**DESIGN BUILD**

**STORMWATER POLLUTION CONTROL PLAN**

**SWPCP**

***This SWPCP template is NOT to be used for Design Bid Build projects.***

For Design Bid Build projects, please visit the OEP website and download the DBB SWPCP file***.***

**Project Name**

**Town, CT**

**State Project No.: XXXX-XXXX**

**ezFile No. XXXXX**

**Connecticut Department of Transportation**

Date of Submission

This Stormwater Pollution Control Plan (SWPCP) is prepared to comply with the requirements for the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and the Connecticut Guidelines for Soil Erosion and Sediment Control (E&S Guidelines).

Stormwater Pollution Control Plan Template

Connecticut Department of Transportation

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**Informational Key:**

**Black -** Boilerplate

**Red -** Fill in the Blank

**Green –** Guidance

**Blue –** Hyperlinks

**Orange** - Design Build Boilerplate

# Development & Contents of Plan

The Plan shall consist of site plan drawings and a narrative. The Plan shall be prepared in accordance with sound engineering practices, and shall be consistent with the [Connecticut Guidelines for Soil Erosion and Sediment Control](https://portal.ct.gov/DEEP/Water/Soil-Erosion-and-Sediment-Control-Guidelines/Guidelines-for-Soil-Erosion-and-Sediment-Control), as amended, the [Connecticut Stormwater Quality Manual](https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Stormwater-Manual), as amended, and any applicable requirements of the General Permit.

# Site Description

## Site Description

### 

This project consists of the construction of *insert project description.*

***Please review the project’s Contract Documents to complete the following information.***

* *Are there any discharges to impaired waters or coastal waters?* ***Additional limitations and control measures will be required for impaired waters review section Control Measures Impaired Waters.*** 
  + [*2020 Integrated Water Quality Report – List of Impaired Waters for CT*](https://portal.ct.gov/-/media/DEEP/water/water_quality_management/305b/2020/2020IWQRAppendixB1.pdf)
* *Is the project within an Aquifer Protection Area (APA), public water supply watershed, etc.?* 
  + [*Aquifer Protection Area Interactive Map*](https://ctdeep.maps.arcgis.com/apps/webappviewer/index.html?id=6b33fc05fcce4c5286fafae1b2cccbfb)
* *Does the outfall discharge to a river within the National Wild and Scenic Rivers System Connecticut?* 
  + [*National Wild & Scenic River System*](https://www.rivers.gov/connecticut.php)
* *Any known endangered/threatened species present?*
  + ***Natural Diversity Database coordination should have taken place prior to application.***
  + ***Verification of NDDB expiration – Ensure NDDB coordination letter does not expire prior to the issuance of the stormwater permit.***
* *Any Cold-Water Stream Habitat watercourse?*

The purpose of this project is to *insert purpose & need.*

Site work includes *insert nature of construction activity.*

***To be consistent, label the outfalls with the naming convention PO# for proposed outfalls, EO# for existing outfalls and TO# for temporary outfalls throughout the registration and on the drainage plans. The tables and the plan sheets shall be consistent in their labeling of their outfalls.*** *Reference the Registration Form Part V: Stormwater Discharge Information – Table 1 & Table 2.*

***Provide the conditions of all existing outlets.  If an outlet condition cannot be inspected, provide the reason. (i.e., drainage outlet cannot be found, discharge outlet is in private property/without easement/far from the project site, outlet discharges into a much larger drainage system).***

## Estimated Disturbed Area

The total area for this project site is *insert total site area* acres. Of this area, *insert acres disturbed* acres will be disturbed by construction activities regardless of phasing.

***Note: The General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (General Permit) defines “Site” as geographically contiguous land on which the construction activity takes place, where non-contiguous land owned by the same person is deemed the same site if it is part of a linear project or is connected by right-of-way. This definition of “Site” does not fit typical Department projects well.***

***Based on this, the “total site area” should be thoughtfully chosen by the Contractor’s Design Professional. Total site area should always include limits of construction/grading and generally, areas with construction easements/temporary rights. It may not always make sense to extend out to the limits of the State right of way. Total site area will be used in subsequent calculations of Effective Impervious Area and Water Quality Volume. Currently developed sites with more than 40% Effective Impervious Cover will be required to retain less Water Quality Volume, than sites with less than 40% (see Sections 5(b)(2)(C)(i)(a) and (b)).***

***“Effective Impervious Cover” is the area of impervious cover that is hydraulically connected to a water or wetland by means of continuous paved surfaces, gutters, swales, ditches, drain pipes, or other conventional conveyance and detention structures that do not reduce runoff volume. Impervious cover is a surface composed of any material that impedes or prevents infiltration of water into the soil. Impervious surfaces shall include, but are not limited to, roofs, solid decks, driveways, patios, sidewalks, parking areas, tennis courts, concrete or asphalt streets, or compacted soils or compacted gravel surfaces.***

***Effective Impervious Cover is related to Directly Connected Impervious Area (DCIA) within the MS4 program****.*

## Estimated Runoff Coefficient

*Provide the runoff coefficient for the total site area post construction -* ***example provided below. Note these areas are to be depicted on the plans provided, as well.***

***The calculation below compares runoff coefficients between Pre- and Post-Construction, do not remove areas determined not DCIA (based on MS4) from the below calculation, Site area for pre & post construction acreage should be the same amount (the denominator).***

The runoff coefficient assumed for pavement is 0.9 and for gravel roads is 0.7. For the pervious areas, a coefficient of 0.3 was assumed.

Pre-Construction

(0.94 ac. x 0.3)+(2.86 ac. x 0.9)+(0.18 ac. x 0.7) = 0.75

0.94 ac. + 2.86 ac. + 0.18 ac.

Post-Construction

(2.09 ac. x 0.3)+(1.74 ac. x 0.9)+(0.15 ac. x 0.7) = 0.58

2.09 ac. + 1.74 ac. + 0.15 ac.

## Receiving Waters

The name of the receiving water is *insert receiving waterbody*, which drains to *insert ultimate receiving waterbody*.

