Stormwater Pollution Prevention Plan
for Construction Activities at:

Public Improvements and Onsite Construction to Serve Wilshire Hills Phase III

Wilshire Drive
Lee's Summit, Missouri

Operator(s):

Wilshire Hills III, L.P.
206 Peach Way
Columbia, Missouri 65202
Contact: Brian Kimes (573)424-8811

SWPPP Authorized Representative(s):

(to be filled in by Contractor after award of contract)

Company Name: _____
Company Address: _____
_____
Contact Name: _____
Contact Phone: _____

Prepared by:

Engineering Surveys & Services
1113 Fay Street
Columbia, MO 65201
Phone: 573-449-2646
Missouri Engineering Corp. # 2004005018

Project Number: 15925

6/22/23

SWPPP Preparation Date:

June 22, 2023

Estimated Project Dates:
Project Start Date: September 2023
Project Completion Date: September 2024

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SWPPP APPENDICES

SECTION 1: SWPPP BASICS

1.1 GENERAL PERMITS FOR STORMWATER DISCHARGE FROM CONSTRUCTION SITES

The Clean Water Act and associated federal regulations require nearly all construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more, including smaller sites in a larger common plan of development or sale, to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit for their stormwater discharges. Under the NPDES program, the U.S. Environmental Protection Agency (EPA) has authorized the State of Missouri to implement the federal requirements and issue stormwater permits. The Missouri Department of Natural Resources (MDNR), as administrative agent for the Missouri Clean Water Commission, issues these permits as land disturbance permits. To obtain the permit for compliance with the regulations for land disturbance it is necessary to request coverage under the MDNR Missouri State Operating Permit – General Permit. The permit was obtained through MDNR's ePermitting process available online and is included in Appendix A.

Local requirements by the City of Lee's Summit also require the submittal of their land disturbance permit application and a construction plan(s) prepared for the site. The construction plan(s) consists of two parts: site grading and erosion control map(s)/plan(s), and a site-specific written document that identifies and describes stormwater pollution sources and prevention methods referred to as a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP for the site must be prepared and followed during construction activities in accordance with the state NPDES Permit and local Lee's Summit requirements. Plans and SWPPP must be approved by the City of Lee's Summit prior to commencement of construction activities.

1.2 BEST MANAGEMENT PRACTICES

If sediment and erosion controls and good housekeeping practices are not followed, construction activity can result in the discharge of significant amounts of sediment and other pollutants via stormwater runoff. The term Best Management Practices or BMPs is often used to describe the controls and activities used to prevent stormwater pollution. BMPs can be divided into two main categories – structural and non-structural BMPs. Structural BMPs include silt fences, sedimentation ponds, erosion control blankets, and temporary or permanent seeding, while non-structural BMPs include picking up trash and debris, sweeping up nearby sidewalks and streets, maintaining equipment, and training site staff on erosion and sediment control practices. In this document, the term "BMPs" is used broadly and includes both structural and non structural controls and practices.

1.3 PURPOSE OF STORMWATER POLLUTION PREVENTION PLAN

The purpose of the SWPPP is to ensure the design, implementation, management, and maintenance of BMPs in order to reduce the amount of sediment and other pollutants in storm water discharges associated with the land disturbance activities; comply with Missouri Water Quality Standards; and ensure compliance with the terms and conditions of the land disturbance permits(s). Copies of these permits shall be included in Appendix A. The SWPPP document shall:

- Identify potential sources of stormwater pollution at the construction site
- Describe practices to reduce pollutants in storm water discharges from the construction site.
- Identify procedures the Operator will implement to comply with the terms and conditions of the land disturbance permit(s).

1.4 NOTICE OF INTENT

The Operator has petitioned for storm water discharges associated with the land disturbance activities at this site to be covered by Missouri's MDNR Operating Permit – General Operating Permit and the City of Lee's Summit Land Disturbance Permit. The MDNR permit was obtained through MDNR's ePermitting process available online and is included in Appendix A. The application for the City of Lee's Summit Land Disturbance Permit is included in

Appendix B. This serves as the Notice of Intent (NOI) for the project.

1.5 AUTHORIZED REPRESENTATIVE

All reports, including SWPPPs and inspection reports, must be signed by the Operator or a duly authorized representative of that entity. For this project the Operator has chosen to designate the Contractor as an authorized representative as indicated in the signed statement located in Appendix C.

1.6 RESPONSIBILITIES OF THE CONTRACTOR

The authorized representative, or Contractor, shall be responsible for the management of the discharge of stormwater from the site in accordance with the Missouri NPDES General State Operating Permit, City of Lee's Summit Land Disturbance Permit conditions and the provisions of this SWPPP. The Contractor shall be responsible for implementing all aspects of this SWPPP and conducting the stormwater management practices in accordance with the permit(s). The Contractor shall be responsible for providing qualified inspectors to conduct the inspections required by this SWPPP and for notifying each subcontractor or entity (including utility crews and city employees or their agents) who will perform work at the site of the existence of the SWPPP and what actions or precautions shall be taken while on site to minimize the potential for erosion and damage to BMPs. The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions. It shall be the responsibility of the Contractor to make any changes to the SWPPP necessary when the Contractor or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The Contractor should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

1.7 RESPONSIBILITIES OF THE CONTRACTOR TO OPERATOR

The Contractor shall monitor the suitability of the designated management practices to achieve the stormwater quality provisions of the permit(s) and shall notify the Operator of the need to change management practices if necessary. If changes are ordered by the Operator, an adjustment in the Contractor's fee shall be considered in accordance with the General Conditions of the specifications. However, the Contractor's failure to monitor or report deficiencies to the Operator shall result in the Contractor being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

1.8 AUTHORIZED REPRESENTATIVE AND SUBCONTRACTORS CERTIFICATION

The SWPPP Authorized Representative Certification must bear the signature of an authorized representative of the Contractor certifying that they are familiar with the terms and conditions of the MDNR Operating Permit – General Operating Permit, City of Lee's Summit Land Disturbance Permit, and shall comply with the requirements of the SWPPP developed for this construction site. The Authorized Representative is responsible for ensuring that all contractors and subcontractors whose activities provide the potential for storm water pollution comply with the SWPPP. Some Contractors require each subcontractor whose activities provide the potential for storm water pollution to sign the SWPPP Subcontractor's Certification and make the same certification as the Authorized Representative. These forms are located in Appendixes C and D of this document. Copies of these pages shall be created as necessary to accommodate all subcontractors for this project. For easier tracking, a List of Subcontractors is provided in Appendix E to be filled out by the Contractor. All of the signed forms shall be kept in Appendixes C thru F as part of this document.

1.9 ONSITE REQUIREMENTS AND PUBLIC NOTICE

The Contractor shall keep a copy of the SWPPP maps and the SWPPP with all related documents onsite when land disturbance operations are in progress, or other operational activities that may affect the maintenance or integrity of

the BMP structures are in progress. The SWPPP must be made available to any stormwater regulatory authorities upon request.

The Contractor shall post and maintain a copy of the public notification information required in the MDNR Land Disturbance Permit included in Appendix A and the notice included in Appendix K at the main entrance to the site. The public notification sign must be visible from the public road that provides access to the site's main entrance. The public notification sign must remain posted at the site until the permit has been terminated.

SECTION 2: COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

2.1 GENERAL

The Contractor shall obtain copies of any and all federal, state, and local regulations that are applicable to stormwater management, erosion control, and pollution minimization at this job site and shall comply fully with such regulations. The Contractor shall submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor shall comply with all conditions of the MDNR Operating Permit – General Operating Permit, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

SECTION 3: SITE EVALUATION, ASSESSMENT, AND PLANNING

3.1 PROJECT/SITE INFORMATION

Project/Site Name: Wilshire Hills Phase III
Project Street/Location: Wilshire Drive
City: Lee's Summit State: MO ZIP Code: 64064
County or Similar Subdivision: Boone County

Latitude/Longitude:

Latitude: 38.970009 º (decimal degrees)

Longitude: -94.366822º (decimal degrees)

Method for determining latitude/longitude:

☐ USGS topographic map (specify scale: _____) ☐ EPA Web site ☐ GPS

☒ Other (please specify): Google Earth

Is the project located in Indian country? ☐ Yes ☒ No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable." N/A

Is this project considered a federal facility? ☐ Yes ☒ No

NPDES project or permit tracking number*: _____

**(contractor hand write in MDNR General Operating Permit number from Appendix A)*

A general location map (i.e., USGS National map) with enough detail to identify the location of the construction site, direction of storm water flow, the receiving water within one (1) mile of the site, locations of off-site material, waste, borrow, and equipment storage areas (if applicable), and storm water discharge locations as required by MDNR is included in Appendix J.

3.2 CONTACT INFORMATION/RESPONSIBLE PARTIES

Operator(s):

Wilshire Hills III, L.P.
206 Peach Way
Columbia, MO 65203

SWPPP Authorized Representative(s) (can be: general contractor: project/construction manager(s) or site supervisor(s); see also APPENDIX C): *(to be filled in by Contractor after award of contract)*

Company or Organization Name:_____

Address: _____

City, State, Zip Code: _____

Contact Name: _____

Contact Telephone Number: _____

Contact Email: _____

Insert area of control (if more than one operator at site) : _____

_____

Repeat as necessary

General Contractor: (can be Project/Construction Manager(s) or Site Supervisor(s)):
(to be filled in by Contractor after award of contract)

Company or Organization Name:_____

Address: _____

City, State, Zip Code: _____

Contact Name: _____

Contact Telephone Number: _____

Contact Email: _____

Insert area of control (if more than one operator at site) : _____

_____

Repeat as necessary

This SWPPP was Prepared by:

Engineering Surveys & Services
1113 Fay Street
Columbia, MO 65201
Matthew Kriete
Phone: 573-449-2646
mkriete@ess-inc.com

Subcontractor(s):

See Appendix E

Emergency 24-Hour Contact: *(to be filled in by Contractor after award of contract)*

Company or Organization Name:

_____

Contact Name:

_____

Contact Telephone Number:

_____

3.3 NATURE AND SEQUENCE OF CONSTRUCTION ACTIVITY

The general scope of the work for the project is as follows:

The project consists of construction of a 50 unit, three story, senior living building and associated parking lots, sewer and utility systems. Offsite work will include the extension of Wilshire Drive as well as a large regional detention basin for future development. The project shall be built in one phase. Soil disturbing activities will include: clearing and grubbing, installing erosion and sediment controls, grading, installation of underground utilities, building foundations, parking lot construction, and preparation for final seeding, mulching, and landscaping.

What is the function of the construction activity?

☐ Residential ☒ Commercial ☐ Industrial ☐ Road Construction ☐ Linear Utility

☐ Other (please specify):

Estimated Project Start Date: **09 / 07 / 2023**

Estimated Project Completion Date: **09 / 27 / 2024**

3.4 SOILS, SLOPES, VEGETATION, AND CURRENT DRAINAGE PATTERNS

Soil type(s): The current soil type is sandy, silty clay.

Slopes (describe current slopes and note any changes due to grading or fill activities): Pre project the site consisted of previously cleared flat pad along the site frontage. The rear of the site rises steeply at a 3:1 slope to the top of the hill. Post project the majority of the site will be flatter at 2-5% slopes with 3:1 daylight slopes and a large retaining wall along the back portion of the site.

Drainage Patterns (describe current drainage patterns and note any changes due to grading or fill activities): Pre project the site for Wilshire Hills Phase III sheet flows to the east before draining into an existing stream. Post development the site will drain into a designed channel before flowing into a large permanent detention basin. This will discharge into the existing wing walls of the culvert of May Brook Creek.

Pre Project the entirety of the road development drains to the east with an additional 7 acres of offsite water flowing onto the site. This water then drains into to existing sediment basins before entering May Brook Creek.

Vegetation: Pre project the entire site consisted of previously graded agriculture fields with a grass/brush mix. Post project the site will consist of impervious areas and landscaped green space areas.

Other: The site will contain a large 18 foot retaining wall along the west side of the site. This wall will end leaving a large slope in the back yard portion of the site. Wilshire Drive will be extended to its intersection with Strother Road.

3.5 CONSTRUCTION SITE ESTIMATES

The following are estimates of the construction site.

Total site area:	20.78 acres
Construction project area to be disturbed:	8.65 acres
Percentage impervious area before construction:	0.0 %
Runoff coefficient before construction:	0.30
Percentage impervious area after construction:	11.5 %
Runoff coefficient after construction:	0.37

$$[0.30(7.63) + 0.90(1.02)] / 8.65 = 0.00$$

Estimated disturbed area of off-site borrow and fill areas: 0.00 acres

3.6 RECEIVING WATERS

Description of receiving waters: An unnamed tributary of May Brook Creek. These waters are not listed by MDNR as 303d impaired waters or waters subject to Total Maximum Daily Loads (TMDLs). Verification can be found with the current 303d List printed from the MDNR website and placed in Appendix P.

Description of receiving storm sewer systems: City of Lee's Summit storm sewer system.

Stormwater velocity reduction methods at outfall(s): All outfalls will consist of flared end sections with rip-rap and geotextile fabric.

