

**STORM WATER POLLUTION PREVENTION PLAN
FOR
WHISPERING WOODS PH. III
City of Lee's Summit, Cass County, Missouri
Snyder Project No. 120.0485.11**

NPDES Permit Discharge Authorization Number: MORA09315

April 24, 2021

Prepared by:

**SNYDER & ASSOCIATES, INC.
802 Francis St.
St. Joseph, MO 64501
(816) 364-5222**

IMPORTANT NOTICE

This Storm Water Pollution Prevention Plan (SWPPP) shall be retained on the construction site from the date the construction activities begin to the date of final stabilization. In addition, all contractors shall be supplied with a copy of the SWPPP and shall certify their role as co-permittee by signing the appropriate form in Part 5. It shall be the duty of the OWNER to see that these requirements are met and that the SWPPP is maintained up to date.

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PART 1

SITE DESCRIPTION / SITE MAP

SITE INFORMATION:

Project Name	WHISPERING WOODS Ph. III
Project Location (address, latitude/longitude or Section-Township-Range)	E of Pryor Road btwn SW Hook RD & SW Scherere Rd City of Lee's Summit, CassCass County, Missouri
Owner Name	Whispering Woods Land, L.L.C.
Representative / Title	Rick Frye, Owner
Owner Address/Phone	803 P.C.A. Road Warrensburg, MO 64093 816-564-2230
Site Area	17.46 Acres
Disturbed Area	17.46 Acres
Final Runoff Coefficient	0.51
Soil type / characteristics	73.5% Sampsel silty clay loam, 5 to 9 percent slopes 7.6% Weller silt loam, 2 to 5 percent slopes 18.4% McGirk silt loam, 5 to 9 percent slopes, eroded 0.4% Arisburg-Urban land complex, 1 to 5 percent slopes (per NRCS Soil Survey of Cass Co., Missouri &/or soils report)
Receiving Waters	Runoff discharged to unnamed tributary to Blue Branch
Description (purpose and types of soil disturbing activities)	Project consists of grading, roadway paving and utility installation. Soil disturbing activities include rough grading, detention basin installation, roadway paving and utility installation.
Expected Sequence of Major Construction Activities (subject to change; any deviations shall be noted on this plan)	1. Install DNR permit sign at construction entrance 2. Install stabilized construction entrance, staging area controls & perimeter silt barrier 3. Clear and grub for detention/sediment basin installation 4. Construct initial detention/sediment basin 5. Clear and grub for earthwork operations 6. Continue grading operations beginning with topsoil stockpiling (interior silt barrier installation) 7. Stabilize denuded areas and stockpiles within 14 days of last construction activity in that area 8. Install utilities & storm sewer 9. Install curb & gutter, paving 10. Backfill / finish grading 11. Temporary seeding / stabilization 12. Permanent seeding/stabilization 13. Final completion, removal of temporary erosion control measures

PART 2

CONTROLS

A. Erosion and Sediment Controls

Measures to be used for controlling erosion and sediment throughout the construction project. Includes stabilization measures for limiting soil erosion from disturbed areas and structural controls to divert runoff and remove sediment. Contractor/subcontractor is responsible for the implementation and management of control measures specific to this site. As work progresses, field investigation may indicate additional erosion control measures may be required as determined by the contractor, owner, engineer, city or other governmentally regulated agencies.

1. Stabilization

- a. Preserve existing vegetation in areas not disturbed during construction
- b. The total area of soil disturbed by construction operations at any time shall be held to a minimum.
- c. Soil Compaction – compaction of soils in areas to be seeded or sodded will be kept to a minimum to increase infiltration of storm water runoff into the groundwater, reducing the amount of runoff.
- d. Temporary Stabilization - areas where construction activity is not planned to occur for at least 21 days will be stabilized within 14 days of ceasing construction activities in that area by one or more of the following temporary erosion control measures.
 - Topsoil stockpiles and disturbed portions of the site will be stabilized with temporary seed and mulch.
 - Areas of the site to be paved will be temporarily stabilized with geotextile and stone sub-base until pavement can be installed.
 - Frequent watering during construction in dry weather shall minimize wind erosion from exposed soil.
 - Winter Stabilization shall occur between November 15 and March 15 and shall consist of seeding, erosion control blanketing or geotextile fabric.
 - Seeding shall occur during favorable weather conditions and normal and acceptable planting seasons when satisfactory growing conditions occur.
 - Planting operations shall not be performed during times of extreme drought, when ground is frozen or during times of other unfavorable climatic conditions.
- e. Permanent Stabilization - areas where construction activity has permanently ended will be stabilized within 14 days of ceasing construction activities in that area by one or more of the following permanent erosion control measures.
 - Sodding or permanent seeding/mulch and mulch in all unpaved areas where final grading is complete.
 - Permanently seed drainage swales and install erosion control matting where required immediately upon reaching final grades to decrease erosion and facilitate sediment deposition in surface runoff.
 - Permanent Seeding:
 - Spring seeding shall occur between February 1 and April 15.
 - Fall seeding shall occur between August 15 and October 15.

- f. Vegetative buffer strips
 - Vegetation strip will be planted along the downstream boundary of the site to increase infiltration and sediment deposition by reducing runoff velocity.
- g. Protection of Trees and Natural Vegetation
 - Undisturbed areas will utilize existing vegetation as a natural buffer zone to increase infiltration and sediment deposition by reducing runoff velocity.
- h. Dust control
 - Mulch or surface watering will be utilized to control wind erosion of susceptible soils during and/or immediately after mass site grading operations.
- i. Channel Stabilization
 - Riprap and engineering fabric placed in channel to prevent erosion.
 - Erosion control mat in conjunction with seeding placed in channel to prevent erosion.
 - Concrete drainage flume installed in channel flow line to prevent erosion in minor storms.
- j. Outlet Stabilization
 - Rock / riprap and engineering fabric installed at storm sewer outlets to prevent erosion.
 - Non-rock stabilization installed at storm sewer outlets to prevent erosion.
 - Concrete drainage flume installed at storm sewer outlets to prevent erosion.
- k. Geotextiles
 - Erosion control matting placed over seeded areas on bare slopes where rill or gully erosion is evident or likely in order to establish vegetation growth and prevent erosion.
- l. Chemical stabilization
- m. Soil retaining measures
- n. Stream bank stabilization

2. Structural Controls

- a. At all areas where runoff can move offsite, silt fence or approved equal will be installed along the perimeter of the project downstream of soil disturbing activities and storm water discharge points prior to site clearing and grading operations as required and/or shown on the plans.
- b. Temporary sediment basins are provided at the rate of 3,600 cubic feet of storage per acre for disturbed areas over 10 acres. If not attainable, a combination of silt fences, multiple sediment traps, or equivalent sediment controls are required for all side slopes and downslope boundaries of the disturbed area.
- c. Silt fence, sediment traps or equivalent measures for all side slopes and downslope boundaries of the disturbed area provided for disturbed areas of 10 acres or less.
- d. Silt barrier enclosures will be installed around all area intakes and flared end section inlets to protect storm sewers from sediment immediately after

- construction of inlet.
- e. All storm water street intakes will be protected from silt with filter socks or equivalent sediment protection measures after paving.
 - f. Silt fence, temporary silt basins, earthen dikes and ditch checks will be installed along concentrated drainageways to control flow velocity and encourage sediment deposition.
 - g. Storm water detention/retention facilities will retain flows and act as temporary sediment basin with the installation of a temporary outlet riser.
 - Installed prior to commencing upstream grading operations and storm sewer installation.
 - h. Curb & gutter will divert storm water once installed.
 - i. Drainage swales
 - Permanently seeded immediately upon reaching final grade to facilitate sediment deposition in surface runoff.
 - Convey runoff to sediment basins/acceptable outlet.
 - Used in conjunction with sediment traps, ditch checks, or other control measures to trap sediment.
 - j. Earthen dike will be constructed along the downslope boundaries of undeveloped rough graded areas to divert sheet flow runoff to silt trap/storm sewer outlet.
 - k. Surface roughening – temporarily roughen the surface of graded slopes perpendicular to the slope as an end of day practice and in conjunction with other stabilization measures. Reduces runoff velocity, traps sediment, increases infiltration and aids in establishment of vegetative cover.
 - l. Subsurface drains
 - m. Brush barrier
 - n. Pipe slope drains
 - o. Level spreaders
 - p. Reinforced soil retaining systems
 - q. Gabions
 - r. Check dams
 - s. Gradient Terraces
 - t. Additional erosion control measures may be required on embankments, stockpiles and other areas to ensure runoff control.

B. Other Controls

Measures for controlling other sources of potential pollution that may exist on the construction site. During the course of construction, it is possible that situations may arise where unknown materials will be encountered. When such situations occur, they will be handled according to all applicable federal, state, and local regulations in effect at the time.

- 1. Waste materials
 - a. Disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall

apply.

2. Hazardous waste

- a. Hazardous waste materials will be disposed of in accordance with applicable local, State, and/or Federal regulations.
- b. Equipment refueling and maintenance operations will be carried out in such a manner so as to prevent any spills and contamination to the soil and groundwater.
- c. Potentially hazardous materials will be used with great care to prevent spillage in any volume.

3. Sanitary waste

A portable restroom facility may be located onsite at the contractor's discretion. Wastes will be collected and disposed of in complete compliance with local, state and federal regulations. This facility will be located in an area where contact with the storm water discharge is minimal.

4. Vehicle tracking

- a. Stabilized construction entrances and/or vehicle washing racks will be installed at all site access points to reduce vehicle tracking of sediment offsite.
- b. Paved streets adjacent to the site will be inspected daily and cleaned as necessary to remove any excess mud, dirt or rock tracked from the site.
- c. Dump trucks hauling material from the site will be properly covered with a tarpaulin.
- d. Dust control measures will be utilized as necessary.

5. Non-storm water discharges

- a. Expected sources of non-storm water discharges from the site during construction may include:
 - Potable water sources including water line flushings, irrigation drainage and fire fighting activities.
 - Pavement/building wash waters where no spills or leaks of toxic or hazardous materials have occurred and excluding detergents.
 - Uncontaminated groundwater from de-watering excavation.
 - Natural springs, wetland, water sources.
 - Foundation or footing drains where flows have not been exposed to solvents.
- b. Non-storm water discharges will be directed to the sediment basin or other appropriate control measure prior to discharging off-site.

C. Storm Water Management

Post-construction storm water drainage will be facilitated by curb and gutter, storm sewer, intake structures, and established drainage swales for the developed areas. Runoff will be directed to onsite storm water management controls and/or the City of Lee's Summit public storm sewer/drainage ditch.