***It could be in certain cases that the immediate receiving water body is “wetlands associated with ABC Brook”, which ultimately drains to ABC Brook.***

## Extent of Wetlands on Site

*Insert wetland acreage present on the site, briefly discuss extent of regulated floodplain / floodway areas on site.* ***Stormwater controls should not be placed in wetlands or floodways.***

# Construction Sequencing

***The site should be phased to avoid creating an area of disturbance of over 5 acres (3 acres for impaired waters) at one time.***

The Contractor will be given approximately *insert overall construction timeframe* for the construction of all phases of the project, which shall be revised as necessary to keep the Plan current.

The suggested sequence of construction is as follows:

***Note that for each major phase you list, a plan sheet must be included that depicts those limits of disturbance and the amount of disturbance.***

***Examples of major phases***

1. Conduct a preconstruction meeting.
2. Verify the surveyed staked-out limits of the project and clearly identify the limits of disturbance (LOD).
3. Install erosion and sedimentation controls where soil will be exposed or susceptible to erosion (e.g., effected inlet/outlets, disturbed slopes, toe of slopes, etc.).
4. Conduct the plan implementation inspection.
5. Install permanent stormwater control measures (e.g., stormwater basins) in the early phase of construction.
6. Perform clearing and grubbing activities.
7. Apply temporary stabilization measures for disturbed areas in accordance with Temporary Stabilization Practices.
8. *List phases,* ***major*** *construction activities, and erosion and sedimentation controls in sequence. Include a timetable for the major construction activities for large multiyear projects.*

▪ ***If a new discharge to an impaired water is proposed, site construction activities shall be phased to avoid the disturbance of over 3 acres at any one time.***

1. Stabilize the disturbed areas. Establish with appropriate seeding mixture per *reference plan sheet*, on all remaining disturbed areas. *Add “Install landscaping”* *if applicable*.
2. Remove erosion and sedimentation controls when it has been determined that the disturbed areas have been stabilized.
   * (This determination shall be made by the **CTDOT Consultant Inspector (Qualified Inspector) or with the concurrence of CTDOT**).
3. All post-construction stormwater structures shall be cleaned of construction sediment and any remaining sediment control systems (SCS) shall be removed prior to the filing of the “Notice of Termination Form: Non-Solar Projects.”
4. Ensure the project area is cleaned, free of debris, and catch basins have been cleaned, etc.

**The requirement for sediment traps or basins shall not apply to flows from off-site areas and flows from areas of the site that are either undisturbed or have undergone final stabilization.**

***If discharging into an impaired watercourse, please follow the requirements for impaired waters and remove references with a contributing drainage area that contains 2-5 acres of disturbed soils.***

If the areas of disturbance ***have a contributing drainage area that contains 2-5 acres of disturbed soils*** per discharge point, a temporary sedimentation trap must be provided. The Contractor’s **Design Professional** must submit to the **CTDOT Consultant Inspector (Qualified Inspector) with the concurrence of** **CTDOT,** a revised SWPCP in accordance with the **Contract Documents**.

***If the Contractor phased the project to have between 2 - 5 acres disturbed at one time, the SWPCP must show approximate location of the temporary sedimentation trap per discharge point with a capacity to contain 134 cubic yards per acre of material in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.***

If the areas of disturbance ***have a contributing drainage area that contains greater than five acres of disturbed soils***per discharge point, a temporary engineered sedimentation basin must be provided. The Contractor’s **Design Professional** must submit to the **CTDOT Consultant Inspector (Qualified Inspector) with the concurrence of** **CTDOT,** a revised SWPCP in accordance with the **Contract Documents**.The SWPCP must include locations of the temporary engineered sedimentation basin designed and installed in accordance with the E&S Guidelines, as amended. The Contractor shall provide an inspection and maintenance plan for the engineered sedimentation basin as part for the amended SWPCP. ***If providing a basin, it is important to note information such as it being constructed and utilized during construction, and then re-graded / finalized for post construction use.***

# Control Measures

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***Control Measures are required Best Management Practices (BMPs) that are implemented to minimize the discharge of pollutants from the permitted activity.***

***Locations of Control Measures must be identified on the plans.***

*This section should be a narrative description (which matches the plans) of the control measures that will be used on site.* ***They must be in conformance with the E&S Guidelines****,* ***the SWQ Manual and the CTDOT’s******Qualified Products List, or by Special Provisions accepted by the Department.***

***Reminder: A completed MS4*** [[***Maximum Extent Practicable (MEP) Worksheet***](https://portal.ct.gov/-/media/DOT/documents/dpolicy/MS4/MS4WorksheetV322620.pdf)](https://portal.ct.gov/-/media/DOT/documents/dpolicy/MS4/MS4WorksheetV322620.pdf) ***is required for all projects where the effective impervious area is changing pre to post construction. Include in Appendix D.***

***The need for a reverse slope bench shall be investigated for any slope steeper than 3:1 (horizontal: vertical) that exceeds 15 feet vertically, (review E&S Guidelines). These areas must also be depicted on the plans.***

## Impaired Waters

This section is to include the name of the impaired water(s) and describe the impairment.

