
Chapter 9-6

DRAINAGE & EROSION CONTROL STANDARDS

Sections:

- 9-6-1: General Provisions**
- 9-6-2: Detention Ponds**
- 9-6-3: Design Criteria for Drainage Facilities**
- 9-6-4: Construction Materials**
- 9-6-5: Erosion Control**
- 9-6-6: Final Inspection and Acceptance**
- 9-6-7: Storm Water System Details**

9-6-1: General Provisions

- (A) **General.** The Drainage and Erosion Control Standards are intended to provide for a comprehensive and integrated storm water utility system to convey and manage storm waters in order to mitigate safety hazards and minimize property losses and disruption due to heavy storm runoff and flooding; maintain travel on public streets during storm events, enhance water quality of storm runoff by mitigating erosion, sediment, and pollutant transport; control and manage increased runoff due to local development; establish effective long-term management of natural drainage ways; and provide for ongoing and emergency maintenance of public storm water systems.

The City adheres to the Urban Drainage and Flood Control District (UDFCD) criteria and the latest editions of its published Drainage Criteria Manuals, Volumes 1, 2, and 3 unless specified otherwise. The criteria and design procedures presented in the UDFCD Drainage Criteria Manuals are incorporated into the Drainage and Erosion Control Standards by reference, except where City specifications are more stringent. The City utilizes the UDFCD Four-Step Process found in Volume 3 during the selection of water quality Best Management Practices (BMPs) for new development or significant redevelopment. The terms erosion control, stormwater pollution prevention, and stormwater management are used interchangeably and are understood to mean the same thing.

- (B) **Streets.** Streets are an integral part of the local storm water drainage system and may transport local storm runoff as specified in these Standards. However, the primary purpose of streets is for transportation, and storm water conveyance shall not be the major function of a street.

9-6-2: Detention Ponds

- (A) **General.** Detention ponding facilities are intended to store increased runoff from developed property and release this runoff at the historic (pre-development) rate. By providing detention ponding, increased runoff impacts on downstream facilities may be controlled and minimized to reduce potential damages and the need for greatly expanded storm water conveyance facilities.
- (B) **Required.** Detention ponding for storm water flood control shall be provided for all new development or redevelopment, other than single-family lots that are not part of a larger common development, and for subdivisions of one (1) single-family lot into two (2) single-family lots where the runoff coefficient for the site is increased. Detention ponding shall not be required if runoff for the initial and major storm events from the entire tributary basin can be conveyed directly to the major drainage system without adverse impact on upstream, surrounding, or downstream properties and facilities, and if storm water detention to meet water quality mitigation measures is not required. This exemption does not apply to water quality detention requirements outlined in Chapter 3-7 of the Official Municipal Code of the City of Montrose.

- (C) **Design Storms.** Generally, detention ponds shall be designed to provide adequate storage volume for the twenty-five (25) year storm event. See Section 9-6-3 for specific detention pond design criteria. The design release rates shall be restricted such that runoff from the entire parcel and tributary basin to be developed or redeveloped does not exceed the historic runoff for the storm event that occurred prior to the proposed development or redevelopment. Where existing downstream facilities have been designed for a storm with a lesser frequency than required by this document, additional storage may be required to maintain historic release rates during that lower frequency storm event.
- (D) **Maintenance.** The property owner shall be responsible for maintaining stormwater detention facilities.

9-6-3: Design Criteria for Drainage Facilities

- (A) **General.** This section presents the minimum design criteria for the analysis and design of storm drainage facilities. All subdivision, zoning, and other proposed site development submitted for approval under the provisions of the City Municipal Code shall include adequate storm drainage system analysis and appropriate drainage system design. These are minimum standards. All analysis and design shall meet or exceed these Drainage Standards.
- (B) **Drainage Report.** All developments requiring a Final Drainage Report shall submit the report to the City for review and approval with the Land Use or Building Permit Application. This report shall be prepared by an engineer licensed in the State of Colorado in accordance with the latest editions of the Urban Drainage and Flood Control District's Urban Storm Drainage Criteria Manual, Volumes I-III, and shall incorporate the use of Best Management Practices whenever applicable.

Final Drainage Reports must be submitted in the format of the attached outline. The City will not review a Final Drainage Report submitted in any other format.

Two (2) hardcopies and one (1) electronic copy in PDF format of the Final Drainage Report shall be included with each submittal. Subsequent review comments will be redlined in the report and on the plans, and will be summarized in a review letter of comments. This review letter will then be returned to the applicant for revisions. The resubmitted package must be accompanied by the review comment letter prepared by City staff. **The resubmitted report must indicate that it has been revised and all revisions clearly indicated.** When the Final Drainage Report/Plan is deemed acceptable by the City, two (2) additional hardcopies and one (1) electronic copy in PDF format of the Final Drainage Report/Plan shall be submitted.

Any subsequent revisions to the approved Final Drainage Report and/or Plans shall be submitted to the City for review and approval. The approved Drainage Plan sheet

must be included in the construction plans and specifications for the proposed development.

Prior to the issuance of any Building Permits for a proposed multi-family/commercial or subdivision development, the following technical documents shall be submitted for review and approval: a Final Drainage Report and Plan, Grading and Erosion Control Plan, Traffic Impact Study, Stormwater Management Plan, and engineered construction drawings. These documents shall be in accordance with the current Urban Drainage and Flood Control District and City of Montrose Drainage Standards criteria established herein.

No Building Permit applications shall be approved until the aforementioned requirements have been met to the satisfaction of the City of Montrose Engineering Department.

Upon completion of the drainage improvements, the Engineer-of-Record shall provide to the City of Montrose Engineering Department a Drainage Certification Letter, signed and sealed by a professional engineer licensed by the State of Colorado, certifying that the site grading was completed per the approved Grading and Erosion Control Plans, all drainage facilities were constructed and shall function as defined in the approved Final Drainage Report/Plan, and that the site has been accurately surveyed to confirm that the grading and the construction of all drainage facilities was completed in accordance with these documents. The Drainage Certification Letter shall be submitted to the City along with the Construction As-Built Plans for review and approval prior to Final Acceptance by the City.

(C) **Drainage Report Format**

1. TITLE PAGE

- A. Type of report (Final or Flood Hazard)
- B. Project Name
- C. Preparer name, firm, and date
- D. P.E. seal and signature of preparer

2. INTRODUCTION

- A. Site Location
- B. City, County, street grid
- C. Adjacent Development
- D. Site Description
- E. Existing topography, ground cover, use, etc.
- F. Existing drainage facilities, major channels, Flood Hazard Zones and Studies, irrigation ditches
- G. Proposed Project Description
- H. Flood Hazard and Drainage Studies relevant to site

3. HISTORIC DRAINAGE SYSTEM (Discuss the following)

- A. Major Basin
 - (1) Relationship to major basin channel
 - (2) Major basin drainage characteristics, topography, runoff, use, ground cover, etc.
- B. Sub-Basin and Site Drainage
 - (1) Flow rates for the minor (5-year) and major (25-year) storm events
 - (2) Contributing off-site flows
 - (3) Basin and sub-basin areas
 - (4) Existing drainage patterns: channelized or overland flow, volumes, historic points of discharge from site
 - (5) Effect of historic flows upon adjacent properties

4. PROPOSED (DEVELOPED) DRAINAGE SYSTEM (Discuss the following)

- A. Criteria
 - (1) Area of basin and sub-basins
 - (2) Hydrologic method (Rational or CUHP)
 - (3) Design storm frequencies – minor (5-year) and major (25-year)
- B. Runoff
 - (1) Developed flow rates and paths
 - (2) Effect of developed flows upon adjacent properties
 - (3) Runoff reduction practices to minimize directly connected impervious areas (MDCIA), i.e., the use of reduced pavement area, porous pavement, grass buffers and swales, etc.
- C. Flood Control and Water Quality Detention (if required)
 - (1) The structural BMP to be utilized for water quality, i.e., porous pavement and/or landscaping, extended detention basin, etc.
 - (2) State the volumes required and provided:
 - (a) Water Quality Capture Volume (WQCV)
Please note: If the T_c is very short (≤ 10 min) for all design points within the basin, and the development lies adjacent to a major drainageway, the WQCV is the only detention volume required. If these two conditions cannot be met, all detention volume requirements A, B, and C shall apply:
 - (b) Five (5) Year: The full WQCV + the full five (5) year detention volume
 - (c) Twenty-five (25) Year: fifty percent (50%) WQCV + the full twenty-five (25) year detention volume
 - (3) Water surface elevations: twenty-five (25) yr, five (5) yr, and WQCV
 - (4) Release rates: twenty-five (25) yr, five (5) yr, and WQCV, based upon a twenty-four (24) hr minimum and forty (40) hr maximum time to completely drain the pond
 - (5) Describe the methods of release
 - (6) A minimum of one (1) foot of freeboard shall be provided for all stormwater detention facilities and open channel conveyances

- (7) The use of concrete trickle channel(s) to completely drain the pond
- (8) The pond bottom shall be graded at a minimum of two percent (2%) towards the trickle channel
- (9) Excess storm water passage
- (10) Emergency overflow location and design
- (11) Water Quality Outlet Structure and orifice plate design
- (12) The trash rack/orifice plate design shall incorporate a U.S. Filter Stainless Steel Well-Screen, or approved equivalent, using #93 vee wire with 0.139" openings between the wires
- (13) Proximity to major drainageways and the T_c for the site. If the T_c is ≤ 10 minutes and the site is adjacent to a major drainageway, only WQCV will be required.

D. Streets

- (1) Depth and velocity of flow for minor and major storms
- (2) Curb overtopping (not allowed)
- (3) Storm drainage systems

E. Open Channel Flow

- (1) Type of channel lining
- (2) Maximum depth and velocity (Note: A minimum of 1' of freeboard shall be provided for all stormwater detention facilities and open channel conveyances)

F. Storm Sewers and Culverts

- (1) Type, size, class, and percent grades of storm sewer pipe
- (2) Hydraulic characteristics; sub-critical or super-critical. If the flow is super-critical, discuss any hydraulic jump, scouring, or other adverse conditions and their associated remedies

5. CONCLUSIONS

A. Discuss Impact of Improvement

- (1) Benefits – Does the improvement reduce existing drainage problems?
- (2) Solutions to mitigate any adverse impact

B. State Compliance with Applicable Criteria

- (3) Detention ponds
- (4) Depth and velocity of street flows
- (5) Channel flow depth and velocity

C. Do Areas In Flood Hazard Zones Meet Requirements of Flood Plain Section of City of Montrose Municipal Code? (Floodplain Development Permit may be required)

6. APPENDICES

A. Hydrologic and Hydraulic Computations

- (1) Runoff (Historic)
 - (a) Historic off-site + site for as many design points as required

- (b) Separate T_c for each design point (Rational Method)
 - (c) Runoff coefficients and percent impervious values (reference Tables RO-3 and RO-5 of the Runoff Chapter in UDFCD Manual)
 - (d) Existing drainage facilities carrying flows must include flow for entire tributary area for each design point
 - (e) Irrigation ditch flows
- (2) Runoff (Developed)
- (a) Off-site + site for as many design points as required
 - (b) Separate T_c for each design point (Rational Method)
 - (c) Runoff coefficients and percent impervious values (reference Tables RO-3 and RO-5 of the Runoff Chapter in UDFCD Manual)
 - (d) Existing drainage facilities carrying flows must include flow for entire tributary area for each design point
 - (e) Irrigation ditch flows
4. Detention
- (a) Storage volume provided for the twenty-five (25) yr event: 50% WQCV + the full twenty-five (25) yr detention volume. Include calculations.
 - (b) Storage volume provided for the five (5) yr event: The full WQCV + the full five (5) yr detention volume. Include calculations.
 - (c) Release rates for the five (5) and twenty-five (25) yr storm events, and also for the WQCV (based on a minimum drain time of twenty-four (24) hours and a maximum drain time of forty (40) hours to completely drain the pond).
 - (d) Detention Pond Outlet Structures
 - (i) Outlet Structure design. Include all the dimensions and grate information necessary to construct. The design shall provide for the detention pond to completely drain within forty (40) hours.
 - (ii) Use appropriate outlet discharge calculations – include off-site flows and consider head at entrance
 - (iii) Provide excess capacity for grates
 - (iv) WQ orifice plate and trash rack designs
 - (v) Compute outlet velocity and provide energy dissipater of velocity exceeds maximum permissible channel velocity
 - (vi) Check excess storm water passage effects
 - (vii) The trash rack/orifice plate design shall incorporate the use of a U.S. Filter Stainless Steel Well-Screen, or approved equal, using #93 vee wire with 0.139" openings between the wire
 - (e) Size outlet structures for parking areas
 - (f) Depths of ponding anticipated for parking areas and the duration of storage for each storm event
4. Streets
- (a) Compute depths and velocity of flow for minor and major storm events
 - (b) Inlet capacities and depths at inlet

- (c) Meet standards in Table 6-1 and 6-2 of the Streets Chapter in the UDFCD Manual
- 5. Open Channel Flow
 - (a) Roughness coefficient
 - (b) Trickle channel
 - (c) Depth and velocity for minor and major storm events
 - (d) Channel protection
 - (e) Minimum freeboard
 - (f) Pipe profile(s), including hydraulic grade line(s)
- 6. Hydraulic Structures – pipes, culverts, inlets, etc.
 - (a) Culvert capacity using standard nomographs of the Inlets and Culverts Chapter in the UDFCD Manual
 - (b) Storm sewer capacity at each design section
 - (c) Inlet capacity
 - (d) Flow depth or headwater depth at inlet
 - (e) Drop structures
 - (e) Weirs
 - (f) Streets, gutters, and cross-pans
 - (g) Minimum and maximum velocities
 - (h) Energy dissipaters
 - (i) Hydraulic grade lines
 - (j) Define any areas of super-critical flow. Any proposed super-critical flows through conduit shall require a complete hydraulic jump analysis with associated remedies
- B. Drainage Plans (include both Historic and Developed Drainage Plans)
 - 1. Site Location Map
 - (a) Major drainage basin
 - (b) Sub-basin boundaries and acreage
 - (c) Floodway and floodplain area
 - (d) Site location
 - 2. Site (Developed) Drainage Plan – Show the following:
 - (a) Existing and proposed 1' contours based on the current City datum. Existing and proposed contours are to extend a minimum of fifty (50) feet beyond the property line.
 - (b) Outlet structure and well-screen/trash rack details
 - (c) To-scale cross-sections across each property line not adjacent to a public roadway. The number, location, and lengths of the cross-sections, as well as the information contained therein, shall be sufficient to accurately convey the intent of the proposed drainage design. The cross-sections should include any measures utilized to protect adjoining properties from potential negative impact (e.g., bank stabilization, drainage structures, walls, etc.).
 - (d) Location and elevation of benchmarks referenced to City
 - (e) Existing and proposed property lines
 - (f) Existing and proposed drainage easements

(g) Street names and grades

(D) **Pipe Sizing.** Minimum circular pipe inside diameter shall be as follows:

- Main storm sewer line 15"
- Catch basin lateral 12"
- Driveway or other culvert 12"
- Equivalent sized arch pipe may be used upon written request.

(E) **Manholes.** Maximum allowable manhole spacing shall be as follows:

Horizontal pipe dimension (inches)	Maximum distance Between Manholes
15 to 30	400'
36 to 60	500'
Larger than 60	750'

Manholes shall be placed wherever there is a change in size, direction, elevation or slope where there is a junction of two (2) or more systems or laterals, or where the maximum distance above is reached.

