Environmental Coordination & Permitting Group-Environmental Analysis Unit

GPS/CADD Information-June 2020

GPS/CADD STANDARDS

GPS settings:

- Use PDEA Data Dictionary Version 5 (request via ECAP@ncdot.gov).
- Minimum logging interval of 1 second for point features, minimum of 20 positions per point
- Provide sub-meter accuracy

GPS data:

- Wetland and/or protected species boundaries are to be recorded with **points**, not lines or areas
- Use 'point generic' feature to GPS wetland/upland data form locations and intermittent/perennial transitions for streams
- For streams, use appropriate stream feature: "JS MIT" or "JS Non-MIT" -(JS = Jurisdictional Stream and MIT = Mitigation). For ponds and tributaries use "JS Non-MIT"

Nomenclature:

- Features should be labeled and provided in the wetland file in the following format:
- *Wetlands* -WA, WB, WC…WAA, WAB, WAC [Points should correspond to wetland ID (WA1, WA2, WA3…)]
- *Streams* -SA, SB, SC… SAA, SAB, SAC [Points should correspond to stream ID (SA1, SA2, SA3…)]
- *Ponds*-PA, PB, PC…PAA, PAB, PAC [Points should correspond to pond ID (PA1, PA2, PA3…)]
- *Tributaries to Waters of the U.S.*-TA, TB, TC…TAA,TAB,TAC [Points should correspond to tributary ID (TA1, TA2, TA3…)]

Microstation:

- Submittal should include: 1) Corrected or real-time GPS file, 2) GIS shape file, 3) Microstation V8i wetland design file

- Appropriate nomenclature for wetland files:
  - TIP_WET.DGN for USACE verified wetlands
  - TIP_WEX.DGN for unverified wetland files
  - TIP_EPB.DGN for protected species boundaries

- Other that changing WEX to WET, no other file name changes are allowed. If a revision is made to an original file, a copy of the original file should be placed in an archive folder along with a text file explaining what changes were made.

- The swamp/marsh cell should be placed throughout the wetland area but the density should not obscure other information.

- All jurisdictional wetlands and streams need to be represented and labeled in the wetland file. Additionally, a feature name should be assigned for representation in NRTR unless the project only crosses one named stream. If this is the case, then stream name should be given only. CAMA wetlands need to be labeled as such.

- A conspicuous note needs to be added to wetland file that states that the wetland points were not surveyed by PLS if the nail method was used.

- Set element scale for all projects to 50. When using the Natural Environment Workspace, the NES toolbox can be used to set scales and assign appropriate levels for features.

- Numbered levels are no longer used or accepted. Usage of the appropriate level will automatically assign the correct line style, weight, and color to a feature.

- Do not use features on a level that are not designated for that level--supplementary features or information will be placed on the "Default" Level. For example, wetland/upland or stream form points are to be placed on the "Default" Level.

- Additional information for nomenclature and setting up Microstation Workspaces can be found at:

  https://connect.ncdot.gov/resources/CADD/Pages

PLS Scope of work for wetland boundaries as contracted through the NCDOT Environmental Analysis Unit

Biologist will provide visible location of wetland boundaries by flag, ribbon, nails, etc., for survey crew/member to locate, unless survey crew/member accompanies biologist to the field. Flags, ribbons, etc. will be numbered in some logical fashion, i.e. concurrent numbers indicating boundary perimeter.

Surveyor will use some type of non-destructive survey equipment such as survey or mapping grade GPS to locate points as designated.

All data will be tied horizontally to the most recent adjustment of NAD 83, NC State Plane Coordinate System unless otherwise specified by NCDOT.

The deliverables from the surveyor to the biologist will be:
1) One map in pdf format. This map shall be a signed and sealed map of the wetland boundary, showing North arrow with datum reference, vicinity map, and wetland boundary, with statement reading:

"I, _____certify that this plat was drawn under my supervision from an actual Class B (or better) LIS/GIS survey made under my supervision on_____(dates of survey); that _____(method of measurement with manufacturer and model number) was used in this survey; that the method of accuracy evaluation was_____; that all wetland boundary lines were surveyed and are clearly indicated; that the horizontal datum for this survey is_____(NAD 83 or other adjustments).

Witness my original signature, registration number and seal this_____ day of _____, A.D., _____. Seal or Stamp

_____
Surveyor Name Registration Number"

This map will not be recorded, and should be marked "Wetland Boundary for NCDOT: Not For Recordation" This map will include a table of coordinates for all surveyed wetland points, with associated numbers from the biologist's field delineation. The map should be of a reasonable size to display the wetland boundary plus all notes, seals, etc.

2) A CAD file that accurately represents the signed and sealed map.

The deliverable from the biologist will be 1) A copy of the signed and sealed survey map 2) An accurate representation of the surveyor's map in .dgn format, as previously defined by the Environmental Analysis Unit (this may be provided by the surveyor).