQ will typically permit the disposal of soils containing up to 3,000 mg/kg of TPH in lined landfill cells upon submittal of a special waste application). The pH of all materials must demonstrate that the material is not a hazardous waste. The moisture content of all materials entering the borrow pit is not regulated, but all materials that are disposed of in the landfill must not contain any free liquid and must pass the paint filter test. We do not currently have any acceptance limits on salinity.

We have reviewed the Preliminary Sediment Study prepared by Cardno dated July 23, 2018 and have determined that all materials that were tested in the study would be acceptable for disposal as reclamation fill in our borrow pit except for material that is located in the vicinity of boring B-001 since it contained TPH at a concentration of 62 mg/kg. That material would need to be disposed of in one of our lined landfill cells. The only constituent that was detected at concentrations above the Beneficial Fill limits was arsenic, but that constituent is known to be a naturally occurring material in the local soils at concentrations similar to those that were reported by Cardno.

Our facility is generally open from Monday through Friday from 7:00 a.m. to 4:00 p.m. and Saturday from 7:00 a.m. to 12:00 p.m., although alternate work hours may be arranged upon prior agreement. It is anticipated that we will be able to accept up to 5,000 cubic yards of material per day although there are no permit restrictions on the daily volume of reclamation fill that can be received.

### **3. Material Management Plan**

Material from the HRBT project would primarily be managed as reclamation fill in the borrow pit under the assumption that all material will be classified as noncontaminated and nonhazardous. Our plan would be to construct a minimum

---

## Dominion Recycling Center, LLC

of five drying cells within the borrow pit to manage materials that contain excess moisture such as the tunnel boring material. Each drying cell would have a capacity of 5,000 to 10,000 cubic yards. Material would be directly dumped into each drying cell until the capacity was reached. Material would be allowed to drain and dry in each drying cell for approximately one to two weeks and would then be removed and stockpiled for final disposition. Material that does not contain excess moisture would be placed directly into stockpiles. We estimate that the borrow pit property contains approximately 30 acres of land that will be available to perform this task. The landfill property will have approximately 10 acres of land that will be available to perform drying and stockpiling if necessary.

Materials from the HRBT project that can be reused or recycled will be set aside on the property for such purposes. Materials that may fall under this item will include concrete, asphalt pavement and clean sand. We also estimate that upwards of 100,000 cubic yards of silt/clay can be used for construction of our final cap system over the landfill once it reaches capacity.

We look forward to working with you on the project. Please do not hesitate to contact me at (757) 284-9975 or [bconley@conleyenvironmental.com](mailto:bconley@conleyenvironmental.com) if you have any questions or comments or require any additional information.

Sincerely,



Bryan Conley  
Managing Member



Via email to [mkremen@Dragados-USA.com](mailto:mkremen@Dragados-USA.com)

Tuesday, November 6, 2018

Maksim Kremenchugskiy  
Senior Project Engineer – HRBT  
Dragados USA, Inc.  
5701 Thurston Ave. Suite 100  
Virginia Beach, Virginia 23455

Re: Preliminary Estimate, Responses and Scope/Exclusions

Dear Sir,

Below are the requested preliminary estimate, responses and scope/exclusions. Should you have questions, contact me by phone at 804-357-3913 or email at [charles@remadeland.com](mailto:charles@remadeland.com)

Very truly,

  
Charles H. Carter, III



---

Port Tobacco at Weanack // Weanack Land LLC  
461 Shirley Plantation, Charles City, VA 23030

804 357-3913  
[www.remadeland.com](http://www.remadeland.com)

[charles@remadeland.com](mailto:charles@remadeland.com)

HRBT Spoil Disposal for Dragados ON-SITE DISPOSAL ON WEANACK/SHIRLEY

PRELIMINARY ESTIMATE

Item Description	Quantity	Units	Unit Price	Item Total
MOBILIZATION	1.000	LS	\$4,463,135.47	\$4,463,135.47
HYDRAULIC UNLOAD	2,800,000.000	CY	\$19.91	\$55,748,000.00
TREAT AT UNLOADING	2,800,000.000	CY	\$2.20	\$6,160,000.00
Total =====>				\$66,371,135.47

HRBT Tunnel Spoils for Dragados ON-SITE DISPOSAL ON WEANACK/SHIRLEY

Scope Clarifications:

For Hydraulic Unloaded material, production is based on unloading at a rate of 2400 CY per 12-hour shift. We have assumed a conversion rate of 1.4 TN/CY, or 3,920,000 tons. We assume a 30% dry weight of total wet weight of material. We will treat the dry weight basis with agricultural lime at a rate of 0.015 of dry weight, requiring 17,640 tons of ag lime during the process of unloading and placement on-site.

