

ECOLOGY TOOLKIT

Nationwide Permit 6: Survey Activities



OVERVIEW

This Toolkit is intended to provide guidance on preparing a Pre-construction Notification (PCN) for a Section 404 of the Clean Water Act (Section 404) Nationwide Permit (NWP) 6: Survey Activities. Please refer to the *Section 404 Nationwide Permits* guidebook for information on using other common NWPs on GDOT projects and General and Savannah District (SAS) Regional Conditions applicable for use of NWPs.

Ecology Environmental Procedures Guidebooks,
GDOT Office of Environmental Services

Nationwide Permit 6 may be needed for certain GDOT projects prior to performing the geotechnical exploration needed to complete the Bridge Foundation Investigation (BFI), which occurs during the Final Design phase of the [GDOT Plan Development Process \(PDP\)](#) of projects. The purpose of performing a BFI is to obtain site-specific subsurface information on which a structure will be built. This information is used to design the substructure and provide foundation recommendations to GDOT Bridge and design team in the BFI report. Foundation types for highway bridges consist of driven piles for pile bents, caissons (drilled shafts), spread footings, and pile footings. The BFI report would contain foundation specifics such as pile type, elevation, scour, erosion, spudding/jetting, pre-drilling, and test pile recommendations, and include soil composition breakdown for the drilled locations. Additional information is located in Attachment 1, which includes example geotechnical rig setups in WOTUS and Attachment 2, which is a glossary of drilling terms.

NWP 6 TRIGGERS

The use of NWP 6 (reporting or non-reporting) is triggered when drilling is required in a Water of the US (WOTUS). This NWP allows discharges in Waters of the US up to and not exceeding 0.10 acre. Drilling impacts are generally less than the reporting threshold. Typically, a PCN would only be required for use of this NWP on a GDOT project when there is a federal nexus determined for the drilling activity alone for federal species, requiring consultation under Section 7 of the Endangered Species Act (Section 7), or have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, which would require Section 106 consultation of the National Historic Preservation Act (Section 106); is known to be a project of public concern, is located on or near parkland, or is otherwise known to be of environmental significance. Refer to NWP General Conditions and SAS Regional Conditions for additional requirements that may apply to your project. Note that a PCN may be needed even when a “no effect” determination is recommended for a federal species. Therefore, coordination with the United States Army Corps of Engineers (USACE) is needed to confirm whether a PCN is required. If the USACE has confirmed that the project has no other applicable conditions and neither Section 7 nor Section 106 consultation is required, then a [Georgia Department of Natural Resources \(GADNR\) Notification Form](#) would be transmitted, as appropriate. The majority of GDOT projects would not be expected to require a PCN for use of NWP 6.

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TIMING AND SCHEDULE

Timing and scheduling of NWP 6 can be complicated. Coordination among environmental, design, and geotechnical subject matter experts (SMEs) needs to begin early during project planning to ensure avoidance and minimization measures (AMM) are considered and permitting needs are understood. This means discussions about geotechnical exploration and potential need for permitting should occur during the Avoidance and Minimization Measures Meeting (A3M). Although less common, it may be necessary to start the conversation at the beginning of the Concept Phase if geotechnical work is being conducted as part of the overall project planning. The Consultant geotechnical SME would not typically be under contract during the concept phase of a project; therefore, the GDOT Office of Materials and Testing (OMAT) would need to be included in the A3M. Coordination among SMEs would need to continue during the project preliminary design phase.

According to the *Final Plan Development Process* flowchart, geotechnical drilling is initiated after the geometry is finalized and field explorations are needed for the BFI ahead of the Final Field Plan Review (FFPR). Final bridge and roadway design occurs on parallel paths; however, lockdown plans are tied to roadway design. The geotechnical drilling occurs prior to submittal of lockdown plans to the GDOT Office of Environmental Services (OES) for environmental permitting/reevaluation. The Geotechnical consultants would be under contract during the final design phase of a project, yet scoping would occur during the preliminary design phase on a parallel path to the environmental document development. The current Office of Program Delivery (OPD) and OMAT scope templates do not include line items for permitting or environmental coordination associated with geotechnical explorations.

Although development of Special Provision 107.23H would occur during the preliminary design phase ecology impact assessment, there is no GDOT contracting mechanism currently in place to tie the Special Provisions 107.23H outlining geotechnical drilling restrictions into geotechnical consultant contracts. However, *Geotechnical Drilling Activity Environmental Restrictions* (see Appendix C for template) are developed as part of permitting and become a condition of NWP 6 use.

Notification for use of NWP 6 would generally be transmitted in the geotechnical consultant's name and not GDOT since they are responsible for the geotechnical work. This arrangement would help ensure that AMMs documented in the NWP 6 conditions and/or verification letter, when a PCN is required, are the sole responsibility of the geotechnical consultant.

The drilling needs to occur at the beginning of the final design phase to maintain the final bridge design and FFPR schedule. This means that a PCN would need to be transmitted to the USACE during the preliminary plan phase and be included in preliminary phase scoping. The geotechnical consultant may not have an environmental department; therefore, the project environmental team may need to aid with permitting and provide the geotechnical consultant with the appropriate permit condition and restriction language.

ASSESSING IMPACTS AND AVOIDANCE AND MINIMIZATION

As previously mentioned, the drilling impacts are typically less than the reporting threshold for use of a reporting NWP 6. A clay and water mixture is typically used during drilling to stabilize the borehole and cool the equipment. The naturally occurring clay/water mixture will backfill the hole as the core is removed and sediments will naturally accumulate over time as water flow is normalized post-drilling. This methodology would be considered a temporary fill impact. Use of concrete would be considered a permanent impact. As a general rule, one boring is required at each bent of the new or widened bridge, and bridges that are 60 feet wide or more would need 2

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borings per bent. Additional borings may be required, depending upon the location and specific site conditions of the project within the State.

The following are examples of AMM to be discussed among the SMEs during project development yet are not all encompassing.

- Protected species presence and habitat can be impacted by the drilling itself, the placement and type of rigs used to drill, and the noise produced during drilling. Each of these aspects should be discussed.
- Drilling locations can and should be moved to avoid Environmentally Sensitive Areas (ESA) as feasible and practicable. Per GDOT Geotechnical Guidelines, borings should be drilled as closely as possible to the location of the proposed bent, with a maximum of 10-foot offset preferred.
- The use of amphibious rigs, existing structures, roadway, and GDOT managed right-of-way (ROW) to perform drilling areas can minimize impacts to ESAs.
- Geotechnical Sampling Guidelines allow the use of Cone Penetration Test (CPT) and Flat-Plate Dilatometer Test (DPT), which may be less impactful to ESAs than Standard Penetration Testing (SPT). However, SPTs should comprise no less than 50% of the drilling plan when CPT and/or DMT are being considered.
- For projects with Essential Fish Habitat (EFH) present, or with sea turtles or sturgeon potentially present, the GDOT *National Oceanic and Atmospheric Agency (NOAA) Fisheries Tool* found on the the [Ecology Section SharePoint](#)¹ should be used to assess feasibility of implementing measures outlined in the NOAA *Fisheries Programmatic Essential Fish Habitat Assessment for Transportation Activities and Projects Regularly Undertaken in North Carolina, South Carolina, and Georgia* and *Programmatic Biological Evaluation (NLAA) on the Effects of Transportation Activities and Projects Regularly Undertaken in North Carolina, South Carolina, and Georgia*, also available on the Ecology SharePoint.
- For projects with manatee present, coordination with GADNR Coastal Resources Department (CRD), FWS, and USACE [via [Effects Determination Guidance for Endangered and Threatened Species \(EDGES\)](#)] will determine the appropriate best management practices (BMP)s and restrictions needed. Note that turbidity curtain usage may need to be avoided to be granted revocable license from CRD.
- The NOAA Fisheries programmatic agreements have their own impact thresholds and requirements for use, such as:
 - No allowed impacts to oyster/shellbeds
 - Limited impacts to areas with submerged aquatic vegetation
 - Limited impacts to Critical Habitat
- Cultural resources assessment of effects reports may need to outline and recommend standard AMM for geotechnical work since Georgia State Historic Preservation Office (SHPO) concurrence would likely not be received at the time a NWP 6 is needed. However, if the full project construction is anticipated to have no adverse effects to National Register of Historic Places (NRHP)-eligible cultural resources also typically referred to as cultural resources ESAs in a project, then drilling would also have no effect except for cases where deeply buried archaeological sites or sensitive areas are identified in a project Environmental Survey Boundary (ESB) or Area of Potential Effect (APE). If no cultural resource ESAs were found in the immediate drilling footprint (borings, staging, and access), then drilling would have no potential to cause effects to these resources except in the case noted previously pertaining to deeply buried resources. Note that Orange Barrier Fence (OBF) is not typically required for drilling activities;

¹ See instructions for accessing SharePoint on the [Office of Environmental Services Guidebooks website](#).

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however, discuss it with the project team if OBF may be needed in uplands to avoid direct impacts to an ESA. If OBF were to be placed in WOTUS, then those impacts would need to be included in the NWP 6 impact assessment.

- Two examples of AMM for cultural resources would include establishing a buffer around NRHP-eligible historic resources to minimize any potential effects from drilling and vibration from the operation of the drill rigs and coordinating an archaeological monitor to be on-site to monitor geotechnical work in archaeological sensitive areas or in areas with deeply buried resources to better understand the stratigraphy and soil profiles.

Specific AMM incorporated into the drilling plan and event would need to be outlined in the PCN, as applicable. Coordinate with the Geotechnical Consultant and Prime Engineer prior to committing to any AMM in the PCN that is specifically for geotechnical work, aside from general avoidance of accessing areas beyond the immediate drilling bore location and equipment access footprint.

AGENCY COORDINATION

Drilling is typically required to be completed prior to Federal Highway Administration (FHWA) approval of the environmental document, which is when FHWA has decision making responsibilities as lead federal agency on GDOT federally funded projects. Therefore, the USACE would be the lead federal agency on state and federally funded projects, the *Joint Coordination Procedures (JCP)* do not apply, and USACE will confirm whether a PCN is required for the activity. Ecologists would use SAS USACE EDGES and coordinate with the cultural resources team (OES and consultant) to determine the need for a PCN. Assessment of effects to EFH would also be required, when applicable. The USACE GDOT PMs would be assigned to review a NWP 6 for geotechnical drilling associated with a GDOT project. Therefore, the consultant completing the PCN is expected to coordinate with Section 7 agencies for technical assistance pertaining to the drilling activity ahead of PCN transmittal to provide agency input for the USACE. This information would be used by the USACE to coordinate with agencies for Section 7 during the Section 404 review process, as deemed necessary.

Section 106 consultation by GDOT would typically not be completed by the time drilling assessment is needed; however, the OES and consultant archaeologists and historians would be able to estimate a conservative effect assessment for drilling work based on what is anticipated for the overall project. If any SHPO concurrence has occurred for the overall project, then it would need to be included in the PCN. This information would be used by the USACE to coordinate with agencies for Section 106 during the Section 404 review process, as deemed necessary.

The action area for geotechnical drilling is limited to the immediate drilling bore location and equipment access footprint, which is much smaller than the project action area. Technical assistance requests and agency consultation for drilling would need to occur separately from the overall project. Details included in the agency outreach should be tailored to only describe the drilling activity to avoid confusion with the overall project.

If EDGES are not available for all species, then an educated determination can be made for the remaining species. With projects occurring within NOAA Fisheries jurisdiction the GDOT *NOAA Fisheries Tool* would be used to help determine applicable restrictions for geotechnical drilling. Detailed information on effects of drilling on species under NOAA Fisheries jurisdiction and EFH can be found in the NOAA Fisheries Programmatic Agreements for Transportation Activities.

Remember to include the following information when requesting ecological agency assistance: EDGES information, GDOT *NOAA Fisheries Tool* output table(s) outlining geotechnical drilling measures, recommended

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species determinations and justification of these determinations. All agency coordination should be included as an attachment of the PCN Package.

Additional coordination may be needed as outlined below if it applies to the project:

- USACE Lake Office -- Section 408, et. al. for projects occurring on USACE-managed lakes and waterways
- GDNr-CRD – Letter of Access and/or Revocable License for project occurring in tidal areas
- National Park Service – Special Use Permit for projects occurring within the boundaries of National Parks

COMPLETING PCN PACKAGE

Minimum PCN attachments include:

1. USACE Nationwide Permit Pre-construction Notification (PCN) Engineering Form 6082. Instructions are included with the form for completion of each box. Supplemental information is required as outlined below.
2. Attachment 1 – Supplemental Information
 - a. Box 19 *Description of the Proposed Nationwide Permit Activity* -- Existing Site Conditions and Project Description
 - i. Describe the general project area, existing bridge/roadway conditions, and need and purpose
 - ii. WOTUS – because this permit will be needed before an AOER and potentially before an ERSR, basic resource information is not known by agencies. Impacted waters should be described using the jurisdictional waters tables used in the AOER template found in Section III.H (and in Appendix D of this toolkit).
 - b. Box 20 *Description of Proposed Mitigation Measures* -- Some of the details of the drilling activity provided by the Geotechnical Consultant are considered avoidance and minimization of waters and should be discussed. Examples may include use of barge and low ground bearing pressure track rigs, use of upland boring locations, etc.
 - c. Box 21 *Purpose of Nationwide Permit Activity* -- Describe the geotechnical activities. Details would be provided by the geotechnical consultant performing the drilling and include:
 1. Drilling and Sampling methodology (including backfilling bores) and equipment
 2. Schedule
 3. Diameter and depth of bores anticipated
 4. Core processing and equipment staging area(s) location
 5. Discharge disposal process and location (not in the water)
 - d. Box 26 *List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity.* -- Describe agency coordination that has occurred, include the template AOER Federal and State Protected Species overview table found in the Ecology Resource Survey and Assessment of Effects Overview Section (and in Appendix E of this toolkit), and discuss recommended effects determinations. Agency correspondence would be included in Attachment 4 of the PCN.

Include a discussion of oyster/shellfish beds and EFH in this section, where applicable. Discuss applicable agency concerns, or lack thereof, that occurred during technical outreach. However, should it be needed, discuss impacts to these resources and any required AMM.

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- e. *Box 27 List any historic properties that have the potential to be affected by the proposed NWP activity and include a vicinity map indicating the location of the historic property or properties -- Cultural Resources:*
 - i. History and archaeological resources identified in the project ESB would be listed in the Historical Resources Survey Report and the Phase 1 Archaeology Report with reference to any SHPO concurrence. Describe the fieldwork conducted, findings, and status of SHPO concurrence on any cultural resources recommended NRHP-eligible in the PCN.
 - ii. Impact determinations specific to drilling activities on NRHP-eligible cultural resources. Because drilling will most likely occur within GDOT ROW, the cultural resources team can make a determination of the effects of the impact of drilling on NRHP-eligible cultural resources with standard GDOT protections. Discuss this in the PCN.
 - iii. Describe any avoidance and minimization measures used to protect cultural resources, as appropriate. Coordinate with the Geotechnical Consultant and Prime Engineer prior to committing to any avoidance and minimization measures in the PCN that is specifically for geotechnical work, aside from general avoidance of accessing areas beyond the immediate drilling bore location and equipment access footprint.
3. Attachment 2 – Aquatic Resource Delineation Request (ARDR) application or completed letter
4. Attachment 3 – Drilling locations – The preference is for these to be shown on an aerial background (GIS/Google Earth) and referenced if applicable throughout the supplemental information attachment. Use of the project Series 13 plans to depict drilling locations may cause confusion between drilling and overall project impacts. The drilling location plans/aerial need to show drilling locations and overall impact footprint specific to drilling (bore locations and access).
5. Attachment 4 – Agency Coordination
 - a. Species lists [IPaC, HUC10, and Georgia Natural, Archaeological, and Historical Resources GIS (GNAHRGIS)]
 - b. EDGES Form(s)
 - c. SHPO concurrences
 - d. Any direct agency coordination
 - e. Section 408 letter or correspondence, if applicable
6. Attachment 5 – Environmental Restrictions -- All restrictions and protections developed that need to be followed during the geotechnical drilling should be compiled in a list similar to SP107.23H language and included in the PCN package as an attachment. Per coordination that occurred between OES and Engineering Services, this document should be called “Environmental Restrictions” since SP107.23H is a contracting document to be implemented post-let. Including the Environmental Restrictions document in the PCN will hold the geotechnical drilling consultant responsible for following all AMM as a condition to perform work as described in their approved permit. Attachment 3 includes the environmental restrictions template to be used. Coordinate with the assigned OES Ecologist, as needed.
7. Attachment 6 – Letter of Access and/or Revocable License – The applicant’s name is the Consultant geotechnical SME. Coordinates can be used for “project address/location”. Include the completed form for USACE – CRD coordination to occur during the permit review process. Copy CRD on the USACE PCN package transmittal email so they are aware of the need for coordination in advance.
8. Attachment 7 – Projects within the boundaries of a US National Park or National Wildlife Refuge will require a Special Use Permit. If your project is in or adjacent to a national park, reach out to the contact information listed on the specific National Park Service (NPS) website. If your project is in or adjacent to US Fish and Wildlife Service (USFWS) National Wildlife Refuge, contact the specific refuge for

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information on this process, which includes a Special Use Permit form. Copy the appropriate NPS/USFWS official on the USACE PCN package transmittal email so they are aware of the need for coordination in advance. USFWS refuge contact information can be found on the USFWS National Wildlife Refuge System website.

APPENDICIES

Toolkit Appendix A

Example Geotechnical Rig Setups in WOTUS

Toolkit Appendix B

Glossary of Terms

Toolkit Appendix C

Environmental Restrictions Template

Species Summary Table Template

WOTUS template

TOOLKIT REVISION HISTORY

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	2/29/2024
Annual content review (no changes)	All	1/27/2025

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APPENDICIES

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APPENDIX A: EXAMPLE GEOTECHNICAL RIG SETUPS IN WOTUS

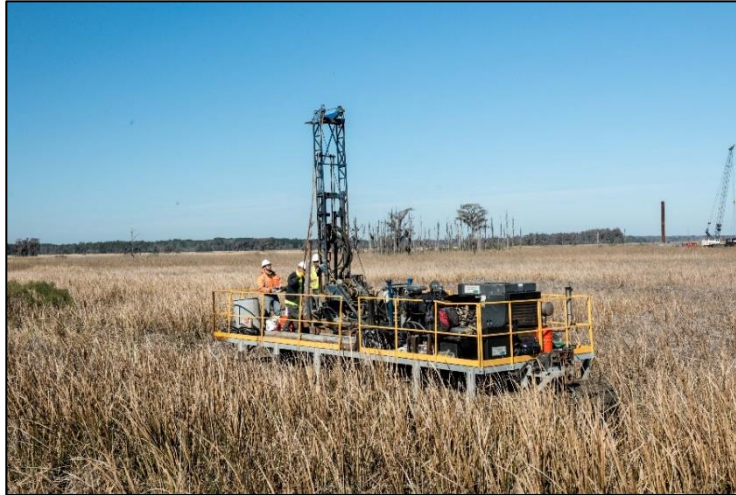


Photo 1. *Amphibious rig in a marshland during a GDOT project drilling event.*
Source: Terracon

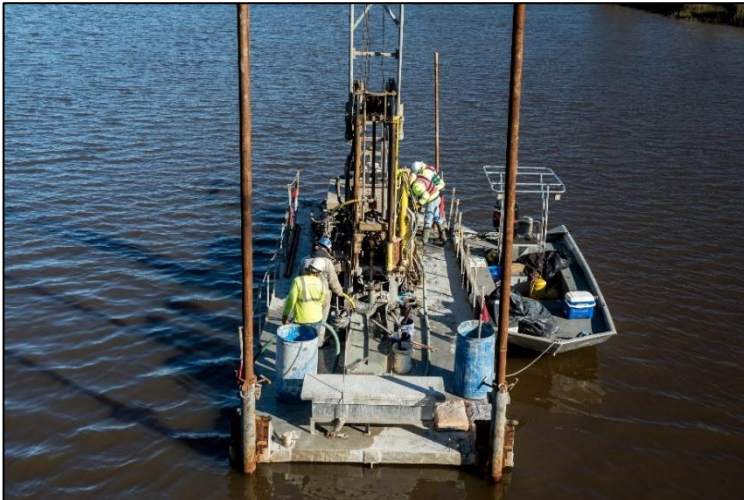


Photo 2. *Barge setup in an open water during a GDOT project drilling event.*
Source: Terracon



Photo 3. *Barge setup in an open water during a GDOT project drilling event.*
Source: Terracon

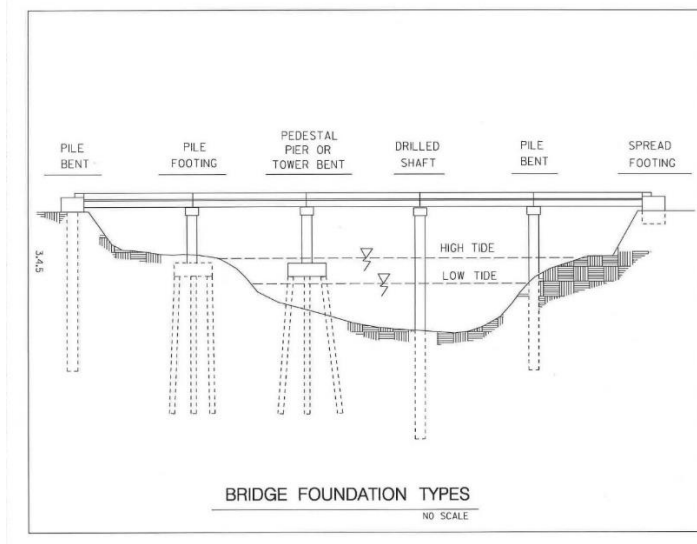
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APPENDIX B: GLOSSARY OF DRILLING TERMS

Amphibious track rig – low ground bearing pressure track rig used for drilling in inundated wetland, pond, or marsh systems to reduce overall environmental impacts.

BFI – Bridge Foundation Investigation – helps determine the type of foundation to be used. See bridge foundation types below for examples.



CPT – Cone Penetration Testing – can be used in conjunction with SPT on GDOT projects and uses a cone penetrometer to determine the geotechnical engineering properties of soils and delineating soil stratigraphy. Drilling diameter is smaller than SPT.

DMT – Flat-Plate Dilatometer Test – can be used in conjunction with SPT on GDOT projects and is carried out by pushing a flat plate with a membrane into the ground using a CPT rig.

Laboratory Testing – In the laboratory, the samples are then tested and classified for things like soil type, clay levels, rock type and quality, moisture levels, and density. This data is then matched with data from the previous historical studies and used to generate a detailed geologic map and database of the area along the routes. The geologic survey will establish the relative location of soil, rock formations, and ground water levels along the route.

Mud rotary technique – uses a drill bit mounted at the end of a drill rod and advances the drill bit by rapid rotation to form the borehole, aided by a semi-fluid mixture (mud). The geotechnical consultant will confirm fluid type used during sampling in a WOTUS. However, typically samples are collected by circulating a water-bentonite clay mixture through the drill parts, between the borehole and drill rods. This method allows for backfill of the borehole with the bentonite clay mixture as the soil sample is collected.

Shelby tube – a thin, hollow steel tube that is driven into the ground to collect soils in a relatively undisturbed state. It is capped and easy to transport for later laboratory testing.

SPT –Standard Penetration Testing – performed at bridge end bents on GDOT projects and is conducted to determine the geotechnical engineering properties of subsurface soils, especially for cohesionless soil. SPT utilizes a borehole drilled to the desired sampling depth. The split-spoon sampler that is attached to the drill rod is placed at the testing point. A hammer of a specified weight is dropped repeatedly from a specified height driving the sampler into the ground until reaching a certain depth. The number of the required blows is recorded to determine refusal depth.

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APPENDIX C ENVIRONMENTAL RESTRICTIONS TEMPLATE

Geotechnical Drilling Activity Environmental Restrictions to be implemented by [Name of Geotechnical Consultant]

Protection of Environmental Resources

The following conditions are intended as a minimum to protect these species and suitable habitat during any geotechnical activities that are in close proximity to the known or potential location(s) of these species.

1. [Name of Geotechnical Consultant] is responsible for notifying all on-site personnel about the potential presence and appearance of the federally protected [LIST], and that there are civil and criminal penalties for harming, harassing, pursuing, hunting, shooting, wounding, killing, capturing, or collecting these species, which are activities in violation of the Endangered Species Act of 1973. [Name of Geotechnical Consultant] is responsible for notifying all on-site personnel about the potential presence of the bald eagle (*Haliaeetus leucocephalus*), and that there are civil and criminal penalties for harming, harassing, pursuing, hunting, shooting, killing, capturing, or collecting these species in known violation of the Bald and Golden Eagle Protection Act of 1940 [INCLUDE IF APPLICABLE]. [Name of Geotechnical Consultant] is responsible for notifying all on-site personnel about the potential presence and appearance of the state protected [LIST] and that there are criminal penalties for killing, capturing, or selling these species in known violation of the Georgia Endangered Wildlife Act of 1973. It is unlawful to pursue, hunt, take, capture, kill, or attempt to take birds in known violation of the Migratory Bird Treaty Act of 1918. All bats are protected under Georgia state law (Official Code of Georgia § 27-1-28. Pictures and habitat information will be provided and should be posted in a conspicuous location in the field until such time geotechnical activities have been completed and time charges have stopped. [RESOURCE(S) #] provides suitable [TYPE] habitats for the [SPECIES].
2. In accordance with 36 CFR 800.13(a) Planning for Discoveries, if historic material or archaeological artifacts are encountered during construction on the project site or during the excavation of a previously approved off-site facility, the Contractor shall immediately cease the operation in the vicinity of the find and notify the Engineer. The Engineer shall then immediately contact the State Environmental Administrator in the Office of Environmental Services to determine the coordination required and the disposition of the find in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C § 306108) and the Georgia Environmental Policy Act (OCGA § 12-16-9), as applicable. The Contractor shall not remove any historic or archaeological materials from the project site and shall not resume activity in the area of the find until specifically authorized in writing by the Engineer.

If human remains, or associated funerary objects, are encountered during construction on the project site or during excavation of a previously approved off-site facility, the Contractor shall immediately cease all activity in the surrounding area and notify the Engineer. The Engineer shall then immediately contact the State Environmental Administrator in the Office of Environmental Services. The Office of Environmental Services will determine if the human remains are modern or historic/archaeological in context. If the human remains are determined to be modern in context (i.e. not associated with an historic burial or an archaeological context, the Engineer will then notify law enforcement in accordance with the Georgia Dead Bodies Act [OCGA § 31-21-6(a)]. If they are historic or archaeological in context, law enforcement will not be notified as provided for in OCGA § 31-21-6(a) and the Georgia Office of the State Archaeologist Policy on Encountering American Indian Human Remains.

The area of the find shall be secured and protected to the extent possible to prevent harm while coordination and additional investigation are conducted pursuant to the Georgia Abandoned Cemeteries and Burial Ground Act (OCGA § 36-72), Section 106 of the National Historic Preservation Act (54 U.S.C § 306108), Native American Graves Protection and Repatriation Act (NAGPRA; 25 U.S.C. § 3001), and the Archaeological Resources Protection Act (16 U.S.C. § 470aa-470mm), as applicable. The Contractor shall limit discussion of the find to Department personnel only and shall

not share information with the public through personal or mass media. The Office of Environmental Services will notify and coordinate with federal and state agencies, federally recognized tribes, and other entities, as applicable regarding the find and communicate the subsequent plan for treatment and/or disposition to the Engineer.

The Engineer will communicate to the Contractor the status of any restrictions implemented as a result of the required coordination by the Office of Environmental Services, including the time necessary to resolve required consultation and the identification of areas within the project where the Contractor may work while coordination is ongoing. The Contractor shall not resume activity in the area of the find until written authorization is provided by the Engineer.

Additional contract time will be the only consideration granted to the Contractor. If the Contractor fails to immediately notify the Engineer of the encounter (not to exceed 24 hours), the Contractor shall be liable for any associated cost and all damage incurred. Should damage to a find or human remains occur as a result of the Contractor's action in violation of this section, and notwithstanding any subsequent correction by the Contractor, the Contractor shall be liable for any cost arising from such action, including but not limited to, the cost of repair, remediation of any fines, or mitigation fees assessed against the Department by another government entity.

3. ADD APPROPRIATE RESTRICTIONS FOR EACH SPECIES

4. All disturbed soil located within 200 feet of a wetland, stream, and open water should be mulched daily or covered with erosion control mats until work in such areas has been completed. If mulch is necessary, mulch with tackifiers or soil stabilizers that are anionic, non-oil based (e.g., granular PAM) should be used to reduce turbidity and increase longevity. Erosion and sediment control devices (e.g., compost filter socks or silt fence) should be installed around storage piles within 200 feet of a wetland, stream, and open water. It is preferred that stockpiled materials and excavation spoil should be placed at least 200 feet away from wetlands and open waters, if feasible.
5. All equipment storage, maintenance, refueling and staging areas should be restored to pre-construction conditions following construction. Staging areas should be located in upland areas and have appropriate temporary erosion, turbidity, and sediment controls for disturbed areas, including, but not limited to stabilized construction exists/entrances and sediment control fence.
6. Refueling and mechanical fluid maintenance activities should include the use of spill containment perimeter devices. Refueling of boats and heavy machinery such as cranes positioned atop temporary work platforms over the water should avoid or minimize and mitigate spills into waterbodies.
7. Leaks and other maintenance issues with equipment that may cause release of pollutants into streams, and other waters and wetlands, should be repaired prior to use over or on water or wetlands or replacement equipment with no such issues should be used for work over the river, waters or wetlands. Petroleum products, chemicals, live (uncured) concrete, or water contaminated by these should not be allowed to enter waters. No uncured concrete or water used to facilitate curing shall be discharged into ESAs.
8. A Spill Pollution Prevention Plan should be created, and geotechnical personnel and subcontractors should be trained and should implement it whenever spill pollution prevention and mitigation is necessary. The Spill Pollution Prevention Plan and all materials necessary to implement it should be available and accessible to all geotechnical personnel and subcontractors on the Project site.
9. **THESE ARE EXAMPLES OF HARM/NOTIFICATION RESTRICTIONS TO SHOW PROPER NOTIFICATION FOR GEOTECH CONSULTANT AS THE PERMITEE- MODIFY APPROPRIATE AGENCIES, AS NEEDED** In the event of possible harm to the [LIST SPECIES] all activity should cease, with the exception of traffic control and erosion control, pending consultation with and guidance from the U.S. Army Corps of Engineers (USACE), who is the lead federal agency. In the event a [LIST SPECIES] is encountered by project personnel, it should not be touched, moved, or harassed. If it is possible to free the animal from entrapment without handling it, do so. If a dead [LIST SPECIES] is

observed in the Project limits, the carcass should be secured to an object to prevent it from being swept away by water currents, if practicable. If the carcass is unable to be secured, photographs of the carcass should be collected, and a record reporting its specific location where found should be prepared, including a description of its condition such as decay or injury, the presence of and color and writing on scientific research tags observed on the animal, and the estimated nose to tail length of the animal.

In the event any incident occurs that causes harm to the [LIST SPECIES], or that could be detrimental to their continued existence, on-site geotechnical person in charge or project manager should report the incident immediately to the USACE (lead federal agency). The USACE will either notify additional federal and state agencies or direct [Name of Geotechnical Consultant] to notify the agencies. Work should not commence until directed to do so by the USACE or their designee.

Contact information is listed below for all agencies that may be involved, should [Name of Geotechnical Consultant] be responsible for notifying agencies.

- a. The U.S. Army Corps of Engineers Savannah District at (912) 652-5050 (regarding any of the species)
 - b. NOAA Fisheries at (727) 824-5312 (regarding loggerhead sea turtle, green sea turtle, Kemp's Ridley sea turtle, shortnose sturgeon, and Atlantic sturgeon); dead Atlantic sturgeon should also be reported to (877) 788-7491 or nmfs.ser.sturgeonnetwork@noaa.gov; stranded, injured, or dead sea turtles will be reported to 1-877-942-5343
 - c. U.S. Fish and Wildlife Service Georgia Ecological Services at (706) 613-9493 (regarding West Indian manatee, Eastern black rail, and wood stork)
 - d. Georgia Department of Natural Resources (GADNR) Wildlife Resources Division (WRD) 706-557-3213 (regarding gull-billed tern, bald eagle, and least tern)
 - e. GADNR Coastal Hotline (1-800-2-SAVE-ME) (regarding West Indian manatee, loggerhead sea turtle, green sea turtle, and Kemp's Ridley sea turtle)
10. The on-site geotechnical person in charge should keep a log detailing any incidents that cause harm or injury to [LIST SPECIES] in or adjacent to the Project until such time that Project geotechnical activities have been completed and time charges have stopped. Following Project completion, the log and a report summarizing any incidents that caused harm or injury to these species should be submitted to the USACE submittal inbox at cesas-rd-gdot-esubmittal@usace.army.mil. The subject line should include: GDOT PI #XXXXXX Species Incident Log and the Savannah District project number included on the Section 404 Permit (ex. SAS-2021-12345).

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APPENDIX D: JURISDICTIONAL WATERS TABLE(S) TEMPLATE

Refer to the latest *Ecology General Project Report Template and Guidance* on the OES Ecology Sharepoint site for the most up-to-date table and additional information.

Notes on Text Colors:

Text that is highlighted yellow will need to be updated with the information for your specific project.

Include information in the blank cells of each table.

Text that is highlighted blue should be deleted, as it is strictly guidance text.

USE FOR STREAMS/CANALS/DITCHES

Resource Name:		NCDWQ Score:		Trout Water?	Y/N
Latitude/Longitude:				HUC 10:	ZZZ
Location:	Ex. Flowing east, perpendicularly under SR 129			Buffered?	Y/N
Bankfull Dimensions:	Width x Depth	Wetted Dimensions:	Width x Depth		
Substrate Composition:		Flow Condition:	High/Normal/Low		
In-Channel Structure:					
Ordinary High Water Mark Indicator(s)	List the observed OHWM indicators as defined by the USACE (RGL 05-05)				
Current Water Quality:	Describe water quality (smell/sheen/clarity) and impacts affecting water quality (e.g., roadway runoff, recent excavation, sloughing banks); justify assessment of existing condition of the resource				
Existing Structures:	Include type and length of any existing structures Ex. 2 Bridge Bents (5 wooden piles each), 16" RCP (26 ft.), etc.				
Existing Aquatic Connectivity Barriers:	None/Minor/Moderate/Severe Ex. Culvert oversized and exhibiting low flow across 4 barrels				
Impact Activity:	Ex. Bridge Replacement, Riprap Placement & Rock Jetty, Temporary Work Bridge on Driven Piles (Corps permit not required)				
Impact/Length (Area)/Duration:	Ex. Discharge of Fill/10 LF (0.05 ac.)/Permanent Morphological Alteration/15 LF (0.1 ac.)/Permanent Discharge of Fill/20 LF (0.5 ac.)/Short Term				
Length of Resource within Survey Area:	X LF				
FWCA Required?	No (Impacts are <100LF)				
Does resource provide habitat for protected species?	No, or list species if Yes				

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USE FOR OPEN WATERS

Resource Name:		Buffered?	Y/N
Latitude/Longitude:		HUC 10:	ZZZ
Location:	Ex. West of SR 129, hydrologically connected to PS 1		
Apparent Use:	Ex. Recreation		
Current Water Quality:	Describe water quality (smell/sheen/clarity) and impacts affecting water quality (e.g., roadway runoff, recent excavation, sloughing banks); justify assessment of existing condition of the resource		
Existing Structures:	Include type and length of any existing structures Ex. 2 Bridge Bents (5 wooden piles each), 16" RCP (26 ft.), etc.		
Impact Activity:	Ex. Bridge Replacement, Riprap Placement & Rock Jetty, temporary debris containment structure		
Impact/Area/Duration:	Ex. Discharge of Fill/10 LF (0.05 ac.)/Permanent Morphological Alteration/15 LF (0.08 ac.)/Permanent		
Area of Resource:	X.X ac	Area of Resource within Survey Area:	X.X ac
Does resource provide habitat for protected species?	No, or list species if Yes		

USE FOR WETLANDS

Resource Name:		Wetland Type:	Ex. Riverine, Lacustrine Fringe, Freshwater Tidal, or Saltwater Tidal
Latitude/Longitude:		HUC 10:	ZZZ
Location:	Ex. West of SR 129, hydrologically connected to PS 1		
Current Quality:	Describe water quality (smell/sheen/clarity) and impacts affecting water quality (e.g., roadway runoff, recent excavation)		
Existing Structures:	Include type and length of any existing structures Ex. 2 Bridge Bents (5 wooden piles each), 16" RCP, etc.		
Impact Activity:	Ex. Bridge Replacement, Riprap Placement & Rock Jetty, Temporary Work Bridge on Driven Piles (Corps permit not required)		
Impact/Area/Duration:	Ex. Discharge of Fill/1.0 ac./Permanent Clearing and Grubbing/1.5 ac./Permanent		
Area of Resource:	X.X ac	Area of Resource within Survey Area:	X.X ac
FWCA Required	TBD		
Does resource provide habitat for protected species?	No, or list species if Yes		

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APPENDIX E: FEDERAL AND STATE SPECIES SUMMARY TABLE TEMPLATE

Refer to the latest *Ecology General Project Report Template and Guidance* on the OES Ecology Sharepoint site for the most up-to-date table and additional information.

Common Name	Scientific Name	Federal Rank	State Rank	Habitat Present	Species Present	Effect Determination

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Stream Diversion

TOOLKIT REVISION HISTORY

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	2/29/2024
Annual content review (no changes)	All	1/27/2025