CITY OF URBANA

CLASS 2
EROSION CONTROL
PERMIT

MANUAL OF PRACTICE

Revised August 2016

CLASS 2 EROSION CONTROL PERMIT MANUAL OF PRACTICE

TABLE OF CONTENTS

CLASS 2 EROSION CONTROL PERMIT MANUAL OF PRACTICE

TABLE OF CONTENTS (continued)

Introduction:

Background: For many years, urban storm water runoff has been a source of great concern because of its potential to carry harmful pollutants into nearby watercourses. Some pollutants in urban storm water can damage lakes and streams, harm aquatic life and disrupt sensitive wetland habitats. As a result of these concerns, the 1987 amendments to the Clean Water Act required the United States Environmental Protection Agency (U.S. EPA) to address storm water runoff in two phases.

• Phase I of the National Pollution Discharge Elimination Systems (NPDES) Storm Water Program began in 1990. Phase I of the NPDES Storm Water Program applies to large and medium municipal separate storm sewer systems (MS4s) and eleven industrial categories including construction sites disturbing five or more acres of land.

• Phase II of the NPDES Storm Water Program began March 10, 2003 and applies to small MS4s and construction sites disturbing between 1 acre and five acres of land.

The Illinois Environmental Protection Agency (Illinois EPA) is in charge of implementing both phases of the NPDES Storm Water Program.

Since Urbana is defined as a small MS4, the City is required to comply with Phase II of the NPDES Storm Water Program and they now hold a Phase II Permit that covers stormwater discharge from sewers under City jurisdiction. Among other things, this permit requires the City to control construction site runoff.

City of Urbana Requirements: The City of Urbana (CITY) requires a Class 2 Erosion Control permit for all demolition or construction projects that result in land disturbances between 2,000 sq-ft and 1 acre (43,560 sq-ft). Land disturbance area is defined by CITY ordinance as: *any land change that may result in soil erosion from wind, water and/or ice and the movement of sediments into or upon water, lands or rights-of-way*

within the CITY, including but not limited to building demolition, clearing and grubbing, grading, excavating, transporting and filling of land.

Practically speaking, the best way to estimate disturbed area is to total the area of new building, parking/driving surfaces, and areas that will require seeding or sodding after the project is complete to restore a vegetative cover. For demolition projects, the rule of thumb is building square footages over 1000 sq-ft require a Class 2 erosion control permit.

Class 2 Erosion Control permits are issued and inspected by the City of Urbana Engineering Division located in the Public Works Department at 706 South Glover Avenue in Urbana.

Projects that disturb more than 1 acre (43,560 sq-ft) require Class 1 erosion control permits (see City of Urbana Class 1 Erosion Control Permit Manual of Practice).

For more information on erosion control permitting, consult the CITY website:

http://urbanaillinois.us/Erosion_Control

Urbana Erosion Control Details: Details for approved erosion and sediment control best management practices (BMPs) are included in this manual. Other BMPs may be acceptable, but must be reviewed and approved by the City of Urbana Engineering Division prior to their use.

Inspections: Once an erosion control permit is issued, the CITY will make periodic inspections to ensure that all required erosion control measures are in place and remain effective. The CITY inspector will confirm that all construction related dirt and debris stays on site, out of CITY storm sewers and off of CITY sidewalks and roadways.

Urbana Class 2 Erosion Control Permit Application

City of Urbana
Engineering Division
706 Glover Avenue
Urbana, IL 61802
Phone (217) 384-2342
Fax (217) 384-2400

Date Received: _____ Permit Number: _____

Approved By & Date: _____ Permit Fee: _____

Inspected By & Date: _____ Check #: _____

Cash (exact) or Check only. Make check payable to City of Urbana.

CLASS 2 LAND DISTURBANCE PERMIT FORM
(Land disturbances between 2,000 square feet and one (1) acre)

TO BE COMPLETED BY APPLICANT

Name: _____ Date: _____

Mailing Address: _____

E-mail: _____ Phone #:_____

Address of Development: _____

Subdivision Name & Lot #: _____

Type of Development: _____ Sq.Ft of Site: _____

On-Site Responsible Contact:

Name: _____

E-mail: _____ Phone #: _____

[ ] Erosion Control Plan Attached

[ ] Erosion Control Plan Checklist Completed and Attached

[ ] Class 2 Land Disturbance Permit Fee Submitted

PERMIT FEE SCHEDULE – EFFECTIVE JULY, 2018:

- 1 & 2 family new construction, additions and demolitions - $100
- Commercial new construction, additions, and demolitions under 1 acre - $200

APPLICANT MUST CONTACT CITY AT 384-2342 TO SCHEDULE AN INSPECTION AFTER ALL EROSION CONTROL DEVICES ARE INSTALLED.

Revised July 2018

Urbana Class 2 Erosion Control Permit Checklist

EROSION CONTROL PLAN CHECKLIST

TO BE COMPLETED BY APPLICANT

[ ] North arrow shown?

[ ] Drawing completed in a scale not to exceed 1-inch to 20-feet?

[ ] Scale shown on drawing?

[ ] Edges of street pavement shown and street names shown?

[ ] Edges of sidewalk shown?

[ ] Property lines shown?

[ ] Building location and address shown?

[ ] Building pad elevation shown?

[ ] Finished floor elevation shown?

[ ] Spot elevations at four corners of site shown?

[ ] Surface water runoff flow arrows shown?

