

GENERAL NOTES

- This project shall be built under the January 2024 Roadway Standards Drawing and Specifications.
- This plan is based on the principles of natural channel design.
- Proposed constructed stream features and structures shown on these plans are shown in their approximate location and shall be field located and dimensioned to insure proper channel dimension.
- All elevations shown on these plans are referenced to a NAVD 88 datum.
- The location of all equipment and material staging areas, haul roads, access points, limits of silt fencing, construction staging areas and construction access roads are shown as approximate on plans. Limits and locations will be coordinated as directed by the Engineer.
- Highly visible safety fencing will be installed along wetlands as directed by the Engineer. Flagging will also be installed around trees not to be disturbed, as shown on plans.
- Boulders will be staged in construction staging areas upon delivery.
- Construction activities shall progress downstream, unless otherwise noted on these plans or as directed by the Engineer.
- Equipment will remain outside of channel for construction unless the channel has been dewatered. Utilization of a pump around operation will be required when making the tie-in's of any work that has to be done within the water course.
- All mechanized equipment operated in or near the stream or its tributaries shall be inspected regularly and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic materials. Any equipment repairs, maintenance or refueling activities shall not be done while the equipment is in the stream or its tributaries.
- Contractor to utilize or dispose of all waste material as directed by the Engineer and in accordance with all federal, state, and local regulations.
- All appropriately sized on-site trees removed during the stream restoration construction to be used on-site for log vanes, footer logs, etc., where feasible and as directed by the Engineer. Contractor shall stockpile suitable woody material for construction of in-stream structures separate from wasted material inside the stockpile areas.
- All disturbed areas will be seeded immediately, as specified in the project specifications.

- Apply temporary and permanent seed and coir fiber matting to bankfull bench and cut banks daily as excavation progresses. Coir fiber matting will be keyed into the top of slope and at the ends of each mat to prevent undercutting from sheet flow. Additional silt fencing may be necessary, as directed by the Engineer.
- Unless otherwise directed by the Engineer, a 50-foot minimum width permanently vegetated buffer shall be planted on each side of channel.
- Unless otherwise directed by the Engineer, where feasible, when beginning construction on a given reach, where clearing is required, use the following sequence:
 - Stockpile as specified on the plans.
 - Remove larger trees that can be used on-site for footer logs, log vanes or floodplain habitat structures and stockpile as specified on the plans.
 - Remove remaining vegetation and dispose of or stockpile as specified on the plans.
 - Remove topsoil and stockpile as specified on the plans.
 - Remove remaining soil materials as required and stockpile as specified on the plans.
- Existing non-native vegetation within the right of way will be removed as specified in the project specifications.
- Construction staging areas to be of adequate size to provide safe and organized storage for boulders and logs to be used for in-stream structures, mulch, topsoil and other soil material as well as all other related construction materials and equipment.
- Construction personnel should park all vehicles within the limits of the designated construction staging areas. All other construction equipment and vehicles should be parked within the construction staging areas when not in use.
- Contractor to be responsible for repairs to any damage to existing utilities, including but not limited to, overhead and underground utilities, curb and gutter, pavement, sidewalks, storm drainage systems, sanitary sewer systems or fencing. Any required repairs to be made in accordance with any and all applicable state and or local municipality or utility agency standards.
- Contractor shall keep all topsoil stockpiled on site separately from other soil materials.

