Project Name:	
Project Address:	
Site Plan Number:	
Date of Submittal:	
Civil Consultant:	
Name of Applicant:	

This checklist shall be completed and submitted with the Civil Construction Plan application. Civil Construction Plan applications that do not included the checklist below will not be reviewed.

REQUIRED CIVIL CONSTRUCTION PLAN INFORMATION	Complete	Not Applicable
General		
Plan Preparation		
All requirements from the Public Services Area - Engineering Site Plan Checklist are fulfilled.	☐	☐
Plans are signed and sealed by a Professional Engineer. **(Article 1 Section III.A.1.b.)**	☐	☐
Plan size is 24"x36". **(Article 1 Section III.A.4.a.)**	☐	☐
A cover sheet with an index of drawings is submitted with the plan set if the plan set consists of two or more sheets. **(Article 1 Section III.A.5.b.)**	☐	☐
Standard notes as found on the last page of this checklist are on the cover sheet of the plans, or supplied separately if no cover sheet is needed.	☐	☐
All non-standard details are on the plans. No City standard details are shown on the plans. **(Article 1 Section III.A.4.g.)**	☐	☐
Each plan sheet is oriented such that the north arrow points toward the top of the page, unless impracticable. The order of preference for north orientation is: pointing toward the top, pointing to the left, pointing to the right. **(Article 1 Section III.A.4.b.)**	☐	☐
All plan sheets shall be either 1"=40' or 1"=20'. Other scales may be used only if approved by the PSAA or if directed by the PSAA for specific areas requiring detailed analysis. **(Article 1 Section III.A.4.b.)**	☐	☐
A minimum of two benchmark locations and elevations that will remain present throughout construction are indicated on the plans, and the benchmark used to establish the vertical datum is listed. Vertical datum is reference to NAVD 88 datum. **(Article 1 Section III.A.7.)**	☐	☐
A topographic survey is included in the plan submittal.	☐	☐
Labeling and Stationing		
All existing and proposed utility structures, such as fire hydrants, manholes, valve boxes, etc., are labeled with a name or number. Structure labels are used consistently throughout the plan set.	☐	☐
Rim or finished grade elevations are shown for all existing and proposed utility surface features, such as manholes, cleanouts, catch basins, gate wells, valve boxes, handholes, fire hydrants, etc., within the limits of project disturbance on the existing conditions sheet, grading sheet, and utility sheet. **(Article 1 Section III.B.1.h.)**	☐	☐
All items, including but not limited to bike hoops, tree grates, raised planter curbs, utility lines/poles, and bus shelters, proposed within the right-of-way are labeled with the ownership of the item.	☐	☐

Required Civil Construction Plan Information (cont.)	Complete	N/A
Proposed utilities and roadway have separate stationing along respective centerlines. Sidewalks are stationed at either the front or back edge.	☐	☐
All stationing is shown to the nearest whole foot, using standard rounding, on all pages and in all labels.	☐	☐
Station 0+00 for sanitary and storm sewers begin at the downstream connection to the existing main **(Article 1 Section III.A.6.d.)**. Stationing for water main shall begin at Station 0+00 at the connection to the existing main.	☐	☐
Grading Sheet		
Underground utilities are not shown on the grading sheet. Utility surface features, such as manholes, cleanouts, catch basins, gate wells, valve boxes, handholes, fire hydrants, utility poles, street or pedestrian lighting poles, etc., are shown.	☐	☐
Spot elevations are shown at the front and back edges of proposed sidewalk at minimum 25' intervals. Additional spot elevations shown at the front and back edge of sidewalk at points of curvature, points of tangency, midpoints of curves, and changes in direction of sidewalk at each deflection point or corner.	☐	☐
Spot elevations are shown at all four corners of a level landing. **(Article 6 Section II.A.2.a.)**	☐	☐
Spot elevations are shown at all four corners of a proposed curb ramp at a crosswalk. Additionally, spot elevations are shown at all four corners of the receiving curb ramp and level landing of a crosswalk. See the Sidewalk Design Guidelines & Example (PDF) on the Design, Building and Construction Resources webpage. https://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx	☐	☐
Sidewalk is designed with a maximum longitudinal slope of 4.8% to allow for construction tolerances. Transverse grades and turning spaces are design to a maximum slope of 1.5%.	☐	☐
Spot elevations are shown on both sides and the midpoint of drive approaches at the right-of-way line, sidewalk crossing, beginning of return curb, and end of return curb. **(Article 6 Section I.A.1.h.)**	☐	☐
Slope labels are provided for drive approaches and meet the requirements of **Article 6 Section I.A.6.b-c.** Drive approaches slope toward the street. **(Article 6 Section I.A.6.)**	☐	☐
Profile Sheets		
All utility profile sheets are 1"=40' (horizontal) and 1"=4' (vertical) scale or 1"=20' (horizontal) and 1"=2' (vertical).	☐	☐
The plan and profile are to be on the same sheet and shall be vertically oriented. The plan view shall be placed over the profile with the stationing aligned. Each plan and profile is labeled with its respective north arrow and scale. **(Article 1 Section III.B.1.d.)**	☐	☐
Plan views only have labels and stationing for the utility being profiled.	☐	☐
Existing and proposed grade lines are shown and labeled in the profile view. Grades in the profile view match those in the plan view. **(Article 1 Section III.B.1.e.)**	☐	☐

