

TE/LCI DESIGN PLANS CHECKLIST FOR LANDSCAPING AND PEDESTRIAN/BICYCLE FACILITIES PROJECTS

February 2006

1. Get Project File

- o Review information in file. Compare to plans, looking for conflicts, or unanswered questions.
- o Are there any environmental requirements in the correspondence in the file? Have the requirements been included in the plans and/or special provisions? A typical requirement is to identify historic buildings and boundaries on the plans and adding a note that the contractor cannot work or stage equipment or materials within the historic boundaries unless there is an easement for such use.
- o Have any Design Variances or Design Exceptions been requested or approved?
- o Read Concept Report and CE. Do the concept report and the CE match the plans?

2. Check to see whether a FPR is to be held

Field Plan Reviews (FPR) are usually not required on all projects. A FPR request should be made to the GDOT Project Manager and a determination will be made as to whether or not a FPR is required.

3. Check Cover Sheet/Index/Revision Summary Sheet

- o “Construction Plans” is to be added at the top of the cover sheet.
- o The Sponsor’s name including county name.
- o Description or name of project.
- o Georgia DOT project number and project identification number.
- o Location map with north arrow.
- o Project Map should include the beginning and end stations of the project and all bridges and bridge culverts, beginning and end stations of all exceptions, all equalities, rivers and major streams, railroads, county lines, city limits, land lot lines, and the names of all side roads. A scale and north arrow should be located near the project map.
- o Length of project in miles (x.xx mi).
- o Specification note:
 - o Project to be constructed as per Georgia Department of Transportation Standard Specifications, 2001 Edition, as approved by the Federal Highway Administration and as modified by contract documents.
- o For projects within GDOT District 7 area, add this note: This project has been designed to comply with Title II provisions of the Americans with Disabilities Act (ADA).
- o Scale if required.
- o Date when plans completed.
- o Percentage breakdown of work by Congressional District and Counties.
- o Give the survey and coordinate data references.

- o Index of sheet numbers, which should include description of sheet including GDOT standards.
- o Name of consulting engineering or architectural firm.
- o PE or RLA stamp on plans. Plan sheets for bridges or retaining walls must be sealed by PE.
- o Revision dates for changes after the initial plan set is approved.
- o The plans must have a box in upper right corner giving project number and sequential numbering of all sheets, i.e., 1, 2, 3, ...N of N. The cover sheet is sheet 1.
- o Revision summary sheet has been included giving date of revision, sheet number of revised sheet, and description of revision..
- o Index should include all applicable Standards and Details. Revision dates should indicate the most recent revision.
- o **Landscaping plans: All of above plus the following:**
 - o Plant specifications
 - o If the contractor is to mulch the bed areas initially and additional mulching is wanted during the contract then the specifications should state when re-mulching is required and how many times it is required. This needs to be clear in the bid specifications so the contractor will price the mulch accordingly.
 - o The specifications should clearly state the contractor's responsibilities and maintenance tasks. 1) Mowing – How often? What area? 2) Mulching – How often? 3) Watering – How often? Who supplies the water? Are there time restrictions such as during rush hours? 4) Weeding – How often? How is it accomplished and what quantity of weeds is acceptable at any time? 5) Dead Material – How often does dead material have to be removed? When does dead material have to be replaced? How many times does the contractor have to replace dead material prior to the end of the contract?
 - o Pruning specifications – Limb to at least 7 feet.
 - o Planting details
 - o Tree protection
 - o Planting plans
 - Location of plants
 - Types of plants, by key reference or plant name
 - Check plants with exotic/invasive species plant list.
 - Check sight triangles at intersections.
 - No plants over 30" mature height for plants within sight distance triangle.
 - No plants over 4" diameter within clear zone of roadway.
 - o Irrigation
 - Sponsor to sign indemnity agreement with GDOT if project within GDOT right-of-way.
 - Use pop-up heads only
 - Controller box must be located off GDOT right-of-way.
 - Valve boxes need to be locked or located off the GDOT right-of-way.
 - Add tracer wire to all piping.
 - Add a shut-off valve at the water meter for emergency purposes.