***If it is determined that there are* any new discharges to impaired waterbodies (turbidity / sedimentation), then *site construction activities shall be phased to avoid the disturbance of over 3 acres at any one time.***

***For those areas for which construction activity will be temporarily suspended for a period of greater than 14 days, temporary stabilization measures shall be implemented within 3 days of such suspension of activity. For all areas, permanent stabilization shall be implemented within 30 days of disturbance: or The Plan shall document that measures are in place to ensure that there will be no discharge to the impaired water from rain events up to a 2-year, 24-hour rain event (provide frequency) while construction activity is occurring.***

***If there are no new discharges to impaired waterbodies (turbidity /sedimentation), please document this within the section.***

## Erosion and Sedimentation Controls

The Contractor will have a **CTDOT Consultant Inspector (Qualified Inspector)** oversee the erosion and sedimentation operations to ensure compliance with the provisions of the contract, **with the concurrence of CTDOT*.***

The following timelines will be followed for the proposed construction activities:

* The Contractor shall stabilize disturbed areas with temporary or permanent measures as quickly as possible after the land is disturbed. ***Requirements for soil stabilization are detailed in the Contract General Provisions Chapter 1.10, Environmental Compliance.***
* Areas that remain disturbed but inactive for at least 14 days shall receive temporary seeding or soil protection within seven (7) days.
* Areas that will be disturbed past the planting season will be covered with a long-term, non-vegetative stabilization method that will provide protection through the winter.
* If construction activities are completed to final grade, permanent stabilization measures shall take place within seven (7) days. **(*Review E&S Guidelines)***

CTDOT projects are required to have Preconstruction Meetings with the Contractor. The Contractor is required to review and understand the Contract Plans and Specifications as well as to develop an E&S Plan for **the review and acceptance from the Qualified Professional Engineer (QPE) with the concurrence of CTDOT.** The Contractor’s E&S plan shall demonstrate compliance with the Stormwater Permit requirement for a double row of sediment control barriers at all disturbed locations. ***Include the following note on the plan sheet:***

**Double Row of Erosion and Sediment Control Barriers**

* A double row of sediment control barrier shall be utilized between any disturbed area and downgradient wetland or watercourse within 50 feet, unless there would be an adverse impact to adjacent wetlands/watercourses due to installation of a double row.
* Additional erosion control barriers (double row of SCS) may also be required within the project area. Factors to be reviewed by the **CTDOT Consultant Inspector (Qualified Inspector)** include but are not limited to the contributing disturbed area, drainage area, slope, length of slope, and flow conditions to maintain sheet flow. If determined necessary by the **CTDOT Consultant Inspector (Qualified Inspector) or CTDOT,** the Contractor shall install and maintain additional rows of erosion control barrier (or equivalent).

## Soil Stabilization and Protection

*The narrative shall include a section that describes temporary and permanent soil stabilization practices for managing disturbed areas, soil stockpiles, and a construction schedule.* ***Vegetation should be preserved to the maximum extent possible, and*** **any disturbed *portions of the site shall be minimized and stabilized throughout the duration of the construction activity at the site.***

## Reverse Slope Benches

***Section not applicable if there is no need for a reverse slope bench.***

***If it is determined that a reverse slope is needed and can be provided, please include the following verbiage.***

Reverse Slope Benches have been incorporated into the project for slopes steeper than 3H:1V and exceeding 15’ tall to lessen the erosive potential of surface water and subsequent rilling and rutting. These have been designed utilizing the E&S Guidelines**,** as amended.

*Explain the location, height and steepness of slope, and the method of getting runoff to the bottom of the slope. Provide detail(s) in plan set.*

***If the project has slope(s) that obviously exceed 15 feet in height and are steeper than 3H:1V and it has been determined that a reverse slope cannot be provided, please provide the following verbiage:***

The E&S Guidelines, as amended requires that Reverse Slope Benches be utilized “whenever the vertical height of any slope steeper than 3H:1V exceeds 15 feet, except when engineered slope stabilization structures measures are included in the slope and/or a detailed soils mechanical analysis calculation has confirmed that an acceptable factor of safety exists for the finished slope.” CTDOT has determined that slope benching is not feasible/practical in this location *(state reason why, such as lack of available space, ROW limitations, ledge).* CTDOT Soils and Foundations unit has determined that Connecticut soils which are 2H:1V or flatter have appropriate drainage, as they do not become saturated, are located above the groundwater table, and are considered stable. Slopes that do not meet the criteria above require an analysis by the **Contractor’s QPE** with experience in geotechnical engineering or soil mechanics.

The surficial stability of permanent slopes (i.e., prevention of erosion, rilling, and rutting) is typically provided through surface erosion control measures (i.e., vegetation establishment. erosion control matting, or crushed stone blanket.) Refer to ***Section Control Measures***. An engineering soil mechanics analysis is not required in association with these types of measures.

*Explain measures taken to prevent erosion, rilling and rutting on the slope.*

## Temporary Stabilization Practices

*Temporary or permanent vegetation or other ground cover shall be maintained at all times in all areas of the site, except those undergoing active disturbance.*

***Examples are provided below and are not limited to:***

* Erosion Control Matting: On slopes steeper than 2:1 erosion control matting shall be used to stabilize the topsoil or as necessary and directed by the **CTDOT Consultant Inspector (Qualified Inspector) or CTDOT**. ECM type shall be disclosed and selected from CTDOT’s [Qualified Products List](https://portal.ct.gov/-/media/DOT/documents/deng/QPL/CTDOT-Qualified-Product-List.pdf), as amended**.**
* Sedimentation Control System (SCS): SCS shall be placed at the toe of the slope or as directed by the **CTDOT Consultant Inspector (Qualified Inspector) or CTDOT**.
* Anti-Tracking Pads: Construction entrances (gravel anti-tracking pads) shall be constructed at truck access/exit points to off-road route. Access road(s) should grade away from the main roadway or waterbody.
* Dust Control: Routine sweeping and application of dust suppression agents, including but not limited to, water and calcium chloride, over exposed subbase shall be completed for dust control. Additional measures may be necessary to minimize dust within the project limits and within staging and stockpile areas.
* Temporary Seeding: Areas that will remain disturbed but inactive for at least 14 calendar days shall receive temporary seeding or soil protection within 7 days, ***unless a new discharge to an impaired water is proposed, review Impaired Waters below.***
* Impaired Waters: For those areas for which construction activity will be temporarily suspended for a period of greater than 14 days, temporary stabilization measures shall be implemented within 3 days of such suspension of activity.
* Catch Basin Inlet Protection: Catch basin inlet protection shall be used to reduce the amount of sediment entering the storm drainage system during construction.
* *Provide other site-specific soil stabilization practices*, ***refer to the E&S Guidelines & SWQ Manual.***

Stabilization practices shall be implemented after completion, as final grades are reached, within seven (7) days.