3.7 JURISDICTIONAL WETLANDS AND/OR OTHER SURFACE WATERS

A non-jurisdictional stream, May Brook, is located on the site. It has been previously contained by a box culvert and discharges into an energy dissipator and a protected area. This stream or culvert is not to be disturbed for this project. Verification from the U.S. Corps of Engineers is provided in Appendix R.

3.8 SITE FEATURES AND SENSITIVE AREAS TO BE PROTECTED

Sensitive areas and features are located on the site but there is no disturbance proposed. This area is marked for protection on plans and is not to be disturbed.

3.9 POTENTIAL SOURCES OF POLLUTION

Sediment is the principal stormwater pollutant of concern for this project. There are, however, other pollutants that may be found, usually in substantially smaller amounts, in stormwater runoff from construction sites. Potential sources of pollutants to stormwater runoff from this project are noted in the following table:

Potential Construction Site Pollutants		
Possible Source	Pollutants	Location

	Sediment	Nutrients	Heavy Metals	pH (acids & bases)	Pesticides & herbicides	Oil & grease	Bacteria & viruses	Trash, debris, solids	Other toxic chemicals	
Clearing & Grubbing	X							X		Within clearing limits
Grading & site excavation	X									Within grading limits
Vehicle Tracking	X					X				Construction roads onsite and/or nearest public roadway(s) providing site access
Topsoil stripping & stockpiling	X									Within grading limits
Paving Operations	X							X		Paving areas
Concrete washout & waste			X	X				X		Designated concrete wash out area(s)
Structure construction/painting/ cleaning		X		X				X	X	Structure location(s) & designated wash out area(s)
Demolition and debris disposal	X							X		Demo areas
Dewatering operations	X	X								Where necessary. Typically footing and trenching locations.
Drilling and blasting operations	X			X				X		Where necessary in cut areas.
Material delivery and storage	X	X	X	X	X	X		X	X	Designated staging area(s)
Material use during building process		X	X	X	X	X		X	X	Building construction area(s)
Solid waste (trash and debris)								X	X	Designated trash receptacle(s)
Hazardous waste			X	X	X	X			X	Designated staging area(s) and building construction area(s)
Contaminated spills		X	X	X	X	X			X	Designated staging areas and building construction area(s)
Sanitary/septic waste		X		X			X		X	Designated port-a-potty area(s)
Vehicle/equipment use and storage						X			X	Designated vehicle storage and refuel area(s)
Landscaping operations	X	X						X		Landscaping area(s)

3.10 ENDANGERED SPECIES CERTIFICATION

Is there evidence of endangered/threatened species or critical habitats on or near the project area?

☐ Yes ☒ No

Describe how this determination was made:

Past disturbance shows the area has been graded for urban development. No habitat is currently present.

If yes, describe the species and/or critical habitat: N/A

3.11 MAPS

All site maps for this SWPPP shall be the following civil construction plan sheets prepared for this project:

Sheet #	Plan Title	Plan Date
C0.01	Cover Sheet	Latest sealed date by Civil Engineer and approved by authority having jurisdiction.
C0.02	General Notes	
C0.03	Typical Road Sections	
V1.01-V1.02	Boundary and Topographic Survey	
C1.01	Overall Public Plan	
C1.02-C1.03	Wilshire Drive Extension Road Plan & Profile	
C1.04-C1.08	Wilshire Drive Extension Cross Sections	
C2.01-C2.04	Grading and Storm Sewer Plan	
C3.01	Storm Sewer Profiles	
C4.01	Sanitary Sewer Extension Plan & Profile	
C5.01	Utility Extension Plan & Profile	
C6.01	Erosion Control Plan	
C7.01-C7.02	Road Plan Details	
C8.01-C8.02	Public Storm Sewer Details	
C9.01	Public Sanitary Sewer Details	
C10.01	Public Water Details	
C11.01-C11.03	Public Erosion Control Details	

The Contractor shall make copies of the site maps, fold them, and put them in the onsite SWPPP for documentation. The Contractor shall then track progress and document maintenance or amendments to the SWPPP via dating and redlining these site maps. If a redlined plan becomes to full to be easily legible and understood, simply date and fold it, put it in the onsite SWPPP for documentation, and start a new one. That way, there is a good hard copy record of what has occurred onsite.

Site maps should show the construction activities and stormwater management practices for each major phase of construction (initial grading, infrastructure, construction, and stabilization). Site maps should identify the following features:

- € Stormwater flow and discharges
- € Areas and features to be protected
- € Disturbed areas (locations and timing of activities)
- € Clearing limits
- € Identify locations of structural and non-structural BMPs
- € Identify locations of Post-construction BMPs
- € Areas of stabilization
- € Indicate locations of material, waste, borrow, or equipment storage

The site maps should show changes that have been made to the construction site, and BMPs and stabilization methods as the site progresses. The SWPPP shall be kept up to date, so redline the site maps with the locations and dates of any changes being made. Also include the current locations of the following:

- € Portable toilets
- € Material storage, vehicle and equipment fueling and maintenance areas
- € Concrete, paint and stucco washouts
- € Dumpster containers
- € Spill kits
- € Stockpiles
- € All other BMPs and whatever changes have been done to them

- € Environmentally sensitive areas
- € Stream buffers
- € SWPPP amendments

SECTION 4: EROSION AND SEDIMENT CONTROL BMPS

4.1 GENERAL

The BMPs shall be constructed or applied in accordance with this SWPPP, maps or construction plans, and all State or local requirements. Good engineering practices shall be used if there is a lack of information or changes are proposed for a BMP. The Contractor shall install the BMPs in the order indicated in the construction plans. BMPs shall be applied within the timeframe specified in the permit.

The Contractor shall be responsible for implementing all aspects of the SWPPP, including all BMPs. The Contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these BMPs and ensuring their proper functioning remains with the Contractor. An Implementation Schedule can be found in Appendix G.

To ensure that controls are adequately implemented, it is important that the work crews who install the BMPs are experienced or adequately trained. Improperly installed BMPs have little or no effect and may adversely affect the pollution of stormwater. It is important that all workers on the construction site are aware of the BMPs so they do not inadvertently disturb or remove them.

Additional information for BMPs are available in the latest version of: "Protecting Water Quality: a field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas", available on the MDNR website.

4.2 MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL

BMP:	**Topsoiling: Removal, Stockpiling, and Replacement**
Responsible Staff:	
Location:	Within project grading areas only.
Installation Schedule:	After all perimeter erosion and sediment controls are in place and after clearing and grubbing is completed.
Description:	
Topsoil shall meet the definition provided in the specifications. If specifications are not provided it shall be defined as the top layer of the soil profile usually richest in organic matter and nutrients consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches (50 mm) in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials. A pH range of 5.0-7.5 is acceptable. Topsoil will be stripped to a minimum depth of 4" or as indicated in the geotechnical report or specifications for the project. Depths of removal may also vary as encountered in the field and directed by the geotechnical engineer. The topsoil will be stockpiled where indicated in the civil construction plans. The stockpile(s) will be in areas that will not interfere with construction phases and at least 15 feet away from concentrated flows. A silt fence shall immediately be installed around the perimeter of each stockpile, in accordance with silt fence design specifications per this SWPPP. If stockpiles are to remain for longer than 14 days, they shall be temporarily seeded as indicated in this SWPPP. Stockpiles that will remain longer than 6 months shall be permanently seeded as indicated in this SWPPP. All rough grading operations within landscape areas shall be completed 4" below finish grade to allow the placement of 4" of topsoil (or depth per specifications). To provide an optimum	

growing medium and allow for rainfall infiltration, the topsoil shall be placed in one lift with light compaction not to exceed 85-90% maximum dry density according to ASTM D698. Do not drive over any areas of topsoil placement to avoid further compaction.
Maintenance & Inspection:
All areas shall be inspected during routine SWPPP inspections to ensure the stockpiles and surrounding silt fence(s) are stable and functioning as intended. Inspect the silt fence(s) per the silt fence BMP description in this SWPPP. If required, inspect vegetation establishment on stockpile and correct as necessary. Inspect topsoil that has been spread for erosion, over compaction, and poor vegetation establishment. Correct over compacted areas by tilling 4" deep and smoothing and reseeding or sodding. Determine cause of erosion and correct as necessary immediately. Fertilize, reseed and mulch, (or resod if required) and water all areas of poor vegetation establishment.

Removal Requirements:	At the completion of the project, remove all silt fence from stockpiles. Remove all stockpiles by spreading leftover topsoil onsite in areas directed by Operator. Seed, mulch, and water all disturbed areas.

4.3 PHASE CONSTRUCTION ACTIVITY

BMP:	**Phased Grading**
Responsible Staff:	
Location:	Project grading limits.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
Onsite grading will be composed of three stages: initial, intermediate, and final grading. Each stage of grading and its required BMPs are indicated in the civil construction plans. To minimize potential erosion, only areas where immediate earthwork is needed shall be graded. Erosion and sediment controls shall be implemented immediately after construction but no later than 14 days after construction ceases.	
Maintenance & Inspection:	
Responsible staff shall be constantly aware of the construction schedule and make whatever adjustments may be necessary to minimize the amount of disturbed area at any one time. Inspections shall be made weekly to ensure all graded areas are property stabilized immediately after completion of construction or if there will be a break in land disturbance activities longer than 14 days.	

4.4 PERMANENT STRUCTURAL BMPs

BMP:	**Inlet Filters**
Responsible Staff:	
Location:	Where indicated in the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
Inlet filters are manufactured cleanable/maintainable filters placed inside storm sewer structures designed to remove trash, debris, coarse sediments, and sometimes oil from stormwater runoff entering the inlet. They are typically installed just below the frame and grate or sill opening of the inlet structure. Install per the manufacturer's written instructions.	
Maintenance & Inspection:	
All units shall be inspected during routine SWPPP inspections for proper functioning, clogging, sediment build up, structural integrity, and as recommended by the manufacturer. Clean the filters and remove all trash, debris,	

fluids, and sediment from all units every month minimum, or as recommended by the manufacturer, during construction. Items removed from unit(s) shall be disposed of offsite as legally allowed. All repairs/maintenance shall be done immediately.

BMP:	**Rip-Rap**
Responsible Staff:	
Location:	Where indicated in the civil construction plans.
Installation Schedule:	Immediately after completion of storm sewer outlet structure and/or completion of finish grading in rip-rap area(s).
Description:	
Rip-rap consists of large rock placed over a geotextile fabric on the ground around in areas of concentrated stormwater flow. Typically these areas are immediately downstream of storm sewer flared end sections and at basin emergency spillways. The can also line drainage channels and stream banks. The purpose of rim-rap is to provide a rough, stable media that will slow the stormwater down as it overland flows across the rip-rap. This reduction in velocity will reduce erosion. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All rip-rap shall be inspected during routine SWPPP inspections for proper functioning, stability, trash build up, clogging, piping, scour holes, dislodged rock, and structural integrity. Remove all weed and brush growth and apply herbicide at least once during the growing season. All repairs/maintenance shall be done immediately.	

BMP:	**Vegetated Swales/Channels**
Responsible Staff:	
Location:	Where indicated in the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
Vegetated swales/channels consist of broad, shallow, constructed channels with a dense stand of turf grass covering. They may have an erosion control blanket for added erosion protection and typically have a trapezoidal cross section. Their intent is to convey concentrated overland flow in a slow manner to promote infiltration and reduce erosion/maintenance. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All swales/channels shall be inspected during routine SWPPP inspections for proper vegetation establishment, functioning, stability, trash build up, clogging, piping, sediment, scour holes, and erosion. Remove sediment when it has reached 1/3 of the total design depth of the swale. If installed, inspect the erosion control blanket for proper function and verify there is no erosion under the blanket. All repairs/maintenance shall be done immediately.	

4.5 TEMPORARY STRUCTURAL BMPs

BMP:	**Silt Fence**
Responsible Staff:	
Location:	Where indicated on the civil construction plans & as necessary.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	

Silt fence consists of a geotextile fabric that is attached to supporting posts and trenched into the ground. This is applied where sheet erosion (not channelized) occurs over small areas. It is typically installed at the same elevation following the contour of the land. Its purpose is to filter sediment laden runoff on the uphill side. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All silt fence shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Verify the fence posts are still structurally sound, the fabric is still securely attached to the fence posts, and the fabric is still trenched into the ground with no runoff occurring under the fence. Remove built up sediment when it has reached 1/3 the height of the fence. Take care to avoid undermining the fence during sediment removal. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during the removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Straw Wattles**
Responsible Staff:	
Location:	Where indicated on the civil construction plans & as necessary.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
Straw wattles consist of compressed straw fibers compressed in a tubular netting. They typically are 9" or 12" in diameter (sometimes larger) and 10' to 25' lengths. They are typically placed across channel bottoms, or on the contour on hill slopes to break up slope lengths and slow overland flow. They are typically staked in place with wooden stakes. Straw wattles are used to slow water velocity, trap sediment, and enhance revegetation. They are often used in place of silt fence, rock ditch checks, or straw bale ditch checks. Acceptable products are American Excelsior Company AEC Premier Straw Wattles or North American Green Straw Wattles, or approved equal. Straw wattle diameters are shown on the civil construction plans. Install per the manufacturer written instructions.	
Maintenance & Inspection:	
All straw wattles shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Verify the posts are still structurally sound, and the wattle is still trenched into the ground with no runoff occurring under the wattle. Remove built up sediment when it has reached 1/2 the height of the wattle. Take care to avoid undermining the wattle during sediment removal. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during the removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Sediment Logs / Fiber Rolls**
Responsible Staff:	
Location:	Where indicated on the civil construction plans & as necessary.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.

