

DEPARTMENT OF PUBLIC UTILITIES



DIVISION OF SEWERAGE AND DRAINAGE



**PRIVATE DEVELOPMENT SECTION
(ONE STOP SHOP aka SITE ENGINEERING)
(SEWER PERMIT OFFICE)**

SEWER SYSTEM ENGINEERING SECTION (SSES)

DESIGN INFORMATION SOURCES

- <https://www.columbus.gov/utilities/document-library/>
- 2018 CONSTRUCTION & MATERIAL SPECIFICATIONS
- STORMWATER DRAINAGE MANUAL (August 2012)
- SANITARY SEWER DESIGN MANUAL
- STANDARD DRAWINGS
- SUPPLEMENTAL SPECIFICATIONS (Bypass Pumping SS-3; CCTV SS-5; HDD SS-23; CIPP; MH Lining, etc.)
- CAD DIGITAL SUBMISSION STANDARDS
- Submit additional design questions via email to review staff, include exhibits (DAHOLZ@COLUMBUS.GOV)

STORMWATER DRAINAGE MANUAL SECTION 1

- **PRESERVATION (streams, wetlands, floodplains)**
- SCPZ (Stream Corridor Protection Zone) Section 1.3
- Prohibited and Permitted Uses (pipe outlets with outlet protection)
- Larger of the 3 derivation methods Sec 1.3.1
- Width Minimum 50 feet to 250 feet Maximum
- Must expand to encompass wetlands and steep sideslopes
- Specify method for SCPZ limits delineation (calcs in report, width on drawings)
- “Formula” width in feet = $147 \times (DA)^{0.38}$ (DA=Drainage Area sq. mi.)
- Width derivation (USGS Streamstats website USEFUL WEB APP)
- <https://water.usgs.gov/osw/streamstats/ohio.html>

USGS Streamstats Drainage Area Delineation Example

streamstatsags.cr.usgs.gov/v3_beta/viewer.htm?stabbr=OH

USGS StreamStats Version 3.0 : Ohio

Select a tool on the toolbar. If the icon remains depressed, click on the map to perform the desired action.

OH Map Layers

- Streamgages
- Areas of limited functionality
- Ohio outline
- Stream Grid
- Study Area Bndys

Base Layers

- Imagery
- Street Map
- World Topo
- USA Topo
- Canadian Topo
- TNM Topo

0 0.1 0.2mi
Scale: 1 : 18,056
Latitude: 40.02992
Longitude: -83.16507 55

USGS The National Map: National Boundaries Dataset, 3D Elevation Prog

Accessibility | FOIA | Privacy | Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: http://streamstatsags.cr.usgs.gov/v3_beta/viewer.htm
Page Contact Information: StreamStats Help

[StreamStats Status](#) [News](#) [Introduction](#) [Application Information](#)

STORMWATER DRAINAGE MANUAL SECTION 1

- Stormwater Variance— last resort when nothing else will work.
- <https://www.columbus.gov/Templates/Detail.aspx?id=2147487221>
- Discuss variance with Greg Fedner (GFedner@columbus.gov) prior to preparation of submittal.
- Variance submittal required to be posted for 2 weeks on City website for public comment prior to Variance Review Committee convening
- Variance Review Committee handles larger scale requests but minor design variances MAY be worked out through Private Development Section (i.e., pipe outlet encroaching SCPZ, drainage area diversions etc.)

STORMWATER DRAINAGE MANUAL SECTION 3

QUANTITY/QUALITY CONTROLS

- New OEPA General Stormwater Permit still requires Water Quality treatment for sites of 1 acre or more. (See permit Part I, section B.1., 2nd paragraph)
- Over 2 acres disturbed or part of a larger common development > 2 acres requires drawdown BMP from CGP Part III, section G.2.e.
- Private storm controls **prohibited** from being installed within FEMA floodplain boundaries, stream corridor protection zones and public right-of-way
- Alternative Applicant Proposed BMP Policy references NJ approved hydrodynamic devices (www.njstormwater.org).
- Stormwater detention devices located within building footprint must be approved by the Building Department. May apply for a preliminary plan review (PRPL) from the building department. All storm sewers and appurtenances within building footprint must be shown on the building plans.
- Storm sewers within the building footprint must meet plumbing code and be approved by the building department.

