

Phase II Stormwater Management Program

for the

City of Stillwater, Oklahoma

The City of

Stillwater

OKLAHOMA

STILL PIONEERING

Effective Date:
February 1, 2016



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

MARY FALLIN
Governor

December 19, 2016

Mike Beaty
City of Stillwater
PO Box 1449
Stillwater, OK 74076

Re: Notice of Intent (NOI) for Authorization under OKR04 for Stormwater Discharge from Phase II
Small Municipal Separate Storm Sewer System (MS4), City of Stillwater, Payne County, OK.
DEQ Authorization No. OKR040031

Dear Mr. Beaty:

On January 27, 2016, the Oklahoma Department of Environmental Quality (DEQ) received an NOI and supporting documents for the above-referenced City. On June 29, 2016, DEQ completed administrative review of your submittals. DEQ also received the additional information on December 16, 2016. Pursuant to OAC 252:004-7-8, DEQ completed technical review of your NOI and supporting documents. As a part of the public participation process, DEQ will initiate a 30-day public comment period from December 22, 2016 to December 20, 2016 to allow the public to review and comment on the submitted NOI and supporting documents. A copy of your NOI and supporting documents will be available for public review at DEQ's central office and on its website at www.deq.state.ok.us.

You should also make available a copy of the NOI and all the supporting documents that was submitted to DEQ at a public place such as Town Hall/City Office, Courthouse or Public Library located within your county accessible to public for review and comment. In addition, you are required to comply with State and local public notice requirements as a part of the public participation and involvement process pursuant to Part IV.C.2.a of OKR04 Permit. Persons wishing to file comments and/or request that DEQ hold a public meeting are required to do so in writing to DEQ during the public comment period. A formal public meeting may be scheduled if there is a significant degree of public interest.

Once the public comment period is expired, DEQ will notify you if comments are received and ask you for necessary changes in the Stormwater Management Program. If no comments are received, DEQ will issue the authorization. If you have any question regarding this letter or DEQ permitting procedures or Stormwater Program, please contact me at (405)702-8193 or email me at ismat.esrar@deq.ok.gov.

Sincerely,

Ismat Esrar, P.E.
Municipal Discharge & Stormwater Permitting
Water Quality Division



**DEQ FORM
605-R04**

November 1, 2015



**Oklahoma Department of Environmental Quality
Notice of Intent (NOI) for Stormwater Discharges from
Small Municipal Separate Storm Sewer Systems (MS4s)
Under OPDES General Permit OKR04**

Please print or type: All items should be completed as accurately as possible and in their entirety. Please refer to Part 4 of the permit OKR04 for information about the required items. An original signature of the applicant is required according to PART VI.H in the permit OKR04. Use additional pages to fully describe your responses.

Note: Municipality is defined as a federal, state, city, town, county, district, association, or other public body (created by or pursuant to Oklahoma or Federal law), including special districts under State law such as a storm sewer district, flood control or drainage district, or similar entity, or a designated and approved management agency under Section 208 of the CWA.

1. Name and address of the permit applicant and local contact:

Name of the Small MS4: City of Stillwater

Address: PO Box 1449

City: Stillwater

County: Payne State: Oklahoma ZIP Code: 74076-1449

Telephone Number: (405) 742-8215 E-mail Address: mbeaty@stillwater.org

Name and Title of Stormwater Management Program Manager: Mike Beaty - Dev Rev Mgr, Interim SWP Mgr.

Circle the appropriate letter to indicate the legal status of the operator of the facility:

F = Federal; **S** = State;

M = Municipal (public other than Federal or State, i.e. as city, county); **P** = Private

F ☐ **S** ☐ **M** ☒ **P** ☐

2. Co-permittee: Are you co-permitting with another entity? Yes ☐ No ☒ If yes, complete the following:

Name of the Co-permittee _____ Name and Title of Stormwater Management Program Manager _____

Mailing Address _____ City _____ ZIP Code _____

Telephone Number: _____ E-mail Address: _____

Circle the letter for type of facility: Federal, State, Municipal, Private **F** ☐ **S** ☐ **M** ☒ **P** ☐

Certification by the co-permittee is required in Section 9.

Latitude: _____ Longitude: _____

3. Facility/Site Location: Attach a map showing your MS4 boundaries. Your MS4 jurisdiction shall cover the entire area within the corporate boundary of the municipality if your city is not located entirely within an Urbanized Area.

Name of the Small MS4: City of Stillwater County: Payne

Street Address: 723 S. Lewis City: Stillwater

Latitude: 36-07-36 N Longitude: 97-04-04 W Approximate area of the MS4: 29.10 square miles

Latitude/Longitude: If you do not have this information, go to the DEQ Flexviewer at <http://gis.deq.ok.gov/flexviewer/>.

4. Will another entity provide services to perform some portion or all of the Best Management Practices (BMPs) for the six minimum control measures (PART IV.C) or TMDL supplemental conditions (PART III.B)?

Yes ☐ No ☒ If yes, attach a statement listing their name and the service they will be providing.

5. Receiving waters for discharges of stormwater from your MS4: Use additional pages if needed.

Name of Waterbodies	Impaired?	Impairment	Source of Impairment
Stillwater Creek	Yes ☒ No ☐	E.Coli, Turbidity, DO	Unknown
Boomer Lake	Yes ☒ No ☐	Mercury, Chlorophyll-a, DO	Unknown
Sanborn & Hanzen Lakes; Cow, Brush & West Brush Creeks	Yes ☐ No ☒		

Do you discharge into waterbodies on the Oklahoma 303(d) list of impaired waters? Yes ☒ No ☐

If yes, you must ensure that impairment caused by identified pollutants in your receiving waters will, in future discharges, not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of WQ standards and comply with PART III.A.1

Do you discharge into receiving waterbodies with an established TMDL or watershed plan? Yes ☐ No ☒

If yes, you must adopt any Wasteload Allocation (WLA) assigned to your discharges specified in the TMDL as measurable goals and include any limitations, conditions, monitoring, and other requirements associated with a TMDL implementation plan within specified timeframes.

Do you discharge into an Outstanding Resource Water (ORW)? Yes ☐ No ☒

If yes, you must document in your SWMP how you will comply with WQ standard prohibitions (PART III.C)

6. Outline of Measurable Goals and BMPs

Attach an updated description of your Stormwater Management Program (SWMP). You shall include details of BMPs that will be implemented and the measurable goals for each of the six stormwater minimum control measures, the month and year in which the MS4 operator will start and fully implement each of the control measures or the frequency of the action, and the name of the person(s) responsible for implementing or coordinating the SWMP.

7. Endangered Species

Based on the requirements of Part I. E and Exhibit 1, does your municipality discharge into an Aquatic Resource of Concern?

Yes ☐ No ☒ If yes, which criterion listed in Part I.E is your municipality using to meet eligibility requirements?

Criterion A - Per OKR04 Ex 1

Certification of this NOI will constitute your certification of compliance with the endangered species requirements of this Permit.

8. Construction by the Permitted Municipality

You have the option to develop permit requirements (PART VIII) that allow the municipality to cover all municipalities owned and operated construction sites under this Permit rather than filing a separate OKR10 NOI with the DEQ for each such project.

Will the municipality include the optional permit requirements into your SWMP and permit? Yes ☒ No ☐

9. Certification of Permittee

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Norman McNickle
Signature of Applicant

1-25-16
Date Signed

Norman McNickle
Name (print)

Interim City Manager
Title

Certification of Co-Permittee (if applicable)

Signature of Co-Permittee

Date Signed

Name (print)

Title



Stormwater Management
723 S. Lewis Street
Stillwater, Oklahoma 74074
Office: (405) 533-8436
Fax: (405) 742-8324
stormwater@stillwater.org

January 20, 2016

Director Water Quality Division
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

Re: OPDES Permit OKR04 – Stillwater Notice of Intent

Attention: Shellie Chard-McClary

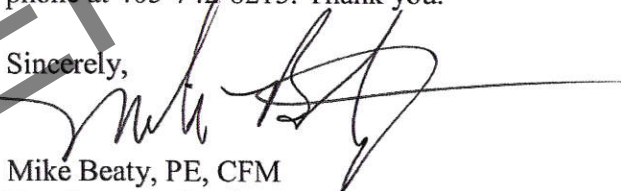
Please find enclosed the Notice of Intent (NOI) for the City of Stillwater to discharge stormwater under OPDES Permit OKR04 along with a check in the amount of \$100 for the application fee. We have also developed a Stormwater Management Program (SWMP) document, which is available at the below address for public review.

Also enclosed are the following associated documents, rather than the entire SWMP, in accordance with ODEQ's request.

- Signature/Certification Page
- Table III-1, Summary of Best Management Practices
- Appendix A, Map of the City of Stillwater Corporate Limits
- Appendix B, One Page Summary of BMPs

Please feel free to contact me, if you have any questions regarding this submittal, or the Stormwater Management Program in general. I may be reached at the below email address or by phone at 405-742-8215. Thank you.

Sincerely,



Mike Beaty, PE, CFM
Development Review Manager
Interim Stormwater Program Manager
mbeaty@stillwater.org

enclosures

for the City of Stillwater, Oklahoma

The statements made in this Stormwater Management Program document, and the programs described herein, are hereby declared to be accurate and fulfill the intent of the City of Stillwater to comply with the requirements of the State of Oklahoma's Phase II Stormwater General Permit for municipalities (OKR04).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


Norman McNickle, Interim City Manager

1-25-16
Date

CITY OF STILLWATER • DEVELOPMENT SERVICES DEPARTMENT
723 S. LEWIS, P.O. BOX 1449 • STILLWATER, OKLAHOMA 74076-1449
www.stillwater.org

EXECUTIVE SUMMARY

The City of Stillwater has prepared this Stormwater Management Program (SWMP) document which provides descriptions of all activities that will be conducted on behalf of Stillwater to meet its obligations under the Oklahoma Department of Environmental Quality (ODEQ) General Permit for Phase II Small Municipal Separate Storm Sewer System Discharges within the State of Oklahoma (OKR04) dated November 1, 2015.

A Notice of Intent (NOI) and a summary of this SWMP, that together constitute the application for coverage under the OKR04 General Permit, have been submitted to ODEQ, in accordance with their request. Copies of this SWMP will be kept in-house for review by ODEQ or the public upon request.

All six Minimum Control Measures (MCMs) have been addressed in this SWMP. The City of Stillwater has elected to incorporate the "Optional Permit Requirements for Municipal Construction Activities (OKR04 Part VIII)" into the SWMP.

Each MCM has a number of Best Management Practices (BMPs) that constitute the core activities pertaining to that MCM. Appendices summarize the BMPs and provide Measurable Goals and implementation schedules for each BMP. Further, the City of Stillwater will evaluate the possibility of cooperative efforts with separate government or other entities, such as INCOG, Blue Thumb, and Oklahoma State University, as methods by which to achieve certain of the goals.

Every reasonable effort has been made to comply with all requirements in the State's OKR04 General Permit for Small Municipal Separate Storm Sewer Systems (SMS4s).

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I. INTRODUCTION

In 1990 the U.S. Environmental Protection Agency (EPA) promulgated regulations for establishing water quality based municipal stormwater programs to address stormwater runoff from certain industrial and construction activities and from medium and large municipal separate storm sewer systems (MS4s) serving populations of 100,000 or greater. These "Phase I" regulations were incorporated into the existing National Pollutant Discharge Elimination System (NPDES) permit rules that address point source dischargers. As a result, urban nonpoint source runoff became regulated as a point source. On December 8, 1999, EPA published final regulations that address urban stormwater runoff from cities under 100,000 population and counties that lie within the Urbanized Area as defined by the latest US Bureau of Census designation or otherwise designated by the Oklahoma Department of Environmental Quality (ODEQ) as being required to obtain coverage under the State's Phase II Stormwater program.

As one of these "Phase II" cities, the City of Stillwater must develop a comprehensive Stormwater Management Program (SWMP) that addresses six "Minimum Control Measures" (MCMs). These are:

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post Construction Management in New Development and Re-Development
6. Pollution Prevention and Good Housekeeping

The ODEQ has primary jurisdiction over permitting and enforcement of the Phase II Stormwater Program for Oklahoma. On November 1, 2015, the ODEQ finalized their General Permit (OKR04) for Phase II Small Municipal Separate Storm Sewer System Discharges within the State of Oklahoma.

The Phase II regulations require that the regulated community submit a Notice of Intent (NOI) to apply for coverage under the Oklahoma Stormwater General Permit (OKR04) along with a Stormwater Management Program document (SWMP) that specifies, for each MCM, what activities will be performed (Best Management Practices - BMPs), along with schedules and measurable goals for each BMP. In accordance with an ODEQ request, the City of Stillwater submitted only a summary of the SWMP with the NOI.

This SWMP document fulfills the OKR04 General Permit requirement to prepare a detailed plan of how the City of Stillwater will address stormwater discharges within its city limits. A map showing Stillwater's City Limits is included in Appendix A.

II. SWMP PROGRAM OVERVIEW

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et. seq.) as required under Section 122.34(d)(2) of the Storm Water Phase II Rule, and with the provisions under the Oklahoma Pollutant Discharge Elimination System, OAC 252:606-1-3(b)(3) incorporating by reference 40 CFR §122.26 and 122.30 through 122.35, operators of Small Municipal Separate Storm Sewer Systems (SMS4s) are authorized to discharge in accordance with the conditions and requirements set forth in their permit. The Phase II regulations issued by the EPA can be found in FR Vol. 64 No. 235, December 8, 1999, beginning on page 68722, and became effective on February 7, 2000.

The ODEQ's OKR04 General Permit is a new issue with an effective date of November 1, 2015. The general permit and the authorization to discharge shall expire at midnight October 31, 2020. As provided in the permit, operators of SMS4s who submit a Notice of Intent and a Storm Water Management Program (SWMP) in accordance with PART IV of the general permit are authorized to discharge pollutants to waters of the State in accordance with the conditions and requirements set forth in the permit. ODEQ has requested that Phase II cities submit only a summary of the SWMP with the NOI, rather than the entire plan.

The OKR04 permit authorizes discharges of storm water and certain non-storm water discharges from SMS4s, as defined in OAC 252:606-1-3(b)(3) incorporating by reference 40 CFR §122.26(b)(16). This includes MS4s designated under 40 CFR §122.32(a)(1) and 40 CFR §122.32(a)(2) that describes the referenced area with a population of at least 10,000 but not exceeding 100,000, and SMS4s located in urbanized areas (UA). A number of other operators of SMS4s located outside of a UA have also been designated as a regulated MS4.

This SWMP document specifies all of the actions that the City of Stillwater will take to comply with the stormwater regulations and address the six "Minimum Control Measures" required by EPA for a successful stormwater program.

All information contained in this SWMP represents a good faith effort on the part of the City of Stillwater to comply with all requirements of the ODEQ's Phase II General Permit for Small MS4s (OKR04). This SWMP will be reviewed periodically by local administrative staff and amended, as needed, to provide greater efficiency or meet additional requirements that may be forthcoming under OKR04 or other regulatory changes.

This SWMP addresses all elements of the ODEQ's General Permit for MS4s (OKR04). The six Minimum Control Measures are addressed in the same sequence as the OKR04 text, and supporting tables and summary forms are included. Table III-1 contains a summary table of all BMPs to be used in City of Stillwater's program. Appendix B has one page summaries of each BMP.

III. MINIMUM CONTROL MEASURES

For each of the following Minimum Control Measures (MCMs), the City of Stillwater will implement Best Management Practices (BMPs), develop implementation schedules, and establish Measurable Goals for each BMP. An annual report will be submitted to the ODEQ that documents implementation and BMP effectiveness under each of the six MCMs.

This SWMP provides information on the BMPs and other activities that will be implemented to address each of the MCMs. Table III-1 summarizes all BMPs that will be used for this MCM. Appendix B provides a one-page description of each BMP, along with measurable goals and schedule of implementation.

A. MCM 1: PUBLIC EDUCATION AND OUTREACH:

OKR04 requires Phase II cities to develop and implement a public education program to distribute education materials and to develop and document a stormwater public outreach program that addresses BMPs and measurable goals of the education program. The City of Stillwater will use a number of public education Best Management Practices (BMPs) to inform individuals and groups about the steps they can take to reduce stormwater pollution and become involved in the stormwater program.

Applicable Best Management Practices:

- Brochures - Develop Web Based
- Training
 - City Staff
 - Development Community
 - Builders
 - Developers
 - Engineers
 - Contractors
- Public Awareness Signs
- City Council Annual Presentation
- Planning Commission Annual Presentation
- Public Awareness Signs
- Pollutant Collection Facility and Events
- Promote and Utilize Recycling Centers
- Distribute promotional logo items to schools and non-profits

- Develop outreach programs to area public schools

B. MCM 2: PUBLIC PARTICIPATION AND INVOLVEMENT:

Some of the activities under the Public Education and Outreach MCM will also apply to the Public Participation and Involvement MCM. The Public Participation MCM is different from the Public Education MCM in that the citizens of City of Stillwater will actively participate in a program component such as stream cleanups or stormdrain marking. By participating, citizens not only learn about the urban stormwater quality issues but contribute towards improving water quality in their community.

Applicable Best Management Practices:

- Brochures - Develop Web Based
 - Stormwater quality impacts from urban runoff
 - How to become involved in Stormwater quality program
 - Recycling
- Public Meetings - Phase II Discussion
 - City Council Annually
 - City Planning Commission - Annually
 - Builders Relations Meetings - Annually
- Sponsorship of Public Clean up Events
 - Streams
 - Parks
 - Roadway
- Sponsorship of recycling events
 - Household Hazardous Waste
 - Electronic Waste Collection

C. MCM 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION:

The City of Stillwater will implement a comprehensive program to detect and eliminate illicit discharges in accordance with the requirements in the OKR04 General Permit. The program will rely upon a number of methods of pollutant detection, including complaints from the public and inspections. The sources and responsible parties of the pollution may or may not be identifiable.

The City of Stillwater will use a number of Best Management Practices (BMPs) to implement an effective detection and elimination program for illicit discharges. Some of the brochure from the Educational Materials BMP program will be useful for this MCM as well.

Applicable Best Management Practices:

- Brochures - Develop Web Based
 - Household chemical disposal options

- Business chemical storage and disposal options
 - Recycling and Reuse
- Public Meetings - Phase II Discussion
 - City Council Annually
 - City Planning Commission - Annually
 - Builders Relations Meetings - Annually
- Sponsorship of Public Clean up Events
 - Streams
 - Parks
 - Roadway
- Sponsorship of recycling events
 - Household Hazardous Waste
 - Electronic Waste Collection

D. MCM 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL:

The City of Stillwater will implement a comprehensive inspection and enforcement program, utilizing a number of BMPs, to implement an effective erosion and pollutant control program for active construction sites. The City will review/revise existing ordinances and develop new ordinances, if deemed necessary, prohibiting the discharge of pollutants and sediment from construction sites, and require the deployment of adequate erosion control measures. City inspectors will perform periodic construction site inspections for compliance with local stormwater codes.

Applicable Best Management Practices:

- Standardized Construction Plan
 - Develop Standard Erosion Control Plan Sheet
 - Develop minimum standard Erosion Control Construction Notes
 - Develop Localized Construction BMP manual
- Policies - Ordinances
 - Issue permit jointly to Owner and Operator
 - Adopt ordinance and inspection procedures to address chronic violators
- Training
 - City Staff
 - Construction Inspectors
 - Operations Staff
 - Development services staff
 - Builders Relations Meetings - Annually
 - Design Workshops

E. MCM 5: POST-CONSTRUCTION RUNOFF CONTROL:

Post-construction stormwater management in new development and redevelopment focuses on implementation of controls and practices that will try to maintain good water quality conditions after an area has been developed and after construction activities have been completed. The BMPs should be appropriate for the local site conditions and should be selected to minimize water quality impacts. The City will develop methods to address the long-term operation and maintenance of the BMPs.

Applicable Best Management Practices:

- Develop Permanent Post Construction Policies
 - Improved owner maintained facilities
- Policies - Ordinances
 - Develop policies to encourage Low Impact Development
 - Complete Streets Design standards
 - Encourage Form Based Codes Design
- Training
 - City Staff
 - Construction Inspectors
 - Operations Staff
 - Development services staff
 - Builders Relations Meetings - Annually
 - Homeowners/Property owner association meetings
- Continue Stream monitoring
 - Coordinate with stream volunteers
 - Continue Dry Weather Observation and assessment

F. MCM 6: POLLUTION PREVENTION / GOOD HOUSEKEEPING:

Pollution prevention/good housekeeping for municipal operations is a minimum control measure designed to emphasize the operation and maintenance (O&M) of the MS4 and proper training of municipal employees. Performing municipal activities in a careful and proper manner prevents or reduces pollutant runoff. Municipal operations include parks and open space maintenance, vehicle fleet and building maintenance, new construction and land disturbances, building oversight, and stormwater system maintenance.

Applicable Best Management Practices:

- Review and Develop Policies - Ordinances
 - Develop greater utilization of GIS and Mapping of MS4 Outfalls
 - Develop GPS based tracking monitoring of events
- Training
 - City Staff
 - Construction Inspectors

- Public Infrastructure Operations Staff
 - Building Maintenance staff
 - Development Community - Annually
- Continue Stream monitoring
 - Coordinate with stream volunteers
 - Continue Dry Weather Observation and assessment
- Maintain Hazardous Spill Kits

REFERENCE COPY

BMP Summary Table

BEST MANAGEMENT PRACTICES	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	COMMENTS
ADMINISTRATIVE						
Adopt illicit discharge ordinance	Complete	review/mod	review/mod	review/mod	review/mod	
Adopt construction ordinance	Complete	review/mod	review/mod	review/mod	review/mod	
Adopt post-construction ordinance	Complete	review/mod	review/mod	review/mod	review/mod	
Comply with State and Local public notification	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	
Program to receive information from the public	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	
Site Plan review to include water quality	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	As ordinance is approved.
Support regional agency-sponsored seminars	Plan	Plan	Plan	Plan	Plan	Once/Permit Cycle
Discuss Phase II in city council meetings	Once/Year	Once/Year	Once/Year	Once/Year	Once/Year	
Collect local pollution data	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	
Develop stormwater web site	Review/Mod	Completed	review/mod	review/mod	review/mod	
COMMUNITY INVOLVEMENT						
Sponsor local clean-up events	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Minimum of once/year
Create display board for public meetings	Develop	review/mod	review/mod	review/mod	review/mod	
Create signs for community education	Develop	review/mod	review/mod	review/mod	review/mod	
Create signs for city work areas		Develop	review/mod	review/mod	review/mod	
Conduct school presentations	5 Hours	5 Hours	5 Hours	5 Hours	5 Hours	
Conduct storm drain marking	Plan	Once/Year	Once/Year	Once/Year	Once/Year	Target neighborhoods
Conduct household pollutant collection event	Once/Year	Once/Year	Once/Year	Once/Year	Once/Year	
INSPECTIONS						
Investigate MS4 system complaints	100% action	100% action	100% action	100% action	100% action	
Illicit discharge tracking in MS4 system	100% action	100% action	100% action	100% action	100% action	
Inspections of construction sites and activities	*	All sites	All sites	All sites	All sites	* As ordinance is approved.
Good housekeeping inspections of city property	*	*	*	*	*	* Once/Permit Cycle
BROCHURES -BROADEN TO USE WITH SOCIAL MEDIA						
Convert Paper Brochures to Electronic Media	Review/Mod	Review/Mod	* Distribute	* Distribute	* Distribute	* >100 to general public.
ID Social Media Platforms	Develop 3	Dev 1/Apply	Apply	Apply	Apply	
Water quality impacts from urban stormwater	Review/Mod	Review/Mod	* Distribute	* Distribute	* Distribute	* >100 to general public.
Household chemical disposal options	Review/Mod	Review/Mod	* Distribute	* Distribute	* Distribute	* >100 to general public.
Construction/erosion control BMPs	Review/Mod	Review/Mod	* Distribute	* Distribute	* Distribute	* As needed developers/contr.
Post-construction/erosion control BMPs	Review/Mod	Review/Mod	* Distribute	* Distribute	* Distribute	* As needed developers/contr.
TRAINING MODULES						
Storage and disposal of chemicals at city facilities	*	*	*	*	*	* Training will be provided
Water quality impact and regulations	*	*	*	*	*	once a permit cycle
How to conduct effective stormwater inspections	*	*	*	*	*	to applicable City of Stillwater
Stormwater and city house-keeping activities	*	*	*	*	*	employees.
MS4 MAPPING						
Local MS4 maps	Review/Mod	review/mod	review/mod	review/mod	review/mod	
Add GPS inspection Monitoring	Develop	review/update	review/update	review/update	review/update	

IV. IMPAIRED WATERS

The OKR04 general permit requires that if any of the MS4 receiving waters are on the latest Clean Water Act (CWA) §303(d) list of impaired waters, then the MS4 must include all necessary BMPs that will ensure the impairment caused by the identified pollutants in the receiving waters will; not cause, have the reasonable potential to cause, or contribute to an in-stream exceedance of water quality standards. The following receiving water bodies are classified as impaired waters in the MS4:

<u>Name</u>	<u>WB ID</u>	<u>Cause(s) of Impairment</u>
Boomer Lake - OK620900040190-00		Mercury, Chlorophyll-a, Dissolved Oxygen, Turbidity
Stillwater Creek - OK620900040270-10		Escherichia Coli, Dissolved Oxygen Turbidity

None of the impaired waters have established TMDLs for any of the impairments. All of the impaired waters have a 2019 TMDL establishment priority.

Part III of OKR04 requires special BMP development and implementation for discharge to any impaired water bodies by the MS4. The following BMPs will be pursued by the MS4 for each of the impairment causes.

Mercury and Chlorophyll-a Reduction BMPs - Boomer Lake

1. MS4 Mapping - Utilize MS4 outlet feature mapping to identify focused area for investigation of illicit storm drainage discharges.
2. Inspection Program - Focus inspection and investigation into potential sources in tributary area.
3. Investigate cost effective construction BMP standards for pollutant source removals such as the use of bioswales, forebays and wetlands.

E-coli Reduction BMPs - Stillwater Creek

4. MS4 Mapping - Utilize MS4 outlet feature mapping to identify focused area for investigation of illicit storm drainage discharges.
5. Inspect regional sanitary systems for leakage and overflows.
 - a. Lift Station overflows
 - b. Sewer main capacity and condition.
 - c. Investigate onsite septic systems for failure/replacement
 - d. Consider sewer system expansion.
6. Coordinate with property owners, ranchers, OSU on livestock operation and management to minimize non-point sources.

Turbidity and Dissolved Oxygen BMPs - Stillwater Creek and Boomer Lake

7. MS4 Mapping - Utilize MS4 outlet feature mapping to identify focused area for investigation of illicit storm drainage discharges with emphasis on identification of potential COD and BOD sources.

V. AQUATIC RESOURCES OF CONCERN

The OKR04 general permit requires that if any portion of the City's MS4 lies within the Aquatic Resources of Concern area designated in Exhibit 1 of OKR04, then the segment should receive special consideration to ensure that the MS4 discharges do not negatively impact any protected species and/or habitat to which the designation applies. Using Exhibit 1, it has been determined that there is an Aquatic Resources of Concern to which the City of Stillwater MS4 can discharge; the Cimarron River Watershed.

As the entire MS4 drains to Stillwater Creek, and ultimately to the Cimarron River, and virtually all BMPs will contribute to efforts to reduce turbidity levels, there are not specific geographic areas that will receive special attention under this criterion.

VI. OPTIONAL PERMIT REQUIREMENTS FOR CITY CONSTRUCTION

The City of Stillwater elects to comply with the alternative provided in Part VIII of OKR04 relating to construction activities on land owned by the City and to activities that are directly controlled by the City. By selecting this option, all municipal construction discharges are herein authorized so long as the City meets all terms and requirements under OKR04. The City of Stillwater will develop, for each City construction project of one acre or greater in size, a Stormwater Pollution Prevention Plan (SWP3) that meets all requirements of OKR04 and applies to all municipal construction activities within the Stillwater city limits. This option applies to all City construction activities where the City meets the definition of "construction site operator" as defined in OKR04.

