



Joint Permit Application and Supporting Information
for
Mason Creek Dredging Project¹

City of Norfolk
Dept. of Public Works

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| <i>Date</i> | <i>Version</i> | |
|-------------|-------------------------|--|
| 11/26/2014 | <i>Agency submittal</i> | |
| | | |

¹ USACE assigned project number NAO-2014-0896

Project Description and Need

Description of Project Area and Need for Project

Mason Creek is a micro-tidal brackish water body that is connected to tidal Willoughby Bay via an 1,800-foot long box culvert with dimensions 20 feet wide by 11 feet high. Prior to 1940, the present-day area of Mason Creek was part of a much larger tidal estuary connected directly to Willoughby Bay (Figure 1). In the early 1940s, Naval Station Norfolk was expanded, including land reclamation over much of Mason Creek. This land reclamation isolated the creek from Willoughby Bay and effectively prevented tidal flushing of Mason Creek. Prior to 1945, the culvert between Mason Creek and Willoughby Bay was installed to address local concerns about the deteriorating water quality condition of the creek.

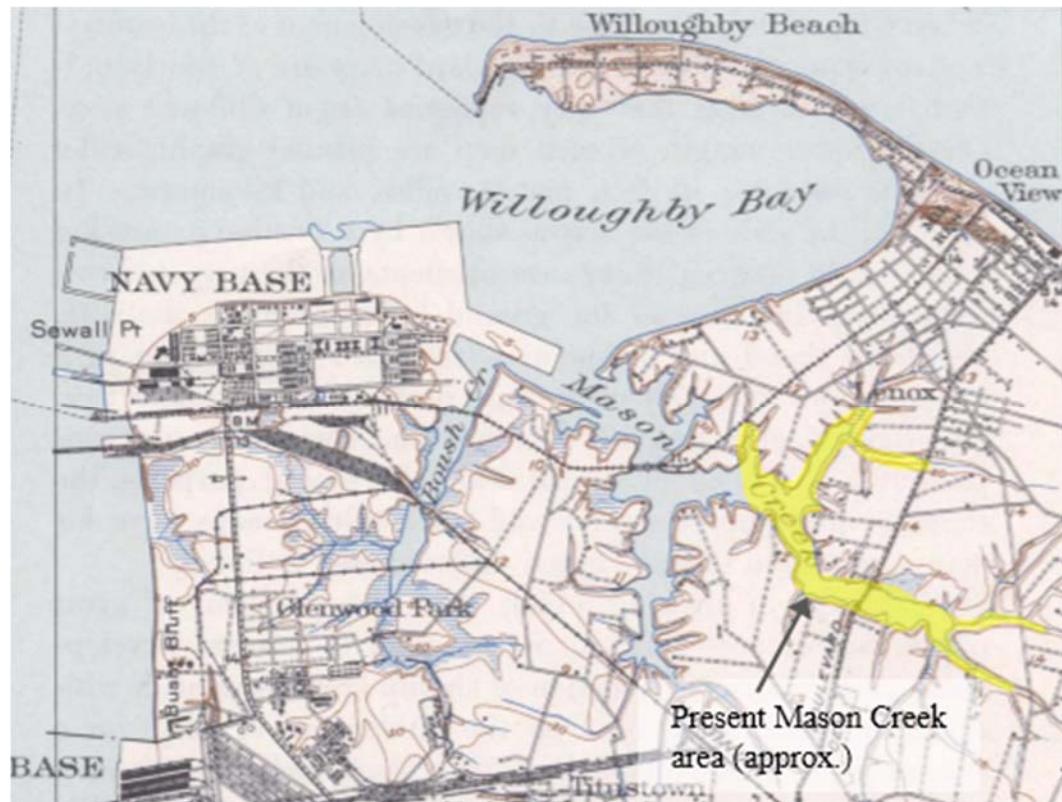


Figure 1: 1921 extents of Mason Creek (U.S. Geological Survey, Newport News, VA Quad, 1921 edition)

Since the culvert was installed, Mason Creek receives tidal flows from Willoughby Bay through the culvert, but the flow rate is limited by the dimensions of the culvert and by a tide gate structure on the creek end of the culvert. The culvert and gate together limit tidal amplitudes in the creek and the rate of water exchange between Willoughby Bay and Mason Creek. Figure 2 shows a time series of measured tidal water levels within Mason Creek (red line) and the NOAA tide gauge at Sewells Point (black line) near the entrance to Willoughby Bay. The time series is indicative of the significant damping of the tidal signal from Willoughby Bay into Mason Creek.

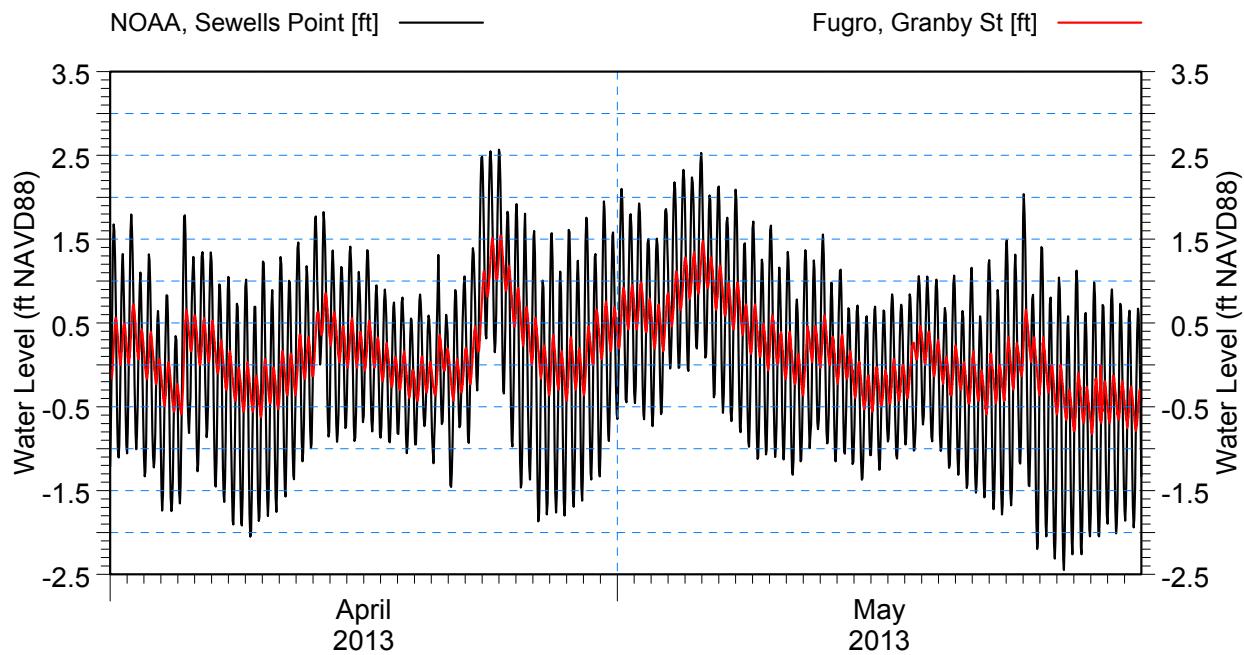


Figure 2: Measured water levels in Mason Creek and at Sewells Point, April – May 2013

A second culvert exists within Mason Creek, at the Granby Street crossing, dividing the creek into western and eastern basins. The eastern basin is the smaller of the two. Water quality sampling demonstrated that periodically the eastern basin exhibits noticeable differences from the western basin in key water quality indicators such as salinity, nutrient and pathogen concentrations.



Figure 3: Mason Creek and surrounding watershed

The watershed draining to Mason Creek consists mainly of a Naval Station Norfolk airfield, low- to medium-density residential neighborhoods, parks, a cemetery, and two interstate interchanges with water crossings. Non-tidal flow to the creek consists of storm runoff generated locally, with little to no persistent upstream inflow from other areas of the City.

A map of present-day Mason Creek and its contributing watershed are shown in Figure 3. Statistics on tidal water levels within Mason Creek have been calculated based on tide gauge data collected within the creek from November 2012 to November 2013. General information on Mason Creek within the project limits includes:

- Mean Low Water (MLW) elevation is approximately 0.0 feet NAVD88, and Mean High Water (MHW) elevation is approximately 0.5 feet NAVD88
- Typical average water surface elevation is approximately 0.3 feet NAVD88
- Average existing water depth at MLW in the area to be dredged is approximately 2.3 feet
- Invert at the box culvert at the outlet to Willoughby Bay is approximately -4.6 feet NAVD88
- Bank to bank area of the creek within the project limits, I-64 in the northeast to Northside Park in the southeast, is approximately 85 acres

A year-long water quality monitoring campaign was conducted on Mason Creek from October 2012 through September 2013. Virginia water quality standards for dissolved oxygen (DO) were exceeded when DO levels near Granby Street in late July 2013 fell to approximately 2.0 mg/L, below the Virginia standard for daily instantaneous minimum DO of 3.2 mg/L. On the same date, DO concentrations creek-wide were also low, between 3.5 and 5.0 mg/L.

Observations of the bed sediments in Mason Creek indicate that the lower water column and the sediment layers may experience anoxic conditions. The anoxic decomposition of the organic clays and silts is believed to be responsible for the surrounding residents' complaints of objectionable odors from Mason Creek. Additionally, a literature review indicates that anoxic sediments tend to release more nitrogen and phosphorus back into the water column.

At least two substantial algal blooms occurred during the 2013 growing season. The March-April 2013 bloom, which exhibited floating mats of algae and appeared to be severe, occurred during the cooler months of spring. As a rule of thumb, the combined impact of total nitrogen levels greater than 1.0 mg/L and total phosphorus levels above 0.1 mg/L are sufficient to support eutrophic conditions in freshwater systems, provided that residence time, water temperature and sunlight are suitable. Such thresholds are not so steadfast for more saline waters, such as Mason Creek, but as with most urban to suburban impoundments, it is clear that nutrient loads to Mason Creek are sufficient to support nuisance algal blooms and the associated adverse consequences. High turbidity was observed visually during the summer months, possibly indicating algae suspended in the water column during most of the summer of 2013. Calculations based on Total Kjelhdahl Nitrogen (TKN) concentrations observed in June 2013 indicate that eutrophic conditions could have existed in Mason Creek. Given the high concentrations of nitrogen and phosphorus present, Mason Creek is at risk for eutrophication events of greater severity.

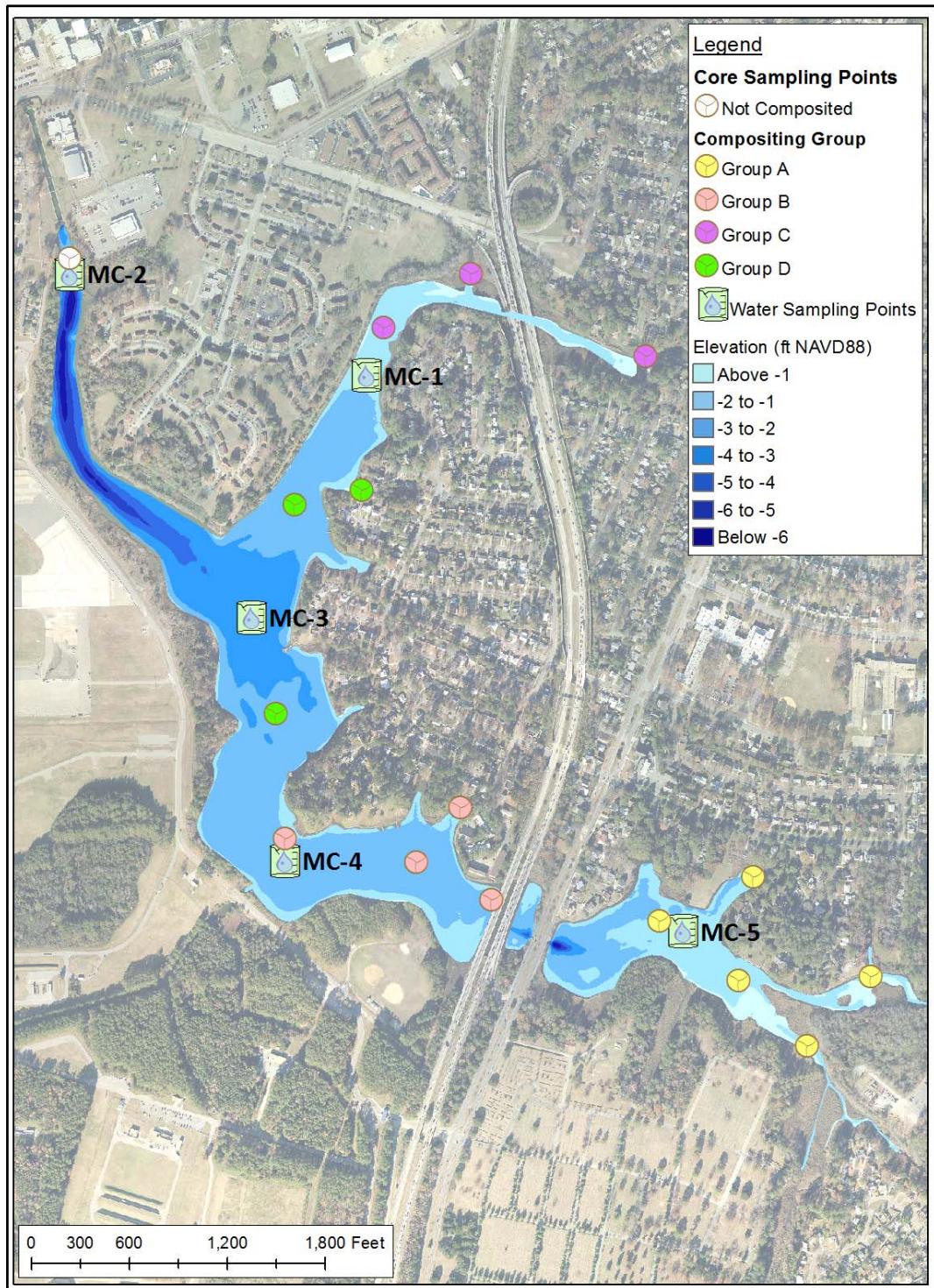


Figure 4: Locations of 2012-2013 water quality and sediment core sampling

In addition to the water quality issues discussed above, progressive sediment deposition over the decades has resulted in very shallow depths in much of Mason Creek. The most shallow areas are generally located in the reaches most closely associated with potential access areas for recreational watercraft and fishing, i.e. along the residential shorelines and near Northside Park. During typical mid to low tide conditions, water depths are too shallow in many areas of the creek to use small electric trolling motors, to paddle canoes and kayaks, or to sail in small boats with centerboards. Long-time residents of the surrounding community have reported that the depth in the creek for recreational boating was significantly greater several decades ago.

In summary, the expansion of Naval Station Norfolk facilities across the mouth of the creek and urbanization of the Mason Creek watershed over the past several decades have resulted in significant sediment accumulation and poor circulation and tidal flushing in the creek. As a result, the creek experiences lower dissolved oxygen, higher summer temperatures, higher nutrient concentrations, and higher pathogen indicator concentrations than it would have experienced in its historical state as an open tidal estuary. The degradation of water quality within Mason Creek has manifested as persistent algae blooms, and odors that appear to be associated with anaerobic decomposition of organic bed sediments. In addition, the sediment accumulation has significantly reduced the ability of adjacent residents and the general public to use Mason Creek for recreation.

Description of Proposed Project

The proposed dredging project is needed (1) as a major component of a project to improve water quality within the creek and (2) as the only means for restoring water depths suitable for recreation, including canoe, kayak, and small boat navigation.

The project seeks to improve water quality and decrease nuisance odors by removing nutrient-laden organic sediments (through dredging) and by increasing mixing through the phased installation of bubble diffusers (aerators). Bottom-mounted fine-bubble diffusers generate localized vertical currents in the water column, bringing less oxygenated water to the surface where it becomes reaerated. The induced circulation and turbulence mix the reaerated water with adjacent areas, over time increasing dissolved oxygen levels over broad areas. Maintaining higher dissolved oxygen levels in the water column results in improved habitat for fish and aquatic organisms and is likely to reduce the harmful effects of algal blooms. Increasing oxygen levels near the bed and within the upper bed sediments generally reduces the potential for release of nutrients to the water column and reduces the production of odor-causing compounds that occur in organic sediments under anoxic conditions.

Diffuser system manufacturers report a minimum water depth of approximately 4 feet for cost-effective use of bubble diffusers; the area of the water body circulated by each diffuser panel generally increases with water depth. The proposed dredging project is therefore needed to support the mixing and aeration of Mason Creek by providing the required 4 feet of water depth at low tide.

Dredging proposed to improve recreational access to Mason Creek encompasses the same footprint and depth as that proposed to be performed in conjunction with aeration. A depth of approximately 4 feet

would provide sufficient depth to accommodate the use of kayaks, canoes, and small sailboats such as Lasers or Sunfish which typically draft 2.5 to 3.5 feet.

As shown in the attached drawings, the proposed dredge template is a minimum dredge cut elevation of -4.0 feet NAVD88 in the main body of the creek and -3.5 feet NAVD88 in the narrower arms and coves. The shallower dredge elevation in the narrow reaches of the creek is designed to avoid impacts to shoreline wetlands considering lateral effects of dredging to occur at a distance of four times the depth of cut. Each section will have an allowable pay overdredge (also considered advance maintenance) of 0.5 feet below the specified dredge cut elevation. This dredge template with allowable overdredging will provide for between 4.0 and 4.5 feet of depth at MLW.

Dredging contractors will use a “box cut” template to efficiently remove the material. A box cut removes an equivalent volume of material using vertical side slopes. Over time the cuts slough in and a side slope is formed by the soil’s angle of repose. Based on the sediment sampling an angle of repose of 1 Vertical to 4 Horizontal is anticipated. The estimated *in situ* dredge volume, with allowable overdredging, is approximately 165,000 cubic yards (CY).

The method of dredging is proposed to be mechanical dredging by barge-mounted excavator, with truck haul of the dredged material to an upland facility. The specific final dredged material placement / disposal facility will be secured by the contractor.

