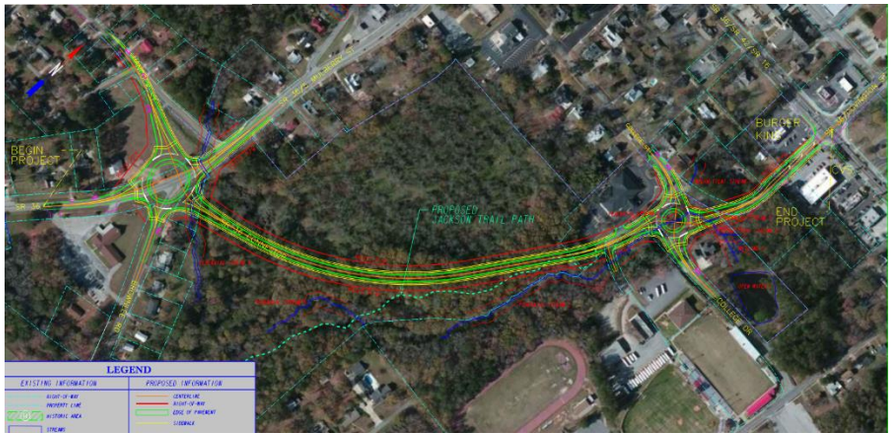
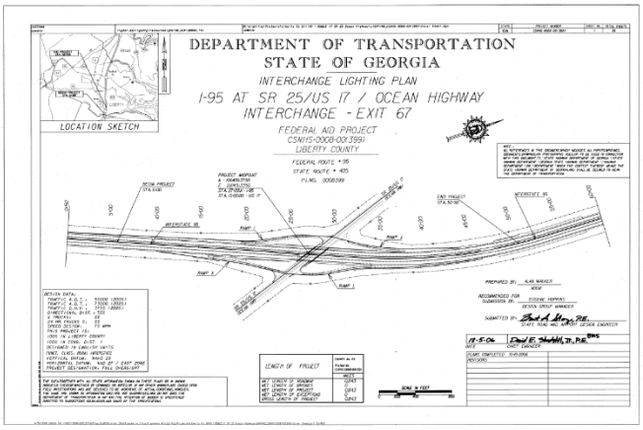
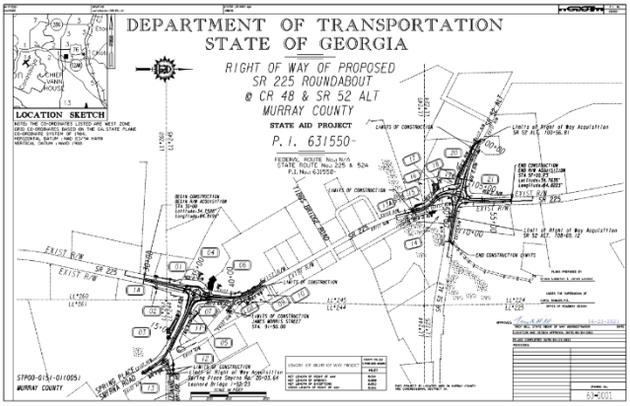
Plan Presentation Guide







5/31/2023

Revision 3.0

Atlanta, GA 30308

GDOT

Georgia Department of Transportation

This document was developed as part of the continuing effort to provide guidance within the Georgia Department of Transportation in fulfilling its mission to provide a safe, efficient, and sustainable transportation system through dedicated teamwork and responsible leadership supporting economic development, environmental sensitivity and improved quality of life. This document is not intended to establish policy within the Department, but to provide guidance in adhering to the policies of the Department.

Your comments, suggestions, and ideas for improvements are welcomed.

Please send comments to:

State Design Policy Engineer
Georgia Department of Transportation
One Georgia Center
600 West Peachtree Street, N.W., 26th Floor
Atlanta, Georgia 30308

DISCLAIMER

The Georgia Department of Transportation maintains this printable document and is solely responsible for ensuring that it is equivalent to the approved Department guidelines.

Revision History

Revision Number	Revision Date	Revision Summary
01.00	3/5/07	Initial Release of revised document in current format (version 01.00)
	5/3/07	Section 12: Deleted Monument required information and references to it in the General paragraph Sections 26-28: Added required information bullet of "Location of guardrail for incorporation into design plans"
	6/8/07	Added Sections 60-64
01.01	6/15/07 (Interim Release)	Added ESA designation information to Sections 13,14,18,19,21,24,25,29, 30, 53-55 (version 01.01)
	6/29/07	Sections 26-28 and RW: Added ESA designation information Sections 13,14,18,19,21,24,26-30,53-55,60-64,RW: Removed specific descriptions of T&E and Archaeological ESA's Sections 13-14: Added "Legend" as a bullet for Required Information Sections 22,53,55: Removed "Project specific allowable activities notes" from Required Information Section 30: Added the following required information: Proposed utilities, Strain poles, Proposed roadway features Section 34: Changed from "Noise Barrier" to "Sound Barrier"
	1/2/08	Section 44: Moved from Section 60-64 and combined into one section
	9/12/08	Erosion control sections revised for new permit requirements Updated links to Reference Material Resources
	10/7/08	Synchronized RW Section with current RW Checklist and provided reference for detailed information to the RW Checklist
	12/19/08	19.001 – Added Staging linestyles and standards Ch. 1 - 1.2.2 - Updated TS&D Stand-Alone plans for Erosion Control Added most of the sample sheets and activated links Updated Chief Engineer Document Acceptance page Ch. 3 – 3.2.2 – Updated “RR MOG” to current TOPPS Policy

01.10	1/5/09 (Major Release)	Synchronization with current EDG and sample sheets added (version 01.10)
01.20	3/1/2010 (Interim Release)	Revised RW Plan Section (Chapter 3) to Section 60 of plans and compiled external RW Checklists into PPG (RW Office) Added "*Revision Requested By* block" as required item on ESPCP Cover Sheet (Section 50) Deleted Section 9 – Detail Estimate Sheet and revised Section 6 – Summary of Quantities Updated Sections 21 - Drainage Area Map and 53 – ESPCP Drainage Area Map
01.30	4/1/11	Updated ESA types in each affected section for Environmental Impacts Table inclusion (collapsed ESA statements) Changed wording for direction of vertical text in Section 60 Added PVI to be shown to only two decimal places Updated Sections 31 & 32 Titles Removed quantities from sample Sign & Marking Sheet Removed "Design Speed" for vertical curve data on side-road profiles Revised Section 50 to include the Chief Engineer's signature and other minor edits Updated "Limit-of-Access" wording in Section 60 Updated PPC contact information to be Solutions Center/Remedy Removed temporary sediment basins from being a required item on Construction plans
01.40	9/26/11	Note added to Section 5 – Typical Sections identifying the safety edge and Ga. Standard Minor updates to Sections 21, 53, and 55 Added text orientation note under General section
01.50	10/1/12	Minor updates to Sections 21, 53, 54 and 55
01.51	October 2014	Revised Section 50 as per the latest EDP guidelines Revised Sections 26, 27 and 28 to show General Notes placed in Section 04 GENERAL NOTES Revised Section 60 to update "Example C" graphic

01.52	January 2015	Revised Section 01 – Construction Cover signature requirements Revised Section 06 - Required Information for Culverts to add embedded culvert requirements Revised Section 22 - Required Information for embedded culverts Revised Section 50 – Cover signature requirements
2.0	1/16/15	Reformatted manual to new standard template
2.1	1/27/15	General – Removed reference to sample section. LEC – Updated to reflect changes. Removed Appendix A Sample Plan Sets from manual. No longer needed in manual.
2.2	5/1/15	General – Updated hyperlinks LEC – Updated to reflect changes Chapter 2 – Updated hyperlinks and updated Section 54 with new procedures
2.3	7/31/15	Remove all references to “Sheet(s)” and replaced with “Drawing(s)” throughout manual. Removed “Project Number” from all plan sections except 01, 50 and 60. Chapter 2 - Revised Section 13 to include Section 14 information. Deleted Section 14. Chapter 3 - Revised Section 60 to show additional Railroad requirements.
2.4	10/15/15	Chapter 1 – Revised Section 31 Retaining Wall Envelopes and 32 Retaining Wall Plans General Revision to Sections 31 and 32.
2.5	1/15/16	Chapter 2 – Revised Section 4 to include info regarding driveway note cell; Revised Section 5 regarding driveway reconstruction detail
2.6	4/22/16	General – Updated title block description Chapter 2 – Updated Section 20 title and updated general description
2.7	1/13/17	Chapter 3 – Revised Section 60 to include State Plan Coordinates in RW data tables related to Railroads
2.8	7/31/17	General – Added info regarding migration to 11”x17” plotting. Added MS4 Post-Construction Stormwater Report Template to reference sources Acronyms and Definitions – Added definition of MS4 and Post-Construction Stormwater Report Template Chapter 1 – Added reference to Post-Construction Stormwater BMP to section sequence. Updated Erosion Control Plans reference Chapter 2 – Added info regarding MS4 and Post-Construction Stormwater BMPs. Updates to the titles of sections related to changing “Sound” to

		"Noise". Chapter 3 – Added info regarding Post-Construction Stormwater BMPs.
3.0	5/31/23	Updated to reflect branding guidelines throughout General – Revised Drawing Scales table. Revised Stationing references. Updated hyperlinks Chapter 1 – Revised Roadway Projects Section Sequence Table. Added Traffic Operations projects info. Updated Drawing Numbers submission. Chapter 2 - Revised Section 01 to add signature summary sheet for consultant plans, various sections (01, 02, 40, 41) to reflect change to use of Construction Standards and Details Book, Section 20 to Bridge Construction Access, various sections revised for content based on SME office input, staging legend Section 19, ESA label verbiage to allow for "SEE E.R.I.T." in legend with OBF linestyle; Added Section 32 (previously blank) Chapter 3 – Removed ROW District plans reviewed by District personnel. Revised ROW Cover Drawings. Revised ROW easements. Added table hearders requirements. Remove ROW plans submittal. Revised ROW administrator info. Updated Conventional Signs images. New Chapter 4 Layouts for Public Meetings added

General

This document contains guidelines to be used in preparation of plans, as well as information specific to each section of a typical plan set. However, there are guidelines that are common to every section of the plans. In order to avoid repetition within each section, some of the general information that applies to all sections is contained below.

Individual Summary of Quantity Drawings: Individual Summary of Quantities drawings for plan sections requiring separate, stand-alone Summary of Quantities drawings will be submitted to the Project Manager with no drawing numbers. The drawings will be placed with the Roadway Summary of Quantities (with no drawing number) as noted in the individual plan sections. The Project Manager will number the drawings before final submission of plans.

English Units: This document and the supporting CADD standard files were developed based on Projects with English Units only.

Drawing Scales:

The scales used in the production of roadway plans are as follows. The scale used is dependent on the level of detail required. The scale should remain constant throughout the plans.

Horizontal Scales:

11 x 17	24 x 36
1"=40’	1"=20’
1”=60’ (Signal Plans only)	1”=30’ (Signal Plans only)
1"=100’	1"=50’
1” = 200’	1” = 100’

Vertical Scales:

11 x 17	24 x 36
1"=10’	1"=5’
1"=20’	1"=10’
1” = 40’	1” = 20’

Project Type	Recommended Scale	
	11 x 17	24 x 36
Widening (rural shoulders) – 1 mile or less	100 scale; or 40 scale for high density urban environments	50 scale; or 20 scale for high density urban environments
Widening (rural shoulders) – more than 1 mile	100 scale	50 scale
Widening (urban shoulders) – 1 mile or less	40 scale	20 scale
Widening (urban shoulders) – more than 1 mile	100 scale; or 40 scale for high density urban environments	50 scale; or 20 scale for high density urban environments

Interchange (Re)construction	100 scale	50 scale
Bridge Replacement	40 scale	20 scale
Intersection Improvement	40 scale	20 scale

Minimum Text Sizes: The minimum size for text on a set of R/W plans is to be 0.15 inches on the final D Size (24”X36”) plot or 0.075 inches on the final (11”x17”) plot.

The minimum size for text on a set of Construction plans is to be 0.12 inches on the final D Size (24”X36”) plot or 0.06 inches on the final (11”x17”) plot for information not included on R/W Plans.

Text information shown on the R/W plan drawings should be placed at a minimum size (0.15 X scale of plans). Plans are usually drawn at 1 inch equals 50 feet (1”=50’) which should equal a text size of 7.5 feet (i.e.: 0.15 X 50 = 7.5) or 1 inch equals 20 feet (1”=20’) which would equal a text size of 3.0 feet (0.15 X 20 = 3.0).

Stationing: Stationing references shall be shown to the nearest 100th (i.e. 1010+26.25)

Current GDOT Engineering Software Versions: The current versions of major engineering software used and accepted by the Department are identified at the following link:

https://www.dot.ga.gov/GDOT/pages/designmanualssoftware.aspx

Only deliverables produced by the versions of software at this link will be accepted by the Department.

GDOT Customization Tools: The GDOT Root Menu, which is accessible in MicroStation, was developed to minimize common repetitive tasks of the plan sheet development process. This menu aids with compliance to the current GDOT Electronic Data Guidelines and the Plan Presentation Guide by automating many of the steps needed for reference file, linetype, and level settings.

Items included on sheets

General

Title Block - Provide a complete title block on each drawing. Included in this title block will be a drawing number. Place the PI number in the upper right corner of the drawing.

Show the names of Route Numbers, U.S. and State, including the names of highway and roads on the plan. Do not use generic names such as "County Road", "Cross Road", etc.

Plan View (Section Numbers: 1, 13, etc.)

Construction Centerline - Center in the plan portion of the drawing with increasing stationing running from left to right. In horizontal curve sections, position the construction centerline on the drawing to avoid breaks or match lines other than at normal drawing breaks.

North Arrow - Place a north arrow on each Plan Sheet at the upper part of the drawing, regardless of orientation.

Graphic Scale - Provide a numeric graphic scale.

All dimensioning and station offset labeling shall be clearly referenced.

Standard Plan Drawing Sizes: Beginning July 1, 2017 all projects which have not progressed through PFPR should begin using the 11”x17” standard file size for PDFs and plan distributions. For projects already developed with the 24”x36” standard file size beyond PFPR, the Design Phase Leader will have the discretion to use either size.

Text Orientation: Text should be read horizontal to the orientation of the plan drawing, reading from left to right. When text needs to be vertical, it should be placed on the plan drawing parallel to the right edge of the drawing, reading from the bottom of the drawing to the top of the drawing.

Reference Material sources:
Current version as approved by the Department; List includes but not limited to:

- "Plan Development Process" - GDOT policies and procedures for project development
- "Manual for Erosion and Sediment Control in Georgia" - GDOT
- Uniform Code System For Soil Erosion and Sediment Control Design Guidelines
- Department's Manual On Drainage Design for Highways
- Department's Specifications for Construction of Transportation Systems
- Department's Standards and Construction Details
- Department’s Post-Construction Stormwater BMP Details
- Georgia State Soil And Water Conservation Commission Manual for Erosion and Sediment Control in Georgia
- "Georgia Department of Transportation Uniform Code System for Soil Erosion and Sediment Control" chart for determining the appropriate codes to use on the Erosion Control Plans. This chart is also located in the Department's Construction Details and is periodically updated.
- Department’s Utility Accommodation Policy and Standards Manual
- "Manual on Uniform Traffic Control Devices" - FHWA
- GDOT Signal Design Guidelines
- GDOT Signing and Marking Design Guidelines
- "Regulations for Driveway and Encroachment Control" – GDOT
- Policies and Publications
- “Design Policy Manual” - GDOT
- "A Policy on Geometric Design of Highways and Streets" (current approved edition) - AASHTO [often referred to as the "Green Book"]
- "A Policy on Design Standards – Interstate System" - FHWA
- "Roadside Design Guide" – AASHTO
- "Standard Specifications for Road and Bridge Construction" - GDOT
- “Georgia D.O.T. Pavement Design Manual” – GDOT
- Georgia Department of Transportation MS4 Post-Construction Stormwater Report Template
- AASHTO Bike Guide (Bicycle Facilities) 2012
- Bridge and Structures Manual
- Bridge Detailing Manual
- Context Sensitive Design Manual
- Design Build Manual
- Environmental Procedures Manual
- Geotechnical Manual

- ROW Manual
- Automated Survey Field Manual
- Drainage Manual
- ITS Manual
- Pedestrian and Streetscape Guide

List of Effective Chapters

Document	Revision Number	Revision Date
General	3.0	5/31/23
List of Effective Chapters	3.0	5/31/23
Table of Contents	3.0	5/31/23
Acronyms and Definitions	3.0	5/31/23
Chapter 1. Construction Plans Assembly	3.0	5/31/23
Chapter 2. Construction Section Presentation	3.0	5/31/23
Chapter 3. Right-Of-Way Section Presentation	3.0	5/31/23
Chapter 4. Layouts for Public Meetings	1.0	5/31/23

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Table of Contents

Acronyms and Definitions

Term/Acronym	Definition
Construction Limits	The full extents of the construction area from one toe-of-slope of the proposed roadway to the other toe-of-slope of the proposed roadway along the limits of the project corridor. (Cut/Fill Lines)
Contour	Lines of constant elevation
Drainage X-Sections	Roadway cross-section showing a drainage profile as defined in Section 22 of this document
Equality	Another term for “Station Equality” - See “Station Equation” below
GMD	Georgia Militia District (GMD)
GDOT	Georgia Department of Transportation
Metes and Bounds	A system of land description uses distance (metes) and directions (bounds) beginning and ending at the same point.
MS4	Municipal Separate Storm Sewer System
Post-Construction Stormwater BMP	Permanent stormwater management practices which store, treat, infiltrate or reduce the volume of runoff from development sites
Project Limits	The full extents of the actual area where clearing, grading, excavation, or contractor activities are occurring or will occur along the length of the project, including utilities within the contract.
Roadway Items	Everything included in plan view such as, but not limited to station tick marks, road names, station labels, Centerline labels, bearings, guardrail, edge of curb & gutter, edge of median, etc.
R.O.A.D.S.	Repository for Online Access to Documentation and Standards – GDOT web page for centralized access to all documentation and standards required for design of roadway projects for the Georgia Department of Transportation.
Station Equation	A point along a horizontal alignment where the stationing is no longer sequential in number and the stationing from that point back is one value and the stationing from that point forward on the alignment starts at a different value. [e.g.: Station 100+50 (Back) = Station 204+50 (Forward)]
Station pluses	Station value on the right side of the “+” sign (e.g.: Station 12+50 would be +50) – used to save space on plans
SUE	Subsurface Utility Engineering – is defined as the engineering processes that involve managing certain risks associated with accurately and comprehensively identifying, characterizing, and mapping overhead and underground utility facilities. The major activities include utility records

	research, mapping, designating, utility impact analysis, locating, and data management.
Topo	Topography - The representation of a portion of the earth's surface showing existing natural and man-made features of a given area such as rivers, streams, ditches, lakes, and roads, as well as the variations in ground elevations for the existing terrain of the area.
Screened Back	The elements are faded so they appear in the background. (Also known as "gray-scale")

Chapter 1. Construction Plans Assembly - Contents

Chapter 1. Construction Plans Assembly

1.1 General

Constructions plans are comprised of sections of drawings that are to be assembled in the following sequence. This plan assembly is to be used as a guide and may or may not include all the sections below based on the project.

1.2 Section Sequence

1.2.1 Roadway Projects Section Sequence

SECTION	DESCRIPTION
01	Cover Drawing
02	Index Drawing
03	Revision Summary Drawing
04	General Notes
05	Typical Sections
06	Summary of Quantities
07	Quantities Required by Amendment Drawing
08	Quantities Required on Construction Drawing
09	Detailed Estimate Drawing - SECTION DELETED
10	Traffic Diagram Drawings
11	Construction Layout Drawing /Stakeout Drawing
12	Corridor Location Map or Aerial Photo Mosaics (New Location Projects only)
13	Mainline Roadway, Crossroad, Side Street, Frontage Road and Ramp Plan Drawings (plan & profile may be on same drawings)
14	Crossroad, Side Street, Frontage Road and Ramp Plan Drawings - SECTION DELETED
15	Mainline Roadway Profile Drawing
16	Crossroad, Side Street, Frontage Road, and Ramp Profile Drawings
17	Driveway Profile Drawing
18	Special Grading Drawings (Sediment/Detention Basins, Parking Lots, etc…)
19	Construction Staging Plan Drawings and Staging Cross-Section Drawings
20	Construction Details (Temporary Construction Access for Construction)

SECTION	DESCRIPTION
21	Drainage Area Map
22	Drainage Profiles
23	Cross-Sections
24	Utility Plans
25	Lighting Plans and Details
26	Signing and Marking Plans and Details
27	Signal Plans
28	Intelligent Transportation Systems (ITS) Plans
29	Landscaping Plans and Details
30	Mitigation Plans (Wetland, Stream, Stream Buffers, Historic, etc.)
31	Retaining Wall Envelopes
32	Retaining Wall Plans*
33	Noise Barrier Envelopes
34	Noise Barrier Plans
35	Bridge Plans*
36	Bridge Culvert Plans*
37	Miscellaneous Structural Plans (Buildings, tollbooths, ice canopies, etc…)*
38	Special Construction Details
39	Special Design Box Culverts
40	Construction Details
41	Georgia Standards
44	Utility Relocation Plans – Water/Sewer, Electric, Gas, Communications, Cable
50	Erosion, Sedimentation and Pollution Control – Cover Drawing
51	Erosion, Sedimentation and Pollution Control – General Notes Drawing
52	Erosion, Sedimentation and Pollution Control – Legend and Uniform Code Drawing
53	Erosion, Sedimentation and Pollution Control – Drainage Area Map
54	Erosion, Sedimentation and Pollution Control – Construction Best Management Practices (BMP) Location Details
55	Erosion, Sedimentation and Pollution Control – Watershed Map and Site

SECTION	DESCRIPTION
	Sampling Location
56	Erosion, Sedimentation and Pollution Control – Construction Standards and Details (for Erosion Control Items only)
60	Right of Way Plans

*Structural Plans designed by the Office of Bridge and Structural Design or Structural Consultants.

Right-of-Way Plans may be included at the end of the Plan Assembly (discretion of the Project Manager)

1.2.2 Stand-Alone Projects Section Sequence

Some project plan sets are not associated with any specific roadway project. For those stand-alone project plan sets, the plans should typically include the sections marked below under each type of stand-alone project. Some sections may be optional depending on the scope of the work. Traffic Operations projects with limited plan requirements (ie: overhead signs, traffic signal upgrades, pedestrian upgrades, etc.) will not conform with the PPG if prior written approval is received by TO. Examples of these type non-conformancies include combining sections of the plans into one section to produce an Existing sheet and a Proposed sheet. Required information, such as utilities, shall not to be excluded even in these cases.