The City of Stillwater will potentially have several types of construction activities in the future, including: 1) new or renovated buildings, 2) street construction or reconstruction, 3) cleared and/or paved areas such as parking lots or park ball fields, and 4) utility construction and/or maintenance. The City of Stillwater will either hire a contractor to perform the work or use city crews and equipment. Standard construction practices will be used on all projects. Local conditions will vary with topographic and soil conditions, as well as accessibility and the presence of other existing features. Appendix A shows a map of the City of Stillwater boundaries within which City construction may occur.

The City's Project Manager for each project will ensure that the project-specific SWP3 is developed and a copy kept at the construction site for review. When the City hires a contractor to perform the work, the City will either require the contractor to prepare and maintain access to the SWP3, or do so itself. This will be verified by the City construction inspector or other City official. The City will inspect the project site as with

any other construction project within the City's jurisdiction. Part of this inspection process will be to ensure that all SWP3 requirements are being met. The City's SWP3 contents will meet all requirements of OKR04.

VII. CITY OWNED INDUSTRIAL FACILITIES

The City of Stillwater owns two industrial facilities for which it has submitted an NOI. Those facilities are the Stillwater Municipal Airport (Authorization Number OKGP00326) and the Municipal Waste Water Treatment Plant (Authorization Number OKR052250). The City also owns three facilities for which it has submitted a "No Exposure Certificate". Those facilities are Fire Station #1, the Boomer Lake Power Station, and the Parks and Recreation Maintenance Shop.

VIII. DEFINITIONS

All definitions contained in Section 502 of the Act and 40 CFR §122 shall apply to this permit and are incorporated herein by reference. For convenience, simplified explanations of some regulatory/statutory definitions have been provided, but in the event of a conflict, the definition found in the Statute or Regulation takes precedence.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Construction Site Operator means the party or parties that meet one or more of the following descriptions:

- (1) Has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or;
- (2) Has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a Storm Water Pollution Prevention Plan for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Control Measure as used in the permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the State.

Discharge, when used without a qualifier, refers to "discharge of a pollutant" as defined at 40 CFR §122.2.

General Permit OKR4 was issued by the state, and under this permit, Phase II cities in compliance with the program are allowed stormwater and certain non-stormwater discharges.

Illicit Discharge is any discharge to a municipal separate storm sewer that is not entirely composed of stormwater, except discharges authorized under an OPDES or NPDES permit and discharges resulting from fire fighting activities.

MEP is an acronym for "Maximum Extent Practicable," the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by CWA §402(p).

Municipal Separate Storm Sewer System (MS4) means conveyances (including streets, curbs, gutters, storm sewers, culverts, catch basins, ditches, channels, or storm drains) that function as part of a city's stormwater collection and conveyance system. This means storm and sanitary sewers are not combined.

National Pollution Discharge Elimination System (NPDES) is a body of EPA rules regarding stormwater quality. Phase I regulated cities with populations over 100,000 and construction sites greater than 5 acres. Phase II regulates certain smaller cities with populations over 10,000 and construction sites greater than 1 acre.

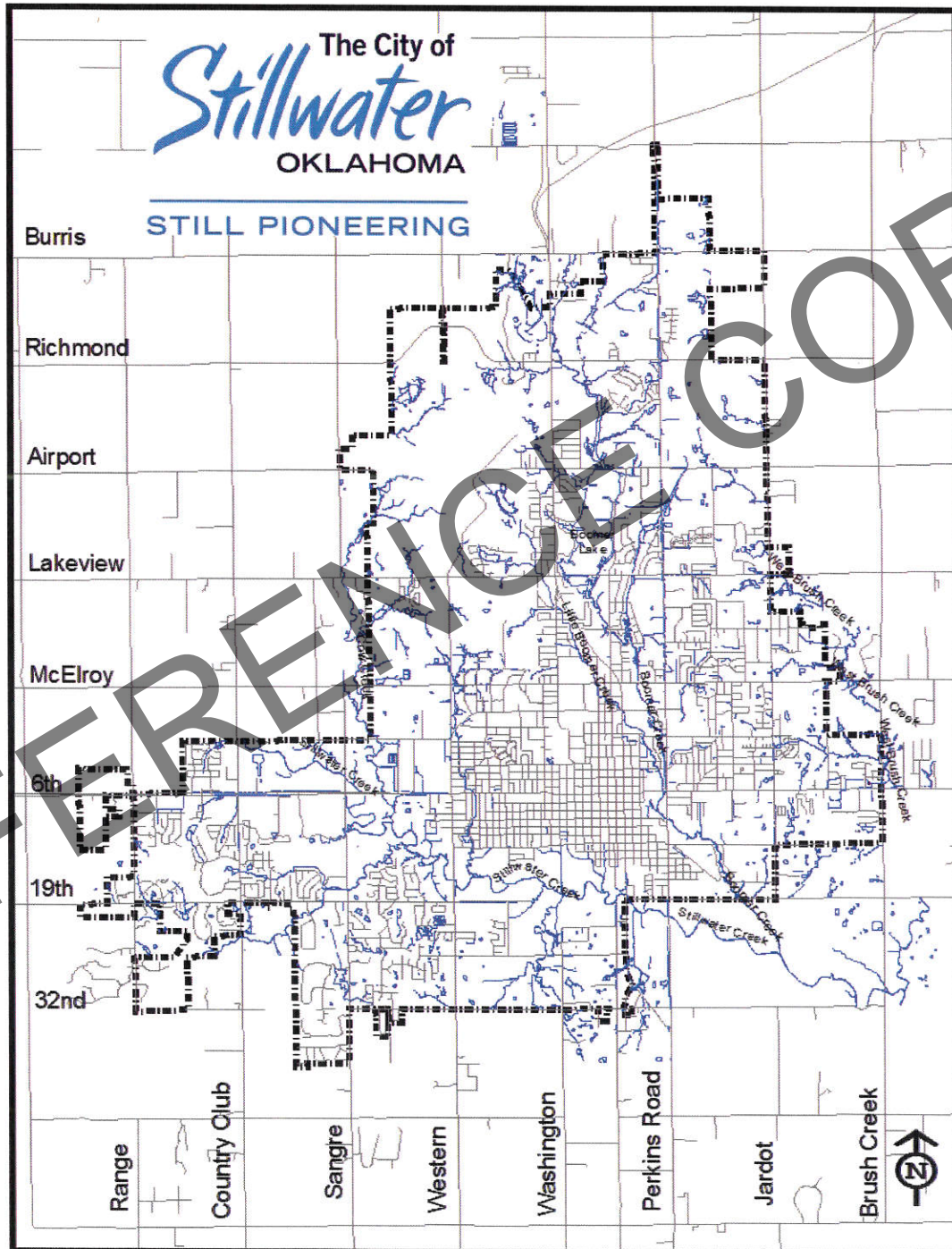
Notice of Intent (NOI) must be submitted, and accepted by ODEQ, to be covered by the permit and is the mechanism used to "register" for coverage under a general permit.

Stormwater is defined as stormwater runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Management Program (SWMP) refers to a comprehensive program (and document) to manage the quality of storm water discharged from the municipal separate storm sewer system.

APPENDIX A:
Map of City Limits of City of Stillwater

The following is a map showing the City Limits of the City of Stillwater.



APPENDIX B
One Page Summaries of BMPs

BMP Title:	Brochures / Flyers / Social Media					
Minimum Control Measure Applications	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X	X	X	X
BMP Description:	Expand use of existing and develop new brochures or flyers for the following and distribute in print and via social media: Water quality impacts from urban stormwater, household chemical disposal options, proper use of fertilizers and pesticides, recycling and re-use benefits, how to become involved in the stormwater program, motor oil pollution prevention, responsible pet ownership, construction / erosion / sediment control BMPs, post-construction stormwater management BMPs, chemical storage and disposal at City facilities, City good housekeeping options, and various other program-related topics. Details: Will be distributed continuously at City building. Will be distributed to City schools once per permit year. Every permit year one selected brochure / flyer will be mailed as a utility bill stuffer "Construction / erosion / sediment control BMPs" also will be distributed with building permit issuance, "Chemical storage and disposal at City facilities" and "City good housekeeping options" also will be distributed at City staff training events offered various times during the permit cycle.					
Target Audience:	General public – adults, schools (5th-12th), business owners, contractors, developers, builders, consulting engineers, City staff					
Measurable Goals:	2016: Minimum: Identify 3 social media platforms for electronic media distribution. 2017: Minimum of having electronic versions of 50% of printed brochures. 2018: Minimum 100% electronic versions. 2019: Review and update brochures.					
Implementation Schedule:	2016: Develop media platforms by end of year. 2017: Develop/convert new material, Modify, update, and distribute during year. 2018: Develop/convert, Modify, update, and distribute during year. 2019: Modify and update, distribute during year.					

BMP Title:	MS4 Mapping					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
			X	X	X	X
BMP Description:	The City of Stillwater will develop a GIS-based storm sewer system map that shows the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls. Priority areas for the above-referenced MCM will be determined utilizing this GIS database. Details: This map will be created by utilizing existing records at the City, public-domain GIS data, contract-acquired GIS data such as aerial photographs and radar-generated topography, USGS 7.5 Minute Quadrangles, and FEMA Flood Insurance Rate Maps (used as a reference for labeling USGS unnamed tributaries), and spot field verifications using Global Positioning System (GPS) MS4 storm sewer map will be revised once every permit year to incorporate all corrections and updates from compiled data Map will also be used to develop prioritized inspection areas for illicit discharges to impaired water bodies.					
Suitable For:	City staff					
Measurable Goals:	Develop priority inspection zones for investigation of illicit discharges to all impaired waters by end of first year. Update Map for entire MS4 by the end of each year					
Implementation Schedule*: * Permit Year	Annually - Compile corrections and updates; revise map					

BMP Title:	Public Meetings					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X				
BMP Description:	Discuss the Phase II Program once every permit year at the City Council Meeting. Details: These are public meetings that comply with State and local public notice requirements					
Suitable For:	General public					
Measurable Goals:	Number of times Phase II Program was discussed at City Council Meeting per permit year Number of contacts made by the public due to the public meetings per permit year.					
Implementation Schedule*: * Permit Year	None					

BMP Title:	Ordinance					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
			X	X	X	
BMP Description:	The City of Stillwater will review and modify existing ordinances for the above-referenced MCM Details: Ordinance effectiveness will be periodically reviewed and changes made as appropriate					
Suitable For:	City staff and administration					
Measurable Goals:	City of Stillwater will develop and review ordinances the first year of the program. The City of Stillwater will adopt the ordinances by the middle of the second year. Update and changes in the ordinances will be made as needed.					
Implementation Schedule*: * Permit Year	Year 1 – Develop and review ordinances for MCM #3, 4, 5. Year 2 – Adopt ordinances for MCM #3,4,5 Year 4 - Review and modify existing ordinances if needed Year 5 - Evaluate effectiveness of the above ordinances; begin administrative process to make any needed modifications					

BMP Title:	Site Plan Review					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
				X	X	
BMP Description:	Modification of the current pre-construction site plan review process to incorporate the review of erosion and sediment control BMPs and post-construction BMPs that address stormwater quality. Details: Current site plan review process and minimum design standards will be reviewed; modifications to the process and standards will be implemented to ensure required elements pertaining to the above MCM are present on the plans and/or addressed in some other manner. Site plan review will incorporate the updated sediment and erosion control manual BMP.					
Suitable For:	City staff					
Measurable Goals:	Site plan review process reviewed and modified to address MCM # 4 within the second year of the permit. Site plan review process reviewed and modified to address MCM #5 within the first four years of the permit. Number and type of BMPs for MCM #4 and #5 shown on the final approved plans and/or addressed in some other manner per permit year. Effectiveness of the site plan review process evaluated during the fifth year of the permit and modified if needed					
Implementation Schedule*: * Permit Year	Year 1 - Review and modification of site plan review process for MCM #4 Year 2 – Implement updated process and standards for MCM #4 Year 3 - Review and modification of site plan review process and design standards for MCM #5. Implement process by end of year. Year 5 - Evaluate effectiveness of the site plan review process; make needed modifications					

BMP Title:	Public Information Receipt					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X	X	X	X
BMP Description:	Review existing, development new procedures in the first year of the permit to receive, record, and consider information / input from the public. Details: Procedures needed due to the anticipated volume of public contact Staff will be educated on how to document public input from email, letters, faxes, phone calls, social media and personal contacts. Response actions tied to each request will be documented Response actions will be evaluated as to whether they were successful or not Follow-up action on unresolved problems will be ensured. Success of these procedures will be evaluated and the procedures modified as needed					
Suitable For:	City staff					
Measurable Goals:	Development of procedures and their implementation in the first permit year. Total number of contacts made by the public, method of contact, and associated data such as MCM every permit year.					
Implementation Schedule*: * Permit Year	Year 1 - Develop and implement procedures Year 2, 3, 4 & 5 - Continue program					

BMP Title:	Enforcement					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
			X	X	X	X
BMP Description:	Conduct enforcement specific to appropriate MCM. Detail: Increasingly more strict enforcement actions will be used with continued noncompliance at a site, including stop work orders, fines and referral to the ODEQ and EPA in situations where the City's series of enforcement actions have failed to abate the pollutant source.					
Suitable For:	City-wide, all sources					
Measurable Goals:	Record total number of sites requiring enforcement action every permit year. Record total number of enforcement actions and type every permit year and per MCM every year. Record total number of sites requiring enforcement action beyond the first contact every permit year and per MCM every permit year. Record total number of sites referred to the ODEQ / EPA due to noncompliance every permit year and per MCM every permit year. Number of pollution sources abated due to enforcement action every permit year and per MCM every permit year					
Implementation Schedule*: * Permit Year	Year 1, 2, 3, 4 & 5 - Conduct enforcement as necessary; record data					

BMP Title:	Stormwater Website					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X	X	X	
BMP Description:	Review the existing stormwater website by the end of the first permit year. Add new elements as they are developed. Details: The Stormwater website will contain information on each BMP. It will contain information on what citizens can do to help improve water quality. The site will also have information on the upcoming events.					
Suitable For:	General public					
Measurable Goals:	Update stormwater website by the end of the first permit year. Report the number of times the website was updated every permit year. Report the number of contacts made by the public due to accessing the website every permit year					
Implementation Schedule*: * Permit Year	Year 1 - Establish website Year 2, 3, 4 & 5 – Update					

BMP Title:	Digital Media Public Service Announcement					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X					
BMP Description:	Develop digital media public service announcements on water quality impacts from urban stormwater by the end of the second permit year. Details: The City of Stillwater will incorporate EPA videos as well as material developed by the City. Distribute to local tv, cable, internet outlets and on social media.					
Suitable For:	General public					
Measurable Goals:	Develop and distribute public service announcement by the end of the second permit year. Record number of times or length of time announcement ran on local cable per permit year. Record number of contacts made by the public due to viewing announcement per permit year					
Implementation Schedule*: * Permit Year	Year 2 – Air announcement Year 3, 4 & 5-develop new announcement and run it on local cable channels and via social media.					

BMP Title:	Newsletter (Utility Bill)					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X					
BMP Description:	Place one article about stormwater quality and/or public participation events in this publication once every permit year. Details: This is a City-generated newsletter sent at least annually to all utility customers in the City of Stillwater.					
Suitable For:	General public					
Measurable Goals:	Place one article about stormwater quality and/or public participation events once every permit year. Record the number of contacts made by the public due to reading this article every permit year.					
Implementation Schedule*: * Permit Year	Year 1 - Create article Year 2, 3, 4 & 5 –Create new article if necessary and Send in utility bill at least once a year					

BMP Title:	Posters					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X					X
BMP Description:	Develop or obtain posters for public awareness about stormwater. Details: It will be posted at City Hall quarterly, and when special events are coming up.					
Suitable For:	General public, City staff					
Measurable Goals:	Number of posters posted at City buildings per permit year Number of contacts made by the public attributable to viewing the poster per permit year					
Implementation Schedule*: * Permit Year	Year 1 - Develop / obtain poster and post at City buildings Year 2, 3, 4 &5 - Repeat					

BMP Title:	School Program					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X				
BMP Description:	Obtain / provide a stormwater education program for the schools. Details: The City of Stillwater will give presentations to the 8 th grade classes twice a year. The Stormwater Program will also give the teachers education material to give the students.					
Suitable For:	Schools (8th graders)					
Measurable Goals:	Develop / obtain stormwater education material the second permit year of permit. Report the number of children every permit year receiving this instruction					
Implementation Schedule*: * Permit Year	Year 2 - Develop / obtain stormwater education program Year 3, 4 & 5 - Continuously available					

BMP Title:	Clean-Up Events / Programs					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X			X
BMP Description:	Sponsor Adopt A Street program events every year. Details: This is an ongoing program currently sponsored by the City. "Adopt-a-Street" Program is continuously available; "Adopt-a-Street" Program requires clean-ups at least annually.					
Suitable For:	General public, City staff					
Measurable Goals:	Miles of streets under adoption every permit year. Number of clean-up events every permit year. Number of participants in each particular event. Miles of streets cleaned every permit year by these events. Number of bags of trash collected or other quantifiable data on what was collected to demonstrate the success of the particular event.					
Implementation Schedule*: * Permit Year	None					

BMP Title:	Household Pollutant Collection Event					
Minimum Control Measure Addressed:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X			X
BMP Description:	Support the household pollutant collection event that is already in place. Details: The Environmental Programs Division put this event on. The Stormwater Management Program will support and help promote this event.					
Suitable For:	General public, City staff					
Measurable Goals:	Hold one household pollution collection event every permit year and provide permanent disposal sites. Types of pollutants collected and associated quantifiable data such as pounds, containers, gallons, etc. to demonstrate the success of the event.					
Implementation Schedule*: * Permit Year	None					

BMP Title:	Recycling Opportunities					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X			X
BMP Description:	Offer recycling opportunities. Details: These are opportunities currently offered by the City of Stillwater.					
Suitable For:	General public, City staff					
Measurable Goals:	Number or percentage of households participating in curbside recycling every permit year					
Implementation Schedule*: * Permit Year	None					

BMP Title:	Storm drain Marking					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X	X	X			X
BMP Description:	A stock of storm drain marking kits will be obtained the first permit year and offered continuously thereafter. Details: The Environmental Programs has been providing stormdrain marking kits and training to volunteer who want to participate in the stormdrain marking program.					
Suitable For:	General public, schools, non-profits					
Measurable Goals:	Number of stormdrains marked every permit year.					
Implementation Schedule*: * Permit Year	Year 1 – Maintain stock of kits and provide training needed to train volunteers on how to safely install stormdrain markers. Year 2, 3, 4 & 5 - Continuously available					

BMP Title:	Free Promotional Items					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X					
BMP Description:	Purchase and distribute items with stormwater quality message to promote the stormwater program. Details: To be distributed free at public events when brochures are distributed and/or when public education booths are set up at events.					
Suitable For:	General public, schools, non-profits					
Measurable Goals:	Select one item type and purchase by the end of the second permit year. Number of items distributed every permit year. Number of contacts made by the public due to item every permit year					
Implementation Schedule*: * Permit Year	Year 1 - Select item type and acquire Year 2, 3, 4 & 5 – Distribute					

BMP Title:	Inspections					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
			X	X	X	X
BMP Description:	Conduct inspections specific to appropriate MCM Detail: Investigations under MCM #3 and #6 of the MS4 and waterways primarily will be complaint-driven, except for areas tributary to Boomer Lake and Stillwater Creek. Investigations under #4 and #6 for both MS4 impaired water bodies will focus on identification of all potential pollutant load sources contributing to the impairments. Investigations under #4 and #5 will be both regularly scheduled as well as complaint-driven. Good Housekeeping investigations under #6 of the City-owned facilities will be regularly scheduled. Trigger mechanism, pertinent data, and applicable MCM for every investigation will be recorded.					
Suitable For:	City-wide					
Measurable Goals:	Total number of sites inspected every permit year and per MCM every permit year. Total number of investigations conducted every permit year and per MCM every permit year. Routine inspections for MCM #4 begun by the end of the first permit year. Good Housekeeping inspections for MCM #6 begun by the end of the second permit year. Number of investigations conducted for pollutant source tracking every permit year with breakdown of number by City staff and number by contract professionals. Total number of inspections requiring follow-up action(s) and type(s) of follow-up action(s) every permit year and per MCM every permit year. Total number of pollution sources abated due to an inspection every permit year and per MCM every permit year.					
Implementation Schedule*: * Permit Year	Year 1, 2, 3, 4 & 5 – Conduct inspections; record data					

BMP Title:	Erosion and Sediment Control Manual					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
	X			X	X	
BMP Description:	The Stormwater Program will develop an erosion and sediment control manual for construction contractors and developers that address proper erosion and sediment control measures.					
Suitable For:	All construction activities within the city-wide MS4 system.					
Suggested Measurable Goals*: * by permit Year	2016 - Develop draft erosion and sediment control plan standards 2017 – Finalize manual and distribute manuals to all active construction sites, developers and design engineers. 2018 – Distribute manuals to Stormwater Permit (currently earth change permit) applicants. 2019 – Update if necessary and continue to distribute. 2020 – Continue to distribute manuals.					
Implementation Schedule*: * by Permit Year	Same as Measurable Goals.					

BMP Title:	Illicit Discharge Investigation and Monitoring					
Minimum Control Measure Application:	Public Ed.	Public Part.	Illicit Det.	Constr.	Post Const.	Houskeep.
			X			X
BMP Description:	The City of Stillwater will develop policies and procedures to investigate and conduct enforcement, as necessary, for suspected illicit discharges. Increasingly more strict enforcement actions will be used with continued noncompliance at a site, including referral to the ODEQ and EPA in situations where the City's sequence of enforcement actions have failed to abate the pollutant source. The City will develop and implement a dry weather screening program, which may include checking for water flows in excess of expected base flows during low rainfall periods and chemical monitoring. The City of will also develop an Optical Brightener Monitoring program that will help find and eliminate illicit discharges.					
Measurable Goals:	Number of complaints received, and number validated. Number of possible violations investigated and number confirmed. Number of sites requiring enforcement action beyond first identification, and type of action. Number of pollution sources abated due to enforcement action.					
Implementation Schedule:	Year 1: Investigate all complaints, start choosing monitoring sites, and determine what equipment will need to be purchased. Year 2: Investigate all complaints, Purchase monitoring equipment, and begin monitoring. Year 3: Investigate all complaints. Continue dry weather monitoring program, begin choosing sites for the optical brightener program. Year 4: Investigate all complaints. Continue dry weather monitoring program, start the optical brightener program. Year 5: Investigate all complaints. Continue dry weather monitoring and optical brightener monitoring program.					

City of Stillwater Oklahoma Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Insert Project/Site Name
Insert Project Site Location/Address
Stillwater, OK 74074

SWPPP Prepared By:

City of Stillwater, Oklahoma
Insert Stillwater Project Manager
Insert Address
Insert City, State, Zip Code
Insert Telephone Number
Insert Fax/Email

SWPPP Preparation Date:

____/____/____

Estimated Project Dates:

Project Start Date: ____/____/____
Project Completion Date: ____/____/____

Note: Use of this SWPPP template is only applicable to municipal construction projects and activities governed by the OKR04 permit and should not be used for construction projects and activities governed by the OKR10 permit.

REFERENCE COPY

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Appendix A – Site Maps

Appendix B – Copy of Oklahoma State Operating Permit

Appendix C – Inspection Form & Corrective Action Report

Appendix D – SWPPP Amendment Log

Appendix E – Subcontractor Certifications/Agreements

Appendix F – Grading and Stabilization Activities Log

Appendix G – Delegation of Authority

Appendix H – Stillwater Erosion & Sediment Control Manual

REFERENCE COPY

SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Property Owner / Contractor(s)

Instructions:

- City of Stillwater Code Section 35-136 Requires any person effecting an earth change to obtain a permit from the City Engineer.
- List the general contractor and subcontractors expected to work on-site. Notify contractors of stormwater requirements applicable to their work.
- The general contractor and subcontractors must sign the Contractor Agreement included in Appendix E.

Property Owner:

City of Stillwater, Oklahoma
Dan Blankenship – Deputy City Manager
723 South Lewis
Stillwater, OK 74074
405-742-8260
dblankenship@stillwater.org

Alternate Owner Contacts – By Project Type:

Roadway and Storm Drainage Improvements

City of Stillwater, Oklahoma
Sharla Lovern, PE – Interim Director Transportation and Stormwater Services
723 South Lewis
Stillwater, OK 74074
405-533-8431
slovern@stillwater.org

Existing Channel and Pavement Maintenance

Mark White – Operations Manager
723 South Lewis
Stillwater, OK 74074
405-742-8351
mwhite@stillwater.org

Water and Sewer Improvement Projects

Bill Millis, PE – Director Water and Wastewater Resources
723 South Lewis
Stillwater, OK 74074
405-742-8325
wmillis@stillwater.org

General Contractor: (If Applicable) Attach signed Contractor Agreement (see Appendix E)

INSERT COMPANY OR ORGANIZATION NAME
INSERT NAME
INSERT ADDRESS
INSERT CITY, STATE, ZIP CODE
INSERT TELEPHONE NUMBER
INSERT FAX/EMAIL
INSERT AREA OF CONTROL

Subcontractor (s): Attach signed Contractor Agreement for each (see Appendix E)

Excavation/Trenching Subcontractor

INSERT COMPANY OR ORGANIZATION NAME
INSERT TELEPHONE NUMBER
INSERT EMAIL

Responsible for Excavation and Trenching

INSERT COMPANY OR ORGANIZATION NAME
INSERT TELEPHONE NUMBER
INSERT AREA OF CONTROL

Emergency 24-Hour Contact:

INSERT COMPANY OR ORGANIZATION NAME
INSERT CONTACT NAME

1.2 Stormwater Team

City contact responsible for environmental matters:

Chris Franks –
Environmental Programs Manager
405-533-8482
cfranks@stillwater.org

Designated inspector - by City of Stillwater function:

Existing Channel & Pavement Maintenance Operations

Sean Eisensmith
Operations – Deputy Team Leader
405-533-8454
seisensmith@stillwater.org

Roadway and Storm Drainage Improvement Projects

Kevin Crew
Transportation Construction Inspector
405-564-3614
kcrew@stillwater.org

Water and Sewer Improvement Projects

Steven Fair
Water Construction Inspector
405-533-8423
sfair@stillwater.org

Development Services Inspection

Brian Edmonston
Engineering Inspector
405-742-8257
bedmonston@stillwater.org

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Discharge Information

Instructions:

- A listing of all outfalls and receiving waters associated with the project is required.
 - ✓ List the name of the first surface water that receives discharges from your site.
 - ✓ If your site has discharges to multiple surface waters, indicate the names of all such waters.
 - ✓ Contact Mike Beaty for assistance with identifying project receiving waters.
Mbeaty@stillwater.org - Phone - 405 742-8215
- Article XVIII, Section 23 of the Stillwater Municipal Code requires a Floodplain Development Permit (Earth Change) for all grading activities that are proposed within a FEMA special flood hazard area (mapped floodplain).
- Any grading or filling that is proposed within a USGS mapped blue line stream, an incised channel, or waterway otherwise deemed to be jurisdictional waters of the United States may also require a (404) or (401) permit from the U.S. Army Corps of Engineers.
- The only allowable non-stormwater discharges covered by this SWPPP and (Part VIII.B.2 of OKR04 Permit):
 - ✓ waters used to wash vehicles where detergents are not used;
 - ✓ water used to control dust;
 - ✓ routine external building wash-down which does not use detergents;
 - ✓ pavement wash-waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
 - ✓ un-contaminated flows from excavation de-watering activities will be allowed if operational and structural controls are used to reduce any pollutant releases in order to avoid or minimize the impacts on water quality. These controls must be included in your SWPPP.

Names of Receiving Waters

Outfall #	Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)
	1.
	2.
	3.
	4.
	5.
	6.