Two locations are proposed for contractor access to the creek for transferring dredged material to sealed dump trucks. Materials dredged from the larger basin (west of Granby Street) will be transferred via landside equipment to dump trucks at an open field owned by the Norfolk Redevelopment and Housing Authority (NRHA). Sheets CS-104, CS-106 and CS-307 of the attached permit drawings shows the proposed transfer location, including a schematic representation of a construction entrance and onsite construction road. Construction traffic would access the site via a temporary construction entrance off of Bellinger Boulevard. This NRHA parcel will be the primary laydown area for the project, and the site will be restored at the completion of the work.

Transfer of materials dredged mechanically from the smaller basin (east of Granby Street) would require a temporary transfer area to be constructed adjacent to the northbound lanes of Granby Street. Sheets CS-102, CS-106 and CS-307 of the attached permit drawings shows the proposed transfer location and a schematic representation of a pull-off area for dump trucks and a temporary working platform. This parcel is owned by the City of Norfolk. Construction of the working platform will require earthwork and/or structural construction over tidal wetlands comprised primarily of *Phragmites australis*. The platform will support a long-reach excavator to transfer dredged materials from the hopper barges to sealed dump trucks queued in the right lane of northbound Granby Street. The area will be restored following construction.

Anticipated Impacts of Proposed Project

The dredge cut has been designed so as not to impact any tidal wetland areas (other than subaqueous areas) away from the dredged material transfer areas. Impacts of the dredging project consist of temporary impacts during construction, including impacts to tidal wetland (primarily *Phragmites australis*) at the two dredged material transfer areas, and impacts to subaqueous areas and temporarily increased turbidity from sediment suspension. Impact areas are indicated on the attached JPA and permit drawings. Table 1 summarizes the impacts and benefits associated with the proposed Dredging and the proposed Aeration.

Because the impacts are of a temporary nature and the sites will be restored following construction, no additional mitigation is proposed.

Table 1. Anticipated Impacts and Benefits of Proposed Dredging and Aeration

| Project Component | Impacts | Benefits |
|--------------------------|---|--|
| Dredging | <p>Temporary increase in turbidity during construction</p> <p>Temporary tidal wetlands impact during construction, primarily to <i>Phragmites</i>. Impacted shorelines will be restored following construction</p> <p>Temporary nuisance odors and equipment exhaust / noise during construction</p> <p>Temporary impacts on traffic along Bay Avenue and Granby Street during construction</p> | <p>Provides sufficient minimum water depth for aeration to be effective.</p> <p>Removes nutrient-laden, organic sediments</p> <p>Improves ability to use Mason Creek for boating and fishing</p> |
| Aeration | <p>Small increase in impervious area for compressor equipment</p> <p>Noise from compressor operations, minimized through mufflers integrated into the equipment.</p> | <p>Maintains higher dissolved oxygen levels by improving circulation; improves aquatic habitat</p> <p>Reduces nuisance odors arising from anaerobic bed sediment processes</p> |

Dredged Material Management Plan

Dredging is to be completed using mechanical dredge equipment. Equipment will be trucked to the site. Barges and excavators have maximum widths of 14 feet for over the road transportation.

Typical construction equipment includes:

- Barges for excavators – typically a two-piece barge, each section 14 feet by 45 feet, making the barge 28 feet by 45 feet
- Long-reach excavators mounted on barges
- Material / hopper barges (14 feet by 45 feet) for transporting dredged material to transfer areas; hoppers contain material volumes of approximately 50 CY each, and typically four or five hoppers will be used
- Small boats for pushing barges
- Long reach excavator at transfer area for unloading material barges
- Sealed dump trucks for transport to a final dredged material placement area

Material will be dredged by the barge-mounted excavators and loaded in the hopper barges. The hoppers will then be transported to the transfer sites where they will be unloaded by other excavators directly into sealed dump trucks. Note that some excavation from shore will be necessary immediately adjacent to the dredged material transfer areas, to create sufficient water depth for launching the barges and boats.

Samples of the materials to be dredged were collected from the proposed dredge area. The sediment testing program consisted of 16 samples collected to a depth of four feet below the bed. Composite samples were prepared representing geographic sections of the creek, and the composite samples were compiled for environmental testing. Classification testing results indicate the material to be dredged consist of silts and clays, with widespread presence of plant matter or roots, and relatively high water contents (112% to 282%). A single sampling point near the Navy channel and culvert to Willoughby Bay indicated fine to medium sand. The complete results of sediment sampling, with environmental testing results, are an attachment to this permit application.

No onsite dewatering of dredged material is anticipated. The dredged material will be truck hauled to an upland landfill or other facility that accepts excavated and dredged material. The project has been specifically discussed with two area facilities that have indicated that they are able to accept the dredged material from Mason Creek without dewatering. The specific final dredged material placement / disposal facility will be secured by the contractor in keeping with any and all permit requirements.

Property owned by the NRHA would constitute a 2.4 acre area for contractor access and laydown adjacent to Bellinger Boulevard and the northeastern shoreline of Mason Creek. This area is open grass space with no consistent present usage. After construction, this area will be restored to existing conditions. Dredged material will be loaded into sealed dump trucks and transported to the placement sites immediately to avoid re-handling, minimizing impacts on this parcel. Two reaches of shoreline will

be temporarily disturbed during construction, as outlined above, for equipment access and as areas to pull barges near shore for unloading. The disturbed shoreline, estimate to be on the order of 50 to 70 feet at each site, will be restored to pre-project conditions following construction (without restoring the *Phragmites*).

Production for mechanical dredges is estimated to be on the order of 40 – 50 CY/hr. Based on an estimated dredge volume of 165,000 CY, and production of 400-500 CY/day (assuming 10 hour work days), approximately 4 to 5 sealed 10 CY dump trucks will be leaving the site hourly over the project period estimated to be 24 months. Given the dredging volume and need to establish two separate dredged material transfer locations, the project may be conducted in phases over multiple calendar years.

A traffic control plan will be developed to provide ingress and egress onto Bellinger Boulevard and along Granby Street. Traffic control is proposed through a combination of signs and flagmen when trucks enter the road.

Attachment 1. Joint Permit Application

PLEASE PRINT OR TYPE ALL ANSWERS. If a question does not apply to your project, please print N/A (not applicable) in the space provided. **If additional space is needed, attach extra 8 1/2 x 11 inch sheets of paper.**

| | | |
|----------------------------------|---|-------------------------------|
| CHECK ONE, if applicable: | Pre-Construction Notification (PCN) <input type="checkbox"/> (For Nationwide Permits ONLY) | SPGP <input type="checkbox"/> |
|----------------------------------|---|-------------------------------|

1. PROJECT LOCATION INFORMATION

(Attach a copy of a detailed map, such as a USGS topographic map or street map showing the site location and project boundary, so that it may be located for inspection. Include an arrow indicating the north direction.)

| | |
|--|--|
| Street Address | City/County/Zipcode |
| Subdivision | Lot/Block/Parcel # |
| Name of water body(ies) within project boundaries and drainage area (acres or square miles) | |
| Tributary(ies) to: _____ Basin: _____ Subbasin: _____ (Example: Basin: <u>James River</u> Subbasin: <u>Middle James River</u>) | |
| Special Standards (based on DEQ Water Quality Standards 9VAC25-260 et seq.): _____ | |
| Project type (check one) | <input type="checkbox"/> Single user (private, non-commercial, residential) <input type="checkbox"/> Multi-user (community, commercial, industrial, government) |
| Latitude and longitude at center of project site: _____ - _____ - _____ / _____ - _____ - _____ | |
| USGS topographic map name: _____ | |
| 8- digit USGS Hydrologic Unit Code (HUC) for your project site (See http://cfpub.epa.gov/surf/locate/index.cfm): _____ If known, indicate the 10-digit and 12-digit USGS HUCs (see: _____) | |
| Name of your project (Example: Water Creek driveway crossing) _____ | |
| Is there an access road to the project? <input type="checkbox"/> Yes <input type="checkbox"/> No. If yes, check all that apply: <input type="checkbox"/> public <input type="checkbox"/> private <input type="checkbox"/> improved <input type="checkbox"/> unimproved | |
| Provide driving directions to your site, giving distances from the best and nearest visible landmarks or major intersections: | |
| Does your project site cross boundaries of two or more localities (i.e. cities/counties/towns)? <input type="checkbox"/> Yes <input type="checkbox"/> No If so, name those localities: _____ | |

FOR AGENCY USE ONLY

| | |
|------|--------|
| | Notes: |
| JPA# | |

2. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION

The applicant(s) is/are the legal entity to which the permit may be issued. The applicant(s) can either be the property owner(s) or the person/people/company(ies) that intend(s) to undertake the activity. The agent is the person or company that is representing the applicant(s). If a company, please use the company name that is registered with the State Corporation Commission (SCC), or indicate no registration with the SCC.

| | | | | | | | |
|--|--------|-------|--|------|--------|-------|----------|
| Applicant(s) (For a company, use SCC-registered name) | | | Agent (if applicable) (For a company, use SCC-registered name) | | | | |
| Mailing address | | | Mailing address | | | | |
| City | | State | Zip Code | City | | State | Zip Code |
| Phone number w/area code | Fax | | Phone number w/area code | | Fax | | |
| Mobile/pager | E-mail | | Mobile/pager | | E-mail | | |
| State Corporation Commission ID number (if applicable) | | | State Corporation Commission ID number (if applicable) | | | | |
| <i>Certain permits or permit authorizations may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please provide an e-mail address here: _____</i> | | | | | | | |
| Property owner(s), if different from applicant (For a company, use SCC-registered name) | | | Contractor, if known (For a company, use SCC-registered name) | | | | |
| Mailing address | | | Mailing address | | | | |
| City | | State | Zip code | City | | State | Zip code |
| Phone number w/area code | Fax | | Phone number w/area code | | Fax | | |
| Mobile/pager | E-mail | | Mobile/pager | | E-mail | | |
| State Corporation Commission ID number (if applicable) | | | State Corporation Commission ID number (if applicable) | | | | |

3. PROVIDE A DESCRIPTION OF THE PROJECT, PROJECT PRIMARY AND SECONDARY PURPOSES, PROJECT NEED, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose must include any new development or expansion of an existing land use and/or proposed future use of residual land
- Describe the physical alteration of surface waters
- Include a description of alternatives considered to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent practicable. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered
- For major surface water withdrawals, public surface water supply withdrawals, or projects that will alter in-stream flows, include the water supply issues that form the basis of the proposed project.

3. PROVIDE A DESCRIPTION OF THE PROJECT (Continued)

| | |
|--|---|
| Date of proposed commencement of work (MM/DD/YYYY) _____ | Date of proposed completion of work (MM/DD/YYYY) _____ |
| Are you submitting this application at the direction of any State, local, or Federal agency? <input type="checkbox"/> Yes <input type="checkbox"/> No | Has any work commenced or has any portion of the project for which you are seeking a permit been completed? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| If you answered "yes" to either question above, give details stating when the work was completed and/or when it commenced, who performed the work, and which agency (if any) directed you to submit this application. In addition, you will need to clearly differentiate between completed work and proposed work on your project drawings. | |
| Are you aware of any unresolved violations of environmental law or litigation involving the property? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, please explain) | |

4. PREVIOUS SITE VISITS AND/OR PERMITS RELATED TO THE PROPOSED WORK (Include all Federal, State, and Local pre-application coordination or previous permits)

| Agency | Activity | Permit/Project number, and explanation of non-reporting Nationwide permits previously used | Action taken ** and Date of Action | If denied, give reason for denial |
|--------|----------|---|------------------------------------|-----------------------------------|
| | | | | |
| | | | | |

** Issued, denied, site visit

5. PROJECT COSTS

Approximate cost of the entire project, including materials and labor: \$ _____

Approximate cost of only the portion of the project affecting State waters (below mean low water in tidal areas and below ordinary high water mark in nontidal areas): \$ _____

6. PUBLIC NOTIFICATION (Attach additional sheets if necessary)

- Complete information for all property owners adjacent to the project site and across the waterway, if the waterway is less than 500 feet in width. If your project is located within a cove, you will need to provide names and mailing addresses for all property owners within the cove.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

| | | | | |
|-----------------------|-----------------|------|-------|----------|
| Property owner's name | Mailing address | City | State | Zip code |
| | | | | |

Name of newspaper having general circulation in the area of the project: _____
Address and phone number (including area code) of newspaper _____

Have adjacent property owners been notified with forms in Appendix A? _____ Yes _____ No (attach copies of distributed forms)

7. THREATENED AND ENDANGERED SPECIES INFORMATION

Please provide any information concerning the potential for your project to impact state and/or federally threatened and endangered species (listed or proposed). Attach correspondence from agencies and/or reference materials that address potential impacts, such as database search results or your Corps' waters and wetlands delineation confirmation. Contact information for the Virginia Department of Game and Inland Fisheries and the Virginia Department of Conservation and Recreation, Division of Natural Heritage can be found on page 4 of this package.

8. HISTORIC RESOURCES INFORMATION

Note: Historic properties include but are not limited to archeological sites, battlefields, Civil War earthworks, graveyards, buildings, bridges, canals, etc. Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (AHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

Are any historic properties located within or adjacent to the project site? _____ Yes _____ No _____ Uncertain
If Yes, please provide a map showing the location of the historic property within or adjacent to the project site.

Are there any buildings or structures 50 years old or older located on the project site? _____ Yes _____ No _____ Uncertain
If Yes, please provide a map showing the location of these buildings or structures on the project site.

Is your project located within a historic district? _____ Yes _____ No _____ Uncertain
If Yes, please indicate which district: _____

8. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?

Yes No Uncertain

If Yes, please provide the following information: Date of Survey: _____

Name of firm: _____

Is there a report on file with the Virginia Department of Historic Resources? Yes No Uncertain

Title of Cultural Resources Management (CRM) report: _____

Was any historic property located? Yes No Uncertain

9. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 18.

| | Impact site number 1 | Impact site number 2 | Impact site number 3 |
|--|-------------------------|-------------------------|-------------------------|
| Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO (Example: F, NT, PE, V) | | | |
| Wetland/waters impact area (square feet) | | | |
| Dune/beach impact area (square feet) | | | |
| Stream dimensions at impact site (length and average width in linear feet, and area in square feet) | | | |
| Volume of fill below Mean High Water or Ordinary High Water (cubic yards) | | | |
| Cowardin classification of impacted wetland/water or geomorphological classification of stream Example wetland: PFO; Example stream: wide; bank eroding; braided channel; Example stream: 'C' channel | | | |
| Average stream flow at site (flow rate under normal rainfall conditions in cubic feet per second) | | | |
| Contributing drainage area (acres or square miles) | | | |

9. WETLANDS/WATERS IMPACT INFORMATION (Continued)

| | | | |
|---|--|--|--|
| DEQ classification of impacted resource(s): Estuarine Class II Non-tidal waters Class III Mountainous zone waters Class IV Stockable trout waters Class V Natural trout waters Class VI Wetlands Class VII | | | |
| For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map⁽⁴⁾ – see the Footnotes section in the form instructions. | | | |
| For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument. | | | |

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

CERTIFICATION: I am hereby applying for permits typically issued by the DEQ, VMRC, U.S. Army Corps of Engineers, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Is/Are the Applicant(s) and Owner(s) the same? Yes No

| | |
|---|--|
| Applicant's name & title (printed or typed) | Second applicant's name & title, if applicable (printed or typed) |
| Applicant's signature | Second applicant's signature |
| Date | Date |
| (Required for VMRC permit actions only) Property owner's name, if different from Applicant | (Required for VMRC permit actions only) Second property owner's name, if applicable |
| Owner's signature, if different from Applicant | Second owner's signature |
| Date | Date |

10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS (Continued)

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

CERTIFICATION OF AUTHORIZATION TO ALLOW AGENT(S) TO ACT ON APPLICANT'S(S') BEHALF (IF APPLICABLE)

I (we), _____ (and) _____,
APPLICANT'S NAME(S) – complete the second blank if more than one Applicant

hereby certify that I (we) have authorized _____ (and) _____
AGENT'S NAME(S) – complete the second blank if more than one Agent

to act on my (our) behalf and take all actions necessary to the processing, issuance, and acceptance of this permit and any and all standard and special conditions attached. I (we) hereby certify that the information submitted in this application is true and accurate to the best of my (our) knowledge.

| | |
|-----------------------------|---|
| Applicant's signature | Second applicant's signature, if applicable |
| Date | Date |
| Agent's signature and title | Second agent's signature and title, if applicable |
| Date | Date |

CONTRACTOR ACKNOWLEDGEMENT (IF APPLICABLE)

I (we), _____ (and) _____,
APPLICANT'S NAME(S) – complete the second blank if more than one Applicant

have contracted _____ (and) _____
CONTRACTOR'S NAME(S) – complete the second blank if more than one Contractor

to perform the work described in this Joint Permit Application, signed and dated _____.

I (we) will read and abide by all conditions as set forth in all Federal, State, and Local permits as required for this project. I (we) understand that failure to follow the conditions of the permits may constitute a violation of applicable Federal, State, and Local statutes and that we will be liable for any civil and/or criminal penalties imposed by these statutes.

In addition, I (we) agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If I (we) fail to provide the applicable permit upon request, I (we) understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all of the terms and conditions.

| | | |
|---|---|------|
| Contractor's name or name of firm (printed/typed) | Contractor's or firm's mailing address | |
| Contractor's signature and title | Contractor's license number | Date |
| Applicant's signature | Second applicant's signature, if applicable | |
| Date | Date | |

**END OF GENERAL INFORMATION**

The following sections are activity-specific. Fill out only the sections that apply to your particular project.

