Construction
Storm Water Pollution
Prevention Plan (SWPPP)

LEE'S SUMMIT FIRE STATION #3

Project No. 19622.000

April 2018

BARTLETT & WEST, INC.

228 NW Executive Drive
Lee's Summit, MO 64063

TABLE OF CONTENTS

12.5 Erosion Control Pre-Clearing Plan
12.6 Erosion Control Final Restoration

MDNR Land Disturbance Permit to be issued by General Contractor upon approval by city of land disturbance plans.

1.0 INTRODUCTION: SWPPP FOR MARTIN LUTHER LUTHERAN CHURCH

1.1 Purpose – This Storm Water Pollution Prevention Plan (SWPPP) was developed to provide guidance in implementing Best Management Practices (BMPs), for the construction of Lee's Summit Fire Station #3. The BMP's are employed to prevent the discharge of sediment via storm water runoff. The land disturbance portion of this project is approximately 2.23 acres of a 2.23 acre site. The surface water discharges generally to the south and east. All surface water drains to tributary to Cedar Creek.

1.2 SWPPP Team

The on-site contact, responsible for day to day implementation, will be the construction site SWPPP coordinator. The construction site coordinator shall be the superintendent for the successful bidder/contractor.

The construction site SWPPP Coordinator shall oversee maintenance practices identified in the SWPPP as Best Management Practices (BMPs).

The construction site SWPPP Coordinator shall oversee inspection and monitoring activities of BMPs.

The construction site SWPPP Coordinator shall identify any new potential pollutant sources and ensure that they are added to the SWPPP.

The construction site SWPPP Coordinator shall ensure that any changes in construction plans are addressed in the SWPPP.

The construction site SWPPP Coordinator shall notify the owner's representative if any SWPPP deficiencies are encountered.

2.0 PRE-CONSTRUCTION SITE DESCRPTION

2.1 Site Location: The site currently rests on undeveloped open ground. The location is southwest of the intersection of NW Shamrock Avenue and NW Pryor Road in Lee's Summit, Missouri. The site is in the Northeast ¼ of the Southeast ¼ of Section 2, Township 47 North, Range 32 West.

2.2 Physical Description - Existing Site Conditions. The site is Lot 1 of a Pending Final Plat containing 2.23 acres of open ground. The current property generally drains from north to south and then drains toward each southern corner of the proposed lot. The surface water from the property discharges to a tributary before it is received downstream by Cedar Creek. The south property line abuts a residential subdivision. The north side of the property will have future Shamrock Ave. (Plat Pending) across the entire front of the property.

3.0 IDENTIFICATION OF POTENTIAL STORM WATER CONTAMINANTS

3.1 Site Activities - Construction Type

The primary construction activities involved with this project (which has a potential for soil erosion and contamination) is excavation and construction using typical building materials.

The contractor will be responsible for implementing best management practices to prevent soil from being eroded and washed outside of the project boundary.

4.0 DRAINAGE AREAS – The drainage patterns will be kept close to the existing conditions.

5.0 BEST MANAGEMENT PRACTICES - STORM WATER MANAGEMENT – EROSION AND SEDIMENT CONTROL - BEST MANAGEMENT PRACTICES TO BE IMPLEMENTED

5.1 Erosion Control Plan and Sequence:

1. The contractor is responsible for the preparation and submittal of all required MDNR permitting and associated fees.
2. The contractor will be responsible for implementing the erosion control and storm water management control measures. The contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the contractor.
3. Install construction entrance at owner approved location and perform land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed.
4. Construction of detention pond and grading of proposed parking lot. Installation of underground storm sewer system.
5. Install erosion fence around site along with site BMPs.
6. Install temporary mulching as required. (No ground shall be left open for more than 14 days.) All mulch shall be crimped.
7. Seed, fertilize and mulch unsurfaced areas within 14 days after construction activities are complete.
8. Remove sediment basin concrete blocks and rip rap and install stormwater control device.

5.2 General - This plan outlines storm water management and sediment and erosion control practices to be followed by the Contractor during all phases of construction of the project. The Contractor will be responsible to prevent soil or

sediment loss from the construction site and cannot leave the site until all permanent erosion control, sediment control and storm water management practices are in place, inspected and have been found to be satisfactory, and until all temporary practices have been properly removed.

5.3 Storm Water Management - This project has been designed to provide positive post-construction control of excess storm water generated on the site through the use of curbs, gutters, piping, and a detention basin. During the course of construction, the Contractor will install and maintain storm water management structures in a manner to maximize storm water control.

