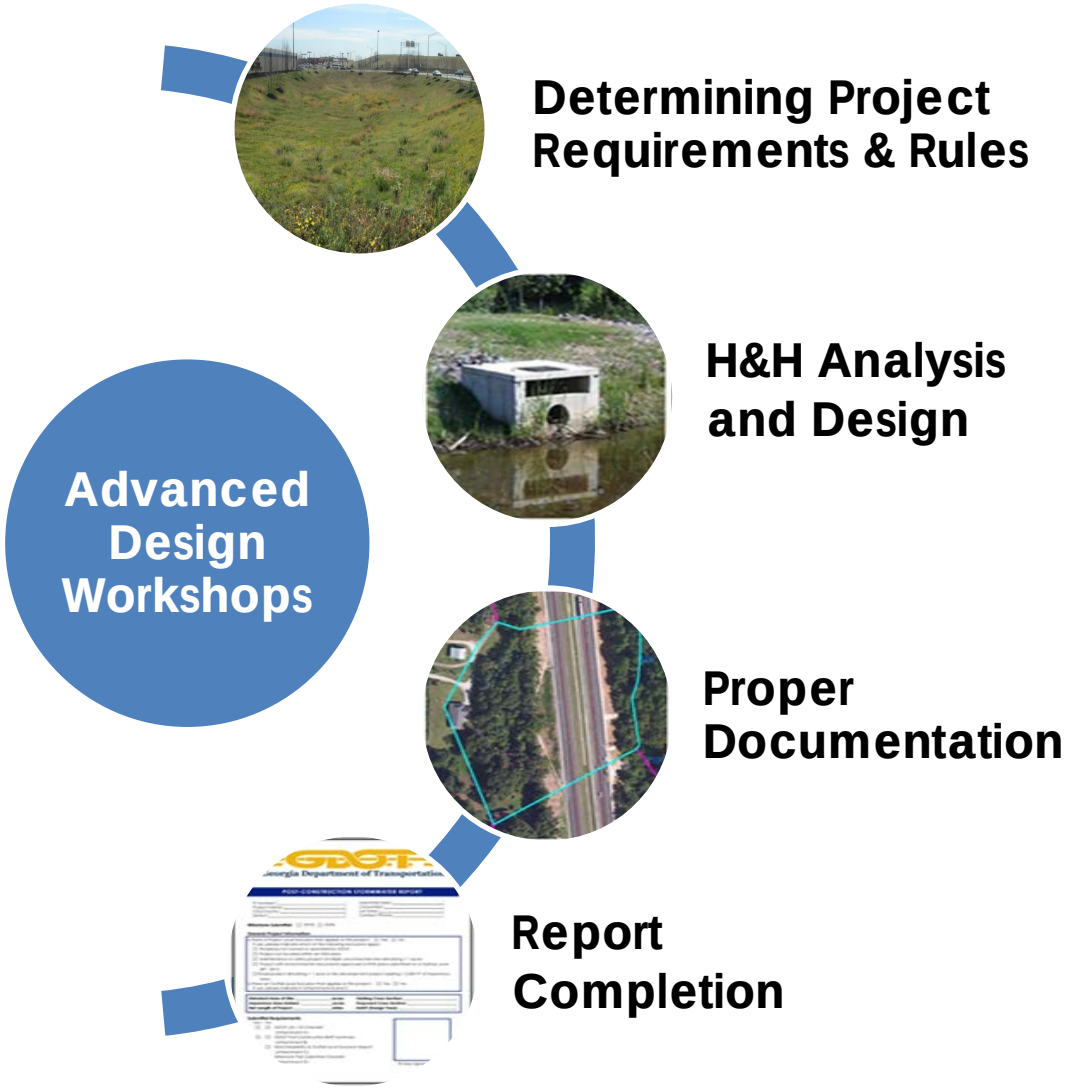
ADVANCED DESIGN WORKSHOPS



1. **Basin Delineation & BMP Selection**
   May 31, 2017
2. **Enhanced Dry Swale Design**
   July 12, 2017
3. **Bioretention Basin Design**
   August 9, 2017
4. **Following PDP and PPG for MS4**
   September 6, 2017
5. **Filter Strip and Bioslope Design**
   TBD

Always check the current edition of the GDOT Drainage Design for Highways Manual for current policies.

This presentation shall not supersede any policies in the GDOT Drainage Design for Highways Manual (current edition) or any other GDOT policy publications.

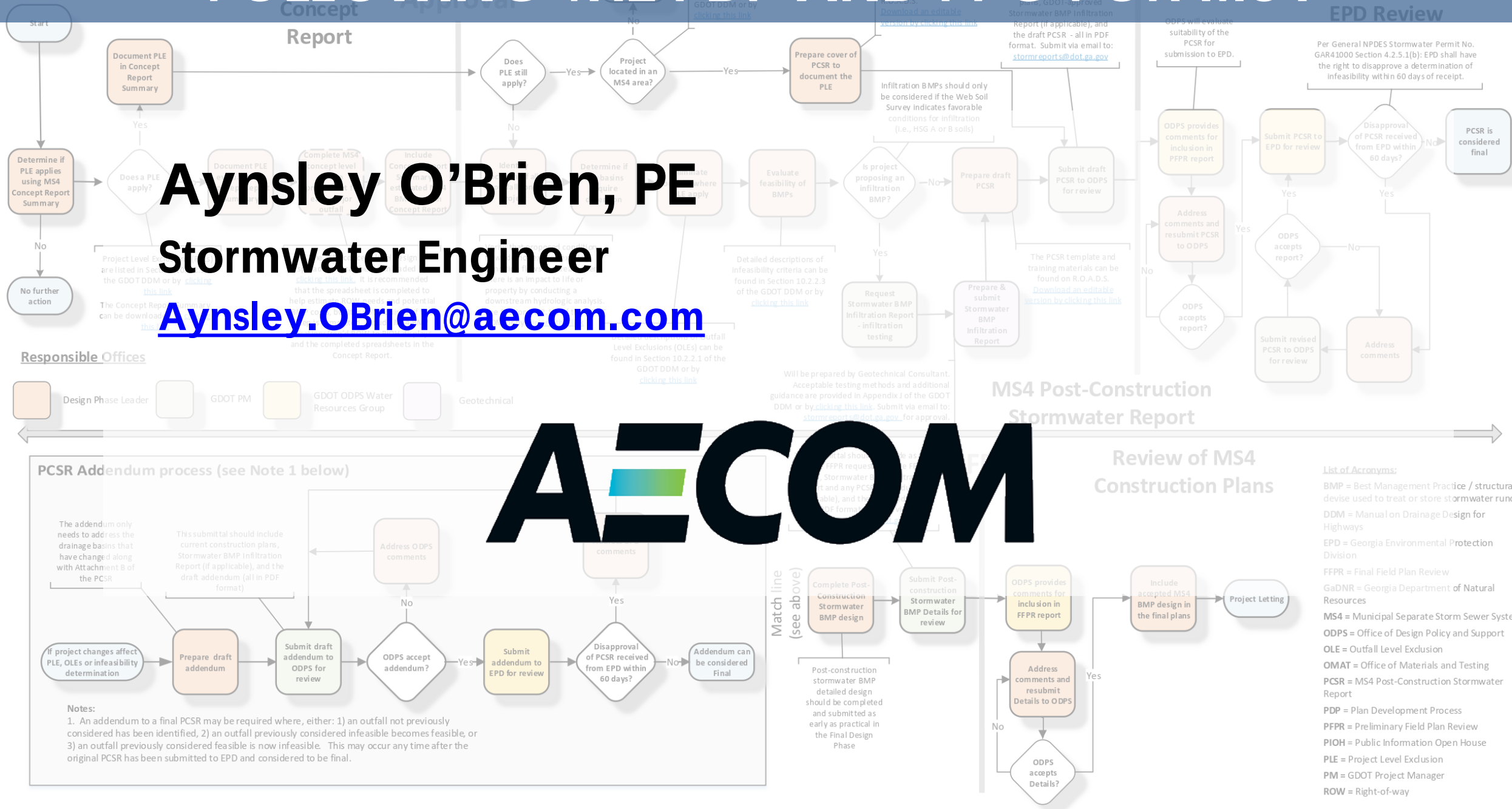
FOLLOWING THE PDP AND PPG FOR MS4

Aynsley O'Brien, PE

Stormwater Engineer

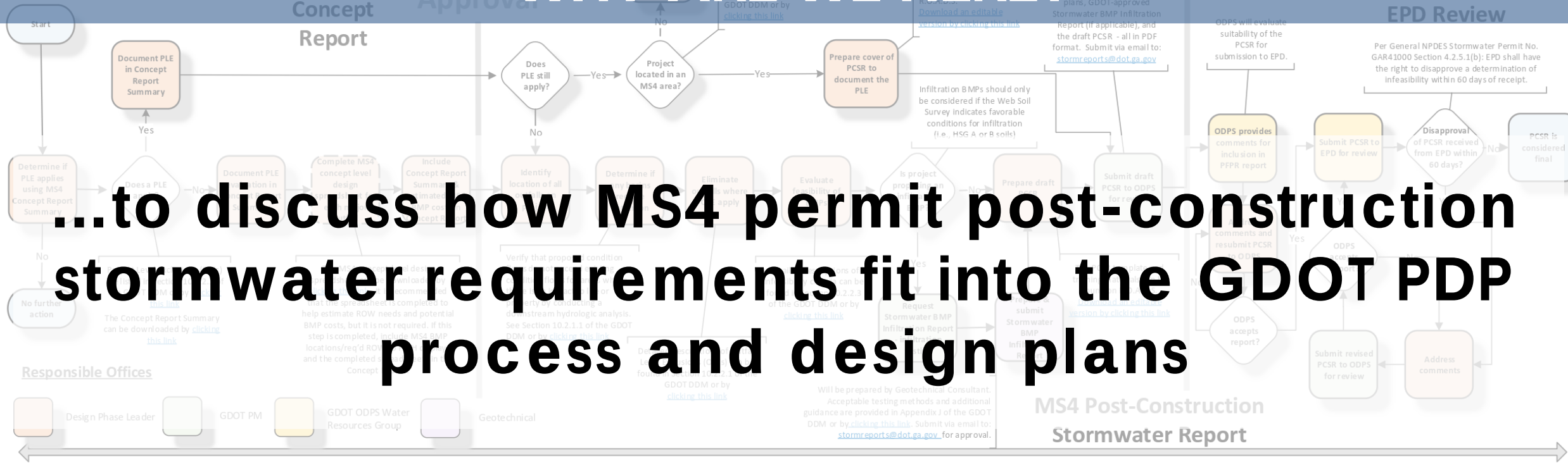
Aynsley.OBrien@aecom.com

AECOM



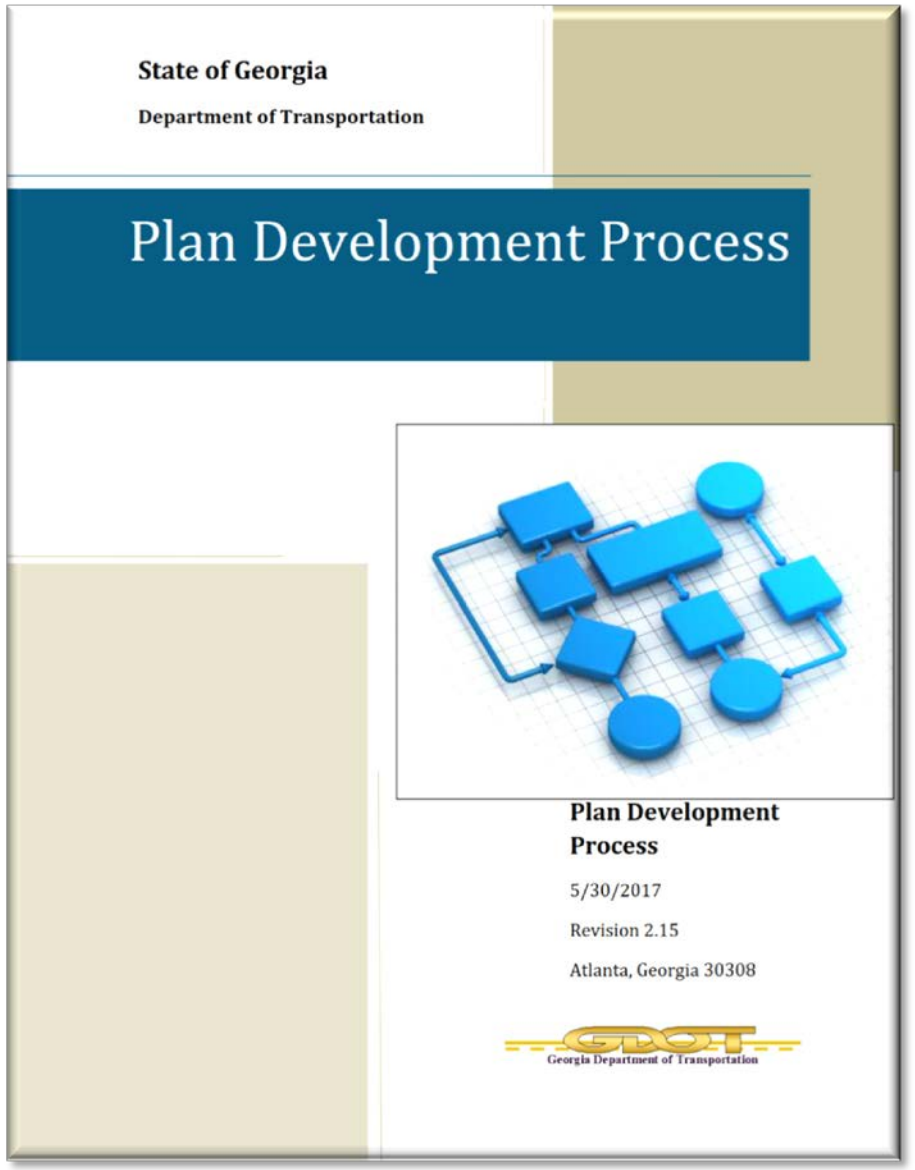
WHY ARE WE HERE?

...to discuss how MS4 permit post-construction stormwater requirements fit into the GDOT PDP process and design plans



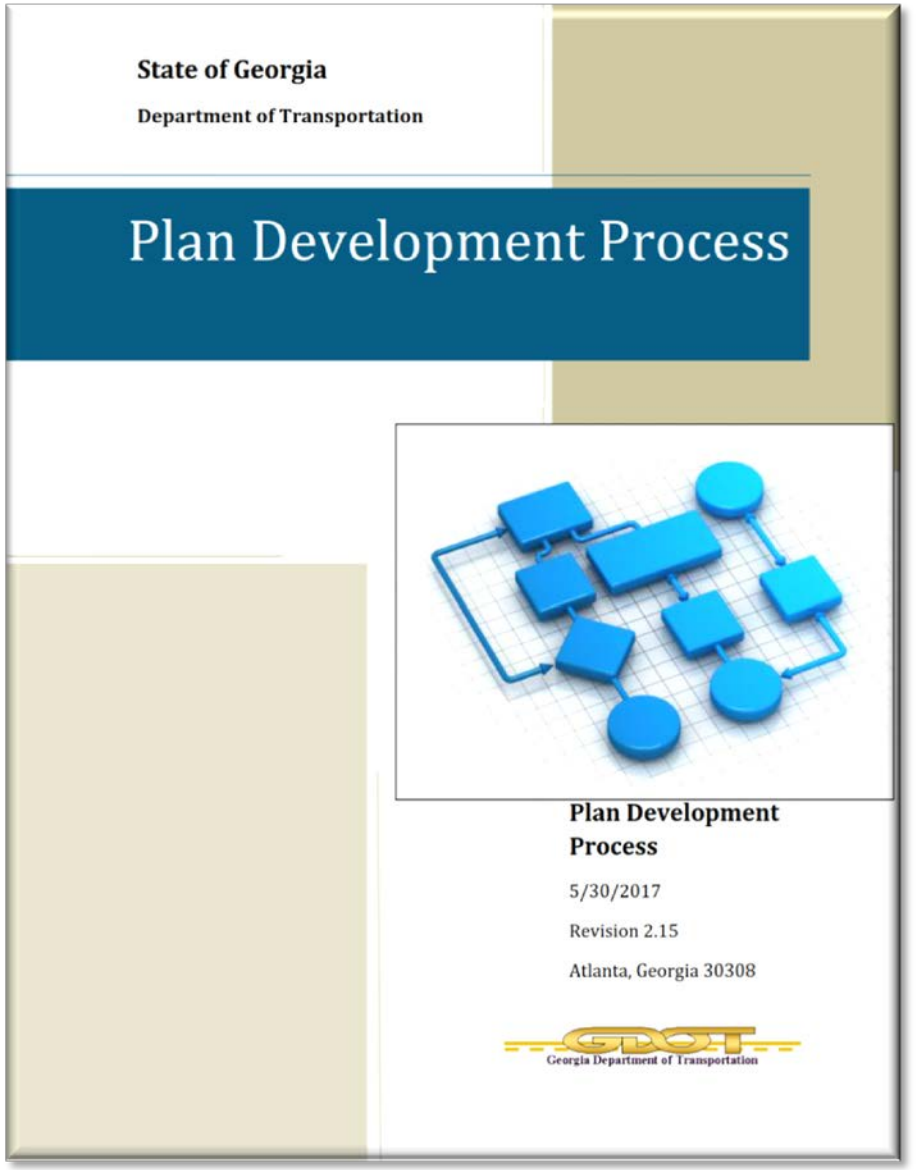
PLAN DEVELOPMENT PROCESS (PDP)

The Plan Development Process (PDP) Manual provides guidance for completing a GDOT project from the conceptual stage to final acceptance



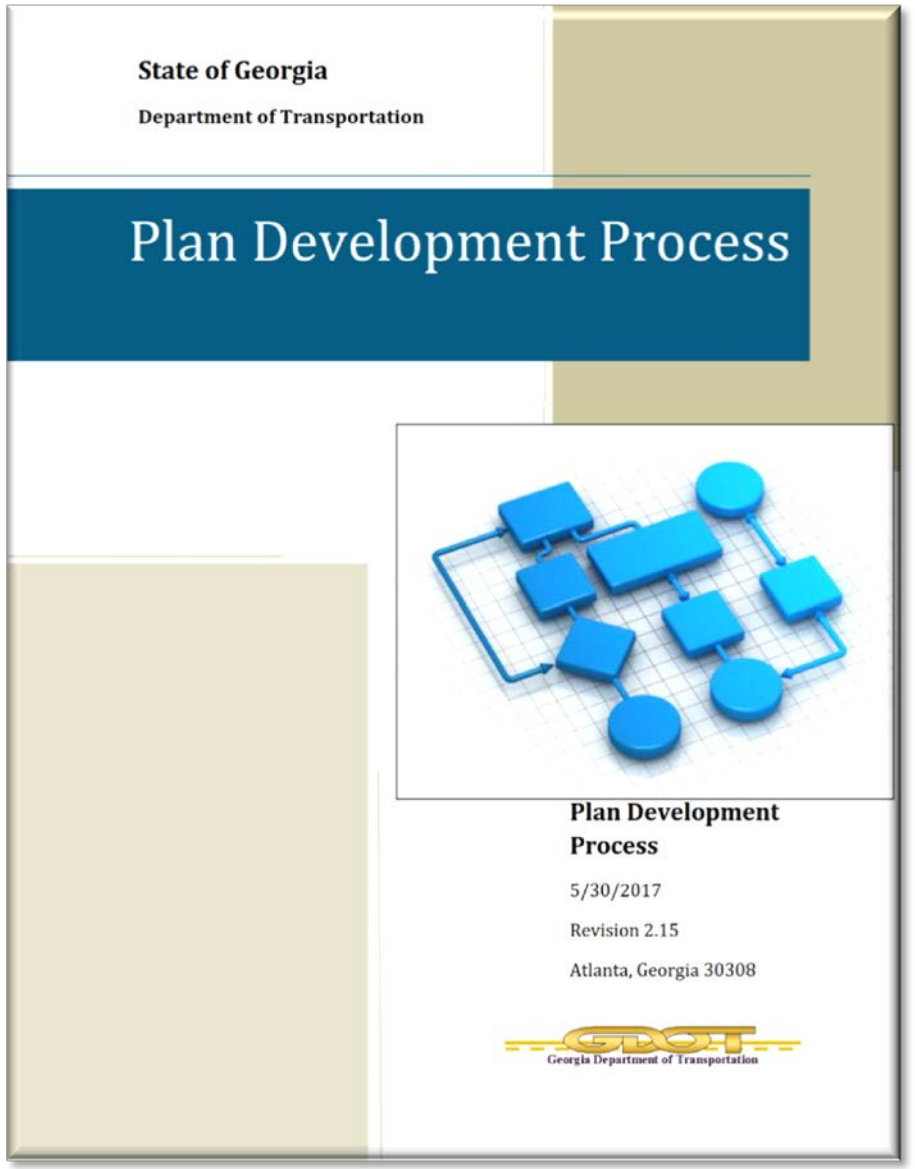
PLAN DEVELOPMENT PROCESS (PDP)

- **Manual Updates in Fall 2016**
  - **Chapter 5: Concept Stage**
  - **Chapter 6: Preliminary Design**
  - **Chapter 7: Final Design**



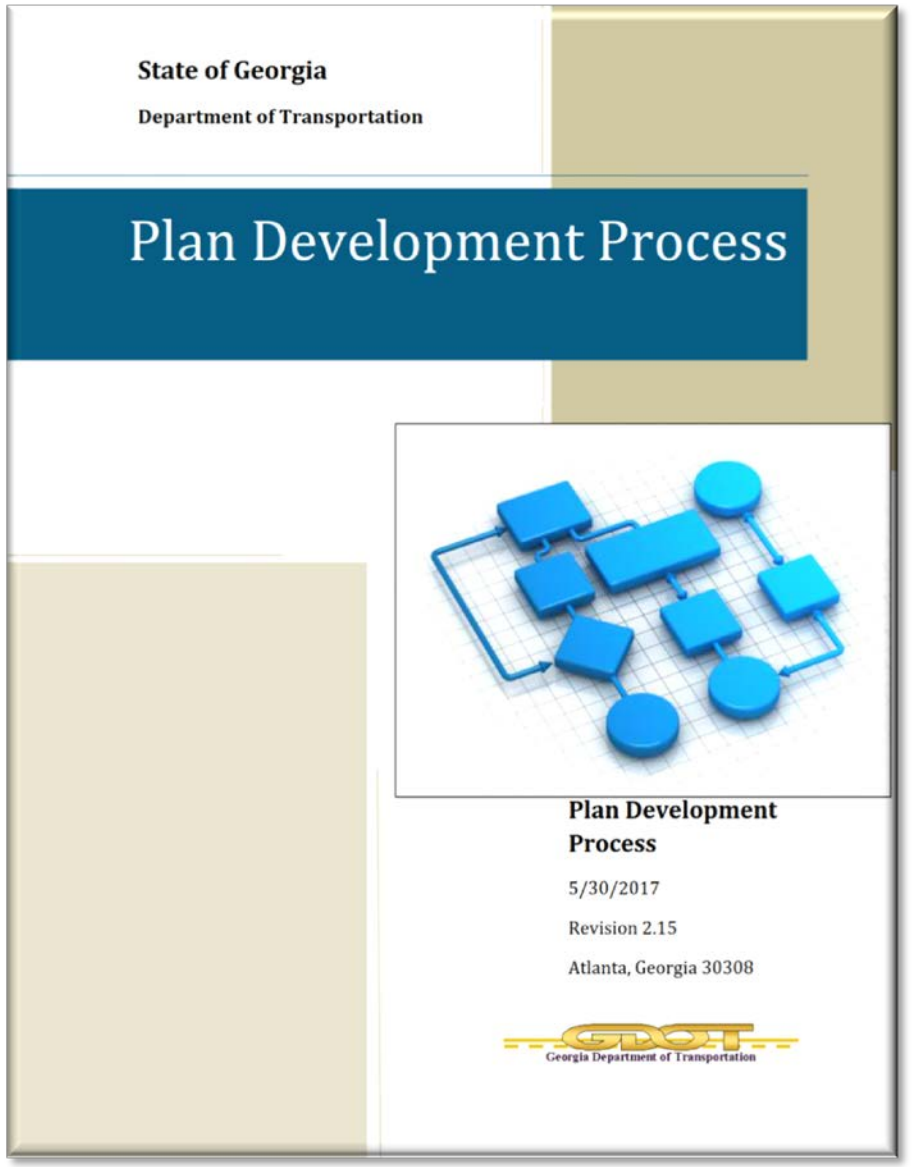
PLAN DEVELOPMENT PROCESS (PDP)

- **Section 5.13: MS4**
  - **Provides MS4 Overview**
  - **Introduces MS4 PDP Process Chart**
  - **References Chapter 10 of GDOT Drainage Manual**



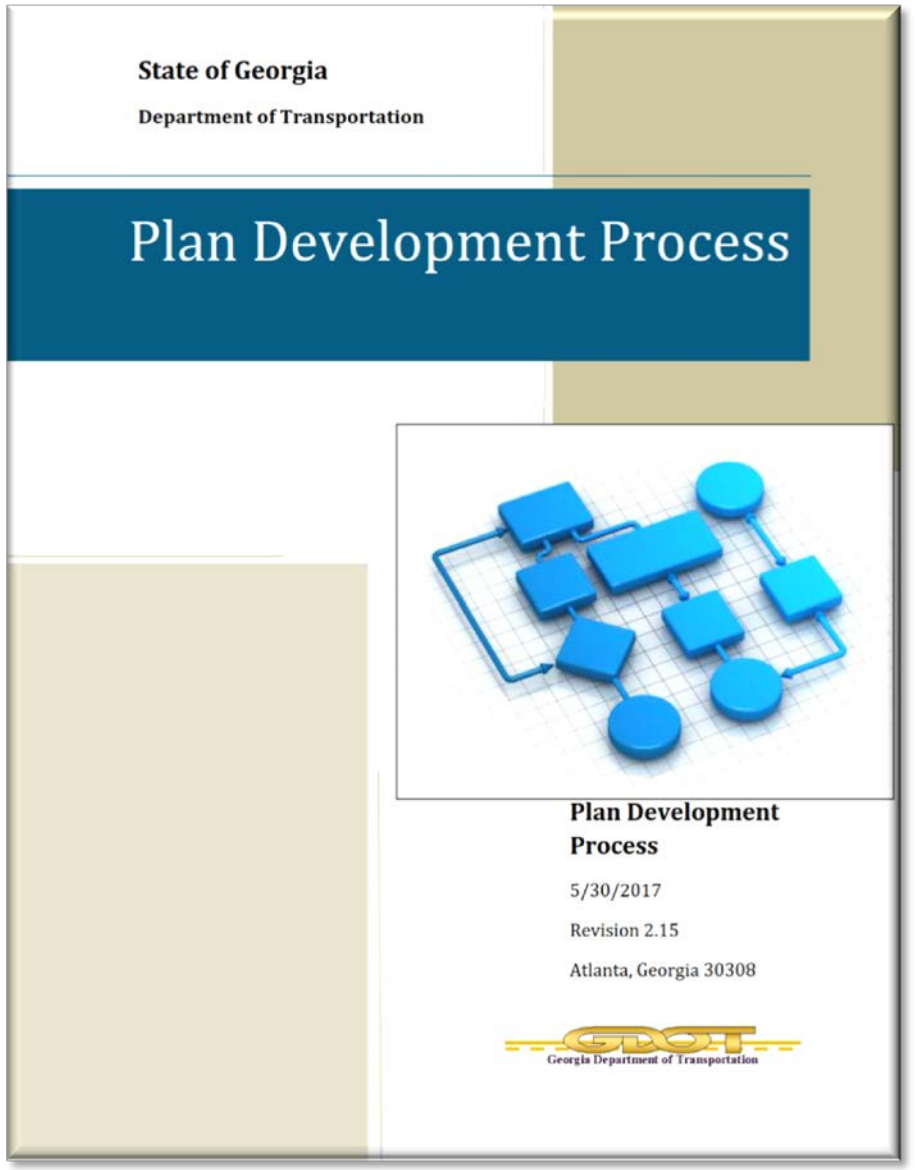
PLAN DEVELOPMENT PROCESS (PDP)

- **Section 5.17: Concept Team Meeting**
  - **Items discussed at Meeting should include:**
    - *MS4 Project Level Exclusion*
    - *Concept Level Post-Construction BMP Development*



PLAN DEVELOPMENT PROCESS (PDP)

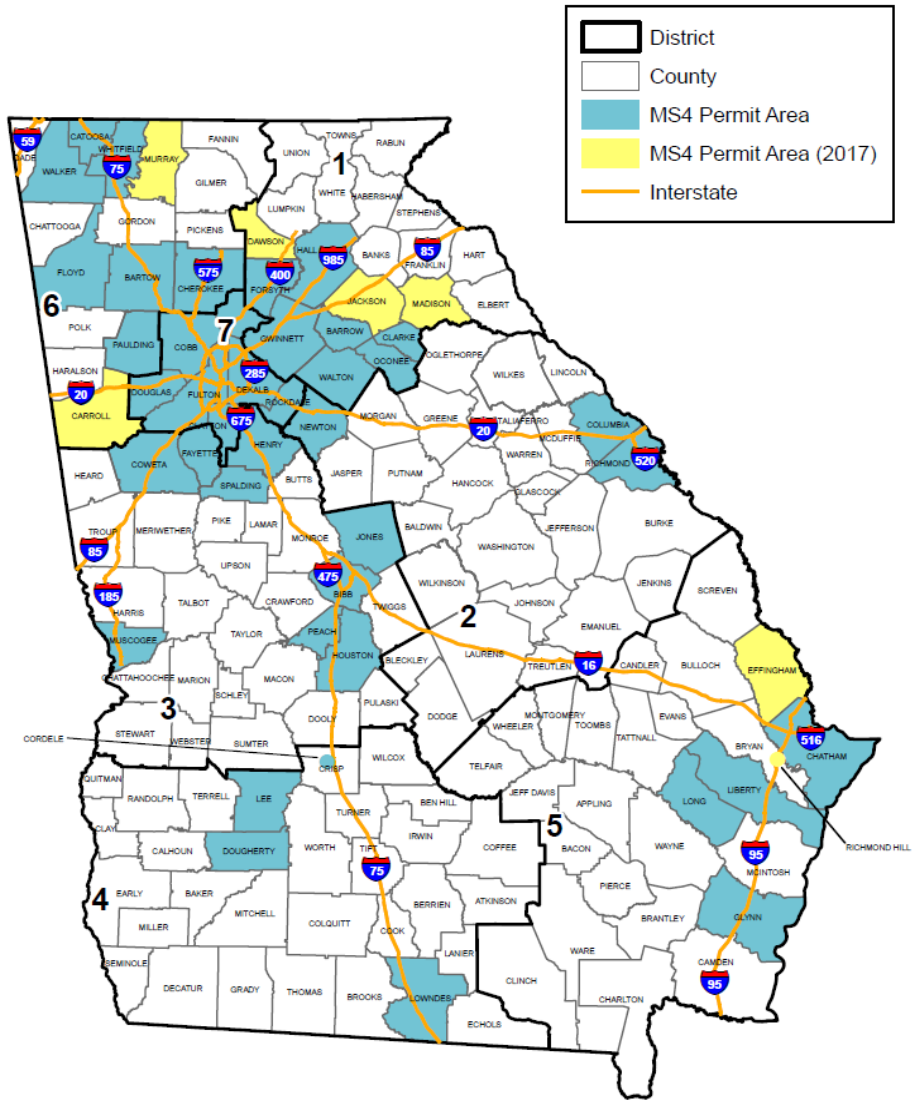
- **Section 5.4: Project Design Data Book**
  - **Contents should include:**
    - *Project Level Exclusion*
    - *MS4 Concept Level Design Spreadsheets, if sufficient information is known*
      - *BMP Locations*
      - *Required ROW for each BMP*
      - *Cost of BMP*



PLAN DEVELOPMENT PROCESS (PDP)

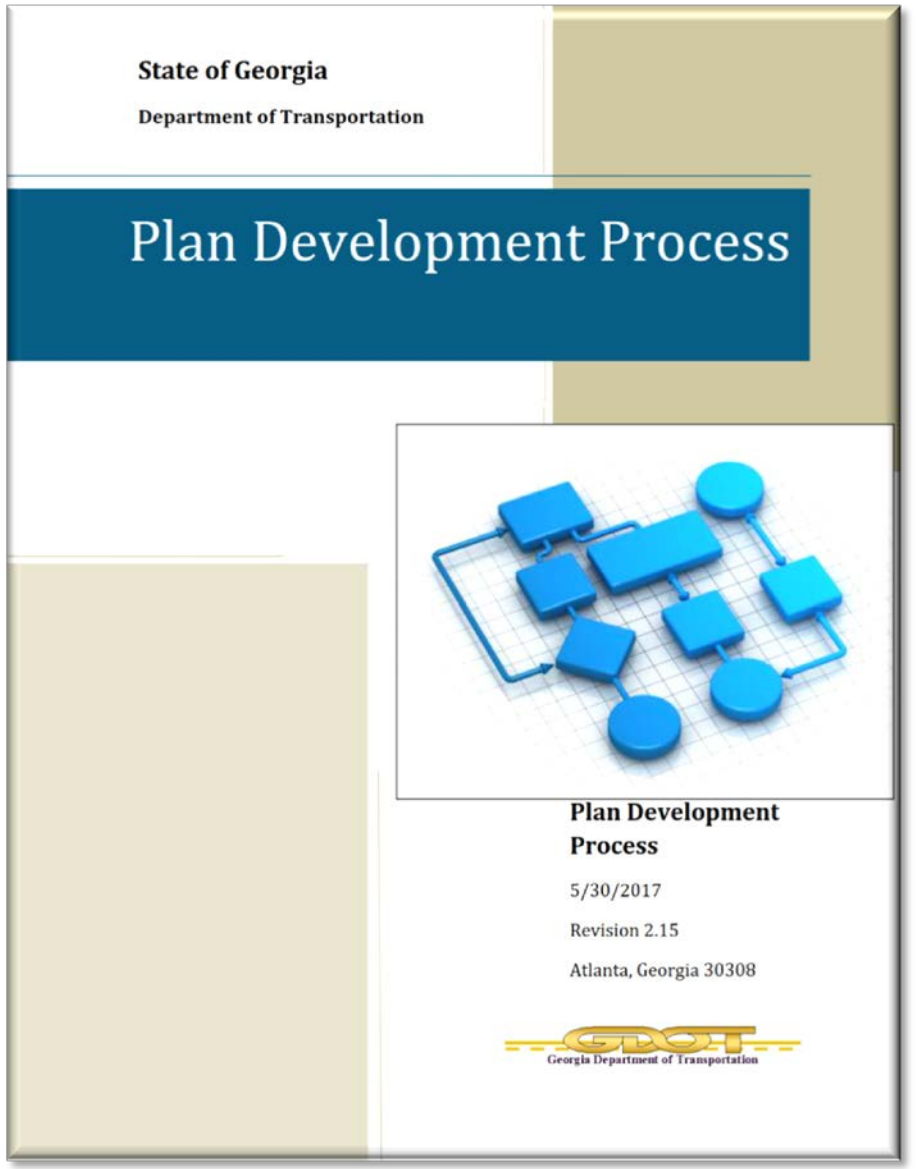
2012 or 2017 MS4 Permit?