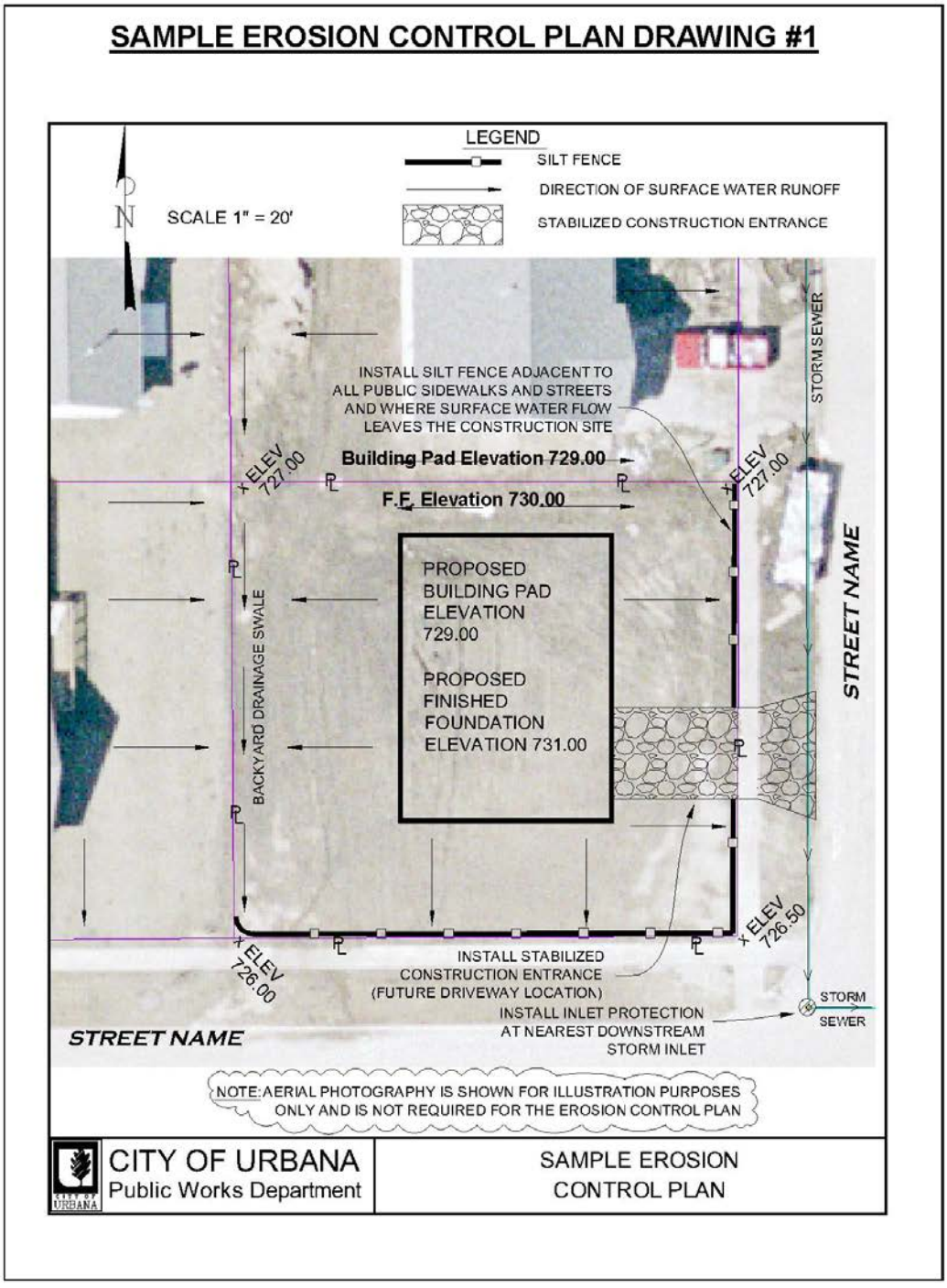
[ ] Identify backyard or sideyard swales if applicable?

[ ] Silt fence or landscape buffer locations shown?

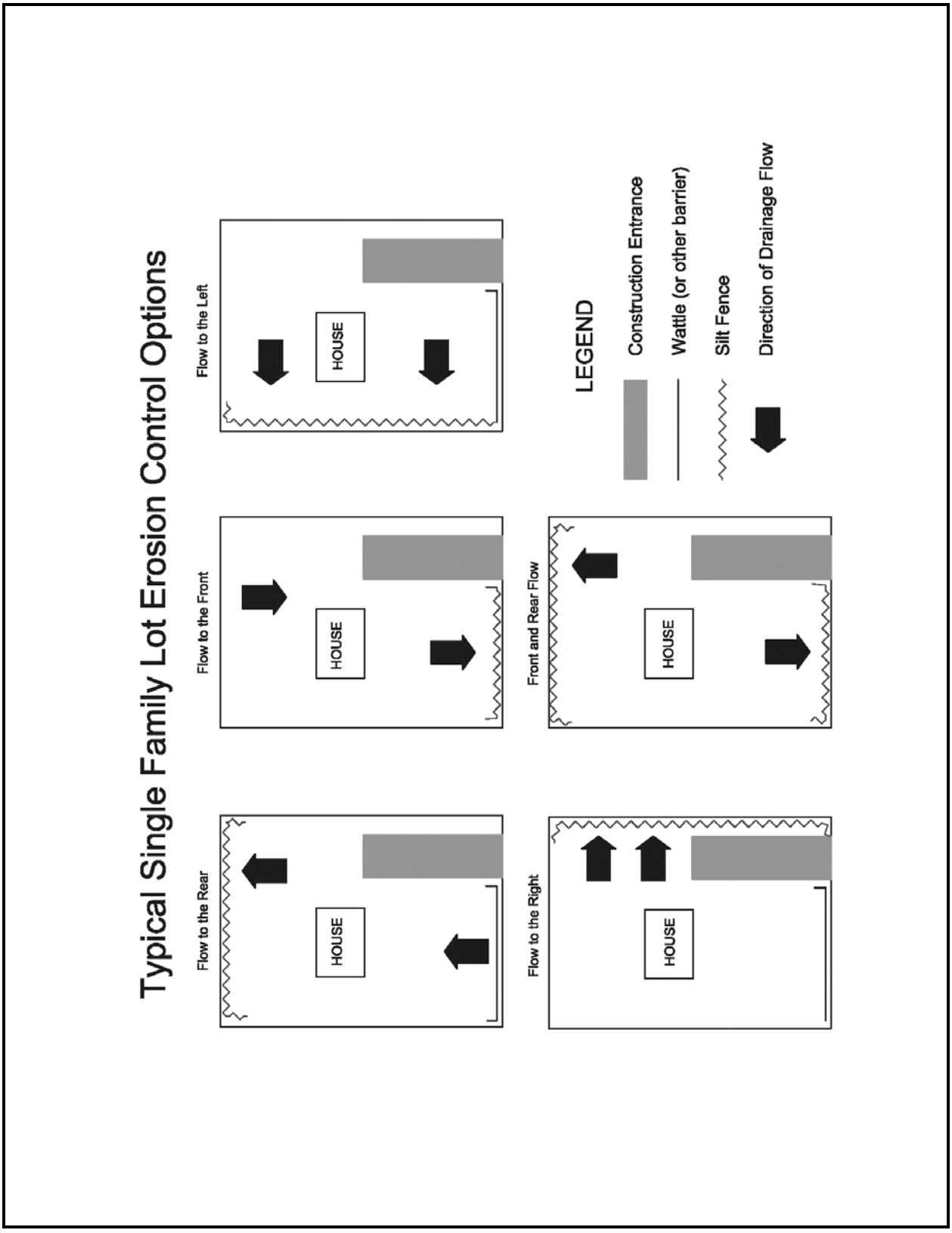
[ ] Stabilized construction entrance shown?