	DESCRIPTION	Project Types										
		Lighting	Mitigation	Bridge	Noise Barrier	Landscaping	Utilities	Ped/Signal Upgrades	Overhead Sign Upgrades	Railroad Sign & Marking Upgrades	State Funded Operational Projects	Post Mounted Sign Upgrades
01	Cover Drawing	■	■	■	■	■	■	■	■		■	■
02	Index Drawing	■		■	■	■	■	■	■		■	■
03	Revision Summary Drawing	■		■	■	■	■	■	■			■
04	General Notes	■	**	■	■	**	■	■	■		■	■
05	Typical Sections			■	■	■	■				■	
06	Summary of Quantities	■		■	■	■	■	■	■		■	■
07	Quantities Required by Amendment Drawing	■		■	■	■	■		■		■	■
08	Quantities Required on Construction Drawing	■		■	■	■	■				■	■
09	Detailed Estimate Drawing - SECTION DELETED											

	DESCRIPTION	Project Types										
		Lighting	Mitigation	Bridge	Noise Barrier	Landscaping	Utilities	Ped/Signal Upgrades	Overhead Sign Upgrades	Railroad Sign & Marking Upgrades	State Funded Operational Projects	Post Mounted Sign Upgrades
10	Traffic Diagram Drawing											
11	Construction Layout Drawing /Stakeout Drawing											
12	Corridor Location Map or Aerial Photo Mosaics (New Location Projects only)											
13	Mainline Roadway, Crossroad, Side Street, Frontage Road and Ramp Plan Drawings (plan & profile may be on same drawings)	****										
14	Crossroad, Side Street, Frontage Road and Ramp Plan Drawings - SECTION DELETED											
15	Mainline Roadway Profile Drawings											
16	Crossroad, Side Street, Frontage Road, and Ramp Profile Drawings											
17	Driveway Profile Drawings											
18	Special Grading Drawings (Sediment/Detention Basins, Parking Lots, etc…)											
19	Construction Staging Plan Drawings and Staging Cross-Section Drawings											
20	Construction Details (Temporary Construction Access for Construction)											
21	Drainage Area Map	****										
22	Drainage Profiles	****										

	DESCRIPTION	Project Types										
		Lighting	Mitigation	Bridge	Noise Barrier	Landscaping	Utilities	Ped/Signal Upgrades	Overhead Sign Upgrades	Railroad Sign & Marking Upgrades	State Funded Operational Projects	Post Mounted Sign Upgrades
23	Cross-Sections	****										
24	Utility Plans											
25	Lighting Plans and Details											
26	Signing and Marking Plans and Details											
27	Signal Plans											
28	Intelligent Transportation Systems (ITS) Plans											
29	Landscaping Plans and Details											
30	Mitigation Plans (Wetland, Stream, Stream Buffers, Historic, etc.)	****										
31	Retaining Wall Envelopes											
32	Retaining Wall Plans*											
33	Noise Barrier Envelopes											
34	Noise Barrier Plans											
35	Bridge Plans*											
36	Bridge Culvert Plans*	****										
37	Miscellaneous Structural Plans (Buildings, tollbooths, ice canopies, etc…)*											
38	Special Construction Details											
39	Special Design Box Culverts	****										
40	Construction Details											
41	Georgia Standards											

	DESCRIPTION	Project Types										
		Lighting	Mitigation	Bridge	Noise Barrier	Landscaping	Utilities	Ped/Signal Upgrades	Overhead Sign Upgrades	Railroad Sign & Marking Upgrades	State Funded Operational Projects	Post Mounted Sign Upgrades
44	Utility Relocation Plans – Water/Sewer, Electric, Gas, Communications, Cable											
50	Erosion, Sedimentation and Pollution Control – Cover Drawing	****										
51	Erosion, Sedimentation and Pollution Control - General Notes Drawing	****										
52	Erosion, Sedimentation and Pollution Control - Legend and Uniform Code Drawing	****		***								
53	Erosion, Sedimentation and Pollution Control – Drainage Area Map	****										
54	Erosion, Sedimentation and Pollution Control – Construction Best Management Practices (BMP) Location Details	****		***								
55	Erosion, Sedimentation and Pollution Control – Watershed Map and Site Sampling Location	****										
56	Erosion, Sedimentation and Pollution Control – Construction Standards and Details (For Erosion Control Items Only)	****		***								
60	Right of Way Plans											

* Structural Plans designed by the Office of Bridge and Structural Design or Structural Consultants.

** If the Landscape Plans or Mitigation Plans are a stand-alone plan package, place the Utility Owner list and the “Call Before you Dig” cell in the project’s General Notes drawing

*** To be determined by the Statewide ESPCP Design Coordinator

**** If necessary

For all Traffic, Safety, and Design projects, show existing conditions (topo) and existing signal equipment

Right-of-Way Plans may be included at the end of the Plan Assembly (discretion of the Project Manager)

1.3 Numbering

1.3.1 Drawing Numbering

The construction drawings shall be labeled (in the lower right corner) according to the respective section number described in the above Section Sequence. For example: Typical Section Drawings are listed as section No. 05 of the plan assembly sequence. If you have 4 Typical Section Drawings, then they will be labeled as drawings 05-0001, 05-0002, 05-0003, and 05-0004.

Drawing numbers will be shown on every drawing and will never change after the final plans have been submitted to the Office of Bidding Administration. If a drawing is added after the final plans are approved, place the drawing in the appropriate location and assign the drawing number an alpha suffix (i.e.: XX-0025A).

1.4 Drawing Revisions

- "Use on Construction" revisions (previous drawing is replaced with a revised drawing):
  - Label as *"Use on Construction"* along the right border of drawing
    - Text should be prominent and bold
  - Place revision date in revision box

- "Void on Construction" revisions (drawing is not used in the project plan set, but is maintained in historical record as a voided or deleted drawing):
  - Label as "Void on Construction" along the right border of drawing
    - Text should be prominent and bold
  - Place revision date in revision box

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Chapter 2. Construction Section Presentation - Contents

Chapter 2. Construction Section Presentation

2.1 General

Unless noted within each individual section, information specified for plans refers to Preliminary and Final submission plans. Standard cells have been created in order to automate and standardize the production of plans. The latest version of all cells is to be used.

Section 1 Cover Drawing & Signature Drawing

01.001 General – Cover Drawing

A cover drawing is required for project identification and contract purposes. Additional cover drawings may be needed based on engineering discretion.

01.002 Required Information

- Project Owner (i.e.: GDOT or other entity)
- Project description
- Project number
- Project identification number (P.I. NO.)
- State and Federal route number
- County name
- Graphic representation of the project (including centerline and stationing)
- Congressional district(s) and percentages
- Standard note referring to GDOT Specifications
- “This project contains post construction stormwater (permanent) BMPs.” note (if applicable)
- Project location map oriented with north at the top of drawing
- Begin/End Project Stations to the nearest 100th (i.e. 1010+26.25) (mainline). This station range should encompass all proposed work shown in the plans (permanent construction, temporary/staging construction, ditch grading, signing and pavement marking, etc.). No proposed work (other than temporary signs for traffic control) should be shown outside the Begin/End Project Stations in the plans.
- Additional “Begin/End _____ “ Station callouts should be shown at the discretion of the Design Phase Leader to clearly describe the limits of project work. Examples may include: Begin/End Full Depth Construction, Begin/End Overlay, Begin/End Temporary Pavement, Begin/End Ditch Grading, etc.
- Functional classification of mainline
- Project Length Table
    - County
    - Net Length of Roadway
    - Net Length of Bridges
    - Net Length of Project
    - Net Length of Exceptions
    - Gross Length of Project
- Design Traffic Data of mainline and crossroads (as appropriate)

    - Base Year Traffic (two-way) – Traffic A.D.T.
    - Design Year Traffic (two-way) – Traffic A.D.T.
    - Design Hourly Volume (One way, Design year) – Traffic D.H.V.
    - Directional distribution (%)
    - Truck percentages
    - Truck percentages (24 hour)
    - Design speed (MPH)
- Revision Summary Table (date and drawing number)
- Road names and route numbers (including County Road # (CR#) or City Street # (CS#))
- Project (approximate) midpoint station (to nearest foot) and coordinates (calculated from Begin/End Project Stations)
- Stations where centerline crosses county boundaries
- Project designation (e.g.: PODI, Exempt or S.F.)
- Horizontal and vertical datum used
- Designation for “Plans prepared by:” (Design Engineer, Name only or Consultant Name)
- Designation for “Recommended for submission by:” (Design Engineer Group Manager, District Design Engineer (Design Engineer of Record) – Name only **OMIT FOR CONSULTANT DESIGN PLANS**
- Designation for “Recommended for acceptance by:” (State Roadway Design Engineer, District Engineer, State Program Delivery Administrator, State Alternative Delivery Administrator, State Express Lanes Administrator signature)
- GDOT Chief Engineer (Signature and Date)
- Location & Design approval date
- Plans completed date (date submitted to Contracts)
- Applicable CS&D Book note (unless ALL applicable standards and details are included in the plan set and listed in the Index)
    - THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE _____ CONSTRUCTION STANDARDS AND DETAILS BOOK AND ATTACHED APPLICABLE REVISIONS. THE _____ CONSTRUCTION STANDARDS AND DETAILS BOOK IS AVAILABLE AT: http://mydocs.dot.ga.gov/info/gdotpubs/ConstructionStandardsAndDetails/Forms/AllItems.aspx ANY REVISIONS CONTAINED WITHIN THIS PLAN SET SUPERSEDE THE _____ CONSTRUCTION STANDARDS AND DETAILS BOOK WHICH THEY REVISE OR IN WHICH THERE IS A CONFLICT.
- DO NOT DEVIATE FROM THE ABOVE LANGUAGE

01.003 Project-Specific Information – Cover Drawing

- Topography**
- Equalities on mainline
- Begin and end bridge stations (labeled on centerline)
- Rivers and stream names
- ESA’s**
- State Lines, County Lines, City Limits, Land Lot Lines, GMD
- Existing property lines**

- Parcel numbers**
- Required right-of-way lines**
- Median locations and sidewalks**
- Stations of Crossroad and Mainline at intersection
- Railroad lines and owner name
- Major utility facilities (i.e.: transmission lines, substations, pipelines, etc.)

**Optional and to be reflected at the discretion of the Design Phase Leader

01.004 Drawing Layout – Cover Drawing

01.005 General – Signature Drawing

The Signature Drawing:

- Is required for consultant designed projects and is used to define an engineer's area of responsibility for the portions of the plans being digitally signed.
- Is required for plans that will be signed by a single professional engineer or by more than one professional engineer.
- Is required on GDOT designed projects if the plan set contains component drawings submitted by an external entity (e.g., Section 44).
- Is to be located directly behind the last Cover Drawing.

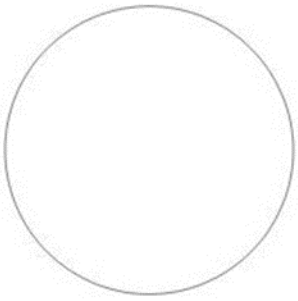
Revisions: In the event of revisions being submitted, a separate revision Signature Drawing shall be submitted with the revised drawings and shall be numbered xxA, xxB, etc. Only the professionals required to sign and seal the revision are to be included on the Signature Drawing. The revision Signature Drawing will be placed directly behind the original Signature Drawing(s) or the previous revision Signature Drawing, whichever is applicable. Where the same PE as the original Signature Drawing is signing and sealing a revision and the original Signature Drawing is editable and has the needed space, the PE may add the required information to the original Signature Drawing, provided it is listed among the revised drawings in the index of revised drawing that are being signed and sealed.

01.006 Required Information – Signature Drawing

- For Final Plans only, signature and seal of the professional(s) of record (1.5" in diameter on the record plan size)
- Statement of Responsibility (if there are multiple PE's responsible for a drawing to define the licensed professional's limits of responsibility and any required explanatory language)
- Index (list of drawings that the licensed professional is responsible for signing and sealing)
    - All Sections designed by a consultant (except those addressed in the following bullets) shall include a signature and seal in the Signature Drawing(s) of Section 01.
    - Sections 40, 41, 52, and 56 will not be covered by PE signature and seal. These sections are produced by GDOT. The signature drawing shall include the cell noting this.
    - Section 38 should not be included in the drawing list of the Signature Drawing unless the special details were developed by a consultant.

- Section 50 requires a signature and seal. See Section 50 for cover drawing signature and seal requirements.
- See Section 60 in Chapter 3 for separate signature and seal requirements. Section 60 shall have its own Signature Drawing regardless of its inclusion in the Final Plans.

01.007 Drawing Layout – Signature Drawing



THE DRAWINGS AS LISTED BELOW
HAVE BEEN SIGNED AND SEALED BY

REGISTERED ENGINEER
PE No 0000000

ENGINEERING FIRM
STREET ADDRESS
CITY, GA 12345
CERTIFICATE OF AUTHORIZATION #:
CERTIFICATE OF AUTHORIZATION EXPIRATION DATE:

202X.XX.XX

DRAWING No.	DRAWING DESCRIPTION
01-0001	COVER SHEET
01-0002	SIGNATURE SHEET
02-0001	INDEX SHEET
03-0001 - 03-0010	REVISION SUMMARY DRAWING
04-0001 - 04-0010	GENERAL NOTES
05-0001 - 05-0010	TYPICAL SECTIONS
06-0001 - 06-0010	SUMMARY OF QUANTITIES
07-0001 - 07-0010	QUANTITIES REQUIRED BY AMENDMENT DRAWING
08-0001 - 08-0010	QUANTITIES REQUIRED ON CONSTRUCITON DRAWING
09-0001 - 09-0010	DETAILED ESTIMATE DRAWING
10-0001 - 10-0010	TRAFFIC DIAGRAM DRAWINGS
11-0001 - 11-0010	CONSTRUCTION LAYOUT DRAWING/STAKEOUT DRAWING
12-0001 - 12-0010	CORRIDOR LOCATION MAP/AERIAL PHOTO MOSAICS
13-0001 - 13-0010	MAINLINE PLAN DRAWINGS
14-0001 - 14-0010	CROSSROAD PLAN DRAWINGS
15-0001 - 15-0010	MAINLINE PROFILE DRAWINGS
16-0001 - 16-0010	CROSSROAD PROFILE DRAWINGS
17-0001 - 17-0010	DRIVEWAY PROFILE DRAWINGS
18-0001 - 18-0010	SPECIAL GRADING DRAWINGS
19-0001 - 19-0010	CONSTRUCTION STAGING PLAN/CROSS SECTION DRAWINGS
20-0001 - 20-0010	CONSTRUCTION STAGING DETAILS
21-0001 - 21-0010	DRAINAGE AREA MAP
22-0001 - 22-0010	DRAINAGE PROFILES
23-0001 - 23-0010	CROSS SECTIONS
24-0001 - 24-0010	UTILITY PLANS
25-0001 - 25-0010	LIGHTING PLANS AND DETAILS
26-0001 - 26-0010	SIGNING AND MARKING PLANS AND DETAILS
27-0001 - 27-0010	SIGNAL PLANS
28-0001 - 28-0010	ATMS/ITS PLANS
29-0001 - 29-0010	LANDSCAPING PLANS AND DETAILS
30-0001 - 30-0010	MITIGATION PLANS
31-0001 - 31-0010	RETAINING WALL ENVELOPES
32-0001 - 32-0010	RETAINING WALL PLANS
33-0001 - 33-0010	NOISE BARRIER ENVELOPES
34-0001 - 34-0010	NOISE BARRIER PLANS
35-0001 - 35-0010	BRIDGE PLANS
36-0001 - 36-0010	BRIDGE CULVERT PLANS
37-0001 - 37-0010	MISCELLANEOUS STRUCTURAL PLANS
39-0001 - 39-0010	SPECIAL DESIGN BOX CULVERTS
44-0001 - 44-0010	UTILITY RELOCATION PLANS
51-0001 - 51-0010	EROSION, SEDIMENTATION AND POLLUTION CONTROL GENERAL NOTES DRAWING
53-0001 - 53-0010	ESPCP DRAINAGE AREA MAP
54-0001 - 54-0010	CONSTRUCTION BMP LOCATION DETAILS
55-0001 - 55-0010	EROSION CONTROL WATERSHED MAP AND SITE MONITORING LOCATION

NOTE: DRAWINGS IN SECTIONS 40, 41, 52, AND 56
ARE GDOT STANDARDS AND DETAILS AND ARE NOT
COVERED BY THIS SIGNATURE AND SEAL. DRAWINGS
IN SECTION 38 CONTAIN GDOT SPECIAL DESIGN DETAILS
AND ARE NOT COVERED BY THIS SIGNATURE AND SEAL
UNLESS OTHERWISE LISTED IN THE ABOVE DRAWING LIST.

Section 2 Index Drawing

02.001 General

The index drawing is required for each set of construction drawings to identify plan contents. The index shall be included as a separate drawing. The index should list all plan sections (01 to 60). Drawings shall be grouped according to the Sequence of Plans.

02.002 Required Information

- The index drawing includes the following columns:
  - Drawing Numbers Column indicating:
    - Drawing number range for sections included in the plan set
    - “To Be Developed” for sections forthcoming (not applicable for final plans)
    - “Not Applicable” for sections unnecessary to the project plans
  - Drawing Description Column
- The index drawing shall also contain the following required information:
  - Revised Construction Standards and Details listed individually, including latest revision date, as applicable to the project let date.

02.003 Drawing Layout

Section 3 Revision Summary Drawing

03.001 General

Revisions to a set of construction plans should be detailed for the purpose of keeping a record of changes to the construction plans, including additions and deletions, after final plans have been submitted to Bidding Administration.

03.002 Required Information

- The revision summary drawing will consist of three columns (in addition to the normal project information in the title blocks).
  - The first column states the date on which the revision was made
  - The second column references the drawing number of the revision in the plan set
  - The third column contains a description of the revision, described in enough detail to quickly understand the nature of the revision.

03.003 Drawing Layout

Section 4 General Notes

04.001 General

Project plan information should be included in the construction plans utilizing a general note drawing. This section should include:

- Notes that are project specific and are not covered under the current Standard Specifications and Supplemental Specifications, Special Provisions, Georgia Standard Drawings, and/or Special Details.
- Notes that are needed in the construction contract may be included in the General Notes drawing if special attention is necessary to eliminate a possible source of errors or conflict, or to expedite the work.
- All plan section General Notes drawings shall be contained in Section 4 of the plan set.

04.002 Required Information

Provide the following notes in the General Notes:

- “Georgia811” (Call Before You Dig) cell
- State if the project requires a Notice of Intent (NOI).
- Pipe Culvert Materials Alternate Chart as provided in the Soils Report.
- Utility/Railroad Owner list and notes on all projects
- Method of Utility Location (SUE Investigation or not)
- Environmental Resources Impact Table (to be included whether there are any impacts on the project or not)
- Driveway Note cell from the EDG Cell Library which lists detailed information required for the reconstruction of residential and commercial driveways.
- State if the project includes Post-Construction Stormwater BMPs. If so, include Post-Construction Stormwater BMP Table.

04.003 Drawing Layout

04.004 Miscellaneous

Section 5 Typical Sections

05.001 General

Typical sections should be developed during the conceptual and early preliminary design and shall be drawn in the form of cross sectional views depicting standard or typical work within certain station-to-station limits. **Typical sections should show typical conditions only**. Specific dimensions, cross-slopes, and other design information shall be depicted in the Construction Plans and Cross Sections.

Separate typical sections should be shown for tangent, superelevated (at the discretion of the Design Phase Leader / Project Manager), full-depth pavement, overlay pavement, mainline, ramps, cross streets, detour and temporary tie-in sections. Include partial sections or miscellaneous details (ex. guardrail, retaining walls, treatment of turn lanes, bike lanes special shoulder or grading sections, etc.) as needed. When partial sections are necessary to cover details, place these sections near the main typical section to which they apply.

See the Georgia D.O.T. Pavement Design Manual for additional typical section guidelines and details.

05.002 Required Information

The typical section drawings shall include the following:

- **Scale:** No specific scale is required. An appropriate scale shall be used to clearly illustrate the full sectional view. Further, the vertical scale of pavement courses shall be exaggerated to clearly indicate individual courses.
- **Pavement:** Paving and base courses shall be clearly defined and shall comply with the approved pavement design. The mix design, spread rate and bid item description for each asphaltic concrete course shall be labeled, and the thickness and bid item description for all other materials shall be labeled. Other pavement related operations including milling, asphaltic concrete leveling, pavement edge treatment, patching, removing existing partial depth paved shoulders, etc., shall be indicated where applicable. Separate typical sections shall be shown for all paving alternatives, if applicable.
- **Cross Slopes and Shoulder Slopes:** The cross slopes of roadway pavement, shoulders, sidewalks, raised medians and bridge decks shall be labeled with percentages and directional arrows. For superelevated sections, label the cross-slope as SE in percent. Slopes beyond shoulder break points shall be labeled as ratios, horizontal to vertical (e.g., 10:1, 4:1, 2:1).
    - **Slope Control Table:** The “Slope Control Table” included in the EDG cell library may be included to specify the front and back slopes for corresponding cuts and heights of fill as a guide for the Field Engineer to follow should site specific conditions require variation from the proposed cross-sections.
    - **Allowable Range Table:** The “Allowable Range Table” included in the EDG Cell Library may be included on the typical sections when allowing variation from the design superelevation to better match existing pavement slopes as deemed appropriate by the Design Phase Leader..
- **Lane and Shoulder Widths:** Lane and shoulder widths shall be labeled on the typical sections to the nearest inch. Minimum and maximum dimensions of variable-width features shall be labeled.
- **Guardrail:** Standard guardrail details for both urban and rural designs are provided in the EDG cell library.
- **Curbs:** The curb and gutter width and type shall be labeled. Gutter slope and direction shall be illustrated as required for the drainage design.
- **Sidewalks:** The sidewalk width, location, thickness and cross-slope shall be labeled.
- **Typical Section Numbers:** Each typical section shall be labeled with a consecutive typical section number.