- Based on Concept approval date
- Concept approval received January 3, 2018 or later → 2017 MS4 Permit



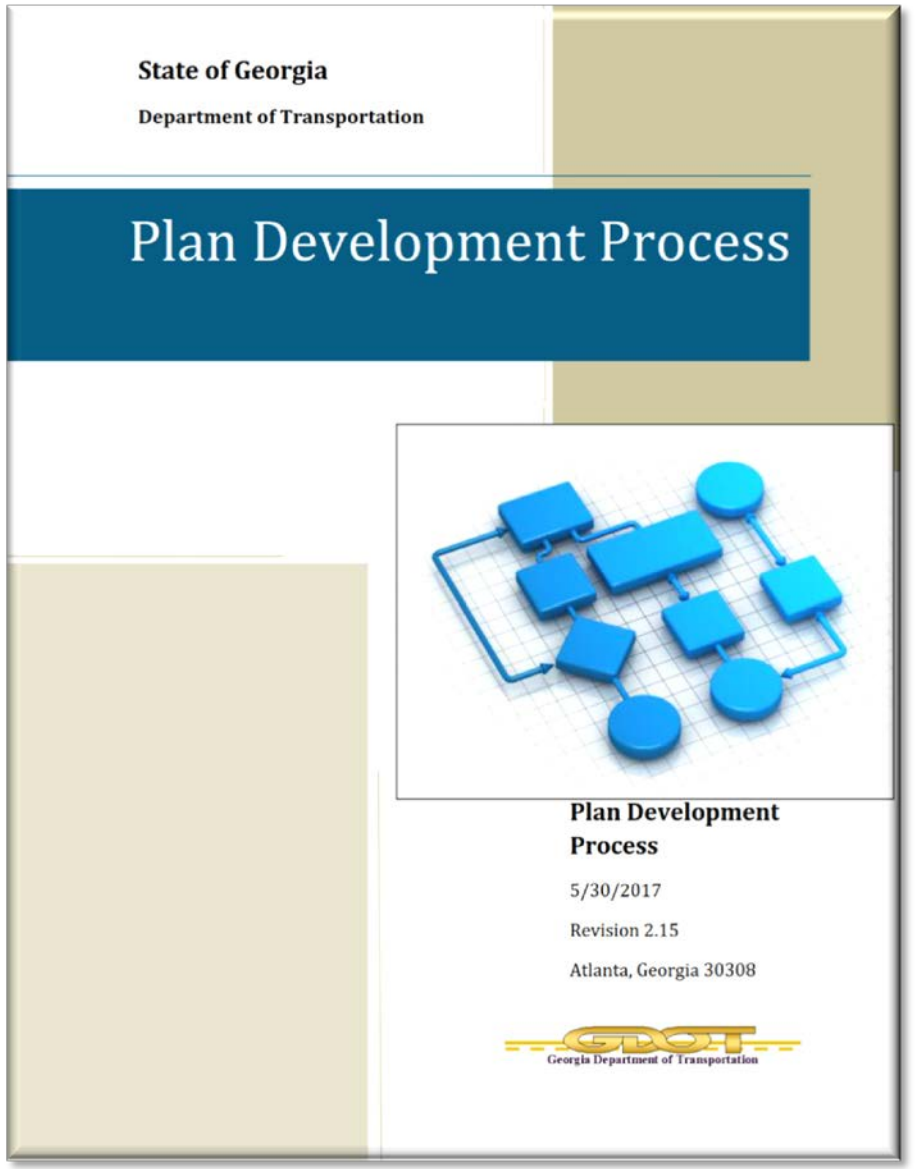
PLAN DEVELOPMENT PROCESS (PDP)

- **Chapter 6: Preliminary Design**
  - **Review Assumptions/Design Standards from Concept Phase:**
    - *Design Year Traffic Forecast*
    - *Proposed Typical Section*
    - *Design Criteria*
    - *MS4 Requirements*



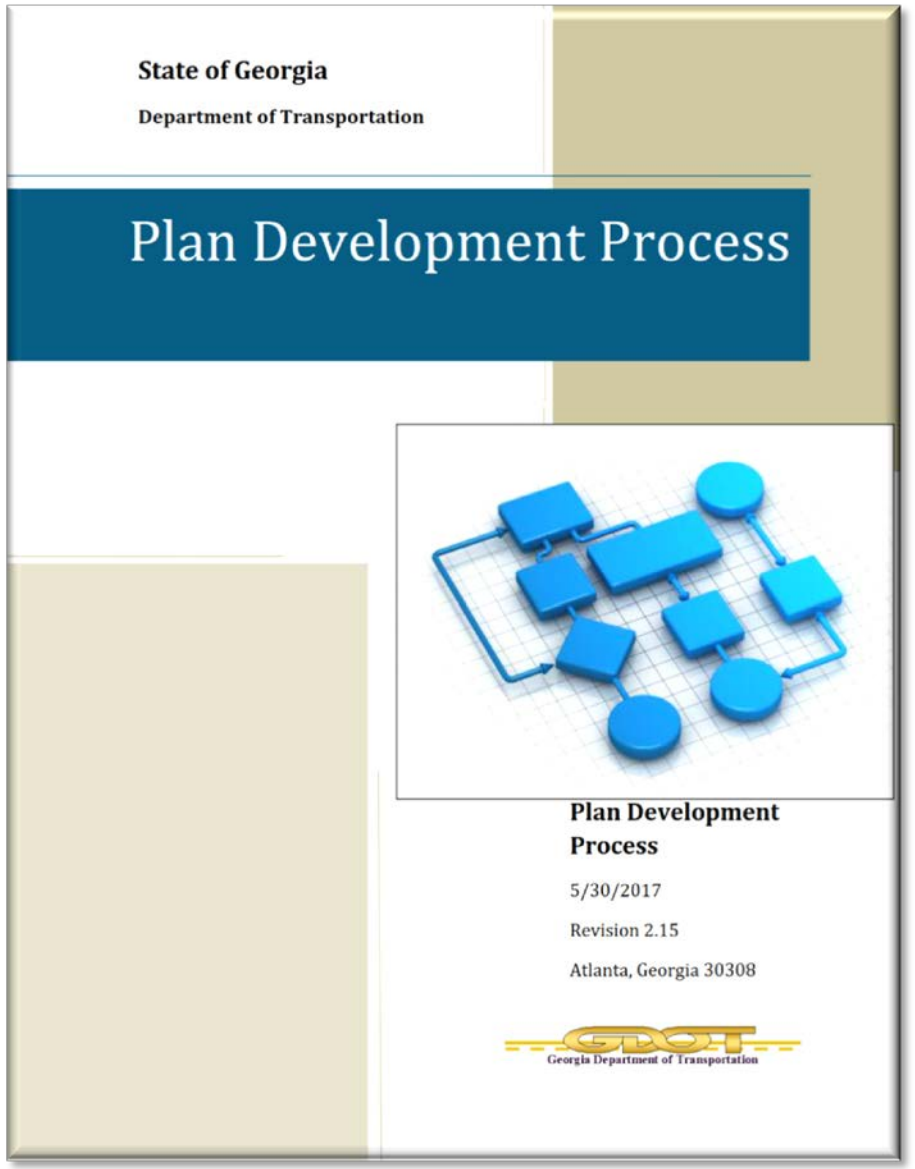
PLAN DEVELOPMENT PROCESS (PDP)

- **Section 6.3.3: MS4 Soils Report (Stormwater BMP Infiltration Report)**
  - Applicable for Infiltration Post-Construction Stormwater BMPs
  - Separate from Soil Survey Report – Timing Outlined in MS4 PDP Flowchart
  - Reference Appendix J of GDOT Drainage Manual



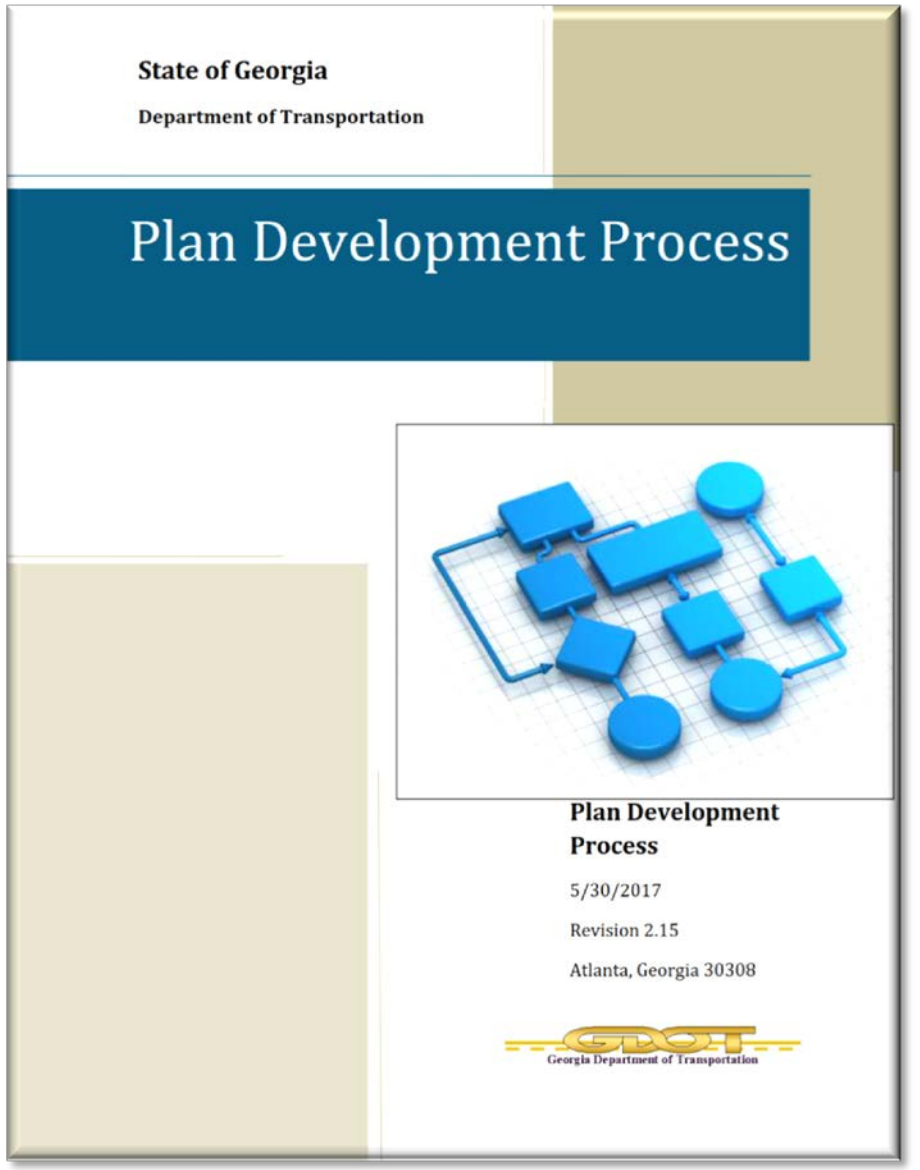
PLAN DEVELOPMENT PROCESS (PDP)

- **Section 6.4.1: Roadway Design**
  - **Roadway Design Activities should include:**
    - Outfall Evaluation
    - Outfall Level Exclusion Determination
    - BMP Feasibility Analysis
    - BMP Sizing
    - Post-Construction Stormwater Report Preparation and Submittal



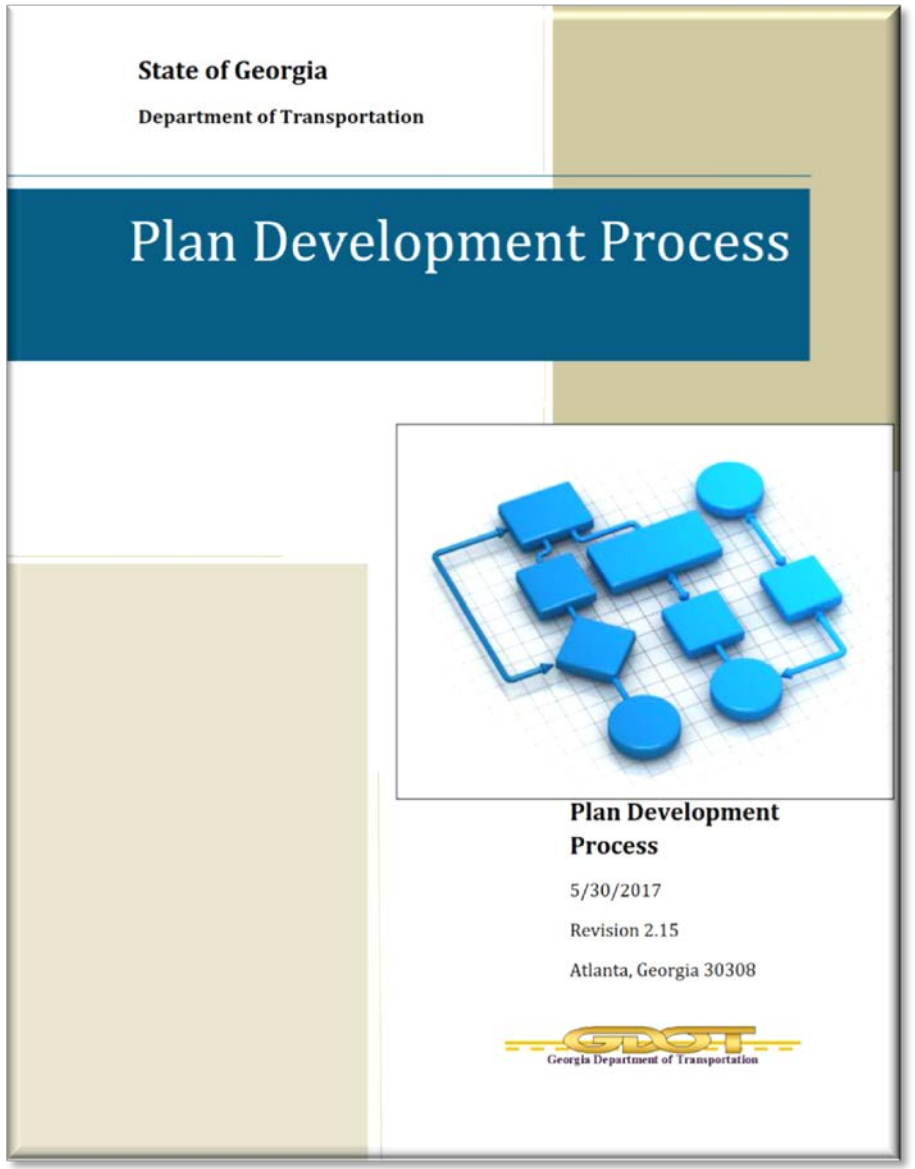
PLAN DEVELOPMENT PROCESS (PDP)

- **Section 6.4.10: MS4 and Maintenance Office Coordination**
  - **Discuss BMP maintenance accessibility**
  - **Discuss BMP maintenance responsibility**



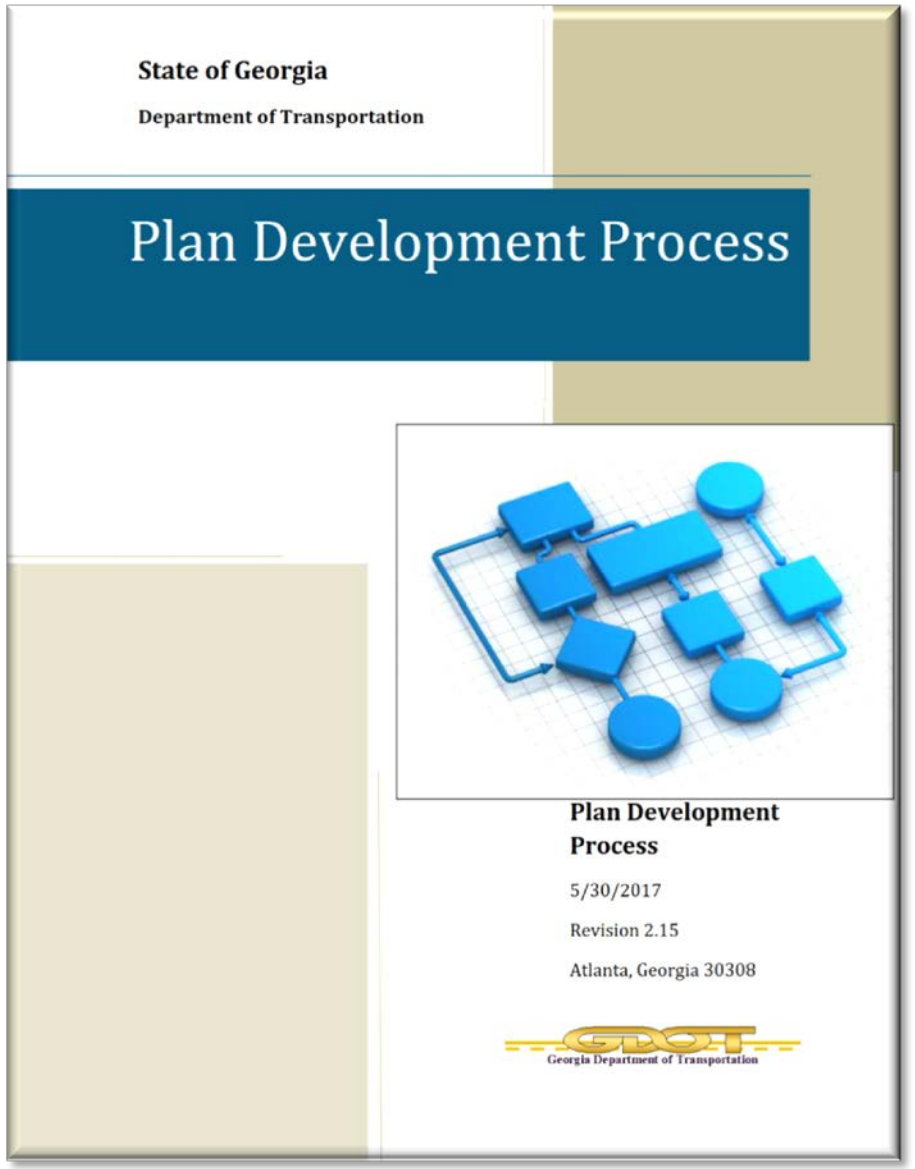
PLAN DEVELOPMENT PROCESS (PDP)

- **Section 6.5.3: Preliminary Field Plan Review**
  - **Post-Construction Stormwater Report submittal to ODPS required 8 weeks prior to PFPR Request**



PLAN DEVELOPMENT PROCESS (PDP)

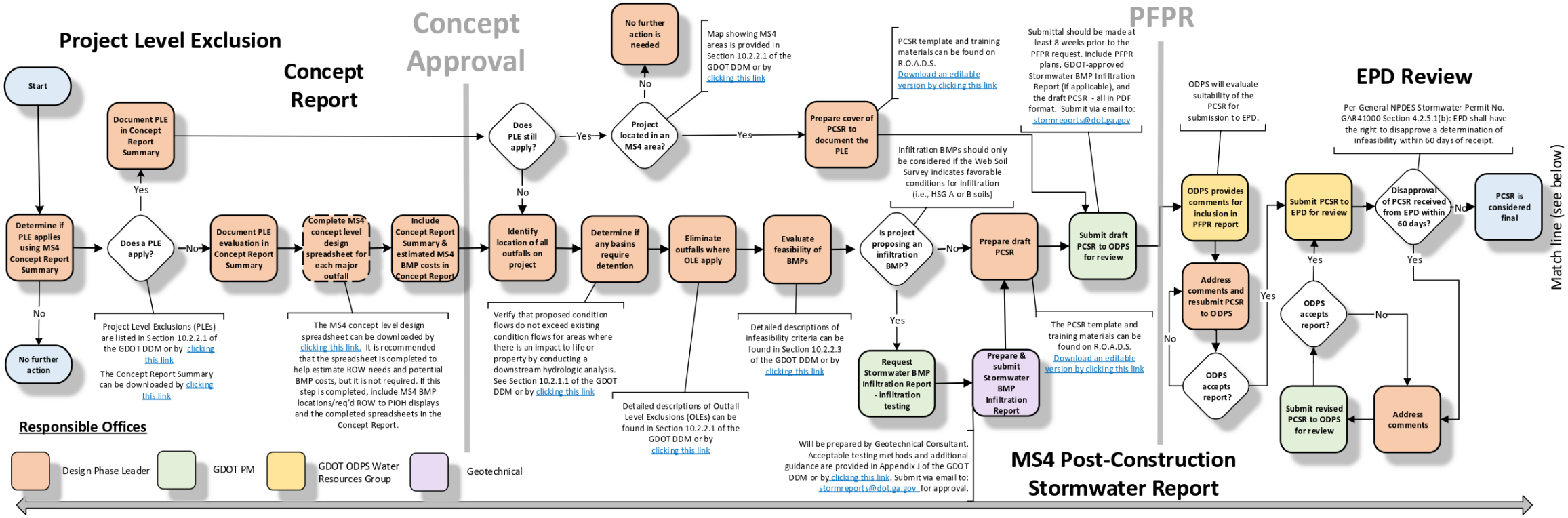
- **Section 7.3.4: MS4 Design**
  - Discusses submittal of Post-Construction Stormwater Report (PCSR) to EPD
  - Introduces PCSR Addendum Process Requirements
  - Final BMP details submitted as part of the FFPR Request package



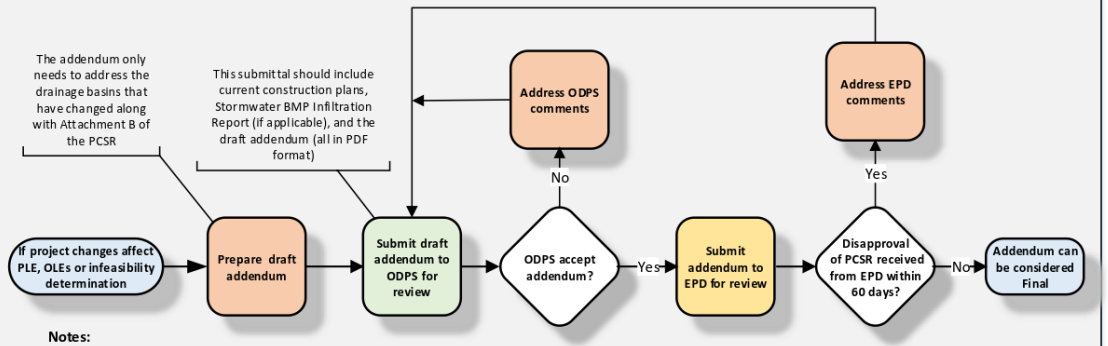
MS4 Plan Development Process (Pre-Construction)

GDOT Office of Design Policy & Support

March 8, 2017

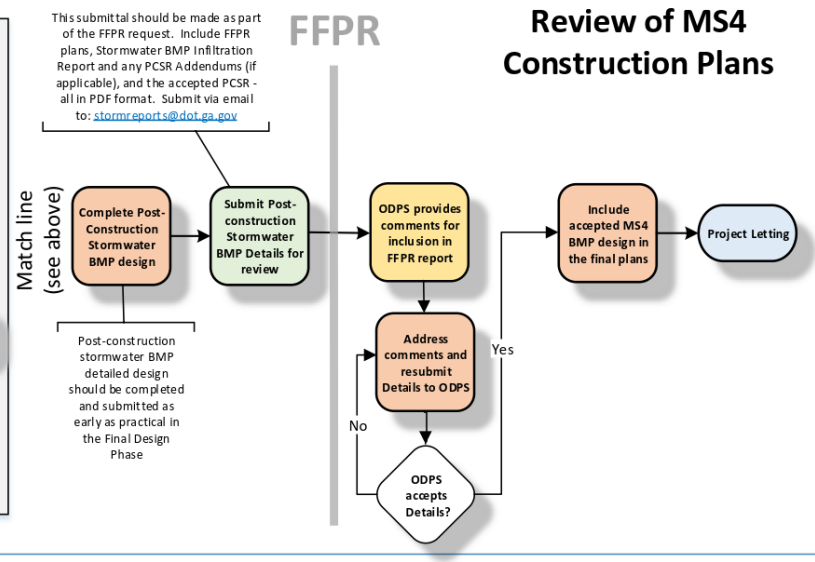


PCSR Addendum process (see Note 1 below)



Notes:

1. An addendum to a final PCSR may be required where, either: 1) an outfall not previously considered has been identified, 2) an outfall previously considered infeasible becomes feasible, or 3) an outfall previously considered feasible is now infeasible. This may occur any time after the original PCSR has been submitted to EPD and considered to be final.



List of Acronyms:

BMP = Best Management Practice / structural devise used to treat or store stormwater runoff

DDM = Manual on Drainage Design for Highways

EPD = Georgia Environmental Protection Division

FFPR = Final Field Plan Review

GaDNR = Georgia Department of Natural Resources

MS4 = Municipal Separate Storm Sewer System

ODPS = Office of Design Policy and Support

OLE = Outfall Level Exclusion

OMAT = Office of Materials and Testing

PCSR = MS4 Post-Construction Stormwater Report

PDP = Plan Development Process

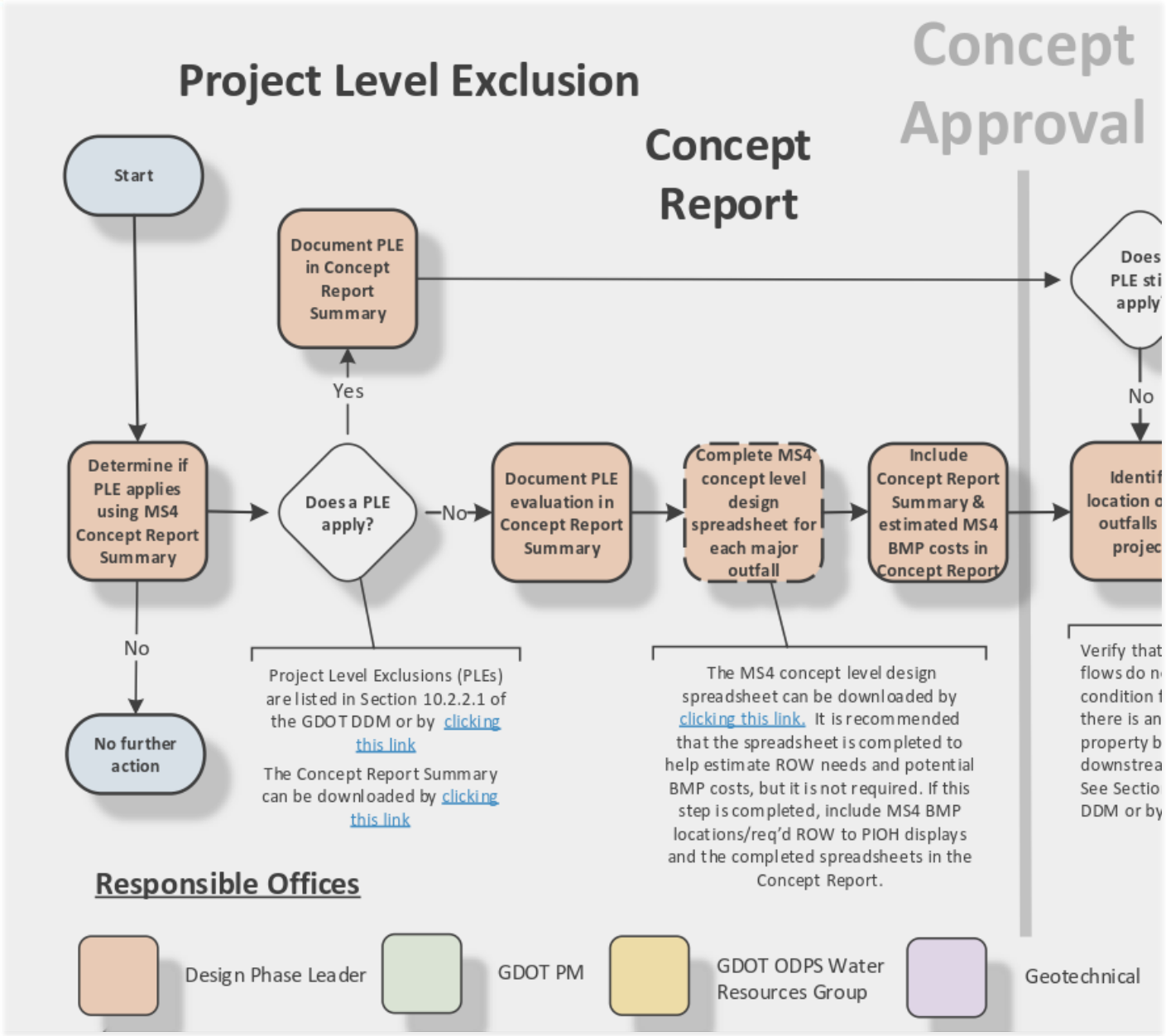
PFPR = Preliminary Field Plan Review

PIOH = Public Information Open House

PLE = Project Level Exclusion

PM = GDOT Project Manager

ROW = Right-of-way



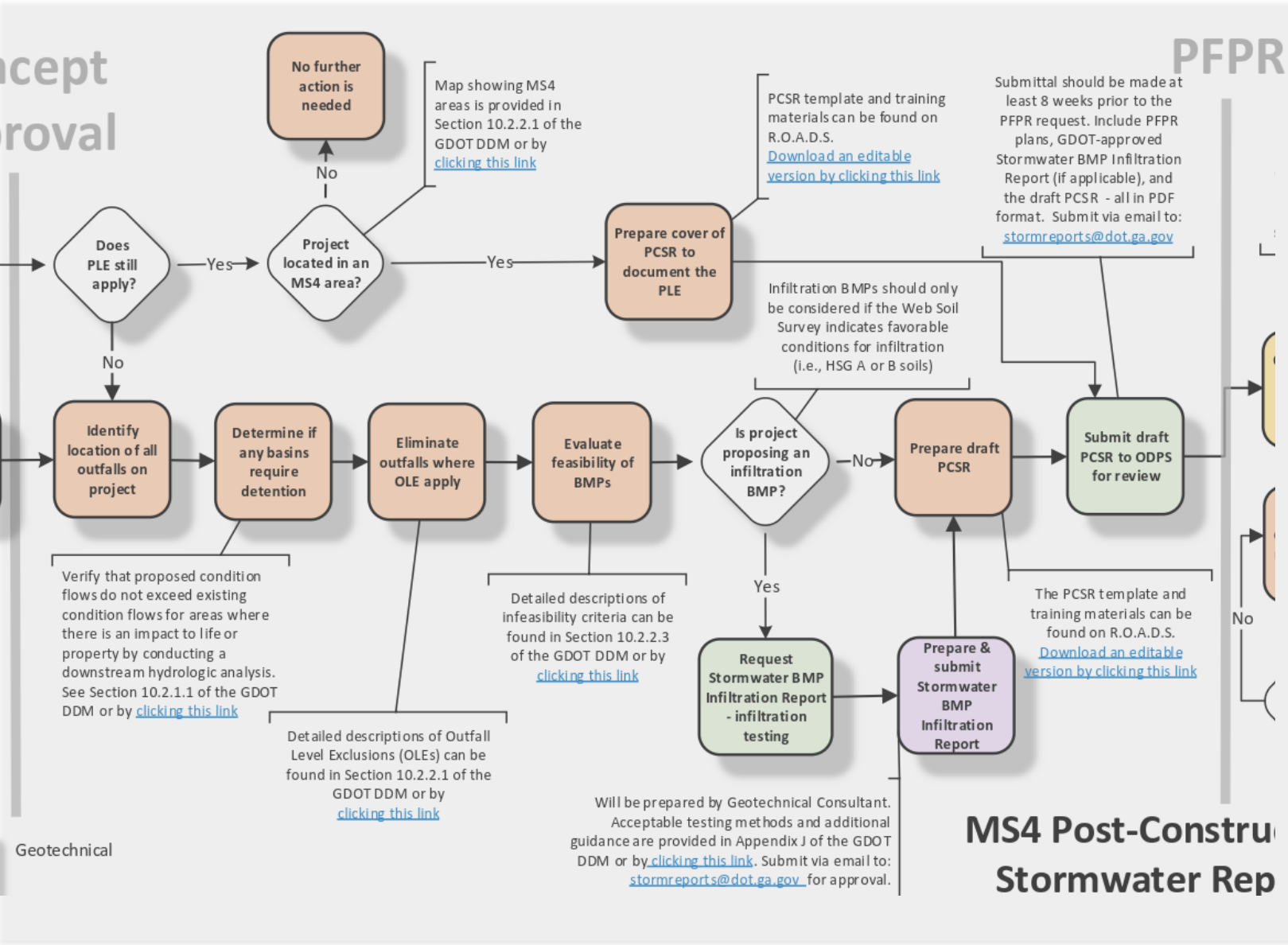
PDP FLOWCHART

Concept Phase

- PLE Determination
- MS4 Concept Report Summary
- MS4 Concept Level Design Spreadsheet (optional)
- Concept Level MS4 BMP Cost Estimate

