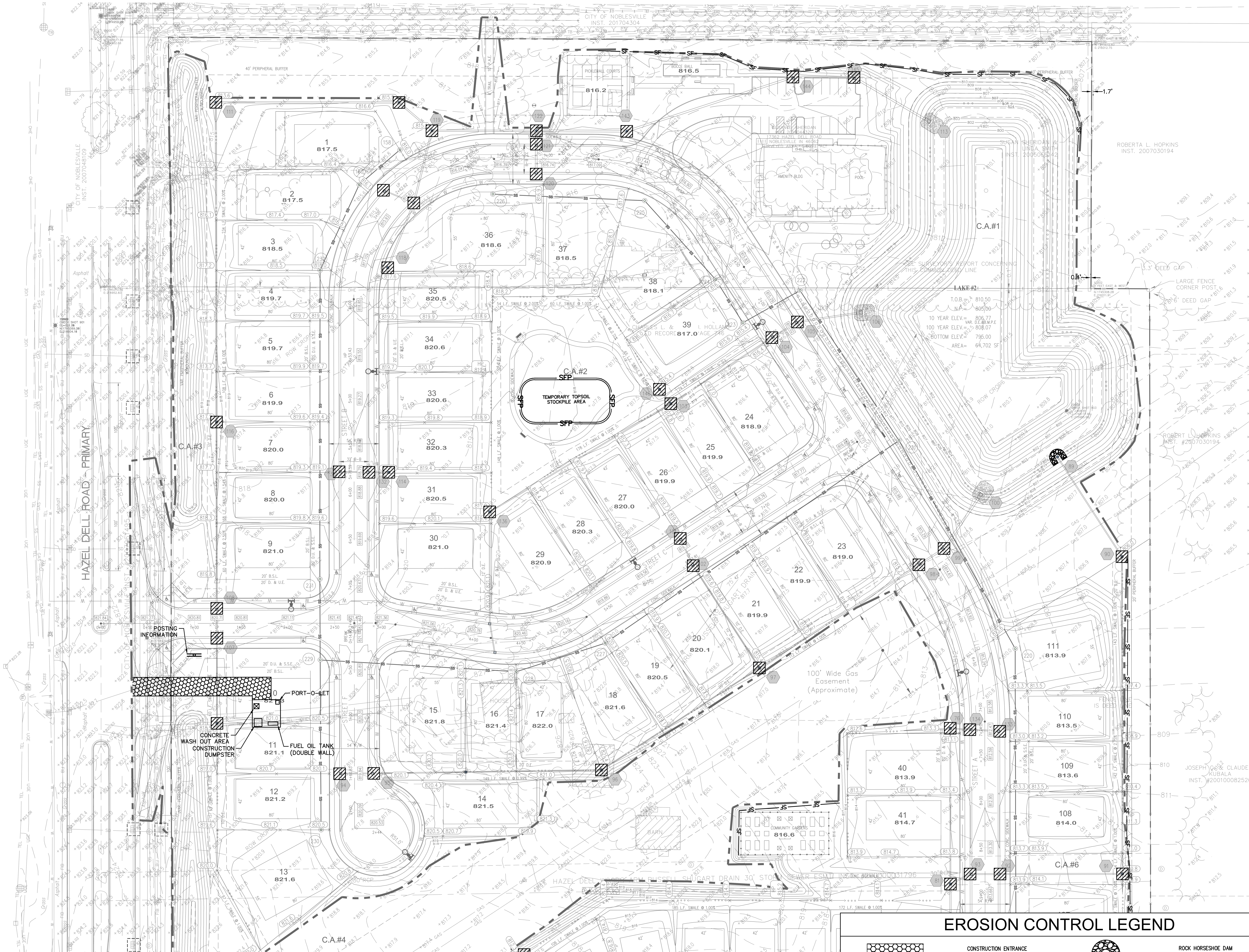

MATCHLINE - SEE SHEET C401

EROSION CONTROL LEGEND

Symbol	Description	Symbol	Description
	CONSTRUCTION ENTRANCE (SEE EROSION CONTROL DETAILS)		ROCK HORSESHOE DAM (SEE EROSION CONTROL DETAILS)
SFP	SHEET FLOW PROTECTION (SEE EROSION CONTROL DETAILS)	SF	TEMPORARY TOPSOIL STOCKPILE
x x	SNOW FENCE	620	EXISTING CONTOURS
	AREA INLET PROTECTION (SEE EROSION CONTROL DETAILS)	620	PROPOSED CONTOURS
	CONCRETE WASHOUT (SEE EROSION CONTROL DETAILS) (TO BE DETERMINED BY CONTRACTOR)		POSTING INFORMATION
	RIP RAP (SEE EROSION CONTROL DETAILS)		

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No.	REVISIONS	DATE	BY
	REVISED PER ROADWAY CHANGE PER CITY	06/25/24	GMS
	REVISED PER TWO-WAY STOP	06/06/24	GMS
1	PDP TAC COMMENTS	03/28/24	GMS

SCALE: AS NOTED
DESIGNED BY: JSM
DRAWN BY: GMS
CHECKED BY: BAH

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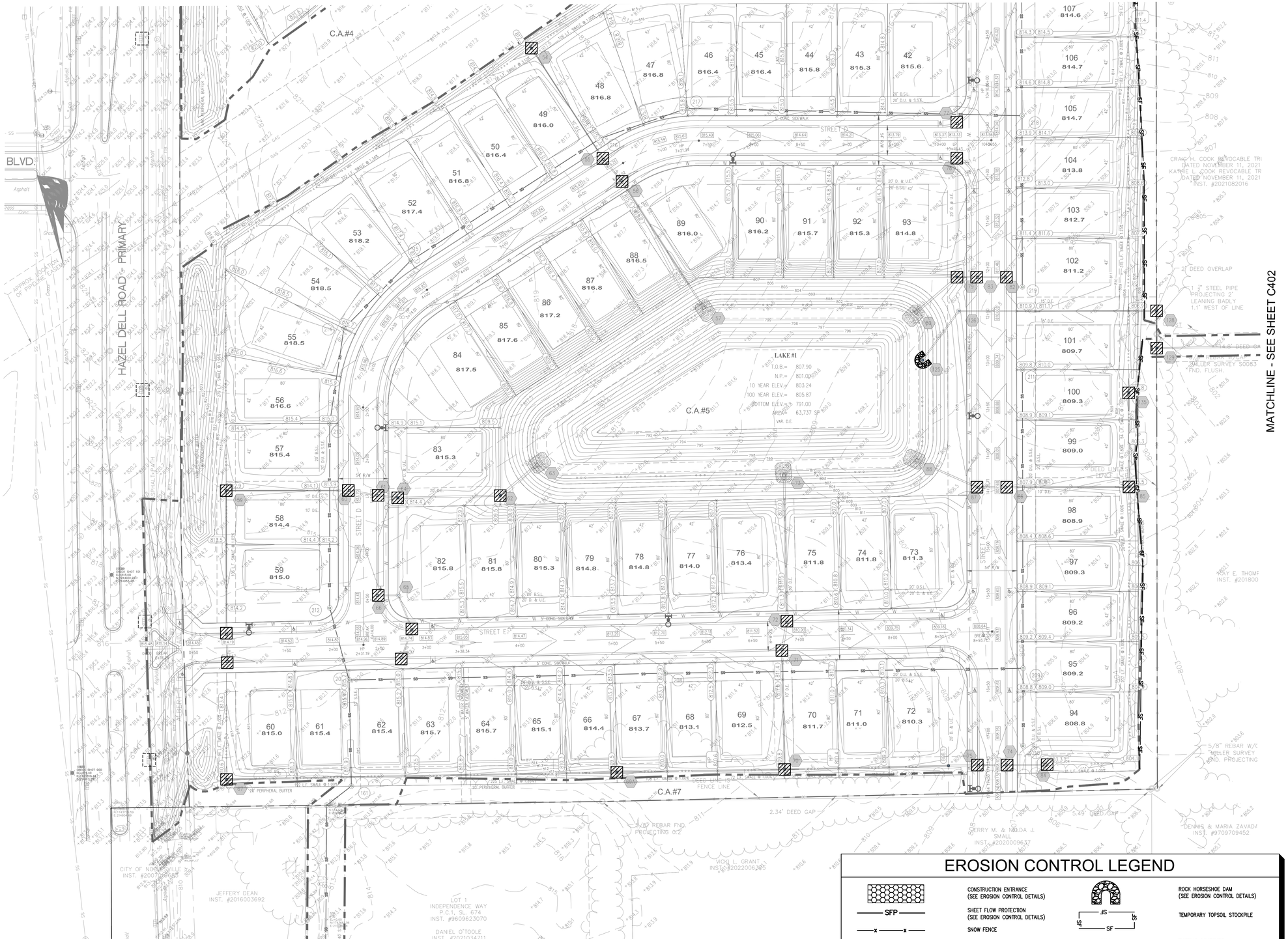
EROSION CONTROL PLAN

COURTYARDS OF HAZEL DELL PRIMARY PLAT

ORIGINAL ISSUE: 12/20/2023
KHA PROJECT NO. 170177022
SHEET NUMBER
C400

MATCHLINE - SEE SHEET C400



MATCHLINE - SEE SHEET C402

MATCHLINE - SEE SHEET C402

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE (SEE EROSION CONTROL DETAILS)
- SHEET FLOW PROTECTION (SEE EROSION CONTROL DETAILS)
- SNOW FENCE
- AREA INLET PROTECTION (SEE EROSION CONTROL DETAILS)
- CONCRETE WASHOUT (SEE EROSION CONTROL DETAILS) (TO BE DETERMINED BY CONTRACTOR)
- RIP RAP (SEE EROSION CONTROL DETAILS)
- ROCK HORSESHOE DAM (SEE EROSION CONTROL DETAILS)
- TEMPORARY TOPSOIL STOCKPILE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- POSTING INFORMATION

