Stormwater Pollution Prevention Plan

for:

Pergola Park – 4th Plat
SW Redbuck Circle and SW Pergola Park Dr
Lee's Summit, MO 64081

Operator(s):

Inspired Homes, LLC
1301 Burlington Street, Ste 150
North Kansas City, MO 64116
Ph 816-548-3300

SWPPP Contact(s):

Erosion Control, Inc.
Margie Sobczynski, CPESC
15720 S Keeler St, Olathe, KS 66062
Ph 913-397-7324 Fax 913-397-9324
Email: erosioncontrol@eci.kc.com

SWPPP Preparation Date:

10/07/2017

Estimated Project Dates:

Project Start Date: 10/09/2017
Estimated Project Completion Date: 12/31/2022

Contents

SECTION 1: SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 Project/Site Information

Project/Site Name: Pergola Park – 4th Plat
Project Street/Location: SW Redbuck Circle and SW Pergola Park Drive
City: Lee's Summit State: MO ZIP Code: 64081
County or Similar Subdivision: Jackson County

Latitude/Longitude
Latitude:
1. 38° 54' 07.54" N (degrees, minutes, seconds)

Longitude:
1. 94° 26' 50.36" W (degrees, minutes, seconds)

Method for determining latitude/longitude:
☐ USGS topographic map (specify scale: 1:18,056 inches) ☐ 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." _____

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

NPDES project or permit tracking number*: TO BE PROVIDED

**(This is the unique identifying number assigned to your project by your permitting authority after you have applied for coverage under the appropriate National Pollutant Discharge Elimination System (NPDES) construction general permit.)*

1.2 Contact Information/Responsable Parties

Project Manager(s) or Site Supervisor(s):
Inspired Homes, LLC
1301 Burlington Street, Ste 150, North Kansas City, MO 64116
Office Ph 816-548-3300
Nick Krier - Project Mgr. - Cell ph 913-387-7466 / Email: nkrier@inspired-homes.com

SWPPP Contact(s):
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1.2 Contact Information/Responsable Parties - Continued

This SWPPP was Prepared by:
Erosion Control, Inc.
Margie Sobczynski, CPESC
15720 S Keeler St, Olathe, KS 66062
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Subcontractor(s):

Erosion Control, Inc.
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Dan Sobczynski - Cell ph 913-915-8408
15720 S Keeler St, Olathe, KS 66062
Ph 913-397-7324 Fx 913-397-9324 Email: erosioncontrol@ecikc.com

Emergency 24-Hour Contact:

Inspired Homes LLC - Project Manager – Nick Krier - cell 913-387-7466

1.3 Nature and Sequence of Construction Activity

This project will consist of new streets and storm sewers for the next residential phase of Pergola Park. A sediment trap is to be constructed on the southwestern portion of the project.

Phasing

- Phase 1 – install temporary construction entrance, drainage swales, rock check dams, protect existing inlets, and perimeter sediment fence. Install temporary sediment trap with overflow rock check dams. Clear and grub site areas for construction not disturbing trees to remain.
- Phase 2 – Maintain all controls from Phase 1. Clear and grub the remainder of the grading area. Remove and stockpile topsoil surrounding with silt fence. Install storm sewer and new streets.
- Phase 3 – Maintain all controls remaining from previous phases and remove rock check dams. Install sediment fence for Phase 3. Complete site grading, storm and sanitary sewers, curbs and stabilization.

Sequence of Activities:

1. Mobilization
2. Demolition, clearing and grubbing will begin on or around 10/07,2017
3. Rough grading operations will follow the same sequence with installation of temporary BMP's occurring prior to any site disturbance or significant change in site construction.
4. As operations move and change, the BMP's and the SWPPP plan will be updated as needed.
5. Permanent BMP's will be constructed as early as practical during construction.
6. Final stabilization and landscaping activities will commence as closely behind specific discipline construction activities listed above in item 4 as practical. Permanent and temporary BMP's will be utilized together at this point.
7. Seeded and landscaped areas and associated BMP's will be maintained until adequate vegetative cover is established.
8. Demobilize

1.4 Soils, Slopes, Vegetation, and Current Drainage Patterns

Soil type(s):

See attached Appendix I – Greenton Silty Clay Loam

Slopes:

Slopes are gradual from northeast to southwest

Drainage Patterns:

All current drainage flows from the northeast to the southwest. The drainage pattern will be constructed according to the design of the new subdivision.

Vegetation:

Grass and treed area

Description of unique features that are to be preserved: Old Longview Lake

Describe measures to protect this feature: Rock ditch checks, silt fence, sediment traps and use of various necessary temporary erosion control measures such as but not limited to inlet protection, seeding, mulching, etc. until permanent soil stabilization is obtained.

1.5 Construction Site Estimates

Total project area to encompass entire project:	12.5 acres
Construction site area to be disturbed :	12.5 acres
Percentage impervious area before construction:	0 %
Percentage impervious area after construction:	Estimate 60 %

1.6 Receiving Waters

Description of receiving waters: Old Longview Lake

Description of storm sewer systems: City of Lee's Summit, MO

Description of impaired waters or waters subject to TMDLs: No impaired waters were located in the immediate area

Other:

1.7 Endangered Species and Historical Sites Certification

Appendix G for documentation retrieved from the US Fish and Wildlife Services website providing facts and additional references regarding the endangered and threatened species and their habitats: Piping Plover, Least tern, Red knot, Indiana Bat, Gray Bat, and Northern Long-Eared Bat. The Project Construction Manager will work closely with the local field office of the US Fish and Wildlife Service, 101 Park DeVille, Suite A, Columbia, MO 65203-0057 - phone #573-234-2132.

Appendix H for documentation from the National Historical Society – there are no historical sites listed for this area.

1.8 Applicable Federal, Tribal, State or Local Programs

Applicable storm water management requirements will be reviewed and updated per the City of Lee's Summit, MO Stormwater Regulations and the Missouri Dept. of Natural Resources.

1.9 Maps

See the site maps attached – Appendix A, C, and I.

SECTION 2: EROSION AND SEDIMENT CONTROL BMPS

The Project shall exercise Best Management Practices (BMP's) throughout the project to control water pollution. BMP's that may be used on the project are listed and described below and in Appendix J. As the project evolves, this list of erosion and sediment control BMP's may change, adding BMPs as they become necessary. The appropriate erosion control measures and the timing during the construction process that these measures are to be implemented will be determined as the project progresses. Installed BMP's will be identified on the erosion and sediment control plans. These plans will be updated by the field personnel responsible for them whenever the:

- Design, operation, or maintenance of BMP's is changed
- Design of the construction project is changed that could significantly affect the quality of the storm water discharges

- Permittee's inspections indicate deficiencies in the SWPPP or any BMP
- SWPPP is determined to be ineffective in significantly minimizing or controlling erosion and sedimentation (e.g., there is visual evidence, such as excessive site erosion or excessive sediment deposits in streams or lakes).

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

Clearing of the right-of-way and removal of vegetation will be limited to the minimum width and depth of scraping necessary, using required equipment, safety and engineering design constraints. Vegetation removed from the site will be properly disposed of off-site. Salvaged topsoil will be stockpiled and protected until it is reused after grading operations are complete. Staging areas will be located at least 50 feet from the edge of wetlands, streams or other sensitive areas such as low points in the grade. Temporary BMP's will be installed prior to, or at the time of, ground disturbing construction and will remain in place until permanent measures have taken effect. They will be maintained until final stabilization and re-vegetation has been achieved. Temporary erosion and sediment controls shall include but not be limited to silt fence, rock ditch checks, concrete washout, rock accesses, etc will be installed at the edge of the work area, at storm sewer inlets, culvert pipes, within temporary and completed ditches, bottoms of cut and fill slopes and shall have significant redundancy as necessary, to prevent transport of sediment into any downgrade or adjacent stream, wetland, river, etc. This work shall consist of furnishing, installing, maintaining, and removing temporary erosion control measures as shown on the plans. Final stabilization and re-vegetation will be based upon contract specifications in Appendix K or City of City of Lee's Summit, MO, APWA Specifications. After final stabilization of the disturbed areas has been achieved, all temporary soil erosion and sediment control measures will be removed and properly disposed.

2.2 Control Stormwater Flowing onto and through the Project

BMP Description: Silt fence will be installed to control runoff from the site prior to start of construction, continue through progression of project, and removed when final stabilization has been achieved.

BMP Description: Temporary gravel access roads will be installed prior to start of construction in the designated area.

BMP Description: Rock ditch checks will be installed prior to start of construction when possible. Energy dissipaters will be installed if necessary at outfall locations (see Appendix J).

BMP Description: Sediment Logs may possibly be used to stabilize slopes and/ or inlet protection.

Maintenance Procedures:

- All BMP's shall be maintained in a good working order. If a repair is necessary, the repair shall be corrected within seven (7) calendar days of the inspection report, given suitable access conditions exists for repair. If weather conditions make it impossible to correct the problem within seven (7) calendar days, a detailed report of the problem must be filed with the regular inspection reports. The BMP malfunctions shall be corrected as soon as weather conditions allow.
- Deposited sediment shall be removed from BMP's when it has reached ½ (one half) the height of the control measure, or before.
- Silt fence, erosion logs, and straw bales shall be maintained for height of sediment, connection to stakes, and stability of stakes and tears or gaps.
- All other BMP's shall be maintained for sediment load, appropriateness given field conditions and adequate redundancy for potential sediment load based on disturbed surface.

Trenching and Structural Excavation/Excavation De-watering:

Soil excavated from trenches and other relatively small excavations shall be placed on the up-slope side of the excavation, if possible, to prevent sediment runoff away from the site.

De-watering discharge from any trench or excavation either will be conveyed back into the excavation or shall be controlled with temporary BMP's to prevent sediment runoff from entering drainage structures and streams.

2.3 Soil Stabilization

Disturbed areas outside the project will be graded and re-seeded as necessary to restore them to pre-construction conditions or the requirements of the landscape plans associated with this project. Site conditions will be considered restored when construction has been completed, final soil stabilization has occurred, all temporary erosion and sediment control measures have been removed or arrangements have been made for their removal at an appropriate future time, and re-vegetation is compliant with the contract specifications or APWA of Kansas City. Permanent stabilization measures will be initiated as soon as practical, and in most cases within 14 days after completion of construction, in any given section of the project. An exception may occur when construction ends near or after the end of the local growing season, due to wet weather site conditions. In that case, temporary measures will remain in place and be maintained until the next growing season. Site to be monitored weekly and following any rain event over 0.50" of rain until final stabilization has been achieved.

On areas of the site where soil disturbing activities will cease and are not planned to resume for a period exceeding fourteen (14) calendar days, temporary stabilization must be initiated immediately upon knowing of the 14-day cessation, and must be completed with seven (7) calendar days. On portions of the project where slopes are greater than 3:1, or greater than 3% and greater than 150 feet in length, all temporary stabilization must be completed within seven (7) days of ceasing operations. Temporary stabilization may include, but is not limited to the installation of sediment basins, check dams, sediment fences, and mulch; however, the preferred method of stabilization is seed and mulch. Seeding and/or mulching will be a continuous operation on all cut and fill slopes, excess material (waste), and borrow areas during the construction process. All disturbed areas shall be seeded and mulched or otherwise stabilized when and where necessary to eliminate erosion. Seeding and/or mulching shall be done as soon as possible after completion of the earthwork and preparation of the seedbed, weather permitting. Whenever clearing, grading, excavating or other earth disturbing activities have permanently ceased on a portion of the site, final stabilization must be initiated immediately and completed within 7 calendar days. Final stabilization can be achieved by covering disturbed areas with pavement, buildings or other structures, perennial vegetation or non-erodible materials such as adequately sized rock. With respect to areas that have been seeded, vegetation cover must be at least 70% plant density with uniform coverage over 100% of the disturbed area.

For the purposes of this section, allowances to the seven (7) day completion period for temporary and permanent stabilization may be made due to inclement weather or adverse site conditions. If utilized, these allowances must be documented in the SWPPP.

The following types of activities will constitute initiation of stabilization (this list is not exhaustive):

- Prepping the soil for vegetative or non-vegetative stabilization
- Applying mulch or other non-vegetative product to the exposed area
- Seeding or planting the exposed area
- Starting any of the above activities on a portion of the area to be stabilized, but not on the entire area
- Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing stabilization

Note: the term "immediately" in this section means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

2.4 Construction Equipment near Waterways, Stabilization, and Restoration:

Only equipment required to perform the construction activity and to restore disturbed areas shall be allowed in waterways. Temporary slope protection or erosion control measures will be applied to minimize erosion of the slopes. Equipment will not cross or enter waterways for convenience only.

Timber bridges, culverts, timber pads, pre-fabricated equipment pad, BMP's, etc. shall be removed from waterways upon completion of construction. All waterways disturbed shall be restored immediately to pre-construction drainage patterns or to the projects design drawings, grades, and contours with riprap up banks to current water line with hydroseeding above the riprap on disturbed soils.

Restored waterway areas subject to erosion due to concentrated water flow or rising waters due to heavy precipitation may be stabilized with erosion control fabric, fiber blankets, or other appropriate means. Seeding and mulch may also be used to help stabilize the area.

2.5 Protect Storm Drain Inlets

Inlet protection may include but not be limited to silt fence, coir logs, and gravel bags. Appropriate protection will be installed as needed during construction and maintained or replaced with the appropriate protection as construction progresses.

2.6 Stabilized Construction Access/Dust Control

Areas with limited vehicle access needs, vehicle tracking of soil onto public roads and paved areas will be minimized by removal of excess material from tires prior to entering public roads. In areas with frequent construction vehicle access, a stabilized construction access pad will be installed. Accumulated debris will be removed from the roadway by shoveling or sweeping as soon as practical. If sediment and debris control is not achieved by methods described above, periodic roadway washing may be used to clean the pavement.

BMP's will be employed to control dust during construction. These could include watering of haul roads and sited during dry or windy conditions, covering loads in transit and storage bins, roughening surfaces to minimize sediment uplift or temporary work shutdown if high winds occur for certain operations such as grading or concrete saw-cutting.

SECTION 3: GOOD HOUSEKEEPING BMPS

Material needed for the project will be stored in an area designated by the contractor to minimize disturbance to the project area. Material or substances expected to be present on site during project construction:

- Portland Cement Concrete
- Concrete Cure
- Asphalt Concrete
- Fertilizers
- Petroleum based products (fuel, oil, and lubricants)
- Cleaning Solvents
- Demolition material
- Lime
- Other fill material
- Cement
- Paints and stains

Material Management Practices:

The following material management practices shall be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff:

- Store only enough products require to reasonably do the job
- Materials stored on site shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products shall be kept in their original containers with the original manufacturer's labels.
- Substances shall not be mixed with one another unless recommended by the manufacturer.
- Wherever possible, all the product in a package shall be used before disposing the container.

- Follow manufacturer's recommendations for proper use and disposal shall be followed.
- Containment berms and drip pans shall be installed at liquid storage tanks and containers.
- Construction materials shall be stored away from drainage courses and low areas.
- Products shall be kept in original containers unless they are not re-sealable.
- Original labels and material safety data sheets (MSDS) will be retained; they contain important product information.
- If surplus product must be disposed, manufacturers or local and state recommended methods for proper disposal shall be followed.

3.1 Material Handling and Waste Management

The Contractor will install sanitary waste units on site prior to start of construction. All sanitary waste will be collected from the portable units a minimum of once a week by a licensed sanitary waste management contractor, as required by local regulations. These units will be properly weighted to ensure high winds do not tip them over and placed in locations where they will not jeopardize stormwater run-off if tipped over.

Contractor will clean and maintain site daily to minimize construction debris, trash and waste from leaving the site. Whenever possible the concrete, asphalt, and brick material will be used on site as fill material and will be crushed as necessary to meet material specification requirements. All personnel shall be trained regarding the correct procedure. The contractor's site superintendent in charge of the day-to-day operations of the construction activities will be responsible for compliance with procedures.

3.2 Designate Washout Areas

The Contractor will post signage at the designated area(s) and install proper containment for concrete washout if the concrete trucks will be washed out on site. No vehicle washing will occur on site.

3.3 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products retained on site will be stored in tightly sealed containers, which are clearly labeled.

3.4 Spill Prevention and Control Plan

In addition to the good housekeeping and material management practices discussed in the previous section of this plan, the following practices will be followed for spill prevention and cleanup:

All hazardous wastes generated during the project either from construction materials used or unforeseen materials discovered during construction shall be disposed of per the local, state, federal regulations or per manufacturers' recommended methods for spill cleanup. Spills of toxic or hazardous material shall be reported to the appropriate state or local government agency, regardless of size. When unknown materials including potentially contaminated soil and groundwater are encountered, they will promptly be identified, contained to prevent exposure to rain and sediment runoff with temporary BMP's and will be properly disposed of at a licensed disposal facility.

Manufactures recommended methods for spill cleanup shall be clearly posted and site personnel shall be made aware of the procedures and the location of the information and clean-up supplies.

Material and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials may include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.

All spills will be cleaned up immediately after discovery. The spill area will be kept well ventilated and personnel will wear

appropriate protective clothing to prevent injury from contact with a hazardous substance.

The spill prevention plan will be adjusted to included measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will be included.

The site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He shall designate at least three (3) other site personnel, one (1) of who shall be from the nightshift if applicable, who shall receive spill prevention and clean-up training. These individuals shall each become responsible for a particular phase of prevention and clean up. The names of responsible spill prevention personnel shall be posted in the material storage area and in the office trailer on site.

Storage and handling procedures will be practiced by all subcontractors:

- Fuel, lubricants, debris and other water contaminants shall not be stored in areas that are subject to contact with water (such as adjacent to stream banks) or where contaminated runoff from the storage areas can enter waters.
- Do not store incompatible materials in the same secondary containment basin.
- Avoid transferring chemicals from one container to another. If a transfer is necessary, perform the transfer in secondary containment.
- Ensure that all chemical containers are properly labeled, indicating the contents and hazards involved.
- Store chemicals in an area protected from weather.
- Inspect all containers for damage or leaks at least weekly and before attempting to move them.
- Each employee should look for damaged or leaking containers each time they use a chemical from the storage area or add to the chemical stock.
- When working with hazardous materials, protect the ground or flooring with a suitable covering (one which is resistant to penetration by the material being used and that will contain small drips and spills).

To prevent fuel spills, the practices listed below should be followed:

- Pay attention when refueling vehicles/equipment so that they are not overfilled.
- If a leak is detected in a vehicle or piece of equipment, repair the leak as soon as possible; place plastic sheeting, or other receptacle of sufficient size to contain all leaking fluid, under the leak until the repair is made. If repairs cannot be made within 24 hours or if the leaking fluid cannot be contained, then the leaking equipment must be removed from the site immediately.

Spill Response

If a hazardous material spill should occur, it must be cleaned up immediately as follows:

- If a spill of gasoline or discharge of pollutants occurs, the local emergency staff should be contacted first by dialing 911. Hazardous material spills and air releases that need federal reportable quantities must also be immediately reported to the Missouri Dept of Natural Resources at (573) 634-2436. These incidences should also be reported to the National Spill Response Center (1-800-424-8802). The above numbers will be posted in a central location on site.
- Place all contaminated soil on an adequately-sized sheet of plastic.
- If a hazardous material spill occurs on pavement, it shall be absorbed with sand or other inert material and then placed on plastic sheeting. This includes spills of vehicle fluids. Pavement will not be washed where a hazardous material spill has occurred (including vehicle fluids) until all spilled material has been cleaned up.
- Cover contaminated soil or inert absorbent material with plastic to prevent runoff contamination and to prevent the material from becoming airborne in wind.
- Provide the Project Manager with a Material Safety Data Sheet for the type of spilled material to determine whether or not the material is hazardous.
- The project engineer will make a determination as to the proper method of disposal required and will coordinate with the Project Manager. The subcontractor shall arrange for disposal according to the guidelines and requirements provided by the Project Manager.