Floodplain

Will land disturbance activities take place within the Special Flood Hazard Area (mapped floodplain)?
YES ☐ NO ☐

If yes, a Stillwater Floodplain Development Permit (Earth Change Permit) will also be required. Contact Floodplain Administrator Mike Beaty 405-742-8215.

Corps of Engineers

Will this project require a permit from the Corps of Engineers?
YES ☐ NO ☐

If yes, a copy of the Corps permit must be submitted with this SWPPP.

2.2 Nature of the Construction Activity

Instructions:

- A description of the function of the project is required. Also provide:
 - ✓ Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including, but not limited to, off-site borrow and fill areas.
 - ✓ Provide a general description of the nature of the construction activities at your project.
 - ✓ Describe the size of the property (in acres) and the total area expected to be

General Description of Project

This SWPPP Template has been prepared for use by City of Stillwater operations and maintenance crews and contractors involved in City facility maintenance operations throughout the City. Its application is for linear utility and roadway maintenance operations not exceeding 5000 feet in length or more than 3.0 acres in disturbed or exposed soil. Larger activities will be required to prepare a separate SWPPP and apply for a separate NOI with the Department of Environmental Quality.

For each unique improvement project provide an additional general information describing the construction/maintenance project:

Project type:

☐ Storm water

☐ Street/Pavement

☐ Water/Sewer Utility

☐ Channel Repair/Maint

☐ Culvert/Pipe

☐ Detention Basin Maint.

☐ Pavement Repair/Patch

☐ Pavement Removal/Replacement

☐ Utility Line Extension/Replacement

☐ Utility Line Repair

☐ Pump Station

Size of Construction Project

What is the size of the property (in acres), the total area expected to be disturbed by the construction activities (in acres), and the maximum area expected to be disturbed at any one time?

Size of Property: INSERT NUMBER OF ACRES OR LINEAL FEET OF LINE.

Area to Be Disturbed: INSERT NUMBER OF ACRES

Maximum Area to be Disturbed At Any One Time: INSERT MAX NUMBER OF ACRES (CANNOT EXCEED 2 ACRE).

[Repeat as necessary for individual project phases.]

Construction Support Activities (only provide if applicable)

Describe any construction support activities for the project (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas)

INSERT DESCRIPTION OF CONSTRUCTION SUPPORT ACTIVITY

INSERT CONTACT INFORMATION FOR CONSTRUCTION SUPPORT ACTIVITY (Name, Telephone No., Email Address)

INSERT LOCATION INFORMATION FOR CONSTRUCTION SUPPORT ACTIVITY (Address and/or Latitude/Longitude)

[Repeat as necessary.]

2.3 Sequence and Estimated Dates of Construction Activities

Instructions:

- The City of Stillwater Project Manager shall provide the following for each construction project and or major maintenance project.
- A description of the intended sequence and timing of activities that disturb soils at the site is required.
- For each phase of construction, include the following information:
 - ✓ Installation of stormwater controls, and when they will be made operational;
 - ✓ Commencement and duration of earth-disturbing activities, including clearing and grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
 - ✓ Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site.

Phase	Construction activities	Best Management Practices installed	Estimated Start & End Dates	Actual Dates (Complete in field.)
Pre-construction/ Maintenance	Installation of BMPs.	- Inlet protection (Graveled Bags) - Channel Checks (Gravel or Geo wedge) - Silt Fence/Silt Sox - Site Construction Entrances	START DATE END DATE	START DATE: _____ END DATE: _____
Phase – Construction and Maintenance Activities	- Installation of Linear Utility, Storm or Roadway. - See Note 1. - See Note 2.	- Maintain Construction Entrances – see Note 2. - Initiate intermediate installation of soil stabilization measures during lulls in construction – see Note 1. - Soil Stockpile protection - Installation of Diversion Dikes - Maintain Channel Checks. - Maintain Vegetative buffer zones. - Schedule regular street sweeper	START DATE END DATE	START DATE: _____ END DATE: _____
[Project Manager add phases as needed.]	LIST ACTIVITIES	- LIST BMPs - LIST BMPs	START DATE END DATE	START DATE: _____ END DATE: _____
Final Stabilization	Placement of Permanent BMP's and cleanup	- Driving Pavement Replacement - Removal of Temporary BMP's - Seeding and Mulching - Sod Placement - Other(s)	START DATE END DATE	START DATE: _____ END DATE: _____

Note 1: Operator must initiate stabilization measures **immediately** whenever earth-disturbing activities have **temporarily or permanently** ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Both temporary and permanent stabilization activities must begin **as soon as practicable** but **no later than 7 calendar days** after earth-disturbing activities have ceased. See Section 4.5 for more details. Log all intermediate grading and stabilization activities. (See appendix F.)

Note 2: You must remove the deposited sediment by the **end of the same work day** in which the track-out occurs, or by the end of the next work day if track-out occurs on a non-work day. There are possibilities of sediment being tracked-out from your site onto the surface of this street, paved areas, and sidewalks. You must include the provision to remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out sediment into any stormwater conveyance (unless it is connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.

2.4 Site Maps

Instructions:

- The City of Stillwater project manager shall provide at least two maps for each construction project and major maintenance projects. Project manager will provide additional maps as the scale and scope of the project requires.
 - ✓ Topographic Map(s):
 - Project boundary and planned disturbed area;
 - Existing vegetative cover (e.g. forest, pasture, pavement, structures);
 - Drainage pattern(s) of stormwater indicating the flowpath across construction site;
 - Authorized non-stormwater flow onto, over, and from the site property before and after major grading activities;
 - Locations of all waters of the state within one mile of the site including wetlands.
 - ✓ Site Erosion and Sediment Control Plan Map(s) with Specific Features:
 - Boundaries of the site and locations of construction activities – provide an aerial map to scale showing the limits of construction and construction phasing;
 - Labeled outfall(s);
 - Locations of all roadway entrances from the site;
 - Direction(s) of stormwater flow and approximate slopes before grading and anticipated after grading activities – note areas of steep slopes greater than 40%;
 - Identify areas of soil disturbance and areas that will not be disturbed;
 - Location of major structural and non-structural BMPs identified in the SWPPP including concrete wash-out pits as required;
 - Locations where stabilization practices are expected to occur;
 - Locations of off-site material, waste, borrow or equipment storage areas;
 - Locations of all waters of the State (including wetlands);
 - Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply;
 - The boundary lines of any natural buffers (i.e., either the 100 foot or other buffer areas retained on site);
 - Locate stormwater and allowable non-stormwater discharge locations, including locations where stormwater or allowable non-stormwater will be discharged to waters of the state on or near the site.
- Attach maps in Appendix A of the Template. For more complicated sites, a series of maps showing the major phases of development is recommended. If all required information is on the construction plan sheets, no attachment will be required for Appendix A of this SWPPP.

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

Instructions:

- This permit does not supersede compliance with the Endangered Species Act.
- If there are listed species in Payne County or the City of Stillwater, check to see if critical habitat has been designated and if that area overlaps or is near the project area. Critical habitat designations and associated requirements may also be found at 50 CFR Parts 17 and 226. Use the map view tool at <http://criticalhabitat.fws.gov/crithab/> to find data specific to your project.

Are there any endangered species or critical habitat on or near the project?

YES ☐ NO ☐

If YES, please describe the species and/or critical habitat: _____

If YES, describe steps taken to address the impact of construction: _____

3.2 Historic Preservation

Instructions:

- NPDES permittees must be in compliance with the Historic Preservation Act.
- To view National Register Listings for Payne County, please visit the Oklahoma Historical Society website <http://nr.shpo.okstate.edu>
- You may also contact the State Historic Preservation Office (SHPO) at 405-521-6249.

Are there any historic sites on or near the construction site? YES ☐ NO ☒

If YES, describe steps taken to address the impact of construction: _____

- ☐ Other: INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO.

SECTION 4: EROSION AND SEDIMENT CONTROLS

Instructions:

- Development of the SWPPP requires the use of the minimum selected temporary and permanent structural and non-structural BMPs indicated below.
- The City of Stillwater Project Manager shall select and provide descriptions of all additional BMP's that will be utilized on the site.

Erosion Control BMPs:

- | | |
|---|---|
| ☒ Scheduling | ☒ Preservation of Existing Vegetation |
| ☒ Dust (Wind Erosion) Control | ☐ Hydraulic Mulch/Bonded Fiber Matrix |
| ☒ Seeding | ☐ Soil Binders |
| ☒ Sodding | ☐ Hydroseeding |
| ☐ Turf Reinforcement Mat | ☒ Erosion Control Blankets |
| ☐ Outlets/Velocity Dissipation Devices | ☐ Geotextiles and Plastic Covers |
| ☐ Temporary Stream Crossing | ☐ Streambank Stabilization |
| ☒ Mulching | |

Sediment Control BMPs:

- | | |
|--|--|
| ☒ Vegetated Filter Strips | ☒ Silt Fencing |
| ☐ Compost Filter Sock | ☐ Compost Filter Berms |
| ☐ Sediment Basins | ☐ Sediment Traps |
| ☐ Sediment Filters/Chambers | ☒ Inlet Protection |
| ☒ Street Sweeping/Cleaning | |

Runoff Management BMPs:

- | | |
|---|--|
| ☒ Check Dams | ☐ Earth Berms and Drainage Swales |
| ☐ Water Diversions | ☐ Terracing |
| ☐ Grass Lined Channel | ☐ Slope Drains |
| ☒ Gravel Bags | ☐ Level Spreaders |
| ☐ Soil Roughening | ☒ Fiber Wattles |
| ☐ Dewatering Operations | |

Tracking Control BMPs:

- | | |
|--|---|
| ☒ Construction Entrance/Exit | ☐ Construction Parking |
| ☐ Stabilized Construction Roadway | ☐ Tire Wash Down Station |

Pollution Prevention BMPs:

- | | |
|---|--|
| ☒ Concrete Washout | ☒ Non-Sediment Pollution Control |
| ☐ Vehicle Maintenance | ☐ Solid Waste/Trash Management |
| ☐ Other (Specify in description below) | |

4.1 BMP Descriptions

☐ Check box if control is Not Applicable.

- Detailed descriptions of the common structural and non structural BMPs anticipated for the majority of City of Stillwater construction and facility operations are presented below.
- Each of the principal BMPs checked on page 8 are described below.
- Stillwater project managers are responsible for adding additional BMP's as required for their project efficacy.
- See Stillwater Erosion and Sediment Control Manual in Appendix H for additional BMP's and details

BMP Descriptions

BMP# 1

BMP Description - Scheduling

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
Phasing involves developing a schedule that includes the sequencing of construction activities with the implementation of construction site BMPs. The purpose of phasing is to reduce the amount and duration of soil exposed to erosion and to implement and maintain BMPs in coordination with the sequence of construction activities.
- CONDITIONS FOR EFFECTIVE USE
A schedule of the sequence and timing of construction activities is a requirement for all sites that disturb 1 acre or greater and must be provided in - Sequencing and Estimated Dates of Construction Activities in the City's SWPPP template. Projects should be phased when possible to reduce the amount and duration of soil exposed at any one time. The phasing plan should be developed during project design. Disturbed areas in one phase should be stabilized before disturbing subsequent phases. When possible, land disturbance and construction in and around waterways should be scheduled during dry weather.

BMP# 2

BMP Description - Dust (Wind Erosion) Control

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
Dust control involves prevention of wind erosion of the soil and includes phasing, maintenance of existing vegetation, mulching, watering, and provision of wind barriers. consistently maintaining a minimum moisture content on exposed soil to prevent wind erosion of the soil.
- CONDITIONS FOR EFFECTIVE USE
Phase work to the extent practical to minimize the amount of area disturbed at one time (see Phasing/Sequencing). Preservation of grass and trees and the use of solid board fences may also serve as wind barriers. For areas not subjected to traffic, vegetation provides the most practical method of dust control and should be established as early as possible. Effectiveness of application of water, adhesives, and chemical treatment depends on soil, temperature, humidity and wind velocity
- CONSTRUCTION PROCEDURES
Use dust control when clearing and grading activities create blowing dust, especially during periods of dry weather. Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution. Place barriers at right angles to prevailing wind at intervals of about 10 times their height to control soil blowing. Paved areas that have soil on them from construction sites should be cleaned with street sweeper. Mulching offers a fast and effective means of controlling dust when properly applied. Binders and tackifiers should be used on organic mulches.
- MAINTENANCE REQUIREMENTS
Check the site regularly and reapply as required.

BMP# 3**BMP Description - Seeding**

- TYPE OF BMP: PERMANENT ☒ TEMPORARY ☒
- DEFINITION & PURPOSE
Seeding is used to establish temporary or permanent vegetation in order to protect exposed soil from erosion.
- CONDITIONS FOR EFFECTIVE USE
The exposed areas should be prepared for the application of the seed and or sodding.
- INSTALLATION/CONSTRUCTION PROCEDURES - Seeding
Seeding should be done immediately after completion of a phase of grading, or in areas where construction activity has ceased for 14 days. Use the following seeding specification.

Stillwater Seeding SpecificationMaterials:

- A. Seed: Provide seed from the most recent season's crop meeting the requirements of Oklahoma state seed law, including the testing and labeling for Pure Live Seed (PLS = Purity x Germination). Furnish seed of the designated species, in the labeled unopened bags or containers to the jobsite and retain seed tags for Engineer or Owners Representative's review and approval before planting. Seed must be used within 12 months from the date of the analysis.

Typical Native Seed Mix and Rates for Warm and Cool Seeding

Common Name	Botanical Name	Variety	#Pure Live Seed/ Acre	Live Seed/ Square Foot	Growth Rate
Western Wheatgrass	<i>Agropyron smithii</i>	VNS	2.00	5.05	Rapid
Sideoats Grama	<i>Bouteloua curtipendula</i>	El Reno	5.00	21.92	Moderate
Hairy Grama	<i>Bouteloua hirsuta</i>	VNS	2.00	5.34	Moderate
Buffalograss	<i>Buchloe dactyloides</i>	VNS	12.00	11.57	Slow
Partridge Pea	<i>Cassia fasciculata</i>	VNS	4.00	5.88	Rapid
Virginia Wildrye	<i>Elymus virginicus</i>	VNS	2.00	3.67	Moderate
Green Sprangletop	<i>Leptochloa dubia</i>	VNS	1.00	12.35	Rapid

Cold Season Native Seed Mix and Rates (In Addition to Typical Native Seed Mix and Rates)

Common Name	Botanical Name	Variety	#Pure Live Seed/ Acre	Live Seed/ Square Foot	Growth Rate
Virginia Wildrye	<i>Elymus virginicus</i>	VNS	6.00	10.00	Moderate
Indian Woodoats	<i>Chasmanthium Latifolium</i>	VNS	0.25	0.50	Moderate
Illinois Bundleflower	<i>Desmanthus illinoensis</i>	VNS	0.25	0.50	Moderate

*Contractor may submit alternate seed mix design for Engineer or Owners approval.

- B. Fertilizer: Provide soil samples to the Payne County Extension Office or other testing facility for Nitrogen, Phosphorus, Potassium, and pH. If necessary provide fertilizer in accordance with recommendations, and retain testing facility reports and labels for Engineer or Owners Representative's review.

- C. Vegetative Watering: Water shall be clean and free of industrial wastes and other substances harmful to the growth of vegetation.
- D. Cellulose Fiber Mulch: Wood fiber/ recycled paper blend "Second Nature-Wood Fiber Blend" manufactured by Central Fiber Corporation, 1525 Waynesburg Drive SE, Canton OH 44707, (888) 454-2630 or approved equal. Manufacturer's literature for alternate mulches shall be submitted for approval prior to hydro mulching operations. Mulch shall remain dry until applied. Molded or rotted material shall not be applied.
 - a. Mulch Application Rate:
 - i. Slopes less than 3:1 – 2400 lbs./ acre (dry weight of mulch)
 - ii. Slopes greater than 3:1 – 3000 lbs./ acre (dry weight of mulch)
- E. Tacking Methods: A water-soluble tacking agent shall be used and applied in accordance with manufacturer's recommendations.
- F. Erosion Control Blanket: Propex Landlok Supergro Erosion Control Blanket or approved equal. Manufacturer's literature for alternate erosion control blanket shall be submitted for approval prior to installation.

Construction:

- A. Temporary Native Seeding
 - a. Contractor shall begin Temporary Seeding operations no later than the twentieth day of soil exposed during construction.
 - b. Fertilizer may be placed simultaneously to hydro seeding operations (per Recommended Rates)
 - c. Hydroseeding: For areas of 200 square feet or greater; mix seed, fertilizer, and fiber mulch at the specified application rates and apply uniformly as a homogeneous slurry to soil exposed during construction. Apply seed within 4 hours of the placement of components in the tank. Apply with a machine specifically designed and manufactured for mixing and applying hydro mulch.
 - d. Broadcast Seeding: For areas of 200 square feet or less; distribute the seed mixture uniformly over exposed areas manually or by mechanical distribution or by hydroseeding. Cover with erosion control blanket and secure per manufacturer's recommendations.
- B. Permanent Native Seeding
 - a. Cultivate the area to be planted along contour lines to a depth of four inches (4") prior to placing seed unless the area is approved as having a stand of established designated cover by the Engineer or Owners Representative.
 - b. Fertilizer may be placed simultaneously to hydro seeding operations (per Recommended Rates)
 - c. Hydroseeding: Mix seed, fertilizer, and fiber mulch at the specified application rates and apply uniformly as homogeneous slurry to soil exposed during construction. Apply seed within 4 hours of the placement of components in the tank. Apply with a machine specifically designed and manufactured for mixing and applying hydro mulch. Areas approved by the Engineer or Owners Representative as having a stand of established designated cover will not need to be hydroseeded.
- OPERATION & MAINTENANCE PROCEDURES

Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Protect seeded areas from vehicular and foot traffic. Reseed and mulch areas that have not sprouted within 21 days of planting. Repair damaged or eroded areas and reseed/mulch as needed. Do not mow until 4 inches of growth occurs. During the first 4 months, mow no more than 1/3 the grass height. Seeded areas should be repaired and reseeded/mulched for one year following permanent seeding to ensure successful establishment.

BMP# 4

BMP Description - Sodding

- TYPE OF BMP: PERMANENT ☒ TEMPORARY ☐
- DEFINITION & PURPOSE
Sod is a mat of grass with an established root system used to provide immediate vegetation for erosion control.
- CONDITIONS FOR EFFECTIVE USE
Sod is an effective way to achieve immediate erosion protection in areas of sheet flow and low concentrated flows with velocities less than 5 feet/second. A soil test should be performed to determine if soil amendments are needed. Fertilizer should only be applied if a soil test indicates it is needed.
- INSTALLATION/CONSTRUCTION PROCEDURES
Install immediately after finish grading. Remove debris larger than 1 inch in diameter and concentrated areas of smaller debris. Level and roll soil lightly to provide an even grade and firm the surface. Soil should not be excessively wet or dry. Lay first row of sod perpendicular to the slope or direction of flow. Lay subsequent rows tightly against previous rows with joints staggered in a brick-like pattern. Fill minor gaps with good soil and roll entire surface to ensure contact. Stake, staple and/or net corners and centers of sod strips as required, especially in areas of concentrated flow. Water the sod immediately after installation, enough to soak 4 inches into the soil without causing runoff.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Water the sod as often as necessary to maintain moist soil to a depth of at least 4 inches. Reposition areas of sod that have moved along the slope. Remove sediment accumulations, and replace sod if necessary. Repair and replace sod in eroded areas as needed. Do not mow sod until 3 inches of new growth occurs. During the first 4 months, mow no more than 1/3 the grass height.

BMP# 5

BMP Description - Mulching

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE

A layer of organic material designed to protect exposed soil or freshly seeded areas from erosion by eliminating direct impact of precipitation and slowing overland flows. Mulch materials include grass, hay, straw, wood chips, wood fibers, and shredded bark.
- CONDITIONS FOR EFFECTIVE USE

Mulching can be used in areas of sheet flow for temporary soil stabilization on disturbed areas and applied to seeded areas to protect the seed and retain moisture for plant establishment. It is essential to seeding success in most conditions. In landscape areas, mulch is installed for permanent use. Where slopes are 3:1 or greater, hydraulic mulch-bonded fiber matrix, erosion control blankets, or turf reinforcement mats should be used.
- INSTALLATION/CONSTRUCTION PROCEDURES

Install immediately after grading landscaped areas or after seeding in other areas. Grade area and remove all debris larger than 1 inch if area is to be vegetated and mowed in the future, larger than 2 inches if area is to be permanently mulched. If area is to be seeded, follow requirements of seeding. Spread mulch evenly and anchor by crimping it into the ground or using netting.
- OPERATION & MAINTENANCE PROCEDURES

Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site until adequate vegetation is established. For permanent mulch, inspect annually. Protect from vehicular and foot traffic. Repair damaged or eroded areas, and reseed and replace mulch as needed.

BMP# 6

BMP Description - Erosion Control Blankets

- TYPE OF BMP: PERMANENT ☒ TEMPORARY ☒
- DEFINITION & PURPOSE
An erosion control blanket (ECB) is a blanket of synthetic or natural fibers to protect soil from the erosive impact of precipitation and overland flow, typically on slopes and in channels. ECBs also retain moisture and facilitate establishment of vegetation. Erosion control blankets are also sometimes referred to as Rolled Erosion Control Products (RECPs).
- CONDITIONS FOR EFFECTIVE USE
Factors in the selection of ECB include soil conditions, steepness and length of slope, shear stress, and type and duration of protection needed to establish desired vegetation. Products are available for a variety of uses and longevity, typically from 3 months to 36 months. Manufacturer's specifications should be followed.
- INSTALLATION/CONSTRUCTION PROCEDURES
The type of ECB shown on the plans should be installed immediately after completion of a phase of grading and/or seeding. Follow manufacturer's specifications for installation, particularly noting requirements for check slots, fastening devices (staples), and the need for firm contact with soil. See Manufacturer's Detail or Typical Detail.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site until adequate vegetation is established. Repair erosion and/or undermining at top of slope. Repair undermining beneath blankets. Pull back the blankets, fill and compact eroded area, re-seed and then firmly secure the blankets. Reposition or replace blankets that have moved along the slope or have been damaged.

BMP# 7

BMP Description - Street Sweeping/Cleaning

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
Street cleaning includes shoveling, brooming, sweeping and/or vacuuming to remove track-out of sediment from paved public roads.
- CONDITIONS FOR EFFECTIVE USE
Shoveling should be used to remove mud layers and large dirt clods. Sweeping and vacuuming may not be effective when paved roads are wet or muddy.
- INSTALLATION/CONSTRUCTION PROCEDURES
If track out is present, street cleaning should be performed as soon as possible, at the end of the work day, and before rain events. If not mixed with debris or trash, consider incorporating the removed sediment back into the project. Otherwise, sweeper waste should be disposed in a solid waste dumpster on or off-site. Do not wash any sediment or debris down the storm drain.
- OPERATION & MAINTENANCE PROCEDURES
Inspect ingress/egress access points daily, and clean tracked sediment as needed and/or required.

BMP# 8

BMP Description - Silt Fencing

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
A silt fence consists of a run of filter fabric, stretched, trenched in the ground and attached to anchored posts. Silt fence used as a perimeter control BMP encourages ponding of runoff and settling of sediment from stormwater.
- CONDITIONS FOR EFFECTIVE USE
Install silt fence along slopes, at bases of slopes, and around the perimeter of a site as a final barrier to sediment being carried off site. Silt fence should follow level contour lines with ends turned upslope in a J-Hook. Silt fence should never be used in areas of concentrated flow. **Common industry practice is that drainage areas should not exceed 0.25 acres per 100 feet of fence length.**
- INSTALLATION/CONSTRUCTION PROCEDURES
Install silt fence prior to disturbance and at intervals during construction of fill slopes. Follow Manufacturer's Specifications. See Typical Detail.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Remove sediment buildup once it accumulates to 6 inches. Replace torn/clogged fabric, and repair loose fabric and broken stakes.

BMP# 9

BMP Description - Inlet Protection

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
A temporary sediment control barrier placed around an inlet that minimizes sediment from entering the storm drain.
- CONDITIONS FOR EFFECTIVE USE
All functional inlets that drain disturbed areas should have inlet protection. The type of inlet protection should be determined based on the type of inlet, drainage area, slope, and whether the inlet is in a high traffic area. Types of inlet protection include gravel bags and proprietary inserts and covers. Compost filter sock or silt fence can be used for protection of area inlets where the sock and fence can be properly staked into the ground. Compost filter sock may also be used on pavement for curb inlet protection but gravel bags may be a better choice in high traffic areas because of their higher flow rate.
- INSTALLATION/CONSTRUCTION PROCEDURES
Install before land disturbing activities begin on existing inlets, or immediately after installation of a new inlet. Gravel bags may be placed either as a j-hook on the upstream end of the inlet or as a full barrier, sometimes stacked 2 bags high, across the entire opening of the inlet). Create an overflow bypass in the inlet protection structure so that excessive ponding of water around the inlet will not become a safety issue.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Inspect inlet protection to ensure integrity and effectiveness every week or 48 hour after every rain event that causes stormwater runoff to occur on-site. Remove sediment and construction debris that impedes flow to the inlet, and replace or repair nonfunctional inlet protection.

BMP# 10

BMP Description - Check Dams

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
Check dams reduce flow velocity, allowing sediment to settle out. A check dam is a device constructed of rock, rock bags, or proprietary products placed across a natural or man-made channel or swale. They are similar to ditch checks but designed to be more robust. Not to be constructed from silt fence.
- CONDITIONS FOR EFFECTIVE USE
Check dams should be designed by a registered design professional and consists of one or more dams placed at intervals in channels and swales to slow velocities, reducing erosion and allowing sediment to settle out. They can also be used as an alternative to a sediment basin for sites with a drainage area of 20 acres or less. They can also be used as a secondary sediment control measure in streams but should be combined with water diversion and other BMPs.
- INSTALLATION/CONSTRUCTION PROCEDURES
Install before disturbing vegetation in contributing drainage area and immediately following excavation of channels or swales. Check dams must be placed perpendicular to flow of water. Install geotextile filter fabric below rock. When using rock bags, no geotextile is needed. Check dam must be long enough to assure that center mass is lower than outside edge so that water will run over the middle and not undermine outside edges.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Remove accumulation of trash and leaves. Remove sediment when depth reaches one-half of the check dam height. Repair/restore dam structure, if necessary, to original configuration.

BMP# 11

BMP Description - Gravel Bags

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
Open mesh nylon or burlap bags of gravel designed to pond water and cause sediment to settle out.
- APPROPRIATE APPLICATIONS
Gravel bags may be implemented on a project-by-project basis with other BMPs.
- CONDITIONS FOR EFFECTIVE USE
Type of Flow: Sheet flow and concentrated flow. Gravel bags can be used alone or with other BMPs. They can be used as inlet protection, check dams in streams and channels, outfall protection, for water diversions, to create temporary sediment basins, and as barriers.
- INSTALLATION/CONSTRUCTION PROCEDURES
Time of installation is dependent upon the function gravel bags are intended to perform. When used as a linear control for sediment removal, install along a level contour and turn ends of gravel bag row up slope (j-hook style) to prevent flow around the ends. When used for concentrated flows, stack gravel bags to required height using a pyramid approach. The upper rows of gravel bags should overlap joints in lower rows.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Replace or stabilize any damaged bags or bags that have moved out of place. Repair wash-outs or other damages as needed. Inspect gravel bags for sediment accumulations, and remove sediment when accumulation reaches $\frac{1}{2}$ the height of the structure.