Measures implemented to control pollution of storm water after construction is complete

include the following:

1. Retention Pond – permanent pool providing sediment control and detention. Designed to release storm water at a 5-year/24 hour storm pre-development peak rate.
2. Detention Pond – dry bottom basin providing detention of peak storm water runoff. Designed to release storm water at a 5-year/24 hour storm pre-development peak rate.
3. Open channels
 - a. Vegetated Swales and natural depressions will reduce storm water runoff by increasing infiltration and increase sedimentation by reducing runoff velocity.
 - b. Riprap placed as channel lining in high-flow drainage ditches to prevent erosion and increase sedimentation by reducing runoff velocity.
 - c. Permanent erosion control or turf reinforcement mats will be placed in drainage swales to prevent erosion.
 - d. Concrete drainage flumes installed at channel flowlines to reduce erosion of channel in small storm events.
4. Undeveloped areas will be graded at the slopes indicated and have permanent seeding and/or landscaping designed to reduce runoff velocities and increase infiltration.
5. Part of the site will remain undisturbed and in its original vegetative state, limiting the amount of exposed soil and providing a continuous vegetation buffer zone that will reduce runoff velocities and increase infiltration.
6. Outlets of all storm sewer systems and culverts will be stabilized with riprap aprons underlain by engineering fabric or non-rock outlet protection measures to dissipate flow velocities and prevent erosion.
7. Infiltration Measures
 - a. Infiltration trenches, basins, dry wells

PART 3

CONSTRUCTION / IMPLEMENTATION

A. State and Local Requirements

1. The storm water pollution prevention plan reflects the provisions of the Missouri Clean Water Law (Chapter 644 R.S. Mo.) and the Federal Water Pollution Control Act (Public Law 92-500).
2. Prior to initiating a land disturbing activity, a person engaged in land disturbing activity shall file a signed affidavit with the soil and water conservation district that the project will not exceed the soil loss limits.
3. Code Compliance: The contractor shall comply with the soil erosion control requirements of the Missouri Code, the Missouri DNR NPDES permit and all local ordinances.

B. Timing of Controls/Measures

1. Install down-slope and side-slope perimeter silt fence prior to commencing land-disturbing activity.
2. Install construction entrance and vehicle tracking controls.
3. Construct temporary sediment basins or detention basin as sediment basin and route all runoff from disturbed areas to the basin and/or erosion control measures at storm water discharge points – sediment traps/basins, riprap channel lining, erosion control mat.
4. Do not disturb an area until necessary for construction to proceed.
5. Install interior silt fences, earthen dikes, sediment traps, etc. as grading progresses.
6. Cover or stabilize disturbed areas and stockpiles as soon as possible and no later than 14 days after ceasing construction for more than 21 days or permanently.
7. Place swale control measures (erosion control mats, silt traps, ditch checks, seed & mulch) in drainageways as soon as final grades are achieved and before storm sewer is installed where possible.
8. Construct outlet stabilization measures at storm outlets and place silt barriers at storm sewer inlets immediately after storm sewer is installed.
9. As areas reach their final grade, provide additional silt fence, sediment traps, earthen dikes, ditch checks or filter sock as necessary.
10. Complete permanent stabilization seeding/mulch or sod stabilization as soon as possible after work is complete in an area.
11. Remove temporary sediment controls and accumulated sediment once entire site is stabilized. Re-seed/mulch any areas disturbed during removal.

PROJECTED CONSTRUCTION SCHEDULE / CONSTRUCTION PROGRESS:

PHASE A – GRADING	Anticipated Start-End	
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Initial control measure installation (sediment basin, construction entrance, perimeter silt fence)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Initial Grading Operations (clearing/grubbing, topsoil stripping/stockpiling/stabilization)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Major Grading Operations (mass grading, sediment/detention basins, pond, interior silt barrier, temporary stabilization)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

PHASE B – UNDERGROUND UTILITIES	Anticipated Start-End	
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Sewer / Water installation (sanitary sewer, water main)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Storm System (storm sewer/structures, culverts, outlet structures)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

PHASE C – PAVING / FINE GRADING	Anticipated Start-End	
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Paving (subgrade prep, curb & gutter, street, sidewalk, drive, parking lot paving)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Franchise Utilities (electric, gas, telephone, cable, _____, _____)			
Operator Responsible	Attach additional sheets listing utility companies working on the site		
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

Finish Grading (backfill, finish grading, temporary seed stabilization)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

PHASE D – BUILDING CONSTRUCTION	Anticipated Start-End	
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Building Construction (basement excavation, building construction, driveway paving, sod stabilization)			
Operator Responsible	Attach additional sheets listing any individual lot ownership transfers		
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

PHASE E – FINAL STABILIZATION	Anticipated Start-End	
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Permanent Stabilization (final seeding / sod stabilization, temporary erosion control measure removal)			
Operator Responsible			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

C. Inspection & Maintenance

1. All documents related to the storm water discharge permit shall be kept on site at all times and must be presented to the Missouri DNR or EPA upon request. Including but not limited to the Storm Water Pollution Prevention Plan, Notice of Intent, and project inspection diary.
2. The contractor will be responsible for selecting a “qualified” inspector to conduct the inspections. “Qualified” is defined as a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.
3. The project area and control devices will be inspected by personnel assigned by the contractor a minimum of every seven calendar days. The findings and any actions taken as a result of this inspection shall be recorded in the project diary with a copy submitted weekly to the owner or owner’s representative during the project.
 - a. Inspect silt fence for depth of sediment, tears, fabric securely attached to posts and posts firmly in the ground.
 - b. Inspect sediment basins for depth of sediment.
 - c. Inspect diversion dikes for any breaches.
 - d. Inspect seeding for bare spots, washouts and healthy growth.
 - e. Inspect site for any other conditions or deficiencies which may allow or contribute to polluted runoff discharging offsite.
 - f. Inspect site within 48 hours after any storm event equal or greater than a 2-year, 24-hour storm (3.4 inches) 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.
4. This pollution prevention plan shall be revised as construction progresses to reflect current ownership, responsibilities, operations and findings.
 - a. The plan will be revised due to any deficiencies in the plan or changes in conditions noted during an inspection and the contractor will implement any and all revisions as soon as practical but no later than 3 business days after the inspection.
 - b. Maintain record of major construction operations start and ending dates and operators responsible for the various phases.
 - c. The plan will be modified within 14 calendar days of a hazardous condition, describing the release, the date of release and the circumstances leading to the release. Steps to prevent the reoccurrence of such releases will be identified in a plan revision and implemented.
5. Maintain all temporary and permanent erosion control measures in good working order by cleaning, repairing, replacement and sediment removal throughout the permit period. Any necessary repairs will be initiated within 24 hours of report.
 - a. Built up sediment will be removed from silt barrier or the silt barrier replaced when it has reached 1/2 the height of the barrier.

- b. Built up sediment will be removed from sediment basins when it reaches 25% of the design capacity or at the end of the project.
 - c. Accumulation of earth, silt or debris on adjoining properties or streets will be minimized. Remove any accumulation of earth, silt or debris immediately and take remedial actions for prevention.
 - d. Minor spills of potentially hazardous materials will be cleaned up by removing and disposing of contaminate soils properly. Major spills shall be reported in accordance with Part D of NPDES Permit No. MORA09315 with clean up procedures dependant on the severity of the spill.
6. Hazardous substance spill prevention and response
- a. The contractor is responsible for training all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or wastes will be allowed to come into contact with storm water discharges. If contact does occur, the storm water discharge will be contained on site until appropriate measures in compliance with all Federal, State, and local regulations are followed to dispose of the hazardous substance.
 - b. In addition to Good Housekeeping and material management practices, the following practices shall be done to minimize the potential for hazardous material spills and to reduce the risk of the spill coming in contact with storm water.
 - Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.
 - Materials and equipment necessary for spill control, containment and cleanup will be provided onsite in a material storage area. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers.
 - c. In the event of a spill, the following procedures will be followed:
 - All spills will be cleaned up immediately following discovery.
 - The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substance.
 - Spill of toxic or hazardous material will be reported to the appropriate state or local governmental agency and to the project manager and engineer, regardless of the size of the spill.
 - d. In the event the construction site has a release of a hazardous substance or oil in an amount which exceeds a reportable quantity (RQ) as defined at 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 then the permittee shall:
 - Person in charge of the site at the time of the spill shall call the EPA National Response Center to report the spill (800-424-8802, or 202-426-2675).
 - Modify the Pollution Prevention Plan accordingly within 14 days of the spill including the items mentioned below.
 - Within 14 days of the release, submit a written description of the release including: a description of the release, type of material,

estimated amount of spill, date of release, explanation of why the spill happened, and a description of the steps taken to prevent and control future releases.

D. Materials Management

Site sources of pollution generated as a result of this work related to silts and sediment which may be transported as a result of a storm event. However, this SWPPP provides conveyance for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this SWPPP.

1. Materials or substances expected to be present onsite during construction:
 - a. Concrete
 - b. Detergents
 - c. Paints
 - d. Tar
 - e. Soil stabilization additives
 - f. Fertilizers
 - g. Petroleum based additives
 - h. Cleaning solvents
 - i. Wood
 - j. Solids and construction wastes
 - k. Pesticides
2. Material Management Practices – the following is a list of practices that will be used onsite to minimize the risk of spills or other accidental exposure of materials and substances to storm water runoff.
 - a. Good Housekeeping
 - An effort will be made to store onsite only enough products required to complete the job.
 - All materials stored onsite will be kept in a neat, orderly manner and in their appropriate containers. If possible, products shall be kept under a roof or other enclosure.
 - Materials will be kept in their original containers with the original manufacturer's label.
 - Substances will not be mixed with one another unless recommended by the manufacturer.
 - Whenever possible, all of a product will be used up before disposing of the container.
 - Manufacturer's recommendations for proper use and disposal will be followed.
 - The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.
 - b. Hazardous Products
 - Products will be kept in their original containers with the original manufacturer's label.
 - The original labels and material safety data will be kept for each of the

materials as they contain important product information.

- Disposal of any excess product will be done in a manner that follows all manufacturers', federal, local and state recommended methods for proper disposal.

3. Product Specific Practices – the following is a list of potential sources of pollution and specific practices to reduce pollutant discharges from materials or sources expected to be present during construction.

a. Petroleum Storage Tanks

- All onsite vehicles shall be inspected and monitored for leaks and receive preventative maintenance to reduce the chance of leakage.
- Steps will be taken by the contractor to eliminate contaminants from storage tanks from entering ground soil. Any petroleum storage tanks kept onsite will be located with an impervious surface between the tank and the ground.

b. Fertilizers – shall be applied in minimal amounts as recommended by the manufacturer. It shall be worked into the soil as to minimize the contact with storm water discharge.

c. Paints, paint solvents and cleaning solvents – Excess paints and solvents shall not be discharged into the storm sewer system. The contractor shall refer to the manufacturer's instructions and federal regulations on the proper disposal techniques.

d. Concrete wastes

- Concrete trucks will be allowed to washout or discharge excess concrete only in specifically designated areas which have been prepared to minimize contact between the concrete and storm water discharge from the site.
- The hardened product from the concrete washout areas will be disposed of as other non-hazardous waste materials or may be broken up and used on the site for other appropriate uses.

e. Solid and construction wastes – All trash and construction debris shall be deposited into a dumpster that will be emptied as necessary. No construction waste materials will be buried on site. The dumpsters must be put in a location where the contact with storm water discharge is minimized.

PART 4

FINAL STABILIZATION / DISCONTINUATION

A. Final Stabilization / Discontinuation

1. The storm water discharge from a construction activity is no longer considered to be a discharge subject to the storm water permit requirements when final stabilization has been reached and temporary erosion and sediment controls have been or will be removed. A permittee must submit a Notice of Termination (NOT) to inform the DNR that storm water discharge from the site will no longer need to be covered by the general permit.
2. “Final Stabilization” – the point at which all soil disturbing activities are complete, and a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been employed.
3. Notice of Discontinuation should be submitted to the Missouri DNR using the e-permitting process (<http://www.dnr.mo.gov/env/wpp/epermit/help.htm>)
4. All plans, inspection reports and other related documents must be retained for a period of three years after project completion. The contractor shall retain a record copy and provide the original documents to the owner upon issuance of the NOT.