[ ] Inlet protection locations shown or noted?

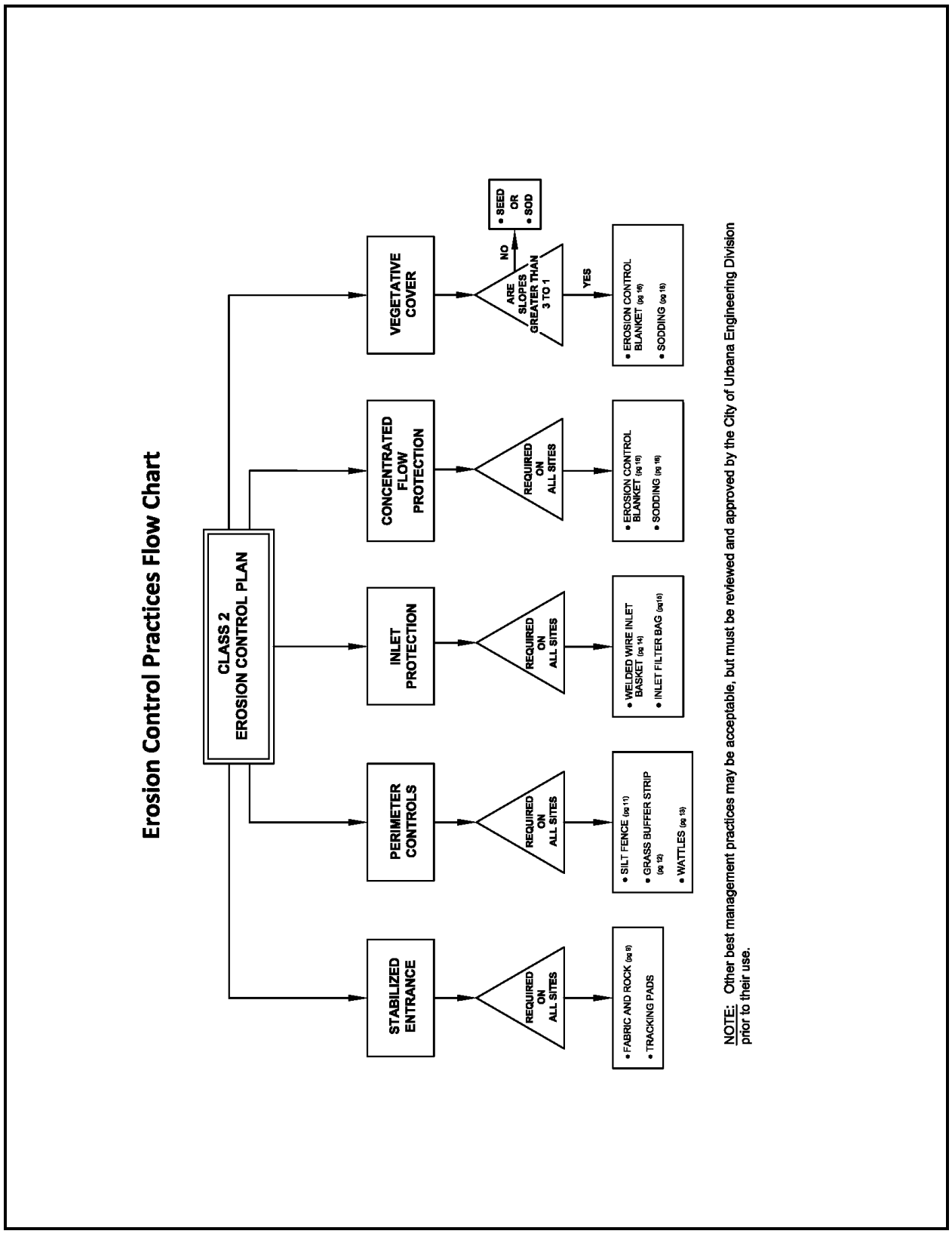
Sample Erosion Control Plans **Page 1**



Sample Erosion Control Plans Page 2



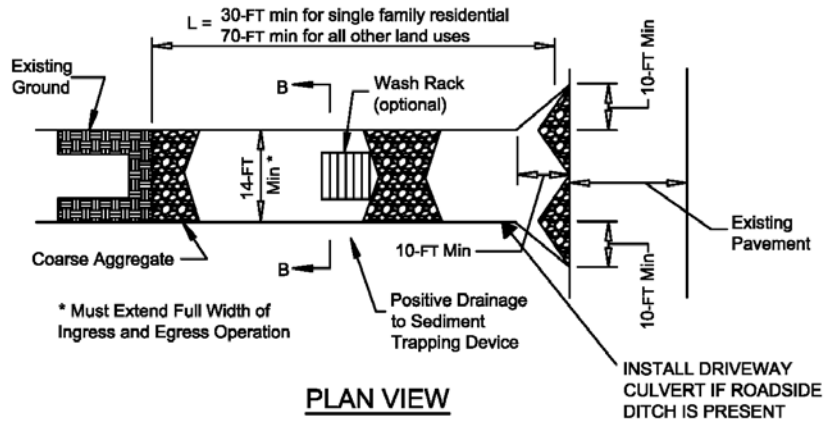
Erosion Control Practices Flow Chart



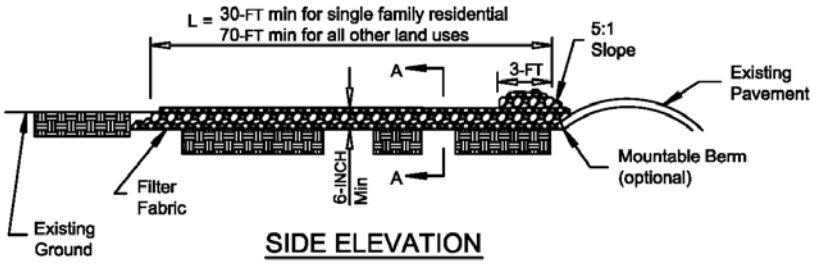
Erosion Control Sequence

1) Install stabilized construction entrance.
2) Install perimeter controls (silt fence, vegetative buffer, wattles). Perimeter controls are typically placed where storm water runoff leaves the site and adjacent to all public sidewalks and streets.
3) Install inlet protection at downstream sewer inlets, grates, drains and manholes.
4) Provide erosion blankets or sod for concentrated flow areas.
5) Contact the Urbana Public Works Engineering Division to inspect erosion control measures.
6) Excavate and backfill foundations. Note: Spoil piles must not extend beyond property lines or cover sidewalks.
7) Provide soil protection and energy dissipation at gutter downspouts and sump pump outlets if they are in place prior to full vegetative cover over the area.
8) Maintain and repair all erosion controls until disturbed areas are fully restored.
9) Clean dirt off sidewalks and roads each day.
10) Complete final grading and seed or place sod.
11) Remove erosion control measures after permanent ground cover is obtained at a density sufficient to control erosion, typically 70%.