PDP FLOWCHART

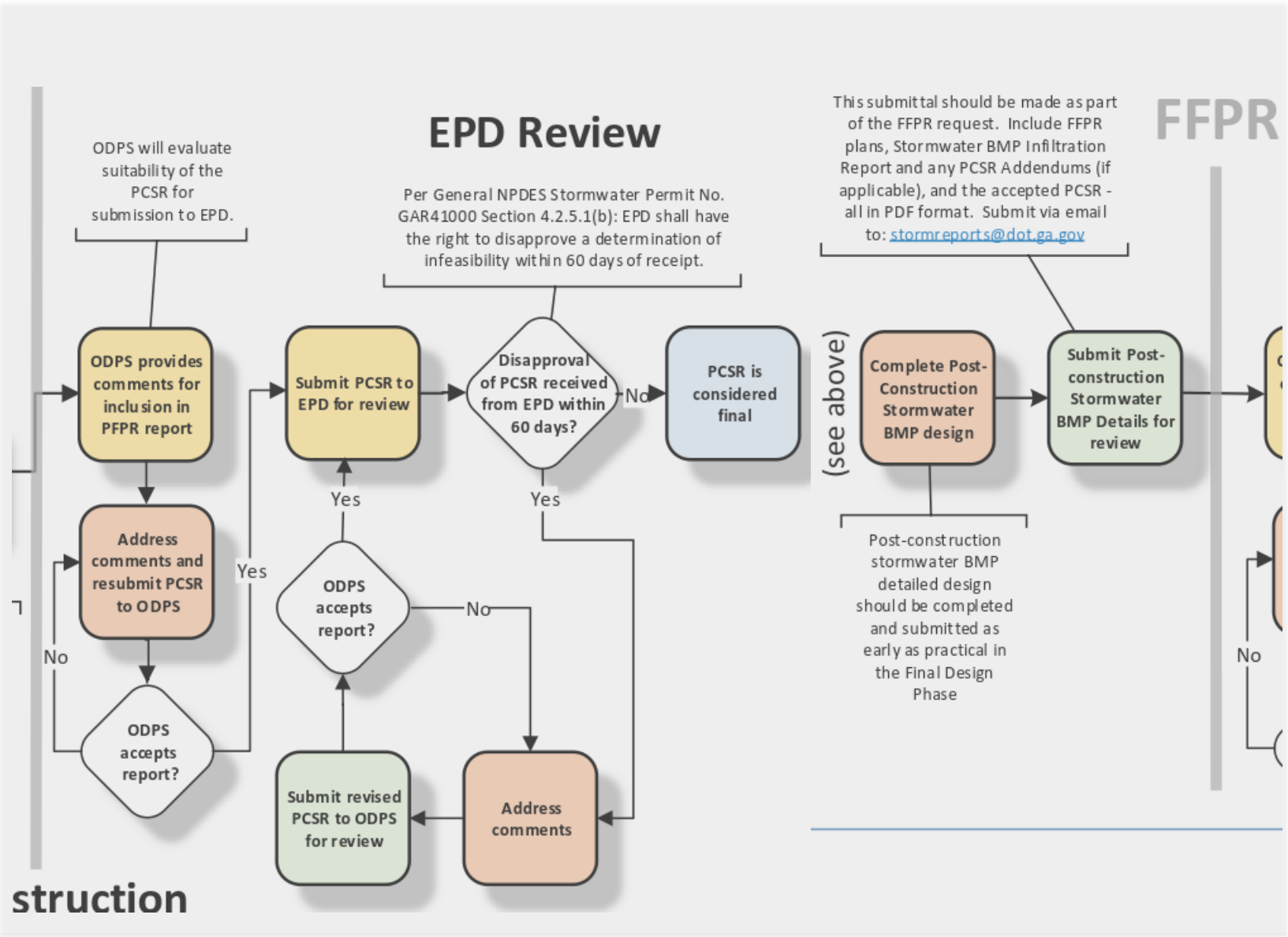
Preliminary Plan Phase



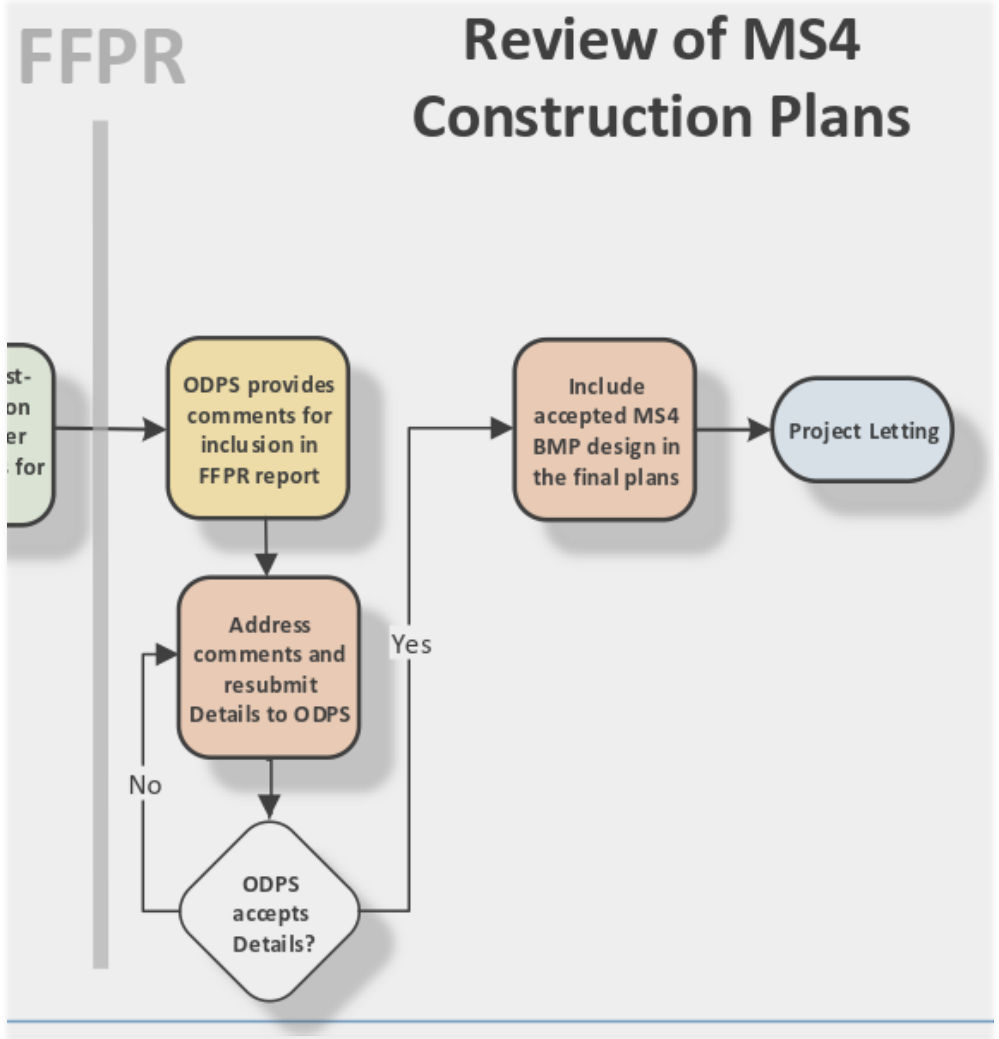
- Outfall Basin Delineation
- Downstream Analysis
- Outfall Level Exclusion Determination
- Feasibility Analysis
- Infiltration Testing Applicability
- Post-Construction Stormwater Report Preparation

PDP FLOWCHART

Final Plan Phase



- ODPS Review of Post-Construction Stormwater Report
- Address Report Comments
- Final Approval by ODPS
- EPD Review of Post-Construction Stormwater Report (if applicable)

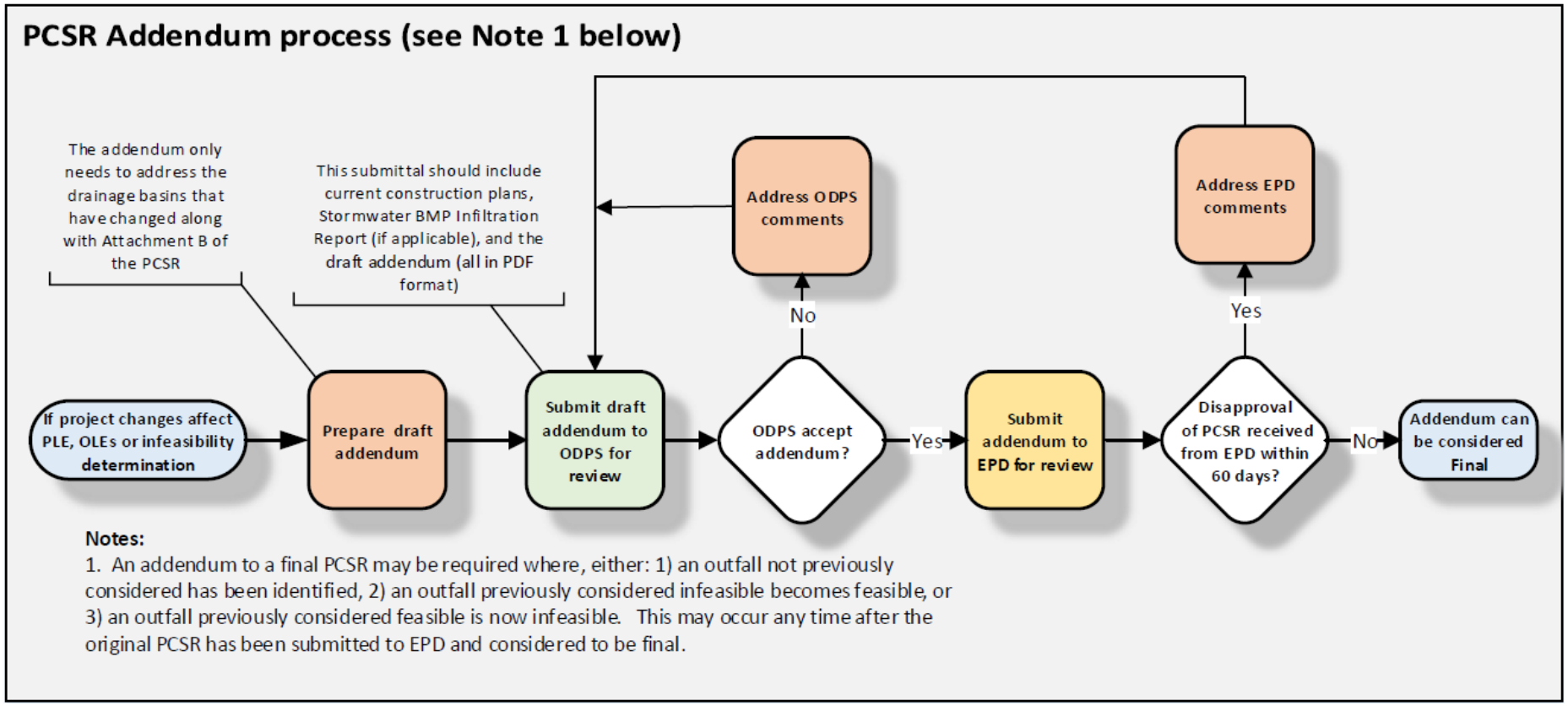


PDP FLOWCHART

Final Plan Review

- Revise Post-Construction Stormwater Report, if necessary
- ODPS Review of Final BMP Design
- Address Plan Comments
- Project Letting

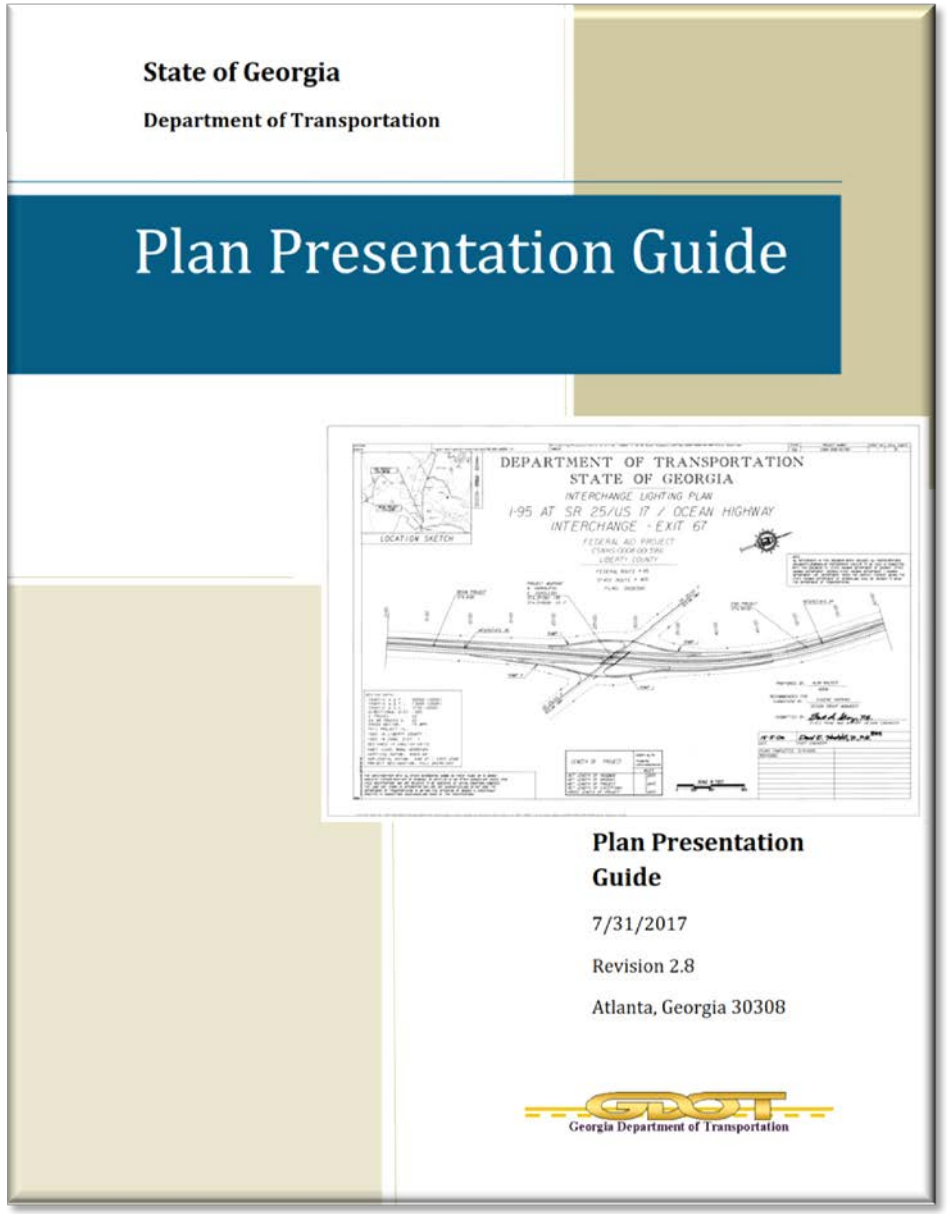
PDP FLOWCHART
Addendum Process



- 3 scenarios that could trigger need for an addendum
- Only address revised drainage basins
- Resubmittal to ODPS and EPD

PLAN PRESENTATION GUIDE (PPG)

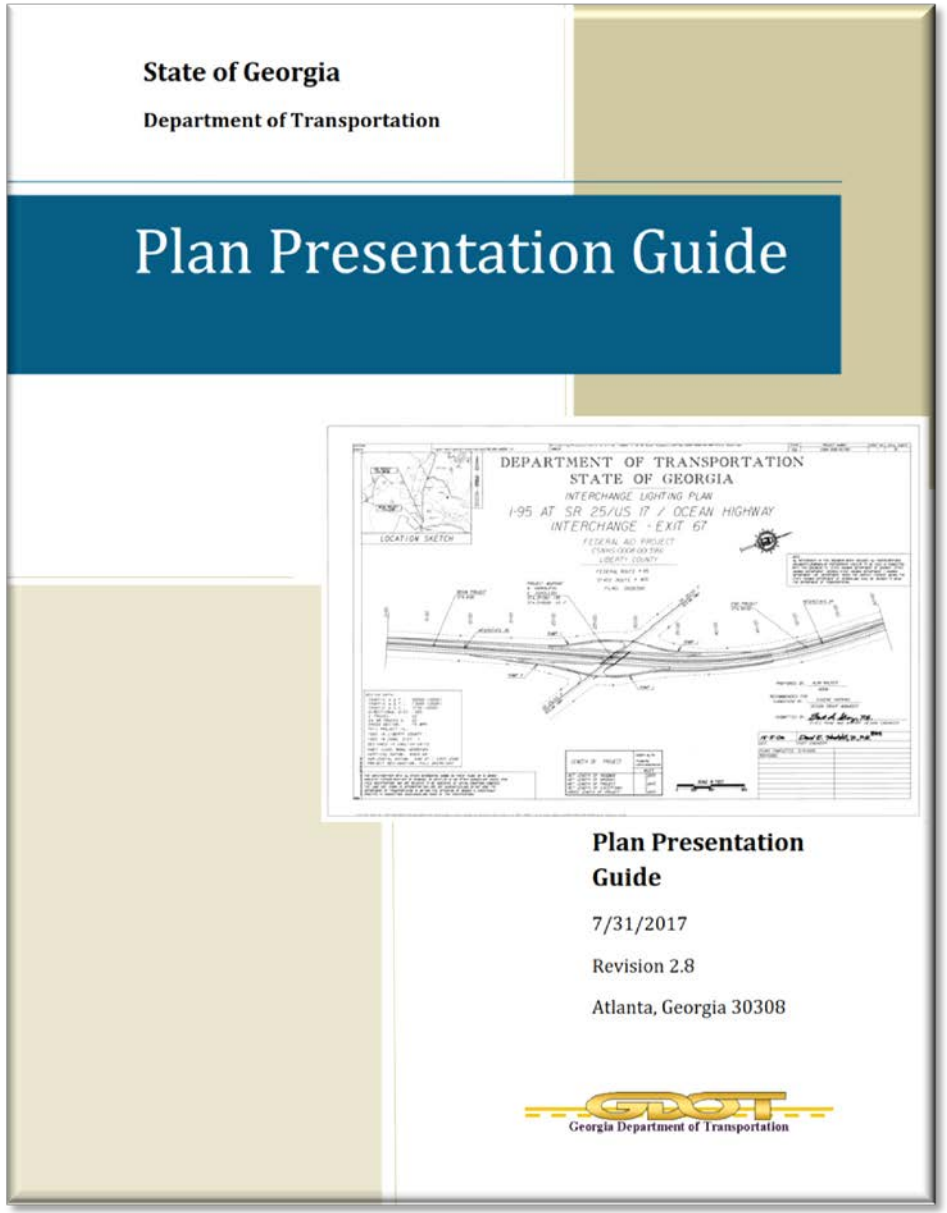
- **July 2017 MS4 Manual Updates**
  - **Chapter 2:Construction Section Presentation**
    - *Added MS4 and Post-Construction Stormwater BMP Information*
  - **Chapter 3:Right of Way Section Presentation**
    - *Added Post-Construction Stormwater BMP Information*



PLAN PRESENTATION GUIDE (PPG)

–Section 4: General Notes

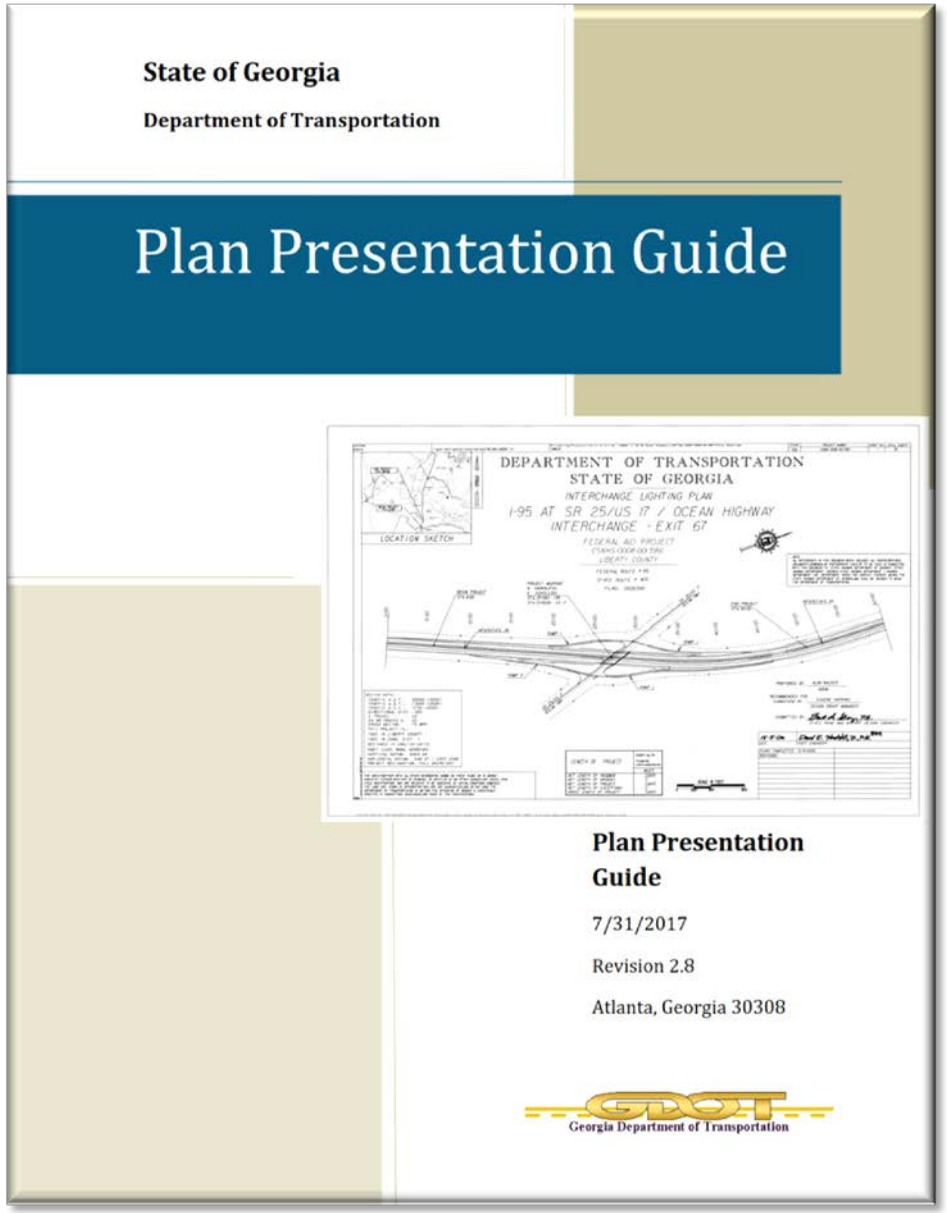
- *Include General Note: THIS PROJECT CONTAINS POST-CONSTRUCTION STORMWATER (PERMANENT) BMPS. REFER TO SECTION 38 FOR SPECIFIC REQUIREMENTS.*
- *Include a table with post-construction BMP types and locations similar to ERIT.*



PLAN PRESENTATION GUIDE (PPG)

–Section 5: Typical Sections

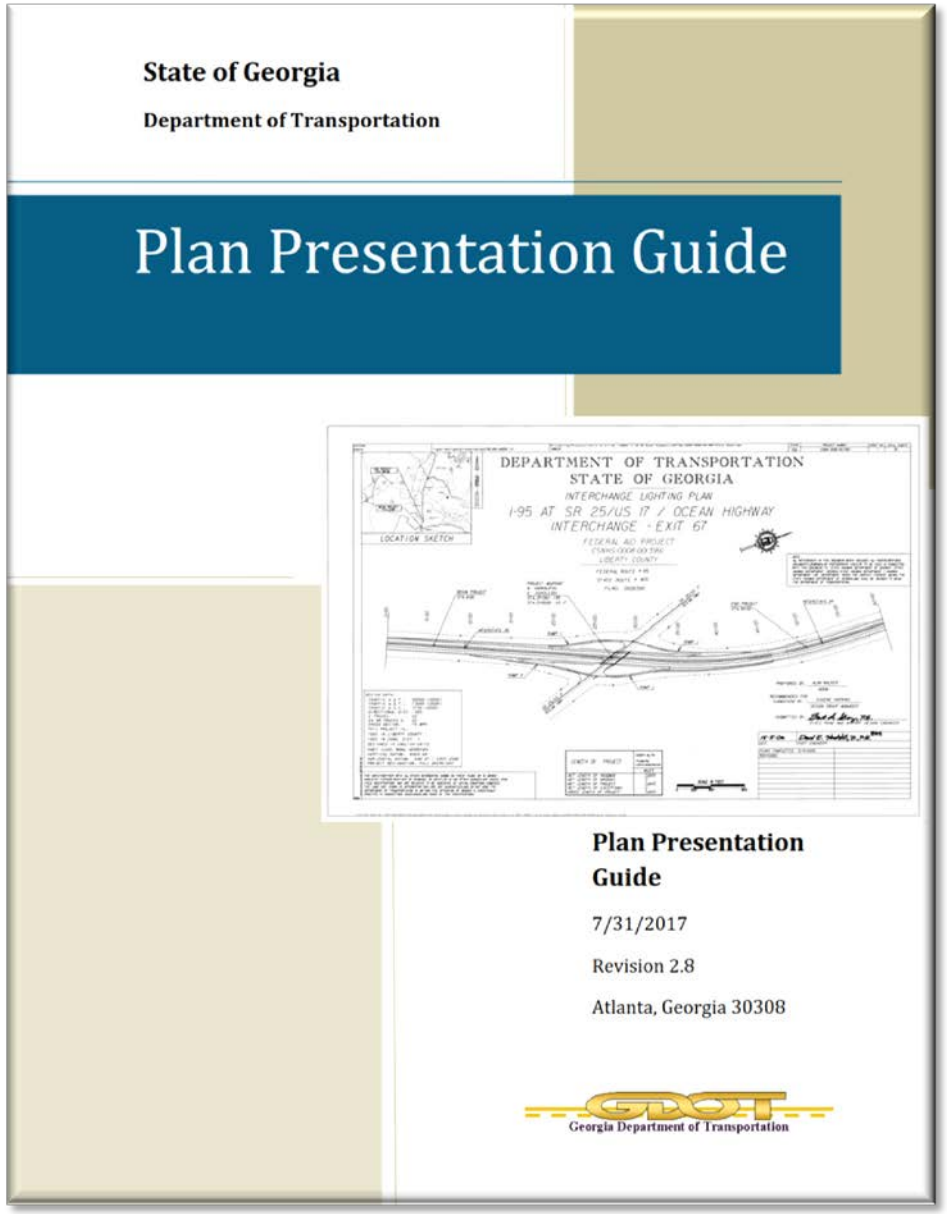
- *Include note specifying station range of BMPs affecting typical section (i.e. bioslope, filter strip) and reference to BMP detail sheet(s).*
- *Include note with station range of OGFC that has been specified for MS4 permit compliance.*



PLAN PRESENTATION GUIDE (PPG)

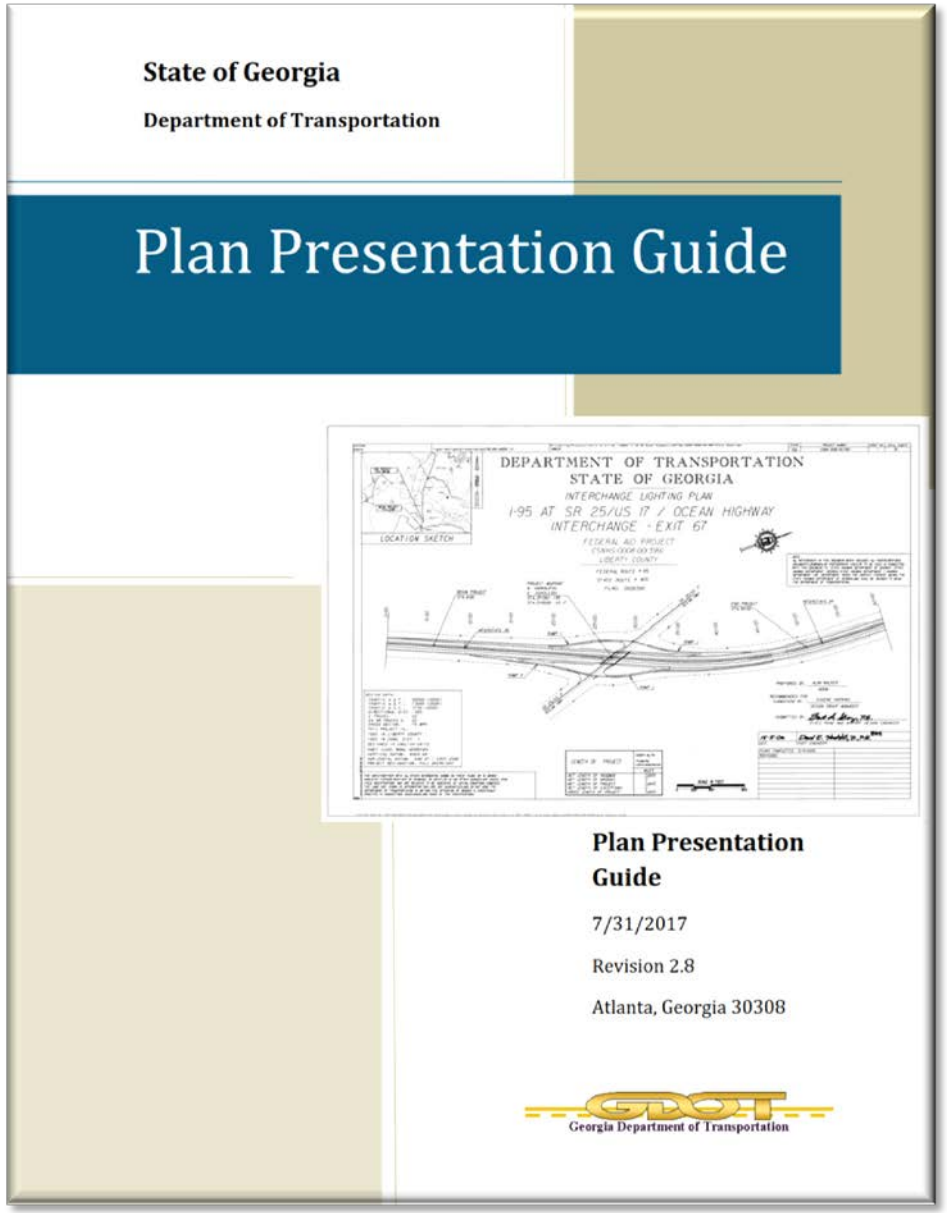
–Section 6: Summary of Quantities

- *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



PLAN PRESENTATION GUIDE (PPG)