4. Check Typical Sections

- o Lane widths, shoulder widths, curb and gutter widths, landscape area width, sidewalk, or trail widths.
- o Check lane widths, shoulder widths, speed design, etc. against Geometric Design Standards. Check Clear Zone requirements. If bridges are included, check typical section versus bridge section.
- o Typical Sections should indicate rate and direction of cross slopes for paving, shoulders, and sidewalk.
- o Give stations for each section.
- o Identify asphalt and concrete paving and thickness.
- o Add Superpave Mix Design Level. Use metric Superpave nomenclature for all asphalt paving, e.g., 9.5 mm Superpave, 12.5 mm Superpave.
- o Typical Sections should show stationing applicable to each section. Stationing should not overlap or skip. Superelevated sections should be shown where applicable. Each pavement layer should be labeled with a depth and type of material.
- o On widening and reconstruction projects typical sections should indicate rate of slope or “Match Existing Slope”.
- o Check front slopes, ditch depths, overall dimensions, etc.
- o If there is a sidewalk with no curb, the sidewalk is to be at least 5 feet from the roadway..
- o All projects with sidewalk should provide for curb cut ramps. Index should include GA Special Details A1, A2, A3, and A4 as appropriate. Curb cut ramps are to be shown and labeled as to type on the construction plans. Detectable warnings are to be shown at all required locations.
- o Curb and Gutter sections should be labeled with the type and size. Curb and gutter on the high side of superelevated section should spill with the same direction and slope as roadway.
- o Check all notes and details for accuracy and need.

5. Check Summary Sheets (Optional)

- o All items on summary sheets should be listed on the detailed estimate unless there will be no separate pay item for the item.
- o Check all references to GA standards. Has the correct Standard been noted? Has it been included in the plans?
- o Drainage summary should be in accordance with Drainage Manual.

6. Check Detailed Estimate

- o Bid item number. See GDOT Bid Item index.
- o Description of item. See GDOT Bid Item index.
- o All items in the detailed estimate should be shown on the summary sheets. Check figures for errors in transfer from the summary. A slight round up is normal. Quantities should never be rounded down. Bridge quantities should never be rounded.
- o Check to see if correct pay item number has been used. Check to see if the correct units have been used. Check to see if the description contains all required information.
- o Bridges and Bridge Culverts should be shown in separate blocks in the detailed estimate.

o **SUMMARY OF QUANTITIES/ DETAILED ESTIMATE:**

A Detailed Estimate needs to be developed according to current GDOT PDP guidelines using the current Ga. DOT Pay Item Index numbers, descriptions, and units of measure. **Use pay item numbers and pay item descriptions verbatim from the current GDOT Pay Item Index.** In addition, any item in this project that does not have a current pay item number in the current Ga. DOT Pay Item Index, a pay item number can be created. This number can be any number as long as it is not a number in the current pay item index. The prefix will come from the section of the Standard Specifications that this item applies i.e. SEC 163 MISCELLANEOUS EROSION CONTROL ITEMS. The pay item description for the created pay item number will begin with the section description i.e. Sec 203 Foundation Exploration. After the section description a dash (-) can be added to the description and additional wording can be added that thoroughly describes the created item as follows: Foundation Exploration – Wall 23, etc. In addition a Special Provision will need to be developed for the created pay item.

Grading Complete – Add this pay item to the Detailed Estimate. This will cover any miscellaneous earthwork and minor grading that may be needed for this project. Any removals noted in the Detailed estimate should be deleted from the Detailed Estimate, and a note added to the plans stating that all items for to be removed is to be included in the price bid for “Grading Complete”.

The unit and quantity for all “LUMP SUM “ items is “LUMP SUM” not one (1).

Maintenance of Silt Fence is 50% of the total quantity for the silt fence, for example, if there is 680 linear feet of silt fence, then 680 feet x 50% = 340 linear feet for maintenance of silt fence.

All proposed handicap ramps should be listed under the pay item number 005-0023 ADA ramps; the unit of measure is EACH.

7. Check General Notes/Project Notes

- o One-Call Number for Utilities 1-800-282-7411.
- o List utility owners and contact information.
- o Check that project specific notes do not conflict with other contract documents.
- o Check that project specific notes do not repeat any information already specified in the contract documents.
- o Add Traffic Control note:
 - o The contractor will be responsible for preparing a traffic control plan showing the proposed measures to manage traffic during construction activities. The plan shall conform to the 2003 Manual of Uniform Traffic Control Devices and Georgia DOT Specification 150. Any lane closures must be approved by and coordinated with the Georgia DOT Area Engineer. Lane closures will require proper lane tapers and advance warnings per Georgia DOT standards.
- o Add Traffic Signing Note:
 - o All signing, marking, and traffic control shall conform to the Manual on Uniform Traffic Control Devices, 2003 Edition.
- o Add, as appropriate, Traffic Signal Note:
 - o Existing traffic signals shall remain operable at all times. Contact _____, GDOT Signal Engineer (or city contact as appropriate), at _____ prior to beginning work to discuss buried signal equipment.
- o When using the GDOT Specification 702 add this note:

- Review length of maintenance requirements – two growing seasons – in the 702 specification.
- List any time restrictions on lane closures, e.g., before 9 AM and after 4 PM.
- Add NOI note.