18. DREDGING, MINING, AND EXCAVATING

FILL OUT THE FOLLOWING TABLE FOR DREDGING PROJECTS

| | NEW dredging | | | | MAINTENANCE dredging | | | |
|--|--------------|-------------|--|---|----------------------|-------------|--|-------------|
| | Hydraulic | | Mechanical (clamshell, dragline, etc.) | | Hydraulic | | Mechanical (clamshell, dragline, etc.) | |
| | Cubic yards | Square feet | Cubic yards | Square feet | Cubic yards | Square feet | Cubic yards | Square feet |
| Vegetated wetlands | | | | | | | | |
| Nonvegetated wetlands | | | | | | | | |
| Subaqueous land | | | | | | | | |
| Totals | | | | | | | | |
| Is this a one-time dredging event? <input type="checkbox"/> Yes <input type="checkbox"/> No If "no", how many dredging cycles are anticipated: _____ (<input type="checkbox"/> initial cycle in cu. yds.) (<input type="checkbox"/> subsequent cycles in cu. yds.) | | | | | | | | |
| <p>Composition of material (percentage sand, silt, clay, rock): Provide documentation (i.e. laboratory results or analytical reports) that <i>dredged</i> material from on-site areas is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site).</p> | | | | | | | | |
| <p>Please include a dredged material management plan that includes specifics on how the dredged material will be handled and retained to prevent its entry into surface waters or wetlands. If on-site dewatering is proposed, please include plan view and cross section drawings of the dewatering area and associated outfall.</p> | | | | | | | | |
| <p>Will the dredged material be used for any commercial purpose or beneficial use? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, please explain:</p> | | | | | | | | |
| <p>If this is a maintenance dredging project, what was the date that the dredging was last performed? _____ Permit number of original permit: _____ <i>(It is important that you attach a copy of the original permit.)</i></p> | | | | | | | | |
| <p><i>For mining projects:</i> On separate sheets of paper, explain the operation plans, including: 1) the frequency (i.e., every six weeks, for example), duration (i.e., April through September), and volume (in cubic yards) to be removed per operation; 2) the temporary storage and handling methods of mined material, including the dimensions of the containment berm used for upland disposal of dredged material and the need (or no need) for a liner or impermeable material to prevent the leaching of any identified contaminants into ground water; 3) how equipment will access the mine site; and 4) verification that dredging: a) will not occur in water body segments that are currently on the effective Section 303(d) Total Maximum Daily Load (TMDL) priority list or that have an approved TMDL; b) will not exacerbate any impairment; and c) will be consistent with any waste load allocation/limit/conditions imposed by an approved TMDL.</p> | | | | | | | | |
| <p>Have you applied for a permit from the Virginia Department of Mines, Minerals and Energy? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | | | | | | | | |
| Contributing drainage area: _____ square miles | | | | Average stream flow at site (flow rate under normal rainfall conditions): _____ cfs | | | | |

19. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES

Source and composition of fill material (percentage sand, silt, clay, rock): _____

Provide documentation (i.e. laboratory results or analytical reports) that *fill* material from off-site locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas.

Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any):

Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose:

| | |
|---|--|
| Will the structure be placed on pilings? _____ Yes _____ No | Total area occupied by any structure. _____ Square Feet |
| How far will the structure be placed channelward from the back edge of the dune? _____ feet | How far will the structure be placed channelward from the back edge of the beach? _____ feet |

20. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCEMENT, or TEMPORARY OR PERMANENT RELOCATIONS

If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at:
<http://www.nao.usace.army.mil/Missions/Regulatory/UnifiedStreamMethodology.aspx> or
<http://www.deq.virginia.gov/Programs/Water/WetlandsStreams/Mitigation.aspx>.

Has the stream restoration project been designed by a local, state, or federal agency? _____ Yes _____ No. If yes, please include the name of the agency here: _____.

Is the agency also providing funding for this project? _____ Yes _____ No

Linear feet of stream impact: _____

Contributing drainage area: _____ acres or _____ square miles

| | |
|--|--|
| Existing average stream flow at site (flow rate under normal rainfall conditions): _____ cfs | Proposed average stream flow at site after modifications (flow rate under normal rainfall conditions): _____ cfs |
|--|--|

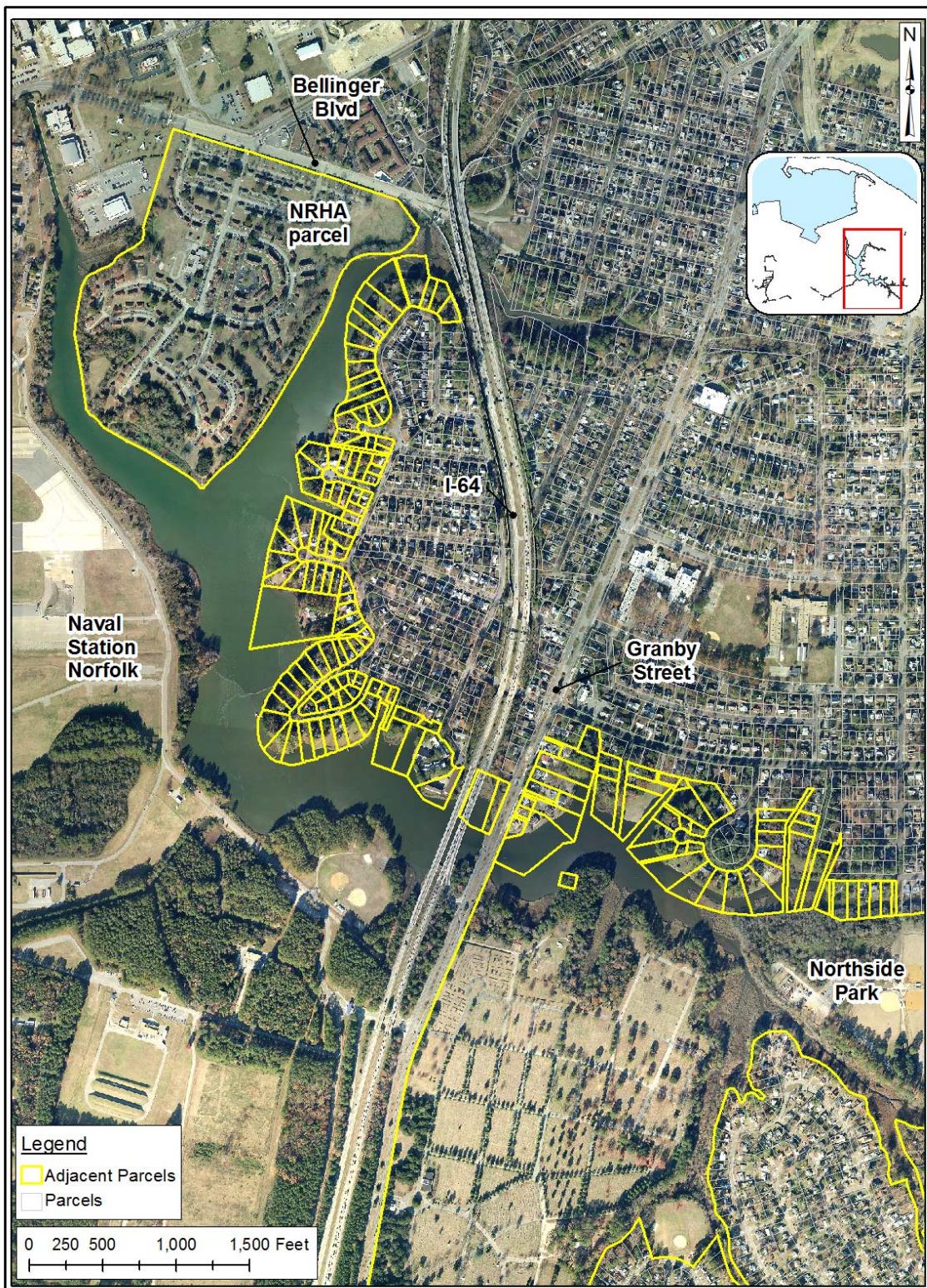
Explain, in detail, the method to be used to stabilize the banks:

Explain the composition of the existing stream bed (percent cobble, rock, sand, etc.):

9. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

| Impact number (description) | Impact site number 1 (Dredge area w/ 3x buffer) | Impact site number 2 (Eastern Transfer Area) | Impact site number 3 (Western Transfer Area) | Impact site number 4 (Dredge area w/ 3x buffer) |
|---|--|--|--|--|
| Impact description (use all that apply): | EX, T, PE, SB, NV | F, T, TE, V | F, T, TE, NV | EX, T, PE, SB, NV |
| Wetland/waters impact area (square feet) | 2,382,943 | 4,185 | 1,316 | 6,870 |
| Dune/beach impact area (square feet) | N/A | N/A | N/A | N/A |
| Stream dimensions at impact site (length and average width in linear feet, and area in sq. ft.) | N/A | N/A | N/A | N/A |
| Volume of fill below Mean High Water or Ordinary High Water (cubic yards) | N/A | N/A | N/A | N/A |
| Cowardin classification of impacted wetland/water or geomorphological classification of stream | EUB3 | EEM5 | ERS2 | EUB2 |
| Average stream flow at site (flow rate under normal rainfall conditions) (cubic feet per second) | N/A | N/A | N/A | N/A |
| Contributing drainage area (acres or square miles) | 3491 acres | 3491 acres | 3491 acres | 3491 acres |
| DEQ classification of impacted resource(s): | Estuarine (Class II) | Estuarine (Class II) | Estuarine (Class II) | Estuarine (Class II) |
| For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map (4) – see the Footnotes section in the form instructions. | See project drawings for wetlands and waters boundary map. |
| For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument. | N/A | N/A | N/A | N/A |

Attachment 2. Adjacent Property Owners



Adjacent Property Owner (APO) Parcel Locations

| GPIN | Owner Name | Owner Street | Owner City | Owner ZIP | Property Street | Property City | Property ZIP |
|------------|--------------------------------------|---------------------------|--------------------|------------|---------------------|---------------|--------------|
| 1530473371 | ABBOTT, JOSEPH E JR & ANN B | 8534 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8534 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530499087 | ALBERT, DEL W & DORIS L | 8769 COMMODORE OVLK | NORFOLK, VA | 23503-4733 | 8769 COMMODORE OVLK | NORFOLK, VA | 23503-4733 |
| 1530570412 | ALMOND, LAWRENCE A | 187 BLADES ST | NORFOLK, VA | 23503-4742 | 187 BLADES ST | NORFOLK, VA | 23503-4742 |
| 1530853927 | HAIR, JOHNATHAN & PAMELA | 257 LOUVIK ST | NORFOLK, VA | 23503-5224 | 257 LOUVICK ST | NORFOLK, VA | 23503-5224 |
| 1530669331 | APLET, NORMA J ET ALS | 147 CIRCLE CT | NORFOLK, VA | 23503-4835 | 147 CIRCLE CT | NORFOLK, VA | 23503-4835 |
| 1530769445 | CASEY, NOREEN J & WILLIAM B | 8545 LAWSON AVE | NORFOLK, VA | 23503-5220 | 8545 LAWSON AV | NORFOLK, VA | 23503-5220 |
| 1530669432 | ROSSETTI, WILLIAM | 144 CIRCLE CT | NORFOLK, VA | 23503-4835 | 144 CIRCLE CT | NORFOLK, VA | 23503-4835 |
| 1530573186 | ASPHALT ROADS & MATERIALS CO INC | 4901 CLEVELAND ST | VIRGINIA BEACH, VA | 23462-5301 | 8578 EXECUTIVE DR | NORFOLK, VA | 23503 |
| 1530562947 | ASPHALT ROADS & MATERIALS CO INC | 4901 CLEVELAND ST | VIRGINIA BEACH, VA | 23462-5301 | W S EXECUTIVE DR | NORFOLK, VA | 23503 |
| 1530477172 | MARUSICH, ROBERT P ET AL | 8510 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8510 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530488567 | SANCHEZ, DOUGLAS A | 8729 COMMODORE DR | NORFOLK, VA | 23503-4705 | 8729 COMMODORE DR | NORFOLK, VA | 23503-4705 |
| 1530486368 | CORCORAN, JESSAMYN | 212 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 212 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1530489933 | GRIMPEL, LUCAS & NATALIE | 206 RODMAN RD | NORFOLK, VA | 23503-4727 | 206 RODMAN RD | NORFOLK, VA | 23503-4727 |
| 1530489884 | CAMPBELL, JERGEN D & SHERRY D HANDEL | 8749 COMMODORE DR | NORFOLK, VA | 23503-4733 | 8749 COMMODORE DR | NORFOLK, VA | 23503-4733 |
| 1530669821 | VITEK, LEIGH T & ROBERT T | 8588 MARGARET AVE | NORFOLK, VA | 23503-4842 | 8588 MARGARET AV | NORFOLK, VA | 23503-4842 |
| 1530477343 | BASTIAN, RICHARD A & BETTY S | 8523 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8523 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530760179 | BATEMAN, JESSICA C REVOCABLE TRUST | 8548 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8548 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530486126 | ATKINSON, CHRISTOPHER J ET AL | 209 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 | 209 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530477623 | MENDOZA, RICARDO U & PAULA M | 8552 CUFOR CRESCENT | NORFOLK, VA | 23503 | 8552 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530571022 | WRIGHT, MARIAN W REV LIVING TR | 4744 POOL SIDE RD | VIRGINIA BEACH, VA | 23455-5329 | 8560 ROSMAR CT | NORFOLK, VA | 23503-4728 |
| 1530485445 | BUEN, EDELL D | 218 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 218 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1530485178 | DEAN TIMOTHY M & ANNA | 211 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 | 211 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530487754 | HABIB, AMEET I & STEPHANIE | 213 RODMAN RD | NORFOLK, VA | 23503-4726 | 213 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530488917 | CASTOR, MARY ANN | 214 RODMAN RD | NORFOLK, VA | 23503-4727 | 214 RODMAN RD | NORFOLK, VA | 23503-4727 |
| 1530487154 | SUMMIT HOLDING GROUP, LLC | 7656 W SAHARA AVE STE 110 | LAS VEGAS, NV | 89117-2773 | 201 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530762414 | MULLALY, HUGH J | 156 CIRCLE CT | NORFOLK, VA | 23503-4835 | 156 CIRCLE CT | NORFOLK, VA | 23503-4835 |
| 1530768194 | WISE, KEITH ET AL | 8541 LAWSON AVE | NORFOLK, VA | 23503-5220 | 8541 LAWSON AV | NORFOLK, VA | 23503-5220 |
| 1530478669 | COULSTING, MARY S TRUST | 1420 RAMSEY RD | NORFOLK, VA | 23503-4124 | 8560 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530662776 | IACONO, D BARRY & MYRA V TRS | 8568 GRANBY ST | NORFOLK, VA | 23503-4816 | 8568 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530499228 | GUERRA, ERIC S | 8803 COMMODORE OVLK | NORFOLK, VA | 23503-4733 | 8803 COMMODORE OVLK | NORFOLK, VA | 23503-4733 |
| 1531501133 | CALEO, MICHAEL V & CATHRYN L | 8831 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8831 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530479744 | FECTEAU, JEAN E ET AL | 8580 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8580 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530767437 | BLINK, MARTIN J & CATHERYN C | PO BOX 121 | BUXTON, NC | 27920-0121 | 8518 CIRCLE DR | NORFOLK, VA | 23503-4837 |

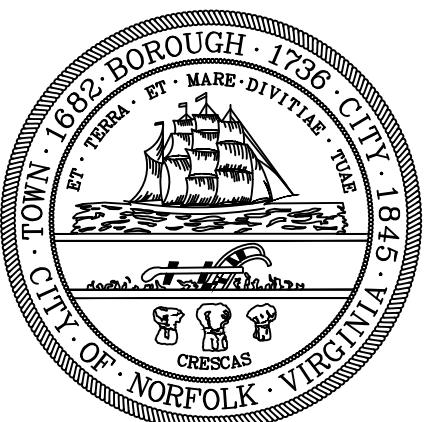
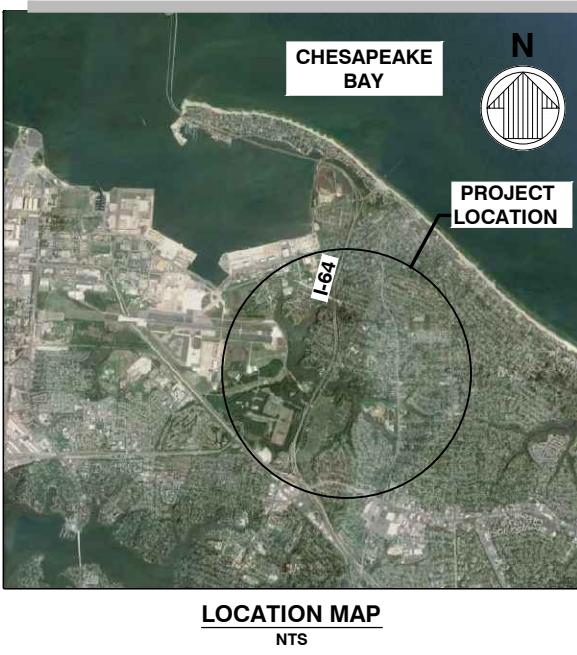
| GPIN | Owner Name | Owner Street | Owner City | Owner ZIP | Property Street | Property City | Property ZIP |
|------------|------------------------------------|------------------------------|-------------|------------|---------------------|---------------|--------------|
| 1530664903 | PHILLIPS, MATTHEW & AMY W | 8584 GRANBY ST | NORFOLK, VA | 23518-2504 | 8584 GRANBY ST | NORFOLK, VA | 23518-2504 |
| 1530663816 | HUTCHINS, GREGORY M | 8576 GRANBY ST | NORFOLK, VA | 23503-4816 | 8576 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530855928 | DOWNING, LYNETTE K | 269 LOUVICK ST | NORFOLK, VA | 23503-5224 | 269 LOUVICK ST | NORFOLK, VA | 23503-5224 |
| 1530855958 | DOWNING, LYNETTE K | 269 LOUVICK ST | NORFOLK, VA | 23503-5224 | 273 LOUVICK ST | NORFOLK, VA | 23503 |
| 1530478407 | BOYD, JAMES A ET AL | 8555 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8555 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530476027 | SOUSA, EMILIO ET ALS | 8516 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8516 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530486412 | OZMON, TIMOTHY T | 216 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 216 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1530496030 | FOSTER, LAWRENCE H JR ET AL | 222 RODMAN RD | NORFOLK, VA | 23503-4727 | 222 RODMAN RD | NORFOLK, VA | 23503-4727 |
| 1530761392 | DICKINSON, DEBRA A | 155 CIRCLE CT | NORFOLK, VA | 23503-4835 | 155 CIRCLE CT | NORFOLK, VA | 23503-4835 |
| 1530661771 | CAPUTO, JOHN P JR & VIVIAN C | 8562 GRANBY ST | NORFOLK, VA | 23503-4816 | 8562 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530663671 | WALTER, ANNETTE E | 8560 GRANBY ST | NORFOLK, VA | 23503-4816 | 8560 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530660662 | CATCHOT, ROBERT H JR & GARNET V | 8552 GRANBY ST | NORFOLK, VA | 23503-4816 | 8552 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530660536 | ERB, DANIEL LEE & NANCY | 5579 STERLING LAKES CIR #310 | MASON, OH | 45040-7838 | 8548 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530569486 | TYSON, TONY & ALBERTA L | 8540 GRANBY ST | NORFOLK, VA | 23503-4816 | 8540 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530760522 | MULLIGAN, CHARLES H & HELEN P, TRS | 148 CIRCLE CT | NORFOLK, VA | 23503-4835 | 148 CIRCLE CT | NORFOLK, VA | 23503-4835 |
| 1530580946 | GILDEA, ROBERT E & SHIRLEY V | 8757 COMMODORE DR | NORFOLK, VA | 23503-4733 | 8757 COMMODORE DR | NORFOLK, VA | 23503-4733 |
| 1530486709 | CHARNOCK, JOSEPH P & SHEILA A | 221 RODMAN RD | NORFOLK, VA | 23503-4726 | 221 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530483398 | GORNEY, LOUIS F & HAZEL A | 224 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 224 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1530488683 | HINOJOSA, FRANKLIN ALEJANDRO | 8733 COMMODORE DR | NORFOLK, VA | 23503-4705 | 8733 COMMODORE DR | NORFOLK, VA | 23503-4705 |
| 1530486185 | GREENE, DAVID A & TAMMIE A | 205 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 | 205 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530767338 | BEALES, EDWARD H | 8522 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8522 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530499619 | DAY, DANIEL B & CARYNN | 8819 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8819 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530499298 | WALL, LISA M ET AL | 8805 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8805 COMMODORE OVLK | NORFOLK, VA | 23503-4706 |
| 1530571345 | CRISTEA, SIMEON & SAMANTHA L | 173 BLADES ST | NORFOLK, VA | 23503-4742 | 173 BLADES ST | NORFOLK, VA | 23503-4742 |
| 1530489649 | MCLAUGHLIN, JAMES B & KRYSTLE A | 201 RODMAN RD | NORFOLK, VA | 23503-4726 | 201 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530474044 | JOHNSON, DEREK W & JANICE L | 8524 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8524 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530762684 | BUNS, PHILLIP A & RACHEL A | 8568 CIRCLE DR | NORFOLK, VA | 23503-4850 | 8568 CIRCLE DR | NORFOLK, VA | 23503-4850 |
| 1530488792 | MATEO, RICHARD H & ESMIN B | 205 RODMAN RD | NORFOLK, VA | 23503-4726 | 205 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530477685 | WARD, RICHARD C & VIRGINIA M | 5326 POWHATAN AVE | NORFOLK, VA | 23508 | 8554 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530564904 | JEFFERSON ARMS CORP | 8562 EXECUTIVE DR # DR-2 | NORFOLK, VA | 23503-4711 | 8562 EXECUTIVE DR | NORFOLK, VA | 23503-4715 |
| 1530498103 | MORRIS, EMILY ANN ET ALS | 8777 COMMODORE OVLK | NORFOLK, VA | 23503-4741 | 8777 COMMODORE OVLK | NORFOLK, VA | 23503-4741 |
| 1530487938 | JOHNSON, GAIL T & JAMES JUSTIN | 218 RODMAN RD | NORFOLK, VA | 23503-4727 | 218 RODMAN RD | NORFOLK, VA | 23503-4727 |
| 1530761439 | SAULT, KENNETH R ET AL | 152 CIRCLE CT | NORFOLK, VA | 23503-4835 | 152 CIRCLE CT | NORFOLK, VA | 23503-4835 |