Interior diameter of all storm sewer manholes shall be as follows:

Horizontal pipe dimension (inches)	Minimum barrel diameter (feet)
15 to 18	4
21 to 48	5
Larger than 48	6

The City may require a larger barrel sizing should conditions warrant.

(F) **Clearance Distances.** The minimum clearance between storm sewer and water main, either above or below, shall be eighteen (18) inches. In all cases, suitable backfill and/or other protection as deemed necessary by the City Engineer shall be provided to prohibit settling or failure of either pipe system.

The minimum clearance between storm sewer and sanitary sewer, either above or below, shall also be eighteen (18) inches. However, when a sanitary sewer main lies above a storm sewer, or within eighteen inches below, the sanitary sewer shall have an impervious encasement or be constructed of structural sewer pipe for a minimum of ten feet on each side of where the storm sewer crosses.

(G) **Head Wall Requirement.** A concrete head wall at least eight inches thick shall be required at all transitions between culverts and ditches. Alternate means of protecting culvert ends from vehicle damage and channeling runoff into culverts will be reviewed on a case-by-case basis by the City Engineer.

9-6-4: Construction Materials

- (A) **General.** Construction of storm water-related public improvements shall be in compliance with these Standards. All pipe and structures constructed within City of Montrose rights-of-way shall be of adequate strength to support trench and AASHTO HS-20 highway loadings.
- (B) **Piping.** The type of pipe and structures to be installed shall comply with these Standards, and shall be based upon applicable design flows, site conditions, and maintenance requirements. Acceptable type of pipe conforming to these standards are the following:
- Reinforced Concrete Pipe (RCP)
 - Polyvinyl Chloride (PVC)
 - Corrugated High Density Polyethylene or ADS

9-6-5: Erosion Control Plans

- (A) **General.** All construction activity within the City must address water quality and stormwater pollution prevention.
- (1) For construction sites with land disturbance areas one (1) acre or larger, or sites that disturb less than one (1) acre but are part of a larger common plan of development, the applicant must obtain a CDPS General Permit (NPDES Program) for Stormwater Discharges Associated with Construction Activity. The application for the above General Permit must be submitted at least ten (10) days prior to the start of the project. A Stormwater Management Plan (SWMP) must be prepared prior to submittal and Best Management Practices in place before construction begins. The SWMP shall be available for review at the Pre-Construction meeting. [Please refer to the Colorado Department of Public Health and Environment (CDPHE) website, <http://www.cdphe.state.co.us/wq/PermitsUnit>, for an index to permit documents available on the internet.] The remainder of this section addresses all other construction activity not regulated by the CDPHE. The City's construction site oversight program applies to sites with land disturbance areas one (1) acre or larger and sites that disturb less than one (1) acre but are part of a larger common plan of development.
- (2) All other construction activities must submit an Erosion Control Plan with their site application. An erosion control plan consisting of a written narrative and a site plan map must be submitted to the City Engineer for review and approval. The narrative report must contain a project description, existing site conditions, and the name of the professional preparing the report.

- (B) **Performance Objectives.** The primary performance objectives of an erosion control plan include:
- (1) Conduct all land disturbance activities in a manner that effectively reduces accelerated soil erosion and reduces sediment transport and offsite deposition.
 - (2) Design and construct all temporary or permanent facilities for the conveyance of water around, through, or from the disturbed area to limit the flow of water to non-erosive velocities.
 - (3) Remove sediment caused by accelerated soil erosion from surface runoff water before it leaves the site.
 - (4) Stabilize the areas of land disturbance with permanent vegetative cover or stormwater quality control measures.

Timing of implementing measures is one of the most critical factors involved in the control of erosion from developing and redeveloping sites.

- (C) **Erosion Control Measures:** There are two (2) types of water erosion control measures; those that prevent initial movement (cover factor, non-structural measures) and those that reduce sediment from moving water (practice factor, structural measures). Erosion control measures must be properly designed, installed and maintained if they are to accomplish their intended purpose and effectiveness.

- (1) **Non-structural Erosion Control Measures.** Non-structural erosion control measures provide the best means of managing sediment from disturbed lands by preventing soil movement. Such measures dissipate the kinetic energy of rainfall by placing cover (e.g., straw, burlap, mulch, etc.) over disturbed areas to prevent initial sediment transport.

One of the more effective practices is the use of vegetation. Vegetative measures can provide temporary cover to help control erosion during construction and permanent cover to stabilize a site after construction is completed. The measures include the use of sod, planting of temporary cover crops and establishing permanent cover crops.

When establishing a permanent dry land grass cover, two (2) or more different seed types must be used. Typical application is by hydroseeding. It is important to establish vegetative cover as soon as possible in order to reduce erosion. An approved seed mix design shall be used to reestablish vegetative cover in the City right-of-way. Hydroseeding is essential in establishing good stands of vegetation on moderate to steep slopes, and on other areas where it is difficult to establish vegetation.

- (2) **Structural Erosion Control Measures.** Once erosion commences due to water, structural measures have to be utilized to reduce sediment transport from disturbed lands. Below are some of the more practical and cost effective

measures used in implementing an erosion control plan. These are some of the common structural Best Management Practices for controlling erosion.

- Sediment trap basins
- Diversions
- Terraces
- Berms
- Surface roughing
- Filter berms
- Sediment barriers
- Straw bales
- Filtered inlets
- Contour wind row

Please refer to the Urban Drainage and Flood Control District's *Urban Storm Drainage Criteria* manual, *Volume 3, Construction BMPs* document for generally accepted guidance on BMP implementation for construction activity. You may access the above document for free at <http://www.udfcd.org>.

(D) **Erosion Control Plans.** Erosion Control Plans shall address the following:

- (1) Phased structural and non-structural Best Management Practices to be employed are identified and located on a site map
- (2) Properties and waterways downstream from development sites have been adequately protected from erosion due to an increase in the volume, velocity, and peak flow rate of stormwater runoff from the proposed site
- (3) Material stockpiles shall be set back a minimum of fifty (50) feet from down gradient features such as drainage ways, ponds, streams, or irrigation channel banks
- (4) Adequate stabilization provided to prevent erosion of outlets, slopes, adjacent stream channels, and downstream reaches provided at all conveyance system outlets
- (5) Dewatering devices shall discharge into a sediment trap or sediment pond
- (6) If a permanent stormwater detention facility will be used as a temporary sediment pond, describe how and when the sediment will be removed
- (7) Vehicle tracking control has been provided at all vehicle entrances or access points
- (8) Sediment protection has been provided for all drop inlets and catch basins
- (9) Concrete washout areas are provided
- (10) Erosion control seeding shall not be used in areas subject to wear by construction traffic
- (11) Permanent Best Management Practices providing water quality consideration are identified along with routine maintenance schedules
- (12) Removal of temporary BMPs is identified

9-6-6: Final Inspection and Acceptance

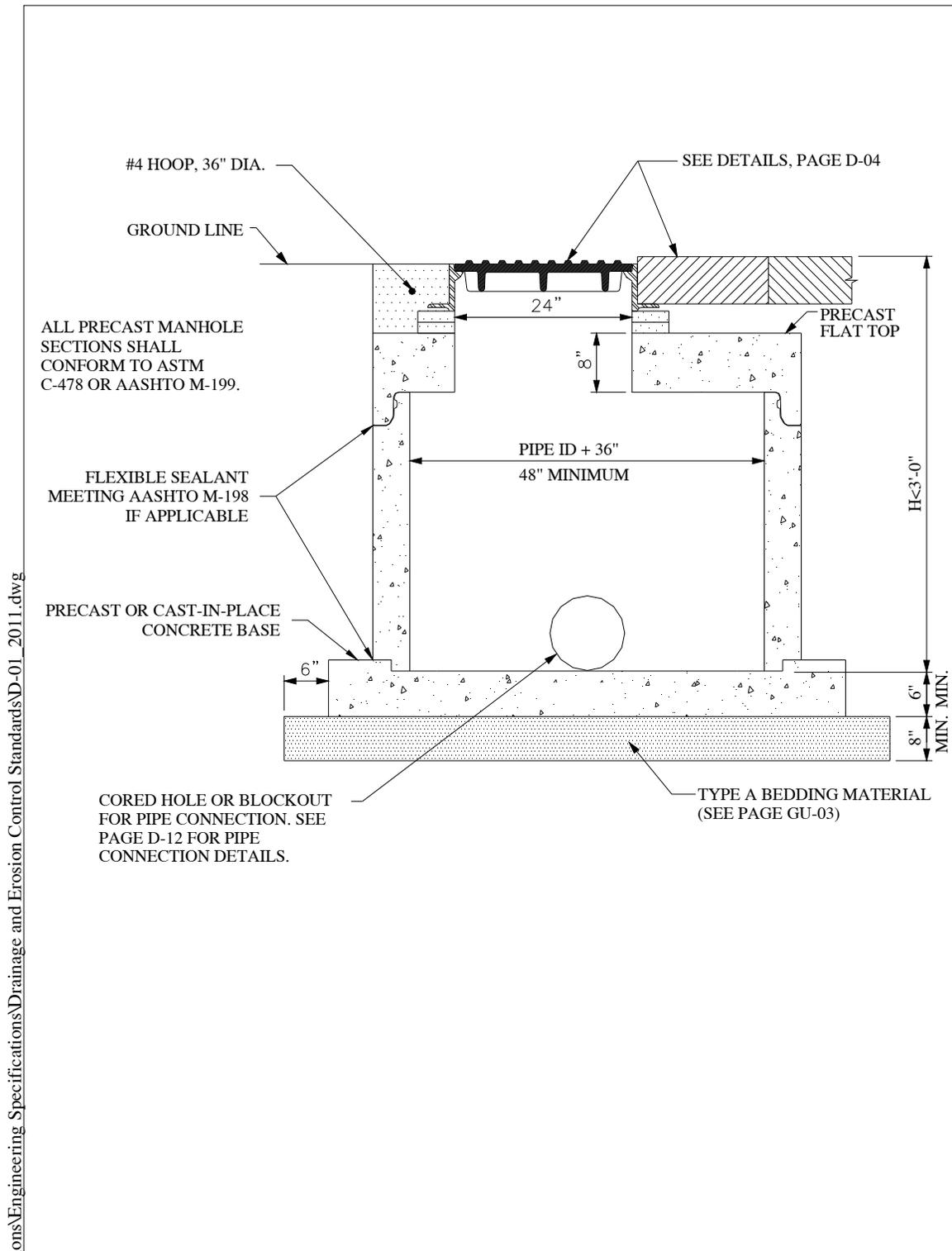
- (A) **General.** City acceptance of all pipelines and “As-Built” drawings is required prior to paving.
- (B) **Contractor’s Warranty.** The Contractor shall guarantee his work to be free from defects in materials and workmanship for a period of not less than two (2) years, the initial Acceptance Period. At the end of the two (2) year initial Acceptance period, and at the request of the Contractor, the City Engineer and the Contractor shall jointly inspect all dedicated public improvements. The City Engineer may request tests and inspections as deemed necessary, and consistent with these specifications. Any defects in the system resulting from defective materials, poor workmanship or any other cause attributable to the contractors work shall be corrected by the contractor, to the satisfaction of the City Engineer at the Contractor’s expense.
- (C) **As-Built Drawings.** As-Built construction drawings shall be submitted on twenty-four by thirty-six inch (24" x 36") paper and as an electronic AutoCAD file in accordance with the Montrose submittal standards. A Professional Engineer currently licensed by the State of Colorado shall certify all As-Built drawings. Storm drain line As-built’s shall also identify size and material type.

9-6-7: Storm Water System Details

D-01	Standard Shallow Manhole
D-02	Standard Manhole
D-03	Standard Cast Iron Manhole Ring and Cover
D-04	Approved Storm Drain Inlet Placard
D-05	Single Storm Drain Inlet with Drive Over Curb Opening
D-06	Single Storm Drain Inlet with Vertical Curb Opening
D-07	Double Storm Drain Inlet with Vertical Curb Opening
D-08	Triple Storm Drain Inlet with Vertical Curb Opening
D-09	Large Area Inlet
D-10	Small Area Inlet
D-11	Connection to Existing Pipe, Manhole, or Inlet Box
D-12	Drain Through for Sidewalk Crossing
D-13	Frame and Cover for Sidewalk Drain Through

9-6-8: Storm Water Management Details

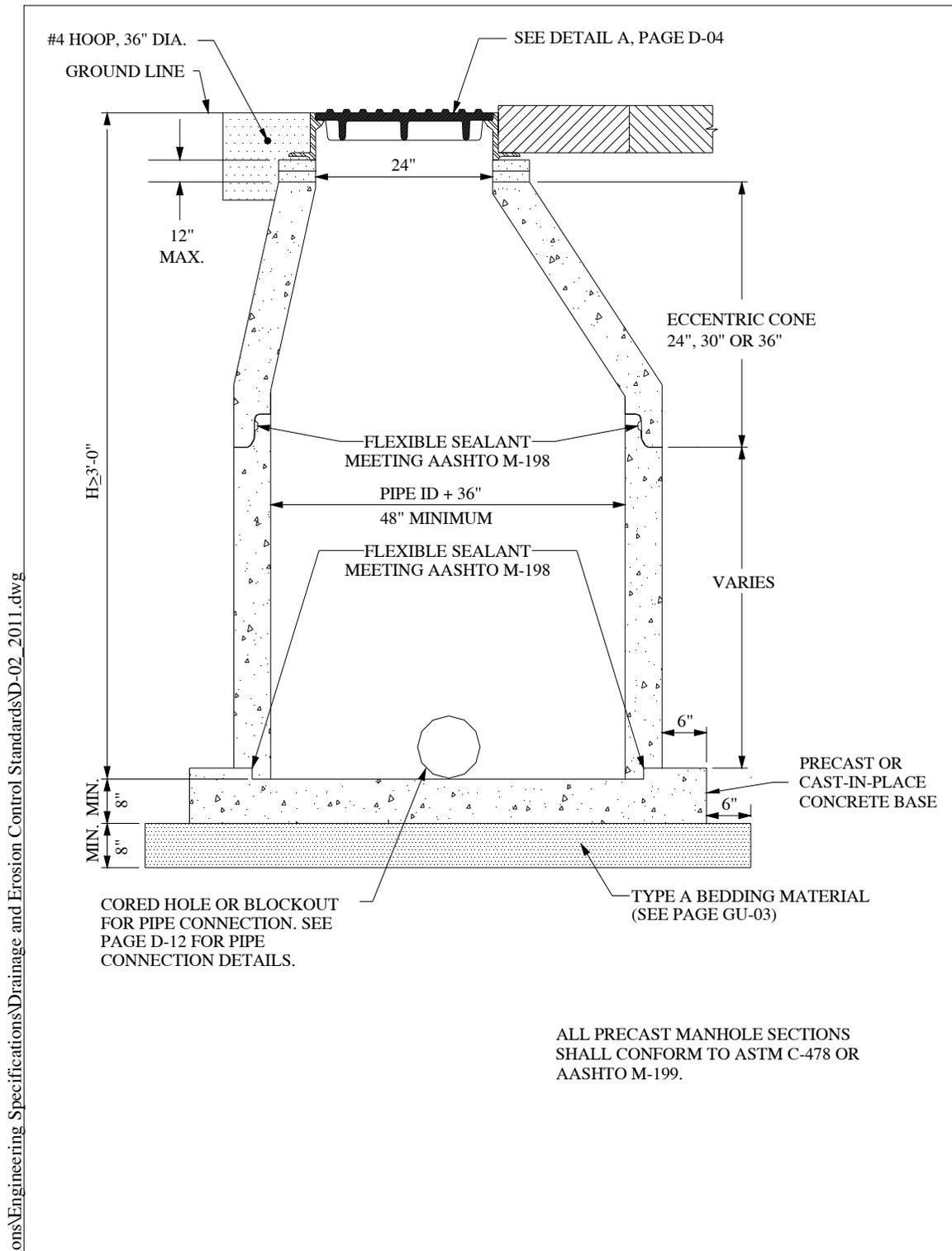
SWMM-01	Sediment Pond and Outlet Structure
SWMM-01A	Sediment Basin Installation Notes
SWMM-01B	Sediment Basin Maintenance Notes
SWMM-02	Inlet Protection
SWMM-02A	Inlet Protection Notes
SWMM-03	Silt Fence
SWMM-03A	Silt Fence Notes
SWMM-04	Straw Bale Barrier Detail
SWMM-04A	Straw Bale Notes
SWMM-05	Curb Inlet Gravel Filter
SWMM-05A	Rock Sock Maintenance Notes
SWMM-06	Surface Roughening
SWMM-06A	Surface Roughening Notes
SWMM-07	Aggregate Vehicle Tracking Control
SWMM-07A	Aggregate Vehicle Tracking Control with Washrack
SWMM-07B	Stabilized Construction Ent./Exit Installation Notes
SWMM-07C	Stabilized Construction Entrance/Exit Notes
SWMM-08	Concrete Washout Area
SWMM-08A	Concrete Washout Area Maintenance Notes
SWMM-09	Stockpile Protection Plan
SWMM-09A	Stockpile protection Maintenance Notes
SWMM-09B	Materials Staging in Roadways
SWMM-09C	Materials Staging in Roadways Maintenance Notes
SWMM-10	Sediment Control Log
SWMM-10A	Sediment Control Logs to Control Slope Length
SWMM-10B	Sediment Control Logs Notes