Required Civil Construction Plan Information (cont.)	Complete	N/A
All utility crossings, including leads, are shown, labeled, dimensioned, and stationed in the profile views on the profile sheet. Inverts, top of pipe, and bottom of pipe elevations are included in the labels as applicable. A minimum vertical clearance of 18" between water pipe and storm/sanitary pipe and a minimum 12" vertical clearance between all other utilities at crossings is provided. **(Article 1 Section III.B.1.e., Article 2 Section I.H., Article 3 Section I.B.6., Article 4 Section I.H.)**	☐	☐
All fittings (bends, tees, valves, reducers, wyes, etc.) and structures (gate wells, valve boxes, manholes, fire hydrant assemblies, etc.) are shown, stationed, and labeled in both the plan and profile views on the profile sheet. Finished grades, rim elevations, inverts, and top of pipe elevations as appropriate are included in the labels for structures. **(Article 2 Section I.A.4.b.3., Article 3 Section I.A.3.b.3., Article 4 Section I.A.3.b.3.)**	☐	☐
The City standard grid is used for all profiles. Horizontal gridlines have heavy line weights and elevation labels every 5', lighter line weights at every 1', and lighter line weights at every 0.2'. Vertical gridlines have heavy line weights at every 50' and lighter line weights at every 10'.	☐	☐
Profiles for sanitary and water are shown separately on individual sheets. Profiles for storm, road vertical alignment, edge drain, and curb and gutter may be grouped together on sheets. **(Article 1 Section III.B.1.b.)**	☐	☐
Horizontal lengths between all fittings/structures are labeled in the profile view (e.g. "50 LF valve to bend;" "250 LF manhole to manhole;" etc.). **(Article 2 Section I.A.4.b.2., Article 3 Section I.A.3.b.2., Article 4 Section I.A.3.b.2.)**	☐	☐
Proper trench details per **Article 12 Standard Details** are shown and labeled within the profile view with a dimension of the length for each applicable trench type. **(Article 1 Section III.B.1.i.)**	☐	☐
Water Mains/Leads		
General		
All water pipes are labeled with the City standard labeling system, with the size in inches and a letter representing the type of utility and its state of existence (e.g., 6" w for an existing 6-inch water pipe and 4" W for a proposed 4-inch water pipe). No other labeling methods are present.	☐	☐
Water connections are labeled with the proposed method of connection, e.g. wet tap, tee, etc.	☐	☐
A note is included on the Utility Sheet stating whether booster pumps will be used in any proposed buildings.	☐	☐
Service leads are 2" or less for copper leads and 4" or greater for ductile iron leads. 3" leads are not permitted.	☐	☐
Valves		
In-line valves are installed on pipe less than 16" such that in any single case of accident, breakage, or repair, no more than 800 feet of water main outside the DDA boundary or 500 feet within the DDA boundary is removed from service. For water main pipe 16" and greater, no more than 1,600 feet will be removed from service. **(Article 2 Section I.B.8.d-e.)**	☐	☐
In-line valves are located such that not more than one fire hydrant is removed from service in the event of a water main break for pipe less than 12", or not more than two fire hydrants for pipe 12" and greater. **Article 3 Section I.B.8.a-b.)**	☐	☐