5.4 Erosion and Sediment Control - This project is designed to minimize off-site effect of soil erosion and resulting sediment loss through the use of proper construction techniques, including installing both temporary and permanent management practices. All soil disturbing activities performed by the Contractor will be accomplished in such a manner as to prevent the loss of sediment in storm water and tracking of soil from vehicle traffic from the construction site. To accomplish this, the following specific steps will be taken during construction:

5.5 Overall Plan and Contractor Responsibility:

1. The Contractor shall keep a written log of when construction activities begin, erosion and sediment controls are installed, inspected and repaired. Copies of log shall be submitted to the owner with every pay request. Copies shall be maintained on site.

2. The Contractor shall monitor erosion and sediment control measures throughout the project. This plan may be updated as construction progresses with approval of Engineer.

3. Temporary erosion and sediment control measures installed as part of this plan shall not be removed following construction until slopes are stabilized to a non-erosive state with established grass.

4. Immediately after mobilization and prior to starting any soil disturbing activities, the Contractor shall install the perimeter erosion and sediment control measures of the perimeter silt fence, gravel construction entrance. It is recognized that some site clearing and preparation may be required to properly install such measures.

5. The recommended sequence of construction activities and of the installation and removal of erosion and sediment control measures is as follows: Perimeter control measures (silt fence) including areas draining to a drainageway such as a stream, gravel construction entrance, construction of

drive(s) and parking lot, inlet protection and any ditch checks, final grading, seeding, fertilizing and mulching on all slopes and disturbed areas, removal of temporary practices, removal of perimeter controls and site cleanup.

6. Perimeter silt fence, ditch checks, construction entrance shall be constructed in accordance with details shown. Install silt fence where represented on plan as ditch checks and slope control, around inlets, areas draining to a drainageway such as a stream and other locations as needed to prevent sediment from leaving the site. Measures will be kept in place until grass is established.

7. Erosion control perimeter fence shall be inspected and maintained by the Contractor not less than weekly or within 24 hours after a precipitation event of 0.5 inches or more. Maintenance shall include but not limited to sediment removal, silt fence and hay bale barrier repair and/or replacement.

8. Construction entrance(s) shall be maintained by the Contractor in a condition that will prevent tracking or flowing of sediment onto public right-of-ways and paved streets. This may include periodic top dressing with additional crushed stone as conditions warrant. Repair of entrance(s), cleaning on a daily basis of right-of-way and paved streets that have been soiled by construction activities, shall be the Contractor's responsibility.

9. If additional ingress and egress to the construction site is required over entrance(s) shown hereon, Contractor shall coordinate with the Engineer the location and construction details of these additional entrances. Usage of non-stabilized entrances will not be permitted.

10. During all soil disturbing activities, the Contractor will take appropriate steps using accepted construction methods to minimize the time of exposure of unprotected soil and other construction materials to rainfall.

11. No ground shall be left open for more than 14 days of non-activity without being mulched and/or seeded.

12. Soil stockpiled for more than seven days shall have silt fence or bales placed on the downhill slope to trap sediment.

13. Whenever soil, rock, vegetation or other materials are exported for placement away from the construction site covered in this plan, the Contractor is responsible for determining that EPA storm water permitting requirements are met. Prior to the removal of any materials from the site the Contractor will furnish the owner with written agreement, signed by each

landowner who will receive exported materials, stating that they accept the material and that receiving site is properly permitted, when required.

5.6 Silt Fence

Silt fence is geotextile fabric, supported by wooden or metal stakes (4' long minimum). The purpose of silt fence is to slow water runoff and intercept small amounts of sediment.

Silt fence will be placed in strategic areas at the construction site. These areas include the perimeter of the any soil stockpiled for more than 14 days, around any existing storm water inlet structures, including culverts, which are close to trench excavations. All silt fence installation is temporary and should be removed once construction activity is complete and vegetation is established.

1. Stakes shall be 4' (min.) long and of one of the following materials.
    a. Hardwood – 1 3/16" x 1 3/16"
    b. Southern Pine (No. 2) – 2–5/8" x 2-5/8"
    c. Steel U.T.I. or C Section – 1.33 pounds per 1'-0"
2. Attach fence to stakes with staples, plastic zip ties, wire or nails.
3. Refer to plan sheets to estimate the length of silt fence required.

Accumulated sediment should be removed from the silt fence as necessary to prevent the fence from collapsing under the weight of the soil. Any damaged or collapsed sections of silt fence should be repaired as soon as they are identified.

5.7 Disturbed Area Protection

1. Soil stockpiled for more than seven days will have erosion fence placed on the downhill side to trap sediment.
2. No ground shall be left for more than 14 days of non-activity without being mulched and/or seeded.

5.8 Vegetative Cover

Existing vegetative cover shall be preserved wherever possible; and clearing shall be limited to the minimum required for construction.

Within 14 days after completion of any grading activities, disturbed areas shall be seeded. Water for seeding shall be potable.