3.5 Pollution Prevention Plan Certification

The Program Manager Certifies under Penalty of Law that this document and all attachments were prepared under direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on 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 our knowledge and belief, true, accurate, and complete. The Program manager is aware that there are significant penalties for submitting false information, including the possibility or fine and imprisonment for knowing violations.

Through acceptance of the contract containing this document, the Contractor certified under Penalty of Law the he (she) understands the terms and conditions of the general national pollution discharge elimination system (NPDES) permit that authorizes the stormwater discharges associated with individual activity from the construction site identified as part of the certification.

3.6 Non-Stormwater Discharge Management

Demolition of structures such as existing bridges may require water to be used as a form of dust mitigation. Under this circumstance, additional BMP's shall be installed to increase redundancy to at least the two (2) closest inlets in all drainage patterns adjacent to the demolition activity.

SECTION 4: SELECTING POST-CONSTRUCTION BMPs

Re-vegetation Procedures:

As the project progresses, permanent stormwater management will be incorporated with the use of culverts, outlet protection, detention and sediment basins ditches, as required by the contract and inlets. Final grading around these transference systems will occur, followed by permanently stabilization via seeding or landscaping. When permanent seeding and planting cannot occur due to the local growing season, temporary BMP's shall continue to be used to maintain the slope until the vegetation cover is adequate. Re-vegetative materials and applications shall conform to APWA – City of Kansas City, MO and contract specifications.

Permanent BMP's:

In conjunction with the re-vegetation efforts for this project, permanent BMP's will be shown on the drainage/grading plans. Final stabilization is in the design stage but may include detention ponds with forebays, sediment vaults within drainage networks, riprap lined pipe outfalls or ditches or concrete trickle channels. As design progresses, these features will be identified to meet the contract requirements. Permanent BMP's will be constructed as soon as practical within the site so the may be partially used during construction.

SECTION 5: INSPECTIONS

5.1 Inspections

1. ***Inspection Personnel:***

   Erosion Control, Inc. - Margie Sobczynski or Dan Sobczynski

   15720 S Keeler St, Olathe, KS 66062

   Ph 913-397-7324 Fax 913-397-9324 Email: *erosioncontrol@ecikc.com*

Inspection Practices –

- The permittee (or a representative of the permittee) shall conduct regularly scheduled inspections. These inspections shall be conducted by a qualified person, one who is responsible for environmental matters at the site, or a person trained by and directly supervised by the person responsible for environmental matters at the site. For disturbed areas that have not been finally stabilized, all installed BMP's and other pollution control measures shall be inspected for proper installation, operation and maintenance. All stormwater outfalls shall be inspected for evidence of erosion or sediment deposition. When practicable the receiving stream shall also be inspected for 50 feet downstream of the outfall. Any structural or maintenance problems shall be note in an inspection report and corrected as soon as possible but no more than seven calendar days after the inspection. All BMP's must be inspected in accordance to one of the two schedules listed below, and any changes to the frequency of inspection, including switching between the options listed below, and any changes to the frequency of inspections, including switching between the options listed below, must be documented in the SWPPP:
    1. at least once every 7 calendar days and 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm (0.50 inches) has ceased during a normal work day and within 72 hours if the rain event ceases during a non-work day such as a weekend or holiday; or
    2. Once every 14 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches of precipitation or greater, or the occurrence of runoff from snowmelt. To determine if a storm event of 0.25 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on site, or obtain the storm event information from a weather station from your location.

       A). Inspections are only required during the project's normal working hours.

       B). You must conduct an inspection within 24 hours once a storm event has produced 0.25 inches within a 24-hour period, even if the storm event is continuing.

       C). If you have elected to inspect every 14 calendar days and there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.25 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 4 hours after the end of the storm.
- Inspection reports shall be kept in the SWPPP binder in the on-site project office and shall include at minimum the following information: inspector's name, inspection date, location, type of BMP that requires maintenance or modification, any new BMP's required for certain locations on the project, and locations of where construction activities have temporarily or permanently stopped. The inspection form shall be signed by the inspector and a copy shall be initialed after correction by the person responsible for making any corrections.
- Temporary and permanent slope stabilization shall be inspected for large bare areas and rill formation leading to significant sediment movement. The inspection form attached shall be used to document the inspections – **See Appendix D.**

5.2 Delegation of Authority

Duly Authorized Representative(s) or Position(s):

Inspired Homes, LLC
1301 Burlington Street, Ste 150, North Kansas City, MO 64116
Office Ph 816-548-3300

Nick Krier - Project Mgr. - Cell ph 913-387-7466 / Email: nkrier@inspired-homes.com

5.3 Corrective Action Log

Changes to the SWPPP will be recorded on the weekly inspection reports and/or daily activity log.

SECTION 6: RECORDKEEPING AND TRAINING

6.1 Recordkeeping

The following records kept will include, but not be limited to, when:

- Major grading activities occur
- Addition of new BMPs
- Replacement of failed BMPs
- Rainfall Activity Log
- Significant changes in the activities or the timing of the project
- Construction activities temporarily or permanently cease
- An area is either temporarily or permanently stabilized
- Updates to site maps
- Changes in personnel

Records will be retained for a minimum period of at least 3 years after the permit is terminated.

6.2 Training

General stormwater and BMP awareness training will be provided for staff and subcontractors. Detailed training may be provided for staff and subcontractors with specific stormwater responsibilities if needed. – **(See Appendix E and Appendix F)**

SECTION 7: Certification of Compliance with Federal, State, and Local Regulations

SWPPP References:

This Stormwater Pollution Prevention Plan was developed using the following references: "Storm Water Management for Construction Activities; Developing Pollution Prevention Plans and Best Management Practices" from the United States Environmental Protection Agency. This manual is available at the USEPA internet site http://cfpub1.epa.gov/npdes/stormwater/swppp.cfm. Also referenced was the "Protecting Water Quality: A field guide to erosion, sediment and storm water best management practices for development sites in **Missouri" from the Missouri Department of Natural Resources. This manual is available on the department's internet site at** http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm.

SECTION 8: CERTIFICATION AND NOTIFICATION

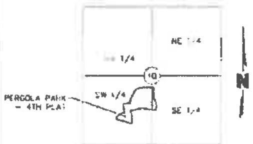
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage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

Name: Margie K Sobczynski Title: CPESC #3871

Signature: Margie K Sobczynski Date: 10-10-2017

Appendix A

General Location Map



LOCATION MAP
Sec. 10, Twp. 47 N., Rge. 3_ W
(N.T.S)

VICINITY MAP

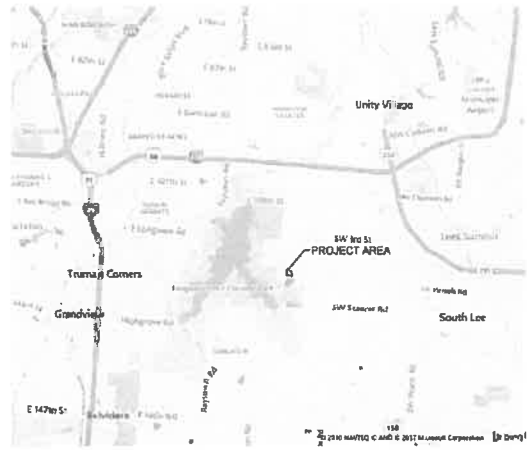
S1, T11S, R23E
SCALE 1"=2000'

PERGOLA PARK
4TH PLAT
STREET & STORM SEWER PLANS

SECTION 10, TOWNSHIP 47N, RANGE 32W
IN LEE'S SUMMIT, JACKSON COUNTY, MO

PROJECT TEAM & UTILITY CONTACT LIST

OWNER / DEVELOPER Inspired Homes 1301 Burlington, Suite 150 North Kansas City, MO 64116 CONTACT Todd Libschutz PHONE 913.207.1270 EMAIL tlipschutz@inspired-homes.com	UTILITY SERVICE NUMBERS NAME: LEE'S SUMMIT PUBLIC WORKS PHONE: 816-969-1800 NAME: LEE'S SUMMIT WATER & SERVICES DEPARTMENT PHONE: 816-969-1840 NAME: MISSOURI GAS ENERGY PHONE: 816-756-5252 NAME: AT&T PHONE: 800-286-8313 NAME: KCP&L PHONE: 816-471-5275 NAME: TIME WARNER CABLE 816-358-5360 NAME: GOOGLE FIBER PHONE: 877-454-6959
ENGINEER OLSSON ASSOCIATES 1301 Burlington, Suite 100 North Kansas City, MO 64116 CONTACT Melissa G DeGonia, P.E. PHONE 816 587 4320	
SURVEYOR OLSSON ASSOCIATES 1301 Burlington, Suite 100 North Kansas City, MO 64116 CONTACT: Jed Baughman PLS PHONE 816 587 4320	



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REVIEWED BY:

CITY OF LEE'S SUMMIT ______________________ DATE

OLSSON ASSOCIATES HAS BEEN RETAINED TO PROVIDE AS-BUILT DRAWINGS FOR THIS PROJECT.

Melissa G DeGonia, P.E.
CIVIL ENGINEER
MO# 2011000892 ______________________ DATE

☒ NOT FOR CONSTRUCTION

☐ REVIEWED FOR CONSTRUCTION

PROPERTY DESCRIPTION:

Part of Lot 2, MINOR PLAT OF NEW LONGVIEW MANSION, LOTS 1-2, a subdivision of land in Southeast Quarter of Section 9, the Southwest Quarter Section of 10, and the Northwest Quarter of Section 15, all in Township 47 North, Range 32 West of the Sth Principal Meridian in Lee's Summit, Jackson County, Missouri being bounded and described as follows: Commencing at the Southwest corner of said Southwest Quarter; thence North 03°14'50" East, along the West line of said Southwest Quarter, 1,481.24 feet; thence South 88°45'10" East, 784.84 feet to a point on the North line of said Lot 2, said point also being the Point of Beginning of the tract of land to be herein described; thence North 45°01'17" East, along said North line, 40.47 feet; thence North 38°24.37" West, continuing along said North line, 24.70 feet; thence Northerly, continuing along said North line, on a curve to the right, having a common tangent with the last described course with a radius of 87.00 feet, a central angle of 80°34'11" and an arc distance of 122.34 feet; thence Northeasterly, continuing along said North line, on a curve to the left, having a common tangent with the last described course with a radius of 788.00 feet, a central angle of 13°09'56" and an arc distance of 178.48 feet; thence Northeasterly, continuing along said North line, on a curve to the right, having a common tangent with the last described course with a radius of 962.00 feet, a central angle of 07°24'38" and an arc distance of 127.00 feet; thence Northeasterly, continuing along said North line, on a curve to the left, having a common tangent with the last described course with a radius of 1,018.00 feet, a central angle of 03°08'28" and an arc distance of 56.81 feet; thence South 58°41'28" East, continuing along said North line, 95.80 feet; thence South 31°34'45" West, continuing along said North line, 121.88 feet; thence Southwesterly, continuing along said North line, on a curve to the left, having a common tangent with the last described course with a radius of 213.00 feet, a central angle of 15°25'08" and an arc distance of 57.32 feet, thence South 71°41'12" East, continuing along said North line, 38.03 feet; thence Northerly, continuing along said North line, on a curve to the right, having an initial tangent bearing of North 15°41'33" East with a radius of 175.00 feet, a central angle of 10°18'38" and an arc distance of 31.48 feet; thence South 58°25'15" East, continuing along said North line, 42.76 feet; thence South 48°54'57" East, continuing along said North line, 87.34 feet; thence South 58°25'15" East, continuing along said North line, 153.43 feet; thence South 32°34'07" West, continuing along said North line, 7.00 feet; thence South 57°25'53" East, continuing along said North line, 46.00 feet; thence North 32°34'07" East, continuing along said North line, 7.79 feet; thence South 58°25'15" East, continuing along said North line, 66.17 feet; thence South 81°46'01" East, continuing along said North line, 35.21 feet; thence South 54°22'31" East, continuing along said North line, 2.80 feet; thence South 11°23'53" East, continuing along said North line, 21.85 feet, thence South 31°34'45" West, continuing along said North line, 154.53 feet; thence South 38°58'51" East, continuing along said North line, 64.44 feet; thence Southwesterly, continuing along said North line, on a curve to the left, having a common tangent with the last described course with a radius of 117.00 feet, a central angle of 25°31'53" and an arc distance of 52.82 feet; thence South 85°47'44" East, continuing along said North line, 32.08 feet; thence Southerly, continuing along said North line, on a curve to the left, having an initial tangent bearing of South 21°18'58" West with a radius of 198.00 feet, a central angle of 27°55'16" and an arc distance of 96.48 feet, thence South 08°35'22" East, continuing along said North line, 55.01 feet; thence Westerly, continuing along said North line, on a curve to the right, having an initial tangent bearing of North 88°56'32" West with a radius of 473.00 feet, a central angle of 00°38'44" and an arc distance of 5.48 feet; thence South 01°43'12" West, continuing along said North line, 48.00 feet; thence Westerly, along a curve to the right, having an initial tangent bearing of North 88°16'47" West with a radius of 523.00 feet, a central angle of 01°45'50" and an arc distance of 16.10 feet; thence Westerly, along a curve to the left, having a common tangent with the last described course with a radius of 177.00 feet, a central angle of 04°54'55" and an arc distance of 15.18 feet; thence South 88°34'07" West, 253.88 feet; thence Westerly, along a curve to the right, having a common tangent with the last described course with a radius of 223.00 feet, a central angle of 43°40'38" and an arc distance of 170.00 feet; thence Westerly, along a curve to the left, having a common tangent with the last described course with a radius of 227.00 feet, a central angle of 50°45'52" and an arc distance of 201.12 feet; thence North 06°31'07" West, 47.00 feet; thence Easterly along a curve to the right, having an initial tangent bearing of North 81°28'53" East with a radius of 274.00 feet, a central angle of 01°50'45" and an arc distance of 8.83 feet; thence North 43°34'35" East, 17.90 feet; thence North 03°48'32" East, 221.29 feet; thence North 37°45'17" West, 18.58 feet; thence Northeasterly along a curve to the right, having an initial tangent bearing of North 60°08'11" West with a radius of 130.00 feet, a central angle of 38°00'07" and an arc distance of 83.53 feet to the Point of Beginning. Containing 363,311 square feet or 8.30 acres, more or less.

BENCHMARK

3/8" IB Cap at the S.W. corner of SW Pergola park Drive and SW Grandstand Circle. Elevation= 848.83
3/8" IB Cap N.E. corner of SW Longview Park Drive and SW Arena Street. Elevation= 870.720

OLSSON ASSOCIATES
Olsson Associates – Civil Engineering

NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

COVER SHEET

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT, MO

2017

SHEET
C101

DWG: F:\2017\0001-0500\017-0284\40-Design\AutoCAD\Final Plans\Sheets\CNCV\C1_Street & Storm_36x24\C_TTL01_70284.dwg USER: jbellard
DATE: Jul 24, 2017 12:28pm

DWG: F:\2017\0001-0500\017-0264\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_GEN02_70264.dwg USER: jpollers
DATE: Jul 24, 2017 12:28pm

GENERAL LAYOUT		
PERGOLA PARK 4TH PLAT		
LEE'S SUMMIT, MO	2017	

NO. REV	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

OLSSON ASSOCIATES

SHEET C103

Appendix B

Construction Permits

Appendix C

Drainage Areas

DWG: F:\2017\0001-0500\017-0264\40-Design\AutoCAD\Final Plans\Sheets\CHCV\01_Street & Storm_36x24\C_GRD01_70264.dwg USER: pcilliers
DATE: Jul 24, 2017 12:31pm

N

0 30' 60' 120'
SCALE IN FEET

GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO THE "DESIGN AND CONSTRUCTION MANUAL" SECTION 2100 AS ADOPTED BY THE CITY OF LEE'S SUMMIT (LATEST EDITION) FOR EXCAVATION AND EMBANKMENT WORK WITHIN THE PROPOSED RIGHT-OF-WAY

2. AREAS OF CONSTRUCTION SHALL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER AND TOPSOIL TO A DEPTH AS RECOMMENDED BY GEOTECHNICAL ENGINEER AND OR TESTING AGENCY. SOILS REMOVED DURING SITE STRIPPING SHOULD BE EVALUATED TO DETERMINE IF PORTIONS OF THE TOPSOIL STRATUM MAY BE UTILIZED AS STRUCTURAL FILL WITHIN PAVEMENT AREAS. ANY MATERIAL NOT DEEMED AS SUITABLE FILL MATERIAL BY THE GEOTECHNICAL ENGINEER AND OR TESTING AGENCY SHALL BE REMOVED FROM THE JOB SITE BY THE CONTRACTOR AT HIS EXPENSE

3. CONTRACTOR SHALL ADHERE TO THE SITE PREPARATION AND STRUCTURAL FILL RECOMMENDATIONS AS CALLED OUT IN THE GEOTECHNICAL REPORT AND ENGINEERING EVALUATION AS PROVIDED BY THE GEOTECHNICAL ENGINEER

4. ALL EMBANKMENT OUTSIDE OF RIGHT-OF-WAY SHOULD BE PLACED IN CONTROLLED LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 8". EMBANKMENT SHOULD BE COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 (STANDARD PROCTOR COMPACTION). MOISTURE CONTENT OF THE FILL AT THE TIME OF COMPACTION SHALL BE WITHIN A RANGE OF -0 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT

EARTHWORK QUANTITIES		
LOCATION	CUT (C.Y.)	FILL (C.Y.)
STREET	259	3,720
SITE	11,775	16,857
TOTAL	12,034	20,577

EARTHWORK QUANTITIES NOTES:
1. EARTHWORK QUANTITIES BASED ON FINISHED GRADE SURFACE AND DO NOT INCLUDE ADJUSTMENTS FOR TOPSOIL AND SHRINKAGE.

2. EARTHWORK QUANTITIES DO NOT TAKE INTO CONSIDERATION EXCAVATION, REMOVAL AND DISPOSAL OF MATERIAL DEEMED UNSUITABLE BY A GEOTECHNICAL ENGINEER. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL AND FOR REPLACING IT WITH SUITABLE MATERIAL.