- **Station Ranges:** Show station ranges and road name below each typical section. Do not break-out the station range of the superelevated section.
- **Geometrics:** The construction centerline, profile grade line (PGL), and superelevation (S.E.) rotation point shall be labeled.
- **Medians:**
  - Raised median width, thickness, cross-slope, and type (doweled, grass, etc.) shall be labeled.
  - Depressed median slope, width and ditch locations/parameters shall be labeled.
- **Ditches:** The width of front-slopes and ditches shall be labeled.
- **Post-Construction Stormwater BMPs:** Include note specifying station range of BMPs affecting typical section (i.e. bioslope, filter strip) and reference to BMP detail sheet(s). The station range of OGFC that has been specified for MS4 permit compliance shall be noted on the applicable typical section.
- **Miscellaneous:** The station range of any site specific conditions that require special fill material or pavement structure alterations shall be noted on the applicable typical section.
- Note identifying the Safety Edge and Georgia Standard

05.003 Drawing Layout

Place typical sections in order as they will be used along the alignment. Typical Sections for side roads shall follow the mainline Typical Sections. If possible, the tangent sections and the related superelevated sections shall be located on the same drawing.

05.004 Miscellaneous Notes & Other Information

Include the following notes, when applicable, on the typical section drawings:

- See roadway plans for superelevation rates and transitions.
- See roadway plans for location of guardrail.
- See roadway plans for location of curb and gutter.
- Shoulder may be graded away from roadway to facilitate the slope tie to existing ground.

Include the following information, when applicable, on the typical section drawings:

- A detail showing underdrain pipe at curbed medians (grassed) - located at the lowest end of the median - should be shown, when required.
- The Pavement Reinforcing Fabric detail included in the EDG Cell Library shall be included for applicable projects. Flagging the location of the reinforcement fabric on individual typical sections is not required.
- Rumble strip type and location shall be shown on the typical sections.
- All special details from the Soils Report not covered by GDOT Standards and Details shall be included in the typical sections.
- Temporary pavement

Section 6 Summary of Quantities

06.001 General

The Summary of Quantity drawings shall include itemized quantities of all construction items to be paid for by the project contract as indicated on the plan, profile and cross section drawings. All quantities listed and summarized shall include the Pay Item description and appropriate unit. Quantity totals shall match the quantities submitted in the Department's cost estimating program.

On contracts with multiple project numbers or with Federal-Aid and non-Federal-Aid quantities, tabulate and summarize quantities by project number.

06.002 Required Information

Roadway Items:

Lump Sum items:

- Include any appropriate notes of items that should be included within the price bid for these items.

Pavement Items (excluding driveway items):

- Quantity by alignment (i.e.: mainline, crossroads, ramps, detours/staging, etc.; long alignments may be broken into smaller logical sections such as station to station followed by the alignment total)
- Include milling or other pavement related items

Concrete items (curb and gutter, concrete medians, sidewalks, excluding driveway items):

- Location
- Width and thickness
- Type

Driveways:

- Location
- Width
- Type of surface

Guardrail/Barrier/Fence/Railing items:

- Location
- Side of roadway (include offset if not typical)
- Type

Guardrail Begin/End treatments:

- Location
- Type

Ditch Protection:

- Location
- Material

- Depth of Protection

Right of Way Markers

Drainage:

- Structure Number
- Location
- Structure Type (Standard/Detail)
- Structure Depth
- Structure Size
- Height of Fill and Class for connecting pipes

Culverts:

- Structure Number
- Location
- Structure Size
- Height of Fill and Class for Pipe Culverts
- Height of Fill/Barrel Design for Box Culverts
- All items related to the culvert including concrete, steel, foundation backfill material, rip-rap, etc.
- For embedded culverts show the additional concrete and steel required for the concrete veins separate from the concrete and steel required for the barrel and wingwalls.

Erosion Control Items:

- Permanent Erosion Control
- Temporary Erosion Control

Signing, Marking, and Signal Items:

Signing:

- Location
- Installation number
- MUTCD Sign Code
- Signs
- Size
- Square Feet
- Material
- Reflective sheeting material
- Sign Posts (square tubes)
  - Length
  - Quantity
  - Total length

Markings:

- Material
- Color
- Width (if applicable)
- Type (if applicable)

Signals:

- Installation number
- Location
- Strain poles

ATMS

- Installation number
- Location

Structural Items (Bridges, Walls, etc.):

- Number

Lighting:

- Type
- Height

Post-Construction Stormwater BMPs:

- BMP Type
- Structure ID (from post-construction stormwater report)
- Drainage Area ID (from post-construction stormwater report)
- Location
- Side of Roadway

Landscape

- Size (landscaping)

“Location” means items needing station (or station to station), side and offset. Items shall be described from the mainline alignment looking forward toward increased stationing. Reference to an alignment shall only be made if the location is not from the mainline alignment.

“As Directed by Engineer” amounts shall be included as a line item in the total quantity, where appropriate for quantities requested by District or Area construction personnel and/or for contingency amounts used to round up non-exact items. Examples of items to round up may include asphalt, mulch, grassing, rip-rap, etc.

Notes for payment of miscellaneous items to be paid for within a quantified item, if required, are to be placed under the corresponding quantity box. Each note shall consist of the special requirement, regulations, or directions to describe the work that is not covered by the specifications or for general information. References to Georgia Standards or Construction Details may be added to summary boxes as appropriate.

06.003 Drawing Layout

The designer shall place the summary boxes in order as noted above from left to right and top to bottom and grouped (i.e.: Roadway, Erosion Control, Signing Marking & Signals, Structural, etc.).

Place related items in the same summary box. Example: spillways adjacent to approach slabs should have the slope drain, pipe. Other items may include guardrail/guardrail anchors, fence/gates, etc. Box culverts and related items including outlet/inlet protection shall not be included in the Summary of Drainage Quantities but in a separate culvert summary box.

Section 7 Quantities Required By Amendment Drawing

07.001 General

This drawing is used for quantities that are added or changed by an amendment.

07.002 Required Information

- P.I. Number
- Item Number
- Amendment Date
- Amendment Number
- Description
- Units
- Original quantity
- Revised quantity

07.003 Drawing Layout

Section 8 Quantities Required On Construction Drawing

08.001 General

This drawing is used for quantities that are added or changed by a revision during construction.

08.002 Required Information

- P.I. Number
- Date
- Item Number
- Description
- Units
- Original quantity
- Previous quantity
- Revised quantity

08.003 Drawing Layout

Section 9 Detailed Estimate Drawing

9.001 SECTION DELETED

Section 10 Traffic Diagram Drawings

10.001 General

This drawing provides all traffic movements and volumes for the project. This section can be omitted for projects without traffic diagrams.

10.002 Required Information

- Schematic
- Directional Hourly Volumes (DHV) – AM and PM Peak Design Year
- Average Daily Traffic (ADT) – Base and Design Year
- Percent Trucks
    - 24 Hour Trucks
    - Single Unit
    - Combo
- Street Names
- North arrow

10.003 Drawing Layout

Section 11 Construction Layout Drawing/Stakeout Drawing

11.001 General

The Construction Layout/Stakeout Drawing provides construction alignment information concisely on one or multiple plan drawings.

11.002 Required Information

- Construction alignments
- Stationing with tic marks
- Bearings
- Curve labels
- Curve data
    - CURVE Number
    - P.I. Station
    - P.I. Coordinates
    - △ or “DELTA” (Deflection angle)
    - D (Degree of Curve)
    - T (Tangent Length)
    - L (Length of Curve)
    - R (Radius)
    - E (External distance)
    - e_{MAX} (Maximum Superelevation rate in percent)
    - e_d (Design Superelevation rate in percent – Normal Crown and

Reverse Crown to be shown as “NC” or “RC” respectively)

- Design Speed

- Roadway names
- Equalities
- Begin and end project
- Alignment intersection stations and angles
- Begin and end construction stations
- Survey control points and benchmarks with description, northing and easting coordinates, and elevation.
- North Arrow
- Match line and text (if more than one drawing is required)

Construction plan drawing boundaries and drawing numbers may be shown to assist in clarifying plan drawing layout.

11.003 Drawing Layout

The construction layout/stakeout drawing is placed on a typical construction plan drawing border at an appropriate scale to maximize the plan drawing area.

Section 12 Corridor Location Map or Aerial Photo Mosaics

12.001 General

If a road closing and an off-site detour are required, prepare a detour map showing a layout of the road network with the road closure points and the detour route indicated. Also, indicate any load-limited bridges or other traffic restrictions and include applicable special directional signs.

If an important community and/or topographic feature(s) is located in the vicinity of the project but beyond the normal plan sheet coverage area, prepare a location map showing these features in relation to the project and surrounding area. Such features may include Historic Districts, churches, schools, libraries, parks, government buildings, lakes, streams, neighborhoods, businesses, cemeteries.

12.002 Required Information

- Background map (i.e.: county, city, aerial)
- Roadway alignments
- Major Roadway names
- Environmental features (ESAs) if practical
- Detour
- Route with directional arrows
- Detour signing
- Length of route segments and overall detour length
- Project limits
- Bridges (with applicable load ratings)
- Speed limits of detour route

12.003 Drawing Layout

Prepare off-site Detour Plans on standard plan drawings with a scale such that the entire detour route is shown and all details are clear and legible. If it is not possible to show the entire detour legibly on one drawing, use multiple drawings and label match lines between drawings. The Detour Maps / Location Maps are placed on a typical construction plan drawing border.

Section 13 Mainline Roadway, Crossroad, Side Street, Frontage Road and Ramp Plan Drawings (plan & profile may be on same drawings)

13.001 General

Roadway plan drawings depict all details of the project's features in a horizontal or plan view. The roadway plans shall show in detail what is to be constructed and where the project will be constructed.

The roadway plan drawings show what an area looks like before (existing) and after (proposed) construction of the project.

13.002 Required Information

The existing information shown should include:

- Signs
- Roadway items
- Driveways (with existing material)
- Buildings / Structures
- Drainage (including streams, ponds, lakes, ditches, special ditches, and storm drain pipes all with size, material type, and flow arrows)
- Above ground utility features including utility structure and appurtenance locations (i.e. poles, valves, manholes/vaults, telephone pedestals)
- NOTE: Existing utility lines, mains, and pipes are not shown on the Roadway Plan Drawings
- Retaining walls
- Other paved areas
- Gravel surfaces
- Fences
- Bridges
- Wooded areas (including tree lines or obscured areas)
- Trees (specific to parcel or design issues)
- Underground storage tank caps within the limits of the topographic survey
- Groundwater wells with indication to be plugged or remain in service
- Existing right-of-way and easement lines with labels
- Property lines with labels
- Railroads
    - Right of way lines with labels
    - Tracks

    - Names
    - Mileposts
    - Warning devices
    - Crossing ID numbers
- Utility easement lines with labels
- City, county, and state boundaries with labels
- Existing L/A – Limit-of-Access lines with labels (Begin (B L/A) and End (E L/A) if applicable)
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas
    - NOTE: For streams, show linework and labels for only the tops-of-banks and stream flow line (i.e., deepest part of channel). Do not show linework or labels indicating the location of water's edge itself at the time of survey (e.g. edge of water, edge of stream, etc.)
    - ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided
- All other pertinent physical features (i.e.: property owner entrance signs, business/residential signs, etc.)

Proposed Design Features shall include:

- Begin/End Project Stations to the nearest 100th (i.e. 1010+26.25) (mainline). This station range should encompass all proposed work shown in the plans (permanent construction, temporary/staging construction, ditch grading, signing and pavement marking, etc.). No proposed work (other than temporary signs for traffic control) should be shown outside the Begin/End Project Stations in the plans.
- Additional “Begin/End _____ “ Station callouts should be shown at the discretion of the Design Phase Leader to clearly describe the limits of project work. Examples may include: Begin/End Full Depth Construction, Begin/End Overlay, Begin/End Temporary Pavement, Begin/End Ditch Grading, etc.
- Limit of Construction Station to the nearest 100th (i.e. 1010+26.25) (crossroad)
- Alignments
    - Stations progressing from west to east and from south to north
    - PC/PT Stations
    - Bearings (flag points for deflection)
    - Road names
    - Stationing and primary tic marks every 500 feet and secondary tic marks every 100 feet (frequency can be increased) for 1”=50’ to the even station (i.e. 12+30)
    - Stationing and primary tic marks every 100 feet and secondary tic marks every 50 feet for 1”=20’ to the even station (i.e. 12+30)
    - Curve number
    - Equalities with back and ahead stations
- Curve Data Table (not required when Section 11 is included)
    - CURVE Number

  - P.I. Station
  - P.I. Coordinates
  - △ or “DELTA” (Deflection angle)
  - D (Degree of Curve)
  - T (Tangent Length)
  - L (Length of Curve)
  - R (Radius)
  - E (External distance)
  - e_{MAX} (Maximum Superelevation rate in percent)
  - e_d (Design Superelevation rate in percent – Normal Crown and Reverse Crown to be shown as “NC” or “RC” respectively)
  - Design Speed
- Angle and station of intersection
- Edges of pavement
- Curb and Gutter
- Sidewalk
- ADA ramps
  - Label type
- Paved Shoulder
- Ditches and swales
  - Material must be labeled if other than grass
  - Begin/End labels for berm and special ditches
- Guardrail/Barriers
  - Label guardrail type
  - Label terminal/anchor type
  - Label barrier type
  - Begin and end stations for guardrail/barrier
- Walls
  - Begin and end stations for retaining walls
- Noise Barrier
  - Begin, end and end stations for noise barrier
- Drainage
  - Structures (structure number)
  - Storm Drains (size and direction)
  - Side Drains (size and direction)
  - Culverts (label as width (“W” - feet) X height (“H” - feet))
  - Permanent erosion features (i.e. type of rip-rap, concrete aprons, concrete flumes, spillways)
  - Inlet/Outlet Structures
- Bridges
  - Begin/End Stations
  - Alignment intersection stations and angles
  - Bent Locations
- Post-Construction Stormwater BMPs

    - Outline (BMP footprint)
    - Label BMP Type (i.e. bioretention, infiltration trench, etc.)
    - Begin/End Stations
    - Reference Special Detail Sheet(s)
    - Maintenance access features (i.e. access road, fence)
- Approach slabs (stationing label not required)
- Construction limits (cut/fill line with cut/fill designations)
- Railroad
    - Alignment
    - Railroad facility adjustments
    - NOTE: If this work is not to be included in the roadway contract, then clearly indicate on the plans that this work is to be done “By Others”.
- Strain poles and overhead sign structures
- Limits of pavement work (i.e. limits of resurfacing, pavement removal, widening, full-depth, overlay, milling, reconstruction, etc.)
- Survey control points (not required when Section 11 is included)
- All permanent detention/retention basins
- Superelevation transition stationing
    - Both Percent SE and “NC” - Normal Crown (station plus)
    - Both Percent SE and “FLAT” - Zero Crown (station plus)
    - Both Percent SE and “RC” - Reverse Crown (station plus)
    - Both Percent SE and “BFS” - Begin Full Superelevation (station plus)
    - Both Percent SE and “EFS” - End Full Superelevation (station plus)
- Dimensions to reflect the proposed construction
    - Roadway dimensions
    - Radii dimensions
    - Taper stations and dimensions from alignment
    - Pavement widths
    - Median widths
    - End of curb and gutter station
- Driveways (including throat width dimension)
- Matchlines (including station and drawing number)
- Legend
- Proposed Right-of-Way Features
    - Required right-of-way lines and labels
    - Easement lines and associated patterns
    - Property Owner name and parcel number of all affected parcels
    - If RW plans are not included, full station and offset of all required right-of-way, and easement (temporary, permanent and driveway) points or point numbers with station and offset information labeled elsewhere or preferably on the same drawing
    - Proposed right-of-way markers at locations where RW direction changes (including PC/PT locations)
    - Begin/End Limit-of-Access

- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas.
    - NOTE: For streams, show linework and labels for only the tops-of-banks and stream flow line (i.e., deepest part of channel). Do not show linework or labels indicating the location of water's edge itself at the time of survey (e.g. edge of water, edge of stream, etc.)
    - ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided
- Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code.

13.003 Drawing Layout

For a plan scale of 1” = 50’ on 36 x 24 and 1” = 100’ on 11 x 17, place match lines between drawings at even 100 feet intervals with a maximum coverage per drawings of 1500 feet. For a plan scale of 1” = 20’ on 36 x 24 and 1” = 40’ on 11 x 17, place match lines at even 50 feet intervals with a maximum coverage per drawings of 600 feet. The first and last plan drawings may be exceptions in each case.

13.004 Miscellaneous

Specific notes pertaining to project requirements as identified from various sources, including, but not limited to, soil survey, UST report, Environmental Green Sheet, Utility Agreement, RW Agreement, MS4 Post-Construction Stormwater Report, etc.

Section 14 Crossroad, Side Street, Frontage Road and Ramp Plan Drawings

14.001 SECTION DELETED

Section 15 Mainline Roadway Profile Drawings

15.001 General

The Roadway Profile drawings depict the existing ground (or profile grade) and the proposed profile grade for the mainline. The most important data is the proposed profile or the "profile grade line" (PGL), which is typically along the centerline of the horizontal alignment or as shown on the typical section. All stations and elevations will be labeled to two decimal places unless otherwise noted.

Use the same horizontal scale for the profile as that used for the plan drawings. Typically, the vertical scale is a ratio of the horizontal at a factor of 5:1 for a 50 scale and 4:1 for a 20 Scale drawing.

15.002 Required Information

- Begin/End Project Stations to the nearest 100th (i.e. 1010+26.25) (mainline). This station range should encompass all proposed work shown in the plans (permanent

construction, temporary/staging construction, ditch grading, signing and pavement marking, etc.). No proposed work (other than temporary signs for traffic control) should be shown outside the Begin/End Project Stations in the plans.

- Additional “Begin/End _____ “ Station callouts should be shown at the discretion of the Design Phase Leader to clearly describe the limits of project work. Examples may include: Begin/End Full Depth Construction, Begin/End Overlay, Begin/End Temporary Pavement, Begin/End Ditch Grading, etc.
- Grades for all tangents along the PGL in percentage to four (4) decimal place accuracy
- Point of Vertical Intersection (PVI) with station and elevation – to two decimal places
- Point of Vertical Curvature (PVC) with station and elevation
- Point of Vertical Tangency (PVT) with station and elevation
- Low Point with station and elevation
- High Point with station and elevation
- Vertical Curve Data
    - Curve length
    - "K" factor
    - Design speed
- Back and ahead station and elevation for equalities if applicable
- All intersecting streets
    - Street name
    - Station on the mainline
    - Station on the intersecting street
    - Elevation
- Major cross-drains greater than or equal to 48”
- All grade separations with clearances (i.e.: bridges over roadway, etc.)
- Begin and end stations
- Intersecting railroad track elevations and stations (top of rail)
- Existing ground
- Proposed ground
- Elevations of existing ground (along Construction centerline) and proposed ground (along Profile Grade Line(s)) at appropriate intervals

15.003 Drawing Layout

Stationing on profile drawings shall agree with stationing on plan drawings.

Single, double, or plan and profile drawings are acceptable. If the drawings are double, the lowest station range should be on the top of the drawings. Once a determination whether to go with single or double profiles has been made for a project, all the drawings shall be in the same format.

Section 16 Crossroad, Side Street, Frontage Road, and Ramp Profile Drawings

16.001 General

The Roadway Profile drawings depict the existing ground (or profile grade) and the proposed profile grade for the ramps, side roads or streets. The most important data is the proposed profile or the

"profile grade line" (PGL), which is typically along the centerline of the horizontal alignment or as shown on the typical section. All stations and elevations will be labeled to two decimal places unless otherwise noted.

Use the same horizontal scale for the profile as that used for the plan drawings. Typically, the vertical scale is a ratio of the horizontal at a factor of 5:1 for a 50 scale and 4:1 for a 20 Scale drawing.

16.002 Required Information

- Begin/End Project Stations to the nearest 100th (i.e. 1010+26.25) (mainline). This station range should encompass all proposed work shown in the plans (permanent construction, temporary/staging construction, ditch grading, signing and pavement marking, etc.). No proposed (other than temporary signs for traffic control) work should be shown outside the Begin/End Project Stations in the plans.
- Additional “Begin/End _____ “ Station callouts should be shown at the discretion of the Design Phase Leader to clearly describe the limits of project work. Examples may include: Begin/End Full Depth Construction, Begin/End Overlay, Begin/End Temporary Pavement, Begin/End Ditch Grading, etc.
- Grades for all tangents along the PGL in percentage to four (4) decimal place accuracy
- Point of Vertical Intersection (PVI) with station and elevation – to two decimal places
- Point of Vertical Curvature (PVC) with station and elevation
- Point of Vertical Tangency (PVT) with station and elevation
- Low Point with station and elevation
- High Point with station and elevation
- Vertical Curve Data
    - Curve length
    - "K" value
    - Design speed
- Back and ahead station and elevation for equalities if applicable
- All intersecting streets
    - Street name
    - Station on the mainline
    - Station on the intersecting street
    - Elevation
- Major cross-drains greater than or equal to 48” (All cross-drains if Section 22 omitted)
- All grade separations with clearances (i.e.: bridges over roadway, etc.)
- Begin and end stations
- Intersecting railroad track elevations and stations (top of rail)
- Existing ground
- Proposed ground
- Elevations of existing ground (along Construction centerline) and proposed ground (along Profile Grade Line(s)) at appropriate intervals

16.003 Drawing Layout

Stationing on profile drawings shall agree with stationing on plan drawings.

Single, double, or plan and profile drawings are acceptable. If the drawing is double, the lowest station range should be on the top of the drawing. Once a determination whether to go with single or double profiles has been made for a project, all the drawings shall be in the same format.

Section 17 Driveway Profile Drawings

17.001 General

Driveway Profile drawings reflect the grade and length of the tie-in of all driveways, including access drives for post-construction stormwater BMPs.

17.002 Required Information

- Roadway station where the driveway is located
- Direction (right or left) from the roadway under the profile
- Length of Vertical Curve
- Proposed Grades
- Existing ground
- Tie-in station

17.003 Drawing Layout

The scales are typically consistent with the cross-sections. Start the stationing for the driveway profile with 0+00 at the centerline of the roadway which the driveway intersects. Stations are placed along the bottom of the profile and the index elevations along both sides. Arrange as many profiles as practical on each drawing with the lowest station value in the lower left hand corner continuing up the drawing and, if there is space still available, "stack" the next adjacent column of profiles in the same manner.

Section 18 Special Grading Drawings

18.001 General

Special Grading Drawings are used as supplemental detail drawings for detailing special grading needs. These drawings are typically used to show grading of sediment/detention basins, parking lots, roundabouts/intersection grading, etc. These are used in addition to the construction plan drawings and provide room and flexibility for detailing.