Plant seed on unfrozen soil; do not perform seeding when wind exceeds 15 mph. Protection: Restrict foot and vehicular traffic from seeded areas after planting to end of established period.

Tillage. After the areas required to be seeded have been brought to the grades specified on the drawings, they shall be tilled to a depth of at least three inches by scarifying, disking, harrowing or other approved methods. All debris and stones larger than one inch in diameter remaining on the surface after tillage shall be removed.

Seed shall be sowed by drilling, broadcasting or other approved method that will evenly distribute the seed over the area to be planted. If drilling is used, drills shall be not more than four inches apart and successive passes shall overlap. The seed shall be covered by an average depth of ¼ inch by means of brush, harrow, cultipacker or other approved device. Contractor shall reseed turfed areas with seed mixture that matches existing turf or grass areas.

Optimal seeding season in northeast Kansas is February 15- April 30 and August 15- September 30. In the event that seeding must occur at other times of the year, the engineer may substitute a winter wheat or annual rye grass, to be used as temporary seeding.

6.0 SEEDING

6.1 Seed

The seed shall be uniformly distributed by an industry-approved method. A seed mixture and suggested rates of application are listed below. The contractor shall be responsible for adapting the seed mixture and rate of application to the site conditions so as to insure a uniform stand of healthy grass in reasonable conformity with adjacent areas.

Seed for existing residential lawns and street rights-of-way shall be as follows:

Variety	Pounds/Acre	Purity	Germination
Turf-Type Perennial Rye Grass	40	95%	85%
Tall Turf Fescue	348	95%	85%
Kentucky Blue Grass	65	80%	70%

Seeding for agricultural grasslands and other non-developed areas.

Variety	Pounds/Acre	Purity	Germination
Perennial Rye Grass	40	95%	85%
Bromegrass	100	80%	80%
Light Bluestem (Aldous)	4	30%	50%
Indian Grass (Osage)	2	90%	80%
Switch Grass (Blackwell)	2	93%	40%

Big Bluestem Grass	4	30%	50%

6.2 Fertilizer:

Fertilizer shall be commercial types, delivered in sealed bags and bearing the manufacturer's Guaranteed Statement of Analysis. Analysis of fertilizer shall be within the following range:

Nitrogen	12%	
Phosphoric Acid	24%	
Potash		12%

Fertilizer shall be applied at the rate of 100 pounds of actual nitrogen as recommended by the manufacturer on areas to be seeded. Fertilizer shall be incorporated into the soil to a depth of at least three inches and may be incorporated as a part of the tillage operation.

6.3 Mulch

Mulch shall be straw stalks from oats, wheat, rye, barley or rice that are free from noxious weeds mold or other objectionable material. Straw shall be in an air-dry condition and suitable for placing with blower equipment.

Mulch shall be evenly spread at the rate of two tons of dry mulch per acre. The mulch shall be anchored by either a mulch tiller, twine or netting.

6.4 Construction Exit Protection

Construction traffic entering and leaving the site should be limited to dedicated access points. A temporary gravel entrance pad should be constructed at access points. The purpose of the gravel pads is to prevent the transfer of sediment from the site to the public road, where sediment may be washed into unprotected inlet drains.

The gravel pad shall be constructed of 2”-3” coarse stone, 6” in depth. The pad shall be 50’ long (min), unless the particular site configuration makes this impractical. The gravel pad shall be at least 12’ wide, flaring to 24’ wide at its intersection with the public road.

The gravel pad shall be monitored; and, any excess mud or sediment shall be removed from the pad as soon as it is identified.

6.5 Temporary Inlet Sediment Barrier

The Contractor has the option to use any of the materials for temporary inlet sediment barriers that are listed on the plan sheets. Construct the temporary inlet sediment barriers according to the details shown in the Contract Documents. If temporary silt fence is used, reduce post spacing and drive the posts deeper into the ground in low areas and soft, swampy ground. When deposits reach approximately 1/3 the height of the silt fence, remove and dispose of the sediment. If temporary filter socks are used, when deposits reach approximately ½ the height of the sock, remove and dispose of the sediment.

6.6 Concrete Washouts:

Prior to concrete placement activities which may involve a ready mix concrete truck, a pit shall be constructed. The pit should be constructed on high ground, away from intermittent streams or any place where rain runoff may concentrate. The pit shall be 3 ft deep, 10 ft wide, and 10 ft long. Any cleaning of concrete chutes or concrete tools shall occur such that waste water and concrete is disposed in the pit. At no time shall any concrete tool or chute cleaning occur such that the waste water and concrete lands on the ground, in a location where it could run off to a stream or channel.