| GPIN | Owner Name | Owner Street | Owner City | Owner ZIP | Property Street | Property City | Property ZIP |
|------------|--------------------------------------|----------------------|--------------------|------------|--------------------|---------------|--------------|
| 1530479230 | THOMPSON, BRYAN | 8506 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8506 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1531500053 | COFFMAN, NICHOLAS | 8829 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8829 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530499531 | STARITA, PATRICIA D | 8815 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8815 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530760719 | VITEK, ROBERT T & LEIGH T | 8588 MARGARET AVENUE | NORFOLK, VA | 23503-4842 | E S MARGARET AV | NORFOLK, VA | 23503-0000 |
| 1530668784 | PINE, CHRISTOPHER W & KRISTEN M | 8584 MARGARET AVE | NORFOLK, VA | 23503-4842 | 8584 MARGARET AV | NORFOLK, VA | 23503-4842 |
| 1530763032 | SMITH, WINFORD W & KAY D | 8540 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8540 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530475046 | GLEASON, RYAN J & REBECCA L | 8522 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8522 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530564762 | KMH LLC | 2492 ENTRADA DR | VIRGINIA BEACH, VA | 23456-4222 | 8554 EXECUTIVE DR | NORFOLK, VA | 23503-4714 |
| 1530851977 | HARDY, MARION, TRUSTEE | PO BOX 429 | HAMPTON FALLS, NH | 03844-0429 | 245 LOUVICK ST | NORFOLK, VA | 23503-5224 |
| 1531503191 | STINE, RACHEL E ET AL | 194 COMMODORE DR | NORFOLK, VA | 23503-4801 | 194 COMMODORE DR | NORFOLK, VA | 23503-4801 |
| 1530767228 | EVERSOLE, JASON C & BRIDGID R | 8526 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8526 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530764070 | LAWRENCE, VERNIE C JR & BETTY S, TRS | 8538 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8538 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530590385 | LEVESQUE, RONALD F | 8809 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8809 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530572242 | ZADD, PATRICK J & JAMIE G | 8564 ROSMAR CT | NORFOLK, VA | 23503-4728 | 8564 ROSMAR CT | NORFOLK, VA | 23503-4728 |
| 1530476661 | LEWIS, JOHN H & PATSY P | 8550 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8550 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530487473 | LINDEN, GENE M & JANET K | 8721 COMMODORE DR | NORFOLK, VA | 23503-4705 | 8721 COMMODORE DR | NORFOLK, VA | 23503-4705 |
| 1530590098 | LLAMES, GIL C & MARIA L | 8765 COMMODORE DR | NORFOLK, VA | 23503-4733 | 8765 COMMODORE DR | NORFOLK, VA | 23503-4733 |
| 1530476336 | LOPEZ, MARIO L & SEVERINA C | 8541 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8541 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530860151 | BARRINGTON, BILLY R & SHIRLEY D TRS | 416 E BAYVIEW BLVD | NORFOLK, VA | 23503-5438 | 8532 LAWSON AV | NORFOLK, VA | 23503 |
| 1530661329 | LUSH, WALTER D & CARMENCITA B | 8544 GRANBY ST | NORFOLK, VA | 23503-4816 | 8544 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530484447 | BUEN, THOMAS R & GISELA M | 222 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 222 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1530474315 | MINOR, MATTHEW H ET AL | 8536 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8536 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530478459 | ALEXANDER, KEVIN M & VALERIE D | 8559 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8559 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530762019 | HESS, STEVEN C & ANDREA G | 8544 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8544 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530488520 | ELENBACK, GERALD & MARYANN N | 8725 COMMODORE DR | NORFOLK, VA | 23503-4705 | 8725 COMMODORE DR | NORFOLK, VA | 23503-4705 |
| 1530477401 | BURTON, MARK & KATHLEEN | 8543 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8543 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530478826 | HOYT, BRYAN J | 177 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 | 177 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |
| 1530761705 | BAKER, RAND E | 151 E BAYVIEW BLVD | NORFOLK, VA | 23503-4852 | N S CIRCLE DR | NORFOLK, VA | 23503-0000 |
| 1530483299 | MAHLAU-HEINERT, JERALD L & PATRICIA | 221 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 | 221 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530473211 | SANDOW, BRUCE A & MONIKA I | 8530 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8530 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530487383 | RODE, CHRISTOPHER B | 200 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 200 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1531504057 | LOFTIN, RAYMOND LJR | 192 COMMODORE DR | NORFOLK, VA | 23503-4801 | 192 COMMODORE DR | NORFOLK, VA | 23503-4801 |
| 1530488115 | NORTON, HERSHEL C & MARTHA L | 187 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 | 187 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |

| GPIN | Owner Name | Owner Street | Owner City | Owner ZIP | Property Street | Property City | Property ZIP |
|------------|-------------------------------------|---------------------|----------------|------------|---------------------|---------------|--------------|
| 1530478925 | KRUMM, GLEN S & TARN K | 181 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 | 181 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |
| 1530761670 | NELSON, GERARD L | 8562 CIRCLE DR | NORFOLK, VA | 23503-4850 | 8562 CIRCLE DR | NORFOLK, VA | 23503-4850 |
| 1530499336 | SMITH, TIMOTHY C & SUSAN L | 8811 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8811 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530476360 | NEWTON, EDWARD W | 2823 LAMBERT TRL | CHESAPEAKE, VA | 23323-2301 | 8529 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530488975 | DUNN, KELLI THERESA | 210 RODMAN RD | NORFOLK, VA | 23503-4727 | 210 RODMAN RD | NORFOLK, VA | 23503-4727 |
| 1530476099 | PARRISH, DANIEL L | 8512 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8512 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530662536 | VINCENT, GEORGE T JR | 8556 GRANBY ST | NORFOLK, VA | 23503-4816 | 8556 GRANBY ST | NORFOLK, VA | 23503-4816 |
| 1530473077 | NOFPLOT, MANUEL G, III & AMY HESTER | 8528 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8528 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530668601 | STEERMAN, KATHY T | 8580 MARGARET AVE | NORFOLK, VA | 23503-4842 | 8580 MARGARET AV | NORFOLK, VA | 23503-4842 |
| 1530852977 | PIERSON, FINIS E & IRMALEE | 251 LOUVICK ST | NORFOLK, VA | 23503-5224 | 251 LOUVICK ST | NORFOLK, VA | 23503-5224 |
| 1530478305 | SPIVEY, PATRICK CADE | USS GONZALEZ | FPO, AE | 09570-1284 | 8517 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530499739 | PAYTON, SEAN M | 8821 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8821 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530499444 | SCICHILONE, MICHAEL MAREK | 8813 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8813 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530499857 | BREUER, LAUREN T & JAMES E | 8823 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8823 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530666804 | SCOUTEN, WILLIAM B & NADINE K | 8585 MARGARET AVE | NORFOLK, VA | 23503-4841 | 8585 MARGARET AV | NORFOLK, VA | 23503-4841 |
| 1530570280 | RYCHEN, CHARLES B & BETTY I AS TRS | 179 BLADES ST | NORFOLK, VA | 23503-4742 | 179 BLADES ST | NORFOLK, VA | 23503 |
| 1530485109 | SPANGLER, BONNIE K,TRUSTEE | 7413 RED BROOK RD | NORFOLK, VA | 23518-4337 | 215 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530485960 | FRAZIER, DAVID S & CHERYL L | 225 RODMAN RD | NORFOLK, VA | 23503-4726 | 225 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530665688 | JENKINS, RICHARD E JR & LESLIE | 8581 MARGARET AVE | NORFOLK, VA | 23503-4841 | 8581 MARGARET AV | NORFOLK, VA | 23503-4841 |
| 1530769582 | WEIL, CHRISTOPHER R & KATHRYN ELLEN | 8549 LAWSON AVE | NORFOLK, VA | 23503-5220 | 8549 LAWSON AV | NORFOLK, VA | 23503-5220 |
| 1530486795 | SHAMPINE, DALE B TRUSTEE | 217 RODMAN RD | NORFOLK, VA | 23503-4726 | 217 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530487316 | ROSS, LUCY | 206 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 | 206 W BAYVIEW BLVD | NORFOLK, VA | 23503-4702 |
| 1530498223 | SMITH, MIRIAM C | 8801 COMMODORE OVLK | NORFOLK, VA | 23503-4733 | 8801 COMMODORE OVLK | NORFOLK, VA | 23503-4733 |
| 1530499984 | FITZPATRICK, JULIE A | 8825 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8825 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530666901 | SPARKMAN, JAMES L | 8591 MARGARET AVE | NORFOLK, VA | 23503-4841 | 8591 MARGARET AV | NORFOLK, VA | 23503-4841 |
| 1530675004 | BREEN, DAVID A & DEBORAH L TRUSTEES | 111 E BAYVIEW BLVD | NORFOLK, VA | 23503-4833 | 111 E BAYVIEW BLVD | NORFOLK, VA | 23503-4833 |
| 1530475864 | RIVIN, RICHARD ET AL | 191 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 | 191 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |
| 1530478369 | SUMERLIN, GLADYS C TRUST | 8511 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8511 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530478497 | BELSHA, JAMES L | 193 BLADES ST | NORFOLK, VA | 23503-4740 | 193 BLADES ST | NORFOLK, VA | 23503-4740 |
| 1530478637 | DAVIS, MARY E | 8558 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8558 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530488712 | HENSON, JONATHAN A | 209 RODMAN RD | NORFOLK, VA | 23503-4726 | 209 RODMAN RD | NORFOLK, VA | 23503-4726 |
| 1530499008 | TRAYNOR, PATRICIA A | 8773 COMMODORE OVLK | NORFOLK, VA | 23503-4741 | 8773 COMMODORE OVLK | NORFOLK, VA | 23503-4741 |
| 1530767555 | SCHOONOVER, BETHANY L ET AL | 8514 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8514 CIRCLE DR | NORFOLK, VA | 23503-4837 |

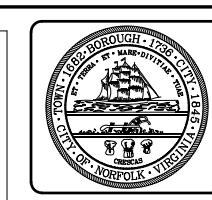
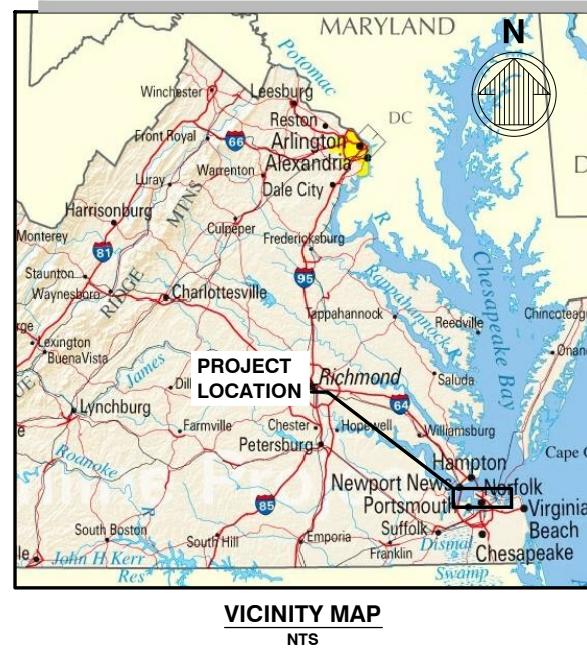
| GPIN | Owner Name | Owner Street | Owner City | Owner ZIP | Property Street | Property City | Property ZIP |
|------------|--------------------------------------|-----------------------------|--------------------|------------|-----------------------------|---------------|--------------|
| 1530484200 | WIPPERFURTH, KEVIN A & MICHELLE L | 219 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 | 219 W BAYVIEW BLVD | NORFOLK, VA | 23503-4701 |
| 1530479757 | BRENDA PERKINS TRUST | 173 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 | 173 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |
| 1530478155 | KESSELLY, LINNIE D | 8508 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8508 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530590063 | JONES, WESLEY W E AL | 8761 COMMODORE DR | NORFOLK, VA | 23503-4733 | 8761 COMMODORE DR | NORFOLK, VA | 23503-4733 |
| 1530475418 | BEAHR, ROBERT C & ROBIN D | 8544 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8544 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530476506 | CHARALAMBOUS, ALEXANDER C & HILLARY | 8548 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8548 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530477444 | WADE, ALEX | 8549 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8549 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530767114 | 8530 CIRCLE DRIVE, LLC | 8530 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8530 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1530488022 | SOMERS, HELEN M | 183 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 | 183 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |
| 1530761311 | ARCHIBALD, DANIEL M & KOREN M | 151 CIRCLE CT | NORFOLK, VA | 23503-4835 | 151 CIRCLE CT | NORFOLK, VA | 23503-4835 |
| 1530595927 | LEFF, JOSEPH D | 190 COMMODORE DR | NORFOLK, VA | 23503-4801 | 190 COMMODORE DR | NORFOLK, VA | 23503-4801 |
| 1530479391 | GEORGE, CHRISTOPHER THOMAS & SUELLEN | 8504 CULFOR CRES | NORFOLK, VA | 23503-4709 | 8504 CULFOR CRES | NORFOLK, VA | 23503 |
| 1530499529 | FOREMAN, JONATHAN J ET AL | 8817 COMMODORE DR | NORFOLK, VA | 23503-4706 | 8817 COMMODORE DR | NORFOLK, VA | 23503-4706 |
| 1530580910 | DAWSON, LINDA B | 8753 COMMODORE DR | NORFOLK, VA | 23503-4733 | 8753 COMMODORE DR | NORFOLK, VA | 23503-4733 |
| 1530854957 | MC GUIRT, KEITH M & MARTHA A | 263 LOUVICK ST | NORFOLK, VA | 23503-5224 | 263 LOUVICK ST | NORFOLK, VA | 23503-5224 |
| 1530474483 | ROBBINS, JOHN CLEVELAND, JR | 2861 RIVER RD | VIRGINIA BEACH, VA | 23454-1212 | 8540 CULFOR CRES | NORFOLK, VA | 23503-4709 |
| 1530663130 | CITY OF NORFOLK | 810 UNION ST | NORFOLK, VA | 23510-2717 | E S GRANBY ST | NORFOLK, VA | 23503-0000 |
| 1530475268 | DUVAL, JAMES L ET AL | 8533 CULFOR CRES | NORFOLK, VA | 23503-4708 | 8533 CULFOR CRES | NORFOLK, VA | 23503-4708 |
| 1530766022 | FENZ, RANDY S & KAREN D JOINT | 8530 CIRCLE DR | NORFOLK, VA | 23503-4837 | 8534 CIRCLE DR | NORFOLK, VA | 23503-4837 |
| 1531308079 | NRHA | 201 GRANBY MALL | NORFOLK, VA | 23510-1810 | 8807 MONITOR WAY | NORFOLK, VA | 23503-4624 |
| 1530669795 | CITY OF NORFOLK | 811 UNION ST | NORFOLK, VA | 23510-0000 | E S MARGARET AV | NORFOLK, VA | |
| 1530479801 | CITY OF NORFOLK | 810 UNION ST | NORFOLK, VA | 23510-2717 | 175 W BAYVIEW BLVD | NORFOLK, VA | 23503-4744 |
| 1530649449 | CITY OF NORFOLK | 810 UNION ST | NORFOLK, VA | 23510-2717 | 8100 GRANBY ST | NORFOLK, VA | 23505-1500 |
| 1531502283 | KENNEY, MICHAEL A | 198 COMMODORE DR | NORFOLK, VA | 23503-4801 | 198 COMMODORE DR | NORFOLK, VA | 23503-4801 |
| 1530568645 | CITY OF NORFOLK | 810 UNION ST | NORFOLK, VA | 23510-2717 | W S GRANBY ST | NORFOLK, VA | |
| | COMMANDER, NAVAL STATION NORFOLK | 1530 GILBERT ST, SUITE 2000 | NORFOLK, VA | 23511 | 1530 GILBERT ST, SUITE 2000 | NORFOLK, VA | 23511 |
| | | | | | | | |
| | | | | | | | |