18.002 Required Information

- Required information will vary based on what is being detailed, but typically the following is required.
    - Existing/proposed contour lines and elevations
    - Spot elevations shown on plan view

- Table of spot elevations showing point name, station/offset/elevation, and state plane coordinates
- North arrow
- Alignments
- Scale
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas. Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code.
- ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE ERIT TABLE)”, is provided

18.003 Drawing Layout

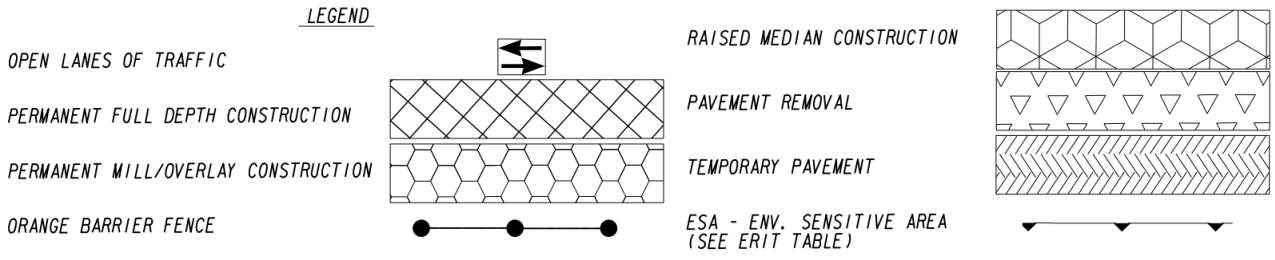
The scale of the drawing needs to be consistent with the level of detail required.

Section 19 Construction Staging Plan Drawings and Staging Cross-Section Drawings

19.001 General

The Construction Staging Plans are developed to show one method to construct the project, while accommodating the movement of traffic through the construction work zone. The staging plans are to show, as a minimum, where the flow of traffic is located, the area being constructed, and any temporary construction or pavement. The detail of the plans will depend on the complexity of the project. Signing and Marking for Traffic Control Plans are required for special conditions.

The following standard linestyles are provided and are to be used where applicable on all staging plans such that there is consistency and uniformity on all project staging plans produced by the Department. Any other designations for staging details are prohibited from being used, including shading. The linestyles are provided as a standard, but the extent of their use on projects will be at the discretion of the Project Manager.



19.002 Required Information

Notes/Narrative

- A narrative of the sequence of construction and means of accommodating traffic for each stage

- Legend

For each construction stage, show the following:

Plan Drawings

- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas.
  - ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided
  - NOTE: For streams, show linework and labels for only the tops-of-banks and stream flow line (i.e., deepest part of channel). Do not show linework or labels indicating the location of water’s edge itself at the time of survey (e.g. edge of water, edge of stream, etc.)
- Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code
- Construction centerline
- Existing and proposed pavement edges
- Proposed curb lines
- Access openings
- Intersections
- Existing and proposed storm drainage and culverts
- Major drainage structure to be constructed
- Traffic flow patterns
- Lane widths
- Areas of Temporary/Required Construction
- Locations of temporary barriers
- Temporary drainage structures
- Taper lengths and dimensions for temporary features

Temporary Profile Drawings

- Grades for all tangents along the PGL in percentage to four (4) decimal place accuracy
- Point of Vertical Intersection (PVI) with station and elevation – to two decimal places
- Point of Vertical Curvature (PVC) with station and elevation
- Point of Vertical Tangency (PVT) with station and elevation
- Low Point with station and elevation
- High Point with station and elevation
- Vertical Curve Data
  - Curve length
  - "K" value
  - Design Speed
- Back and ahead station and elevation for equalities if applicable
- All intersecting streets
  - Street name

    - Station on the mainline
    - Station on the intersecting street
    - Elevation
- Major cross-drains greater than or equal to 48” (All cross-drains if Section 22 omitted)
- All grade separations with clearances (i.e.: bridges over roadway, etc.)
- Begin and end bridge stations
- Intersecting railroad track elevations and stations (top of rail)
- Existing ground
- Proposed ground
- Elevations existing ground (along Construction centerline) and proposed ground (along Profile Grade Line(s)) at appropriate intervals

Typical Sections/Cross-sections

When required (see the GDOT Design Policy Manual for general guidance), prepare cross sections or typical sections of the stage indicating the area to be constructed along with the area to be used to maintain traffic. Staging cross sections shall be placed in order directly behind the corresponding staging plans or profile drawings. Cross sections shall show the following:

- Temporary pavement
- Temporary Drainage Cross Sections and applicable details
- Temporary barriers
- Traffic flow arrows
- Any other temporary slopes or structures necessary to complete the stage

19.003 Drawing Layout

Construction Staging Plans, Profiles and Cross Sections shall be prepared at the same scale as the Construction Plans, Profiles and Cross Sections. (At the discretion of the Project Manager)

Section 20 Bridge Construction Access

Bridge Construction Access sheets (Section 20 Plans) define the allowable temporary construction impacts of environmentally sensitive areas (corresponding to the project’s 404 permit and/or Special Provision 107.23) which are not typically defined on other plan sections. These construction impacts are most often applicable to projects with bridges over water. Examples of such construction activities include constructing a temporary work bridge or bulkhead, constructing a haul/access road, constructing a rock jetty, removal of the existing bridge structure, etc. Bridge Construction Access sheets are not required for projects without a 404 permit, unless requested for the purpose of agency consultation associated with impacts to environmentally sensitive areas (ESA). Bridge Construction Access sheets are developed through coordination among Bridge Design, Construction, Roadway Design, and Environmental Services.

20.002 Required Information

- All ESAs including, but not limited to, state buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas

    - NOTE: For streams, show linework and labels for only the tops-of-banks and stream flow line (i.e., deepest part of channel). Do not show linework or labels indicating the location of water's edge itself at the time of survey (e.g. edge of water, edge of stream, etc.) banks)
- Orange Barrier Fence (OBF)
- Proposed and existing bridge structures and approach roadways
- Bridge serial numbers and I.D. numbers for existing bridges
- Direction of stream flow (if applicable)
- Scale
- North arrow
- Cut/Fill limits (if applicable)
- Existing right-of-way and easement lines with labels
- Required right-of-way and easement lines with labels
- Existing ground contour lines and elevation labels
- Property lines with labels
- Required in-water construction access area within ESAs represented by a hatched area and legend
    - Do not show temporary structures like work bridges or rock jetties themselves*
- Proposed permanent rip rap protection including bridge endrolls (if applicable)
- General notes describing restricted or allowed methods*:

    1. *Permanent and temporary stabilization measures (e.g., riprap) are allowed only within the in-water construction access areas along the streambank, unless otherwise shown on Plans. Bank stabilization shall be limited to a maximum of five feet outside the top-of-bank when applied. Bank stabilization shall be used only where needed and minimized to the greatest extent practicable.*

    2. *The width of each temporary work structure tie-in to the streambank shall not exceed 25 feet.*

    3. *No more than 33% of the stream width shall be obstructed at any given time. Temporary fill (i.e., jetties, bulkheads, etc.) within streams/ESAs **[are/are not]** permitted at this location. Fill and/or temporary work structures (e.g., cofferdams, debris containment structures, etc.) shall be staged accordingly.*

        *If NOAA Fisheries and/or Formal Section 7 consultation is required, consult with environmental team for additional requirements.

20.003 Drawing Layout

The Bridge Construction Access information should be shown on a typical construction plan sheet at an appropriate scale to maximize the plan drawing area. For bridge (or twin bridge) should be shown on a separate sheet; long bridges may require multiple sheets with matchlines.

Section 21 Drainage Area Map

21.001 General

A drainage area map as described in this section shall be prepared for stormwater infrastructure sizing and shall be included in the project drainage report and the construction plans. For each drainage structure, tabulate a summary (or otherwise summarize) of the hydrologic and hydraulic data specified below on the map or on a following drawing as drawing space permits. All area calculations shall be in acres.

21.002 Required Information

- Receiving waters and other significant drainage features, labeled with the direction of flow of each.
- Applicable roadway names and centerlines.
- Beginning and ending project limits.
- Beginning and ending of bridges, bridge culverts, and culverts.
- Boundaries and drainage patterns of individual basins and subbasins. Include contour lines, index contour labels, and flow arrows. Use insets to show areas that are of such small size that the boundaries cannot be clearly shown at the selected map scale.
- Proposed or modified drainage structures, pipes, outlet structures, storm drain outlet protection, and any retention/detention pond locations. Note by structure number. Label existing structures that are to be removed or plugged, if any. Use the Department's standard symbols for existing and proposed drainage structures.
- For proposed or modified drainage structures (cross drains, curb inlets, drop inlets, etc.) identify as applicable:
    - The station and offset of each
    - The structure designation and type
    - The skew angle and size of pipes and culverts
    - The pre- (if applicable) and postconstruction runoff coefficients
    - The pre- (if applicable) and postconstruction design and check storm peak flows at the inlet
    - The pre- (if applicable) and postconstruction velocities corresponding to the design and check storm peak flows at storm drain outlets
    - The pre- (if applicable) and postconstruction headwater elevations corresponding to the design and check storm peak flows at cross drains
    - The total drainage basin area contributing to each

Detailed Drainage Area Map — As needed, prepare a supplemental drainage area map to a larger scale to show the detail of small areas needed to calculate the peak flow for structure and pipe sizing. Make a cross reference note to indicate the plan drawing that shows the overall drainage area encompassing the smaller area.

21.003 Drawing Layout

Prepare the drainage area map on standard plan drawings such that the entire area is shown and all details are clear and legible. Choose the largest scale practicable, preferably 200-scale or larger, and use as many plan drawings as necessary.

Section 22 Drainage Profiles

22.001 General

Drainage profile drawings include profiles of all drainage structures and pipe systems, slopes of pipes; flowline elevations of all weirs, slots, pipes and structures; height of structure; index numbers of standard details used, and similar data. Drainage profiles also show the vertical relationships of the entire drainage system and possible conflicts with utilities, as well as the horizontal relationship to the Construction Centerline.

22.002 Required Information

- The following items are required to be shown for each drainage structure:
  - Structure number
  - Station/Offset distance or direction
  - Structure type (Georgia Standard or Detail information)
  - Invert elevations
  - Height of structure
  - Length, size, flow direction, and slope of pipe
  - Number of lines/structures
  - Centerline station of roadway at all crossings (including skew)
  - Existing and proposed (at the discretion of the engineer) groundlines along the drainage system
  - Subgrade of roadway where applicable
  - Show all pipe connections to each structure
  - Show tie-in points from drainage system to post-construction stormwater BMPs with reference to BMP detail sheet(s).
  - At outlet structures, show existing and proposed groundline to the RW or Easement line
  - Underground utilities which are in close proximity to drainage structures in conjunction with the drainage profiles (where applicable)
  - For all embedded culverts reference the use of Ga. Construction Detail D-48 and label the embedment depth.

In addition to the above information, the following specific information is to be shown for:

<u>Cross-drains:</u>

- The design year headwater elevations for all cross drains
- Subgrade material requirements
- Culvert design height of fill (i.e.: 6W X 6H-30, designed for 30’ of fill)
- Design year outlet velocity
- Outlet protection (dimensions of apron)

22.003 Drawing Layout

Multiple drainage systems can be placed on a drawing, along with a summary of systems reflected on each drawing in the title block. Show the horizontal and vertical scales. Match lines shall be used as required.

Cross-drains:
Cross-drains are to be shown on cross-section drawings and at an appropriate scale to depict the cross-drain. Show all elevation datum on both the left and right sides of the drawing. Show offset from centerline along the bottom of drawing.

Longitudinal systems:
Longitudinal systems are to be shown on profile drawings and at an appropriate scale to depict the system. Show all elevation datum on both the left and right sides of the drawing.

Show all segments of the pipe system that do not exceed 45 degrees in delta as a continuous system on the Drainage Profile drawing. For any segments of the system that equal or exceed 45 degrees in delta, break the segment(s) to a new “line” on the Drainage profile drawing.

Show the Design HW at each inlet (Hydraulic Grade Line).

Section 23 Cross-Sections

23.001 General

Cross-sections depict the existing and proposed conditions as sections perpendicular to the construction centerline or baseline. Cross-sections are also intended to illustrate all earthwork requirements.

Assemble the cross sections in the plans set in the following order:

1. Mainline
2. Ramps
3. Cross/Side Streets/Major Commercial or Retail Driveways

23.002 Required Information

- Cross-section at one even station before begin construction and after end construction of all roadways
- Cross-section at both the begin and end construction stations of all roadways
- Cross-sections at begin and end stations for exceptions and bridges (no sections are required between begin and end stations)
- Existing ground lines
- Proposed ground line (including correct subgrade depth)
- Station number of each section
- Equalities
- Proposed profile grade elevation(s) for each cross-section
- All ditch elevations
- Ratio for the side slopes and back slopes
- Special ditches shall be labeled

- Construction Limit offset
- Post-construction stormwater BMP finished grade elevations or reference to other plan section containing this information
- Limits of removal of unsuitable material when required by the soils survey
- Special features (walls, barrier, buildings, etc.) that affect the limits of construction
- Matchline between mainline and ramp sections
- RW Limits in critical areas such as walls

23.003 Drawing Layout

The acceptable horizontal scales are 1" = 10', 1" = 20', and 1" = 50'. The acceptable vertical scales are 1" = 10' and 1" = 20'. Horizontal and vertical scales do not have to be the same, but horizontal scale must be greater than or equal to the vertical scale. Show cross-sections at even 50' intervals with stations increasing from the bottom to the top when drawn along the wide axis of the drawing and right to left when drawn along the narrow axis of the drawing. Specific project conditions may require cross-sections at shorter or longer intervals.

- Cross-sections are plotted on the standard grid drawings provided in the EDG cell library.
- Cross-section centerline or baseline placed and labeled on a major gridline on each drawing
- Horizontal centerline offset distance at each major gridline
- Elevation label at each major gridline
- Cross-section drawings may be single or double column and oriented portrait or landscape
    - For double columns, show cross sections with stations increasing from the bottom to the top and left to right on the drawing.

Section 24 Utility Plans

24.001 General

The Utility Plans are used as the primary tool to identify and resolve utility related conflicts/issues prior to beginning the construction of a project. Utility Plan drawings shall be comprised of roadway plan drawings with the inclusion of all existing, proposed, and adjusted utility facility locations (overhead & underground) found within a project's limits. The work in this section shall be performed by the Utility owners or their contractor unless additional plans are provided in Section 44.

Where extensive or complex utility work is proposed to be performed as part of the roadway contract work performed by the GDOT Contractor, separate Utility Relocation Plan Drawings for that specific utility shall be included in the project plans. Refer to Section 44 for additional requirements.

It is imperative that information pertinent to utility facilities be clearly shown in the Utility Plan drawings without the interference of extraneous data such as horizontal curve data, superelevation data, roadway dimensions, miscellaneous text, etc. All background information such as pavement limits, existing structures, etc. should be screened back.

All special notes will be placed first in the plan section (named 000A); legend drawings will be placed second (named 000B) and followed by the plan drawings (named 0001, 0002, etc.).

24.002 Required Information for Utility Plan Drawings

- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas. Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code.

Utility Legend, Notes & Details

- Utilities Legend drawing (as provided by Standard GDOT Cell/SUE Consultant).
    - Miscellaneous General Notes required for coordination of utility facilities with roadway construction.
- Provide drawing with all Overhead/Subsurface Utility Engineering (SUE) investigation notes that were originally included in accepted SUE deliverables for the respective project.

Details

- Pole Data Table (on separate drawing - if applicable).
- Quality Level A Test Hole Data Table (on separate drawing - if applicable)
- Point of Attachment table (on separate drawing – if applicable)
- Sanitary Sewer Manhole table (on separate drawing – if applicable)

Utility Plan Drawings

The following items should be shown as screened back:

- Construction centerline with project stations and begin/end project limits
- Curb and gutter or edge of pavement (proposed and existing)
- Road, street and railroad names
- Existing and Required Right of Way limits
- Property lines
- Environmentally sensitive area limits
- Property owners
- All proposed and existing easements (including existing and proposed utility easements)
- Proposed and existing drainage structures/features (excluding drainage text)
- Limits of existing and proposed sediment basins & detention/retention ponds
- Proposed construction limits (C/F lines)
- Topographical planimetrics (i.e. existing buildings / structures, existing tree/vegetation limits, lakes, rivers etc.)
- All proposed bridges including bent locations, culverts, walls, signs (excluding standard signs) and other structures
- Railroad mainline and spur tracks with their respective property/easement limits

The following items should not be shown screened back:

- All proposed and existing strain poles and service points, span wires, control cabinets and appurtenances, and mast arms (signal, ATMS, sign, lighting)
- SUE investigation Limit of study (if applicable)
- Location and labeling of existing gas valves and shut-offs
- Location and labeling of existing water valves and shut-offs

- Existing overhead and underground utilities found within the project's limits (including size and material if known).
- Sanitary sewer manhole top, and invert elevations. Sanitary Sewer pipe flow directions
- All proposed, temporary, and relocated utility facilities with annotation describing nature of work.
- Disposition of all existing utilities (i.e.: "To be removed", "To be Adjusted", "To be Abandoned", "To Remain", "To be Relocated", etc.)

Miscellaneous Proposed Utility Details

- Any miscellaneous proposed utility details
- Quality Level A Test hole form drawings (if applicable)

24.003 Drawing Layout

24.004 Miscellaneous

Section 25 Lighting Plans and Details

25.001 General

Lighting plans are required for projects that propose modifications to existing lighting or the construction of new lighting systems. Lighting plans shall provide a set of construction details, electrical circuit details, single line diagram and schematic diagram, lighting standards and high mast tower data summaries, conduit/cable descriptions, service point locations, luminaire specifications, foundations and details, and other data required for the proposed lighting components.

25.002 Required Information

Lighting Plans shall include the following drawings:

- Separate (with no drawing number) Summary of Quantities drawing (to be placed with the Roadway Summary of Quantities)
- Electrical Legend, Notes & Details
- Lighting Standards and High Mast Tower Data Tables
- Lighting Layout
- Underpass/Tunnel Lighting Layout
- Bridge Lighting Layout
- Lighting Details
- Schematic Diagram
- Single Line Diagram
- Lighting Foundation Details
- Miscellaneous Lighting and Electrical Details

The following describes the contents for each drawing type:

Electrical Legend, Notes & Details

- Lighting Legend
  - High Mast Tower
  - Roadway Standard
  - Underpass Luminaire
  - Pedestrian Standard
  - Conduit/Cable
  - Pull Box
  - Electrical Junction Box
  - Service Point
  - Existing Conduit/Cables to be reused
  - Existing Conduit to be removed/abandoned
  - Miscellaneous items
- General Notes
  - Luminaire specifications, including specific approved make/model numbers
  - Wiring specifications
  - Conduit specifications
  - Required Contractor Warranty information
  - Overhead power line warnings, clearances etc.
  - Miscellaneous notes

Lighting Standards and High Mast Tower Data Tables

- Design and Construction information for each lighting standard or high mast tower installation by the structure identification number tabulated sequentially.
- Construction Centerline station and offset
- Mounting Height
- Mast Arm Length
- Mounting Arrangement
- Installation Notes
- Circuit Designation

Lighting Layout Drawings

- General Information
  - Lighting standards and high mast towers shall be labeled with a unique number.
  - Lighting standards and high mast towers shall be numbered sequentially preferably increasing stations). Standards: S1, S2, etc… Towers: T1, T2, etc…
  - Each electrical service point shall be labeled with an alpha character.
  - Associated circuits shall be labeled with the service point letter and a corresponding number (e.g. Service Point "A" would have circuits A-1, A-2, A-3, etc.).
  - Conductor gauge and number of conductors shall be shown on the plan drawings or tabulated on a table/schedule between each pole/tower.
  - Stationing and offset shall be shown for each standard or tower (may be omitted if clearly dimensioned on the Lighting Standard and High Mast Tower Data Drawing).

    - Utility owner name, address and contact person along with specific connection information, requirements, or coordination required for each service point location shall be provided on either the Lighting Layout Drawing or a specific detail drawing.
    - All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, bat habitats, archaeological resources, hazardous materials, and environmental justice areas. Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code.
    - ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE ERIT TABLE)”, is provided
    - Items to be removed (if applicable)
- Existing Information (for any items to be retained)
    - Service Point(s)
    - Standards
    - High Mast Towers
    - Drainage
    - Utilities
    - Waters of the U.S.
- Proposed Information
    - Service Point(s)
    - Standards
    - High Mast Towers
    - Conduit/Cable runs
    - Junction/Pull boxes
    - North Arrow
    - Scale Bar
    - Limits of required clearing (if different from Clearing Limits on Roadway Plans)
    - Roadway Names
    - Fencing
    - Guardrail
    - Edge of Pavements
    - Pavement Markings
    - Construction Centerlines
    - Curb and Gutter
    - Sidewalk
    - Ditches
    - Drainage Structures
    - Utilities
    - Guardrail
    - Median/Side Barriers
    - Noise Barriers
    - Walls
    - Bridges
    - Approach slabs

- Strain Poles
- Driveways
- Matchlines (including station and drawing number)
- Required R/W

Underpass/Tunnel Lighting Layout Drawings

- General Information
  - Underpass luminaires shall be labeled with a unique number.
  - Underpass luminaires shall be numbered sequentially (preferably increasing stations). Underpass Luminaires: U1, U2, etc…
  - Each electrical service point shall be labeled with an alpha character.
  - Associated circuits shall be labeled with the service point letter and a corresponding number (e.g. Service Point "A" would have circuits A-1, A-2, A-3, etc.).
  - Conductor gauge and number of conductors shall be shown on the plan drawings or tabulated on a table/schedule.
  - Stationing and offset shall be shown for each underpass luminaire (may be omitted if clearly dimensioned on the Lighting Standard and High Mast Tower Data Drawing).
  - Utility owner name, address and contact person along with specific connection information, requirements, or coordination required for each service point location shall be provided on either the Lighting Layout Drawing or a specific detail drawing.
- Existing Information (for any items to be retained)
- Proposed Information
  - Service Point(s)
  - Underpass Luminaires
  - Conduit/Cable horizontal and vertical runs
  - Junction/Pull boxes
  - North Arrow
  - Scale Bar
  - Roadway Names
  - Median/Side Barriers
  - Noise Barriers
  - Guardrail
  - Construction Centerlines
  - Pavement markings
  - Edges of pavement
  - Curb and Gutter
  - Sidewalk
  - Ditches
  - Drainage Structures
  - Walls
  - Bridges
  - Approach slabs
  - Strain Poles
  - Driveways
  - Matchlines (including station and drawing number)

- Required R/W

Lighting Detail Drawings

- High Mast Tower and Lowering Device details and specifications
- Head frame and luminaire ring details
- Pole and pole base details
- Electrical junction box details
- Electrical pull box details
- Electrical conduit stubout details
- Luminaire mounting details
- Grounding Details
- Service cabinet and foundation details
- Service equipment details

Schematic Diagram

- Wiring Diagram
- Service Point data
- Circuit Breaker specifications
- Contactor specifications
- Conductor size, quantity and type
- Miscellaneous electrical wiring specifications
- Service cabinet and equipment details and specifications
- Grounding Details
- Surge Suppressor specifications

Single Line Diagram

- Single Line Diagram for each service point
- Legend of all symbols used in Single Line Diagram
- Circuit breaker sizes and ratings
- Conductor number, size and type
- Each lighting standard, tower and underpass fixture attached to each circuit, including its unique designation (S1, S2, T1, T2, U1, U2, etc…)
- Miscellaneous electrical wiring specifications

Lighting Foundation Detail Drawings

- Foundation Elevation View
- Foundation Plan View
- Foundation notes and details, including diameter and depth
- Reinforcement Schedule
  - Location (foundation number)
  - Number of locations
  - Length
  - Number of bars required
  - Type
- Foundation Quantities in tabular form with Tower Number showing separated unit quantities.