Stabilized Construction Entrance Details Page 1



PLAN VIEW



SIDE ELEVATION

NOTES:

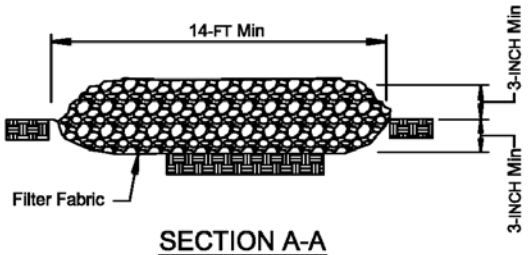
1. Filter fabric shall be placed over the entire area prior to placing of stone.
2. Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradations: CA-1, CA-2, CA-3 or CA-4.
3. Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
4. Wash rack or tire wash facilities shall be required if stabilized construction entrance is creating a mud tracking issue.
5. If wash racks are used they shall be installed according to the manufacturer's specifications.
6. Other approved products such as Tracking Pads (www.trackingpads.com) may be considered for use.

CITY OF URBANA
PUBLIC WORKS DEPARTMENT

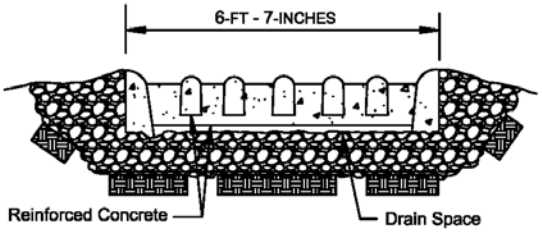
Stabilized Construction Entrance
Page 1 of 2

DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE

Stabilized Construction Entrance Details Page 2



SECTION A-A



SECTION B-B

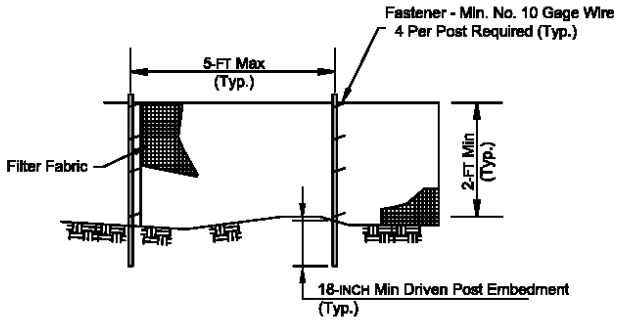
MAINTENANCE:

1. Inspect on a daily basis or as necessary
2. Immediately remove mud or sediment tracked onto road
3. Add or remove aggregate material as necessary to maintain a viable construction entrance
4. Silt or construction fencng may be required at entrance apron to ensure that construction entrance is used

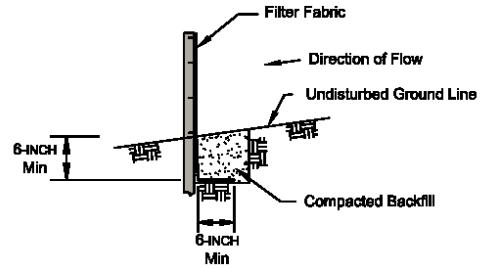
CITY OF URBANA
PUBLIC WORKS DEPARTMENT

Stabilized Construction Entrance
Page 2 of 2

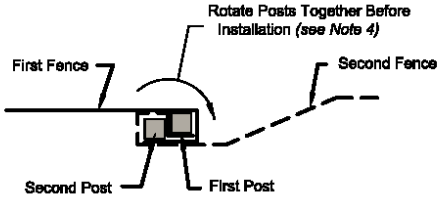
DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE



ELEVATION



FABRIC ANCHOR DETAIL



SPLICE DETAIL-PLAN VIEW

NOTES:

1. Temporary silt fence shall be installed prior to any grading work in the area to be protected. Fence shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 1080.02 Geotextile Fabric.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3 square inches.
4. When splices are necessary make splice at post according to splice detail. Place the end post of the second fence inside the end post of the first fence. Rotate both posts together at least 180 degrees to create a tight seal with the fabric material. Cut the fabric near the bottom of the posts to accommodate the 6 inch flap. Then drive both posts and bury the flap. Compact backfill well.

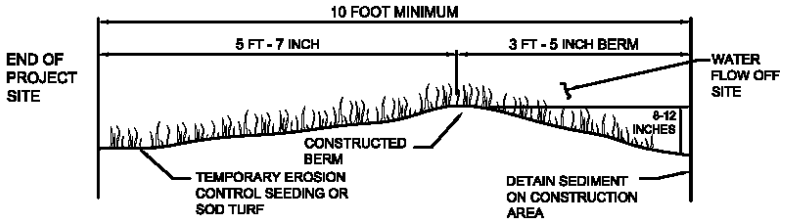
MAINTENANCE:

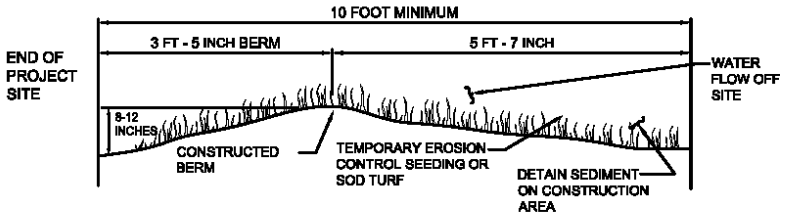
1. Inspect on a daily basis or as necessary.
2. Repair any damage immediately.
3. Remove sediment when the level of deposition reaches one-half the height of the silt fence.
4. Replace geotextile fabric that has deteriorated due to ultraviolet breakdown.
5. Remove silt fence once it has served its useful purpose, but not before the upslope area has been permanently stabilized.