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EROSION CONTROL PLAN

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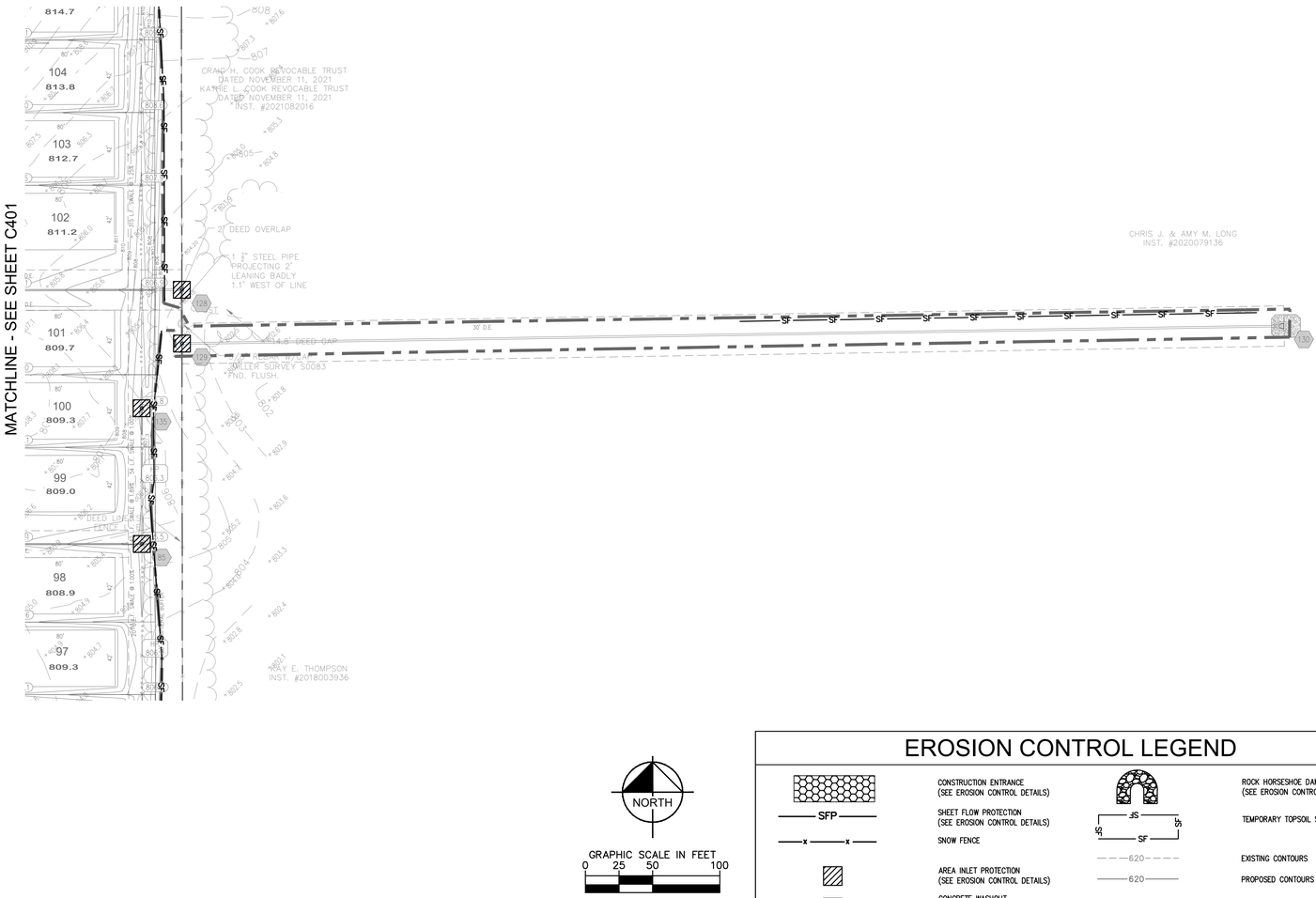

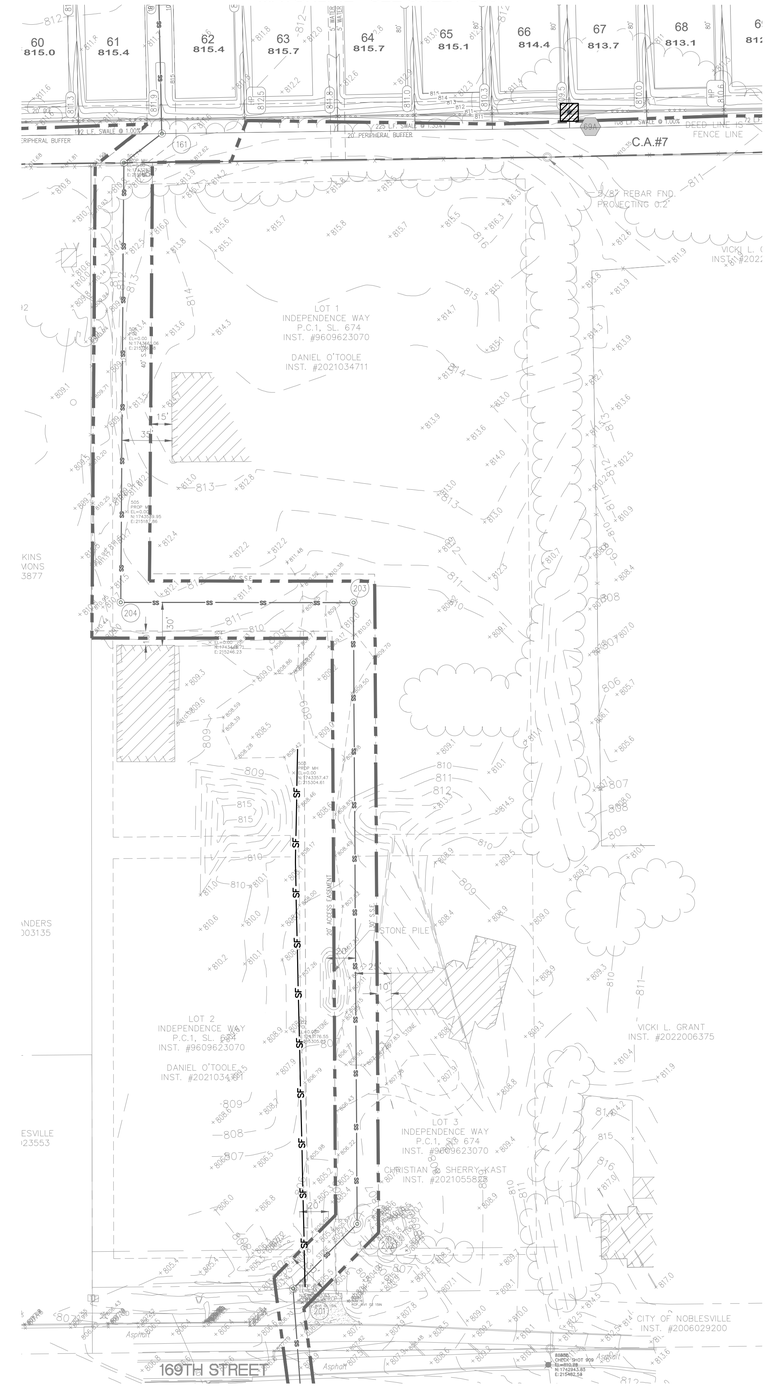

EROSION CONTROL LEGEND

CONSTRUCTION ENTRANCE (SEE EROSION CONTROL DETAILS)	ROCK HORSESHOE DAM (SEE EROSION CONTROL DETAILS)
SFP — SHEET FLOW PROTECTION (SEE EROSION CONTROL DETAILS)	TEMPORARY TOPSOIL STOCKPILE
x — x — SNOW FENCE	620 — EXISTING CONTOURS
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EROSION CONTROL PLAN