- Grounding Details

Miscellaneous Lighting and Electrical Details

- Details for mounting light standards on barrier walls
- Special design footing details
- Special mounting details for specific project requirements
- Grounding Details
- Maintenance pads

25.003 Drawing Layout

Section 26 Signing and Marking Plans and Details

26.001 General

Signing and Marking plans depict signage and pavement marking on the roadway that is necessary for normal traffic flow and safety.

26.002 Required Information

All special notes will be placed first in the plan section (named 000A); legend drawings will be placed second (named 000B) and followed by the plan drawings (named 0001, 0002, etc.).

Prepare plan drawings to show all permanent roadway signs and pavement markings as they appear upon completion of the project along with the necessary details of unique project signs (destination, mileage, road name, guide, and overhead signs).

Include base information from the roadway design file to allow adequate depiction of required signing and marking. Coordinate signing and marking items with utilities, right-of-way, and drainage structures.

Include the following list of base data on each drawing:

- Separate stand-alone (with no drawing number) Summary of Quantity drawing (to be placed with the Roadway Summary of Quantities)
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas
- Orange Barrier Fence
- Construction sheet legend
- Edge of Pavement
- Driveways
- Project Center-line w/stationing text
- Existing and Proposed right-of-way
- Property boundaries
- City, county, state boundaries
- Names of intersecting roads

- Any sidewalks, guardrail, or barrier walls
- Drainage structures
- Existing and proposed overhead utility structures (i.e. poles)
- All railroad at-grade crossings and bridge structures

In addition to the base information above, the following items are to be reflected for the following specific disciplines.

Pavement Marking Requirements

- Lane lines
- Stop bars
- Crosswalks
- Painted islands
- Label the type of each line on each drawing
- Required hatching
- Required arrows, symbols, words, and other pavement drawings

Signing Requirements

- Location (station) and orientation of required signs
- Representation of the sign face
- Sign code
- Sign size (if applicable)

Special Signs - Projects may require special signs including guide signs and direction signs.

- Special Sign Detail that shows the complete message layout with:
    - Spacing
    - Margins
    - Border widths
    - Corner radii
    - All guide signs and special signs shall include a legend showing letter size, font, space plate size, etc.

Overhead Span Wire Signs

- Pole locations (station and offset) and types
- Wire span and sign location
- Show and specify sign and sign code

Clearance Diagrams for Overhead Signs

- The location of existing guardrail or barrier wall
- The cross section of the roadway and shoulders, including the widths of paved surfaces
- The location of any proposed guardrail or median barrier to protect sign structures within the clear area that are not of breakaway construction
- The horizontal and vertical location of the signs in relation to the cross section of the roadway and lanes
- The structural support number and station number (with offset, if applicable)
- The sign design layout

- The design sign area (sq. ft.) for the existing structure.
- The design sign area (sq. ft.) for the proposed structure.
- Number and dimensions of the sign
- Distance from the edge of roadway to the support columns
- The location of any footings for the sign structure
- Structure Type
- Bridge Name and Number for Type VII Bridge Attachments

26.003 Drawing Layout

26.004 Miscellaneous

General Notes - All general notes pertaining to signing and pavement markings shall be shown in Section 04 GENERAL NOTES.

Section 27 Signal Plans

27.001 General

Signal Plans show graphically the way in which the traffic signal is to be constructed and installed. This includes the intersection geometrics; the location of signal hardware and equipment; signal phasing; pavement markings; signal related signs; interconnect/communication layout, and other pertinent information. The various items that are usually included on Signal Design Plan drawings are discussed below.

27.002 Required Information

- All special notes will be placed first in the plan section (named 000A); legend drawings will be placed second (named 000B) and followed by the plan drawings (named 0001, 0002, etc.).
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas
- Orange Barrier Fence
- ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided
- Roadway Geometrics
    - Intersecting streets and driveways within limits of intersection (include street names, bike and pedestrian paths/trails)
    - Right of way or property lines (permanent easements, Limit-of-Access lines, historic boundaries, city, county, state boundaries, railroad right of way)
    - Physical features (concrete islands, medians (grass or raised) curb and gutter, sidewalks, shoulders, bridges)
    - ADA wheelchair ramps/landings

- Provide the proposed attachment elevation (Point of Attachment - POA) of the traffic signal span wire when joint use.
- Railroads, emergency centers, and schools in the vicinity
- Any drainage or sewer facility within intersection (inlets, catch basins, ditches, streams, ponds, storm drains)
- Existing topography within intersection (trees, fences, retaining walls, buildings, guardrail, fire hydrants)
- Underground storage tanks within limits of intersection

- Traffic Control Features
  - Electrical service point and associated conduit
  - Signal display and design configurations
    - Existing traffic signal equipment (if maintained)
    - Proposed traffic signal equipment
    - Number and location of signals
    - Size and arrangements of signal indications in signal faces
    - Signal mounting configuration (pole or post mounted, span-wire, mast arm mounted)
    - Lateral placement and display of pedestrian signals
    - Location and display of blank-out signs
    - Battery backup equipment
  - Lane usage and configurations (pavement marking)
  - Parking restrictions (Bus stops, loading zones)
  - Location and message of traffic signal related signs
    - Street name signs
    - Pedestrian signs
    - Any supplementary or auxiliary sign
    - Signal related regulatory signs
  - Posted speed limits (main and side streets)
  - Show placement and type of loop detector (presence or set back loop)
    - Show placements of detectors on all approaches
  - Location and type of conduit (rigid, TP 2, TP 3)
  - Lateral placement of controller cabinet including mounting alternative (pole or base mounted)
  - Lateral placement of signal supports (wood poles with down guys or, concrete, steel strain poles or mast arms)
  - List of materials for the traffic signal installation lump sum (647-1000)
  - Traffic Signal Controllers
    - Show location and type of controller (master, local)
    - Interconnection (wireless, hard wire cable, Fiber Optic cable, radio communication)
  - Sequence of phases (phasing diagram) including vehicular and pedestrian movements, pre-emption and pre-emption clearance phases
  - Cabinet input charts for each signal design.
    - Special features being used (evacuation switch, pre-empt, video detection)
  - Field wiring design

        - Location and type of pull boxes
- Project specific notes
    - Indicate on the plan that at least one spare conduit entrance be provided into all concrete pad, base-mounted cabinets
    - Identify the size and location of all risers being used
    - Identify the location of all interconnect cable and place interconnect in a separate conduit from other intersection wiring
- Construction stationing
- Location of guardrail for incorporation into design plans

27.003 Drawing Layout

General Note Drawing

This drawing contains instructional information concerning equipment and installation that applies to the total project. All general notes pertaining to signal plans shall be shown in Section 04 GENERAL NOTES.

Legend Drawing

This drawing is used to convey all the symbols used on an intersection plan to denote the various traffic control elements or hardware. The legend drawing will be placed second in the plan section after special notes and followed by the plan drawings.

List of Materials

This drawing contains summary boxes or lined pay items of the estimated quantities needed for material or equipment used for Signal Design projects not included in Lump Sum. It will be a separate stand-alone (with no drawing number) Summary of Quantity drawing (to be placed with the Roadway Summary of Quantities).

Summary of Quantities

This drawing contains summary boxes or lined pay items of the estimated quantities needed for material or equipment used for Signal Design projects not included in Lump Sum. It will be a separate stand-alone (with no drawing number) Summary of Quantity drawing (to be placed with the Roadway Summary of Quantities).

Detail of Overhead Street Name Signs Drawing

This drawing shows the detail and summary of overhead street name signs and the type of legend, sign material and letter size. In addition, it shows a tabulation of the sign material and the estimated quantities needed. This drawing may be included in the Traffic Signal Plans.

Signal Design Plans

This drawing shows the physical layout of the intersection as defined from base plans and serves as the reference source to design and locate the various traffic control items. Draw the signal plan at a scale of 1: 30.

Standard and Construction Details

The detail drawings consist of previously developed standard plans or drawings for items of equipment or construction details common to most signal installations. Detail drawings are also used for special features not covered by standard drawings; these usually involve the specifics of a different type of installation or special equipment unique to an individual location.

Section 28 Intelligent Transportation Systems (ITS) Plans

28.001 General

ITS plans show graphically the way in which the ITS infrastructure is to be constructed and installed. This includes the roadway geometrics; the location of ITS hardware and equipment; ramp meters; hub/control center equipment; interconnect/communication layout; fiber allocations; and other pertinent information. The various items that are usually included on ITS drawings are discussed below.

28.002 Required Information

- All special notes will be placed first in the plan section (named 000A); legend drawings will be placed second (named 000B) and followed by the plan drawings (named 0001, 0002, etc.).
- Separate stand-alone (with no drawing number) Summary of Quantity drawing (to be placed with the Roadway Summary of Quantities)
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas.
- Orange Barrier Fence
- ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided
- Roadway Geometrics
    - Construction centerline
    - North arrow
    - Intersecting streets and driveways within limits of intersection (include street names, bike and pedestrian paths/trails)
    - Right of way or property lines (permanent easements, Limit-of-Access lines, historic boundaries, city, county, state boundaries, railroad right of way)
    - Physical features (concrete islands, medians (grass or raised) curb and gutter, sidewalks, shoulders, bridges)
    - Railroads in the vicinity
    - Existing topography within intersection (trees, fences, retaining walls, buildings, guardrail, fire hydrants)
    - Underground storage tanks within limits of intersection
    - Structures impacting design (drainage, utilities, noise barriers, etc.)
    - Bridge decks
    - Guardrail

- Sign structures' station and offset
- Pavement markings

- ITS Features
  - Existing electrical service points and associated conduit
  - Proposed electrical service points and associated conduit
  - Existing ITS lines and structures
  - Proposed pole/structure station, offset, and height
  - Structure identification number label for all field device poles and structures
  - Proposed conduit details, including:
    - Type
    - Quantity
    - Location
    - Installation method
  - Proposed cable details, including:
    - Type
    - Quantity
    - Location
    - Cable identification number
  - Proposed splice information, including:
    - Type
    - Quantity
    - Location
  - Proposed pull box and electrical communication box details, including:
    - Type
    - Quantity
    - Location
  - Proposed ITS device details, including:
    - Type
    - Quantity
    - Location
    - NaviGAtor identification number
  - List of materials for ramp meter installation lump sum

28.003 Drawing Layout

General Note Drawing

This drawing contains instructional information concerning equipment and installation that applies to the total project. All general notes pertaining to ITS shall be shown in Section 04 GENERAL NOTES.

Legend Drawing

This drawing is used to convey all the symbols used on an ITS plan to denote the various elements or hardware. The legend drawing will be placed second in the plan section after special notes and followed by the plan drawings.

Fiber allocation drawing

This drawing shows a table of the interconnect information for all locations where splicing is taking place. The table shall include:

- Station number
- Structure identification number
- Device identification number(s)
- Fiber optic trunk cable identification number and associated fiber number
- Fiber optic drop cable identification number and associated fiber number
- Destination
- Function

List of Materials

This drawing contains summary boxes or lined pay items of the estimated quantities needed for material or equipment used for Ramp Meter Design projects. Note: Quantities are for information only. The contractor should field verify prior to ordering materials.

Summary of Quantities

This drawing contains summary boxes or lined pay items of the estimated quantities needed for material or equipment used for Ramp Meter Design projects not included in Lump Sum. It will be a separate stand-alone (with no drawing number) Summary of Quantity drawing (to be placed with the Roadway Summary of Quantities).

Standard and Construction Details

The detail drawings consist of previously developed standard plans or drawings for items of equipment or construction details common to most signal installations. Detail drawings are also used for special features not covered by standard drawings; these usually involve the specifics of a different type of installation or special equipment unique to an individual location.

Section 29 Landscaping Plans and Details

29.001 General

Landscaping plans depict all project landscaping items and details that are to be constructed excluding the permanent erosion control items in accordance with policy 6755-9. The plans shall provide type (plant and size) and location of landscaping items within the project limits. Plans also provide details and notes of how items are installed. Plans may also include irrigation and applicable details for installation. Landscape plans shall show the proper project information such as proposed roadway features and utilities so that no design/construction conflicts exist.

29.002 Required Information

- Separate stand-alone (with no drawing number) Summary of Quantity drawing (to be placed with the Roadway Summary of Quantities)
- Design Speed
- Posted Speed
- Legend key

- An overall site plan and an area map depicting the roadway corridor in relation to the surrounding environment.
- The scale of the drawing should be generally 1”=50’ for 24 x 36 or 1”=100’ for 11 x 17. If a larger scale drawing is required for clarity, then create enlarged plans depicting the work to be done in the right-of-way.
- Display all property lines, right-of-way.
- The names of Route Numbers, U.S. and State, including the names of highway and roads on the plan.
- Contour lines in areas of landscaping
    - 2 foot contours
    - Existing contours will be dashed
    - Proposed contours will be solid
- All sign locations
- Permitted outdoor advertising signs with 500 ft. radius tree planting buffer
- Existing and proposed topo including:
    - Edge of pavement (or curb line)
    - Sidewalks
    - Driveways
    - Medians
    - Channelizing islands
- All drainage features.
- Proposed and existing utilities that are in proximity to the proposed landscaping.
- Existing street trees or enhancement plantings
- Any trees marked for preservation
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas
- ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided

Plant Specification Drawing – Show the following:

- Abbreviation name (if used on landscape plans)
- Botanical name (including Cultivar)
- Common name (including Cultivar)
- Height
- Spread
- Caliper
- Branching requirements (minimum number, height first, cane, crown),
- Field Dug or Containerized
- Minimum root ball diameter
- Origin
- Remarks

Landscaping Plan Drawing - Generally a 1"= 50' 50' (for 24 x 36 or 1"=100' for 11 x 17) scale drawing showing:

- Species
- Location
- Size
- Quantity of the new plant material
- Proposed and existing utilities

Planting Detail Drawing - Information regarding:

- Planting instructions
- Staking of trees
- Tree protection

Irrigation/Drainage Plan - There are no irrigation specifications in the GDOT's Standard Specifications, therefore, if irrigation is approved for a project, an irrigation special provision shall be required. These drawings (if required) shall show:

- Power sources
- Water sources
- Valve locations
- Controllers
- Watering zones
- Head types
- All other appurtenances required for irrigation systems

29.003 Drawing Layout

Section 30 Mitigation Plans (Wetland, Stream, Stream Buffers, Historic, etc.)

30.001 General

Mitigation Plans are used for constructing wetland, stream, or stream buffer mitigation sites or landscaping plans for the purpose of mitigating visual impacts to an environmental resource (historic resources, etc.).

30.002 Required Information

- An overall site plan map and an area (small location) map depicting the project corridor in relation to the surrounding environment (i.e.: cover drawing).
- The scale of the drawing should be generally 1"=50' for 24 x 36 and 1"=100' for 11 x 17. If a larger scale drawing is required for clarity, then create enlarged plans depicting the work to be done in the right-of-way.
- All intersecting streets
    - Street names
    - Station on the mainline/intersection street

- Existing and Required Right-of-Way limits (Use Station/Offset or Point Numbers, but not both)
- Property lines
- Property owner information
- All proposed and existing easements (including existing utility easements) (Use Station/Offset or Point Numbers, but not both)
- Existing overhead and underground utilities found within the project limits including size and material if known
- Disposition of all existing utilities (i.e.: To Be Removed, To Be abandoned, etc.)
- Proposed construction limits (C/F lines)
- Topographical planimetrics (i.e. existing buildings/structures, existing tree/vegetation limits)
- Proposed contour lines
- Proposed utilities
- Strain Poles
- Proposed Roadway Features
- Mitigation specific construction sequencing
- Stream typical sections and details
- Staging areas for mitigation materials
- All drainage features
- All Railroads crossed or impacted by the project
- Planting Zones in plan view
- Quantity of the new plant material
- Vegetation selection specifications
- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas. Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code.
- ESA lines labeled as “ESA – See General Notes ‘Environmental Resources Impact Table’ for construction restrictions” unless the standard legend, which shows the ESA linestyle and states, “(SEE E.R.I.T.)”, is provided

30.003 Drawing Layout

1. Stream Mitigation Plan Drawing:
   - Display all Stream curve data (for use in the design of the meanders in the stream)
     - Minimum data should include radius of curvature
2. Stream Buffer Mitigation Plan Drawing:
   - Display all Stream curve data (for use in the design of the meanders in the stream)
     - Minimum data should include radius of curvature

Section 31 Retaining Wall Envelopes

31.001 General

This section of the plans establishes the retaining wall envelopes (begin and end locations along with top and bottom elevations) to be used for the design and construction. Section 31 drawings are acceptable for preliminary and final plans for walls that are to be constructed based on GDOT Standard wall details.

31.002 Required Information

- When the wall alignment deviates from the roadway alignment significantly enough to cause confusion (Example: walls at roundabout intersections), consider defining a separate horizontal alignment. Since vertical wall geometry is often controlled by the typical section and profile, having the wall alignment reference the roadway alignment at critical points (Begin Wall, Bends, End Wall, etc.) is necessary for quality control. If a separate alignment is used, use a stationing for that alignment that is distinct enough to avoid confusion with adjacent roadway alignments.
- Show wall types and wall numbering.
- Show existing and/or proposed drainage pipe including station, size (diameter), and invert elevation (if applicable). The maximum size of pipe allowed to pass through a wall constructed per the Std 4949 series is 36". Do not run pipes adjacent to each other as they pass through the wall..
- Station, Offset, Elevations labelled at the following locations:
    - Begin and end wall
    - Wall type change
    - Points critical to horizontal geometry
        - Bend in horizontal or vertical alignment of wall
        - Begin (PC) and/or End (PT) locations for curved sections
    - Every 50-ft minimum if not covered by the conditions above
- Offsets for walls including a parapet or barrier should be measured to the point where the barrier meets finished grade
- Elevation lines to be drawn continuously and called out as noted above:
- Cut Wall (from top down):
    - Top of Wall Elevation (should roughly parallel the proposed groundline after grading)
    - Back face finished grade line (could be toe of backslope, ditch section etc.)
    - Back face ground line elevation (existing ground line)
    - Top of Barrier elevation (if applicable)
    - Top of Coping (for MSE Wall)
    - Front face* ground line elevation (proposed finished grade line – could be gutter line, sidewalk, grass, etc.)
    - Bottom of Wall elevation*** – top of footing or maximum top of leveling pad elevation
- Fill Wall (from top down):
    - Top of Wall elevation

        - Pay special attention to the top of wall elevations when a wall leads up to a bridge. Shoulder breaks may not be consistent for the full length of the wall due to the absence of a shoulder break in the approach slab and the need to transition to the typical section
    - Top of Barrier elevation (if applicable)
    - Top of Parapet elevation (if applicable)
    - Top of Coping (for MSE Wall)
    - Back face ground line elevation (proposed finished grade line – could be gutter line, sidewalk, grass, etc.)
    - Front face* ground line (existing ground line and proposed wrap around slopes if needed)
    - Bottom of Wall elevation*** – top of footing or maximum top of leveling pad elevation
    - Note changes in wall type (or standard vs. special design in preliminary phase)
    - Show proposed fencing or handrail (if applicable)**
    - Show proposed wall face finish (if applicable)**

* The front face of the wall is the face that is “exposed” (not buried) after construction is complete.

** These items should be shown on final retaining wall envelopes but are not required for preliminary wall envelopes.

*** Envelopes for cast in place retaining walls, such as the Std 4949 Series, require the engineer to give additional attention to the wall footing. The following must be considered:

- Footings may not be sloped to a grade steeper than 10%.
- Footings steeper than 10% must be detailed as level with steps.
- Footing steps may not exceed 3ft. (If greater steps are necessary, special details must be provided in the plans)
- Footing steps shall be spaced at a minimum of 10ft.

The design height and applicability of a given Standard section should be conservatively determined once the above items are addressed. Exceeding a design standard on construction will lead to a costly supplemental agreement.

31.003 Drawing Layout

Retaining wall envelopes will be shown on the standard profile sheet. A split plan/profile sheet can be used if the horizontal alignment of the wall is displayed for clarity.

Section 32 Retaining Wall Plans

32.001 General

Section 32 of the plans provides the necessary information to the Contractor to bid, design, and construct special design retaining walls. The sheets in this section are used to describe two distinct types of special designed retaining walls: Pre-construction designed walls and Contractor designed walls.

Pre-construction designed wall plans are fully developed by GDOT or its consultant partners (the Pre-construction designer). Contractor designed wall plans, prepared by the Pre-construction designer provide the Contractor with sufficient information to allow a specialty contractor or material supplier to provide the contractor with design plans sufficient for bidding and construction.

Under the alternate delivery process (Design Build) the Pre-construction designer role is assumed by the Design Build team. For retaining walls in Design Build projects, the Design Build Team is responsible for adhering to all the plan requirements in the following sub-sections.

The guidance in this chapter applies to both the development of Preliminary Wall Layouts prior to PFPR and to the completion of Final Plans prior to FFPR.

General Terms

Wall Alignments - The horizontal layout of a retaining wall in plan view with a corresponding stationing that is typically an offset of a roadway baseline or centerline. Wall alignments can alternatively have their own stationing.

Wall Envelope - The elevation view of a retaining wall that indicates top of wall, minimum or actual bottom of wall, associated profiles (such as existing ground and proposed ground), and references to horizontal bends or breaks in wall.

Separate Wall Plans

In general, present each wall separately in the contract plan set. Provide all Details, General Notes, Design Data, etc. for each wall in the plan set. Do not group items to apply to more than one wall.

Drawing Scale

Draw Wall Envelopes (Elevation views) in Section 32 using equal horizontal and vertical scales. A scale of 1” = 10’-0” is desired for the Pre-construction designed walls that require more detailing. Limit the scale to 1” = 20’-0” for all other cases. Both scales are based on a 24”x 36” sheet size.

When wall envelopes are too long to be drawn on one sheet based on the scale requirements, show match lines, which include stationing and elevation information at the point where the drawing stops on one sheet and begins on another.