OLSSON ASSOCIATES
Olsson Associates - Civil Engineering
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www.olssonassociates.com

STATE OF MISSOURI
MELISSA D. DIGONIA
NUMBER PE-2011000982
PROFESSIONAL ENGINEER

NO. REV	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

GRADING PLAN

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT, MO | 2017

drawn by: S.N.B.
checked by: J.E.A.
designed by: J.E.A.
QA/QC by: M.D.D.
project no.: 017-0264
date: 2017.07.21

SHEET
C105

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DATE: Jul 24, 2017 12:45pm

SHEET C117	DRAINAGE PLAN		REVISIONS
	PERGOLA PARK 4TH PLAT		
	LEE'S SUMMIT, MO	2017	

OLSSON ASSOCIATES

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DATE: Jul 24, 2017 12:45pm

Storm Sewer Design Calculation Table (10-year Return Frequency)													
Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)	Upstream Top Elev. (ft)
MH 1-2	ES 1-1	124.459	928.41	928	0.35	72	0.012	197.57	8.83	269.66	3.64	932.27	939.38
C.I. 1-3	MH. 1-2	171.273	929.44	928.93	0.3	72	0.012	160.66	9.4	250.4	3.49	932.93	940.65
C.I. 1-4	C.I. 1-3	36	930.62	930.44	0.5	60	0.012	157.09	11.25	199.52	3.59	934.21	940.68
C.I. 1-5	C.I. 1-4	43.536	931.38	931.12	0.6	60	0.012	151.41	11.88	218.07	3.52	934.9	941.64
MH. 1-6	C.I. 1-5	214.315	933.33	931.88	0.68	54	0.012	144.55	12.31	175.2	3.53	936.86	948.69
F.I. 1-7	MH. 1-6	88.838	934.52	933.83	0.78	48	0.012	140.81	12.42	131.15	3.52	938.04	943.51
C.I. 2-1	C.I. 1-5	35.5	935.56	935.13	1.21	15	0.012	4.77	6.6	7.7	0.88	936.44	941.61
C.I. 2-2	C.I. 2-1	31.164	936.47	936.16	0.99	15	0.012	2.74	5.34	6.98	0.66	937.13	941.33
C.I. 3-1	ES 3-0	122.46	937.1	935	1.71	24	0.012	18.5	10.57	32.08	1.55	938.65	946.41
C.I. 3-2	C.I. 3-1	34	938.14	937.7	1.29	24	0.012	17.22	9.34	27.87	1.49	939.63	946.41
G.I. 3-3	C.I. 3-2	147.247	940.37	938.74	1.11	24	0.012	13.98	8.37	25.78	1.35	941.72	948.9
G.I. 3-4	G.I. 3-3	59.699	942.51	940.87	2.75	18	0.012	7.61	7.42	18.86	1.07	943.58	948.62
G.I. 3-5	G.I. 3-4	60.562	944.33	942.81	2.51	15	0.012	6.35	8.03	11.08	1.02	945.35	949.2
G.I. 3-6	G.I. 3-5	102.87	946.47	944.93	1.5	15	0.012	4.41	7.02	8.56	0.85	947.32	951.51
G.I. 3-7	G.I. 3-6	95.522	948.5	947.07	1.5	15	0.012	2.52	6.07	8.56	0.64	949.14	953.72
G.I. 4-1	G.I. 3-3	99.928	943.81	941.72	2.09	15	0.012	5.79	8.52	10.12	0.97	944.78	949.58
C.I. 4-2	G.I. 4-1	71.13	945.2	944.41	1.11	15	0.012	3.8	6.05	7.37	0.79	945.99	950.68
C.I. 4-3	C.I. 4-2	33	946.18	945.8	1.15	15	0.012	1.9	5.1	7.51	0.55	946.73	950.68
C.I. 5-1	MH. 1-6	88.446	942.06	940.29	2	18	0.012	3.74	7.41	16.09	0.74	942.8	949.3
C.I. 5-2	C.I. 5-1	34	943.14	942.46	2	18	0.012	0.83	2.78	16.09	0.34	943.48	[illegible]

Storm Sewer Design Calculation Table (100-year Return Frequency)													
Upstream Structure	Downstream Structure	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (%)	Diameter (in)	Manning's n	Total Flow (cfs)	Velocity (ft/s)	Capacity (cfs)	Flow Depth (ft)	Upstream Struct. HGL (ft)	Upstream Top Elev. (ft)
MH 1-2	ES 1-1	124.459	928.43	928	0.35	72	0.012	251.61	9.79	269.66	4.96	933.39	939.38
C.I. 1-3	MH. 1-2	171.273	929.44	928.93	0.3	72	0.012	187.04	7.31	250.52	4.76	934.2	940.65
C.I. 1-4	C.I. 1-3	36	930.62	930.44	0.5	60	0.012	180.56	10.4	199.29	3.85	934.47	940.68
C.I. 1-5	C.I. 1-4	43.536	931.34	931.12	0.6	60	0.012	167.53	12	217.81	3.71	935.08	941.64
MH 1-6	C.I. 1-5	214.315	933.33	931.88	0.68	54	0.012	158.12	12.47	175.2	3.68	937.01	948.69
F.I. 1-7	MH. 1-6	88.838	934.52	933.83	0.78	48	0.012	151.56	12.06	137.35	4	938.67	943.51
C.I. 2-1	C.I. 1-5	35.5	935.32	934.89	1.21	15	0.012	6.45	7.03	7.71	1.02	936.34	941.61
C.I. 2-2	C.I. 2-1	31.164	936.35	935.82	1.7	15	0.012	3.79	7.09	9.12	0.79	937.14	941.33
C.I. 3-1	ES. 3-0	122.46	937.1	935	1.72	24	0.012	28.65	11.54	32.09	1.84	938.94	946.41
C.I. 3-2	C.I. 3-1	34	938.14	937.7	1.29	24	0.012	26.62	10.1	27.87	1.8	939.94	946.41
G.I. 3-3	C.I. 3-2	147.247	940.37	938.74	1.11	24	0.012	22.25	9.23	25.78	1.68	942.05	948.9
G.I. 3-4	G.I. 3-3	59.699	942.51	940.87	2.75	18	0.012	11.92	7.98	18.85	1.31	943.82	948.62
G.I. 3-5	G.I. 3-4	60.562	944.33	942.81	2.51	15	0.012	9.71	9.14	11.06	1.18	945.51	949.2
G.I. 3-6	G.I. 3-5	102.87	946.47	944.93	1.5	15	0.012	7.75	7.9	8.56	1.1	947.57	951.51
G.I. 3-7	G.I. 3-6	95.522	948.5	947.07	1.5	15	0.012	4.43	7.03	8.56	0.85	949.35	951.72
G.I. 4-1	G.I. 3-3	99.928	943.81	941.72	2.09	15	0.012	9.31	9.35	10.12	1.16	944.97	949.58
C.I. 4-2	G.I. 4-1	71.13	945.2	944.41	1.11	15	0.012	5.82	6.66	7.37	0.98	946.18	950.68
C.I. 4-3	C.I. 4-2	33	946.18	945.8	1.15	15	0.012	2.91	5.73	7.51	0.68	946.87	950.68
C.I. 5-1	MH. 1-6	88.446	942.06	940.29	2	18	0.012	6.56	8.64	16.09	0.97	943.05	949.3
C.I. 5-2	C.I. 5-1	34	943.14	942.46	2	18	0.012	1.45	2.25	16.09	0.45	943.59	949.3

Inlet Design Table
10 Year Return Frequency

Inlet ID	Inlet Location	Peak Flow (cfs)	Upstream Bypass (cfs)	Total Flow (cfs)	Clogging Factor	Inlet Capacity (cfs)	Sag Inlet Capacity (Note 1) (cfs)	Captured Flow (cfs)	Bypass Flow (cfs)	Inlet Efficiency (Note 2) (%)	Gutter Depth (ft)	Gutter Spread (ft)	Ponding Depth (ft)
C.I. 1-3(L)	SAG	1.36									0.14	6.96	
C.I. 1-3(R)	SAG	1.55									0.14	7.23	
C.I. 1-3	SAG	3.40		3.57	0.80	31.04	24.83	3.57	0.00	100.00%			
C.I. 1-4(L)	SAG	0.00									0.12	6.22	
C.I. 1-4(R)	SAG	0.58									0.12	6.02	
C.I. 1-4	SAG	2.38	3.31	5.68	0.80	31.04	24.83	5.68	0.00	100.00%			
C.I. 1-5	GRADE	2.77	0.00	2.77	1.00	2.09	2.09	2.09	0.67	75.68%	0.16	7.70	
C.I. 2-1	GRADE	3.15	0.00	3.15	1.00	2.03	2.03	2.01	1.12	64.35%	0.16	8.19	
C.I. 2-2	GRADE	3.88	0.00	3.88	1.00	2.74	2.74	2.74	1.14	70.68%	0.20	10.00	
F.I. 1-7	SAG	140.81	0.00	140.81	0.80	206.91	165.53	140.81	0.00	100.00%			3.85
C.I. 5-1(L)	SAG	0.00									0.00	0.00	
C.I. 5-1(R)	SAG	2.14									0.18	8.43	
C.I. 5-1	SAG	2.91	0.00	2.91	0.80	19.40	15.52	2.91	0.00	100.00%			
C.I. 5-2(L)	SAG	0.44									0.10	4.81	
C.I. 5-2(R)	SAG	0.19									0.07	3.43	
C.I. 5-2	SAG	0.83	0.00	0.83	0.80	19.40	15.52	0.83	0.00	100.00%			
C.I. 4-2	GRADE	2.28	0.00	2.28	1.00	1.90	1.90	1.90	0.38	83.38%	0.17	8.45	
C.I. 4-3	GRADE	2.28	0.00	2.28	1.00	1.90	1.90	1.90	0.38	83.38%	0.17	8.45	
C.I. 7-1	GRADE	2.18	0.00	2.18	1.00	1.81	1.81	1.81	0.37	83.06%	0.16	8.17	
C.I. 3-1	GRADE	1.44	0.00	1.46	1.00	1.28	1.28	1.28	0.17	88.01%	0.14	6.93	
C.I. 3-2	GRADE	4.32	0.76	5.08	1.00	3.24	3.24	3.24	1.83	63.87%	0.22	11.06	
G.I. 3-4	SAG	1.26	0.00	1.26		5.18		1.26	0.00	100.00%			
G.I. 3-3	GRADE	0.58	0.00	0.58		5.18		0.58	0.00	100.00%			
G.I. 4-1	SAG	1.99	0.00	1.99		3.93		1.99	0.00	100.00%			
G.I. 3-5	GRADE	1.94	0.00	1.94		5.18		1.94	0.00	100.00%			
G.I. 3-6	SAG	1.89	0.00	1.89		5.18		1.89	0.00	100.00%			
G.I. 3-7	SAG	2.52	0.00	2.52		5.18		2.52	0.00	100.00%			
EX. 3A	GRADE	2.18	0.00	2.18		5.18		2.18	0.00	100.00%			
EX. 2B	GRADE	0.78	0.00	0.78		5.18		0.78	0.00	100.00%			
EX. C.I. 1C	GRADE	0.92	0.00	0.92	1.00	0.85	0.85	0.85	0.07	92.35%			

Notes:
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600. Both theoretical capacity and reduced capacity are shown.
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

Drainage Area Design Table
10 Year Return Frequency

Inlet ID	Drainage Area (ac)	C	Tc (min)	I (in/hr)	K	Peak Flow (cfs)
C.I. 1-3(L)	0.28	0.66	5.00	7.35	1.00	1.36
C.I. 1-3(R)	0.32	0.66	5.00	7.35	1.00	1.55
C.I. 1-3(B)	0.10	0.66	5.00	7.35	1.00	0.49
C.I. 1-3	0.70	0.66	5.00	7.35	1.00	3.40
C.I. 1-4(L)	0.00	0.66	5.00	7.35	1.00	0.00
C.I. 1-4(R)	0.12	0.66	5.00	7.35	1.00	0.58
C.I. 1-4(B)	0.37	0.66	5.00	7.35	1.00	1.80
C.I. 1-4	0.49	0.66	5.00	7.35	1.00	2.38
C.I. 1-5	0.57	0.66	5.00	7.35	1.00	2.77
C.I. 2-1	0.65	0.66	5.00	7.35	1.00	3.15
C.I. 2-2	0.80	0.66	5.00	7.35	1.00	3.88
F.I. 1-7	40.40	0.66	14.34	5.28	1.00	140.81
C.I. 5-1(L)	0.00	0.66	5.00	7.35	1.00	0.00
C.I. 5-1(R)	0.44	0.66	5.00	7.35	1.00	2.14
C.I. 5-1(B)	0.16	0.66	5.00	7.35	1.00	0.78
C.I. 5-1	0.60	0.66	5.00	7.35	1.00	2.91
C.I. 5-2(L)	0.09	0.66	5.00	7.35	1.00	0.44
C.I. 5-2(R)	0.04	0.66	5.00	7.35	1.00	0.19
C.I. 5-2(B)	0.04	0.66	5.00	7.35	1.00	0.19
C.I. 5-2	0.17	0.66	5.00	7.35	1.00	0.83
C.I. 4-2	0.47	0.66	5.00	7.35	1.00	2.28
C.I. 4-3	0.47	0.66	5.00	7.35	1.00	2.28
C.I. 7-1	0.45	0.66	5.00	7.35	1.00	2.18
C.I. 3-1	0.30	0.66	5.00	7.35	1.00	1.46
C.I. 3-2	0.89	0.66	5.00	7.35	1.00	4.32
G.I. 3-4	0.26	0.66	5.00	7.35	1.00	1.26
G.I. 3-3	0.12	0.66	5.00	7.35	1.00	0.58
G.I. 4-1	0.41	0.66	5.00	7.35	1.00	1.99
G.I. 3-5	0.40	0.66	5.00	7.35	1.00	1.94
G.I. 3-6	0.39	0.66	5.00	7.35	1.00	1.89
G.I. 3-7	0.52	0.66	5.00	7.35	1.00	2.52
EX. 3A	0.45	0.66	5.00	7.35	1.00	2.18
EX. 2B	0.16	0.66	5.00	7.35	1.00	0.78
EX. C.I. 1C	0.19	0.66	5.00	7.35	1.00	0.92

Drainage Area Design Table
100 Year Return Frequency

Inlet ID	Drainage Area (ac)	C	Tc (min)	I (in/hr)	K	Peak Flow (cfs)
C.I. 1-3(L)	0.28	[illegible]	5.00	10.32	1.25	2.38
C.I. 1-3(R)	0.32	0.66	5.00	10.32	1.25	2.73
C.I. 1-3(B)	0.10	0.66	5.00	10.32	1.25	0.85
C.I. 1-3	0.70	0.66	5.00	10.32	1.25	5.96
C.I. 1-4(L)	0.00	0.66	5.00	10.32	1.25	0.00
C.I. 1-4(R)	0.12	0.66	5.00	10.32	1.25	1.02
C.I. 1-4(B)	0.37	0.66	5.00	10.32	1.25	3.15
C.I. 1-4	0.49	0.66	5.00	10.32	1.25	4.17
C.I. 1-5	0.57	0.66	5.00	10.32	1.25	4.85
C.I. 2-1	0.65	0.66	5.00	10.32	1.25	5.54
C.I. 2-2	0.80	0.66	5.00	10.32	1.25	6.81
F.I. 1-7	40.40	0.66	14.34	7.50	1.25	249.93
C.I. 5-1(L)	0.00	0.66	5.00	10.32	1.25	0.00
C.I. 5-1(R)	0.44	0.66	5.00	10.32	1.25	3.75
C.I. 5-1(B)	0.16	0.66	5.00	10.32	1.25	1.36
C.I. 5-1	0.60	0.66	5.00	10.32	1.25	5.11
C.I. 5-2(L)	0.09	0.66	5.00	10.32	1.25	0.77
C.I. 5-2(R)	0.04	0.66	5.00	10.32	1.25	0.34
C.I. 5-2(B)	0.04	0.66	5.00	10.32	1.25	0.34
C.I. 5-2	0.17	0.66	5.00	10.32	1.25	1.45
C.I. 4-2	0.47	0.66	5.00	10.32	1.25	4.00
C.I. 4-3	0.47	0.66	5.00	10.32	1.25	4.00
C.I. 7-1	0.45	0.66	5.00	10.32	1.25	3.83
C.I. 3-1	0.30	0.66	5.00	10.32	1.25	2.55
C.I. 3-2	0.89	0.66	5.00	10.32	1.25	7.58
G.I. 3-4	0.26	0.66	5.00	10.32	1.25	2.21
G.I. 3-3	0.12	0.66	5.00	10.32	1.25	1.02
G.I. 4-1	0.41	0.66	5.00	10.32	1.25	3.49
G.I. 3-5	0.40	0.66	5.00	10.32	1.25	3.41
G.I. 3-6	0.39	0.66	5.00	10.32	1.25	3.32
G.I. 3-7	0.52	0.66	5.00	10.32	1.25	4.43
EX. 3A	0.45	0.66	5.00	10.32	1.25	3.83
EX. 2B	0.16	0.66	5.00	10.32	1.25	1.36
EX. C.I. 1C	0.19	0.66	5.00	10.32	1.25	1.62

Inlet Design Table
100 Year Return Frequency

Inlet ID	Inlet Location	Peak Flow (cfs)	Upstream Bypass (cfs)	Total Flow (cfs)	Clogging Factor	Inlet Capacity (cfs)	Sag Inlet Capacity (Note 1) (cfs)	Captured Flow (cfs)	Bypass Flow (cfs)	Inlet Efficiency (Note 2) (%)	Gutter Depth (ft)	Gutter Spread (ft)	Ponding Depth (ft)
C.I. 1-3(L)	SAG	2.38									0.18	8.85	
C.I. 1-3(R)	SAG	2.73									0.18	8.93	
C.I. 1-3	SAG	5.96	0.52	6.48	0.80	31.04	24.83	6.48	0.00	100.00%			
C.I. 1-4(L)	SAG	0.00									0.18	8.98	
C.I. 1-4(R)	SAG	1.02									0.16	8.09	
C.I. 1-4	SAG	4.17	8.86	13.03	0.80	31.04	24.83	13.03	0.00	100.00%			
C.I. 1-5	GRADE	4.85	0.00	4.85	1.00	2.96	2.96	2.96	1.89	61.00%	0.19	9.62	
C.I. 2-1	GRADE	5.54	0.00	5.54	1.00	2.66	2.66	2.66	2.87	48.09%	0.20	10.31	
C.I. 2-2	GRADE	6.81	0.00	6.81	1.00	3.79	3.79	3.79	3.01	55.58%	0.25	12.35	
F.I. 1-7	SAG	249.93	0.00	249.93	0.80	206.91	165.53	165.53	84.40	66.23%			7.80
C.I. 5-1(L)	SAG	0.00									0.00	0.00	
C.I. 5-1(R)	SAG	3.75									0.21	10.41	
C.I. 5-1	SAG	5.11	0.00	5.11	0.80	19.40	15.52	5.11	0.00	100.00%			
C.I. 5-2(L)	SAG	0.77									0.13	5.94	
C.I. 5-2(R)	SAG	0.34									0.09	4.21	
C.I. 5-2	SAG	1.45	0.00	1.45	0.80	19.40	15.52	1.45	0.00	100.00%			
C.I. 4-2	GRADE	4.00	0.00	4.00	1.00	2.91	2.91	2.91	1.10	72.61%	0.21	10.43	
C.I. 4-3	GRADE	4.00	0.00	4.00	1.00	2.91	2.91	2.91	1.10	72.61%	0.21	10.43	
C.I. 7-1	GRADE	3.83	0.00	3.83	1.00	2.77	2.77	2.77	1.07	72.15%	0.20	10.09	
C.I. 3-1	GRADE	2.55	0.00	2.55	1.00	2.03	2.03	2.03	0.53	79.50%	0.17	8.55	
C.I. 3-2	GRADE	7.58	2.19	9.77	1.00	4.37	4.37	4.37	5.40	44.78%	0.28	14.14	
G.I. 3-4	SAG	2.21	0.00	2.21		5.18		2.21	0.00	100.00%			
G.I. 3-3	GRADE	1.02	0.00	1.02		5.18		1.02	0.00	100.00%			
G.I. 4-1	SAG	3.49	0.00	3.49		3.92		3.49	0.00	100.00%			
G.I. 3-5	GRADE	3.41	0.00	3.41		5.18		3.41	0.00	100.00%			
G.I. 3-6	SAG	3.32	0.00	3.32		5.18		3.32	0.00	100.00%			
G.I. 3-7	SAG	4.43	0.00	4.43		5.18		4.43	0.00	100.00%			
EX. 3A	GRADE	3.83	0.00	3.83		5.18		3.83	0.00	100.00%			
EX. 2B	GRADE	1.36	0.00	1.36		5.18		1.36	0.00	100.00%			
EX. C.I. 1C	GRADE	1.62	0.00	1.62	1.00	1.40	1.40	1.40	0.22	86.31%			

Notes:
1. Inlet capacity at sag location has been reduced by a clogging factor of 0.80, reducing theoretical capacity to 80% capacity, as required per APWA Section 5600. Both theoretical capacity and reduced capacity are shown.
2. Inlet efficiency shown in the tables is Captured Flow/Total Flow, denoting the actual percentage of flow captured after the capacity has been reduced to 80% of theoretical capacity.