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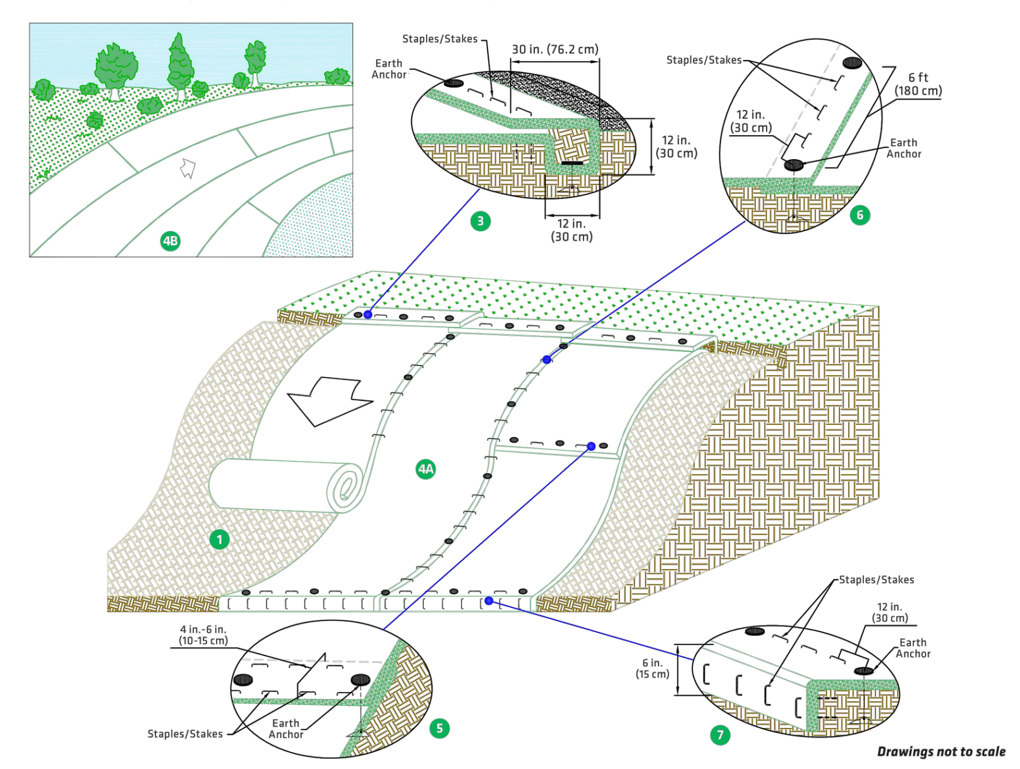
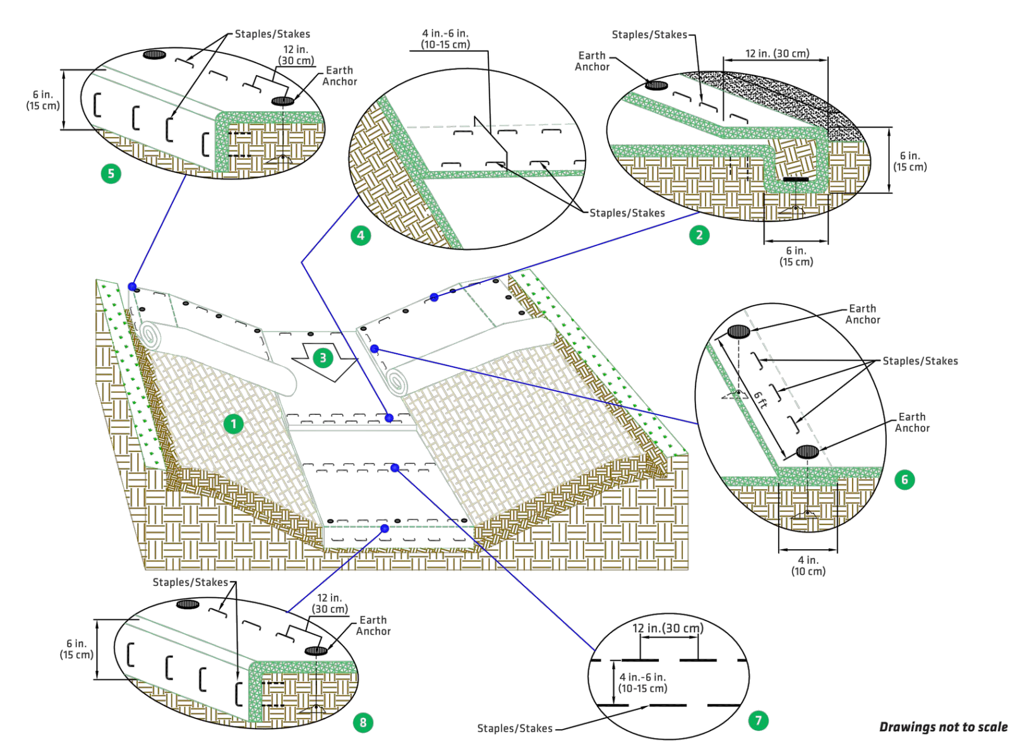
Slope and Levee Installation Detail

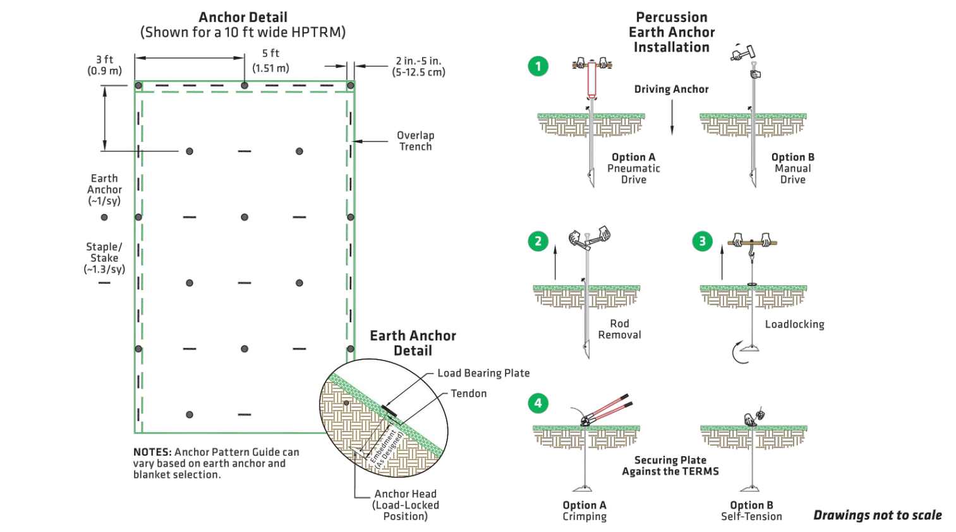
Choosing the right solution is half the battle against costly erosion. The other half is proper installation. North American Green® provides all of the tools and instructions you need for quick, effective installation on your site.