Description:	
Sediment logs consist of compressed excelsior, coconut, or other fibers compressed in a tubular netting. They typically are 9" or 12" in diameter (sometimes larger) and 10' to 25' lengths. They are typically placed across channel bottoms, or on the contour on hill slopes to break up slope lengths and slow overland flow. They are typically staked in place with wooden stakes. Sediment logs are used to slow water velocity, trap sediment, and enhance revegetation. They are often used in place of silt fence, rock ditch checks, or straw bale ditch checks. Acceptable products are American Excelsior Company AEC Curlex Sediment Log or or approved equal. Sediment Log diameters are shown on the civil construction plans. Install per the manufacturer written instructions.	
Maintenance & Inspection:	
All sediment logs shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Verify the posts are still structurally sound, and the log is still trenched into the ground with no runoff occurring under the log. Remove built up sediment when it has reached 1/2 the height of the log. Take care to avoid undermining the log during sediment removal. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during the removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Diversion Dike**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
Diversion dikes consist of a combination of an earthen ridge and excavated channel constructed to direct sediment laden runoff to another BMP. These are often installed at the perimeter of disturbed areas and can be installed within the grading areas for temporary service. If installed within grading areas, grading activities should be implemented to keep intact the diversion dike for as long as possible. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All diversion dikes shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Immediately remove trash/debris from the flow area and rebuild the ridge as needed. Remove built up sediment when it has reached 1/3 the height of the ridge. Take care to avoid undermining the fence during sediment removal. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Rock Ditch Check**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.

Description:	
Rock ditch checks are used in waterways and swales to reduce concentrated water velocities and energy to drop out sediment, and reduce erosion in swales until permanent vegetation can be established. The center of the ditch check should always be lower than its edges to ensure runoff will flow over the center of the rock check and not the earthen sides where excessive erosion can occur. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All ditch checks shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Immediately remove trash/debris and repair any erosion, piping, displaced rock as needed. Remove built up sediment when it has reached 1/3 the height of the rock. Take care to avoid undermining the ditch check during sediment removal. All sediment removed shall be placed as fill in non structural areas or as directed by the Operator. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Rock Dam**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
Rock dams are used in waterways and swales to reduce concentrated water velocities and energy to drop out sediment, and reduce erosion in swales until permanent vegetation can be established. The center of the dam should always be lower than its edges to ensure runoff will flow down the center of the rock dam and not the earthen sides where excessive erosion can occur. A rock dam is a larger structure than a rock ditch check with a larger upstream ponding area to function more as a temporary sediment trap. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All rock dams shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Immediately remove trash/debris and repair any erosion, piping, displaced rock as needed. Remove built up sediment when it has reached 1/2 the height of the rock. Take care to avoid undermining the dam during sediment removal. If the upstream ponding area does not drain between storms, pump out the water to another BMP, remove the sediment, and replace the stone on the upstream face of the dam. All sediment removed shall be placed onsite as fill in non structural areas or as directed by the Operator. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Sediment Trap**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.

Description:	
Sediment trap can be temporary ponds with structural pipe outfalls that temporarily store sediment laden runoff to allow drop out of the sediment. They can also be permanent detention basins with a filter fabric temporarily wrapped around the permanent outfall structure. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All sediment traps shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Immediately remove trash/debris and repair any erosion, piping, displaced rock as needed. Remove built up sediment when it has reached 1/2 the height of the outfall depth. Check the embankment, spillway(s), and outfall structure and pipe for erosion, piping, settlement, seepage, and slumping. If the ponding area does not drain between storms, pump out the water to another BMP, and remove and replace the filter fabric and/or gravel on the outfall structure. All sediment removed shall be placed onsite as fill in non structural areas or as directed by the Operator. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Silt Fence Inlet Protection**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Immediately after construction of each storm sewer inlet.
Description:	
Silt fence inlet protection is reinforced silt fence installed completely around a stormwater inlet to filter and pond sediment laden runoff to allow drop out of the sediment before it drains into the inlet. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All inlet protection shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Verify the fabric and wire support is still in good condition with no rips, holes, or signs of stretching or stress. Verify the posts and supports are still structurally sound, the fabric is still securely attached to the posts and supports, and the fabric is still trenched into the ground with no runoff occurring under the fence. Remove built up sediment when it has reached 1/3 the height of the fence. All sediment removed shall be placed onsite as fill in non structural areas or as directed by the Operator. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Curb Inlet Filters**
Responsible Staff:	
Location:	All existing downstream curb inlets; all new curb inlets; where indicated on the civil construction plans.
Installation Schedule:	Prior to construction at all nearby existing curb inlets downstream from any disturbed

	area. Immediately after paving around each new curb inlet.
Description:	
Curb Inlet filters are manufactured filters temporarily placed over/around/in front of the grate and/or curb intake of curb inlet storm sewer structures and are designed to let stormwater flow through the fibrous material while stopping sediment, debris, and trash. Common systems include Sediment logs, Gutterbuddy, Silt-Savers, and InletSoxx. Install per the manufacturer's written instructions. The filter should overlap both sides of the inlet opening by a minimum 12 inches.	
Maintenance & Inspection:	
All filters shall be inspected during routine SWPPP inspections for proper functioning, clogging, sediment build up, structural integrity, and as recommended by the manufacturer. Clean the filters and remove all trash, debris, fluids, and sediment from all units every month minimum, or as recommended by the manufacturer. Trash/debris removed from unit(s) shall be disposed of offsite as legally allowed. Sediment shall be disposed of onsite in non-structural fill areas. All repairs/maintenance shall be done immediately. Complete replacement of the filter may be required if it is clogged.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Slope Drains**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet.
Description:	
A slope drain is a pipe designed to convey concentrated runoff down the face of a cut or fill slope without causing erosion on the slope face. The area around the pipe inlet can be excavated to function as a small sediment basin. The pipe shall have a stabilized outlet consisting of rip-rap and filter fabric. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All slope drains shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Verify the diversion dike along the top of the slope still conveys runoff to the pipe inlet and the pipe is still functioning properly and stable. Inspect the pipe along the slope for signs of movement, piping, leaking or other signs of erosion. If applicable, inspect the sediment basin at the pipe inlet and remove the sediment when it has reached ½ the design depth or as indicated in the civil plans. Verify the stabilized outlet is stable. All sediment removed shall be placed as onsite fill in non structural areas or as directed by the Operator. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when the disturbed area draining to the BMP is stabilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

4.6 PERMANENT NON-STRUCTURAL BMPs

BMP:	**Permanent Seeding**
Responsible Staff:	
Location:	All disturbed areas except sodded areas, surfaced areas, solid rock, or areas consisting of primarily broken rock.
Installation Schedule:	Per the Sequence of Events on the civil construction plans Cover Sheet and/or as necessary.

Description:

Permanent seeding is the establishment of perennial vegetation for graded areas that will be undisturbed for longer than 6 months. Permanent seeding and planting shall be performed within 14 days after final grade is reached or within 7 days after final grade is reached if the slope of the area is greater than 3:1 (3 feet horizontal to 1 foot vertical) or if the slope is greater than 3% and greater than 150 feet in length, unless temporary stabilization is applied. Permanent seeding shall be completed per the project specifications or landscape plan. If no specification/plan is provided, the following methods can be applied:

Seedbed Preparation:

For broadcast seeding and drilling, loosen the soil via tilling to a depth of 3 inches. For no-till drilling, the soil does not need to be loosened unless the site has surface compaction. If compacted, till 3 inches deep.

Soil Amendments:

Obtain a minimum of three soil tests from various areas on the site and add fertilizer and lime according to the test results. If soil tests are not available, spread lime evenly at a rate of 92 pounds per 1,000 square feet of area. Spread evenly a 5.5-16-16 fertilizer at a rate of 7 pounds per 1,000 square feet of area. Mix the soil amendments into the top 3 inches of soil.

Seed:

Plant seed ¼ to ½ inch deep or rake in after application. Apply mulch and water immediately after seed application. Water to a depth of 2 inches without causing erosion. Grass seed mixture recommended for use in lawn areas:

Type	% Mix by Weight	Minimum Purity	Minimum Germination	Seeding Rate (lb/acre)
Tall or Turf Fescue (minimum 3 cultivars)	80	98%	90%	150 minimum or as recommended by manufacturer
Annual Rye	20	98%	90%	25 minimum

The percent mixture by weight is for pure live seed (PLS). Weed seed shall not exceed 1.0% by weight of the mix. A seed mix certification shall be approved by the Operator prior to seeding.

Mulch:

All mulch shall consist of clean, bright, plant residues and be free of weed seeds, mold, and rot. No more than 15% of the ground surface shall be visible after mulching. Install per manufacturer's recommendations. Straw mulch shall be applied at a minimum rate of 3,000 lbs/acre.

Planting Dates:

Apply permanent seed and mulch only between the dates of February 1 thru May15 and August 15 thru October 15th. Seeding and mulching outside these dates shall be done according to temporary seeding requirements with reseeding at 50% the permanent seeding rates done during the next allowable permanent seeding planting dates.

Maintenance & Inspection:

All seeded areas shall be inspected during routine SWPPP inspections for erosion, germination, vigorous seedlings, uniform density with at least 70% ground cover, disease, drought stress, and seed wash out. Water 1 inch deep every 7 day stretch with less than ½ inch total rain accumulation until grass is 3 inches tall. Do not mow until grass is 4 inches tall, and then mow at a 3 inch height, minimum. All repairs/maintenance shall be done immediately.

BMP:	**Sodding**
Responsible Staff:	
Location:	Where indicated on the civil construction plans or landscape plans.
Installation Schedule:	Immediately after final grades are achieved and surrounding construction is complete.

Description:

Sodding is the laying of vegetative cover that includes both grass plants and their established root system. Sodding shall be completed per the project specifications or landscape plan. If no specification/plan is provided, the following methods can be applied:

Soil Preparation:

Verify that topsoil have been placed to required thickness and smoothed to finish grades. Loosen the topsoil if it has been compacted by tilling 3 inches deep using small, pneumatic tired equipment that will prevent additional compaction.

Sod:

Sod shall consist of, or a mixture of: turf/tall fescue, Bermuda, Zoysia, or Buffalograss cultivars suitable for the site's climate. Install in staggered rows with offset joints. Lay rows perpendicular to the slope. Tamp or roll all sod immediately after installation to provide root contact with the soil. Water thoroughly to a depth of 2 inches upon installation.

Sodding Dates:

Sodding can be done at any time of the year except when the ground is frozen or there is a ground cover such as snow or ice.

Sodding Dates:

Sodding can be done at any time of the year except when the ground is frozen or there is a ground cover such as snow or ice.

BMP:	**Turf Reinforcement Mats / Erosion Control Blankets**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Immediately after completion of topsoil placement and finish grading of the area.

Description:

Permanent turf reinforcement mats control erosion by providing a protective surface cover commonly consisting of straw, coconut, wood, or other plant fibers woven into a plastic, nylon, or cotton net matrix. Install per the manufacturer's written recommendations. Typically permanent grass seed is installed first and the mat is rolled over the seed and then nailed or pinned down. The grass grows up through the mat and the mat and grass work together to prevent surface erosion. Erosion control blankets/mats only function properly if STORMWATER RUNOFF DRAINS OVER THE TOP OF THE BLANKET/MAT. Therefore it is critical that all weeds/vegetation/stumps/etc. be removed and the ground smoothed immediately prior to blanket installation. Then grass seed and fertilizer should be applied followed by the blanket installation as tightly anchored to the ground using adequate staples/pins/anchors.

Maintenance & Inspection:

All blankets shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Inspect for tears, blowouts, erosion, and undermining beneath the blankets. Areas that show erosion shall be repaired by pulling back that portion of the blanket, adding tamped topsoil, reseeding, and resecuring blankets. Blankets that have become dislodged or damaged shall be repaired or replaced and resecured immediately. Trash and debris shall be removed immediately. Vegetation shall be inspected and maintained per the permanent seeding BMP description. All repairs/maintenance shall be done immediately.

