

**CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC UTILITIES**

SUPPLEMENTAL SPECIFICATION 1601

**SITE ACTIVITY PLAN FOR PROJECTS CONTAINING
GREEN INFRASTRUCTURE FACILITIES**

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**SITE ACTIVITY PLAN FOR PROJECTS CONTAINING
GREEN INFRASTRUCTURE FACILITIES**

1601.00 Purpose of the Specification. Supplemental Specification 1601 – Site Activity Plan for Projects Containing Green Infrastructure (GI) Facilities is intended to demonstrate that the contractor understands the contract documents and has thoroughly planned sequencing, site preparation, installation, and establishment of green infrastructure facilities. The Site Activity Plan shall be submitted and approved prior to commencement of any field activities.

1601.01 DESCRIPTION

- A. This specification section includes the requirements for development of a Site Activity Plan for Green Infrastructure Facilities. A Site Activity Plan is a collection of illustrated plans which identify a detailed construction schedule, addresses stormwater runoff during construction, summarizes means of access to the site, and identifies the anticipated site utilization. The Contractor may combine the components listed in 1601.01.B so long as the information required of all components is clearly defined. The Contractor is responsible for developing a Site Activity Plan and maintaining up-to-date documents throughout the project lifecycle.

- B. The Site Activity Plan shall contain the following information as described in detail in this Specification:

Site Activity Plan Component	Description	Specification Reference(s)
Construction Schedule	Green Infrastructure sequencing and phasing activities incorporated into the CPM Schedule	CMSC 108.03 SS 1601.02
Runoff Management Plan for construction of GI Facilities	Plan sheet and notes illustrating Contractor's understanding and compliance with Section 1601.03	CMSC Section 207 SS 1601.03
Site Access Plan	Plan sheet and notes illustrating Contractor's understanding and compliance with Section 1601.04	CMSC 105 CMSC 106 CMSC 614 CMSC 615 SS 1601.04 SS 1602
Site Utilization Plan	Plan sheet and notes illustrating Contractor's understanding and compliance with Section 1601.05	CMSC 105 CMSC 106 CMSC 107 CMSC 207 SS 1601.05 SS 1602 SS 1603

1601.02 CONSTRUCTION SCHEDULE

1601.02.1 Description. A Critical Path Method (CPM) construction schedule, in accordance with CMSC 108.03 which includes critical green infrastructure sequencing and phasing tasks necessary to ensure the protection and performance of green infrastructure facilities.

1601.02.2 Execution

- A. The Contractor shall include additional activities within the CPM schedule outlining project-wide green infrastructure-related sequencing and phasing necessary to comply with the contract documents. Specifically, the Contractor shall include the following schedule activities:
1. Submittals of critical green infrastructure items including planting materials, bioretention soil, permeable pavers, aggregates, and others as applicable.
 2. Procurement of green infrastructure materials including planting materials, lead times, and any storage requirements
 3. Installation and completion of the following GI components
 - a. Excavation
 - b. Underdrain installation
 - c. Backfill placement
 - d. Setting bed installation
 - e. Joint fill installation
 - f. Bioretention soil placement
 - g. Mulch placement
 - h. Planting
 - i. Others as applicable
 4. Diversion of flow around GI facility during construction
 5. Plant establishment including monthly site inspection and maintenance activities
 6. Site stabilization activities including stabilization of areas upstream of any green infrastructure

1601.03 RUNOFF MANAGEMENT PLAN FOR CONSTRUCTION OF GI FACILITIES

1601.03.1 Description. The work specified in this Section consists of providing, maintaining and removing temporary erosion and sedimentation controls as necessary during construction of GI facilities.

1601.03.2 Applicable Standards

- A. City of Columbus CMSC (current standards)
 - 1. Section 207: Erosion and Sediment Control
 - a. City of Columbus Stormwater Drainage Manual
 - b. NPDES General Permit
 - c. Ohio Water Pollution Control Act (OWPCA)

1601.03.3 Execution

- A. The Site Activity Plan shall outline the Contractor's approach to runoff management and the protection of green infrastructure facilities prior to, during, and following construction. The illustrated plan shall be developed in accordance with the following:
 - 1. Erosion and sediment control intended to protect GI shall be provided, installed, and maintained per CMSC Section 207.
 - 2. Unless approved by the Engineer, proposed green infrastructure facilities shall not be used for collection or conveyance of stormwater during construction or until site is stabilized and commissioning of green infrastructure facility is approved by Owner and Engineer.
 - 3. Any sedimentation occurring in the footprint of proposed green infrastructure during construction shall be promptly removed by the contractor. Contractor shall re-scarify the green infrastructure excavation following sediment removal to the satisfaction of the Engineer prior to placement of aggregate or bioretention soil.
 - 4. Underdrain piping, bioretention aggregates and soils, and pervious pavement shall not be installed until contributing drainage areas are stabilized to the satisfaction of the Engineer. Any discharge of sediment that affects the performance of the underdrain or green infrastructure facility shall be corrected to restore hydraulic performance.
 - 5. Perimeter Protection/Controls – Perimeter control will be required for all basins to prevent soils outside of basins from eroding and washing into basin bioretention soils. Do this regardless of growth of seeding/mulching or sodding. This also provides a clear boundary/visual barrier to the basins. Place straw wattles to prevent soils outside of basins from eroding into basin bioretention soils. Securely block all basin inlets with sand bags.
 - 6. Winter Maintenance – It is required that the contractor provides continual maintenance of erosion and sediment controls throughout the project duration as per the contract documents. If basins are to remain fallow during winter months, in lieu of mulching, straw matting shall be installed over the bioretention soil. Straw matting shall be as per CMSC 712.11, *Temporary Erosion Control Mats Materials*, Type B.