PART 5
CERTIFICATION

A. Storm Water Pollution Prevention Plan Certification

1. This project is subject to section 402(b) of the Clean Water Act (projects disturbing one or more total acres) and requires inclusion in the National Pollutant Discharge Elimination System (NPDES) General Permit No. MORA09315 or individual NPDES Permit for storm water discharge associated with industrial activity for construction activities. The Contractor shall perform all pollution prevention measures as identified in the plans and specifications. A copy of the Storm Water Pollution Prevention Plan (SWPPP) must be kept at the construction site from the time construction begins until the site has reached final stabilization.
2. The owner and prime contractor must sign the NPDES Certification Statement. The prime contractor must identify which contracting entity will be responsible for each portion of the pollution prevention plan and maintain the site in compliance with the SWPPP, Pollution Prevention Plan drawings and NPDES Permit. The certification must be signed in accordance with the signatory requirements found in the general permit; i.e., principal executive officer, vice president, general partner, proprietor, elector official, and will be incorporated into the pollution prevention plan.
3. All subcontractors, including short-term contractors and subcontractors, prior to approval, must sign the NPDES Certification Statement before conducting any work at the site. The certification must be signed in accordance with the signatory requirements found in the general permit; i.e., principal executive officer, vice president, general partner, proprietor, elector official, and will be incorporated into the pollution prevention plan.
4. Upon signing the certification, the contractor or subcontractor becomes a co-permittee with the owner and other co-permittee contractors. In signing the plan, the authorized representative certifies that the information is true and assumes liability for the plan and its implementation. Note that Section 309 of the Clean Water Act provides for significant penalties where information is false or the permittee violates, either knowingly or negligently, the permit requirements.
5. A copy of the NPDES Certification Statement of the Owner, Prime Contractor and all Subcontractors shall be filed in and become a part of the project SWPPP.

NPDES CERTIFICATION STATEMENT
(Owner certification)

Project	WHISPERING WOODS PH. III
Project Location (address, lat./long., Sec.-T-R)	E of Pryor Road btwn SW Hook RD & SW Scherere Rd City of Lee's Summit, Cass County, Missouri

I certify under penalty of law that this document and all attachments were prepared under my direction of 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.

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (MORA09315) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Owner	Whispering Woods Land, L.L.C.	
Address	803 P.C.A. Road Warrensburg, MO 64093	Phone 816-564-2230
Representative	Rick Frye	Title Owner
Signature	Date	

NPDES CERTIFICATION STATEMENT
(for contractors with authority to modify SWPPP)

Project	WHISPERING WOODS PH. III
Project Location (address, lat./long., Sec.-T-R)	E of Pryor Road btwn SW Hook RD & SW Scherere Rd City of Lee's Summit, Cass County, Missouri

I certify under penalty of law that this document and all attachments were prepared under my direction of 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.

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (MORA09315) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Contractor / Sub-contractor	
Responsible for	
Address	Phone
Representative	Title
Signature	Date

NPDES CERTIFICATION STATEMENT
(for contractors with NO authority to modify SWPPP)

Project	WHISPERING WOODS PH. III
Project Location (address, lat./long., Sec.-T-R)	E of Pryor Road btwn SW Hook RD & SW Scherere Rd City of Lee's Summit, Cass County, Missouri

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (MORA09315) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Contractor / Sub-contractor	
Responsible for	
Address	Phone
Representative	Title
Signature	Date

APPENDIX A

NPDES GENERAL PERMIT No. MORA09315

APPENDIX B

CHECKLISTS

EPA BASELINE CONSTRUCTION GENERAL PERMIT REQUIREMENTS PRE- CONSTRUCTION CHECKLIST

Storm Water Pollution Prevention Plans

1. A site description, including:
 - ☐ The nature of the activity?
 - ☐ Intended sequence of major construction activities
 - ☐ The total area of the site
 - ☐ The area of the site that is expected to undergo excavation
 - ☐ The runoff coefficient of the site after construction is complete
 - ☐ Existing soil or storm water data
 - ☐ A site map with:
 - ☐ Drainage patterns
 - ☐ Approximate slopes after major grading
 - ☐ Area of soil disturbance
 - ☐ Outline of areas which won't be disturbed
 - ☐ Location of major structural and non-structural controls
 - ☐ Areas where stabilization practices are expected to occur
 - ☐ Surface waters
 - ☐ Storm water discharge locations
 - ☐ The name of the receiving water(s)
2. A description of controls:
 - 2.1 Erosion and sediment controls, including:
 - ☐ Stabilization practices for all areas disturbed by construction
 - ☐ Structural practices for all drainage/discharge locations
 - 2.2 Storm water management controls, including:
 - ☐ Measures used to control pollutants occurring in storm water discharges after construction activities are complete.
 - ☐ Velocity dissipation devices to provide nonerosive flow conditions from the discharge point along the length of any outfall channel.
 - 2.3 Other controls including:
 - ☐ Waste disposal practices which prevent discharge of solid materials to waters of the U.S.?
 - ☐ Measures to minimize offsite tracking of sediments by construction vehicles
 - ☐ Measures to ensure compliance with State or local waste disposal, sanitary sewer, or septic system regulations
 - 2.4 ☐ Description of the timing during the construction when measures will be implemented.
3. ☐ Are State or local requirements incorporated into the plans?
4. ☐ Are maintenance procedures for control measures identified in the plan?
5. ☐ Identification of allowable non-storm water discharges and pollution prevention measures.
6. ☐ Contractor certification.
7. ☐ Plan certification.

EPA BASELINE CONSTRUCTION GENERAL PERMIT CHECKLIST

Storm Water Pollution Prevention Plan Construction/Implementation Checklist

1. Maintain Records of Construction Activities, including:
 - ☐ Dates when major grading activities occur
 - ☐ Dates when construction activities temporarily cease on a portion of the site
 - ☐ Dates when construction activities permanently cease on a portion of the site
 - ☐ Dates when stabilization measures are initiated on the site
2. Prepare Inspection reports summarizing:
 - ☐ Name of inspector
 - ☐ Qualifications of inspector
 - ☐ Measures/areas inspected
 - ☐ Observed conditions
 - ☐ Changes necessary to the SWPPP
3. Report Releases of Reportable Quantities of Oil or Hazardous Materials (if they occur):
 - ☐ Notify National Response Center 800/424-8802 immediately
 - ☐ Notify permitting authority in writing within 14 days
 - ☐ Modify the pollution prevention plan to include:
 - the date of release
 - circumstances leading to the release
 - steps taken to prevent reoccurrence of the release
4. Modify Pollution Prevention Plan as necessary to:
 - ☐ Comply with minimum permit requirements when notified by EPA that the plan does not comply
 - ☐ Address a change in design, construction operation or maintenance which has an effect on the potential for discharge of pollutants
 - ☐ Prevent reoccurrence of reportable quantity releases of a hazardous material or oil

EPA BASELINE CONSTRUCTION GENERAL PERMIT CHECKLIST

Storm Water Pollution Prevention Plan Final Stabilization/Termination Checklist

1. ☐ All soil disturbing activities are complete
2. ☐ Temporary erosion and sediment control measures have been removed or will be removed at an appropriate time
3. ☐ All areas of the construction site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 70% or equivalent measures have been employed

**POLLUTION PREVENTION PLAN FOR STORM WATER DISCHARGE ASSOCIATED WITH
CONSTRUCTION ACTIVITIES
EROSION AND SEDIMENT CONTROL SELECTION CHECKLIST**

INSTRUCTIONS: THIS CHECKLIST LISTS THE MINIMUM SEDIMENT EROSION CONTROL REQUIREMENTS UNDER THE USEPA GENERAL PERMIT. CHECK [✓] EACH ITEM AND FILL IN THE BLANKS BELOW TO EVALUATE COMPLIANCE FOR EACH DRAINAGE AREA AND LOCATION. NOTE: THIS CHECKLIST WAS PREPARED FOR THE USEPA GENERAL PERMIT. REQUIREMENTS FOR STATE GENERAL PERMITS MAY VARY.

Stabilization Practices

- ☐ Stabilization will be initiated on all disturbed areas where construction activity will not occur for a period of more than 21 calendar days by the 14th day after construction activity has permanently or temporarily ceased.

Stabilization measures to be used include:

- | | |
|--|--|
| ☐ Temporary Seeding | ☐ Sod Stabilization |
| ☐ Permanent Seeding | ☐ Geotextiles |
| ☐ Mulching | ☐ Other _____ |

Structural Practices

- ☐ Flows from upstream areas will be diverted from exposed soils. Measures to be used include:

- | | |
|---|---|
| ☐ Earth Dike | ☐ Pipe Slope Drain |
| ☐ Drainage Swale | ☐ Other |
| ☐ Interceptor Dike and Swale | |

Drainage locations serving less than 10 disturbed acres	Drainage locations serving 10 or more disturbed acres
☐ Sediment controls will be installed Sediment controls include: ☐ Sediment Basin ☐ Sediment Trap ☐ Silt Fence or equivalent controls along all sideslope and downslope boundaries	☐ A Sediment Basin will be installed ☐ A Sediment Basin is not attainable on the site; therefore, the following sediment controls will be installed: Sediment Trap Silt Fence or equivalent controls along the sideslope and downslope boundaries

Sediment Basin Runoff Storage Calculation

_____	acres area draining to the sediment basin
X	
3,600	cubic feet of storage/acre
=	
_____	cubic feet of storage required for the basin.

APPENDIX C

INSPECTION REPORTS

EROSION AND SEDIMENT CONTROL MONITORING REPORT

Project: _____ Date of Inspection: _____

Prime Contractor: _____ Permit No: _____

Inspector: _____ Project No: _____

Reason for Inspection: ☐ Weekly ☐ Rainfall Event (_____ in.) ☐ Other _____

EROSION AND SEDIMENT CONTROL MONITORING

Area Inspected: _____

Inspection of Best Management Practices:

BMP	Control Practice Effective			Maintenance/Modification Required			BMP	Control Practice Effective			Maintenance/Modification Required		
	Y	N	N/A	Y	N	N/A		Y	N	N/A	Y	N	N/A
Silt Fencing	☐	☐	☐	☐	☐	☐	Stockpile Stabilization	☐	☐	☐	☐	☐	☐
Ditch Checks	☐	☐	☐	☐	☐	☐	Mulching	☐	☐	☐	☐	☐	☐
Rip Rap	☐	☐	☐	☐	☐	☐	Erosion Matting	☐	☐	☐	☐	☐	☐
Inlet Protection	☐	☐	☐	☐	☐	☐	Temporary Seeding	☐	☐	☐	☐	☐	☐
Drainage Swales	☐	☐	☐	☐	☐	☐	Permanent Seeding	☐	☐	☐	☐	☐	☐
Construction Site Exits	☐	☐	☐	☐	☐	☐	Sodding	☐	☐	☐	☐	☐	☐
Project Schedule	☐	☐	☐	☐	☐	☐	Staging Area	☐	☐	☐	☐	☐	☐
Grading Practices	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐
Good Housekeeping	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐

OBSERVATION COMMENTS / RECOMMENDATIONS

Note: Any 'Control Practice Effective' box checked 'N' or 'Maintenance/Modification Required' box checked 'Y' must have comments, recommended improvements, and date implemented. Any modifications must be sketched, described, dated, and initialed on the drawing included with the Pollution Prevention Plan.