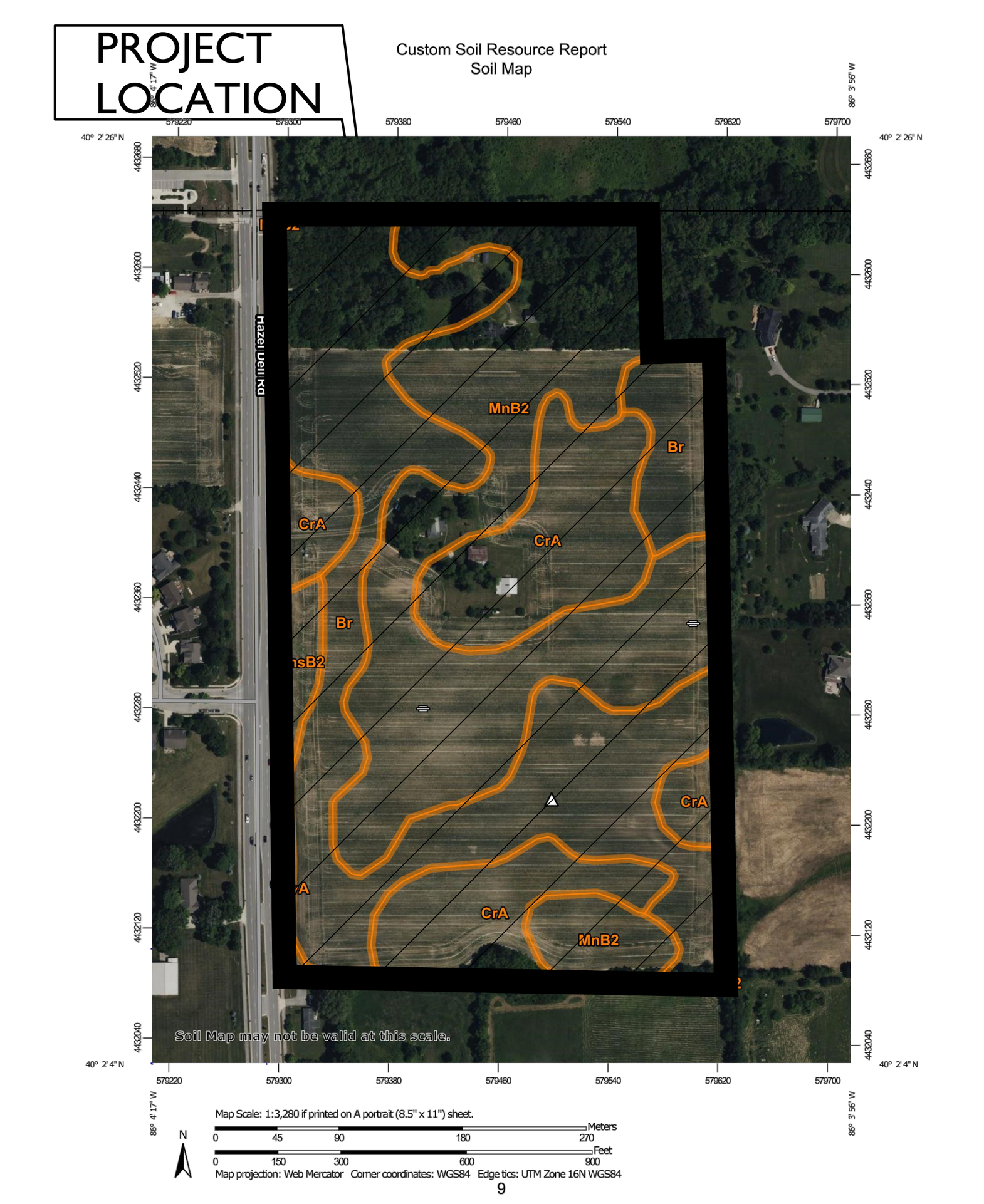


Channel Installation Detail



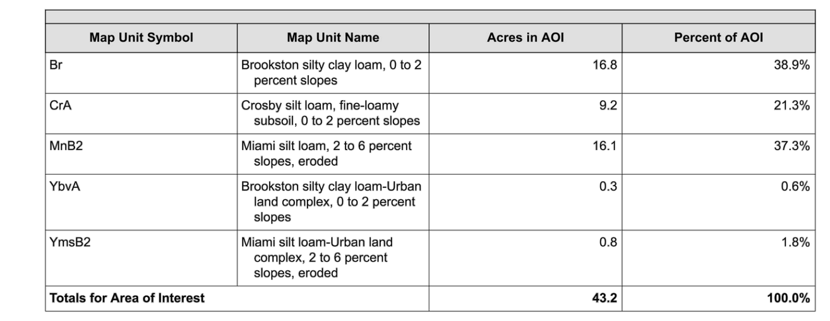
Anchoring Detail



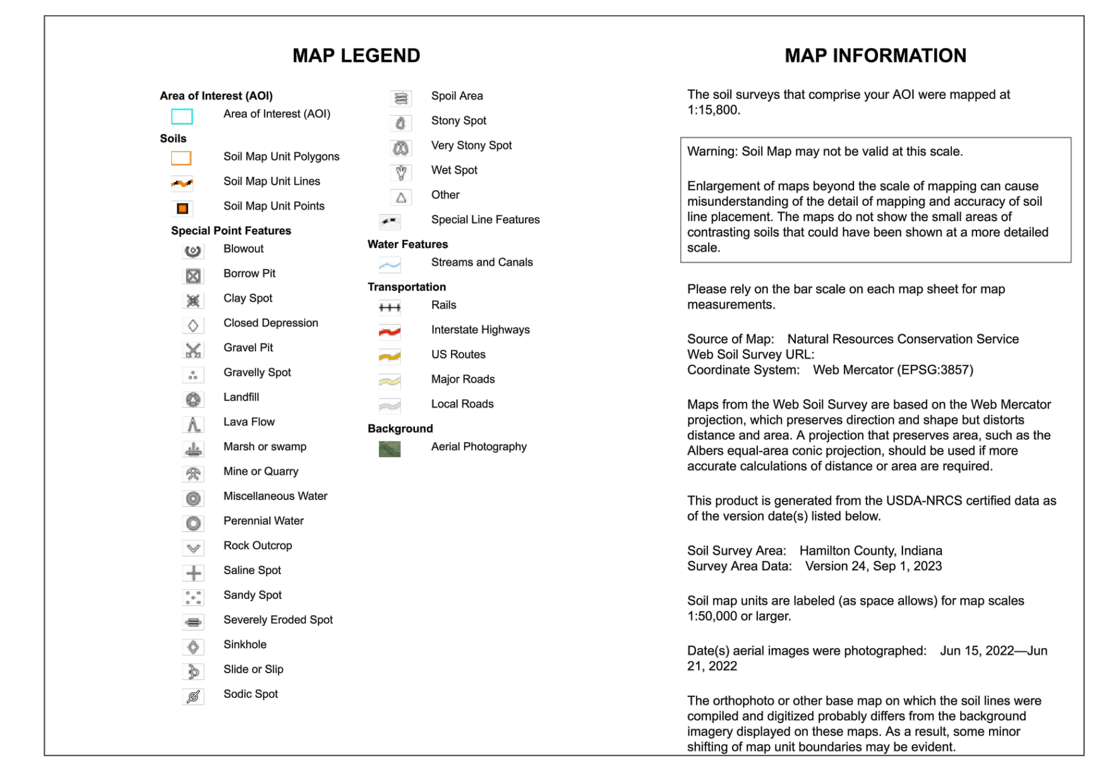


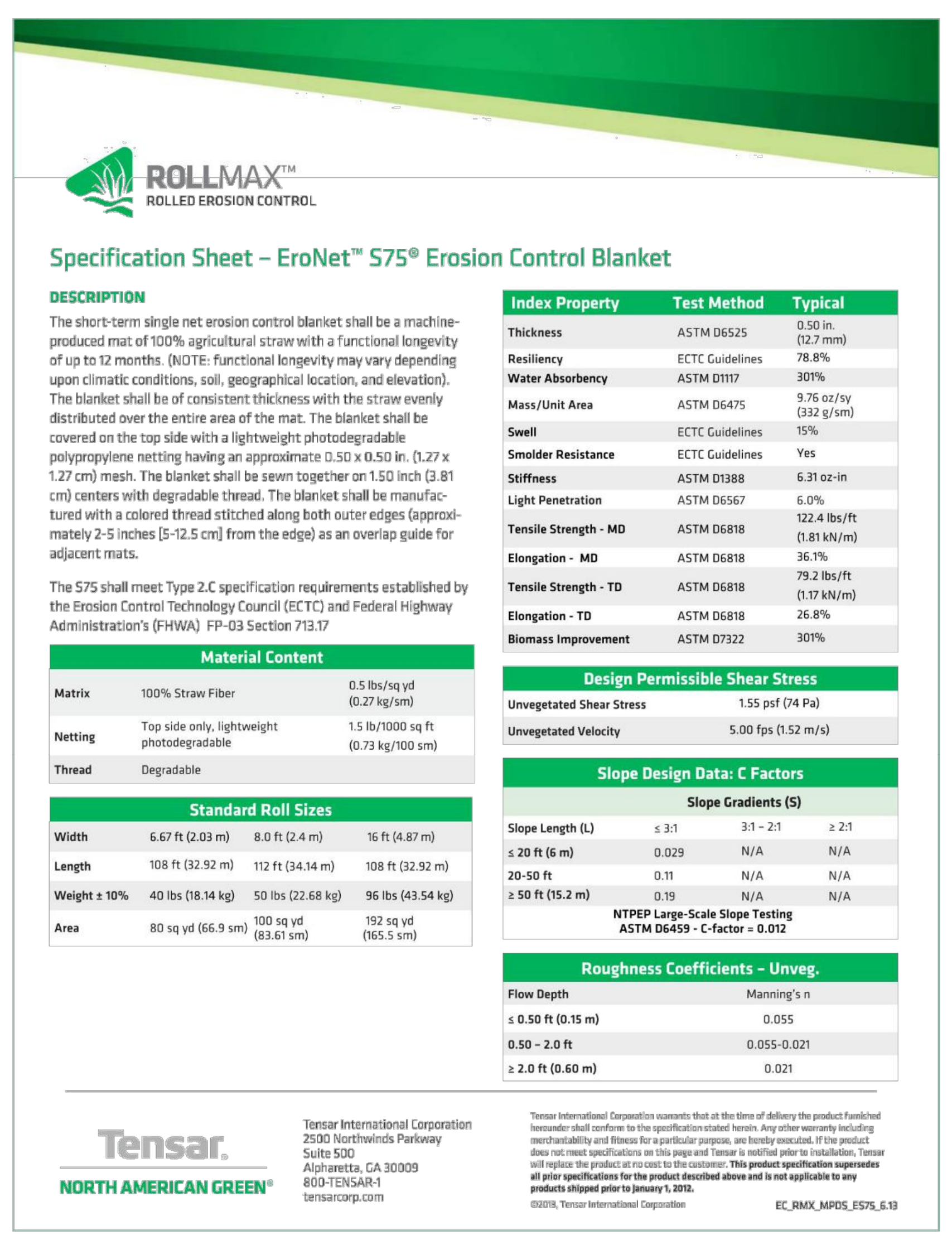
SOILS MAP

Map Unit Legend

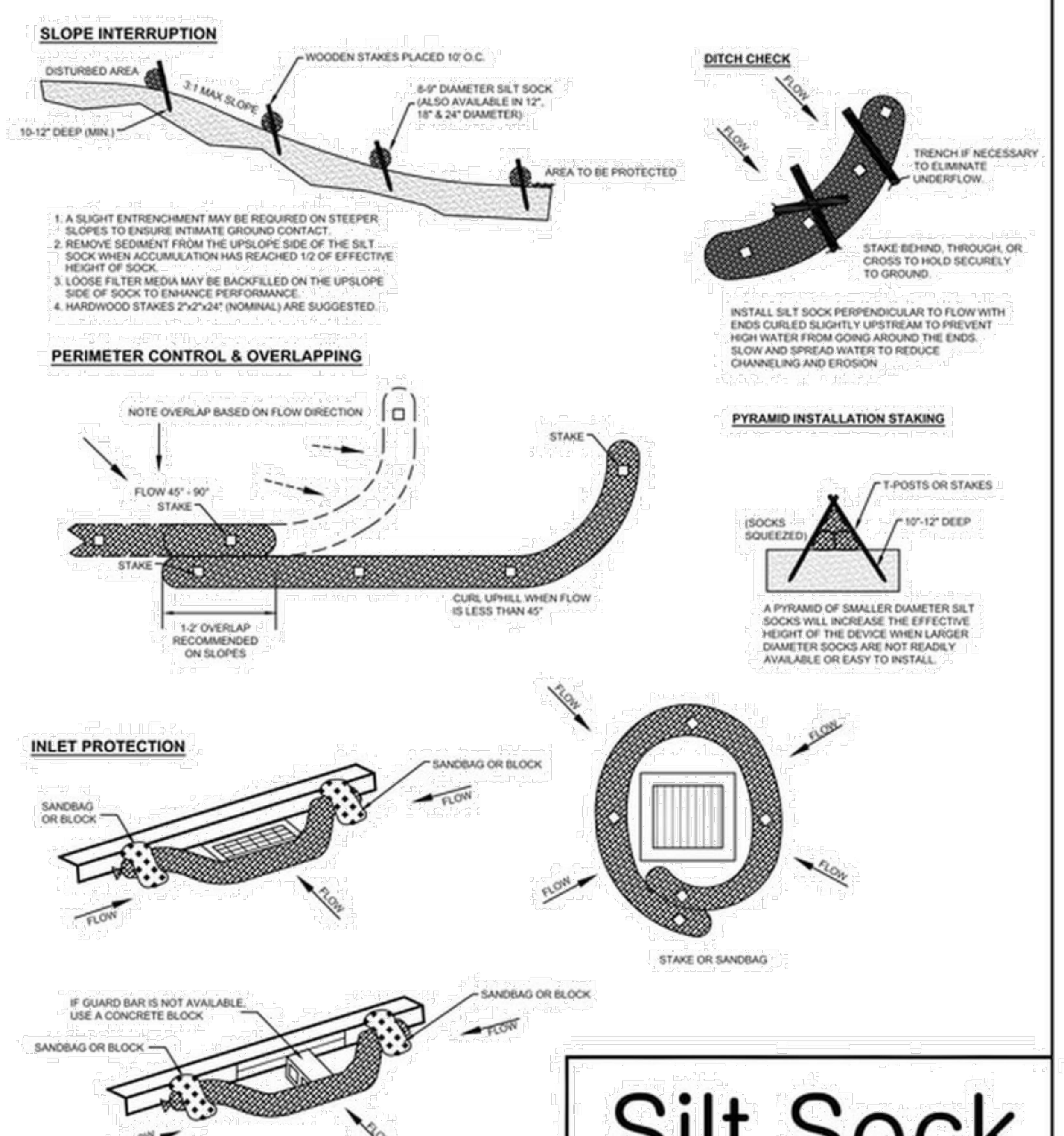


Custom Soil Resource Report





SILT SOCK INSTALLATION GUIDELINES



1. THESE GUIDELINES ARE BASED UPON MANUFACTURERS RECOMMENDATIONS. PROJECT SPECIFICATIONS MAY SUPERSEDE THESE GUIDELINES.
2. REFER TO REGULATORY AUTHORITY OR PROJECT ENGINEER FOR DETAILED INSTALLATION PROCEDURES.
3. WOOD FILLER MATERIAL IS PROPERLY SIZED, BIODEGRADABLE, WEED , SEED & DISEASE FREE AND ENVIRONMENTALLY SOUND.