OLSSON ASSOCIATES

MELISSA D. DEGONIA
NUMBER PE 2011000000

NO. REV | DATE | REVISIONS DESCRIPTION | BY

REVISIONS

DRAINAGE TABLES

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT, MO

2017

SHEET
C118

DWG: F:\2017\0001-0500\017-0264\40-Design\AutoCAD\Final Plans\Sheets\GNCV\01_Street & Storm_36x24\C_DRN02_70264.dwg USER: jsellers
DATE: Jul 24, 2017 12:47pm

Lot #	Rear MBOE	Front MBOE
81	951.70	949.81
82	951.36	949.79
83	950.70	949.27
84	952.22	951.40
85	952.69	952.32
86	953.62	953.50
87	954.48	954.61
88	955.50	955.60
89	957.52	955.60
90	956.36	954.69
91	954.91	954.03
92	953.60	953.38
93	951.91	952.74
94	950.47	952.09
95	949.30	951.38
96	949.79	947.92
97	949.30	947.15
98	949.23	945.24
99	949.11	945.31
100	949.60	947.07
101	950.87	948.83
102	951.91	950.42
103	953.09	950.41
104	954.12	951.43
105	955.21	953.43
106	956.35	953.80
107	957.52	955.47

NOTES:

1. INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW LINES OR PATHS ON THE LOTS, AS SHOWN ON THE MATER DRAINAGE PLAN, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

2. PLAT IS LOCATION IN ZONE X. "AREAS OUTSIDE THE 1-PERCENT ANNUAL CHANCE FLOODPLAINS, AREAS OF 1-PERCENT ANNUAL CHANCE SHEET FLOW FLOODING WHERE THE AVERAGE DEPTHS ARE LESS THAN 1 FOOT, AREAS OF 1-PERCENT ANNUAL CHANCE STREAM FLOODING WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 SQUARE MILE, OR AREAS PROTECTED FROM THE 1-PERCENT ANNUAL CHANCE FLOOD BY LEVEES. NO BASE FLOOD ELEVATIONS OR DEPTHS ARE SHOWN WITHIN THIS ZONE"

3. PLAT IS LOCATED OUTSIDE OF ANY REQUIRED BUFFER ZONES FOR NATURAL STREAMS.

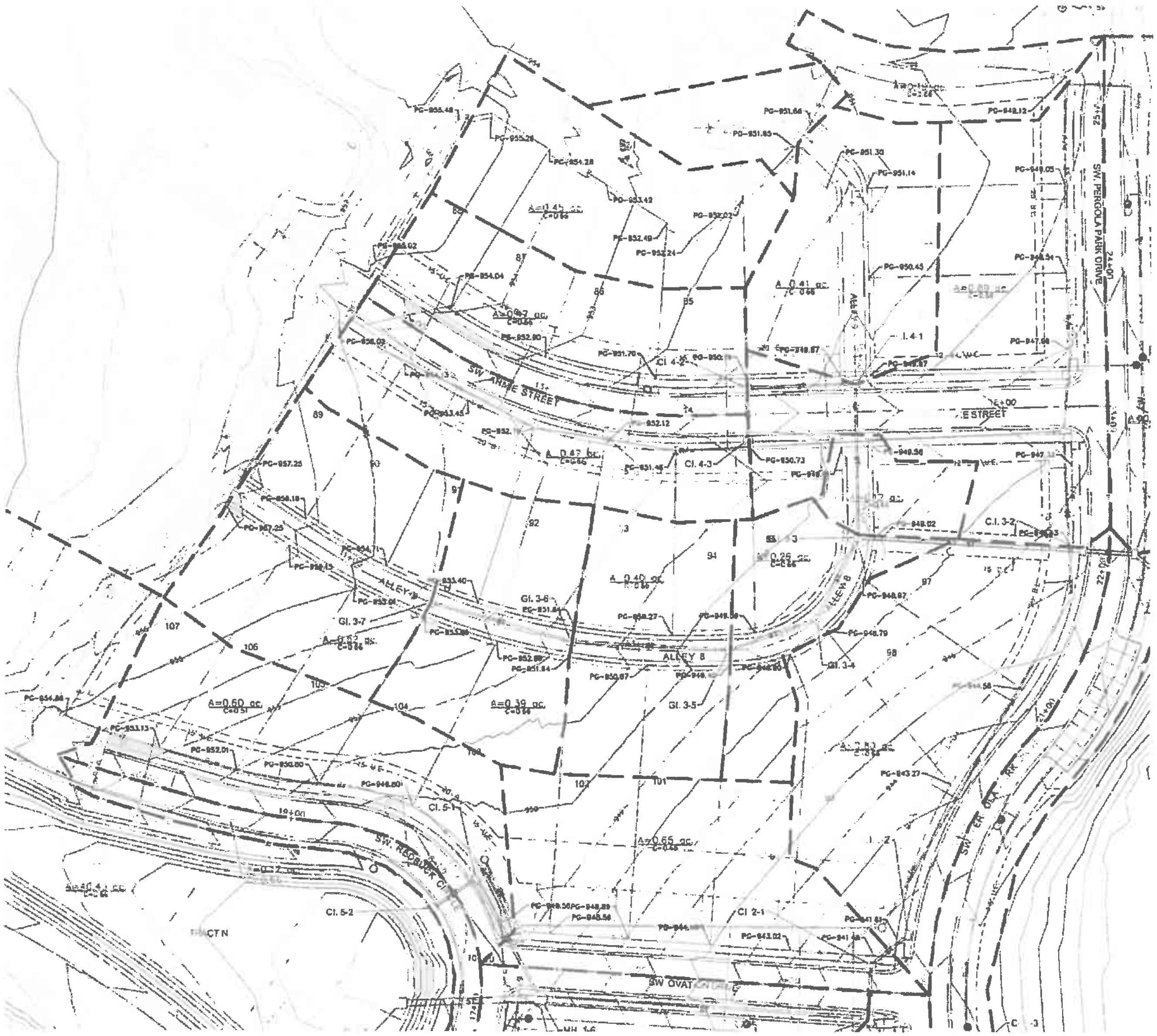
4. MBOE ELEVATIONS HAVE BEEN PROVIDED PER LOT LINES. INTERPOLATION WILL BE ALLOWED BETWEEN THE RIGHT AND LEFT SIDE MBOES SHOWN ON THE MASTER DRAINAGE PLAN, DEPENDING ON THE LOCATION OF THE LOWEST OPENING ON THE PROPOSED STRUCTURE.

5. NO BUILDING PERMITS WILL BE ISSUED UNTIL AN AS-GRADED MASTER DRAINAGE PLAN HAS BEEN SUBMITTED TO THE CITY AND APPROVED BY THE CITY.

RMBOE ~ REAR MINIMUM BUILDING OPENING ELEVATION
FMBOE - FRONT MINIMUM BUILDING OPENING ELEVATION

N

15' 30' 60'
SCALE IN FEET



MASTER DRAINAGE PLAN

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT, MO

REVISIONS DESCRIPTION | BY

REVISIONS

OLSSON. ASSOCIATES

SHEET
C1.19

Appendix D

Erosion Control Plans

And

Inspection Report Coversheet

Stormwater Construction Site Inspection Report

General Information			
Project Name	Pergola Park – 4th Plat, Lee's Summit, MO		
NPDES Tracking No.			
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Qualification(s)			
Inspector's Contact Information			
Describe present phase of construction			

Type of Inspection:
☐ Regular ☐ 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 inspection:
__Clear __Cloudy __Rain __Sleet __Fog __Snowing __High Winds Other:_____ Temperature_____

Have any discharges occurred since the last inspection? ☐ Yes ☐ No
If yes, describe:

Are there any discharges at the time of inspection? ☐ Yes ☐ No
If yes, describe:

Site-specific BMPs

- *Identify the structural and non-structural BMPs in your SWPPP and on your site map. List them below (add as many BMPs as necessary). Carry a copy of the site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	Location of BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1	Silt fence	☐ Yes ☐ No	☐ Yes ☐ No	
2	Inlet protection	☐ Yes ☐ No	☐ Yes ☐ No	
3	Construction Access	☐ Yes ☐ No	☐ Yes ☐ No	
4		☐ Yes ☐ No	☐ Yes ☐ No	
5		☐ Yes ☐ No	☐ Yes ☐ No	
6		☐ Yes ☐ No	☐ Yes ☐ No	
7		☐ Yes ☐ No	☐ Yes ☐ No	
8		☐ Yes ☐ No	☐ Yes ☐ No	
9		☐ Yes ☐ No	☐ Yes ☐ No	

Overall Site Issues
Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	☐ Yes ☐ No	☐ Yes ☐ No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	☐ Yes ☐ No	☐ Yes ☐ No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	☐ Yes ☐ No	☐ Yes ☐ No	
4	Are discharge points and receiving waters free of any sediment deposits?	☐ Yes ☐ No	☐ Yes ☐ No	
5	Are storm drain inlets properly protected?	☐ Yes ☐ No	☐ Yes ☐ No	
6	Is the construction exit preventing sediment from being tracked into the street?	☐ Yes ☐ No	☐ Yes ☐ No	
7	Is trash/litter from work areas collected and placed in covered dumpsters? Sanitary facilities secure?	☐ Yes ☐ No	☐ Yes ☐ No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	☐ Yes ☐ No	☐ Yes ☐ No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	☐ Yes ☐ No	☐ Yes ☐ No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	☐ Yes ☐ No	☐ Yes ☐ No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	☐ Yes ☐ No	☐ Yes ☐ No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

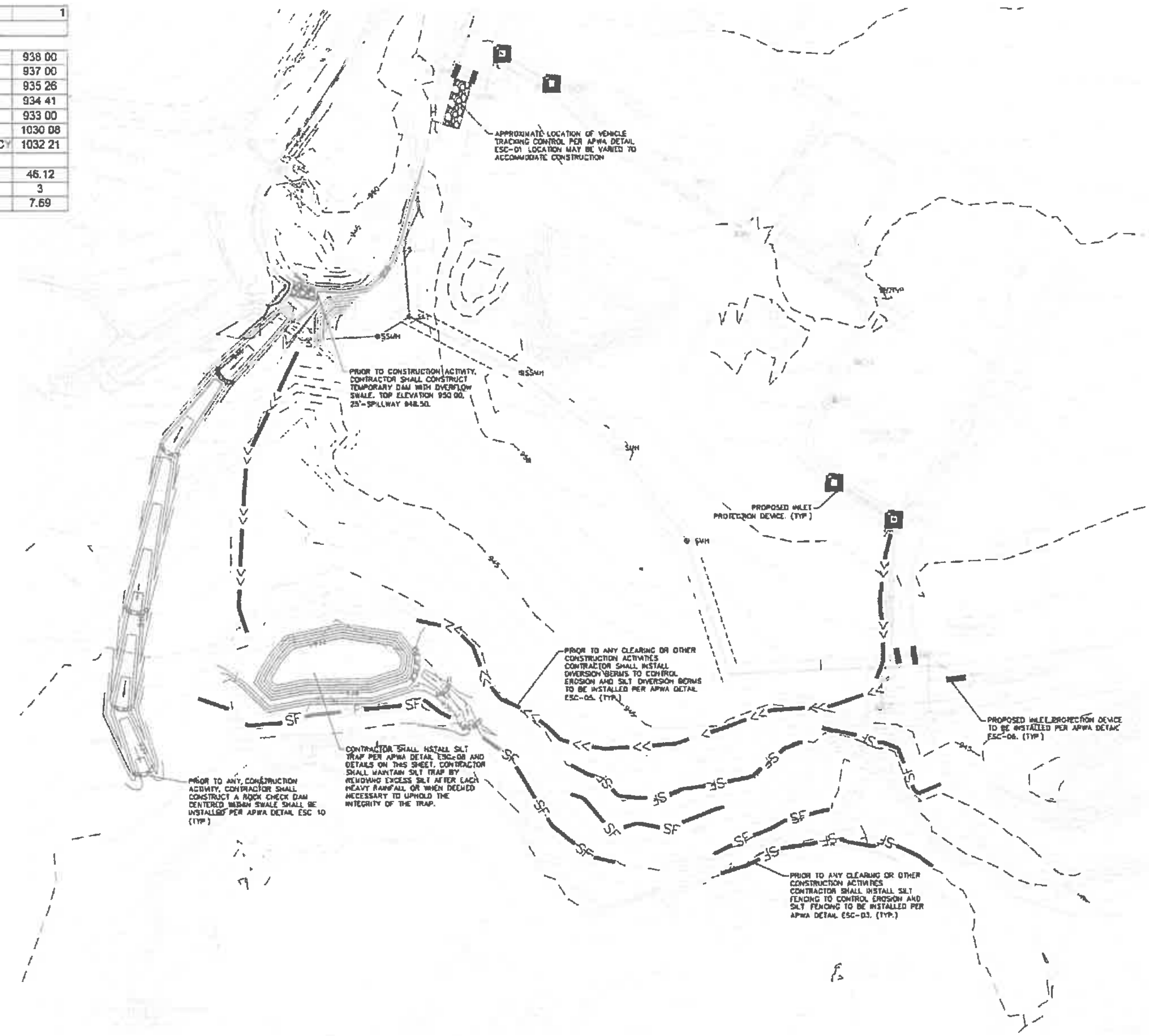
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage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

Signature: _____

TEMPORARY SEDIMENT TRAP	1
POND AND PRINCIPAL SPILLWAY DATA	
DAM TOP ELEVATION	938 00
EMERGENCY SPILLWAY ELEVATION	937 00
WET STORAGE VOLUME ELEVATION	935 26
CLEANOUT ELEVATION	934 41
DRY BOTTOM ELEVATION	933 00
VOL. REQ'D @ 134CY/ACRE	1030 08
VOL. PROVIDED BELOW OUTLET CREST (CY	1032 21
STONE OUTLET DATA	
LENGTH (L.) FT	46.12
WIDTH (W.) FT	3
DRAINAGE AREA (AC)	7.69

NOTE:
THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.



PLAN LEGEND:
PHASE I DEVICES

- TEMPORARY STONE CONSTRUCTION ENTRANCE
- SF — SILT FENCE
- STORM DRAIN INLET PROTECTION
- << — TEMPORARY DIVERSION BERM
- ROCK CHECK DAMS

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DATE: Jul 24, 2017 12:48pm

OLSSON. ASSOCIATES

MELISSA D. DeGONIA NUMBER PE-2011000662

NO REV	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

SITE DISTRUBANCE PLAN - PHASE 1

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT MO 2017

SHEET
C120

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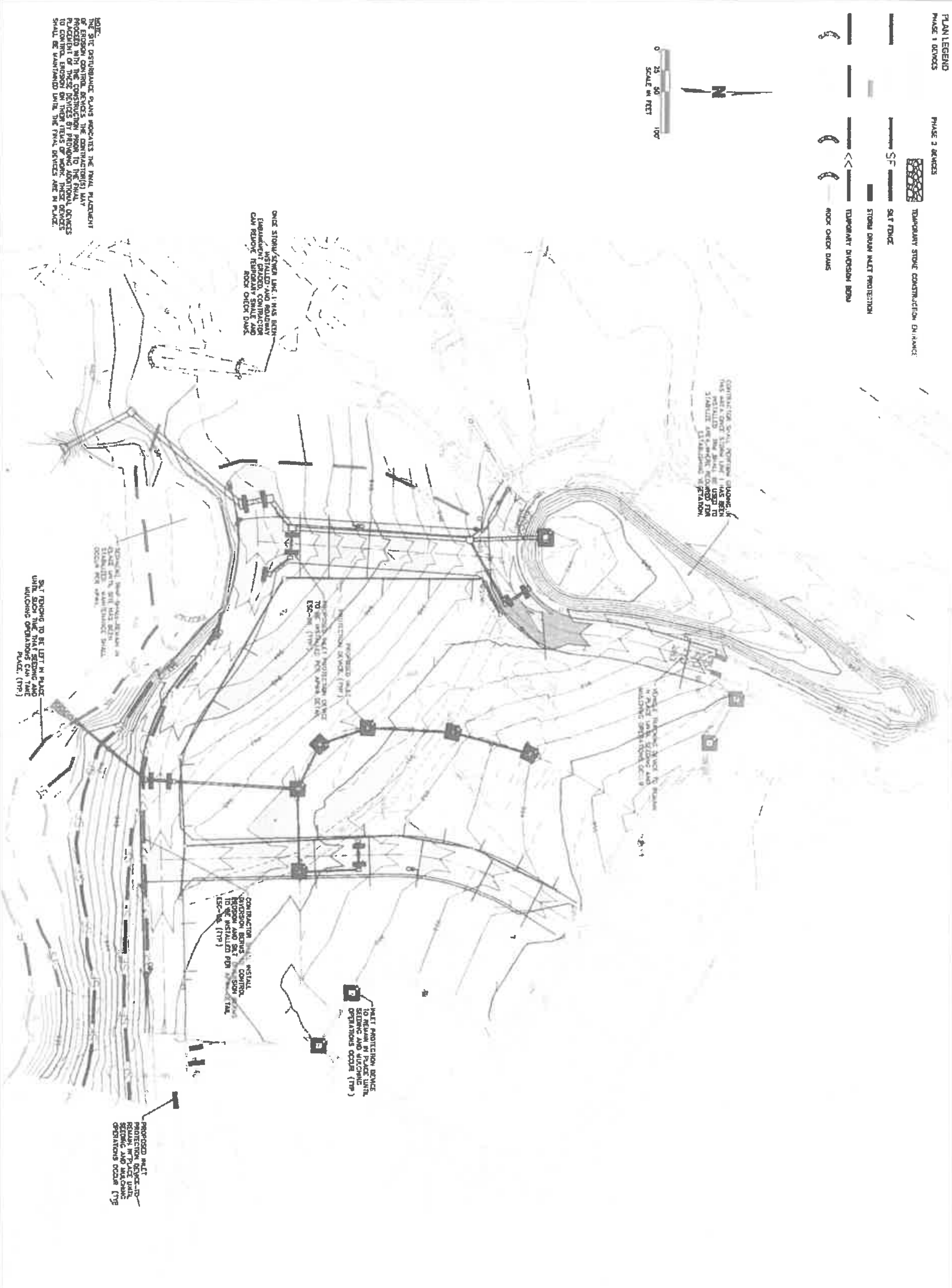


SITE DISTRUBANCE PLAN - PHASE 2	NO. REV	DATE	REVISIONS DESCRIPTION	BY
PERGOLA PARK 4TH PLAT				
LEE'S SUMMIT MO — 2017			REVISIONS	

SHEET
C121

OLSSON
ASSOCIATES

PLAN LEGEND

PHASE 1 DEVICES	PHASE 2 DEVICES	PHASE 3 DEVICES	
			TEMPORARY STONE CON[illegible]
			SILT FENCE
			STORM DRAIN INLET [illegible]
			TEMPORARY DIVERSI[illegible]
			ROCK CHECK DAMS

GENERAL NOTES.