Exclusions:

- Additional lime, additives or binders and treatment
- Contaminated materials or materials not meeting permit acceptance
- Offsite disposal

HRBT Spoil Disposal for Dragados OFF-SITE DISPOSAL AT LANDFILL

Item Description	Quantity	Units	Unit Price	Item Total
MOBILIZATION	1.000	LS	\$5,292,623.03	\$5,292,623.03
HYDRAULIC UNLOAD ON SITE DISPOSAL	400,000.000	CY	\$34.67	\$13,868,000.00
MECHANICALLY UNLOAD	2,400,000.000	CY	\$79.88	\$191,712,000.00
TREAT AT UNLOADING	2,800,000.000	CY	\$42.00	\$117,600,000.00
Total =====>				\$328,472,623.03

HRBT Tunnel Spoils for Dragados OFF-SITE DISPOSAL AT LANDFILL

Scope Clarifications:

400,000 CY dredge material will be hydraulically unloaded and disposed on site at Weanack/Shirley Plantation

2,400,000 CY dredge material will be mechanically unloaded and transported to a laydown area at Shirley Plantation.

For Mechanical Unloaded material, production is based on unloading at a rate of 2400 CY per 12-hour shift. We have assumed a conversion rate of 1.4 TN/CY, or 3,360,000 tons. We will treat the material with cement at a rate of 15% of total wet weight, requiring 504,000 tons of cement. Once the material has been mixed and dried, it will be reloaded into on road trucks for disposal at a landfill.

For Hydraulic Unloaded material, production is based on unloading at a rate of 2400 CY per 12-hour shift. We have assumed a conversion rate of 1.4 TN/CY, or 560,000 tons. We assume a 30% dry weight of total wet weight of material. We will treat the dry weight basis with agricultural lime at a rate of 0.015 of dry weight, requiring 8,400 tons of ag lime during the process of unloading and placement on-site.

Exclusions:

Additional lime, additives or binders and treatment

Contaminated materials or materials not meeting permit acceptance

Responses to Questions for HRBT Spoil Disposal for Dragados ON-SITE DISPOSAL ON WEANACK/SHIRLEY

Question #1: Confirming today able to receive, handle, and take up to 2.8 MCY.

Answer #1: There are no limits on receiving, handling and taking up to 2.8 MCY of acceptable material at 2,500 cy/day for placement here.

Question #2: Permits currently held to allow to take this material

Answer #2: Permits for handling dredged material for on-site disposal:

DEQ VPA 00579 permit for placement of dredged materials

DEQ VWP 11-0942 permit for dock construction, operation, & maintenance

(with corollary Corps permit 11-V0942 & VMRC #11-0942 permit for same)

DEQ VAR 052417 permit for industrial stormwater management at the dock

Question #3: Limits on material handling by category:

Answer #3:

- TPH No limit on TPH, limits on TPH parameters in VPA 00579 permit
- pH pH & Acid-Base Accounting to meet VPA 00579 permit
- moisture content No limit
- salinity, and No limit for Sodium or Chloride
- volume (weight) per day No limit
- DDE and DDT No limit other than VPA 00579 permit and:

Parameter	SSL
4,4'-DDD	7.2 mg/kg
4,4'-DDE	5.1 mg/kg
4,4'-DDT	7.0 mg/kg
DDT, Total	N/A

Question #4: Advise that you have received dredged material:

Answer #4: Weanack has handled dredged materials for on-site and off-site disposal for over 20 years. Weanack can accept non-hazardous material the landfill can accept to transport to landfill, and, can accept material meeting the VPA 00579 permit for placement on site.