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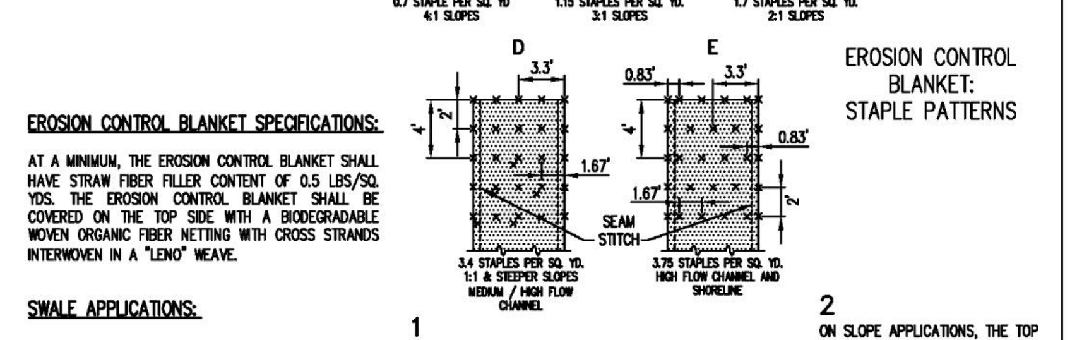


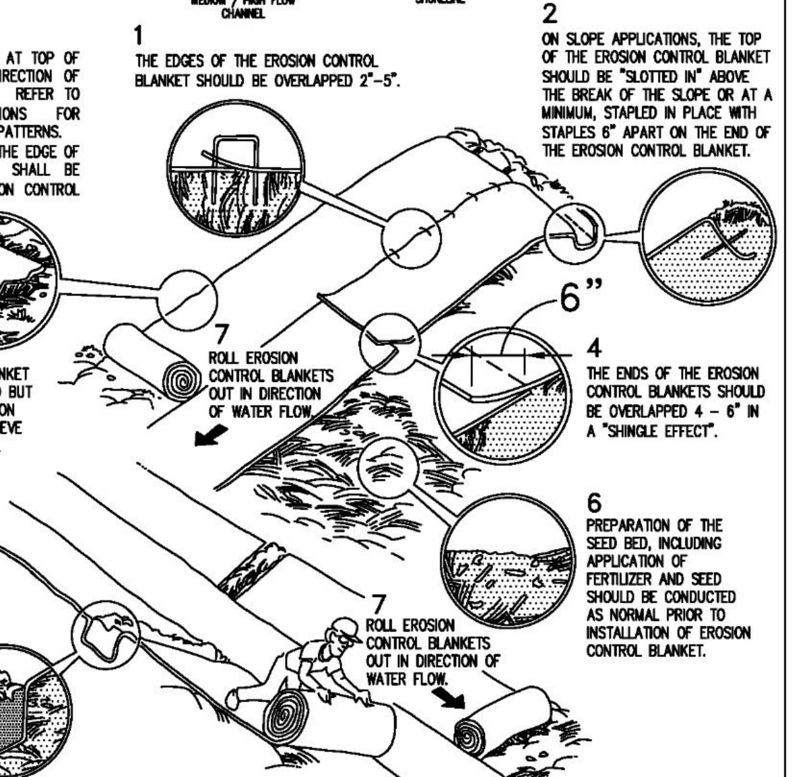
EROSION CONTROL BLANKET: STAPLE PATTERNS

EROSION CONTROL BLANKET SPECIFICATIONS:

AT A MINIMUM, THE EROSION CONTROL BLANKET SHALL HAVE STRAW FIBER FILLER CONTENT OF 0.5 LBS/SQ. YDS. THE EROSION CONTROL BLANKET SHALL BE COVERED ON THE TOP SIDE WITH A BIODEGRADABLE WOVEN ORGANIC FIBER NETTING WITH CROSS STRANDS INTERWOVEN IN A "LENO" WEAVE.

SWALE APPLICATIONS:

1. START EROSION CONTROL BLANKET AT TOP OF THE SWALE AND ROLL IN THE DIRECTION OF THE WATER FLOW IN THE SWALE. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR CHANNEL PLACEMENT AND STAPLE PATTERNS.
2. THE STAPLE/STAKE LOCATIONS ON THE EDGE OF THE EROSION CONTROL BLANKET SHALL BE INSET 2" TO 5" FROM THE EROSION CONTROL BLANKET EDGE.



EROSION CONTROL BLANKET INSTALLATION
NOT TO SCALE

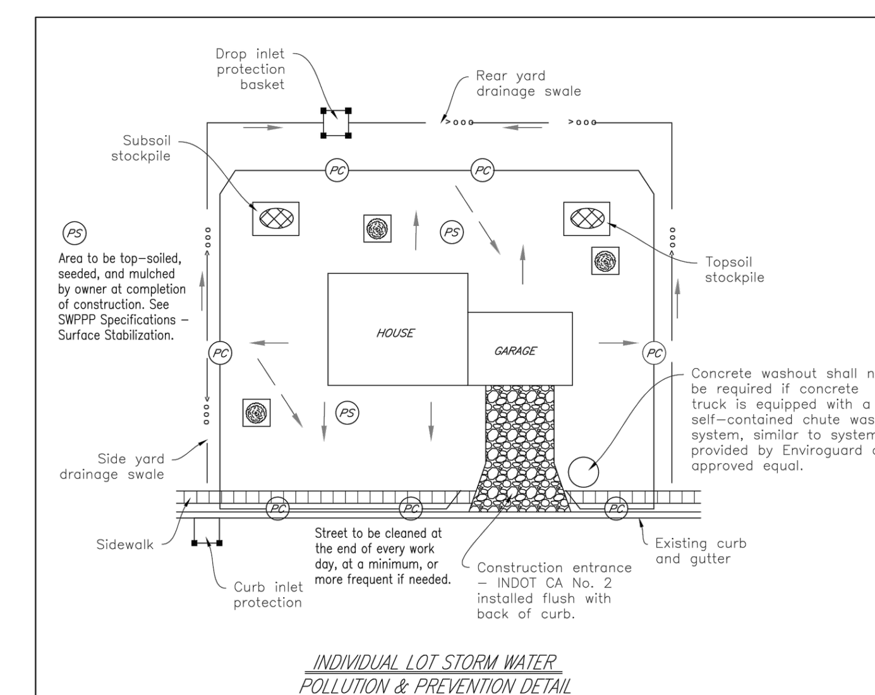
GENERAL SWPPP NOTES FOR INDIVIDUAL LOTS

1. All storm water quality measures, including erosion and sediment control, necessary to comply with the requirements for 327 IAC 15–5, Rule 5 and/or general construction practices and/or City of Noblesville Improvement Location Permit must be implemented in accordance with the plan and sufficient to satisfy Section 600 of the City of Noblesville Stormwater Technical Standards (STSM).
2. Provisions for erosion and sediment control on individual building lots regulated under the original permit of a project site owner must include the following requirements:
   - 2.1. The individual lot operator, whether owning the property or acting as the agent of the property owner, shall be responsible for erosion and sediment control requirements associated with activities on individual lots.
   - 2.2. Installation and maintenance of a stable construction site access.
   - 2.3. Installation and maintenance of appropriate perimeter erosion and sediment control measures prior to land disturbance.
   - 2.4. Sediment discharge and tracking from each lot must be minimized throughout the land disturbing activities on the lot until permanent stabilization has been achieved.
   - 2.5. Clean–up of sediment must be redistributed or disposed of in a manner that is in compliance with all applicable statutes and rules.
   - 2.6. Adjacent lots disturbed by and individual lot operator must be repaired and stabilized with temporary or permanent surface stabilization.
3. In accordance with Chapter 600 of the Noblesville STSM, final stabilization of an individual lot project site is achieved when:
   - 3.1. All land disturbing activities have been completed
   - 3.2. The establishment, at a uniform density of seventy percent (70%) across the disturbed area, of vegetative cover or permanent non–erosive material that will ensure the resistance of the soil to erosion, sliding, or other movement.

CONSTRUCTION SEQUENCE FOR INDIVIDUAL LOTS

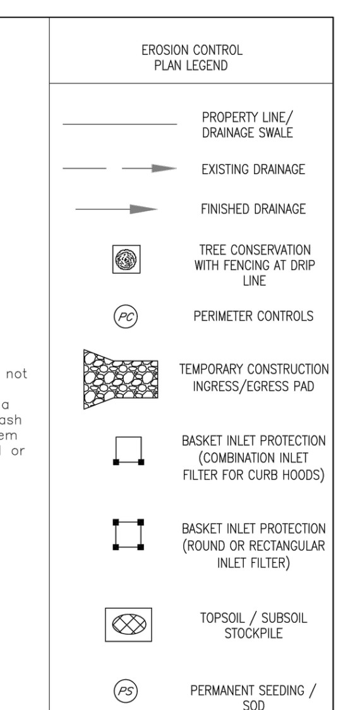
Construction sequence on individual lots should be as follows:

1. Clearly delineate areas of trees, shrubs, and vegetation that are to be undisturbed. To prevent root damage, the areas delineated for tree protection should be at least the same diameter as the crown.
2. Install perimeter silt fence at construction limits. Position the fence to intercept runoff prior to entering drainage swales.
3. Avoid disturbing drainage swales if vegetation is established. If drainage swales are bare, install erosion control blankets or sod to immediately stabilize.
4. Install drop inlet protection for all inlets on the property.
5. Install curb inlet protection, on both sides of the road, for all inlets along the property frontage and along the frontage of adjacent lots, or install temporary catch basin inserts in each inlet and frequently clean.
6. Install gravel construction entrance flush with the back of existing curb, extending from the street to the building pad.
7. Perform primary grading operations.
8. Contain erosion from any soil stockpiles created on–site with silt fence around the base.
9. Establish temporary seeding and straw mulch on disturbed areas.
10. Construct the home and install utilities.
11. Install downspout extenders once the roof and gutters have been constructed. Extenders should outlet to a stabilized area.
12. Re–seed any areas disturbed by construction and utilities installation with temporary seed mix within 3 days of completion of disturbance.
13. Grade the site to final elevations. Add topsoil as needed to minimize erosion of underlying soil and to quickly establish grass.
14. Install permanent seeding or sod.