BMP# 12

BMP Description - Fiber Wattles

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE

Fiber rolls or straw wattles are a rolled erosion control product filled with straw, flax, rice, coconut fiber material, or composted material. Each roll is wrapped with UV-degradable polypropylene netting or with biodegradable materials like burlap or jute. These devices are slope dissipaters that reduce velocity of runoff as sheet flow and catch sediment on steep slopes.
- CONDITIONS FOR EFFECTIVE USE

Fiber rolls can be used in areas of low shear stress including: along the toe, top, face, and at grade breaks on exposed and erodible slopes to shorten slope length and spread runoff as sheet flow, at the end of a downward slope where it transitions to a steeper slope, along the perimeter of a project (less than 1/3 acre) or down-slope of a stockpile, and down-slope of other exposed soil areas.
- INSTALLATION/CONSTRUCTION PROCEDURES

Install fiber roll immediately after rough grading and prior to seeding or mulching. On slopes, install fiber rolls along the contour with a slight downward angle at the end of each row to prevent ponding at the midsection. Turn the ends of each fiber roll upslope (like a j-hook) to prevent runoff from flowing around the roll. Determine using manufacturer's specification the vertical spacing for slope installations. Straw wattles can float or move if not properly staked and trenched in.
- OPERATION & MAINTENANCE PROCEDURES

Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on site. Remove sediment accumulation when it reaches ½ the height of the roll/wattle. Repair or replace split, torn, unraveled, or slumping fiber rolls.

BMP# 13

BMP Description - Construction Entrance/Exit

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
A stabilized exit to a construction site is designed to minimize the amount of sediment tracked from the site on vehicles and equipment. Mud and sediment fall off of tires as they bounce along the stabilized entrance.
- CONDITIONS FOR EFFECTIVE USE
Limit the number of points of ingress/egress and locate them where it is safe for construction vehicles and equipment to access public road. Avoid placing construction exit in low areas, where stormwater can accumulate and discharge off site. If possible, locate where permanent roads will eventually be constructed.
- INSTALLATION/CONSTRUCTION PROCEDURES
Install prior to the start of construction. Properly grade and compact each construction entrance/exit to prevent runoff from leaving the site. Install culvert under entrance if needed to maintain positive drainage. Install woven geotextile fabric and cover with 3 to 6" aggregate to a depth of 6". Construction exit should have a length of 50' and a turn radius of 25' or full width of roadway. All contractors, subcontractors, and suppliers should be instructed to utilize construction entrance/exit before entering or exiting unstable areas.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Add a new lift of rock, or turn stones when voids become inundated with sediment and pad becomes smooth. Keep all temporary roadway ditches clear. Immediately remove any mud, rock or debris tracked onto paved surfaces. Use a street sweeper adjacent with the construction exit to reduce track out from site.

BMP# 14

BMP Description - Non-Sediment Pollution Control

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- SPILL PREVENTION CONTROLS

Keep a spill kit on-site with equipment necessary for spill clean-up. Equipment and materials include, but are not limited to: brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sawdust, oil-absorbent booms, and trash containers.
- FUELING, MAINTENANCE OF EQUIPMENT & VEHICLES

No fueling, servicing, maintenance or repair of equipment or machinery should be done within 100 feet of a stream, or within 150 feet of a classified stream, losing stream, or sinkhole. Tarps or drop cloths and drip pads should be used when servicing, repairing, or performing maintenance on construction equipment in the field. When work is complete, the contaminated materials should be disposed of appropriately.
- WASHING OF EQUIPMENT & VEHICLES

No wash water is allowed to discharge into storm drains or drainage way without proper treatment.
- PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS & LANDSCAPE MATERIALS

Exposure of these chemicals to precipitation and stormwater on-site should be minimized.
- DIESEL FUEL, OIL, HYDRAULIC FLUIDS, OTHER PETROLEUM PRODUCTS & CHEMICALS

All fueling facilities present on the site shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers. All fuel, oil, and other fluids exposed to precipitation shall be stored in watertight, structurally sound, closed containers. Minimize the discharge of fluids from spills and leaks by implementing chemical spill and leak prevention and response procedures, including, but not limited to, installation of containment berms and use of drip pans. Machinery should be kept out of the waterway as much as possible.
- HAZARDOUS OR TOXIC WASTE

Post guidelines for proper handling, storage and disposal of materials, and emergency spill cleanup on site. An accurate, up-to-date inventory of materials delivered and stored on-site should be kept. Retain original labels and material safety data sheets. All paint, solvents, petroleum products, petroleum waste products and storage containers such as drums, cans, or cartons shall be stored using best management practices. Materials exposed to precipitation shall be stored in watertight, structurally sound, closed containers with proper labels. Store bagged and boxed materials on pallets. Cover bagged and boxed materials during nonworking days and prior to rain events. Incompatible materials, such as ammonia and chlorine, must not be stored in the same temporary containment facility. Containers for proper disposal of waste paints, solvents, and cleaning compounds shall be provided.

BMP# 15

BMP Description - Concrete Wash-Out Pit

- TYPE OF BMP: PERMANENT ☐ TEMPORARY ☒
- DEFINITION & PURPOSE
Concrete wash-out pits are used to contain concrete wash-out when truck chutes, drums and/or hoses are rinsed out after delivery to construction site. Disposal can occur when concrete wash-out becomes a solid. Concrete wash-out water is a pollutant because of the high pH level and chemical additives in the wash-out. Concrete wash-out management prevents the contamination of stormwater with high pH and additives that may cause adverse impact to water quality.
- CONDITIONS FOR EFFECTIVE USE
Concrete wash-out pits must be implemented on construction projects where concrete slurries are generated. Wash-out should be located a minimum of 50 feet from storm drains, ditches, and 100 feet from classified streams, losing streams or sinkholes. Design concrete wash-out pits to sufficiently hold all liquid and concrete waste. Plastic liner should be a minimum of 20 mil. polyethylene sheeting.
- INSTALLATION/CONSTRUCTION PROCEDURES
Install concrete wash-out pits prior to concrete pouring activities.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after a rain event that causes stormwater runoff to occur on-site. Remove and dispose of solid concrete material. Wash-out facilities must be cleaned when volume reaches 75% of capacity. Cover the concrete wash-out pit before predicted rain events to prevent overflow.
- SITE CONDITIONS FOR REMOVAL
Remove concrete wash-out pit when concrete wash-out activity ceases.
- ALTERNATIVES
Return unwanted concrete back to concrete batch plant to wash-out, proprietary disposal boxes, roll-off dumpster.

BMP# 16

BMP Description - Preservation of Existing Vegetation

- TYPE OF BMP: PERMANENT ☒ TEMPORARY ☐
- DEFINITION & PURPOSE
Permanent preservation of existing vegetation and topsoil minimizes the area of disturbance, reducing the need for erosion and sediment control BMPs and the potential for violations. It also provides a financial benefit by reducing the cost of grading, BMPs, topsoil, and seeding. Preserved areas can provide long-term stormwater benefits through increased absorption of rainfall compared to turf grass areas with compacted soil.
- CONDITIONS FOR EFFECTIVE USE
Preservation of existing vegetation requires planning and should be the first step in the design process. The site should be surveyed to identify high quality soils, trees, vegetation, and steep slopes to be preserved. The site improvements, including any temporary roadways, should be designed around these features and follow existing contours to reduce cutting and filling. Sediment control BMPs such as compost filter sock or silt fence may be desirable to protect the preservation area from significant sediment accumulation.
- INSTALLATION/CONSTRUCTION PROCEDURES
Protection of preservation areas with temporary construction fencing and any sediment control BMPs shall be provided prior to the commencement of clearing and grubbing operations or other soil-disturbing activities.
Construction materials, equipment storage, and parking areas should be located outside of protected areas where they will not cause root compaction.
- OPERATION & MAINTENANCE PROCEDURES
During weekly and rain event inspections, verify that temporary construction fencing and any sediment control BMPs to protect preservation areas are still in place and operational. If the area to be preserved is adjusted during construction, update the site plan and document the update in Appendix D – SWPPP Amendment Log.
- SITE CONDITIONS FOR REMOVAL
Temporary fencing and any sediment control BMPs shall be removed after final stabilization of the site has occurred.

BMP# 17

BMP Description - Vegetated Filter Strips

- TYPE OF BMP: PERMANENT ☒ TEMPORARY ☐
- DEFINITION & PURPOSE
Vegetated filter strips are areas of vegetation that are used as sediment control practices during construction. Vegetation slows down stormwater runoff and filters out sediment.
- CONDITIONS FOR EFFECTIVE USE
Vegetated filter strips are appropriate where a strip of existing vegetation can be left in place in downhill areas to provide sediment control in place of or in addition to other sediment control BMPs. They should be used in areas of sheet flow only. Level spreaders may be needed to ensure sheet flow. Filter strip width and length should be determined based on the size and slope of the drainage area and type of vegetation. If the vegetated filter strip is part of a preservation area (see Preservation of Existing Vegetation), additional sediment control BMPs may be desired to protect the preservation area from excessive sediment deposition. Vegetated filter strips installed as a permanent stormwater quality control measure should not be used as a sediment control BMP.
- INSTALLATION/CONSTRUCTION PROCEDURES
Existing vegetation that will be used as a vegetated filter strip should be marked the width and length shown on the plans prior to construction and designated as no disturbance. It may be desirable to fence off the filter strip to protect it from construction activities.
- OPERATION & MAINTENANCE PROCEDURES
Inspect every week and within 48 hours after every rain event that causes stormwater runoff to occur on-site. Verify that the vegetated filter strip has not been removed or damaged by construction activities. Remove excessive sediment accumulation if needed for functionality. Seed areas of erosion or dead vegetation as needed. Install additional BMPs if the vegetated filter strip becomes ineffective, and update the site plan and Appendix D – SWPPP Amendment Log.
- SITE CONDITIONS FOR REMOVAL
The vegetated filter strip should remain in place until the drainage area is stabilized, at which point it is typically replaced with permanent vegetation or, in the case of a phased site, replaced with improvements. The SWPPP should provide site-specific information on removal/replacement of the vegetated filter strip.

4.2 Natural Buffers or Equivalent Sediment Controls ☐ Check box if control is Not Applicable.

Instructions:

- Existing vegetation is to be preserved everywhere practical. A minimum of a 50-foot buffer of undisturbed natural vegetation shall be provided between disturbed portions of the site and surrounding surface waters.
- On the site map(s), label any surface waters on or adjacent to the project and indicate the area to be dedicated as a buffer.
- Where the minimum buffer cannot be maintained, project manager shall provide locations and design of equivalent structural controls to supplement and augment the available buffer.

Are there any surface waters within 100 feet of your project's earth disturbances? ☐ YES ☐ NO
(Note: If no, no further documentation is required for the SWPPP Template.)

Check the compliance alternative that you have chosen:

- ☐ Project will maintain a minimum 50-foot undisturbed natural buffer.
(Note (1): Show the 50-foot boundary line of the natural buffer on site map.)
- ☐ It is infeasible to provide and maintain an undisturbed natural buffer of 50-ft.
 - INSERT RATIONALE FOR CONCLUDING THAT IT IS INFEASIBLE TO PROVIDE AND MAINTAIN A NATURAL BUFFER OF ANY SIZE

(Note (2): Project manager must show on site map how all discharges from construction disturbances, through the natural buffer area, will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.)
- ☐ Buffer disturbances are authorized as part of in-stream work under a CWA Section 404 permit.
 - INSERT DESCRIPTION OF ANY EARTH DISTURBANCES THAT WILL OCCUR WITHIN THE BUFFER AREA

(Note (3): If this exception applies, no further documentation is required.)

(Note (4): This exception only applies to the limits of disturbance authorized under the Section 404 permit, and does not apply to any upland portion of the construction project.)

4.3 Minimize the Disturbance of Steep Slopes

☐ Check box if control is Not Applicable.

Definitions:

- Steep Slopes: A steep slope is defined as being greater than 5:1 (five feet horizontal to one foot vertical) or greater than 20% AND greater than 150 feet in length.

Steep Slope Controls

Steep Slope Control # 1

Steep Slope Control Description

- Install jute erosion control mat on all exposed steep slopes
 - See BMP Description.

Steep Slope Control # 2

Steep Slope Control Description

- Install sod lining on all exposed steep slopes
 - See BMP Description.
 - Stake sod as required.

Steep Slope Control #3

Steep Slope Control Description

- Install hydroseeding and mulch with a diversion channel along the top of the exposed slope.
 - See BMP Description.
 - Place seeding and mulch within 7 days of exposure of the slope.

4.4 Sediment Basins

☐ Check box if control is Not Applicable.

Instructions:

- A sedimentation basin shall be provided for each drainage area with 2 or more acres disturbed at one time. The basin shall be sized to contain a volume of at least 3,600 cubic feet per each disturbed acre draining thereto. Include design specifications for each basin, including volume, dimensions, and outlet structure.
- Sediment ponds must utilize outlet structures that withdraw water from the surface, unless infeasible.
- Temporary and permanent sedimentation basins must have a stabilized spillway to minimize the potential for erosion of the spillway or basin embankment.
- Accumulated sediment shall be removed from the basin when the basin is 50% full. The basin shall be maintained until final stabilization of the disturbed area served by the basin.

Sediment Basin Controls

Sediment Basin Control # 1

Sediment Basin Control Description

- See project specific engineered site plans for sediment basin locations and dimensions.

Installation

- See engineered plans for the sediment basin specifications.
- Project managers shall identify phase in which the BMP will be installed.

4.5 Site Stabilization

Instructions:

- Interim stabilization must be initiated immediately and completed within 7 calendar days where soil disturbing activities have temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Interim stabilization shall consist of well-established and maintained BMPs. Final stabilization of disturbed areas must be initiated immediately and completed within 7 calendar days whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site. Log phased/intermediate and permanent grading and stabilization activities in Appendix F.
- Allowances to the 7 day completion period for temporary and final stabilization may be made due to weather and equipment malfunctions. Use of allowances shall be documented in the SWPPP.
- Describe the specific vegetative and/or non-vegetative practices that will be used to stabilize exposed soils where construction activities have temporarily or permanently ceased.

Site Stabilization Practice

- ☒ Vegetative ☐ Non-Vegetative
☒ Temporary ☒ Permanent

Description of Practice

- Provide seeding and mulch or sodding as indicated and as required. See BMPs.
- Provide steep slope protection in accordance with Section 4.3.
- See project specifications.

SECTION 5: POLLUTION PREVENTION STANDARDS

5.1 Potential Sources of Pollution

Instructions:

- Pollution prevention BMPs shall be installed to minimize the risk potential for non-sediment pollutants (including, but not limited to: wheel wash water, trash, fertilizers, pesticides, sanitary waste, and petroleum products leaving the site in stormwater runoff)
 - ✓ Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
 - ✓ Minimize exposure of any materials which may contribute pollution to precipitation and stormwater;
 - ✓ Implement chemical spill and leak prevention and response procedures. These procedures include but are not limited to maintenance of spill kits, installation of containment berms, and use of drip pans at petroleum product and liquid storage tanks and containers.

Construction Site Pollutants

Project Manager to Insert a listing of all anticipated site pollutants.

Pollutant-Generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)

[Include additional rows as necessary.]

There shall be no pollutants stored on site. All pollutants shall be secured in watertight containers on municipal vehicles and shall be stored at City facilities until required. A separate spill kit will be maintained for each substance and shall be transported with each substance delivered to the site. Spill kits will include absorption materials, booms, and containment systems specifically designed for each potential pollutant. Operators shall follow all manufacturer's storage and handling instructions for each substance used.

5.2 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

☐ Check box if control is Not Applicable.

Instructions:

- For any of the types of construction products, materials, and wastes that are expected to be used or stored at your site, provide the specific practices that will be employed.
- Solid waste and hazardous waste shall be managed using trash containers and regular site clean-up for proper disposal of solid waste (scrap metal, shipping waste, food containers, etc.). Containers for proper disposal of waste paints, solvents and cleaning compounds shall be provided. Portable toilets for proper disposal of sanitary sewage and the storage of construction materials should be kept away from drainage courses and low areas.
- All fueling facilities present on site shall adhere to applicable federal and state regulations concerning underground storage, above ground storage and dispensers.
- All paint, solvents, petroleum waste products and storage containers such as drums, cans, or cartons shall be stored according to BMPs. Materials exposed to precipitation shall be stored in watertight, structurally sound, closed containers. All containers shall be inspected for leaks or spillage during the once per week inspection of BMPs.
- From the list below, check all potentially hazardous waste that will be present on your site.

Materials Present Include:

- | | |
|---|---|
| ☐ Pesticides | ☐ Herbicides |
| ☐ Insecticides | ☐ Fertilizers |
| ☐ Diesel Fuel | ☐ Oil |
| ☐ Hydraulic Fluid | ☐ Other Petroleum Products |
| ☐ Paint | ☐ Solvents |
| ☐ Acid | ☐ Curing Compounds |
| ☐ Portable Toilets | ☐ Solid Waste |
| ☐ Other | |

General

- City of Stillwater project managers and Operations Team Leaders will be responsible for identifying any waste or hazardous materials on the job site. City operations personnel will police the area daily for project related waste material prior to completion of daily operations. All solid waste, and other environmentally noxious/hazardous waste will be collected and removed from the job site daily. No material, fuels, supplies, chemicals or other non-stable material will be allowed to remain exposed to the elements on the jobsite, but shall be secured in water tight containers on the municipal vehicles.

SECTION 6: INSPECTION AND CORRECTIVE ACTION

6.1 *Inspection Personnel and Procedures*

City contact responsible for environmental matters:

Chris Franks –
Environmental Programs Manager
405-533-8482
cfranks@stillwater.org

Designated Inspector by Discipline for City of Stillwater programs and projects:

Water and Sewer Extensions –
Steven Fair
405-533-8423
sfair@stillwater.org

Field Operations Activity Inspector
Sean Eisensmith
405-533-8454
seisensmith@stillwater.org

Transportation and Stormwater Services Inspector
Kevin Crew
405-564-3614
kcrew@stillwater.org

Inspection Schedule

Inspections will be performed by City Inspectors at least once per seven calendar days. Contractors shall monitor and inspect project site and BMP's on a daily basis (work day). If a rainfall of 0.5 inches occurs or a snow melt causes storm water runoff to occur on-site, the BMPs must be inspected within a 24 hour period after the rainfall event has ceased. These inspections must occur within 24 hours after the rain event has ceased during a normal work day and within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday. Areas on-site that have been finally stabilized must be inspected at least once per month.

Rain Gauge Location (if applicable)
City of Stillwater Rain gauge system

Rain gauge locations and rainfall data can be found by contacting:

Rob Hill - Stillwater Emergency Management
Rhill@stillwater.org

See Appendix C for Inspection Report Forms and Corrective Action Forms

6.2 Corrective Action

Personnel Responsible for Corrective Actions

City of Stillwater Project Managers, Operations Team Leaders and City contractors will be responsible for working with project inspectors, taking corrective actions, and submitting reports. All reports must be submitted to the appropriate superintendent or director, as listed below.

City of Stillwater Field Services Superintendent
James Driskel
405-533-8452
jdriskel@stillwater.org

City of Stillwater Interim Director of Transportation
Sharla Lovern, PE
405-533-8431
slovern@stillwater.org

City of Stillwater Director of Water Utilities
Bill Millis, PE
405-742-8259
wmillis@stillwater.org

Corrective Action Schedule

Once an inspection has identified a BMP failure or an unauthorized stormwater discharge, the inspector, with the project manager and the contractor will identify corrective actions to immediately address the discharge or failure. Any structural or maintenance problems shall be noted in the inspection report and corrected within seven calendar days of the inspection. If weather conditions prevent correction of BMPs within 7 calendar days, the reasons for the delay must be documented (including pictures) and there must be a narrative explaining why the work cannot be accomplished within the 7 day time period. The documentation must be filed with the regular inspection reports, and the problem shall be corrected as soon as weather conditions allow.

Corrective Action Results and Documentation

Record all corrective actions taken for the project. Prepare a report identifying the condition requiring the correction, the scope of the correction and the date the correction was completed and put into service. (See Appendix C)

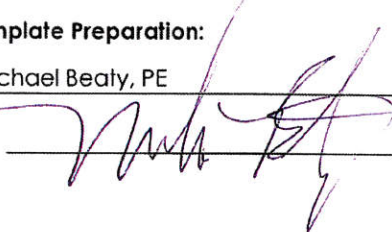
Any corrective action requiring an addition or change to the project SWPPP must be documented with a SWPPP amendment log entry by the project manager. (See Appendix D).

SECTION 7: CERTIFICATION AND NOTIFICATION

I certify under penalty of law that this document template and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SWPPP Template Preparation:

Name: Michael Beaty, PE Title: Development Review Manger

Signature:  Date: 12 Dec '16

Project Manager : (To Sign for Each Project Application)

Name: _____ Title: _____

Signature: _____ Date: _____

Appendix A – Site Maps

INSERT PROJECT SITE MAPS

REFERENCE COPY

Appendix B – Copy of Oklahoma Stormwater Permit

Insert Oklahoma Stormwater Permit

REFERENCE COPY

Appendix C – Inspection Form & Corrective Action Report

Instructions:

- Create a log here of corrective Actions. You may use the table below to track these modifications. Expand to additional sheets as required.
- Corrective actions are required when any of the following conditions exist:
 - ✓ Required Stormwater BMP or control was never installed, installed improperly, or not in accordance with OKR04 Parts VIII.B.3 and or VIII.B.6; or
 - ✓ The installed stormwater controls are not effective enough to meet applicable stormwater quality standards in accordance with OKR04 Part VIII.B.4.; or
 - ✓ Discharge from the site includes one of the prohibited discharges in OKR04 Parts 1.C and VIII.B.3.c.

Corrective Action Log:

No.	Description of the Corrective Action Taken	Date of Correction	Follow up Inspection of Correction [Name(s) and Date]

**STORMWATER MANAGEMENT
CONSTRUCTION SITE INSPECTION REPORT
(405) 533-8436**

Violations to be listed on Notice of Non-compliance:

- ☐ Violation #1: Severely inadequate and/or unmaintained perimeter controls.
- ☐ Violation #2: Severely inadequate and/or unmaintained inlet/outfall protection.
- ☐ Violation #3: Severely inadequate and/or unmaintained construction site entries/exits.
- ☐ Violation #4: Severely inadequate and/or unmaintained best management practices
for swales, channels, sediment catchment basins and/or related features.
- ☐ Violation #5: Severely inadequate and/or unmaintained slope stabilization to include areas around channels and catchment basins.
- ☐ Violation #6: Excessive sedimentation and/or debris in a street, storm drainage component, and/or other common-use area.
- ☐ Violation #7: Excessive areas, not undergoing active construction, which expose bare earth to precipitation.
- ☐ Violation #8: Excessive sediment entering into a body of water.
- ☐ Violation #9: Improper and/or severely inadequate storage/use/control of construction materials, chemicals (i.e., fuel, paint),
equipment and/or on-site facilities which could pollute stormwater.
- ☐ Violation #10: Earth change activities which disturbs 1.0 acres or more, impacts a drainage-way and/or is in a floodplain being
conducted without City of Stillwater Earth Change Permit authorization.
- ☐ Violation #11: Earth change activities (1.0 acres or greater) being conducted without meeting SWMP and OKR04 permit requirements.
(Note: Not punished by penalties from the City of Stillwater Municipal Code, but site will be reported to
ODEQ, if not corrected within the allotted timeframe.)
- ☐ Violation #12: Other (i.e., dust control):

NOTES and/or INSTRUCTIONS:

DIFFERENC

City of Stillwater Corrective Action Report Form

DEQ Authorization No. OKR04 _____

You are only required to fill out this form if any of the corrective action triggering conditions occurs on your site. Routine maintenance and repairs are generally not considered to be a corrective action triggering condition.

Section A – Initial Report (Part VIII.B.7.n(2)(a) of OKR04) (Complete this section within 24 hours of discovering the condition that triggered corrective action)	
Name of Project:	Today's Date:
Date Problem First Discovered:	Time Problem First Discovered:
Name & Contact Information of the Individual:	
What site conditions triggered the requirement to conduct corrective action (check the box that applies): ☐ A required stormwater control was never installed or was installed incorrectly, or not in accordance with the corresponding OKR04 permit requirement ☐ A stormwater control is not effective enough for the discharge to meet applicable water quality standards ☐ A prohibited discharge is occurring or has occurred. ☐ DEQ requires corrective action as a result of permit violations found during an DEQ inspection	
Provide a description of the problem:	
Deadline for completing corrective action:	no more than 7 calendar days after the date you discovered the problem

Section B – Corrective Action Progress (Part VIII.B.7.n(2)(b) of OKR04) (Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)			
Section B.1 – Why the Problem Occurred			
Cause(s) of Problem		How It Was Determined & Date of Determining the Cause	
1.		1.	
2.		2.	
Section B.2 – Stormwater Control Modifications to be Implemented to Correct the Problem			
List of Stormwater Control Modification(s) Needed to Correct Problem	Date of Completion	SWP3 Update Necessary? ☐ Yes ☐ No, If yes, provide date SWP3 modified:	Notes
1.		☐ Yes ☐ No, If yes, provide date SWP3 modified:	
2.		☐ Yes ☐ No, If yes, provide date SWP3 modified:	

Section C – Certification and Signature by Permittee

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Permittee or

Duly Authorized Representative: _____ Date: _____

Printed Name and Affiliation: _____

Appendix D – Stillwater SWPPP Amendment Log

Instructions:

- Create a log here of changes and updates to the SWPPP. You may use the table below to track these modifications.
- SWPPP modifications are required whenever the:
 - ✓ Design, operation, or maintenance of BMPs is changed;
 - ✓ Design of the construction project is changed that could significantly affect the quality of the stormwater discharges;
 - ✓ Permittee's inspections indicate deficiencies in the SWPPP;
 - ✓ SWPPP is determined to be ineffective in minimizing or controlling erosion and sedimentation (e.g., there is visual evidence of excessive site erosion or excessive sediment deposits in streams or lakes); and

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix E – Contractor Certification/Agreements

CONTRACTOR/SUBCONTRACTOR CERTIFICATION STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a contractor/subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company Name: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

Signature: _____

Title: _____

Date: _____

Appendix F – Grading and Stabilization Activities Log

Date Grading Activity Initiated	Description of Stabilization Measure and Location	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures Initiated

Appendix G – Delegation of Authority Form – To be filled out by the General Contractor.