Temporary seeding shall be spread over any disturbed areas which will remain inactive for at least 14 days. Areas to remain disturbed through winter shall be protected with non-vegetative stabilization measures. The Contractor must provide an Erosion and Sedimentation Control plan for each winter season during construction operations.

The Contractor may elect to utilize other controls in conformance with the E&S Guidelines, as accepted by the **CTDOT Consultant Inspector (Qualified Inspector) with the concurrence of CTDOT**. The Contractor will be required to provide the necessary details for any erosion controls not specifically called for on the project plans.

During construction, all areas disturbed by the construction activity that have not been stabilized, structural control measures, and locations where vehicles enter or exit the site shall be inspected at least once a week and within 24 hours of the end of a storm that generates a discharge.For storms that end on a weekend, holiday, or other time in which normal working hours will not commence within 24 hours, an inspection is required within 24 hours following any storm in which 0.5 inches or greater of rain occurs. For lesser storms, inspection shall occur immediately upon the start of subsequent normal working hours.

## Permanent Stabilization Practices

***If applicable, be sure to cover a discussion of reverse slope benching in this section.***

During construction, the following methods of permanent stabilization shall be installed:

* Topsoiling: Once final grades have been established, topsoil shall be applied to provide a suitable growth medium for vegetation, if required.
* Permanent Stabilization: Once soils have been brought to final grade; permanent stabilization measures such as vegetative cover, crushed stone for slope protection, or riprap, shall be applied, if required.Disturbed areas shall be seeded with the appropriate seed mix. The **CTDOT Consultant Inspector (Qualified Inspector)** will verify compliance with this requirement on the Notice of Termination Form: Non-Solar Projects, **with the concurrence of CTDOT.**
* Landscaping: Wood chip mulch shall be placed around the plants. Plantings (trees, shrubs, etc.) and permanent seeding may be established together. Wood chip mulch shall NOT be utilized in wetland areas.

All new embankments and unpaved areas that are graded or disturbed by construction will receive erosion control matting, topsoil and / or seed establishment. The Contractor may use other permanent stabilization practices that have been accepted by the **CTDOT Consultant Inspector (Qualified Inspector) or CTDOT** that are in conformance to the E&S Guidelines.

*In your narrative (that matches the plans) include all landscaping and preservation measures for existing trees or vegetation. Landscaping plans should be included in the submission.*

## Structural Measures

***Locations must be identified on the plans*.** *Additionally, the appropriate supporting calculations should be provided in the appendix section.*

*Provide a narrative (that matches the plans) that includes all structural measures that divert flows away from exposed soils, store flows, or otherwise limit runoff and minimize the discharge of pollutants.* ***Structural measures cannot be located within wetlands or floodways and should not be located within regulated floodplain, unless previously permitted via the Regulatory Agency.***

## Maintenance

*The narrative shall include the procedures to maintain, in good and effective operating conditions, all erosion and sediment control measures, including vegetation, and all other protective measures identified in the Plan.*

All construction activities and related activities shall conform to the requirements of **Chapter** 1.10 "Environmental Compliance" of the **Contract General Provisions**. In general, all construction activities shall proceed in such a manner so as not to pollute any wetlands, watercourses, water body, and conduit carrying stormwater. The Contractor shall limit, in so far as possible, the surface area of earthen materials exposed by construction activity and immediately provide temporary and permanent pollution control to prevent soil erosion and contamination on the site. Water pollution control provisions and Required Best Management Practices per **Chapter** 1.10, Environmental Compliance of the **Contract** **General Provisions** shall be administered during construction. Control measures shall be inspected and maintained in accordance with the E&S Guidelines and as directed by the **CTDOT Consultant Inspector (Qualified Inspector) or CTDOT**.

# Dewatering Wastewaters

## Dewatering Guidelines

*Discuss any planned dewatering and identify locations on plans. (Refer to specific plan sheet)* ***Dewatering devices cannot be located within wetlands or floodways unless previously permitted via the Regulatory Agency.*** *The narrative shall discuss any activities that are expected to require dewatering and a brief description of what controls will be utilized (temporary dewatering basin, temporary outfall protection, etc.).* ***If dewatering is not anticipated, the paragraph below can be used as a guide.***

When dewatering is necessary, pumps used shall not be allowed to discharge directly into a wetland, watercourse, or stormwater drainage system. Prior to any dewatering, the Contractor must submit to the **CTDOT Consultant Inspector (Qualified Inspector)** a written proposal for specific methods and devices to be used on site. Written approval must be obtained from the **CTDOT Consultant Inspector (Qualified Inspector)** for methods and devices, including, but not limited to, the pumping of water into a temporary sedimentation basin, providing surge protection at the inlet or outlet of pumps, floating the intake of a pump, or any other method for minimizing and retaining the suspended solids. If the **CTDOT Consultant Inspector (Qualified Inspector) or CTDOT** determines that a pumping operation is causing turbidity problems, the Contractor shall halt said operation until a means of controlling the turbidity is submitted by the Contractor in writing to the **CTDOT Consultant Inspector (Qualified Inspector).** Once written acceptance is received from the **CTDOT Consultant Inspector (Qualified Inspector)** with the concurrence of CTDOT, the Contractor may implement the turbidity control measures.

No discharge of dewatering wastewater shall contain or cause a visible oil sheen, floating solids or foaming in the receiving water. If required, all activities are to be performed in compliance with the **Contract Documents.**

# Post-Construction Stormwater Management

***(All controls in this section must be in conformance with the SWQ Manual and the CTDOT’s qualified product list* or by Special Provision accepted by the Department*. Be sure to use the same call outs for structures as in the manual)***

***The* CTDOT Consultant Inspector (Qualified Inspector) *may consider BMP’s to be installed during the construction process to minimize the discharge of pollutants, and stormwater discharges that will occur after construction operations have been completed.***

***The following measures are examples of what can be used post construction to divert flows, limit runoff, and minimize the discharge of pollutants.*** *Please describe any additional post-construction stormwater management measures.*

* Minimal Curbing: Curbing shall be avoided wherever possible to maximize overland sheet flow and encourage infiltration.
* Outlet Protection: Riprap outlet protection shall be used at the proposed outlet to decrease velocity and the potential for erosion (e.g., apron, splash pad, etc.).
* Catch Basins: Catch basins shall be used, especially adjacent to outlets, to intercept pollutants and debris.
* MS4 Measures: List any permanent post construction water quality BMP’s by including the completed [CTDOT MS4 Maximum Extent Practicable (MEP) sheet](https://portal.ct.gov/-/media/DOT/documents/dpolicy/MS4/MS4WorksheetV322620.pdf) in Appendix D of the Plan.