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STANDARD SHALLOW MANHOLE

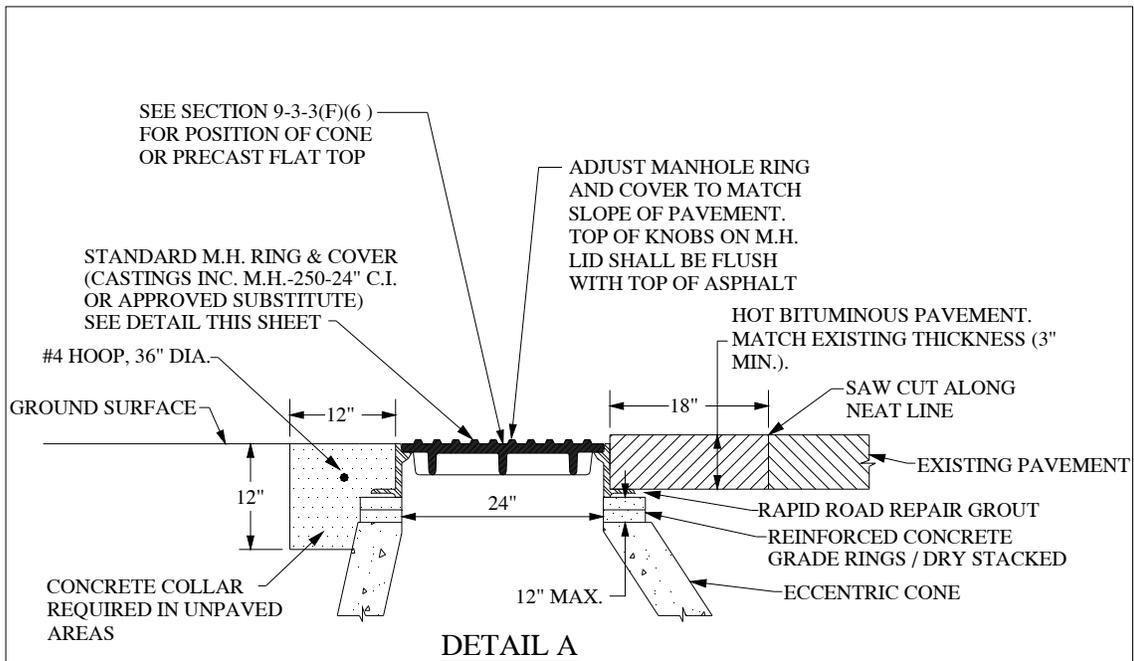
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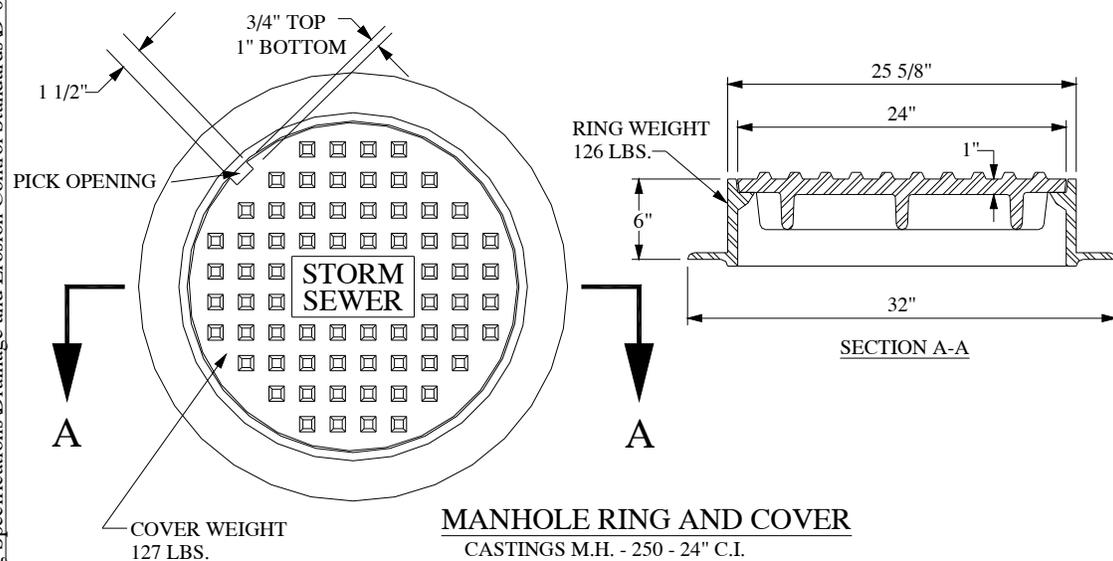
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STANDARD MANHOLE

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM DRAIN DETAILS</p>	<p>APPROVED: <u>LRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE D-02</p>
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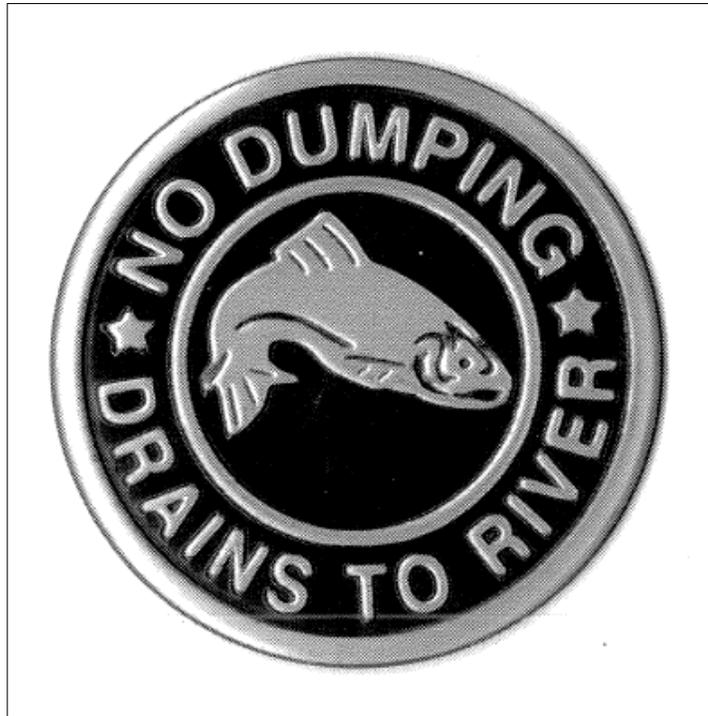
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STANDARD CAST IRON MANHOLE RING AND COVER

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM DRAIN DETAILS</p>	<p>APPROVED: <u>LRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE D-03</p>
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PLACARDS TO BE ALMETEK INDUSTRIES SDS4R0101BLNAX
OR APPROVED EQUIVALENT