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

(name of person or position)
(company)
(address)
(city, state, zip)
(phone)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix H – City of Stillwater Erosion and Sediment Control Manual

REFERENCE COPY

The City of
Stillwater
OKLAHOMA

STILL PIONEERING



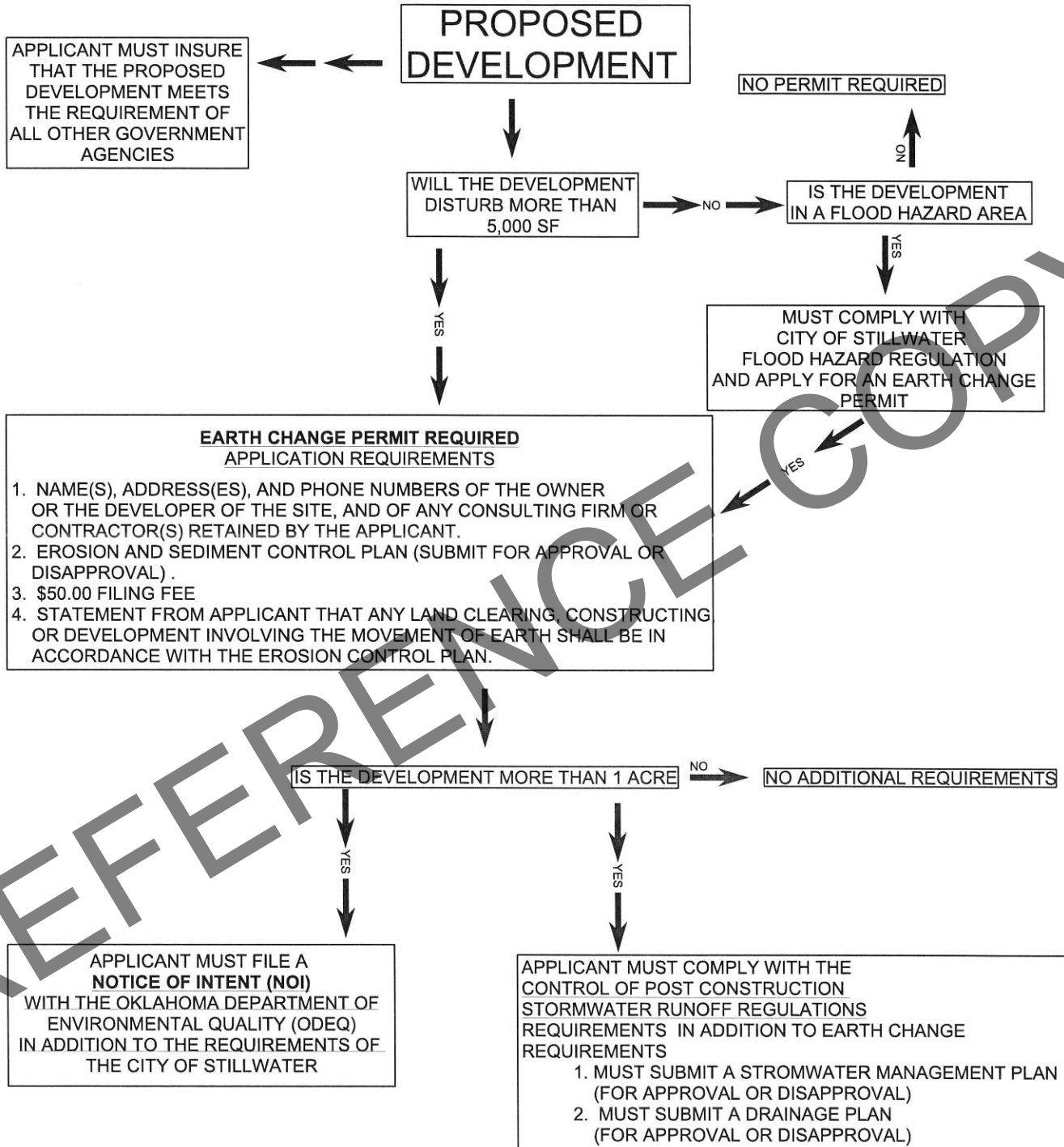
**EROSION & SEDIMENT
CONTROL MANUAL**



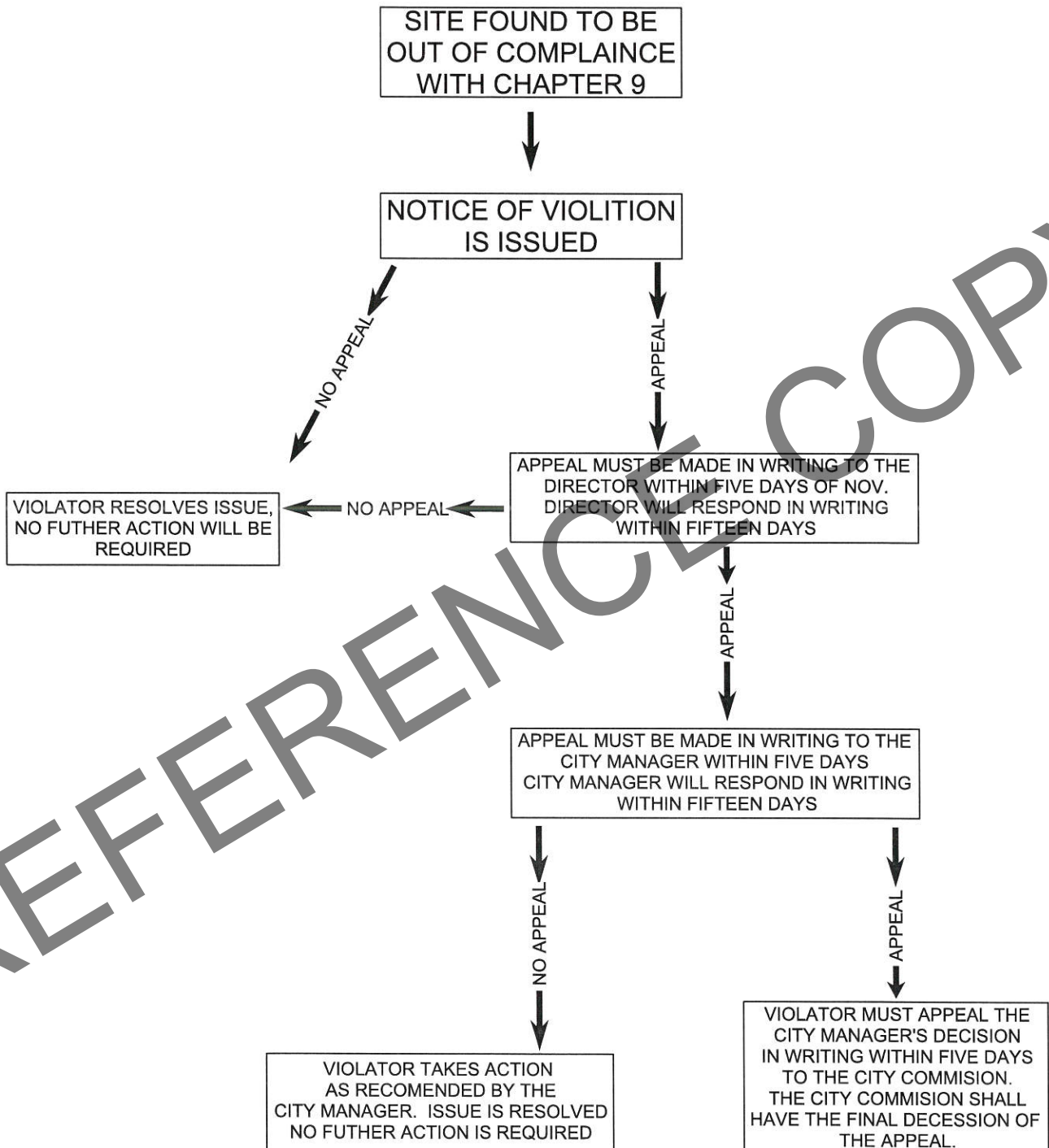
Storm Water Program Coordinator, Public Works Department
City of Stillwater
405-533-8436
dclaytor@stillwater.org

REFERENCE COPY

CHAPTER 9 STORMWATER MANAGEMENT EARTH CHANGE REQUIREMENTS



CHAPTER 9 STORMWATER MANAGEMENT NOTICE OF VIOLATION





For Question Regarding this Form, Contact:
Mr. "BD" Else
City of Stillwater
723 S. Lewis, Stillwater, OK 74076-1449
Office 405-533- Fax 405-742-8324
@stillwater.org
www.stillwater.org

Notice of Completion (NOC)

StormWater Runoff Associated with Construction Activity

Submission of this Notice of Completion letter constitutes notice to the City of Stillwater that the project site owner / permittee applying for Termination of Coverage under the **Earth Change Permit** for StormWater Discharges Associated with Construction Activity.

Project Name and Location:

Permit Number: _____
Project Name: _____
Company Name (If Applicable): _____
Project Site Owner's Name (An Individual): _____
Address: _____
City: _____ State: _____ Zip: _____ County: _____
Phone: _____ Fax: _____
E-Mail Address (If Available): _____

This Notice of Completion is Being Submitted for the Following:

Select one of the Two Options that apply to Permit Termination by checking the appropriate box, complete all the information associated with that option and complete the "Project Site Owner Responsibility Statement"

Option #1

☐ **Certification for Change of Ownership:**

(Does not Apply to the Sale of Individual Lots within the Permitted Acreage; only the Sale of the Entire Project Site as Originally Permitted)

By Signing this Notice of Completion, I Certify the Following:

A. The project was sold; I am no longer the project site owner / permittee as was designated in my Earth Change Permit. The new owner / permittee of the project site is:

Company Name (If Applicable): _____

Project Site Owner's Name (An Individual): _____

Address: _____

City: _____ State: _____ Zip: _____ County: _____

Phone: _____ Fax: _____

E-Mail Address (If Available): _____

B. I have notified the new Project Site Owner / Permittee of his / her responsibilities to comply with the requirements associated with the Earth Change Permit.

Option #2

☐ **Certification for Termination of Construction Activities:**

By Signing this Notice of Completion, I Certify the Following:

A. All land disturbing activities, including construction on all building lots have been completed and the entire site has achieved final stabilization;

B. No future land disturbing activities will occur on this project site;

Project Site Owner Responsibility Statement:

"I understand that by submitting this Notice of Completion I am no longer authorized to discharge stormwater associated with the construction activity identified on this form under the terms and conditions of Chapter 9 of the City of Stillwater's Municipal Code, Stormwater Earth Change Requirements.

Printed Name of Project Site Owner / Permittee: _____

Signature of Project Site Owner / Permittee: _____ Date: _____

REFERENCE COPY

NOTICE OF NONCOMPLIANCE

Date

Name

Address

City, State Zip Code -- Don't forget the +4

RE: Project

Dear **Name**:

This is notification that **Project** is out of compliance with Chapter 9 of the City Code. Chapter 9 of the City Code contains details pertaining to erosion and sediment control.

Project was inspected on **Date of Inspection** for compliance with Chapter 9 of the City Code. During inspection deficiencies were noted.

The **Project** is currently out of compliance in the following areas:

- 1.
- 2.
- 3.
- 4.

Name shall have 7 days to correct above referenced deficiencies, before further action is taken.

Violations(s) must be corrected within the noted correction period. If a violation(s) is not corrected within the correction period, a citation will be issued every day thereafter until the violation(s) is corrected. The violation will be a Class C offense (\$500.00 fine) if there is not any sediment discharged, and a Class D offense (\$1000.00 fine and/or 90 days in jail) if sediment is discharged.

Earth Change Permit holders will receive a maximum of 5 citations (1 citation per day) for a single violation and then on the 6th day, the Earth Change Permit will be revoked or suspended. Upon revocation of an Earth Change Permit, the permittee will receive a Stop Work Order until all violations have been corrected.

The Code can be viewed at www.stillwater.org . If you should have any question please contact Mr. "BD" Else at 405-533-.

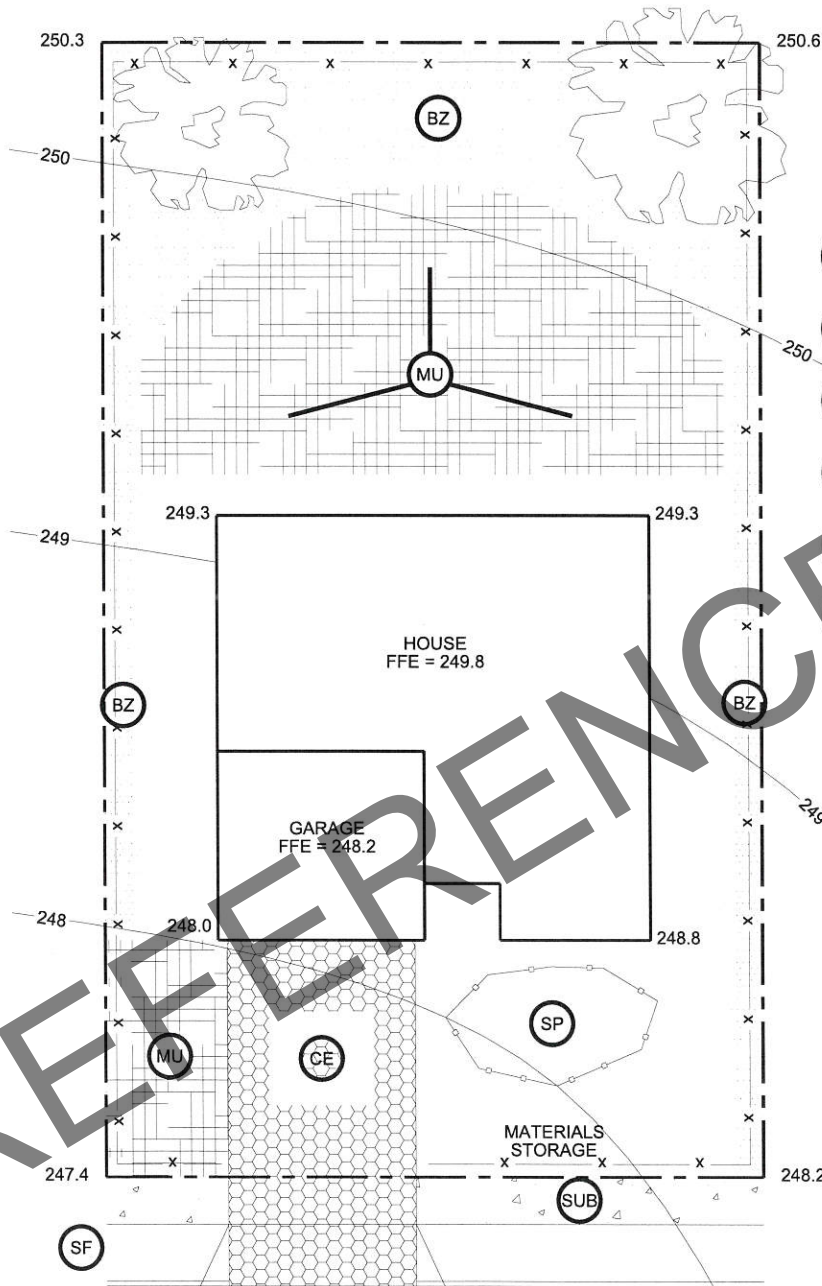
Sincerely,

"BD" Else

Notice of Noncompliance
November 14, 2016

T:\Engineering\CAD\Standards and Details\SPF\SPF STANDARD DETAILS\erosion\Notice of Noncomp Stormwater.doc
1 of 2

SINGLE FAMILY RESIDENCE TYPICAL EROSION PREVENTION AND SEDIMENT CONTROL PLAN



- (BZ) BUFFER ZONE - DO NOT DISTURB
- (CE) GRAVEL CONSTRUCTION ENTRANCE
- (SF) SEDIMENT FENCE (OR EQUIVALENT)
- (SUB) SIDEWALK SUB-BASE
- (MU) MULCH - ESTABLISH GRASS
- (SP) SOIL STOCKPILE

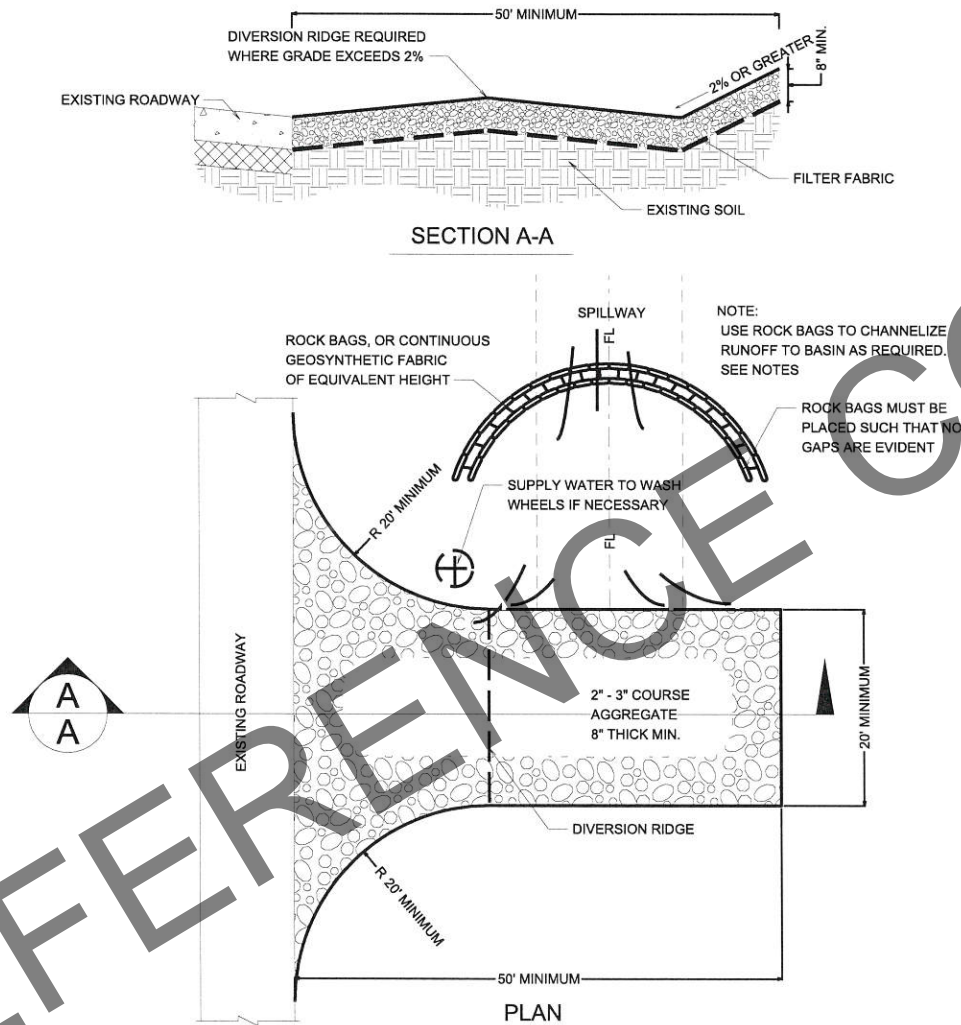
CONSTRUCTION NOTES

STABILIZED CONSTRUCTION
ENTRANCE SHALL BE INSTALLED
AS THE FIRST SITE ACTIVITY

THE ENTIRE SITE MUST BE STABILIZED,
USING A HEAVY MULCH LAYER OR
ANOTHER METHOD THAT DOES NOT
REQUIRE GERMINATION TO CONTROL
EROSION, AT THE CLOSE OF
CONSTRUCTION SEASON OR WHEN A
SITE HAS BEEN INACTIVE FOR 14 DAYS

ALL BMPs SHALL BE INSPECTED
AND MAINTAINED EVERY 5 DAYS
WITHIN 24hrs OF A 0.25" OR MORE
STORM EVENT

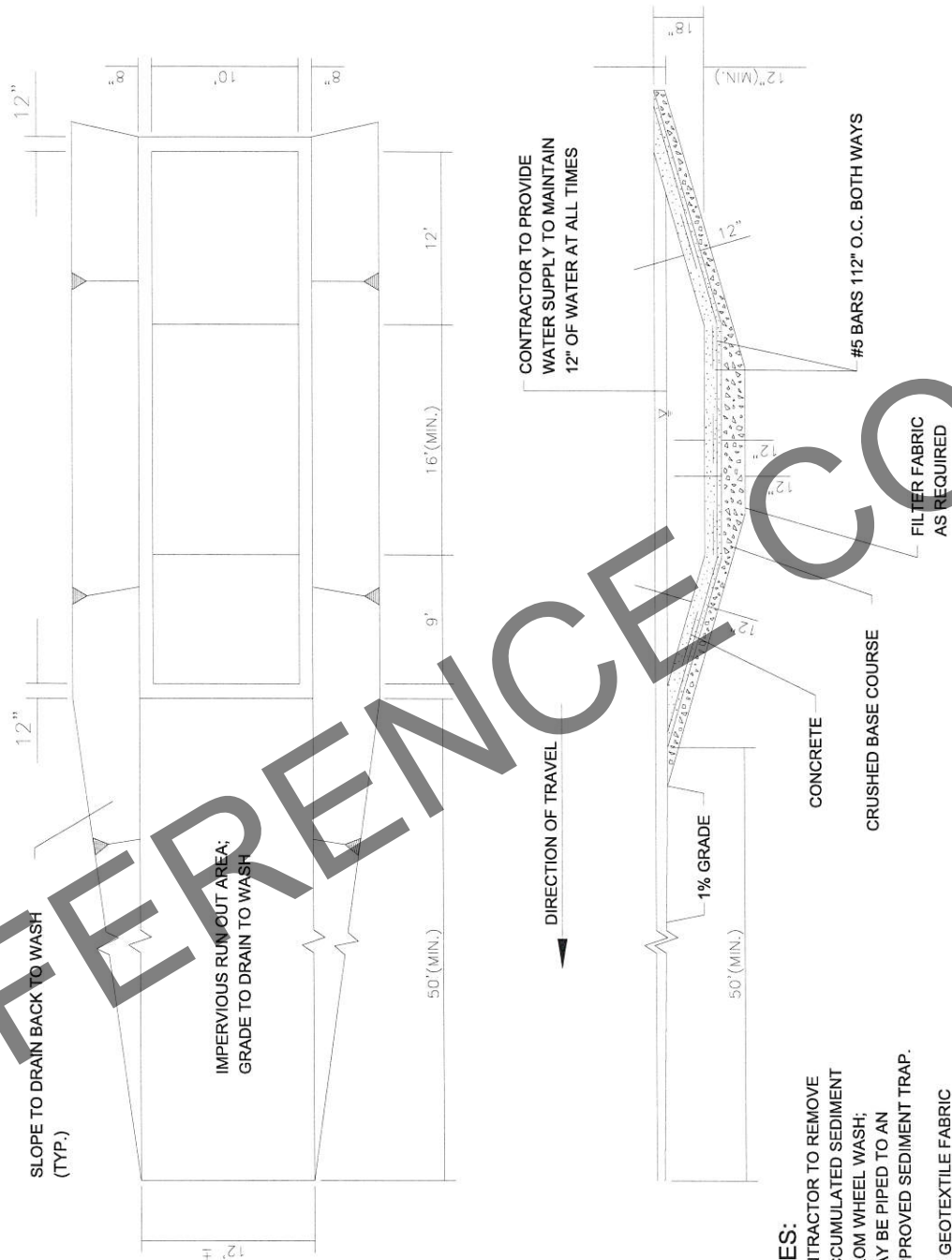
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT



NOTES:

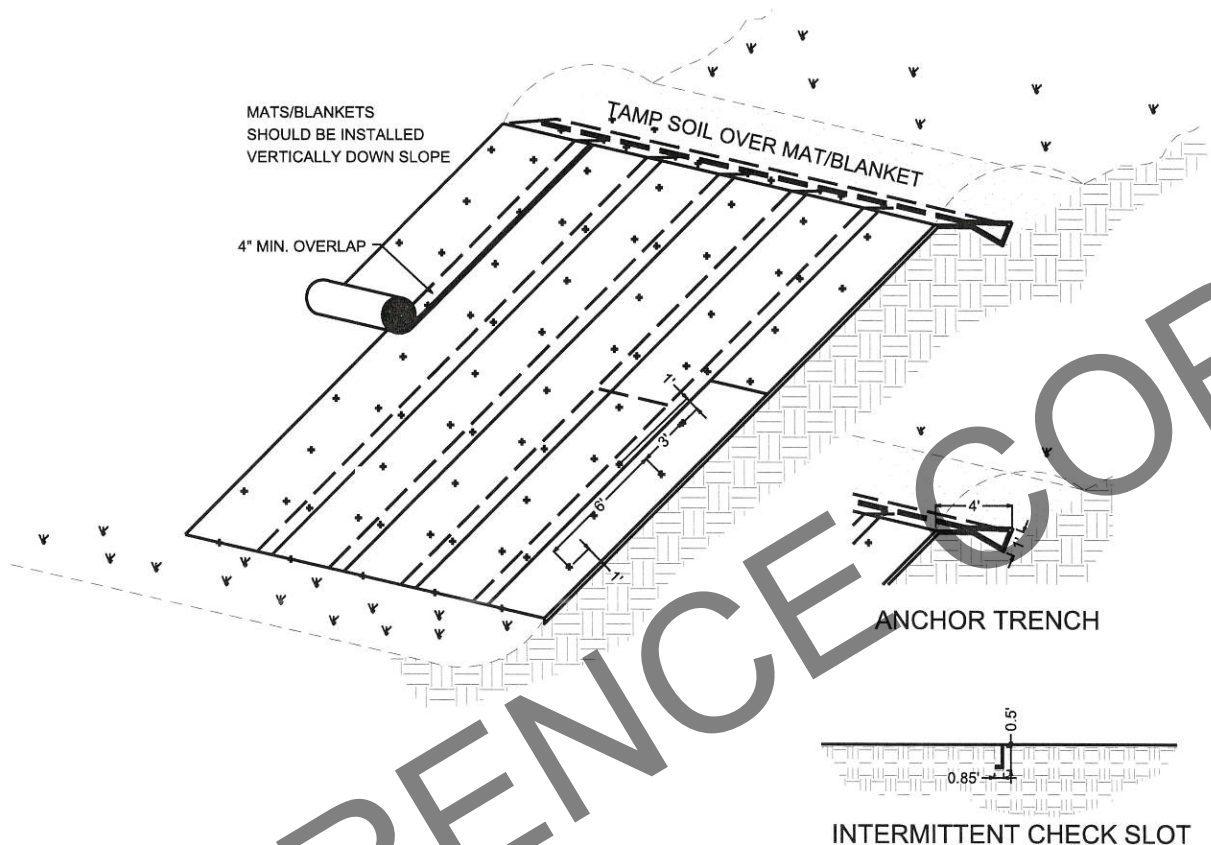
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. ROCK BAGS OR SANDBAGS SHALL BE PLACED SUCH THAT NO GAPS ARE EVIDENT.
5. REMOVE ALL VEGETATION AND OBJECTIONABLE MATERIAL FORM THE FOUNDATION AREA. GRADE AND CROWN THE FOUNDATION FOR POSITIVE DRAINAGE.
6. IF SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 8" HIGH WITH 3:1 SIDE SLOPES ACROSS THE FOUNDATION APPROXIMATELY 20 FT. FROM THE ENTRANCE.

TIRE WASH



- NOTES:**
1. CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT FROM WHEEL WASH; MAY BE PIPED TO AN APPROVED SEDIMENT TRAP.
 2. USE GEOTEXTILE FABRIC WITH AGGREGATE FOR A TEMPORARY TIRE WASH.

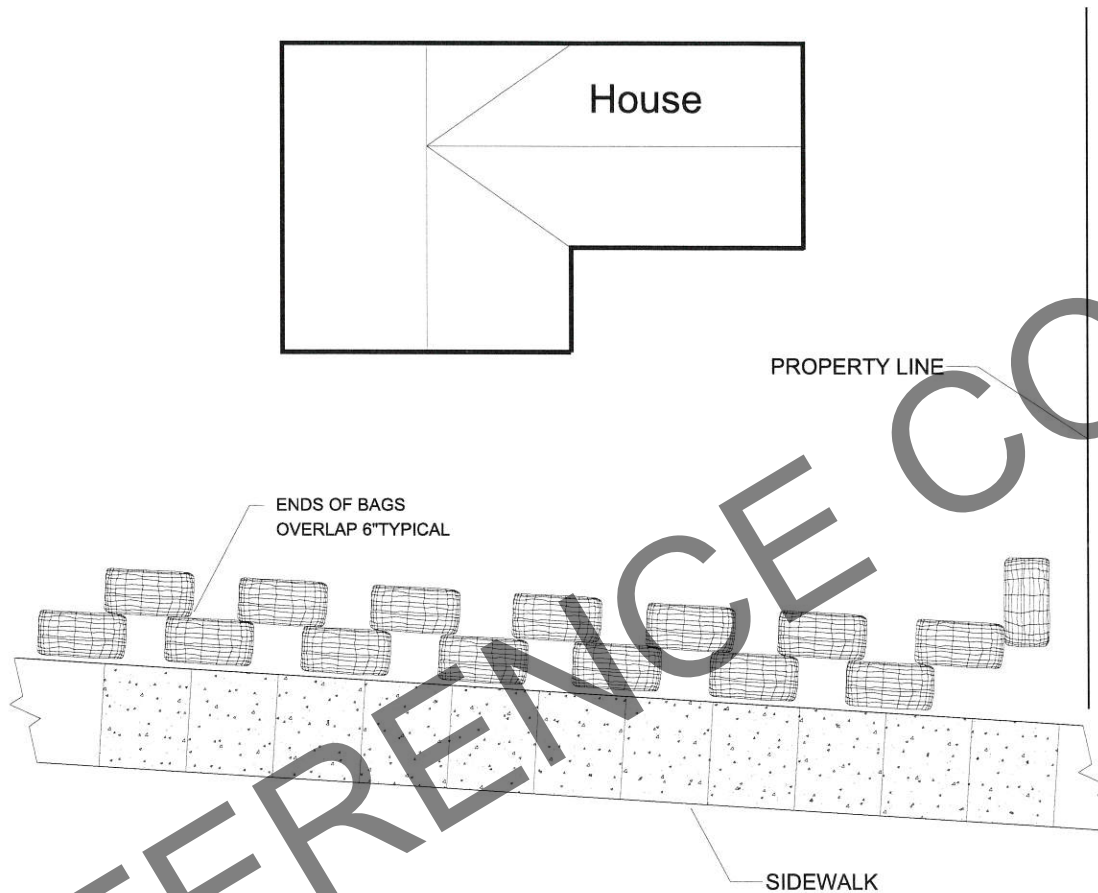
EROSION BLANKET & TURF REINFORCEMENT MATS SLOPE INSTALLATION



NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING MATS/BLANKETS.
3. LAY MATS/BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH MATS/BLANKETS.
4. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURES SPECIFICATIONS.
5. STAKING OR STAPLING LAYOUT PER MANUFACTURES SPECIFICATIONS.