SEED & MULCH NOTES:
SEEDING SHALL BE DONE BEFORE THE PROPOSED SEEDBED BECOMES ERODED, CRUSTED OVER,OR DRIED OUT AND SHALL NOT BE DONE WHEN THE GROUND IS FROZEN, OR COVERED WITH SNOW. THE SEED SHALL COMPLY WITH THE REQUIREMENTS OF THE MISSOURI SEED LAW AND THE FEDERAL SEED ACT. ALSO, IT SHALL CONTAIN NO SEED OF ANY PLANT ON THE FEDERAL NOXIOUS WEED LIST. OTHER WEED SEED SHALL NOT EXCEED ONE PERCENT BY WEIGHT OF MIX.

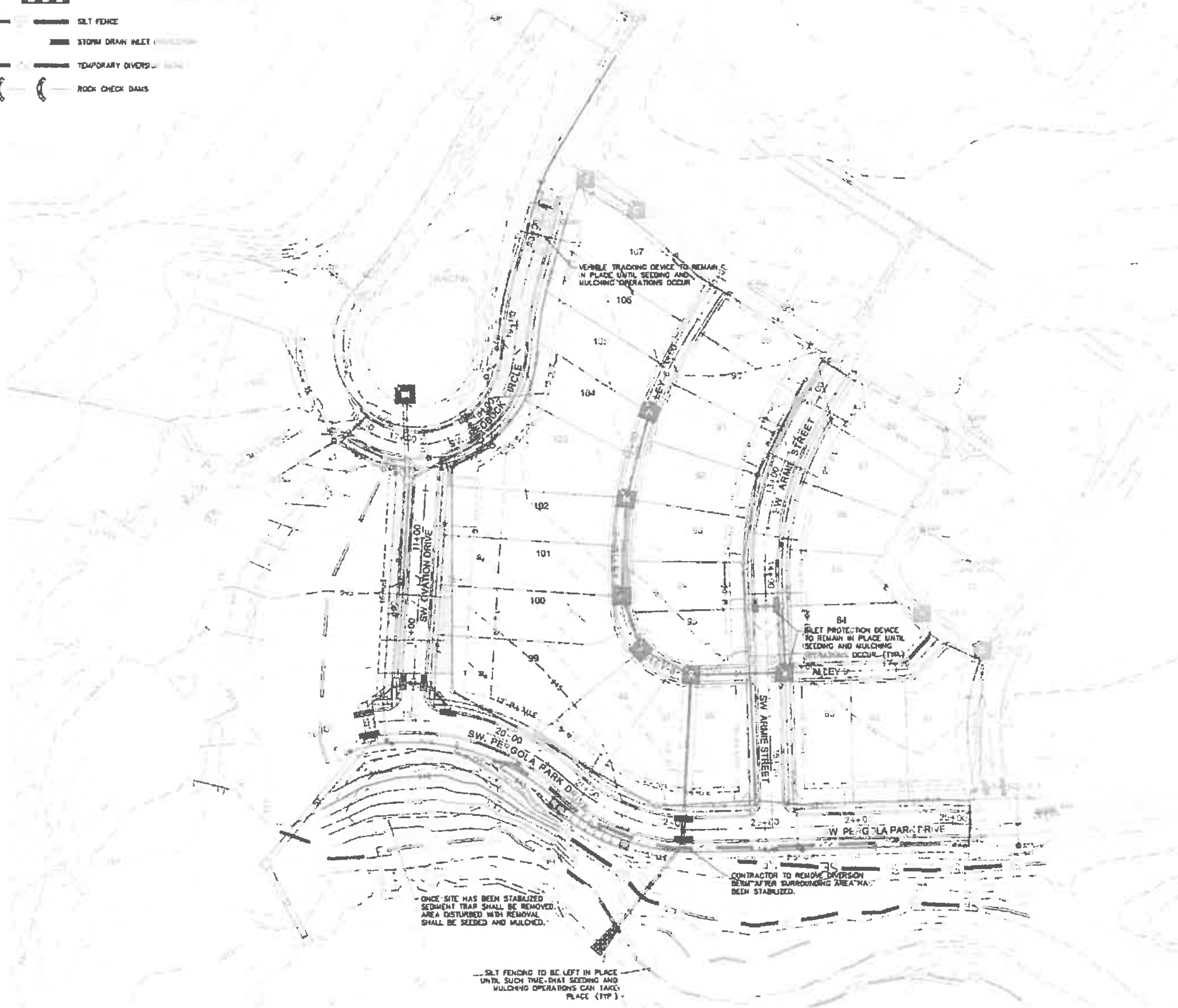
SEED & FERTILIZER RATE.
MIX I – RYE GRASS / BLUE GRASS ------100 LBS. PER ACRE
MIX II – TALL FESCUE / BLUE GRASS -----195 LBS. PER ACRE
LIME ---------------------------2000 LBS. PER ACRE
(50 LBS. PER 1000 SQ. FT.)
FERTILIZER ---------------------------800 TO 1200 LBS. PER ACRE (25 LBS. PER 1000 SQ. FT.)

DURING THE DATES DECEMBER 15TH THROUGH MAY 31 ALL LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED TO FINISHED SLOPES OF DISTURBED AREAS. DURING THE MONTHS OF JUNE, JULY, OCTOBER, AND NOVEMBER 1ST THROUGH DECEMBER 15TH, LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED AT THE FOLLOWING RATES.
LIME – 100 % OF SPECIFIED QUANTITY
FERTILIZER – 75 % OF THE SPECIFIED QUANTITY
SEED – 50 % OF THE SPECIFIED QUANTITY
MULCH – 100 % OF THE SPECIFIED QUANTITY
MULCH SHALL BE VEGETATIVE TYPE, CEREAL STRAW FROM STALKS OF OATS, RYE, OR BARLEY, OR APPROVED EQUAL. THE STRAW SHALL BE FREE OF PROHIBITED WEED SEED AND RELATIVELY FREE OF ALL OTHER NOXIOUS AND UNDESIRABLE SEED. MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE, (70 TO 90 LBS. PER 1000 SQ. FT.). MULCH SHALL BE EMBEDDED BY A MULCH ANCHORING TOOL OR DISK TYPE ROLLER HAVING FLAT SERRATED DISKS SPACED NOT MORE THAN 10 INCHES APART AND CLEANING SCRAPERS SHALL BE PROVIDED.

THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE.

N

25 50 100
SCALE IN FEET



OLSSON ASSOCIATES

MELISSA ROCHA
NUMBER PE-2010000862

REVISIONS

SITE DISTRUBANCE PLAN - PHASE 3

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT, MO

2017

SHEET
C122

Appendix E

Subcontractor Certifications/Agreements

The attached master form is to be completed by the general contractor and each subcontractor on the project following the SWPPP Training session. The signed form is to be kept in Appendix E for record.

Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: Pergola Park – 4th Plat, Lee's Summit, Jackson County, MO

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP and the general National Pollution Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity for the above designated project. I agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above-named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix F

Training Log

SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name: Pergola Park – 4th Plat

Project Location: SW Pergola Park Drive and SW Redbuck Circle, Lee's Summit, MO

Instructor's Name(s): _____

Instructor's Title(s): _____

Course Location: _____

Date: _____

Course Length (hours): _____

Stormwater Training Topic: (*check as appropriate)*

- ❑ **Erosion Control BMPs**
- ❑ **Emergency Procedures**
- ❑ **Sediment Control BMPs**
- ❑ **Good Housekeeping BMPs**
- ❑ **Non-Stormwater BMPs**

Specific Training Objective:_____

_____

Attendee Roster: (*attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix G

List of Threatened and Endangered Species

Species By County Report

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the IPaC application.

County: Jackson, Missouri

CSV

Need to contact a FWS field office about a species? Follow this link to find your local FWS Office.

Group	Name	Population	Status	Lead Office	Recovery Plan	Recovery Plan Action Status	Recovery Plan Stage
Birds	Piping Plover (*Charadrius melodus*)	except Great Lakes watershed	Threatened	Office of the Regional Director	Piping Plover Atlantic Coast Population Revised Recovery Plan	Implementation Progress	Final Revision 1
Birds	Piping Plover (*Charadrius melodus*)	except Great Lakes watershed	Threatened	Office of the Regional Director	Volume I: Draft Revised Recovery Plan for the Northern Great Plains Piping Plover (Charadrius melodus)	Recovery efforts in progress, but no implementation information yet to display.	Draft Revision 1
Birds	Least tern (*Sterna antillarum*)	interior pop.	Endangered	Mississippi Ecological Services Field Office	Least Tern (Interior Pop.)	Implementation Progress	Final
Birds	Red knot (*Calidris canutus rufa*)	Wherever found	Threatened	New Jersey Ecological Services Field Office			
Fishes	Pallid sturgeon (*Scaphirhynchus albus*)	Wherever found	Endangered	Missouri River Coordinator Office	Final Revised Recovery Plan for the Pallid Sturgeon (Scaphirhynchus albus)	Implementation Progress	Final Revision 1
Flowering Plants	Western prairie fringed Orchid (*Platanthera praeclara*)	Wherever found	Threatened	Minnesota-Wisconsin Ecological Services Field Office	Western Prairie Fringed Orchid	Implementation Progress	Final

Group	Name	Population	Status	Lead Office	Recovery Plan	Recovery Plan Action Status	Recovery Plan Stage
Mammals	Indiana bat (*Myotis sodalis*)	Wherever found	Endangered	Indiana Ecological Services Field Office	Indiana Bat (Myotis sodalis) Draft Recovery Plan: First Revision	Implementation Progress	Draft Revision 1
Mammals	Gray bat (*Myotis grisescens*)	Wherever found	Endangered	Missouri Ecological Services Field Office	Gray Bat	Implementation Progress	Final
Mammals	Northern Long-Eared Bat (*Myotis septentrionalis*)	Wherever found	Threatened	Minnesota-Wisconsin Ecological Services Field Office			

Appendix H

Historical Places

MISSOURI
enjoy the show

HISTORIC SITES / CIVIL WAR

Missouri's historic sites have been around a long time. But that doesn't mean you should take them for granted. Instead, soak up as many as you can. Famous cemeteries, Civil War battle sites, even the world's first skyscraper are all here for you to appreciate

HARRY S. TRUMAN

After Harry S. Truman grew up in Independence, leading the allied forces to victory in World War II seemed like the next logical step. And to think, the newspapers at first reported that he lost his election

MARK TWAIN

Samuel Clemens was born in Missouri. Then, he penned under the name Mark Twain and changed Hannibal, Missouri into America's Hometown with classic literary characters like Tom Sawyer and Huckleberry Finn.

Archeologists and treasure hunters have been searching the Missouri countryside for Jesse James' buried riches. Meanwhile, above ground, the lore of his life and mystery surrounding his death is definitely present

Missouri found itself smack dab in the middle of the Civil War in the middle of the 19th century. Revisit the famous battlegrounds and cemeteries to put yourself back there - a defining time in our nations history

All Results

All Regions

All Cities

Sort By Name (A-Z)

Results 25

Page 1 of 25 « < 1 2 3 4 5 > »

A ★ FEATURED THING TO DO
NATIONAL BLUES MUSEUM
St. Louis | Museum

B 1827 LOG COURTHOUSE
Independence | Historic Site

C 1855 HARRIS-KEARNEY HOUSE
Kansas City | Historic Site

D 1859 JAIL, MARSHAL'S HOME AND MUSEUM
Independence | Museum

E 1889 SQUIRREL CAGE JAIL
Gallatin | Museum

F 1906 MISSOURI-PACIFIC DEPOT AND AURORA HISTORICAL SOCIETY MUSEUM
Aurora | Museum

G A. L. WEBB SCHOOL MUSEUM AND VETERAN'S MEMORIAL
East Prairie | Museum

H ADAIR COUNTY HISTORICAL SOCIETY MUSEUM
Kirksville | Museum

I AGENCY FORD MUSEUM
Agency | Museum

J AIR AND MILITARY MUSEUM OF THE OZARKS
Springfield | Museum

K ALBRECHT-KEMPER MUSEUM OF ART
St. Joseph | Museum

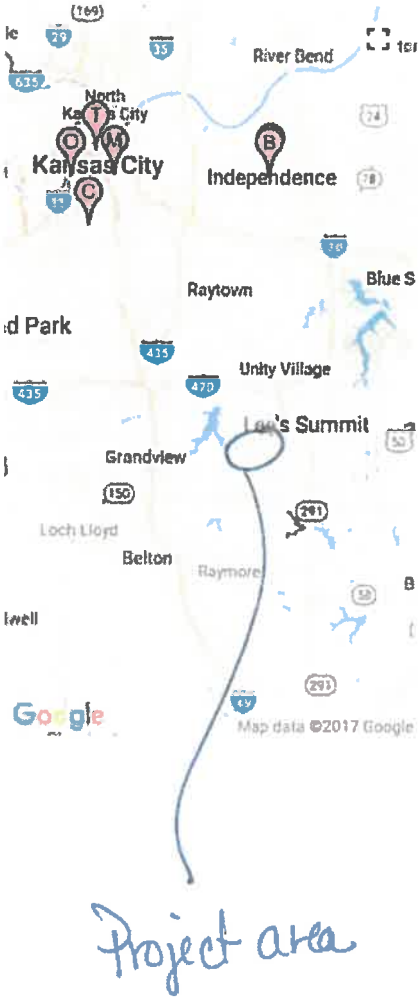
L ALLEY MILL-NATIONAL PARK SERVICE
Eminence | Historic Site

M AMERICAN JAZZ MUSEUM
Kansas City | Museum

N AMERICAN KENNEL CLUB MUSEUM OF THE DOG
St. Louis | Museum

O AMERICAN ROYAL MUSEUM AND VISITORS CENTER
Kansas City Museum

P AMTRAK - HERMANN STATION
Hermann | Railroad



ANCIENT OZARKS NATURAL HISTORY MUSEUM
Ridgedale | Museum

ANDREW COUNTY MUSEUM
Savannah | Museum

ANHEUSER MUSEUM AND ESTATE
Kimmswick | Museum

ARABIA STEAMBOAT MUSEUM
Kansas City | Museum

ARROW ROCK AFRICAN-AMERICAN EXPERIENCE MUSEUM
Arrow Rock | Museum

ARROW ROCK STATE HISTORIC SITE
Arrow Rock | State Parks and State Historic Sites

ARROW ROCK TRAM TOURS
Arrow Rock | Organized Tour

ASSEMBLIES OF GOD NATIONAL HEADQUARTERS
Springfield | Museum

ATKINS-JOHNSON FARM AND MUSEUM
Gladstone | Museum

Appendix I

Soil Analysis Report

Soil Map—Jackson County, Missouri
(Pergola Park - 4th Plat, Lee's Summit, MO)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jackson County, Missouri
Survey Area Data: Version 17, Sep 28, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 14, 2014—Oct 10, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
30080	Greenton silty clay loam, 5 to 9 percent slopes	12.4	100.0%
Totals for Area of Interest		12.4	100.0%

Appendix J

Erosion and Sediment Control and Standard Drawings

SECTION 2150 – EROSION AND SEDIMENT CONTROL

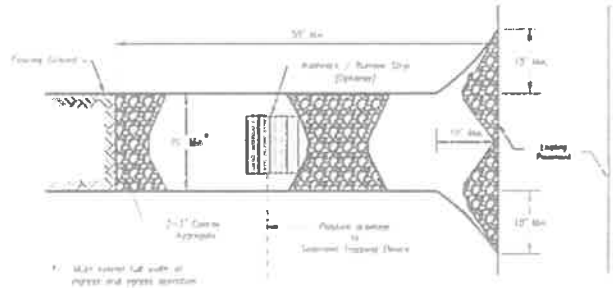
CITY OF LEE'S SUMMIT, MISSOURI
STANDARD SPECIFICATIONS

The City of Lee's Summit hereby adopts Section 2150 of the Kansas City Metropolitan Chapter of APWA Construction and Material Specifications, current edition. The following additions, deletions and/or revisions are adopted as a part of Section 2150 for use within Lee's Summit. Text in bold italics indicates revisions or additions to the APWA standard.

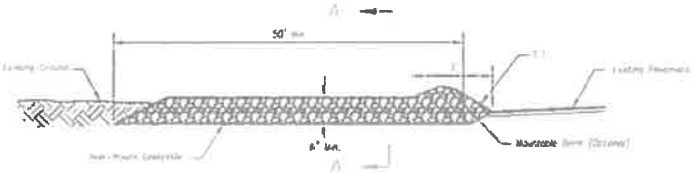
2154.5.A (Silt Fence) Materials, Construction Requirements, and Maintenance:

ADD the following:

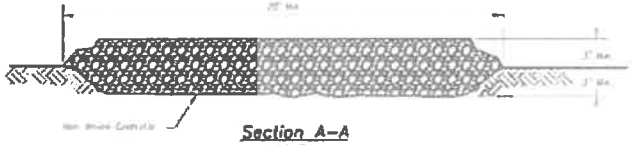
1. ***Silt fence shall not be used in swales, drainage-ways, channels and other conduits of concentrated stormwater flow.***
2. ***Silt fence shall not be used to direct or divert water.***



Plan View
Not to Scale



Side Elevation
Not to Scale



Section A–A
Not to Scale

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area; grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

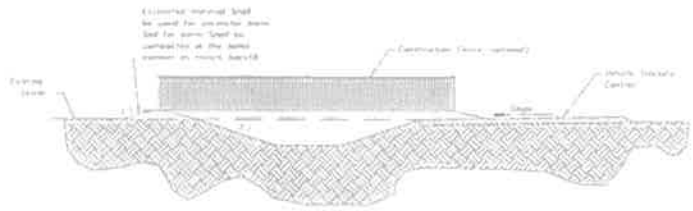
CONSTRUCTION ENTRANCE

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The outside overhang pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas
4. Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete trucks and pump rigs.
5. A one-piece impervious liner may be required along the bottom and sides of the subsurface pit to ensure an adequate seal

Maintenance for Concrete Washout:

1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
3. Concrete washout water, washed pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water-tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



CONCRETE WASHOUT

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

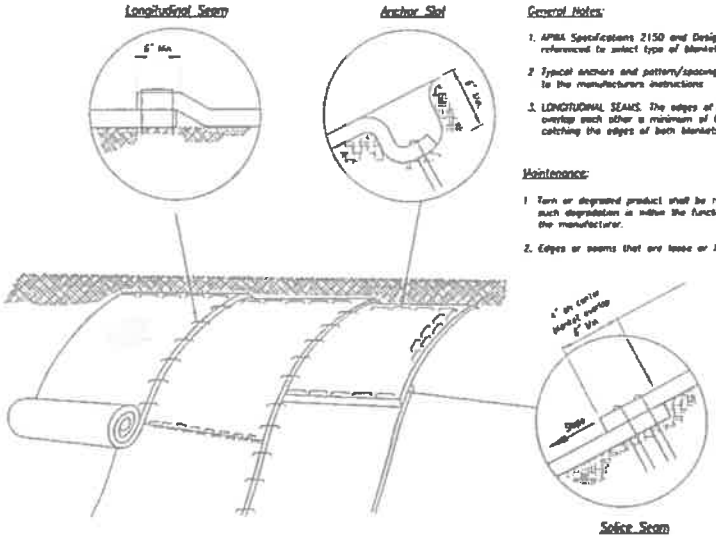
AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