ITEM	COMMENTS / RECOMMENDED IMPROVEMENTS	DATE IMPLEMENTED
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ See reverse side for sketches or additional comments/recommendations

CERTIFICATION

Copy to: ☐ Onsite Pollution Prevention Plan ☐ Owner ☐ Project Engineer ☐ Project Observer

"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 Monitor

EROSION AND SEDIMENT CONTROL MONITORING REPORT

Project: _____ Date of Inspection: _____

Prime Contractor: _____ Permit No: _____

Inspector: _____ Project No: _____

Reason for Inspection: ☐ Weekly ☐ Rainfall Event (_____ in.) ☐ Other _____

EROSION AND SEDIMENT CONTROL MONITORING

Area Inspected: _____

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	Y	N	N/A	Y	N	N/A		Y	N	N/A	Y	N	N/A
Silt Fencing	☐	☐	☐	☐	☐	☐	Stockpile Stabilization	☐	☐	☐	☐	☐	☐
Ditch Checks	☐	☐	☐	☐	☐	☐	Mulching	☐	☐	☐	☐	☐	☐
Rip Rap	☐	☐	☐	☐	☐	☐	Erosion Matting	☐	☐	☐	☐	☐	☐
Inlet Protection	☐	☐	☐	☐	☐	☐	Temporary Seeding	☐	☐	☐	☐	☐	☐
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Good Housekeeping	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐

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EROSION AND SEDIMENT CONTROL MONITORING

Area Inspected: _____

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Silt Fencing	☐	☐	☐	☐	☐	☐	Stockpile Stabilization	☐	☐	☐	☐	☐	☐
Ditch Checks	☐	☐	☐	☐	☐	☐	Mulching	☐	☐	☐	☐	☐	☐
Rip Rap	☐	☐	☐	☐	☐	☐	Erosion Matting	☐	☐	☐	☐	☐	☐
Inlet Protection	☐	☐	☐	☐	☐	☐	Temporary Seeding	☐	☐	☐	☐	☐	☐
Drainage Swales	☐	☐	☐	☐	☐	☐	Permanent Seeding	☐	☐	☐	☐	☐	☐
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Grading Practices	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐
Good Housekeeping	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐

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Ditch Checks	☐	☐	☐	☐	☐	☐	Mulching	☐	☐	☐	☐	☐	☐
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Drainage Swales	☐	☐	☐	☐	☐	☐	Permanent Seeding	☐	☐	☐	☐	☐	☐
Construction Site Exits	☐	☐	☐	☐	☐	☐	Sodding	☐	☐	☐	☐	☐	☐
Project Schedule	☐	☐	☐	☐	☐	☐	Staging Area	☐	☐	☐	☐	☐	☐
Grading Practices	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐
Good Housekeeping	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐

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EROSION AND SEDIMENT CONTROL MONITORING

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Good Housekeeping	☐	☐	☐	☐	☐	☐	Other _____	☐	☐	☐	☐	☐	☐

OBSERVATION COMMENTS / RECOMMENDATIONS

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_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ See reverse side for sketches or additional comments/recommendations

CERTIFICATION

Copy to: ☐ Onsite Pollution Prevention Plan ☐ Owner ☐ Project Engineer ☐ Project Observer

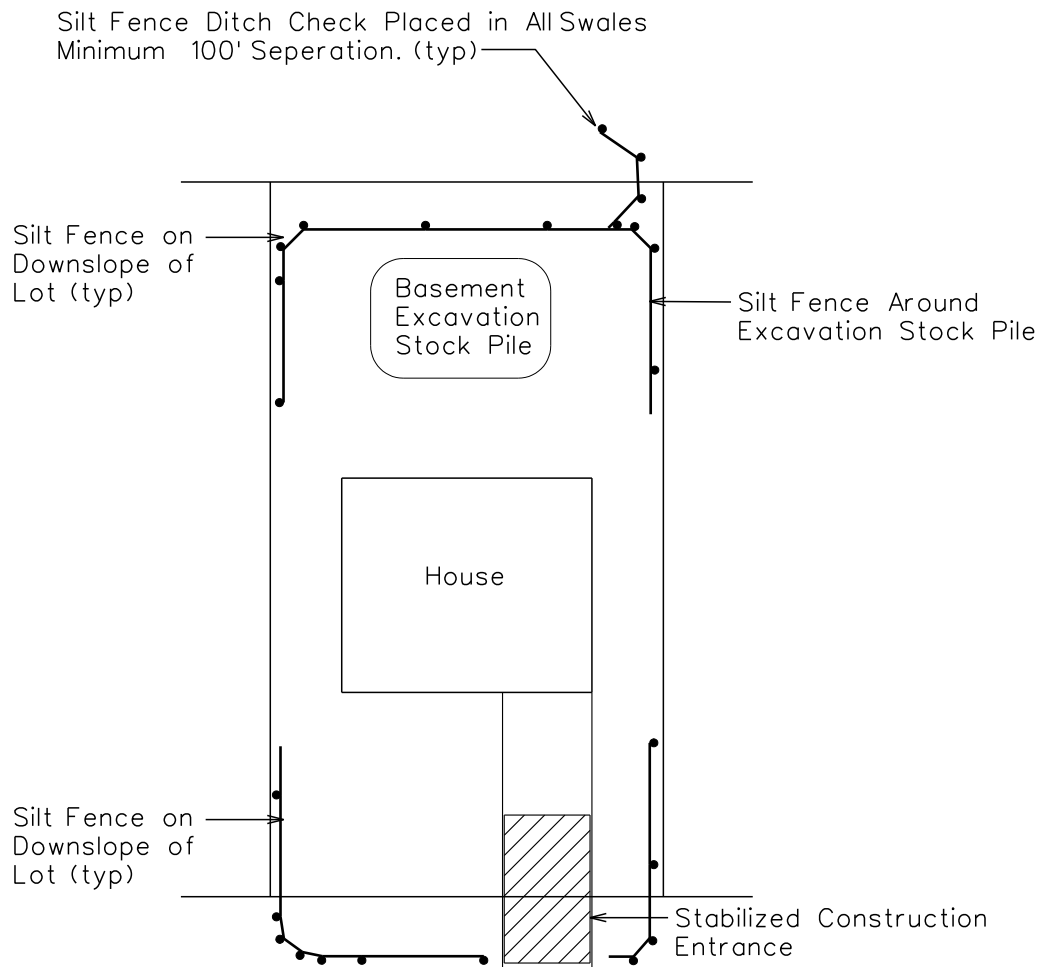
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage 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 Monitor

APPENDIX D

TYPICAL LOT SEDIMENT/EROSION CONTROL PLAN

SUGGESTED EROSION CONTROL MEASURES FOR A TYPICAL LOT SEDIMENT/EROSION CONTROL PLAN



NOTES

Suggested erosion control measures shown are typical and for informational purposes. Site conditions will dictate the amount and type of erosion control measures necessary. The contractor shall be responsible for installing and maintaining any and all appropriate control measures.

1. Potentially hazardous materials shall be stored within an enclosed or controlled structure.
2. Note temporary sanitary facilities on plan if individually provided.
3. Keep roadways and adjacent properties free of silt and other debris.
4. Permanent stabilization by seeding and mulching and/ or sod shall be completed within 14 days of final disturbance.

		SHEET	OF
		PN:	
		FN:	
		DATE:	4/19/05
		TECH:	SDB

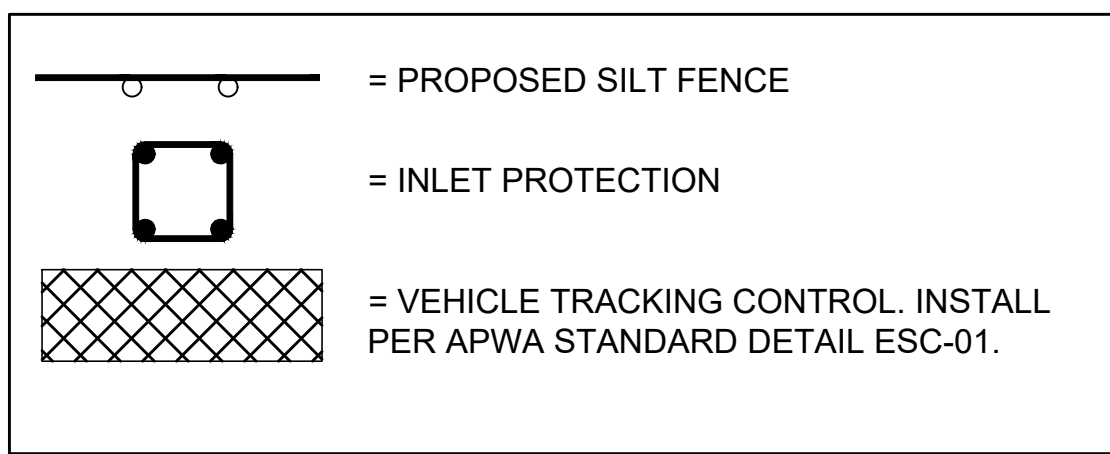
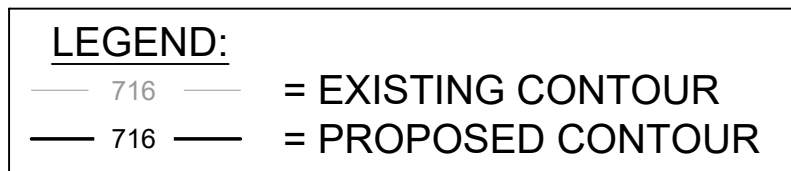


SNYDER & ASSOCIATES
Engineers and Planners

501 S.W. ORALABOR ROAD
ANKENY, IA 50021 (515) 964-2020

APPENDIX E

GRADING & EROSION CONTROL PLAN



1. INSTALL PERIMETER SILT FENCE
2. INSTALL CONSTRUCTION ENTRANCE.
3. INSTALL INLET PROTECTION FOR EXISTING INLETS

1. GRADE ENTIRE SITE AS SHOWN.
2. SEED AND MULCH AREAS THAT ARE COMPLETED WITHIN TWO WEEKS.
3. METHODS AND MATERIALS TO CONTROL SEDIMENTATION AND EROSION ARE TO BE INCORPORATED INTO THE GRADING OPERATIONS AS SHOWN OR AT THE DIRECTION OF THE CITY ENGINEER. UPON COMPLETION OF GRADING OPERATIONS, SUCH FACILITIES TO PROVIDE FOR SAID EROSION AND SEDIMENTATION CONTROL ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED BY THE DEVELOPER UNTIL SUCH TIME AS SEEDED AREAS BECOME ESTABLISHED.

1. INSTALL ALL INLET PROTECTIONS FOR PROPOSED INLETS
2. ALL AREAS TO BE SEEDED SHALL BE SPREAD WITH A MINIMUM 6-INCH DEPTH OF TOP SOIL. ALL SEEDING SHALL BE DONE IN COMPLIANCE WITH THE REQUIREMENTS SET FORTH IN THE CITY OF LEE'S SUMMIT SPECIFICATION AND DESIGN CRITERIA MANUAL.
3. ALL AREAS SEEDED ARE TO BE SPREAD WITH MULCH AT THE RATE OF 1 1/2 TON PER ACRE AND SHALL BE ANCHORED BY DISCING.
4. ALL AREAS DISTURBED BY GRADING OPERATIONS AUTHORIZED BY THIS PERMIT SHALL BE SEEDED WITHIN TWO WEEKS AFTER COMPLETION AND ACCEPTANCE OF SITE GRADING. THE ENTIRE AREA AFFECTED SHALL BE MAINTAINED BY THE DEVELOPER UNTIL SUCH TIME AS SEEDED AREAS HAVE BECOME ESTABLISHED.
5. ANY INCIDENTAL WORK NOT SPECIFICALLY PERMITTED DURING FINAL CLEANUP WILL BE COMPLETED BY THE CONTRACTOR.
6. STABILIZE SITE.
7. REMOVE TEMPORARY CONSTRUCTION ENTRANCES.