BIO- FILTER BAGS



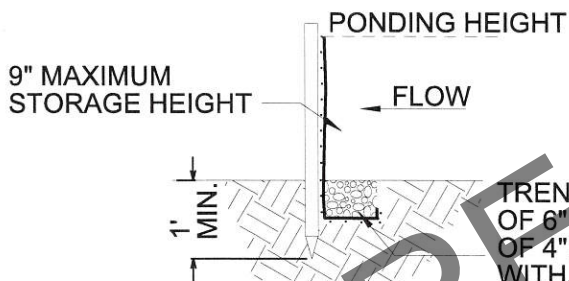
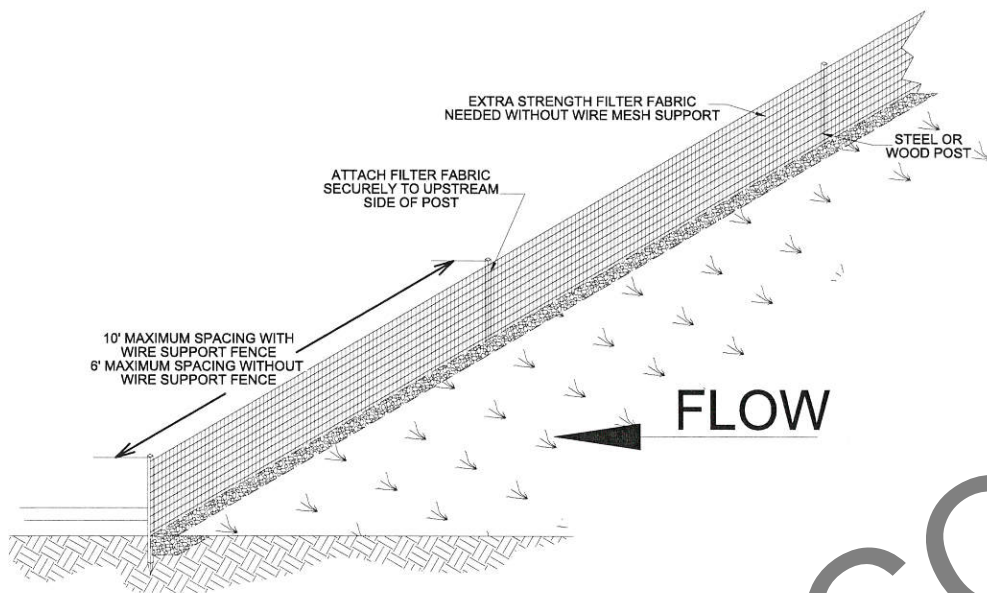
PLAN VIEW

NTS

NOTE:

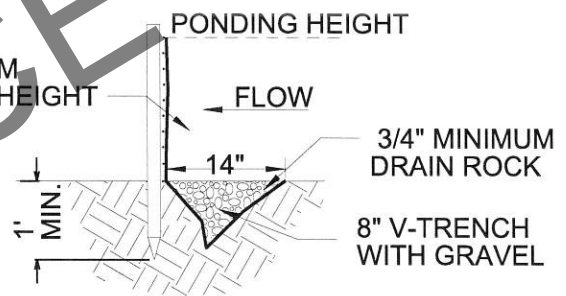
1. STAKING OF BAGS REQUIRED
USING (2) 1"x 2" WOOD STAKES OR
APPROVED EQUAL PER BAG.
2. BAGS ARE USED AS ALTERNATE FOR
SEDIMENT FENCE FOLLOWING INSTALLATION
OF SIDEWALK ON SINGLE FAMILY CONSTRUCTION ONLY.

FILTER FABRIC SILT FENCE



6' x 4' TRENCH DETAIL

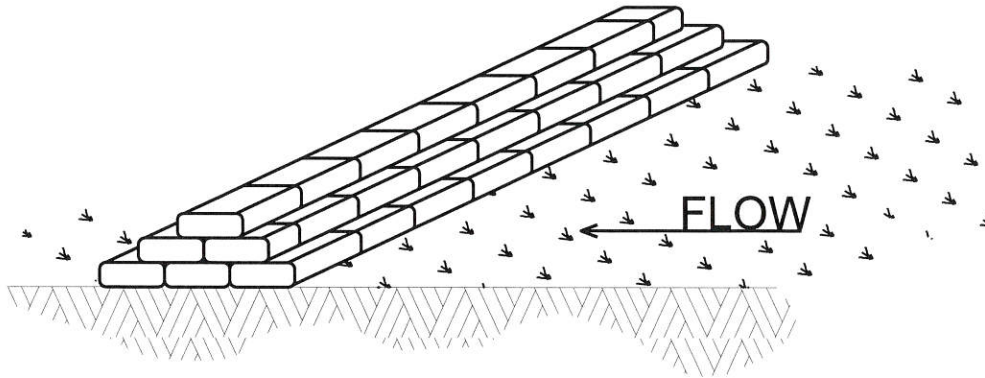
TRENCH TO A DEPTH OF 6" WITH A WIDTH OF 4". LINE TRENCH WITH FILTER FABRIC ATTACHED TO STAKE PLACE A MINIMUM OF 6" COMPACTED BACKFILL IN TRENCH



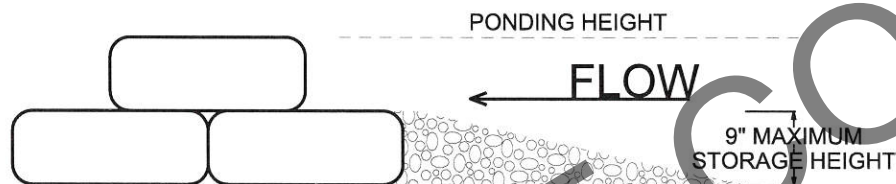
8' V-TRENCH DETAIL

NOTES:

1. MUST BE INSTALLED PROPERLY TO AVOID NOTICE OF VIOLATION.
2. SILT FENCE SHALL BE PLACE ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
3. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
4. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.



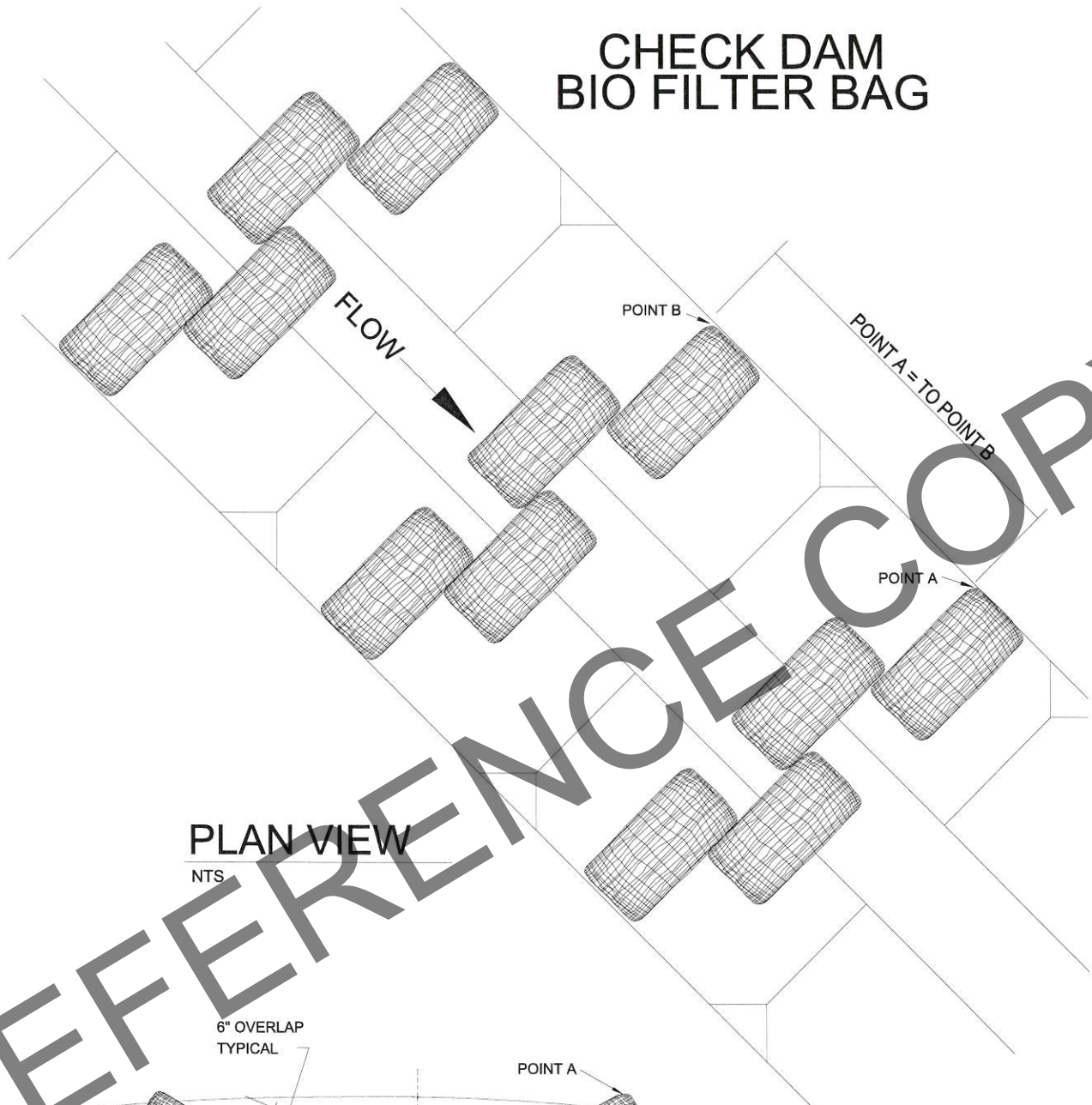
SANDBAG BARRIER



ROCK BAG DETAIL

1. A 'REASONABLE' DESIGN SIZE PARTICLE MUST BE SELECTED.
2. SIZE DISTRIBUTION OR UPSTREAM SOIL PARTICLES MUST BE EVALUATED.
3. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
4. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF THE SYSTEM.
5. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE SIZE SUSPENDED PARTICLE.
6. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION OF DESIGN PARTICLES.
7. THE PONDING HEIGHT MUST BE WELL BELOW THE GROUND ELEVATION DOWN SLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWN SLOPE SIDE OF THE STRUCTURE.
8. ROCK BAG SILT BARRIER SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
9. PLACE ROCK BAG SUCH THAT NO GAPS ARE EVIDENT.
10. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
11. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF- SITE AND CAN BE PERMANENTLY STABILIZED.

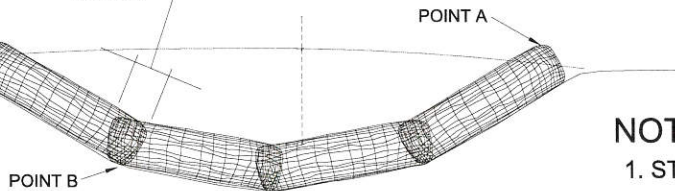
CHECK DAM BIO FILTER BAG



PLAN VIEW

NTS

6" OVERLAP
TYPICAL



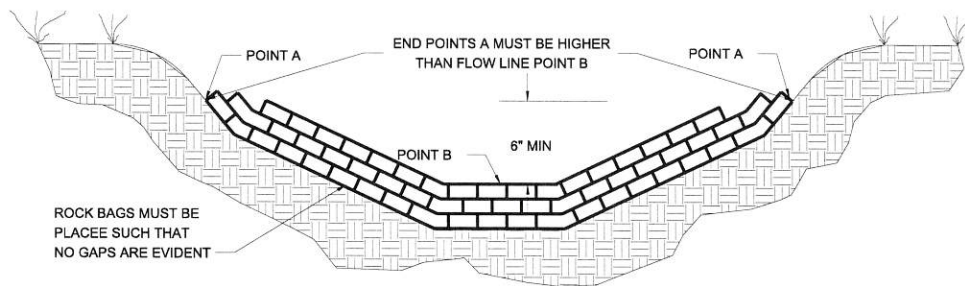
PROFILE

NTS

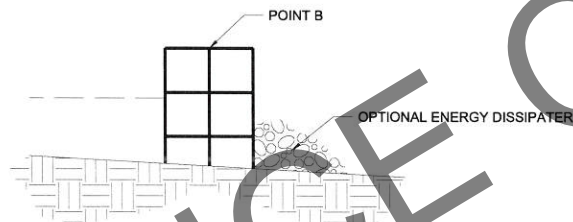
NOTES:

1. STAKING OF BAGS REQUIRED USING (2) 1"X2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. SURFACE MUST BE SMOOTH BEFORE APPLICATION.

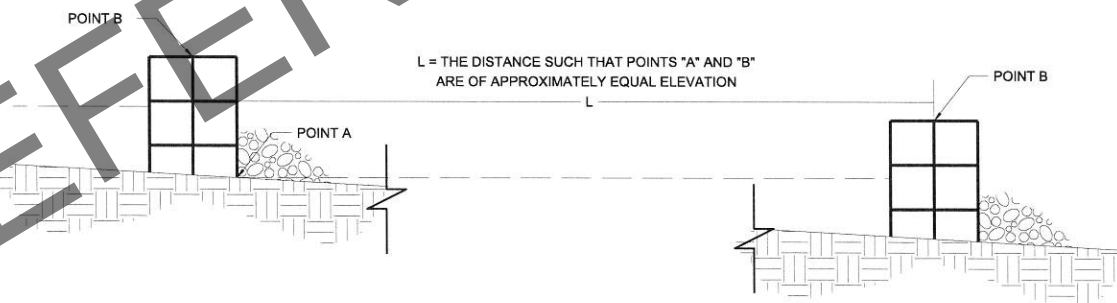
ROCK BAG CHECK DAMS



VIEW LOOKING UPSTREAM

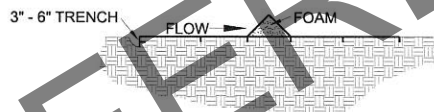
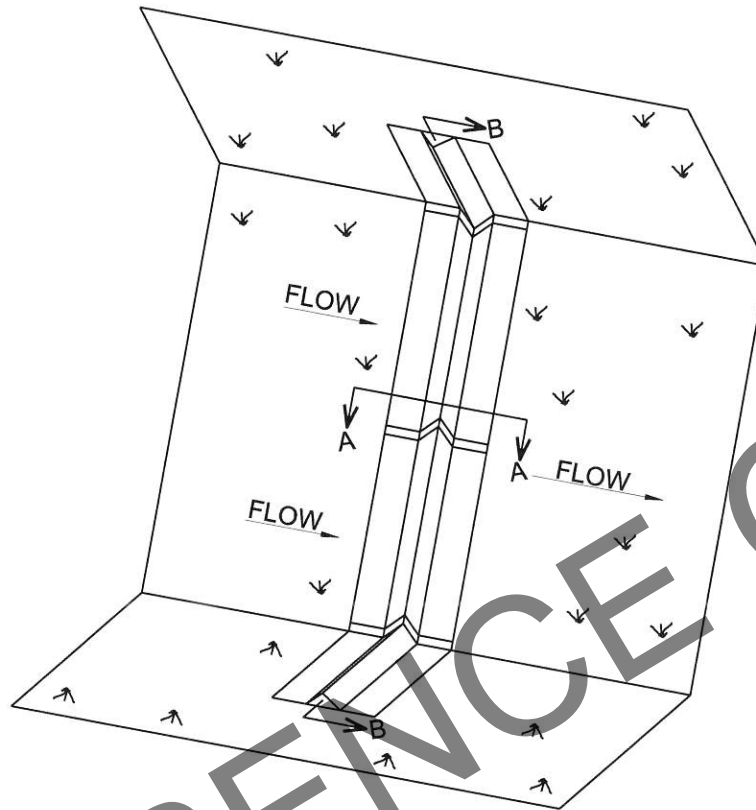


SIDE VIEW

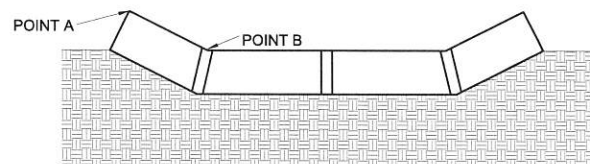


SPACING BETWEEN CHECK DAMS

SILT DAM



SECTION A-A

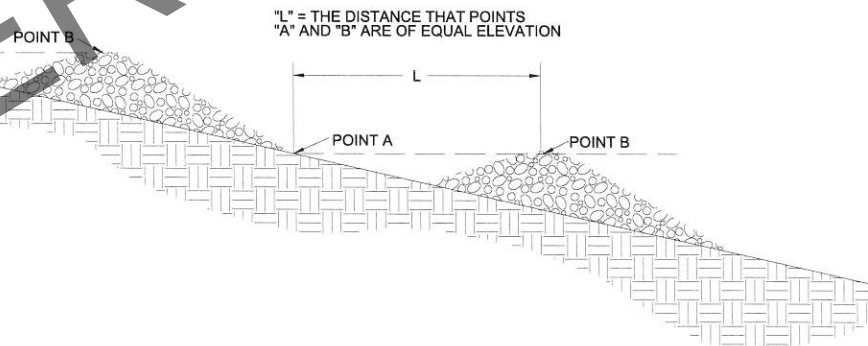
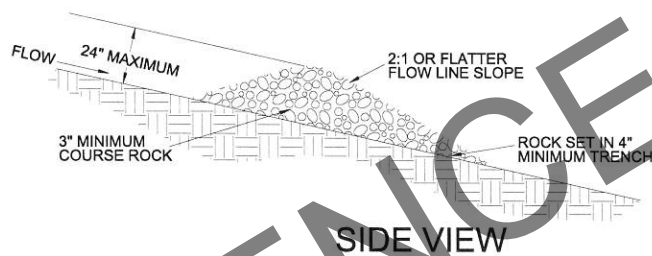
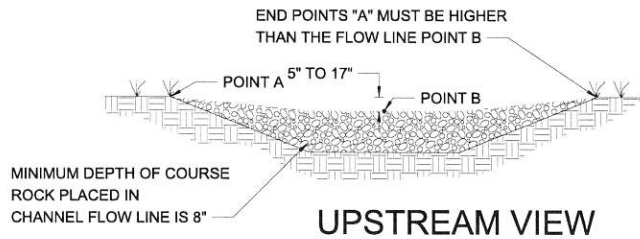


SECTION B-B

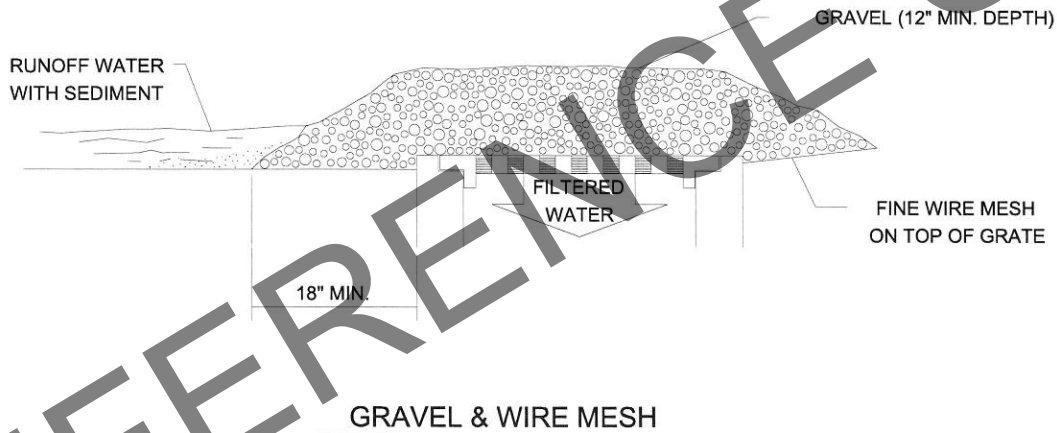
NOTES:

1. STAPLES SHALL BE PLACED WHERE THE UNITS OVERLAP AND IN THE CENTERS OF THE UNIT.
2. POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE THAT THE WATER FLOWS OVER THE DAM AND NOT AROUND THE ENDS

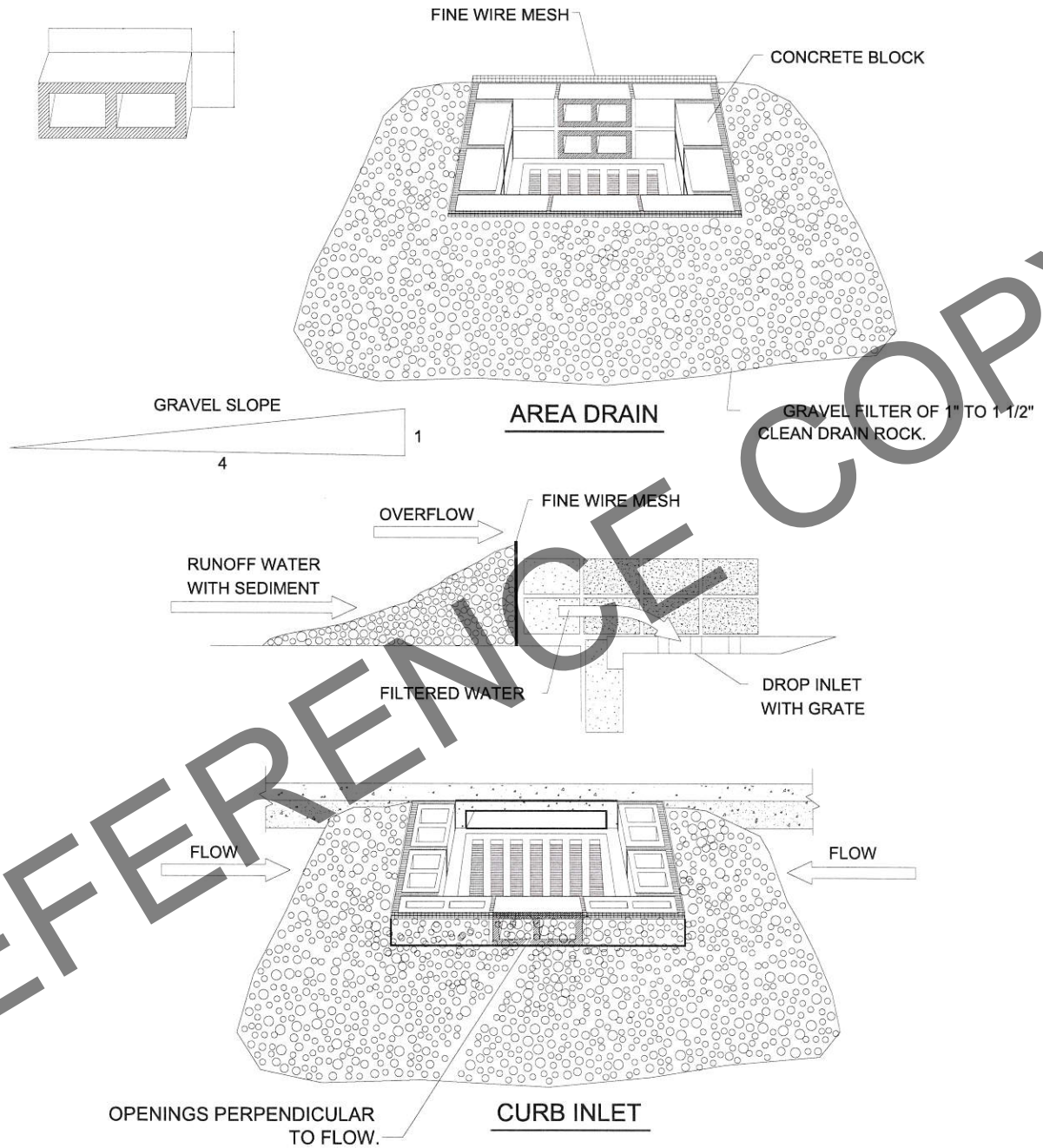
ROCK CHECK DAMS



INLET PROTECTION - TYPE 1



INLET PROTECTION TYPE 2

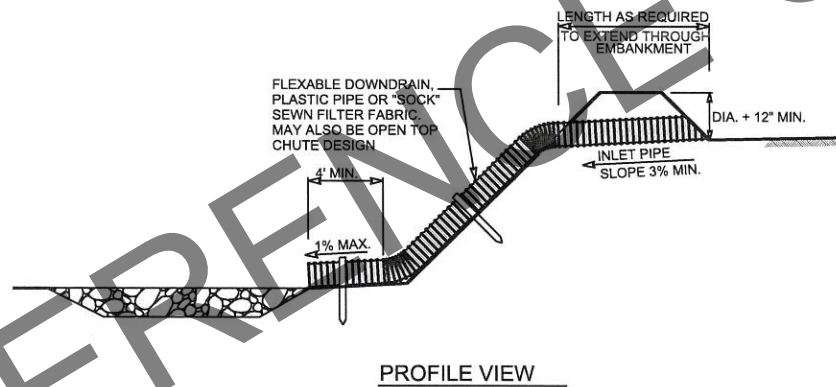
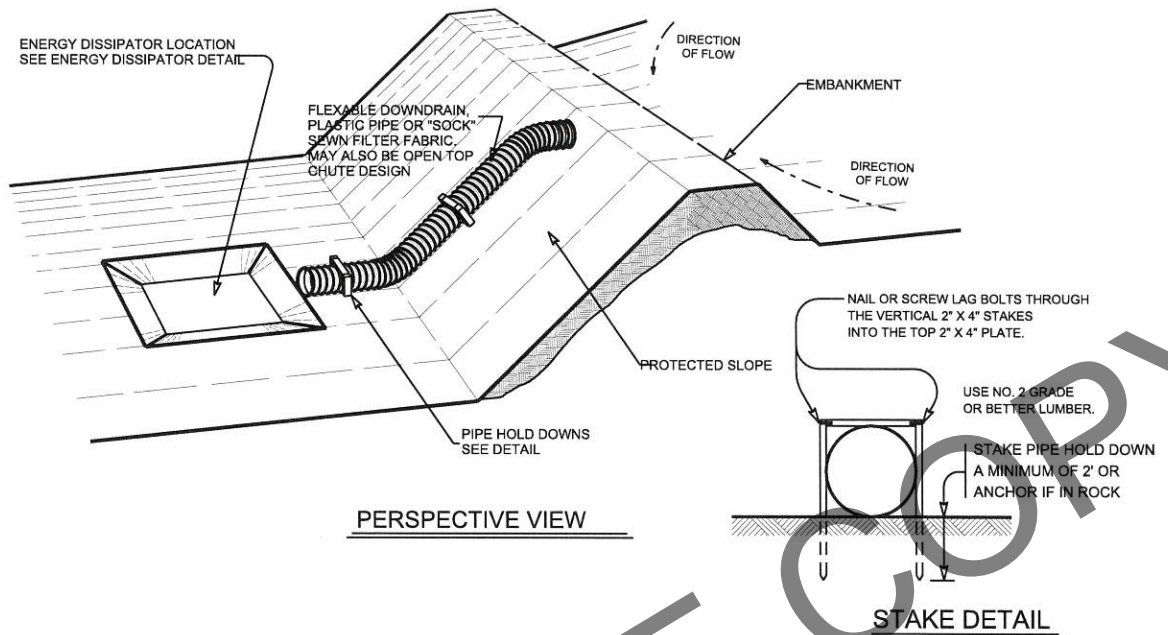


NOTE:

1. BLOCKS SHALL BE STACKED WITH THE OPENINGS ON THE TOP AND BOTTOM EXCEPT FOR THE CENTER BLOCKS. CENTER BLOCKS WILL HAVE OPENINGS PERPENDICULAR TO FLOW.