8. Check Construction Plan and Profile Sheets

- Check for Begin Project and End Project stationing. Check side road limits as well. All transitions and proposed construction must be within the project limits.
- No catch basins should be constructed within radii limits of intersections. Shift catch basins out of radii or use 1019A, Type E, modified or 1019B.
- Check all horizontal and vertical curve data for compliance with Geometric Design Standards based upon speed design.
- Check spacing and size on all drainage structures. Are pipe sizes, direction of flow and structure numbers shown on plan sheets?
- Check all equalities and exceptions for stationing, grade continuity, and horizontal continuity.
- Check all intersections for proper horizontal and vertical tie-ins and compliance with design speed.
- Check for locations where Type 3 backfill material is required. Also, check for locations where Type 2 backfill material is normally used, such as live streams or unsuitable conditions.
- Check that the following items are plotted on the plan sheets: Survey Centerline, Construction Centerline, Existing Right of Way, Required Right of Way with Stations and Offsets at break points, Construction Limits, Easements, Property Lines and Owner's Names, North Arrows, Stationing, Existing Topography, Begin/End for Guardrail and Anchors, Ditches, Drainage Structures, Flow Lines, Curb and Gutter, Sidewalks, and Wheelchair Ramps.
- Minimum median opening spacing: Urban: 660 feet Rural: 1320 feet.
- Are right turn lanes in place according MOG 6638-1?

9. Check Bridge Plans

- Are all bridges shown and labeled on plan and profile sheets?
- Is inside bridge width at least the width of the paved trail width? See 1999 AASHTO Bike Guide.
- Does bridge alignment match roadway alignment, both horizontally and vertically?
- Highwaters should be shown in accordance with the drainage manual. Geometric Design Standards must be met.
- The design loadings must be on the plan sheets. See AASHTO specifications for pedestrian bridges.
- Submit Bridge Foundation Report (BFI) and hydrology report, if applicable with plans.

10. Check Wall Plans

- Are all walls shown and labeled on plan and profile sheets and cross sections?
- Provide top and bottom elevations and stationing for walls.
- Retaining walls – submit design calculations if not using Georgia Standard 9031L.

11. Check Stage Construction/Detour Plans

- o Review plans to determine if stage construction or detour plans are necessary.

12. Check Erosion Control Plans

- o New erosion control guidelines became effective in August 2003. Permit GAR 100002 requires separate erosion control plans if the disturbed area is 1 or more acres. Plan notes have been revised frequently so ensure the latest required notes are included. Check with the GDOT District Office for current requirements.
- o Projects with less than 1 acre of disturbed area will not require a NOI and Erosion Control Plans will be done as they have been done in the past. Required erosion control items should be shown on the erosion control plans.
- o Projects with 1 acre or more of disturbed area will require a NOI and separate Erosion Control Plans. The erosion control plans should be a separate, complete package located at the back of the complete set of plans.
- o Generally the erosion control plans will contain the following items:
 - A separate cover sheet, certification notes, and signed and sealed by a design professional.
 - Erosion, Sediment and Pollution Control Plan (ESPCP) General Notes.
 - Drainage Area Map
 - Erosion control plans sheets showing the required items for each stage of construction.
 - Comprehensive Monitoring Program (CMP) General Notes
 - Monitoring Location Map
 - All erosion control standards and details should be included in the erosion control plan package.

