



Norfolk Harbor Navigation Improvements –

Thimble Shoal Channel West of Chesapeake
Bay Bridge-Tunnel

Thimble Shoal Overview



- Project issued by: The Port of Virginia (code: 1839000)

In Partnership with the U.S. Army Corps of Engineers
Norfolk District.



**US Army Corps
of Engineers®**



Thimble Shoal – Spec Parameters - Snapshot

- **Parameters**

- Located Thimble Shoal Channel
- Advertised quantity 5,233,000 cubic yards – new work material
- 44,425' of channel including widener
- -56 feet with 1-foot overdepth
- Placement into Dam Neck Placement Area

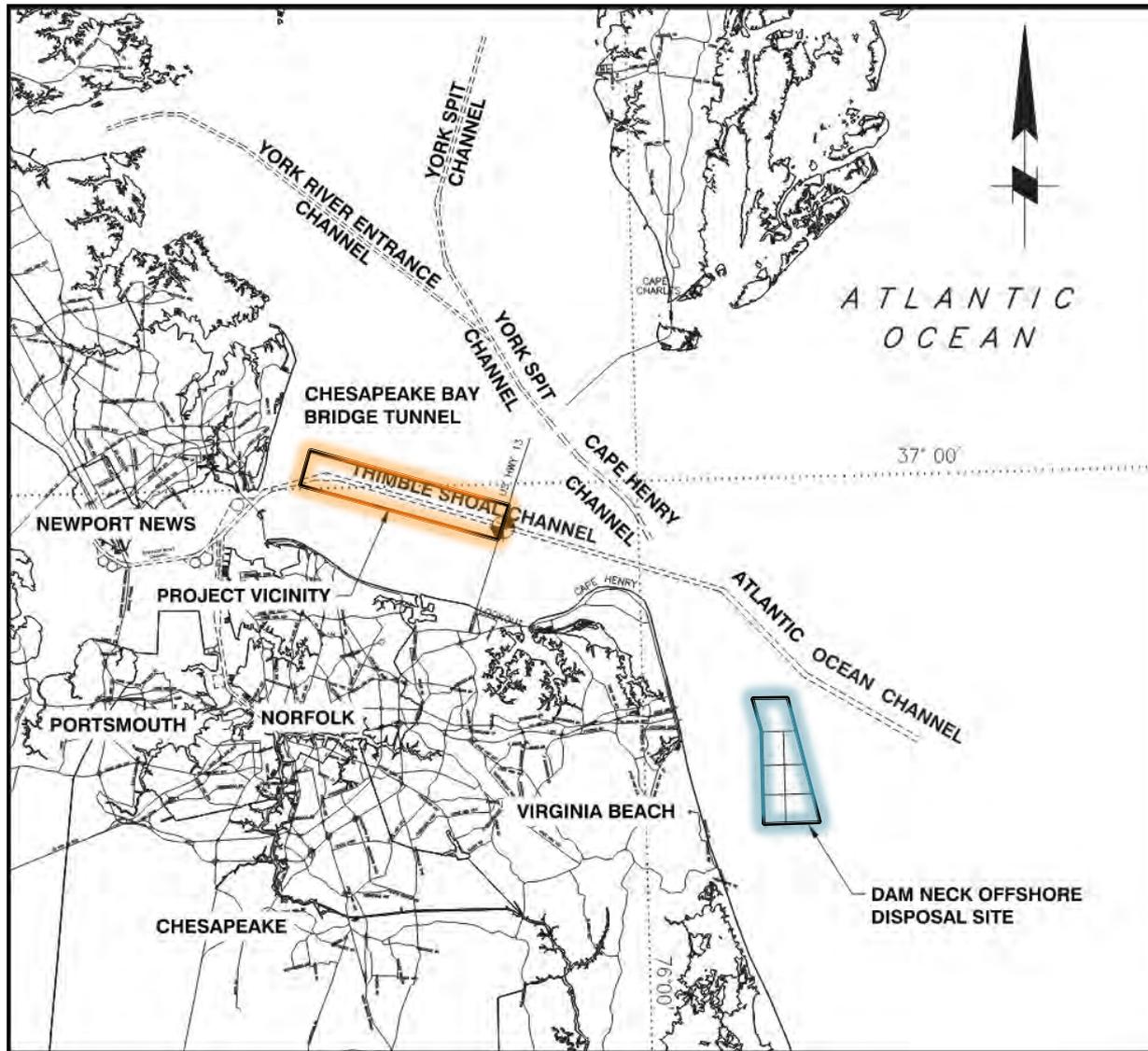
- **Schedule**

- 1035 days to substantially complete contract by August 30th, 2022
- Dredging commencement before January 1st, 2020
- Liquidated damages of \$5,000 per day applicable to both start and completion milestones

- **Restrictions**

- Sea Turtles – No hopper dredging environmental window September 1 to November 14
- Right Whales – Speed restriction (10 knots) November 1 to April 30
- Unexploded ordnance (Munitions) – Hopper Dredge Draghead screening for MEC, opening not to exceed 1.25" x 6"