CAD Information

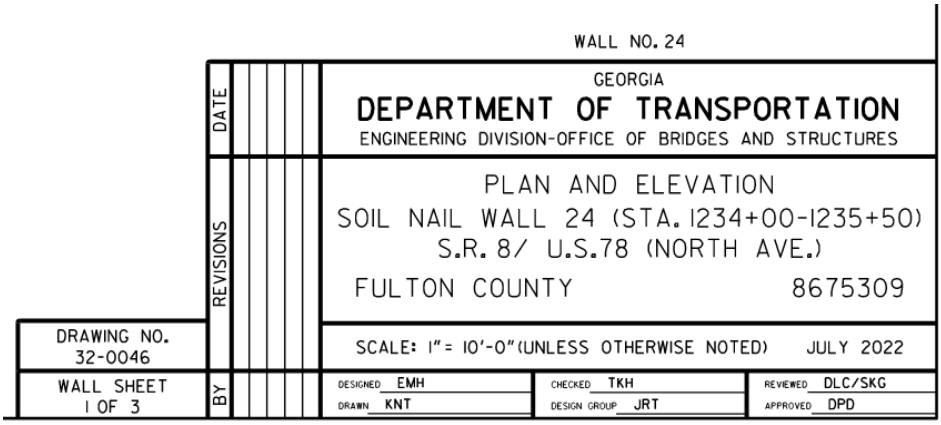
See Chapter 1 of the GDOT Bridge and Structures Detailing Policy Manual for guidance on line styles, fonts, etc.

Title Blocks

Present section 32 plans on a sheet including the “BORD” border cell from the GDOT Bridge Cell Library, as modified below.

- Provide three description lines in addition to information about the county and project identification number in the title block on all Section 32 sheets.
- Use the first line to describe the sheet type. (Examples are: PLAN AND ELEVATION, GENERAL NOTES, WALL DETAILS, etc.)
- Use the second line to describe the wall type and number and provide begin and end roadway alignment station values. Wall type examples are: SOIL NAIL WALL, MSE WALL, etc.

- Use the third line to describe the roadway alignment along which the wall is located.
- Example:



Note: Revise the sheet count box to “WALL SHEET” instead of “BRIDGE SHEET”.

Dimensions

Dimension Pre-construction designed walls sufficiently for the construction of all elements.

For Contractor designed walls, show the horizontal dimensions on the wall envelope between each point of geometric significance (Begin, End, Bend, etc.) and/or changes in linear foot pay items, such as coping or handrail.

Dimension horizontal and vertical distances to the nearest 1/8”. Show elevations to the nearest .01 (hundredth) of a foot.

Wall Numbering

Walls should typically be numbered in consecutive order of appearance in Section 13 of the plans.

Divide wall alignments alphabetically (1A, 1B, 1C…) at any change in wall type or change from a cut section to a fill section. Present these alphabetic divisions as separate walls with separate envelopes but show a portion of any adjoining wall using a lighter “existing structure” line style for reference. Show the adjoining wall portions in both the plan and elevation views. Include the wall numbers as part of the Begin and End Wall labels in Section 13 of the plans. (Example: END WALL 1A, BEGIN WALL 1B)

Label walls that turn one or more times, such as walls wrapping a bridge abutment, with a single wall number, unless there is a change in type as noted above.

Wall Stationing

In general, define the wall geometry by stations and offsets from the predominate roadway alignment that controls or influences the geometry of the wall. Where multiple alignments influence the geometry of the wall or a section of the wall, provide stations and offsets for all influencing alignments.

When the wall alignment deviates from the roadway alignment significantly enough to cause confusion (Example: walls at roundabout intersections), consider defining a unique wall alignment. Since vertical wall geometry is often controlled by the typical section and profile, having the wall alignment reference the roadway alignment at critical points (Begin Wall, Bends, End Wall, etc.) is necessary for quality control. If a unique alignment is used, use a stationing for that alignment that is distinct enough to avoid confusion with adjacent roadway alignments.

Point of reference for Wall Envelopes

Present wall envelopes with increasing stationing from left to right on the sheet. This may require labeling the elevation view as “Looking at Back Face of Wall” (fill walls on the left side of the alignment and cut walls on the right side of the alignment will be “Looking at Back Face of Wall”).

When a wall turns to run along more than one alignment or turn multiple times to wrap around an abutment, present the elevation view looking at the front face, which may cause stationing to reverse direction and is acceptable. Complex geometries may lead to various other approaches to stationing to provide clarity.

Plan and Elevation View Presentation

The Plan and Elevation views outlined in subsequent sections should be presented together on the same sheet with the Plan view located above the Elevation view and at the same scale. When the length of the wall requires presentation on multiple sheets place the match lines at the same location in the Plan view and Elevation view. When the wall alignment is anything other than a straight line, the Elevation view will be longer than the plan view, since the elevation view presents the wall flattened out.

32.002 Pre-Construction Designed Wall Plans

Pre-construction designed walls typically consist of reinforced concrete cantilever gravity walls or non-gravity cantilever walls (Soldier Pile Walls).

Required Information for all Pre-Construction Designed Wall Plans

- Plan view
  - A “North Arrow”
  - Benchmark data
  - Roadway alignment including bearing and curve information.
    - Label the alignment with the roadway name.
    - Station the alignment at 100ft stations and include tick marks at 50ft stations.
  - Stations and offsets at the beginning of wall, end of wall, and points critical to horizontal geometry
    - If a unique wall alignment is being employed, provide roadway station equivalencies at each of the critical horizontal geometry points.
    - Measure offsets for walls including a parapet or barrier to the point where the barrier meets finished grade.
    - Measure offsets for other walls to the front face of the wall.

- Turn angles for any bend in the wall
- Curve radii, PC, and PT information for all curves in the wall
- Right of way and easement if those limits are close enough to the foundation, reinforced soil zone, or penetration area of anchors to be of importance to the design or construction of the wall
- Proposed or existing utilities to remain, both buried and overhead, that are located close enough to the structure to affect its construction, loading, or long-term maintenance
- Drainage elements including pipes and structures with structure numbers, pipe sizes, and the intersection angles of pipes/culverts to the wall face
- A representative shoring line indicating the location of probable need

- Elevation view
  - Vertical roadway alignment data
  - Joint locations, identified as expansion or contraction
  - Stations, offsets, and elevations at the horizontal points mentioned above as well as all points of vertical profile transition, wall joints, and other points of critical vertical geometry
    - Provide station, offset, and elevation data at no more than 50 ft spacing.
    - For cut walls, present the top of the cast concrete stem or facing elevations as the top of wall.
    - For fill walls with a barrier or parapet, present the finished grade at the inside face of the barrier or parapet as the top of wall. The top of the barrier or parapet is not the top of wall.
    - Present either the top of footing or top of leveling pad elevations as the bottom of the wall.
  - Existing groundline
  - Labeling and/or illustration of sections along the wall requiring foundation improvement
  - Proposed grade line, including potential slopes at the wall ends for convergence
    - Pay special attention to the top of wall elevations when a wall leads up to a bridge. Shoulder breaks may not be consistent for the full length of the wall due to the absence of a shoulder break in the approach slab and the need to transition to the typical section.
  - Pipes intersecting the plane of the wall, both through and below the actual structure, with diameter, station, and invert elevation labeled
  - Horizontal measurements
    - Measure walls with a barrier or parapet along the point where the barrier intersects the finished grade.
    - Measure other walls along the front face of the wall.
- General notes
- List of applicable Georgia Standards

- Statement of Design Data
- Summary of Quantities
- Section view(s), including dimensions and reinforcement
- Reinforcing schematics of footing and stem panels sufficient to inform a detailed Reinforcement Schedule
- Footing step details including reinforcing
- Bend details for stems and footing including reinforcement layout, lap splicing, and joint locations.
- Pipe opening details including opening dimensions and reinforcing
- Drain details for the relief of water pressure behind the wall
- Drainage details for adequate treatment of surface water behind the wall
- Deflection detail to provide calculated stem deflection for each section height
- Expansion and Contraction Joint details as necessary
- Barrier or Parapet Transition Detail for guardrail connection as necessary
- Reinforcement schedule- Divide reinforcement on the rebar schedule by concrete pour. (group by footing sections between expansion joints and then by that sections associated panels)
- Details associated with any required formliner finish, including a sample of any specialty pattern
- Any other necessary details for the construction of the wall

Additional Required Information for REINFORCED CONCRETE CANTILEVER GRAVITY WALLS

- Plan view
  - Outline of the footing and stem of the wall
- Elevation view
  - Outline of the barriers, parapets, stems, footings, steps, and keys

Additional Required Information for NON-GRAVITY CANTILEVER WALLS (Soldier Pile Walls)

- Plan view
  - Outline of the wall facing and all soldier piles
- Elevation view
  - Outline of barriers, parapets, stems
  - Top of any present Type 7W-S barrier needed to protect the face of the wall and associated Type 6S transition sections needed for guardrail attachment
    - Do not quantify either item in the Section 32 Summary of Quantities as they are roadway items.
  - Soldier pile locations including spacing and distances from critical points of reference

- Illustrations or tables that identify soldier pile sections, embedments, or tip elevations.

32.003 Contractor Designed Wall Plans (contract documents)

Contractor designed walls can include Mechanically Stabilized Earth (MSE), Modular Block, Soil Nail, or Tie Back. For each, the goal of the contract plan sheets, prepared by the Pre-construction designer, is to provide enough details and parameters to allow the contractor to provide a specialty or proprietary design to the Department for review as a shop drawing. These contract plan sheets also provide the necessary summary of quantities for the contractor to base their bid.

Required Information for all Contractor Designed Wall Plans

- Plan view
  - A “North Arrow”
  - Benchmark data
  - Roadway alignment including bearing and curve information
    - Label the alignment with the roadway name.
    - Station the alignment at 100ft stations and include tick marks at 50ft stations.
  - Turn angles for any bend in the wall
  - Curve radii, PC, and PT information for all curves in the wall
  - Right of way and easement if those limits are close enough to the foundation, reinforced soil zone, or penetration area of anchors to be of importance to the design or construction of the wall
  - Proposed or existing utilities to remain, both buried and overhead, that are located close enough to the structure to affect its construction, loading, or long-term maintenance
  - Drainage elements including pipes and structures with structure numbers, pipe sizes, and the intersection angles of pipes/culverts to the wall face. All drainage structures within MSE Backfill, or within 5 ft of MSE Backfill shall be precast or cast in place concrete.

- Elevation view
  - Vertical roadway alignment data
  - Existing groundline
  - Labeling and/or illustration of sections along the wall requiring foundation improvement
  - Proposed grade line including potential slopes at the wall ends for convergence
    - Pay special attention to the top of wall elevations when a wall leads up to a bridge. Shoulder breaks may not be consistent for the full length of the wall due to the absence of a shoulder break in the approach slab and the need to transition to the typical section.
  - Pipes intersecting the plane of the wall, both through and below the actual structure, with diameter, station, and invert elevation labeled
  - Horizontal measurements
    - Measure walls with a barrier or parapet along the point where the barrier intersects the finished grade.
    - Measure other walls along the front face of the wall.
    - Wall dimensions may be presented at the top or bottom of the elevation view. Include the overall total wall length. If the envelope takes up more than one sheet, show the overall length on all sheets with arrows indicating that the dimension extends beyond the match line(s).

- Top of any present Type 7W-S barrier needed to protect the face of the wall and associated Type 6S transition sections needed for guardrail attachment
  - Do not quantify either item in the Section 32 Summary of Quantities as they are roadway items.

- General notes
- List of applicable Georgia Standards
- Statement of Design Data
- Summary of Quantities
- Typical Section view(s)
- Drainage details for adequate treatment of surface water behind the wall
- Details associated with any required formliner finish, including a sample of any specialty pattern
- Any other necessary details for the construction of the wall

Additional Required Information for MSE WALLS or MODULAR BLOCK WALLS

- Plan view
  - Stations and offsets at the beginning of wall, end of wall, and points critical to horizontal geometry
    - If a unique wall alignment is being employed, provide roadway station equivalencies at each of the critical horizontal geometry points.
    - Measure offsets for walls including a parapet or barrier to the point where the barrier meets finished grade.
    - Measure offsets for other walls to the front face of the wall.
    - When a wall includes both sections with a barrier type coping and sections without, the offset reference point will be different. Explain this difference using noting and symbols. Include a note explaining assumptions in the coping dimensions.
      (Example: The Inside face of parapet is assumed to be 8 inches inside of the Front Face of Wall. Front face of wall location may be adjusted to fit the wall system to be constructed. Maintain the offset to inside face of parapet as shown.)
- Elevation view
  - Outline of Traffic Barrier H, Coping A, or Coping B. Label transitions for guardrail attachment as necessary for Traffic Barrier H and Coping B.
  - Stations, offsets, and elevations at the horizontal points mentioned above as well as all points of vertical profile transition, wall slip joints, and other points of critical vertical geometry
    - Provide station, offset, and elevation data at no more than 50 ft spacing.
    - For Walls with Coping A at the top, present the elevations at the top of Coping A.
    - For fill walls with Traffic Barrier H or Coping B at the top, present the finished grade at the inside face of the barrier or parapet as the top of wall. The top of the barrier or parapet is not the top of wall.
    - Present the “maximum top of leveling pad elevation” at the bottom of the wall. See Section 627 of the Georgia Standard Specifications and the GDOT Bridge and Structures Design Manual for more guidance. Step locations at or below the maximum top of leveling pad elevation will be determined at the discretion of the wall system provider.

        - Whenever possible, provide elevation data in matched sets at the top and bottom of the wall, allowing for easier calculation of wall height and quantities.
    - Required slip joints

Additional Required Information for SOIL NAIL WALLS or TIE BACK WALLS

- Plan view
    - Stations and offsets at the beginning of wall, end of wall, and points critical to horizontal geometry
        - If a unique wall alignment is being employed, provide roadway station equivalencies at each of the critical horizontal geometry points.
        - Measure offsets for walls including a parapet or barrier to the point where the barrier meets finished grade.
        - Measure offsets for other walls to the front face of the wall.
    - Outline of the wall facing
- Elevation view
    - Stations, offsets, and elevations at the horizontal points mentioned above as well as all points of vertical profile transition and other points of critical vertical geometry
        - Provide station, offset, and elevation data at no more than 50 ft spacing.
        - Present the top of the cast concrete facing as the top of a cut wall.
        - For walls with traffic barrier or parapet at the top, present the finished grade at the inside face of the barrier or parapet as the top of wall. The top of the barrier or parapet is not the top of wall.
        - Present the “maximum top of leveling pad elevation” at the bottom of the wall.

Section 33 Noise Barrier Envelopes

33.001 General

This section of the plans establishes the top and bottom of the noise barrier wall for the Contractor to build.

33.002 Required Information

- Existing ground line.
- Label noise barrier wall number(s) on profile drawing
- Show and label top and bottom elevations of side barriers and/or gravity walls required for noise barrier wall.
- Station, Offset, Top and Bottom Elevations labeled at the following locations:
    - Begin and end wall
    - Bend in horizontal or vertical alignment of wall
    - Every 50-ft minimum if not covered by the conditions above

33.003 Drawing Layout

Noise barrier envelopes will be shown on the standard profile drawing.

Section 34 Noise Barrier Plans

34.001 General

Plan view information related to noise barriers should be shown on the Section 13 roadway plan sheets where practical. For stand-alone noise barrier projects or for projects where including noise barrier information on the Section 13 plans would overly clutter the plan sheets, Section 34 may be used for this information.

Section 35 Bridge Plans

35.001 General

35.002 Required Information

35.003 Drawing Layout

35.004 Miscellaneous

Section 36 Bridge Culvert Plans

36.001 General

36.002 Required Information

36.003 Drawing Layout

Section 37 Miscellaneous Structural Plans (Buildings, tollbooths, ice canopies, etc.)

37.001 General

37.002 Required Information

37.003 Drawing Layout

Section 38 Special Construction Details

38.001 General

Special Construction Details are used to clarify project specific construction elements within a set of plans. Special Construction Details should be developed for specific construction items that are not included in the Department's Standards or Construction Details, including Post-Construction Stormwater BMPs (grading plans and BMP details).

38.002 Required Information

- The special construction details should be listed on the index by a descriptive title of the special construction detail and creation date or latest revision date.
- Include all dimensions, views, and clearances necessary to clearly depict the construction element.
- Sole Source components should not be a part of the detail. Do not specify a manufacturer's items; list only the general construction item.
- For each item, any general notes and any specific construction method are required. General notes should be referenced on the right side of the plan drawing.

38.003 Drawing Layout

Label the drawing "Special Construction Detail", including a descriptive title.

Section 39 Special Design Box Culverts

39.001 General

39.002 Required Information

39.003 Drawing Layout

Section 40 Construction Details

40.001 General

The GDOT Construction Standards and Details (CS&D) Book for the calendar year in which the project will let should be noted on the construction plans cover sheet per Section 01.002 with the standard language provided in that section.

Only those construction details which were revised after the publication of the annual CS&D Book are to be included. Inclusion of revised details should be per the letting mentioned in the implementation memo. Revised details should be included regardless of use of the detail in the project. The revised details included in the plan set should be listed on the index by current construction detail number, title of the construction detail, and latest revision date of the construction detail.

The current CS&D Books, latest revised details, and implementation memos can be obtained from the Georgia Department of Transportation R.O.A.D.S. web site. PDF images can be downloaded so they can be included as part of the final construction plans. The web site contains the English details.

Section 41 Georgia Standards

41.001 General

The GDOT Construction Standards and Details (CS&D) Book for the calendar year in which the project will let should be noted on the construction plans cover sheet per Section 01.002 with the standard language provided in that section.

Only those construction standards which were revised after the publication of the annual CS&D Book are to be included. Inclusion of revised standards should be per the letting mentioned in the implementation memo. Revised details should be included regardless of use of the detail in the project. The revised standards included in the plan set should be listed on the index by current construction standard number, title of the construction standard, and latest revision date of the construction standard.

The current CS&D Books, latest revised standards, and implementation memos can be obtained from the Georgia Department of Transportation R.O.A.D.S. web site. PDF images can be downloaded so they can be included as part of the final construction plans. The web site contains the English details..

Section 44 Utility Relocation Plans – Water/Sewer, Electric, Gas, Communications, Cable

44.001 General

Most utility relocation/adjustment work required to accommodate a GDOT project is performed by the utility owners or their contractor. In some cases however, it is advantageous to the GDOT and the utility owner to include the utility work as part of the roadway contract. The highway contractor is required to construct or relocate the specified utilities in accordance with the plans and special provisions developed by the GDOT and/or the utility owner and incorporate this work as part of the

bid package. To this end, more than one utility plan set may be included. For example, the contract plans may include separate plans for a gas utility and a water utility.

It is also possible for the utilities to combine their individual facilities into one plan set and supply them to the GDOT for inclusion into the contract plans. This occurs when the utility relocations/adjustments are not extensive and can be clearly presented together (i.e. combined Water and Gas relocation plans) or on the Utility Plan Drawings referenced in Section 24 of this document. The Project Manager should consult with the District Utilities Engineer to determine the requirements in these cases. When separate utility relocation plans are required; such plans shall be prepared in the same basic format as the Utility Plan drawings referenced in Section 24.

Drawing numbers for the drawings shall start at 44-0001 and continue sequentially to the end of all utility relocation plan drawings, regardless of the type of relocation plans. For example, the Water/Sewer Relocation Plans may be 44-0001 through 44-0010, the Gas Relocation Plans may be 44-0011 through 44-0023, and the Cable Relocation Plans may be 44-0024 through 44-0034.

44.002 Required Information for Utility Plan Drawings

The following requirements are applicable to all Utility Relocation Plan sections.

- All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas. Areas requiring no entry by any personnel shall be delineated with Orange Barrier Fence with a Solid Circle Line Code.

The Utility Relocation Plans should include the following drawings:

- Separate stand-alone (with no drawing number) Summary of Quantity drawings (to be placed with the Roadway Summary of Quantities)
- Proposed Utility Legend & Notes
- Utility Relocation Plan Drawings
- Utility Profile/Cross Sections (as provided)
- Utility Detail Drawings (as provided)

The following describes the contents for each drawing type:

Summary of Quantities Drawings

- The Summary of Quantities drawings shall be prepared in standard GDOT format and should show any quantities tabulated for type, size, quantity, etc. Standard notes referring to item numbers shall also be shown on this drawing or on plan drawings.

Utility Legend & Notes

- Utilities Legend specific to the proposed utility construction presented on the respective Utility Relocation Plan set.
- Miscellaneous utility notes and specifications required for the construction and coordination of the proposed utility facility relocation with roadway and other utility construction.
- The disposition and final ownership of any utility infrastructure that is to be removed by the contractor and salvaged shall be identified in the plans. The address of the Utility/Agency Owner receiving the salvaged utility infrastructure shall be included in the notes.

- SUE Quality Level A Test Hole Data Table specific to the proposed utility construction presented on the respective Utility Relocation Plan set.

Utility Relocation Plan Drawings

Utility Relocation Plan Drawings shall show full construction details for all utilities to be relocated or constructed by the contractor. All underground utilities shall be shown in the plan view. All above ground utilities shall be shown in the plan view (inclusive of underground connections). When the construction clearances are restricted, such as when a power line is above and near a sanitary or water facility, either the facility (overhead lines) must be identified and shown in profile, or the minimum available vertical clearances, along with the type facility, shall be stated on the plans. Applicable project information shall be shown similar to that described in Section 24 of this document. The scale used should be the same as that used for the roadway plan-profile drawings.

The following items should be shown as screened back:

- Construction centerline with project stations and begin/end project limits
- Curb and gutter or edge of pavement (proposed and existing)
- Road, street, and railroad names
- Existing and Required Right of Way limits
- Property lines
- Environmentally sensitive area limits
- Property owners
- All proposed and existing easements (including existing and proposed utility easements)
- Proposed and existing drainage structures/features (excluding drainage text)
- Limits of existing and proposed sediment basins & detention/retention ponds
- Proposed construction limits (C/F lines)
- Topographical planimetrics (i.e. existing buildings / structures, existing tree/vegetation limits, lakes, rivers etc.)
- All proposed bridges including bent locations, culverts, walls, signs (excluding standard signs), and other structures. All proposed and existing strain poles and service points, span wires, control cabinets and appurtenances, and mast arms (signal, ATMS, sign, lighting)
- Railroad mainline and spur tracks with their respective property/easement limits

The following should only be screened back when not associated with the subject Utility Relocation Plan set:

- SUE investigation Limit of study (if applicable)
- Location and labeling of existing gas valves and shut-offs
- Location and labeling of existing water valves and shut-offs
- Existing overhead and underground utilities found within the project's limits (including size and material if known).
- Sanitary sewer manhole top, and invert elevations. Sanitary Sewer pipe flow directions
- All proposed, temporary, and relocated utility facilities with annotation describing nature of work.
- Disposition of all existing utilities (i.e.: removed, adjusted, Abandoned, Remain, Relocated, etc.)

