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## Underground Stormwater Management Facility Plan Review Checklist

Sediment control Permit No. \_\_\_\_\_

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### SUPPORTING INFORMATION (One Copy)

- \_\_\_ \_\_\_ \_\_\_ Maintenance Easement and Covenant Documents
- \_\_\_ \_\_\_ \_\_\_ Itemized Stormwater Management Construction Estimate.
- \_\_\_ \_\_\_ \_\_\_ Storm drain plans and computations for storm drains leading to the underground facility.

### STORMWATER MANAGEMENT COMPUTATIONS (One Copy)

- \_\_\_ \_\_\_ \_\_\_ RCN determinations for CP<sub>V</sub>: ultimate development (any existing developed off-site areas considered as existing condition).
- \_\_\_ \_\_\_ \_\_\_ Stormwater Management provided for one half of contiguous rights-of-way or planned non-state roads, and new construction within state road rights-of-way.
- \_\_\_ \_\_\_ \_\_\_ Time of Concentration (T<sub>C</sub>) for CP<sub>V</sub> computations: ultimate development (same policy on existing off-site areas as RCN determination).
- \_\_\_ \_\_\_ \_\_\_ Elevation-storage computations.
- \_\_\_ \_\_\_ \_\_\_ Elevation-discharge computations (provide equations and site references).

### STORMWATER MANAGEMENT PLAN (One Copy)

#### A. PLAN VIEW OF FACILITY AT SCALE OF 1" = 50' OR LESS (40', 30', ETC.)

- \_\_\_ \_\_\_ \_\_\_ Existing and final contours (1' or 2' interval )
- \_\_\_ \_\_\_ \_\_\_ Existing and proposed improvements.
- \_\_\_ \_\_\_ \_\_\_ Delineation of outfall or downstream storm drain, control structure, storage facility and entire storm drain system.
- \_\_\_ \_\_\_ \_\_\_ Facility and manhole location to allow easy access and maintenance.
- \_\_\_ \_\_\_ \_\_\_ Outflow pipe, outlet protection (detail required), outfall channel.
- \_\_\_ \_\_\_ \_\_\_ Existing and proposed utility locations.
- \_\_\_ \_\_\_ \_\_\_ Maintenance access from public right-of-way, minimum width 12', maximum grade 15% - mechanically stabilized, 10% maximum without mechanical stabilization.
- \_\_\_ \_\_\_ \_\_\_ Maintenance easement (shall include: storage chamber, control structure, outfall, any related appurtenances, access points, minimum width allowance for repair work. Minimum 10-foot clearance around the facility.

**B. PROFILE OF ENTIRE SYSTEM AND ASSOCIATED DETAILS**

**1. GENERAL ITEMS**

- \_\_\_ \_\_\_ \_\_\_ Only pipes and concrete vaults allowed for storage chambers.
- \_\_\_ \_\_\_ \_\_\_ Circular pipes only.
- \_\_\_ \_\_\_ \_\_\_ All slopes, inverts, and dimensions.
- \_\_\_ \_\_\_ \_\_\_ Minimum 48" height of storage chamber and cross-overs.
- \_\_\_ \_\_\_ \_\_\_ Gage and corrugation size for metal pipe. Minimum 14 gauge.
- \_\_\_ \_\_\_ \_\_\_ Silt tight pipe or storage chamber.
- \_\_\_ \_\_\_ \_\_\_ Coupling band detail.
- \_\_\_ \_\_\_ \_\_\_ Grated, vented manholes on upstream and downstream ends of storage chamber for access, cleaning, and venting.
- \_\_\_ \_\_\_ \_\_\_ Maximum of 100' chamber length between manhole access points.
- \_\_\_ \_\_\_ \_\_\_ For metal pipe, add note that the pipe ends must be matched and numbered, from the manufacturer.
- \_\_\_ \_\_\_ \_\_\_ Concrete manholes must be used at all HDPE pipe connections.

**3. CONTROL STRUCTURE (DETAILS REQUIRED)**

- \_\_\_ \_\_\_ \_\_\_ Cast in place reinforced concrete only
- \_\_\_ \_\_\_ \_\_\_ Plan view with top slab removed.
- \_\_\_ \_\_\_ \_\_\_ Cross-sections each direction.
- \_\_\_ \_\_\_ \_\_\_ Top slab reinforcing detail.
- \_\_\_ \_\_\_ \_\_\_ Reinforcing details.
- \_\_\_ \_\_\_ \_\_\_ Submit copy of structural computations.
- \_\_\_ \_\_\_ \_\_\_ Weir crest and CpV and 10-year water surface elevations.
- \_\_\_ \_\_\_ \_\_\_ Orifice dimensions and location.
- \_\_\_ \_\_\_ \_\_\_ Orifice trash rack.
- \_\_\_ \_\_\_ \_\_\_ Protective coating for exposed metals.
- \_\_\_ \_\_\_ \_\_\_ Manhole access to both sides.
- \_\_\_ \_\_\_ \_\_\_ Maximum manhole step spacing of one foot on center. Access ladders must be used.

**3. OUTFALL PROTECTION (DETAIL REQUIRED)**

- \_\_\_ \_\_\_ \_\_\_ Size for 10-year storm – use SCS methodology.
- \_\_\_ \_\_\_ \_\_\_ Cross-section at end of channel in accordance with receiving section.
- \_\_\_ \_\_\_ \_\_\_ Outfall dimensions.
- \_\_\_ \_\_\_ \_\_\_ Slope – 0%

\_\_\_ \_\_\_ \_\_\_ Median riprap size ( $d_{50}$ ).

\_\_\_ \_\_\_ \_\_\_ Thickness ( $2.0 \times d_{50}$ )

\_\_\_ \_\_\_ \_\_\_ Approved filter cloth.

**C. MISCELLANEOUS ITEMS**

\_\_\_ \_\_\_ \_\_\_ Inspector Checkoff List / Sequence of Construction

\_\_\_ \_\_\_ \_\_\_ Stormwater Management Construction Specifications and General Notes.

\_\_\_ \_\_\_ \_\_\_ Water quality considerations and construction runoff protection.

\_\_\_ \_\_\_ \_\_\_ Loadings for structural design specified on plan (H-20 for vehicular travel areas).

\_\_\_ \_\_\_ \_\_\_ Sealed by P.E. (Structural P.E. also where required) with signature and date.

9/8/09