PLACARD TO BE PLACED ON EACH
STORM SEWER OPENING INSTALLED
WITHIN THE SYSTEM SERVED BY THE
CITY OF MONTROSE

APPROVED STORM DRAIN INLET PLACARD

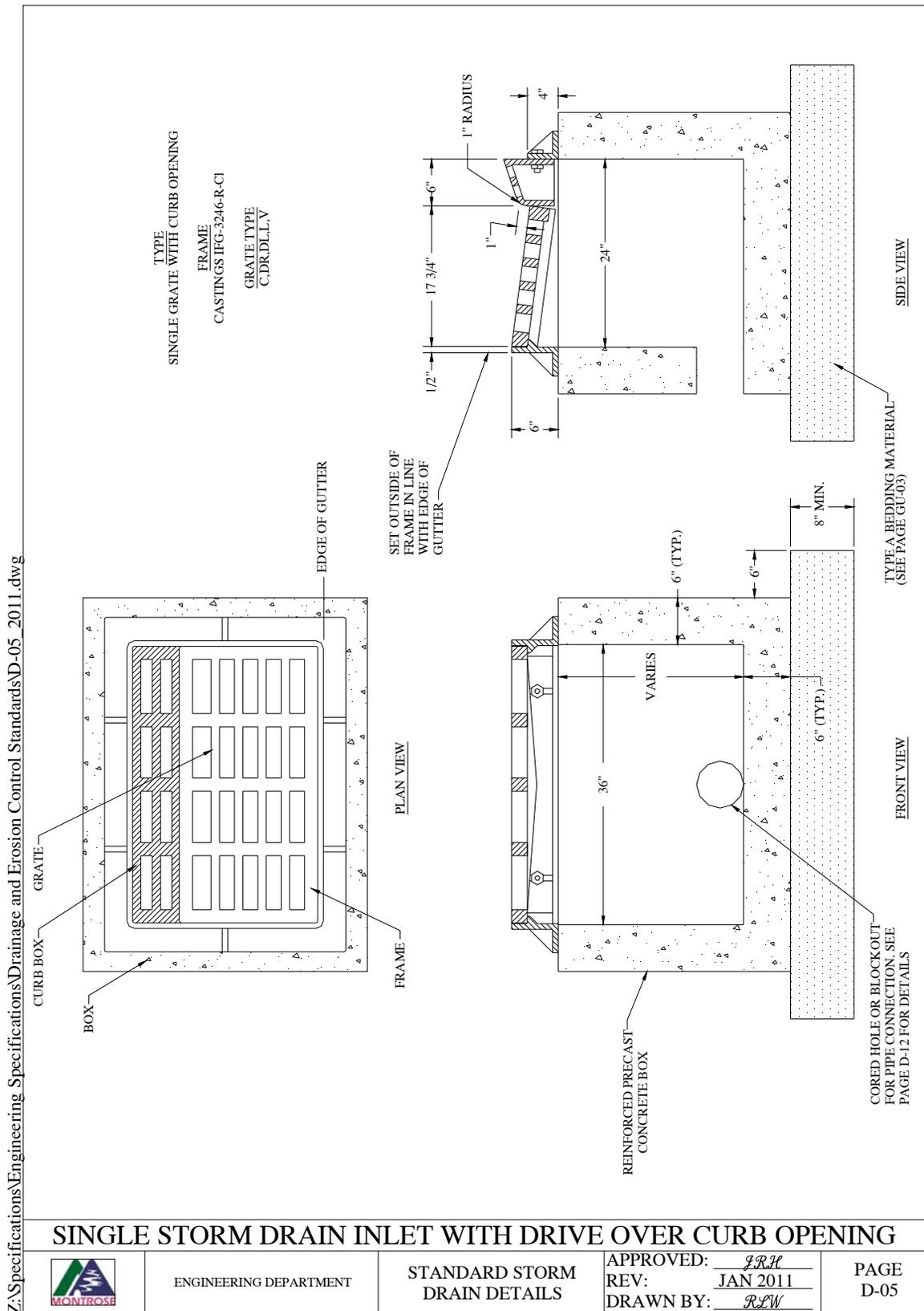


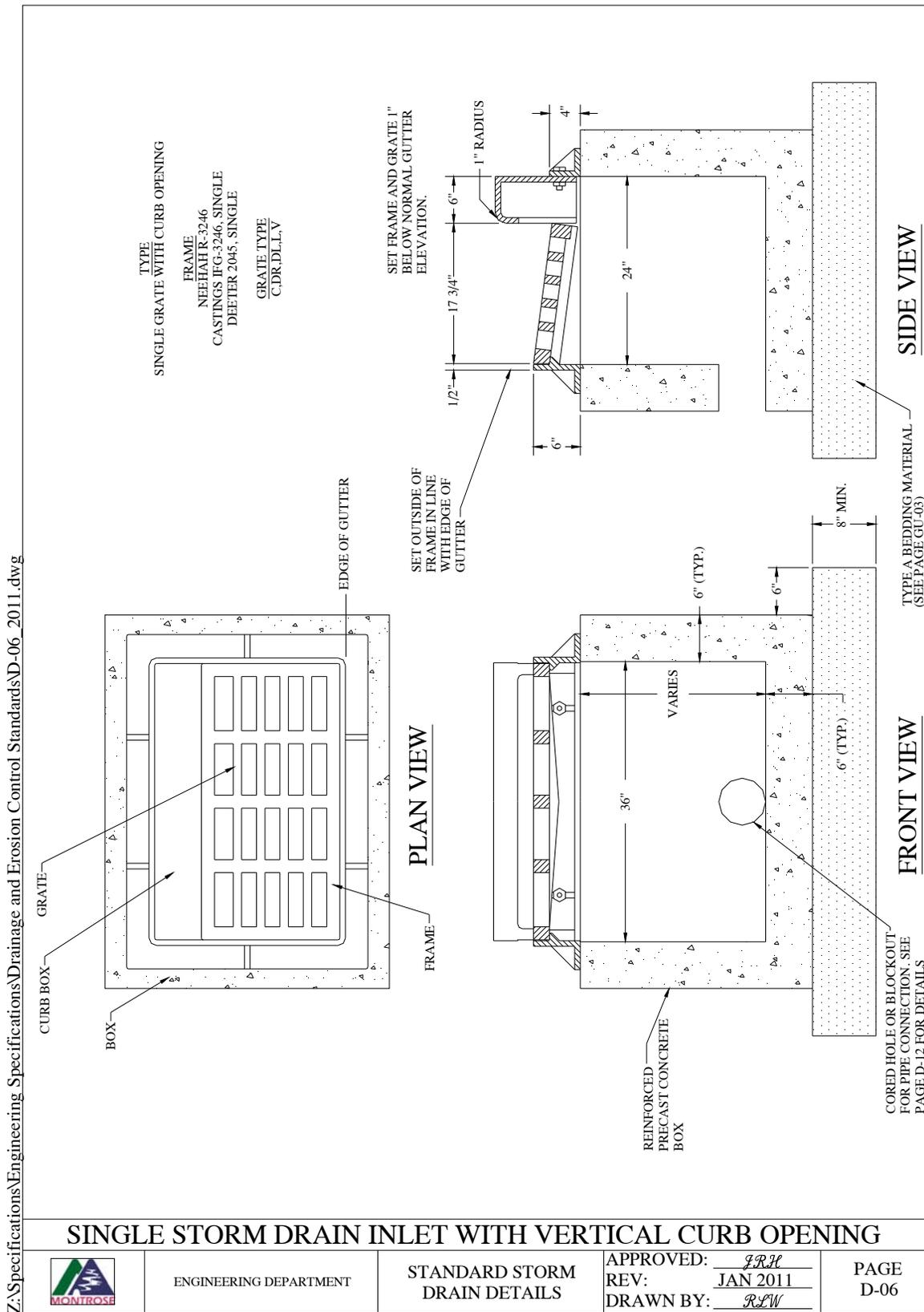
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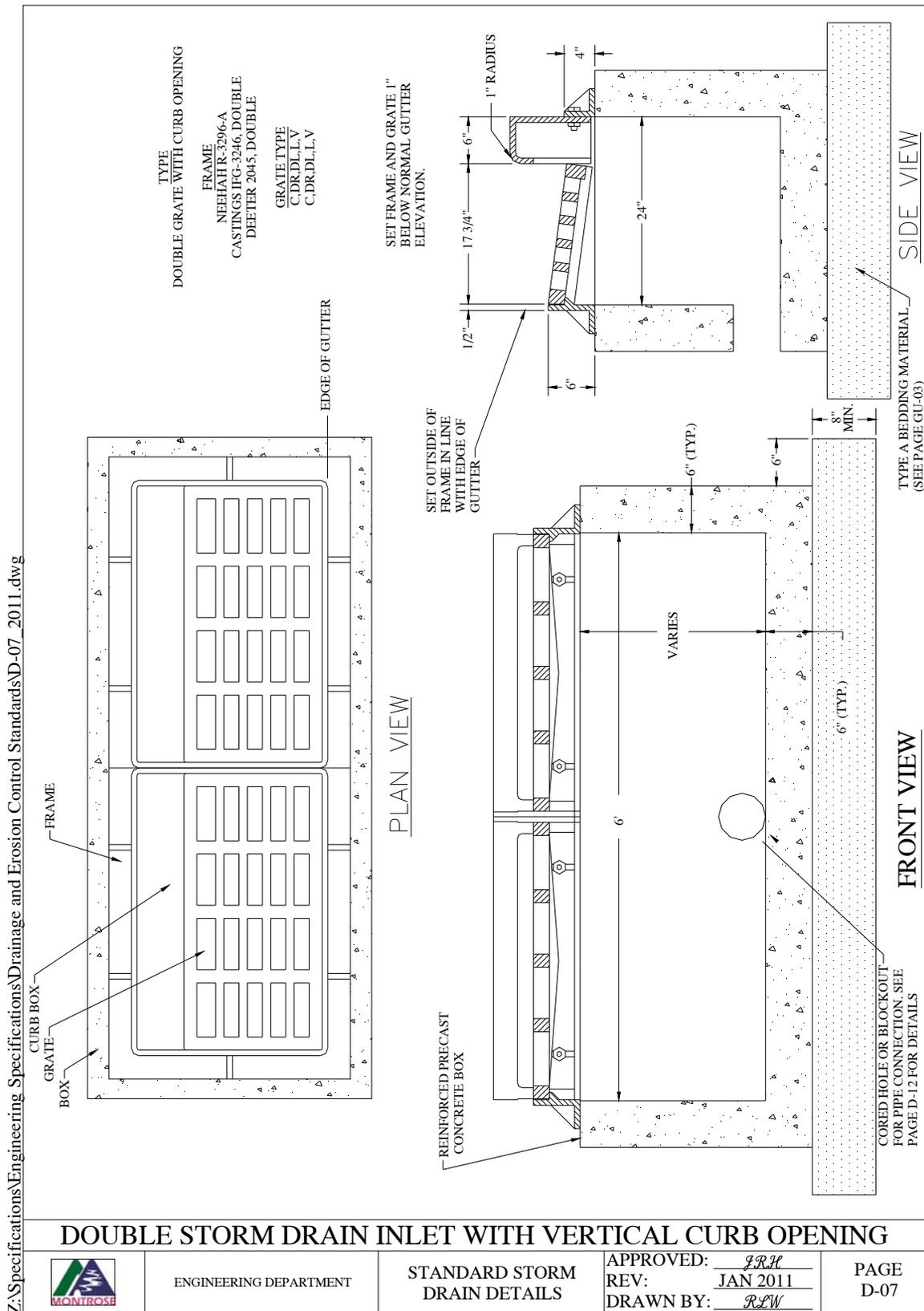
STANDARD STORM
DRAIN DETAILS

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PAGE
D-04







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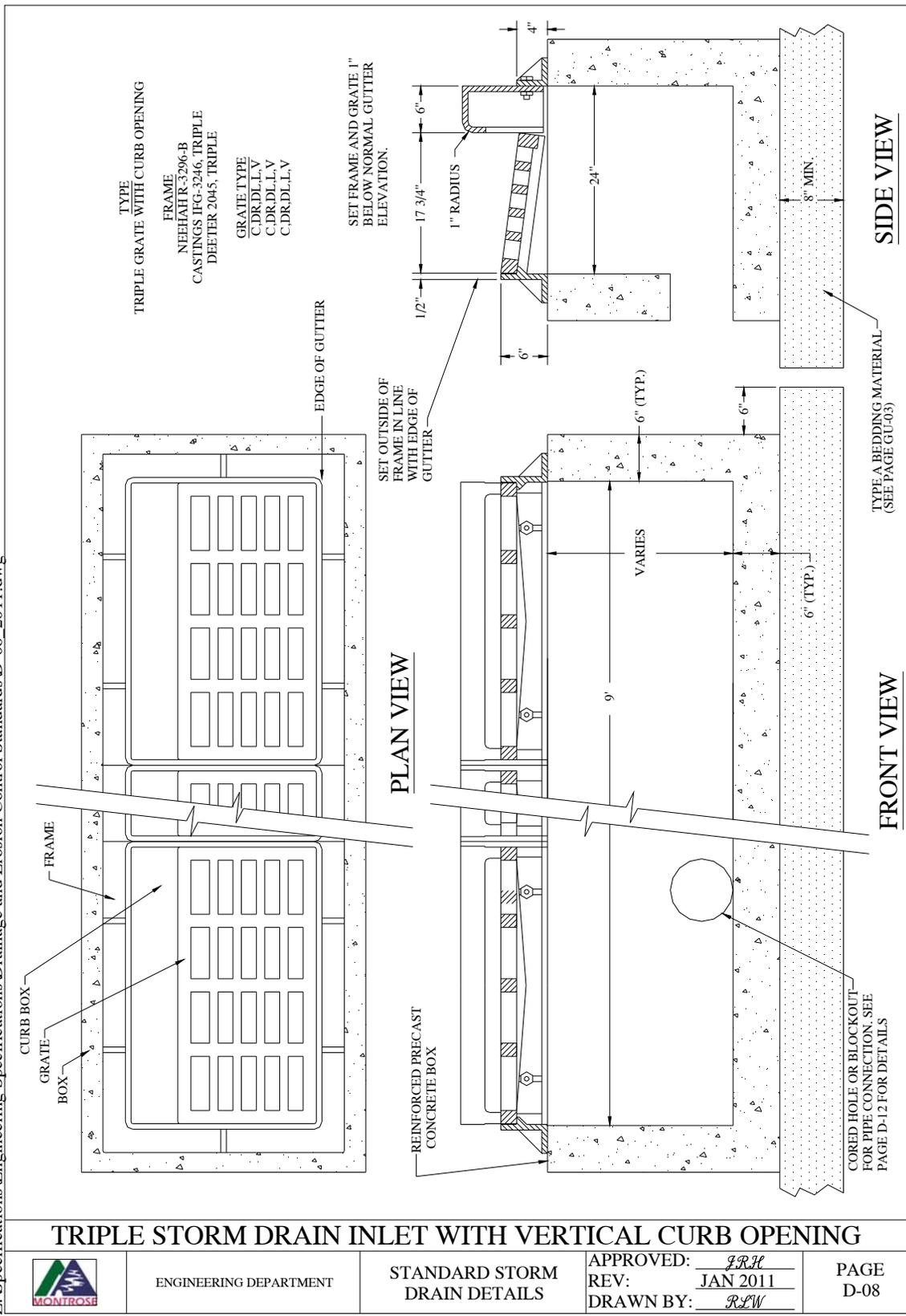
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PAGE D-07

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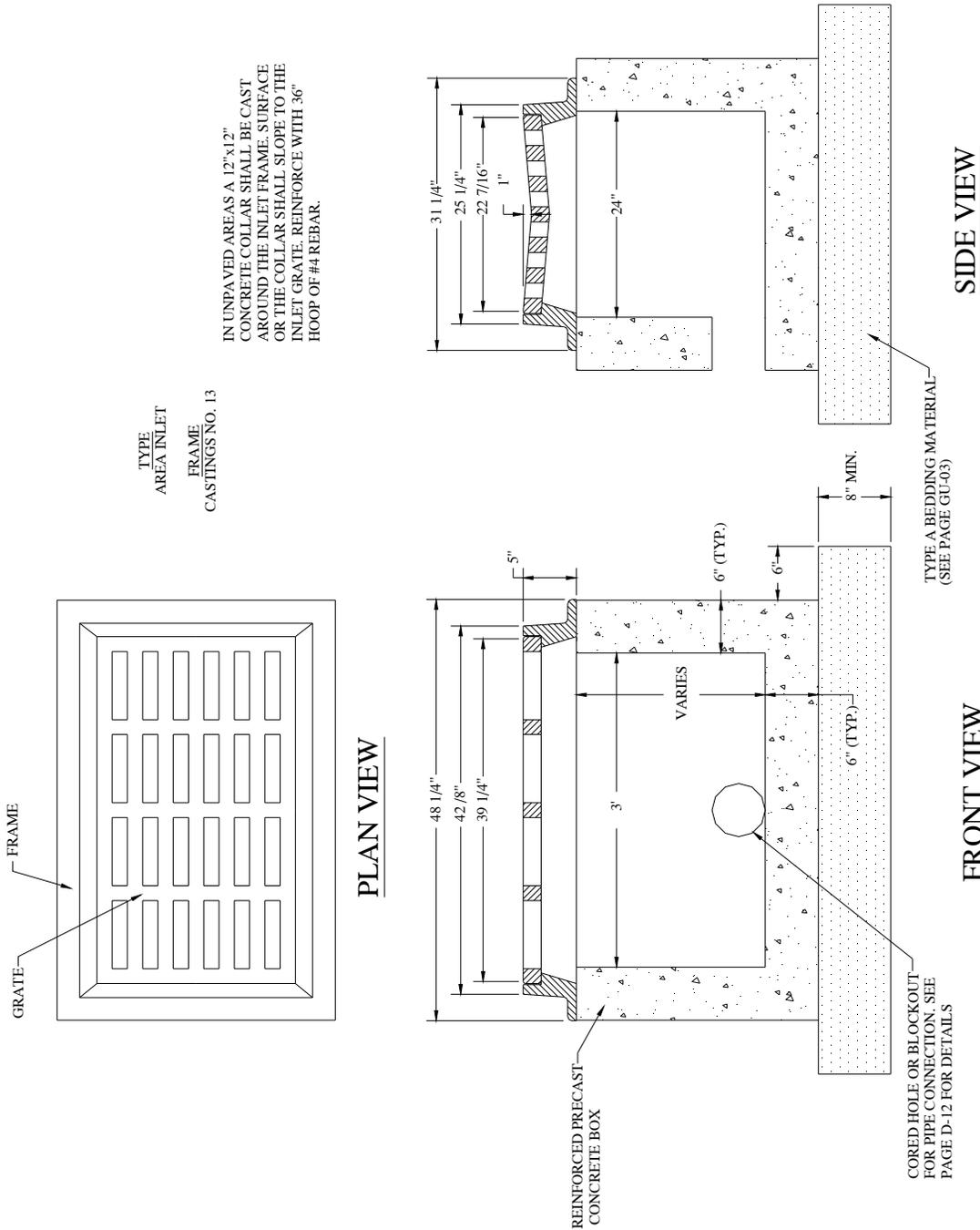
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PAGE D-08

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LARGE AREA INLET

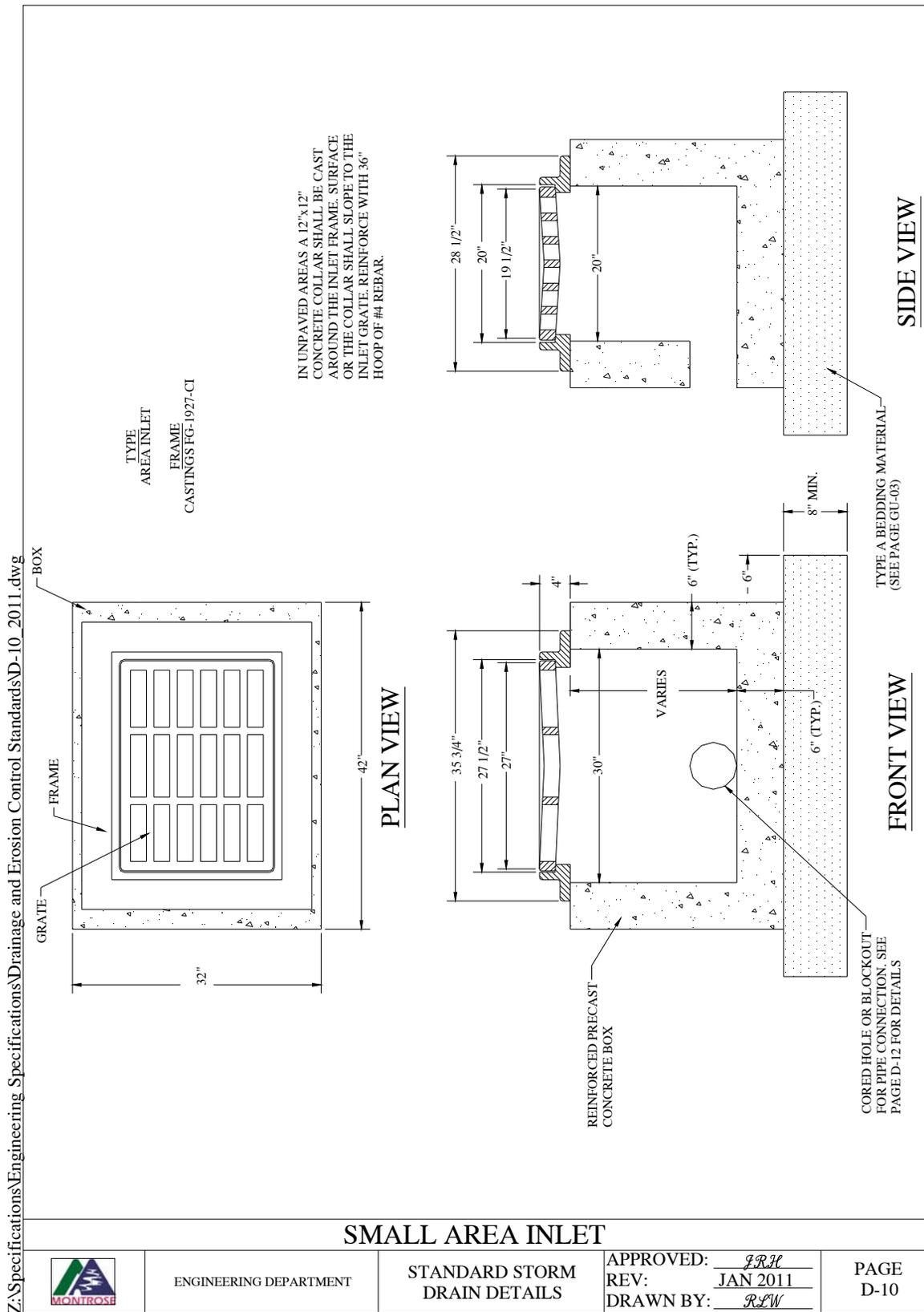


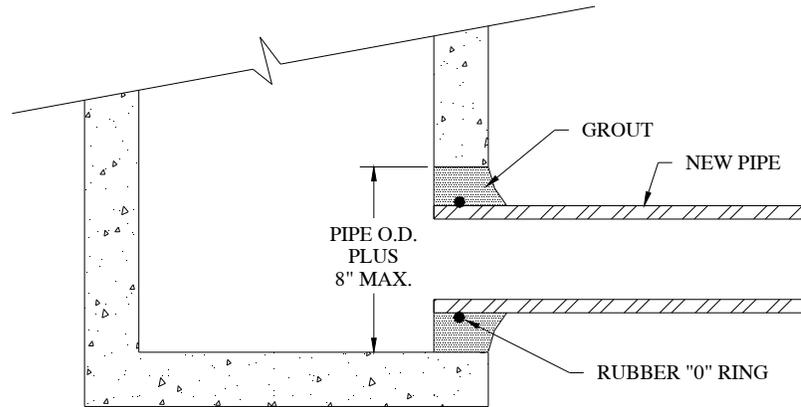
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DRAIN DETAILS