CITY OF URBANA
PUBLIC WORKS DEPARTMENT

Silt Fence

DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE





DESCRIPTION:

Grass buffers are wide strips of undisturbed vegetation consisting of grass or other erosion resistant plants surrounding the disturbed site. They provide infiltration, intercept sediment and other pollutants, and reduce stormwater flow and velocity. They can also act as a screen for visual pollution and reduce construction noise.

PLANNING CONSIDERATIONS:

Grass strips should be fenced off prior to construction. Avoid storing debris from clearing and grubbing, and other construction waste material in these strips during construction.

DESIGN CRITERIA:

The minimum length of strip must be at least as long as the contributing runoff area. The minimum width should conform to the table below.

MINIMUM WIDTHS OF FILTER STRIPS

SLOPE OF LAND %	WIDTH OF FILTER STRIP FOR GRASSED AREAS (FT)
0	10
2	12
4	14
6	16
8	18
10	20
15	25

INSPECTION AND MAINTENANCE:

1. Maintain moist soil conditions immediately after seeding and/or sod installation.
2. Maintain moist soil conditions throughout vegetation establishment period.
3. Remove sediment deposits after each storm event.

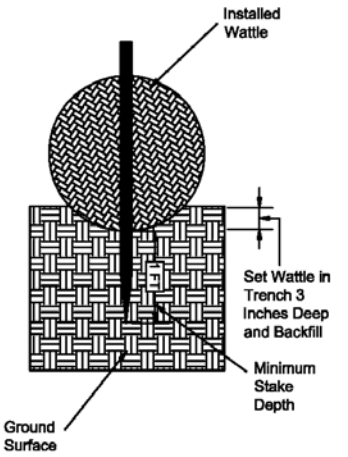
CITY OF URBANA
PUBLIC WORKS DEPARTMENT

Grass Buffer Strip

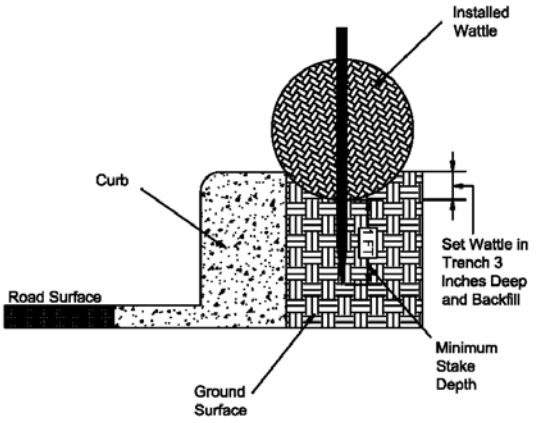
DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE

Perimeter Control Details: Wattle

Flat Ground
(Perimeter Control) Installation



Curbside Installation



INSTALLATION NOTES:

1. Wattles shall be a minimum of 9 inches in diameter and consist of 100% clean, certified weed free straw fiber matrix, washed shredded rubber (metal removed) or other material approved by the City, confined by a net or woven fabric.
2. Remove debris, rocks and dirt clods and grade to create a smooth, flat surface to install wattle on. Excavate a trench approximately 3 inches deep to set wattle in. Backfill and compact soil around wattle.
3. Drive minimum 1-inch by 1-inch by 24-inch wooden stakes through the middle of the wattle to hold it in place. Stake should not stick out more than 4 inches above the top of the wattle. Stake each end of the wattle and every 3 to 4 feet in between.
4. Overlap wattles a minimum of 6 inches at joints.
5. Follow manufacturer's recommended installation procedures.

MAINTENANCE NOTES:

1. Inspect on a daily basis or as necessary and repair or replace any damaged or deteriorated wattles immediately.
2. Remove sediment when it reaches 3 inches high on the wattle.
3. Remove wattles when they have served their useful purpose, but not before the up-slope area has been permanently stabilized.

CITY OF URBANA
PUBLIC WORKS DEPARTMENT

Wattle
(Perimeter Control)

DATE: 3/2/16 REV: 1 DRAWING NOT TO SCALE

Inlet Protection Details: Welded Wire Inlet Basket

WELDED WIRE MONOFILAMENT PROTECTORS

MAINTENANCE:

1. Inspect on a daily basis.
2. Repair any damage immediately.
3. Remove sediment when it reaches 6 inches high on the basket.
4. Replace geotextile fabric that has deteriorated due to ultraviolet breakdown.
5. Remove inlet protector when it has served its useful purpose, but not before the upslope area has been permanently stabilized.

SPECIFICATIONS

Description: Weld Wire monofilament protector shall consist of three (3) parts:

1. 36 inch wide geotextile fabric shall be WinFab 2098. Geotextile fabric is composed of monofilament polypropylene yarns, which are woven into a stable network such that the yarns retain their relative position.

2. 6 inch x 6 inch welded wire mesh geotextile composite, shall be 30 inches tall, formed and secured into a 42 inch minimum diameter circle.

3. Fastening rings shall be constructed of wire conforming to ASTM A-641, A-809, A-370, and A-938.

Assembly
Geotextile shall be wrapped a minimum of one inch over the top member of the 6 inch x 6 inch welded wire mesh and secured with fastening rings at six inches on center. Geotextile shall be secured to the sides of the welded wire mesh with fastening rings at a spacing of one per square foot. The fastening rings shall penetrate both layers of geotextile and securely close around a steel member. The bottom 2 inches +/- of fabric shall be left unsecured to allow for entrenchment.

Geotextile

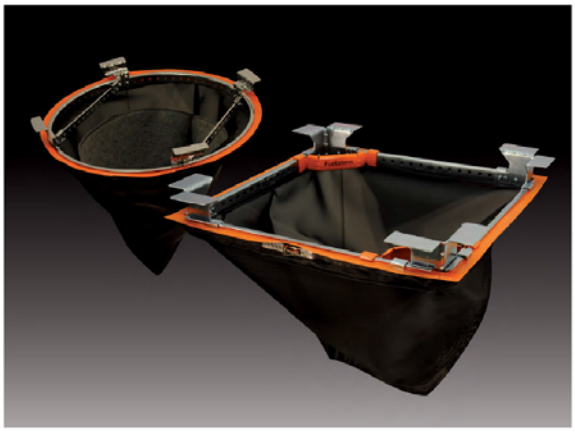
Mechanical/ Physical Properties	Description/Minimum Average Roll Values	Test Method
Structure	Woven Monofilament	
Polymer	Polypropylene	
U.V. Resistance (@ 500hrs)	80% Strength Retained	ASTM D4355
Permittivity	.05 Sec-1	ASTM D4491
Flow Rate	75 gpm/ft²	ASTM D4491
Grab Tensile Strength	350 / 250 lbs	ASTM D4632
AOS (U.S. Sieve)	40	ASTM D4751
Mullen Burst Strength	450 psi	ASTM D3786
Color	Black	

Welded Wire Mesh
6 inch x 6 inch welded wire mesh shall be formed of 10ga. steel conforming to ASTM A-185.