6.7 Planning and Scheduling

Planning and scheduling of construction site activities should be coordinated with BMP's, in order to minimize erosion from the site. All materials and labor necessary to install necessary BMP's shall be available prior to commencing each phase of construction. Major clearing activities or excavations should not be conducted if the weather forecast indicates that there will not be enough time to install BMP's, prior to the next precipitation event.

6.8 Maintenance and Removal of Temporary Erosion and Pollution Control Devices

Maintain the integrity of the temporary erosion and pollution control devices as long as they are necessary to contain sediment runoff. Inspect the temporary erosion and pollution control devices at least daily during prolonged rainfall. Correct any deficiencies immediately. If directed by the Engineer, remove the temporary devices. After removal of the temporary erosion and pollution control devices, remove and dispose of the silt accumulation. Grade, fertilize, seed, and mulch any bare areas.

6.9 Additional Site Management BMP's

The contractor shall be responsible for obtaining all permits associated with pavement disposal and contaminated soils disposal.

All mechanical equipment on site shall be kept in proper working order and monitored for leaks. Any soil contaminated by vehicle leaks shall be disposed of off site, in accordance with local codes and restrictions. Maintenance activities on vehicles, which involve fluid exchange, shall not be performed at the site. Equipment servicing and/or cleaning shall take place in a designated area surrounded by containment berms capable of providing 110% of the volume of the containers for which they serve with liner.

All paints, sealants, chlorine, fertilizers and other chemicals shall be kept in tightly sealed containers.

Dust control, minimize wind erosion and controlling dust shall be accomplished by one or more of the following: covering 30% or more of the soil surface with a non-erodible material, roughening the soil to produce ridges perpendicular to the prevailing wind and ridges should be about six inches in height, frequent watering of excavation and fill areas, providing additional gravel at entrance/exit and contractor parking area if needed.

Any on-site dumpster used for waste materials shall be covered. Waste materials shall not be burned or buried on the site.

Restroom facilities or portable toilets shall be made available to all workers at the site. Portable toilets shall be serviced at least once per week or more often as needed.

Storing construction materials away from drainage courses and low areas.

7.0 SITE INSPECTION/REPORT

The construction SWPPP Coordinator shall be responsible for making visual inspections of the site at the end of every work day. A record inspection of the site shall be made once every two weeks. In addition, a record inspection shall be made within 24 hours of any precipitation greater than 0.50 inches.

The inspection will verify that all prescribed silt fence is in place and in good condition, with any excess silt removed. The inspection will identify any bare spots in seeded areas. The inspection will identify any chemical spills. All deficiencies noted shall be remedied within seven days, with the exception of chemicals spills – which shall be remedied immediately.

A maintenance inspection report will be made after each record inspection. These records shall be kept for a minimum of one year. In addition, the contractor is strongly encouraged to photograph all site BMP's within 24 hours of rainfall greater than 0.50 inches.

8.0 PLAN MODIFICATION

If site conditions necessitate a change in the SWPPP, the changes shall be made by a qualified professional. Changes shall be documented in the SWPPP. Conditions that may require a modification to the SWPPP include:

Deficiencies noted on the inspection report(s)
A change in construction activity or construction sequence
The SWPPP is determined to be inadequate/ineffective
Notification of BMP deficiency by MDNR
Notification of violation of Surface Water Quality Standards by MDNR

9.0 CONTRACTORS

All contractors at the site, who could potentially affect soil erosion or pollution at the site, shall be given access to a copy of the SWPPP. Contractors shall also be notified, in writing, in the event there are modifications to the SWPPP.

All contractors involved with the construction activity shall be required to complete a Contractor's Certification.

10.0 PERMIT TERMINATION

Upon completion of construction activities, a Notice of Termination (NOT) shall be submitted by the construction SWPPP coordinator to the owner, to be forwarded to the Missouri Department of Natural Resources (MDNR). Completion is defined by having all disturbed areas covered by pavements, crushed rock, or vegetation. Vegetation shall have a density of at least 70% (compared to existing vegetation in the area) before being declared complete.

11.0 RESPONSIBLE OFFICIALS

The person responsible for day to day operations, as well as conducting record inspections, is the successful Bidder/Contractor. All SWPPP inspection reports and other documentation shall be delivered to the General Contractor.

12.0 ATTACHMENTS

LEE'S SUMMIT
MISSOURI

Development Services Department – Development Engineering Division
Land Disturbance Permit Application

Project Information:

Project Site/Title: Lee's Summit Fire Station #3

Project Location/Address: Southwest of intersection of NW Pryor Road & NW Shamrock Ave.