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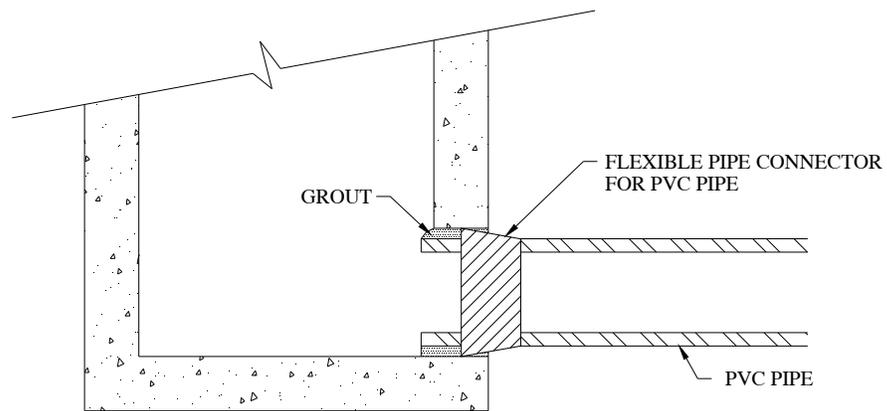
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D-09





GROUTED PIPE CONNECTION
(FOR ALL PIPE OTHER THAN PVC)

GROUT FOR PIPE CONNECTIONS SHALL BE ALL-CRETE (5 OR 20 MINUTE SET) MANUFACTURED BY FOSROC INC. OR AN APPROVED SUBSTITUTE.



PVC PIPE CONNECTION

CONNECTION TO EXISTING PIPE, MANHOLE OR INLET BOX

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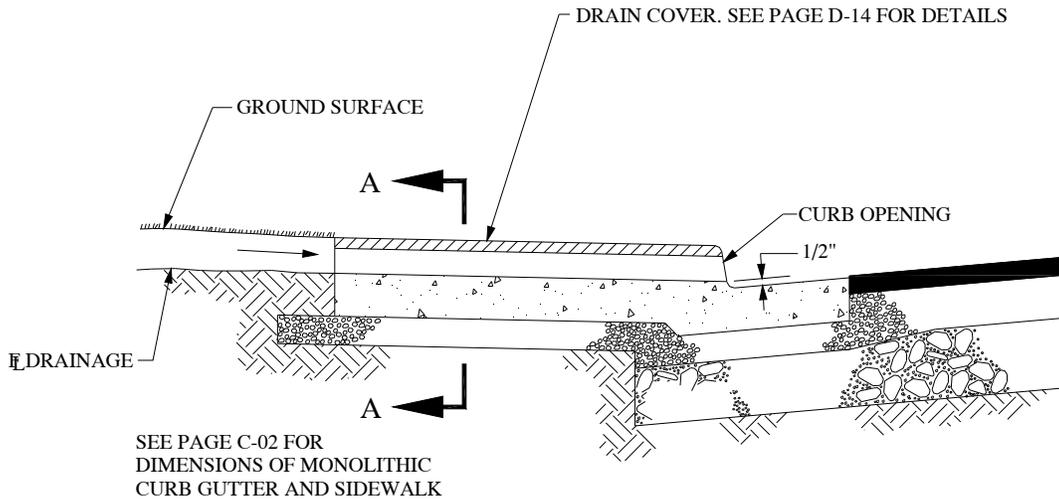
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STANDARD STORM
DRAIN DETAILS

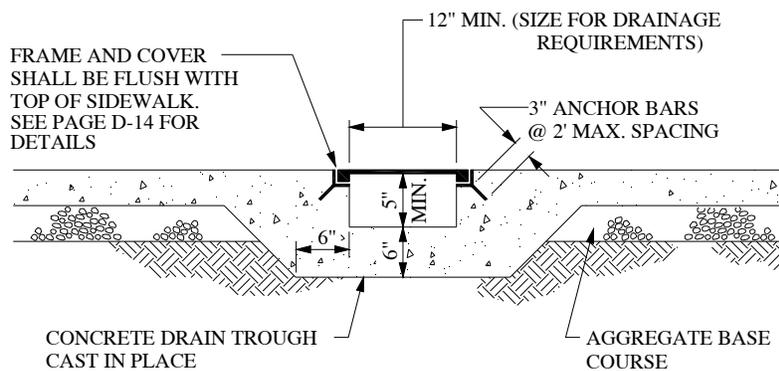
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PAGE
D-11

NOTE: PREMANUFACTURED DRAIN TROUGHS MAY BE SUBSTITUTED FOR THIS DETAIL WHERE APPROVED BY THE CITY.



NOTE: FRAME AND COVER SHALL BE FABRICATED OF SAME MATERIAL (STEEL OR ALUMINUM). ALL STEEL SURFACES SHALL BE GALVANIZED PER AASHTO M-111.



SECTION A-A

DRAIN THROUGH FOR SIDEWALK CROSSING

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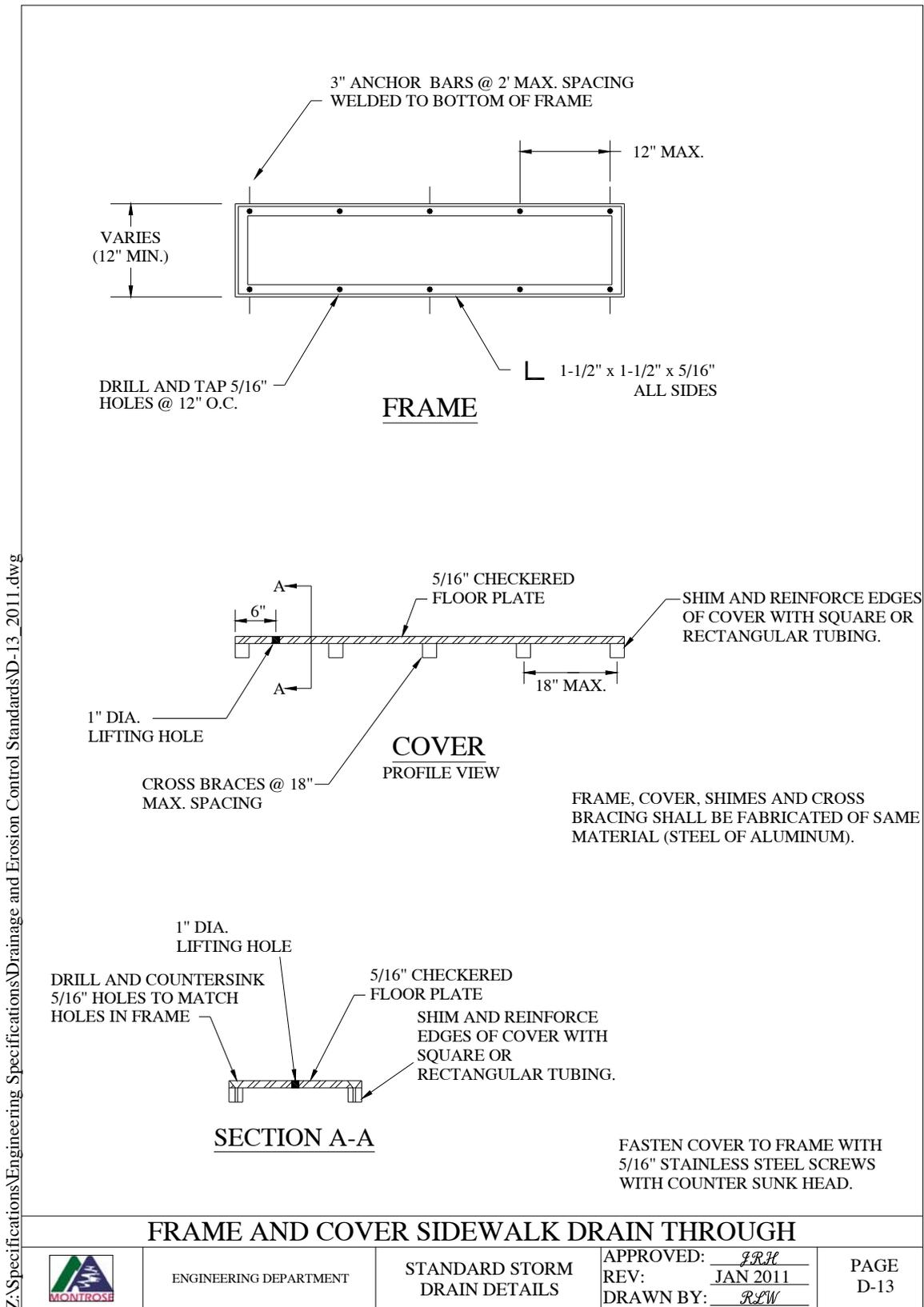


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STANDARD STORM
DRAIN DETAILS

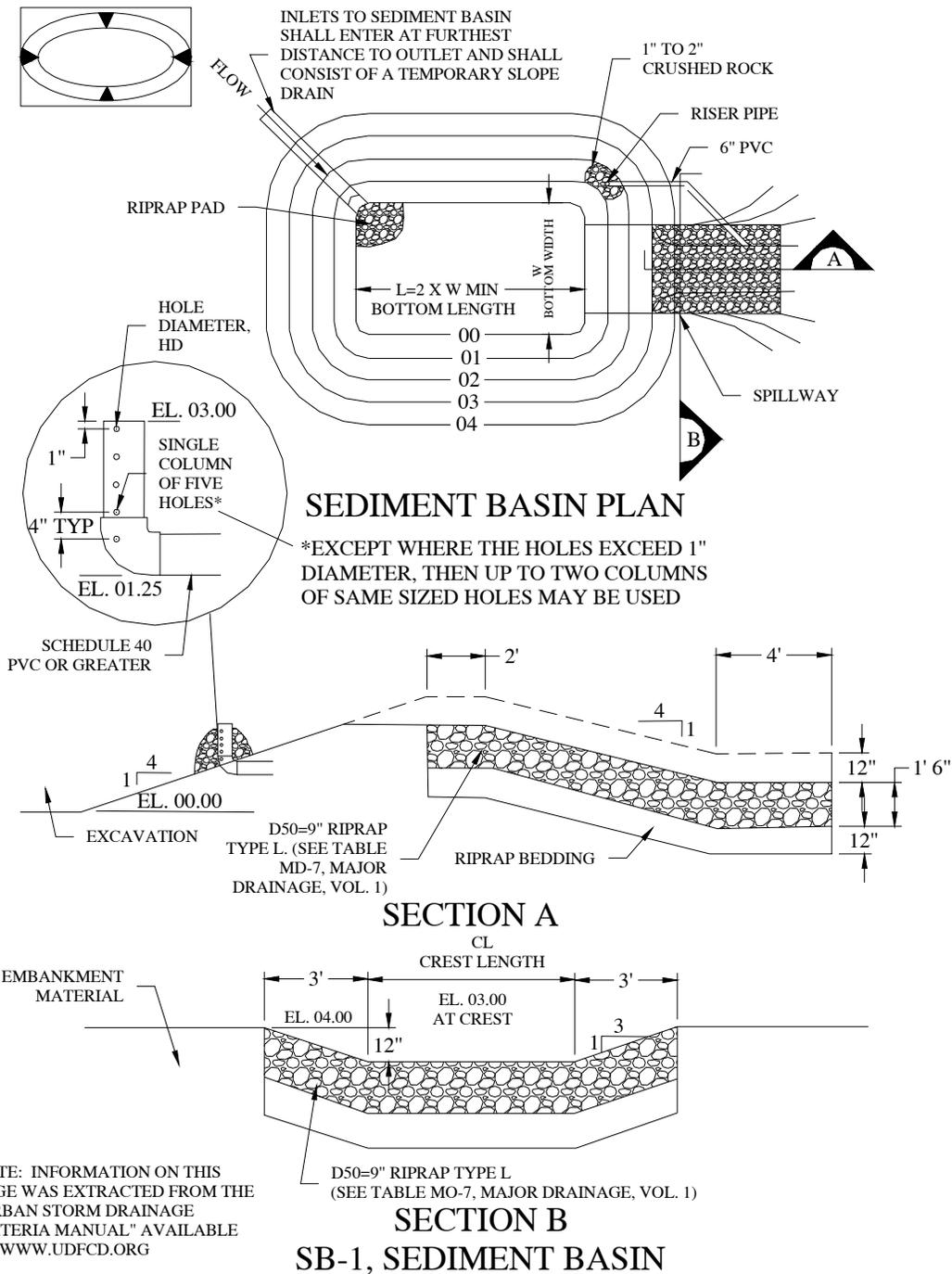
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PAGE
D-12



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SEDIMENT POND AND OUTLET STRUCTURE



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STANDARD STORM
SEWER DETAILS

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PAGE
SWMM-01

Z:\Specifications\Engineering Specifications\Drainage and Erosion Control Standards\SWMM-01A_2011.dwg

TABLE SB-1, SIZING INFORMATION FOR STANDARD SEDIMENT BASIN			
UPSTREAM DRAINAGE AREA (ROUNDED TO NEAREST ACRE). (AC)	BASIN BOTTOM WIDTH (W). (FT)	SPILLWAY CREST LENGTH (CL). (FT)	HOLE DIAMETER (HD). (IN)
1	12 ½	2	9/32
2	21	3	13/16
3	28	5	½
4	33 ½	6	9/16
5	38 ½	8	21/32
6	43	9	21/32
7	47 ¼	11	25/32
8	51	12	27/32
9	55	13	7/8
10	58 ¼	15	15/16
11	61	16	31/32
12	64	18	1
13	67 ½	19	1 1/16
14	70 ½	21	1 1/8
15	73 ¼	22	1 3/16

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

SEDIMENT BASIN INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION OF SEDIMENT BASIN.
-TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
-FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD. FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.
- FOR STANDARD BASIN, BOTTOM DIMENSIONS MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON BASINS AS A STORMWATER CONTROL.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
- PIPE SCH 40 OR GREATER SHALL BE USED.
- THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SEDIMENT BASIN INSTALLATION NOTES

	ENGINEERING DEPARTMENT	STANDARD STORM SEWER DETAILS	APPROVED: <u>LRH</u>	PAGE SWMM-01A
			REV: <u>JAN 2011</u>	
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SEDIMENT BASIN MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS. TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).
5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

SEDIMENT BASIN MAINTENANCE NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-01B</p>
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IP

IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.

IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.

INLET PROTECTION



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SEWER DETAILS

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PAGE
SWMM-02

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GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 - LOCATION OF INLET PROTECTION.
 - TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

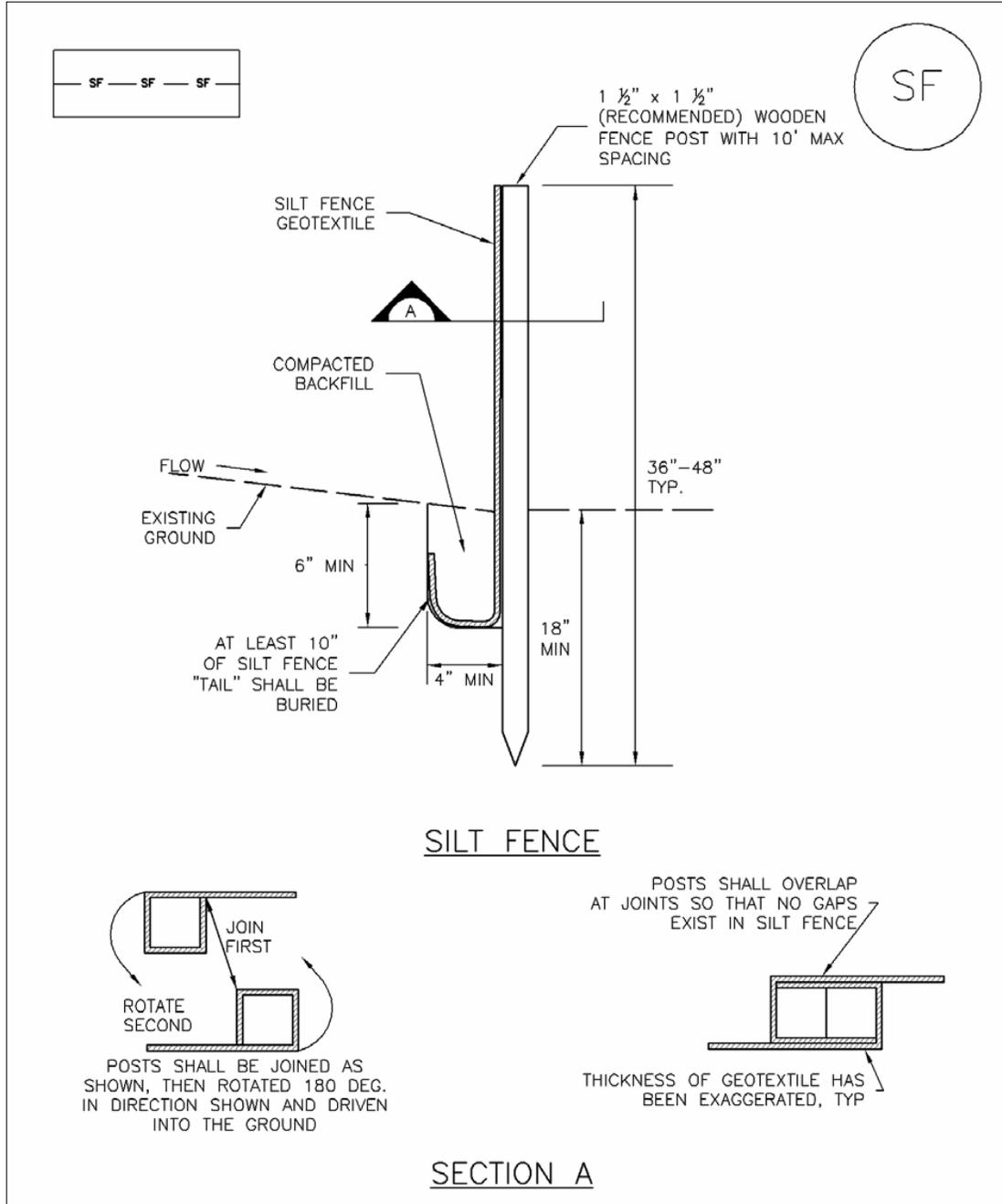
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.
5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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INLET PROTECTION NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>RLW</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-2A</p>
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SILT FENCE



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STANDARD STORM SEWER DETAILS

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PAGE SWMM-03

Z:\Specifications\Engineering Specifications\Drainage and Erosion Control Standards\SWMM-03A_2011.dwg

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

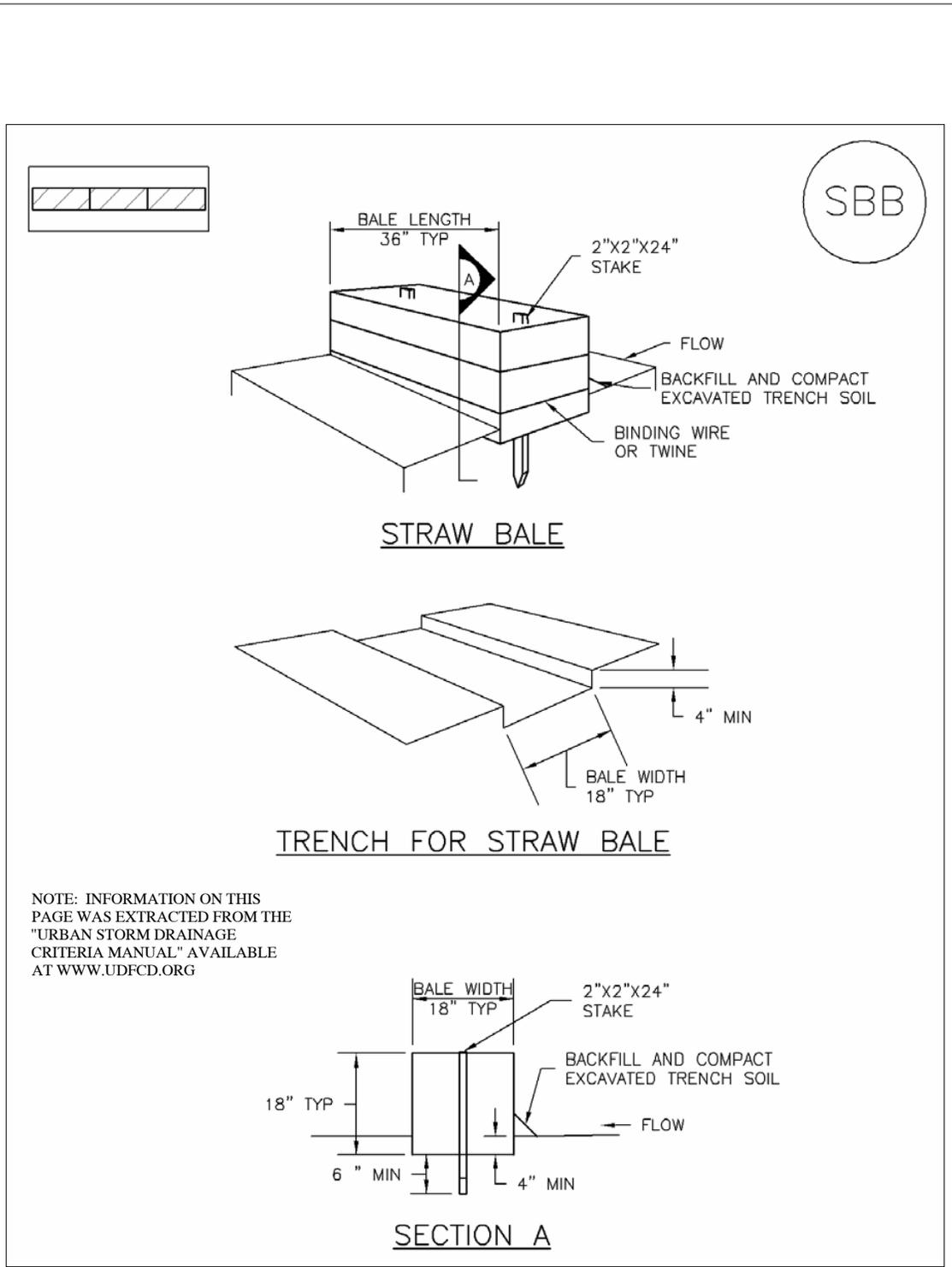
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

SILT FENCE NOTES

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STRAW BALE BARRIER DETAIL



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STRAW BALE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION(S) OF STRAW BALES.
2. STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.
3. STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
4. WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ONE ANOTHER.
5. STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"X18"X18".
6. A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S). ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE(S) AND COMPACTED.
7. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"X2"X24". WOODEN STAKES SHALL BE DRIVEN 6" INTO THE GROUND.

STRAW BALE MAINTENANCE NOTES

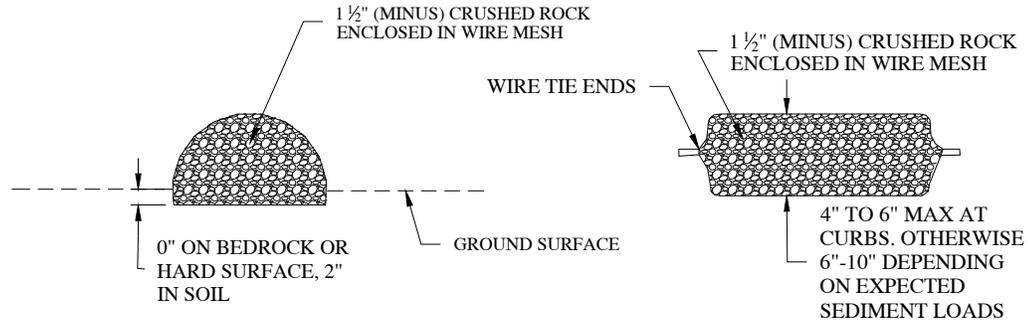
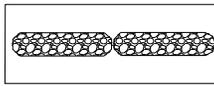
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.
5. SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ¼ OF THE HEIGHT OF THE STRAW BALE BARRIER.
6. STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
7. WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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STRAW BALE NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>LRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-04A</p>
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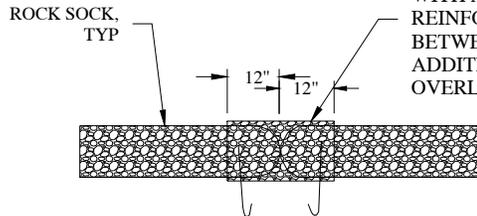
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ROCK SOCK SECTION

ROCK SOCK PLAN

ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE AMOUNT OF 1 1/2" (MINUS) CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED SOCK. AS AN ALTERNATIVE TO FILLING JOINTS BETWEEN ADJOINING ROCK SOCKS WITH CRUSHED ROCK AND ADDITIONAL WIRE WRAPPING, ROCK SOCKS CAN BE OVERLAPPED (TYPICALLY 12-INCH OVERLAP) TO AVOID GAPS.



ROCK SOCK JOINTING

GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

ROCK SOCK INSTALLATION NOTES

- SEE PLAN VIEW FOR:
-LOCATION(S) OF ROCK SOCKS
- CRUSHED ROCK SHALL BE 1 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1 1/2" MINUS).
- WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2". RECOMMENDED MINIMUM ROLL WIDTH OF 48"
- WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
- SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

CURB INLET GRAVEL FILTER



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STANDARD STORM SEWER DETAILS

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PAGE SWMM-05

Z:\Specifications\Engineering Specifications\Drainage and Erosion Control Standards\SWMM-05_2011.dwg

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ROCK SOCK MAINTENANCE NOTES

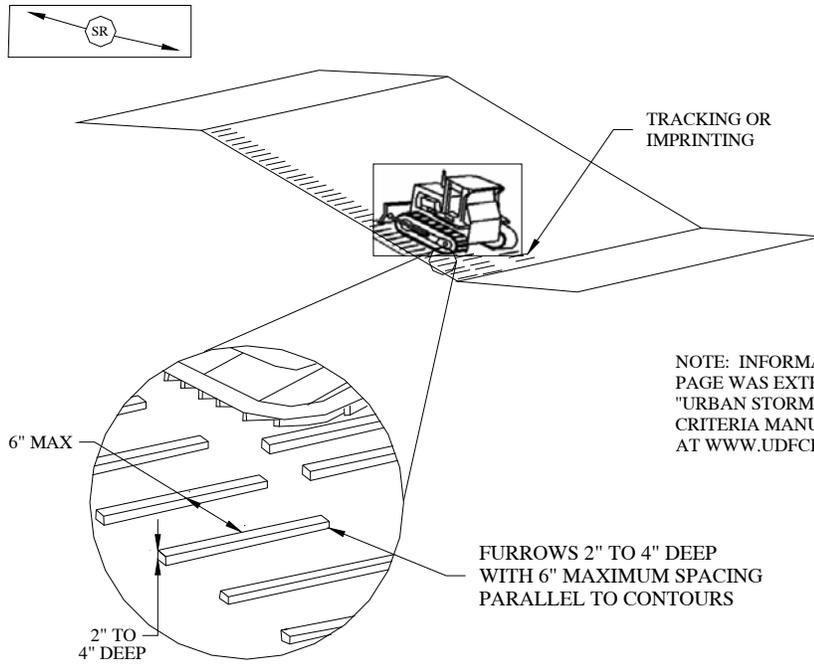
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
5. SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
6. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
7. WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

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ROCK SOCK MAINTENANCE NOTES

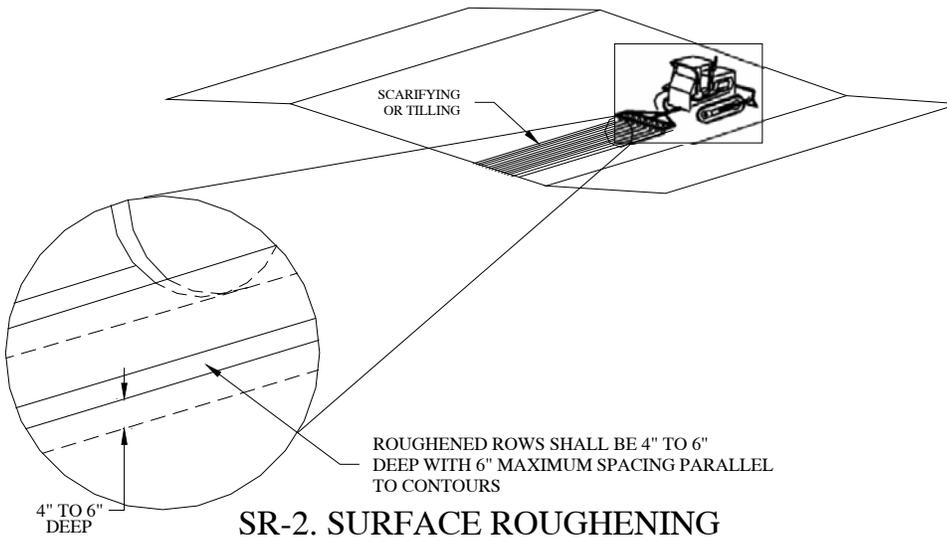
	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-05A</p>
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SR-1. SURFACE ROUGHENING
FOR STEEP SLOPES (3:1 OR STEEPER)



SR-2. SURFACE ROUGHENING
FOR LOW SLOPES (LESS THAN 3:1)

SURFACE ROUGHENING

	ENGINEERING DEPARTMENT	STANDARD STORM SEWER DETAILS	APPROVED: <u>LRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u>	PAGE SWMM-06
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SURFACE ROUGHENING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION(S) OF SURFACE ROUGHENING.
2. SURFACE ROUGHENING SHALL BE PROVIDED PROMPTLY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY FORECASTED RAIN EVENT.
3. AREAS WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE, SURFACE ROUGHENING IS NOT REQUIRED.
4. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.
5. A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.