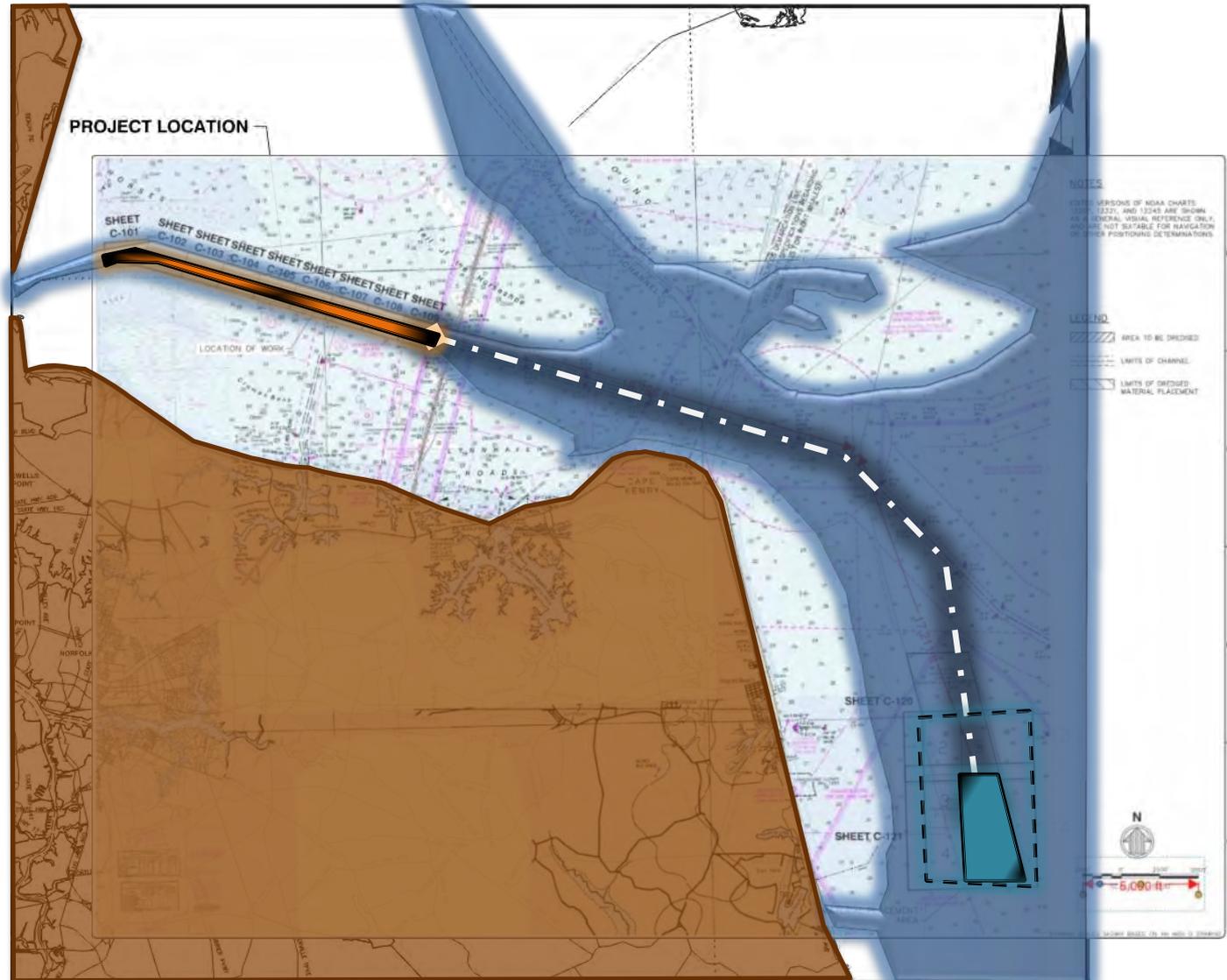
Drawing Overview



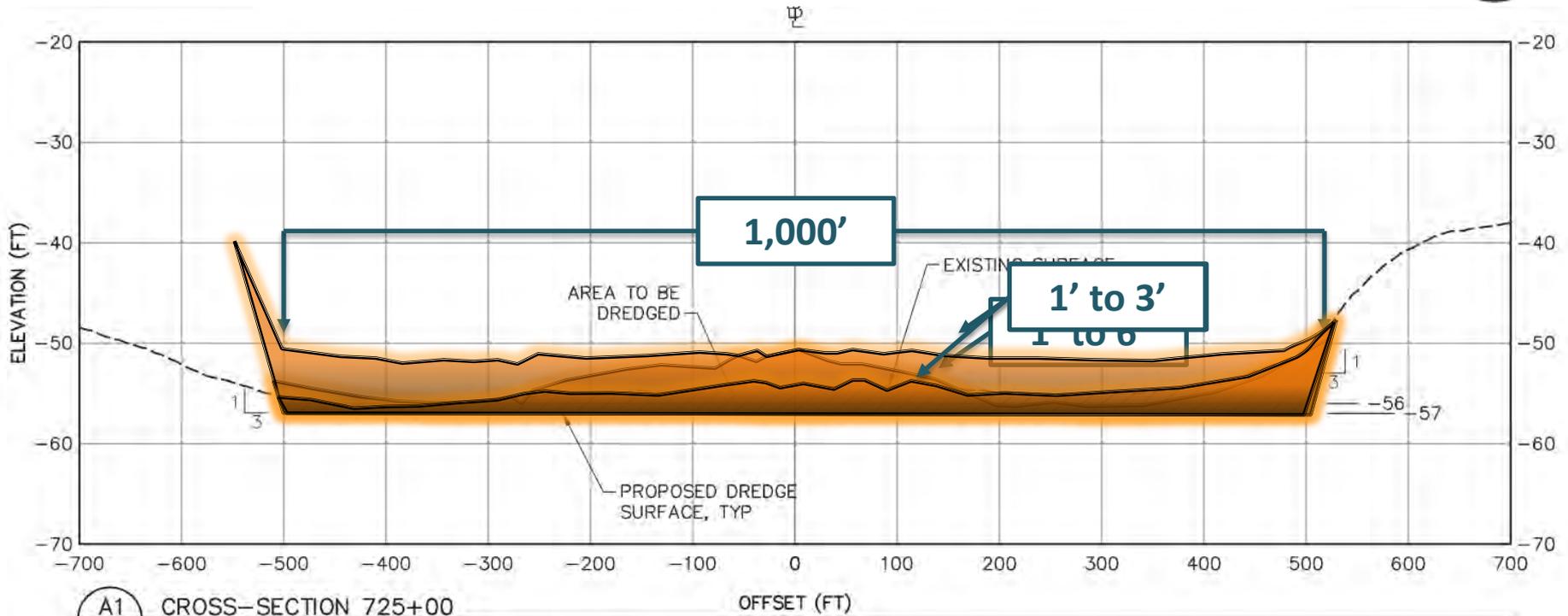