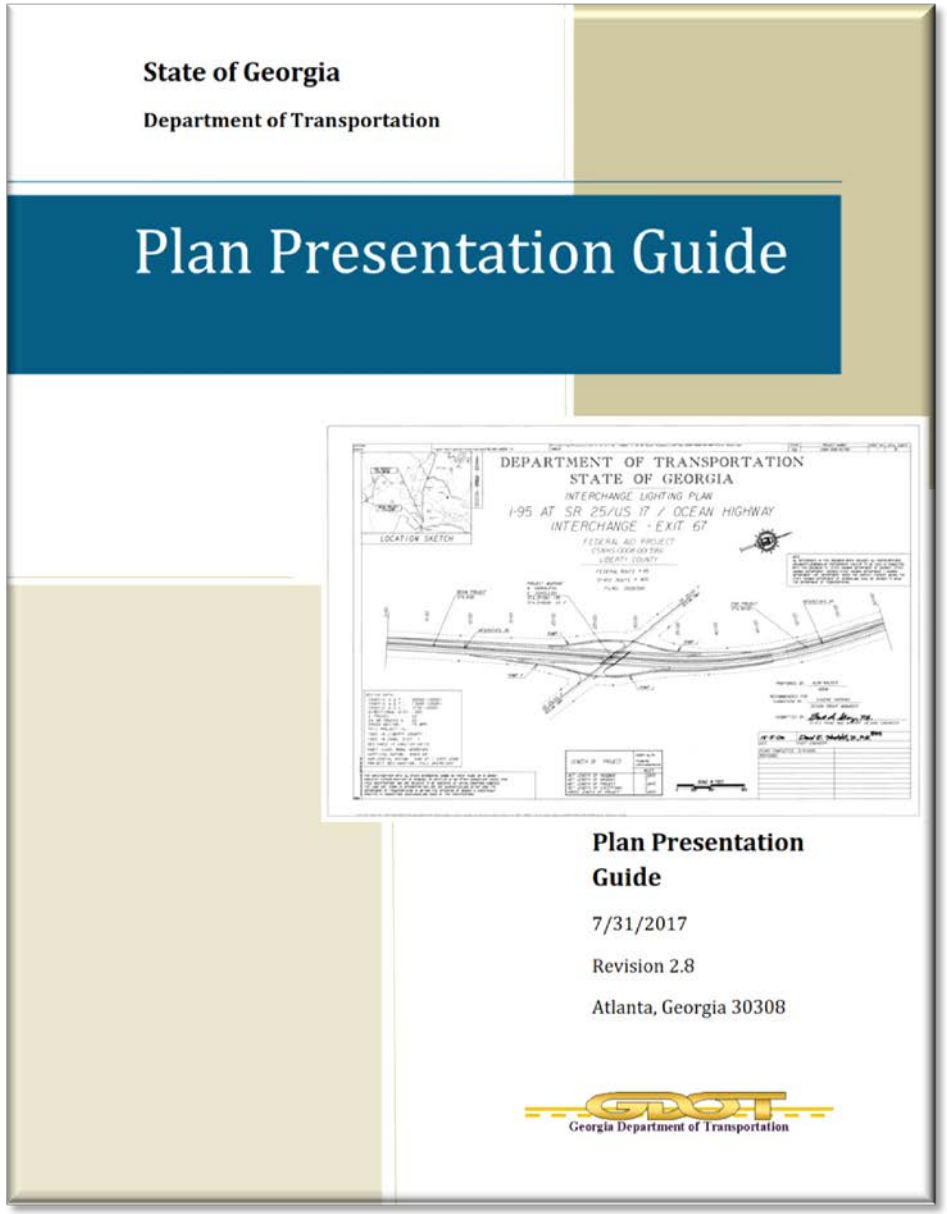
- **Section 13: Mainline Roadway, Crossroad, Side Street, Frontage Road and Ramp Plan Drawings**
  - *Post-Construction Stormwater BMPs:*
    - Outline (BMP footprint)
    - Label BMP Type (i.e. bioretention, infiltration trench, etc.)
    - Begin/End Stations
    - Reference Special Detail Sheet(s)
    - Maintenance access features (i.e. access road, fence)



PLAN PRESENTATION GUIDE (PPG)

–Section 22: Drainage Profiles

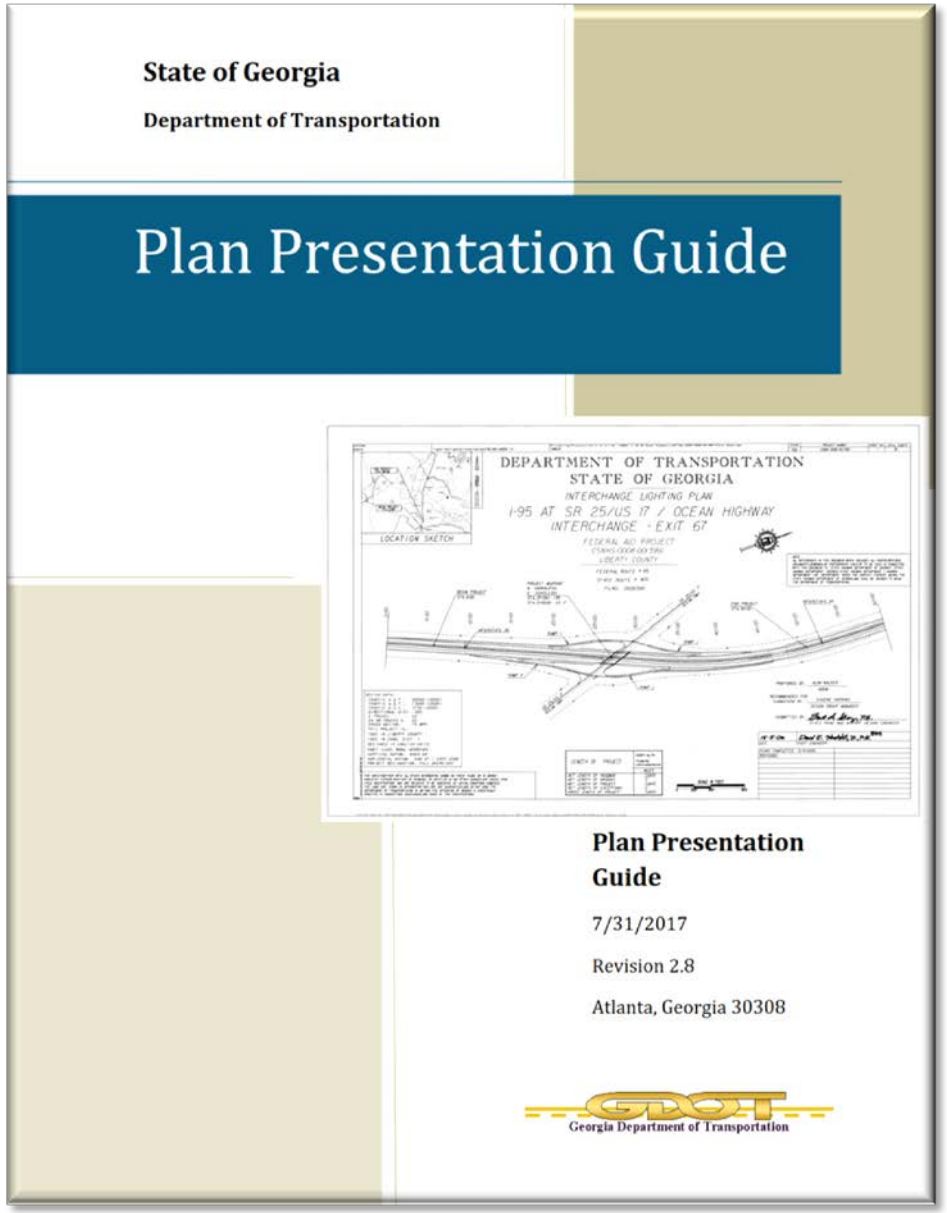
- Tie-in points from drainage system to post-construction stormwater BMPs with reference to BMP detail sheet(s)



PLAN PRESENTATION GUIDE (PPG)

–Section 23: Cross-Sections

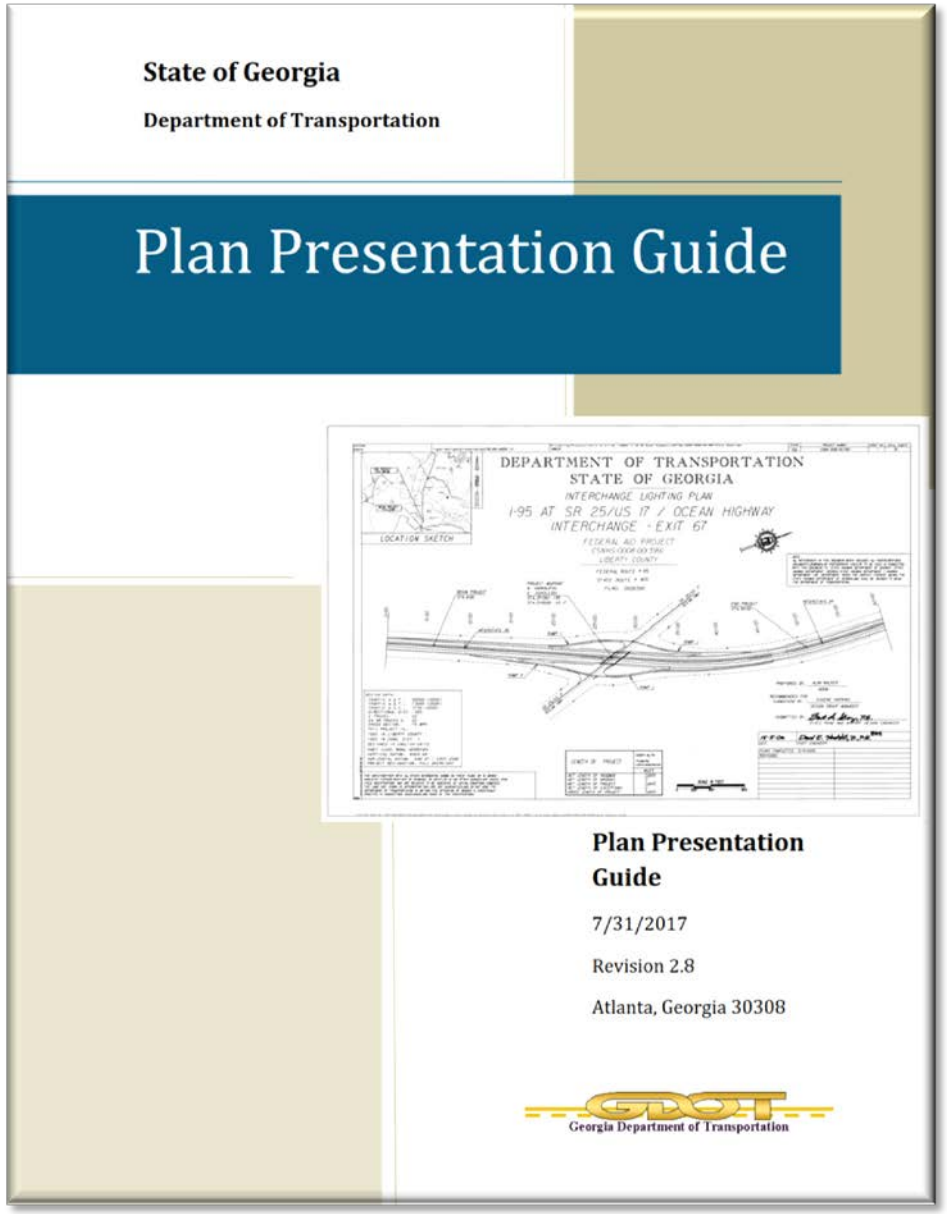
- Post-construction stormwater BMP finished grade elevations or reference to other plan section containing this information



PLAN PRESENTATION GUIDE (PPG)

–Section 38: Special Construction Details

- *Post-Construction Stormwater BMPs:*
  - –BMP Details
  - –Special Grading Sheets



POST-CONSTRUCTION BMP DETAILS

- Outlet Structure
  - Bioretention Basin
  - Dry Detention Basin
  - Enhanced Dry Swale
  - Enhanced Wet Swale
  - Sand Filter
  - Wet Detention Pond
- Bypass Structure
- Check Dam
- Planting Detail
- Riprap Forebay
- Underdrain Outlet
- Underdrain System
- Bioslope

POST-CONSTRUCTION BMP DETAILS

Located on R.O.A.D.S.

Roadway

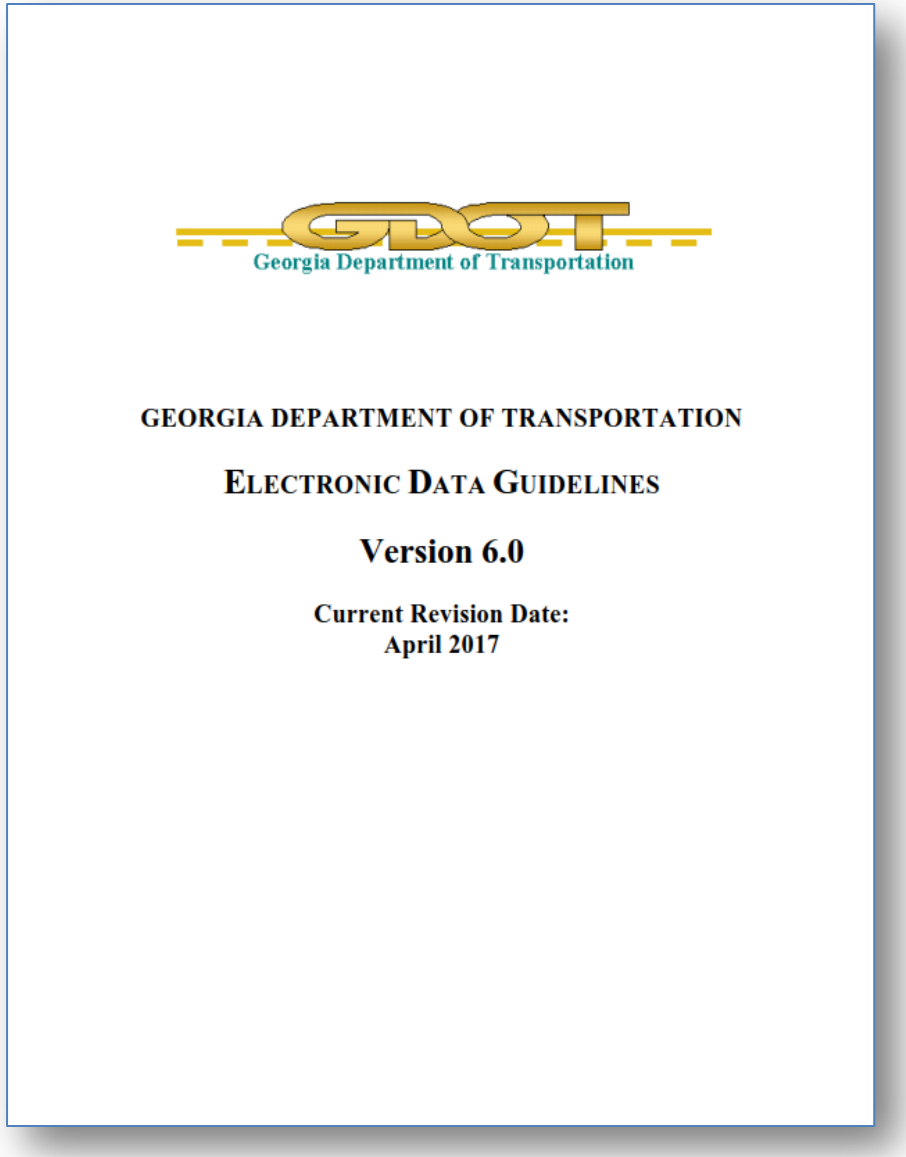
	Title	Revised	Contact
>	Category : Construction Stormwater (Erosion Control)		
>	Category : Design Policy		
>	Category : Drainage		
>	Category : Fish Passage		
v	Category : Stormwater Permit (MS4) & Special Design Post-Construction Details		
	Chief Engineer - Letter 01-20-12	1/20/2012	Brad McManus
	Georgia's MS4 Areas Map		Brad McManus
	MS4 Concept Level Design Spreadsheet	3/9/2016	Brad McManus
	MS4 Concept Report Summary	12/30/2016	Brad McManus
	MS4 Post-Letting PDP Process	8/21/2017	Brad McManus
	MS4 Preconstruction PDP Process	3/8/2017	Brad McManus
	Post-Construction Stormwater Report Attachment B	12/30/2016	Brad McManus
	Post-Construction Stormwater Report Help File	12/30/2016	Brad McManus
	Post-Construction Stormwater Report Template	12/30/2016	Brad McManus
	Special Design Post-Construction Details	8/2/2017	Brad McManus
	TMDL stream locator and Drainage structure inventory map service	3/11/2016	Brad McManus
	Worksheet J-1_Phase 1 Screening Assessment of Stormwater Infiltration	12/30/2016	Brad McManus

POST-CONSTRUCTION BMP SPECIAL GRADING SHEETS

- Bioretention Basin
- Bioslope
- Dry Detention Basin
- Enhanced Dry Swale
- Enhanced Wet Swale
- Sand Filter
- Wet Detention Pond (Micropool)
- Wet Detention Pond (Standard)
- Wet Detention Pond (Extended Detention)

ELECTRONIC DATA GUIDELINES (EDG)

- EDG does not include MS4 revisions to PPG
- Specific Guidance provided in Post-Construction Stormwater BMP Details and Special Grading Plans



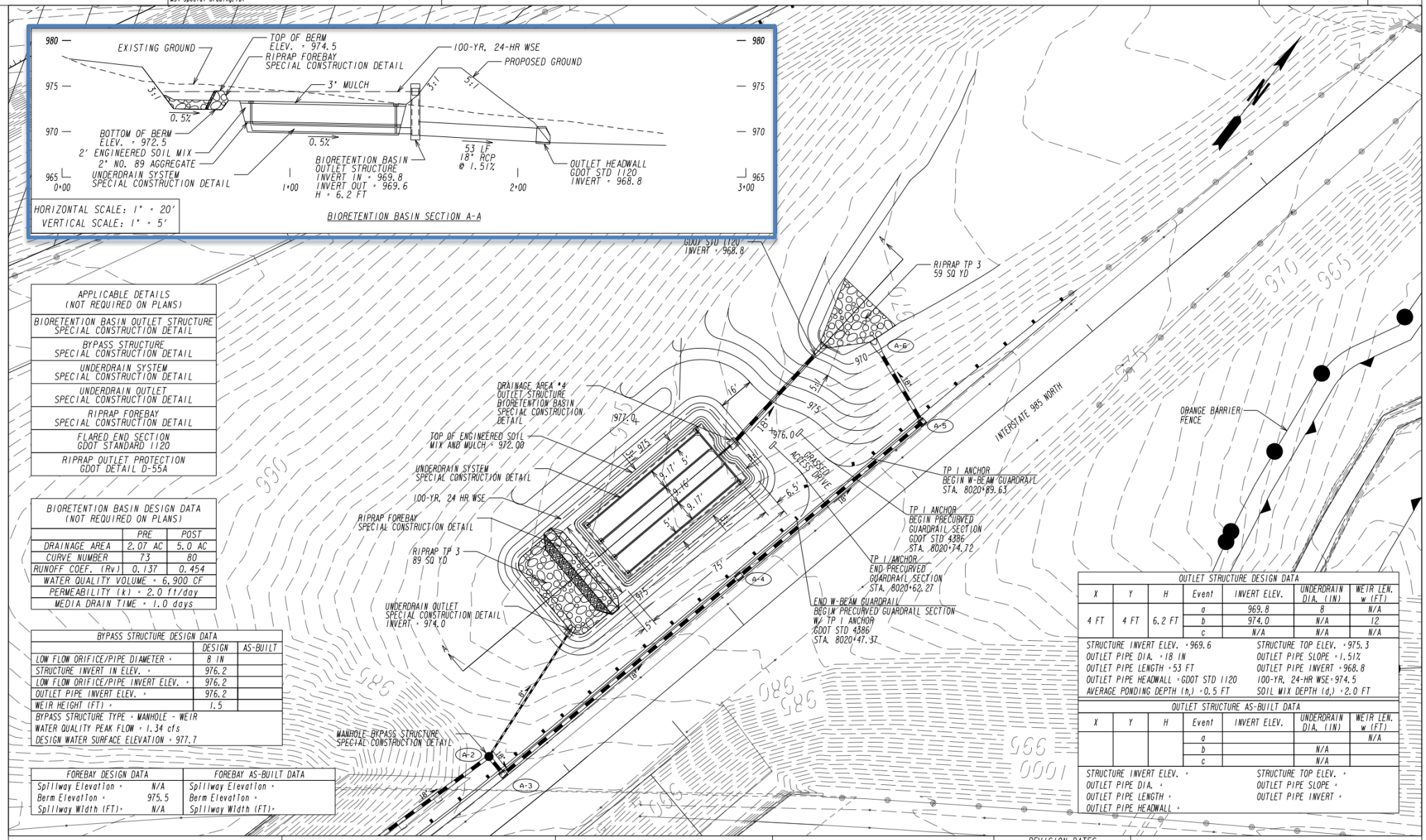
BIORETENTION BASIN SECTION A-A

APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT DATA
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=



OUTLET STRUCTURE DESIGN DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A
STRUCTURE INVERT ELEV. = 969.6				STRUCTURE TOP ELEV. = 975.3		
OUTLET PIPE DIA. = 18 IN				OUTLET PIPE SLOPE = 1.51%		
OUTLET PIPE LENGTH = 53 FT				OUTLET PIPE INVERT = 968.8		
OUTLET PIPE HEADWALL = GDOT STD 1120				100-YR, 24-HR WSE = 974.5		
AVERAGE PONDING DEPTH (h,) = 0.5 FT				SOIL MIX DEPTH (d,) = 2.0 FT		

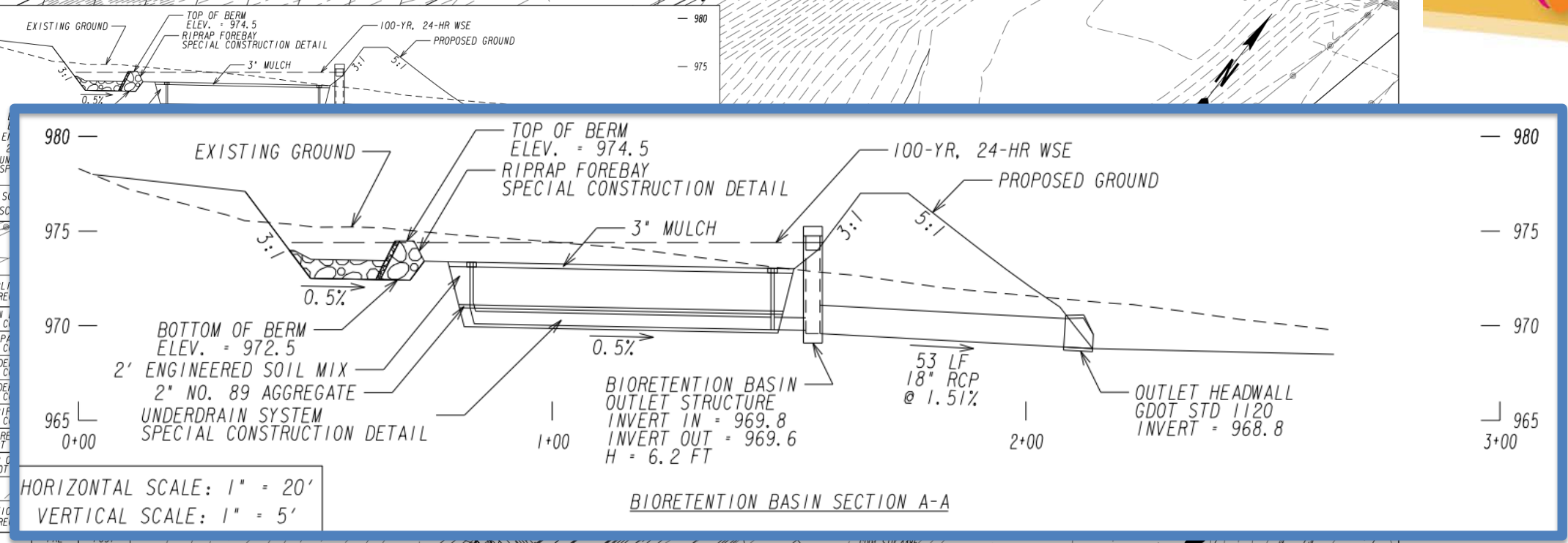
OUTLET STRUCTURE AS-BUILT DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	
STRUCTURE INVERT ELEV. =				STRUCTURE TOP ELEV. =		
OUTLET PIPE DIA. =				OUTLET PIPE SLOPE =		
OUTLET PIPE LENGTH =				OUTLET PIPE INVERT =		
OUTLET PIPE HEADWALL =						

SCALE IN FEET
0 20 40 80

REVISION DATES		

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 1 OF 2

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		
CORRECTED:		DATE:		38-
VERIFIED:		DATE:		



BIORETENTION BASIN SECTION A-A

DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT DATA
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=

RIPRAP TP 3
89 SQ YD

UNDERDRAIN OUTLET
SPECIAL CONSTRUCTION DETAIL
INVERT = 974.0

MANHOLE BYPASS STRUCTURE
SPECIAL CONSTRUCTION DETAIL

GDOT STD 4386
STA. 8020+74.72

TP 1 ANCHOR
END PRECURVED
GUARDRAIL SECTION
STA. 8020+62.27

END W-BEAM GUARDRAIL
BEGIN PRECURVED GUARDRAIL SECTION
W/ TP 1 ANCHOR
GDOT STD 4386
STA. 8020+47.37

OUTLET STRUCTURE DESIGN DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A
STRUCTURE INVERT ELEV. = 969.6				STRUCTURE TOP ELEV. = 975.3		
OUTLET PIPE DIA. = 18 IN				OUTLET PIPE SLOPE = 1.51%		
OUTLET PIPE LENGTH = 53 FT				OUTLET PIPE INVERT = 968.8		
OUTLET PIPE HEADWALL = GDOT STD 1120				100-YR, 24-HR WSE = 974.5		
AVERAGE PONDING DEPTH (h_a) = 0.5 FT				SOIL MIX DEPTH (d_s) = 2.0 FT		

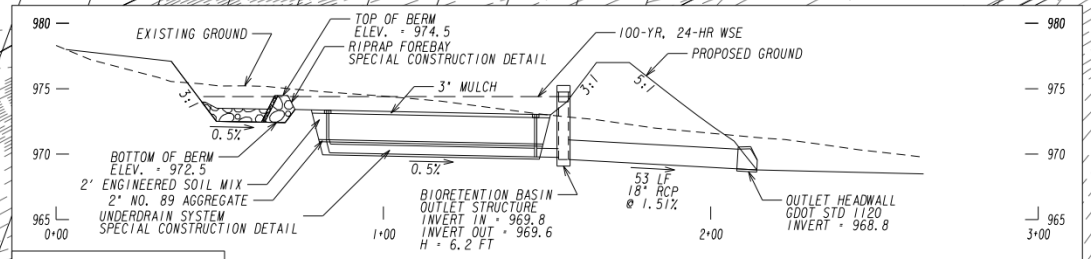
OUTLET STRUCTURE AS-BUILT DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	
STRUCTURE INVERT ELEV. =				STRUCTURE TOP ELEV. =		
OUTLET PIPE DIA. =				OUTLET PIPE SLOPE =		
OUTLET PIPE LENGTH =				OUTLET PIPE INVERT =		
OUTLET PIPE HEADWALL =						

SCALE IN FEET
0 20 40 80

REVISION DATES

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 1 OF 2

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	38-
VERIFIED:		DATE:	



HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

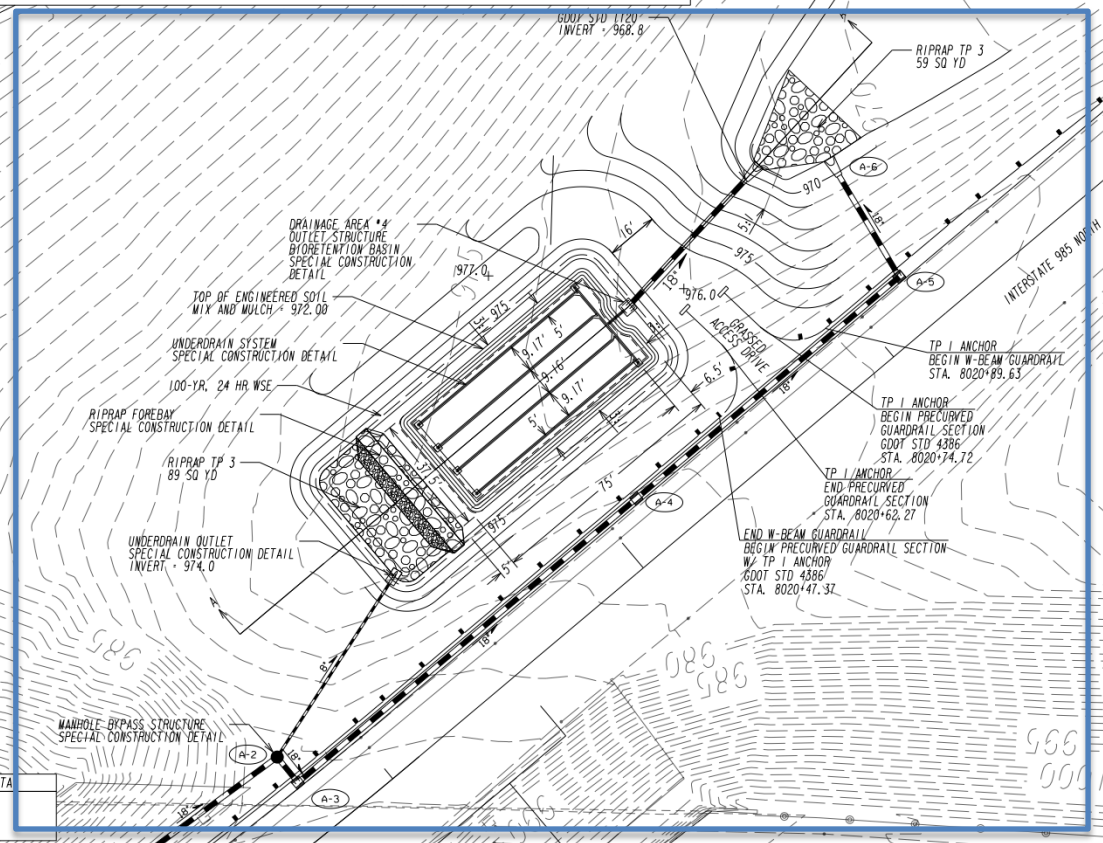
BIORETENTION BASIN SECTION A-A

APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT DATA
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=



OUTLET STRUCTURE DESIGN DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A
STRUCTURE INVERT ELEV. = 969.6				STRUCTURE TOP ELEV. = 975.3		
OUTLET PIPE DIA. = 18 IN				OUTLET PIPE SLOPE = 1.51%		
OUTLET PIPE LENGTH = 53 FT				OUTLET PIPE INVERT = 968.8		
OUTLET PIPE HEADWALL = GDOT STD 1120				100-YR, 24-HR WSE = 974.5		
AVERAGE PONDING DEPTH (h,) = 0.5 FT				SOIL MIX DEPTH (d,) = 2.0 FT		

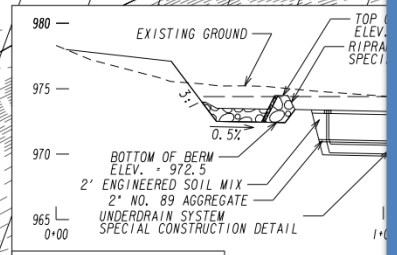
OUTLET STRUCTURE AS-BUILT DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	
STRUCTURE INVERT ELEV. =				STRUCTURE TOP ELEV. =		
OUTLET PIPE DIA. =				OUTLET PIPE SLOPE =		
OUTLET PIPE LENGTH =				OUTLET PIPE INVERT =		
OUTLET PIPE HEADWALL =						