4.7 TEMPORARY NON-STRUCTURAL BMPs

BMP:	**Construction Entrance/Exit**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Immediately at the start of construction.
Description:	
A temporary rock construction exit is a stone base pad installed to provide an exit area where vehicles can drop the mud and caked soil from their tires to avoid transporting it onto public roads. The mud and dirt that ends up on the street is called "track out" and is the #1 complaint of construction sites. A larger stone should comprise the surface of the exit to vibrate/jar the truck and flex the rubber to encourage mud and soil to drop off. Provide water via a water truck and wash all tires and wheel wells of all vehicles prior to leaving the site. Direct all runoff into a sediment trap set up on the downstream side of the exit pad. Install as detailed in the civil construction plans.	
Maintenance & Inspection:	
All construction exits shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Shovel or wash off the rock surface often to prevent soil build up and clogging of the stone. This may need to be several times a day. If surface becomes smooth or clogged, top-dress with clean 2-3 inch stone immediately. Remove sediment from the sediment trap when it has reached ½ the design depth. All sediment removed shall be placed onsite as fill in non structural areas or as directed by the Operator. All repairs/maintenance shall be done immediately.	
Removal Requirements:	Remove when all disturbed areas are stabilized or all construction vehicles have been permanently demobilized. The area is considered stabilized when perennial vegetation or permanent materials (buildings, pavement, etc) cover all areas that have been disturbed. Vegetative cover shall be at least 70% of fully established density over the entire disturbed area that is to be vegetated. Areas disturbed during removal of the BMP shall be smooth graded and permanently seeded and mulched.

BMP:	**Pavement/Curb & Gutter Sweeping**
Responsible Staff:	
Location:	Where necessary.
Description:	
Pavement/curb & gutter sweeping involves picking up and removing all trash, debris, and sediment from onsite land disturbance activities that has accumulated on all public and private paved surfaces near the project site. This can be done by hand via broom, or via mechanical street sweeping and vacuum machines. The sediment shall be picked up and disposed of as onsite fill, it shall not be washed off the pavement into storm sewers or other drainage ways via pressure washing or water trucks.	
Maintenance & Inspection:	
All onsite and nearby offsite paved surfaces shall be inspected during routine SWPPP inspections for trash, debris, and sediment deposition on the surface. All sediment shall be removed immediately. The cause of the trash, debris, and/or sediment deposition shall be identified and immediately corrected.	

BMP:	**Temporary Seeding**
Responsible Staff:	
Location:	Where required/necessary during the construction process.
Installation Schedule:	As required or necessary.

Description:

Temporary seeding is the establishment of fast-growing annual vegetation on disturbed areas to provide erosion control for up to 6 months. This BMP applies where short-lived vegetation needs to be established before final grading or in a season not suitable for permanent seeding. If an area is expected to be undisturbed for longer than 6 months, permanent perennial vegetation shall be used. Temporary seeding and planting shall be performed within 14 days after grading operations cease or within 7 days after final grade is reached if the slope of the area is greater than 3:1 (3 feet horizontal to 1 foot vertical) or if the slope is greater than 3% and greater than 150 feet in length. Temporary seeding shall be completed per the project specifications or landscape plan. If no specification/plan is provided, the following methods can be applied:

Seedbed Preparation:

Loosen the soil via tilling to a depth of 3 inches.

Soil Amendments:

Obtain a minimum of three soil tests from various areas on the site and add fertilizer and lime according to the test results. If soil tests are not available, spread lime evenly at a rate of 69 pounds per 1,000 square feet of area. Spread evenly a 5.5-16-16 fertilizer at a rate of 6 pounds per 1,000 square feet of area. Mix the soil amendments into the top 3 inches of soil.

Seed:

Plant small grains no more than 1 ½ inches deep. Plant grasses and legumes ¼ to ½ inch deep or rake in after application. Apply mulch and water immediately after seed application. Water to a depth of 2 inches without causing erosion. Seed mixture can be any combination of the following:

Species	Seeding Rate	
	lbs. per Acre	lbs./1,000 square feet
Oats	80	2
Cereals: Rye/Wheat	90-120	2-2.5
Millets, Sudangrass	45-60	1-1.25
Annual Ryegrass	75	2
Annual Lespedeza plus Tall Fescue	15 plus 45	0.5 plus 1

Mulch:

All mulch shall consist of clean, bright, plant residues and be free of weed seeds, mold, and rot. No more than 15% of the ground surface shall be visible after mulching. Install per manufacturer's recommendations. Straw mulch shall be applied at a minimum rate of 3,000 lbs/acre.

Planting Dates:

Apply temporary seed and mulch any time of the year, but do not apply on frozen, ice or snow covered ground.

Maintenance & Inspection:

All seeded areas shall be inspected during routine SWPPP inspections for erosion, germination, vigorous seedlings, uniform density with at least 70% ground cover, disease, drought stress, and seed wash out. Reseed and mulch as necessary. Water when dry. Do not mow or only mow after 6 inches tall and then mow at a 4 inch height, minimum. All repairs/maintenance shall be done immediately.

Removal Requirements:	Remove when the area is ready to be disturbed again.

BMP:	**Temporary Erosion Control Blankets**
Responsible Staff:	
Location:	Where indicated on the civil construction plans.
Installation Schedule:	Immediately after the application area is finish graded.

Description:

Temporary erosion control blankets control erosion by providing a protective surface cover commonly consisting of straw, coconut, wood, or other plant fibers woven into a plastic, nylon, or cotton net matrix. They can also consist of photodegradable netting. Install per the manufacturer's written recommendations. Typically, permanent grass

seed is installed and the mat is rolled over the seed and nailed or pinned down. The grass grows up through the mat and the mat and grass work together to prevent surface erosion for a limited period of time. Eventually the plant fibers in the mat decay and/or the net matrix breaks down typically via the sun's UV rays. By this time, the grass should be fully established, providing the necessary erosion control. Erosion control blankets only function properly if STORMWATER RUNOFF DRAINS OVER THE TOP OF THE BLANKET. Therefore it is critical that all weeds/vegetation/stumps/etc. be removed and the ground smoothed immediately prior to blanket installation. Then grass and fertilizer should be applied followed by the blanket installation as tightly anchored to the ground using adequate staples/pins/anchors.
Maintenance & Inspection:
All blankets shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Inspect for tears, blowouts, erosion, and undermining beneath the blankets. Areas that show erosion shall be repaired by pulling back that portion of the blanket, adding tamped topsoil, reseeding, and resecuring the blankets. Blankets that have become dislodged or damaged shall be repaired or replaced and resecured immediately. Trash and debris shall be removed immediately. Vegetation shall be inspected and maintained per the permanent seeding BMP description. All repairs/maintenance shall be done immediately.

Removal Requirements:	Should be none. If still onsite at the end of the blanket lifespan, verify it is breaking down and is not exposed to possibly get caught in mowing equipment. Repair as necessary.

BMP:	**Soil Roughening**
Responsible Staff:	
Location:	All disturbed slopes 3:1 or steeper.
Installation Schedule:	Immediately after applicable slope has reached plan grade.

Description:
Surface roughening are practices that roughen a slope surface to reduce surface runoff velocities, therefore minimizing soil erosion and sedimentation during construction. Either track walking with a dozer up and down the slope (NOT parallel or along the slope) or using a sheep's foot roller to create minimum 1" dimples are acceptable practices. Immediately after completion of roughening, stabilize the surface via vegetation establishment, rip-rap, or however indicated in the construction plans. Do no roughen with finish grading.
Maintenance & Inspection:
All roughening shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Inspect for erosion. Areas that show erosion shall be repaired immediately. Trash and debris shall be removed immediately. Vegetation shall be inspected and maintained per the permanent or temporary seeding BMP description. All repairs/maintenance shall be done immediately.

Removal Requirements:	None.

BMP:	**Tackifiers and Binders**
Responsible Staff:	
Location:	All permanent and temporary seeded areas.
Installation Schedule:	Immediately after topsoil is placed and final grades are achieved.

Description:
Tackifiers and binders are substances mixed with seed, straw, hay, wood, and/or paper mulch and applied via a sprayed slurry. They cause organic material to bind together, anchoring the seed and mulch to minimize or prevent movement of the material during rain or watering events. They also hold moisture to improve seed germination and survival. They are typically applied via hydroseeding or hydromulching techniques.
Maintenance & Inspection:
All tackifiers and binder applications shall be inspected during routine SWPPP inspections for proper functioning,

stability, and general condition. Inspect to verify it is functioning as intended. Inspect and repair as necessary to ensure intended function. All repairs/modifications shall be made immediately.	
Removal Requirements:	None.

BMP:	**Dust Control & Air Emissions**
Responsible Staff:	
Location:	Where necessary based on current site conditions.
Installation Schedule:	Immediately when current site conditions warrant.
Description:	
Open burning will only be allowed per state and local regulations. Contractor is responsible for obtaining all necessary burning permits. In Missouri, state regulation places a limit on the amount of visible dust that can leave a property boundary. For more information research state regulation 10 CSR 10-6.170. Minimize wind erosion and control dust via the following methods: 1. Cover 30% or more of disturbed surface with non-erodible material. 2. Roughening the disturbed areas to produce ridges perpendicular to the prevailing wind. Ridges should be about six (6) inches in height. 3. Frequent watering of disturbed areas.	
Maintenance & Inspection:	
All dust control shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Verify onsite dust creation is below state and local requirements.	

4.8 ADDITIONAL BMPS

BMP:	**Stormwater Outfalls**
Responsible Staff:	
Location:	Where shown on the construction plans. Contractor shall redline on the SWPPP site maps for clarity.
Installation Schedule:	
Description:	
Stormwater outfalls are all points where stormwater drains away from the outer limits of the project area. These can be swales, creeks, or rivers, or storm sewers that daylight with a flared end section/headwall/end or pipe.	
Maintenance & Inspection:	
All stormwater outfalls and 50 feet downstream shall be inspected during routine SWPPP inspections for proper functioning, stability, erosion, sediment disposition, and general condition. All repairs/maintenance shall be done immediately.	

BMP:	**Retaining Walls**
Responsible Staff:	
Location:	Where shown on the construction plans.
Installation Schedule:	
Description:	
The reinforced concrete or modular block retaining walls and all associated items (walls, underdrains, etc) per the	

construction plans.
Maintenance & Inspection:
All retaining walls and associated items shall be inspected during routine SWPPP inspections for proper functioning, stability, cracks, undercutting of foundation, piping erosion, wetness or movement, and general condition. Repair according to wall design engineer and/or manufacturer's recommendations. Perform all repairs immediately.

BMP:	**Management of Excavation Spoil Materials**
Responsible Staff:	
Location:	Out of the way of construction areas.
Installation Schedule:	
Description:	
Excavation spoil materials result from localized grading that occurs during mass grading for footings, docks/truckwells, utility trenches, geowells, etc. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this project shall be managed by the following method: mixed with on-site fill, hauled off-site. If they must be temporarily stockpiled, they shall be placed where all storm water runoff will drain to a BMP and temporarily seeded and mulched immediately after construction.	
Maintenance & Inspection:	
All excavation spoil materials shall be inspected during routine SWPPP inspections for proper functioning, stability, erosion, and general condition. Verify all stockpiles drain to properly functioning BMPs and no untreated storm water runoff is occurring. All repairs/maintenance shall be done immediately.	

BMP:	**Dewatering (if necessary)**
Responsible Staff:	
Location:	
Installation Schedule:	
Description:	
Dewatering operations from footing/trench/etc. excavations shall not be discharged offsite without treatment. Turbid dewatering discharge shall be directed to another BMP to allow filtering or settling prior to discharging offsite. *(below to be filled in by Contractor)* Dewatering Methods: Dewatering Maximum Flow: GPM: BMP(s) Dewatering Will be Directed To:	
Maintenance & Inspection:	
All dewatering operations shall be inspected during routine SWPPP inspections for proper functioning, stability, erosion, and general condition. Verify all dewatering discharge drains to properly functioning BMP(s) and no untreated storm water runoff is occurring. Verify the BMP(s) are properly handling the amount of dewatering discharge they are receiving. All repairs/maintenance shall be done immediately.	

SECTION 5: GOOD HOUSEKEEPING BMPS

5.1 MATERIAL HANDLING AND WASTE MANAGEMENT

Substances regulated by federal law under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) which are transported, stored or used for maintenance, cleaning or repairs shall be managed according to the provisions of RCRA and CERCLA.

The following materials or substances with known hazardous properties are expected to be present onsite during construction:

Concrete/Additives/Wastes
Detergents
Paints/Solvents
Acids
Solids and construction wastes
Soil stabilization additives
Cleaning solvents
Petroleum based products
Pesticides
Fertilizers
Sanitary wastes

All paints, solvents, petroleum products and petroleum waste products (except fuels) and storage containers (such as drums, cans or cartons) shall be stored such that these materials are not exposed to storm water. Sufficient practices of spill prevention, control and/or management shall be provided to prevent any spills of these pollutants from entering a water of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. The following are the material management practices that shall be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The jobsite superintendent shall be responsible for ensuring that these procedures are followed.

a) Good Housekeeping

The following good housekeeping practices shall be followed onsite during the construction project.