SURFACE ROUGHENING MAINTENANCE NOTES

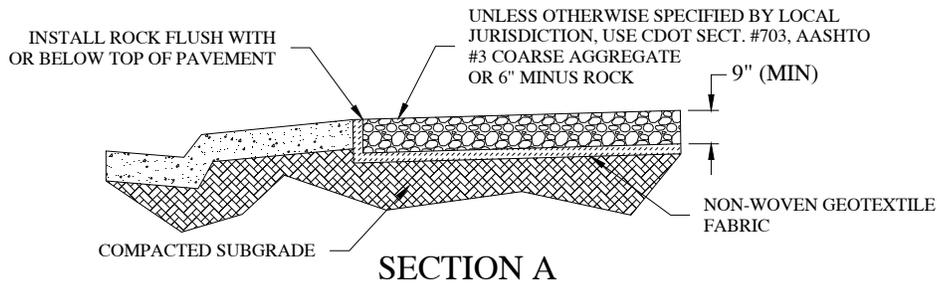
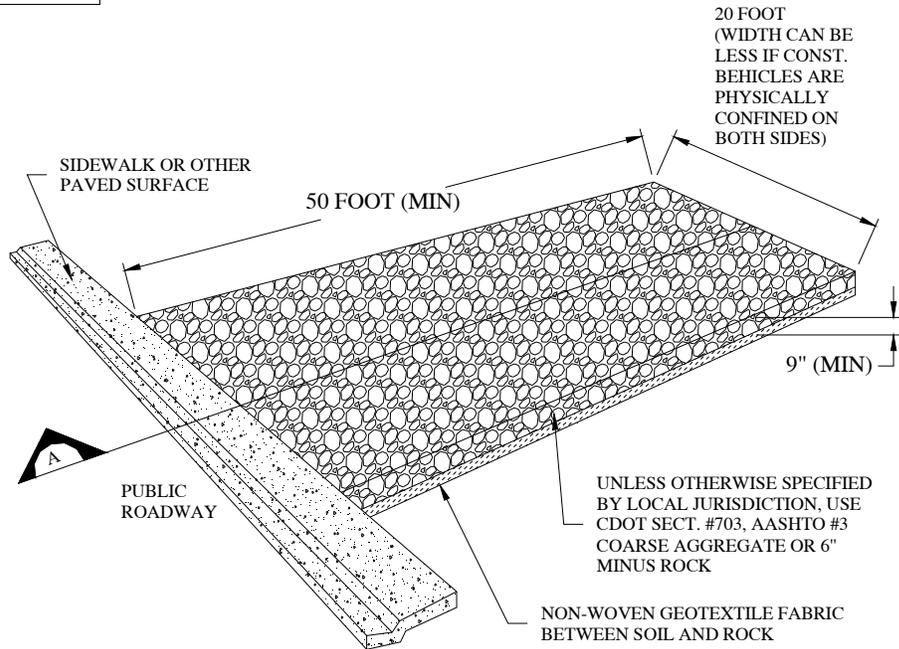
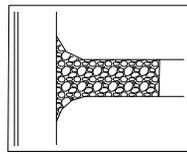
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACE UPON DISCOVERY OF THE FAILURE.
4. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
5. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FIRST SMOOTHING OUT THE SURFACE.
6. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER RILL EROSION.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

SURFACE ROUGHENING NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>RLW</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-06A</p>
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AGGREGATE VEHICLE TRACKING CONTROL



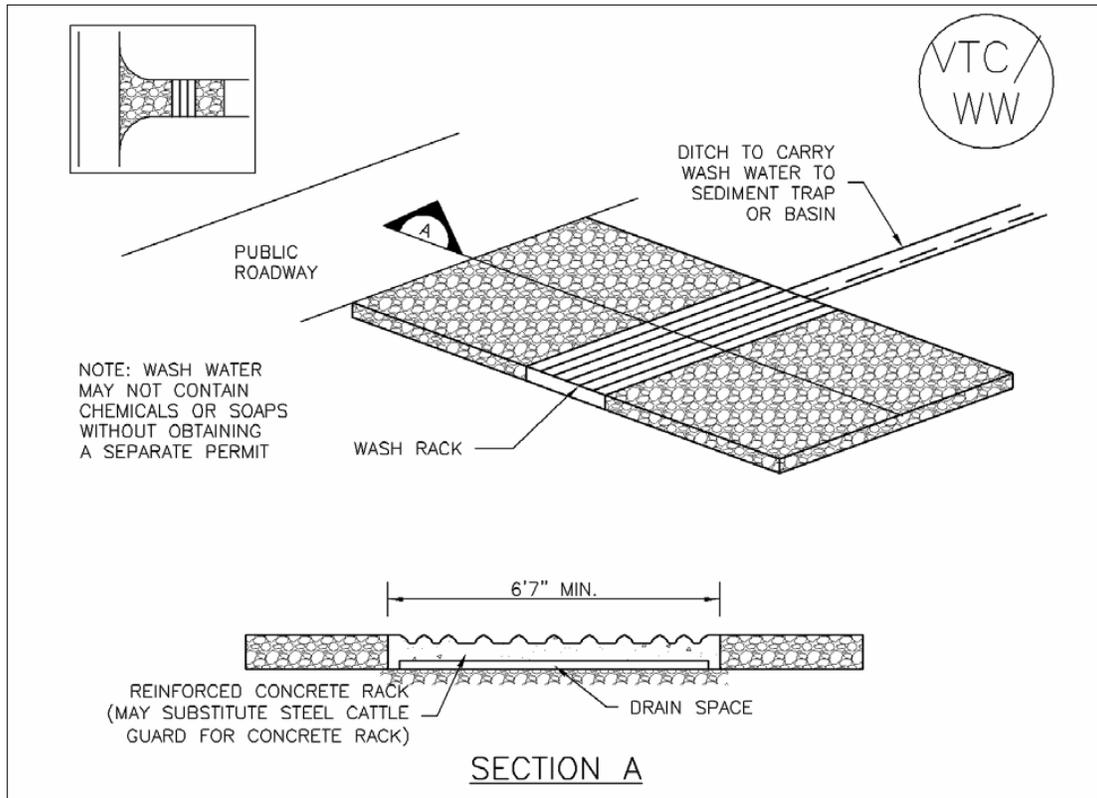
ENGINEERING DEPARTMENT

STANDARD STORM
SEWER DETAILS

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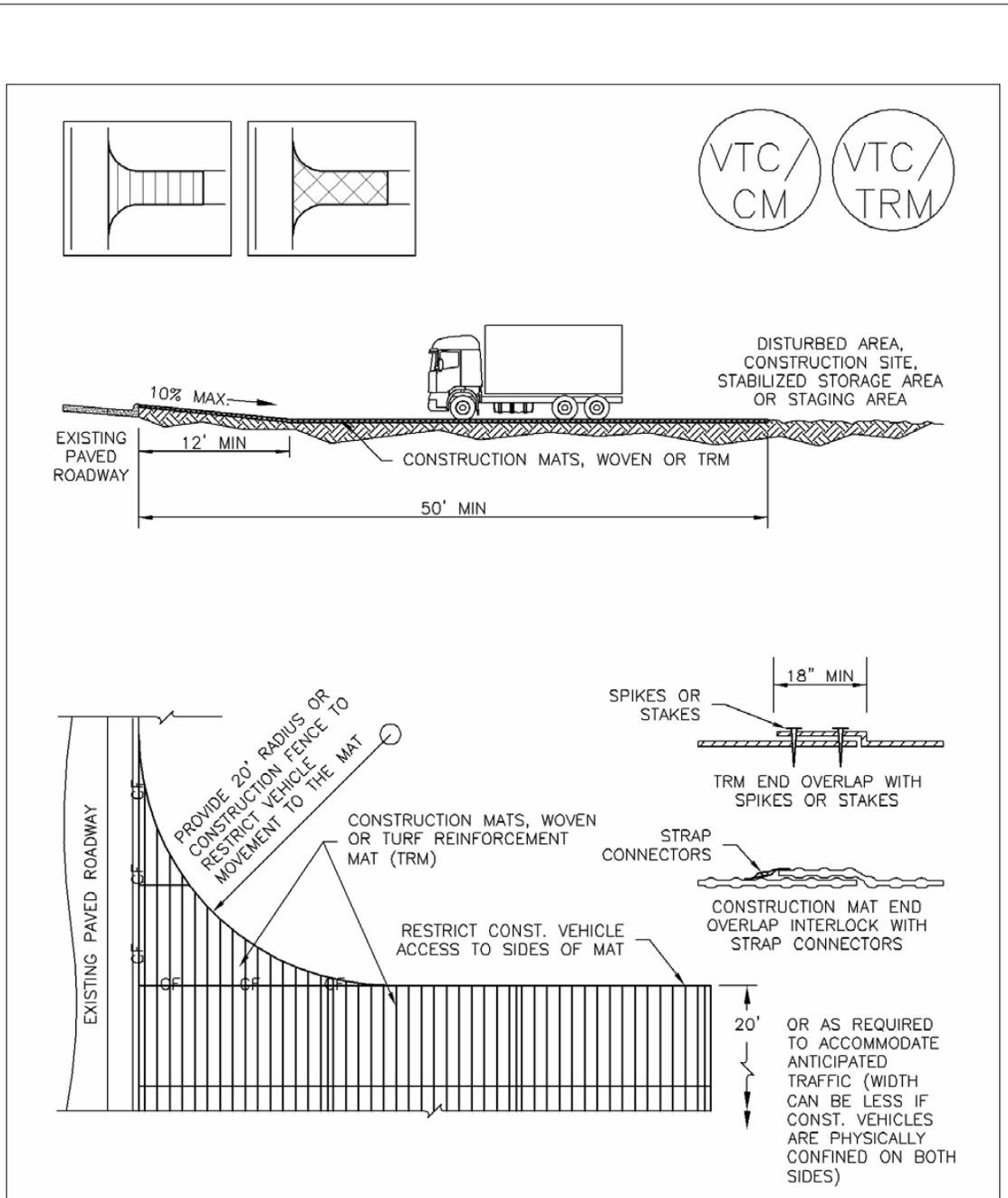


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AGGREGATE VEHICLE TRACKING CONTROL WITH WASHRACK

 <p>CITY OF MONTROSE</p>	<p>PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION</p> <p>QUALITY OF LIFE IS OUR COMMITMENT!</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-07A</p>
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STABILIZED CONSTRUCTION ENT./EXIT INSTALLATION NOTES



ENGINEERING DEPARTMENT

STANDARD STORM SEWER DETAILS

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STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
 - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
 - TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

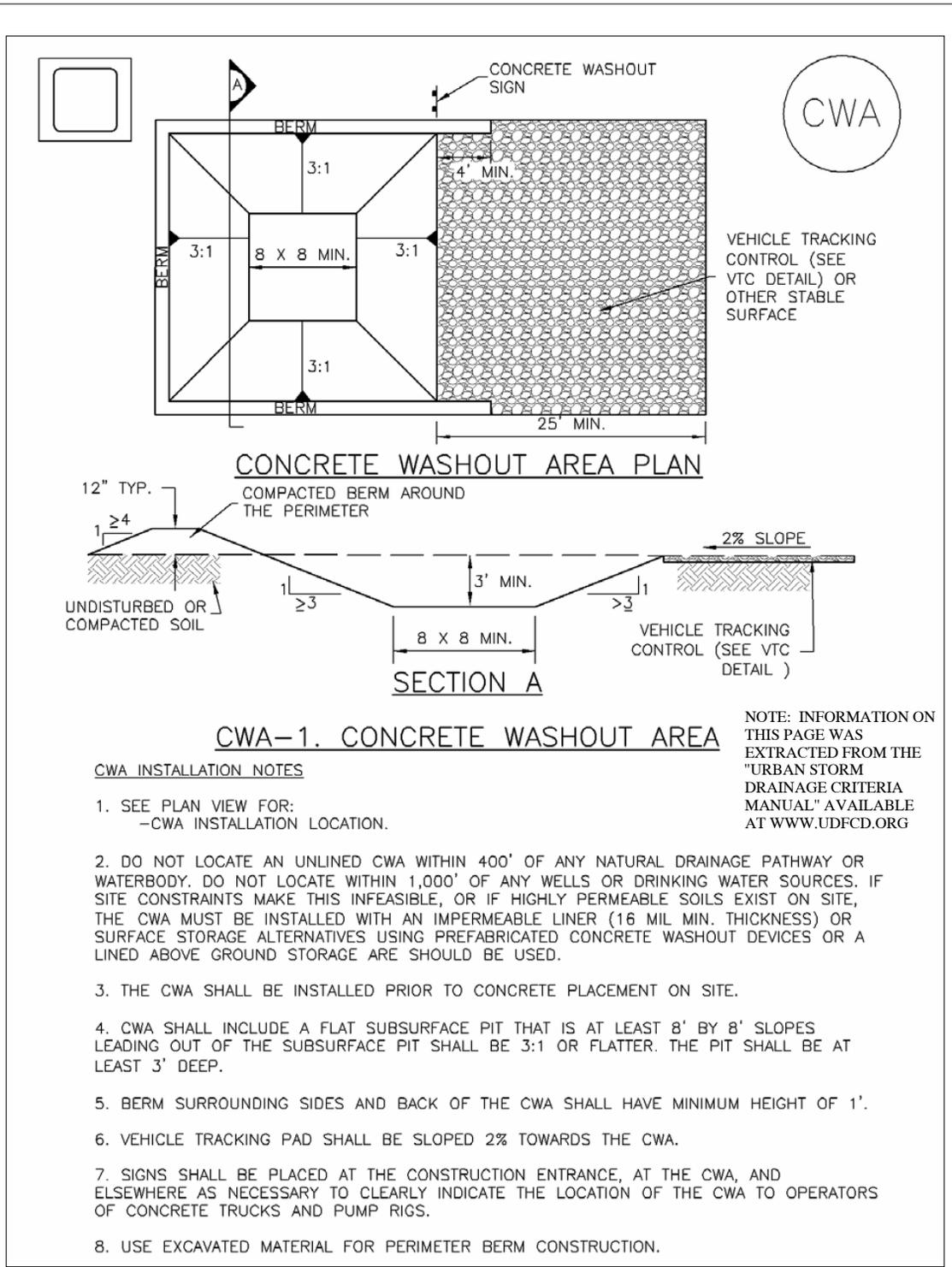
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