STANDARD DRAWING NUMBER ESC-01

ADOPTED: 10/24/2016



Installation on Slopes

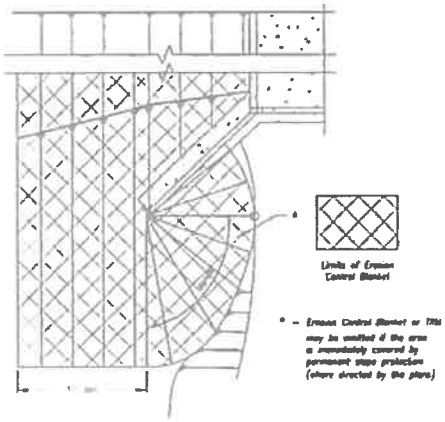
Splice Seam

General Notes:

1. APWA Specifications 2150 and Design Guidance 5100 shall be referenced to select type of blanket or mat to be used.
2. Typical anchors and pattern/spacing shall be installed according to the manufacturers instructions
3. LONGITUDINAL SEAMS. The edges of the blanket or mat should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets

Maintenance:

1. Torn or degraded product shall be repaired or replaced, unless such degradation is within the functional longevity specified by the manufacturer.
2. Edges or seams that are loose or frayed shall be secured

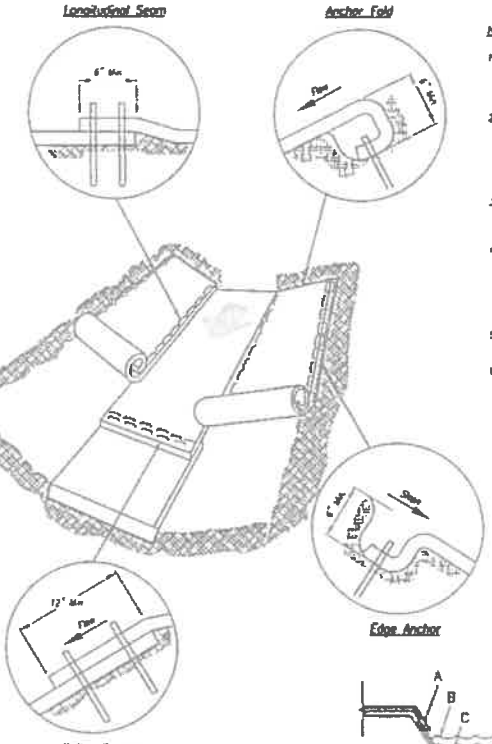


Partial Box Culvert Plan
Not to Scale

Installation Around Culvert Slope

Notes for Installation on Slopes:

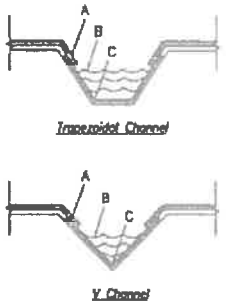
1. Erosion Control Blankets and Tilts shall be laid in the direction of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.
2. ANCHOR SLOTS: The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 8 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
3. SPLICE SEAM: When splices are necessary, overlap mat a minimum of 6 inches in direction of water flow. Shingle splice seams
4. TERMINAL FOLD. The bottom edge of the blanket shall be turned under a minimum of 6 inches, then anchored in place with anchors 9 inches apart.



Installation in Channels

Notes for Installation in Channels:

1. Erosion Control Blankets and Tilts shall be laid in the direction of the flow, with the first course at the centerline of channel, where applicable in order for the mat to be in contact with the soil, lay the mat loosely, avoiding stretching
2. ANCHOR FOLD: The top of the mat should be folded under, buried and secured with wood or other approved anchors placed 8 inches apart. The top edge of the mat should be buried in a slot 6 inches wide x 6 inches deep, anchored in the bottom of the slot, backfilled, and the mat folded over the top as shown in detail.
3. SPLICE SEAM: When splices are necessary, overlap mat a minimum of 12 inches in direction of water flow. Shingle splice seams.
4. CHECK SLOTS: Establish check slots transverse to slope every 30 feet. The slots should be 6 inches wide x 6 inches deep. The mat shall be cut to a length 12 inches beyond the slot. The top of the downstream mat shall be slotted in, secured and buried similar to the edge anchor fold. The upstream mat shall then cover the slot and be anchored as shown.
5. EDGE ANCHORS: Lay outside edge of mat into trench at top of the slope and anchor.
6. TERMINUS: The bottom edge of the mat shall be anchored



Critical Points:

A – Overlaps and seams,

B – Projected water line,

C – Channel bottom / side slope vertices;

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

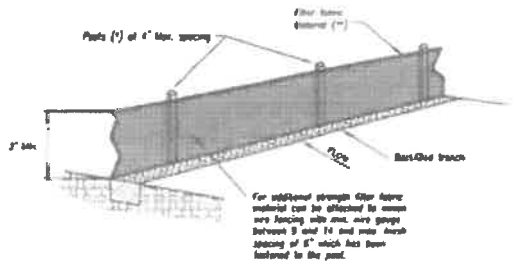
AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

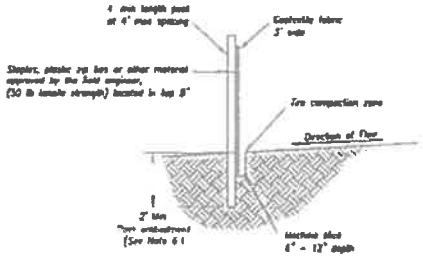
EROSION CONTROL BLANKETS AND TURF REINFORMENT MATS

STANDARD DRAWING NUMBER ESC-02

ADOPTED: 10/24/2016



For additional strength filter fabric material can be attached to woven wire fencing with min. wire gauge between 9 and 14 and mesh openings of 6" which has been fastened to the post.



(*) POSTS
- MIN. LENGTH 4'
- HARDWOOD 1 ½" x 1 ½"
- METAL REINFORCED FENCE 1 ½" x 1 ½"
- STEEL 1 LB/FT

(**) – Geotextile fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS
Not to Scale

Notes:
1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2" into the ground.
6. Trenching will only be allowed for small or difficult installation, where plowing machine cannot be reasonably used.

Maintenance:
1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of silt fence.
2. Repair as necessary to maintain function and structure.

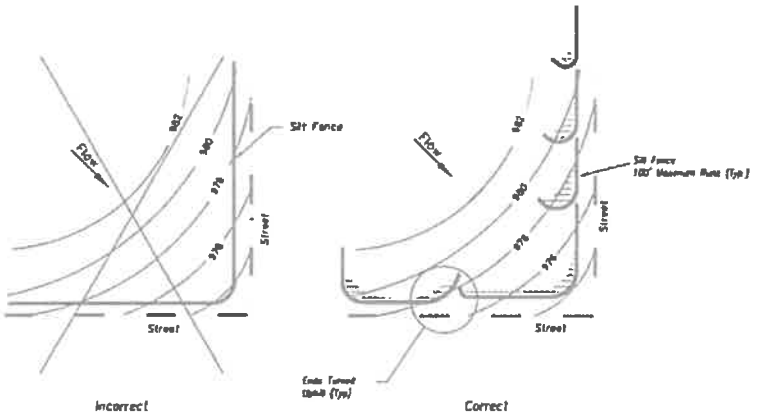
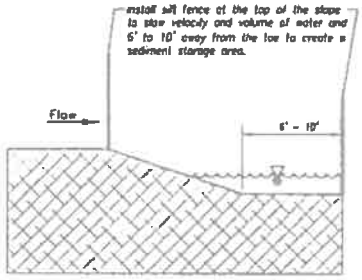
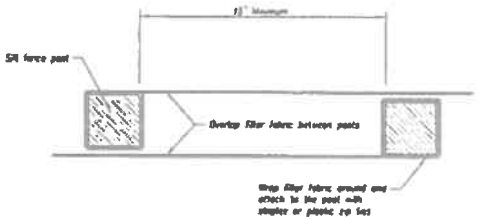


Figure A

SILT FENCE LAYOUT
Not to Scale





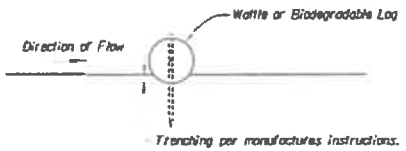
JOINING FENCE SECTIONS
Not to Scale

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

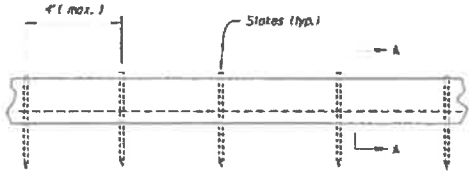
AMERICAN PUBLIC WORKS ASSOCIATION
APWA
KANSAS CITY METRO CHAPTER

SILT FENCE

STANDARD DRAWING NUMBER ESC-03
ADOPTED: 10/24/2016



Section A-A



Typical Elevation

WATTLES AND BIODEGRADABLE LOG

Notes for Wattles and Biodegradable Log Slope Protection:

1. The Slope barriers shall be placed along contour lines, with a short section turned upgrade at each end of the barrier. The maximum length of the slope barrier shall not exceed 250 feet, and the barrier ends need to be staggered.
2. Install wattles and biodegradable logs per manufacturer's instructions.
3. Spacing of stakes per manufacturer's instructions with 4' max. spacing. Length of stakes shall be a minimum of 2 times the diameter of the log with minimum of 24"

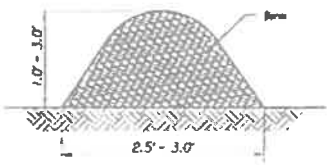


Figure 1
(Perimeter Control)

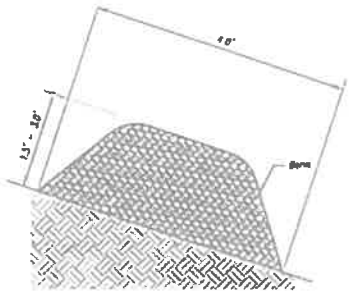


Figure 2
(Steep Slopes)

Notes for Mulch and Compost Filter Berm:

1. The sediment control berm shall be placed unconsolidated in a windrow at locations shown on the plans or as directed by the engineer.
2. Parallel to the base of the slope, or around the perimeter of other affected areas, construct a 1 to 3 foot high by 2.5 to 3 foot wide berm (see Figure 1). For maximum water treatment ability or for steep slopes, construct a 1.5 to 3 foot high trapezoidal berm that is a minimum of 4 feet wide at the base (see Figure 2). In extreme conditions, or where specified by the engineer, a second berm shall be constructed at the top of the slope. Engineer will specify berm requirements.
3. If berm is to be left as permanent or part of the natural landscape, the compost berm may be seeded during application for permanent vegetation.
4. Do not use compost or wood mulch berms in any runoff channels or concentrated flow areas.
5. Wood mulch shall consist of tree and shrub debris resulting from clearing and grubbing and shall be ground by the mechanical means such as a chipper, hammermill, tub grinder or other approved method.
   Mulch sizing varies with a maximum width of 2" and a maximum length of 10"

Maintenance for Mulch and Compost Filter Berm:

1. Berm shall be reshaped and material added as necessary to maintain function and dimensions.
2. Breaches in the berm shall be repaired promptly.

MULCH OR COMPOST FILTER BERMS

Modified from 2013 Overland Park Standard Details for Erosion and Sediment Control.

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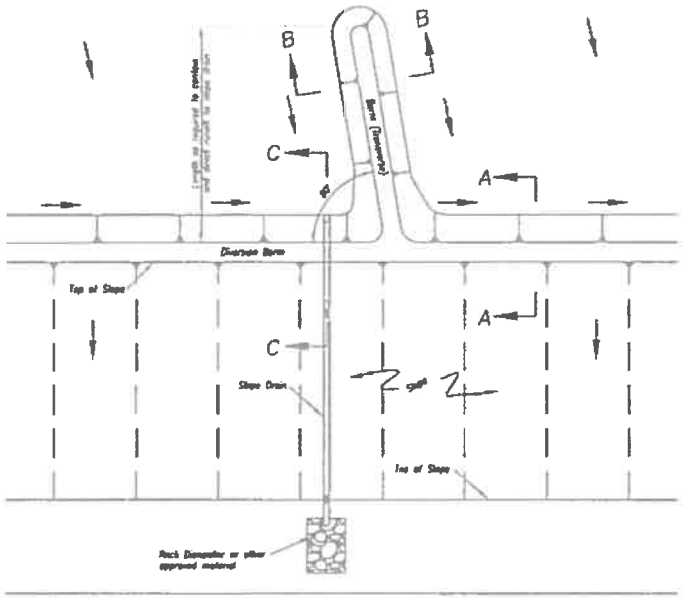
KANSAS CITY METRO CHAPTER

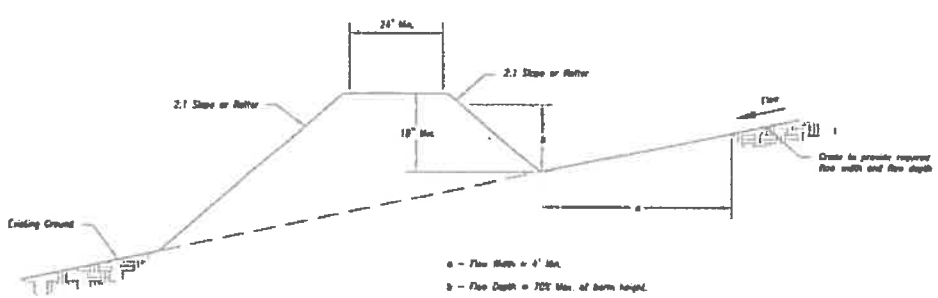
WATTLES/BIODEGRADABLE LOG AND MULCH/COMPOST FILTER BERM	STANDARD DRAWING NUMBER ESC-04
	ADOPTED: 10/24/2016



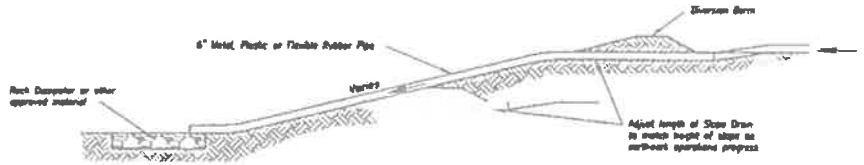
TYPICAL PLAN VIEW OF DIVERSION BERM AND SLOPE DRAIN

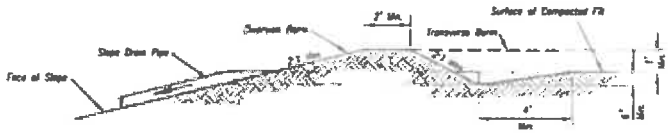
TYPICAL PROFILE OF DIVERSION BEAM

Not to Scale



TYPICAL PROFILE OF DIVERSION BERM





TYPICAL PROFILE OF DIVERSION BERM WITH SLOPE DRAIN

Notes for Diversion Berm:

1. Slope drains are optional, but may be required by the engineer if the berm is at the top of a steep slope.
2. Diversion berms must be installed as a first step in the land-disturbing activity and must be functional prior to upslope land disturbance.
3. The berm should be adequately compacted to prevent failure.
4. Temporary or permanent seeding and mulch shall be applied to the berm immediately following its construction.
5. Place the berm so as to minimize damages by construction operations and traffic.
6. The berm must discharge to a temporary sediment trap or stabilized area.
7. All trees, brush, stumps, obstructions and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of diversion.
8. The diversion shall be excavated or shaped to line, grade and cross-section as required to meet the criteria specified herein, free of irregularities which will impede flow.
9. Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the completed diversion. Fill shall be composed of soil which is free from excessive organic debris, rocks or other objectionable materials.

Maintenance:

1. Berm shall be reshaped, compacted, and stabilized as necessary to maintain its function.
2. Breaches in the berm shall be repaired immediately.

Notes for Slope Drain:

1. Slope Drain and Diversion Berm may be used on other project horizontal or project backslopes.
2. Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.
3. Pipe shall be secured in place as approved by Engineer.

Maintenance:

1. Accumulation of any visible sediment at the inlet and outlet shall be removed promptly.
2. Outlet conditions shall be repaired if scour is observed. Leaking or damaged section of pipe shall be repaired immediately.
3. Barriers directing water to the inlet shall be monitored for continuity and effectiveness.

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

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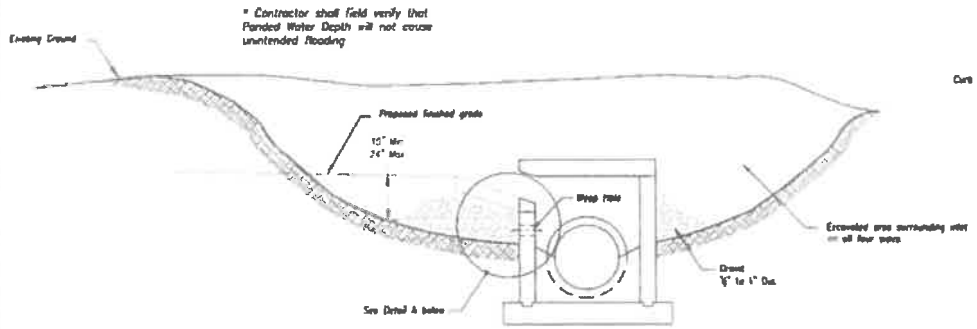
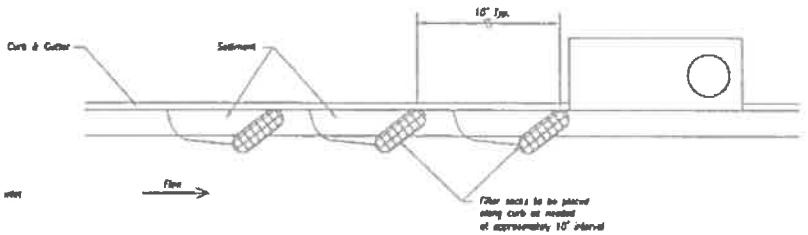
DIVERSION BERMS AND SLOPE DRAINS

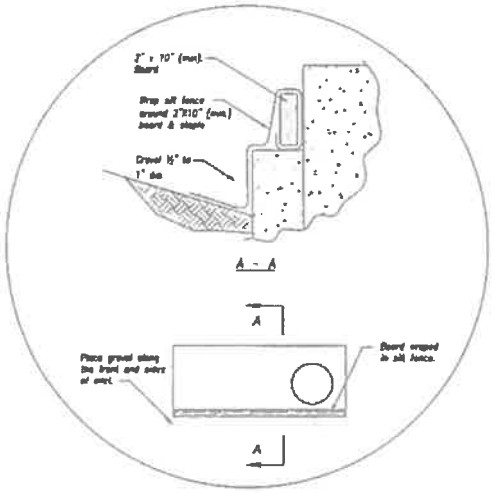
STANDARD DRAWING NUMBER ESC-05

ADOPTED: 10/24/2016





On Grade Curb Inlet Protection



Detail A

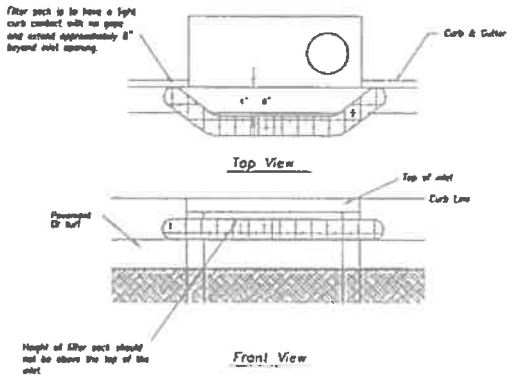
EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

Notes:

1. Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" X 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
2. When inlet is completed and curb poured, filter socks or approved equal should be used (Late Stage Curb Inlet). Straw wattles are not approved for curb inlet use.
3. Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible
3. Repair or replace as necessary to maintain function and integrity of installation.