Question #5: Exact language to address from VDOT: "The Offeror demonstrates it has identified and secured commitments from one or more disposal sites to accept the full quantity of excavated tunnel material and this material, inclusive of any added conditioners or treatments, will be eligible for disposal at such location(s)".

Answer #5: Dragados can bring up to 2.8 MCY from the HRBT project to the facility meeting Weanack's DEQ VPA 00579 permit acceptance criteria to be received, offloaded, transported to, and placed in, on-site basins, assuming reasonable business terms and conditions.

Question #6: State "we have at our facility approximately X acres that allows for handling and drying of materials before final placement..."

Answer #6: The Weanack facility has more than 10 acres for handling and drying of materials before final placement or disposal. Weanack has additional land, which should it be needed, can be employed in the drying of materials.

Responses to Questions for HRBT Spoil Disposal for Dragados OFF-SITE DISPOSAL AT LANDFILL

Question #1: Confirming today able to receive, handle, and take up to 2.8 MCY.

Answer #1: There are no limits on receiving, handling or taking up to 2.8 MCY of acceptable material at 2,500 cy/day for disposal off-site at landfill.

Question #2: Permits currently held to allow to take this material

Answer #2: Permits for handling dredged material for on-site disposal:

DEQ VWP 11-0942 permit for dock construction, operation, & maintenance  
(with corollary Corps permit 11-V0942 & VMRC #11-0942 permit for same)  
DEQ VAR 052417 permit for industrial stormwater management at the dock

Question #3: Limits on material handling by category:

Answer #3: Can accept materials meeting landfill acceptance levels for TPH, pH, salinity, moisture content, volume (weight) per day, DDE, and DDT. Regarding moisture content limits of landfill acceptance, addition of binders and drying on site here can bring material in excess of landfill moisture limits to landfill acceptance levels.

Question #4: Advise that you have received dredged material:

Answer #4: Weanack has handled dredged materials for on-site and off-site disposal for over 20 years. Weanack can accept non-hazardous material the landfill can accept to transport to landfill, and, can accept material meeting the VPA 00579 permit for placement on site.

Question #5: Exact language to address from VDOT: "The Offeror demonstrates it has identified and secured commitments from one or more disposal sites to accept the full quantity of excavated tunnel material and this material, inclusive of any added conditioners or treatments, will be eligible for disposal at such location(s)".

Answer #5: Dragados can bring up to 2.8 MCY from the HRBT project to the facility meeting landfill acceptance criteria to be received, offloaded, solidified, dried, transported to, and placed in, landfill, assuming reasonable business terms and conditions. Regarding moisture content limits of landfill acceptance, addition of binders and drying on site here can bring material in excess of landfill moisture limits to landfill acceptance levels.

Question #6: State "we have at our facility approximately X acres that allows for handling and drying of materials before final placement. . ."

Answer #6: The Weanack facility has more than 10 acres for handling and drying of materials before final placement or disposal. Weanack has additional land, which should it be needed, can be employed in the drying of materials.

####





Via email to [mkremen@Dragados-USA.com](mailto:mkremen@Dragados-USA.com)

Tuesday, November 20, 2018

Maksim Kremenchugskiy  
Senior Project Engineer – HRBT  
Dragados USA, Inc.  
5701 Thurston Ave. Suite 100  
Virginia Beach, Virginia 23455

Re: Addendum to Preliminary Estimate, Responses and Scope/Exclusions of Nov 6

Dear Sir,

Below is addendum to the requested preliminary estimate, responses and scope/exclusions. Should you have questions, contact me by phone at 804-357-3913 or email at [charles@remadeland.com](mailto:charles@remadeland.com)

Very truly,

Charles H. Carter, III



---

Port Tobacco at Weanack // Weanack Land LLC  
461 Shirley Plantation, Charles City, VA 23030

804 357-3913  
[www.remadeland.com](http://www.remadeland.com)

[charles@remadeland.com](mailto:charles@remadeland.com)

**HRBT Spoil Disposal for Dragados at WEANACK/SHIRLEY**

PRELIMINARY ESTIMATE

Item Description	Quantity	Units	Unit Price	Item Total
MOBILIZATION	1.00	LS	\$4,800,000	\$4,800,000
HYDRAULIC UNLOAD & ON-SITE DISPOSAL	600,000	CY	\$31.50	\$18,900,000
MECHANICAL UNLOAD & OFF-SITE DISPOSAL	1,000,000	CY	\$104.00	\$104,000,000
TREAT AT UNLOADING	1,600,000	CY	\$51.00	\$81,600,000
Total =====>				\$209,300,000

