



**TOWN OF BLUFFTON WATERSHED MANAGEMENT
DRAINAGE AS-BUILT CHECKLIST**

DEVELOPMENT NAME & PHASE:	
ADDRESS & TMS:	
DEVELOPER/EMAIL/PHONE:	
ENGINEER/EMAIL/PHONE:	
CONTRACTOR/EMAIL/PHONE:	
TOWN FILE #:	

One set of As-Built drawings sealed by a registered professional engineer licensed in the State of South Carolina must be submitted within 21 days after completion of construction of the site, all BMPs, land covers, and stormwater conveyances as required by the procedure for handling close out documents for private development projects by the Town of Bluffton.

Submit this checklist electronically. Include a copy of this completed checklist and all required submittals to applicationfeedback@townofbluffton.com. Please find examples at the end of this document.

General Information:

	As-builts are to be submitted digitally in GIS, CAD and Geo-referenced PDF format
	Words As-Built in or near the project title, on Plan set Cover Sheet
	Engineer’s As-built certification statement, signature, date, PE seal
	As-Built Signature/Approval block on the cover sheet
	As-builts shall have a coordinate system based on the South Carolina Coordinate System North American Datum of 1983 (NAD83)
	Elevations shown shall be based on the North American Vertical Datum of 1988 (NAVD88)
	Vicinity map
	Sheets numbered correctly
	Project ID number, Project Name, Permit number and name, address and contact information of project engineer
	All measurements and coordinates shall be shown on all drainage structures, detention and BMP structure outlets, outlet control structures and manholes
	Any change to design value elevations, dimensions (L, W, D), specifications or location shall be shown as mark-through of the original design value on the drawings and constructed/as-built value next to it and “boxed” in red ink
	Elevations to the nearest 0.1 ft



Basins:

	At least two benchmarks on the plans
	Profile of the top of berm
	Cross-section of emergency spillway at the control section
	Profile along the centerline of the emergency spillway
	Cross-section of berm at the principal spillway
	Elevation of the principal spillway crest or top of structure elevations
	Elevation of the principal spillway inlet and outlet invert
	Riser diameter/dimensions and riser base size
	Diameter, invert elevation and sizes of any stage orifices, weirs or storm drain pipes
	Barrel diameter, length, and slope
	Types of material used
	Outfall protection length, width, depth, size of rip rap and filter cloth
	Size, location, and type of anti-vortex and trash rack device (height and diameter, elevations and spacing)
	Pipe cradle information
	On plan view show length, width and depth of pond and contours of the basin area so that design volume is specified
	As-built spot elevations within the disturbed area required for basin construction in sufficient detail to provide accurate as-built contours
	Core trench limits and elevations of bottom of cut off trench
	Show length width and depth of outfall rip rap
	Certification by a Geotechnical Engineer for compaction and unified soil classes
	Vegetation cover certification stating that the disturbed area of site has achieved 80% or greater established, permanent stabilization
	Show location, plant types and size of planted landscaping per approved landscape plan
	Utility locations and elevations encountered, test pitted and/or relocation during contract work



Storm Drain Piping:

At least two benchmarks on the plans
Diameter and class of pipe
Invert of pipe at outfall, structures and/or field connections
Structure type, dimensions, number and location of throats, throat invert elevations, top of structure elevation
Slope of pipe
Pipe lengths (show stationing)
Types of materials
Location of all pipes and structures horizontally on the plan
Types of materials
Length, width and depth of all rip rap and other outfall protection as specified
Elevation of rip rap at outfall and at changes in grade
Utility locations and elevations encountered, test pitted and/or relocation during contract work

Post construction BMP Specific details:

Provide as-built details as described for each best management practice in Chapter 4-, to include but not be limited to:

Diameter and type of pipes
Invert of pipes at outfall areas, structures and field connections
Size and location of observation wells
Slope of pipe
Pipe lengths
Types and depth of materials, aggregates, filter media, filter fabric, etc.
Location of all pipes and structures horizontally on the plan
Length, width and depth of all rip rap and other outfall protection as specified
Elevation of rip rap at outfall and at changes in grade
Show location, plant types and size of planted landscaping per approved landscape plan

Rainwater Harvesting

Submission of third-party testing of end-use water quality may be required at equipment commissioning as determined by the requirements in Appendix J *Rainwater Harvesting Treatment and Management Requirements*. Additional regular water quality reports certifying compliance for the life of the BMP may also be required in Appendix J *Rainwater Harvesting Treatment and Management Requirements*.

Rainwater Harvesting Systems must have a submitted and approved Operations and User’s Manual describing:

Design assumptions of system including daily, weekly, monthly, annual, input/output requirements
System layout in schematic drawing showing system components
Narrative of operation set-up and trouble shooting
System component maintenance requirements and frequency as monthly, quarterly and annual.