STABILIZED CONSTRUCTION ENTRANCE/EXIT NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-07C</p>
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CONCRETE WASHOUT AREA			
	ENGINEERING DEPARTMENT	STANDARD STORM SEWER DETAILS	APPROVED: <u>RLW</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u>
			PAGE SWMM-08

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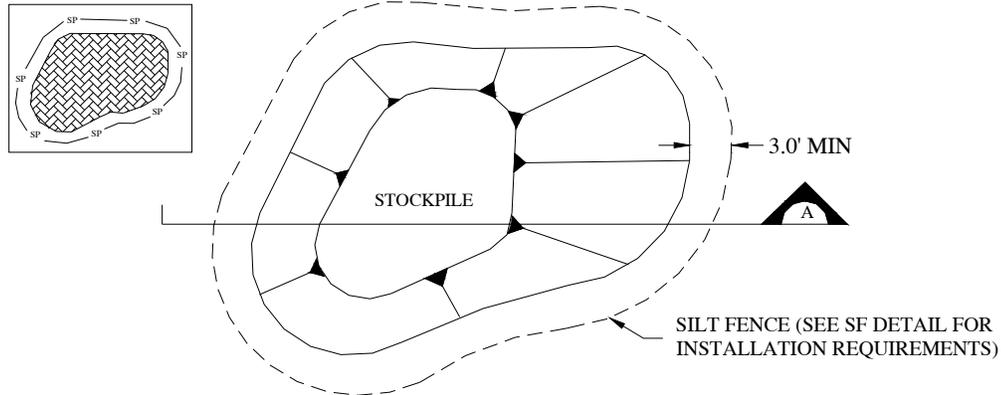
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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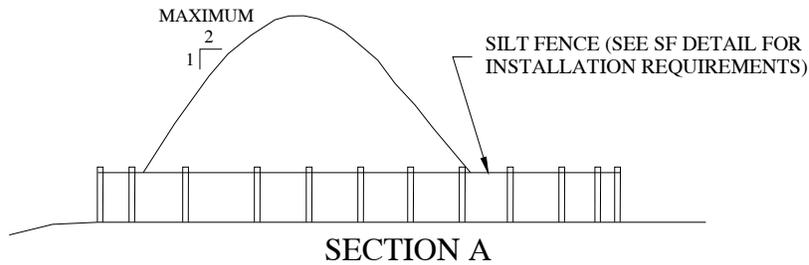
CONCRETE WASHOUT AREA MAINTENANCE NOTES

	<p>PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION QUALITY OF LIFE IS OUR COMMITMENT!</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-08A</p>
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STOCKPILE PROTECTION PLAN



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 - LOCATION OF STOCKPILES.
 - TYPE OF STOCKPILE PROTECTION.
2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERMITER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).
4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS,, INCLUDING PERIMETER CONTROLS, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

STOCKPILE PROTECTION PLAN

	ENGINEERING DEPARTMENT	STANDARD STORM SEWER DETAILS	APPROVED: <u>RLW</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u>	PAGE SWMM-09
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STOCKPILE PROTECTION MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

STOCKPILE PROTECTION MAINTENANCE NOTES

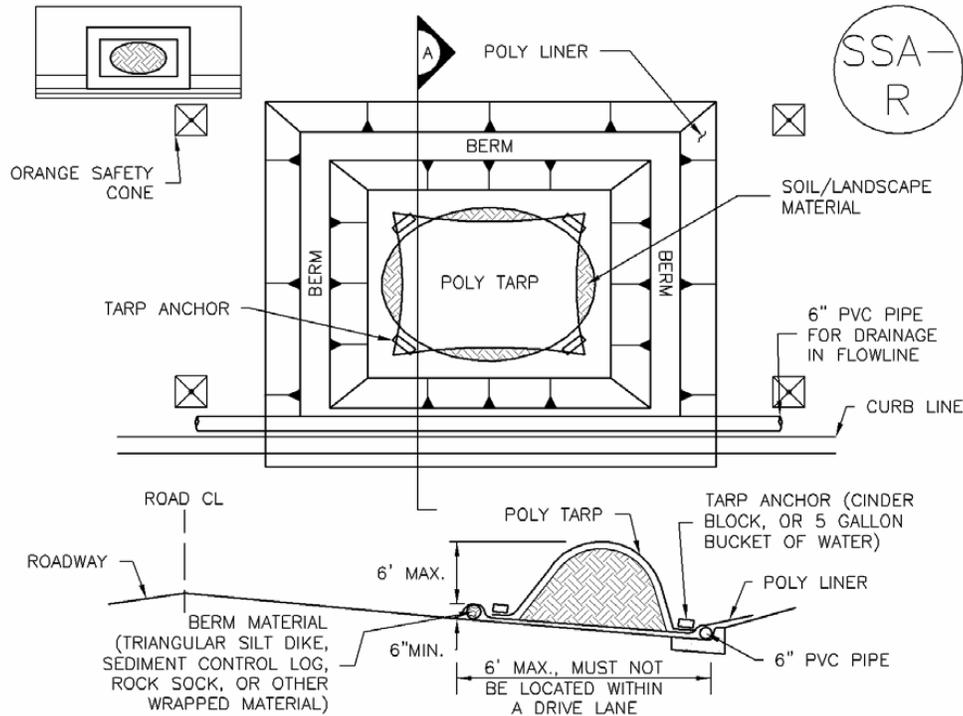
4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

STOCKPILE PROTECTION MAINTENANCE NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-09A</p>
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SP-2. MATERIALS STAGING IN ROADWAY

MATERIALS STAGING IN ROADWAYS INSTALLATION NOTES

1. SEE PLAN VIEW FOR
 - LOCATION OF MATERIAL STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
2. FEATURE MUST BE INSTALLED PRIOR TO EXCAVATION, EARTHWORK OR DELIVERY OF MATERIALS.
3. MATERIALS MUST BE STATIONED ON THE POLY LINER. ANY INCIDENTAL MATERIALS DEPOSITED ON PAVED SECTION OR ALONG CURB LINE MUST BE CLEANED UP PROMPTLY.
4. POLY LINER AND TARP COVER SHOULD BE OF SIGNIFICANT THICKNESS TO PREVENT DAMAGE OR LOSS OF INTEGRITY.
5. SAND BAGS MAY BE SUBSTITUTED TO ANCHOR THE COVER TARP OR PROVIDE BERMING UNDER THE BASE LINER.
6. FEATURE IS NOT INTENDED FOR USE WITH WET MATERIAL THAT WILL BE DRAINING AND/OR SPREADING OUT ON THE POLY LINER OR FOR DEMOLITION MATERIALS.
7. THIS FEATURE CAN BE USED FOR:
 - UTILITY REPAIRS.
 - WHEN OTHER STAGING LOCATIONS AND OPTIONS ARE LIMITED.
 - OTHER LIMITED APPLICATION AND SHORT DURATION STAGING.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

MATERIALS STAGING IN ROADWAYS



ENGINEERING DEPARTMENT

STANDARD STORM SEWER DETAILS

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PAGE SWMM-09B

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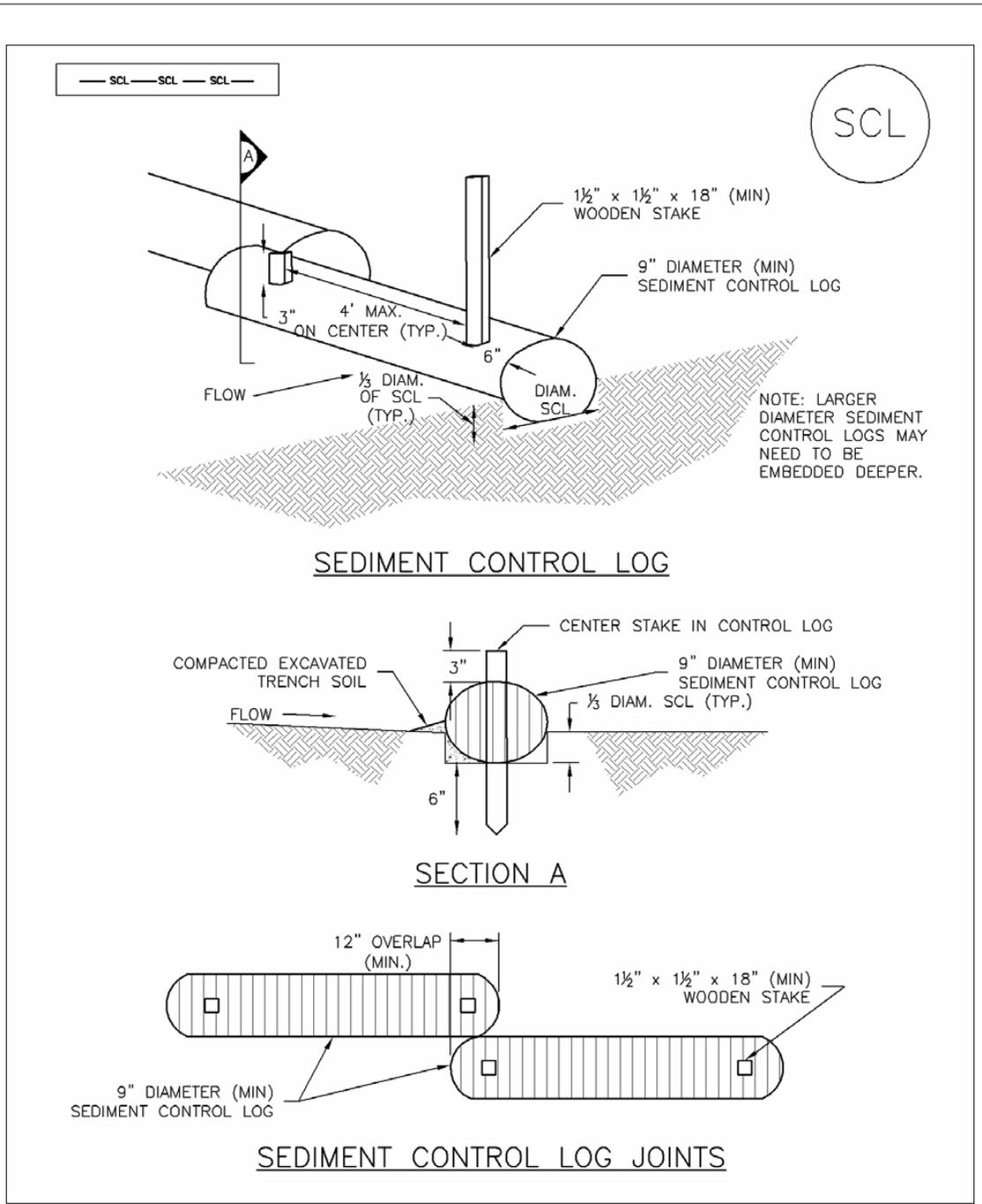
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. INSPECT PVC PIPE ALONG CURB LINE FOR CLOGGING AND DEBRIS. REMOVE OBSTRUCTIONS PROMPTLY.
5. CLEAN MATERIAL FROM PAVED SURFACES BY SWEEPING OR VACUUMING.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

MATERIALS STAGING IN ROADWAYS MAINTENANCE NOTES

	ENGINEERING DEPARTMENT	STANDARD STORM SEWER DETAILS	APPROVED: <u>FRH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u>	PAGE SWMM-09C
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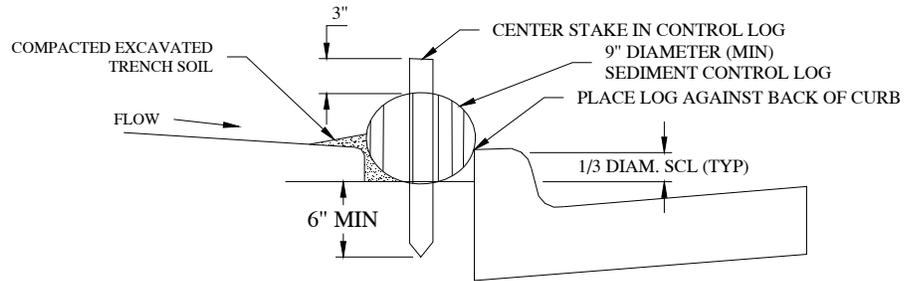


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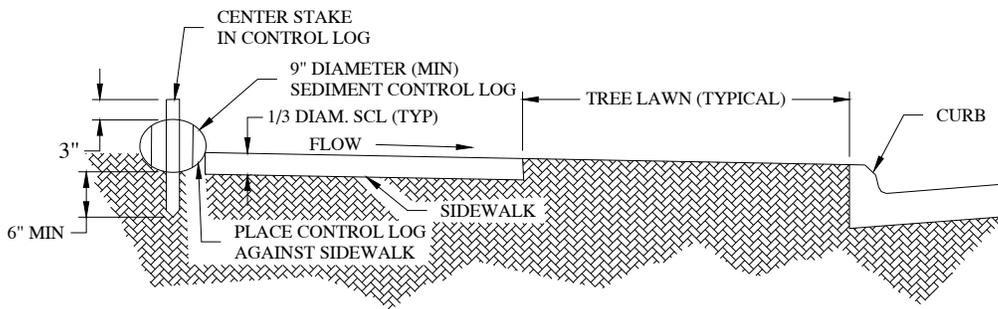
SEDIMENT CONTROL LOG

	ENGINEERING DEPARTMENT	STANDARD STORM SEWER DETAILS	APPROVED: <u>RLH</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u>	PAGE SWMM-10
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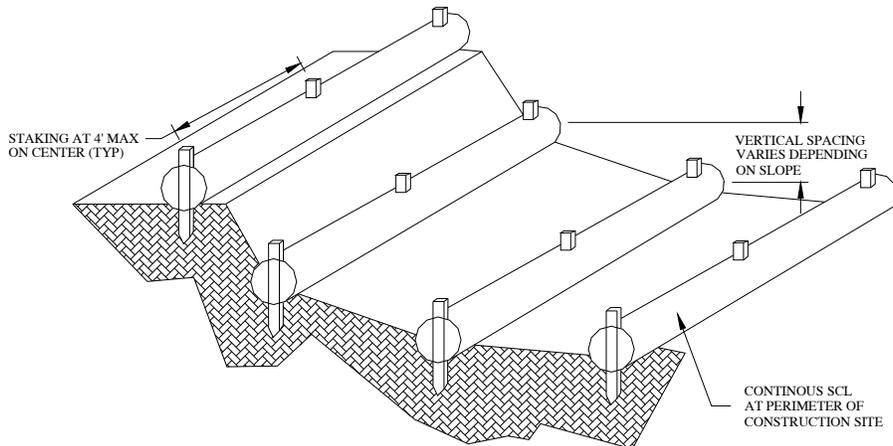
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SCL-2. SEDIMENT CONTROL LOG AT BACK OF CURB



SCL-3. SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN



SCL-4. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH



ENGINEERING DEPARTMENT

STANDARD STORM SEWER DETAILS

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PAGE SWMM-10A

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SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS.
5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING
6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

NOTE: INFORMATION ON THIS PAGE WAS EXTRACTED FROM THE "URBAN STORM DRAINAGE CRITERIA MANUAL" AVAILABLE AT WWW.UDFCD.ORG

SEDIMENT CONTROL LOG NOTES

	<p>ENGINEERING DEPARTMENT</p>	<p>STANDARD STORM SEWER DETAILS</p>	<p>APPROVED: <u>RLW</u> REV: <u>JAN 2011</u> DRAWN BY: <u>RLW</u></p>	<p>PAGE SWMM-10B</p>
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