Attachment 3. Proposed Project Plans



City of Norfolk

Department of Public Works



| | |
|---------------------------------|------|
| PERMIT DRAWINGS | |
| NOT TO BE USED FOR CONSTRUCTION | |
| Date | Apr. |
| Description | |
| Work | |

| | |
|--|--|
| TITLE SHEET & INDEX OF DRAWINGS | |
| MASON CREEK DREDGING NORFOLK, VA | |
| Title: MASON CREEK DREDGING NORFOLK, VA | |
| File: P:\1970-13\500 CADD\1\Permit\197013_G-001; Plotted: 11/26/2014 11:10 AM by AYTODA, BINA; Saved: 11/7/2014 1:24 PM by BAY700A | |

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| Designed by: moffatt & nichol | Rev. - |
| Date: NOV. 2014 | Drawn by: 800 WORLD TRADE CENTER NORFOLK, VA 23510 |
| Cd by: - | Proj. No.: 757-628-8222 |
| Reviewed by: BPJ | Drawing code: - |
| Submitted by: MOFFATT & NICHOL | Drawing Scale: AS NOTED Plot scale: 1:1 (0 SHEET) |

| INDEX OF DRAWINGS | | |
|-------------------|--------|--|
| NO | SHEET | SHEET TITLE |
| 1 | G-001 | TITLE SHEET & INDEX OF DRAWINGS |
| 2 | G-002 | GENERAL NOTES - SHEET 1 OF 2 |
| 3 | C-100 | OVERALL LAYOUT |
| 4 | CS-101 | DREDGING PLAN - SHEET 1 OF 5 |
| 5 | CS-102 | DREDGING PLAN - SHEET 2 OF 5 |
| 6 | CS-103 | DREDGING PLAN - SHEET 3 OF 5 |
| 7 | CS-104 | DREDGING PLAN - SHEET 4 OF 5 |
| 8 | CS-105 | DREDGING PLAN - SHEET 5 OF 5 |
| 9 | CS-106 | ENLARGED PLAN - DREDGED MATERIAL TRANSFER AREA |
| 10 | CS-301 | MAIN CANAL SECTIONS - SHEET 1 OF 4 |
| 11 | CS-302 | MAIN CANAL SECTIONS - SHEET 2 OF 4 |
| 12 | CS-303 | MAIN CANAL SECTIONS - SHEET 3 OF 4 |
| 13 | CS-304 | MAIN CANAL SECTIONS - SHEET 4 OF 4 |
| 14 | CS-305 | NORTHEAST CANAL SECTIONS |
| 15 | CS-306 | EAST CANAL SECTIONS |
| 16 | CS-307 | DREDGED MATERIAL TRANSFER AREA SECTIONS |

CITY OF NORFOLK, VIRGINIA

SITE PLAN #XX
BEFORE YOU DIG
CALL
"MISS UTILITY"
OF VIRGINIA
1-800-552-7001
(TOLL FREE)

| | |
|------------------------|------|
| DEPARTMENT OF PLANNING | DATE |
|------------------------|------|

| |
|---|
| SEAL |
| Sheet Reference Number: G-001 |
| Sheet 1 of 16 |

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THESE PLANS, SPECIFICATIONS, AND WITH ALL CURRENT APPLICABLE CODES AND THE LATEST REVISIONS OF THE FOLLOWING REFERENCE DOCUMENTS:
 - A. VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS
 - B. VDOT ROAD AND BRIDGE STANDARDS
 - C. CITY OF NORFOLK SPECIFICATIONS AND CODE REQUIREMENTS
 - D. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
 - E. VIRGINIA WORK AREA PROTECTION MANUAL
 - F. VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH)
 - G. CITY OF NORFOLK RIGHT-OF-WAY EXCAVATION & RESTORATION MANUAL
2. THESE PLANS ARE INCOMPLETE WITHOUT THE PROJECT SPECIFICATIONS
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE STARTING WORK AND NOTIFY OWNER OF DISCREPANCIES.
4. ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED. METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL ARE THE CONTRACTOR'S RESPONSIBILITY.
5. THE CONTRACTOR SHALL, ON A DAILY BASIS, REMOVE FROM THE SITE ANY EXCAVATED MATERIAL OR DEBRIS. DISPOSAL OF THE MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL DEBRIS NOT SUITABLE FOR PLACEMENT IN WHITEHURST DREDGED MATERIAL MANAGEMENT AREA SHALL BE DISPOSED OF IN A PERMITTED LANDFILL. CONTRACTOR SHALL SUPPLY OWNER WITH ALL APPLICABLE DISPOSAL TICKETS.
6. THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK, STORAGE, AND STAGING AREA LOCATIONS WITH THE OWNER. THE CONTRACTOR SHALL RESTORE THE ACCESS AREAS TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA IS COMPLETE. THIS WORK INCLUDES REPLACEMENT OF FENCING, SIGNAGE, AND OTHER MISCELLANEOUS ITEMS.
7. STAGING AREAS SHALL BE AS APPROVED BY THE OWNER AND FENCED AND MAINTAINED BY THE CONTRACTOR. STAGING AREAS SHALL BE CLEARED OF DEBRIS AND CONTRACTOR INSTALLED AMENITIES AT THE COMPLETION AND ACCEPTANCE OF WORK IN THE AREA.
8. UNLESS OTHERWISE APPROVED BY THE OWNER, EXCESS EQUIPMENT MAY ONLY BE STORED IN APPROVED STORAGE/STAGING AREAS. THE OWNER RESERVES THE RIGHT TO LIMIT SUCH AREAS AS DEEMED NECESSARY. OPERATION OF DREDGING AND OTHER CONSTRUCTION EQUIPMENT WILL NOT BE PERMITTED OUTSIDE THE WORK AREA LIMITS EXCEPT FOR INGRESS AND EGRESS OF THE SITE AT APPROVED LOCATIONS.
9. ANY EXISTING SIGNS, FENCES, OR OTHER STRUCTURES WITHIN THE WORK LIMITS SHALL BE PROTECTED AND/OR REMOVED AND LATER REPLACED BY THE CONTRACTOR AS DIRECTED.
10. A SET OF PROJECT PLANS AND THE PROJECT MANUAL SHALL BE KEPT ON SITE.
11. WITH THE EXCEPTION OF THE TEMPORARY TRANSFER AREAS, NO DREDGING SHALL BE ALLOWED FROM THE SHORELINE.
12. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER.
13. CONTRACTOR IS ENCOURAGED TO VISIT SITE PRIOR TO SUBMITTING BID.
14. ALL INFORMATION SHOWN ON THESE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE CONSTRUCTION ENGINEER ANY CONDITIONS CONFLICTING WITH THE DRAWINGS. FIELD MODIFICATIONS TO THE DRAWINGS SHALL NOT BE MADE WITHOUT THE CONSENT OF THE CONSTRUCTION ENGINEER.
15. IT IS INTENT OF THESE PLANS AND THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT. THE PERMITS ARE HEREBY MADE PART OF THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE AND GOVERN HIMSELF/HERSELF BY ALL PROVISIONS OF THESE PERMITS.
16. ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED. METHODS OF CONSTRUCTION ARE THE CONTRACTOR'S RESPONSIBILITY.
17. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING, AT HIS OWN EXPENSE, ANY AND ALL DAMAGES THAT MAY OCCUR OUTSIDE THE LIMITS OF THIS PROJECT AS A RESULT OF DEMOLITION/CONSTRUCTION.

18. ALL AREAS DISTURBED DURING DEMOLITION/CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION, AT NO EXPENSE TO THE OWNER, UNLESS OTHERWISE NOTED.
19. THE CONTRACTOR SHALL PROTECT ADJACENT STRUCTURES, UTILITIES AND PEDESTRIANS FROM POTENTIAL DAMAGE DUE TO CONTRACTOR'S OPERATIONS.
20. CONTACT CITY FORESTER, RICHARD WERNICKE (757) 823-4024 TO INSPECT TREES SCHEDULED FOR DEMOLITION OR PRUNING WITHIN THE RIGHT OF WAY AND TO GET A PERMIT FOR WORK. ANY EXCAVATION THAT OCCUR WITHIN THE ABOVE MENTIONED TREE PROTECTION AREAS INTENDED TO BE PRESERVED WILL NEED TO HAVE ROOT PRUNING DONE AT 1'-0" TO THE INSIDE EDGE OF THE PROPOSED EXCAVATION.
21. ALL MISS UTILITY MARKINGS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE ERADICATED AT THE COMPLETION OF THE PROJECT.

SURVEY NOTES:

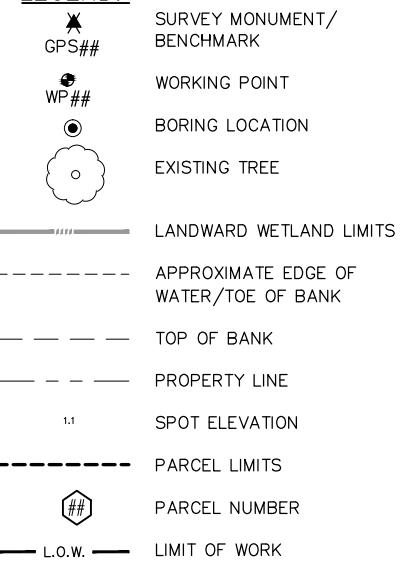
1. THE HYDROGRAPHIC/TOPOGRAPHIC INFORMATION PRESENTED ON THE PLANS AND SECTIONS IS BASED ON SURVEYS COMPLETED IN JANUARY 2013 BY PRECISION MEASUREMENTS, INC. AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME. CONDITIONS MAY VARY FROM THOSE SHOWN HEREIN.
2. BASED ON THE AVAILABLE DATA THE WATER LEVELS WITH RESPECT TO NAVD88 ARE APPROXIMATELY AS FOLLOWS:
 - A. MASON CREEK MHW = 0.500 FT
 - B. MASON CREEK MLW = 0.000 FT
3. THE MERIDIAN SOURCE OF THIS TOPOGRAPHIC SURVEY IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM 1983/1993 HARN (U.S. SURVEY FOOT), RTK GPS DERIVED. HORIZONTAL CONTROL WAS ESTABLISHED USING CITY BENCHMARK CVB DISK G-9-1.
4. VERTICAL DATUM FOR THIS PROJECT IS NORTH AMERICAN VERTICAL DATUM OF 1988.
5. THE SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT OR LEASE EXHIBIT AND MAY NOT SHOW ALL EASEMENTS OR RESTRICTIONS THAT MAY EFFECT THE PROPERTY.
6. THE SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY NOR A SUBDIVISION OF LAND.
7. THE SURVEY DOES NOT INTEND TO DEPICT ANY HAZARDOUS WASTE AND ENVIRONMENTAL FEATURES THAT MAY EFFECT SAID PROPERTY SHOWN HEREON EXCEPT AS SHOWN.
8. METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
9. IF AN EXISTING CONTROL OR BOUNDARY MONUMENT IS DAMAGED OR DESTROYED DURING CONSTRUCTION NEW MONUMENTATION SHALL BE INSTALLED WITHIN THE CONTRACT BY A LAND SURVEYOR, LICENSED IN THE COMMONWEALTH OF VIRGINIA, AS REQUIRED BY THE VIRGINIA DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATIONS – RULE AND REGULATIONS SECTION 18-VAC-10-20-370 PARAGRAPH C-4. THE MONUMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE PUBLIC WORKS SPECIFICATIONS AND STANDARDS.
10. THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL CONSTRUCTION LAYOUT SURVEYING REQUIRED.

CONSTRUCTION

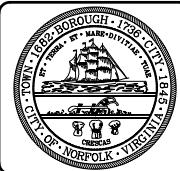
1. MATERIAL SUBMITTALS FOR THIS PROJECT SHALL BE PROVIDED TO THE CONSTRUCTION ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
2. A CONSTRUCTION SCHEDULE SHALL BE SUBMITTED TO THE CONSTRUCTION ENGINEERING OFFICE, AT THE TIME OF THE PRE-CONSTRUCTION CONFERENCE.
3. THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE "CITY OF NORFOLK TREE ORDINANCE" (EFFECTIVE FEBRUARY 15, 2005).
4. FOR WORK IN THE CITY OF NORFOLK RIGHT-OF-WAY, CONTACT 48 HOURS IN ADVANCE:

| | |
|--|--------------|
| DIVISION OF RIGHT-OF-WAY (PERMITS) | 757-664-7306 |
| DIVISION OF ENVIRONMENTAL STORM WATER | 757-823-4000 |
| DEPARTMENT OF PARKS AND URBAN FORESTRY | 757-823-4023 |
| CONSTRUCTION PERMITS | 757-664-6565 |
5. ALL CLEARING, GRUBBING, AND GRADING SHALL BE PERFORMED IN ACCORDANCE WITH VDOT SPECIFICATIONS AND STANDARDS.

6. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ALL OWNERS AND RESIDENTS OF PROPERTY ADJACENT TO WORK SITE, THIRTY (30) DAYS PRIOR TO THE COMMENCEMENT OF WORK, UNLESS OTHERWISE DIRECTED BY THE CITY. CONSTRUCTION WITHIN EASEMENT OR ON PUBLIC RIGHT-OF-WAY NECESSITATED NOTICE WHETHER ADJACENT TO OR LOCATED ON THE ADJOINING PROPERTY. FAILURE TO PROVIDE THE MINIMUM NOTIFICATION TIME WILL RESULT IN A SUSPENSION OF WORK.
9. THE CONTRACTOR SHALL NOTE THAT THERE MAY BE OTHER CONSTRUCTION IN THIS AREA. THE CONTRACTOR SHALL COOPERATE WITH THE CITY AND ANY OTHER CONTRACTOR OR UTILITY OWNER TO PREVENT DELAYS TO EITHER PROJECT.

LEGEND:**ABBREVIATIONS:**

| | |
|----------|---------------------------------|
| AC | ASPHALTIC CONCRETE |
| APPROX | APPROXIMATE |
| AVG | AVERAGE |
| BP | BASELINE |
| BP | BEGINNING POINT |
| C | CENTERLINE |
| CY / CYS | CUBIC YARD / CUBIC YARDS |
| DIA | DIAMETER |
| E | EAST |
| EL | ELEVATION |
| ELEV | ELEVATION |
| EP | ENDING POINT |
| EX | EXISTING |
| EXIST | EXISTING |
| FT | FOOT / FEET |
| HARN | HIGH ACCURACY REFERENCE NETWORK |
| HORZ | HORIZONTAL |
| L | LENGTH, LEFT |
| LB / LBS | POUND / POUNDS |
| MAX | MAXIMUM |
| MHW | MEAN HIGH WATER |
| MHHW | MEAN HIGHER HIGH WATER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MLW | MEAN LOW WATER |
| MLLW | MEAN LOWER LOW WATER |
| MSL | MEAN SEA LEVEL |
| N | NORTH |
| NAVD | NORTH AMERICAN VERTICAL DATUM |
| NTS | NOT TO SCALE |
| OFF. | OFFSET |
| PC | POINT OF CURVATURE |
| PI | POINT OF INTERSECTION |
| POB | POINT OF BEGINNING |
| POE | POINT OF ENDING |
| PT | POINT / POINT OF TANGENT |
| PVI | POINT OF VERTICAL INTERSECTION |
| R | RADIUS, RIGHT |
| REQ'D | REQUIRED |
| R.O.W | RIGHT-OF-WAY |
| S | SOUTH |
| SCH | SCHEDULE |
| SQ | SQUARE |
| STA | STATION |
| TEMP | TEMPORARY |
| TYP | TYPICAL |
| VERT | VERTICAL |
| W | WEST |
| W/ | WITH |
| WP | WORKING POINT |
| & | AND |
| @ | AT |
| ' | FEET OR MINUTES |
| " | INCHES OR SECONDS |
| # | NUMBER OR POUND |
| ± | PLUS OR MINUS |



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|---------------------------------|-------------|
| PERMIT DRAWINGS | |
| NOT TO BE USED FOR CONSTRUCTION | Date Apr. |
| Mark | Description |

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| MASON CREEK DREDGING NORFOLK, VA | |
| GENERAL NOTES - SHEET 1 OF 2 | |