(i) An effort shall be made to store only enough products required to do the job.
(ii) All materials stored onsite shall be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers shall be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
(iii) Products shall be kept in their original containers with the original manufacturer's label in legible condition.
(iv) Substances shall not be mixed with one another unless recommended by the manufacturer.
(v) Whenever possible, all of a product shall be used up before disposing of the container.
(vi) Manufacturer's recommendations for proper use and disposal shall be followed.
(vii) The job site superintendent shall be responsible for daily inspections to ensure proper use and disposal of materials.
(viii) Fertilizers shall be applied in the minimum amounts recommended by the manufacturer.
(ix) All paint containers shall be tightly sealed and stored when not required for use. Excess paint shall not be dumped into the storm sewer system but shall be properly disposed of according to manufacturer’s instructions and State regulations.

b) Hazardous Products

These practices shall be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS’s) for each substance with hazardous properties that is used on the job site shall be obtained and used for the proper management of potential wastes that may result from these products. An MSDS shall be posted in the immediate area where such product is stored and/or used and another copy of each MSDS shall be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties shall be instructed on the use of MSDS sheets and the

specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

(i) Products shall be kept in original containers with the original labels in legible condition.
(ii) Original labels and material safety data sheets (MSDS's) shall be procured and used for each material.
(iii) If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal shall be followed.

c) Hazardous Waste

All hazardous waste materials shall be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel shall be instructed in these practices by the job superintendent, who shall be responsible for seeing that these practices are followed.

d) Product Specific Practices

The following product specific practices shall be followed on the job site.

(i) Petroleum Products

All onsite vehicles shall be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products shall be stored in tightly sealed containers that are clearly labeled. Any petroleum storage tanks used onsite shall have an impervious dike or berm containment structure constructed around it to contain any spills which may occur. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite shall be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas shall be identified on the SWPPP maps by the Contractor once the locations have been determined.

(ii) Fertilizers

Fertilizers shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked in the soil to limit exposure to stormwater. Storage shall be in a covered shed. The contents of any partially used bags of fertilizer shall be transferred to a sealable plastic bin to avoid spills.

(iii) Paints, Paint Solvents, and Cleaning Solvents

All containers shall be tightly sealed and stored when not in use. Excess paint and solvents shall not be discharged to the storm sewer system but shall be properly disposed of according to manufacturer's instructions or state and federal regulations.

BMP:	**Construction Waste Materials Containment**
Responsible Staff:	
Location:	
Installation Schedule:	
Description:	
All non hazardous waste materials shall be collected and stored in an appropriately covered container and/or securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in the project area. The dumpster shall comply with all local and state solid waste management regulations.	

All trash and construction debris from the site shall be deposited in the dumpster. The dumpster shall be emptied a minimum of twice per week or more often if necessary, and the trash shall be hauled to a landfill approved by the state for legal disposal offsite. No construction waste or trash materials of any kind shall be buried on site. All personnel shall be instructed regarding the correct procedures for waste disposal.

All waste dumpsters and roll-off containers shall be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs shall be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers shall be identified on the SWPPP maps by the Contractor once the locations have been determined.

Maintenance & Inspection:	
All dumpsters and/or other waste storage areas shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Dumpsters shall be emptied before trash accumulation prevents complete closure of the lid(s). If trash and construction debris are exceeding the dumpster capacity more dumpsters shall be provided or they shall be emptied more often.	
Removal Requirements:	Remove when all waste contributing construction is complete.

BMP:	**Sanitary Facilities**
Responsible Staff:	
Location:	
Installation Schedule:	

Description:	
Temporary sanitary facilities (portable toilets) shall be provided by a licensed portable facility provider in complete compliance with local and state regulation. Facilities shall be sized to accommodate the maximum anticipated work force on any given day. Facilities shall be property anchored to prevent tip over or other uncontrolled movement. All sanitary facilities shall be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. The location of sanitary facilities shall be identified on the SWPPP maps by the Contractor once the locations have been determined.	
Maintenance & Inspection:	
All sanitary facilities shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. Sanitary facilities shall be regularly emptied, serviced and repaired. Sanitary waste shall be disposed per all applicable state and local requirements.	
Removal Requirements:	Remove when construction is complete and all construction staff has left the site or when other onsite sanitary facilities are available and permission for their use by construction staff is approved by the Operator.

BMP:	**Hazardous Waste Containment**
Responsible Staff:	
Location:	
Installation Schedule:	

Description:
All hazardous waste materials such as oil filters, petroleum products, paint, and equipment maintenance fluids shall be stored in structurally sound and sealed containers in a designated hazardous materials storage area and segregated from other non-waste materials. Additionally, all hazardous material will be disposed of in accordance

with federal, state, and local regulations. Hazardous waste materials shall not be disposed of into on-site dumpsters.	
Maintenance & Inspection:	
All hazardous storage areas shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. The storage areas shall be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Material safety data sheets, material inventory, and emergency contact numbers shall be maintained in the office trailer or other clearly designated area.	
Removal Requirements:	Remove when all hazardous waste contributing construction is complete.

5.2 ESTABLISH PROPER BUILDING MATERIAL STAGING AREAS

BMP:	**Staging Area**
Responsible Staff:	
Location:	
Installation Schedule:	
Description:	
Construction equipment and materials shall be stored at a designed staging area. The staging area is typically located in a proposed parking area and shall consist of an all-weather granular surface that will also be the granular base for the parking lot pavement. The location of all staging areas shall be redlined on the SWPPP maps. Storm water shall be directed away from the staging area.	
Maintenance & Inspection:	
All staging areas shall be inspected during routine SWPPP inspections for proper functioning, stability, and general condition. The staging area(s) shall be kept clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced as needed to maintain proper function. The granular surface shall be kept clean and inspected for signs of settlement or rutting. All repairs shall be made immediately.	
Removal Requirements:	Remove when all construction materials have been removed and the storage of construction equipment is no longer necessary.

5.3 DESIGNATE WASHOUT AREAS

BMP:	**Concrete Washout Area**
Responsible Staff:	
Location:	Where indicated on the civil construction plans & where necessary to contain all concrete waste and wash water.
Installation Schedule:	After grading and before any infrastructure in constructed.
Description:	
Concrete trucks shall only be allowed to wash out or discharge surplus concrete and wash water in specifically designated areas which have been prepared to prevent contact between the concrete, wash water, and stormwater runoff from the site. The washout may be constructed by creating an aboveground storage area a minimum 10’ x 10’ x 2’ deep from straw bales or sandbags double lined with a10 mil minimum polyethylene sheeting. Washout areas may also be prefabricated units brought to the site to be emptied when full by the company providing the unit. They may also be constructed either by digging a minimum 10’ x 10’ pit 1’ deep and surrounding it with an earthen dike a minimum 1’ tall to give it a total depth of 2’ and lining it with minimum 10 mil polyethylene sheeting. The washout shall be constructed so all stormwater is directed away from the washout area. Size according to anticipated concrete waste produced. The project may require the use of multiple concrete washout areas. All	

concrete washout areas shall be located a minimum 50’ from any stormwater conveyance like a storm sewer or swale and a minimum 100’ from any natural water body like a stream, pond, or lake. Temporary weatherproof signage that says “CONCRETE WASHOUT” in a manner clearly visible by construction truck drivers while driving onsite shall be placed next to each washout. The contractor shall be responsible for coordinating and enforcing proper use of the washout by all construction personnel. The hardened material from the washout(s) shall be hauled offsite and disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor and approved by the Operator. Disposal shall be per all applicable solid waste regulations.
Maintenance & Inspection:
All washouts shall be inspected daily to ensure all concrete washing is being discharged into the washout(s), no tears or leaks are present, and to identify when concrete waste needs to be removed. Inspect all signage to ensure it is in good condition and is still legible by all drivers. Remove all concrete waste when it has reached 75% of the storage capacity of the washout. The plastic lining shall be replaced if it is damaged during concrete waste removal. Inspect to verify that no storm water runoff is capable of draining into the washout. All repairs shall be made immediately.

Removal Requirements:	Remove when all concrete construction is complete.

5.4 ESTABLISH PROPER EQUIPMENT/VEHICLE FUELING AND MAINTENANCE PRACTICES

BMP:	**Vehicle/Equipment Fueling and Maintenance**
Responsible Staff:	
Location:	
Installation Schedule:	

Description:
Only minor equipment maintenance shall occur onsite. All major equipment/vehicle maintenance shall be performed off-site. Vehicle/equipment maintenance and fueling area(s) shall be clearly marked and be kept clean and dry. A spill kit shall be kept nearby. Drip pans, drip clothes, or absorbent pads shall be used when replacing spent fluids. Spent fluids shall be collected and stored in appropriate labeled containers in the proper storage areas. Recycle fluids whenever possible. Dispose of fuels, oils, lubricants, solvents, and other hazardous materials offsite per federal, state and local requirements. Petroleum products shall be stored in tightly sealed containers which are clearly labeled. No fueling, servicing, maintenance, or repair of equipment or machinery shall be done within 50 feet of a stormwater drainage way, or within 100 feet of a classified stream, lake/pond, losing stream, or sinkhole.
Maintenance & Inspection:
All equipment/vehicle fueling and maintenance facilities shall be inspected during routine SWPPP inspections for proper functioning, usage, and general condition. Vehicles and equipment shall be inspected on each day of use. Leaks shall be repaired immediately. Any problem vehicle(s) or equipment shall be removed from the project site. Inspect to verify there is an ample supply of spill-cleanup materials onsite.

Removal Requirements:	Remove when the need for construction vehicles onsite is no longer necessary.

5.5 CONTROL EQUIPMENT/VEHICLE WASHING

All equipment/vehicle washing not related to dirt/mud removal at the construction entrance/exit BMP shall be done offsite.

5.6 SPILL PREVENTION AND CONTROL PLAN

BMP:	**Spill Prevention and Response Procedures**
Responsible Staff:	
Spill Prevention & Response Coordinator:	
Installation Schedule:	Training will begin prior to the start of project construction. All other procedures shall begin with the start of project construction.

Description:

All onsite personnel shall be trained in the spill prevention, proper handling, and cleanup procedures of spilled materials. No spilled hazardous materials or hazardous wastes shall be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge shall be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of the contaminated storm water.

Report to the Operator, Engineer, local Fire Department, Joint Communications, local Sheriff's Department, City of Lee's Summit, MDNR, and EPA any noncompliance with the SWPPP that will endanger public health or the environment. Also, if the spill contains a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under 40CFR110, 40CFR117, and 40CFR302, follow the directions on the Reportable Quantity Release Form which can be found in Appendix M. Any information shall be provided orally immediately after the Contractor becomes aware of the circumstances. A written submission shall also be provided to Engineer, Owner, City of Lee's Summit Public Works, MDNR, and EPA within five (5) days of the time the Contractor becomes aware of the circumstances. The following events require immediate verbal: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the MDNR in the permit. The written submission shall contain a description of the non-compliance and its cause; the period of non-compliance, including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the non-compliance.

a) In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps shall be implemented:

   (i) All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) shall be stored in a secure location, with their lids on, preferably under cover, when not in use.

   (ii) The minimum practical quantity of all such materials shall be kept on the job site.

   (iii) A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) shall be provided at the storage site.

   (iv) Manufacturer's recommended methods for spill cleanup shall be clearly posted and site personnel shall be trained regarding these procedures and the location of the information and cleanup supplies.

b) In the event of a spill, the following procedures shall be followed:

   (i) All spills shall be cleaned up immediately after discovery.

   (ii) The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

(iii) The project manager and the Engineer of Record shall be notified immediately.

(iv) Spills of toxic or hazardous materials shall be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) shall be immediately reported to the EPA National Response Center, telephone 1-800-424-8802. Contact the Operator, Engineer, local Fire Department, Joint Communications, local Sheriff's Department, City of Lee's Summit Public Works, MDNR, and EPA immediately after the onset of a "hazardous condition". The applicant shall notify by telephone and in writing the Department of Natural Resources, Water Pollution Control Program, Post Office Box 176, Jefferson City, MO 65102, 1-800-361-4827, of any oil spills or if hazardous substances are found during the prosecution of work under this permit.

(v) If the spill exceeds a Reportable Quantity, the SWPPP shall be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release, the plans shall identify measures to prevent the recurrence of such releases and to respond to such releases. The Reportable Quantity Release form located in Appendix M shall be completed in accordance with this requirement.

c) The Spill Prevention and Response Coordinator shall designate the individuals who shall receive spill prevention and response training. These individuals shall each become responsible for a particular phase of prevention and response. The names of these personnel shall be posted in the material storage area and in the office trailer/construction headquarters onsite.

BMP:	**Soil Contamination**
Responsible Staff:	
Spill Prevention & Response Coordinator:	
Installation Schedule:	Training will begin prior to the start of project construction. All other procedures shall begin with the start of project construction.
Description:	
Soil contamination is either solid or liquid hazardous substances mixed with the naturally occurring soil. Soil contamination results when hazardous substances are either spilled or buried directly in the soil or migrate to the soil from a spill that has occurred elsewhere. Soil contamination is typically identified in the field via visual and/or odor means. No soil contamination is known to exist on the site pre construction. If it is suspected contaminated soil has been discovered onsite or if soil contamination occurs resulting from spills of materials with hazardous properties the Operator shall be immediately notified. Immediate contamination procedures per federal, state, and local requirements shall be implemented by the Contractor. A plan to permanently mitigate the contaminated soil shall be developed by the Contractor and Operator that adheres to all federal, state, and local requirements. The plan shall be implemented by the Contractor.	

5.7 ANY ADDITIONAL BMPS

None.