Required Civil Construction Plan Information (cont.)	Complete	N/A
In-line valves are spaced such that during a shutdown fire service leads are isolated from the hydrant serving a Fire Department Connection (FDC). **(Article 3 Section I.B.8.g.)**	☐	☐
Valves are located along the extension of street right-of-way lines. If valves are located mid-block or within an easement, valves are located 5' from mainline tees, preferably fire hydrant tees. **(Article 3 Section I.B.8.i.)**	☐	☐
Service valves locations are compliant with **Article 12 Standard Details SD-W-8**.	☐	☐
Tapping sleeves are utilized at all proposed connections to existing water mains where the proposed pipe is at least one standard size smaller than the existing pipe. **(Article 3 Section I.B.9.a.)**	☐	☐
Mainline valves are installed in gate wells unless a valve box is approved. **(Article 3 Section I.B.7.a.)**	☐	☐
Hydrants and Fire Coverage		
Hydrants are between 4' and 10' from curb face or paved edge. **(Article 3 Section I.B.10.f.)**	☐	☐
Fire hydrant lead piping is a minimum 8". **(Article 3 Section I.B.13.a.)**	☐	☐
Fire hydrant assemblies comply with **Article 12 Standard Details SD-W-1**, including the location of the reducer and the companion valve. Hydrant valves are not located in a curb or gutter pan.	☐	☐
Profiles		
Profiles for all ductile iron pipe are provided, including water main, ductile iron service leads, and fire hydrant leads.	☐	☐
All ductile iron water pipe has a minimum Pressure Class as specified in **Article 3 Section II.A.1.a.** based on the proposed size of the pipe. All ductile iron pipe is labeled as being polyethylene wrapped. (**Article 3 Section II.A.2.c.**)	☐	☐
The proposed pipe size, material, and polywrapping is labeled on the pipe in the profile (e.g. 12" CL 50 DIP w/polywrap"). **(Article 3 Section I.A.3.b.2.)**	☐	☐
Water main is shown at a typical 5.5' depth to the top of pipe and is labeled "5.5' (TYP)." **(Article 3 Section I.B.5.a.)**	☐	☐
Fire hydrants and valves are shown 5.5' deep from the finished grade to the top of pipe to avoid the use of extensions. **(Article 12 Detail SD-W-1)**	☐	☐
The top of pipe elevation is labeled at all valves, fire hydrants, and crossings.	☐	☐
Ductile iron pipe deflections at joints meet the maximum angle requirements in **Article 10 Section II.K.7.**	☐	☐
All joints for ductile iron pipe 12" and greater are labeled as restrained joints. **(Article 3 Section II.A.3.a.2.)**	☐	☐
Fittings for all sizes of ductile iron pipe are restrained for the length required by the DIPRA Thrust Restraint Calculator. Along with the construction plan submittal, calculations from the DIPRA website showing the minimum length of pipe to be restrained are to be submitted separately as a PDF file. Calculations use the Type 5 laying condition, Good Sand and Gravel soil designation, 150psi design pressure, and 1.5 safety factor. Restrained joint lengths are shown, stationed, and labeled within the profile view. **(Article 3 Section II.A.3.a.4.)**	☐	☐