## Post-Construction Guidelines

***Locations must be shown on the plans.***

*The narrative shall include the measures that will remain in place following construction and how they will be maintained.* ***Structural measures cannot be located in wetlands or floodways and should not be located within floodplains unless previously permitted by the Regulatory Agency. Include the following and modify as required.***

After the project is complete, CTDOT will perform the following maintenance and restorative measures:

* Litter/debris and sweepings will be removed from the site, as needed.
* Mowing and maintenance of the seeded areas and vegetated areas will occur, as needed.
* Riprap outlet protection will be inspected and cleaned, as needed.
* Stormwater drainage system will be cleaned of sediment/debris, as needed.
* Identify, inspect, and maintain all stormwater quality BMPs included within the project, as per the MS4 or manufacturer recommendations.

## Post Construction Performance Standards and Control Measures

## Redevelopment:

***For sites that are already developed where there is more than 40% effective impervious cover, the site must be designed to retain on-site half the water quality volume for the site and provide additional stormwater treatment without retention for discharges up to the full water quality volume for sediment, floatables and nutrients to the maximum extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.***

***If this retention and treatment cannot be achieved, describe:***

* *The measures taken to maximize runoff reduction on site.*
* *The reasons those are the maximum extent achievable.*
* *The alternative retention volume you are providing; and*
* *A description of the measures used to provide additional treatment above the alternative volume.*

***For Roadway and other linear redevelopment projects:***

* ***For the developed portion of the ROW:***
  + *If the full retention standard cannot be met; describe the alternative retention provided and the treatment measures provided.*

***If the effective impervious cover will not be increased within a given watershed, stormwater treatment measures must be provided, but retention of half the water quality volume is NOT required.*** *List the additional stormwater treatment measures.*

In order to comply with CTDOT’s MS4 Permit requirements, projects shall seek to reduce the effective impervious cover (as defined in the Construction Stormwater General Permit effective 12/31/20; modification date 11/25/22) to the maximum extent practicable.

*Insert equation for* ***total*** *impervious cover* **(*include qualifying impervious areas/surfaces as listed in the definition of “effective impervious cover” in the Construction Stormwater General Permit effective 12/31/20).***

*List the pre to post change in effective impervious cover* ***(as defined in the Construction Stormwater General Permit effective 12/31/20;******modification date 11/25/22). This number should be the same as the* design plans *post construction directly connected impervious area total provided in row DC7 of the CTDOT MS4 MEP Design Worksheet. Appendix D- CTDOT MS4 Project Design Maximum Extent Practicable Worksheet shall be attached to this plan (if applicable).***

*Insert equation for water quality volume at following link:*

* [*Review Water Quality Volume / Water Quality Flow Worksheet*](https://portal.ct.gov/-/media/DOT/documents/dpolicy/WaterNoiseCompliance/HelpfulDesign/WaterQualityVolumeWaterQualityFlowWorksheetxlsx.xlsx)

*The area used for the calculation should be the project site area not the total impacted (disturbed) site area. “A=site area in acres”*

*Explain how the site has been designed to meet runoff volume requirements.*

## Other Development:

*Explain how the site has been designed to meet runoff volume requirements.* ***For sites that are undeveloped or where there is less than 40% effective impervious cover, site must be designed to retain on-site the full water quality volume for the site (e.g., brownfields, capped landfills, bedrock, elevated groundwater, etc.). If there are site restrictions preventing such treatment, these reasons must explain the following:***

*List factors that may affect your ability to infiltrate or dictate your retention goals. Review* [**Stormwater Treatment Measures – Limitations & Considerations**](https://portal.ct.gov/-/media/DOT/documents/dpolicy/WaterNoiseCompliance/HelpfulDesign/stormwatertreatmentmeasureslimitationsconsiderations.pdf)

***Describe:***

* *The site limitations.*
* *Provides a description of the runoff reduction practices implemented.*
* *Provides an explanation of why this constitutes the maximum extent achievable.*
* *Offers an alternative retention volume; and*
* *Provides a description of the measures used to provide additional stormwater treatment for sediment, floatable and nutrients above the alternate volume up to the water quality volume.*

## Runoff Reduction and LID Practices

***Primary stormwater treatment practices should be the primary consideration to meet performance standards prior to consideration of secondary stormwater treatment practices. (Review*** [Stormwater General Permits and Incorporation of Low Impact Development Evaluation](https://portal.ct.gov/DEEP/Water/NPS/Stormwater-General-Permits-and-Incorporation-of-Low-Impact-Development-Evaluation)).