INDIVIDUAL LOT STORM WATER POLLUTION & PREVENTION DETAIL
NOT TO SCALE

Notes:
1. Erosion/ sediment control measures must be functional and be maintained throughout construction.
2. Maintain positive drainage away from the structure.
3. Contractor to clean streets at a minimum at the end of every work day, or more frequent if needed.
4. Perimeter protection should be installed before excavation of basement/foundation has begun. Perimeter protection on lots shall remain in place until the lot is stabilized meeting the cover requirements of SWPPP Specifications – Surface Stabilization and Noblesville Department of Engineering.
5. All trash and construction debris shall be disposed properly into an enclosed waste receptacle.
6. Street to be cleaned at the end of every work day, at a minimum, or more frequent if needed.



THE CITY OF NOBLESVILLE	ALISON M. KRUPSKI REGISTERED NO. 11100334 STATE OF INDIANA PROFESSIONAL ENGINEER	CITY OF NOBLESVILLE / SWPPP Details	SHEET 26 OF 29

7/8/2021

No.	REVISIONS	DATE	BY
1	PDP TAC COMMENTS	03/28/24	GMS
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EPCON Communities

EROSION CONTROL DETAILS

COURTYARDS OF HAZEL DELL PRIMARY PLAT

ORIGINAL ISSUE: 12/20/2023
KHA PROJECT NO. 170177022
SHEET NUMBER
C403

TEMPORARY CURB & PAVED AREA INLET PROTECTION

Insert (Basket) Curb Inlet Protection

***Insert (basket) curb inlet protection** is a temporary sediment control measure consisting of a metal frame or basket that is used to support a geotextile fabric. The system is installed under the storm sewer grate.*

Purpose

To minimize sediment from entering the storm sewer system while allowing runoff to enter the storm sewer system in the event of excessive storm events. This measure traps sediment associated with small storm events below the grade of the paved area. This measure does not place an obstruction in the street to trap sediment and is especially conducive to stages of construction when the public has access to the project site.

Note: **This measure should be used in conjunction with other sediment control measures.**

Specifications

Contributing Drainage Area:

One-quarter acre maximum.

Capacity

Runoff from a two-year frequency, 24-hour storm event entering a storm drain without bypass flow.

NOTE: "NO CURED/RUBBLE CONCRETE ALLOWED"

INSERT (BASKET) CURB INLET PROTECTION

Location

- At curb inlets on paved roads and parking lots.
- Down grade from construction activities (e.g., individual home sites).

Materials

- Metal frame or basket with a top width and length such that the frame fits into the inlet. (The frame is supported by the structural integrity of the storm sewer.)
- The metal frame or geotextile should be designed with a bypass to allow storm water to flow into the storm sewer system during excessive storm events.
- The system should be designed for ease of maintenance.
- Geotextile fabric.

Table 1. Geotextile Fabric Specifications

Physical Property	Woven	Non-Woven
Filtering Efficiency	85%	85%
UV Resistance (Inhibitors and stabilizers to ensure six month minimum life at temperatures of 0° F to 120° F)	70%	85%
Tensile Strength at 20% Elongation:		
Standard Strength	30 lbs./linear inch	50 lbs./linear inch
Extra Strength	50 lbs./linear inch	70 lbs./linear inch
Slurry Flow Rate	0.3 gal./min./sq. ft.	4.5 gal./min./sq. ft.
Water Flow Rate	15 gal./min./sq. ft.	220 gal./min./sq. ft.

Installation

1. Remove the storm sewer grate and place the frame into the grate opening.
2. Place geotextile fabric into the frame and secure according to the manufacturer's recommendations.
3. Replace the storm sewer grate.

INSERT (BASKET) CURB INLET PROTECTION

Maintenance

- Inspect daily.
- Remove accumulated sediment and debris after each storm event. Deposit sediment in an area where it will not re-enter the paved area or storm drains.
- Replace or clean geotextile fabric as needed.
- When the contributing drainage area has been stabilized, remove inlet protection.

SITE MANAGEMENT MEASURES

Concrete Washout

***Concrete washout** areas are designated locations within a construction site that are either a prefabricated unit or a designed measure that is constructed to contain concrete washout. Concrete washout systems are typically used to contain washout water when chutes and hoppers are rinsed following delivery.*

Purpose

Concrete washout systems are implemented to reduce the discharge of pollutants that are associated with concrete washout waste through consolidation of solids and retention of liquids. Uncured concrete and associated liquids are highly alkaline which may leach into the soil and contaminate ground water or discharge to a waterbody or wetland which can elevate the pH and be harmful to aquatic life. Performing concrete washout in designated areas and into specifically designed systems reduces the impact concrete washout will have on the environment.

Specifications

Site Management

- Complete construction/installation of the system and have washout locations operational prior to concrete delivery.
- Do not wash out concrete trucks or equipment into storm drains, wetlands, streams, rivers, creeks, ditches, or streets.
- Never wash out into a storm sewer drainage system. These systems are typically connected to a natural conveyance system.
- Where necessary, provide stable ingress and egress (see **Temporary Construction Ingress/Egress Pad** on page 17).
- It is recommended that washout systems be restricted to washing concrete from mixer and pump trucks and not used to dispose of excess concrete or

CONCRETE WASHOUT

residual loads due to potential to exceed the design capacity of the washout system. Small amounts of excess or residual concrete (not washout water) may be disposed of in areas that will not result in flow to an area that is to be protected.

- Install systems at strategic locations that are convenient and in close proximity to work areas and in sufficient number to accommodate the demand for disposal.
- Install signage identifying the location of concrete washout systems.

Location

- Locate concrete washout systems at least 50 feet from any creeks, wetlands, ditches, karst features, or storm drains/manmade conveyance systems.
- To the extent practical, locate concrete washout systems in relatively flat areas that have established vegetative cover and do not receive runoff from adjacent land areas.
- Locate in areas that provide easy access for concrete trucks and other construction equipment.
- Locate away from other construction traffic to reduce the potential for damage to the system.

General Design Considerations

- The structure or system shall be designed to contain the anticipated washout water associated with construction activities.
- The system shall be designed, to the extent practical, to eliminate runoff from entering the washout system.
- Runoff from a rainstorm or snowmelt should not carry wastes away from the washout location.
- Washout will not impact future land uses (i.e., open spaces, landscaped areas, home sites, parks).
- Washout systems/containment measures may also be utilized on smaller individual building sites. The design and size of the system can be adjusted to accommodate the expected capacity.

Prefabricated Washout Systems/Containers

- Self-contained sturdy containment systems that are delivered to a site and located at strategic locations for concrete disposal.

CONCRETE WASHOUT

- These systems are manufactured to resist damage from construction equipment and protect against leaks or spills.
- Manufacturer or supplier provides the containers. The project site manager maintains the system or the supplier provides complete service that includes maintenance and disposal.
- Units are often available with or without ramps. Units with ramps lend themselves to accommodate pump trucks.
- Maintain according to the manufacturer's recommendations.

Designed and Installed Units

These units are designed and installed on site. They tend to be less reliable than prefabricated systems and are often prone to failure. Concrete washout systems can be constructed above or below grade. It is not uncommon to have a system that is partly below grade with an additional containment structure above grade.

- Washout systems shall utilize a pit or bermed area designed and maintained at a capacity to contain all liquid and concrete waste generated by washout operations.
- The volume of the system must also be designed to contain runoff that drains to the system and rainfall that enters the system for a two-year frequency, 24-hour storm event.
  - **Below Grade System**
    - A washout system installed below grade should be a minimum of ten feet wide by ten feet long, but sized to contain all liquid and waste that is expected to be generated between scheduled cleanout periods. The size of the pit may be limited by the size of polyethylene available. The polyethylene lining should be of adequate size to extend over the entire excavation.
    - Include a minimum 12-inch freeboard to reasonably ensure that the structure will not overtop during a rain event.
    - Line the pit with ten millimeter polyethylene lining to control seepage.
    - The bottom of excavated pit should be above the seasonal high water table.
  - **Above Grade System**
    - A system designed and built above grade should be a minimum of ten feet wide by ten feet long, but sized to contain all liquid and waste that is expected to be generated between scheduled cleanout periods. The size of the containment system may be limited by the size of

CONCRETE WASHOUT

polyethylene available. The polyethylene lining should be of adequate size to extend over the berm or containment system.

- The system design may utilize an earthen berm, straw bales, sandbags, or other acceptable barriers that will maintain its shape and integrity and support the polyethylene lining.
- Include a minimum four-inch freeboard as part of the design.

Washout Procedures

- Do not leave excess mud in the chutes or hopper after the pour. Every effort should be made to empty the chutes and hopper at the pour. The less material left in the chutes and hopper, the quicker and easier the cleanout. Small amounts of excess concrete (not washout water) may be disposed of in areas that will not result in flow to an area that is to be protected.
- At the washout location, scrape as much material from the chutes as possible before washing them. Use non-water cleaning methods to minimize the chance for waste to flow off site.
- Remove as much mud as possible when washing out.
- Stop washing out in an area if you observe water running off the designated area or if the containment system is leaking or overflowing and ineffective.
- Do not back flush equipment at the project site. Back flushing should be restricted to the plant as it generates large volumes of waste that more than likely will exceed the capacity of most washout systems. If an emergency arises, back flush should only be performed with the permission of an on-site manager for the project.
- Do not use additives with wash water. Do not use solvents or acids that may be used at the target plant.

Materials

- Minimum of ten millimeter polyethylene sheeting that is free of holes, tears, and other defects. The sheeting selected should be of an appropriate size to fit the washout system without seams or overlap of the lining **(designed and installed systems)**.
- Signage.
- Orange safety fencing or equivalent.
- Straw bales, sandbags (bags should be ultraviolet-stabilized geotextile fabric), soil material, or other appropriate materials that can be used to construct a containment system **(above grade systems)**.

CONCRETE WASHOUT

- Metal pins or staples at a minimum of six inches in length, sandbags, or alternative fastener to secure polyethylene lining to the containment system.
- Non-collapsing and non-water holding cover for use during rain events (optional).