Installation
Install welded wire protector in a 6 inch deep trench overlapping the ends a minimum of 3 inches. Use wire or zip ties to secure the overlap, then compact soil back into trench over the flap. Follow all manufacturer instructions.

SILT FENCE FABRICATORS, LLC 771 International Dr. FRANKLIN, IN 46131
PHONE: (317) 736-5293 info@siltfencefabricators.com Rev. 11/30/2011

Inlet Protection Details: Inlet Filter Bag



DESCRIPTION:

The purpose of an inlet filter bag is to collect silt and sediment from surface storm water runoff at drainage structures entering the storm sewer system. The inlet filter bag system is comprised of a corrosion resistant steel frame and a replaceable geotextile sediment bag attached to the frame with a stainless steel locking band. The sediment bag hangs suspended from the rigid inlet frame at a distance below the grate which allows full water flow into the drainage structure if the bag is completely filled with sediment. Inlet filter bags are made to fit a number of standard inlet shapes and sizes.

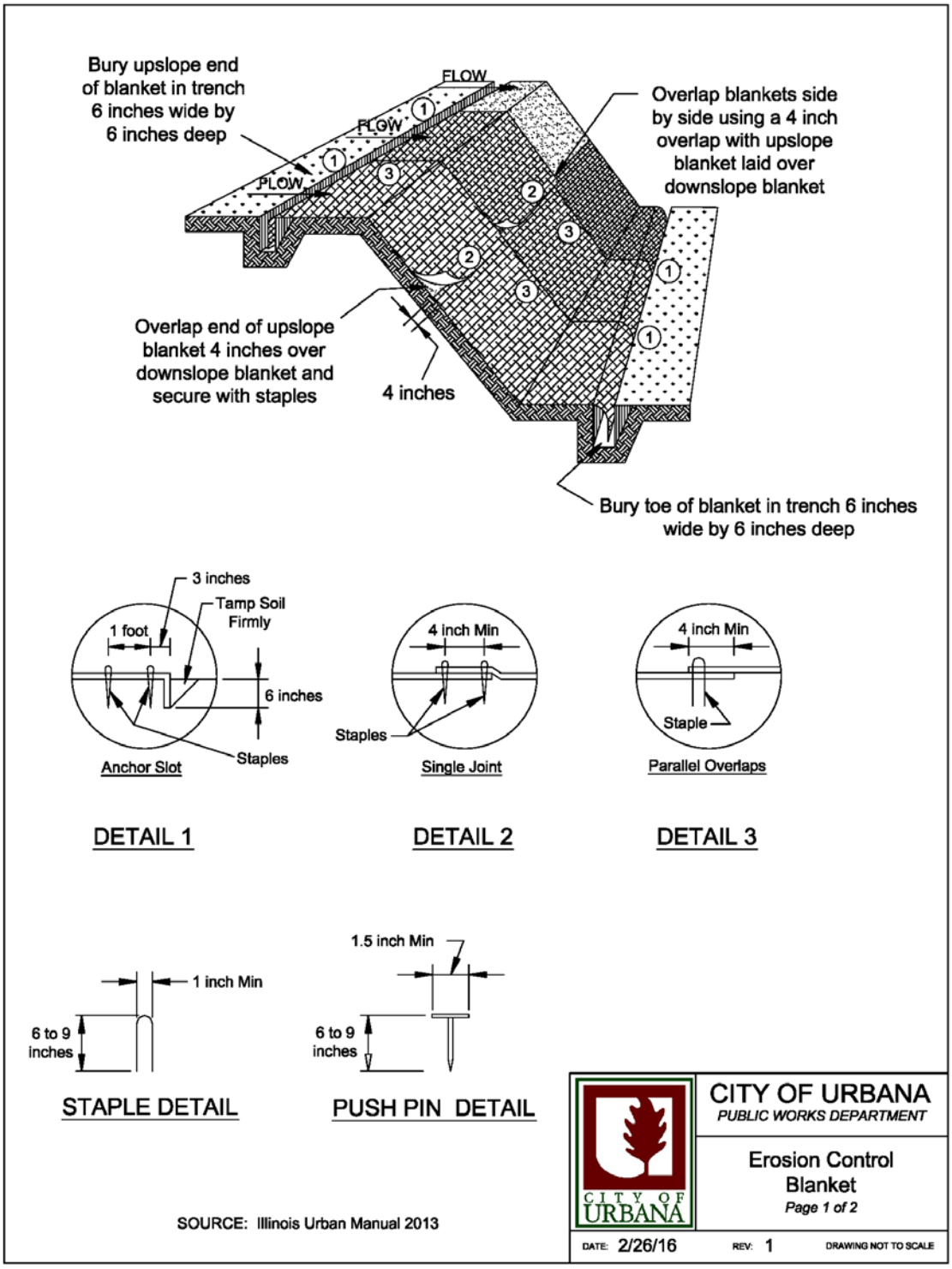
INSTALLATION:

All inlet filter protectors shall be installed in accordance with manufacturer's instructions.

MAINTENANCE:

1. Inspect weekly and following each ½ inch or more rain event.
2. Replace the bag if the geotextile is torn or punctured to ½ inch diameter or greater on the lower half of the bag.
3. Empty the filter bag when it is more than half filled with sediment and debris or as directed by the Engineer. Dispose of the sediment or debris as directed by the Engineer.
4. Remove inlet protection when it has served its useful purpose, but not before upslope area has been permanently stabilized.

Concentrated Flow Control Details: Erosion Control Blanket Page 1



Concentrated Flow Control Details: Erosion Control Blanket Page 2

EROSION CONTROL BLANKETS SHOULD BE USED

1. On exposed slopes and newly seeded areas that are 1.5:1 or flatter.
2. On slopes and flat areas where turf will need to be established.