Sump Inlet Sediment Filter

LATE STAGE CURB INLET
(After Pouring Curb and Inlet Throat)

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

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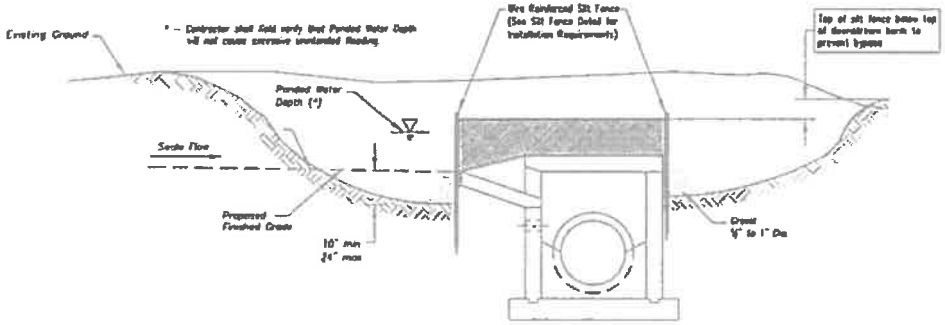
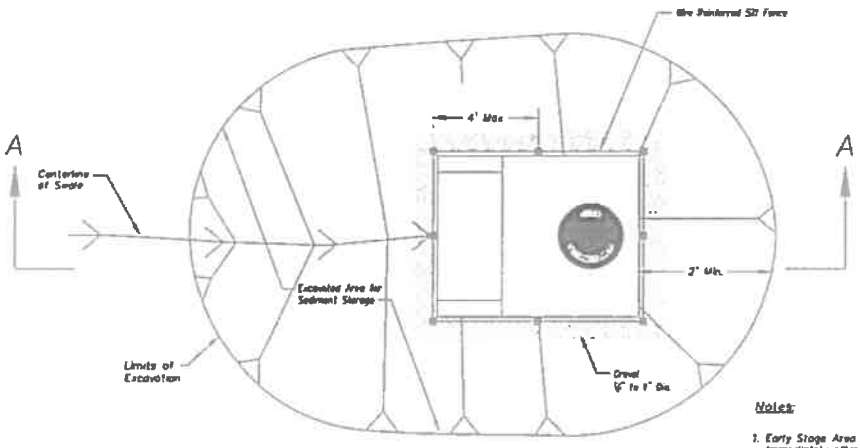
KANSAS CITY METRO CHAPTER

CURB INLET PROTECTION

STANDARD DRAWING NUMBER ESC-06
ADOPTED: 10/24/2016

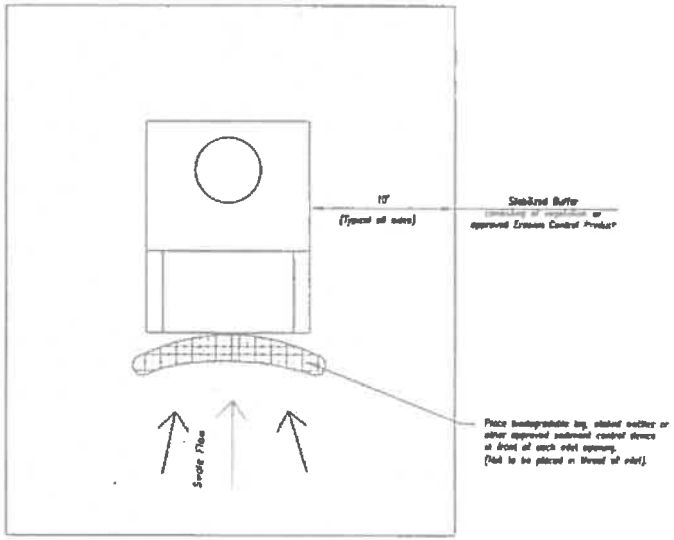


Section A-A
Not to Scale



Plan
Not to Scale

EARLY STAGE AREA INLET
(All open boxes and inlets not at final grade)



Plan
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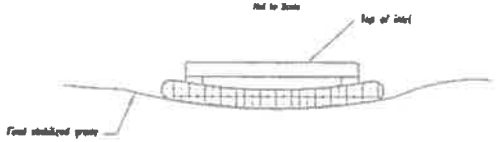

Front View

LATE STAGE AREA INLET
(Area inlets at final grade and existing inlets)

Notes:

1. Early Stage Area Inlet Sediment Barrier to be installed immediately after inlet or junction box is constructed.
2. Silt fence shall remain in place until excavated area is removed and Late Stage Area Inlet is being installed.
3. Backfill excavated area ONLY after final grading of the site. Stabilization of the site is to immediately follow.
4. Wire reinforced silt fence may be used in place of silt fence attached to wood frame.

Maintenance:

1. Remove deposited sediment from excavated storage areas when available storage has been reduced by 20%.
2. Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
3. Repair or replace as necessary to maintain function and integrity of installation.

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

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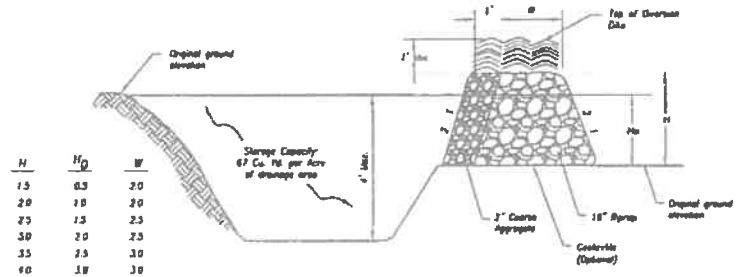
KANSAS CITY METRO CHAPTER

AREA INLET AND JUNCTION BOX PROTECTION

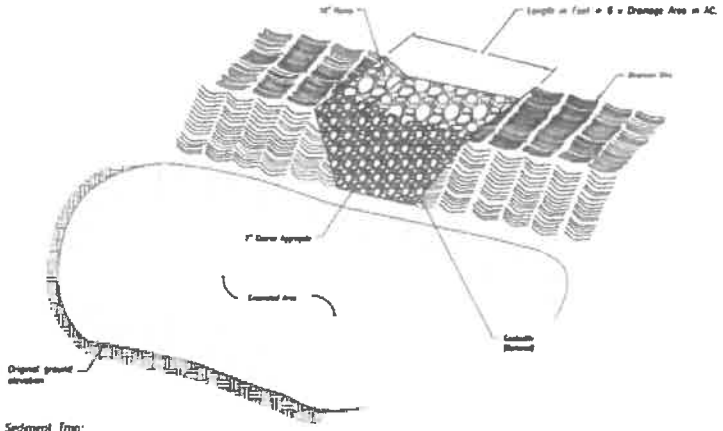
STANDARD DRAWING NUMBER ESC-07
ADOPTED: 10/24/2016



H	H_D	W
1.5	0.5	2.0
2.0	1.0	2.0
2.5	1.5	2.5
3.0	2.0	2.5
3.5	2.5	3.0
4.0	3.0	3.0
4.5	3.5	4.0
5.0	4.0	4.5

(*) Cross Section of Outlet

Not to Scale



(*) Perspective View of Outlet

Not to Scale

(*) – The perspective view and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

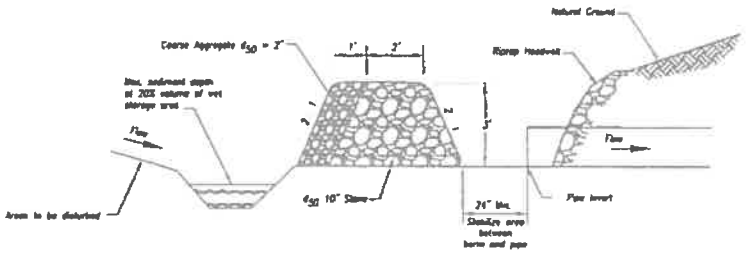
Notes for Sediment Trap:

1. The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat.
2. Fill material for the embankment shall be free of roots or other woody vegetation, organic material, large stones, and other objectionable material. The embankment should be compacted in 6-inch layers by traversing with construction equipment.
3. The earthen embankment shall be stabilized immediately after installation.
4. Construction operations shall be carried out to minimize erosion and water pollution.
5. The structure shall be removed and the area stabilized when the upslope drainage area has been stabilized.
6. All cut and fill slopes shall be 2H : 1V or flatter, except for excavated, wet storage areas which may be at a maximum 1H : 1V grade.

Maintenance for Sediment Trap:

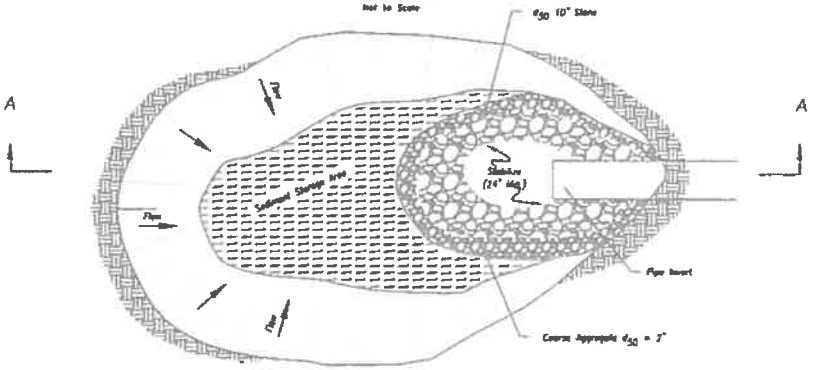
1. Check sediment traps after periods of significant runoff
2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlet.
4. Keep outlet and pool area free of all trash and other debris.

SEDIMENT TRAP



Section A–A

Not to Scale



Plan View

Not to Scale

Notes for Sediment Trap at Culvert Opening:

1. The inlet protection device shall be constructed in a manner that will facilitate clean-out and disposal of trapped sediment and minimize interference with construction activities.
2. The inlet protection devices shall be constructed in such manner that any resultant ponding storm-water will not cause excessive inconvenience or damage to adjacent areas or structures.
3. Geometry of the storage will be a horseshoe shape around the culvert inlet.
4. The toe of the riprap shall be no closer than 24" from the culvert opening to provide an acceptable emergency outlet for flows from large storm events.
5. Storage requirements expressed in that of temporary sediment trap.
6. 67 C.Y./Acre wet storage below base of stone
7. 67 C.Y./Acre dry storage from base of stone to top of berm.

Maintenance for Sediment Trap at Culvert Opening

1. Check sediment traps after periods of significant runoff
2. Remove sediment and restore the trap to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlet.
4. Keep outlet and pool area free of all trash and other debris.

SEDIMENT TRAP AT CULVERT OPENING

Modified from 2013 Overland Park Standard Details for Erosion and Sediment Control

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KANSAS CITY METRO CHAPTER

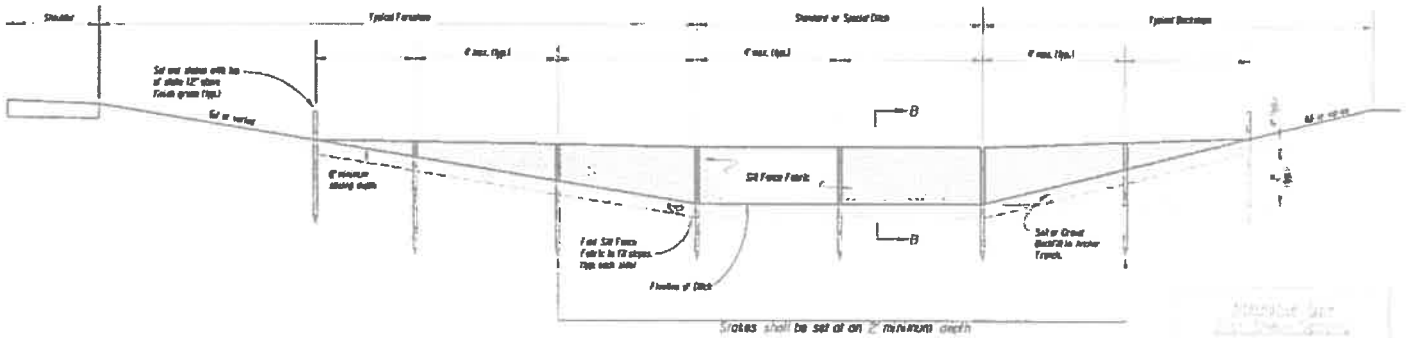
SEDIMENT TRAPS

STANDARD DRAWING NUMBER ESC-08

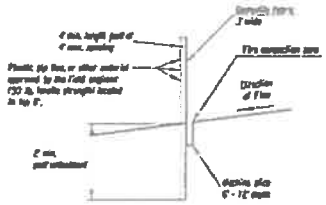
ADOPTED: 10/24/2016

Notes for Silt Fence Ditch Check:

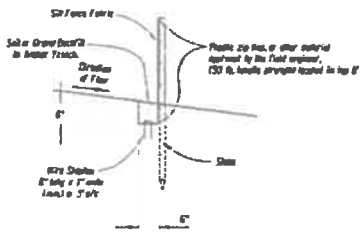
1. Stakes shall be 4' (min.) long and one of the following materials:
   a. Hardwood – 1 ½" x 1 ½";
   b. Southern Pine (No. 2) – 2 ½" x 2 ½";
   c. Steel U, T, L, or C Section – .25 lbs. per 1'-0";
   d. Synthetic – same strength as wood stakes.
2. Cross pieces shall be of same material as stakes.
3. Attach fence fabric securely on 6' centers (max.).
4. Use of high flow material is acceptable
5. Refer to plan sheets to calculate the length of silt fence required.
6. Use support fencing when tributary area is greater than 2.0 acres or when ditch gradient is greater than 2 percent.
7. Silt fence placed in to a 6" minimum depth.
8. Elevation at toe of posts shall be a minimum of 4" higher than the center



TYPICAL ELEVATION

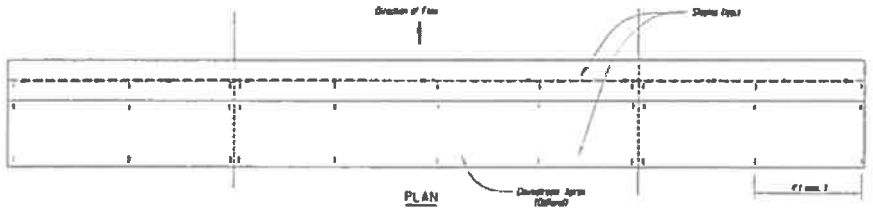


SECTION B-B

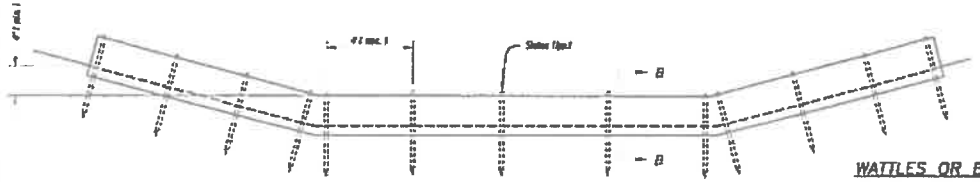


SILT FENCE DITCH CHECK

NO SCALE



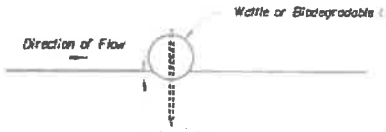
PLAN



TYPICAL ELEVATION

Notes for Wattles and Biodegradable Log Ditch Check:

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 12".
3. Stakes shall be per manufacturer's instructions. Length of stakes shall be a minimum of 2 times the diameter of the log or 24" minimum.
4. Use Erosion Control (Class 1) (Type C) on the downstream apron when directed by the Engineer.
5. Use 9" diameter logs when used with Erosion Control (Class 2) (Any Type) channel lining. Smaller diameter logs may be used with Erosion Control (Class 2) (Any Type) channel lining as directed by the Engineer.



SECTION B - B

WATTLES OR BIODEGRADABLE LOG DITCH CHECKS

OR Filter Sock Ditch Check

NO SCALE

Modified from Kansas Department of Transportation Standard Details for Erosion Control and Sediment Control.

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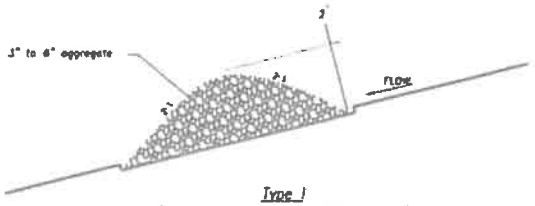
KANSAS CITY METRO CHAPTER

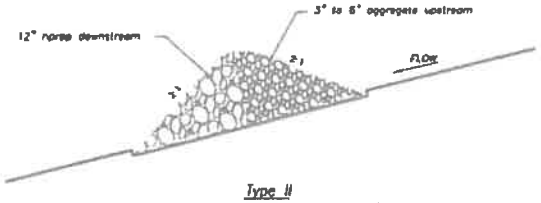
SILT FENCE AND WATTLE/ BIODEGRADABLE LOG DITCH CHECKS

STANDARD DRAWING NUMBER ESC-09

ADOPTED: 10/24/2016



Type I
(2 Acres or less of Drainage Area)
Not to Scale



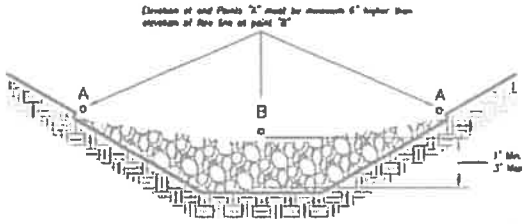
Type II
(2-10 Acres of Drainage Area)
Not to Scale

ROCK DITCH CHECK

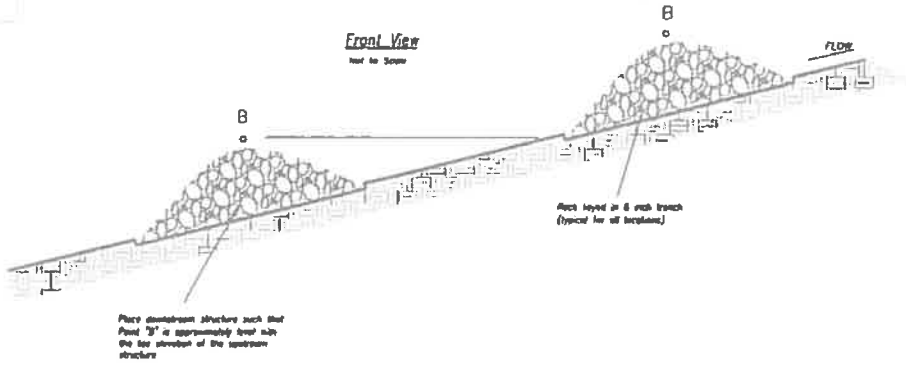
Temporary Rock Ditch Check Spacing

Ditch Centerline Slope (%)	Spacing Interval (Feet)
5.0	80
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29

Note: Use this spacing only for Rock Ditch Checks.