Utility Profiles / Cross-Sections When deemed necessary to provide enough detail for construction, all underground utilities shall also be shown in a profile view. The Project Manager/plan preparer should consult with the District Utilities Engineer to determine the requirements in these cases.

- Proposed utility facility profiles, cross-sections and staging cross-sections (as required).
- Proposed utility plan/profiles (as required).

Miscellaneous Utility Details

- Any miscellaneous utility details
- Quality Level A Test hole form drawings (if applicable)

44.003 Drawing Layout

44.004 Miscellaneous

Section 50-56 Erosion, Sedimentation and Pollution Control Plans

I. GENERAL

The Erosion Sedimentation and Pollution Control Plan (ESPCP) contain the recommended types and general locations for permanent and temporary erosion control items. An ESPCP is required for every project regardless of the size of the disturbed area. For all GDOT projects, plans must be presented in accordance with General NPDES Permit No. GAR 100002-Infrastructure as reflected in the following sections.

Projects that disturb 1 acre or more require a complete ESPCP, the contents of which are outlined in this chapter.

Projects that disturb less than 1 acre require only an abbreviated ESPCP. An abbreviated ESPCP contains:

- Erosion Control Legend Uniform Code Drawing
- BMP Location Details
- Applicable standards and construction details for BMP's specified in the Plan.

Section 50 Erosion, Sedimentation and Pollution Control - Cover Drawing

50.001 General

The ESPCP cover drawing is required for projects that disturb 1 acre or more.

50.002 Required Information

The ESPCP cover drawing includes the following:

- Project name
- Project number

- Project identification number (P.I. No.)
- State and Federal route number(s)
- County name and number
- Project location map oriented with north at the top of drawing (The GAR 100002 Permit calls this the vicinity map.)
- The primary permittee, namely, GDOT, contact information: One Georgia Center, 600 West Peachtree Street, Atlanta, GA, 30308, 404-631-1990, ESPCP@dot.ga.gov
- The 24-hour contact, namely, the contractor, information: name, address, telephone number, and email address (Since this information is unknown before awarding the project contract, place a box containing labeled lines on which to hand write the foregoing information.)
- Beginning and ending project stations flagged and labeled on the centerline (For new location projects, the mid-point of the project will also be flagged.)
- Beginning and ending bridge stations flagged and labeled on the centerline
- Latitude and longitude of project beginning and ending points in decimal degrees, +/- 0.00005 (For new location projects, the latitude and longitude of the mid-point of the project will also be included.)
- All stream segments that are within the limits of the cover drawing
- Equalities if applicable
- Stream names
- Road names
- Graphic scale
- North arrow
- State lines, county lines, city limits, land lot lines where applicable
- Revision block with five columns to provide the date, drawing number(s), signature, GSWCC level II certification number, and revision-requested-by information for each construction revision to the ESPCP
- Plans completed date (the date submitted to the Contracts Office)
- Designation for “Plans prepared by:” (Design Engineer, Name only or Consultant Name and Professional Engineer stamp/signature and GSWCC Level II certification number for Final Plans)
- Designation for “Recommended for submission by:” (Design Engineer Group Manager or District Design Engineer (Design Engineer of Record) – Name only) OMIT FOR CONSULTANT DESIGN PLANS
- Designation for “Recommended for acceptance by:” (State Roadway Design Engineer, District Engineer, State Program Delivery Engineer, State Innovative Delivery Engineer – Name only)
- GDOT Chief Engineer’s signature, Professional Engineer stamp, and GSWCC Level II certification number
- Design Professional’s signature, P.E. stamp (or R.L.S., P.G., R.L.A., R.A., R.F., C.P.E.S.C. stamp), and GSWCC Level II certification number in addition to the GDOT Chief Engineer’s signature, stamp, and GSWCC Level II number when the plans are prepared by a consultant
- All the certification statements required by the GAR 100002 Permit

Additional items may also be shown to delineate other important elements. These items may include, but are not limited to, limits of construction labels, existing property lines, parcel numbers, required right-of-way, median locations, and sidewalks.

50.003 Drawing Layout

Section 51 Erosion, Sedimentation and Pollution Control - General Notes Drawing

51.001 General

Required for projects that disturb 1 acre or more.

51.002 Required Information:

Utilize the standard plan drawing cells with all standard General Notes as described on the Department's ESPCP Notes Template. Add additional project specific information as necessary and add other information as required by the applicable NPDES permit.

51.003 Drawing Layout

Multiple drawings may be necessary.

Section 52 Erosion, Sedimentation and Pollution Control - Legend and Uniform Code Drawing

52.001 General

Required for all projects. These drawings contain the standard legend for erosion and sedimentation measures and practices. All Measures are compatible with and meet or exceed the requirements set forth in the Manual for Erosion and Sediment Control in Georgia. Use GDOT standard Erosion Control Legend drawings. Add "codes" for any additional special design BMPs that are required to the erosion control legend drawings. **Do not put legends on individual BMP drawings.**

52.002 Required Information

All information needed to meet the requirements of legends for GAR 100002 shall be included.

52.003 Drawing Layout

Link to an example Erosion Control Legend and Uniform Code Drawing

(Under development, the drawings can be downloaded from Construction Details Website)

Section 53 Erosion, Sedimentation and Pollution Control - Drainage Area Map

53.001 General

This map is required for projects that disturb one acre or more. This map is similar to the drainage area map (Section 21) but is prepared specifically to meet the requirements of the GAR 100002

NPDES Permit. On this map, the drainage areas are delineated with respect to the project stormwater outfalls (as defined in Part I.B of the GAR 100002 NPDES Permit); while on the map of Section 21, the drainage areas are delineated with respect to the stormwater infrastructure inlets. For each outfall, tabulate a summary (or otherwise summarize) of the hydrologic and hydraulic data specified below on the map or on a following drawing as drawing space permits. All area calculations shall be in acres.

53.002 Required Information

- Show the total numerical value of the disturbed area of the project in acres.
- Show the total numerical value of the project size (this is the sum of the disturbed and undisturbed areas within the project limits) in acres.
- Identify all stream state waters on or within 200 ft. of the project site.
- Identify any ponds or lakes within 500 ft. of the project site.
- Show and label receiving waters and show the direction of flow of each.
- Show applicable roadway names and centerlines.
- Show the beginning and ending project limits.
- Show the beginning and ending of bridges.
- Show the boundaries and drainage patterns of individual outfall drainage basins. Include contour lines, index contour labels, and flow arrows. Use insets to show areas that are of such magnitude that the boundaries cannot be plotted at the selected scale.
- Show and note by structure number, all existing and proposed drainage structures, pipes, outlet structures, storm drain outlet protection, and retention/detention pond locations.
- All environmentally sensitive areas (ESA), if practicable scale-wise, including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas.
- For outfalls show:
    - The station and offset of each
    - The outfall designation
    - The pre- and postconstruction runoff coefficients
    - The 50- and 100-year pre- and postconstruction peak flows
    - The 50- and 100-year pre- and postconstruction velocities corresponding to the peak flows
    - The total drainage acreage contributing to each
    - The total disturbed acreage of each drainage basin
    - The average outfall channel slopes
- Sheet flow area
    - The total drainage acreage contributing to each
    - The total disturbed acreage of each drainage basin
    - Sheet flow area designation

Detailed Drainage Area Map — As needed, prepare a supplemental drainage area map to a larger scale to show the detail of small areas needed to calculate the peak outfall flows. Make a cross reference note to indicate the plan drawing that shows the overall drainage area encompassing the smaller area.

53.003 Drawing Layout

Prepare the drainage area map on standard plan drawings such that the entire area is shown and all details are clear and legible. Choose the largest scale practicable, preferably 200-scale or larger, and use as many plan drawings as necessary.

Section 54 Erosion, Sedimentation and Pollution Control - Construction Best Management Practices (BMP) Location Details

54.001 General

These drawings show the locations of all BMPs installed during the construction of the project. A construction project may consist of one, two, three, or more stages.

54.002 Required Information

The ESPCP plans shall be designed and shown to accommodate all stages of construction. Staging will be designated numerically. All ESPCPs include an initial phase that shows the installation of perimeter BMPs (sediment basins, silt fence, etc.) prior to the clearing and grubbing and any major earthwork or major construction. BMPs should be shown in bold when initially installed; and for subsequent stages and phases, they should be shown faded if still in use or not shown if removed. Similarly, staged construction activities should be shown in bold (or with optional hatching) for the corresponding stage of construction and for subsequent stages shown faded (or without hatching). The designer shall ensure that the BMPs and construction activities are shown in a way that they are legible and that plan drawings are not cluttered. The ESPCP plans shall address the initial, intermediate, and final phases for each stage of construction. The drawings should be titled “INITIAL PHASE”, “STAGE 1” “STAGE 2”, etc. and “FINAL PHASE”.

Include the following minimum information on the BMP location detail drawings:

- Construction centerline with stationing
- All edges of pavement
- Construction limits
- Existing and required right of way and all easements
- Location of all drainage structures
- Streams, open water, wetlands, and names of such (if any)
- Stream Buffers
- Bio-impaired stream labels
- Surface water drainage patterns
- All topographical information and existing contours Stage 1, Phase 1 (However, for stages and phases subsequent to Stage 1, Phase 1, no contours are to be shown within the cut and fill areas.)
- All BMPs constructed for each stage of construction in bold format with the proper code designated by the Department's Erosion Control Legend and Uniform Code drawings. These items include, but are not limited to:
  - Perimeter Control
  - Silt control gates Types 1, 2, and 3 will be shown by their code
  - All temporary sediment basins

- Construction limits
- Principal spillway and outlet pipe
- Top and bottom elevations of dam
- Emergency spillway
- Sediment basin and skimmer BMP symbols
- Baffles (if necessary)

  - Riprap slope protection by its code
  - Any other form of slope protection with its code
  - All down-drain structures temporary or permanent by their code
  - Silt retention barrier as recommended by the soil lab and/or approved by USACE (Army Corps of Engineers)
  - Storm drain outlet protection with BMP symbol
  - Any other item that may be required for proper erosion control or that may be directed by another agency
  - Note construction erosion control BMPs to be converted to post-construction stormwater BMPs with reference to BMP detail sheet(s) (i.e.: sediment basin to stormwater pond)
- Limits of disturbance for each stage.
- Any utility relocations that the contractor is performing during the respective stage. (Ensure that BMPs included are adequate for the utility work that is proposed within the GDOT ROW or easements.)
- All waters of the state that are within 200 ft. of the project limits and that are within the area covered by the drawings
- **All environmentally sensitive areas (ESA) including, but not limited to, stream buffers, wetlands, historical properties, threatened or endangered habitats, archaeological resources, cultural resources, hazardous materials sites, and environmental justice communities delineated with the inverted saw-toothed line code**
  - **NOTE: For streams, show linework and labels for only the tops-of-banks and stream flow line (i.e., deepest part of channel). Do not show linework or labels indicating the location of water's edge itself at the time of survey (e.g. edge of water, edge of stream, etc.)**

54.003 Drawing Layout

- Set up drawings with the same scale and matchlines as the construction plans.

Section 55 Erosion, Sedimentation and Pollution Control - Watershed Map and Site Sampling Location

55.001 General

This map is required for projects that disturb 1 acre or more. This map shows the delineated surface water drainage area(s) of the receiving water(s) and sampling site location; hence the map name. Normally, a USGS topographic map serves as the base map for the superposition of the project footprint; but other maps may be used provided that scale is equal to or greater than that of a 7.5 minute series USGS Topographic Map (1” = 2000’). The map shows the entire project area, the location of all perennial and intermittent streams and other waters of the state that receive

stormwater from the site, and the receiving water or outfall sampling location for each representative sampling point. When the project length is longer than can be shown on one drawing, multiple drawings with match lines must be used. However, when the watershed is so large that all of it cannot be shown practicably, the use of a note stating the upstream watershed area not shown on the map is recommended.

55.002 Required Information

- North arrow
- Scale bar to a minimum scale of 1" = 2000'
- Highlighted project location
- Beginning and ending of the project
- Delineate receiving waters within the drawing limits
- Show the total numerical value of each drainage area for receiving waters in square miles
- Flow arrows and topographic contours
- Show the total numerical value of the project size (this is the sum of the disturbed and undisturbed areas within the project limits) in acres.
- All waters of the state within the map area
- Flag Bio F and Bio M impaired segments streams within Category 4a, 4b, or 5 within 1 linear mile ("as the crow flies") downstream of the contributing outfall(s)
- Label watershed portions that are within 1 mile of Bio F and Bio M streams.
- Bodies of water or ponds downstream of the project
- Project outfall and/or receiving-water sampling locations
- Highlighted outfall drainage paths to the confluence point with the nearest blue line stream if applicable
- **All environmentally sensitive areas (ESAs), if practicable scale-wise, including, but not limited to, stream buffers, wetland boundaries, historical boundaries, T&E habitats, archaeological resources, hazardous materials, and environmental justice areas shall be denoted on <u>all</u> plan drawings (roadway plan drawings, utility plan drawings, erosion control plan drawings, etc.) with an inverted saw-toothed line code**

55.003 Drawing Layout

Section 56 Construction Standards and Details (For Erosion Control Items Only)

56.001 General

Required for all projects. These drawings contain standard erosion control details required for the construction of the BMPs described within the plan.

56.002 Required Information

All information to fill the requirements of construction details for GAR 100002 shall be included. The Standards and Construction Details for all Uniform Code items that are available on the

Department's website meet or exceed all requirements. Special Details, when necessary, must meet or exceed the criteria in The Manual for Erosion and Sediment Control in Georgia.

Several details may require the designer to fill in addition site specific information, such as the Sediment Basin Detail.

56.003 Drawing Layout

Link to an example Construction Detail drawing

(Under Development, the standard drawings can be downloaded from Construction Details Website)

Chapter 3. Right-Of-Way Section Presentation - Contents

Chapter 3. Right-of-Way Section Presentation

Right of Way plans are necessary for the acquisition of the required right of way and easements for projects. Proper representation of the right of way and easements are required to ensure their proper legal interpretation for property acquisition and deed description as well as limits of construction activities and potential environmental and property concerns. Please refer to the Right of Way Plans and Engineering Office for further direction. All applicable items are required for a Right of Way Plan approval. LCI- Enhancement information is located below.

Section 60 Right Of Way Plans

60.001 Required Information – General Projects

Cover Drawing

- Show Project Number and County at Bottom Left-Hand corner. Include any phase or section number.
- Project location map oriented at the top of drawing. (Flag project site and show North Arrow)
- Right of Way P.I. Number (Program Item Number)
- Limited Access Project Note. (If Applicable – Full, Partial, Permitted Access Control)
- **A signature line for approval by the Right of Way Administrator and date as shown in Example A.**
- Land Lot Numbers and Lines.
- Land District Numbers and Lines.
- G.M.D. Numbers and Lines. (If Applicable)
- North Arrow.
- Stations on primary centerline used throughout the project.
- Street Names – all existing locations including Mainline, State Route and U.S. Numbers.
- Limits of Right of Way Acquisition labeled on cross streets (where station/offset information is taken from cross street centerline).
- Back Property Lines. (Include Property map if necessary). Property Maps show the project at a scale between the size of the cover and the plan drawing. No acquisition specifics should be shown. This is used to merely show more detail than the cover but much less than the plan drawings. On Limited Access Projects, the access to parcel remainders should be shown.
- Existing and Required Right of Way. (Labeled and shown)
- Begin and End Right of Way Acquisition. Mile log designation – to the nearest tenth – if available. Project should show one Begin and one End acquisition; with beginning right of way acquisition extending from left to right without regard to the north arrow direction.
- Use Exceptions when applicable. **Stationing should be continuous on mainline without regard to exceptions (no breaks in stationing or restart of stationing should occur when exceptions are used).**
- Gross length of right of way project. (Project length from the Beginning of Right of Way Acquisition to the End of Right of Way Acquisition). Net length of Right of Way Project. (Project length less any exceptions)

- Parcel Numbers. **(No property owners name should be shown on cover.)**
- Completion date of plans. Do not change completion date of plans with each submission for review and approval. Use original completion date for all subsequent submittals.
- Designer name should be shown. (Signature no longer required)
- County Line, with counties clearly labeled. (If Applicable)
- Limit-of-Access labeled and shown required and existing with appropriate symbols.
- Dual Project Plans, Clearly Identify each project.
- Scale of the cover drawing. Scale is also Applicable/Appropriate for Metric Plans.
- Revision block. All revision dates must be included on number one (1) cover drawing. **Revisions listed on the cover should include the date and drawings revised not what was revised, this is listed on the revised drawing itself.** To accommodate numerous revisions a drawing numbered 1A can be added to the plans **but only after the revision blocks on the cover have been filled. Drawing 1A should not be included in a set of plans submitted for approval.**
- City Limits shown where applicable.
- Conventional Signs Legend **as shown in Example B. DO NOT DEVIATE FROM OR ADD TO THE LEGEND.**
- Cover drawing **must** include Location and Design approval date **to be considered for approval.**
- **Text should be no smaller than 0.15 times the scale of drawing.**
- Functional Classification

Right of Way Plan Drawings – General

- Land Lot Numbers and Lines. (Shown and Labeled)
- Land District Numbers and Lines. (Shown and Labeled)
- G.M.D. Numbers and Lines. (Shown and Labeled)
- North Arrow.
- Survey Centerline with Bearings. (Labeled)
- Construction Centerline with Bearing. (Labeled if Applicable)
- Street Names – all existing locations including Mainline, State Route and U.S. Numbers.
- Construction Limits. (Include symbols for cut “C” or fill “F”). Symbols should read right side up on each side of centerline for all roads and side roads. (See Example C for Standard Right of Way Legend.)
- Drawings may overlap. (For clarity of parcels, however, duplicate information should be kept to a minimum). Label each Match Line with “See Drawings _____” for clarity purposes.
- Existing Right of Way and Existing Limit-of-Access labeled. (See Example C for Standard Right of Way Legend.) Existing right of way must be shown on County Roads. If existing right of way cannot be determined, please show area maintained as existing right of way.
- All easements, except driveway easement and easement to construct and remove detour, should be shown as permanent unless a letter is provided to this office stating otherwise. Easements are no longer labeled as permanent and/or temporary.
- Required Right of Way and Required Limit-of-Access labeled. (See Example C for standard Right of Way Legend.)

- Curve Data is to be shown for each curve shown on plan drawing even if the curve data has been shown on another drawing. Curve data is to be shown on each drawing on which the curve is shown: arc length, chord length, chord bearing, radius
- (BLA) and (ELA) at access break points. Provide station and offset.
- Dual project plans, clearly shows begin/end each project.
- Begin and End Right of Way Acquisition. A leader should be pointed to the corresponding station on the centerline. The beginning point should be the first point, easement or required right of way, which occurs on the mainline. The end should be the very last point, easement or required right of way, which occurs on the mainline.
- Title Block. (Lower right-hand corner. All drawings need to be numbered as "Drawing ___ of ___".)
- Standard Right of Way Legend for Limit-of-Access, Required Right of Way, Property Lines (with property symbol), Construction limits, Easements (Driveway, Construction and Maintenance of Slopes, and Construction of Slopes), Beginning of Limit-of-Access, and End of Limit-of-Access. Complete Standard Right of Way Legend Required on ALL Plans. Do not deviate from or add to Standard Right of Way Legend by Using Additional Symbols. Line style for Historical Boundary should be added above title block on the drawings on which the Historical Boundary appears. (See Example C for Standard Right of Way Legend.) DO NOT DEVIATE FROM OR ADD TO THE LEGEND.
- Angles and Stations where centerline crosses streets. **Angles should be given in the DD°MM'SS" format. This information needs to be shown for all side roads even if station/offsets are not taken from side roads.**
- Edge of pavement (existing and proposed) on mainline, cross roads and drives.
- Limits of Rights of Way Acquisition labeled on cross streets. (Where station/offset information is taken from cross street centerline).
- Equality Stations. (If any)
- Major drainage such as culverts, channel changes; particularly all outfalls that affect right of way and/or require easements.
- Post-Construction Stormwater BMPs Outline (footprint)
- Driveways, Tie-ins and Cross Streets.
- Dual County Projects – Show county pertaining to individual drawing in the title block. Flag County line station on centerline.
- Drawings must have revision block.
- The scale of the Right of Way plans should be shown on each plan drawing.
- **Text should be read horizontal to the orientation of the plan drawing, reading from left to right. When text needs to be vertical, it should be placed on the plan drawing parallel to the right edge of the drawing, reading from the bottom of the drawing to the top of the drawing.**
- City Limits should be shown on all projects.
- Coordinates are required at two points on the centerline for each plan drawing. These points should be referenced points such as PC's, PT's, Side Street centerline intersections or railroad intersections. (If reference points are not available, even stations should be used.)
- Right of Way, Temporary and/or Permanent Easement from railroads should be referenced from both the centerline and to the nearest railroad milepost. State Plane Coordinates are

required for all points shown in the Data Table. The "Point of Beginning" must be identified and indicate a distance to the nearest railroad mile post and the direction of increasing railroad mile post are to be shown. See Policy & Procedures 6865-9 for further information and guidance.

- Locating the railroad milepost applies to all areas of right of way and easement which are not contiguous.
- Do not shade proposed or existing pavement; do not shade existing pavement to be obliterated. **No shading should be used. Also no concrete or brick pattern hatching should be used.**
- **Text should be no smaller than 0.15" on 24 x 36 plans and 0.075" on 11 x 17 plans.**
- **Construction information not pertaining to the acquisition of Right of Way or Easement (e.g.: NC, RC, Standards, etc…) should NOT be shown.**

Individual Property (Parcels)

- State Plane Coordinates with full Station and Offsets at all points. **(Point numbers and data descriptions can be used instead.)**
- Existing and required right of way points, include P.C. and P.T.
- On all lines within the required right of way (unless data table is provided), show bearings and distances, arcs, and radius on all curved lines. ON CURVED LINE, ALSO INCLUDE CHORD LENGTH AND CHORD BEARING. EXCEPTION: Bearings not required on existing right of way.
- Area for required Right of Way. (Square feet and acres) Acres should be computed to three decimal places; Square Feet to two decimal places.
- Remainder(s). Parcels with remainders on each side of the project or cross street on the project should show separate areas for each remainder. They should be listed as Remainder Left (RL) and Remainder Right (RR). Areas of less than an acre should be shown as 0._ _ +/-acre, 1 – 10 acres _._ and over 10 acres to the nearest acre plus or minus.
- Parcels with easement acquisition only (except driveway easement) should give a remainder or total lot size.
- Easement Area in square feet and acres for each type easement. (Including Driveway Easements).
- Easement Labeled. Label all easements other than those solely for "Construction and Maintenance of Slopes," Construction of Slopes," and "Driveway Easement." **DO NOT DEVIATE FROM THE STANDARD LEGEND.** State Plane Coordinates with Full Station and Offset required; hatch construction easements. On railroad parcels, easements should not be closer than 15 feet from the centerline of the tract.
- Driveway easement should have State Plane Coordinates with full station and offsets on all points (points and description can be used instead). Specify in Data Table the total number of driveway easements per parcel.
- Parcel Number on all drawings applicable. Number parcels in a consecutive manner, there should be no break in the numbering of parcels. Survey Chain Numbers are NOT acceptable as Parcel Numbers. Separate parcel numbers for adjoining parcels under the same ownership.
- Property Owner's name on all drawings applicable.