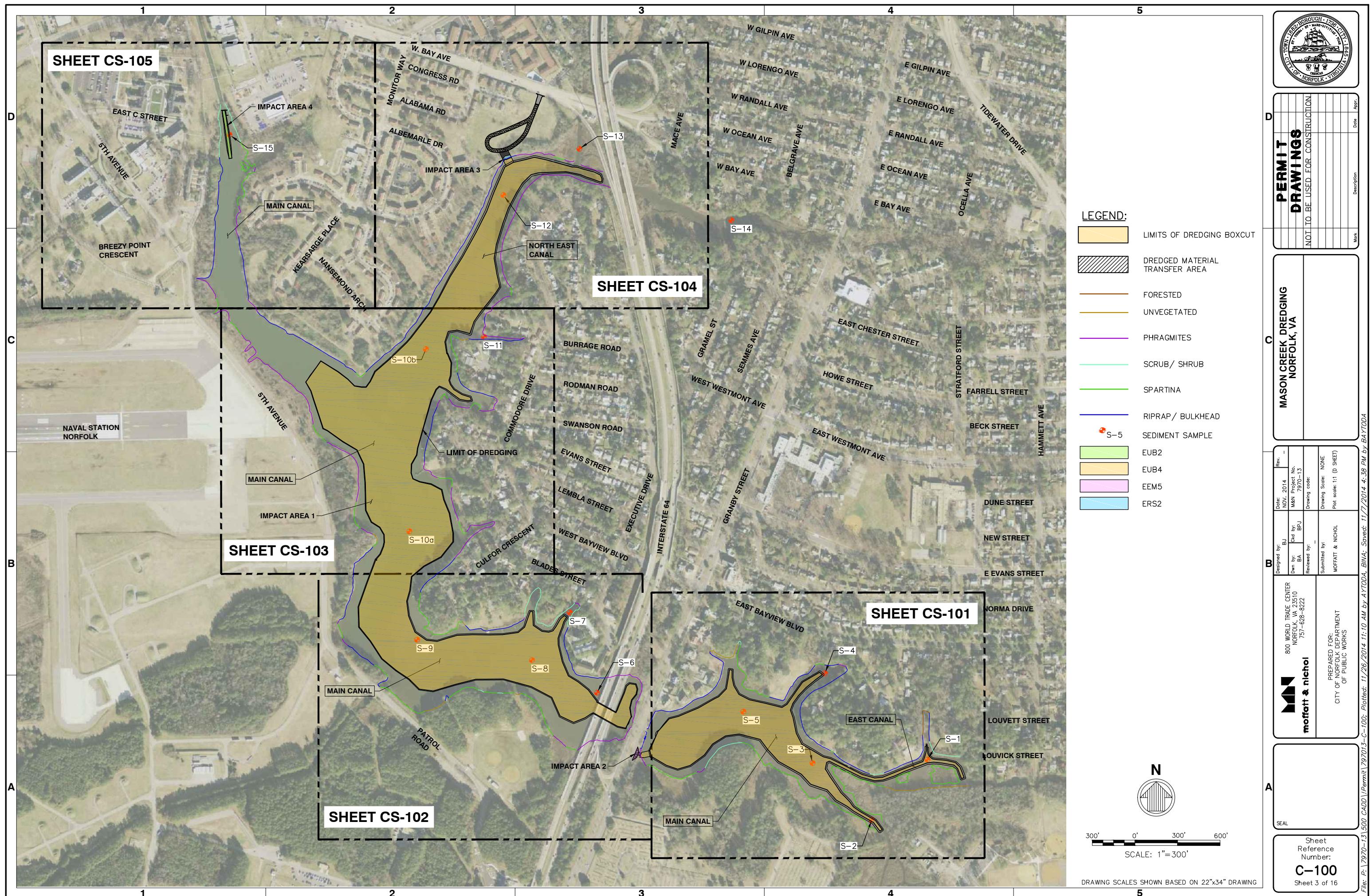
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|---|-------------------------------------|-------------------------------|
| Designed by: moffatt & nichol | Date: Nov. 2014 | Rev. - |
| Dw. by: 800 WORLD TRADE CENTER NORFOLK, VA 23510 | Cd. by: 757-628-8222 | M&M Project No. 790-15 |
| Reviewed by: BPJ | Drawing code: None | |
| Submitted by: MOFFATT & NICHOL | Drawing Scale: 1:1 (0 SHEET) | |
| Plot scale: 1:1 (0 SHEET) | | |

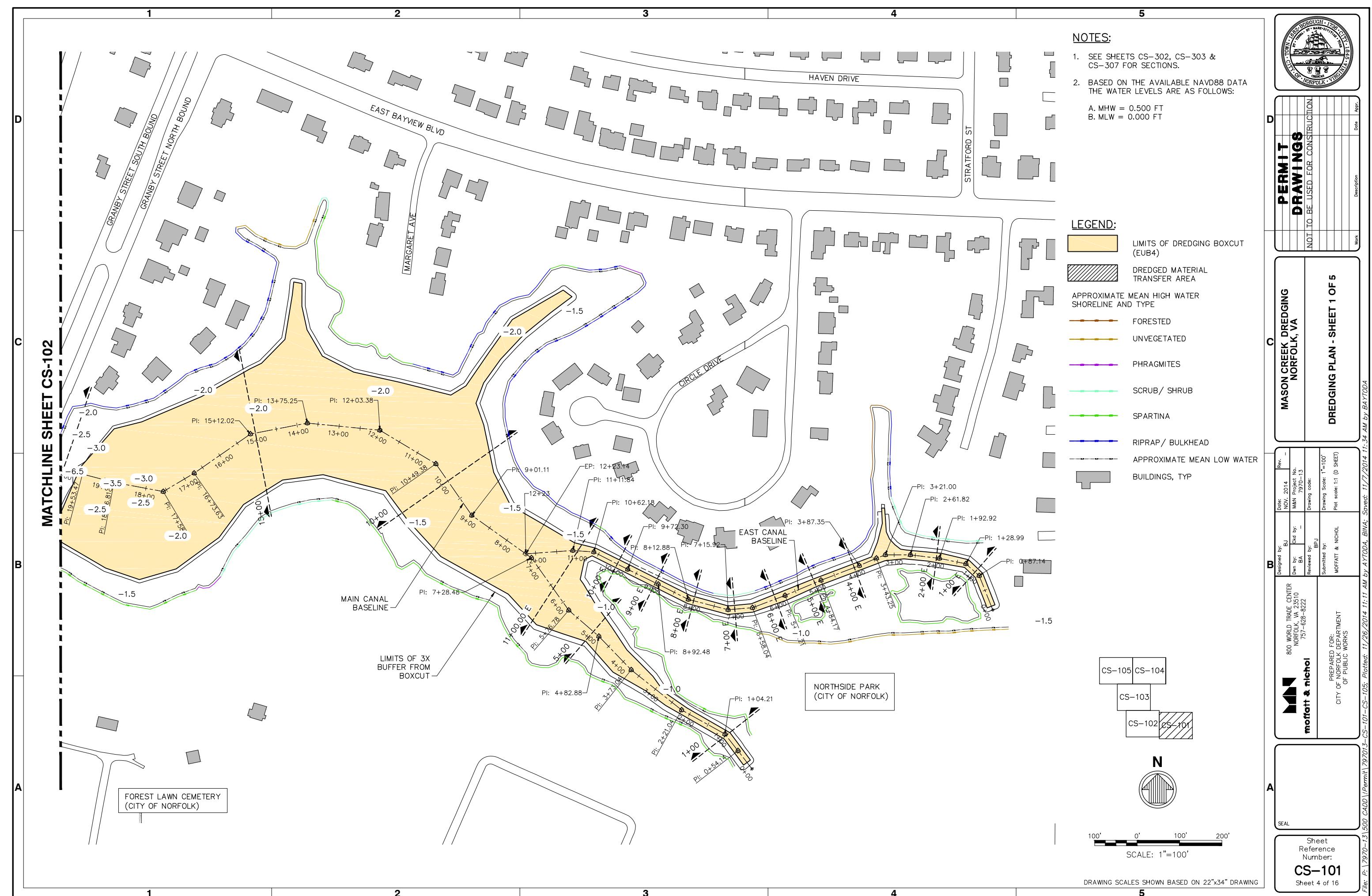


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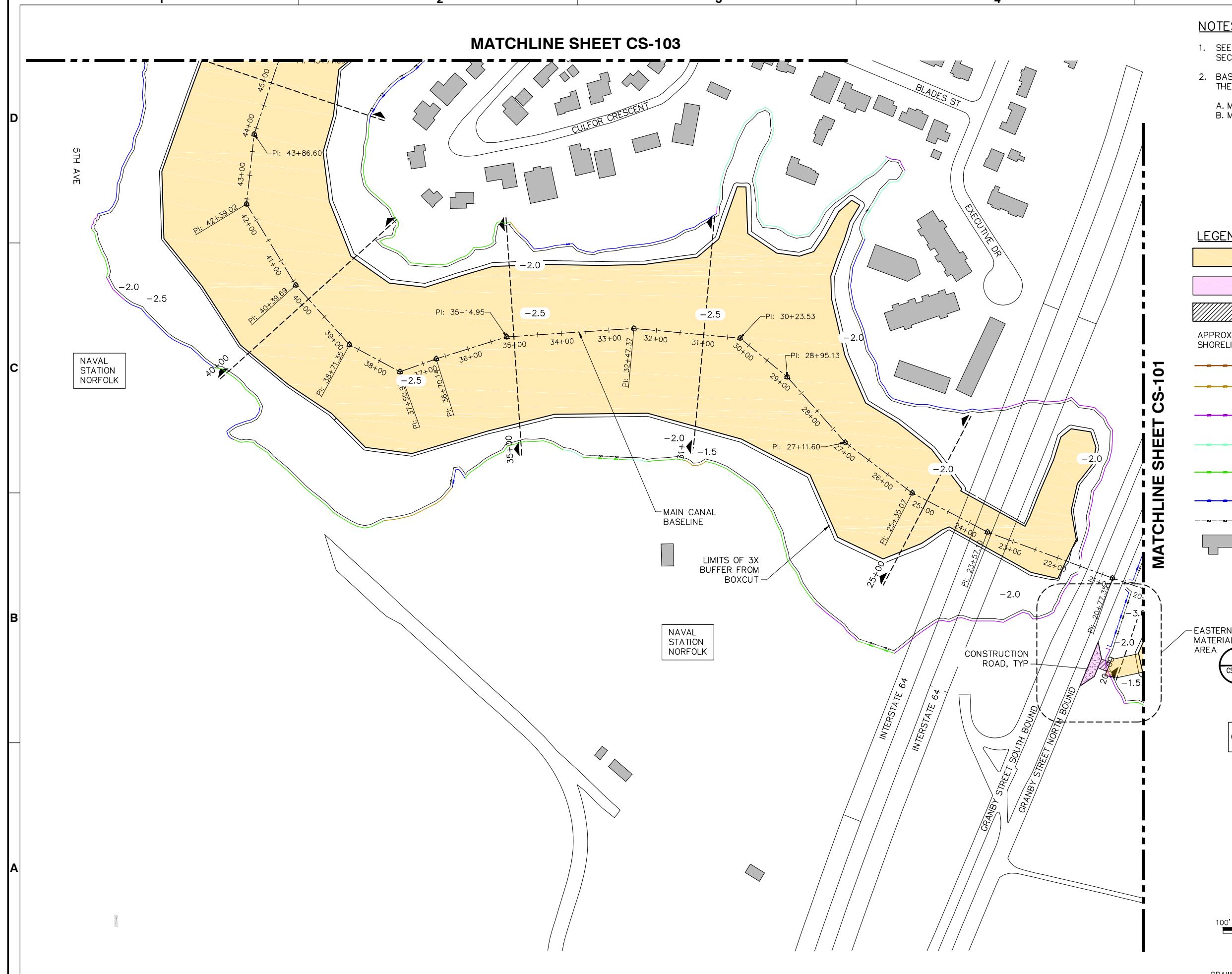
CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS

| | |
|-------------------------|--------------|
| Sheet Reference Number: | G-002 |
| Sheet | 2 of 16 |





MATCHLINE SHEET CS-103



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| PERMIT DRAWINGS | |
| NOT TO BE USED FOR CONSTRUCTION | |
| Date | Apr. |
| Description | |
| Mark | |

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| MASON CREEK DREDGING NORFOLK, VA | |
| DREDGING PLAN - SHEET 2 OF 5 | |

| | |
|--|---|
| Designed by: moffatt & nichol | Reviewed by: BPJ |
| Drawn by: 757-628-8222 | Submitted by: MOFFATT & NICHOL |
| Proj. No.: 790-13 | Drawing code: T=100' |
| Rev. - | Drawing Scale: 1:100' (0 SHEET) |

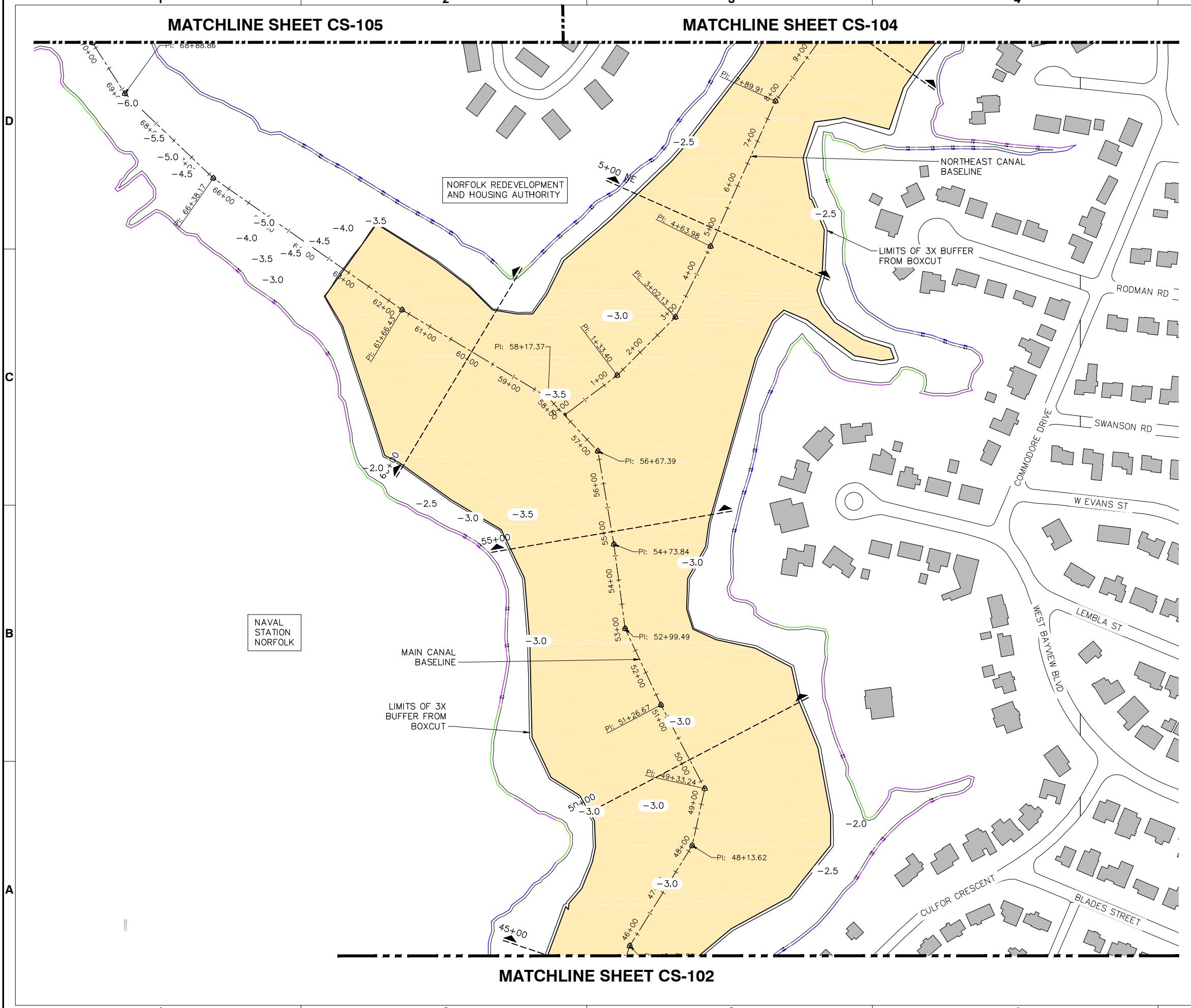
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|---|---|
| 800 WORLD TRADE CENTER NORFOLK, VA 23510 | PREPARED FOR: CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS |
| CS-105 CS-104 | CS-103 |
| CS-102 CS-101 | |

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| SEAL |
| Sheet Reference Number: CS-102 |
| Sheet 5 of 16 |

MATCHLINE SHEET CS-105

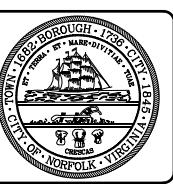
MATCHLINE SHEET CS-104

MATCHLINE SHEET CS-102



NOTES:

- SEE SHEETS CS-304, CS-305 & CS-306 FOR SECTIONS.
- BASED ON THE AVAILABLE NAVD88 DATA THE WATER LEVELS ARE AS FOLLOWS:
 - A. MHW = 0.500 FT
 - B. MLW = 0.000 FT