1601.04 SITE ACCESS PLAN

1601.04.1 Description. The work specified in this Section consists of providing and maintaining site access as necessary for construction of green infrastructure facilities while protecting the green infrastructure facilities from construction related compaction, sedimentation, or other negative effects on the long-term performance of the facility. The Site Access Plan shall address site access, haul roads, delivery of materials, and any temporary facilities such as temporary nurseries and storage of materials.

1601.04.2 Applicable Standards

- A. City of Columbus CMSC (current standards)
 - 1. Section 105: Control of Work
 - 2. Section 106: Control of Material
 - 3. Section 614: Maintaining Traffic
 - 4. Section 615: Roads and Pavement for Maintaining Traffic
 - 5. SS 1602: Earthwork for Green Infrastructure Facilities

1601.04.3 Execution

- A. Site Access
 - 1. The Site Access Plan shall illustrate how non-construction related pedestrian, bicycle, and vehicular access will be maintained to and around the site throughout the duration of project.
 - 2. The Site Access Plan shall illustrate how construction related vehicular and equipment access, material delivery and storage, and execution of construction activity will be maintained to, around, and within the project site throughout the duration of the project.
 - 3. In accordance with CMSC 614, Maintaining Traffic, access to the construction site cannot interfere with access to all property adjacent to the site.
- B. Haul Roads
 - 1. The Site Access Plan shall include a map showing the intended haul roads to be used for heavy and large equipment access to the site. The City shall review and approve the proposed haul roads prior to construction commencing. If revisions are made to the haul roads, the Contractor shall revise the haul road map in the Site Access Plan.
 - 2. Permanent roads installed with permeable pavements or pavers shall not be used for haul roads.
 - 3. The Contractor shall adhere to the all legal load restrictions as indicated in CMSC Section 105.13.

C. Transportation and Delivery of Materials

1. The Site Access plan shall include a description and/or map of material delivery and storage procedures and locations. The plan shall indicate the means of access to the site for delivery of materials.
2. Storage and Handling of Materials shall be in accordance with CMSC Section 106.

1601.05 SITE UTILIZATION PLAN

1601.05.1 Description. The work specified in this Section consists of protecting green infrastructure facilities from construction traffic, material delivery and storage, and erosion/sedimentation caused by typical construction activity.

1601.05.2 Applicable Standards

- A. City of Columbus CMSC (current standards)
 1. Section 105: Control of Work
 2. Section 106: Control of Material
 3. Section 107: Legal Relations and Responsibility to Public
 4. Section 207: Erosion and Sediment Control
 - a. City of Columbus Stormwater Drainage Manual
 - b. NPDES General Permit
 - c. Ohio Water Pollution Control Act (OWPCA)
 5. SS 1602: Earthwork for GI Projects
 6. SS 1603: Tree and Vegetation Protection for GI Facilities

1601.05.3 Execution

The Site Utilization Plan shall include:

- A. A description of the open excavation protection that will be employed.
- B. A description of how private property will be protected in accordance with CMSC Section 105.
- C. A description of how trees and vegetation will be protected and a map showing trees and vegetation to receive protection in accordance with SS 1603.
- D. A description of how existing structures and utilities will be protected in accordance with CMSC Section 105.
- E. A description of how flow in sewers, drains, and water courses will be maintained during the progress of the work CMSC Section 107.
- F. A map showing the location of anticipated material storage, laydown areas, and temporary facilities in accordance with CMSC Section 106.
- G. A description of how stored materials will be protected during the course of the work in accordance with CMSC Section 106.

H. A description of methods for disposal of materials in accordance with CMSC Section 106.

I. A description of the equipment and methods used to backfill with specified materials in a manner that does not compact the subgrade or backfill materials of green infrastructure facilities in accordance with SS 1602.

1601.06 Method of Measurement. The cost for development of the Site Activity Plan shall be spread among the various bid items associated with the construction of the GI Facility.

All specific items and activities documented in the Site Activity Plan shall be measured as indicated in other applicable specification sections, such as SS 1603, Tree and Vegetation Protection.