Irrigation Re-Use

Irrigation re-use systems must have a submitted and approved Operations and User's Manual describing:

	Design assumptions of system including daily, weekly, monthly, annual, output requirements
	System layout in schematic drawing showing control panel, irrigation zones, irrigation line(s) and head(s) locations
	Narrative of operation, set-up and troubleshooting
	System component maintenance requirements and frequency as monthly, quarterly and annual

AS-BUILT SUMMARY: (To be completed by Town Reviewer)

Passed Town reviewer to notify engineer to forward electronic file (GIS files with attributed data and georeferenced TIFF/PDF file) to the Town of Bluffton IT Department.

Failed Owner's engineer will re-calculate/certify/resubmit.

Failed Owner will make field adjustments as necessary.

FAQ:

Exporting Shapefiles with attribute data from Civil3D:

<https://knowledge.autodesk.com/support/autocad-map-3d/learn-explore/caas/CloudHelp/cloudhelp/2019/ENU/MAP3D-Use/files/GUID-55FE7920-51ED-42AB-B52C-0AC25C198E46-hm.html>

Steps on georeferencing a PDF/Image in AutoCAD:

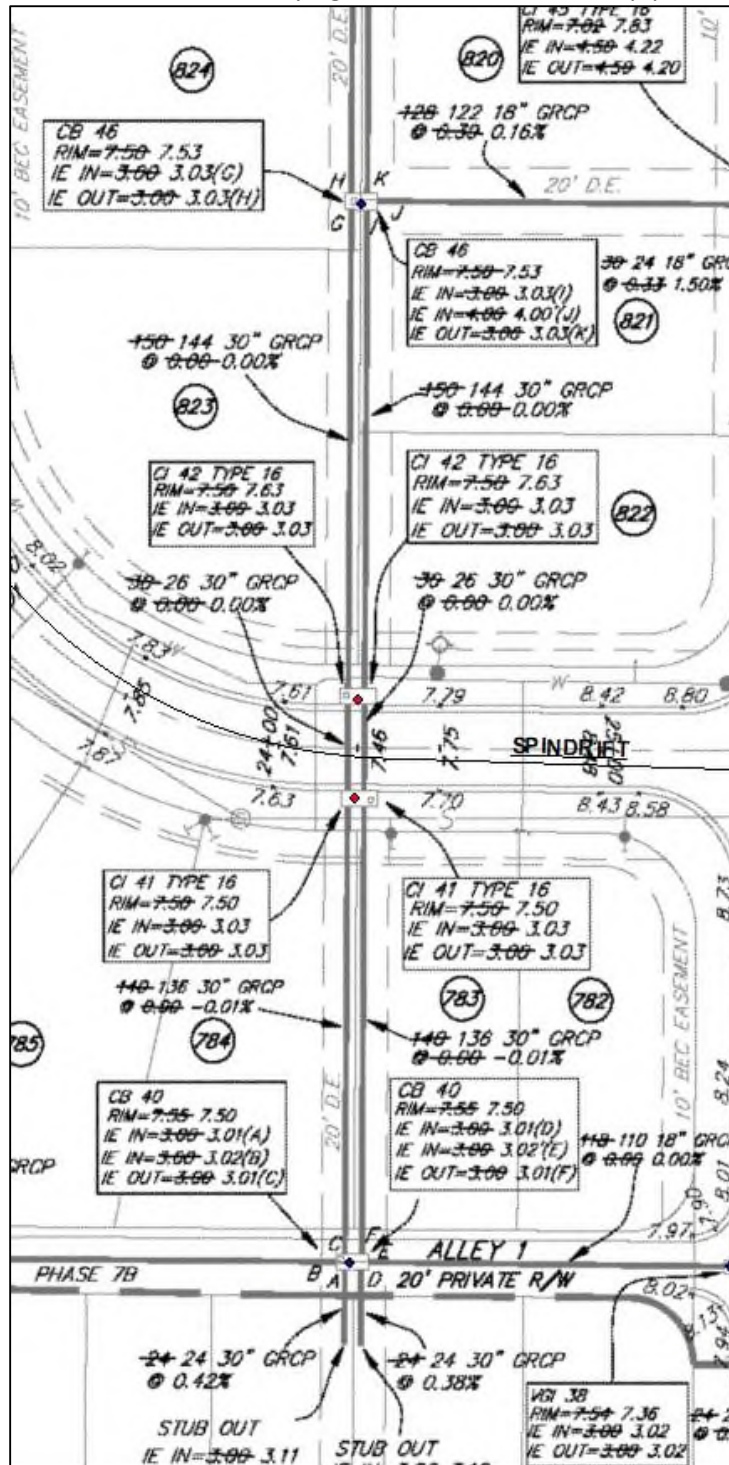
<https://knowledge.autodesk.com/support/autocad/troubleshooting/caas/sfdcarticles/sfdcarticles/How-to-properly-scale-an-image-after-inserting-into-AutoCAD.html>