BLOCK AND GRAVEL INLET BARRIERS

SLOPE DRAIN

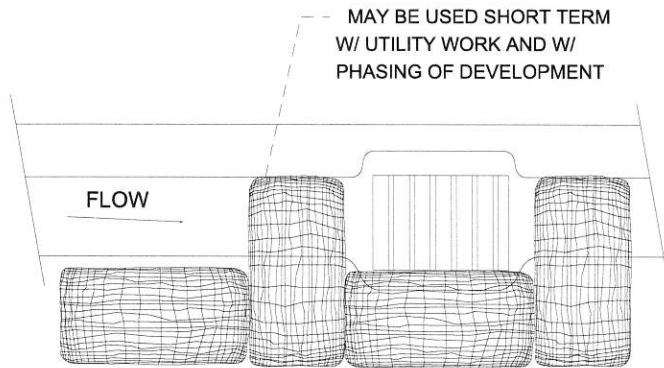


PIPE SLOPE DRAIN WITH ENERGY DISSIPATOR

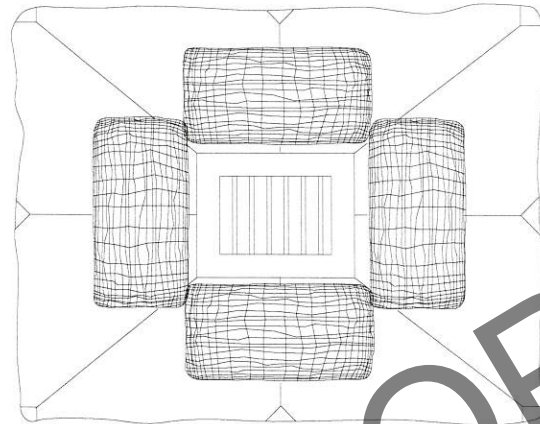
NOTES:

1. THE INLET PIPE SHALL HAVE A SLOPE OF 3% OR GREATER.
2. THE TOP OF EMBANKMENT SHALL BE AT LEAST 12" HIGHER THAN THE TOP OF THE INLET PIPE AT ALL POINTS.
3. THE PIPE SHALL BE FLEXIBLE DOWNDRAIN, PLASTIC PIPE, OR "SOCK" SEWN FILTER FABRIC. MAY ALSO BE OPEN TOP CHUTE DESIGN
4. PIPE SHALL BE SECURED WITH HOLD-DOWN ELEMENTS SPACED A MAXIMUM OF 10' ON CENTER OR WITH HOLD DOWN AS SHOWN IN DETAIL.

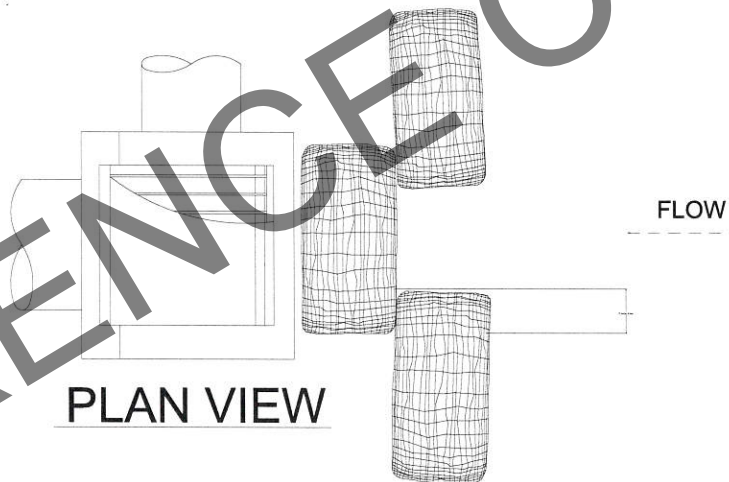
INLET PROTECTION - TYPE 4



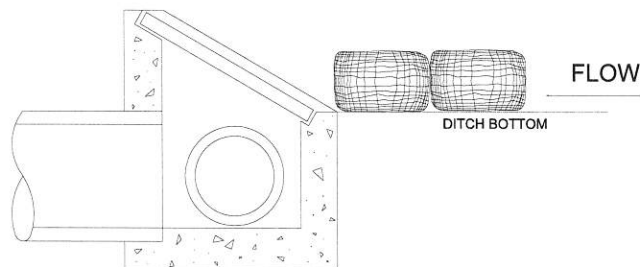
CATCH BASIN



AREA DRAIN



PLAN VIEW

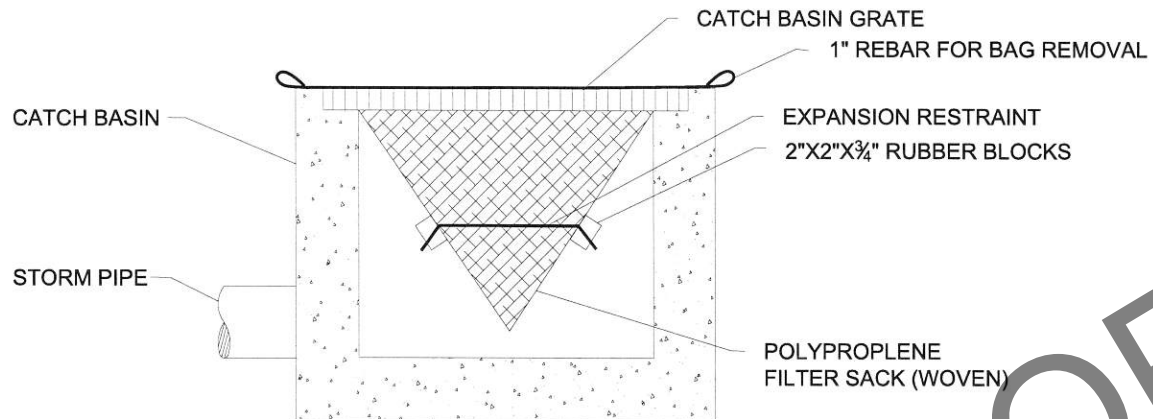


DITCH INLET

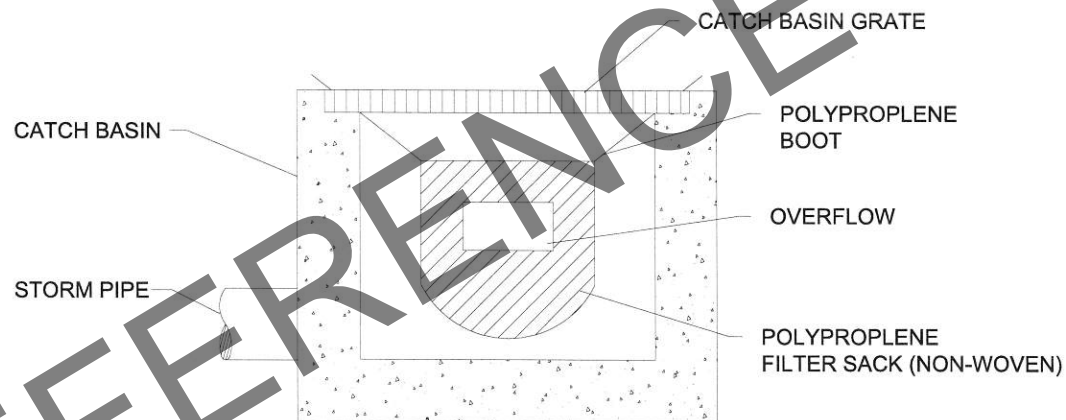
NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIOFILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.

INLET PROTECTION - TYPE 5



WOVEN POLYPROPYLENE SACK

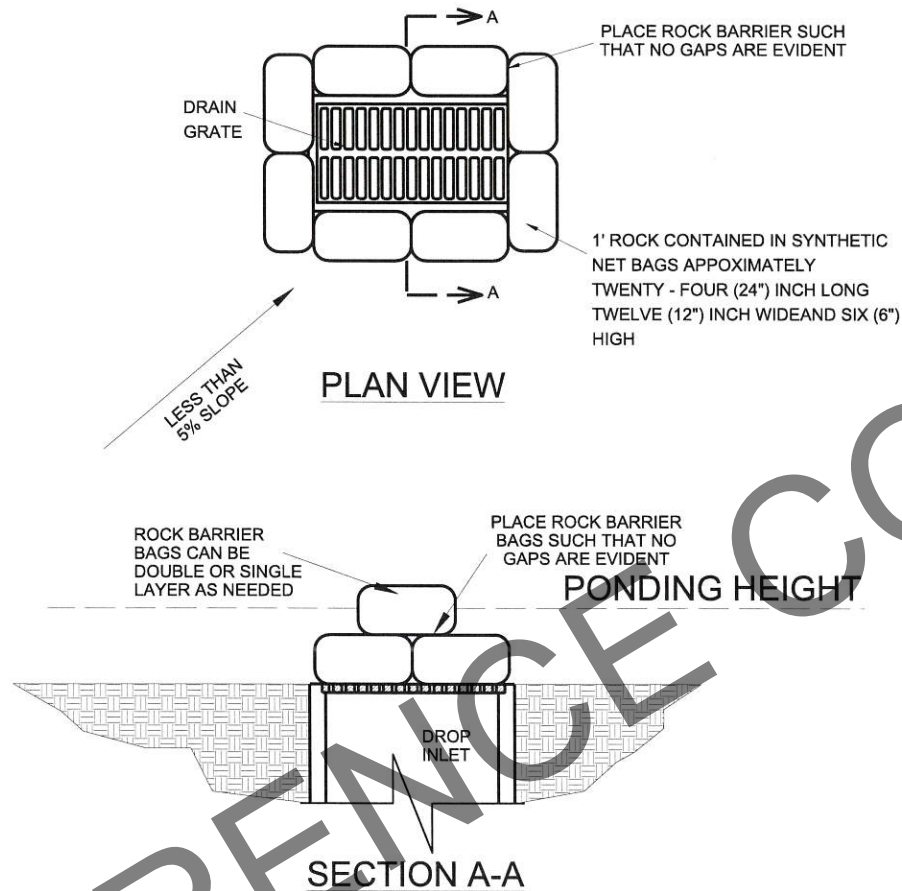


NON-WOVEN POLYPROPYLENE SACK

NOTE:

1. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

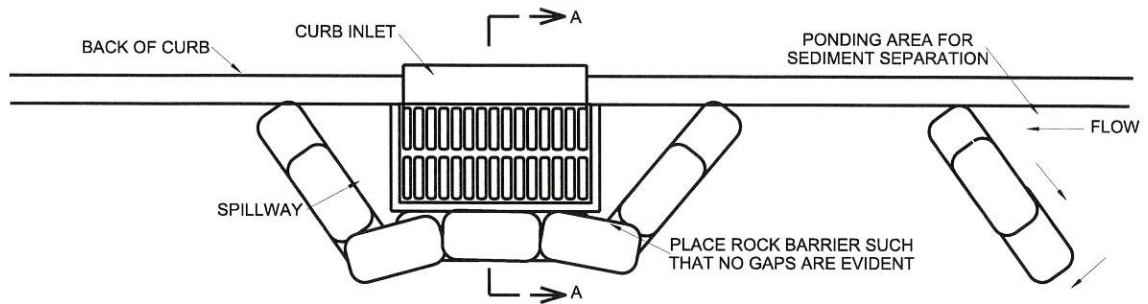
ROCK BAG DROP INLET SEDIMENT BARRIER



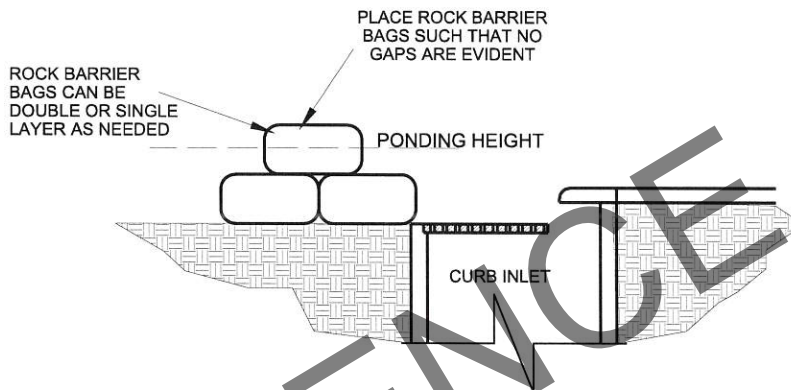
NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. A "REASONABLE" DESIGN SIZE PARTICLE TO CAPTURE MUST BE SELECTED.
3. SIZE DISTRIBUTION OF UPSTREAM SOIL PARTICLES MUST BE EVALUATED.
4. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
5. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF WATER FROM THE SYSTEM.
6. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
7. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION FOR DESIGN SIZE PARTICLES.
8. THE PONDING HEIGHT MUST BE WELL BELOW THE GROUND ELEVATION DOWN SLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWN SLOPE SIDE OF THE STRUCTURE.

ROCK BAG CURB INLET SEDIMENT BARRIER



PLAN VIEW

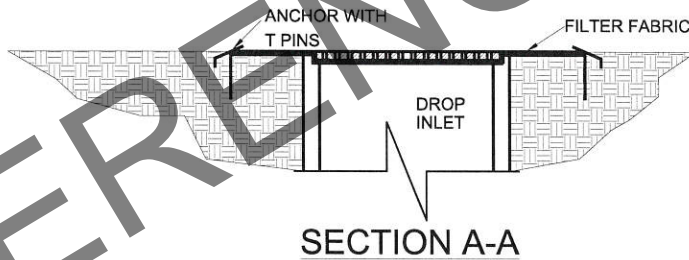
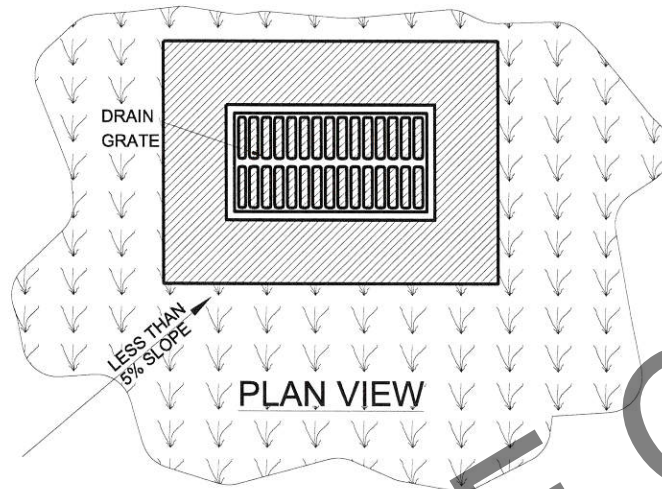


SECTION A-A

NOTES:

1. A "REASONABLE" DESIGN SIZE PARTICLE TO CAPTURE MUST BE SELECTED.
2. SIZE DISTRIBUTION OF UP STREAM SOIL PARTICLES MUST BE EVALUATED.
3. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
4. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF WATER FROM SYSTEM.
5. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
6. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION OF DESIGN PARTICLES.
7. THE PONDING HEIGHT MUST BE BELOW THE GROUND ELEVATION DOWN SLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE SOWN SIDE OF THE STRUCTURE.
8. PLACE CURB TYPE ROCK BAG BARRIER WITH EXTRA FLOW BARRIERS ON STREET WHERE FLOW IS HEAVIER, PLACE AS MANY AS NEEDED.
9. BAGS OF WOVEN GEOTEXTILE FABRIC, FILLED WITH GRAVEL MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
10. LEAVE ONE SANDBAG GAP IN THE TOP ROW ON THE SIDE AWAY FROM FLOW, TO PROVIDE A SPILLWAY; OR IN CENTER IF PONDING IS NEEDED ON BOTH SIDES.
11. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

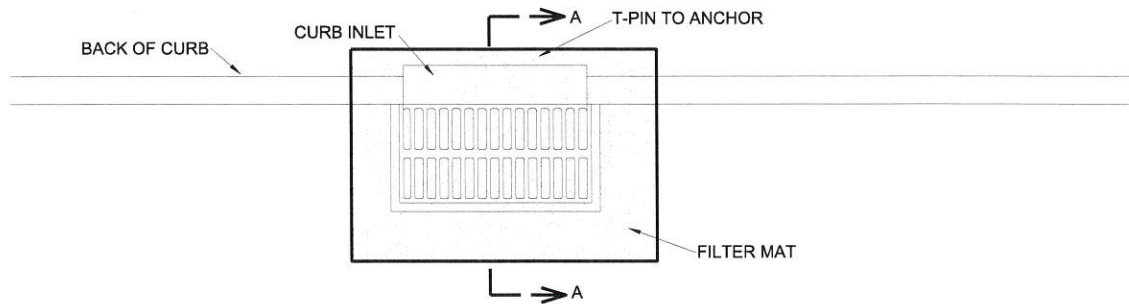
FILTER MAT DROP INLET BARRIER



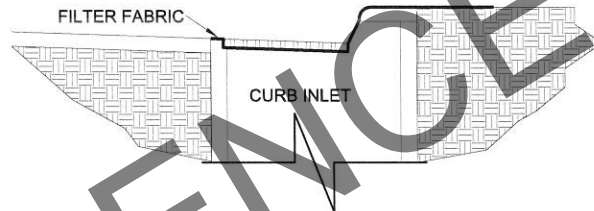
NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. USE T-PINS TO ANCHOR FIBER MAT INTO THE SOIL.

CURB INLET FILTER MAT SEDIMENT BARRIER



PLAN VIEW

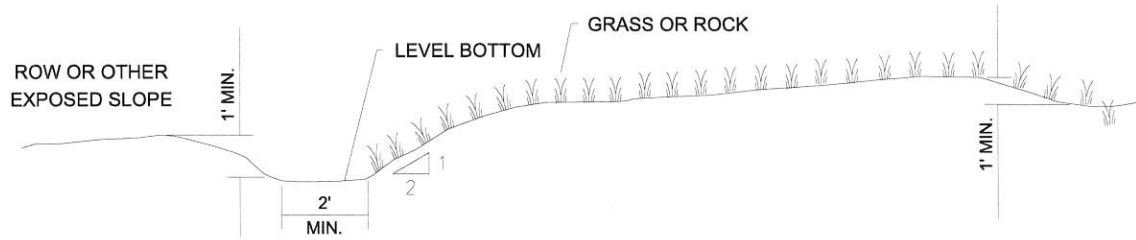


SECTION A-A

NOTES:

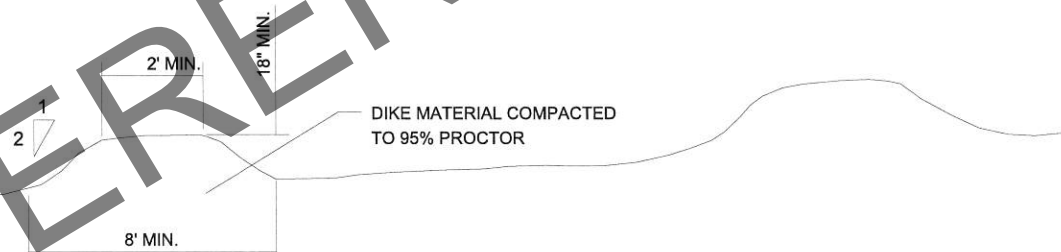
1. USE FILTER MAT SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET, WITH MINIMAL NEED, WHERE WATER CAN FILTER AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

DIVERSION DIKE / SWALE



BOTTOM WIDTH	2 FEET MINIMUM; THE BOTTOM WIDTH SHALL BE LEVEL
DEPTH	1 FOOT MINIMUM
SIDE SLOPE	2H:1V OR FLATTER
GRADE	MAXIMUM 5 PERCENT, WITH POSITIVE DRAINAGE TO A SUITABLE OUTLET (SUCH AS SEDIMENTATION POND)

DIVERSION SWALE



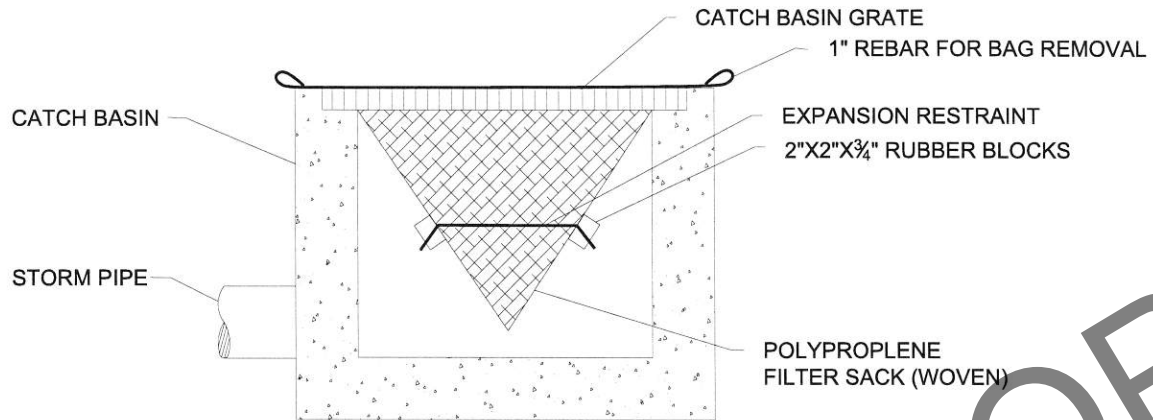
TEMPORARY DIVERSION DIKE

NOTE:

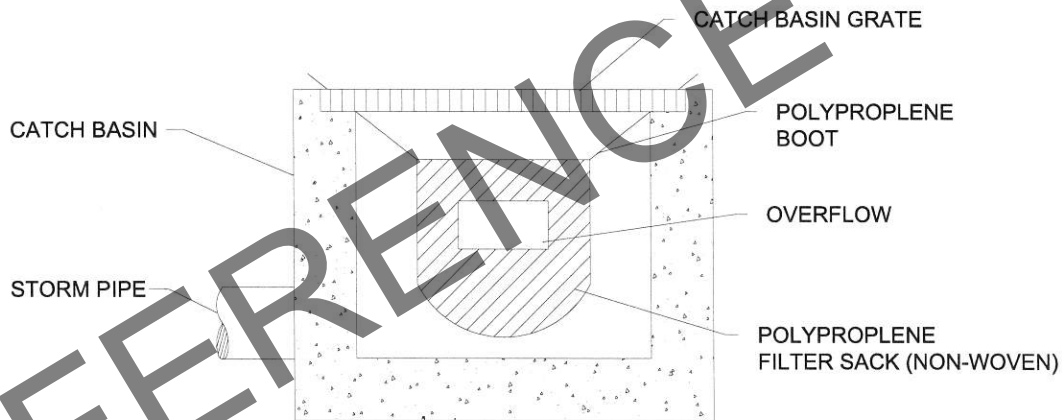
IMMEDIATELY UPON CONSTRUCTION, ESTABLISHED VEGETATION OR EROSION CONTROL BLANKETS ARE REQUIRED. INSPECT AND REPAIR EARTH DIKE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

Slope	Spacing
<5%	300 feet
5-10%	200 feet
10-40%	100 feet

INLET PROTECTION - TYPE 6



WOVEN POLYPROPLENE SACK

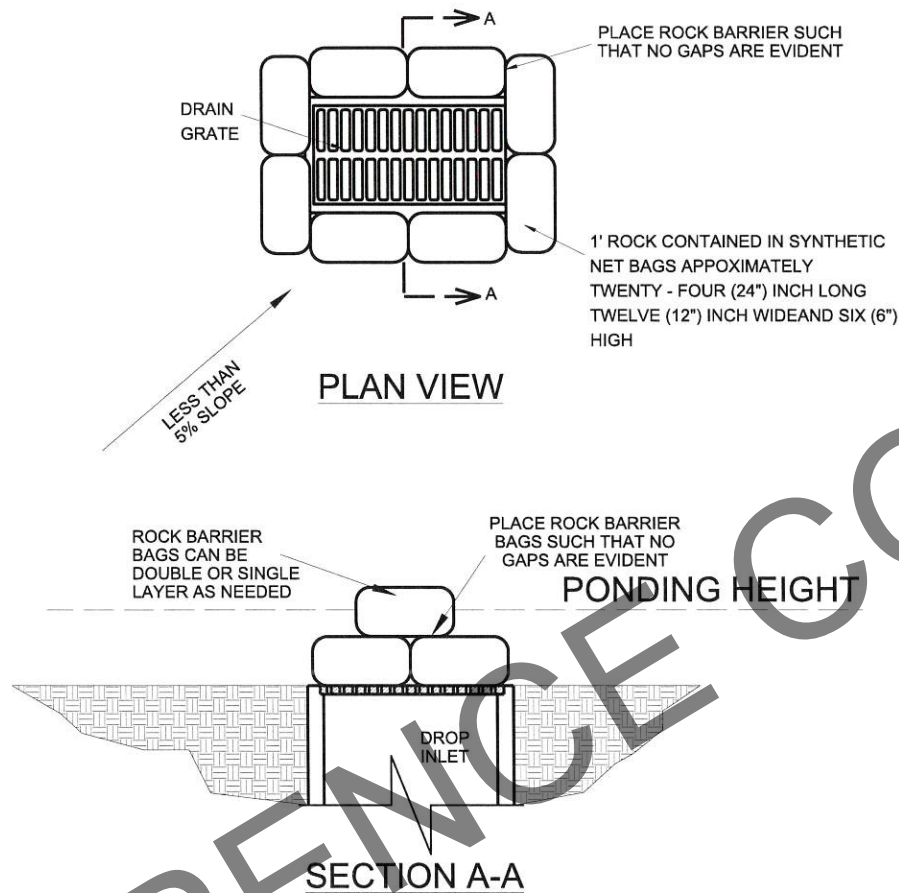


NON-WOVEN POLYPROPLENE SACK

NOTE:

1. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.

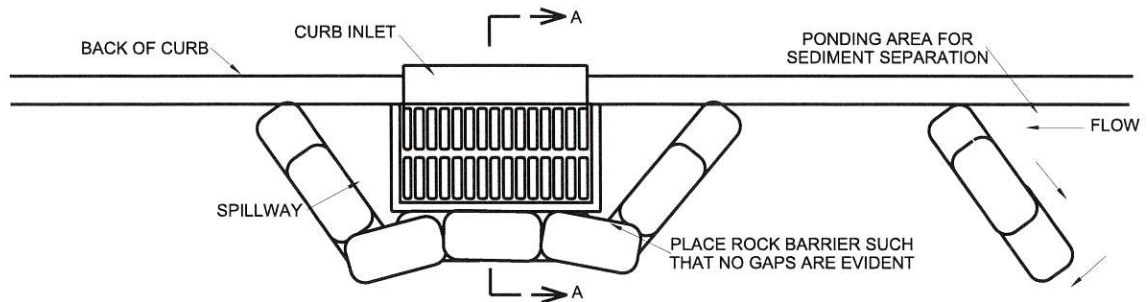
ROCK BAG DROP INLET SEDIMENT BARRIER



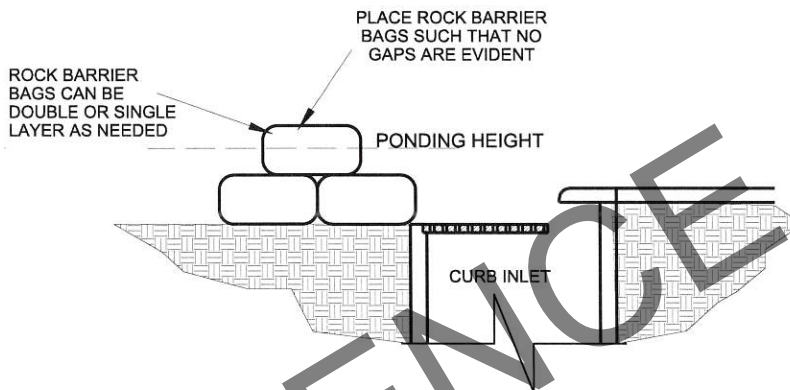
NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. A "REASONABLE" DESIGN SIZE PARTICLE TO CAPTURE MUST BE SELECTED.
3. SIZE DISTRIBUTION OF UPSTREAM SOIL PARTICLES MUST BE EVALUATED.
4. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
5. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF WATER FROM THE SYSTEM.
6. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
7. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION FOR DESIGN SIZE PARTICLES.
8. THE PONDING HEIGHT MUST BE WELL BELOW THE GROUND ELEVATION DOWN SLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWN SLOPE SIDE OF THE STRUCTURE.