SCALE IN FEET
0 20 40 80

REVISION DATES		

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 1 OF 2

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	38-



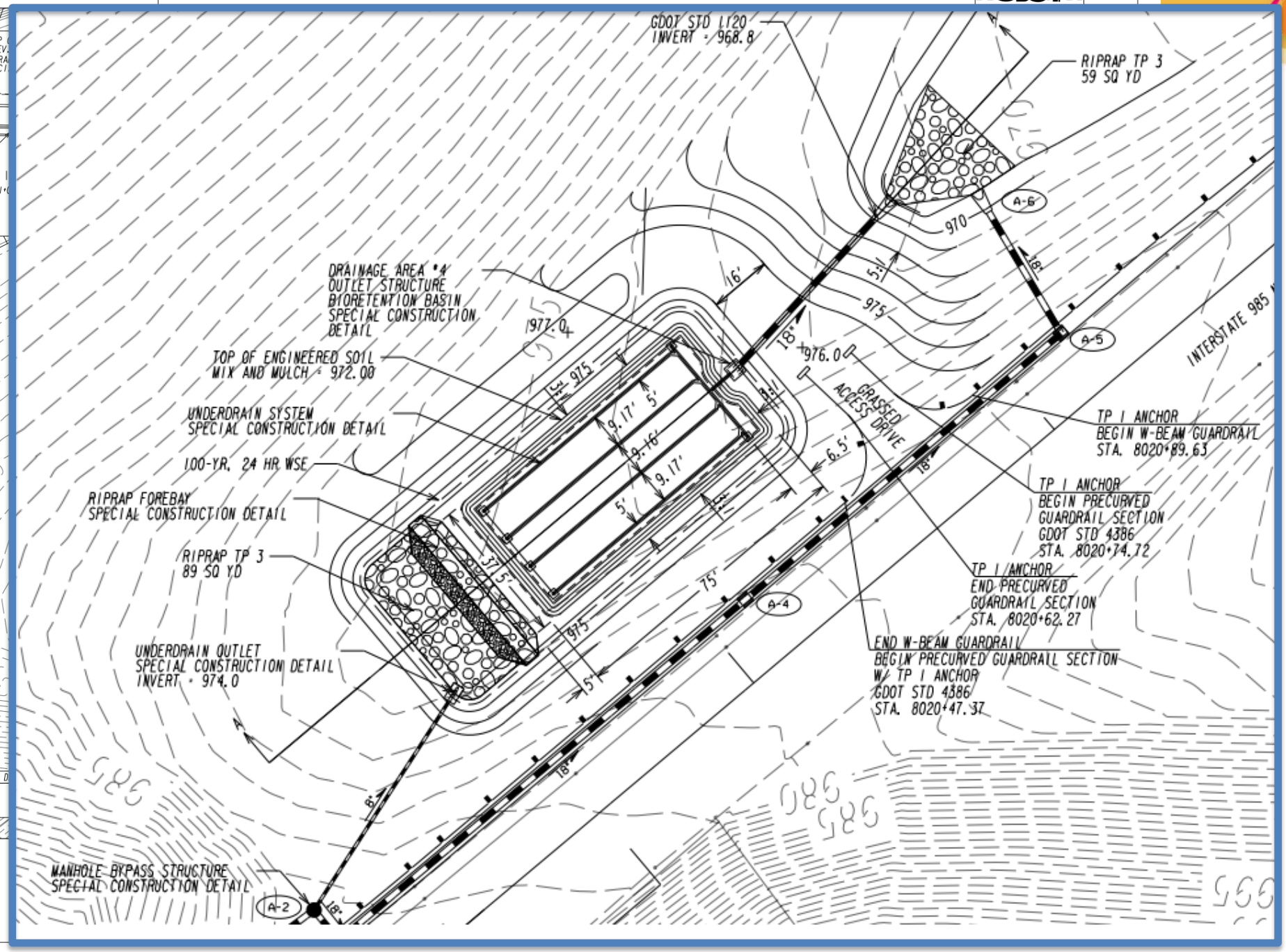
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

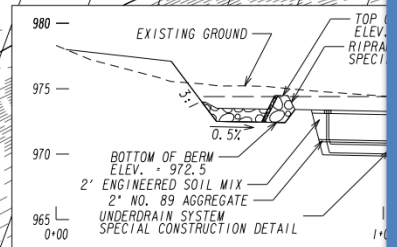
BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT D
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=



6/30/2017 11:07:28 AM | GPLOT-V8 | G:\TRA\640271\BMP Details\Special Grading Plan Sheets\Bioretention Basin Grading Sheet.dgn | P.I. No.
USER:CSarratt | WS4 Special Grading.tbl



HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

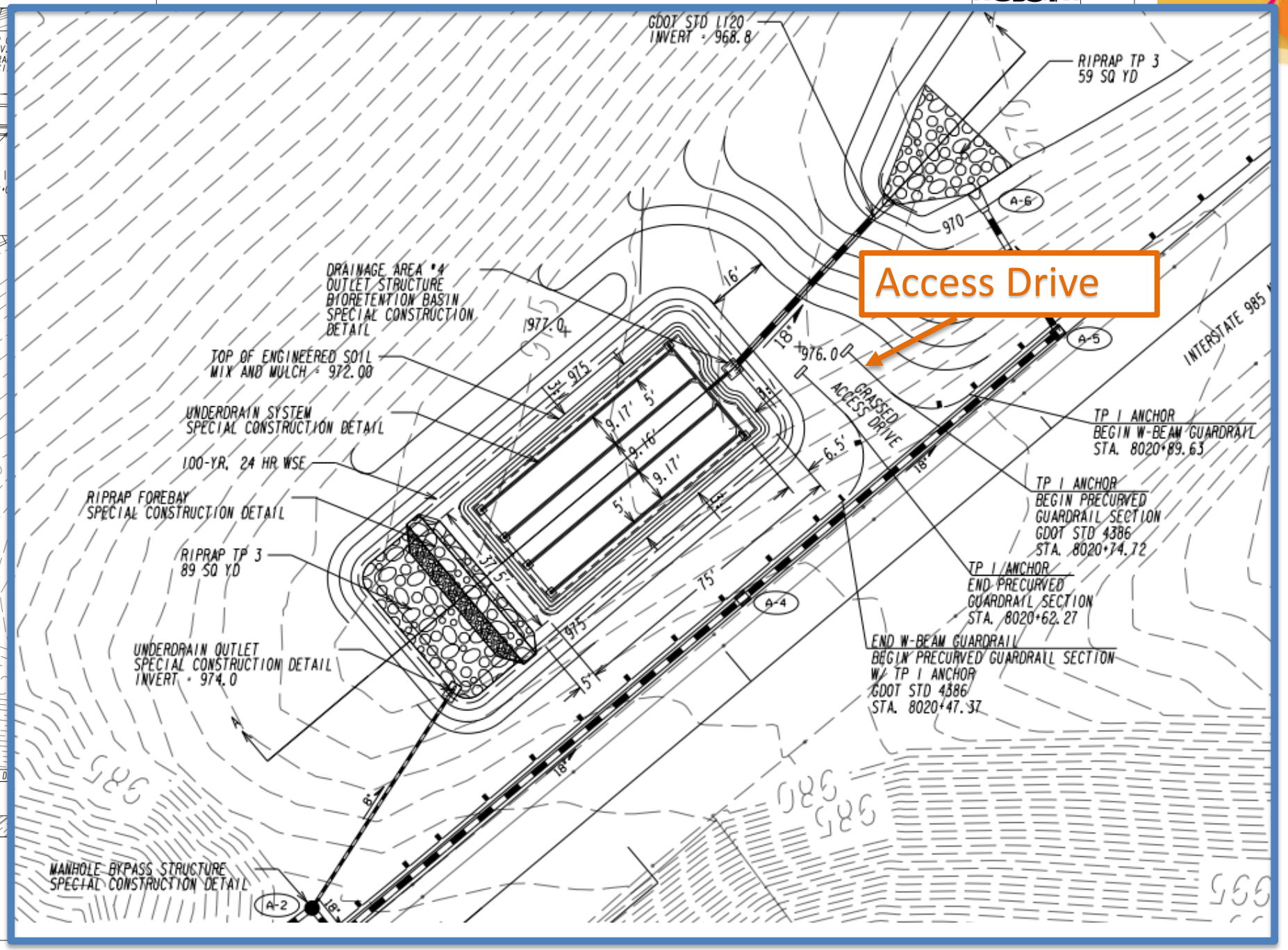
APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

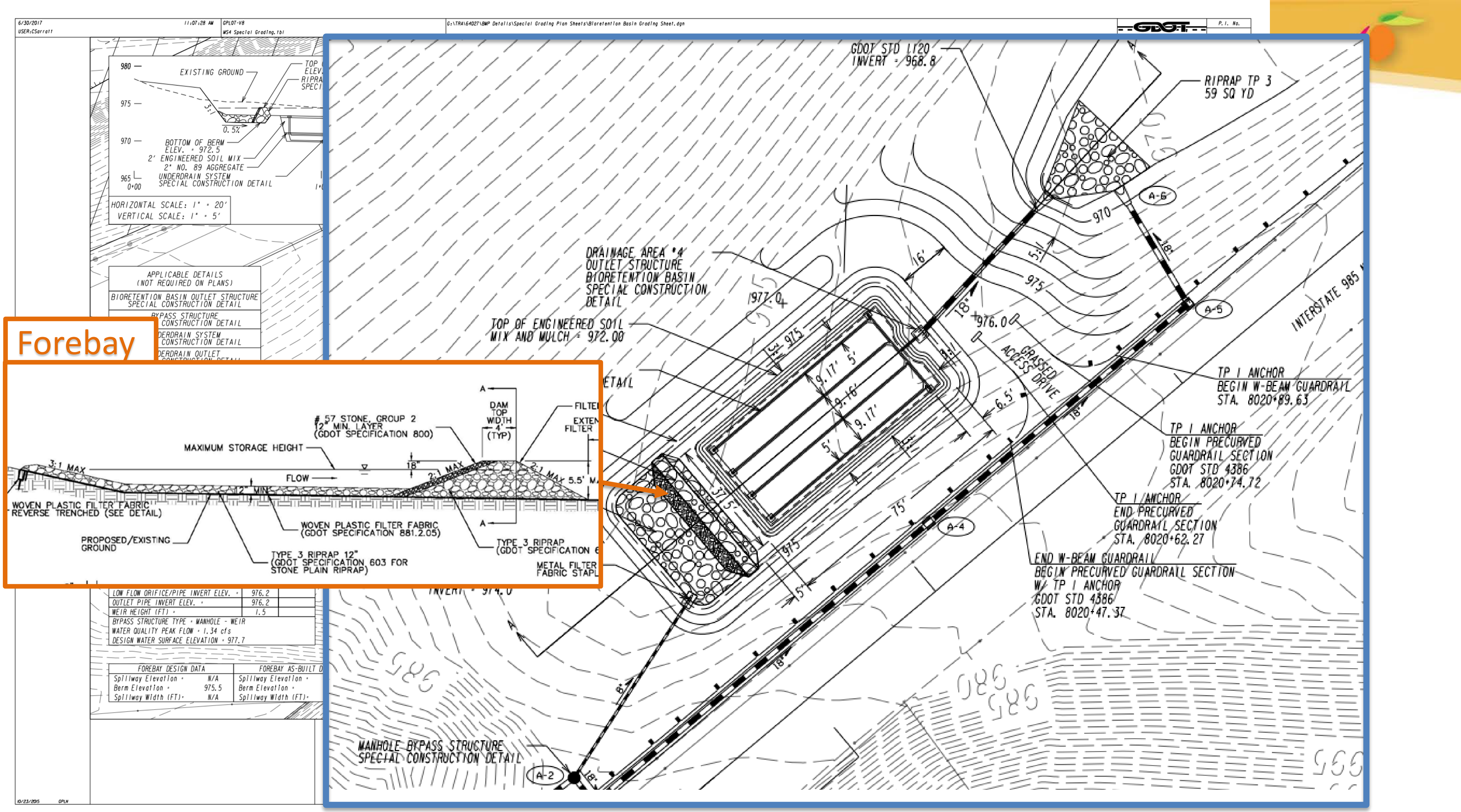
BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT D
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=

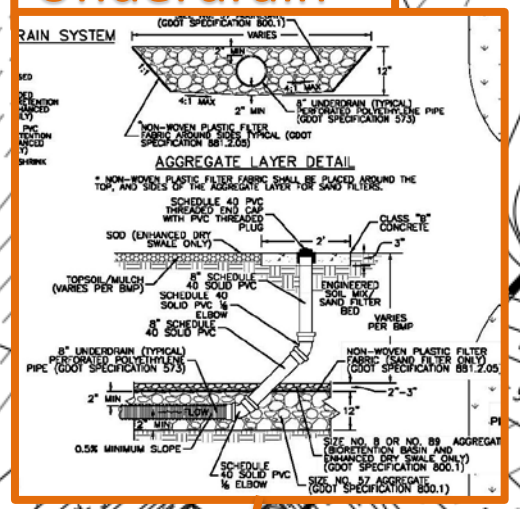
10/23/2015 GPLN

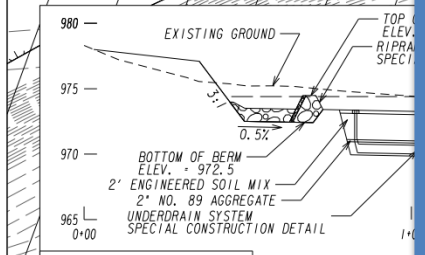



Forebay
EXISTING GROUND
BOTTOM OF BERM ELEV. = 972.5
2' ENGINEERED SOIL MIX
2" NO. 89 AGGREGATE
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'
APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
#57 STONE, GROUP 2
12" MIN. LAYER
(GDOT SPECIFICATION 800)
MAXIMUM STORAGE HEIGHT
DAM TOP WIDTH 4' (TYP)
3:1 MAX
FLOW
2:1 MAX
12" MIN.
WOVEN PLASTIC FILTER FABRIC REVERSE TRENCHED (SEE DETAIL)
WOVEN PLASTIC FILTER FABRIC (GDOT SPECIFICATION 881.2.05)
PROPOSED/EXISTING GROUND
TYPE 3 RIPRAP 12" (GDOT SPECIFICATION 603 FOR STONE PLAIN RIPRAP)
LOW FLOW ORIFICE/PIPE INVERT ELEV. = 976.2
OUTLET PIPE INVERT ELEV. = 976.2
WEIR HEIGHT (FT) = 1.5
BYPASS STRUCTURE TYPE = MANHOLE - WEIR
WATER QUALITY PEAK FLOW = 1.34 cfs
DESIGN WATER SURFACE ELEVATION = 977.7
FOREBAY DESIGN DATA
Spillway Elevation = N/A
Berm Elevation = 975.5
Spillway Width (FT) = N/A
GDOT STD 1120
INVERT = 968.8
RIPRAP TP 3
59 SQ YD
DRAINAGE AREA #4
OUTLET STRUCTURE
BIORETENTION BASIN
SPECIAL CONSTRUCTION DETAIL
TOP OF ENGINEERED SOIL MIX AND MULCH = 972.00
GRASSED ACCESS DRIVE
INTERSTATE 985
TP 1 ANCHOR
BEGIN W-BEAM GUARDRAIL
STA. 8020+89.63
TP 1 ANCHOR
BEGIN PRECURVED GUARDRAIL SECTION
GDOT STD 4386
STA. 8020+74.72
TP 1 ANCHOR
END PRECURVED GUARDRAIL SECTION
STA. 8020+62.27
END W-BEAM GUARDRAIL
BEGIN PRECURVED GUARDRAIL SECTION
W/ TP 1 ANCHOR
GDOT STD 4386
STA. 8020+47.37
MANHOLE BYPASS STRUCTURE
SPECIAL CONSTRUCTION DETAIL

6/30/2017 11:07:28 AM GPLOT-V8
USER:CSarratt WS4 Special Grading.tbl
G:\TRA\640027\BMP Details\Special Grading Plan Sheets\Bioretention Basin Grading Sheet.dgn
GDOT P. I. No.

Underdrain





APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT D
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=

DRAINAGE AREA #4
OUTLET STRUCTURE
BIORETENTION BASIN
SPECIAL CONSTRUCTION
DETAIL

TOP OF ENGINEERED SOIL MIX AND MULCH = 972.00

UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL

100-YR, 24 HR WSE

RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL

RIPRAP TP 3
89 SQ YD

UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
INVERT = 974.0

MANHOLE BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL

RIPRAP TP 3
59 SQ YD

GRASSED ACCESS DRIVE

TP I ANCHOR
BEGIN W-BEAM GUARDRAIL
STA. 8020+89.63

TP I ANCHOR
BEGIN PRECURVED GUARDRAIL SECTION
GDOT STD 4386
STA. 8020+74.72

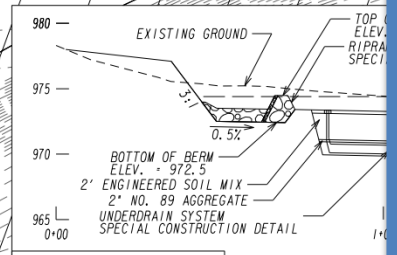
TP I ANCHOR
END PRECURVED GUARDRAIL SECTION
STA. 8020+62.27

END W-BEAM GUARDRAIL
BEGIN PRECURVED GUARDRAIL SECTION
W/ TP I ANCHOR
GDOT STD 4386
STA. 8020+47.37

INTERSTATE 985

10/23/2015 GPLN

6/30/2017 11:07:28 AM GPLOT-V8
USER:CSarratt WS4 Special Grading.tbl
G:\TRA\640027\BMP Details\Special Grading Plan Sheets\Bioretention Basin Grading Sheet.dgn
GDOT P. I. No.



HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

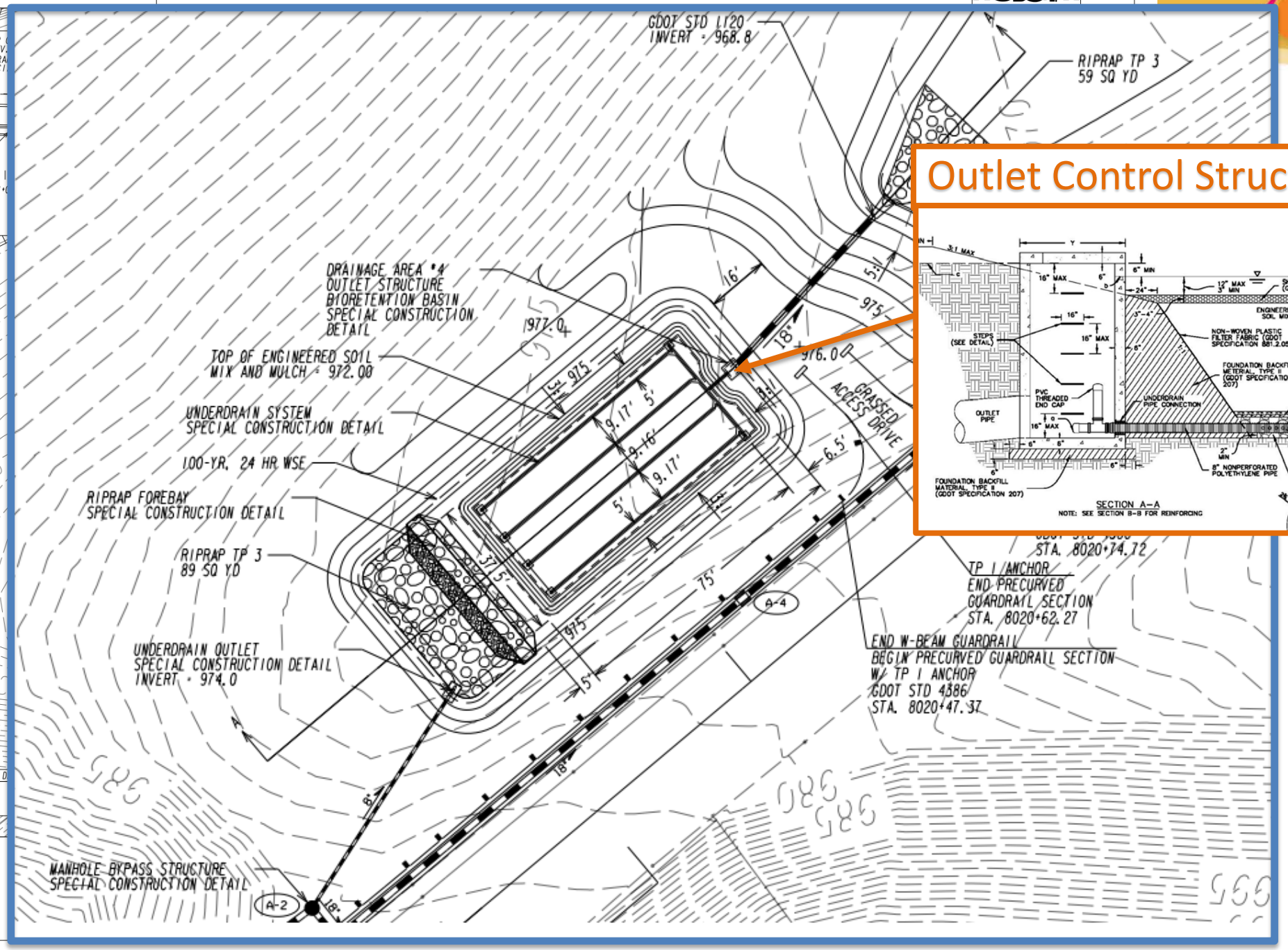
APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

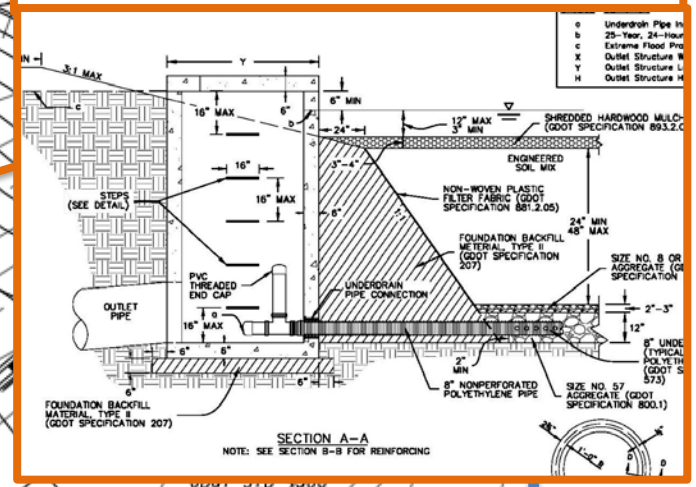
BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT D
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=

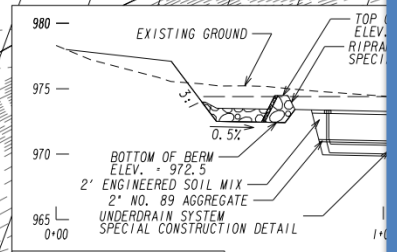
10/23/2015 GPLN



Outlet Control Structure



6/30/2017 11:07:28 AM | GPLOT-V8 | G:\TRA\640027\BMP Details\Special Grading Plan Sheets\Bioretention Basin Grading Sheet.dgn | P.I. No.
USER:CSarratt | WS4 Special Grading.tbl



HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

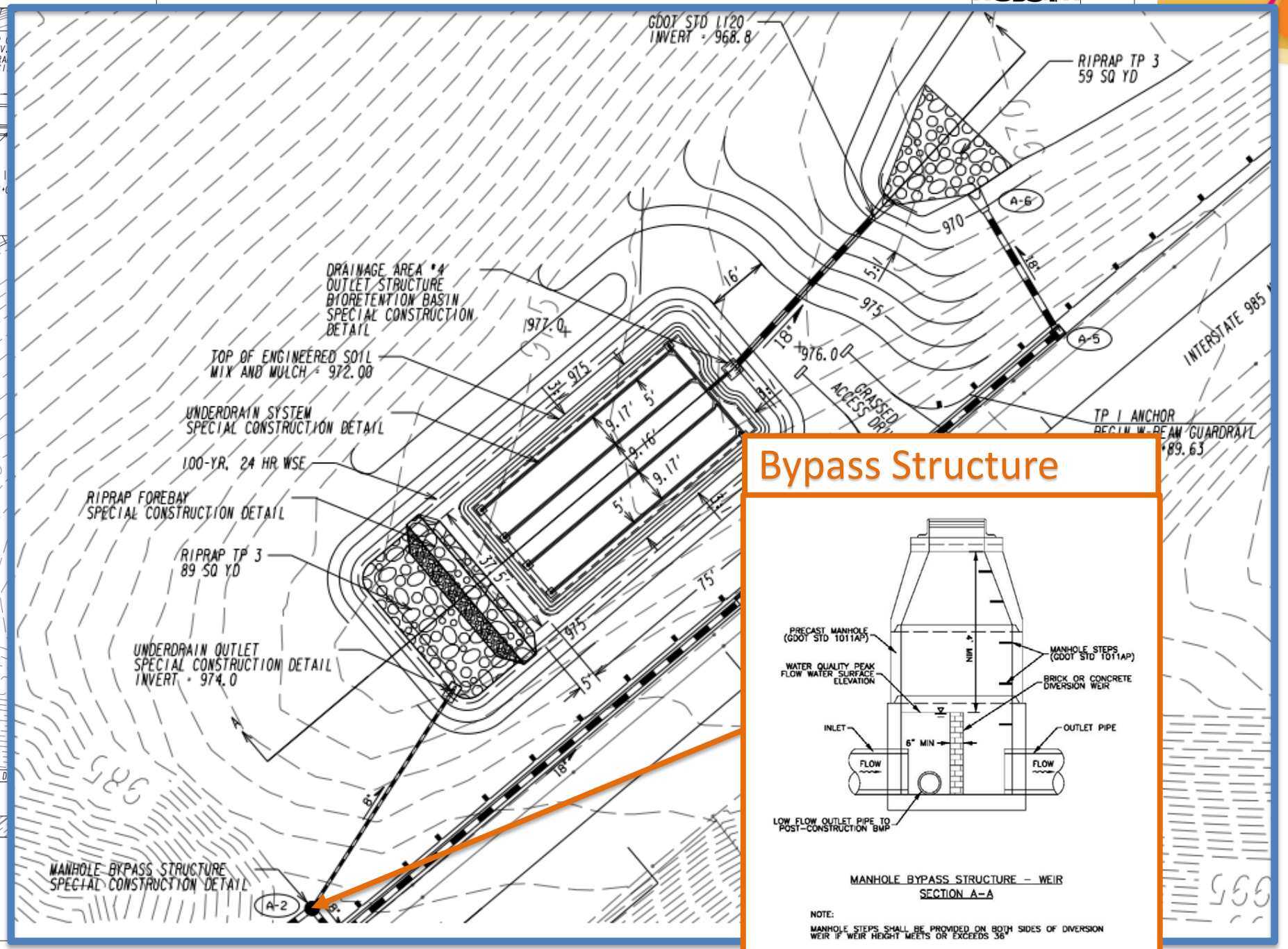
APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT D
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=

10/23/2015 GPLN



Bypass Structure

MANHOLE BYPASS STRUCTURE – WEIR
SECTION A-A

NOTE:
MANHOLE STEPS SHALL BE PROVIDED ON BOTH SIDES OF DIVERSION WEIR IF WEIR HEIGHT MEETS OR EXCEEDS 36"

EXAMPLE LARGE ESTABLISHED BIORETENTION FACILITY

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

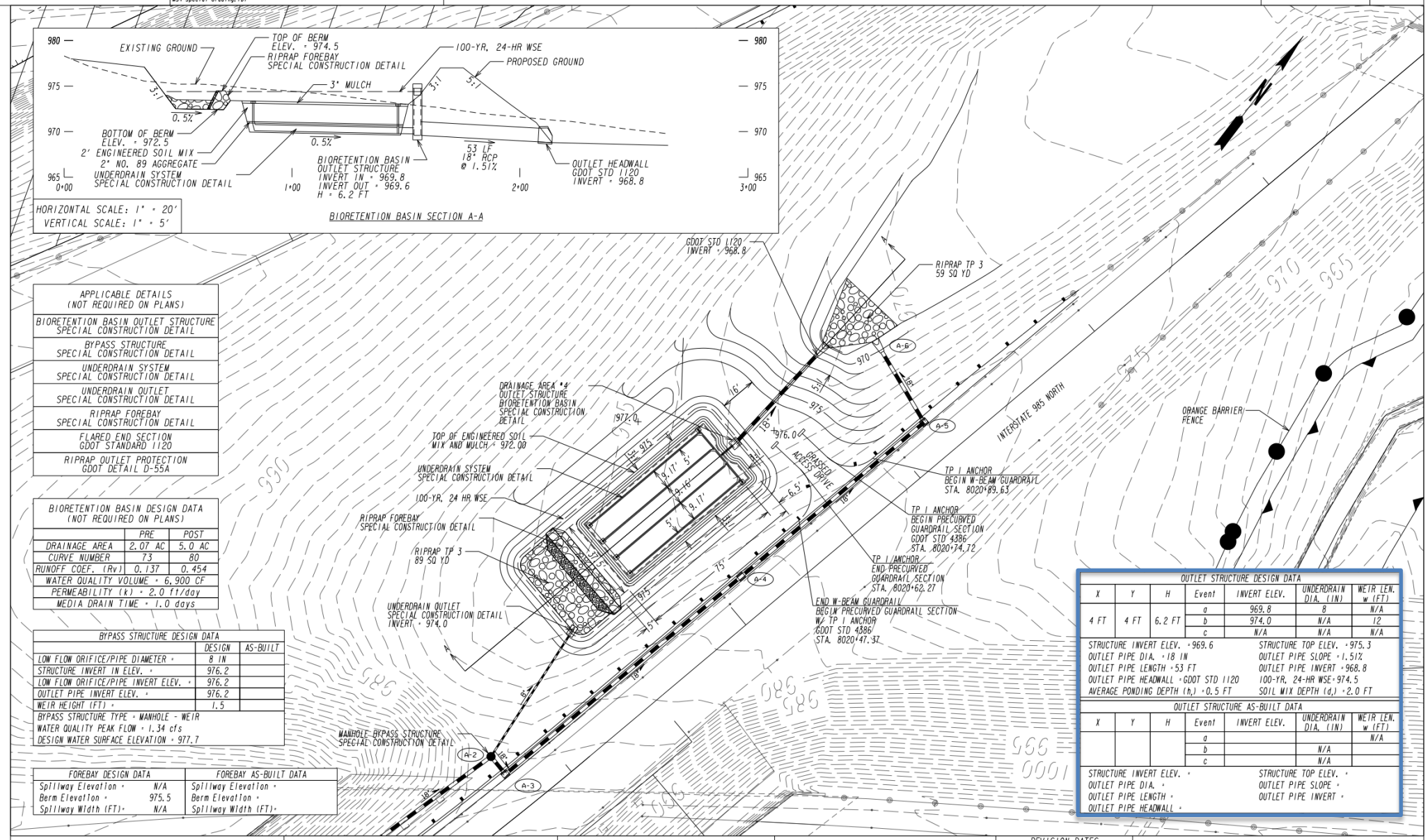
BIORETENTION BASIN SECTION A-A

APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT DATA
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=



OUTLET STRUCTURE DESIGN DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A
STRUCTURE INVERT ELEV. = 969.6				STRUCTURE TOP ELEV. = 975.3		
OUTLET PIPE DIA. = 18 IN				OUTLET PIPE SLOPE = 1.51%		
OUTLET PIPE LENGTH = 53 FT				OUTLET PIPE INVERT = 968.8		
OUTLET PIPE HEADWALL = GDOT STD 1120				100-YR, 24-HR WSE = 974.5		
AVERAGE PONDING DEPTH (h,) = 0.5 FT				SOIL MIX DEPTH (d,) = 2.0 FT		

OUTLET STRUCTURE AS-BUILT DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	
STRUCTURE INVERT ELEV. =				STRUCTURE TOP ELEV. =		
OUTLET PIPE DIA. =				OUTLET PIPE SLOPE =		
OUTLET PIPE LENGTH =				OUTLET PIPE INVERT =		
OUTLET PIPE HEADWALL =						

SCALE IN FEET
0 20 40 80

REVISION DATES		

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 1 OF 2

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	
VERIFIED:		DATE:	38-

OUTLET STRUCTURE DESIGN DATA

X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A

STRUCTURE INVERT ELEV. = 969.6
OUTLET PIPE DIA. = 18 IN
OUTLET PIPE LENGTH = 53 FT
OUTLET PIPE HEADWALL = GDOT STD 1120
AVERAGE PONDING DEPTH (h_p) = 0.5 FT

STRUCTURE TOP ELEV. = 975.3
OUTLET PIPE SLOPE = 1.51%
OUTLET PIPE INVERT = 968.8
100-YR, 24-HR WSE = 974.5
SOIL MIX DEPTH (d_p) = 2.0 FT