5.8 ALLOWABLE NON-STORMWATER DISCHARGE MANAGEMENT

Certain non-stormwater discharges are allowed under the Missouri State Operating Permit – General Operating Permit for land disturbance, and it is the intent of this SWPPP to allow such discharges. These types of discharges

shall be allowed under the conditions that no pollutants shall be allowed to come in contact with the discharge water prior to or after its discharge. The control measures which have been outlined previously in this SWPPP shall be strictly followed to ensure that no contamination of these non-stormwater discharges takes place. The following allowable non-stormwater discharges which may occur from the job site include:

a) Discharges from firefighting activities
b) Fire hydrant flushing (see note below)
c) Waters used to wash vehicles where detergents are not used
d) Waters used to control dust. Water used in fashion shall only be applied so there is no site runoff.
e) Potable water sources such as waterline flushing (see note below), landscape irrigation, routine exterior building wash down that does not use detergent (see note below)
f) Pavement wash waters where spills or leaks of hazardous materials have not occurred or detergents have not been used
g) Air conditioning condensate
h) Springs and other uncontaminated groundwater, including dewatering ground water infiltration
i) Foundation or footing drains where no contamination with process materials such as solvents is present

NOTE: The Contractor shall neutralize any super-chlorinated water from water distribution pipes before releasing it into the environment. Neutralization techniques are available from the Operator's Engineer.

SECTION 6: INSPECTIONS

6.1 ROUTINE INSPECTIONS

Routine inspections are required at least once every seven (7) calendar days and within 24 hours following a rainfall event that produces runoff. Particular BMP inspection details are included in Sections 4 and 5 of this SWPPP. Written documentation in the form of inspection reports and redlined SWPPP maps must be kept on file with the SWPPP at the jobsite and made available to the Operator, Operator's engineer, USEPA, state and local agencies that have issued land disturbance permits, and any other agency with regulatory authority over stormwater. Inspection report forms are included in Appendix H. In addition, copies of the reports shall be provided by the Contractor to any of these persons, upon request, via mail, email, or facsimile transmission. Also included in Appendix H is a Recommended Inspection Sequence for informational purposes only. Additional inspection requirements are given in the permits in Appendix A.

It is encouraged to take photos during inspections, print them out, and keep them on file with the corresponding inspection report with the onsite SWPPP.

6.2 NON ROUTINE/SPOT INSPECTIONS

High use or high maintenance BMPs (typically construction entrance/exit, street sweeping, trash dumpsters, etc.) should be inspected on a daily basis or as deemed necessary to verify they are functioning properly. Weather reports should be monitored and inspections should take place before large storm events to ensure all BMPs are fully operational before the storm event occurs. Inspect some BMPs during rain events to ensure they are keeping sediment onsite.

6.3 FINAL STABILIZATION

Inspection workload can be reduced by defining certain areas onsite as achieving final stabilization. Final stabilization is defined as when 70% permanent vegetation or permanent materials (buildings, pavement, etc) cover all disturbed areas within the defined area. Once final stabilization is achieved, these areas can me marked on the SWPPP map(s) and inspections can discontinue in these areas only.

6.4 BMP INSPECTORS

A BMP inspection is only as good as the inspector. Therefore it is important that designated inspectors/responsible

parties be qualified, trained personnel. Personnel selected to conduct inspections should be knowledgeable in the principles and practices of erosion and sediment controls, possess the technical skills to assess conditions at the construction site that could impact stormwater quality, and assess the effectiveness of any sediment and erosion control measures selected.

6.5 DESIGNATED INSPECTORS

(to be filled in by Contractor after award of contract, make copies of this form as necessary)

Name: _____ Position: _____

Company Name: _____

Company Address: _____

_____

Inspector Cell Phone: _____ Email: _____

Qualifications: _____

_____

_____

Name: _____ Position: _____

Company Name: _____

Company Address: _____

_____

Inspector Cell Phone: _____ Email: _____

Qualifications: _____

_____

_____

Name: _____ Position: _____

Company Name: _____

Company Address: _____

_____

Inspector Cell Phone: _____ Email: _____

Qualifications: _____

Name: _____ Position: _____

Company Name: _____

Company Address: _____

_____

Inspector Cell Phone: _____ Email: _____

Qualifications: _____

_____

_____

SECTION 7: RECORDKEEPING AND TRAINING

7.1 RECORDKEEPING

The following is a list of records you should keep at your project site bound with the SWPPP and available for inspectors to review:

1. Maintain Copies of Permits and Forms, including:
   - ☐ State Land Disturbance Permit (Appendix A)
   - ☐ Local Land Disturbance Permit - if required (Appendix A)
   - ☐ Notice of Intent (NOI)/Land Disturbance Permit Applications (Appendix B)

2. Certification Records, including:
   - ☐ Authorized Representative Designation (Appendix C)
   - ☐ Authorized Representative Certification (Appendix D)
   - ☐ Subcontractors Certification (Appendix F)

3. Maintain Records of Construction Activities, including:
   - ☐ Implementation Schedule (Appendix G)
   - ☐ Dates & locations when major grading activities occur (see below)
   - ☐ Dates when construction activities temporarily cease on a portion of the site (see below)
   - ☐ Dates when construction activities permanently cease on a portion of the site (see below)
   - ☐ Dates when stabilization measures are initiated on the site (see below)
   - ☐ SWPPP maps showing the location and dates of installation of structural and non-structural BMPs (Section 3.13)
   - ☐ SWPPP maps showing the location and dates of installation of good housekeeping BMPs (Section 3.13)

- ☐ Dates of rainfall and the amount of rainfall (Appendix N)
- ☐ Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled (Appendix M)

4. Maintain Inspection & Maintenance Records, including:
   - ☐ Inspection Reports (Appendix H)
   - ☐ SWPPP Amendment Report Form (Appendix I)
   - ☐ Overall SWPPP Amendment Log (Appendix I)

5. General Required Records, including:
   - ☐ List of Subcontractors (Appendix E)
   - ☐ Record Of Personnel Training Activities Form (Appendix L)
   - ☐ TMDL Documentation (303d Impaired Waterway) (Appendix P)
   - ☐ Endangered Species/Critical Habitat Documentation (Appendix Q)
   - ☐ Jurisdictional Wetlands and/or Surface Water Documentation (Appendix R)

6. Termination Records, including:
   - ☐ Notice of Termination from state (Appendix O) (if applicable)
   - ☐ Notice of Termination from Local Authority (Appendix O) (if applicable)
   - ☐ Final Stabilization/Termination Checklist (Appendix O)

7. Additional Required Records, including:
   - ☐ _____
   - ☐ _____
   - ☐ _____
   - ☐ _____

Date(s) & location(s) when major grading activities occur: _____

_____

_____

_____

_____

Date(s), location(s), & reason(s) when construction activities temporarily cease on a portion of the site: _____

_____

_____

Date(s) & location(s) when construction activities permanently cease on a portion of the site: _____

Date(s) & area(s) when an area is either temporarily or permanently stabilized (indicate temporary or permanent): ___

Upon termination of the land disturbance permit, the Contractor shall turn over all SWPP documentation and maps to the Operator. Inspection and maintenance report forms are to be maintained by the Operator for three years following the final stabilization of the site.

7.2 LOG OF CHANGES TO THE SWPPP

The SWPPP is meant to be a dynamic working guide that is to be kept current, effective, and functional in meeting its objectives at all times. Unforeseen or unexpected circumstances can require modification and amendment to the SWPPP. The SWPPP shall be amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP, if inspections or investigations by site staff, local, state, or federal officials determine that discharges are causing water quality exceedances or the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site, or based on the results of an inspection, or there is a release containing a Hazardous Substance, or Oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24 hour period, the SWPPP shall be modified to include additional or modified BMPs designed to correct identified problems. Revisions shall be completed within seven (7) calendar days following the inspection. Modifications that are the result of inspections shall be initiated within 24 hours and completed within 48 hours. The Contractor shall be responsible for SWPPP modifications/amendments whenever the following occurs:

a) Addition of new BMP(s) or replacement of failing or failed BMP(s).
b) Design, operation, inspection, or maintenance of BMP(s) is changed.
c) Design/scope/schedule of the construction project is changed that could affect the quality of storm water discharges.
d) Updates/revisions to site maps/plans.
e) Inspections indicate deficiencies in the SWPPP or any BMP.
f) Changes in Operator, contractor(s), subcontractor(s) or other personnel.
g) Federal, state, or local authorities notify the Operator/permittee/contractor in writing of deficiencies found onsite regarding stormwater control.
h) SWPPP is determined to be ineffective in significantly minimizing or controlling erosion and sedimentation (e.g., excessive site erosion or excessive sediment deposits downstream of any stormwater outfall, etc.).
i) If Total Settleable Solids (TSS) from a storm water outfall exceed the amount as defined in the operating permit.

j) Federal, state, or local authorities determine violations of Water Quality Standards may occur or have occurred.

Any such changes to the SWPPP must be made in writing and signed and dated by the Contractor's representative. A form has been provided in Appendix I for this purpose. Modifications of the SWPPP BMPs shall be indicated via redlines on the SWPPP maps. The SWPPP must also be amended to identify any new contractor and/or subcontractor that will be responsible for any aspect of the SWPPP. Notification of any modifications or amendments to the SWPPP must be made in writing to both the Operator and the Operator's Engineer within 7 days of the date such modification or amendment is made.

An overall log of SWPPP amendments shall be kept and included with the onsite SWPPP. An amendment log is included in Appendix I.

7.3 TRAINING

Onsite contractor(s), subcontractor(s), and staff might not be familiar with stormwater BMPs, and they might not understand their role in protecting local rivers, lakes, and coastal waters. Proper training of personnel can be one of the most effective BMPs implemented at a jobsite. The Contractor shall be responsible for basic training of all onsite staff. As with the other steps taken to prevent stormwater problems at the project site, all training conducted for staff, for those with specific stormwater responsibilities, and for subcontractors shall be documented. Training documentation forms are included in Appendix L and shall become an integral part of the onsite SWPPP. Training shall adhere to the following requirements:

Basic training shall educate the attendees on the topics of:

a) An awareness of the SWPPP, its purpose, and the basics of how the purpose is being achieved.
b) Spill prevention and cleanup measures, including prohibition of dumping any material into storm drains or waterways.
c) An understanding of the basic purpose of BMP's, including what BMP's are on site, what they should look like, and how to avoid damaging them.
d) Potential penalties associated with stormwater non compliance.

Entities and subcontractor directly responsible for implementing the SWPPP shall receive comprehensive stormwater training including:

e) The location and type of BMP's being implemented
f) The installation requirements and water quality purpose for each BMP
g) Maintenance procedures for each of the BMP's being implemented
h) Spill prevention and cleanup measures
i) Inspection and maintenance record keeping requirements

Each person working on the site shall be informed of the following:

j) Only designated construction site entrances shall be used for entering and exiting the site
k) Equipment shall be kept away from silt fences, fiber rolls, and other sediment barriers
l) Know the locations of disposal areas, and know the proper practices for trash, concrete and paint washout, hazardous chemicals, etc.
m) Soil, materials, and liquids shall be kept away from paved areas and storm drain inlets. Material shall not be swept or washed into a storm drain
n) Know the location and understand the proper use of spill kits
o) Know the locations of the site's designated protection areas. Equipment shall be kept away from stream banks, valuable trees and shrubs, and steep slopes. Clearly mark these areas
p) Equipment shall be kept off mulched, seeded, or stabilized areas. Clearly mark these areas
q) Know who to contact when problems are identified

SECTION 8: TERMINATION OF PERMIT COVERAGE

Final stabilization is defined by the state Operating Permit – General Operating Permit when perennial vegetation, pavement, buildings, or structures using permanent materials cover all areas that have been disturbed. With respect to areas that have been vegetated, vegetative cover shall be at least 70% of fully established plant density over 100% of the disturbed area. When final stabilization has been achieved over all disturbed areas, and the facility no longer discharges stormwater associated with construction activities, a Final Stabilization/Termination Checklist shall be completed and signed by the Contractor and submitted to the Operator. Once the operator has approved the checklist, the Contractor shall proceed with terminating all land disturbance permits. To terminate the state permit, a Request for Termination of Operating Permit form shall be filed by the Contractor (Appendix O). To terminate the local land disturbance permit, the Contractor shall write a letter to the local authority requesting termination of the permit. The Contractor shall follow up with both the state and local permit authorities to verify the land disturbance permits have been terminated. Verification shall be placed in Appendix O. Termination of all land disturbance permits terminates the Operators and Contractors responsibility to implement the SWPPP.

An Application for Transfer of Operating Permit should be filed when the Operator is no longer the operator of the facility (typically a change of ownership). Once received, the Application and approval letter from the State should be placed in Appendix O of this document. A new MDNR Operating Permit – General Operating Permit should be obtained for the new Operator via the epermitting process described in Section 1. When received, the new General Operating Permit should be placed in Appendix A.

The termination letter should also be submitted when the Operator is no longer the operator of the facility (typically a change of ownership). Once received, the approval letter from the local authority should be placed in Appendix O of this document. A new local land disturbance permit should be obtained for the new Operator. When received, the new permit should be placed in Appendix A.