CONSTRUCTION SEQUENCE

- Staging areas, stockpile areas, construction entrances and access roads will be identified and approximately located according to the Construction Documents. Variances will be allowed, assuming both the Contractor and Engineer verbally agree.
- Construction entrances will be installed for access to the property in accordance with the roadway design plans and at the discretion of the Engineer.
- The Contractor will install silt fencing, as noted on the Erosion Control Plans, at applicable staging and stockpile areas.
- The proposed stream alignment and structure locations will be staked for Smith Creek (-P. SMITHCREEK-) and its unnamed tributary (-P. UT-). Staking will be restricted to riffle elevations only, to establish and maintain grade for the entire system. Pools will be excavated once structures are installed.
- The Contractor will install temporary stream crossings on an as-needed basis only, pending agreement between both the Engineer and Contractor once implementation begins.
- The Contractor will begin stockpiling materials in designated staging areas. The project will be divided into 5 distinct sections. Upon approval from the Engineer, sections may be constructed in a different sequence than indicated below or concurrently. General details associated with all sections include:
 - Special stilling basins will be used to filter the groundwater and placed within areas of newly excavated channel that are offline from the existing flow. These bags will be utilized as the Engineer deems necessary per BMPs.
 - At the end of each working day, the Contractor will be responsible for the application of temporary and permanent seed mixes, as applicable, to the newly established stream banks and disturbed areas. Coir fiber matting for stream restoration will be installed on top of the seed according to the Construction Documents .
 - Excavated material that is stockpiled, will follow erosion and sediment control guidelines as they relate to material storage and stockpiling.
 - All remaining disturbed areas are to be seeded and covered according to the Construction Documents.
 - Geotextile Fabric Type II will be constructed to impede any erosion of the channel and streambanks by the water diverted from the pumping-around procedure.
- Boulders and materials used for stream structures will be delivered through the primary construction entrance and stockpiled in appropriate areas.
- This project will require pumping for all channels during construction. Work will proceed in a manner that is most conducive with site conditions.
- Generally, offline channels will be constructed and stabilized prior to connections with the existing flow pattern. Once the new channel is fully stabilized, all excavated material will be placed in segments of the existing channel that are to be abandoned. When feasible, the bed material will be transferred between the existing channel to the new channel.
- Large trees and vegetated banks shall not be disturbed as much as practicable in areas noted on the plans or identified by the Engineer.

Section 1: Smith Creek Stations 10+00 to 14+80 +/- -P. SMITHCREEK-

- The Contractor will excavate the proposed Smith Creek Reach 1 floodplain bench based on the typical sections. Water will be diverted by a pump and impervious dike and directed through flexible hose, where necessary, to minimize erosion and sedimentation during grading procedures. If the Engineer identifies the need to dewater the stream due to benching back the banks, implement a pump-around operation. Existing pipes shall be removed as indicated on plans.
- All remaining disturbed areas between Smith Creek Reach 1 Stations 10+00 to 14+80 are to be seeded and mulched according to the Construction Documents.
- Install culvert per roadway erosion control sheet EC-8A, “Culvert Construction Sequence Sta. 66+15.5 -L-”

Section 2: Smith Creek Stations 18+00 to 21+00 +/- -P. SMITHCREEK-

- The Contractor will excavate the proposed Smith Creek channel based on the typical sections. Structures will be installed according to the details presented in the Construction Documents and initial grading will be completed to riffle and drop structure elevations only. Pools will be established once structures and channel alignments have been completed. Water will be diverted by a pump and impervious dike and directed through flexible hose where necessary, to minimize erosion and sedimentation during connection procedures. Once the new channel is fully stabilized, the water can be diverted from the existing channel, and all excavated material will be placed in segments of the existing channel that are to be abandoned. Existing pipes shall be removed as indicated on plans.

- A stream plug will be installed along the existing channel at (-P. SMITHCREEK-) Station 21+25 +/-, just downstream with the existing confluence of the UT.

- All remaining disturbed areas between Smith Creek Stations 18+00 and 21+00 are to be seeded and mulched according to the Construction Documents.

Section 3: UT Stations 10+00 to 12+85 +/- -P. UT-

- Before construction on this section, 66” welded steel pipe is to be installed as shown on PSH 08 of the roadway plans.
- The Contractor will excavate the -P. UT- channel based on the typical sections. Structures will be installed according to the details presented in the Construction Documents and initial grading will be completed to riffle elevations only. Pools will be established once structures and channel alignments have been completed. Water will be diverted by a pump and impervious dike and directed through flexible hose, where necessary, to minimize erosion and sedimentation during connection procedures. Once the new channel is fully stabilized, the water can be diverted from the existing channel, and all excavated material will be placed in segments of the existing channel that are to be abandoned. Existing pipes shall be removed as indicated on plans.
- A stream plug will be installed along the existing channel at (-P. UT-) Station 10+30 +/-.
- All remaining disturbed areas between UT Stations 10+00 and 12+85 +/- are to be seeded and mulched according to the Construction Documents.