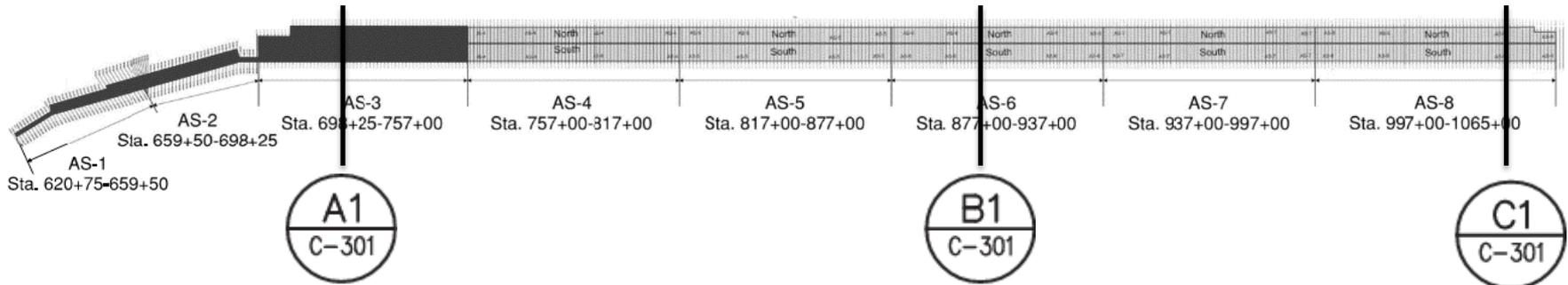
Drawing Overview