NOTE
INLET PROTECTION AND SILT
FENCE SHALL BE REMOVED BY
CONTRACTOR/OWNER AT SUCH
ALL UPSTREAM DISTURBED
AREAS HAVE BEEN
PERMANENTLY STABILIZED.

NOTE
ALL SLOPES GREATER THAN 4:1
WILL BE EVALUATED FOR USE OF
MATS/BLANKETS

- ① CONTRACTOR TO INSTALL SILT FENCE PER APWA STANDARD DETAIL ESC 10-11. REMOVE AND RELOCATE AS NECESSARY FOR CONSTRUCTION.
- ② APPROXIMATE LOCATION OF VEHICLE TRACKING CONTROL. CONTRACTOR TO INSTALL PER APWA STANDARD DETAIL ESC-01. LOCATION CAN BE ADJUSTED AS NEEDED FOR CONSTRUCTION.

NOTE
EROSION CONTROL FEATURES NEED TO BE INSTALLED PRIOR TO LAND DISTURBANCE AND MAINTAINED THROUGHOUT THE DURATION OF OPERATIONS. WE NEED TO CONTAIN THE SILT TO THIS SITE AND KEEP THE ADJACENT STREETS FREE OF MUD AND DEBRIS AT ALL TIMES WHICH MAY INCLUDE ADDITIONAL EROSION CONTROL FEATURES NOT INCLUDED IN THESE PLAN IF IT IS DETERMINED THAT THE CURRENT PLAN IS INADEQUATE.

EROSION & SEDIMENT CONTROL MEASURES IN PLACE SHALL BE CHECKED & MAINTAINED WEEKLY OR WITHIN 24 HOURS FOLLOWING A RAIN MEASURING GREATER THAN 0.5 INCHES IN 24 HOURS AS RECORDED AT KCI AIRPORT.



MARK	REVISION	DATE	BY
Engineer: SD	Checked By: SD	Scale: 1"= 60'	
Technician: JS	Date: 3-18-21	Field Bk: Pg:	
Snyder & Associates Engineers & Planners, Inc. Missouri State Certificate of Authority #200600544			Sheet 4



SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT EROSION & SEDIMENT CONTROL PLANS

LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501

SNYDER & ASSOCIATES
ENGINEERS & PLANNERS INC.
www.snyder-associates.com



Project No: 1200485.11

Sheet 4

PHASE 1 WORK SCHEDULE

1. INSTALL PERIMETER SILT FENCE
2. INSTALL CONSTRUCTION ENTRANCE.
3. INSTALL INLET PROTECTION FOR EXISTING INLETS

PHASE 2 WORK SCHEDULE

1. GRADE ENTIRE SITE AS SHOWN.
2. SEED AND MULCH AREAS THAT ARE COMPLETED WITHIN TWO WEEKS.
3. METHODS AND MATERIALS TO CONTROL SEDIMENTATION AND EROSION ARE TO BE INCORPORATED INTO THE GRADING OPERATIONS AS SHOWN OR AT THE DIRECTION OF THE CITY ENGINEER. UPON COMPLETION OF GRADING OPERATIONS, SUCH FACILITIES TO PROVIDE FOR SAID EROSION AND SEDIMENTATION CONTROL ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED BY THE DEVELOPER UNTIL SUCH TIME AS SEEDED AREAS BECOME ESTABLISHED.

PHASE 3 WORK SCHEDULE

1. INSTALL ALL INLET PROTECTIONS FOR PROPOSED INLETS
2. ALL AREAS TO BE SEEDED SHALL BE SPREAD WITH A MINIMUM 6-INCH DEPTH OF TOP SOIL. ALL SEEDING SHALL BE DONE IN COMPLIANCE WITH THE REQUIREMENTS SET FORTH IN THE CITY OF LEE'S SUMMIT SPECIFICATION AND DESIGN CRITERIA MANUAL.
3. ALL AREAS SEEDED ARE TO BE SPREAD WITH MULCH AT THE RATE OF 1 1/2 TON PER ACRE AND SHALL BE ANCHORED BY DISCING.
4. ALL AREAS DISTURBED BY GRADING OPERATIONS AUTHORIZED BY THIS PERMIT SHALL BE SEEDED WITHIN TWO WEEKS AFTER COMPLETION AND ACCEPTANCE OF SITE GRADING. THE ENTIRE AREA AFFECTED SHALL BE MAINTAINED BY THE DEVELOPER UNTIL SUCH TIME AS SEEDED AREAS HAVE BECOME ESTABLISHED.
5. ANY INCIDENTAL WORK NOT SPECIFICALLY PERMITTED DURING FINAL CLEANUP WILL BE COMPLETED BY THE CONTRACTOR.
6. STABILIZE SITE.
7. REMOVE TEMPORARY CONSTRUCTION ENTRANCES.

NOTE
INLET PROTECTION AND SILT FENCE SHALL BE REMOVED BY CONTRACTOR/OWNER AT SUCH TIMES AS ALL UPSTREAM DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

NOTE
ALL SLOPES GREATER THAN 4:1 WILL BE EVALUATED FOR USE OF MATS/BLANKETS

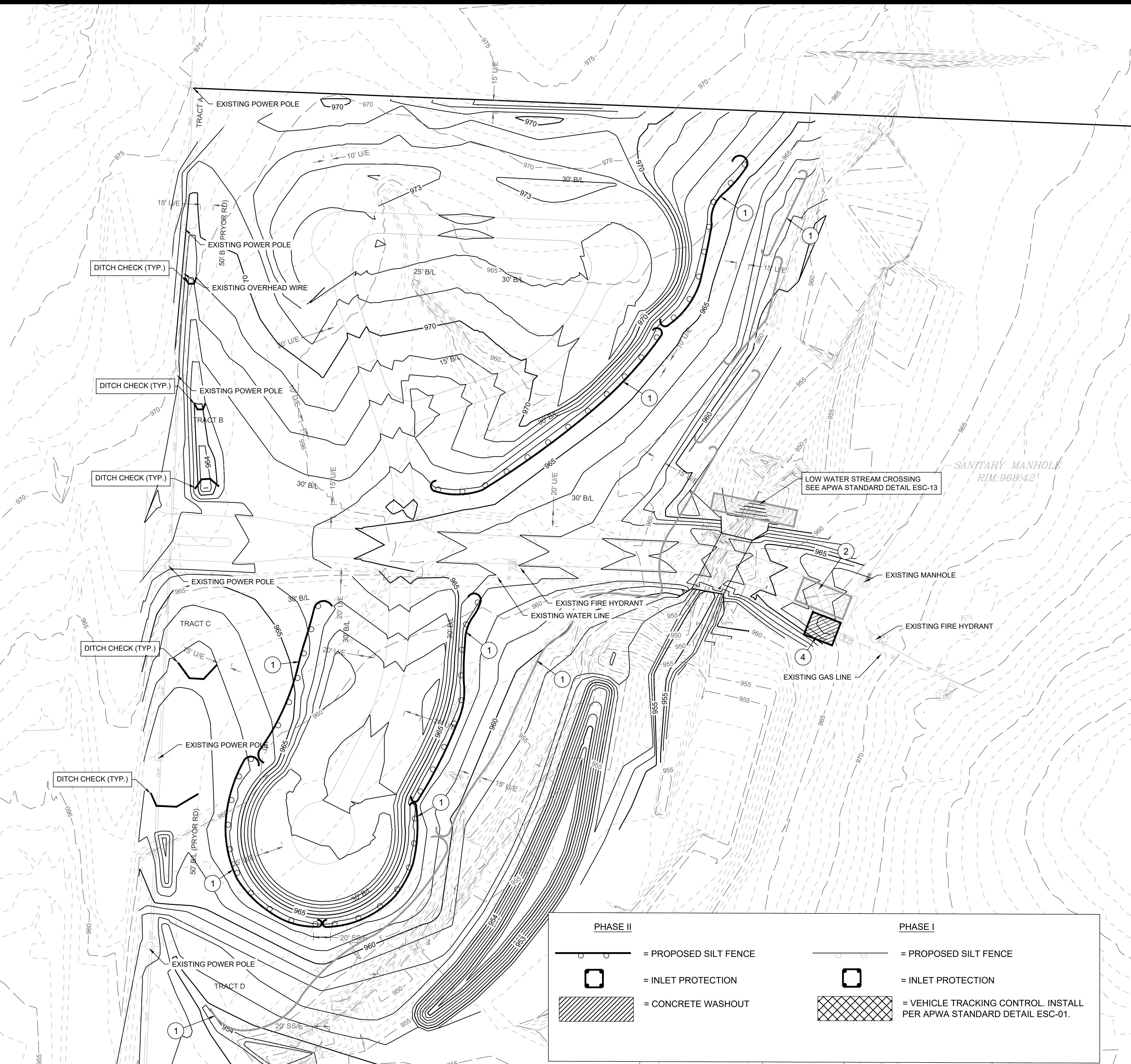
LEGEND:
716 = EXISTING CONTOUR
716 = PROPOSED CONTOUR

EROSION CONTROL PLAN - CONSTRUCTION NOTES

1. CONTRACTOR TO INSTALL SILT FENCE PER APWA STANDARD DETAIL ESC 10-11. REMOVE AND RELOCATE AS NECESSARY FOR CONSTRUCTION.
2. APPROXIMATE LOCATION OF VEHICLE TRACKING CONTROL. CONTRACTOR TO INSTALL PER APWA STANDARD DETAIL ESC-01. LOCATION CAN BE ADJUSTED AS NEEDED FOR CONSTRUCTION.
3. CONTRACTOR TO PROVIDE INLET PROTECTION PER APWA STANDARD DETAILS.
4. CONCRETE WASHOUT PER APWA STANDARD DETAILS

NOTE
EROSION CONTROL FEATURES NEED TO BE INSTALLED PRIOR TO LAND DISTURBANCE AND MAINTAINED THROUGHOUT THE DURATION OF OPERATIONS. WE NEED TO CONTAIN THE SILT TO THIS SITE AND KEEP THE ADJACENT STREETS FREE OF MUD AND DEBRIS AT ALL TIMES WHICH MAY INCLUDE ADDITIONAL EROSION CONTROL FEATURES NOT INCLUDED IN THESE PLAN IF IT IS DETERMINED THAT THE CURRENT PLAN IS INADEQUATE.

EROSION & SEDIMENT CONTROL MEASURES IN PLACE SHALL BE CHECKED & MAINTAINED WEEKLY OR WITHIN 24 HOURS FOLLOWING A RAIN MEASURING GREATER THAN 0.5 INCHES IN 24 HOURS AS RECORDED AT KCI AIRPORT.



PHASE II

= PROPOSED SILT FENCE

= INLET PROTECTION

= CONCRETE WASHOUT

PHASE I

= PROPOSED SILT FENCE

= INLET PROTECTION

= VEHICLE TRACKING CONTROL. INSTALL PER APWA STANDARD DETAIL ESC-01.