HRBT Tunnel Spoils for Dragados at WEANACK/SHIRLEY

Scope Clarifications:

600,000 CY dredge material will be hydraulically unloaded and disposed on site at Weanack/Shirley Plantation

1,000,000 CY dredge material will be mechanically unloaded and transported to a laydown area at Shirley Plantation for disposal off-site at Subtitle D landfill

For Hydraulic Unloaded material, production is based on unloading at a rate of 2400 CY per 12-hour shift. We have assumed a conversion rate of 1.4 TN/CY, or 840,000 tons. We assume a 30% dry weight of total wet weight of material. We will treat the dry weight basis with agricultural lime at a rate of 0.015 of dry weight, and 25% safety margin requiring 4,725 tons of ag lime during the process of unloading and placement on-site.

For Mechanical Unloaded material, production is based on unloading at a rate of 2400 CY per 12-hour shift. We have assumed a conversion rate of 1.4 TN/CY, or 1,400,000 tons. We will treat the material with cement at a rate of 15% of total wet weight, requiring 210,000 tons of cement. Once the material has been mixed and dried, it will be reloaded into on road trucks for disposal at a landfill.

Exclusions:

Additional lime, additives or binders and treatment

Contaminated materials or materials not meeting permit acceptance

## Responses to Questions for HRBT Spoil Disposal for Dragados

Question #1: The quantities have gone down as a result of VDOT updates to our design. Please update your pricing to show 1.6 MCY of material. 600,000 coming from the Portal Excavation. These quantities do not account for bulking.

Answer #1: See answers above

Question #2: Please provide a price for Mechanical unloading and storage at your facility. We are anticipating that this is a possibility.

Answer #2: See answers above

Question #3: Can you please provide an explanation for the large variance in treatment of the material between onsite and offsite disposal?

Answer #3: On-site disposal is for “cleaner” material while off-site disposal is for material requiring Subtitle D (modern sanitary) landfill disposal. The on-site disposal site requires a lower cost of capital, lower operational costs, lower cost binders, lower cost treatment protocols, lower transportation costs, less man power, and less equipment than an off-site disposal site. Off-site disposal is more expensive than on-site disposal of “cleaner” material at every turn, often by significant amounts.

Question #4: Would you entertain us self-performing the unloading at your facility? IF yes please provide a separated price for just disposal at your facility.

Answer #4: The dock facility is currently under exclusive lease for the next 5 years and those costs are incorporated into the *Preliminary Estimate, Responses and Scope/Exclusions of Nov 6* and this *Addendum of Nov 20* to it.

###



*Heavy Marine Construction, Underwater Construction,  
Structural Repairs, Inspections and Call Out Services*

December 05, 2018

Dragados USA  
Mr. Max Kremenchugskiy  
Senior Project Engineer-HRBT  
5701 Thurston Rd.  
Virginia Beach, VA  
23455

RE: HRBT Spoils Transporting & Unloading

Mr. Max Kremenchugskiy

This letter is to confirm that Precon Marine, Inc. (PMI) will be working hand-in-hand with Conley Environmental on the HRBT project and will be providing a turn key solution for handling ALL of the Non Hazardous spoils from this project.

PMI owns and operates it's own Tug Boats and Barges and will utilize 265' "Hopper Barges" to carry spoils from the HRBT Project Site to 1401 Precon Drive. PMI operates 1200 feet of bulk headed riverfront property and plan to unload all materials directly on to dump trucks. If those dump trucks cannot go directly to Dominion Recycling PMI will have a 4 acre site set up with containment to receive the spoils for "Drying" prior to reloading on dump trucks.

PMI will be sending pricing over in the near future for those services.

Thank you for this opportunity, should you have any questions please do not hesitate to call or email me at any time.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Miller", is written over the word "Sincerely,".

Matthew Miller  
President  
Precon Marine, Inc.

Cc: Pete Gibbs  
Precon Marine, Inc.