ROCK BAG CURB INLET SEDIMENT BARRIER



PLAN VIEW

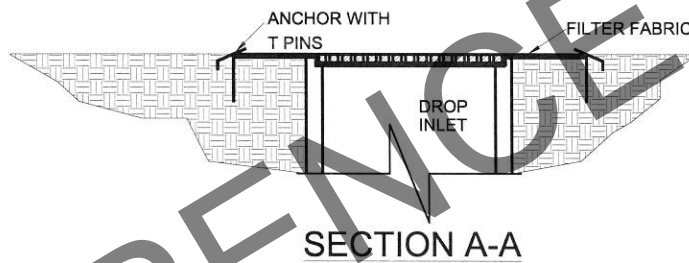
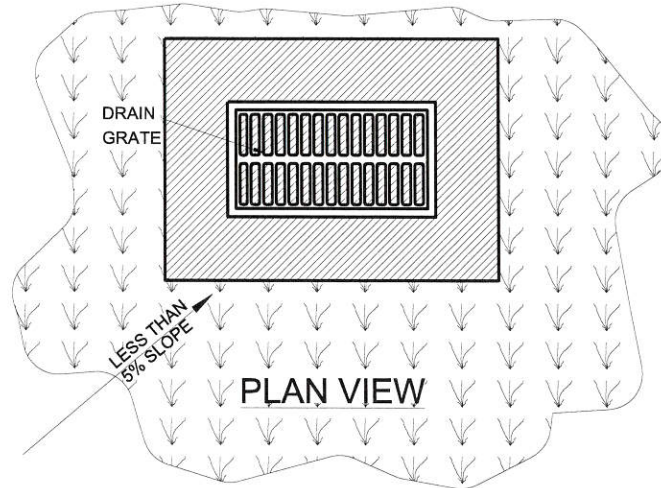


SECTION A-A

NOTES:

1. A "REASONABLE" DESIGN SIZE PARTICLE TO CAPTURE MUST BE SELECTED.
2. SIZE DISTRIBUTION OF UP STREAM SOIL PARTICLES MUST BE EVALUATED.
3. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
4. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF WATER FROM SYSTEM.
5. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
6. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION OF DESIGN PARTICLES.
7. THE PONDING HEIGHT MUST BE BELOW THE GROUND ELEVATION DOWN SLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE SOWN SIDE OF THE STRUCTURE.
8. PLACE CURB TYPE ROCK BAG BARRIER WITH EXTRA FLOW BARRIERS ON STREET WHERE FLOW IS HEAVIER, PLACE AS MANY AS NEEDED.
9. BAGS OF WOVEN GEOTEXTILE FABRIC, FILLED WITH GRAVEL MUST BE LAYERED SUCH THAT NO GAPS ARE EVIDENT.
10. LEAVE ONE SANDBAG GAP IN THE TOP ROW ON THE SIDE AWAY FROM FLOW, TO PROVIDE A SPILLWAY; OR IN CENTER IF PONDING IS NEEDED ON BOTH SIDES.
11. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

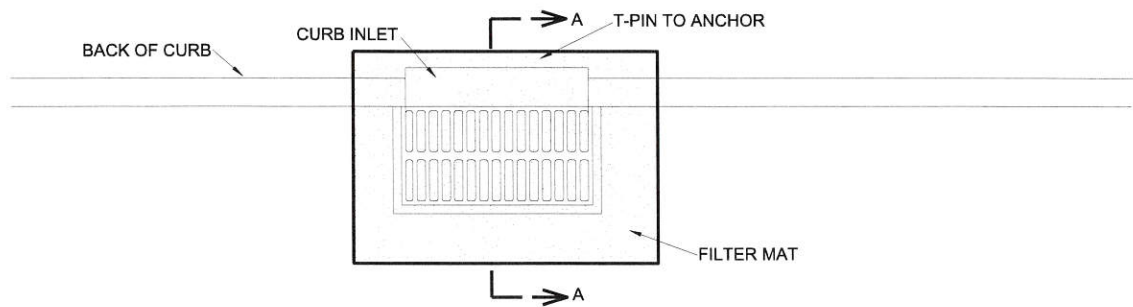
FILTER MAT DROP INLET BARRIER



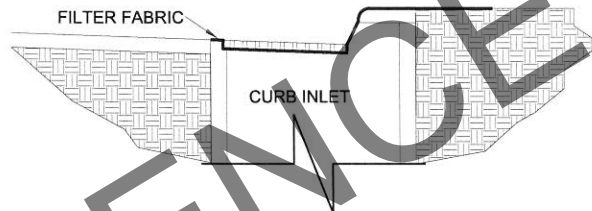
NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. USE T-PINS TO ANCHOR FIBER MAT INTO THE SOIL.

CURB INLET FILTER MAT SEDIMENT BARRIER



PLAN VIEW

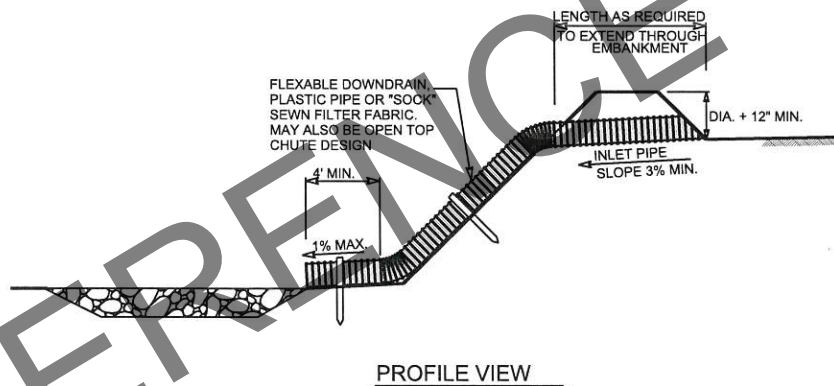
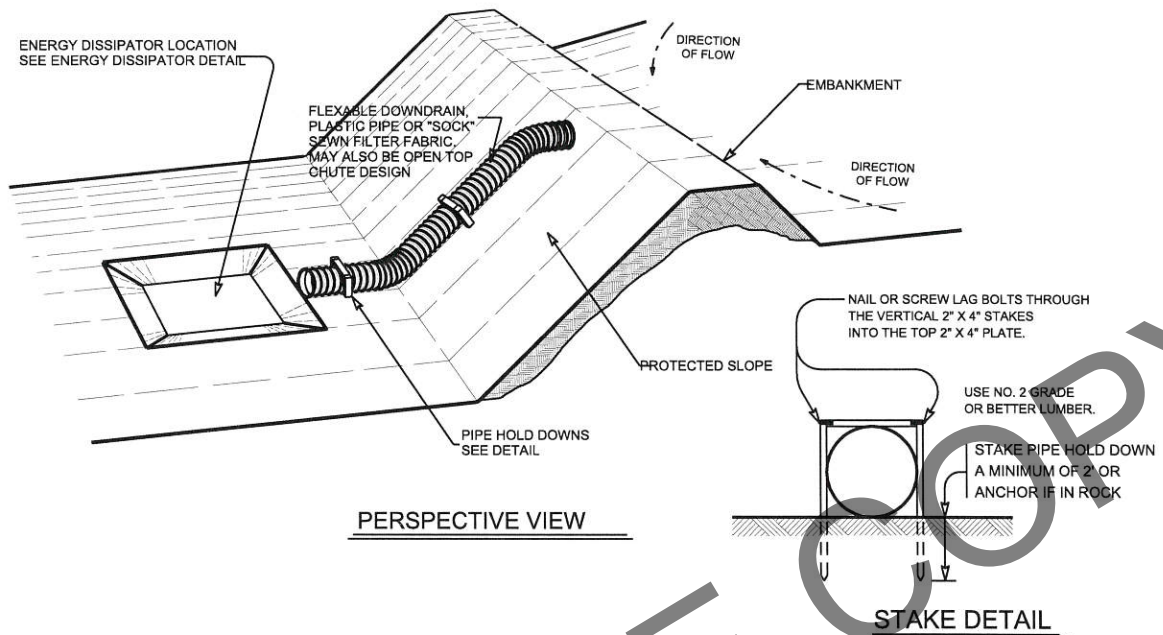


SECTION A-A

NOTES:

1. USE FILTER MAT SEDIMENT BARRIER WHEN CURB INLET IS LOCATED IN GENTLY SLOPING STREET, WITH MINIMAL NEED, WHERE WATER CAN FILTER AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. BARRIER SHALL ALLOW FOR OVERFLOW FROM SEVERE STORM EVENT.
3. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT, SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

SLOPE DRAIN

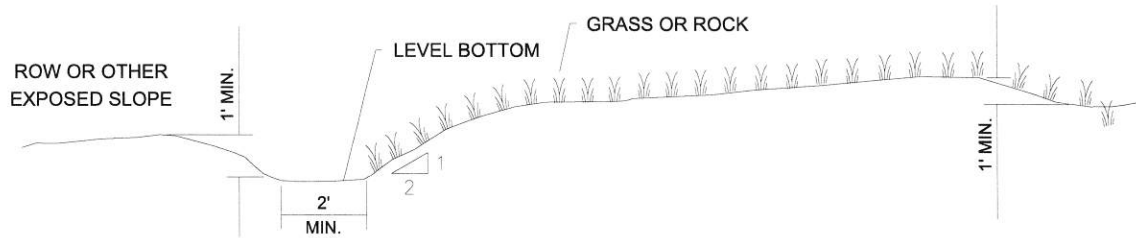


PIPE SLOPE DRAIN WITH ENERGY DISSIPATOR

NOTES:

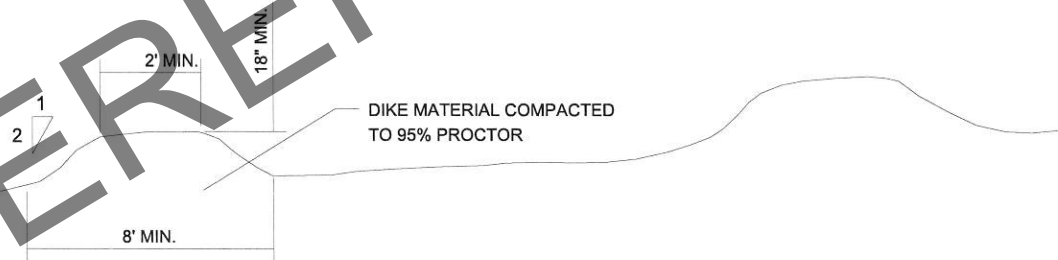
1. THE INLET PIPE SHALL HAVE A SLOPE OF 3% OR GREATER.
2. THE TOP OF EMBANKMENT SHALL BE AT LEAST 12" HIGHER THAN THE TOP OF THE INLET PIPE AT ALL POINTS.
3. THE PIPE SHALL BE FLEXIBLE DOWNDRAIN, PLASTIC PIPE, OR "SOCK" SEWN FILTER FABRIC. MAY ALSO BE OPEN TOP CHUTE DESIGN
4. PIPE SHALL BE SECURED WITH HOLD-DOWN GROMMETS SPACED A MAXIMUM OF 10' ON CENTER OR WITH HOLD DOWN AS SHOWN IN DETAIL.

DIVERSION DIKE/SWALE



BOTTOM WIDTH	2 FEET MINIMUM; THE BOTTOM WIDTH SHALL BE LEVEL
DEPTH	1 FOOT MINIMUM
SIDE SLOPE	2H:1V OR FLATTER
GRADE	MAXIMUM 5 PERCENT, WITH POSITIVE DRAINAGE TO A SUITABLE OUTLET (SUCH AS SEDIMENTATION POND)

DIVERSION SWALE



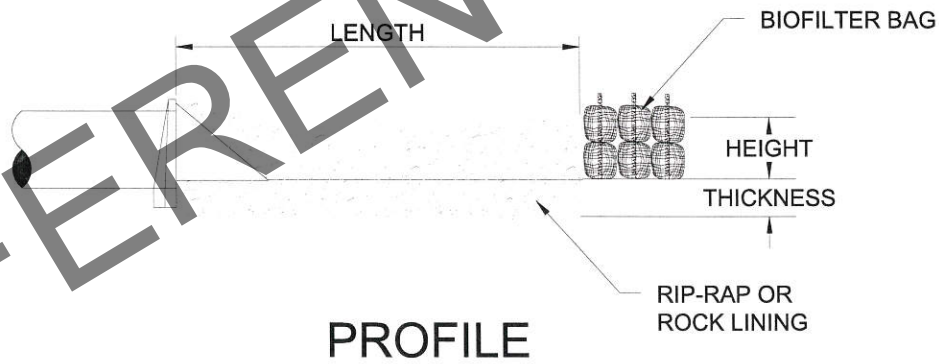
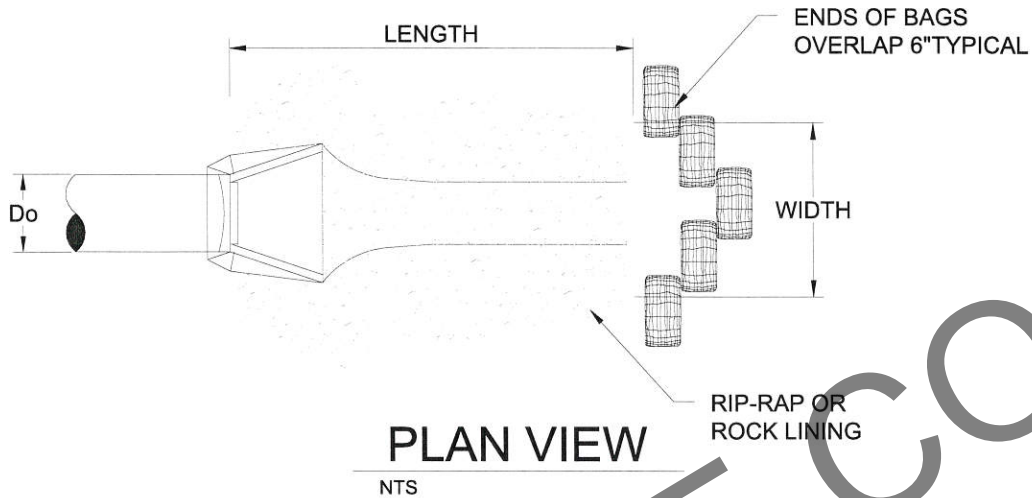
TEMPORARY DIVERSION DIKE

NOTE:

IMMEDIATELY UPON CONSTRUCTION, ESTABLISHED VEGETATION OR EROSION CONTROL BLANKETS ARE REQUIRED. INSPECT AND REPAIR EARTH DIKE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

Slope	Spacing
<5%	300 feet
5-10%	200 feet
10-40%	100 feet

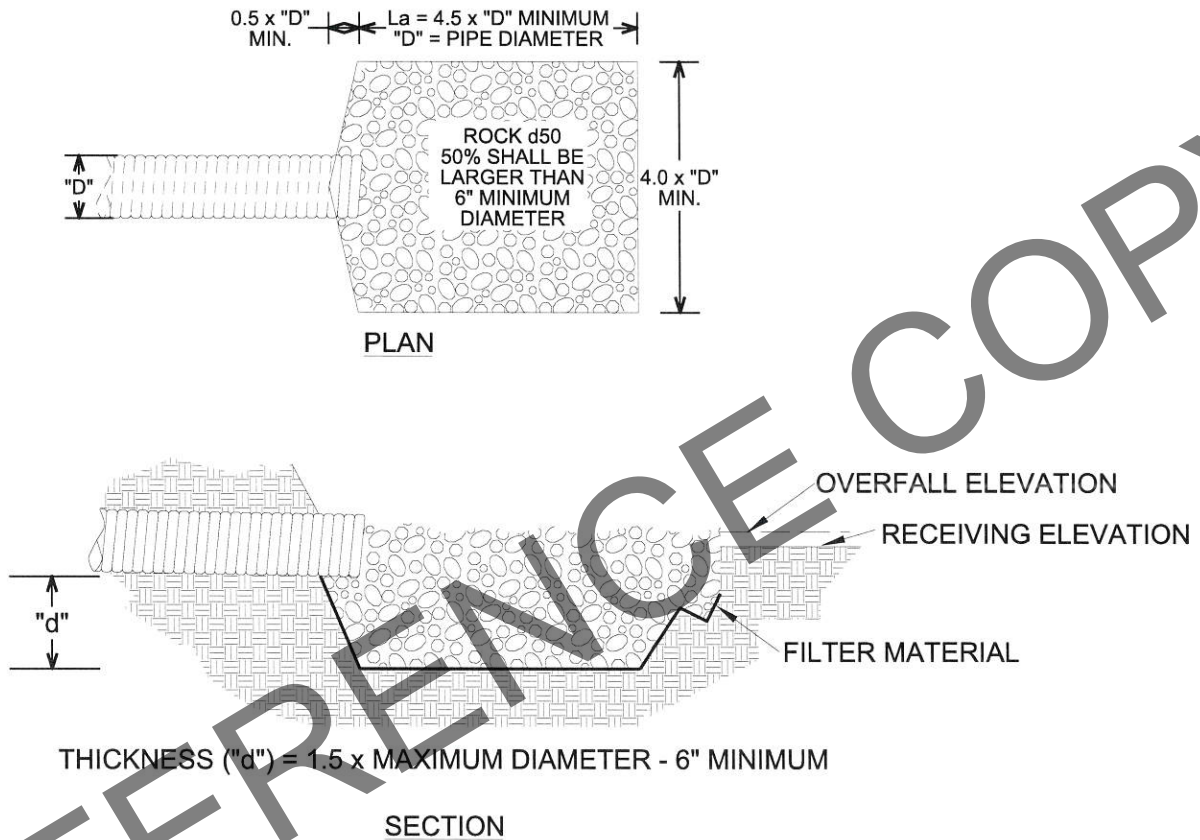
OUTLET PROTECTION



NOTE:

1. BIO BAGS ONLY REQUIRED WHEN DISCHARGING SEDIMENT LADEN WATER.
2. STAKING OF BAGS REQUIRED WITH EITHER METHOD USING (2) 1"x 2" WOOD STAKES OR APPROVED EQUAL PER BAG.

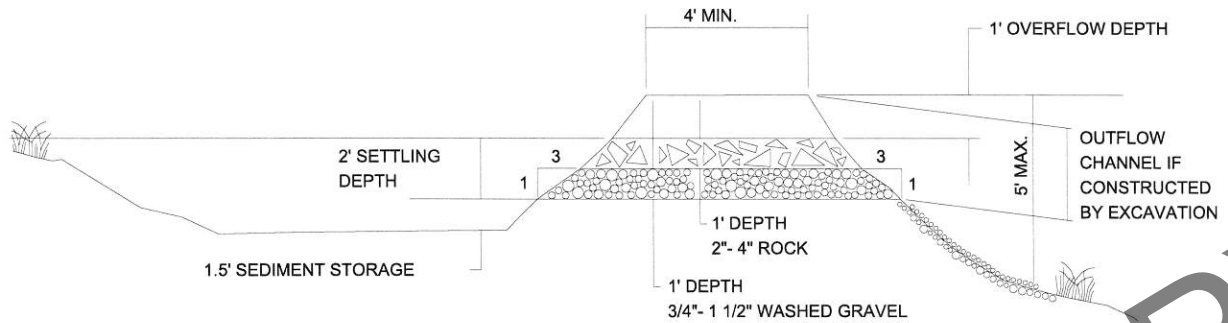
ENERGY DISSIPATER



NOTES:

1. "La" = LENGTH OF APRON. DISTANCE "La" SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.
2. APRON SHALL BE AT ZERO GRADE AND ALIGNED STRAIGHT.
3. FILTER MATERIAL SHALL BE FILTER FABRIC OR 6" THICK MINIMUM GRADED GRAVEL LAYER.

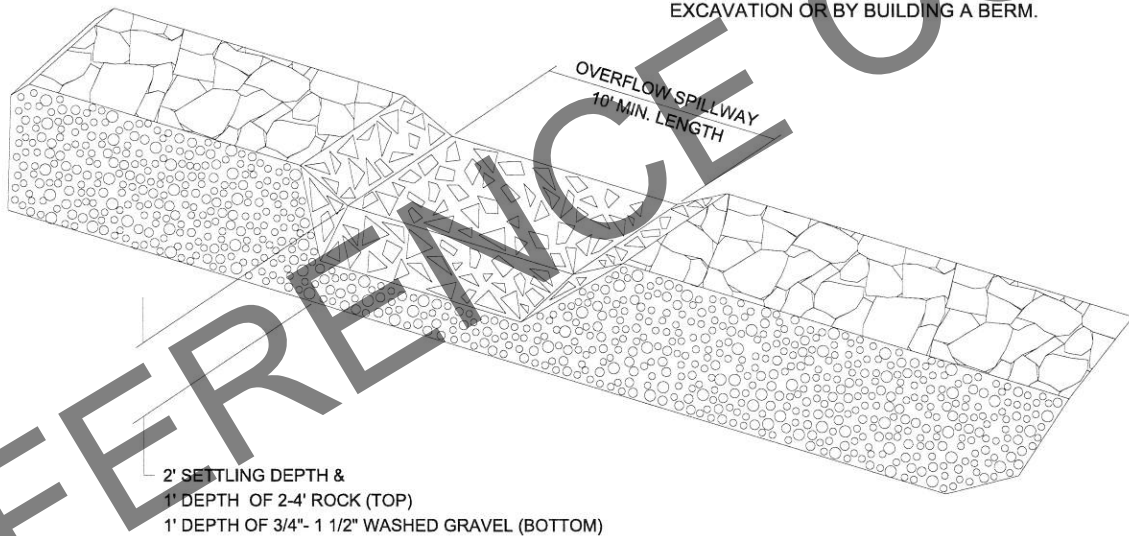
SEDIMENT TRAP



CROSS SECTION

NTS

NOTE: MAY BE CONSTRUCTED BY EXCAVATION OR BY BUILDING A BERM.



2' SETTLING DEPTH &
1' DEPTH OF 2'-4" ROCK (TOP)
1' DEPTH OF 3/4"-1 1/2" WASHED GRAVEL (BOTTOM)

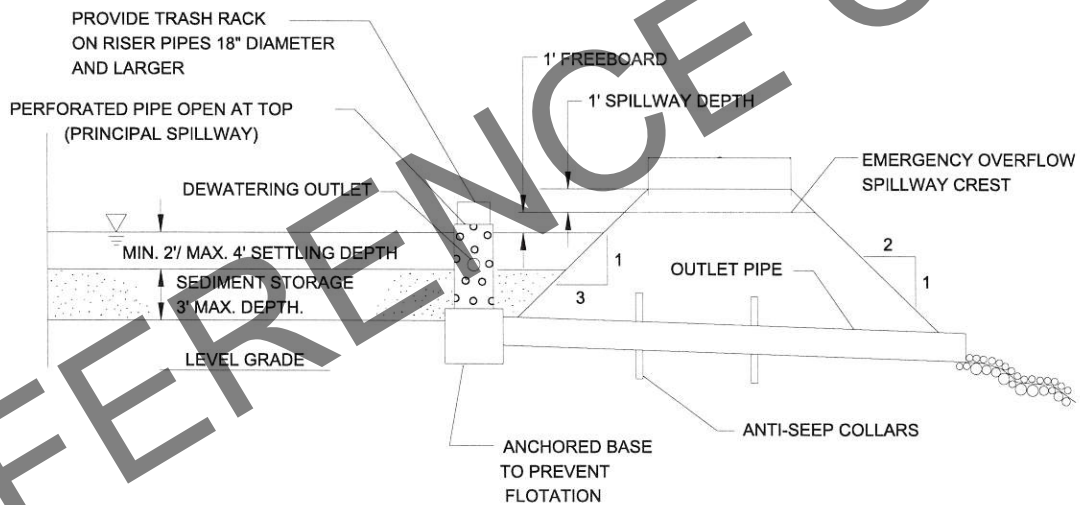
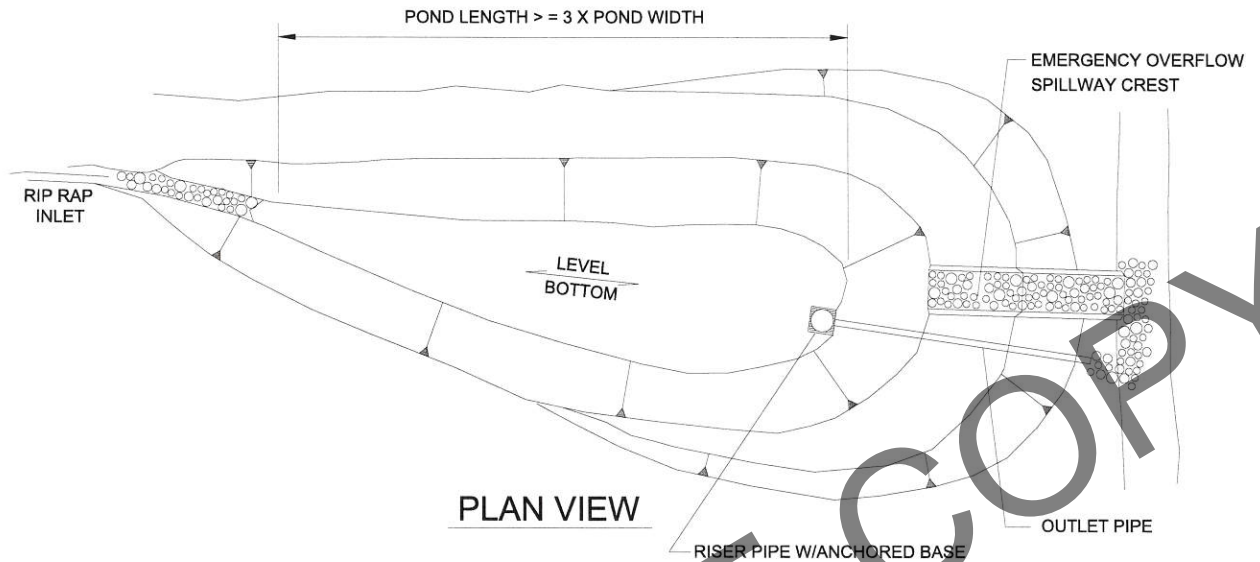
SEDIMENT TRAP OUTLET

NTS

NOTE:

A FILTER FABRIC FENCE OR SIMILAR FILTER MUST BE CONSTRUCTED TO FILTER RUNOFF FROM THE SEDIMENT TRAP PRIOR TO DISCHARGE FROM THE CONSTRUCTION SITE.

SEDIMENT BASIN



NOTES:

1. 50' MINIMUM OF HIGHLY VEGETATED AREA AND OR SEDIMENT FENCE IS REQUIRED PRIOR TO DISCHARGING TO STREAM OR OR WETLAND.
2. THE TEMPORARY SEDIMENT BASIN, DESIGNED BY A QUALIFIED PROFESSIONAL, IS REQUIRED FOR DISTURBED AREAS GREATER THAN 5 ACRES WITHIN A DRAINAGE AREA LESS THAN 100 ACRES
3. THE SEDIMENT BASIN WILL BE REMOVED WITHIN THREE YEARS.