MARK	REVISION	DATE	BY
Engineer: SD	Checked By: SD	Scale: 1"= 60'	
Technician: JS	Date: 3-18-21	Field Bk:	
Snyder & Associates Engineers & Planners, Inc.			Sheet 5
Missouri State Certificate of Authority #2000006544			

STATE OF MISSOURI

SHAWN DUKE

NUMBER PE-2013006489

PROFESSIONAL ENGINEER

SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT

EROSION & SEDIMENT CONTROL PLANS

EROSION CONTROL PLAN : PHASE 2

LEE'S SUMMIT, MO

802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222

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Sheet 5

PHASE 1 WORK SCHEDULE

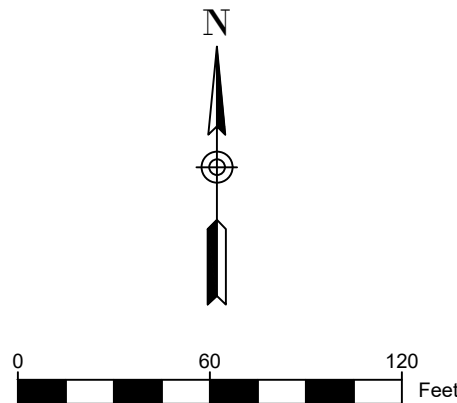
1. INSTALL PERIMETER SILT FENCE
2. INSTALL CONSTRUCTION ENTRANCE.
3. INSTALL INLET PROTECTION FOR EXISTING INLETS

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7. REMOVE TEMPORARY CONSTRUCTION ENTRANCES.



LEGEND:

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716 = PROPOSED CONTOUR

EROSION CONTROL PLAN - CONSTRUCTION NOTES

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NOTE
INLET PROTECTION AND SILT FENCE SHALL BE REMOVED BY CONTRACTOR/OWNER AT SUCH ALL UPSTREAM DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

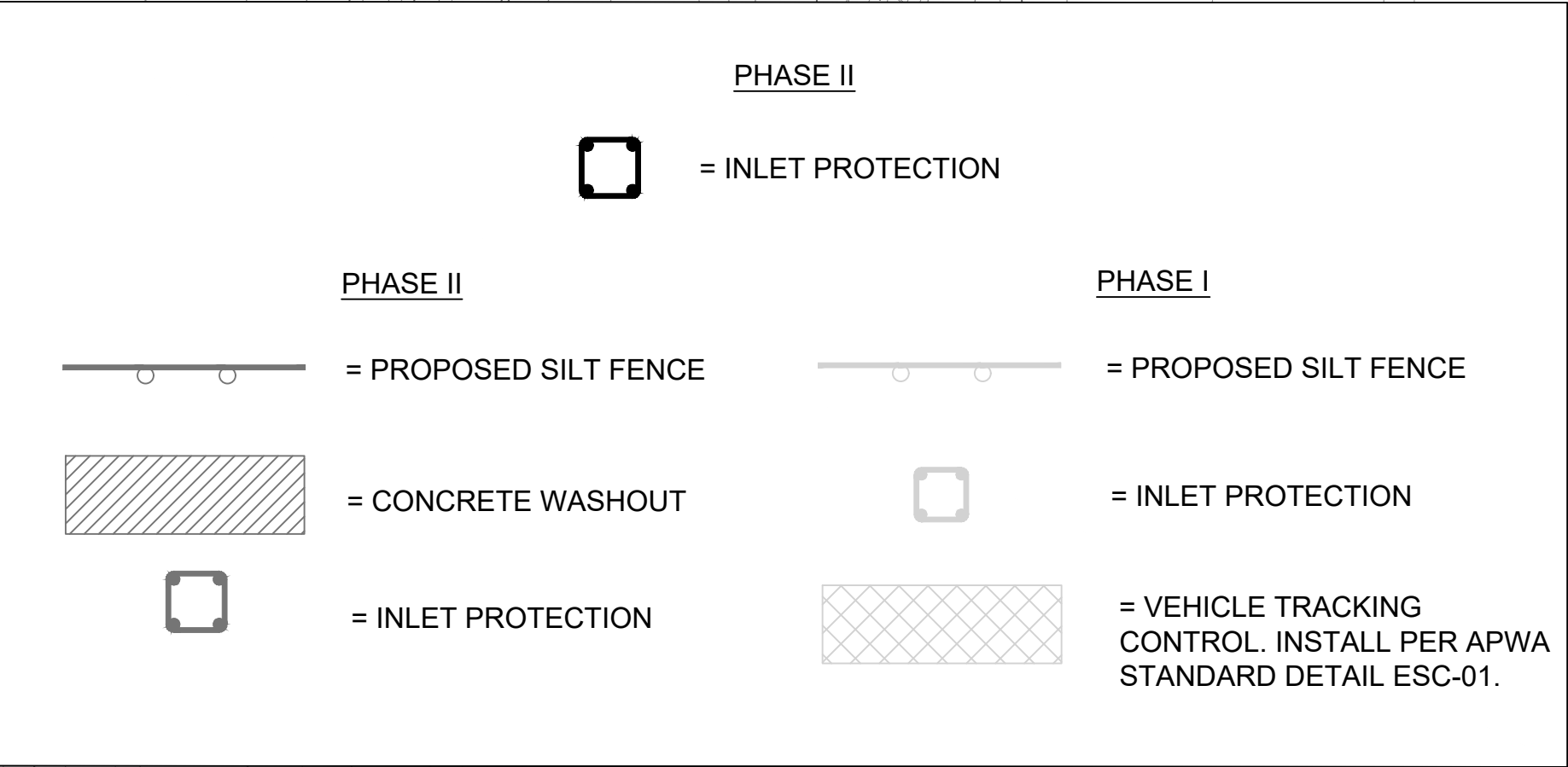
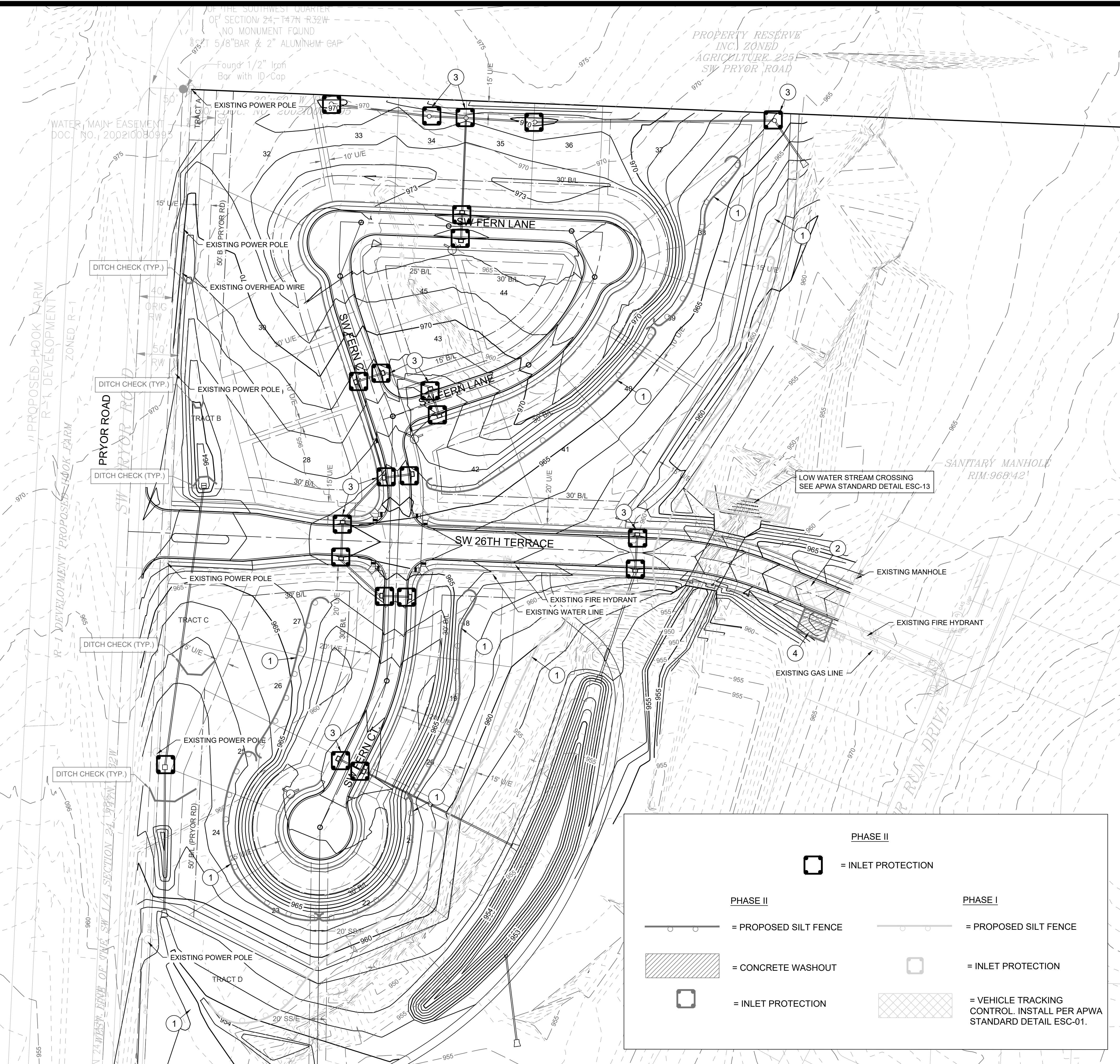
NOTE
ALL SLOPES GREATER THAN 4:1 WILL BE EVALUATED FOR USE OF MATS/BLANKETS