NOAA Chart
Channel Cut
Sailing Route
22 – 35 NM
Dam Neck
ODMDS
4 NM miles
east of
Virginia
Beach



Cross Section B1 – Station 725+00



A1
C-301 CROSS-SECTION 725+00
SCALE: AS SHOWN



Equipment

Equipment Overview



- **Hopper Dredges**

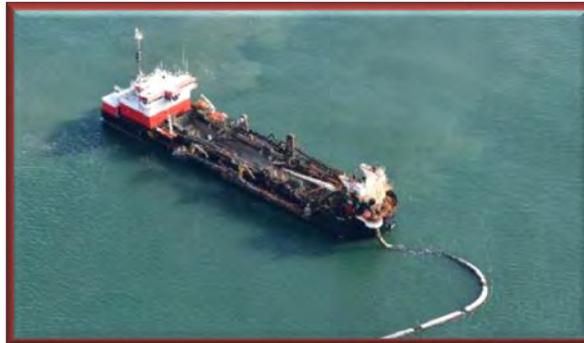
- BE Lindholm
- RN Weeks
- Magdalen

- **Mechanical Dredge**

- 506
- 551

- **Additional Support**

- Paula Lee



Hopper Equipment Used



R.N. Weeks: 1987
Repower 2015
Tier II Engines
10,545 HP



B.E. Lindholm: 1985
Repower 2011
Tier II Engines
15,000 HP



Magdalen: 2017
Tier II Engines
21,150 hp



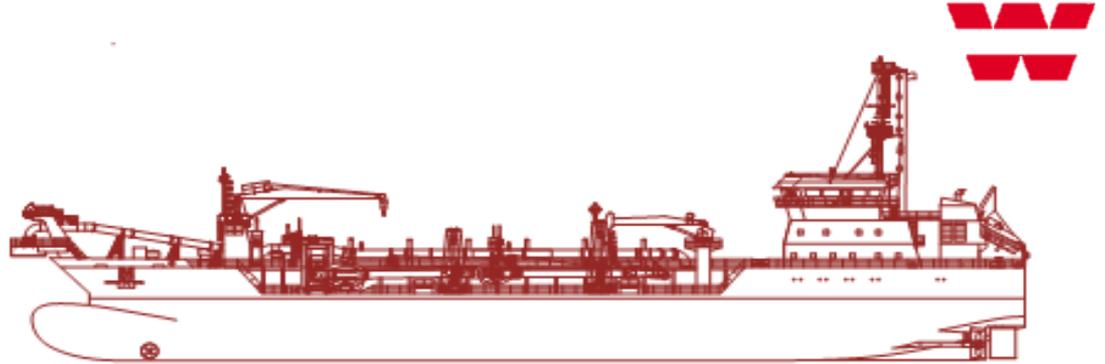
Magdalen

Vessel 80' x 356'