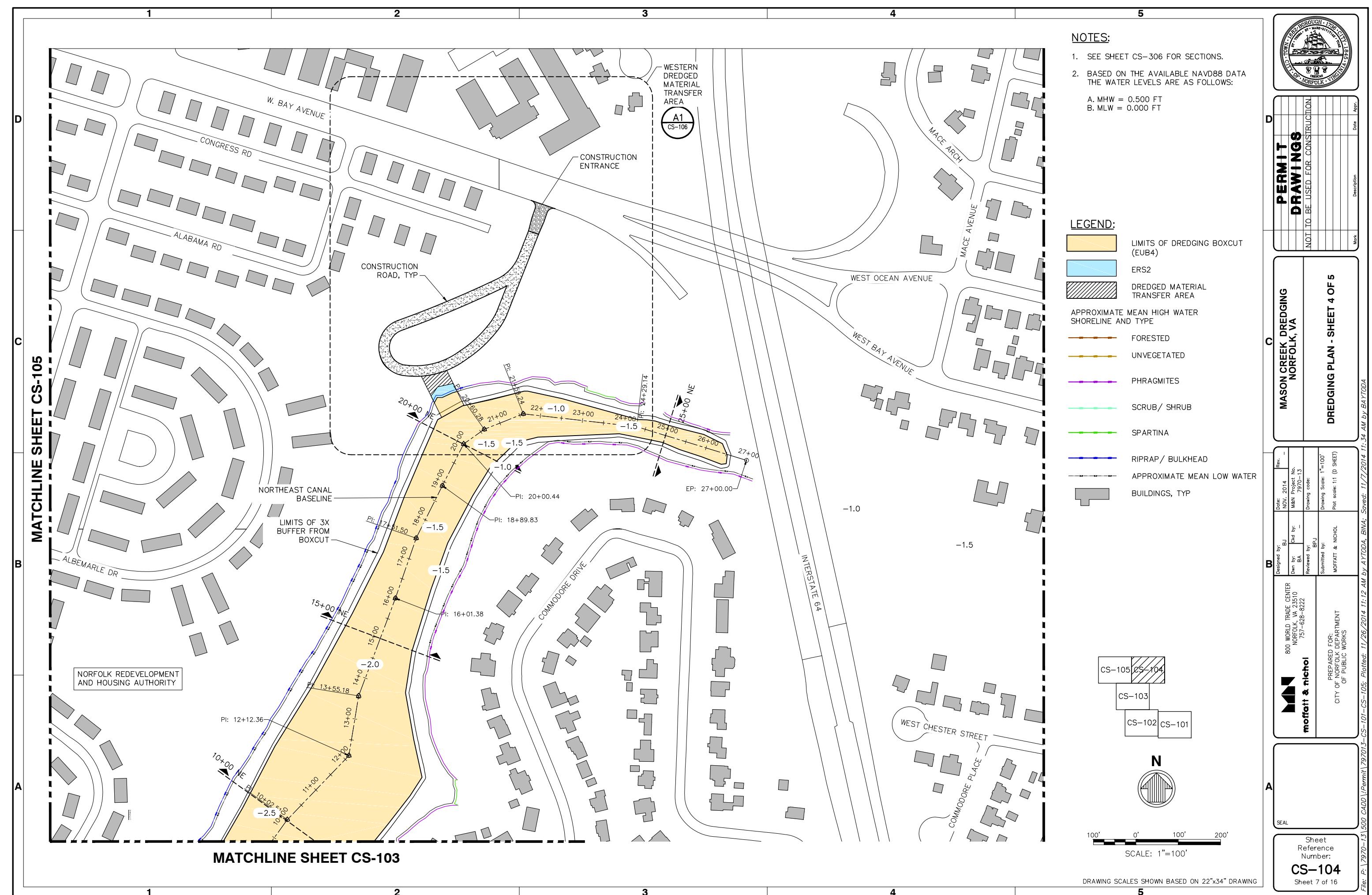
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| NOT TO BE USED FOR CONSTRUCTION | |
| Date | Apr. |
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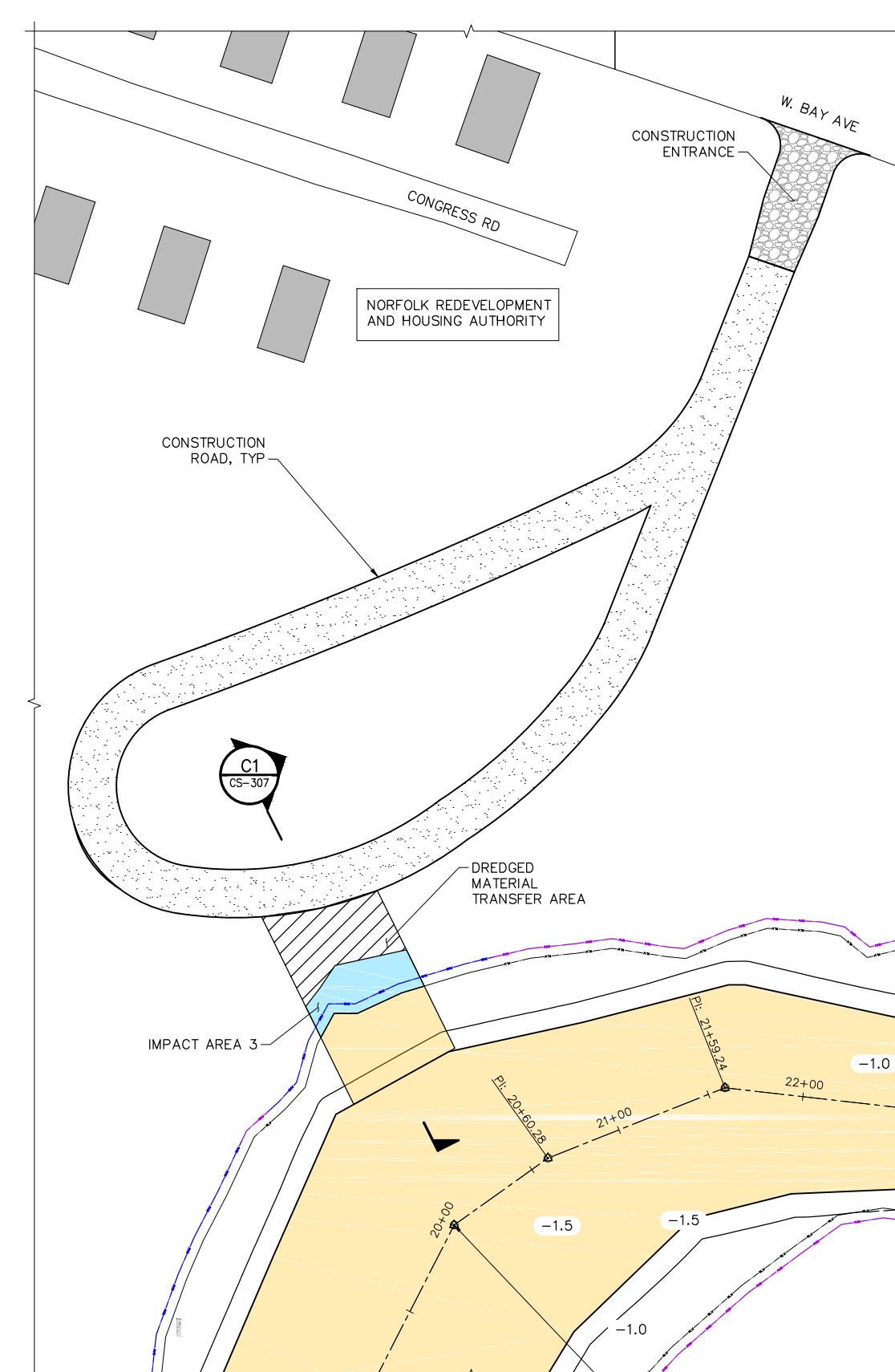
| MASON CREEK DREDGING NORFOLK, VA | |
|----------------------------------|--|
| DREDGING PLAN - SHEET 3 OF 5 | |
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| B | |
|--|-----------------|
| Designed by: | Reviewed by: |
| By: | By: |
| | |
| | |
| | |
| 800 WORLD TRADE CENTER NORFOLK, VA 23510 | Date: Nov. 2014 |
| 757-628-8222 | Rev. - |
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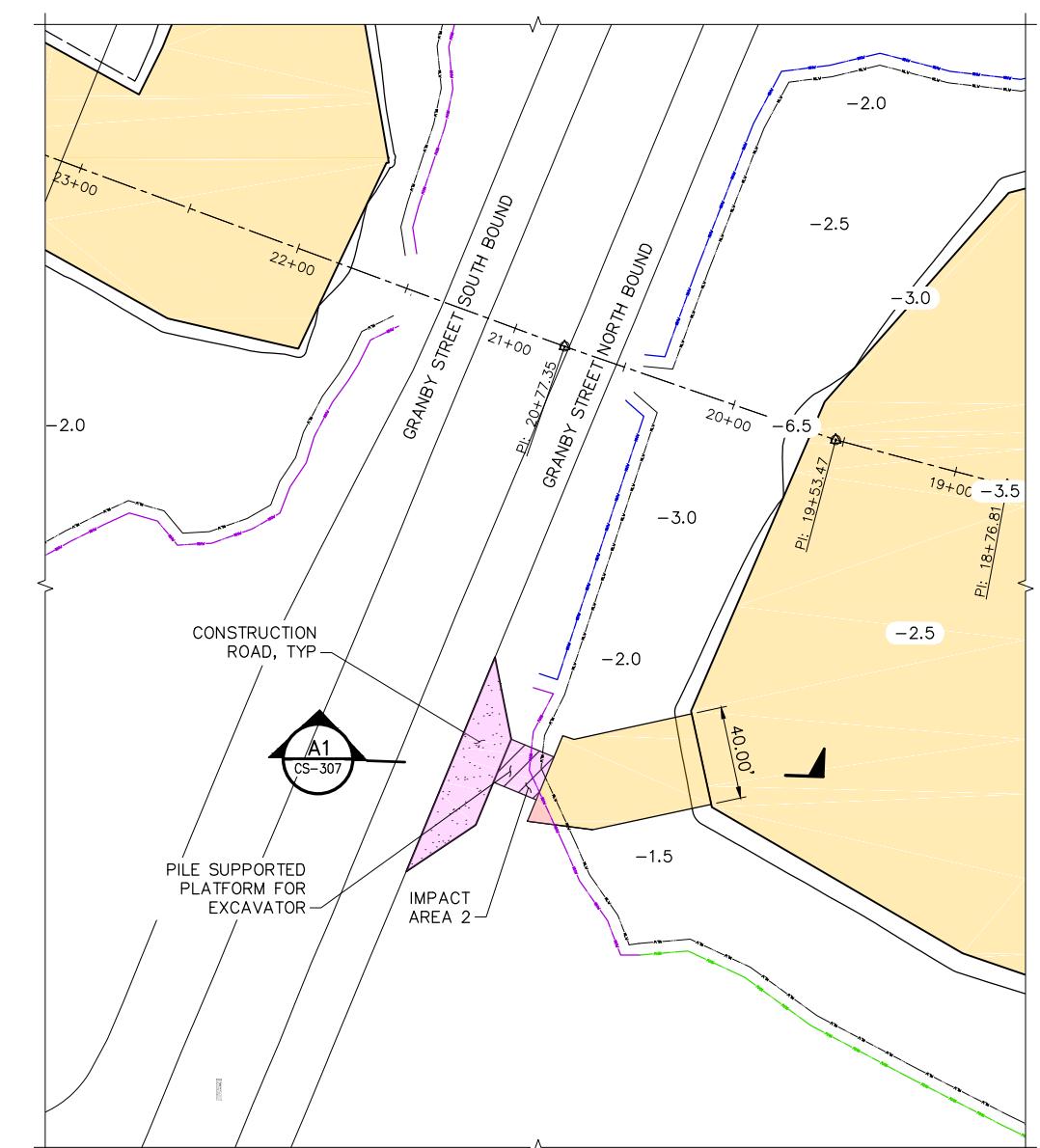
| A | |
|--|---------------|
| PREPARED FOR: | |
| CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS | |
| moffatt & nichol | CS-105 CS-104 |
| | CS-103 |
| | CS-102 CS-101 |
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| Sheet Reference Number: | |
| CS-103 | |
| Sheet 6 of 16 | |
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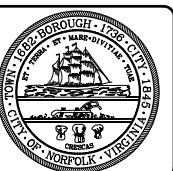
C1 ENLARGED PLAN – WESTERN DREDGED MATERIAL TRANSFER AREA
SCALE: 1"=40'



B3 ENLARGED PLAN – EASTERN DREDGED MATERIAL TRANSFER AREA
CS-102 SCALE: 1"=40'

NOTES:

1. BASED ON THE AVAILABLE NAVD88 DATA
THE WATER LEVELS ARE AS FOLLOWS:
 - A. MHW = 0.500 FT
 - B. MLW = 0.000 FT



**TERMINI
DRAWINGS**

NOT TO BE USED FOR CONSTRUCTION

PERMISSION DRAWINGS

**MASON CREEK DREDGING
NORFOLK, VA**

ENL
MAT

LEGEND:

LIMITS OF DREDGING BOXCUT (EUB4)

EEM5

ERS2

DREDGED MATERIAL TRANSFER AREA

APPROXIMATE MEAN HIGH WATER
SHORELINE AND TYPE

- FORESTED
- UNVEGETATED
- PHRAGMITES
- SCRUB / SHRUB
- SPARTINA
- RIPRAP / BULKHEAD
- APPROXIMATE MEAN LOW WATER
- BUILDINGS, TYP

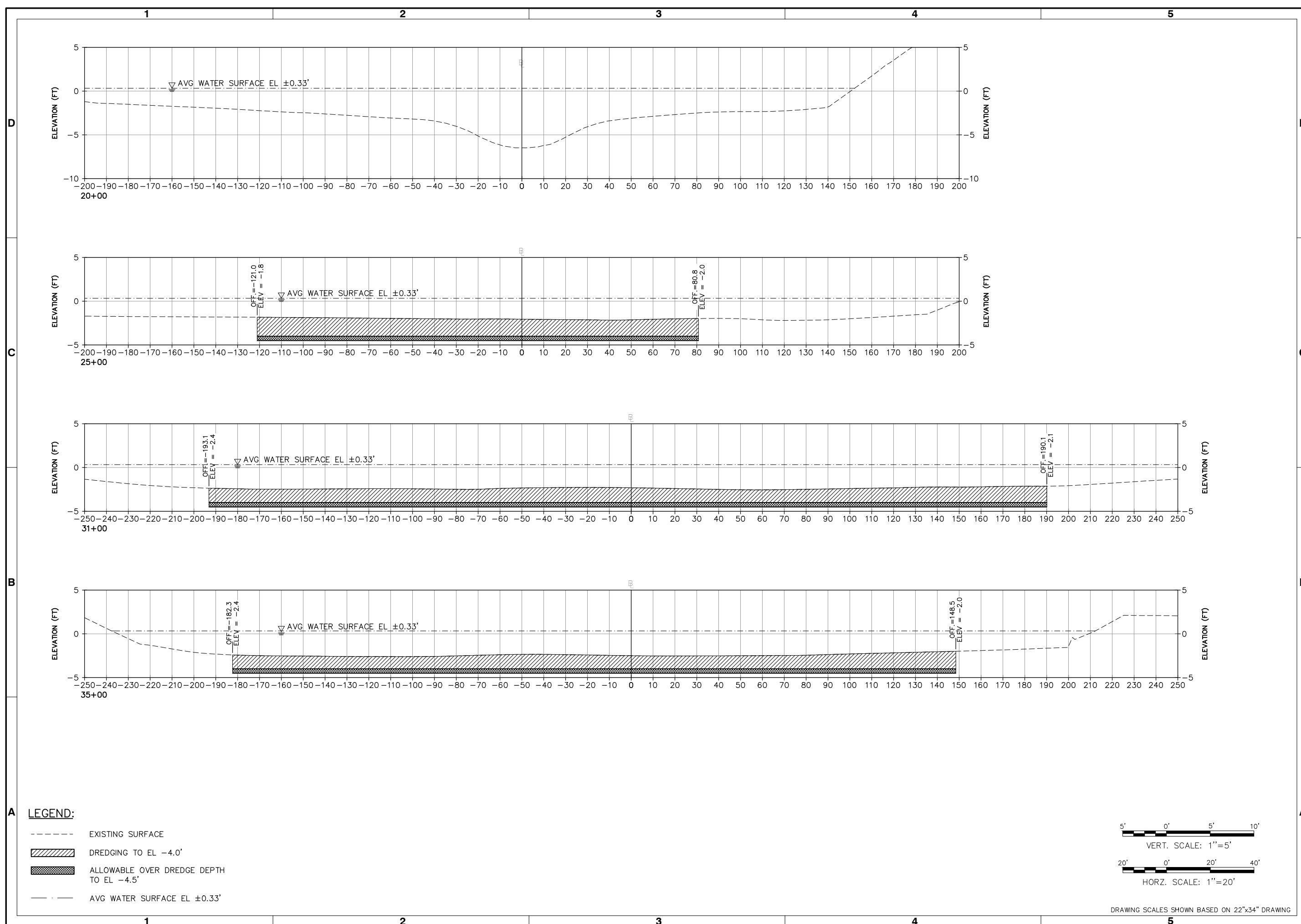
N



A scale bar diagram. It features a horizontal line with tick marks. The first tick mark is labeled '40'' above the line. The second tick mark is labeled '0'' above the line. The third tick mark is labeled '40'' above the line. The fourth tick mark is labeled '80'' above the line. Below the line, the text 'SCALE: 1"=40'' is centered.

DRAWING SCALES SHOWN BASED ON 22" x 34" DRAWING

Number:
CS-106



FERMI DRAWINGS

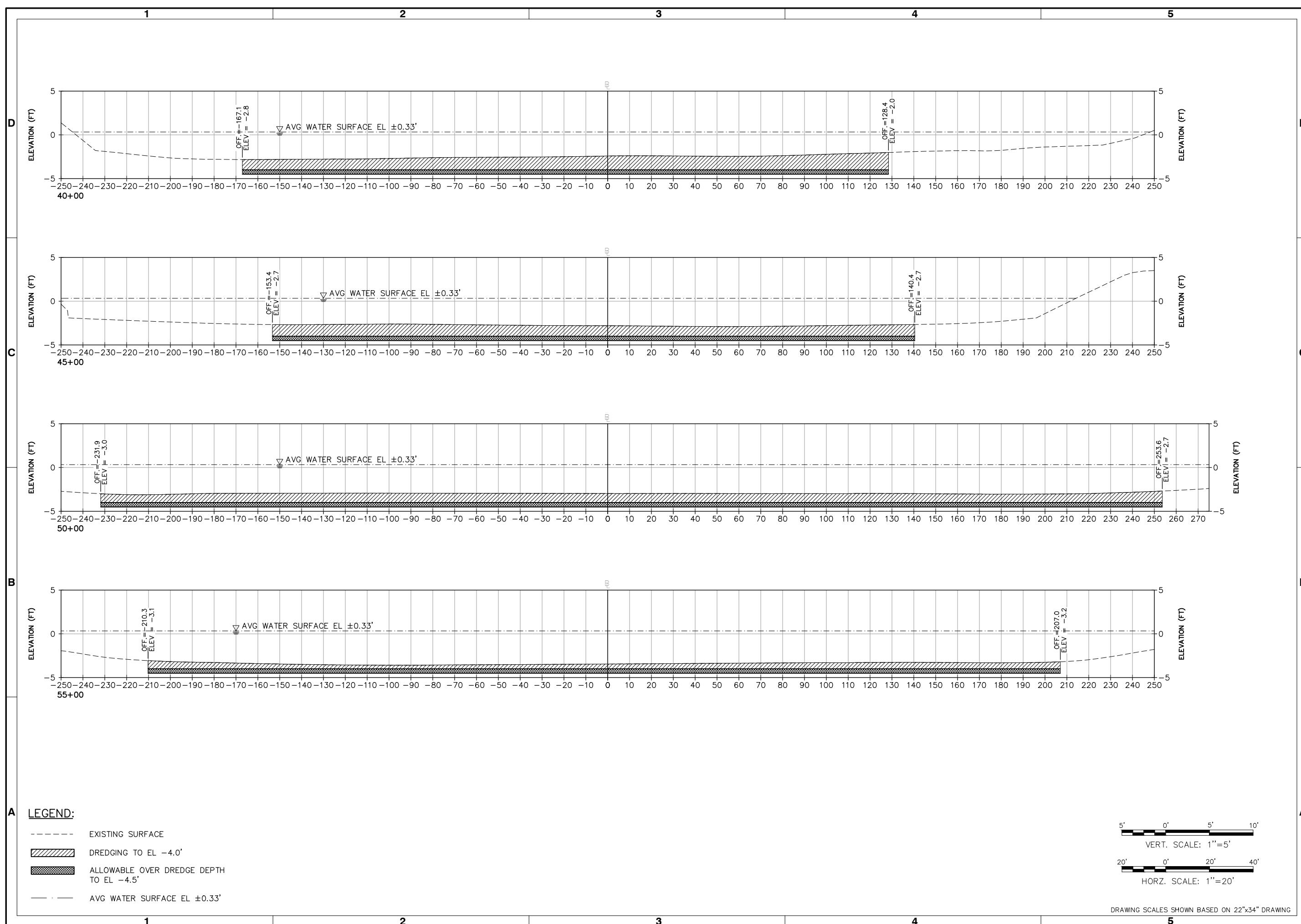
NOT TO BE USED FOR CONSTRUCTION

**MASON CREEK DREDGING
NORFOLK, VA**

**MAIN CANAL SECTIONS -
SHEET 2 OF 4**

| | | |
|-----------------|--------------------------|---|
| BJ | NOV. 2014 | - |
| Crdr by: | M&N Project No: | |
| BA | 7970-13 | |
| Reviewed by: | Drawing code: | |
| BPJ | | |
| Submitted by: | Drawing Scale AS NOTED | |
| | Not scale: 1:1 (0 SHEET) | |
| OFFATT & NICHOL | | |