Required Civil Construction Plan Information (cont.)	Complete	N/A
Sanitary Sewers		
General		
All sanitary main and service leads are labeled with the size in inches and a letter representing the type of utility and its state of existence (e.g., 8" s for an existing 8-inch sanitary pipe and 6" S for a proposed 6-inch sanitary pipe).	☐	☐
Sanitary sewers maintain a minimum horizontal clearance of 10' from water mains and a minimum horizontal clearance of 5' from all other utilities, provided the deeper utility can be excavated with a 1:1 trench without undermining the shallower utility. **(Article 2 Section I.H.)**	☐	☐
Manholes		
The maximum distance between manholes is 400' for sanitary sewers 15" and smaller, or 500' for sanitary sewers 18" and larger. **(Article 2 Section I.I.2.)**	☐	☐
All surfaces to be utilized for manhole access are designed to support a fully loaded sewer cleaning vehicle (66,000 pounds). **(Article 2 Section I.I.6.)**	☐	☐
Manholes are not located in areas subject to flooding. If unavoidable and approved, such manholes will have watertight manhole covers and castings. **(Article 2 Section I.I.7.)**	☐	☐
Profiles		
Sanitary pipe material and size is shown and labeled in the profiles between manholes. Acceptable materials are found in **Article 2 Section II.A.1. (Article 2 Section I.A.4.b.2.)**	☐	☐
The slope of all sections of sanitary pipe between manholes is labeled in the profile view. Slopes for standard sanitary pipes are in compliance with **Article 2 Section I.F.** for sanitary sewer and **Article 2 Section I.L.** for sanitary leads.	☐	☐
Sanitary sewer and lead pipe has a minimum 5' depth of cover from the top of pipe to the proposed grade. **(Article 2 Section I.G.4., Article 2 Section I.L.8.)**	☐	☐
Sanitary sewer mains enter manholes less than 2' above the outlet invert of the manhole. Where a pipe cannot meet this requirement, an exterior drop manhole connection is proposed. **(Article 2 Section I.J.)**	☐	☐
There is a minimum 0.10' fall through a manhole where the sanitary sewer has a horizontal deflection of up to 30 degrees. For sewers with a horizontal deflection of 30 to 90 degrees, there is a minimum 0.20' fall. **(Article 2 Section I.E.)**	☐	☐
A casting schedule is provided which includes manhole/structure number corresponding to the plan, station, casting type (manufacturer and catalog schedule), top-of-casting elevation, riser height, manhole invert(s), and manhole depth. A schedule is provided on each sanitary profile sheet for the castings appearing on that sheet. **(Article 2 Section I.A.4.b.7.)**	☐	☐
Either a sanitary lead schedule or profiles for sanitary leads are provided.	☐	☐
A lead schedule includes the lot/lead number, the mainline station of the lead, invert of the lead at the main, riser height, invert at the top of the riser, total length of lead from the main to 5' from the building face, and invert of the lead 5' from the building face.	☐	☐
Sanitary leads are labeled with the proposed type of connection, e.g. tap, wye, etc. in the overall utility page and the sanitary plan and profile pages.	☐	☐
Cleanouts are not located within the public right-of-way.	☐	☐

Required Civil Construction Plan Information (cont.)	Complete	N/A
Storm Sewers		
General		
All storm main and service leads are labeled with the size in inches and a letter representing the type of utility and its state of existence (e.g., 18" r for an existing 18-inch storm pipe and 6" R for a proposed 6-inch storm pipe).	☐	☐
Storm sewers maintain a minimum horizontal clearance of 10' from water mains and a minimum horizontal clearance of 5' from all other utilities, provided the deeper utility can be excavated with a 1:1 trench without undermining the shallower utility. **(Article 4 Section I.H.)**	☐	☐
Minimum size of storm sewer pipe is 12" for all pipe receiving surface water. **(Article 4 Section I.D.1.)**	☐	☐
Manholes, Inlets, and Catch Basins		
All surfaces to be utilized for manhole access are designed to support a fully loaded sewer cleaning vehicle (66,000 pounds). **(Article 4 Section I.K.6.)**	☐	☐
Manholes are located at the end of each line, at every change of grade, direction, and pipe size, and at each junction of storm sewer mains. **(Article 4 Section I.K.1.)**	☐	☐
Inlets/catch basins are located in compliance with **Article 4 Section I.L.2.**	☐	☐
Proposed inlets and catch basin castings match the existing or proposed curb type (i.e., mountable or barrier curb).	☐	☐
Profiles		
Storm pipe material and size is shown and labeled in the profiles between manholes. Acceptable materials are found in **Article 4 Section II.A.1. (Article 4 Section I.A.3.b.2.)**	☐	☐
The slope of all sections of storm pipe between manholes is labeled in the profile view. Slopes for standard storm pipes are in compliance with **Article 4 Section I.F.**	☐	☐
Storm sewer pipe has a minimum 3.5' depth of cover from the top of pipe to the proposed grade. **(Article 4 Section I.G.2.)**	☐	☐
The drainage structures size and shape are in compliance with **Article 4 Section I.K.3** based on the storm sewer size.	☐	☐
All storm structures have 2' sumps. **(Article 4 Section I.L.4., Article 12 Detail SD-ST-1A, SD-ST-1B)**	☐	☐
A casting schedule is provided which includes manhole/structure number corresponding to the plan, station, casting type (manufacturer and catalog schedule), top-of-casting elevation, riser height, manhole invert(s), and manhole depth. A schedule is provided on each sanitary profile sheet for the castings appearing on that sheet. **(Article 4 Section I.A.3.b.7.)**	☐	☐
Either a storm lead schedule or profiles for storm leads are provided.	☐	☐
A lead schedule includes the lot/lead number, the mainline station of the lead, invert of the lead at the main, riser height, invert at the top of the riser, total length of lead from the main to 5' from the building face, and invert of the lead 5' from the building face.	☐	☐
Storm leads are labeled with the proposed type of connection, e.g. tap, wye, etc. in the overall utility page and the sanitary plan and profile pages.	☐	☐
Check valves for private storm leads are not located in the public right-of-way.	☐	☐