Proposed Start Date: Summer 2018 Estimated Completion Date: Spring 2019

Area of Land Disturbance (Acres): 2.23 ac. Land Disturbance Permit #: _____
(City Use Only)

Purpose & Intent of Permit:

The City of Lee's Summit requires any public or private entity, which causes or intends to cause a condition that allows for soil erosion (i.e. the denuding of ground, the stockpiling / storing of dirt, or covering the ground with dirt) in an area(s) greater than 2,000 square feet, to obtain a Land Disturbance (LD) Permit. The LD Permit application shall be submitted to the City along with the appropriate fee and an Erosion and Sediment Control (ESC) Plan that is in accordance with procedures outlined in the City's Design and Construction Manual (DCM). (http://cityofls.net/Development/Development-Regulations/Design-and-Construction-Manual.aspx)

For projects one (1) acre or greater, the Missouri Department of Natural Resources (MDNR) may require a separate land disturbance permit in addition to the City's permit. Applicants shall contact MDNR (http://www.dnr.mo.gov/env/wpp/epermit/help.htm) to determine their permit requirements.

Application Procedure:

1. Submit completed LD Permit application, a copy of the Storm water Pollution Prevention Plan (SWPPP), two (2) copies of the ESC Plan* designed in accordance with the DCM requirements, and the appropriate application fee (see below) to the Development Services Department – Development Engineering Division for review and approval. (* ESC Plan shall be prepared by a professional engineer or a certified erosion and sediment control specialist.)
2. The ESC Plan must be approved and the ESC system(s) must be installed and inspected before a LD Permit can be issued and land disturbance activities can commence.
3. If a MDNR land disturbance permit is required, verification of the MDNR permit application or a copy of the MDNR permit, for the project site, shall be provided to the City.

Additional Permit Information & Requirements:

1. The permit holder shall be responsible for installing and maintaining all ESC measures for the duration of the project. If approved ESC measures fail, additional ESC measures will be required in addition to what is shown on the initial approved plans to prevent erosion from occurring on the project site.
2. Clearing and grubbing land, vegetation stripping, grading or stockpiling, on land not defined within the ESC project area is prohibited.

3. All ESC systems shall comply with all DCM requirements, in particular Sections 1010.C and 2153 for soil stabilizing erosion control measures which shall be implemented within fourteen (14) calendar days after construction activities have temporarily or permanently ceased on any portion of the overall project site.
4. If backfilling is required due to the land disturbance activities, all material must be suitable backfill and shall be tested according to applicable codes and standards adopted by the City of Lee's Summit.
5. A LD Permit is valid for one (1) year after issuance. A one (1) year extension can be granted upon written request.

Permit Fees:

Permit fee payment is due upon application submittal. The LD permit fee is based on the total area of the project site as follows: 0-1 acre = $200; >1-3 acres = $400; >3-5 acres = $600; >5-15 acres = $800; >15-25 acres = $1,000; >25-50 acres = $1,200; >50 acres = $1,400. Check shall be made payable to: "City of Lee's Summit".

Acceptance of Conditions (All fields must be completed)
By signing this permit the undersigned agrees to abide by the approved ESC Plan, SWPPP and associated requirements stated in the DCM of the City of Lee's Summit.

Permit Holder/ Applicant:

Company: City of Lee's Summit, MO

Contact Person(s): Mike Weisenborn, Project Manager

Address: 220 SW Green Street, Lee's Summit, MO 64063

Phone No: (816)969-1240 Email: Mike.Weisenborn@cityofls.net

Signature: _____ Date: _____

Title: ☐ Property Owner or ☐ Contractor

Engineer/ CPESC Prof.:

Company: Bartlett & West, Inc.

Contact Person(s): _____

Address: 228 NW Executive Drive, Lee's Summit, MO 64063

Phone No: (816)525-3562 Email: brian.wenninghoff@bartwest.com

Required Attachments:	Attached	Verified (City Use Only)
Erosion and Sediment Control Plan – 2 sets	X	
Storm Water Pollution Prevention Plan (SWPPP)	X	
Permit Fee		
MDNR Land Disturbance Permit - copy (if required)		

APPROVAL (City Use Only)

_____ _____

Development Services Department Representative Date

CONSTRUCTION ACTIVITIES RECORD

Activity	Location within Site	Start Date	End Date	Date BMPs Initiated

INSPECTION AND MAINTENANCE REPORT

INSPECTOR: _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:

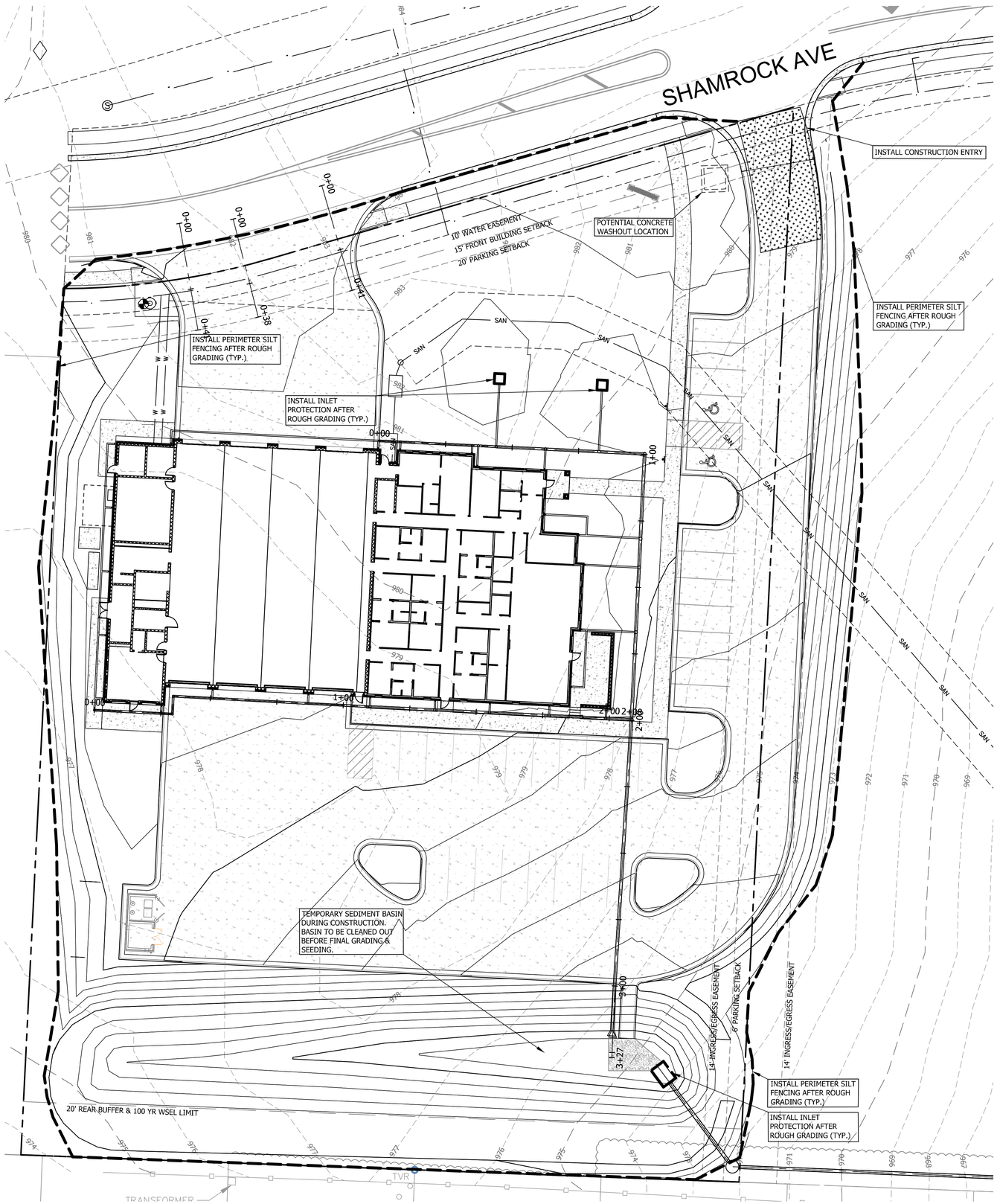
_____

_____

_____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL: _____

Area	Any Discharges?	BMPs Used	Condition	Problems Noted	Required Action and Date



12/1/2017 2:17:26 PM
M:\2017\17016 - Lee's Summit
Fire Station 311 - Drawings\17016
preliminary design plan.rvt

Bartlett&West
www.bartlettwest.com

EROSION CONTROL NOTES:

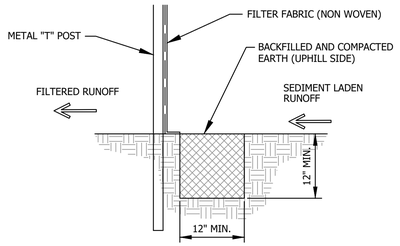
1. THE CONTRACTOR SHALL KEEP A WRITTEN LOG OF WHEN CONSTRUCTION ACTIVITIES BEGIN, EROSION AND SEDIMENT CONTROLS ARE INSTALLED, INSPECTED AND REPAIRED. COPIES OF LOG SHALL BE FURNISHED TO THE ENGINEER.
2. THE CONTRACTOR SHALL MONITOR EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE PROJECT. THIS PLAN MAY BE UPDATED AS CONSTRUCTION PROGRESSES WITH APPROVAL OF ENGINEER.
3. THE CONTRACTOR SHALL COMPLY WITH THE SOIL EROSION CODE FOR THE CITY OF LEE'S SUMMIT, MISSOURI.
4. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES INSTALLED AS PART OF THIS PLAN SHALL NOT BE REMOVED FOLLOWING CONSTRUCTION UNTIL SLOPES ARE STABILIZED TO A NON-EROSIVE STATE WITH ESTABLISHED GRASS OR AS DIRECTED BY THE ENGINEER.
5. IMMEDIATELY AFTER MOBILIZATION AND PRIOR TO STARTING ANY SOIL DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL ANY PERIMETER EROSION AND SEDIMENT CONTROL MEASURES, GRAVEL CONSTRUCTION ENTRANCE(S) AND ANY TEMPORARY SEDIMENT BASIN(S). IT IS RECOGNIZED THAT SOME SITE CLEARING AND PREPARATION MAY BY REQUIRED TO PROPERLY INSTALL SUCH MEASURES.
6. THE RECOMMENDED SEQUENCE OF CONSTRUCTION ACTIVITIES AND OF THE INSTALLATION AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES IS AS FOLLOWS: ANY PERIMETER CONTROL MEASURES (SILT FENCE) INCLUDING AREAS DRAINING TO A DRAINAGE WAY SUCH AS A STREAM, GRAVEL CONSTRUCTION ENTRANCE(S), CONSTRUCTION OF SANITARY SEWERS, STORM SEWERS, INLET PROTECTION AND DITCH CHECKS, STREETS, FINAL GRADING, SEEDING, FERTILIZING AND MULCHING ON ALL SLOPES AND DISTURBED AREAS, INDIVIDUAL SITE CONTROL MEASURES, REMOVAL OF TEMPORARY PRACTICES, REMOVAL OF PERIMETER CONTROLS AND SITE CLEANUP.
7. PERIMETER SILT FENCE, BALE DITCH CHECKS AND CONSTRUCTION ENTRANCE(S) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS OR THE CITY REQUIREMENTS. INSTALL SILT FENCE WHERE REPRESENTED ON PLAN AS DITCH CHECKS AND SLOPE CONTROL, AROUND INLETS, ALONG ROADWAYS, AREAS DRAINING TO DRAINAGE WAYS SUCH AS A STREAM AND OTHER LOCATIONS AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE. MEASURES WILL BE KEPT IN PLACE UNTIL GRASS IS ESTABLISHED TO 70% COVERAGE.
8. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED BY THE GENERAL CONTRACTOR NOT LESS THAN WEEKLY OR WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR MORE. MAINTENANCE SHALL INCLUDE BUT NOT LIMITED TO SEDIMENT REMOVAL, SILT FENCE AND HAY BALE BARRIER REPAIR AND/OR REPLACEMENT.
9. CONSTRUCTION ENTRANCES SHALL BE MAINTAINED BY THE GENERAL CONTRACTOR IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS AND PAVED STREETS. THIS MAY INCLUDE PERIODIC TOP DRESSING WITH ADDITIONAL CRUSHED STONE AS CONDITIONS WARRANT. REPAIR OF ENTRANCES, CLEANING ON A DAILY BASIS OF RIGHT-OF-WAYS AND PAVED STREETS THAT HAVE BEEN SOILED BY CONSTRUCTION ACTIVITIES SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY.
10. THE CONTRACTOR SHALL NOTIFY EACH SUB-CONTRACTOR OR ENTITY (INCLUDING UTILITY CREWS AND CITY EMPLOYEES OR THEIR AGENTS) THAT WILL BE PERFORMING WORK AT THE SITE OF THE EROSION CONTROL PLAN AND WHAT ACTIONS OR PRECAUTIONS SHALL BE TAKEN TO MINIMIZE THE POTENTIAL FOR SOIL EROSION.
11. DURING ALL SOIL DISTURBING ACTIVITIES, THE GENERAL CONTRACTOR WILL TAKE APPROPRIATE STEPS USING ACCEPTED CONSTRUCTION METHODS TO MINIMIZE THE TIME OF EXPOSURE OF UNPROTECTED SOIL AND OTHER CONSTRUCTION MATERIALS TO RAINFALL.
12. NO GROUND SHALL BE LEFT OPEN FOR MORE THAN 7 DAYS OF NON-ACTIVITY WITHOUT BEING MULCHED AND/OR SEEDED.
13. SOIL STOCKPILED FOR MORE THAN 7 DAYS SHALL HAVE SILT FENCE PLACED ON THE DOWNHILL SLOPES TO TRAP SEDIMENT.
14. WHENEVER SOIL, ROCK, VEGETATION OR OTHER MATERIALS ARE EXPORTED FOR PLACEMENT IN AREAS OFF OF THE CONSTRUCTION SITE COVERED IN THIS PLAN, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR DETERMINING THAT EPA STORM WATER PERMITTING REQUIREMENTS ARE MET. PRIOR TO THE REMOVAL OF ANY MATERIALS FROM THE SITE THE GENERAL CONTRACTOR WILL FURNISH THE ENGINEER WITH WRITTEN AGREEMENT, SIGNED BY EACH LANDOWNER WHO WILL RECEIVE EXPORTED MATERIALS, STATING THAT THEY ACCEPT THE MATERIAL AND THAT RECEIVING SITE IS PROPERLY PERMITTED, WHEN REQUIRED.