STORMWATER DRAINAGE MANUAL SECTION 3

QUANTITY/QUALITY CONTROLS

- In combined sewers areas where sewer separation is planned in immediate future, water quality treatment is required. If sewer separation will not be completed before completion of private project, outflow is subject to Fair Share Calculation.
- Connections or crossings of brick sewers in the right of way are subject to Brick Sewer Deposit. Contact Jacque Kelley at JKKelley@Columbus.gov for more information.
- Right of Way (ROW) improvements must be accounted for on associated CC plans. E Plan land disturbance and increase in impervious area must be annotated accordingly in the CC plan site data table and with the notes on the next slide.

STORMWATER DRAINAGE MANUAL SECTION 3

QUANTITY/QUALITY CONTROLS

E – Plan Notes

One of the following notes is required on the title sheet of all E plans:

- Detention and/or Water Quality required projects:
“Post-construction BMPs for storm water quantity and quality for ____ SF (acres) of additional impervious area and _____ SF (acres) of surface disturbance on this plan have been provided outside of the Right-of-Way on CC_____ private stormwater plan.”

- For De Minimis projects (must include total of work in ROW & on site):
“Post-construction BMPs for storm water quantity and quality are not required for the ____ SF of additional impervious area and _____ SF of surface disturbance on this plan as the total additional impervious area and surface disturbance for the entire proposed development, including improvements shown on this plan and on private stormwater plan CC-_____ are below the de minimis levels as defined in the Storm Water Drainage Manual (SWDM).”

STORMWATER DRAINAGE MANUAL SECTION 3

QUANTITY/QUALITY CONTROLS

- Projects with storm a CC plan and an E plan will have a plan break at the first structure out of the site.
- If right of way stormwater drains into the site an access easement is required for the storm sewers carrying this water. The sewers on the site must be privately maintained. The easement provides the City emergency access in the event of a blockage flooding the street.
- Public Service will not sign the CC or E plans until on site easements are recorded.

REQUIRED STORMWATER DETENTION DETAILS

- STRUCTURE DETAILS FOR CONTROL DEVICES REQUIRED
- WET AND DRY BASINS REQUIRE CROSS-SECTIONS (INCLUDE CONTROL STRUCTURE, FOREBAY, MICROPOOL, SAFETY BENCH, SIDE SLOPES, CRITICAL ELEVATIONS)
- 100 YEAR DETENTION TABLE

100 YEAR DETENTION TABLE

| DESCRIPTION | VOLUME REQUIRED | VOLUME PROVIDED | REQUIRED ELEVATION | PROVIDED ELEVATION |
|-------------|-----------------|-----------------|--------------------|--------------------|
| | | | | |
| | | | | |

REQUIRED STORMWATER DETENTION CALCULATIONS

- When have pre-existing controls, the more restrictive release rate is required.
- Software output must have intuitive graphical and summary information in its report. The report narrative must cross-reference the applicable 100 year to 10 year and critical storm output and have an outlet structure summary.
- **Control structure drawings, report summary and calculation software output must be consistent.**

STORMWATER DRAINAGE MANUAL SECTION 2

Conveyance Downstream Capacity Combination Sewer Districts

Critical Storm Method of Allowable Release Rates

vs

Combination Sewer Capacity!!

sewer capacity minus dry weather sanitary flow weighted
over tributary area = cfs/acre allowable release rate typically
more restrictive CSM

- Match crowns on storm sewers. Matching inverts only allowed when have insufficient fall across a site.

STORM REPORT TABULAR FLOW SUMMARY

Stormwater Management Reports

Please include the following summary tables in the Executive Summary at the start of Stormwater Management Reports.

CRITICAL STORM SUMMARY TABLE

| | |
|--|----------|
| 1 YR PRE-DEVELOPMENT STORM RUNOFF VOLUME | XXXXX CF |
| 1 YR POST-DEVELOPMENT STORM RUNOFF VOLUME | XXXXX CF |
| VOLUME INCREASE | XX % |
| CRITICAL STORM | xx-YEAR |

STORMWATER RUNNOFF SUMMARY TABLE

| STORM EVENT | PRE-DEVELOPMENT PEAK FLOW | POST-DEVELOPMENT PEAK FLOW | PROP/ALLOWABLE RELEASE RATE |
|--------------------|----------------------------------|-----------------------------------|------------------------------------|
| 1-YR | XXX CFS | XXX CFS | XXX CFS |
| 2-YR | XXX CFS | XXX CFS | XXX CFS |
| 5-YR | XXX CFS | XXX CFS | XXX CFS |
| 10-YR | XXX CFS | XXX CFS | XXX CFS |
| 25-YR | XXX CFS | XXX CFS | XXX CFS |
| 50-YR | XXX CFS | XXX CFS | XXX CFS |
| 100-YR | XXX CFS | XXX CFS | XXX CFS |

DETENTION SUMMARY TABLE

| | |
|---------------------------------------|---------|
| WATER QUALITY VOLUME REQUIRED | XXXX CF |
| WATER QUALITY VOLUME PROVIDED | XXXX CF |
| WATER QUANTITY VOLUME REQUIRED | XXXX CF |
| WATER QUANTITY VOLUME PROVIDED | XXXX CF |

Tables may be expanded as necessary when site has multiple runoff routes and/or detention facilities.

STORMWATER CREDIT APPLICATION POLICY

-Matt Repasky, PE

MS4 Program Coordinator

Department of Public Utilities

Stormwater and Regulatory Management Section

614-645-6727

DMRepasky@columbus.gov

SANITARY SEWERS

- **NO “private mainlines”. Must be public sewers in public easements**
- **MIN Slope for Private Service 2.08% (no longer accepting “grade letters”). Public mainline extension required is have insufficient fall.**
- **Common service laterals may require a PTI. Contact Julia Zhang (julia.zhang@epa.ohio.gov) for clarification.**
- **WWTP PTI info available through our office (Updated each year)**
- **Easements recorded and PTI evidence on file are required prior to contractor paying Construction Inspection Deposit (CID)**
- **A closure report is required with easement submittal.**
- **No over-sizing sanitary sewer due to limited fall for 8”-15” mainline. These are to be sized to flow 50% full prior to upsizing to next diameter**
- **Backwater prevention devices are **REQUIRED** in Combination Sewer Districts and on shared services (Speers or equivalent, in building, with alarm)**
- **Requests for existing CCTV records must be submitted through review section in writing (email). Include exhibit, sewer drawing number, section, and contact information.**

SANITARY SEWERS

NOTES FROM PERMIT OFFICE

- **Note To Permit Clerk (NTPC)- Necessary when service laterals will be part of the mainline extension installation wherein All permit and capacity fees are paid at the same time the CID is paid for and issued (Typically condominium and apartment projects with master water meter and one upfront capacity charge. Include list of all building (numbered) that are to be recorded against existing sewers. (RP's)**
- **Sanitary Wye Schedule – List each building. Large buildings with multiple taps require a permit for each tap. Each tap must be listed on schedule.**
- **Wye schedule must include height of risers, length of tap, elevation, and a blank for the permit number.**
- **Service installed with the main line are inspected and tested by Transportation (Design and Construction) when there is a NTPC. Individual Permits (houses, parcels or projects without a sanitary main line installation) are inspected by the Permit Office inspection staff.**
- **Street names and building numbers must match certified address.**
- **Do not submit CC plans too soon! Review staff will decide if plans must be revised or resubmitted.**
- **Pre-paid tap permits must complete installation in 90 days. Complete is when the service is extended inside the building footprint. Tap permits may be extended for \$85 per tap. If taps are not prepaid, they service must end at the Right of Way or easement line.**

SANITARY SEWERS VACATION/RELEASE PROCESS

- SEWERS IN EASEMENT MUST BE PROPERLY ABANDONED WITH CC-SANITARY PLAN
- ONCE ABANDONMENT WORK COMPLETE AND APPROVED BY INSPECTION THE VACATION PROCESS CAN BEGIN (NOTE: **PROJECT ENGINEER OF CC PLAN IS RESPONSIBLE TO NOTIFY PDS OF CC PLAN PROJECT APPROVAL**)
 - SUBMIT LEGAL SURVEY INFORMATION DELINEATING THE BOUNDS OF EASEMENT TO BE VACATED or SUBMIT THE PREVIOUSLY RECORDED LEGAL DEED if A FULL VACATION CAN BE PROCESSED. (111 N FRONT STREET PRIVATE DEVELOPMENT SECTION STAFF, CDROM WORD LEGALS, PDF's PICTORIAL EXHIBITS, CLOSURE REPORT, 2 PAPER COPIES WITH CURRENT PROPERTY OWNER CONTACT INFORMATION INCLUDING EMAIL)
 - ONCE REVIEWED PDS DIRECTS REAL ESTATE DIVISION (aka CITY ATTY OFFC) TO BEGIN LEGISLATION PROCESS
 - CITY COUNCIL ACTION IS REQUIRED (AND DIRECTORS OFFICE) AND PROCESS CAN TAKE 3+ MONTHS

DIGITAL STANDARDS

CITY OF COLUMBUS, OHIO BIG WALNUT AUGMENTATION / RICKENBACKER INTERCEPTOR, PART 1 C.I.P. No. 491.1

FRANKLIN COUNTY COMMISSIONERS

Arlene Shoemaker
Dewey R. Stokes
Mary Jo Kilroy

FRANKLIN COUNTY ENGINEER

Ringle, *Don C. Ringle* 5-8-03
DATE

FRANKLIN COUNTY SANITARY ENGINEER

Shockey, *Tom Shockey* 5-8-03
DATE

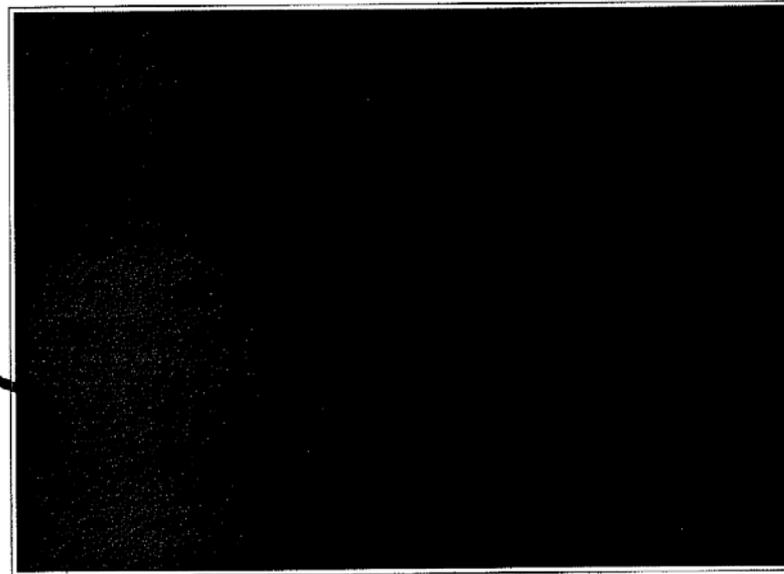
BEGIN
PROJECT

HAMILTON TOWNSHIP TRUSTEES

Chris Hann *Chair*
Shanon Bush *Vice Chair*
Leroy Breuch

HAMILTON TOWNSHIP FIRE CHIEF

Jerry Lupfer



VICINITY MAP

CITY OF COLUMBUS, OHIO

MAYOR

Michael B. Coleman

COUNCIL MEMBERS

Kevin B. Boyce
Matthew D. Habash, *President*
Michael C. Mentel
Maryellen O'Shaughnessy
Richard W. Sensenbrenner
Charleta B. Tavares
Patsy A. Thomas



END
PROJECT



DIGITAL STANDARDS

DIGITAL TIFF DRAWING FILE REQUIREMENTS

- 300 OR 400 DPI
- G4 OR CCITT T.6 COMPRESSION FORMAT

WHY?

- EACH TIME A PLAN IS REVISED THE EXISTING TIFF IS COPIED. EACH TIME RESOLUTION DECAYS. WITH OTHER FORMATS DRAWING BECOME BLURRY AND UNREADABLE AFTER 2-3 REVISIONS

HOW DOES IT EFFECT DRAWINGS?

- GRAY SCALES BECOME BLACK
- THIS FORMAT IS BLACK AND WHITE ONLY, NO COLOR