See the following document for GIS Data Schema guidelines:



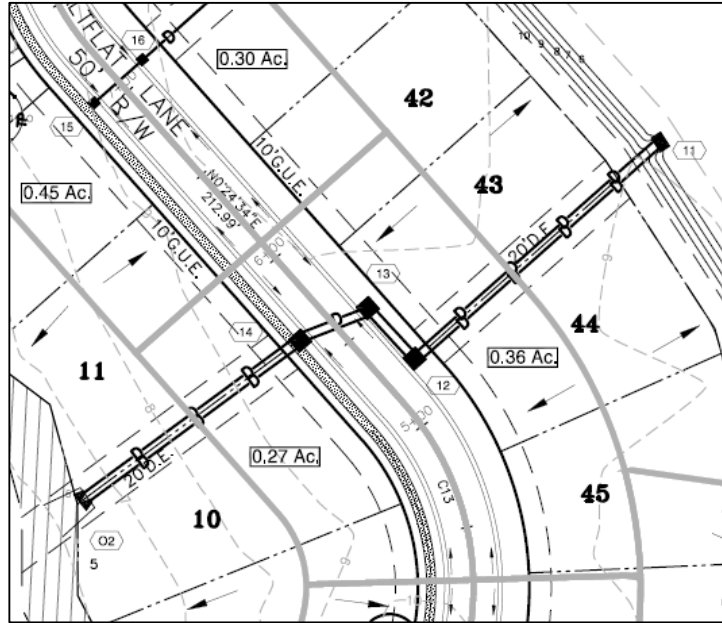
Example Scenarios:

Identify data for every pipe (single and multiple runs) and all invert elevations at each structure. See example below which makes identifying data for structures and pipes efficient.

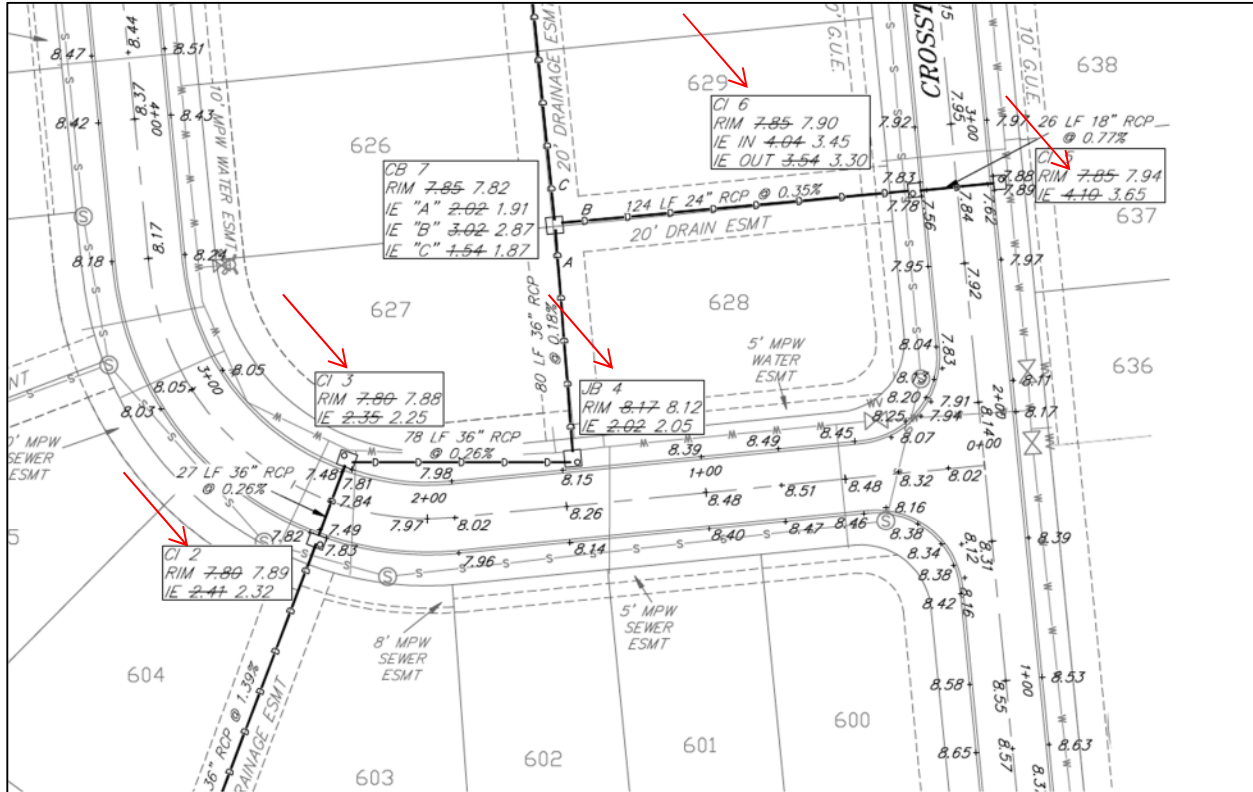




When multiple pipes are present, each pipe needs to be identified.



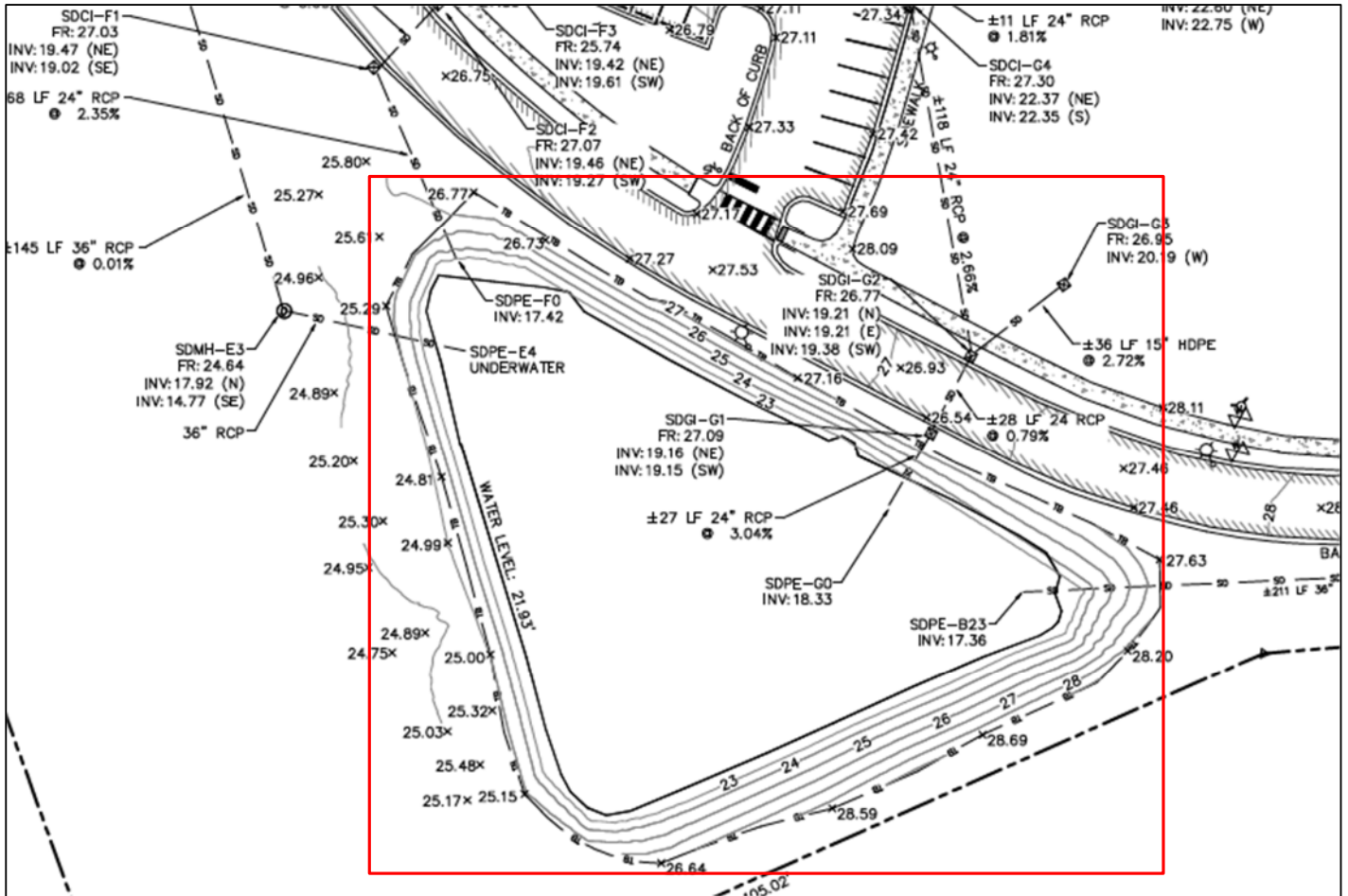
JB4, CI6, CI5, CI3 and CI2 are missing an invert elevation value.





TOWN OF BLUFFTON WATERSHED MANAGEMENT DRAINAGE AS-BUILT CHECKLIST

BMP needs to be identified as per approved plans "Wet Pond #"



BMP needs to be identified as per approved plans (Permanent diversion ditch) "Grass Swale"