For swales, channels and slopes steeper than 1.5:1, please refer to Turf Reinforcement Mat (TRM) detail.

NOTES

1. On slopes and in flow channels, the blanket shall be unrolled upstream to downstream parallel to the direction of flow. The upstream end of each blanket shall be anchored in a minimum 6-inch deep anchor trench, backfilled and compacted.
2. When laid side by side, blankets shall overlap a minimum of 4 inches.
3. When more than one blanket length is needed, the materials shall be shingled at a minimum of 4 inches over the downstream piece as shown in the drawing on page 1.
4. All edges shall be stapled as per manufacturer's recommendation or at least as stringent as shown in the drawing on page 1.
5. Staple or push pin lengths shall be selected based on soil type and conditions, but minimum staple length is 6 inches.
6. Erosion control material shall be placed in contact with the soil or over a prepared seedbed.
7. All anchor slots shall be stapled at approximately 12 inch intervals.

MAINTENANCE

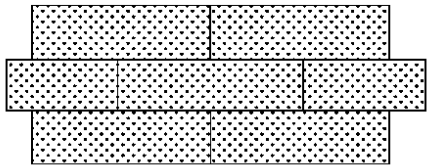
1. Check for damage due to water running under the blanket, tenting of the blanket, or displacement of the blanket by wind.
2. Check for erosion under blankets in flow channels where the blanket terminates and transitions into another surface. In areas where water has seeped under the blanket, more staples may be needed per given area or more frequent anchoring trenches may need to be installed with better compaction. If significant erosion has occurred under the blanket, grading and reseeding may also be necessary.
3. Any blankets that have been displaced will need to be reinstalled and re-stapled. This may indicate that the wrong type of blanket was chosen or improper final site grading was performed. One may also need to revisit the site characteristics and select a different type of Erosion Control Blanket or different erosion control practice.

SOURCE: Illinois Urban Manual 2013

CITY OF URBANA
PUBLIC WORKS DEPARTMENT

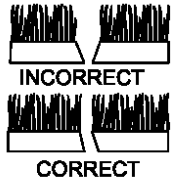
Erosion Control Blanket
Page 2 of 2

DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE

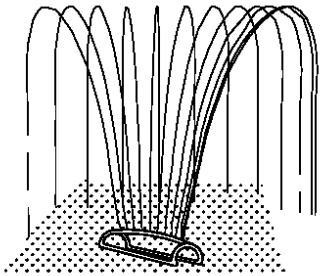


Lay sod in a staggered pattern. Butt the strips tightly against each other. Do not leave spaces and do not overlap. A sharpened mason's trowel is a handy tool for tucking down the ends and trimming pieces.

BUTTING - Angled ends caused by the automatic sod cutter must be matched correctly.



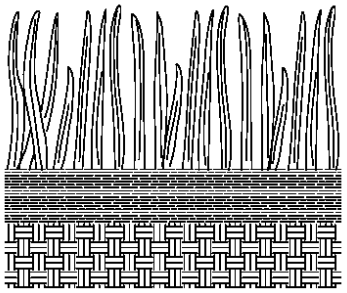
Roll sod immediately to achieve firm contact with the soil.



Water to a depth of 4 inches as needed. Water well as soon as the sod is laid.

Mow when the sod is established, typically in 2-3 weeks. Set the mower at 2 to 3 inches high.

APPEARANCE OF GOOD SOD



Shoots - grass blades should be green and healthy, mowed at a 2-3 inch cutting height.

Thatch - grass clippings and dead leaves, up to 1/2 inch thick.

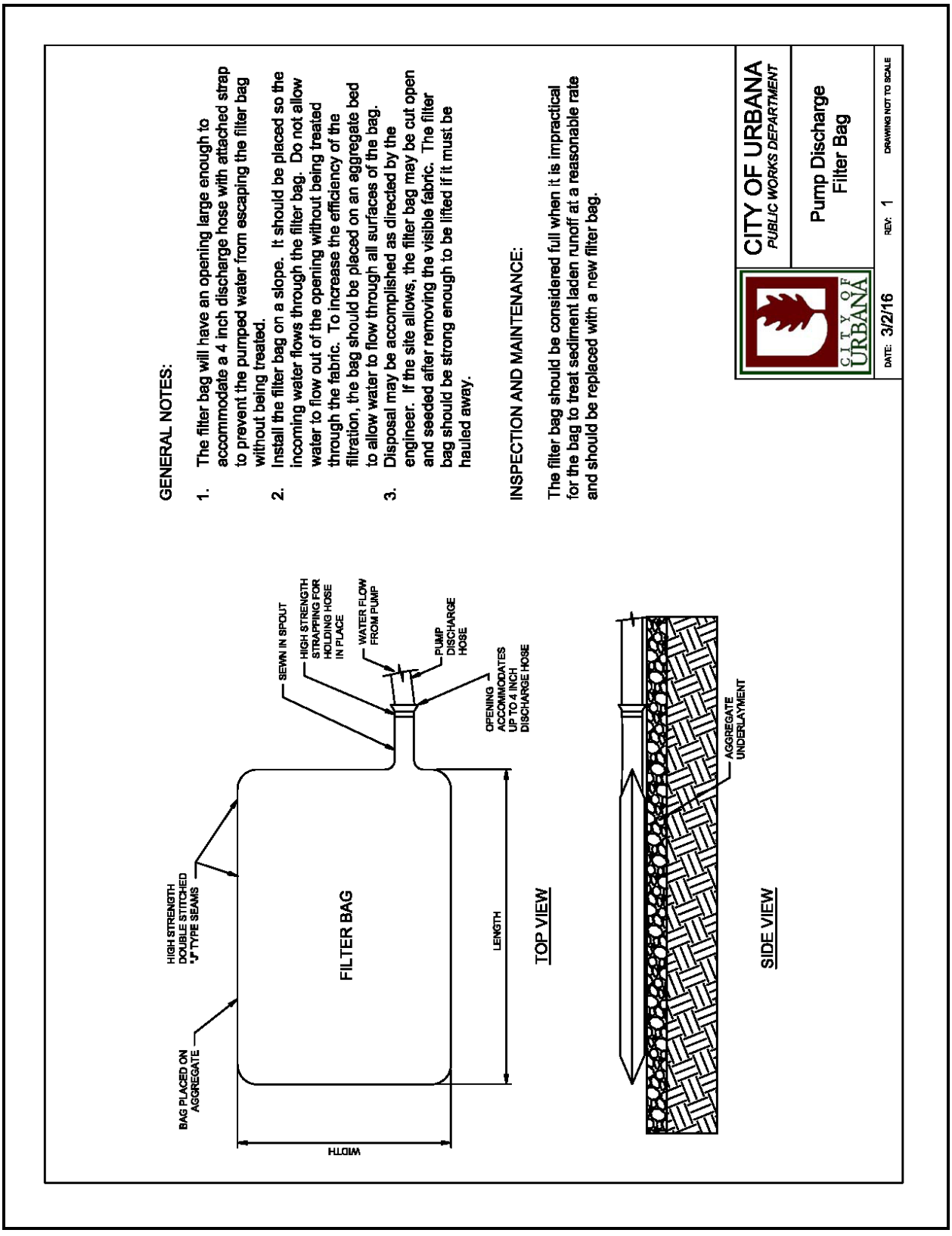
Root zone - soil and roots should be 1/2-3/4 inches thick, with dense root mat for strength.

