CC PLAN REQUIREMENTS FOR STORM SEWER

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THE CITY OF COLUMBUS
ANDREW J. GINTHER, MAYOR
DEPARTMENT OF BUILDING AND ZONING SERVICES

DESIGN INFORMATION

- For design criteria, please follow the Storm Water Drainage Manual and erosion and sedimentation control specifications which can be viewed at the following: https://www.columbus.gov/Services/Columbus-Water-Power/Information-for-Customers/Public-Utility-Contractors/Stormwater-Drainage-Manual

GENERAL PLAN REQUIREMENTS

- Stormwater BMP and outfall form (This information shall be forwarded by OSS to Jeff Cox, DOSD, 1250 Fairwood Avenue)

- PREPARATION:
  - All plans submitted for approval shall be prepared, signed and sealed by a Professional Engineer who is licensed in the State of Ohio.

- PLAN SIZE/TYPE:
  - All plans shall be submitted on standard 22” high x 34” wide.

MASTER DRAINAGE PLAN:

- Project Title
- North arrow and scale (north is to left or top of the page)
- Project boundaries
- Existing and proposed topography at two-foot contour intervals
- Pre-development and post-development sub-basins
- Location and capacity of the immediate downstream receiving waterway or drainage system
- Pre-development and post-development major routing flow paths
- Soil type by sub-basin
- Tier I and Tier II streams and Stream Corridor Protection Zones
- Proposed stormwater facilities
- Existing field tile locations
- Lines designating the phases of multiphase development projects
- Lot lines, streets, right-of-ways, setbacks, and easements
- Flood Hazard limits and classifications
- Regulated wetlands
- All outfalls identified with major outfalls clearly labeled

CALCULATIONS:

Stream Corridor Protection Zone and Floodplain Compensation
- Stream Corridor Protection Zone (SCPZ) sizing calculations
- Floodplain fill volume calculations
- Compensatory floodplain fill volume calculations
- Impervious Area

Storm sewers
- Pipe sizing calculations
- Hydraulic grade line check calculations
- Pavement spread calculations
- Inlet spacing/capacity calculations
- Spread and depth calculations
- Inlet tributary area map(s)

Culverts
- Hydrologic calculations
- Hydraulic calculations/overtopping analysis
- Tributary area map

Constructed Open Watercourses

Ditch sizing calculations
- Tributary area map
- HEC-2 analysis, if required

Flood routing
- Hydrologic and hydraulic calculations

Detention
- Pre-development flow calculations
- Post-development flow calculations
- Critical Storm determination calculations
- Stage-discharge curve
- Stage-storage curve
- Routing calculations
- Storage Volume Table (shown on plans)

Stormwater Quality Best Management Practices (BMP's)
- Water quality volume (WQv) calculations
- Drawdown calculations
- Required areas for media filters (Group 2)
- Design and design flow rate for swale and filters strips (Group 3)
- BMP Maintenance plan

Commercial Activity Areas
- Location shown and area clearly delineated
- Standard Industrial Classification (SIC) identified
- Materials handling areas clearly delineated
- High-risk and low-risk pollutant source identified
- On-site storm & sanitary sewer systems including discharges and outfalls shown
- If applicable, oil/water separator, spill containment (110% of volume stored) and treatment systems shown
- Area covered from rainfall with cover or roof of required dimensions
- Area graded to minimize runoff
- Appropriate methods for material disposal shown including sanitary sewer or other

TITLE SHEET:

- Correct project title
- Location map
- Bench marks
- Estimated quantities
- Standard drawings
- General notes
- Signature block

PLAN VIEW:

- North Arrow orientation
- Proper structure numbering
- Scale
- Reference point
- Property information
- Stream identification
- 100 year flood plain limits (if different from SCPZ limits)
    - SCPZ limits
- Floodplain fill and compensatory volume location and limits
- Stormwater facilities size, types, and location
    - Water quality BMPs
    - Detention facilities (include maximum ponding limits)
    - Storm sewers
    - Open channels
    - Flood routing
    - Culverts
- Proposed and existing easements
- Agricultural field tiles
- Existing and proposed utilities
- Proper structure and pipe annotation
- Stormwater Pollution Prevention Plan (SWP3)

PROFILE VIEW:

- Scale
- Stationing
- Utility, street, driveway, and stream crossings
- Proper structure and pipe annotation
- Granular backfill and encasement limits
- Proper ground surface line types

DETAILS AND CROSS SECTIONS:

- Open channel and flood routing swale cross-sections
- Culvert profiles
    - Elevation information
    - Flow and velocity data

- Stormwater BMP details
    - Plan view
    - Elevation view
    - Volume and drawdown data
    - Planting list
- Detention Ponds
    - Cross section(s)
    - Elevation information
    - Forebay details
    - Outlet structure details

MAINTENANCE OF TRAFFIC (MOT) PLAN:

All work in the R/W requires a detailed MOT plan. The plan will be determined by the type of work performed and must be specific to that work. A detailed MOT plan may consist of drum and cone locations and spacing (see OMUTCD part 6 figure 6F-4), use of temporary pavement, use of temporary markings, detour routes, detour and work zone warning signage (OMUTCD table 6C-1), flashing arrow panels, barricades, street closures, pedestrian detours and sidewalk barricades with signage, proper taper rates in accordance with OMUTCD part 6 Table 6C-2, flagging set-ups when used, covering of existing signs and signal heads, temporary vehicle detection, and signal timing changes. All items shall be clearly labeled, stationed (or distances shown from the nearest intersection). Special attention must be given to provide the safest and least inconvenient plan for motorists, pedestrians and bicycles alike.

TEMPORARY AND PERMANENT TRAFFIC CONTROL NOTES:

Temporary and permanent traffic control notes shall be inserted with ALL plans dealing with work in the R/W. These notes shall be modified to coincide with the scope of work being performed with the R/W along with the maintenance of traffic plan. The notes related to the MOT, specific for the project, should be included as part of the GENERAL
NOTES for the plan.

INTERSECTIONS (UNSIGNALIZED):
ITEMS SHOWN ON PLANS:

All existing/proposed traffic control items shall be shown within the project limit and 200 feet beyond the project limits having each intersection shown in full when work is performed within the R/W. Items to include are pavement markings, lane widths (dimensioned), all driveways and curb cuts, signage, street names, R/W lines, sidewalks, ADA ramps, crosswalks, utility poles/manholes, street lighting, hydrants and valves.

INTERSECTIONS (SIGNALIZED):
MOT NOTES:

Any work to be performed within 400 feet of a signalized intersection shall have “Maintenance of Traffic Notes (Signalized)” included with the temporary and permanent traffic control notes. These notes shall be modified to coincide with the work performed with the area of the signalized intersection.