*Describe how site incorporates runoff reduction, LID, and other measures to meet the performance standards, promote groundwater recharge and minimize post construction impacts to water quality****.***

***LID practices likely most suitable for CTDOT projects include:***

* + ***Refer to*** [***MS4 MEP worksheet***](https://portal.ct.gov/-/media/DOT/documents/dpolicy/MS4/MS4WorksheetV322620.pdf)
* *Discussion of long-term maintenance should be included.*

***If LID is not possible, the following info is needed to demonstrate such: (in narrative and on plan):***

* *The location of all areas with soils suitable for infiltration and areas best suited for infiltration (Soil Map acceptable).*
* *The location of all areas unsuitable or least suitable for infiltration (high water table, bedrock).*
* *Areas of Environmental Concern (AOEC’s) (per the Office of Environmental Compliance’s Plan Set, if applicable) that would make infiltration inappropriate should be described in narrative.*
* *Linear project/Limited ROW.*

## Suspended Solids and Floatable Removal

*Describe post construction stormwater management measures d*esigned to minimize the discharge of suspended solids and floatable (e.g., oil and grease, other floatable liquids, floatable solids, trash, etc.)*. Investigate stormwater management measures for each outlet within the project limits. If a stormwater management measure is not applicable or achievable, please provide justification.* ***The General Permit suggests a goal of 80 percent removal of total suspended solids be used in design of stormwater management measures. This goal has been kept in mind in the design of stormwater and erosion control practices for the project. The effectiveness of many of the practices utilized is not easily quantified. Most measures are effective for small storms or at the beginning of storm events. Effectiveness varies with soil types, pollutant, and storm intensity/ duration. Certainly, in optimal conditions, methods may attain and even exceed the 80% removal goal for total suspended solids.***

*Where applicable, WQV and WQF calculations should be provided for Stormwater measures with the percentage of WQV/WQF actually achieved.*

***Examples are “standard two-foot sumps for each proposed catch basin and deeper sumps, as needed near outlets will be provided to remove initial suspended solids.” or “Runoff Reduction Measures employed with the goal of capturing suspended solids and floatables and velocity dissipation will include Catch Basins with Deep Sumps, a Hydrodynamic Separator and a Detention System.”***

## Velocity Dissipation:

*Describe velocity dissipation devices (splash pads) at outfall locations and provide supporting calculations. (proper sizing of riprap)*

# Other Controls (Non-Structural)

## Waste Disposal

Construction site waste shall be properly managed and disposed of during the entire construction period.

The following is applicable:

* A waste collection area will be designated. The selected area will minimize truck travel through the site and will not drain directly to the adjacent wetlands.
* Waste collection shall be scheduled regularly to prevent the containers from overfilling.
* Spills shall be cleaned up immediately.
* Defective containers that may cause leaks or spills will be identified through regular inspection. Any found to be defective will be repaired or replaced immediately.
* Any stockpiling of materials should be confined to the designated area as approved by the **CTDOT Consultant Inspector (Qualified Inspector), with the concurrence of CTDOT**.

## Washout Areas

Washout of applicators, containers, vehicles, and equipment for concrete shall be conducted in a designated washout area. No surface discharge of washout wastewaters from the area will be allowed. All concrete wash water will be directed into a container or pit such that no overflows can occur. Washout shall be conducted in an entirely self-contained system and will be clearly designed and flagged or signed where necessary. The washout area shall be located outside of any buffers and at least 50 feet from any stream, wetland or other sensitive water or natural resources as determined or designated by the **CTDOT Consultant Inspector (Qualified Inspector) with the concurrence of CTDOT.**

Washout Area(s) will be site located by the Contractor, approved by the **CTDOT Consultant Inspector (Qualified Inspector) with the concurrence of CTDOT,** and the SWPCP revised, as appropriate. The “Concrete Washout Area” detail (***Review link***[*Concrete Washout Detail*](https://portal.ct.gov/-/media/DOT/documents/dpolicy/WaterNoiseCompliance/SCS-Guidesheets/007-GUIDE-SHEET-Concrete-Washout.pdf)*)* shows the recommended method of construction for the washout area. The designated area shall be designed and maintained such that no overflows can occur during rainfall or after snowmelt. *Include the Concrete Washout Area detail in Appendix C, if applicable.*

## Anti-tracking Pads and Dust Control

(Sections 2.11, 9.39, 9.42, and 9.43 of the **Design-Build Specifications provided in Appendix A.01 of the Contract Technical Provisions**.)

Off –site vehicle tracking of sediments and the generation of dust shall be minimized. Temporary anti-tracking pads from the active work site to the existing pavement will be installed and maintained at the locations shown on the plans.

The Contractor shall:

* Maintain the entrance in a condition which will prevent tracking and washing of sediment onto paved surfaces.
* Provide periodic top dressing with additional stone or additional length as conditions demand.
* Repair any measures used to trap sediment as needed.
* Immediately remove all sediment spilled, dropped, washed, or tracked onto paved surfaces.
* Ensure roads adjacent to a construction site are left clean at the end of each day.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then the contractor shall either:

* Increase the length of the construction entrance,
* Modify the construction access road surface, or
* Install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

For construction activities which cause airborne particulates, wet dust suppression shall be utilized. Construction site dust will be controlled by sprinkling the ground surface with water until it is moist on an as-needed basis. The volume of water sprayed shall be such that it suppresses dust yet also prevents the runoff of water.

## Maintaining and Storing Vehicles and Equipment- Storage of Chemicals & Petroleum Products

The Contractor shall take measures to prevent any contamination to wetlands and watercourses while maintaining and storing construction equipment on the site. All chemical and petroleum containers stored on site shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area except for those stored in containers of 100-gallon capacity or more, in which case double-walled tanks will suffice. Accumulation of rainwater within secondary containment must be visually inspected for sheen prior to being discharged. If any sheen is identified; the accumulated water must be removed by the Contractor to an appropriate off-site location.

## Cold Water Stream Habitat

***If there is no Cold Water Stream Habitat, please document this within the section.***

***If it determined that the project is in a Cold Water Stream Habitat, please provide the following verbiage:***

For construction activities within one hundred (100) feet of any stream, river, or tributary that is included within a Cold-Water Stream Habitat, any mitigation strategies authorized by CTDEEP Commissioner must be verified post-construction.

The project is located within a Cold-Water Stream Habitat watershed. *List Cold Water Stream Habitat watercourse(s). Describe CTDEEP Fisheries’ comments/recommendation.* The CTDEEP Fisheries Consultation Form: Cold Water Fisheries is provided in Appendix G.