Installation

Prefabricated Washout Systems/Containers

- Install and locate according to the manufacturer's recommendations.

Designed and Installed Systems

- Utilize and follow the design in the storm water pollution prevention plan to install the system.
- Dependent upon the type of system, either excavate the pit or install the containment system.
- A base shall be constructed and prepared that is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.
- Install the polyethylene lining. For excavated systems, the lining should extend over the entire excavation. The lining for bermed systems should be installed over the pooling area with enough material to extend the lining over the berm or containment system. The lining should be secured with pins, staples, or other fasteners.
- Place flags, safety fencing, or equivalent to provide a barrier to construction equipment and other traffic.
- Place a non-collapsing, non-water holding cover over the washout facility prior to a predicted rainfall event to prevent accumulation of water and possible overflow of the system (optional).
- Install signage that identifies concrete washout areas.
- Post signs directing contractors and suppliers to designated locations.
- Where necessary, provide stable ingress and egress (see **Temporary Construction Ingress/Egress Pad** on page 17) or alternative approach pad for concrete washout systems.

SIGNAGE TO STATE : "NO CURED/RUBBLE CONCRETE ALLOWED"

CONCRETE WASHOUT

Maintenance

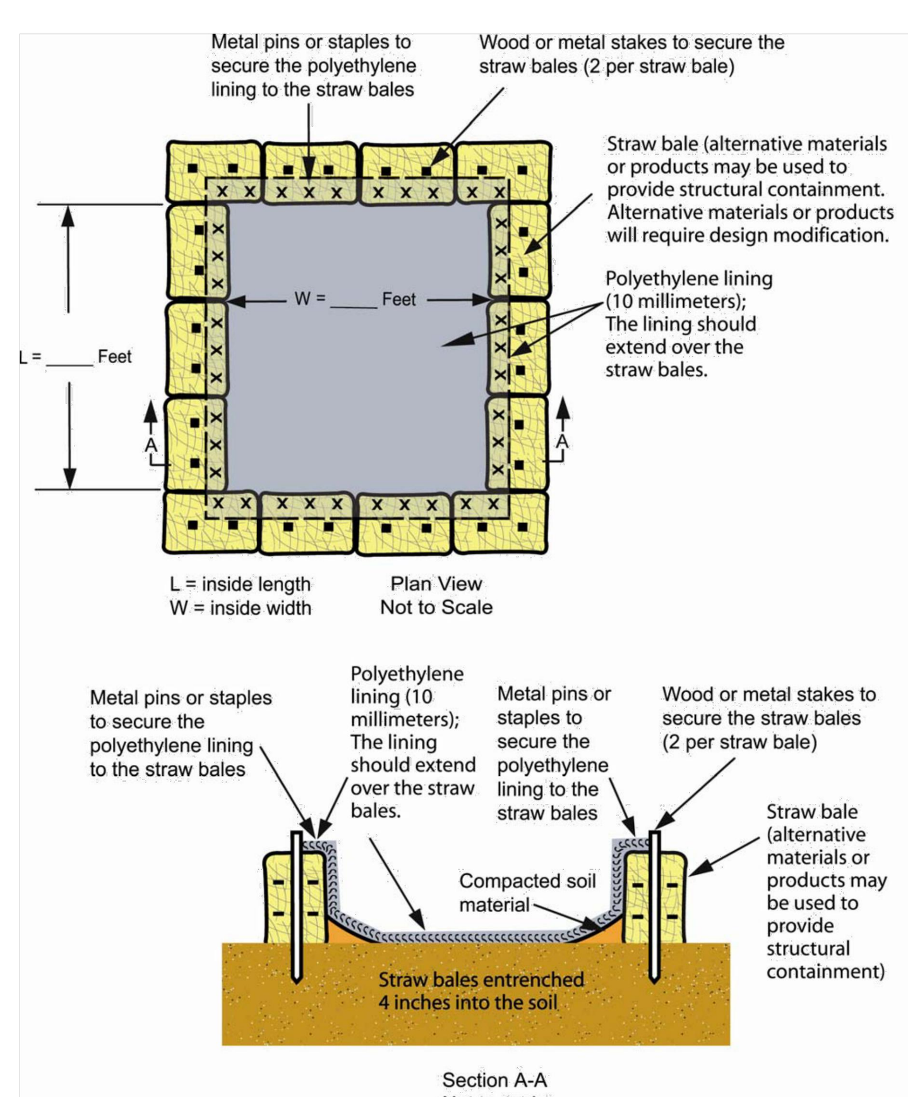
- Inspect daily and after each storm event.
- Inspect the integrity of the overall structure including, where applicable, the containment system.
- Inspect the system for leaks, spills, and tracking of soil by equipment.
- Inspect the polyethylene lining for failure, including tears and punctures.
- Once concrete wastes harden, remove and dispose of the material.
- Excess concrete should be removed when the washout system reaches 50 percent of the design capacity. Use of the system should be discontinued until appropriate measures can be initiated to clean the structure. Prefabricated systems should also utilize this criterion, unless the manufacturer has alternate specifications.
- Upon removal of the solids, inspect the structure. Repair the structure as needed or construct a new system.
- Dispose of all concrete in a legal manner. Reuse the material on site, recycle, or haul the material to an approved construction/demolition landfill site. Recycling of material is encouraged. The waste material can be used for multiple applications including but not limited to roadbeds and building. The availability for recycling should be checked locally.
- The plastic liner should be replaced after every cleaning; the removal of material will usually damage the lining.
- The concrete washout system should be repaired or enlarged as necessary to maintain capacity for concrete waste.
- Concrete washout systems are designed to promote evaporation. However, if the liquids do not evaporate and the system is near capacity it may be necessary to vacuum or remove the liquids and dispose of them in an acceptable method. Disposal may be allowed at the local sanitary sewer authority provided their National Pollutant Discharge Elimination System permits allow for acceptance of this material. Another option would be to utilize a secondary containment system or basin for further dewatering.
- Prefabricated units are often pumped and the company supplying the unit provides this service.
- Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify the violators and take appropriate action.

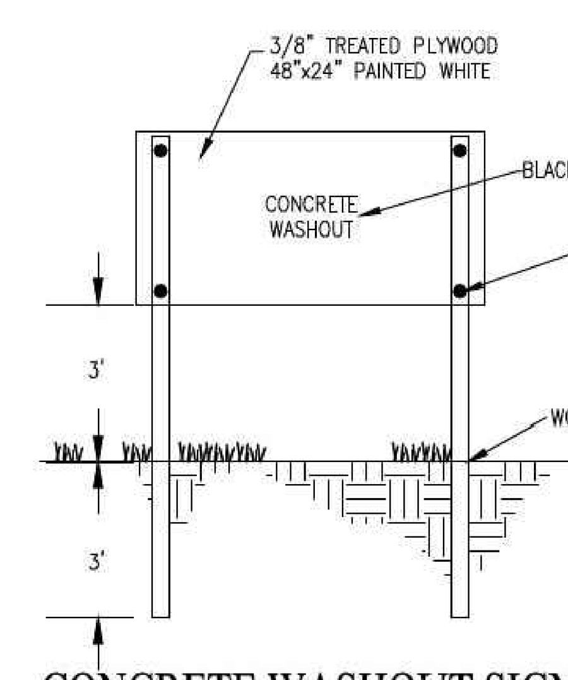
CONCRETE WASHOUT

- When concrete washout systems are no longer required, the concrete washout systems shall be closed. Dispose of all hardened concrete and other materials used to construct the system.
- Holes, depressions and other land disturbances associated with the system should be backfilled, graded, and stabilized.

CONCRETE WASHOUT

Concrete Washout (Above Grade System) Worksheet





CONCRETE WASHOUT SIGN

No.	REVISIONS	DATE	BY
	REVISED PER ROADWAY CHANGE PER CITY	06/25/24	GMS
	REVISED PER TWO-WAY STOP	06/06/24	GMS
1	PDP TAC COMMENTS	03/28/24	GMS

Kimley»Horn

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INDIANAPOLIS, IN 46240
CONTACT: BRETT HUFF
PHONE: 317-912-4129
EMAIL: Brett.Huff@kimley-horn.com
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED
DESIGNED BY: JSM
DRAWN BY: GMS
CHECKED BY: BAH

APPROVAL PENDING NOT FOR CONSTRUCTION

EPCON Communities

EROSION CONTROL DETAILS

COURTYARDS OF HAZEL DELL PRIMARY PLAT

ORIGINAL ISSUE: 12/20/2023
KHA PROJECT NO. 170177022
SHEET NUMBER
C404

Drawing name: K:\IND_LDEV\170177022_Epcon_Holland_Noblesville_IN\1 Design\CADD\PlanSheets\Erosion Control Details.dwg C404 Jul 02, 2024 11:29am by: Grant.Shortridge

SITE ACCESS & PREPARATION

Temporary Construction Ingress/Egress Pad (Large Sites—Two Acres or Larger)

*A **temporary construction ingress/egress pad** is a sediment control measure consisting of a stabilized aggregate pad with geotextile underlayment that is used at any point where construction traffic will be traversing between a large construction site and adjoining public right-of-way, street, alley, sidewalk, or parking areas.*

Purpose

To provide ingress/egress to a construction site and minimize tracking of mud and sediment onto public roadways.

Specifications

Location

- Avoid locating on steep slopes or at curves in public roads.

Dimensions

- Width – 20 feet minimum or full width of entrance/exit roadway, whichever is greater.
- Length – 150 feet minimum (length can be shorter for small sites).
- Thickness – eight inches minimum.

Washing Facility (optional)

- Level area with three inch, or larger, washed aggregate or install a commercial wash rack.
- Divert waste water to a sediment trap or basin.

SEDIMENT BARRIERS & FILTERS

Silt Fence

*A **silt fence** is a temporary barrier of entrenched geotextile fabric stretched across and attached to supporting posts and installed on the contour to intercept and treat sediment-laden storm water runoff from small, unvegetated drainage areas.*

Purpose

To trap sediment from small, disturbed areas by reducing the velocity of sheet flow. Silt fences capture sediment by ponding water to allow deposition, not by filtration.

