Revised May 1, 2025

GDOT GEOTECHNICAL BUREAU

SOIL SURVEY REPORT CHECKLIST

PI NO. & COUNTY_____DATE_____REVIEWER_____

I. PLANS

- ☐ Make sure you have the following plan sections for reference while preparing or review a soil survey report:
  - ☐ Section 1 – Cover Page
  - ☐ Section 13 – Mainline Plan Sheets
  - ☐ Section 15 – Mainline Profile
  - ☐ Section 22 – Drainage Profiles
  - ☐ Section 23 – Cross-Sections
  - ☐ Section 60 – Right-Of-Way Plans (If available)
- ☐ Make sure you have the list of all proposed box culverts and pipes greater than 48 inches along with their sizes, stations and locations. Note whether the culvert will be replaced or extended.
- ☐ Note any deep cuts/high fills (15 ft or greater) on the project by reviewing the profile and cross-sections.
- ☐ Note any proposed high fills or walls to be placed over an existing culvert. This may require special consideration to avoid overloading the old culvert.
- ☐ Note if there are any slopes steeper than 2:1 on the cross-sections.

II. FIELD NOTES & BORING LOGS

- ☐ Are the field notes legible or typed?
- ☐ Do the field notes indicate the boring number, boring location and offset, depth, material description, soil classification, presence of groundwater, and other critical observations?
- ☐ Has the hammer efficiency ratio / energy rating been included on each SPT boring log? Make sure the hammer used was calibrated within two years of the drilling date. If multiple hammers were used for the same project, have the hammers been identified by serial number on the boring logs? Please include the SPT Hammer Calibration Report in the appendices.
- ☐ Have the N-values been identified as corrected or uncorrected on each SPT boring log? Please note that only automatic hammers are acceptable.
- ☐ Has the bottom of culvert elevation been identified on all SPT borings / CPT soundings performed at culvert locations?

☐ Has the bottom of fill slope elevation been identified on all SPT borings / CPT soundings that had to be offset from the toe of proposed fill slope locations?

☐ Note if there are proposed bridge(s) and/or walls within the project limits. Are there end bent borings and/or wall borings that can be used in addition to the soil survey borings? Are these additional boring logs included in the appendix of the report?

III. EARTHWORK

☐ **Hard Rock**: If hard rock was encountered at, near, or above grade, have you specified that blasting will be required and verified that it is feasible (possible constraints are environmental sensitivity, proximity to other structures and/or critical geological features, etc.)? Have you listed the stations and locations where this material was found? Note in the field notes whether rock was verified with rock cores, or if it was determined based on auger refusal.

☐ **Rock Slope**: If hard rock that will form a rock slope was encountered, have you evaluated the strike and dip of the rock to ensure that the rock is not sloping towards the roadway? Rock coring is required for this evaluation. As an alternative, if the rock is exposed, has a professional geologist evaluated the exposed rock surface as well? (Pictures of the exposed rock surface should be included in the appendices of the report)

☐ **Boulders / Rock Layers**: If boulders or rock layers were encountered at, near, or above grade, have you specified that heavy equipment and/or light blasting may be required and verified that it is feasible? Have you listed the stations and locations where this material was found?

☐ **Removal due to unsuitable materials**: If removal of poor soils is required, have you listed the stations and locations where this material was found as well as the maximum depth of removal? Is a removal detail included? Also, have you specified what should be used as replacement material, and what should be done with the removed material?

☐ **Removal due to high In-place moisture**: On sections with cuts and/or low fills (3' or less), if the in-place moisture of the soils 1 to 3 feet below proposed subgrade is significantly above (>4%) optimum moisture, have you set up removal or drying out and replacement of the wet soils?

☐ **Waste**: Specify that Class IIIC2 and worse soils which will be excavated from cut sections are not placed within 3 feet of subgrade. Special provision Section 205 is needed for this requirement.

☐ **Subgrade Materials**: If good Class II B3 or better soils are readily available on Coastal Plain projects, have you set up a 12-inch layer at subgrade? If necessary, have you specified station and locations where a larger thickness of Class IIB3 or better materials will be needed due to the presence of poor soils? Special provision Section 209 is needed for this requirement.

☐ **Ditch Lining**: has the sample used for ditch lining evaluation been identified? This sample should be representative of the soils around the ditch line elevation on the project. Also, has the gradation curve from which D75 was determined been included in the appendices for this sample?

☐ **Slopes steeper than 2:1**: Have any proposed slopes steeper than 2:1 in either soil or rock been investigated and addressed? A slope stability evaluation is required for slopes steeper than 2:1.

☐ **Slopes greater than 35 feet**: For fills and/or cuts higher than 35± feet, is the berm detail referenced and enclosed?

☐ **Bench Detail**: has a bench detail been included in the appendices? This is not required for new fills on slopes flatter than 3:1.

☐ **Serrated Slopes**: this can be used in Districts 1, 6 and 7 on cut slopes steeper than 3:1. It should not be used on rock slopes.

Additional Subgrade Recommendations

☐ **Additional GAB:** If poor Class IIIC1 or worse soils are found at grade in cut sections, is extra graded aggregate base set up? Provide station range and location. (Suitable for projects in the Piedmont and Ridge & Valley regions).

☐ **Better soils readily available:** If marginal Class IIIC2 and/or limited areas of Class IIIC3 soils are remaining at grade in cut sections AND IIB/IIIC1 soils are readily available, have you recommended that the poor soils are undercut and replaced with better soils? Provide station range and location. (Suitable for projects in the Coastal Plain).

☐ **Filter Fabric:** if additional stabilization is needed, have you recommended the use of filter fabric per SP 881? Provide station range and location.

☐ **Lime or Cement Stabilization:** If majority of soils are IIIC2 or worse, and there is limited or no access to GAB or better soils, is lime or cement stabilization needed? Provide station range and location, and reference Standard Specification Section 225 (Soil-Lime Construction) or 301 (Soil-Cement Construction) as applicable.

IV. GROUNDWATER AND DRAINAGE

☐ **Underdrains and Drainage Stone:** If groundwater was found above grade in cuts, or within 1 to 2 feet of grade in fills, have underdrains and drainage stone been set up? Remember to include the correct underdrain detail.

☐ **High Water Table:** If high groundwater was found in cuts, will the slope underdrain detail be needed to prevent slope sloughing? Special Provision 572 is needed for this.

☐ **Low Wet Areas:** If the project crosses a pond, lake, swamp, areas of high groundwater or other wet areas, make sure that some soil samples were taken from the bottom for classification to see if any removal will be required. Have you recommended ditching or fabric prior to placing fill? If fabric is needed, it should be regardless of the soil classification.

For areas with low fills, consider placing one layer of low strength filter fabric under the fills. Provide station range and location. Standard Specification Section 455 should be referenced.

☐ **Embankment Mat:** Is granular or rock embankment needed to mat into any inundated areas? Is special provision 208 needed for granular embankment? For fills of 4 feet and less, consider placing geogrid under granular embankment. Geogrid may also be used in the bottom of inundated removal trenches. SP 881 for fabric should be included, as well as the filter fabric and embankment detail. The applicable stations should be listed on the detail.

☐ **Culverts:** Have you specified an appropriate thickness of Type II Foundation Backfill material under the barrel of all box culverts and 48-inch diameter and larger pipes? For larger culverts that require a different thickness (if any), have you listed these in the table?

☐ **Corrosion:** have the lowest pH and lowest resistivity values (worst case scenarios) from the lab test results been plugged into the Pipe Culvert Material Alternates chart? If there are no test results, the county default values should be plugged into the chart.

V. MISCELLANEOUS

☐ Pavement Design Values: Have you recommended a soil support value and have the options for acceptable base materials been listed?

☐ Is a waiting period or ground improvement needed before approach slabs are constructed? (For projects that include bridges with significant fill/embankment at the end bent).

Note: Settlement should be evaluated in the soil survey if the fill will be placed on soil containing compressible material within the zone of influence, the fill extends past the immediate vicinity of the approach slab, and there is a soil survey being done for the project.

If there is no soil survey for the project (minor projects), and/or the fill is limited to the immediate vicinity of the approach slab, these should be evaluated in the BFI. It would be good to have all relevant information before the BFI is finalized, so appropriate coordination will be necessary as these reports are being prepared.

☐ If there is a bridge within the project limits, has the following note been included in the report under the Special Problems section? – "We recommend that all bridge approach slabs on this project be constructed in accordance with the appropriate notched detail in the Georgia Standard 9017 series."

☐ Global Stability of High Fills and Deep Cuts – have global stability analyses been performed for all sections with fills greater than 15 feet to be placed on compressible material within the zone of influence? Have global stability analyses also been performed for all sections with cuts of 30 feet or more? The analysis should be performed at the most critical station(s) determined based on engineering judgement.

☐ Vibration Monitoring – is Special Provision 154 required for vibration monitoring? This is required if parcels with ***historic*** structures are located within 75 feet of the construction limits of the project and confirmed at Final Field Plan Review (FFPR) or when final Right-Of-Way plans are available.

VI. APPENDICES

☐ Details and Charts
- ☐ Removal detail
- ☐ Berm detail for cuts or fills
- ☐ Surcharge and/or filter fabric details
- ☐ Benching detail
- ☐ Underdrain detail
- ☐ Serrated slope detail
- ☐ Steep rock cuts detail
- ☐ Pipe Culvert Material Alternates chart
- ☐ Slope drainage detail

☐ Other Appendix Items
- ☐ Project location map
- ☐ Boring layout (Please make sure the boring layout/boring location plan is legible)
- ☐ Hand Auger logs

- ☐ SPT boring logs
- ☐ End bent and/or Wall borings (for projects with bridges and/or walls)
- ☐ Soil classification test results (USCS and 810.2)
- ☐ Results for all other lab tests performed such as corrosion, CBR/SSV, consolidation, etc.
- ☐ Rock core pictures and test results (if applicable)
- ☐ Site photographs and/or reconnaissance reports
- ☐ Previous site information, such as copies of old soil survey (if applicable)*
- ☐ Calculation sheet(s) (settlement, time rate of settlement, etc.)*
- ☐ Any other analysis as needed (slope stability, etc.)*
- ☐ SPT hammer calibration report*

* For In-House projects prepared by GDOT Engineers, these appendix items do not have to be attached to the report, however they must be included in the appropriate subfolders of the ProjectWise project folder.