OUTLET STRUCTURE AS-BUILT DATA

X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	

STRUCTURE INVERT ELEV. =
OUTLET PIPE DIA. =
OUTLET PIPE LENGTH =
OUTLET PIPE HEADWALL =

STRUCTURE TOP ELEV. =
OUTLET PIPE SLOPE =
OUTLET PIPE INVERT =

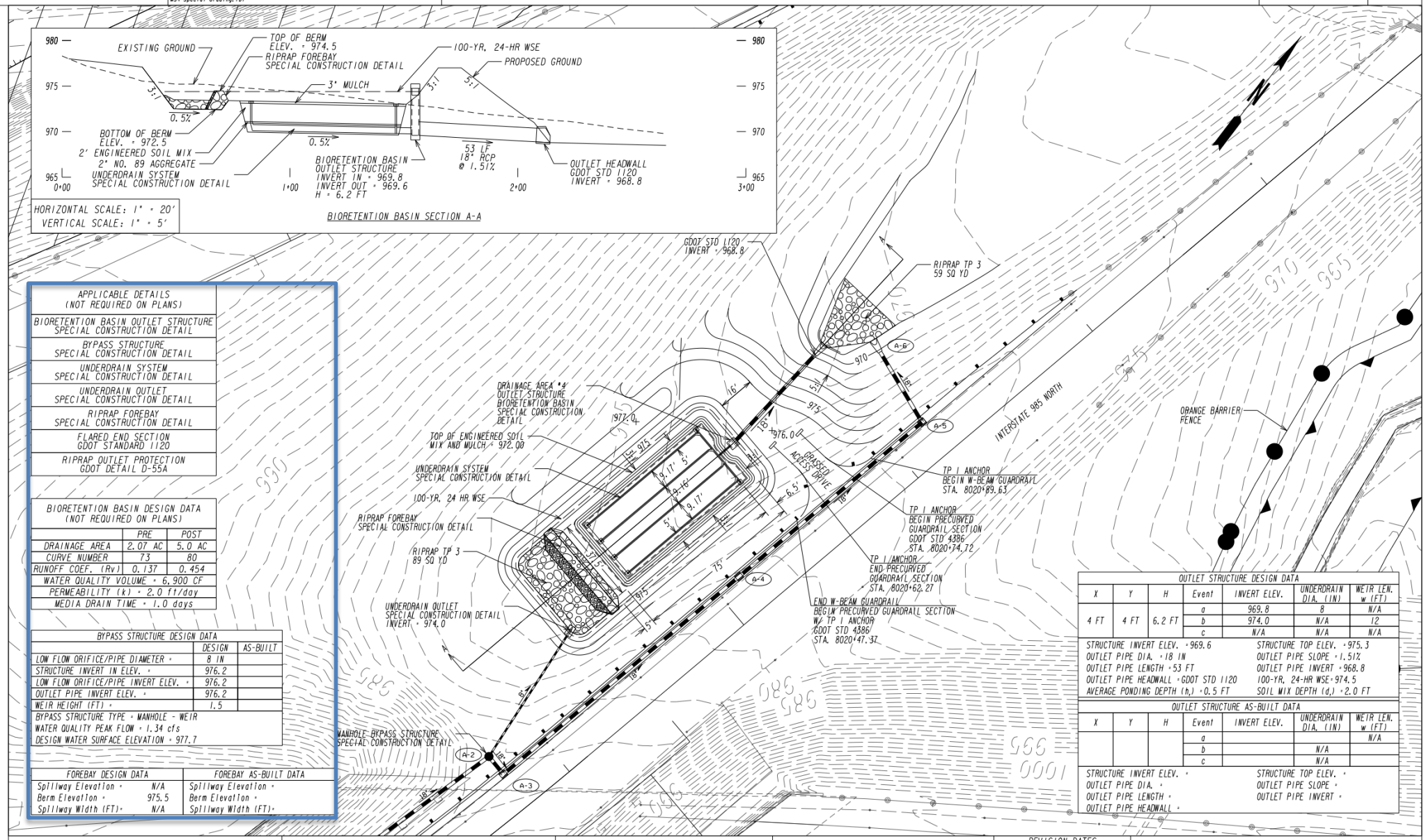
BIORETENTION BASIN SECTION A-A

APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT DATA
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=



OUTLET STRUCTURE DESIGN DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A
STRUCTURE INVERT ELEV. = 969.6				STRUCTURE TOP ELEV. = 975.3		
OUTLET PIPE DIA. = 18 IN				OUTLET PIPE SLOPE = 1.51%		
OUTLET PIPE LENGTH = 53 FT				OUTLET PIPE INVERT = 968.8		
OUTLET PIPE HEADWALL = GDOT STD 1120				100-YR, 24-HR WSE = 974.5		
AVERAGE PONDING DEPTH (h,) = 0.5 FT				SOIL MIX DEPTH (d,) = 2.0 FT		

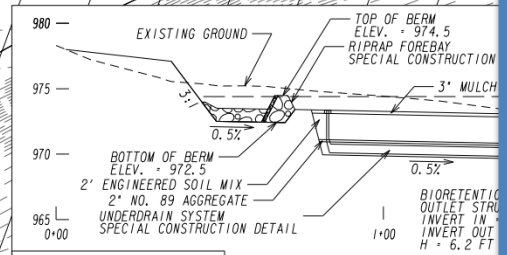
OUTLET STRUCTURE AS-BUILT DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	
STRUCTURE INVERT ELEV. =				STRUCTURE TOP ELEV. =		
OUTLET PIPE DIA. =				OUTLET PIPE SLOPE =		
OUTLET PIPE LENGTH =				OUTLET PIPE INVERT =		
OUTLET PIPE HEADWALL =						

SCALE IN FEET
0 20 40 80

REVISION DATES

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 1 OF 2

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	38-
VERIFIED:		DATE:	

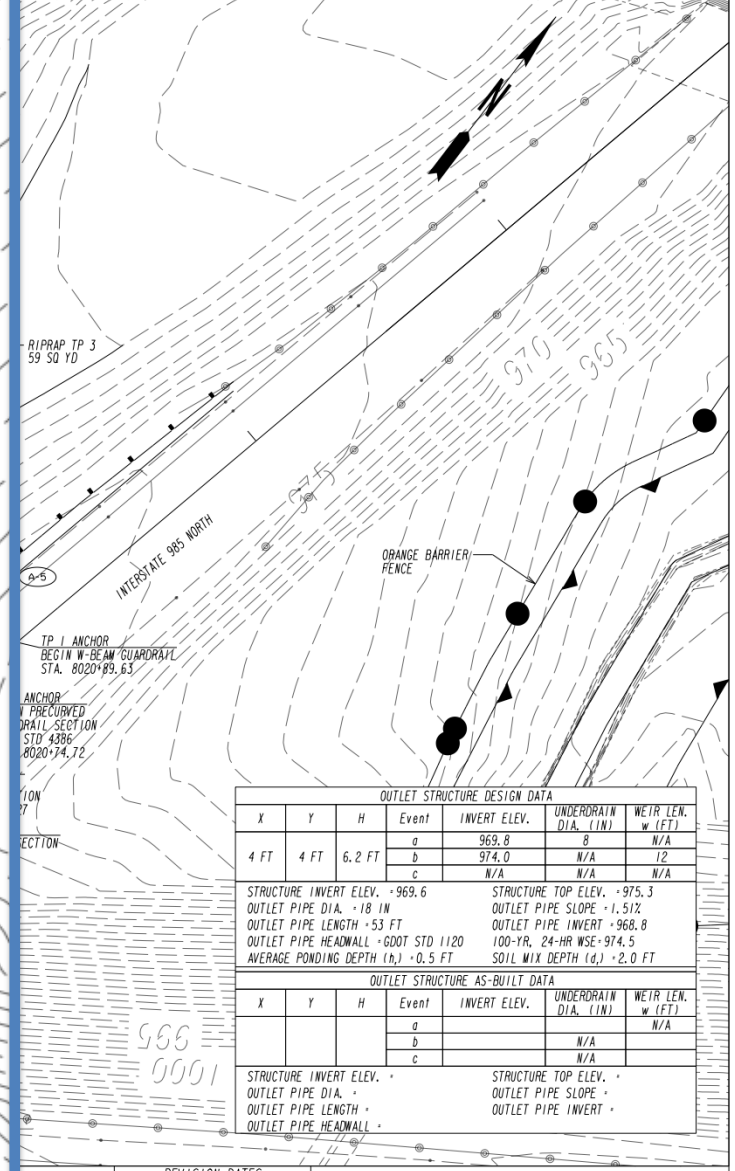


APPLICABLE DETAILS (NOT REQUIRED ON PLANS)
BIORETENTION BASIN OUTLET STRUCTURE SPECIAL CONSTRUCTION DETAIL
BYPASS STRUCTURE SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN SYSTEM SPECIAL CONSTRUCTION DETAIL
UNDERDRAIN OUTLET SPECIAL CONSTRUCTION DETAIL
RIPRAP FOREBAY SPECIAL CONSTRUCTION DETAIL
FLARED END SECTION GDOT STANDARD 1120
RIPRAP OUTLET PROTECTION GDOT DETAIL D-55A

BIORETENTION BASIN DESIGN DATA (NOT REQUIRED ON PLANS)		
	PRE	POST
DRAINAGE AREA	2.07 AC	5.0 AC
CURVE NUMBER	73	80
RUNOFF COEF. (Rv)	0.137	0.454
WATER QUALITY VOLUME = 6,900 CF		
PERMEABILITY (k) = 2.0 ft/day		
MEDIA DRAIN TIME = 1.0 days		

BYPASS STRUCTURE DESIGN DATA		
	DESIGN	AS-BUILT
LOW FLOW ORIFICE/PIPE DIAMETER =	8 IN	
STRUCTURE INVERT IN ELEV. =	976.2	
LOW FLOW ORIFICE/PIPE INVERT ELEV. =	976.2	
OUTLET PIPE INVERT ELEV. =	976.2	
WEIR HEIGHT (FT) =	1.5	
BYPASS STRUCTURE TYPE = MANHOLE - WEIR		
WATER QUALITY PEAK FLOW = 1.34 cfs		
DESIGN WATER SURFACE ELEVATION = 977.7		

FOREBAY DESIGN DATA		FOREBAY AS-BUILT DATA
Spillway Elevation =	N/A	Spillway Elevation =
Berm Elevation =	975.5	Berm Elevation =
Spillway Width (FT)=	N/A	Spillway Width (FT)=



OUTLET STRUCTURE DESIGN DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
4 FT	4 FT	6.2 FT	a	969.8	8	N/A
			b	974.0	N/A	12
			c	N/A	N/A	N/A
STRUCTURE INVERT ELEV. = 969.6				STRUCTURE TOP ELEV. = 975.3		
OUTLET PIPE DIA. = 18 IN				OUTLET PIPE SLOPE = 1.51%		
OUTLET PIPE LENGTH = 53 FT				OUTLET PIPE INVERT = 968.8		
OUTLET PIPE HEADWALL = GDOT STD 1120				100-YR, 24-HR WSE = 974.5		
AVERAGE PONDING DEPTH (h_p) = 0.5 FT				SOIL MIX DEPTH (d_s) = 2.0 FT		

OUTLET STRUCTURE AS-BUILT DATA						
X	Y	H	Event	INVERT ELEV.	UNDERDRAIN DIA. (IN)	WEIR LEN. w (FT)
			a			N/A
			b		N/A	
			c		N/A	
STRUCTURE INVERT ELEV. =				STRUCTURE TOP ELEV. =		
OUTLET PIPE DIA. =				OUTLET PIPE SLOPE =		
OUTLET PIPE LENGTH =				OUTLET PIPE INVERT =		
OUTLET PIPE HEADWALL =						

REVISION DATES		

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 1 OF 2

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	38-
VERIFIED:		DATE:	

Reference File Name	Level Name	Description
Special Construction Detail (Active File)	SHT_B_38-Special-Construction-Detail	Special Grading (sheet specific)
	SHT_B_Legend-Logo-Scale	Sheet border legend, logo, scale bars, location sketch Cell
	SHT_B_Match-Lines-Line	Sheet border match line lines - Line
	SHT_B_Match-Lines-Text	Sheet border match line text - Text
	SHT_B_Misc-P	Sheet border miscellaneous items, notes, etc. (plotted)
	SHT_B_North-Arrow	Sheet border north arrow - Cell
	SHT_B_Plot-Sub-Text	Sheet border plot substitution text - Text
	SHT_B_Sheet-Outline-Line	Sheet border sheet outlie lines - Line
	SHT_B_Sheet-Outline-Text	Sheet border sheet outline text - Text
	SHT_B_Title-Block	Sheet border title block - Cell
	SHT_B_Plot-Border-Inner-Line	Plot border inner line - Line
	SHT_B_Plot-Border-Outer-Line	Plot border outer line - Line
	SHT_B_Grid-Elevation-Text	Grid elevation text - Text
	SHT_B_Grid-Station-Text	Profile station grid text - Text
	SHT_B_Major-Elevation-Tic-Line	Elevation tick marks major - Line
	SHT_B_Major-Station-Tic-Line	Profile station tick marks major - Line
	DRNG_P_Detention-Pond-Text	100-year, 24-hour water surface elevation, normal pool lines - Line
	DRNG_P_Detention-Pond-Text	Bioretention descr., design table, dimensions, spot elevations, slopes, etc. - Te
	DRNG_P_Perm-Ditch-Protect-Text	Permanent ditch protection descr., forebay design table, riprap, etc. - Text
	DRNG_P_Storm-Drain-Pipe-Line	Storm drain pipe incl. underdrain pipe - Line
	DRNG_P_Storm-Drain-Pipe-Text	Storm drain pipe flow arrows and descr. incl. underdrain pipe - Text
	DRNG_P_Storm-Drain-Struct-Text	Storm drain structures number label, headwalls/endwalls, structure info - Tex
	MAIN_P_Driveway-Text	Driveway descr. incl. maintenance access text - Text
	PROF_E_Ground-Line	Profile exist. ground - Line
	PROF_E_Ground-Text	Profile exist. ground - Text
	PROF_P_Finish-Line	Profile prop. finish grade line - Line
	PROF_P_Finish-Text	Profile prop. finish grade annotation (curve data, slope, etc.) - Text
	PROF_P_Drainage-Cell	Profile prop. drainage - Cell
	PROF_P_Drainage-Line	Profile prop. drainage - Line
	PROF_P_Drainage-Text	Profile prop. drainage - Text
	PROF_P_Label-Text	Profile prop. ground text (flow, station, elevs) - Text
MAIN	MAIN_P_Appr-Slab-Line	Approach slab lines - line
	MAIN_P_Bridge-Line	Proposed bridge lines - Line
	MAIN_P_CONSTCL-Cell	Construction CL - point symbols - Cell
	MAIN_P_CONSTCL-Line	Construction CL - lines - Line
	MAIN_P_CONSTCL-Tic-Sta-Text	Construction CL - tic marcs and sta labels - Text
	MAIN_P_CROWN-Cell	Crown point cell - Cell
	MAIN_P_CROWN-Line	Crown point lines - Line
	MAIN_P_Curb-Gutter-Line	Proposed curb & gutter - gutter line and back of curb lines - line
	MAIN_P_Details-Begin-End-Const-Limit-Const-Label	Begin/End construction and limit of construction labels - Text
	MAIN_P_Details-End-Proj-CL-Intersect-Label-Text	Begin/End project & centerline intersection labels - Text
	MAIN_P_Details-RouteName-CL-Text	Route #/Road names and centerline label (C) Cell - Text
	MAIN_P_Driveway-Line	Driveway lines - Line
	MAIN_P_EOP-Cell	Proposed roadway edge of paving - Cell
	MAIN_P_EOP-Line	Proposed roadway edge of paving lines - Line
	MAIN_P_EPSHLDR-Line	Proposed edge of paved shoulder lines - Line
	MAIN_P_Fence-Line	Proposed fence lines - Line
	MAIN_P_Fence-Text	Proposed fence descr. - Text
	MAIN_P_Guardrail-Line	Proposed guardrail lines and anchor - Line
	MAIN_P_Guardrail-Text	Proposed guardrail descr. - Text
	MAIN_P_Median-Side-Barrier-Line	Proposed median or Side barrier lines - line
	MAIN_P_Misc-Const-Feat-Line	Proposed misc. construction feature lines - line
	MAIN_P_Retain-Wall-Line	Proposed retaining wall lines - Line
	MAIN_P_SIDECL-Cell	Side or cross road centerline point symbols - Cell
	MAIN_P_SIDECL-Line	Side or cross road centerline lines - Line
	MAIN_P_SIDECL-Tic-Sta-Text	Side or cross road centerline tic marks and sta labels - Text
	MAIN_P_Sidewalk-Line	Sidewalk lines - Line
	MAIN_P_Sound-Barrier-Wall-Line	Proposed sound barrier wall lines - Line
REQD	REQD_P_PESMT-Line	Permanent easement lines - Line
	REQD_P_PESMT-Pattern	Permanent easement patterning - Line
	REQD_P_REQD-RW-Cell	Required R/W points/cell - Cell
	REQD_P_REQD-RW-Desc-Text	Required R/W description and leader line - Text
	REQD_P_REQD-RW-Line	Required R/W lines - Line
	REQD_P_REQD-RW-Access	Required limited access R/W lines and cells - Line
	REQD_P_RWRM-RW-Cell	Required R/W marker - Cell
	REQD_P_RWRM-RW-Line	Required R/W marker - Line
	REQD_P_RWRM-RW-Marker	Required R/W marker - Cell
	REQD_P_RWRM-RW-Text	Required R/W marker - Text
PROP	PROP_E_BMISC-Cell	Property boundary, misc., exist., point symbol - Cell
	PROP_E_BMISC-Text	Property boundary line, existing, line descr. - Text
	PROP_E_PAR-PL-Line	Property line line and PL cell - Line
	PROP_E_PCF-Cell	Property corner found point symbol - Cell
	PROP_E_PPC-Cell	Property point computed point symbol - Cell
	PROP_E_PPOL-Cell	property point on line point symbol - Cell
	PROP_E_RWC-Cell	Right of way computed point symbol - Cell
	PROP_E_RWF-Cell	Right of way prescription point symbol - Cell
	PROP_E_RWE-Line	Existing limited access, R/W lines, and cells - Line
	PROP_E_RWM-Cell	Right of way marker found point symbol - Cell
DRNG	DRNG_P_Bridge-Culv-Line	Bridge culvert lines - Line
	DRNG_P_Bridge-Culv-Text	Bridge culvert flow arrows and descr. - Text
	DRNG_P_Cross-Drain-and-Culv-Line	Cross drain and culvert lines - Line
	DRNG_P_Cross-Drain-and-Culv-Text	Cross drain and culvert flow arrows and descr. - Text
	DRNG_P_Detention-Pond-Line	Detention pond lines - Line
	DRNG_P_Ditch-and-Channel-Line	Ditch and channel lines with flow arrows - Line
	DRNG_P_Misc-Text	Miscellaneous text - Text
	DRNG_P_Perm-Ditch-Protect-Line	Ditch protection - concr. paving - Line
	DRNG_P_Perm-Riprap-Pattern	Permanent riprap (pattern) - Line
	DRNG_P_Storm-Drain-Pipe-Line	Storm drain pipes (line) - Line
	DRNG_P_Storm-Drain-Struct	Storm drain struct. (catch basin, junct. boxes, drop inlets, flared end sect. etc)
	DRNG_P_Ditch-and-Channel-Cell	Ditch and channel lines with flow arrows - Cell
TOPO	TOPO_E_DADR-Line	K167 Dam, top line - Line
	TOPO_E_DCB-Cell	K65 single catch basin exist. point cell - Line
	TOPO_E_DCB-Line	Single catch basin exist. point cell - Line
	TOPO_E_DCEF-Cell	Culvert end, F/L point symbol, # text, descr., elev. - Cell
	TOPO_E_DCEF-Line	Culvert end, F/L cell - line
	TOPO_E_DCWE-Cell	Culvert, wingwall end point symbol, # text, descr. Elev. - Cell
	TOPO_E_DCWE-Line	Culvert, wingwall end line/cell - Line
	TOPO_E_DDCB-Cell	Double catch basin exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DDCB-Line	Double catch basin exist. point cell - Line
	TOPO_E_DDI-Cell	K68a Drop inlet, top, exist. point symbol, # text. descr., elev. - Cell
	TOPO_E_DDI-Line	Drop inlet, top, exist. Cell - Line
	TOPO_E_DDL-Line	Drain lines, top line - Line
	TOPO_E_DDT-Line	K28 Dam, top line - Line
	TOPO_E_DEW-Line	Edge of water, exist. Line - Line
	TOPO_E_DHWE-Cell	Head wall, end, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DHWT-Line	Head wall, end, exist. cell - Line
	TOPO_E_DHWM-Line	High water mark, existing - line
	TOPO_E_DJB-Cell	Junction box, top, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DJB-Line	Junction box, top, exist. cell - Line
	TOPO_E_DMISC-Line	Misc. drainage feature, exist. line - Line
	TOPO_E_DPC-Line	Drainage pipe, F/L, Concrete - Line
	TOPO_E_DPC-Text	Drainage Pipe, F/L, Concrete - Text
	TOPO_E_DPD-Cell	Paved ditch, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DPD-Line	K63 Paved ditch, existing - Line
	TOPO_E_DPD-Text	Paved ditch, exist. line descr. (Elev., type, size, etc.) - Text

Reference File Name	Level Name	Description
TOPO (Cont.)	TOPO_E_DPM-Line	Drainage pipe, F/L, metal - Line
	TOPO_E_DPM-Text	Drainage pipe, F/L, metal - Text
	TOPO_E_DPP-Line	Drainage pipe, F/L, plastic - Line
	TOPO_E_DPP-Text	Drainage pipe, F/L, plastic - Text
	TOPO_E_DSB-Line	Stream bank top, exist. line - Line
	TOPO_E_DSC-Line	Stream center F/L exist. line - Line
	TOPO_E_DSE-Line	Stream edge, exist. line - Line
	TOPO_E_DSPURKD-Line	Spur dike, exist. line - Line
	TOPO_E_DSTIC-Line	Septic tank, existing - Line
	TOPO_E_DSWE-Cell	K54 Swamp edge, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DSWE-Line	Swamp edge, exist. line - Line
	TOPO_E_DSWE-Text	Swamp edge, exist. line descr. (Elev., type, size, etc.) - Text
	TOPO_E_DWE-Line	Top of water elev., exist. line - Line
	TOPO_E_MDITCHFL-Line	K43 Mapping ditch flow line, existing - Line
	TOPO_E_SBNCHMK-Cell	Bench mark, point symbol - Cell
	TOPO_E_SBNCHMK-Pnt#-Text	Bench mark, point # text, descr., elev. - Text
	TOPO_E_SBNCHMK-Text	Bench mark, point information - Text
	TOPO_E_SLCD-Cell	Location survey control/delta symbol - Cell
	TOPO_E_SLCD-Line	location survey control line - Line
	TOPO_E_SLCD-Line-Text	location surzey control line descr. - Text
	TOPO_E_SLCM-Cell	Location control monument, point symbol - Cell
	TOPO_E_SLCM-Line	Location control monument - Line
	TOPO_E_SLCM-Text	Location control monument, point information - Text
	TOPO_E_SNGSCM-Cell	NGS control monument, point symbol - Cell
	TOPO_E_SNGSCM-Pnt#-Text	NGS control monument, point # text, descr., elev. - Text
	TOPO_E_SNGSCM-Text	NGS control monument, point information - Text
	TOPO_E_TAC-Line	Curb, asphault, exist, line - Line
	TOPO_E_TBAS-Line	Bridge approach slab, edge, exist. line - Line
	TOPO_E_TBC-Line	Brick column, existing - Line
	TOPO_E_TBGL-Line	Bridge gutter line, exist. line - Line
	TOPO_E_TBLD-Line	K18b K18c Building corner, exist. line - Line
	TOPO_E_TBLDRL-Line	Building roof line corner, exist. line - Line
	TOPO_E_TBRDGCTN-Line	Bridge end, center - Line
	TOPO_E_TBRDSCOR-Line	K14 Bridge end, corner - Line
	TOPO_E_TCAN-Line	Canoy, exist. line - Line
	TOPO_E_TCGF-Line	K155 Curb & gutter, F/L, exist. line - Line
	TOPO_E_TCGT-Line	K154 Curb & gutter, top, exist. line - Line
	TOPO_E_TCUL-Line	Cultivation line, exist. line - Line
	TOPO_E_TEAD-Line	Edge of asphault drive, exist. line - Line
	TOPO_E_TEAP-Line	K5 Edge of asphault pavement, exist. line - Line
	TOPO_E_TEAS-Line	K6 Edge of asphault shoulder, exist. line - Line
	TOPO_E_TECD-Line	K36 Edge of concr. drive, exist. line - Line
	TOPO_E_TECP-Line	Edge of concr. drive, exist. line - Line
	TOPO_E_TEDD-Line	K9a Edge of Dirt drive, existing - Line
	TOPO_E_TEDM-Line	K9 Edge of dirt road, exist. line - Line
	TOPO_E_TEST-Line	Edge of surf. treatment road, exist. line - Line
	TOPO_E_TFBW-Line	Fence, Barbed wire, exist, line - Line
	TOPO_E_TFCL-Line	K30 Fence, chain link, exist. line - Line
	TOPO_E_TFE-Line	Floor elevation, existing - Line
	TOPO_E_TFFW-Line	Fence, field wire, exist. line - Line
	TOPO_E_TFP-Cell	Flag pole, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TFP-Line	Flag Pole, existing - Line
	TOPO_E_TFT-Cell	Fuel tank, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TFT-Line	Fuel tank, existing - Line
	TOPO_E_TFW-Line	Fence, wood, exist. line - Line
	TOPO_E_TG-Line	Gate, existing - Line
	TOPO_E_TGFV-Cell	Gasoline filler valve, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGFV-Line	Gasoline filler valve, exist. cell - Line
	TOPO_E_TGMW-Cell	Gasoline monitoring well, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGMW-Line	Gasoline monitoring well, exist. point cell - Line
	TOPO_E_TGP-Cell	Gasoline pump, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGP-Line	Gasoline pump, exist. point cell - Line
	TOPO_E_TGPI-Cell	Gasoline pump island, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGPI-Line	Gasoline pump island, exist. cell - Line
	TOPO_E_TGR-Cell	Guard rail, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGR-Line	K12 guard rail, exist. Line - Line
	TOPO_E_TGRV-Cell	Grave, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGRV-Line	Grave, exist, line - Line
	TOPO_E_TGST-Cell	Gasoline storage tank, end, exist. point symbol, # text, descr. Elev. - Cell
	TOPO_E_TGST-Line	Gasoline storage tank, end, exist. Line - Line
	TOPO_E_TGVP-Cell	Gasoline vent pipe, exist. point symbol, # text, descr., Elev. - Cell
	TOPO_E_TGVP-Line	Gasoline vent pipe, exist. point cell - Line
	TOPO_E_THC-Line	Header curb exist, line - Line
	TOPO_E_THCR-Cell	House corner, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_THCR-Line	House corner, exist. line - Line
	TOPO_E_THM-Cell	Historical monument, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_THM-Line	Historical monument, existing - Line
	TOPO_E_THRL-Line	House roof line corner, exist. line - Line
	TOPO_E_TIRRLMT-Line	Irrigation limit, exist. line - Line
	TOPO_E_TIRRPVPT-Line	Irrigation pump turn, point ??, exist. point line/cell - Line
	TOPO_E_TKMP-Cell	KM post, highway - Cell
	TOPO_E_TKMP-Line	KM post, highway - Line
	TOPO_E_TMAR-Cell	Marker miscellaneous, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TMAR-Line	Marker miscellaneous, exist. point cell - Line
	TOPO_E_TMHB-Line	K39a Mobile home park, exist. line - Line
	TOPO_E_TMHRL-Line	Mobile home roof line corner, exist. line - Line
	TOPO_E_TMISC-Pnt-Cell	Topo, miscellaneous area, exist. point cell - Cell
	TOPO_E_TMPH-Cell	K10 Mile post, highway, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TMPH-Line	Mile post, highway, exist. point cell - Line
	TOPO_E_TMPR-Cell	Mile post, r/r, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TMPR-Line	Mile post, r/r exist. point cell - Line
	TOPO_E_TRAI-Line	Railroad, top of rail, exist. line - Line
	TOPO_E_TRCRE-Cell	Map top of railroad rail, existing - Line
	TOPO_E_TRCRE-Line	K161 Map top of railroad rail, existing - Line
	TOPO_E_TS-Line	Steps, existing - Line
	TOPO_E_TSATPSH-Cell	K22 Satelite dish, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TSATPSH-Line	Satelite dish, exist. point cell - Line
	TOPO_E_TSC-Cell	K13 Sign, center - Cell
	TOPO_E_TSE-Cell	Billboard Sign, end - Cell
	TOPO_E_TSE-Line	K24a Billboard Sign, end - Line
	TOPO_E_TTRE-Cell	K48 Tree, center, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TTRE-Line	Tree center, exist. point cell - Line
	TOPO_E_TUD-Line	Uncovered deck, existing - Line
	TOPO_E_TVF-Line	Vinul/PVC Fence, exist. line - Line
	TOPO_E_TVG-Line	V-gutter, exist. line - Line
	TOPO_E_TWELL-Cell	Well, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TWELL-Line	Well, exist. point cell - Line
	TOPO_E_TWF-Line	Wall face, exist. line - Line
	TOPO_E_TWFB-Line	K164 Wall face bottom - Line
	TOPO_E_TWFT-Line	K163 Wall face top - Line
	TOPO_E_TWL-Line	Woods line, exist. line - Line
	TOPO_E_UELBOX-Cell	Electrical box - Cell
	TOPO_E_UELBOX-Line	K80 Electrical box - Line
	TOPO_E_UFH-Cell	K81 fire hydrant, center - Cell
	TOPO_E_UFH-Line	Fire hydrant, center - Line

Reference File Name	Level Name	Description
TOPO (Cont.)	TOPO_E_UGM-Cell	Gas meter, center - Cell
	TOPO_E_UGM-Line	Gas meter, center - Line
	TOPO_E_UPOA-Cell	Pole anchor - Cell
	TOPO_E_UPOA-Line	Pole anchor - Line
	TOPO_E_UGP-Cell	Guy pole, center - Cell
	TOPO_E_UGP-Line	Guy pole, center - Line
	TOPO_E_ULP-Cell	K73 K75 light pole, center - Cell
	TOPO_E_ULP-Line	Light pole, center - Line
	TOPO_E_UMHE-Cell	Manhole, electrical, top - Cell
	TOPO_E_UMHE-Line	Manhole electrical, top - Line
	TOPO_E_UMHSS-Cell	Manhole, sanitary sewer, top - Cell
	TOPO_E_UMHSS-Line	Manhole, sanitary sewer, top - Line
	TOPO_E_UMHSSF-Cell	Manhole, sanitary sewer, F/L - Cell
	TOPO_E_UMHSSF-Line	Manhole, sanitary sewer, F/L - Line
	TOPO_E_UMHST-Cell	K66 Manhole storm sewer, top - Cell
	TOPO_E_UMHST-Line	Manhole storm sewer, top - Line
	TOPO_E_UMHSTF-Cell	Manhole storm sewer, F/L - Cell
	TOPO_E_UMHSTF-Line	Manhole storm sewer, F/L - Line
	TOPO_E_UMHT-Cell	Manhole, telephone, top, F/L - Cell
	TOPO_E_UMHT-Line	Manhole, telephone, top, F/L - Line
	TOPO_E_UNGLM-Cell	Gas line marker - Cell
	TOPO_E_UNGLM-Line	Gas line marker - Line
	TOPO_E_UNGV-Cell	K89 Gas valve, center - Cell
	TOPO_E_UNGV-Line	Gas valve, center - Line
	TOPO_E_UNGVP-Cell	Sanitary vent pipe - Cell
	TOPO_E_UNGVP-Line	Sanitary vent pipe - Line
	TOPO_E_UOEL-Cell	Overhead electrical line - Cell
	TOPO_E_UOEL-Line	K70 Overhead electrical line - Line
	TOPO_E_UOTL-Cell	Overhead telephone line - Cell
	TOPO_E_UOTL-Line	Overhead telephone line - Line
	TOPO_E_UPP-Cell	K72 K76 Power pole, center - Cell
	TOPO_E_UPP-Line	Power pole, center line - Line
	TOPO_E_USSL-Cell	Sanitary sewer line, center - Cell
	TOPO_E_USSL-Line	Sanitary sewer line, center - Line
	TOPO_E_UTP-Cell	Telephone pole, center - Cell
	TOPO_E_UTP-Line	Telephone pole, center - Line
	TOPO_E_UTPD-Cell	Telephone pedestal, center - Cell
	TOPO_E_UTPD-Line	Telephone pedestal, center - Line
	TOPO_E_UWM-Cell	Water meter, center - Cell
	TOPO_E_UWM-Line	Water meter, center - Line
	TOPO_E_UWV-Cell	Water valve - Cell
	TOPO_E_UWV-Line	Water valve - Line
	TOPO_E_UYLE-Cell	K71 Yard light, electrical - Cell
	TOPO_E_UYLE-Line	Yard light, electrical - Line
	TOPO_E_UYLG-Cell	Yard light, Gas - Cell
	TOPO_E_UYLG-Line	Yard light, gas - Line
	TOPO_E_POOL-Line	K41 Pool, exist. Line - Line
	TOPO_E_FNDN-Line	K19a Foundation, exist. line - Line
	TOPO_E_RUIN-Line	K19b Ruins, exist. line - Line
	TOPO_E_TANK-Line	K18a Tank, exist. line - Line
	TOPO_E_DTCH-Line	Ditch - Line
	TOPO_E_DTCH-Hidden-Line	Hidden ditch - Line
	TOPO_E_TWFE-Line	K29 Wall fence - Line
	TOPO_E_GOLF-Line	K39b Golf Course - Text
	TOPO_E_Basketball-Court-Cell	Basketball Court - Cell
	TOPO_E_Flow-Arrow-Cell	Flow Arrow - Cell
	TOPO_E_DEW-Hatch-Line	Edge of water, exist. line - Line
	TOPO_E_BUILD-Line	Building - Line
	TOPO_E_Ditch-Taper-Cell	K53 Ditch Taper - Cell
	TOPO_E_Trail-Line	Trail - Line
	TOPO_E_Basketball-Court-Line	Basketball Court - Line
	TOPO_E_TRCR-Sgnl-Cell	Railroad, top of rail, exist. signal point symbol, # text, descr., elev. - Cell
	TOPO_E_TRCR-Sgnl-Line	Railroad, top of rail, exist. signal line - Line
	TOPO_E_TRIVER-Cell	River edge interior bound., exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TRIVER-Line	K44 River edge interior bound., exist. line - Line
	TOPO_E_TLAKE-Cell	Lake interior bound., exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TLAKE-Line	K45 Lake interior bound., exist. line - Line
	TOPO_E_DHDS-Cell	Hidden drain line, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DHDS-Line	K68b Hidden drain line, exist. line - Line
ECON	ECON_E_Major-Contour-Line	Major contour lines - Line
	ECON_E_Major-Contour-Text	Major contour lines text - Text
	ECON_E_Minor-Contour-Line	Minor contour lines - Line
	ECON_E_Minor-Contour-Text	Minor contour lines text - Text
FCON	FCON_P_Major-Contour-Line	Major contour lines - Line
	FCON_P_Major-Contour-Text	Major contour lines text - Text
	FCON_P_Minor-Contour-Line	Minor contour lines - Line
	FCON_P_Minor-Contour-Text	Minor contour lines text - Text
ENVE	ENVE_E_Arch-Pattern	Archaeological resource, patterning - Line
	ENVE_E_Cult-Rsc-Pattern	Cultural resource, patterning line - Line
	ENVE_E_Cult-Rsc-Delin-Line	Cultural resource, lines & cells (delineations) - Line
	ENVE_E_Arch-Text	Archaeological Resource, description & labels - Text
	ENVE_E_Arch-Line	Archaeological Resource, lines - Line
	ENVE_E_Arch-Shape	Archaeological Resource, shapes for patterning - Line
	ENVE_E_Cult-Rsc-Shape	Cultural Resource, shapes for patterning - Line
	ENVE_E_Cult-RSC-Text	Cultural Resource, description & labels - Text
	ENVE_E_Endgd-Spec-Line	Endangered Species, lines & cells (delineations) - Line
	ENVE_E_Endgd-Spec-Pattern	Endangered Species, patterning - Line
	ENVE_E_Endgd-Spec-Shape	Endangered Species, shapes for patterning - Line
	ENVE_E_Endgd-Spec-Text	Endangered Species, description & labels - Text
	ENVE_E_Env-Justice-Line	Environmental Justice, lines - Line
	ENVE_E_Env-Justice-Pattern	Environmental justice, patterning - Line
	ENVE_E_Env-Justice-Shape	Environmental justice, shapes and patterning - Line
	ENVE_E_Env-Justice-Text	Environmental justice, description & labels - Text
	ENVE_E_FSA-Line	ESA, lines - Line
	ENVE_E_FSA-Pattern	ESA, patterning - Line
	ENVE_E_FSA-Shape	ESA, shapes for patterning - Line
	ENVE_E_FSA-Text	ESA, description & labels - Text
	ENVE_E_Hac-Mat-Delin-Line	Hazardous Material, lines & cells (delineations) - Line
	ENVE_E_Hac-Mat-Shape	Hazardous Material, shapes and patterning - Line
	ENVE_E_Hist-Rsc-Line	Historic Resource, lines - Line
	ENVE_E_Hist-Rsc-Pattern	Historic Resource, patterning - Line
	ENVE_E_Hist-Rsc-Shape	Historic Resource, shapes for patterning - Line
	ENVE_E_Hist-Rsc-Text	Historic Resource, description & labels - Text
	ENVE_E_Wetland-Bound-Line	Wetland Boundary, lines - Line
	ENVE_E_Wetlnd-Pattern	Wetlands, patterning - Line
	ENVE_E_Wetlnd-Shape	Wetlands, shapes for patterning - Line
	ENVE_E_Wetlnd-Stream-Delin-Line	Stream Delineation, lines - Line
	ENVE_E_Wetlnd-Stream-Text	Wetland and Stream, description & labels - Text
	ENVE_E_ORNGFENCE-Line	Orange Fence - Line
	ENVE_E_ORNGFENCE-Text	Orange Fence - Text
ENVP	ENVP_P_ORNGFENCE-Line	Orange Fence - Line
	ENVP_P_ORNGFENCE-Text	Orange Fence - Text

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 required. General notes should be referenced on the right side of the plan drawing.

Bioretention Basin Plan Required Information

The existing information shown should include:

- Large roadway 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)
- 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
- Land District lines with labels
- Georgia Militia District (GMD) lines with labels
- Railroads
  - Right of way lines with labels
  - Tracks
  - Names
  - Mileposts
  - Warning devices
  - Crossing ID numbers
- Utility easement lines with labels
- Existing L/A - Limit-of-Access lines with labels (Begin (B L/A) and End (E L/A) if applicable)
- Wetlands
- Historic boundaries
- Existing contour lines with labels
- NOTE: Existing contours should be shown screened back and dashed.
- Waters of the U.S
- 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 shall be denoted on all plan drawings (roadway plan drawings, utility plan drawings, erosion control plan drawings, etc.) with a Diamond Line Code. 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"
- All other pertinent physical features (i.e.: property owner entrance signs, business/residential signs, etc.)

The proposed information shown should include:

- Alignments
  - Stations progressing from west to east and from south to north
  - 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)
  - Stations where centerline crosses county boundaries
- Bioretention Basin
  - Outlet control structure (include MS4 Post-Construction Stormwater Report ID)
  - Forebay/pretreatment and outlet protection
  - Reference special detail sheet(s)
  - Design tables
  - Underdrain System
  - Maintenance access (i.e. access road, fences)
  - All other pertinent physical features (i.e. slopes, embankments, spot elevations, etc.)
- Drainage
  - Structures
  - Storm drains (size and direction)
  - Side drains
  - Culverts
  - Permanent erosion features (i.e. type of rip-rap, concrete aprons, concrete flumes)
  - Ditches
  - Inlet/Outlet structures
- Roadway Items
  - Edges of pavement
  - Curb and gutter
  - Sidewalk
  - Paved shoulder
  - Ditches
  - Guardrail/Barriers
  - Walls
  - Noise barriers
  - Bridges
  - Approach slabs
  - Driveways
- Proposed Right-of-Way Features
  - Required right-of-way
  - Required easement lines and associated patterns
  - Proposed right-of-way markers at locations where RW direction changes (Including PC/PT locations)

REVISION DATES		

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 2 OF 2

CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		-
CORRECTED:		DATE:		
VERIFIED:		DATE:		

Reference File Name	Level Name	Description
Special Construction Detail (Active File)	SHT_B_38-Special-Construction-Detail	Special Grading (sheet specific)
	SHT_B_Legend-Logo-Scale	Sheet border legend, logo, scale bars, location sketch-Cell
	SHT_B_Match-Lines-Line	Sheet border match line lines - Line
	SHT_B_Match-Lines-Text	Sheet border match line text - Text
	SHT_B_Misc-P	Sheet border miscellaneous items, notes, etc. (plotted)
	SHT_B_North-Arrow	Sheet border north arrow - Cell
	SHT_B_Plot-Sub-Text	Sheet border plot substitution text - Text
	SHT_B_Sheet-Outline-Line	Sheet border sheet outlie lines - Line
	SHT_B_Sheet-Outline-Text	Sheet border sheet outline text - Text
	SHT_B_Title-Block	Sheet border title block - Cell
	SHT_B_Plot-Border-Inner-Line	Plot border inner line - Line
	SHT_B_Plot-Border-Outer-Line	Plot border outer line - Line
	SHT_B_Grid-Elevation-Text	Grid elevation text - Text
	SHT_B_Grid-Station-Text	Profile station grid text - Text
	SHT_B_Major-Elevation-Tic-Line	Elevation tick marks major - Line
	SHT_B_Major-Station-Tic-Line	Profile station tick marks major - Line
	DRNG_P_Detention-Pond-Line	100-year, 24-hour water surface elevation, normal pool lines - Line
	DRNG_P_Detention-Pond-Text	Bioretention descr., design table, dimensions, spot elevations, slopes, etc. - Tex
	DRNG_P_Perm-Ditch-Protect-Text	Permanent ditch protection descr., forebay design table, riprap, etc. - Text
	DRNG_P_Storm-Drain-Pipe-Line	Storm drain pipe incl. underdrain pipe - Line
	DRNG_P_Storm-Drain-Pipe-Text	Storm drain pipe flow arrows and descr. incl. underdrain pipe - Text
	DRNG_P_Storm-Drain-Struct-Text	Storm drain structures number label, headwalls/endwalls, structure info - Text
	MAIN_P_Driveway-Text	Driveway descr. incl. maintenance access text - Text
	PROF_E_Ground-Line	Profile exist. ground - Line
	PROF_E_Ground-Text	Profile exist. ground - Text
	PROF_P_Finish-Line	Profile prop. finish grade line - Line
	PROF_P_Finish-Text	Profile prop. finish grade annotation (curve data, slope, etc.) - Text
	PROF_P_Drainage-Cell	Profile prop. drainage - Cell
	PROF_P_Drainage-Line	Profile prop. drainage - Line
	PROF_P_Drainage-Text	Profile prop. drainage - Text
	PROF_P_Label-Text	Profile prop. ground text (Elev., station, slope) - Text

Reference File Name	Level Name	Description
Special Construction Detail (Active File)	SHT_B_38-Special-Construction-Detail	Special Grading (sheet specific)
	SHT_B_Legend-Logo-Scale	Sheet border legend, logo, scale bars, location sketch Cell
	SHT_B_Match-Lines-Line	Sheet border match line lines - Line
	SHT_B_Match-Lines-Text	Sheet border match line text - Text
	SHT_B_Misc-P	Sheet border miscellaneous items, notes, etc. (plotted)
	SHT_B_North-Arrow	Sheet border north arrow - Cell
	SHT_B_Plot-Sub-Text	Sheet border plot substitution text - Text
	SHT_B_Sheet-Outline-Line	Sheet border sheet outlie lines - Line
	SHT_B_Sheet-Outline-Text	Sheet border sheet outline text - Text
	SHT_B_Title-Block	Sheet border title block - Cell
	SHT_B_Plot-Border-Inner-Line	Plot border inner line - Line
	SHT_B_Plot-Border-Outer-Line	Plot border outer line - Line
	SHT_B_Grid-Elevation-Text	Grid elevation text - Text
	SHT_B_Grid-Station-Text	Profile station grid text - Text
	SHT_B_Major-Elevation-Tic-Line	Elevation tick marks major - Line
	SHT_B_Major-Station-Tic-Line	Profile station tick marks major - Line
	ORNG_P_Detention-Pond-Line	100-year, 24-hour water surface elevation, normal pool lines - Line
	ORNG_P_Detention-Pond-Text	Bioretention descr., design table, dimensions, spot elevations, slopes etc. - Text
	ORNG_P_Perm-Ditch-Protect-Text	Permanent ditch protection descr., forebay design table, riprap, etc. - Text
	ORNG_P_Storm-Drain-Pipe-Line	Storm drain pipe incl. underdrain pipe - Line
	ORNG_P_Storm-Drain-Pipe-Text	Storm drain pipe flow arrows and descr. incl. underdrain pipe - Text
	ORNG_P_Storm-Drain-Struct-Text	Storm drain structures number label, headwalls/endwalls, structure info - Text
	MAIN_P_Driveway-Text	Driveway descr. incl. maintenance access text - Text
	PROF_E_Ground-Line	Profile exist. ground - Line
	PROF_E_Ground-Text	Profile exist. ground - Text
	PROF_P_Finish-Line	Profile prop. finish grade line - Line
	PROF_P_Finish-Text	Profile prop. finish grade annotation (curve data, slope, etc.)- Text
	PROF_P_Drainage-Cell	Profile prop. drainage - Cell
	PROF_P_Drainage-Line	Profile prop. drainage - Line
	PROF_P_Drainage-Text	Profile prop. drainage - Text
	PROF_P_Label-Text	Profile prop. ground text (Elev., station, slope) - Text
MAIN	MAIN_P_Appr-Slab-Line	Approach slab lines - line
	MAIN_P_Bridge-Line	Proposed bridge lines - Line
	MAIN_P_CONSTCL-Cell	Construction CL - point symbols - Cell
	MAIN_P_CONSTCL-Line	Construction CL - lines - Line
	MAIN_P_CONSTCL-Tic-Sta-Text	Construction CL - tic marcs and sta labels - Text
	MAIN_P_CROWN-Cell	Crown point cell - Cell
	MAIN_P_CROWN-Line	Crown point lines - Line
	MAIN_P_Curb-Gutter-Line	Proposed curb & gutter - gutter line and back of curb lines - line
	MAIN_P_Details-Begin-End-Const-Limit-Const-Label	Begin/End conpstruct & centerline intersection labels - Text
	MAIN_P_Details-End-Proj-CL-Intersect-Label-Text	Begin/End project & centerline intersection labels - Text
	MAIN_P_Details-RouteName-CL-Text	Route A/Road names and centerline label (C) Cell) - Text
	MAIN_P_Driveway-Line	Driveway lines - Line
	MAIN_P_EOP-Cell	Proposed roadway edge of paving - Cell
	MAIN_P_EOP-Line	Proposed roadway edge of paving lines - Line
	MAIN_P_EPSHLDR-Line	Proposed edge of paved shoulder lines - Line
	MAIN_P_Fence-Line	Proposed fence lines - Line
	MAIN_P_Fence-Text	Proposed fence descr. - Text
	MAIN_P_Guardrail-Line	Proposed guardrail lines and anchor - Line
	MAIN_P_Guardrail-Text	Proposed guardrail descr. - Text
	MAIN_P_Median-Side-Barrier-Line	Proposed median or Side barrier lines - line
	MAIN_P_Misc-Const-Feat-Line	Proposed misc. construction feature lines - line
	MAIN_P_Retain-Wall-Line	Proposed retaining wall lines - Line
	MAIN_P_SIDECL-Cell	Side or cross road centerline point symbols - Cell
	MAIN_P_SIDECL-Line	Side or cross road centerline lines - Line
	MAIN_P_SIDECL-Tic-Sta-Text	Side or cross road centerline tic marks and sta labels - Text
	MAIN_P_Sidewalk-Line	Sidewalk lines - Line
	MAIN_P_Sound-Barrier-Wall-Line	Proposed sound barrier wall lines - Line
REQD	REQD_P_PESMT-Line	Permanent easement lines - Line
	REQD_P_PESMT-Pattern	Permanent easement patterning - Line
	REQD_P_REQD-RW-Cell	Required R/W points/cell - Cell
	REQD_P_REQD-RW-Desc-Text	Required R/W description and leader line - Text
	REQD_P_REQD-RW-Line	Required R/W lines - Line
	REQD_P_REQD-RW-Limited-Access	Required limited access R/W lines and cells - Line
	REQD_P_RWRM-RW-Cell	Required R/W marker - Cell
	REQD_P_RWRM-RW-Line	Required R/W marker - Line
	REQD_P_RWRM-RW-Marker	Required R/W marker - Cell
	REQD_P_RWRM-RW-Text	Required R/W marker - Text
PROP	PROP_E_BMISC-Cell	Property boundary, misc., exist., point symbol - Cell
	PROP_E_BMISC-Text	Property boundary line, existing, line descr. - Text
	PROP_E_PAR-PL-Line	Property line line and PL cell - Line
	PROP_E_PCF-Cell	Property corner found point symbol - Cell
	PROP_E_PPC-Cell	Property point computed point symbol - Cell
	PROP_E_PPOL-Cell	property point on line point symbol - Cell
	PROP_E_RWC-Cell	Right of way computed point symbol - Cell
	PROP_E_RWF-Cell	Right of way prescription point symbol - Cell
	PROP_E_RWE-Line	Existing limited access, R/W lines, and cells - Line
	PROP_E_RWM-Cell	Right of way marker found point symbol - Cell
ORNG	ORNG_P_Bridge-Culv-Line	Bridge culvert lines - Line
	ORNG_P_Bridge-Culv-Text	Bridge culvert flow arrows and descr. - Text
	ORNG_P_Cross-Drain-and-Culv-Line	Cross drain and culvert lines - Line
	ORNG_P_Cross-Drain-and-Culv-Text	Cross drain and culvert flow arrows and descr. - Text
	ORNG_P_Detention-Pond-Line	Detention pond lines - Line
	ORNG_P_Ditch-and-Channel-Line	Ditch and channel lines with flow arrows - Line
	ORNG_P_Misc-Text	Miscellaneous text - Text
	ORNG_P_Perm-Ditch-Protect-Line	Ditch protection - concr. paving - Line
	ORNG_P_Perm-Riprap-Pattern	Permanent riprap (pattern) - Line
	ORNG_P_Storm-Drain-Pipe-Line	Storm drain pipes (line) - Line
	ORNG_P_Storm-Drain-Struct	Storm drain struct. (catch basin, junct. boxes, drop inlets, flared end sect. etc)
	ORNG_P_Ditch-and-Channel-Cell	Ditch and channel lines with flow arrows - Cell
TOPO	TOPO_E_DADB-Line	K167 Dam, top line - Line
	TOPO_E_DCB-Cell	K65 single catch basin exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DCB-Line	Single catch basin exist. point cell - Line
	TOPO_E_DCEF-Cell	Culvert end, F/L point symbol, # text, descr., elev. - Cell
	TOPO_E_DCEF-Line	Culvert end, F/L cell - line
	TOPO_E_DCWE-Cell	Culvert, wingwall end point symbol, # text, descr. Elev. - Cell
	TOPO_E_DCWE-Line	Culvert, wingwall end line/cell - Line
	TOPO_E_DDCB-Cell	Double catch basin exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DDCB-Line	Double catch basin exist. point cell - Line
	TOPO_E_DDI-Cell	K68a Drop inlet, top, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DDI-Line	Drop inlet, top, exist. Cell - Line
	TOPO_E_DDL-Line	Drain lines, top line - Line
	TOPO_E_DDT-Line	K28 Dam, top line - Line
	TOPO_E_DEW-Line	Edge of water, exist. Line - Line
	TOPO_E_DHWE-Cell	Head wall, end, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DHWE-Line	Head wall, end, exist. cell - Line
	TOPO_E_DHWM-Line	High water mark, existing - line
	TOPO_E_DJB-Cell	Junction box, top, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DJB-Line	Junction box, top, exist. cell - Line
	TOPO_E_DMISC-Line	Misc. drainage feature, exist. line - Line
	TOPO_E_DPC-Line	Drainage pipe, F/L, Concrete - Line
	TOPO_E_DPC-Text	Drainage Pipe, F/L, Concrete - Text
	TOPO_E_DPD-Cell	Paved ditch, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DPD-Line	K63 Paved ditch, existing - Line
	TOPO_E_DPD-Text	Paved ditch, exist. line descr. (Elev., type, size, etc.) - Text

Reference File Name	Level Name	Description
TOPO (Cont.)	TOPO_E_DPM-Line	Drainage pipe, F/L, metal - Line
	TOPO_E_DPM-Text	Drainage pipe, F/L, metal - Text
	TOPO_E_DPP-Line	Drainage pipe, F/L, plastic - Line
	TOPO_E_DPP-Text	Drainage pipe, F/L, plastic - Text
	TOPO_E_DSB-Line	Stream bank top, exist. line - Line
	TOPO_E_DSC-Line	Stream center F/L exist. line - Line
	TOPO_E_DSE-Line	Stream edge, exist. line - Line
	TOPO_E_DSPURKD-Line	Spur dike, exist. line - Line
	TOPO_E_DSTC-Line	Septic tank, existing - Line
	TOPO_E_DSWE-Cell	K54 Swamp edge, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DSWE-Line	Swamp edge, exist. line - Line
	TOPO_E_DSWE-Text	Swamp edge, exist. line descr. (Elev., type, size, etc.) - Text
	TOPO_E_DWE-Line	Top of water elev., exist. line - Line
	TOPO_E_MDITCHFL-Line	K43 Mapping ditch flow line, existing - Line
	TOPO_E_SBNCHMK-Cell	Bench mark, point symbol - Cell
	TOPO_E_SBNCHMK-Prntd-Text	Bench mark, point # text, descr., elev. - Text
	TOPO_E_SBNCHMK-Text	Bench mark, point information - Text
	TOPO_E_SLCD-Cell	Location survey control/delta symbol - Cell
	TOPO_E_SLCD-Line	location survey control line - Line
	TOPO_E_SLCD-Line-Text	location survey control line descr. - Text
	TOPO_E_SLCM-Cell	Location control monument, point symbol - Cell
	TOPO_E_SLCM-Line	Location control monument - Line
	TOPO_E_SLCM-Text	Location control monument, point information - Text
	TOPO_E_SNGSCM-Cell	NGS control monument, point symbol - Cell
	TOPO_E_SNGSCM-Prntd-Text	NGS control monument, point # text, descr., elev. - Text
	TOPO_E_SNGSCM-Text	NGS control monument, point information - Text
	TOPO_E_TAC-Line	Curb, asphault, exist, line - Line
	TOPO_E_TBAS-Line	Bridge approach slab, edge, exist. line - Line
	TOPO_E_TBC-Line	Brick column, existing - Line
	TOPO_E_TBGL-Line	Bridge gutter line, exist. line - Line
	TOPO_E_TBLD-Line	K18b K18c Building corner, exist. line - Line
	TOPO_E_TBLDRL-Line	Building roof line corner, exist. line - Line
	TOPO_E_TBRDGCTN-Line	Bridge end, center - Line
	TOPO_E_TBRDSCOR-Line	K14 Bridge end, corner - Line
	TOPO_E_TCAN-Line	Canoy, exist. line - Line
	TOPO_E_TCGF-Line	K155 Curb & gutter, F/L, exist. line - Line
	TOPO_E_TCGT-Line	K154 Curb & gutter, top, exist. line - Line
	TOPO_E_TCUL-Line	Cultivation line, exist. line - Line
	TOPO_E_TEAD-Line	Edge of asphault drive, exist. line - Line
	TOPO_E_TEAP-Line	K5 Edge of asphault pavement, exist. line - Line
	TOPO_E_TEAS-Line	K6 Edge of asphault shoulder, exist. line - Line
	TOPO_E_TECD-Line	K36 Edge of concr. drive, exist. line - Line
	TOPO_E_TECP-Line	Edge of concr. drive, exist. line - Line
	TOPO_E_TEDD-Line	K9a Edge of Dirt drive, existing - Line
	TOPO_E_TEDH-Line	K9 Edge of dirt road, exist. line - Line
	TOPO_E_TEST-Line	Edge of surf. treatment road, exist. line - Line
	TOPO_E_TFBW-Line	Fence, Barbed wire, exist. line - Line
	TOPO_E_TFCL-Line	K30 Fence, chain link, exist. line - Line
	TOPO_E_TFE-Line	Floor elevation, existing - Line
	TOPO_E_TFFW-Line	Fence, field wire, exist. line - Line
	TOPO_E_TFP-Cell	Flag pole, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TFP-Line	Flag Pole, existing - Line
	TOPO_E_TFT-Cell	Fuel tank, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TFT-Line	Fuel tank, existing - Line
	TOPO_E_TFW-Line	Fence, wood, exist. line - Line
	TOPO_E_TG-Line	Gate, existing - Line
	TOPO_E_TGFV-Cell	Gasoline filler valve, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGFV-Line	Gasoline filler valve, exist. point cell - Line
	TOPO_E_TGMW-Cell	Gasoline monitoring well, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGMW-Line	Gasoline monitoring well, exist. point cell - Line
	TOPO_E_TGP-Cell	Gasoline pump, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGP-Line	Gasoline pump, exist. point cell - Line
	TOPO_E_TGPI-Cell	Gasoline pump island, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGPI-Line	Gasoline pump island, exist. line - Line
	TOPO_E_TGR-Cell	Guard rail, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGR-Line	K12 guard rail, exist. Line - Line
	TOPO_E_TGRV-Cell	Grave, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TGRV-Line	Grave, exist. line - Line
	TOPO_E_TGST-Cell	Gasoline storage tank, end, exist. point symbol, # text, descr. Elev. - Cell
	TOPO_E_TGST-Line	Gasoline storage tank, end, exist. Line - Line
	TOPO_E_TGVP-Cell	Gasoline vent pipe, exist. point symbol, # text, descr., Elev. - Cell
	TOPO_E_TGVP-Line	Gasoline vent pipe, exist. point cell - Line
	TOPO_E_THC-Line	Header curb exist. line - Line
	TOPO_E_THCR-Cell	House corner, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_THCR-Line	House corner, exist. line - Line
	TOPO_E_THM-Cell	Historical monument, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_THM-Line	Historical monument, existing - Line
	TOPO_E_THRL-Line	House roof line corner, exist. line - Line
	TOPO_E_TIRRLMT-Line	Irrigation limit, exist. line - Line
	TOPO_E_TIRRPVT-Line	Irrigation pump turn, point ??, exist. point line/cell - Line
	TOPO_E_TKMP-Cell	KM post, highway - Cell
	TOPO_E_TKMP-Line	KM post, highway - Line
	TOPO_E_TMAR-Cell	Marker miscellaneous, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TMAR-Line	Marker miscellaneous, exist. point cell - Line
	TOPO_E_TMHL-Cell	K39a Mobile home corner, exist. line - Line
	TOPO_E_TMHRL-Line	Mobile home roof line corner, exist. line - Line
	TOPO_E_TMISC-Prt-Cell	Topo, miscellaneous area, exist. point cell - Cell
	TOPO_E_TMPH-Cell	K10 Mile post, highway, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TMPH-Line	Mile post, highway, exist. point cell - Line
	TOPO_E_TMPR-Cell	Mile post, r/r, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TMPR-Line	Mile post, r/r exist. point cell - Line
	TOPO_E_TRAIL-Line	Railroad, top of rail, exist. line - Line
	TOPO_E_TRCRE-Cell	Map top of railroad rail, existing - Line
	TOPO_E_TRCRE-Line	K161 Map top of railroad rail, existing - Line
	TOPO_E_TS-Line	Steps, existing - Line
	TOPO_E_TSATPSH-Cell	K22 Satelite dish, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TSATPSH-Line	Satelite dish, exist. point cell - Line
	TOPO_E_TSC-Cell	K13 Sign, center - Cell
	TOPO_E_TSE-Cell	Billboard Sign, end - Cell
	TOPO_E_TSE-Line	K24a Billboard Sign, end - Line
	TOPO_E_TTRE-Cell	K48 Tree, center, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TTRE-Line	Tree center, exist. point cell - Line
	TOPO_E_TUD-Line	Uncovered deck, existing - Line
	TOPO_E_TVF-Line	Vinul/PVC Fence), exist. line - Line
	TOPO_E_TVG-Line	V-gutter, exist. line - Line
	TOPO_E_TWELL-Cell	Well, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TWELL-Line	Well, exist. point cell - Line
	TOPO_E_TWF-Line	Wall face, exist. line - Line
	TOPO_E_TWFB-Line	K164 Wall face bottom - Line
	TOPO_E_TWFT-Line	K163 Wall face top - Line
	TOPO_E_TWL-Line	Woods line, exist. line - Line
	TOPO_E_UELBOX-Cell	Electrical box - Cell
	TOPO_E_UELBOX-Line	K80 Electrical box - Line
	TOPO_E_UFH-Cell	K81 fire hydrant, center - Cell
	TOPO_E_UFH-Line	Fire hydrant, center - Line

Reference File Name	Level Name	Description
TOPO (Cont.)	TOPO_E_UGM-Cell	Gas meter, center - Cell
	TOPO_E_UGM-Line	Gas meter, center - Line
	TOPO_E_UPGA-Cell	Pole,anchor - Cell
	TOPO_E_UPGA-Line	Pole anchor - Line
	TOPO_E_UGP-Cell	Guy pole, center - Cell
	TOPO_E_UGP-Line	Guy pole, center - Line
	TOPO_E_ULP-Cell	K73 K75 light pole, center - Cell
	TOPO_E_ULP-Line	Light pole, center - Line
	TOPO_E_UMHE-Cell	Manhole, electrical, top - Cell
	TOPO_E_UMHE-Line	Manhole electrical, top - Line
	TOPO_E_UMHSS-Cell	Manhole, sanitary sewer, top - Cell
	TOPO_E_UMHSS-Line	Manhole, sanitary sewer, top - Line
	TOPO_E_UMHSSF-Cell	Manhole, sanitary sewer, F/L - Cell
	TOPO_E_UMHSSF-Line	Manhole, sanitary sewer, F/L - Line
	TOPO_E_UMHST-Cell	K66 Manhole storm sewer, top - Cell
	TOPO_E_UMHST-Line	Manhole storm sewer, top - Line
	TOPO_E_UMHSTF-Cell	Manhole storm sewer, F/L - Cell
	TOPO_E_UMHSTF-Line	Manhole storm sewer, F/L - Line
	TOPO_E_UMHT-Cell	Manhole, telephone, top, F/L - Cell
	TOPO_E_UMHT-Line	Manhole, telephone, top, F/L - Line
	TOPO_E_UNGLM-Cell	Gas line marker - Cell
	TOPO_E_UNGLM-Line	Gas line marker - Line
	TOPO_E_UNGV-Cell	K89 Gas valve, center - Cell
	TOPO_E_UNGV-Line	Gas valve, center - Line
	TOPO_E_UNGVP-Cell	Sanitary vent pipe - Cell
	TOPO_E_UNGVP-Line	Sanitary vent pipe - Line
	TOPO_E_UOEL-Cell	Overhead electrical line - Cell
	TOPO_E_UOEL-Line	K70 Overhead electrical line - Line
	TOPO_E_UOTL-Cell	Overhead telephone line - Cell
	TOPO_E_UOTL-Line	Overhead telephone line - Line
	TOPO_E_UPP-Cell	K72 K76 Power pole, center - Cell
	TOPO_E_UPP-Line	Power pole, center line - Line
	TOPO_E_USSL-Cell	Sanitary sewer line, center - Cell
	TOPO_E_USSL-Line	Sanitary sewer line, center - Line
	TOPO_E_UTP-Cell	Telephone pole, center - Cell
	TOPO_E_UTP-Line	Telephone pole, center - Line
	TOPO_E_UTPD-Cell	Telephone pedestal, center - Cell
	TOPO_E_UTPD-Line	Telephone pedestal, center - Line
	TOPO_E_UWM-Cell	Water meter, center - Cell
	TOPO_E_UWM-Line	Water meter, center - Line
	TOPO_E_UWV-Cell	Water valve - Cell
	TOPO_E_UWV-Line	Water valve - Line
	TOPO_E_UYLF-Cell	K71 Yard light, electrical - Cell
	TOPO_E_UYLF-Line	Yard light, electrical - Line
	TOPO_E_UYLG-Cell	Yard light, Gas - Cell
	TOPO_E_UYLG-Line	Yard light, gas - Line
	TOPO_E_POOL-Line	K41 Pool, exist. Line - Line
	TOPO_E_FNDN-Line	K19a Foundation, exist. line - Line
	TOPO_E_RUIN-Line	K19b Ruins, exist. line - Line
	TOPO_E_TANK-Line	K18a Tank, exist. line - Line
	TOPO_E_DTCH-Line	Ditch - Line
	TOPO_E_DTCH-Hidden-Line	Hidden ditch - Line
	TOPO_E_TWFE-Line	K29 Wall fence - Line
	TOPO_E_GOLF-Line	K39b Golf Course - Text
	TOPO_E_Basketball-Court-Cell	Basketball Court - Cell
	TOPO_E_Flow-Arrow-Cell	Flow Arrow - Cell
	TOPO_E_DEW-Hatch-Line	Edge of water, exist. line - Line
	TOPO_E_BUILD-Line	Building - Line
	TOPO_E_Ditch-Taper-Cell	K53 Ditch Taper - Cell
	TOPO_E_Trail-Line	Trail - Line
	TOPO_E_Basketball-Court-Line	Basketball Court - Line
	TOPO_E_TRCR-Sgnl-Cell	Railroad, top of rail, exist. signal point symbol, # text, descr., elev. - Cell
	TOPO_E_TRCR-Sgnl-Line	Railroad, top of rail, exist. signal line - Line
	TOPO_E_TRIVER-Cell	River edge interior bound., exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TRIVER-Line	K44 River edge interior bound., exist. line - Line
	TOPO_E_TLAKE-Cell	Lake interior bound., exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_TLAKE-Line	K45 Lake interior bound., exist. line - Line
	TOPO_E_DHDS-Cell	Hidden drain line, exist. point symbol, # text, descr., elev. - Cell
	TOPO_E_DHDS-Line	K68b Hidden drain line, exist. line - Line
ECON	ECON_E_Major-Contour-Line	Major contour lines - Line
	ECON_E_Major-Contour-Text	Major contour lines text - Text
	ECON_E_Minor-Contour-Line	Minor contour lines - Line
	ECON_E_Minor-Contour-Text	Minor contour lines text - Text
FCON	FCON_P_Major-Contour-Line	Major contour lines - Line
	FCON_P_Major-Contour-Text	Major contour lines text - Text
	FCON_P_Minor-Contour-Line	Minor contour lines - Line
	FCON_P_Minor-Contour-Text	Minor contour lines text - Text
ENVE	ENVE_E_Arch-Pattern	Archaeological resource, patterning - Line
	ENVE_E_Cult-Rsc-Pattern	Cultural resource, patterning line - Line
	ENVE_E_Cult-Rsc-Delin-Line	Cultural resource, lines & cells (delineations) - Line
	ENVE_E_Arch-Text	Archaeological Resource, description & labels - Text
	ENVE_E_Arch-Line	Archaeological Resource, lines - Line
	ENVE_E_Arch-Shape	Archaeological Resource, shapes for patterning - Line
	ENVE_E_Cult-Rsc-Shape	Cultural Resource, shapes for patterning - Line
	ENVI_E_Cult-RSC-Text	Cultural Resource, description & labels - Text
	ENVE_E_Endgd-Spec-Line	Endangered Species, lines & cells (delineations) - Line
	ENVE_E_Endgd-Spec-Pattern	Endangered Species, patterning - Line
	ENVE_E_Endgd-Spec-Shape	Endangered Species, shapes for patterning - Line
	ENVE_E_Endgd-Spec-Text	Endangered Species, description & labels - Text
	ENVE_E_Env-Justice-Line	Environmental Justice, lines - Line
	ENVE_E_Env-Justice-Pattern	Environmental Justice, patterning - Line
	ENVE_E_Env-Justice-Shape	Environmental Justice, shapes and patterning - Line
	ENVE_E_Env-Justice-Text	Environmental Justice, description & labels - Text
	ENVE_E_FSA-Line	FSA, lines - Line
	ENVE_E_FSA-Pattern	FSA, patterning - Line
	ENVE_E_FSA-Shape	FSA, shapes for patterning - Line
	ENVE_E_FSA-Text	FSA, description & labels - Text
	ENVE_E_Hac-Mat-Delin-Line	Hazardous Material, lines & cells (delineations) - Line
	ENVE_E_Hac-Mat-Shape	Hazardous Material, shapes and patterning - Line
	ENVE_E_Hist-Rsc-Line	Historic Resource, lines - Line
	ENVE_E_Hist-Rsc-Pattern	Historic Resource, patterning - Line
	ENVE_E_Hist-Rsc-Shape	Historic Resource, shapes for patterning - Line
	ENVE_E_Hist-Rsc-Text	Historic Resource, description & labels - Text
	ENVE_E_Wetland-Bound-Line	Wetland Boundary, lines - Line
	ENVE_E_Wetlnd-Pattern	Wetlands, patterning - Line
	ENVE_E_Wetlnd-Shape	Wetlands, shapes for patterning - Line
	ENVE_E_Wetlnd-Stream-Delin-Line	Stream Delineation, lines - Line
	ENVE_E_Wetlnd-Stream-Text	Wetland and Stream, description & labels - Text
	ENVE_E_ORNGFENCE-Line	Orange Fence - Line
	ENVE_E_ORNGFENCE-Text	Orange Fence - Text
ENVP	ENVP_P_ORNGFENCE-Line	Orange Fence - Line
	ENVP_P_ORNGFENCE-Text	Orange Fence - Text

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 required. General notes should be referenced on the right side of the plan drawing.

Bioretention Basin Plan Required Information

The existing information shown should include:

- Large roadway 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)
- 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
- Land District lines with labels
- Georgia Militia District (GMD) lines with labels
- Railroads
  - Right of way lines with labels
  - Tracks
  - Names
  - Mileposts
  - Warning devices
  - Crossing ID numbers
- Utility easement lines with labels
- Existing L/A - Limit-of-Access lines with labels (Begin (B L/A) and End (E L/A) if applicable)
- Wetlands
- Historic boundaries
- Existing contour lines with labels
- NOTE: Existing contours should be shown screened back and dashed.
- Waters of the U.S
- 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 shall be denoted on all plan drawings (roadway plan drawings, utility plan drawings, erosion control plan drawings, etc.) with a Diamond Line Code. 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"
- All other pertinent physical features (i.e.: property owner entrance signs, business/residential signs, etc.)

The proposed information shown should include:

- Alignments
  - Stations progressing from west to east and from south to north
  - 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)
- Bioretention Basin
  - Outlet control structure (include MS4 Post-Construction Stormwater Report ID)
  - Forebay/pretreatment and outlet protection
  - Reference special detail sheet(s)
  - Design tables
  - Underdrain System
  - Maintenance access (i.e. access road, fences)
  - All other pertinent physical features (i.e. slopes, embankments, spot elevations, etc.)
- Drainage
  - Structures
  - Storm drains (size and direction)
  - Side drains
  - Culverts
  - Permanent erosion features (i.e. type of rip-rap, concrete aprons, concrete flumes)
  - Ditches
  - Inlet/Outlet structures
- Roadway Items
  - Edges of pavement
  - Curb and gutter
  - Sidewalk
  - Paved shoulder
  - Ditches
  - Guardrail/Barriers
  - Walls
  - Noise barriers
  - Bridges
  - Approach slabs
  - Driveways
- Proposed Right-of-Way Features
  - Required right-of-way
  - Required easement lines and associated patterns
  - Proposed right-of-way markers at locations where RW direction changes (including PC/PT locations)

REVISION DATES

SPECIAL CONSTRUCTION DETAIL
BIORETENTION BASIN
SHEET 2 OF 2

CHECKED:		DATE:	DRAWING No.
BACKCHECKED:		DATE:	
CORRECTED:		DATE:	-
VERIFIED:		DATE:	

10/23/2015 GPLN

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 required. General notes should be referenced on the right side of the plan drawing.

Bioretention Basin Plan Required Information

The existing information shown should include:

- Large roadway 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)
- 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
- Land District lines with labels
- Georgia Militia District (GMD) lines with labels

- Railroads
  - Right of way lines with labels
  - Tracks
  - Names
  - Mileposts
  - Warning devices
  - Crossing ID numbers
- Utility easement lines with labels
- Existing L/A - Limit-of-Access lines with labels (Begin (B L/A) and End (E L/A) if applicable)
- Wetlands
- Historic boundaries
- Existing contour lines with labels
- NOTE: Existing contours should be shown screened back and dashed.
- Waters of the U.S
- 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 shall be denoted on <u>all</u> plan drawings (roadway plan drawings, utility plan drawings, erosion control plan drawings, etc.) with a Diamond Line Code. 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"
- All other pertinent physical features (i.e.: property owner entrance signs, business/residential signs, etc.)

The proposed information shown should include:

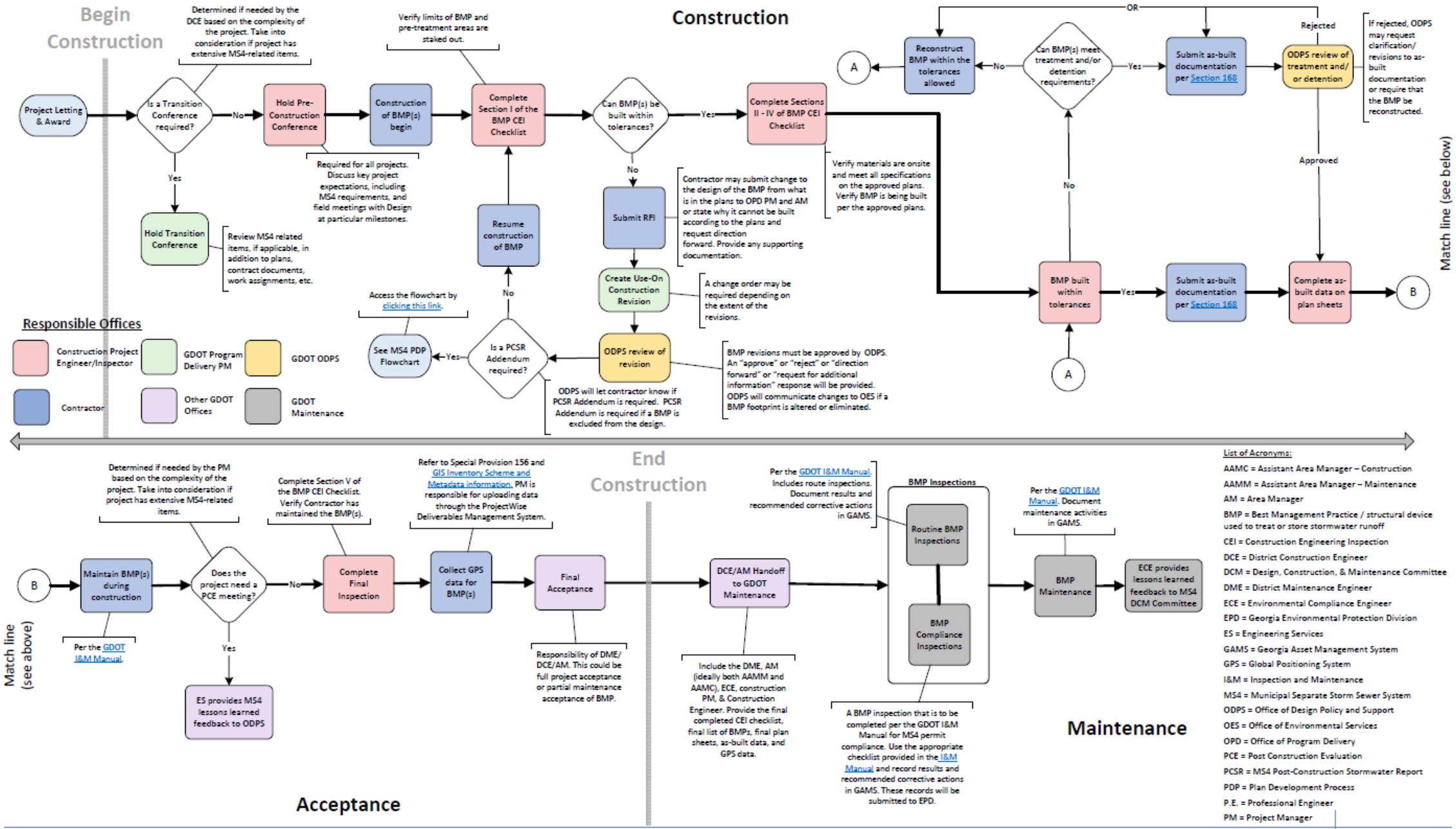
- Alignments
  - Stations progressing from west to east and from south to north
  - Road Names
  - Stationing and primary tic marks every 500 feet and secondary tic marks every 100 feet (frequency can be increased) for 1"=50' to the even station (i.e. 12+30)
  - Stationing and primary tic marks every 100 feet and secondary tic marks every 50 feet for 1"=20' to the even station (i.e. 12+30)
  - Stations where centerline crosses county boundaries

- Bioretention Basin
  - Outlet control structure (include MS4 Post-Construction Stormwater Report ID)
  - Forebay/pretreatment and outlet protection
  - Reference special detail sheet(s)
  - Design tables
  - Underdrain System
  - Maintenance access (i.e. access road, fences)
  - All other pertinent physical features (i.e. slopes, embankments, spot elevations, etc.)
- Drainage
  - Structures
  - Storm drains (size and direction)
  - Side drains
  - Culverts
  - Permanent erosion features (i.e. type of rip-rap, concrete aprons, concrete flumes)
  - Ditches
  - Inlet/Outlet structures
- Roadway Items
  - Edges of pavement
  - Curb and gutter
  - Sidewalk
  - Paved shoulder
  - Ditches
  - Guardrail/Barriers
  - Walls
  - Noise barriers
  - Bridges
  - Approach slabs
  - Driveways
- Proposed Right-of-Way Features
  - Required right-of-way
  - Required easement lines and associated patterns
  - Proposed right-of-way markers at locations where RW direction changes (Including PC/PT locations)

MS4 Plan Development Process (Post-Letting)

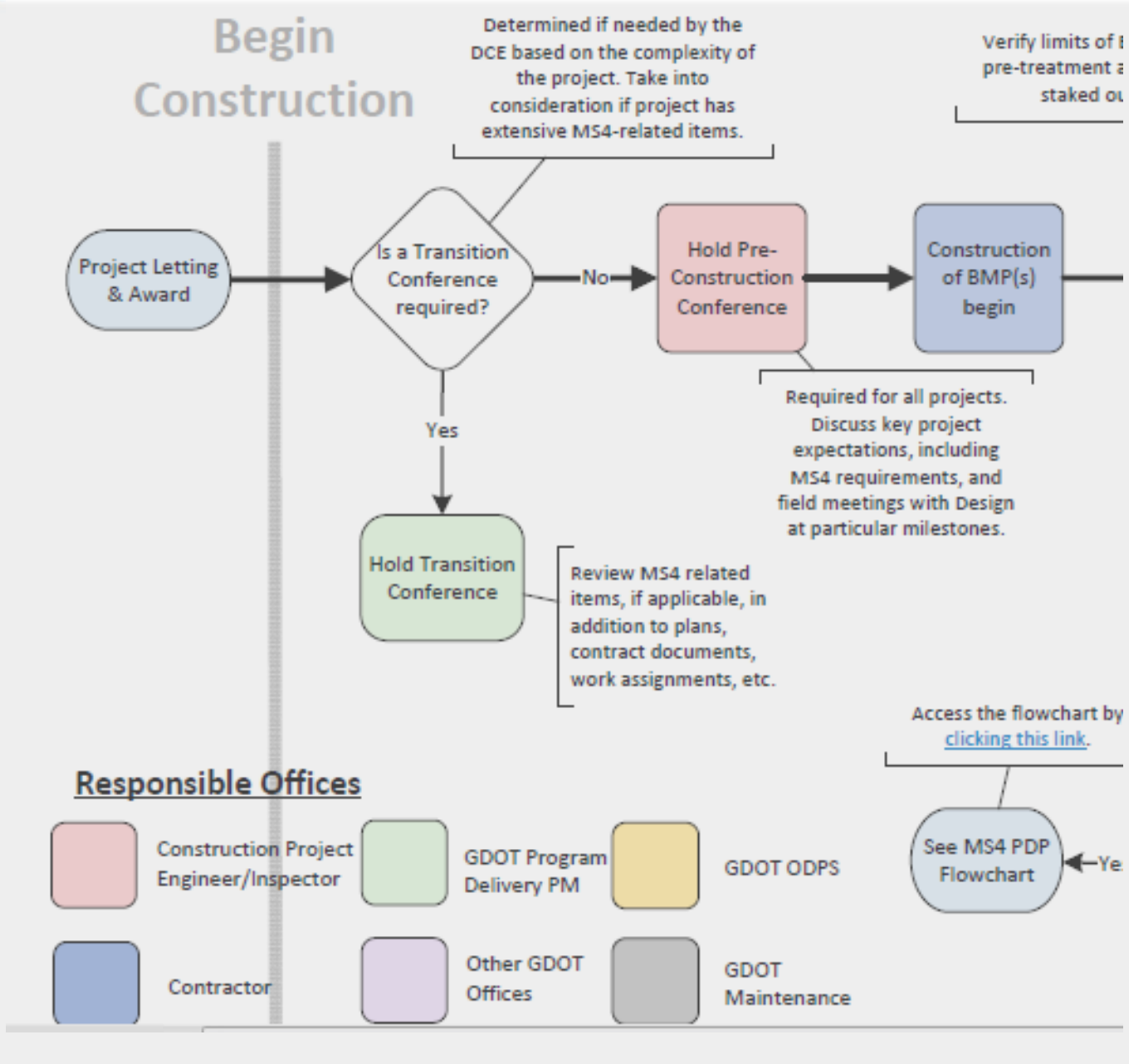
GDOT Office of Design Policy & Support

August 21, 2017



List of Acronyms:

AAMC = Assistant Area Manager – Construction
AAMM = Assistant Area Manager – Maintenance
AM = Area Manager
BMP = Best Management Practice / structural device used to treat or store stormwater runoff
CEI = Construction Engineering Inspection
DCE = District Construction Engineer
DCM = Design, Construction, & Maintenance Committee
DME = District Maintenance Engineer
ECE = Environmental Compliance Engineer
EPD = Georgia Environmental Protection Division
ES = Engineering Services
GAMS = Georgia Asset Management System
GPS = Global Positioning System
I&M = Inspection and Maintenance
MS4 = Municipal Separate Storm Sewer System
ODPS = Office of Design Policy and Support
OES = Office of Environmental Services
OPD = Office of Program Delivery
PCE = Post Construction Evaluation
PCSR = MS4 Post-Construction Stormwater Report
PDP = Plan Development Process
P.E. = Professional Engineer
PM = Project Manager
RFI = Request for Information



POST-LETTING

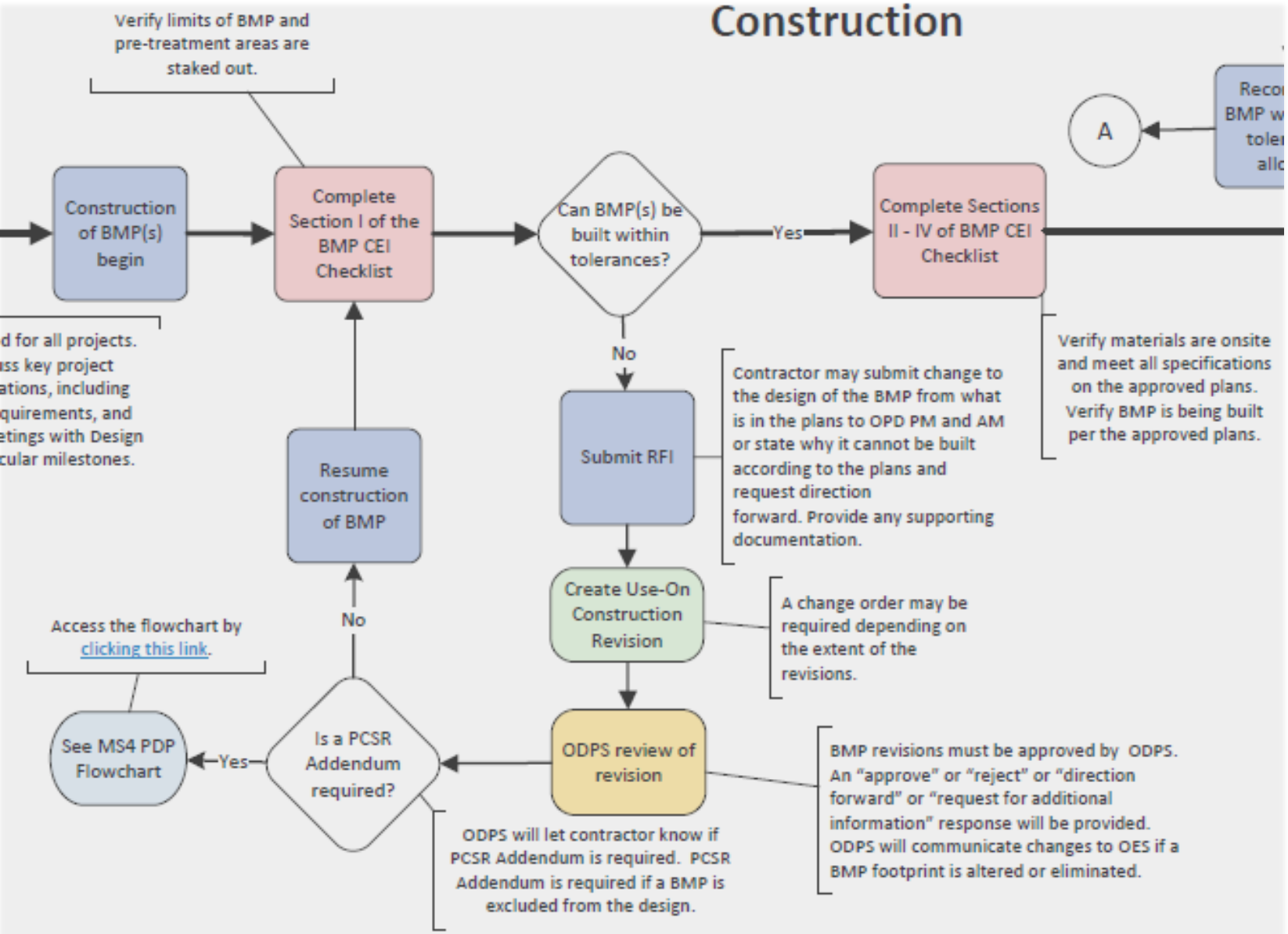
Prior to BMP Construction

- MS4 discussion at Transition Conference, if required
- MS4 discussion at Pre-Construction Conference

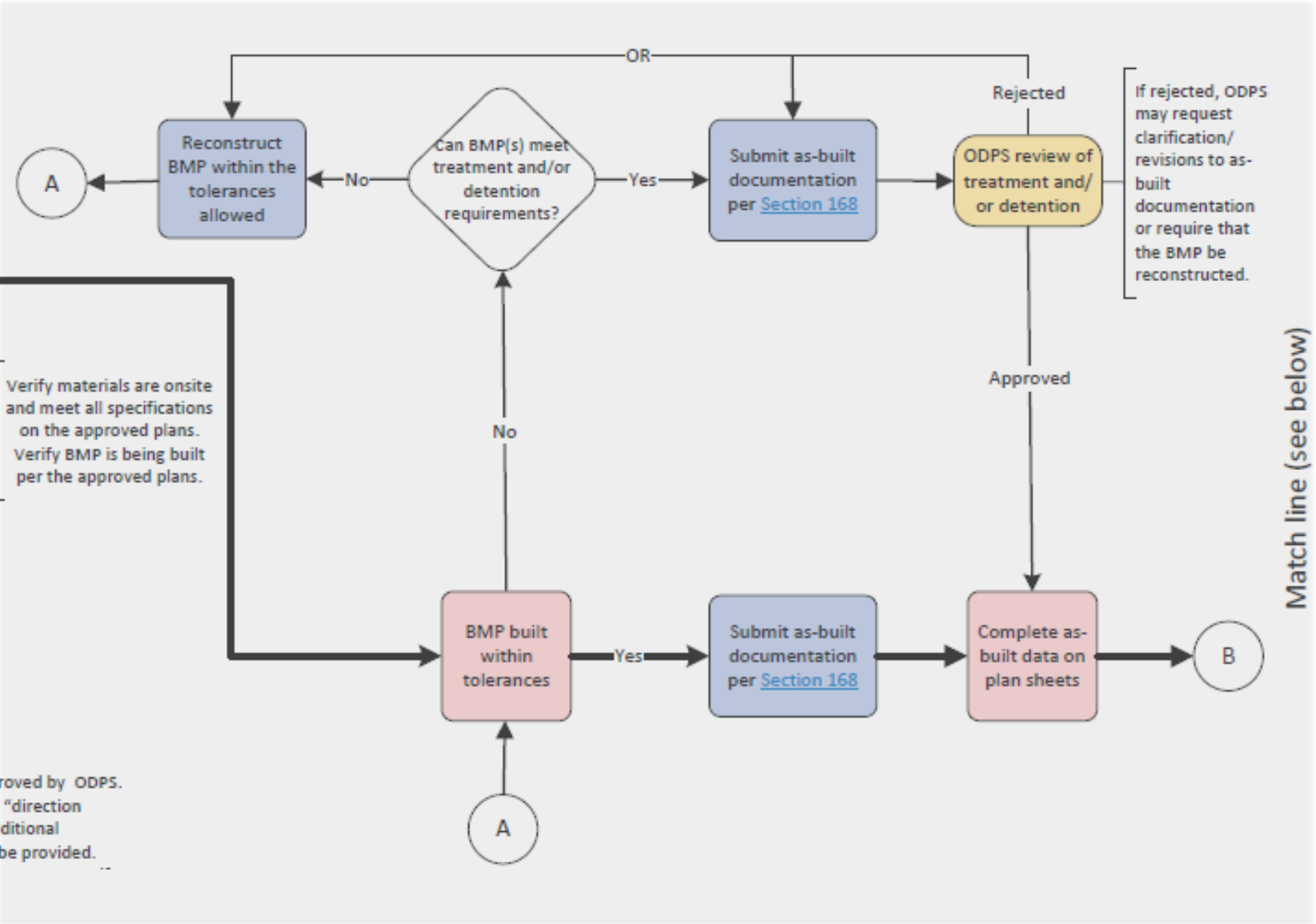
POST-LETTING

BMP Construction

- Verify BMP can be built within tolerances
- Process for design revisions during construction



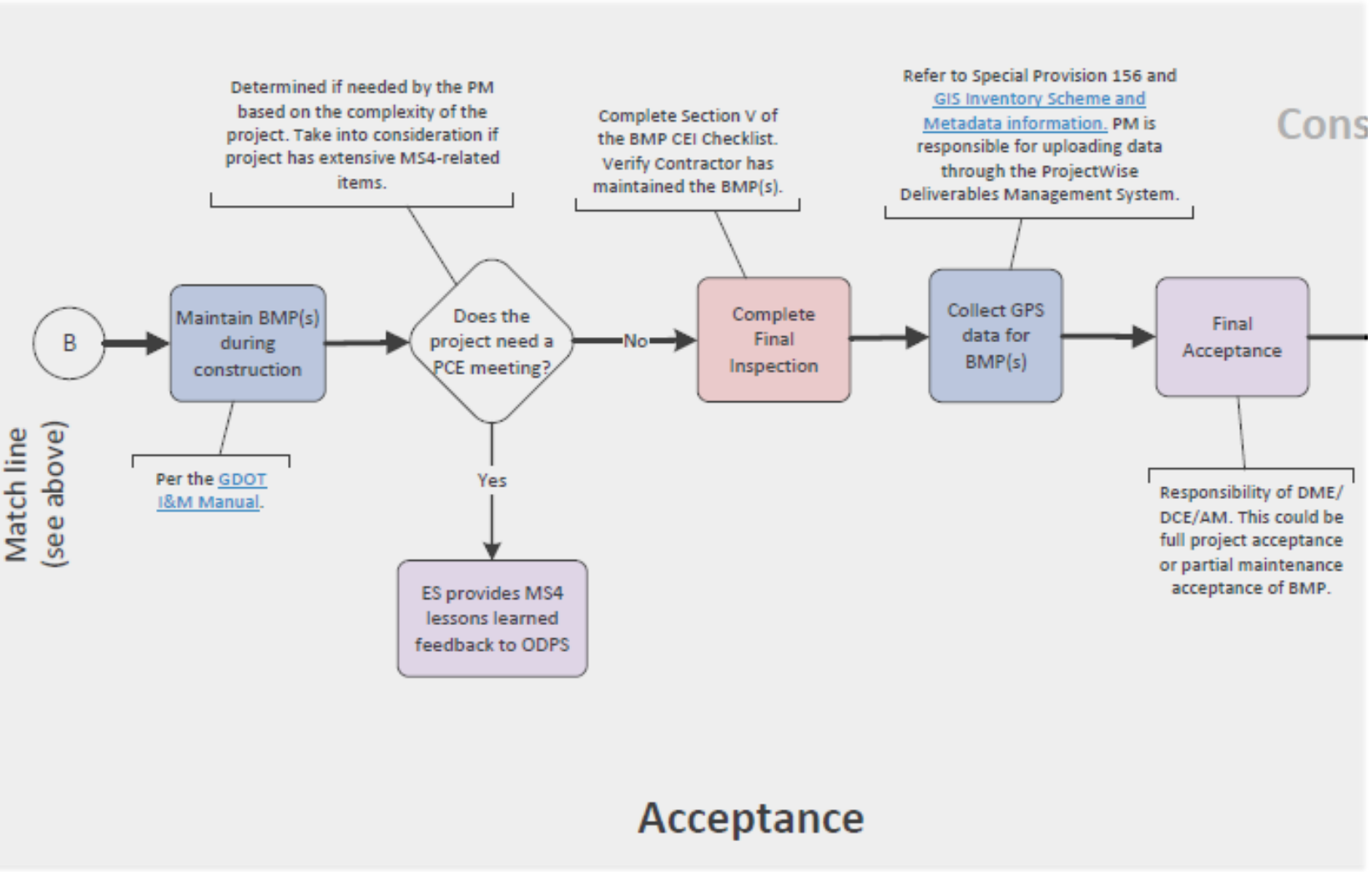
POST-LETTING
BMP Construction Verification



- CEI verification that BMP was built within tolerances
- Submission of as-built documentation

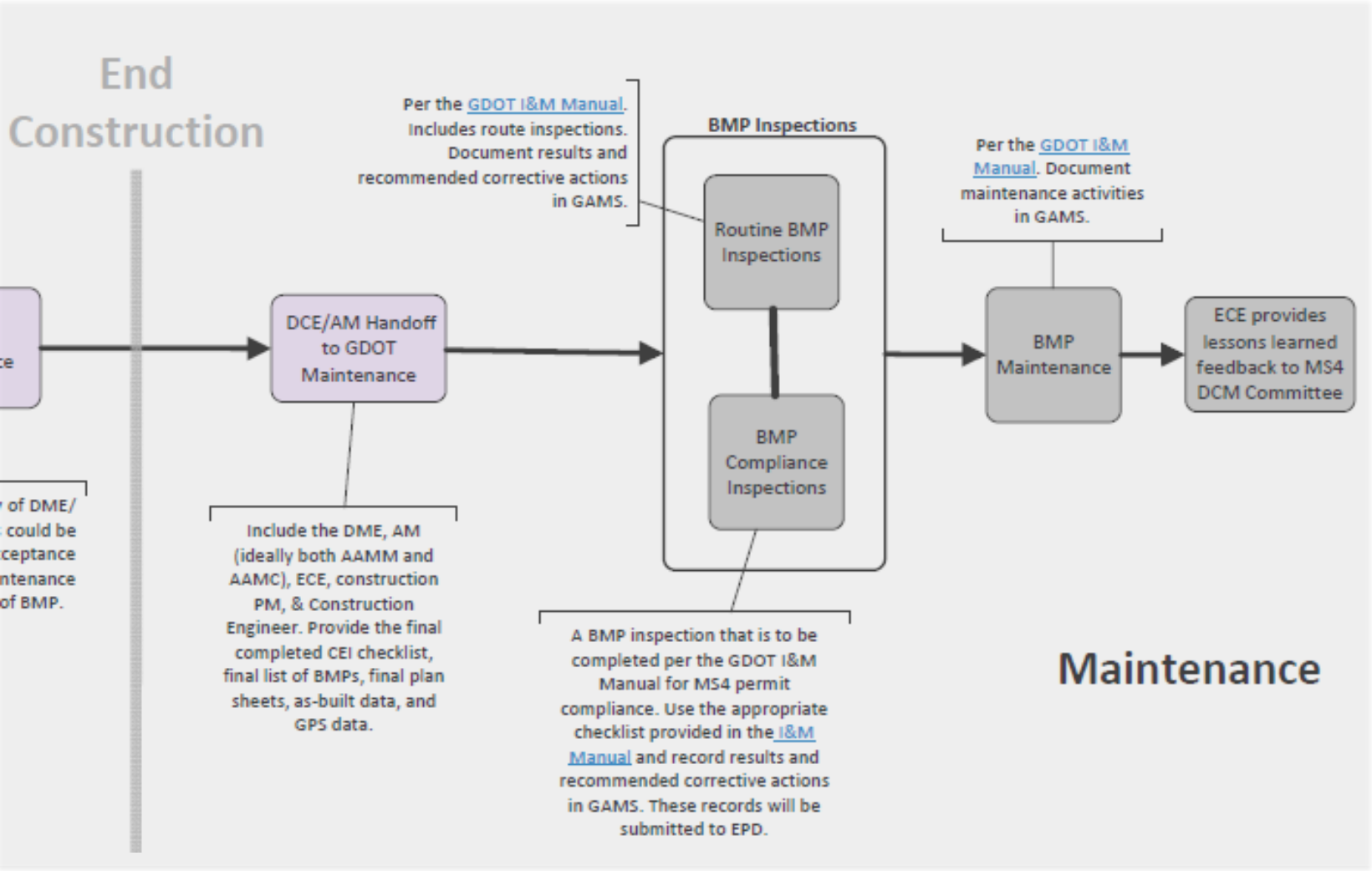
POST-LETTING

GDOT Acceptance



- MS4 lessons learned discussed at PCE meeting, if required
- BMP GPS data collection per SP 156
- GDOT acceptance

POST-LETTING
Maintenance



- Handoff to maintenance
- Maintenance provides lessons learned feedback to DCM Committee


ANY
QUESTIONS
?

COURSE FEEDBACK

Please complete the course feedback forms before leaving so this course can continue to be improved!

CONTACT INFORMATION

Brad McManus, PE

MS4 Program Manager

Office of Design Policy and Support

bmcmanus@dot.ga.gov