13. Check Signing and Marking/Signal Plans

- o Is there a traffic signal at the intersection? If yes, pedestrian signal heads, crosswalk markings, and curb cut ramps must be provided. If the signal is owned and operated by GDOT, contact the District Traffic Signal Engineer to determine if a revised signal permit is required. If a revised signal permit is required, the Sponsor's design consultant is to contact directly the District Traffic Signal Engineer.
- o Are signal plans required? If so, have they been included? The GDOT District Traffic Operations Office will review and approve the traffic signal plans.
- o Are all strain pole locations shown for overhead signs and signals?
- o Do any proposed islands shown on the signing and marking plans match those shown on the construction plans? (Concrete/Striped)
- o Are pay items set up for all striping items? Stripping for bike lanes is to be paint. Other markings are usually thermoplastic.
- o Use the GDOT standard crosswalk markings for all crosswalks. If the crosswalk has an architectural treatment, there shall be an 8" white stripe parallel to the crosswalk on each side of the crosswalk.
- o Pedestrian and Bicycle warning signs shall be fluorescent yellow-green in color using Type 6 wide-angle prismatic sheeting. The sign sizes shall be:
W11-1 & W11-2 = 36" x 36"; W16-7p = 30" x 18"; W16-9p = 36" x 20"
- o Use Table 2C-4, 2003 MUTCD, to determine placement distance of the advance warning sign assembly.

- o The plans are to show the legend, color scheme, size, and sheeting requirements for all signs.
- o Use GDOT Square Sign Post Detail for post design.

14. Check Utility Plans

- o Check utility sheets and cross section sheets with plan and profile sheets for possible conflicts with proposed construction.
- o A list of utility owners and the One-Call Number for Utilities should be shown in the plans.

15. Check Drainage Profiles/Drainage Cross Sections

- o Will Type 2 or 3 backfill material be required? Check drainage summary, plan and profile sheets, and drainage cross sections. Normally Type 2 backfill for pipes will be used only for live streams or unstable conditions.
- o Check for pipe end treatment (flared end section, safety end section, headwalls, etc.). Use outlet headwall where velocities are excessive. See drainage manual.
- o Drainage cross sections should be checked against drainage summary and plan and profile sheets. Make sure there is no conflicting information.
- o Drainage cross sections should show height of fill, which will determine class of pipe or design of culvert, and size, station and skew of structure.

16. Check Cross Sections

- o No earthwork information should be shown on the cross sections.
- o Horizontal and vertical scales should be shown. At least one elevation per cross section should be shown.
- o Walls should be shown and labeled on the cross sections.
- o Check that cross sections match applicable typical section.

17. Check Wetland Mitigation Plans/Lighting Plans/Right of Way Plans, etc.

- o Check to see that this information does not conflict with anything in the contract documents.

18. Review Special Provisions

- o Project Number, PI No., and County should be checked.
- o All special provisions should be compared to the rest of the contract documents to verify that there are no conflicts.
- o Section 150.11 of the Traffic Control Special Provision should contain any special requirements for restrictive work hours and/or traffic count restriction.

19. Metric Projects

- o All plans are to be in English units.

20. General Comments/Things to Look For

- o On all projects, check the overhead clearance under bridges should be checked. On cross sections for facilities under bridges, give the elevations for the trail or sidewalk and the bottom of the bridge beam. This information is used to confirm the overhead clearance.

- o Plans should include method of connection when extending pipe not in kind or when extended in a different grade or slope. (concrete collars, etc.)
- o Right of Way Markers are required at locations where new right of way is acquired. In an Urban Area, they may be set flush with the surrounding terrain.
- o The installation of sidewalks and landscaping can be done on easements. Cut and Fill slopes, channels and ditches may be constructed on easements.
- o Do not use Flared End Sections on slope drainpipe larger than 18". Use Special Design Headwalls. (Class "A" Concrete and Reinforcing Steel)
- o Do not use Flared End Sections on Storm Drain Pipe larger than 42" or greater than 10% grade. Use headwall.
- o Verify that the General Notes do not conflict with anything else in the plans.
- o Verify that the correct pay items have been included.
- o Superpave mixes:
 - Type B mix is now 19mm Superpave, Recycled Asphaltic Concrete, GP1 or 2, Item 402-3190.
 - Type H mix is now 12.5mm Superpave, Recycled Asphaltic Concrete, GP2, Item 402-3130.
 - Type E mix is now 12.5mm Superpave, Recycled Asphaltic Concrete, GP2, Item 402-3130.
 - Type F mix is now 9.5mm Superpave, Recycled Asphaltic Concrete, GP2, Item 402-3131.
- o Thickness of each pavement layer is given in terms of a spread rate of 1" = 110 lb/sy. For example, a 2" layer has a spread rate of 220 lb/sy.
- o The placement of the handicap parking spaces is to be shown on the plans. When placing the handicap spaces, remember the access aisle needs to be accessible to the sidewalk typically through the use of a curb cut ramp that cannot occupy any of the access aisle area.
- o No parking spaces within 20 feet of a crosswalk.
- o No parking spaces within 30 feet of a flashing signal, stop sign, yield sign, or traffic control signal.