STORM WATER MANAGEMENT - Sediment Control

1. THIS PLAN OUTLINES STORM WATER MANAGEMENT AND SEDIMENT AND EROSION CONTROL PRACTICES TO BE FOLLOWED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE TO PREVENT SOIL OR SEDIMENT LOSS FROM THE CONSTRUCTION SITE AND CANNOT LEAVE THE SITE UNTIL ALL PERMANENT EROSION CONTROL, SEDIMENT CONTROL AND STORM WATER MANAGEMENT PRACTICES ARE IN PLACE, INSPECTED AND HAVE BEEN FOUND TO BE SATISFACTORY, AND UNTIL ALL TEMPORARY PRACTICES HAVE BEEN PROPERLY REMOVED.
2. THIS PROJECT HAS BEEN DESIGNED TO PROVIDE POSITIVE POST-CONSTRUCTION CONTROL OF EXCESS STORM WATER GENERATED ON THE SITE THROUGH THE USE OF CURBS, GUTTERS, PIPING, STORM WATER BASINS. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL AND MAINTAIN STORM WATER MANAGEMENT STRUCTURES IN A MANNER TO MAXIMIZE STORM WATER CONTROL.
3. THIS PROJECT IS DESIGNED TO MINIMIZE OFF-SITE EFFECT OF SOIL EROSION AND RESULTING SEDIMENT LOSS THROUGH THE USE OF PROPER CONSTRUCTION TECHNIQUES, INCLUDING INSTALLING BOTH TEMPORARY AND PERMANENT MANAGEMENT PRACTICES. ALL SOIL DISTURBING ACTIVITIES PERFORMED BY THE CONTRACTOR SHALL BE ACCOMPLISHED IN SUCH A MANNER AS TO PREVENT THE LOSS OF SEDIMENT IN STORM WATER AND TRACKING OF SOIL FROM VEHICLE TRAFFIC FROM THE CONSTRUCTION SITE.
4. PROPOSED DETENTION BASINS TO ACT ALSO AS SEDIMENT CONTROL BASINS. REFER TO SHEET C5.2 FOR POND SIZING. NO OUTLET STRUCTURE IS PROPOSED DUE TO HIGH PECULATION RATES OF SANDY SOILS. BASIN IS DESIGNED TO CONTAIN 100 YEAR RAINFALL EVENT WITH A MINIMUM OF 2.00 FEET OF FREEBOARD.

CONSTRUCTION SPECIFICATIONS

1. WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE.
2. SILT FENCE SHALL BE TRENCHED IN WITH A MECHANICAL TRENCHER SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. THE TRENCH SHOULD BE A MINIMUM OF 6" DEEP AND 6" WIDE TO ALLOW FOR THE SILT FENCE TO BE LAID IN THE GROUND AND BACKFILLED.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH WOOD, SUPPORT POST OR TO WOVEN WIRE WHICH IS IN TURN ATTACHED TO THE WOOD FENCE POSTS.
5. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. SEDIMENT TRAPPED BY THIS PRACTICE SHALL BE UNIFORMLY DISTRIBUTED ON THE SOURCE AREA PRIOR TO TOPSOILING.
8. THE EROSION CONTROL SHOWN SHALL BE SILT FENCE. ADDITIONAL EROSION CONTROL PROVIDED BY CONTRACTOR MAY BE STRAW BALE DIKE.



SECTION

SILT FENCE

EROSION CONTROL LEGEND

EROSION CONTROL SILT FENCE (UNLESS CALLED OTHERWISE)

EROSION CONTROL DETAILS

NTS

0 20' 40'
SCALE: 1" = 20'

JOB NUMBER
17016
ISSUE DATE
03/29/2018
REVISIONS

Williams Spurgeon Kuhl & Freshnock Architects, Inc. © 2017

BRIAN L. WENNINGHOFF
NUMBER PE-2013033710
STATE OF MISSOURI
PROFESSIONAL ENGINEER
3/29/2018

LEE'S SUMMIT STATION #3
PRYOR ROAD
LEE'S SUMMIT, MO 64081

110 Armour Road North Kansas City, Missouri 64116 Tel. 816.300.4101 Fax 816.300.4102

Williams Spurgeon Kuhl & Freshnock Architects, Inc.
Missouri Certificate of Authority #2003011262

EROSION CONTROL PLAN

C6.0