[Cold Water Stream Habitat Map Application](https://ctdeepwatermonitoring.github.io/ColdWaterHab/) (***Refer to Contract Documents and this should be noted in the first section of the Plan under Site Description)***

***Additional coordination should have taken place with CTDOT prior to the development of the stormwater permit. Refer to Directive*** [ECPPD-2023-1**.**](https://portal.ct.gov/-/media/DOT/documents/AEC/ECPPD-2023-1_Construction_Stormwater_Drctv_signed.pdf)

# Inspections

The **CTDOT Consultant Inspector (Qualified Inspector)** will conduct site inspections once a week or after any rain event of 0.1 inches or greater during normal working hours. The **CTDOT Consultant Inspector (Qualified Inspector)** conducting inspections shall fill out a [Construction Site Environmental Inspection Report (CSEIR)](https://portal.ct.gov/-/media/DOT/documents/dpolicy/WaterNoiseCompliance/Manuals/CSEIRpdf.pdf) for each inspection described below.

Each report shall be retained as a part of the SWPCP and shall be uploaded to the COMPASS Environmental subfolder available for CTDEEP request. The report shall include a statement that, in the judgment of the **CTDOT Consultant Inspector (Qualified Inspector) with the concurrence of CTDOT** conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance, review Keeping Plans Current.

## Plan Implementation Inspections

For each phase of construction, the site shall be inspected at least once within the first 30 days of construction activity and at least three times, with 7 or more days between inspections, within the first 90 days of construction activity to confirm compliance and proper initial implementation of all control measures.

## Routine Inspections

The Permittee will maintain a rain gauge on-site to document rainfall amounts. During construction, all areas disturbed by the construction activity that have not been stabilized, all erosion and sediment control measures, structural control measures, soil stockpile areas, washout areas, and locations where vehicles enter or exit the site shall be inspected for evidence of or the potential for pollutant entering the drainage systems and impacts to the receiving waters at least every seven (7) calendar days and within 24 hours of the end of a storm that generates a discharge.

For storms that end on a weekend, holiday, or other time in which normal working hours will not commence within 24 hours, an inspection is required within 24 hours following any storm in which 0.5 inches or greater of rain occurs. For lesser storms, inspection shall occur immediately upon the start of subsequent normal working hours.

Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least weekly until final stabilization has been achieved.

The **CTDOT Consultant Inspector (Qualified Inspector)** shall conduct inspections.

The following items shall be inspected as described below: (*List SCS, structural measures, and describe inspection parameters per Connecticut Erosion and Sedimentation Guidelines.*

***Additional measures are listed in the Connecticut Erosion and Sedimentation Guidelines.***

***Other innovative measures may be considered by* Special Provision, as accepted by CTDOT.**

Item Procedure

Sedimentation Control

System (SCS) The SCS shall be inspected to ensure that the fence line is intact with no breaks or tears. The fence shall be firmly anchored to the ground. Areas where the fence is excessively sagging or where support posts are broken or uprooted shall be noted. Depth of sediment behind the fence shall be noted if sediment needs to be removed.

***For other SCS, please include procedure.***

Concrete Washout Area Containers or pits shall be inspected at least once a week to ensure structural integrity, adequate holding capacity and will be repaired prior to future use if leaks are present. The contractor shall remove hardened concrete waste when it accumulates to a height of ½ of the container or pit or as necessary to avoid overflows. All concrete waste shall be disposed of in a manner consistent with all applicable laws, regulations and guidelines.

Catch Basin Protection Protective measures shall be inspected to ensure that sediment is not entering the catch basins. Catch basin sumps shall be monitored for sediment deposition.

Erosion Control Matting Inspect erosion control matting and repair any dislodged or failed blankets immediately. Replace any washed out seed or topsoil.

Anti-tracking Pad Locations where vehicles enter or exit the site shall be inspected for evidence of off-site tracking.

Dust Control Measures shall be taken for the purpose of allaying (diminishing) dust conditions. Measures may include the use of sweeping equipment and/or the application of water or calcium chloride.

General Construction areas and the perimeter of the site shall be inspected for any evidence of debris that may blow or wash off site or that has blown or washed off site. Construction areas shall be inspected for any spills or unsafe storage of materials that could pollute off-site waters.

## Post-Construction Inspection

Upon completion of construction activities and stabilization of the site, all post-construction stormwater structures, including *insert site specific structural measures and all permanent water quality BMPs*, shall be cleaned of construction sediment or debris and the site inspected to confirm compliance with all post-construction stormwater management requirements. Sediment shall be properly disposed of in accordance with all applicable laws, regulations, and guidelines. Any remaining sediment control system(s) SCS shall be removed prior to acceptance of the project by CTDOT.

## Final Stabilization Inspection

Once CTDOT has made a determination that the site has achieved final stabilization, the site shall be inspected, and photo documented by the **CTDOT Consultant Inspector (Qualified Inspector)** to confirm that no active erosion or sedimentation is present and site stabilization has been maintained.

Final stabilization is achieved when a full growing season is completed. A **full growing season** is defined as the timeframe encompassed by **two consecutive full seeding seasons**: April 1 through June 15, and August 15 through October 1. If final stabilization is achieved during a seeding season, the following seeding season will be considered the first full seeding season after final stabilization has been achieved, **CTDOT** will verify compliance with this requirement on the Notice of Termination: Non-Solar Projects.

# Keeping Plans Current

## Revisions to Stormwater Pollution Control Plans

**CTDOT Consultant Inspector (Qualified Inspector)** will amend the Plan if the actions required by the Plan fail to prevent pollution or otherwise comply with provisions of the General Permit. The Plan shall also be amended whenever there is a change in contractors or sub-contractors at the site, or a change in design, construction, operation, or maintenance at the site which has not otherwise been addressed in the plan.

***Resubmission is for extenuating circumstance in which new calculations are required such as the addition a new outfall or a modification to a stormwater quality structure within the project limits and not for modifications such as staging/access road relocations. Additionally, resubmission is applicable if there is a change in run off or discharge of pollutants.***

If the results of the inspections require modifications to the Stormwater Pollution Control Plan, the plans shall be revised as soon as practicable after the inspection. Such modifications shall provide for a timely implementation of any changes to non-engineered controls on the site within 24 hours and implementation of any changes to the plan within 3 (three) calendar days following the inspection. For Engineered measures, corrective actions shall be implemented on site within 7 (seven) days and incorporated into a revised Plan within 10 (ten) days of the date of inspection.