Required Civil Construction Plan Information (cont.)	Complete	N/A
Sidewalks, Bikepaths, Shared Use Paths, and Drive Approaches		
Sidewalks and lawn extensions/amenity zones drain toward the public street. **(Article 6 Sections II.A.7.a., IV.A.3.a.)**	☐	☐
Radii of curves are labeled for any proposed bends in public sidewalk and are a minimum of 15'. **(Article 6 Section II.A.4.a.)**	☐	☐
Level landings are located at all sidewalk intersections leading to an ADA compliant path, including intersections of public and private walks. Level landings are located prior to any curb ramp. **(Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way; Federal Register, Volume 88, No. 151, Pages 53604-53662)**	☐	☐
If one side of a crosswalk is altered with the project, the receiving side is shown to be or is brought into compliance with the **Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way.**	☐	☐
Transitions between existing and proposed sidewalks are clearly shown with detailed grading, dimensions, and slopes of the transitional sidewalk flag.	☐	☐
Sidewalk curb ramps meet the current MDOT R-28 detail, including truncated domes at the bottom of the ramp. **(Article 6 Section II.A.5.a.)**	☐	☐

City Standard Notes for Civil Construction Plans
The construction of any public improvement shown on these plans that is subject to the City of Ann Arbor Public Services Area Design Standards and Construction Specifications ("Standards") shall conform to these Standards, approved January 3, 2024, and all subsequent updates. The omission of any standard detail does not relieve the Contractor of their obligation to construct items in complete accordance with those Standards.
Use of line stops is required where existing water mains cannot be sufficiently isolated to complete the work. The cost of any line stop installation is the responsibility of the developer and/or contractor.
Any existing water main that is exposed as part of a new connection to the main may require anodes to be installed prior to backfilling. Engineering will determine if anodes will be required after existing water main(s) are exposed. The cost of the anodes and installation is the responsibility of the developer/contractor.
Pavement markings disturbed due to pavement cuts or construction related activities shall be replaced as directed by Engineering. Replacement during construction of the project may be considered temporary, with final pavement marking restoration to occur at the end of the project.
The contractor shall take all necessary precautions to protect the existing public road pavement. Damage to the public road pavement during the course of construction may necessitate milling and resurfacing of the damaged areas prior to issuance of the Certificate of Occupancy.
Plans have been prepared using the Michigan State Plane Coordinate System.
All PVC sanitary sewer pipe shall be installed in accordance with ASTM D2321.
In cases where backfill of native material is approved by the Public Services Area Administrator, there shall be no debris, organic soils, frozen material, or other deleterious material within 2 feet of the pipe.
Undercutting of the pipe trench will be required when unsuitable material, e.g. organic soils, frozen material, debris, highly compressible soils, or other deleterious material which would cause differential settlement of the pipe trench, are encountered at the bottom of the trench.
Allowable leakage for sanitary sewer infiltration testing is 100 gallons per inch diameter of pipe per mile of sewer per day.
Air testing for PVC pipe shall conform with ASTM F1417.

Typical Order of Plan Sheets
Cover Sheet
Topographic Survey/Existing Conditions
Demolition Plan
Dimensional Site Layout Plan
Utility Plan
SESC Plan
Landscape Plan
Stormwater Plan
Sanitary Plan and Profiles
Water Plan and Profiles
Storm Plan and Profiles
Site Details