APPENDIX A

LAND DISTURBANCE PERMIT(S)

APPENDIX B

FILED ONLINE

APPENDIX C

AUTHORIZED REPRESENTATIVE DESIGNATION

AUTHORIZED REPRESENTATIVE DESIGNATION

Construction Site
Wilshire Hills Phase III Public Improvments
Lee's Summit, Jackson County, Missouri

STORM WATER POLLUTION PREVENTION PLAN
DATED June 2023

I, Wilshire Hills LLC hereby designate the person or company specifically described below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Missouri State Operating Permit - General Permit by the Missouri Clean Water Commission, any local land disturbance permits, and this Storm Water Pollution Prevention Plan at the above indicated construction site. The designee is authorized to implement, maintain, and enforce all aspects of the Storm Water Pollution Prevention Plan (SWPPP), sign any reports/documents in the (SWPPP), and all other documents required by the land disturbance permit(s). The designee is authorized to amend the SWPPP as deemed necessary to maintain compliance with all environmental requirements.

Authorized Representative:

Company Name: _____

Company Address: _____

_____

Contact Name: _____

Phone Number: _____

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in the Missouri Clean Water Commission, Missouri State Operating Permit, General Operating Permit.

Insert Operators Company Name

Operators Signature: _____

Print Name and Title: _____

Date: _____

APPENDIX D

AUTHORIZED REPRESENTATIVE CERTIFICATION

AUTHORIZED REPRESENTATIVE CERTIFICATION

Construction Site
Wilshire Hills Phase III Public Improvements
Lee's Summit, Jackson County, Missouri

STORM WATER POLLUTION PREVENTION PLAN
DATED June 2023

AUTHORIZED REPRESENTATIVE CERTIFICATION:

"I certify under penalty of law that I understand the terms and conditions of the Missouri State Operating Permit - General Operating Permit by the Missouri Clean Water Commission that authorizes the discharge of storm water associated with construction or land disturbance activity from the construction site as part of this certification. Further, by my signature, I understand that I am fully responsible, along with all other contractors and subcontractors signing such certifications who are performing work activities under this contract, to comply with all provisions and requirements of the General Operating Permit and this Storm Water Pollution Prevention Plan. I understand that I, and my company, are legally required under the federal Clean Water Act and the Code of Missouri, to ensure compliance with the terms and conditions of the General Operating Permit and this Storm Water Pollution Prevention Plan (SWPPP) developed under the Missouri Clean Water Law and the National Pollution Discharge Elimination System (NPDES). I further certify that I and my company shall provide all necessary training and continuing education to all applicable personnel and subcontractors to ensure a complete understanding of all provisions and requirements of the General Operating Permit and this Storm Water Pollution Prevention Plan prior to these entities beginning any work activities on this site."

Signature: _____ Date: _____

Print Name & Title: _____

Company Name: _____

Company Address: _____

_____

Phone Number: _____

Scope of Services: _____

_____

_____

_____

_____

_____

APPENDIX E

LIST OF SUBCONTRACTORS

LIST OF SUBCONTRACTORS

Construction Site
Wilshire Hills Phase III Public Improvments
Lee's Summit, Jackson County, Missouri

STORM WATER POLLUTION PREVENTION PLAN
DATED June 2023

(to be filled in by Contractor after award of contract, make copies of this form as necessary)

Subcontractor:

Company or Organization Name: _____

Address:_____

City, State, Zip Code: _____

Contact Name:_____ Phone #: _____

Contact Email: _____

Subcontractor:

Company or Organization Name: _____

Address:_____

City, State, Zip Code: _____

Contact Name:_____ Phone #: _____

Contact Email: _____

Subcontractor:

Company or Organization Name: _____

Address:_____

City, State, Zip Code: _____

Contact Name:_____ Phone #: _____

Contact Email: _____

Subcontractor:

Company or Organization Name: _____

Address:_____

City, State, Zip Code: _____

Contact Name:_____ Phone #: _____

Contact Email: _____

APPENDIX F

SUBCONTRACTORS CERTIFICATION

SUBCONTRACTORS CERTIFICATION

Construction Site
Wilshire Hills Phase III Public Improvments
Lee's Summit, Jackson County, Missouri

STORM WATER POLLUTION PREVENTION PLAN
DATED June 2023

SUBCONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that I understand the terms and conditions of the Missouri State Operating Permit - General Operating Permit by the Missouri Clean Water Commission that authorizes the discharge of storm water associated with construction or land disturbance activity from the construction site as part of this certification. Further, by my signature, I understand that I am fully responsible, along with all other contractors and subcontractors signing such certifications who are performing work activities under this contract, to comply with all provisions and requirements of the General Operating Permit and this Storm Water Pollution Prevention Plan. I understand that I, and my company, are legally required under the federal Clean Water Act and the Code of Missouri, to ensure compliance with the terms and conditions of the General Operating Permit and this Storm Water Pollution Prevention Plan (SWPPP) developed under the Missouri Clean Water Law and the National Pollution Discharge Elimination System (NPDES)."

Signature: _____ Date: _____

Print Name & Title: _____

Company Name: _____

Company Address: _____

_____

Phone Number: _____

Scope of Services: _____

_____

_____

_____

_____

_____

APPENDIX G

IMPLEMENTATION SCHEDULE

IMPLEMENTATION SCHEDULE (Page 1 of 3)
Wilshire Hills Phase III
Wilshire Drive
Lee's Summit, Jackson County, Missouri

To be filled in by the Contractor prior to initiation of construction.

Refer also to the civil plans for Sequence of Events.

Sequence of Events					
Construction Activity	**Proposed Initiation Date**	**Proposed Completion Date**	**Actual Initiation Date**	**Actual Completion Date**	**Contractor Responsible for Implementation**
Phase 1:					
1. Pre-construction meeting for SWPPP training prior to any construction.					
2. Construct temporary construction exit at location shown on plans.					
3. Install perimeter Erosion control barrier as shown.					
4. Install 30,000 square foot stone laydown area with 25' wide access drive from laydown area to construction entrance as soon as practical.					
5. Construct side open inlet, discharge pipe, F.E.S., and rip rap as shown. Install inlet protection.					
6. Strip topsoil in the area and stockpile in designated location. Dig detention basin to given depth along with swales directing water into basin.					
7. Begin clearing and grubbing operations. Clearing and grubbing shall be done only in areas where earthwork will be performed and only in areas where building is planned to commence within 14 days (or 7 days if the slope of the area is greater than 3:1 (3 feet horizontal to 1 foot vertical) or if the slope is greater than 3% and greater than 150 feet in length) after clearing and grubbing.					
8. Commence site grading and excavation of detention basin.					
9. Disturbed areas of the site where construction activity has ceased for more than 14 days (7 days if					

IMPLEMENTATION SCHEDULE (Page 2 of 3)
Wilshire Hills Phase III
Wilshire Drive
Lee's Summit, Jackson County, Missouri

Sequence of Events					
Construction Activity	**Proposed Initiation Date**	**Proposed Completion Date**	**Actual Initiation Date**	**Actual Completion Date**	**Contractor Responsible for Implementation**
the slope of the area is greater than 3:1 (3 feet horizontal to 1 foot vertical) or if the slope is greater than 3% and greater than 150 feet in length) shall be temporarily seeded and watered.					
10. Soil stockpiles shall be watered as needed to prevent wind erosion.					
11. Ensure the detention basin excessive sediment is removed after completion of construction back to shown grading.					
Phase 2:					
1. Install Storm Sewer					
2. Install Water Line					
3. Install Sanitary Sewer					
4. Build Streets, including curb and gutter					
5. Stabilize the entire site					
6. Disturbed areas of the site where construction activity has ceased for more than 14 days (7 days if the slope of the area is greater than 3:1 (3 feet horizontal to 1 foot vertical) or if the slope is greater than 3% and greater than 150 feet in length) shall be temporarily seeded and watered.					
7. Soil stockpiles shall be watered as needed to prevent wind erosion.					

IMPLEMENTATION SCHEDULE (Page 3 of 3)
Wilshire Hills Phase III
Wilshire Drive
Lee's Summit, Jackson County, Missouri

Sequence of Events					
Construction Activity	**Proposed Initiation Date**	**Proposed Completion Date**	**Actual Initiation Date**	**Actual Completion Date**	**Contractor Responsible for Implementation**
8. Ensure the detention basin excessive sediment is removed after completion of construction back to shown grading.					

APPENDIX H

INSPECTION REPORT FORMS

INSPECTION REPORT (Page 1 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

General Information			
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications	See Section 6 of SWPPP.		
Describe present phase of construction			
Type of Inspection: ❑ Regular (7 calendar day) ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature:			
Have any discharges occurred since the last inspection? ❑Yes ❑No **If yes, describe:**			
Is there any discharges at the time of inspection? ❑Yes ❑No **If yes, describe:**			

CERTIFICATION STATEMENT

"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."

Print name and title: _____

Inspector's Signature: _____ Date: _____

INSPECTION REPORT (Page 2 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

Site-specific BMPs
Carry a copy of the SWPPP maps during inspections.

Site-Specific BMPs					
BMP	**BMP Installed? (yes, no, or N/A)**	**BMP Maintenance Required? (yes, no, or N/A)**	**Corrective Action Needed and Notes**	**Responsible Party for Corrective Action**	**Implementation Date of Corrective Action**
Site Staff Training on Erosion & Sediment Control					
Site Staff Training on Spill Prevention & Response Plan					
Maintaining Equipment					
Staging Area(s)					
Vehicle/Equipment Maintenance & Fueling Area					
Toilet Facilities					
Maintaining New Vegetated Areas					
Gravel Construction Entrances, Exits, & Laydown					
Concrete Washout Area(s)					
Phasing Land Clearing Activities					
Disposing of Trash & Debris					
Construction Waste Materials Containment					

INSPECTION REPORT (Page 3 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

Site-Specific BMPs					
BMP	**BMP Installed? (yes, no, or N/A)**	**BMP Maintenance Required? (yes, no, or N/A)**	**Corrective Action Needed and Notes**	**Responsible Party for Corrective Action**	**Implementation Date of Corrective Action**
Hazardous Waste Materials Containment					
Pavement/Curb & Gutter Sweeping					
Curb Inlet Filters Using Gutterbuddy, Sediment Logs, Etc.					
Wind Erosion & Dust Control					
Permanent Diversion Dikes					
Silt Fences					
Sediment Logs / Fiber Rolls					
Topsoil Stockpile and Placement					
Polyacrylamide (PAM) / Floc Logs					
Temporary Diversion Dikes					
Rock Ditch Checks					
Pipe Slope Drains					

INSPECTION REPORT (Page 4 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

Site-Specific BMPs					
BMP	**BMP Installed? (yes, no, or N/A)**	**BMP Maintenance Required? (yes, no, or N/A)**	**Corrective Action Needed and Notes**	**Responsible Party for Corrective Action**	**Implementation Date of Corrective Action**
Management of Excavation Spoil Materials					
Dewatering into BMP(s)					
Detention Basin #1					
Soil Roughening					
Temporary Seed & Mulch Disturbed Areas					
Storm Sewers					
Storm Sewer Inlet Filter					
ADS Water Quality Unit					
Permanent Outlet Protection using Rip-Rap					
Temporary Inlet Protection using silt fence					
Temporary Outlet Protection using rip-rap					
Vegetated Drainage Swales / Channels					

INSPECTION REPORT (Page 5 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

Site-Specific BMPs					
BMP	**BMP Installed? (yes, no, or N/A)**	**BMP Maintenance Required? (yes, no, or N/A)**	**Corrective Action Needed and Notes**	**Responsible Party for Corrective Action**	**Implementation Date of Corrective Action**
Rip-rap Swales / Channels					
Rolled Erosion Control Products (mats, blankets, etc.)					
Light Compaction of All Placed Topsoil					
Retaining Wall					
Landscape Installation					
Permanent Seed & Mulch					
Tackifiers & Binders (typically hydroseeding, hydromulching, etc.)					
Grass Sod Placement					
Level Spreader					
Other:					

INSPECTION REPORT (Page 6 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

General Site Issues
Below are some general site issues that should be assessed during inspections.

General Site Issues					
BMP/activity	**Implemented? (yes, no, or N/A)**	**Maintenance Required? (yes, no, or N/A)**	**Corrective Action Needed and Notes**	**Responsible Party Corrective Action**	**Implementation Date of Corrective Action**
Are all slopes and disturbed areas not actively being worked properly stabilized?					
Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?					
Are discharge points and receiving waters free of any sediment deposits?					
Are storm drain inlets properly protected?					
Is the construction exit(s) preventing sediment from being tracked onto the street(s)?					
Are the surrounding streets clean and free of mud/dust/trash from the project?					
Is trash/litter from work areas collected and placed in covered dumpsters?					

INSPECTION REPORT (Page 7 of 10)
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri
NPDES Tracking Number: _____

General Site Issues					
BMP/activity	**Implemented? (yes, no, or N/A)**	**Maintenance Required? (yes, no, or N/A)**	**Corrective Action Needed and Notes**	**Responsible Party Corrective Action**	**Implementation Date of Corrective Action**
Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?					
Has the on-site SWPPP been updated?					
Other:					

Recommended Inspection Sequence – For information only
You should conduct thorough inspections of the site, making sure to inspect all areas and BMP's. The seven activities listed below are a recommended inspection sequence that will help you conduct a thorough inspection (EPA in *Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites (adapted from MPCA 2004)*.