AL
Sheet
Reference
Number:
CS-302
Sheet 11 of 16



**PERMIT
DRAWINGS**
NOT TO BE USED FOR CONSTRUCTION

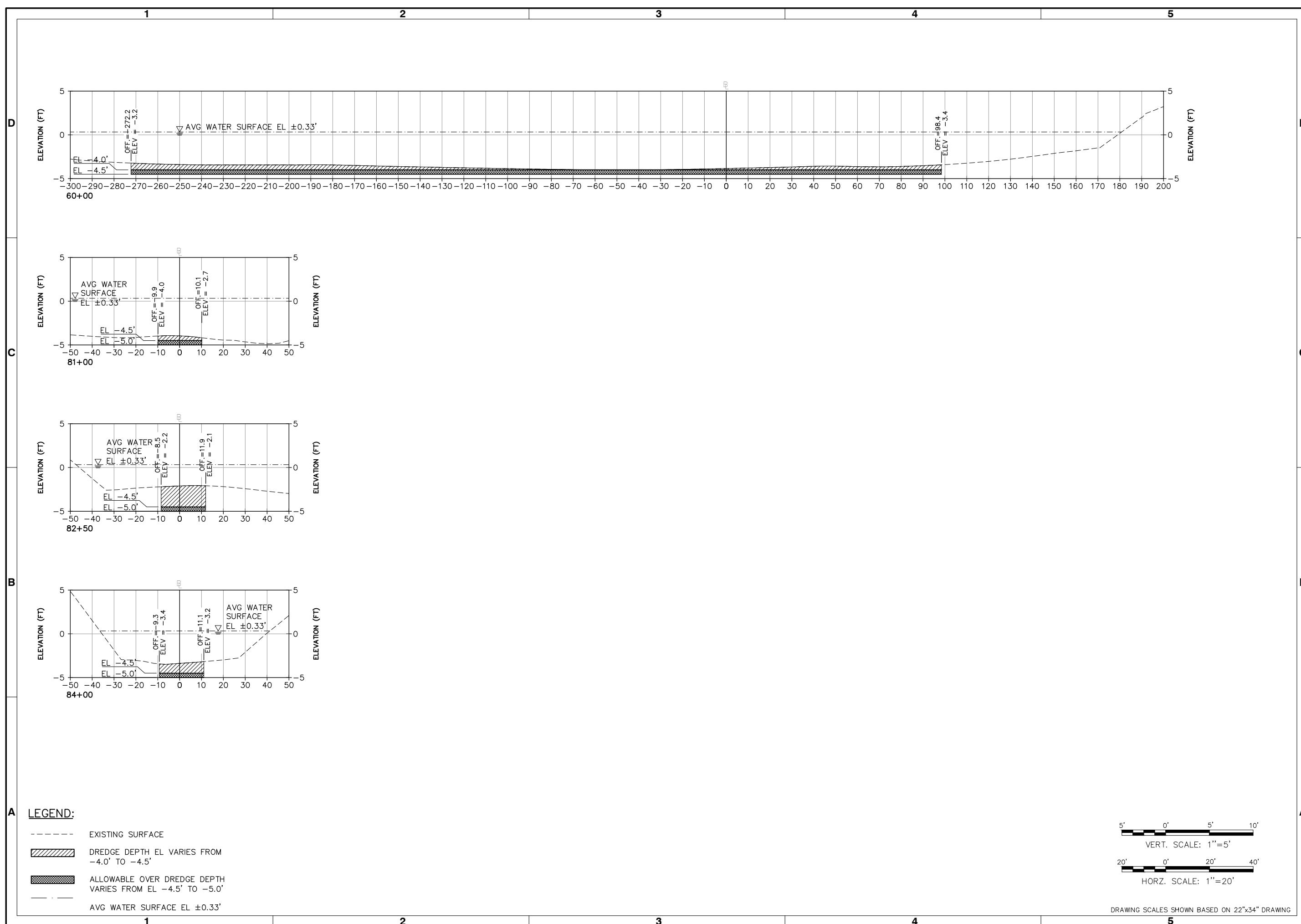
C
MASSON CREEK DREDGING
NORFOLK, VA

MAIN CANAL SECTIONS -
SHEET 3 OF 4

| | | | | | |
|------------------|-----|---------------------------|-------------------------|--------------|---|
| signed by: | Bu | Date: | NOV. 2014 | Rev.: | - |
| in by: | Bu | Ckd by: | MAN | Project No.: | |
| BA | BA | | | 7970-13 | |
| Reviewed by: | BPJ | Drawing code: | Drawing Scale: AS NOTED | | |
| Submitted by: | BPJ | Not. scale: 1:1 (0 SHEET) | | | |
| OFFICIA & NICHOL | | | | | |

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| A | |
| SEAL | |
| Sheet Reference Number: CS-303 | |
| Sheet 12 of 16 | |

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FERMI DRAWINGS

NOT TO BE USED FOR CONSTRUCTION

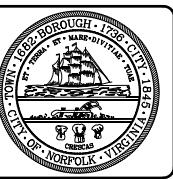
MASON CREEK DREDGING
NORFOLK, VA

MAIN CANAL SECTIONS -
SHEET 4 OF 4

| | | |
|-----------------|--------------------------|---|
| BJ | NOV. 2014 | - |
| Crdr by: | M&N Project No: | |
| BA | 7970-13 | |
| Reviewed by: | Drawing code: | |
| BPJ | | |
| Submitted by: | Drawing Scale AS NOTED | |
| | Not scale: 1:1 (0 SHEET) | |
| OFFATT & NICHOL | | |

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Sheet
Reference
Number:
CS-304
Sheet 13 of 16

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PERMIT DRAWINGS

NOT TO BE USED FOR CONSTRUCTION

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|-------------|------|
| Date | Apr. |
| Description | |
| Mark | |

MASON CREEK DREDGING
NORFOLK, VA

NORTHEAST CANAL
SECTIONS

Designed by: B.J. Date: Nov. 2014 Rev: -

Dwn by: Ccd by: M&M Project No: 7970-13

Reviewed by: B.P.J. Drawing code:

Submitted by: MOFFATT & NICHOL Drawing Scale: AS NOTED

Plot scale: 1:1 (0 SHEET)

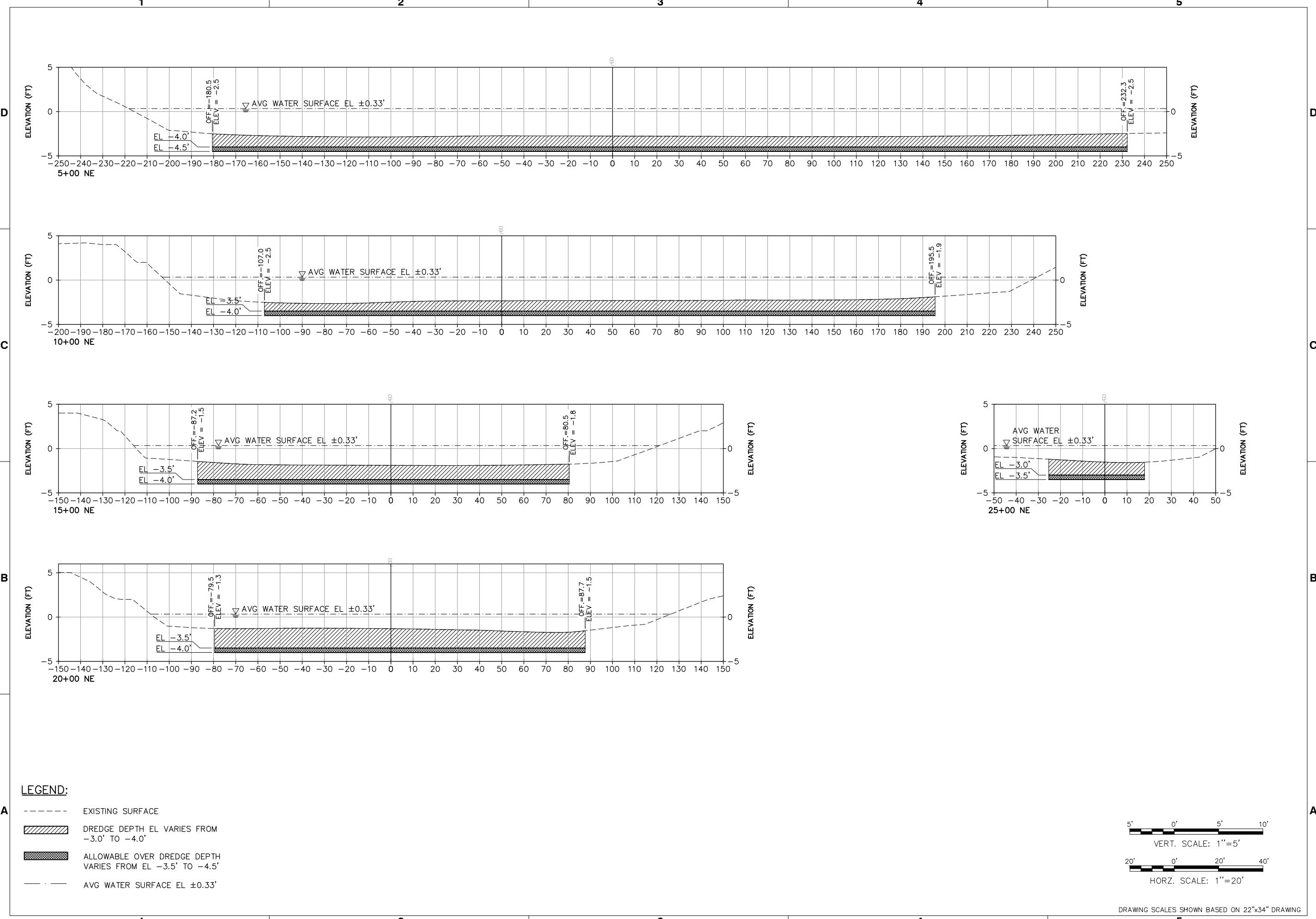
moffatt & nichol

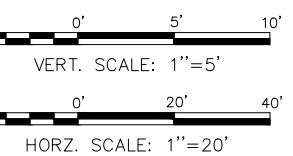
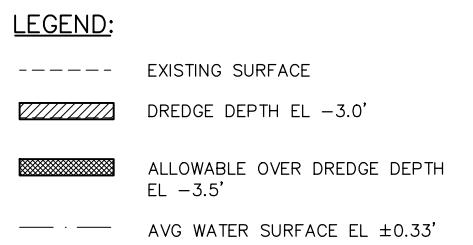
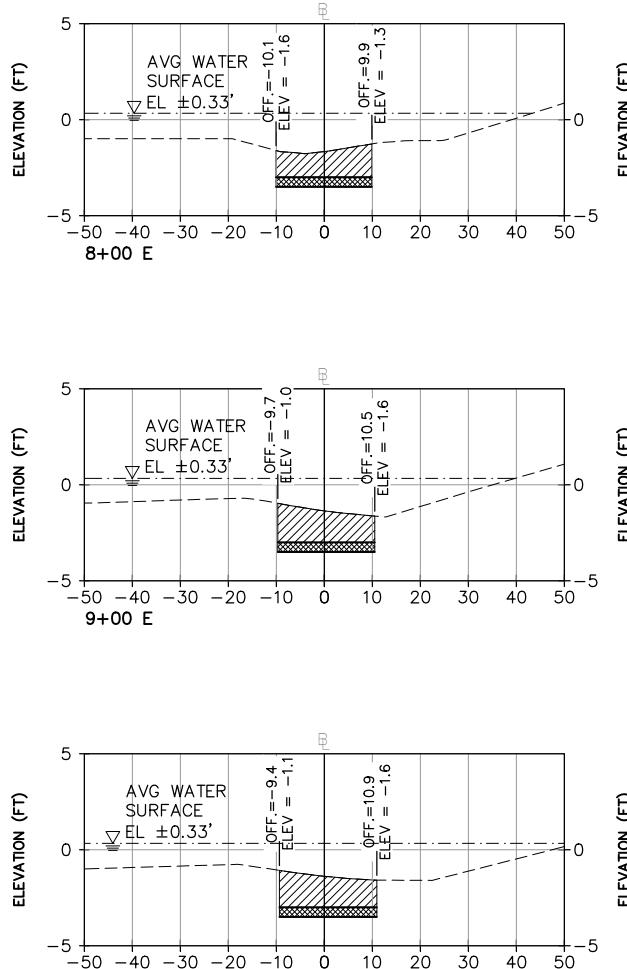
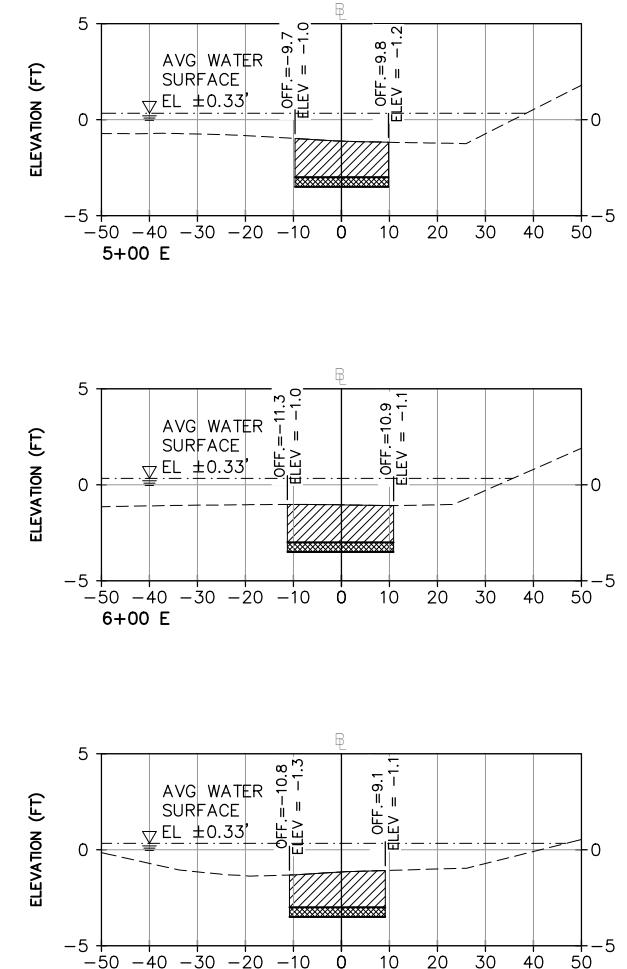
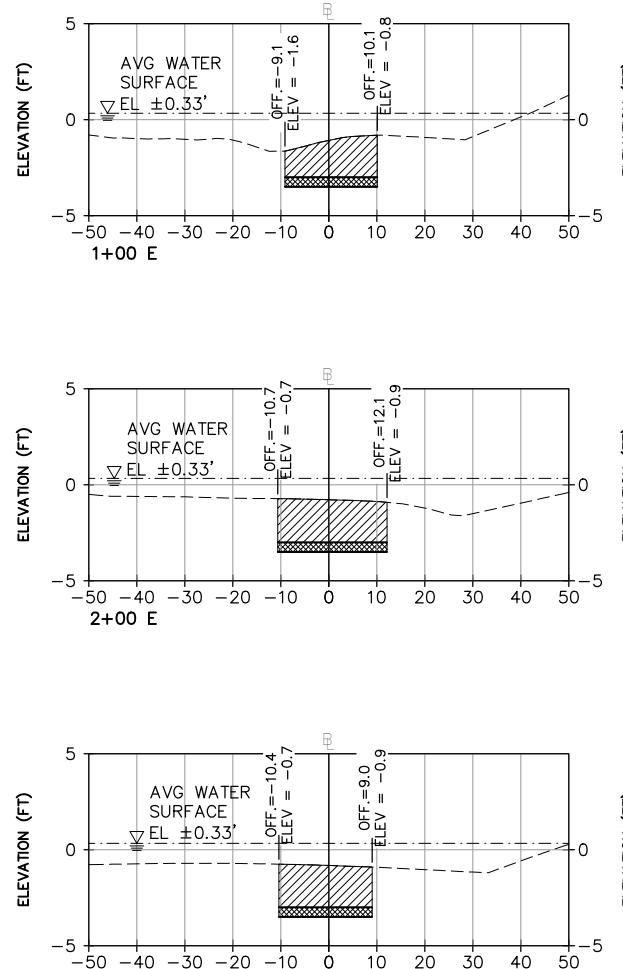
PREPARED FOR:
CITY OF NORFOLK DEPARTMENT
OF PUBLIC WORKS

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Sheet Reference Number: CS-305

Sheet 14 of 16





DRAWING SCALES SHOWN BASED ON 22" x 34" DRAWING

ANSWER

**MASON CREEK DREDGING
NORFOLK, VA**

EAST CANAL SECTIONS

**PERMIT
DRAWINGS**

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