EROSION CONTROL PLAN - CONSTRUCTION NOTES

CONTRACTOR TO STABILIZE SITE IN PHASE III

NOTE
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WHISPERING WOODS 3RD PLAT
EROSION & SEDIMENT CONTROL PLANS

EROSION CONTROL PLAN : PHASE 3

LEE'S SUMMIT, MO

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ENGINEERS & PLANNERS, INC.
802 FRANCIS STREET
ST. JOSEPH, MO 64501
816-364-5222
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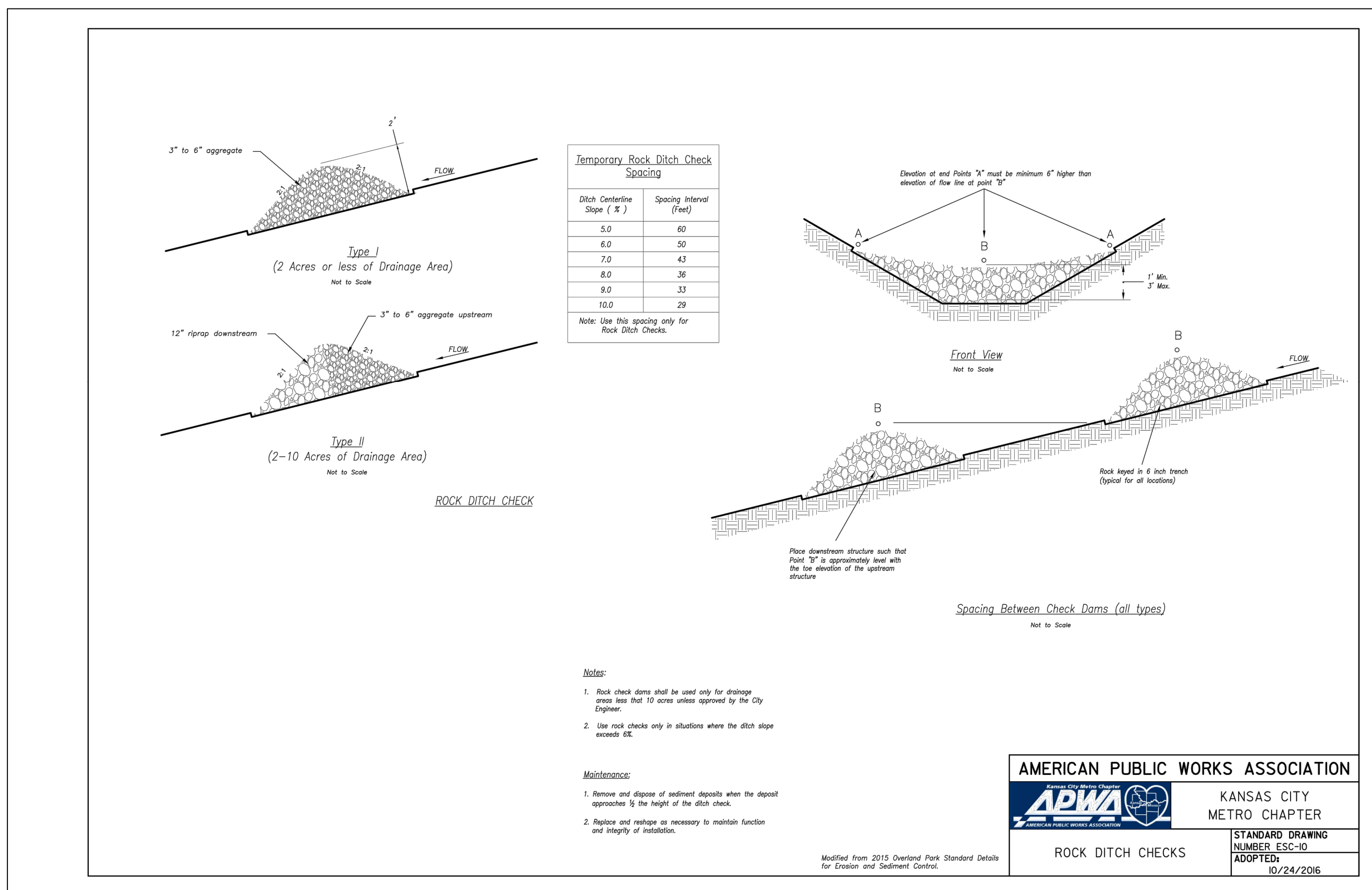
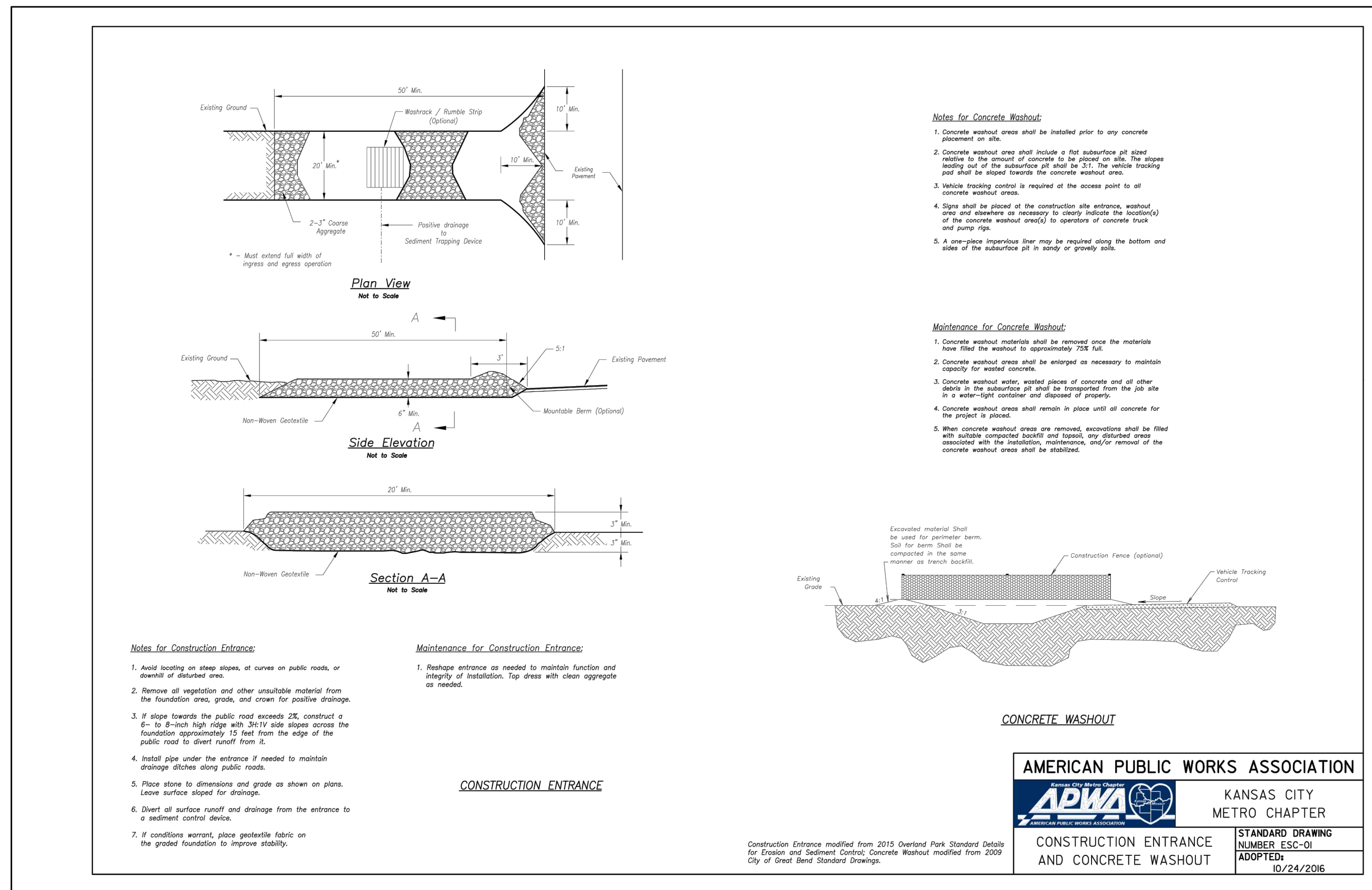
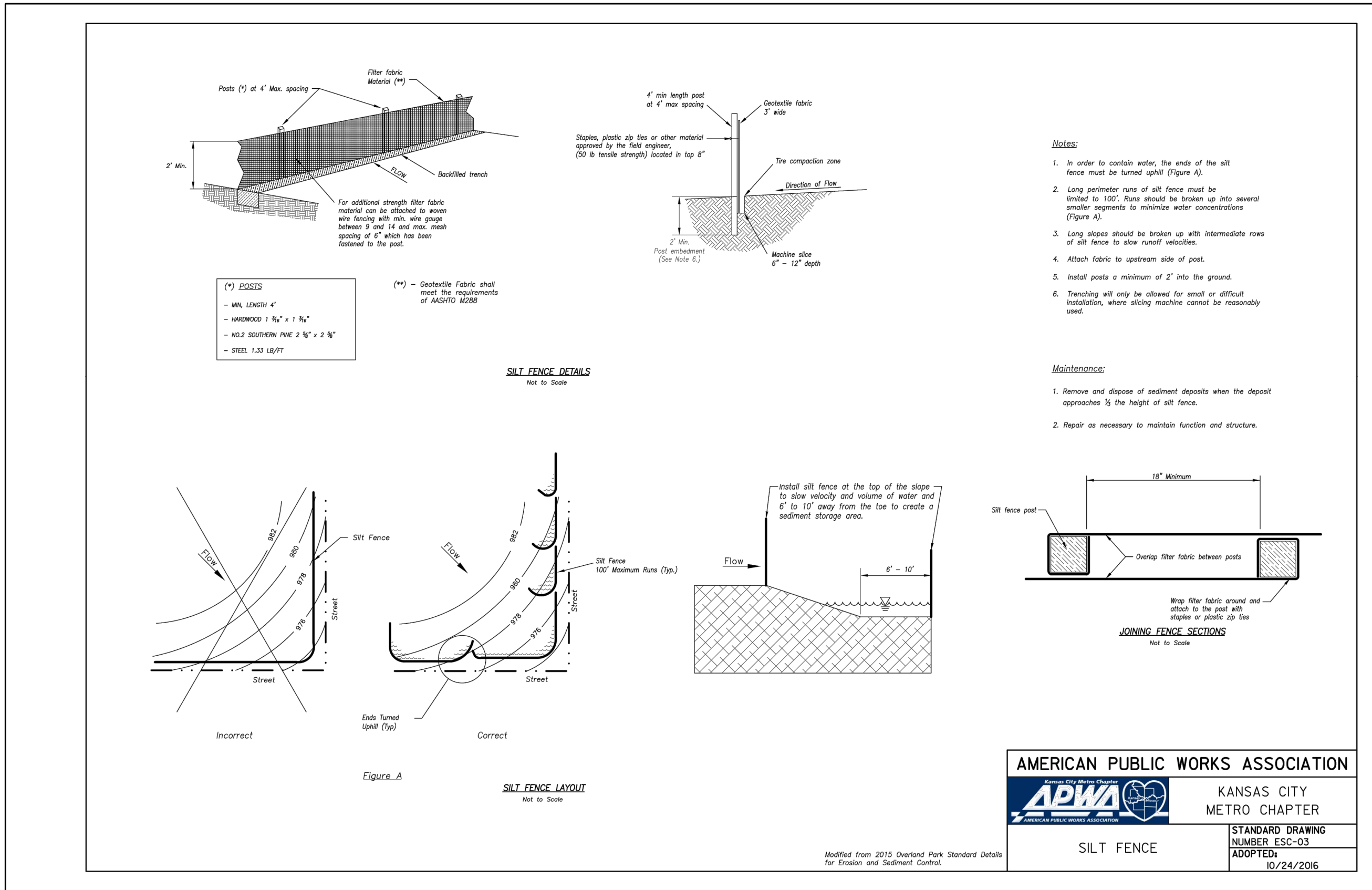
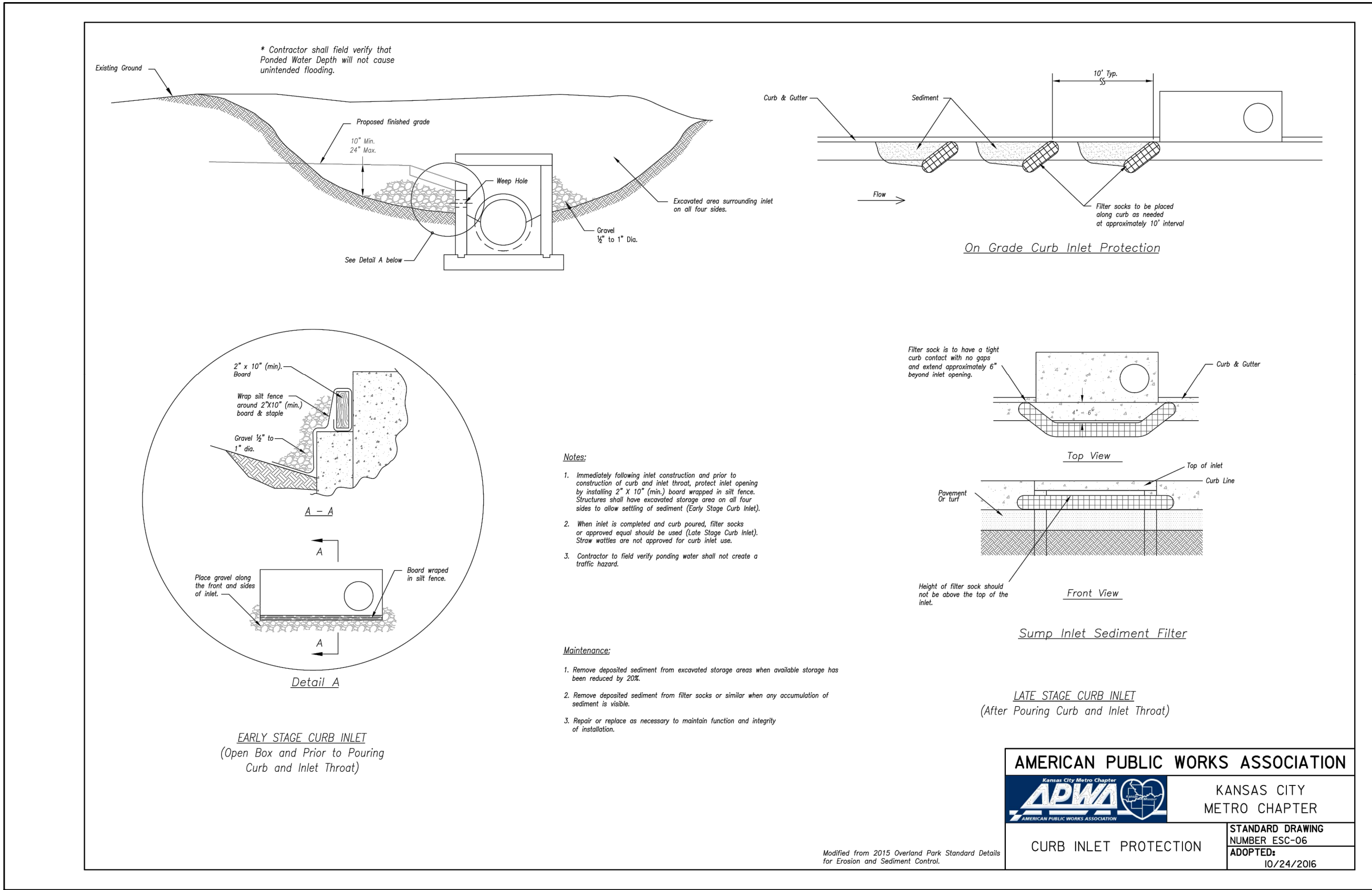
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Sheet 6



SHAWN DUKE - ENGINEER
MO PE#2013006489

MARK	REVISION	DATE	BY
Engineer:	SD	Checked By: SD	Scale: 1"= 60'
Technician:	JS	Date: 3-18-21	Field Bk: Pg:
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Missouri State Certificate of Authority #200006544			



MARK	REVISION	DATE	BY
		1"= NA	
Engineer:	SD	Checked By:	SD
Technician:	JS	Date:	3-5-21
Field Bk:			8
Sheet			8
Snyder & Associates Engineers & Planners, Inc.			
Missouri State Certificate of Authority #200006544			



LEE'S SUMMIT, MO

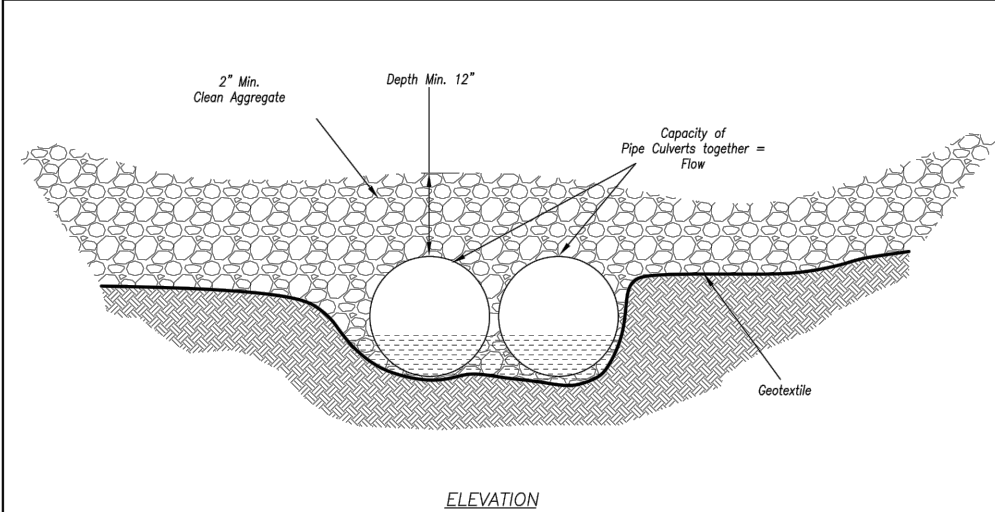
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816-364-5222

WHISPERING WOODS 3RD PLAT
EROSION & SEDIMENT CONTROL PLANS
EROSION CONTROL DETAILS

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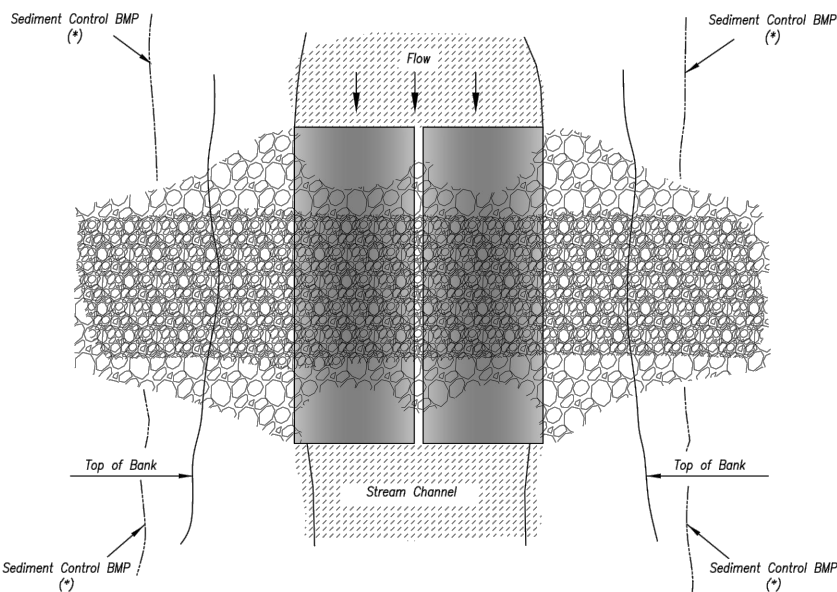


Maintenance:

1. Repair stream bank erosion by stabilizing with erosion control BMP's such as erosion control blankets.
2. For in-stream degradation, armor the culvert outlet(s) with riprap to dissipate energy.
3. If sediment or debris is accumulating upstream of the crossing, remove as needed to maintain the functionality of the crossing.
4. If a temporary crossing is requiring excessive maintenance, replacement with a larger culvert or alternate design may be necessary.

Notes for Temporary Stream Crossing:

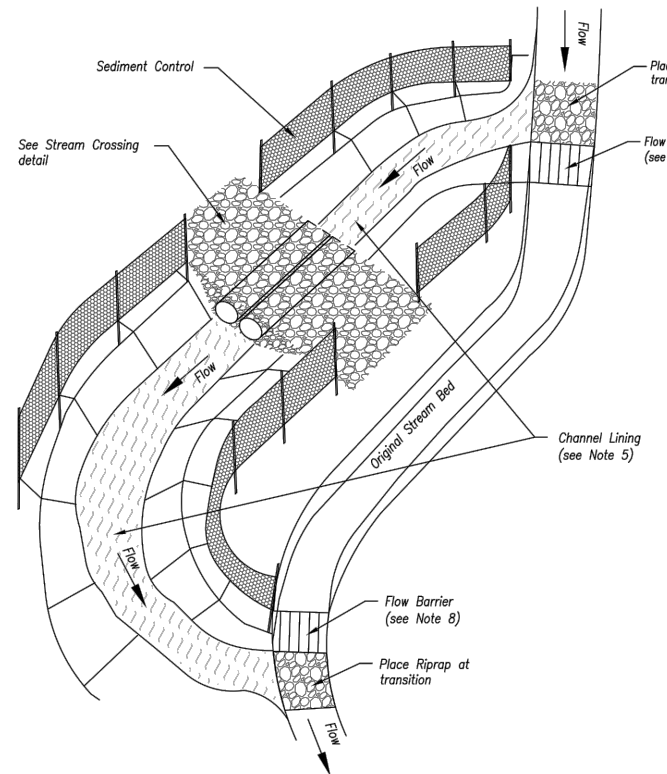
1. Clearing and excavation of the stream bed and banks shall be kept to a minimum.
2. Place one pipe buried 6" into the stream bottom, at the lowest point of the channel to allow the passage of aquatic organisms. Additional pipes shall be placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overlapping the crossing. (See Specification for more information).
3. Geotextile shall be placed on the streambed and streambanks prior to placement of the pipe culvert and aggregate. The geotextile shall cover the streambed and extend a minimum of 6 inches and a maximum of 1 foot beyond the end of culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.
4. The culvert shall extend a minimum of 1 foot beyond the upstream and downstream toe of the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.
5. The culvert shall be covered with a minimum of 1 foot of aggregate. If multiple culverts are used, they shall be separated by at least 12" of compacted aggregate fill.
6. As soon as crossing no longer needed, all structures including culverts, bedding and geotextile materials shall be removed. Removal of the structure and clean-up of the area shall be accomplished without construction equipment working in the channel.
7. Upon removal of the structure, the stream and banks shall immediately be shaped to its original cross-section and properly stabilized. Take care to minimize the amount of sediment lost into the stream.



PLAN VIEW

* - Install as shown on plans

TEMPORARY STREAM CROSSING



Notes for Temporary Diversion Channel:

1. The diversion channel crossing must be operational before work is done in the stream. Construction will be performed in the dry.
2. Minimum width of bottom shall be 6 feet or equal to bottom width of existing streambed, whichever is less.
3. Maximum steepness of side slopes shall be 2H:1V. Depth and grade may be variable, dependent on site conditions, but shall be sufficient to ensure continuous flow of water in diversion.
4. Channel must be lined with riprap or turf reinforcement mat depending on the expected velocity and shear stress in the channel.
5. Stream diversion liners shall be secured at the upstream and downstream sides with non-erodible weights such as riprap. These weights shall allow normal flow of the stream. Soil shall not be mixed with stream diversion weights. Weights may also be needed along the diversion's length to secure liner.
6. Stream diversion liners shall be entrenched at the top of slopes along with a sediment control BMP.
7. Non-erodible materials such as riprap, Jersey barriers, sand bags, plywood, or sheet piling shall be used as flow barriers to divert the stream away from it's original channel and prevent or reduce water backing into the construction area.
8. Stream should be re-diverted only after backfilling and re-stabilization of original streambed and banks is completed.

STREAM DIVERSION CHANNEL

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY
METRO CHAPTER

STREAM CROSSINGS AND
DIVERSION CHANNELS

STANDARD DRAWING
NUMBER ESC-13
ADOPTED:
10/24/2016



SHAWN DUKE - ENGINEER
MO PE#2013006489

WHISPERING WOODS 3RD PLAT
EROSION & SEDIMENT CONTROL PLANS

EROSION CONTROL DETAILS

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