Section 4: Smith Creek Stations 21+00 to 28+12 (End Construction) +/- -P. SMITH CREEK-

- The Contractor will excavate the proposed Smith Creek channel based on the typical sections. Structures will be installed according to the details presented in the Construction Documents and initial grading will be completed to riffle elevations only. Water will be diverted by a pump and impervious dike and directed through flexible hose, where necessary, to minimize erosion and sedimentation during connection procedures. Once the new channel is fully stabilized, all excavated material will be placed in segments of the existing channel that are to be abandoned. Pools will be established once structures and channel alignments have been completed. Tie into existing stream at 28+12 (-P. SMITHCREEK-).

- Stream plugs will be installed along the existing channels at (-P. SMITHCREEK -) Stations 21+75 +/- and (-P. UT-) 12+85+/-

- All remaining disturbed areas between Smith Creek Stations 21+00 and 28+12 are to be seeded and mulched according to the Construction Documents.

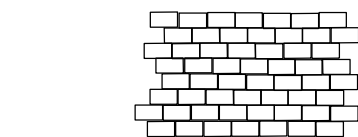
Section 5: Headwater Wetland

- The Contractor will remove the 2@24” RCP and stockpiled 3@ 24” HDPE pipes and level existing mounds to aid in the reestablishment of wetlands on the NCDOT parcel north of US-158. These areas of existing mounds and designated on the construction documents. Grading may occur within potential wetland footprint of up to 6 inches. Site to be bush-hogged, ripped with 12” shank ripper, and disced for reforestation preparation.

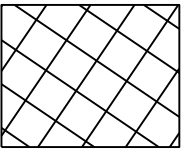
Index of Sheets

Sheet Number	Description
OSM-01	Title Sheet
OSM-01A	Index of Sheets, General notes, Construction Sequencing, and Stream Symbols
OSM-01B	Plan Sheet Symbols
OSM-02A	Typical Sections 1
OSM-02B	Typical Sections 2
OSM-02C	Stream Crossing Detail, Coir Fiber Matting Detail
OSM-02D	Boulder Rock and Roll Riffle Detail
OSM-02E	Rock Cross Vane Detail, Stream Plug
OSM-02F	Rock Sill Detail, Boulder Toe Protection Detail, Constructed Riffle Detail, Flood Plain Interceptor Detail
OSM-02G	Brush Toe Stabilization Detail
OSM-02H	Example of Pump-Around Operation
OSM-02i	Morphological Table
OSM-02J	Structure Invert Table
OSM-03	Quantities
OSM-04	Plan/Profile Sheet
OSM-05	Plan/Profile Sheet
OSM-06	Wetland Enhancement Plan Sheet
OSM-X-01 TO X-06	Cross Section Sheets

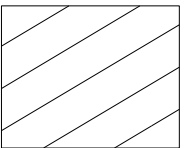
STREAM SYMBOLS



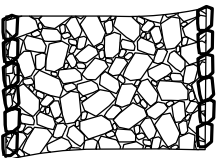
STREAM CROSSING - TYPE II



FILL IN EXISTING CHANNEL



STREAM PLUG



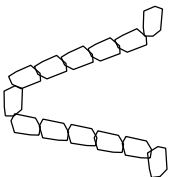
CONSTRUCTED RIFFLE



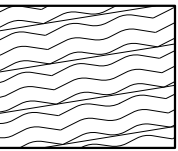
ROCK SILL



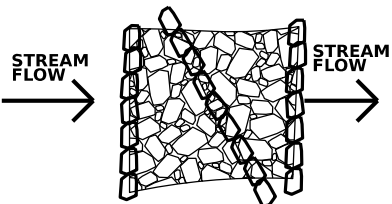
BOULDER TOE (ON STREAM BANKS)



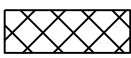
ROCK CROSS VANE



BRUSH TOE STABILIZATION



ROCK AND ROLL RIFFLE



FLOODPLAIN INTERCEPTOR

U-6187

OSM-01A

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DEPARTMENT OF TRANSPORTATION
DAVIE COUNTY

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