In no event shall the requirements to keep the Plan current or update a Plan, relieve the permittee and their contactor(s) of the responsibility to properly implement any actions required to protect the waters of the State and to comply with all conditions of the General Permit.

# Contractors

**General**

This section shall identify all Contractors and Subcontractors who will perform on site actions which may reasonably be expected to cause or have the potential to cause pollution of the waters of the State.

## Certification Statement

All contractors and subcontractors must sign the attached statement. All certifications will be included in the Stormwater Pollution Control Plan.

**State Project No. XXX-XXX**

*Project description*

*Town*, CT

“I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as Contractor on the project, I am covered by this General Permit, and must comply with the terms and conditions of this permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for this project.”

**GENERAL CONTRACTOR**

Signed:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Firm: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**SUBCONTRACTOR**

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Firm:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Telephone:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**General:**

This Stormwater Pollution Control Plan (SWPCP) is prepared to comply with the requirements for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. Also, to be considered part of the SWPCP are the proposed construction plans, special provisions, and the Connecticut Department of Transportation’s “Standard Specifications for Roads, Bridges and Incidental Construction” (Form 818), **Contract Documents** including supplements thereto and the Connecticut Guidelines for Erosion and Sediment Control (E&S Guidelines) and Stormwater Quality Manual (SWQ Manual), as amended.

# List of Applicable Figures / Plans:

## Appendix A – Figures

* *Disturbed Erodible Areas* ***(See Example)***
* *Site Drainage Patterns*
* *Soil Maps and Borings* ***(provide only if can’t infiltrate-to help for LID justification)***

## Appendix B – Drainage Calculations

* ***(Do Not include all drainage calculations)***
* *Velocity Dissipation*
* *Water Quality Computations* **– *(Does not need to be broken down into each outfall. It can be done for the site as a whole and for any structural measures employed).***

## Appendix C – Plan Sheets

* ***Do not put in full contract plans- (These plan sheets do not need to be on separate plans sheets they may be combined if readability is not compromised).***
* *Sedimentation and Erosion Control*
* *Site Plan/Staging*
* *Drainage Plan*
* *Grading Plan*
* *Applicable Stormwater details*
  + *Concrete Washout, if applicable*
  + *Anti-Tracking Pad*
  + *Other Site-Specific Stormwater Details XXX*
* *Landscape Design Plan/Planting Plan*
* *Mitigation Plan*

## Appendix D- CTDOT MS4 Project Design Maximum Extent Practicable Worksheet

* ***Include Designer Worksheet (MEP) and any supporting documentation.***
  + [CTDOT MS4 Maximum Extent Practicable (MEP) sheet](https://portal.ct.gov/-/media/DOT/documents/dpolicy/MS4/MS4WorksheetV322620.pdf)

## Appendix E- Construction Site Environmental Inspection Report (CSEIR)

* ***Provide Copy of Form***
  + [CSEIR Form](https://portal.ct.gov/-/media/DOT/documents/dpolicy/WaterNoiseCompliance/Manuals/CSEIRpdf.pdf)

## Appendix F – Notice of Termination Form: Non-Solar Projects

* *Provide Copy of Form*
  + [General Permit for the Discharge of Stormwater & Dewatering Wastewaters from Construction Activities – Notice of Termination Form](https://portal.ct.gov/-/media/DOT/documents/dpolicy/WaterNoiseCompliance/StormwaterGeneralPermits/stormconstNoticeofTermination-NonSolardoc.docx)

***Include Appendix G only for Projects with Cold Water Fisheries***

## Appendix G - CTDEEP Fisheries Consultation Form: Cold Water Fisheries

* + ***Include Appendix G for Projects with Cold Water Fisheries***
  + ***Provide Copy of From with CTDEEP Fisheries section filled out.***

# Examples:

### **Image previewDisturbed Erodible Area**

### **Drainage Calculation – Velocity Dissipation Suggestions**

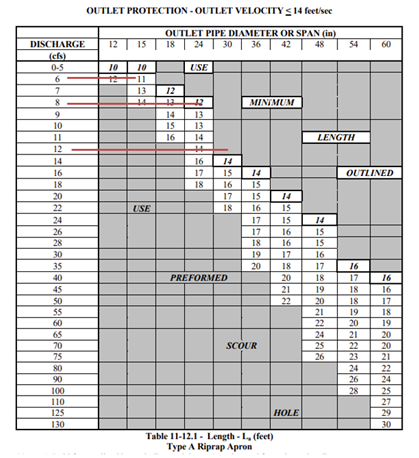
Rip Rap Aprons

The **Contractor’s Designer** does not need to present detailed calculations or a detail for each outlet Rip Rap Apron. The standard details for rip rap aprons should be included in your attached contract plans.

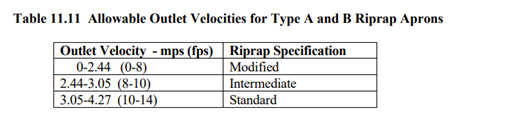
Utilize the CTDOT Drainage Manual – Chapter 11 methods:

Use your discharge, pipe size and velocity. (For many outlets create a table.)

Supply the proper table below (maybe you will only need 1 or 2 tables, you don’t need a table for each outlet.)



Supply this figure for rip rap sizing based on velocity:



Add any additional calculations that were needed per the Drainage Manual.

For each outlet, show the Rip Rap Apron size and chosen rip rap size.

(Make a table if you have many outlets.)

**Preformed Scour Holes**

The **Contractor’s Designer** should present calculations (from a drainage report is acceptable) for any Preformed Scour Holes based on CTDOT Drainage Manual – Chapter 11 methods for Scour Hole and Rip Rap sizing.

A detail for each Preformed Scour Hole is not necessary for your SWPCP. The standard details for preformed scour holes should be included in your attached contract plans.