1. Plan your inspection
   - Create a checklist to use during the inspection (see Inspection Report)
   - Obtain a copy of the site map with BMP locations marked
   - Plan to walk the entire site, including discharge points from the site and any off-site support activities such as concrete batch plants should also be inspected.
   - Follow a consistent pattern each time to ensure you inspect all areas (for example, starting at the lowest point and working uphill)
2. Inspect discharge points and downstream, off-site areas
   - Inspect discharge locations to determine whether erosion and sediment control measures are effective
   - Inspect nearby downstream locations, if feasible
   - Walk *down the street* to inspect off-site areas for signs of discharge. This is important in areas with existing curbs and gutters
   - Inspect downslope municipal catch basin inlets to ensure that they are adequately protected
3. Inspect perimeter controls and slopes
   - Inspect perimeter controls such as silt fences to determine if sediment should be removed
   - Check the structural integrity of the BMP to determine if portions of the BMP need to be replaced
   - Inspect slopes and temporary stockpiles to determine if erosion controls are effective
4. Compare BMP's in the site plan with the construction site conditions
   - Determine whether BMP's are in place as required by the site plan
   - Evaluate whether BMP's have been adequately installed and maintained
   - Look for areas where BMP's are needed but are missing and are not in the SWPPP
5. Inspect construction site entrances
   - Inspect the construction exits to determine if there is tracking of sediment from the site onto the street
   - Refresh or replace the rock in designated entrances
   - Look for evidence of additional construction exits being used that are not in the SWPPP or are not stabilized
   - Sweep the street if there is evidence of sediment
6. Inspect sediment controls
   - Inspect any sediment basins for sediment accumulation
   - Remove sediment when it reduces the capacity of the basin by the specified amount (many permits have specific requirements and include those in the SWPPP)
7. Inspect pollution prevention and good housekeeping practices
   - Inspect trash areas to ensure that waste is properly contained
   - Inspect material storage and staging areas to verify potential pollutant sources are not exposed to stormwater runoff
   - Verify that concrete, paint, and stucco washouts are being used properly and are correctly sized for the volume of wash water
     - Inspect vehicle/equipment fueling and maintenance areas for signs of stormwater pollutant exposure

APPENDIX I

SWPPP AMENDMENT REPORT FORM
&
OVERALL SWPPP AMENDMENT LOG

SWPPP AMENDMENT REPORT FORM
Wilshire Hills Phase III Public Improvements
Lee's Summit, Jackson County, Missouri

(MASTER FORM – copy this page and fill in for each amendment)

AMENDMENT NUMBER: _____

INSPECTOR: _____ DATE: _____

QUALIFICATIONS OF INSPECTOR: _____

_____

_____

CHANGES REQUIRED TO THE STORMWATER POLLUTION PREVENTION PLAN: _____

_____

_____

_____

_____

_____

_____

REASONS FOR CHANGES: _____

_____

_____

_____

_____

_____

TO BE PERFORMED BY: _____

_____

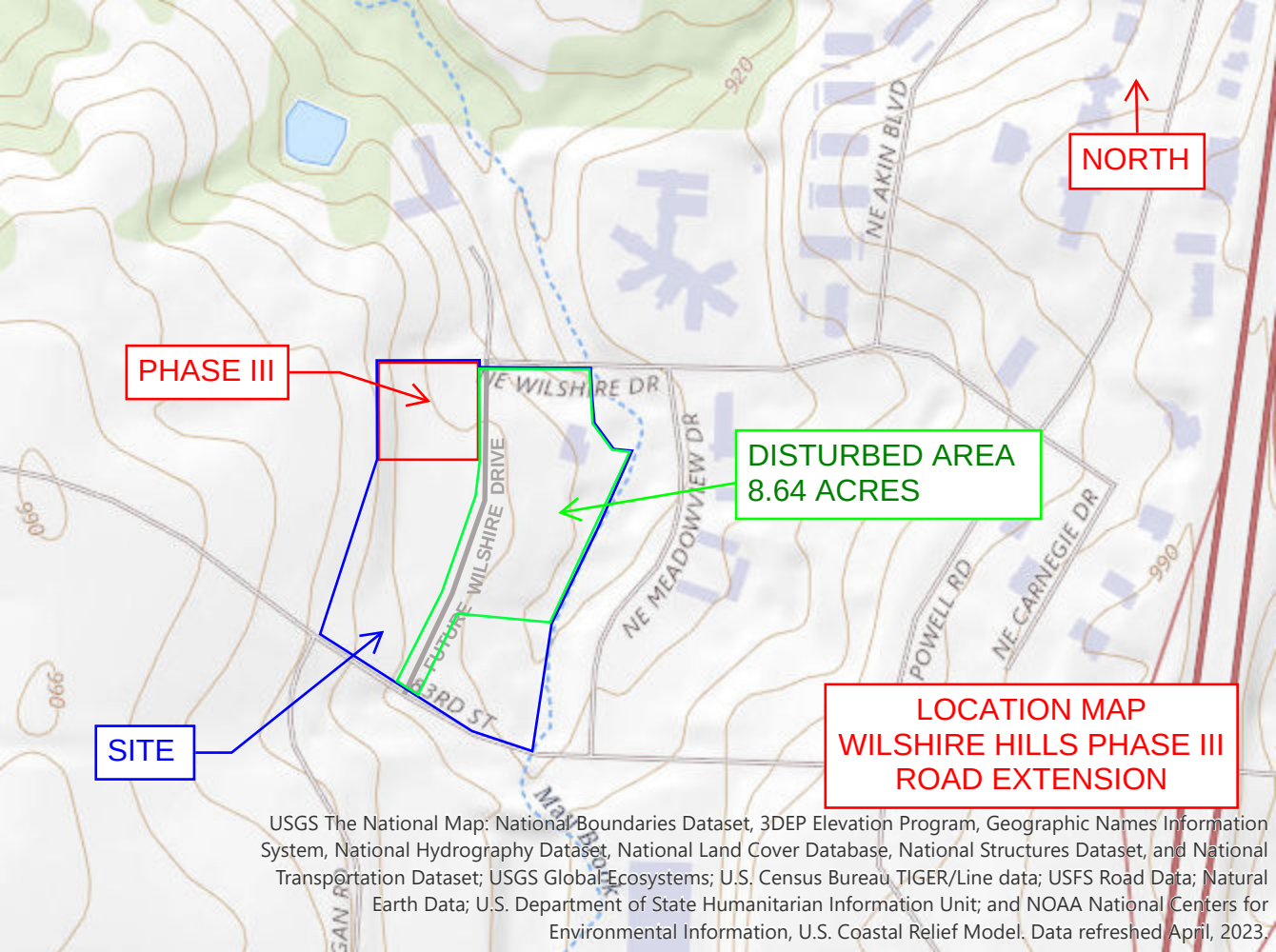
ON OR BEFORE: _____

OVERALL SWPPP AMENDMENT LOG
Wilshire Hills Phase III Public Improvements
Lee's Summit, Jackson County, Missouri

Amendment #	Date	Description of Amendment	Amendment Prepared by (Name and title)

APPENDIX J

GENERAL LOCATION MAP



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.

APPENDIX K

CONSTRUCTION SITE NOTICES

EMERGENCY, SITE, & SWPPP CONTACT INFORMATION
TO BE FILLED OUT BY CONTRACTOR AND POSTED ON-SITE

Emergency: Fire, Police, & Ambulance		Phone:	911
Operator:	**Address:**		
JES Holding Inc Wilshire Hills LLC	206 Peach Way Columbia, MO 65202	Phone:	573-443-2021
24 Hour Contact:	Brian Kimes	Mobile:	573-424-7116
General Contractor:	**Address:**		
		Phone:	
24 Hour Contact:		Mobile:	
24 Hour Contact:		Mobile:	
Subcontractors:	**Company Address / Contact Name:**		
Sub #1:		Phone:	
Sub #2:		Phone:	
Sub #3:		Phone:	
City/County Contact:	Lee's Summit Public Works Department	Phone:	830-257-8000
MDNR:	Water Pollution Control Program	Phone:	1-573-751-1300
National Response Center:		Phone:	1-800-424-8802
SWPPP Location:	Wilshire Drive, Lee's Summit, Jackson County, Missouri		
SWPPP Contact:	Phone:		

APPENDIX L

RECORD OF PERSONNEL TRAINING ACTIVITIES FORM

RECORD OF PERSONNELTRAINING ACTIVITIES FORM
Wilshire Hills Phase III Public Improvements
Lee's Summit, Jackson County, Missouri

Instructor: _____ Date: _____

Instructor Title: _____ Phone #: _____

Course Location: _____

Course Length: _____

SWPPP Training Topic: (check as appropriate)

- ☐ Structural BMPs
- ☐ Non-Structural BMPs
- ☐ Non-Storm Water Management
- ☐ Construction Plans
- ☐ Other: _____
- ☐ SWPPP Basics
- ☐ Good Housekeeping BMPs
- ☐ Waste Management and Materials Pollution Control
- ☐ Emergency Procedures

Specific Training Objective: _____

_____

_____

Attendance Roster: (attach additional pages as necessary)

Name	Company	Telephone Number	Signature

APPENDIX M

REPORTABLE QUANTITY RELEASE FORM

REPORTABLE QUANTITY RELEASE FORM
Wilshire Hills Phase III Public Improvements
Wilshire Drive
Lee's Summit, Jackson County, Missouri

The discharges of hazardous substances or oil in storm water discharges from construction sites shall be prevented or minimized in accordance with the SWPPP. When a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under 40CFR110, 40CFR117, and 40CFR302 occurs, the following steps shall be taken:

1. All measures shall be taken to contain and abate the spill and to prevent the discharge of the pollutant(s) to storm water or off-site.

2. Notice must be provided to the National Response Center (NRC) at 1-800-424-8802, and MDNR at 1-573-751-1300, in accordance with regulations referenced above as soon as site staff has knowledge of the discharge.

3. Contact the Operator, Engineer, local Fire Department, Joint Communications, local Sheriff's Department, City of Lee's Summit Public Works, MDNR, and EPA immediately upon knowledge of release.

4. The SWPPP shall be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans shall identify measures to prevent the recurrence of such releases and to respond to such releases.

Date of Spill	Material Spilled	Approximate Quantity of Spill (in gallons)	Agency(s) Notified	Date of Notification	SWPPP Revision Date

APPENDIX N

RECORD OF RAINFALL

RECORD OF RAINFALL

Wilshire Hills Phase III Public Improvmenets

Year 20___ Lee's Summit, Jackson County, Missouri All rainfall amounts are in inches.

Day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
1												
2												
3												
4												
5												
6												
7												
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27												
28												
29												
30												
31												
Initials												

APPENDIX O

NOTICE OF TERMINATION(S)
&
FINAL STABILIZATION/TERMINATION CHECKLIST

FINAL STABILIZATION/TERMINATION CHECKLIST

Wilshire Hills Phase III Public Improvements
Lee's Summit, Jackson County, Missouri

☐ All soil disturbing activities are complete.

☐ All construction debris and trash has been removed.

☐ All paved surfaces onsite and in the surrounding area have been cleaned of all onsite sediment, trash, debris, etc.

☐ All Subcontractors have completed and cleaned up their work involving land disturbance/erosion and sediment control. The general contractor has inspected and approved this work.

☐ All temporary BMP's (such as silt fence) have been removed, finish graded, and seed and mulched. Residual sediment has been removed as needed. BMP's that will completely decompose, including some fiber rolls and blankets, may be left in place as approved by Operator.

☐ All areas where erosion-control blankets/mats were installed have been inspected. All loose, exposed blanket has been restapled/staked. If less than 70% blanket area is covered by vegetation, coordinate with Operator to determine solution.

☐ The project is stabilized. (The project is considered stabilized when perennial vegetation, pavement, buildings, or structures using permanent materials cover all areas that have been disturbed. Perennial vegetative cover shall be at least 70% of fully established plant density over 100% of the disturbed area.)

☐ All signs of erosion and sediment deposition have been repaired and are permanently stabilized.

☐ All permanent BMP's are in place and operational. Written maintenance requirements for all permanent BMP's have been provided to the Operator.

☐ All drainage conveyances and inlets/outlets have been installed per plan; all trash/debris has been removed, and are functioning as intended. All Inlet/outlet areas have been inspected to ensure complete stabilization in the surrounding area.

☐ All rip-rap areas are stable and rip-rap that has become dislodged has been replaced.

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that all storm water discharges associated with Construction Activity from the identified project that are authorized by the NPDES General Operating Permit, have been eliminated, and that all disturbed areas and soils at the construction site have achieved final stabilization and all temporary erosion and sediment control measures have been removed or will be removed at a scheduled time coordinated with and approved by the Operator."

Name (Print) & Title: _____ _____

Signature: _____ Date: _____

Company Name: _____

Final Stabilization Date: _____