Draft of 27'

8,550 cubic yard capacity

Maximum speed of 14.5 knots



Dredge 506



60' x 158' x 12'
30 cubic yard bucket
Tier 3 Compliant



Liebherr HS8300HD

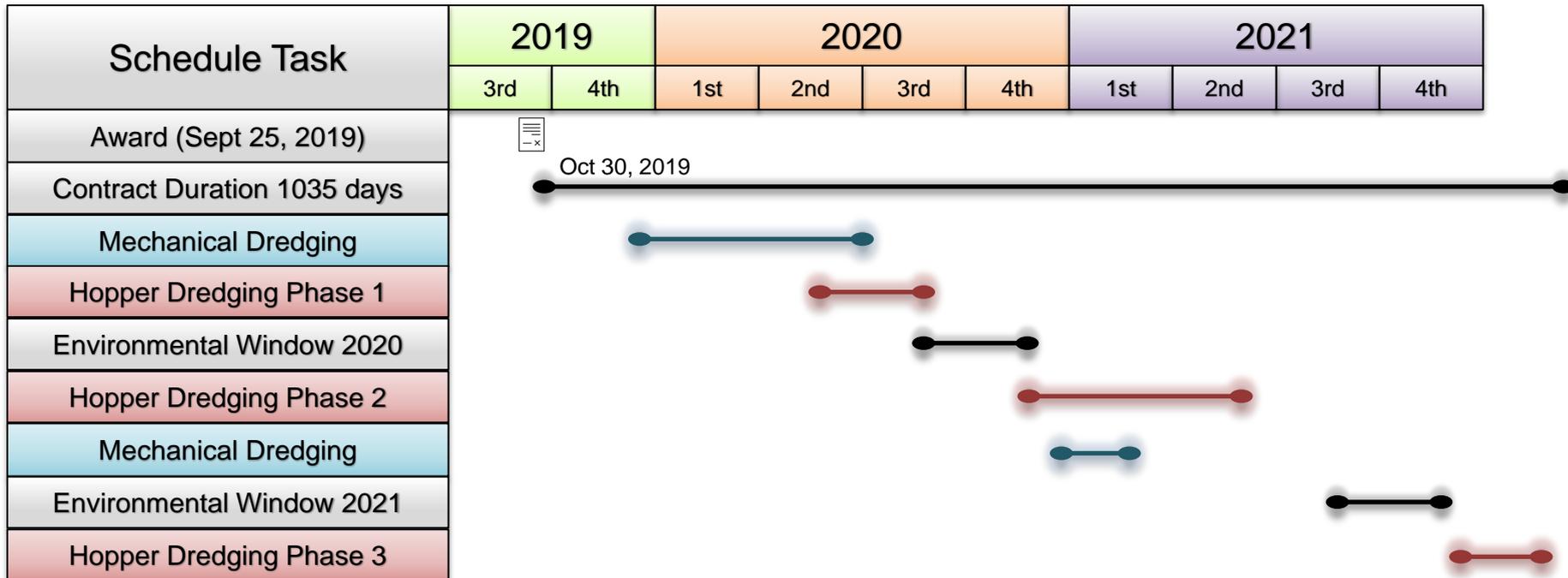


Project Status

Project Status

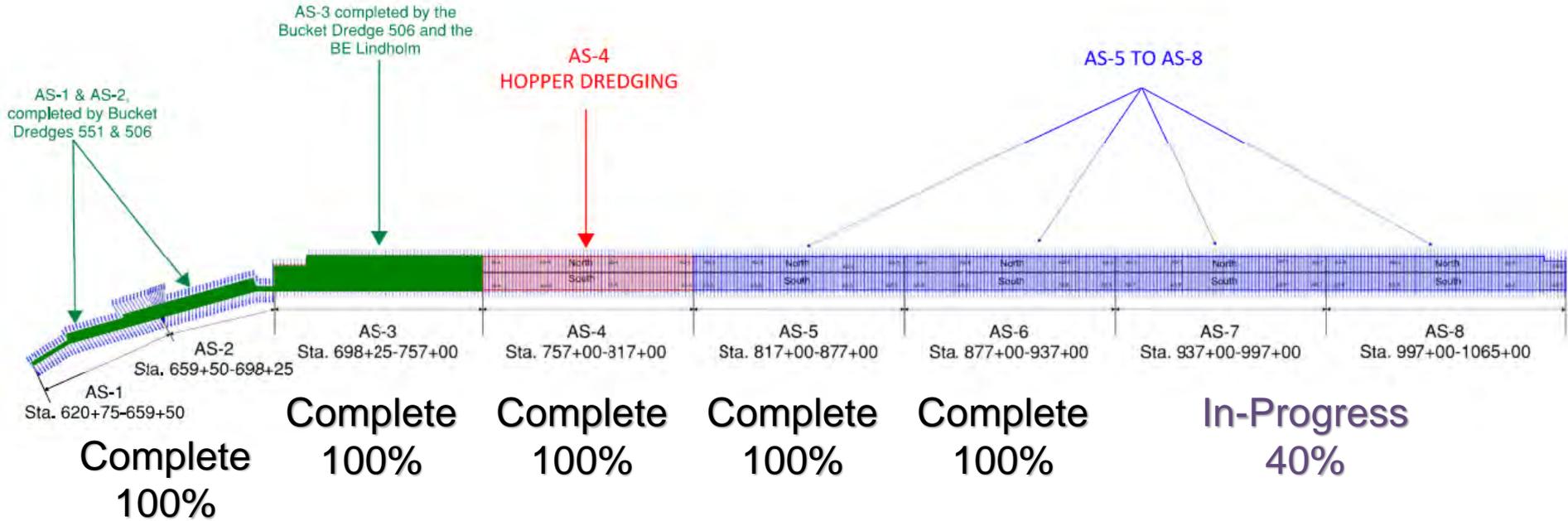


- Cubic yards removed: 4,753,000
- Cubic yards Remaining: 1,080,000
- Project operations have ceased due to the environmental work window which prohibits hopper dredging between September 1st and November 14th.





Construction to date



Section	Dredge	Quantity (CY)
AS-1 & AS-2	551 & 506	200,000
AS-3	506 & BE	500,000
AS-4	Mag / BE / RN	1,175,000
AS-5	Magdalen / BE Lindholm	1,075,000
AS-6	Magdalen	800,000
AS-7/8	Magdalen	1,700,000
AS-8	Paula Lee	280,000



Project Challenges



Acceptance Sections

- Channel acceptance section
 - 1,000' wide and 6,000 – 7,000' long
 - Limited payable overdepth and allowable disturbance depth
 - Interaction between new work material, seagrass and dragheads MEC screening
 - Multiple clean up passes required to clear grade for acceptance
 - Shoaling
 - Multi-Beam surveys



Ho

Del





Turtles

- Turtle Takes were a major concern for this project and area
 - Specifications –
 - “If two or more turtles are taken within a 24-hour period, the dredge may not resume operations until a trawler is operating in the channel.”
 - This same restriction applies if 4 or more turtles are taken within a 2-month period.

Management Decisions to reduce risk of takes

- On 8.25.2020 management ceased hopper operations until trawlers arrived.
- In addition, operations to target a specific elevation was discontinued, as the dragheads would remain on the bottom of the channel bed regardless of elevations. (prevent any opportunity for turtles to be taken by dredging operations)



Project Photos

551 Bucket



506 Bucket



Magdalen



Closing Remarks



Thank you