Front View
Not to Scale



Spacing Between Check Dams (all types)
Not to Scale

Notes:

1. Rock check dams shall be used only for drainage areas less than 10 acres unless approved by the City Engineer
2. Use rock checks only on gradients where the ditch slope exceeds 5%

Maintenance:

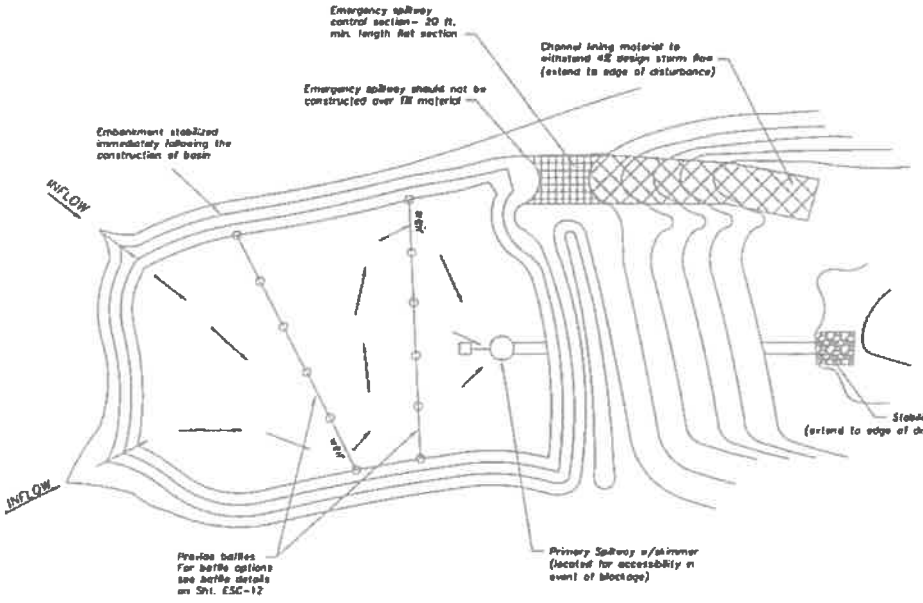
1. Remove and dispose of sediment deposits when the deposit approaches ½ the height of the ditch check.
2. Replace and reshape as necessary to maintain function and integrity of installation.

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

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER

ROCK DITCH CHECKS

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



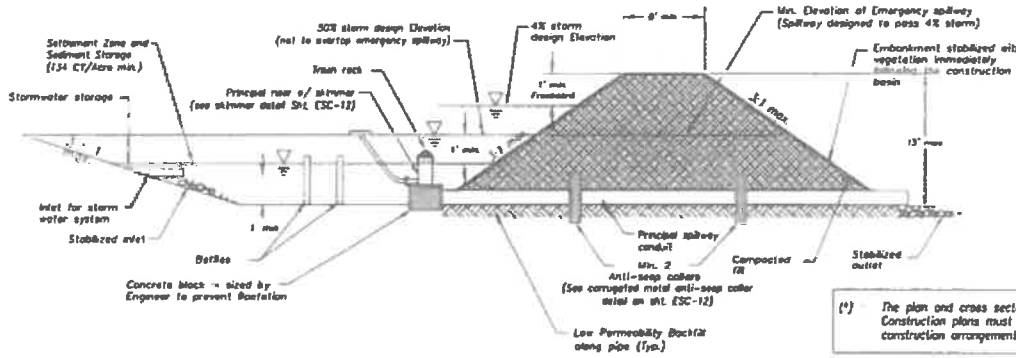
Plan View (*)

Not to Scale

Sediment Basin Design Summary (**)

Design Item	Basin #1	Basin #2	Units	Notes
Site Data:				
Tributary Drainage Area to Pond			Acres	
50% (2 yr) Design Flow			cfs	
4% (25 yr) Design Flow			cfs	
Pond Data:				
Minimum Sediment Storage Volume			cu yd	134 cy/acre required minimum
Provided Sediment Storage Volume			cu yd	
Bottom Elevation			ft	
Sediment Cleanout Elevation			ft	Elevation equal to 20% of original design volume
Top of Riser Elevation			ft	Top of dry storage volume
Emergency Spillway Elevation			ft	at or above 0-2 elevation, 1.0 ft min above principal spillway
Top of Dam Elevation			ft	1.0 ft min above 0-25 elevation
Basin Shape Data:				
A = Area at Normal Pool			SF	
L = Length of Flow Path			ft	
We = Effective Width = A/L			ft	
Length to Width Ratio = L/We				
Principal Spillway Data:				
Riser Pipe dia			in	15" min. Size for 2 year flow minimum
Barrel Pipe dia			in	15" min. Size for 2 year flow minimum
Concrete Base size for Riser Pipe			CY	Size to prevent flotation. 1.25 safety factor required
Skimmer Size				Designer to provide specific details and calculations per application to dewater in 48 to 72 hours
Emergency Spillway Data:				
Design Depth in Spillway			ft	
Design Velocity in Spillway			ft/sec	
Lining Material				Designer to provide specific details and calculations per application

(**) – Required on all Sediment Basin Plan Sheets



Cross Section (*)

Not to Scale

(*) The plan and cross section are schematic in nature. Construction plans must provide specific site construction arrangements.

Sediment Basin Notes:

1. Interior baffles shall be provided to reduce short-circuiting of the basin. See Sht. ESC-12 for approved baffle options
2. Emergency spillways to be located in a non-fill location when feasible and shall be lined with a non-erodible material such as Riprap or Turf Reinforcement Mat.
3. When directed, sediment basins shall be fenced using construction fence or other material for safety reasons and include warning signs, reading, "Danger – KEEP OUT".

Maintenance:

1. Check temporary sediment basins after periods of significant runoff
2. Remove sediment and restore the basin to its original dimensions when sediment accumulates to 20% of the storage capacity.
3. Immediately repair any erosion damage to the embankment and outlets.
4. Repair and/or replace baffles as necessary to maintain function and integrity of installation.
5. Keep outlet, skimmer and pool area free of all trash and other debris.

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

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KANSAS CITY METRO CHAPTER

SEDIMENT BASIN

STANDARD DRAWING NUMBER ESC-11

ADOPTED: 10/24/2016

DWG: F:\2017\0001-0500\017-0264\40-Design\AutoCAD\Final Plans\Sheets\CHCV\01_Street & Storm_36x24\C_DTL03_70264.dwg USER: jwalters
DATE: Jul 24, 2017 12:51pm

OUTLET STABILIZATION/RIP-RAP
CONSTRUCTION SPECIFICATIONS

Ensure that the subgrade for the filter and riprap follows the required lines and grades shown on the plan. Compact any fill required in the fill to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.

The riprap and gravel filter must conform to the specified grading limits shown on the plans.

Filter cloth, when used, must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter cloth over the damaged area. All connecting joints should overlap a minimum of 12 inches. If the damage is extensive, replace the entire filter cloth.

Riprap may be placed by equipment, but take care to avoid damaging the filter.

The minimum thickness of the riprap should be 1.5 x the maximum stone diameter, but [illegible]

Riprap may be field stone or rough quarry stone. It should be hard, angular, highly weather-resistant and well graded.

Construct the apron on zero grade with no overfall at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.

Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site conditions, place it in the upper section of the apron.

Gradation – riprap materials shall be graded within the following limits.

Weight per Stone in Pounds	Percent of Total Weight Lighter Than
350	100
40	10–20

Not more than 5% shall pass through the 2 inch sieve.

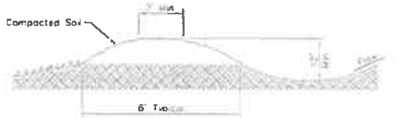
A synthetic filter fabric shall be used with or in place of gravel filters. The permeability of the filter fabric must be greater than that of the soil. The fabric may be made of woven or nonwoven monofilament yarns and should meet the following minimum requirements:

Thickness 20–60 mils

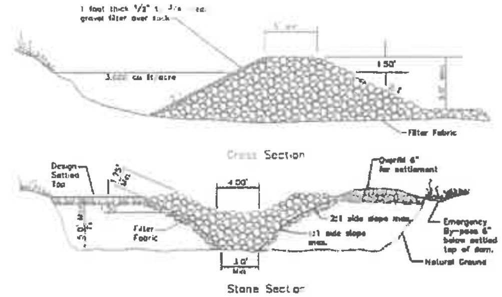
Grab strength 90–120 lbs

Conform ASTM D-1682 or ASTM D-177

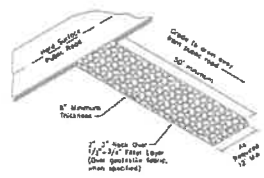
Place the cloth filter directly on the prepared foundation. Overlap the edges by at least 12 inches, and space anchor pins every 3 feet along the overlap. Bury the upper and lower ends of the cloth a minimum of 12 inches below ground. Take care not to damage the cloth when placing the riprap. If damage occurs remove the riprap and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches around the damaged area. If extensive damage is suspected, remove and replace the entire sheet.



TEMPORARY DIVERSION DIKE DETAIL

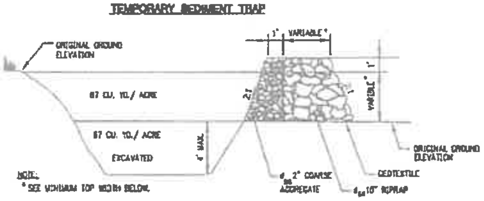


ROCK CHECK DAM DETAIL



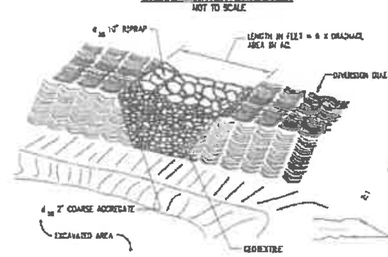
VEHICLE TRACKING CONTROL

TEMPORARY SEDIMENT TRAP

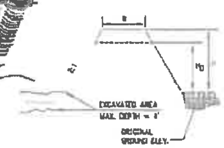


NOTE:
* SEE MINIMUM TOP WIDTH BELOW.

CROSS SECTION OF OUTLET
NOT TO SCALE

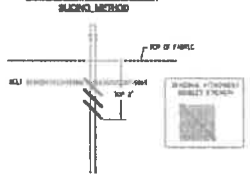


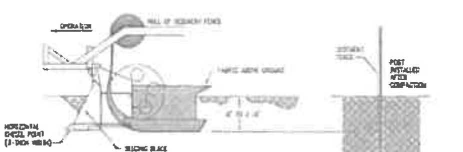
OUTLET (PERSPECTIVE VIEW)



MINIMUM TOP WIDTH
NOT TO SCALE

SEDIMENT FENCE INSTALLATION SLICING METHOD

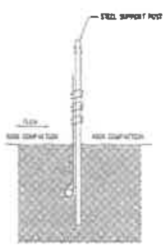




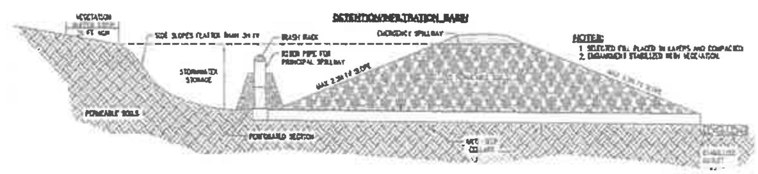
NOTE
VIBRATORY PLOW IS NOT ACCEPTABLE BECAUSE OF HORIZONTAL COMPACTION.

SEDIMENT FENCE INSTALLATION SLICING METHOD NOTES:

1. LIMIT PONDING HEIGHT TO 24"
2. ATTACH FABRIC TO UPSTREAM SIDE OF POST
3. DRIVE OVER EACH SIDE OF SEDIMENT FENCE 2 TO 4 TIMES WITH DEVICE EXERTING 60 PSI OR GREATER AFTER MATERIAL IS SLICED INTO THE GROUND.
4. SPACE POSTS 6 MAX OF 7' ON OPEN RUNS AND 4' ON PONDING AREAS.
5. SINK POSTS AS FAR BELOW GROUND AS FABRIC ABOVE GROUND.



DETENTION/INFILTRATION BASIN



NOTES:
1. SELECTED FILL PLACED IN LAYERS AND COMPACTED
2. EMBANKMENT STABILIZED WITH VEGETATION

NOTE: SKIMMER MAY BE USED IN LIEU OF PERFORATED SECTION OF RISER.

NOT TO SCALE

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NUMBER PE-2011000862

NO. REV.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

LAND DISTURBANCE DETAILS

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT MO

2017

drawn by: R.M.S.
checked by: J.E.S.
designed by: J.E.S.
QA/QC by: M.O.D.
project no.: 017-0264
date: 06/15/2017

SHEET
C123

Appendix K

Stabilization Specifications

PLAN LEGEND

PHASE 1 DEVICES	PHASE 2 DEVICES	PHASE 3 DEVICES	
			TEMPORARY STONE CONSTRUCTION ENTRANCE
			SILT FENCE
			STORM DRAIN INLET PROTECTION
			TEMPORARY DIVERSION BERM
			ROCK CHECK DAMS

GENERAL NOTES

SEED & MULCH NOTES:
SEEDING SHALL BE DONE BEFORE THE PROPOSED SEEDBED BECOMES ERODED, CRUSTED OVER, OR DRIED OUT AND SHALL NOT BE DONE WHEN THE GROUND IS FROZEN, OR COVERED WITH SNOW. THE SEED SHALL COMPLY WITH THE REQUIREMENTS OF THE MISSOURI SEED LAW AND THE FEDERAL SEED ACT. ALSO, IT SHALL CONTAIN NO SEED OF ANY PLANT ON THE FEDERAL NOXIOUS WEED LIST. OTHER WEED SEED SHALL NOT EXCEED ONE PERCENT BY WEIGHT OF MIX.

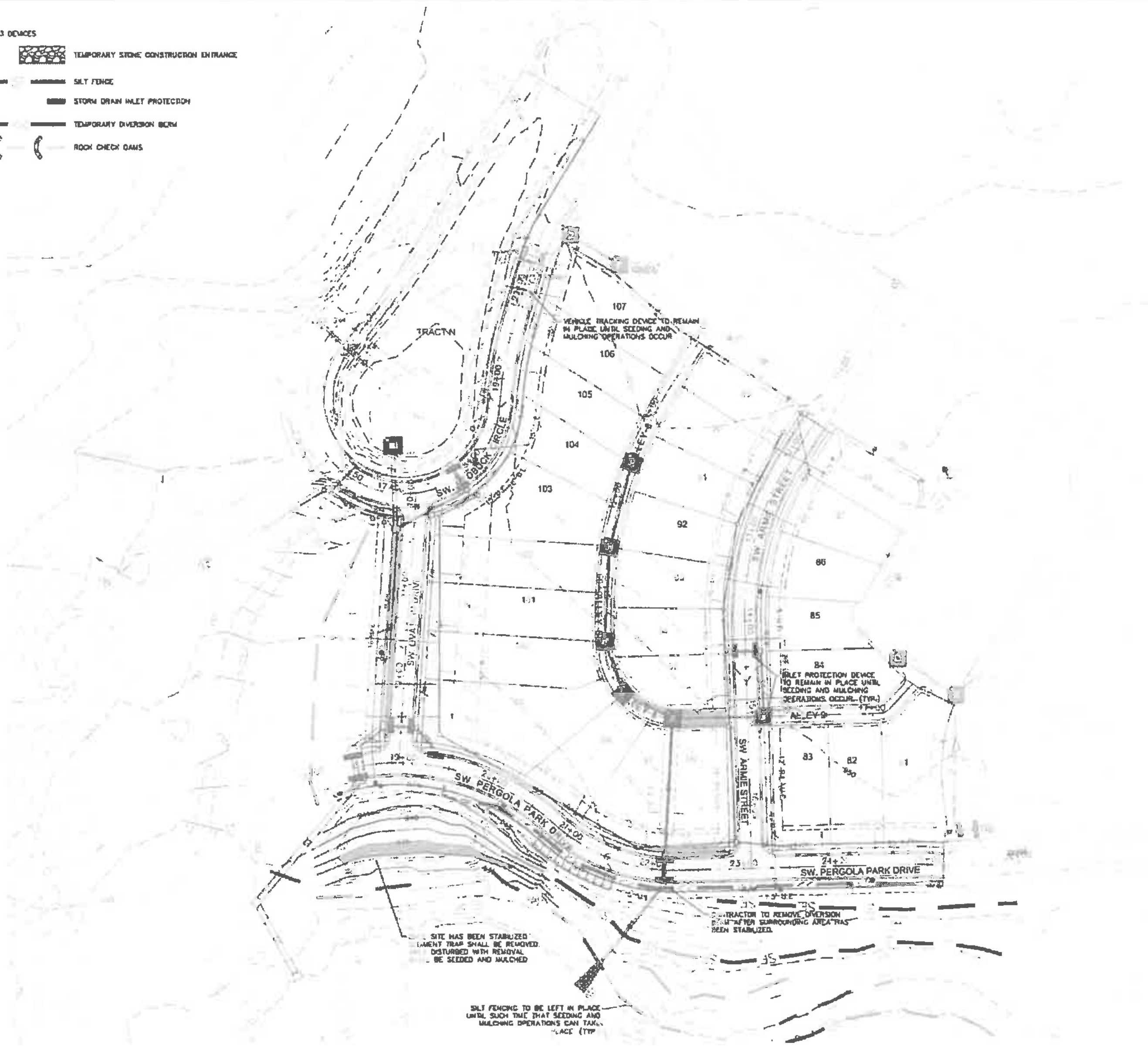
SEED & FERTILIZER RATE.
MIX I – RYE GRASS / BLUE GRASS ------100 LBS. PER. ACRE
MIX II – TALL FESCUE / BLUE GRASS ----185 LBS. PER ACRE
LIME ---------------------------2000 LBS. PER ACRE (50 LBS. PER 1000 SQ. FT.)
FERTILIZER ------------------------800 TO 1200 LBS PER ACRE (25 LBS. PER 1000 SQ. FT.)

DURING THE DATES DECEMBER 15TH THROUGH MAY 31 ALL LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED TO FINISHED SLOPES OF DISTURBED AREAS. DURING THE MONTHS OF JUNE, JULY, OCTOBER, AND NOVEMBER 1ST THROUGH DECEMBER 15TH, LIME, FERTILIZER, SEED, AND MULCH SHALL BE APPLIED AT THE FOLLOWING RATES:
LIME – 100 % OF SPECIFIED QUANTITY
FERTILIZER – 75 % OF THE SPECIFIED QUANTITY
SEED – 50 % OF THE SPECIFIED QUANTITY
MULCH – 100 % OF THE SPECIFIED QUANTITY
MULCH SHALL BE VEGETATIVE TYPE, CEREAL STRAW FROM STALKS OF OATS, RYE, OR BARLEY, OR APPROVED EQUAL. THE STRAW SHALL BE FREE OF PROHIBITED WEED SEED AND RELATIVELY FREE OF ALL OTHER NOXIOUS AND UNDESIRABLE SEED. MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE. (70 TO 90 LBS. PER 1000 SQ. FT.) MULCH SHALL BE EMBEDDED BY A MULCH ANCHORING TOOL OR DISK TYPE ROLLER HAVING FLAT SERRATED DISKS SPACED NOT MORE THAN 10 INCHES APART AND CLEANING SCRAPERS SHALL BE PROVIDED.

THE SITE DISTURBANCE PLANS INDICATES THE FINAL PLACEMENT OF EROSION CONTROL DEVICES. THE CONTRACTOR(S) MAY PROCEED WITH THE CONSTRUCTION PRIOR TO THE FINAL PLACEMENT OF THESE DEVICES BY PROVIDING ADDITIONAL DEVICES TO CONTROL EROSION ON THEIR ITEMS OF WORK. THESE DEVICES SHALL BE MAINTAINED UNTIL THE FINAL DEVICES ARE IN PLACE

N

0 25' 50 100'
SCALE IN FEET



SITE DISTRUBANCE PLAN - PHASE 3

PERGOLA PARK
4TH PLAT

LEE'S SUMMIT, MO

2017

REVISIONS

SHEET
C122

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