Note: **Silt fence is not recommended for use as a diversion and should not be used across a stream, channel, ditch, swale, or anywhere that concentrated flow is anticipated.**

Specifications

Drainage Area

- Limited to one-quarter acre per 100 linear feet of fence.
- Further restricted by slope steepness (see Table 1).

Effective Life

Six months (maximum).

Location

- Installed parallel to the slope contour.
- Minimum of 10 feet beyond the toe of the slope to provide a broad, shallow sediment pool.
- Accessible for maintenance (removal of sediment and silt fence repair).

TEMPORARY CONSTRUCTION INGRESS/EGRESS PAD (LARGE SITES—TWO ACRES OR LARGER)

Materials

- One to two and one-half inch diameter washed aggregate [Indiana Department of Transportation Course Aggregate No. 2 (see Appendix D)].
- One-half to one and one-half inch diameter washed aggregate [INDOT CA No. 53 (see Appendix D)].
- Geotextile fabric underlayment (see Appendix C) (used as a separation layer to prevent intermixing of aggregate and the underlying soil material and to provide greater bearing strength when encountering wet conditions or soils with a seasonal high water table limitation).

Installation

1. Remove all vegetation and other objectionable material from the foundation area.
2. Grade foundation and crown for positive drainage. If the slope of the construction entrance is toward a public road and exceeds two percent, construct an eight inch high diversion ridge with a ratio of 3-to-1 side slopes across the foundation area about 15 feet from the entrance to divert runoff away from the road (see Temporary Construction Ingress/Egress Pad Cross-Section View Worksheet).
3. Install a culvert pipe under the pad if needed to maintain proper public road drainage.
4. If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.
5. Place aggregate (INDOT CA No. 2) to the dimensions and grade shown in the construction plans, leaving the surface smooth and sloped for drainage.
6. Top-dress the first 50 feet adjacent to the public roadway with two to three inches of washed aggregate (INDOT CA No. 53) [optional, used primarily where the purpose of the pad is to keep soil from adhering to vehicle tires].
7. Where possible, divert all storm water runoff and drainage from the ingress/egress pad to a sediment trap or basin.

Maintenance

- Inspect daily.
- Reshape pad as needed for drainage and runoff control.
- Top dress with clean aggregate as needed.
- Immediately remove mud and sediment tracked or washed onto public roads.
- Flushing should only be used if the water can be conveyed into a sediment trap or basin.

SILT FENCE

Spacing

Table 1. Slope Steepness Restrictions

Percent Slope		Maximum Distance
< 2%	< 50:1	100 feet
2% – 5%	50:1 to 20:1	75 feet
5% – 10%[1]	20:1 to 10:1	50 feet
10% – 20%[1]	10:1 to 5:1	25 feet
> 20%[1]	> 5:1	15 feet

[1] Consider other alternatives.

Note: Multiple rows of silt fence are not recommended on the same slope.

Trench

- Depth – eight inches minimum.
- Width – four inches minimum.
- After installing fence, backfill with soil material and compact (to bury and anchor the lower portion of the fence fabric).

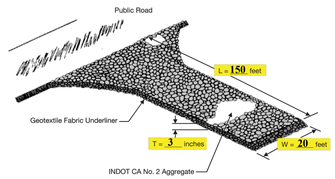
Note: **An alternative to trenching is to use mechanical equipment to plow in the silt fence.**

Materials and Silt Fence Specifications

- Fabric – woven or non-woven geotextile fabric meeting specified minimums outlined in Table 2.

TEMPORARY CONSTRUCTION INGRESS/EGRESS PAD (LARGE SITES—TWO ACRES OR LARGER)

Temporary Construction Ingress/Egress Pad
Plan View Worksheet
(large sites—two acres or larger)



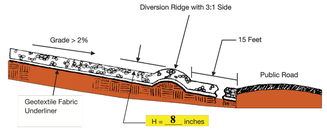
L = Ingress/Egress Pad Length
W = Ingress/Egress Pad Width
T = Aggregate Thickness

(Note: For minimum dimensions, see the "Specifications" section of this measure.)

Source: Adapted from North Carolina Erosion and Sediment Control Planning and Design Manual, 1993

TEMPORARY CONSTRUCTION INGRESS/EGRESS PAD (LARGE SITES—TWO ACRES OR LARGER)

Temporary Construction Ingress/Egress Pad
Cross-Section View Worksheet
(large sites two acres or larger)



H = Height of Diversion Ridge
(*Note: 8 inches minimum*)

Source: Adapted from North Carolina Erosion and Sediment Control Planning and Design Manual, 1993

SILT FENCE

Table 2. Geotextile Fabric Specifications for Silt Fence (minimum)

Physical Property	Woven Geotextile Fabric	Non-Woven Geotextile Fabric
Filtering efficiency	85%	85%
Textile strength at 20% elongation Standard strength Extra strength	 30 lbs. per linear inch 50 lbs. per linear inch	 50 lbs. per linear inch 70 lbs. per linear inch
Slurry flow rate	0.3 gal./min./square feet	4.5 gal./min./square feet
Water flow rate	15 gal./min./square feet	220 gal./min./square feet
UV resistance	70%	85%
Post spacing	7 feet	5 feet

Note: Silt fences can be purchased commercially.

- Height – a minimum of 18 inches above ground level (30 inches maximum).
- Reinforcement – fabric securely fastened to posts with wood lathe.
- Support Posts
  - 2 x 2 inch hardwood posts. Steel fence posts may be substituted for hardwood posts (steel posts should have projections for fastening fabric).
  - Spacing
    - Eight feet maximum if fence is supported by wire mesh fencing.
    - Six feet maximum for extra-strength fabric without wire backing.

Installation

Prefabricated silt fence (see Exhibits 1, 2, and 3)

1. Lay out the location of the fence so that it is parallel to the contour of the slope and at least 10 feet beyond the toe of the slope to provide a sediment storage area. Turn the ends of the fence up slope such that the point of contact between the ground and the bottom of the fence end terminates at a higher elevation than the top of the fence at its lowest point (see Exhibit 1).
2. Excavate an eight-inch deep by four-inch wide trench along the entire length of the fence line (see Exhibit 2). Installation by plowing is also acceptable.
3. Install the silt fence with the filter fabric located on the up-slope side of the excavated trench and the support posts on the down-slope side of the trench.

SILT FENCE

4. Drive the support posts at least 18 inches into the ground, tightly stretching the fabric between the posts as each is driven into the soil. A minimum of 12 inches of the filter fabric should extend into the trench. (If it is necessary to join the ends of two fences, use the wrap joint method shown in Exhibit 3.)
5. Lay the lower four inches of filter fabric on the bottom of the trench and extend it toward the up-slope side of the trench.
6. Backfill the trench with soil material and compact it in place.

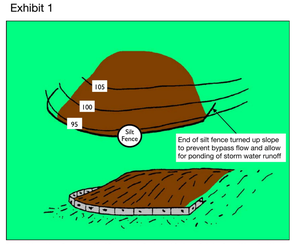
   Note: **If the silt fence is being constructed on-site, attach the filter fabric to the support posts (refer to Tables 1 and 2 for spacing and geotextile specifications) and attach wooden lathe to secure the fabric to the posts. Allow for at least 12 inches of fabric below ground level. Complete the silt fence installation, following steps 1 through 6 above.**

Maintenance

- Inspect within 24 hours of a rain event and at least once every seven calendar days.
- If fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately. Note: **All repairs should meet specifications as outlined within this measure.**
- Remove deposited sediment when it is causing the filter fabric to bulge or when it reaches one-half the height of the fence at its lowest point. When contributing drainage area has been stabilized, remove the fence and sediment deposits, grade the site to blend with the surrounding area, and stabilize.

SILT FENCE

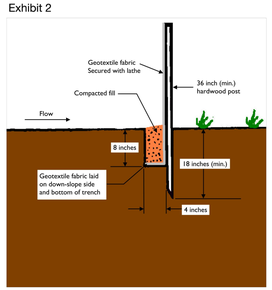
Exhibit 1



Source: Adapted from Commonwealth of Pennsylvania Erosion and Sediment Pollution Control Manual, 1990

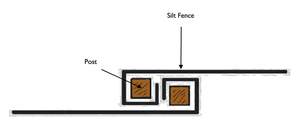
SILT FENCE

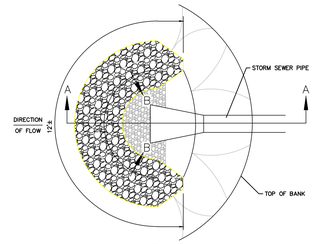
Exhibit 2



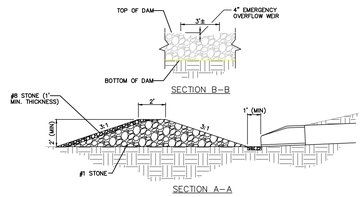
SILT FENCE

Exhibit 3





PLAN



MAINTENANCE:

1. INSPECT THE STRUCTURE AFTER EACH STORM EVENT, REMOVING SEDIMENT AND MAKING NEEDED REPAIRS IMMEDIATELY.
2. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE AND PROPERLY DISPOSE OF ANY UNSTABLE SEDIMENT AND CONSTRUCTION MATERIAL, AND RE-STABILIZE.

ROCK HORSESHOE DETAIL
NOT TO SCALE

No.	REVISIONS	DATE	BY
1.	PDP TAC COMMENTS	03/28/24	GMS
	REVISED PER TWO-WAY STOP	06/06/24	GMS
	REVISED PER ROADWAY CHANGE PER CITY	06/25/24	GMS

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SCALE: AS NOTED
DESIGNED BY: JSM
DRAWN BY: GMS
CHECKED BY: BAH

APPROVAL PENDING
NOT FOR
CONSTRUCTION

EPCON Communities

EROSION CONTROL DETAILS

COURTYARDS OF HAZEL DELL
PRIMARY PLAT

ORIGINAL ISSUE:
12/20/2023

KHA PROJECT NO.
170177022

SHEET NUMBER
C405