- Buildings labeled. (If Data is available).
- Access Rights only, provide parcel number, owner, linear feet of access rights and parcel remainder (total area).
- Access Breaks. (Also show dimension of Access Breaks and Driveways). ELA and BLA provide station and offset. The distance for Limit-of-Access for each parcel needs to be provided in linear feet (LF). This needs to be shown as a point to point distance as well as a total distance for each parcel.
- Show paving improvements within required right of way.
- Show signs, gas pumps islands, pump tanks, permanent light fixtures, septic tanks, sewage field line locations. Signs within the required rights of way should be located and annotated.
- Reference parcel number to drawing(s) necessary to cover the entire parcel shown in plans.
- Parcels with tracts should have a total shown for the required right of way and/or easement area (for each type easement excluding driveways). When more than one tract of required right of way exists for a parcel, label each tract as Tract 1, Tract 2, etc., on the plan drawing(s) where the tract occurs.
- Parcel descriptions should proceed in a clockwise direction when data tables are used.
- Data table descriptions should specify State Route number or Road name that stations and offsets are located from instead of referencing mainline.
- Wetland mitigation parcels should be designated with a “W” included in parcel number.

60.002 Required Information – Checklist for LCI, CMAQ, and Enhancement Projects

A. Cover Drawing
B. Plan Drawings - General
C. Individual Property (Parcels)

NOTE:

1. **WHEN ENHANCEMENT AND LCI PROJECTS CONSIST OF DRIVEWAY EASEMENTS ONLY, OR IF MINIMAL EASEMENTS ARE BEING ACQUIRED (NO REQUIRED R/W), CONTACT YOUR PROJECT MANAGER FOR POSSIBLE WAIVER OF R/W PLANS. FOR WAIVER ON CMAQ PROJECTS, CONTACT YOUR DISTRICT LOCAL GOVERNMENT COORDINATOR. D.L.G.C. WILL CONTACT G.O. R/W PLAN REVIEW SECTION FOR APPROVAL OF WAIVER. IF SIGNIFICANT R/W IS BEING ACQUIRED ON CMAQ, LCI PROJECTS, PDP GUIDELINES ARE REQUIRED.**
2. **PAPER COPIES WILL BE ACCEPTED ON ALL SUBMISSIONS OF PLANS FOR REVIEW.**

<u>Cover Drawing</u>

- Land Lot Numbers and Lines.
- Land District Numbers and Lines
- North Arrow.
- Street Names – all existing locations including Mainline, State Route and U.S. Numbers.

- Begin and End Right of Way Acquisition.
- Completion date of plans.
- Program Item Number.
- Scale of the cover drawing.
- Revision block. All revision dates must be included on number one (1) cover drawing; also include plan drawing no. revised
- Functional Classification
- **Signature line for the State Right of Way Administrator (See Example A).**
- **Conventional Signs Legend (See Example B).**
- **Scale of text should be no smaller than 0.15 times the scale of the drawing this applies to plan drawings as well.**

Plan Drawing – General

- Land Lot Numbers and Lines.
- Land District Numbers and Lines
- North Arrow.
- Full Stations and offsets
- Construction or Survey Centerline with Bearing.
- Street Names – all existing locations including Mainline, State Route and U.S. Numbers.
- Construction Limits. (Labeled or provide legend, include symbols for cut “C” or fill “F”).
- Existing Right of Way.
- Required Right of Way
- Begin and End Right of Way Acquisition.
- Drawings must have revision block.
- The scale of the R/W plans should be shown on each plan drawing.
- **Standard Right-of-Way Legend (See Example C).**
- **Label Curves and provide curve data for each curve. This information needs to be provided on every drawing that the curve is shown**

Individual Property (Parcels)

- State Plane Coordinates with full Station and Offsets at all points.(Station and Offsets optional if point numbers are present in Data Description)
- Area for required Right of Way. (Square feet and acres)
- Remainder(s) on parcels with required R/W; total lot size on parcels with easements only.
- Easement Labeled /hatch construction easements.
- Easement should have State Plane Coordinates with full station and offsets on all points.
- Easement Area in acres and square feet for each type easement.
- Parcel Number on all drawings applicable.
- Property Owner’s name on all drawings applicable.

60.003 Miscellaneous Right of Way Plan Information

This information provides additional information for inclusion in the final Right of Way plans.

Improvements and Culture

Indicate all pertinent data that may affect the cost of the right of way on the plans. Some of these include:

- Structures
- Roads
- Streams
- Ponds
- City limits
- Orchards
- Fences
- Wells
- Septic tanks
- Sewage field lines
- Springs
- Commercial signs on or near the required right of way
- Various improvements - Show any improvements located outside the right of way that may have an influence on the appraised value to scale on the plan drawing.

Easements

- Label easements for a type of construction that does not require maintenance by the Department as: "Easement for the construction of _____ " with the actual purpose of the easement being specified on the plans. Examples of this type of construction are:
    - Channel changes
    - Driveways
    - Yard drains
    - Tree wells
    - Steps and sidewalks leading into residences or places of business
    - Provide a working area outside of the right of way where construction activities require it
    - Demolition (with any restrictions on access)
- Label easements for a type of construction that will require future maintenance by the Department or others as: "Easement for the construction and maintenance of slopes and _____“ with the actual purpose of the easement being specified on the plans. Examples of this type of construction are:
    - Utilities
    - Drainage

Subdivisions

- Show the remaining property to scale. (In cases where the back of the lots cannot be shown to scale, a break may be shown on the property lines with the distance to the back of the lot shown approximately in feet.)

- Include inserts (if necessary) on the right of way detail plan to adequately show information pertinent to the individual lots.
- The subdivision may be shown on the cover drawing as an outline of the entire subdivision with a notation as to the parcels included.
- Show all roads or streets, including names, on the detail plan or cover drawing.

Railroads

- Label intersections of centerline of railroads and roadway centerline with station and angle
- Width of the right of way
- Name of Railroad
- Each track by symbol and distance
- Direction along the Railroad Right of Way to the nearest mile post number
- Railroad I.D. number
- State Plane Coordinates are required to be shown in the Data Tables for all Right-of-Way, Temporary Easement & Permanent Easement

Intersecting Roads and Existing Streets

- Label intersection of all paved and maintained public roads by station and angle, equate to the station of the survey of the intersected road
- Show the name of the road, state and federal routes, if any, and the right of way width of the road.
- Provide details of private roads and access roads to parking lots and commercial centers on the right of way plans.
- Limit-of-Access
- Reflect partial Limit-of-Access
- Show the access control lines by the conventional Limit-of-Access symbols.
- In areas where the Limit-of-Access line and the right of way lines are in the same location indicate both.
- Indicate the exact beginning and ending of Limit-of-Access at interchanges or crossroads with an arrow and the symbols E L/A or B L/A and the station and offset as appropriate.
- Clearly indicate any intermediate breaks in the Limit-of-Access.
- Roadways with Partial Control of Access may have breaks in the normal limit-of-access. The break in limit-of-access is denoted on the plans with an End (E L/A) and Begin (B L/A) and the station and offset as appropriate.
- Roadways with Permitted Access Control may have an acquired limit-of-access along a specific location of a roadway; for example, within the operational area of an intersection. The boundary of the acquired limit-of-access is denoted on the plans with a Begin (B L/A) and End (E L/A) and the station and offset as appropriate.
- Where the right of way and Limit-of-Access lines coincide, label as "Required Right of Way and Limit-of-Access."

Area Tables

If sufficient space is available, then place the required area tables on the right of way plan drawings. If space is not available on the right of way plan drawings then provide a separate drawing

immediately following the plan drawing containing the area tables for the parcels on the preceding plan drawing. Provide references on the plan drawings that indicate the location of the drawing where the tables can be found and vice versa.

Provide the following for each point needed to compute the area of required right of way or easement:

- Point number
- Offset
- Station
- State Plane Coordinates
- Alignment taken from (State Route number or Road Name)
- Distance and bearing between each point
- A separate area computation will be provided for each tract of required right of way and easement (excluding driveway easement).

Provide the following for all curved lines between points. Exception: Bearings are not required on existing right of way lines.

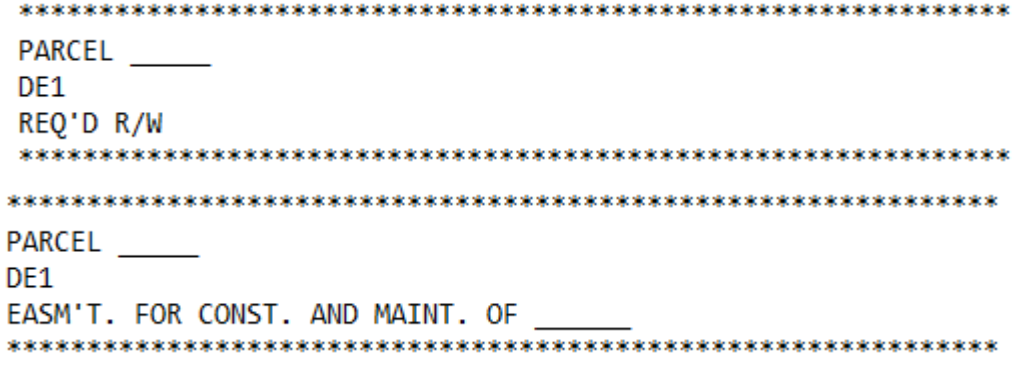
- Arcs
- Radius
- Chord length
- Chord bearing

Indicate the area of required right of way and easements (including driveway easements) in square feet and acres.

For parcels with access rights only (no required right of way or easements), provide parcel number, owner, linear feet of access rights (point to point distance and total distance) and parcel remainder (total area).

Keep all the separate tract area tables for an individual parcel grouped together.

Area table headers must contain the following information: parcel number, acquisition chain number, and acquisition type (or reason for acquisition). Examples of acquisition type include REQ'D R/W, EASEMENT FOR CONTRUCTION OF _____, EASEMENT FOR CONSTRUCTION AND MAINTENANCE OF _____, REQ'D DRWY EASM'T, etc.. The acquisition type listed in the area table is required to match the label of the acquisition on the associated plan sheet. Below are examples of acceptable headers as produced by the latest GDOT ORD workspace.



```
**********************************************************************
PARCEL _____
DE1
EASM'T. FOR CONST. OF _______
**********************************************************************
**********************************************************************
PARCEL _____
DE1
REQ'D DRWY. EASM'T.
**********************************************************************
```

Revision Notes

During the acquisition phase, if a determination is made by the Department that a parcel remainder is an uneconomic remnant, the plans shall be revised as follows:

- Required right of way remains the same.
- Label the property lines of the remnant "Limit of Property Acquisition".
- Identify the remnant area using the subject parcel number with an "R" suffix. If a parcel has more than one remnant then use the "R" suffix with a number. For example: Parcel 35 has two remnants. Therefore, indicate each remnant as 35-R1 and 35-R2.
- The area breakdown of such a parcel could be shown as follows:

	Area Required	Rem.
35	15.375 Ac. (right of way)	29 Ac. (RL)
35-R1	0.662 Ac.	
35-R2	0.300 Ac	
	16.337 Ac. (Total)	

When plan drawing is revised, revision block shall include date and brief description of the revision.

Other Requirements

The following are additional items which the plan preparer shall follow in the preparation of right of way plans:

- Make sure that linework and text on plans are dark enough to show on prints and on a reduced letter size print. Property lines and construction lines should clearly stand out.
- Full station shall be used on all right of way, easement, and property lines rather than the station plus only.
- Do not shade right of way plans.
- Do not begin or end (if possible) projects in the middle of a parcel if there is to be a future project.
  Describe tracts in a clockwise direction to facilitate deed writer's description.

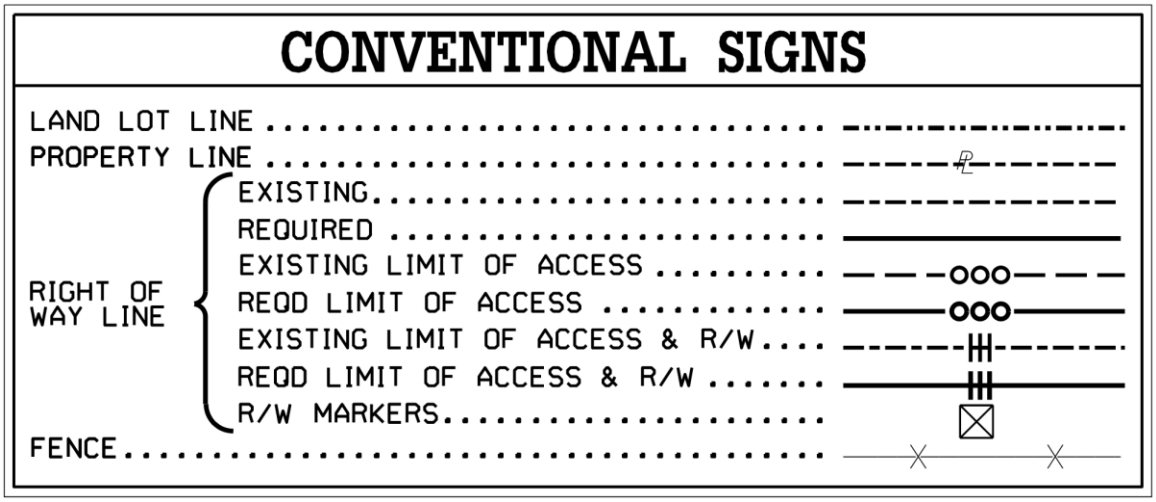
60.004 Standard Legends and Signature Line

Example A:

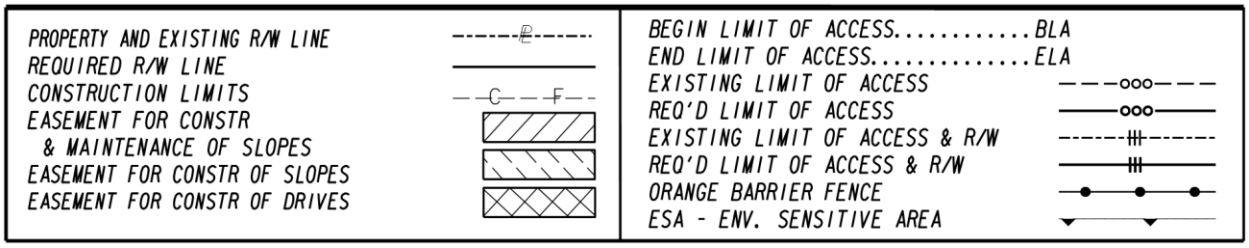
APPROVED: _____

KEVIN YORK, STATE RIGHT OF WAY ADMINISTRATOR DATE

Example B:



Example C:



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Chapter 4. Layouts for Public Meetings - Contents

Chapter 4. Layouts for Public Meetings

4.1 General

Project team members create and use layouts throughout the life of a project to reflect the design and impacts to a variety of audiences - primarily the public and local officials. Layouts should be to scale, accurate, and comprehensible to a non-technical audience with respect to text and graphics. Examples of project layouts include:

- Concept Layout (Record Plan Set):
  - Final version included as an attachment in Concept Report
  - Previous iterations used at the Initial Concept Team Meeting and Concept Team Meeting
  - See PDP Appendices A, A-1, & A-2 for additional guidance on concept report layouts.
- Public Meeting Layouts (Record Plan Set):
  - Public Information Open House (PIOH) Meetings
  - Public Hearing Open House (PHOH) Meetings
  - Detour Meetings (sometimes held in combination with other public meetings)
  - Public Information Meetings (typically held when a project is close to letting)
- Other Stakeholder Meetings:
  - Citizens Advisory Council Meetings
  - Right-of-way Property Owner Information Meetings
  - Misc. Stakeholder Meetings

The project team should consider utilizing GDOT's Visual Engineering Resource Group (VERG) for public meetings or other stakeholder meetings, particularly for unique or complex projects or portions of projects. The VERG can produce renderings and/or videos including traffic simulations videos, 3D animations, and 3D still renderings. Contact VERG by email for requests and additional information: VERG@dot.ga.gov.

4.2 Required Information

The minimum information needed on the layout for each type of public

The information below should be shown on project layouts whenever possible and practical. Some proposed design information may not be available for layouts created in concept phase and early preliminary phase. The project manager and design phase leader should use their judgment to add/remove items to the layout based on project-specific information.

- A Title Block should appear on all layouts that includes:
  - GDOT Logo (no consulting firm logos should be shown)
    - Local government logos may be shown if requested
  - Project Name, P.I. Number, and County
  - Date of Meeting if applicable, otherwise date created/submitted
  - Name of Meeting (e.g., PIOH, Detour Meeting)
  - Graphic Scale
  - North Arrow

- "Preliminary" notation added
- "Layout X of Y" if multiple layouts are used to cover project length

- A Legend should appear on all layouts that includes:
  - Existing Right-of-Way
  - Property Lines
  - Required Right-of-Way and Easements
  - Potential Displacements
  - Travel lanes/arrows
  - Proposed medians (including call outs for changes in median treatments)
  - ESAs (Environmentally Sensitive Areas)
  - Signals/intersection control
  - Other items as needed on layout (e.g. walls, multi-use paths, potential stormwater basins)
  - Avoid creating new symbols that are not consistent with GDOT public meeting layouts
- Typical Sections:
  - Limit the number of Typical Sections shown to a practical minimum, for example:
    - Separate typical sections are not needed to differentiate between:
      - Normal crown and superelevated sections
      - Mill & overlay and full-depth construction
      - Minor differences in lane, shoulder, or median widths
  - Create graphics and callouts on Typical Sections that are clear to a non-technical audience:
    - Graphics and callouts defining pavement layers are not necessary.
    - "PGL & Axis of Rotation" callouts are not necessary.
    - Width dimensions should be limited to major features such as lanes, medians, shoulders, and sidewalks.
- Project Layout
  - Use Aerial Photography Background.
  - Proposed Roadway:
    - Present the proposed roadway so that it is intuitive to a non-technical audience by using shading to represent different components of the roadway and linework to represent pavement markings.
      - Shading should be used for Public Meeting Layouts but is not required for Concept Layouts.
    - Shading should typically be used to represent major elements of the roadway:
      - Gray for asphalt pavement

- White/off-white for concrete such as medians, sidewalks, bridges and approach slabs, or concrete pavement
- Green for grass or landscaped areas, including medians if applicable

- Show line work to reflect pavement markings with correct color and general pattern (e.g., solid vs. skip).

- Additional Information (if available and subject to PM/DPL judgement):
  - Begin Construction and End Construction labels
  - Road Names (US, SR, CS, CR, Local Name)
  - Mainline stationing (useful for reference on corridor-type projects without nearby landmarks or side streets; may be omitted in other cases)
  - State, County, City Lines
  - Existing Property Lines
  - Property Owner Names
  - Existing Right of Way labeled
  - Required Right of Way labeled
    - Features requiring Right of Way or easement should be shown on the layout to help explain why ROW/easement is needed (e.g. sediment basin).
  - Existing and Proposed Easements
  - Potential Displacements
  - Major Utilities with labels (omit if necessary, to reduce clutter)
  - Proposed Paving (i.e., Pavement Limits)
  - Traffic Directional Arrows
  - Proposed Sidewalks, Curbs
  - Proposed Walls
  - Existing/Proposed Bridges
  - Existing/Proposed Culverts
  - Railroads with labels
  - Existing/Proposed Signals
  - Striping (e.g., Proposed Lane Lines, cross-walks, stop bars)
  - Approach rumble strip labels (e.g., approaching a roundabout or stop condition, not edge or centerline rumble strips)
  - Median and Islands (paved/grass/striped)
  - Shoulders (paved/grass)
  - Local “landmarks” (e.g., stores or restaurants) to help residents orient to the layout
  - “You are here” notation and callout (if layout shows meeting location)

- Proposed Driveways* (ensure access is considered/shown on each relevant parcel)
- Construction Limits (Cut/Fill)*
- Proposed Signs*
- Proposed Drainage/Ditches* (omit drainage if necessary, to reduce clutter)
- Potential Stormwater Basin
  - Do not label type of post-construction stormwater BMP.
  - Do not show detailed design; show potential location and generic symbols only.
- Environmental Sensitive Areas
  - Historic Boundaries/Districts
  - Cemetery Boundaries
  - Park Boundaries
  - Places of Worship
  - Schools
  - Streams, Wetlands, and Open Waters
  - Community Facilities
  - Federal/State Owned Land
  - Noise Barrier (Sound Wall/Noise Wall) clouds if applicable

- Additional Considerations for Off-site Detour Layouts:
  - Detour Route
  - Detour Directional Arrows
  - Detour Length – present the overall detour length as the net increase in distance travelled for through traffic (do not present the overall detour length as the total distance travelled along the detour route). Show segment lengths for each road along the detour route.
  - Anticipated Detour Duration (months)
  - Speed Limits of Detour Routes

* may not typically be available in concept or early preliminary phases

4.3 Drawing Layout

- Size:
  - The minimum size for a printed layout displayed at a meeting is 24” (tall) x 36” (long).
  - For long projects requiring roll plots, the designer should balance the level of detail (scale) and total size (length) of the layout. Where practical:
    - Individual roll plot layouts should not be longer than 6 ft.
    - If multiple roll plots are needed, the total length should not be longer than 24 ft.

        - Matchlines should be utilized if multiple roll plots are needed
            - Concept report layout attachments should be letter size or 11 x17 and should print to scale.

- Scales:
    - All layouts should use a common engineering scale, shown graphically on the title block.
- Layout/Organization:
    - A Title Block should appear on top of the layout.
    - A Legend should appear on the bottom of the layout.
    - Typical Sections should appear on the top/bottom/sides of the layout where practical.:

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