CITY OF URBANA
PUBLIC WORKS DEPARTMENT

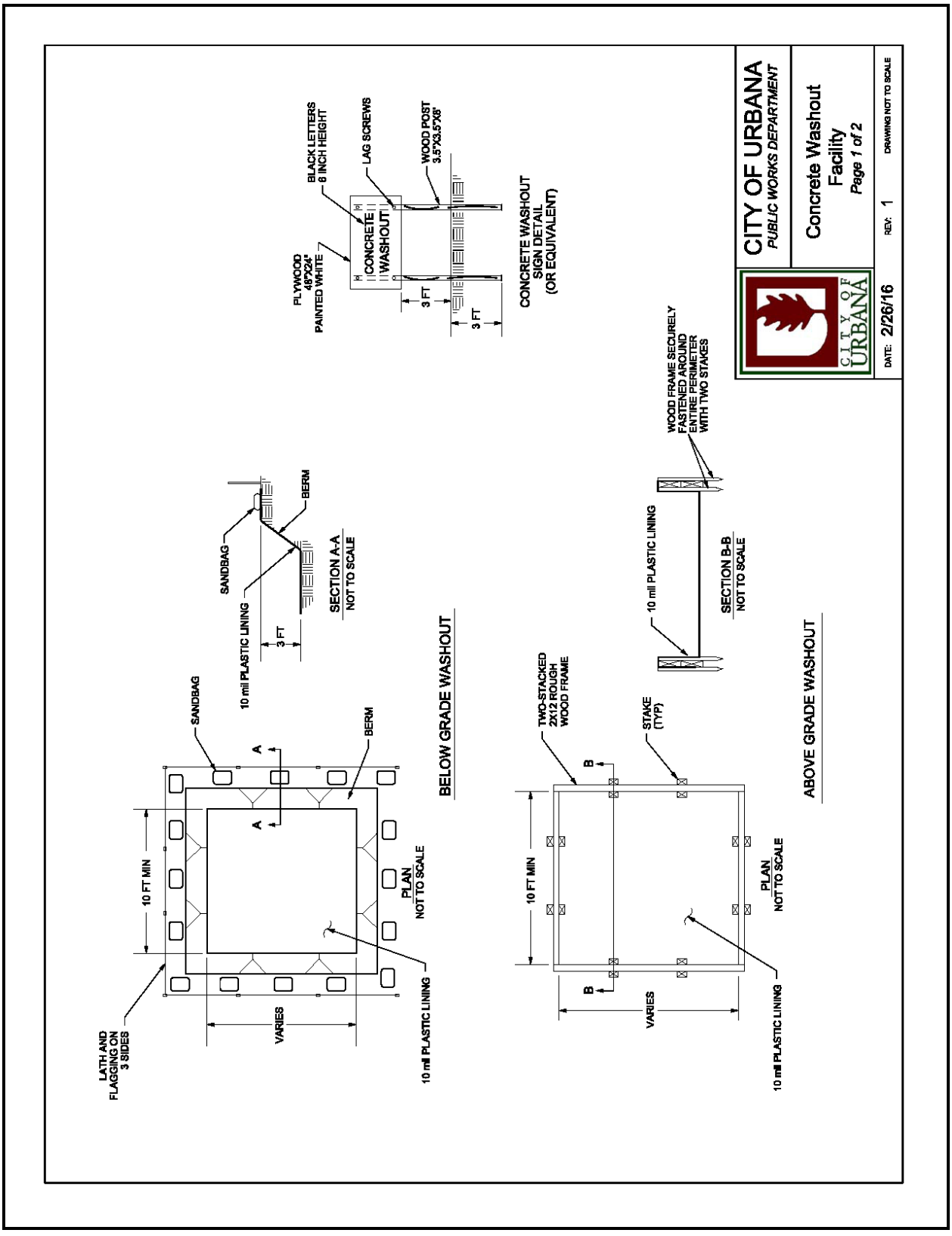
Sodding

DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE

Pump Discharge Filter Bag Details



Concrete Washout Facility Details **Page 1**



General Notes:

- PCC and AC wastes shall be collected and disposed of or placed in a concrete washout facility. No PCC or AC wastes shall enter the storm sewer system or watercourses.
- A sign shall be installed adjacent to each facility to inform concrete equipment operators to utilize proper facilities.
- Below grade facilities are typical. Above grade facilities are utilized if excavation is not practical.
- Washout facilities shall have sufficient volume to contain all liquid and waste concrete materials generated by washout and construction activities.
- Once concrete wastes are discharged to facility and allowed to harden, the concrete waste should be broken up and disposed of in accordance with state and local law.
- Plastic lining shall be free of holes, tears, or other defects that compromise the impermeability of the material.
- A minimum freeboard 12 inches is required for below grade facilities and a minimum of 4 inches freeboard is required for above grade facilities.

Maintenance Notes:

- Concrete washout facilities must be cleaned or new facilities constructed once the washout is 75% full.
- Remove and dispose of hardened concrete materials to return facilities to a functional condition.
- Inspect washout facility on a weekly basis.

Removal Notes:

- When facilities are no longer required for construction work, the materials used to construct the facility shall be removed from the site and disposed of in accordance with state and local law.
- Holes, depressions or other ground disturbance caused by removal of the facility shall be backfilled and restored to its pre-existing condition or use.

CITY OF URBANA
PUBLIC WORKS DEPARTMENT

Concrete Washout Facility
Page 2 of 2

DATE: 2/26/16 REV: 1 DRAWING NOT TO SCALE

NOTES: