



GESC REPORT

Andy's Custard
Lot 3, Lincoln Professional Park Filing No. 1

Lincoln and S. Parker Road.
Parker, CO

PREPARED FOR:
Plaza Street Partners
2400 W 75th Street, Suite 200
Prairie Village, KS 66208
Tel: (918)-615-7685

PREPARED BY:
Galloway & Company, Inc.
6162 S. Willow Drive, Suite 320
Greenwood Village, CO 80111
Tel: (303)-770-8884

DATE:
August 15, 2022



TABLE OF CONTENTS

I.	Certification	4
	Engineer's Statement.....	4
	Developer's Certification	4
II.	General Requirements.....	5
III.	Narrative Site Description	5
	Nature of Construction Activity	5
	Sequence of Major Activities	6
	Extent of Disturbance.....	7
	Soils.....	7
	Existing Vegetation	7
	Potential Pollution Sources.....	7
	Non-Stormwater Discharges	7
	Receiving Waters.....	8
IV.	Site Map.....	9
	Vicinity Map	9
V.	Stormwater Management Controls.....	10
	Qualified Stormwater Manager	10
	Potential Pollutant Sources	10
	Control Measures for Stormwater Pollution Prevention	16
	Erosion Control	16
	Materials Management.....	19
	Sediment Control	19
	Site Management and Other Practices	20
	Revising Control Measures and the GESC.....	23
VI.	Final Stabilization & Long-Term Stormwater Management	23
	Inactivation of Permit Coverage.....	23
VII.	Inspection & Maintenance Procedures	24
	Inspection Schedules.....	25
	Inspection Procedures	25
	Control Measure Maintenance/Replacement and Failed Control Measures.....	26
	Record Keeping and Documentation	27
VIII.	Conclusion.....	28
	Conformance with Standards	28
	Drainage Concept	28
IX.	References.....	29
	Appendix A – Reference Information.....	31
	NRCS Web Soil Survey Information	31
	FEMA FIRMette	31

Appendix B – GESC Site Maps and Calculations	33
GESC Site Maps and Details	33
Appendix C – Training Documentation	35
Appendix D – Inspection Report.....	37
State Inspection Report Template	37
Appendix E – Spill and Prevention Control.....	39
Spill Prevention and Control Plan	39
Site Spill Log.....	39
Appendix F – Cost Estimate.....	41
Opinion of Probable Cost Worksheet.....	41

I. Certification

Engineer's Statement

This report and plan for the GESC design of Lot 3, Lincoln Professional Park Filing No. 1 was prepared by me (or under my direct supervision) in accordance with the provisions of the Douglas County Grading, Erosion and Sediment Control Manual.

Matthew Pepin, PE
Registered Professional Engineer
State of Colorado No. 60198



Date

03/07/2023

Developer's Certification

Plaza Street Partners hereby certifies that the GESC facilities for Lot 3, Lincoln Professional Park Filing No. 1 shall be installed and maintained according to the design presented in this report.

This Grading, Erosion and Sediment Control Plan has been placed in the Douglas County file for this project and appears to fulfill the applicable Douglas County *Grading, Erosion and Sediment Control* Criteria. Additional grading, erosion and sediment control measures may be required of the owner or his/her agents, due to unforeseen erosion problems or if the submitted plan does not function as intended. The requirements of this Plan shall run with the land and be the obligation of the land owner until such time as the plan is properly completed, modified, or voided.

Authorized Signature
Plaza Street Partners

Date

II. General Requirements

This Grading, Erosion and Sediment Control Manual (GESC) has been prepared for Plaza Street Partners, the developer of the site, to fulfill the GESC requirements of Douglas County. The purpose of this report is to identify the site's initial (pre-construction phase), interim (construction phase) and final (after construction) erosion and sedimentation control requirements, as well as management and good housekeeping practices. This GESC report specifies the use of Best Management Practices (BMPs) to control the erosion and sediment due to land disturbance activities. These activities include but are not limited to demolition, excavation, import or export of earth or soils, and any other activity which may cause disturbance to the soil or exposed soil. Specific details are contained within this report and are shown on the Erosion and Sediment Control plans (Site Maps) included in the back of this report. This GESC has been prepared in compliance with the Colorado Department of Public Health and Environment's Stormwater Management Plan Preparation Guidance and the requirements of the Colorado General Permit of Stormwater Discharges Associated with Construction Activity.

III. Narrative Site Description

The project is located at the southwest corner of Lincoln Street and S. Parker Road on Lot 3, Lincoln Professional Park Filing No. 1 in Parker, Colorado. The project is located in the SW ¼ of Section 15, Township 6 South, Range 66 West of the 6th P.M., County of Douglas, State of Colorado. A vicinity map is included in Section IV for reference.

Project Coordinate Location

- Longitude 104°46'9.75" W
- Latitude 39°32'10.04" N

The site is approximately 0.67 acres. It is undeveloped and currently consists of native vegetation. The site will be developed into a drive thru restaurant with a patio area.

Nature of Construction Activity

The project consists of the construction of a 1,947 square foot drive thru restaurant and with associated drives, parking, landscaping, and utility and roadway infrastructure. Improvements will include cut/fill grading, underground service extensions, building foundation and vertical construction, and installation of associated landscaping, parking, drives, and site amenities.

Sequence of Major Activities

The projected sequence of work is expected to occur in the following order, with some overlap and adjustments as site conditions dictate:

- Install control measures
- Construct diversion ditches
- Clear and grub
- Rough overlot grading
- Grade building pad
- Trench and install underground utilities
- Commerce vertical construction
- Fine grade the remainder of the site
- Pavement installation
- Seed native areas and install permanent landscaping
- Remove final control measures upon establishment of vegetation

Construction is anticipated to begin in June 2023 and substantial completion of the project is anticipated in November 2023.

The major phases of construction and their associated control measures are listed in the following table.

	Clearing and Grubbing	Rough Grading	Utility Installation	Building Construction	Curb and Gutter Construction	Paving	Fine Grading	Permanent Landscaping
Dust Control	✓	✓	✓		✓	✓	✓	✓
Concrete Washout Area			✓	✓	✓	✓		
Good Housekeeping	✓	✓	✓		✓	✓	✓	✓
Silt Fence	✓	✓	✓		✓	✓	✓	✓
Inlet Protection	✓	✓	✓		✓	✓	✓	✓
Vehicle Tracking Control	✓	✓	✓		✓	✓		
Stabilized Staging Area	✓	✓	✓		✓	✓	✓	✓
Street Sweeping	✓	✓	✓		✓	✓	✓	✓
Temporary Batch Plant			✓	✓	✓	✓		

Extent of Disturbance

The total area of the site is 0.71 acres. Construction of this project will account for disturbed and impervious areas as shown in the table below. The earthwork for this project will result in fill material.

Total Disturbed Area (ac)	0.67
Pre-Construction Impervious Area (ac)	0.00
Post-Construction Impervious Area (ac)	0.42
Total new Impervious Area (ac)	0.42

The adjusted cut and fill quantities are listed below.

Cut Volume = 249 CY

Fill Volume = 183 CY

Net Volume 65 CY Cut

Soils

The NRCS Web Soil Survey of Douglas County, Colorado indicates site soils to be Bresser sandy loam, both Hydrologic Soil Type B. The soil texture on the site is predominantly loam. Refer to Appendix A for the soil survey information.

Existing Vegetation

The site currently exists as vacant land with native grasses throughout (95% vegetative cover). Vegetative cover was determined by visual site observation.

Potential Pollution Sources

During construction there is potential for pollution from grading, utility, roadway, and building construction activities. These activities include ground disturbance, refueling and maintenance of equipment, washing of equipment, concrete waste, and the on-site use of paints, solvents, and other chemicals required for construction. Additionally, there is potential for pollution from the concrete washout area, temporary batch plant, worker's trash and portable toilets. Locations of potential pollution sources will be shown and updated on the Site Maps by the QSM. The QSM is also responsible for adhering to the Spill Prevention and Control Plan included in Appendix E of this plan.

Non-Stormwater Discharges

Based on current information, the only non-stormwater discharges anticipated are landscape irrigation return flow, emergency firefighting activities, discharge to the ground of concrete washout water, and construction dewatering activities.

If landscape irrigation is to be installed, then potential return flow from the irrigation system must be documented.

Emergency firefighting activities that may occur on the site are permissible under the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*.

A designated contained concrete washout area is located on the Site Map; infiltration discharge of concrete washout water from washing of tools and concrete mixer chutes may be discharged on this construction site provided that control measures in accordance with Part I.B.1.a.ii.(b) of the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity* are installed to prevent pollution of groundwater and discharges do not leave the site as surface runoff or to surface waters.

If low risk discharges including potable water monitoring devices, potable water snowmelt, or uncontaminated groundwater to land occur, they must be discharged in accordance with the CDPHE Low Risk Discharge policies.

Receiving Waters

The project area will drain to an existing extended detention basin, to the west of the site. From there it will ultimately be conveyed north through the Lincoln Avenue Tributary to the ultimate receiving water, Cherry Creek.

Because wetlands were not found on or around the site, construction is not anticipated to have any negative affect on wetlands.

Habitat for threatened or endangered species is not expected to be encountered and will not place additional restrictions on stormwater.

Since this property is currently zoned for commercial uses and has no historic designations, historic properties will not be encountered and will not place additional restrictions on stormwater.

IV. Site Map

Vicinity Map



V. Stormwater Management Controls

Qualified Stormwater Manager

The Qualified Stormwater Manager (QSM) is an individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention and has the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of the CDPS General Permit. The Permittee(s) is responsible for ensuring that the inspector is a qualified stormwater manager. The Permittee(s) shall designate a QSM who will be the contact for all GESC related issues and the person responsible for its accuracy, completeness, and implementation. The QSM should be a person with authority to adequately manage and direct day-to-day stormwater quality management activities at the site.

The QSM is responsible for holding a weekly stormwater meeting attended by the Permittee(s) with all contractors and subcontractors involved in ground-disturbing activities to review the requirements of the Permit(s), the GESC, and address any problems that have arisen in implementing the GESC or maintaining the BMPs. The QSM shall maintain a log of all weekly meetings and document the issues addressed in the meetings.

The name and contact information for the Qualified Stormwater Manager is:

Name: _____ Phone: _____

Potential Pollutant Sources

Potential pollutant sources for this site include:

Disturbed and Stored Soils – The disturbed area will be grubbed and overlot graded prior to major utility and building construction. This will be a one-time activity and should be completed relatively early in the project timeline. The areas of grading that will not require additional disturbance shall receive final landscaping within 7 days. Otherwise temporary seeding and mulching will be required within 7 days of last disturbance if no further disturbance is anticipated for at least 14 days. Any soil stockpiles utilized during construction will be covered with a tarpaulin when not in active use and will have silt fence installed along the base of the slope.

Construction Vehicle Entrance and Vehicle Tracking of Sediments – There is potential for tracking of soils between the beginning of the grading process and the final stabilization of the site. Construction vehicle entrances shall be minimized to reduce the potential for tracking of soils off-site and vehicle tracking control shall be installed at each construction entrance. Vehicle tracking control is to be installed

prior to land disturbance activities and sweeping is to take place as needed. Vehicle access to the exposed and disturbed subgrade will be limited primarily to roll on/off earthmoving equipment and heavy materials delivery trucks. The QSM is responsible for ensuring that access to exposed subgrade is limited, both in quantity and in timing relative to the tracking susceptibility of the soil as it relates to moisture content. The QSM must keep the adjacent parking areas and public rights-of-way free from mud and other tracked debris from the site.

Management of Contaminated Soils – Contaminated soils are not anticipated based on due diligence conducted for the project site. If suspect soils are encountered construction activity shall immediately halt and environmental professionals shall review the materials and provide recommendations on handling of materials. All handling of materials shall be in accordance with State and Federal regulations.

Loading and Unloading Operations – Loading and unloading operations are expected during demolition and during the delivery and staging of materials and equipment. Additionally, imported materials may be necessary to achieve final grades. All loading and unloading operations of equipment shall be accomplished in areas protected by erosion and sediment controls. It is recommended that all equipment be cleaned on-site and within protected areas prior to exiting the site.

Outdoor Storage Activities – Outdoor storage is anticipated during construction activities including delivery and staging of materials. Potential chemicals include paint, fuel, oil, form oil, hydraulic fluid, plumbing glue, and fertilizer. Outdoor storage activities shall be limited to the designated stabilized staging area. All stored chemicals require protection from the elements and must be stored off the ground in some manner. An emergency spill kit is required to be in proximity of any stored chemicals and hazardous materials. The kit at a minimum would have a broom, chemical absorbent, shovel, and turn pallets. Good housekeeping practices shall be employed to prevent pollution associated with solid, liquid, and hazardous construction-related materials and wastes. Secondary containment for fuel tanks, petroleum products, and chemicals shall be utilized to reduce the likelihood of contamination of State Waters and Waters of the United States. The QSM shall show storage locations on the site maps and update them as needed.

Fueling of Vehicles and Equipment – Vehicle and equipment fueling shall occur within the stabilized staging area. Fueling is expected to occur during all phases of construction activity. Under no circumstances shall fueling take place within 200 feet of any State Waters or Waters of the United States or within 50 feet of an inlet or ditch. Spill response kits shall be readily available and accessible at locations where fueling takes place. Please refer to the Hazardous Material Management and Spill Reporting Plan section for information on clean-up and disposal of spills.

Temporary on-site fuel tanks for construction vehicles shall meet all state and federal regulations. Tanks shall have approved spill containment with the capacity required by the applicable regulations. From NFPA 30: All tanks shall be provided with secondary containment (i.e. containment external to and separate from primary containment). Secondary containment shall be constructed of materials of sufficient thickness, density, and composition so as not to be structurally weakened as a result of contact with the fuel stored and capable of containing discharged fuel for a period of time equal to or longer than the maximum anticipated time sufficient to allow recovery of discharged fuel. It shall be capable of containing 110% of the volume of the primary tank if a single tank is used, or in the case of multiple tanks, 150% of the largest tank or 10% of the aggregate, whichever is larger.

The tanks shall be in sound condition free of rust or other damage which might compromise containment. Fuel storage areas will meet all EPA, OSHA and other regulatory requirements for signage, fire extinguisher, etc. Hoses, valves, fittings, caps, filler nozzles, and associated hardware shall be maintained in proper working condition at all times. The location of fuel tanks shall be shown on the Site Maps and shall be located to minimize exposure to weather and surface water drainage features.

A Spill Prevention and Control (SPCP) Plan has been included in Appendix E.

Maintenance of Vehicles and Equipment – If equipment is to be maintained and stored in an open area this area should not be within the drip line of trees and not be within 100 feet of a watercourse or wetland. Runoff should be diverted away from watercourses and wetlands. Maintenance should be done on impervious areas surrounded with impervious berms. Where this is not possible, use pads designed to contain the pollutants which may leak or spill during maintenance operations. Impervious pads are particularly important on sandy and other course soils where spilled materials can easily leach into the groundwater. Equipment shall be checked before and after each use and, minimally, during the weekly stormwater inspection if otherwise idle. Periodic checks of the equipment wash areas shall be performed to ensure proper operation.

Hazardous Material Management and Spill Reporting Plan – Any hazardous or potentially hazardous material that is brought onto the construction site will be handled properly in order to reduce the potential for storm water pollution. All materials used on this construction site will be properly stored including the use of secondary containment measures, handled, dispensed and disposed of following all applicable label directions. Flammable and combustible liquids will be stored and handled according to 29 CFR 1926.152. Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids.

Material Safety Data Sheets (MSDS) information will be kept on site for any and all applicable materials.

In the event of an accidental spill, immediate action will be undertaken by the General Contractor to contain and remove the spilled material. All hazardous materials will be disposed of by the Contractor in the manner specified by federal, state and local regulations and by the manufacturer of such products. As soon as possible, the spill will be reported to the appropriate agencies. As required under the provisions of the Clean Water Act, any spill or discharge entering waters of the United States will be properly reported. The General Contractor will prepare a written record of all spills and associated clean-up and will provide also notify Douglas County (303-663-6181). The General Contractor will provide notice to Owner immediately upon identification of a reportable spill.

Any spills of petroleum products or hazardous materials in excess of Reportable Quantities as defined by EPA or the state or local agency regulations, shall be immediately reported to the EPA National Response Center (1-800-424-8802), the Colorado Department of Public Health and Environment (CDPHE) (1-877-518-5608), Douglas County (303-663-6181).

The State reportable quantity for petroleum products is 25 gallons or more (or that cause a sheen on nearby surface waters). Spills from regulated aboveground and underground fuel storage tanks must be reported to the State Oil Inspector within 24 hours (after-hours contact CDPHE Emergency Spill Reporting Line). This includes spills from fuel pumps. Spills or releases of hazardous substances from regulated storage tanks in excess of the reportable quantity (40 CFR Part 302.6) must be reported to the National Response Center, the local fire authority immediately, the State Oil Inspector, and Douglas County within 24 hours.

The reportable quantity for hazardous materials can be found in 40 CFR 302 at:

http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr302_main_02.tpl

In order to minimize the potential for a spill of petroleum product or hazardous materials to come in contact with storm water, the following steps will be implemented:

- a) All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, additives for soil stabilization, concrete, curing compounds and additives, etc.) will be stored including secondary containment measures in a secure location, under cover, when not in use.
- b) The minimum practical quantity of all such materials will be kept on the job site and scheduled for delivery as close to time of use as practical.

- c) A spill control and containment kit (containing for example, absorbent material such as kitty litter or sawdust, acid neutralizing agent, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided on the construction site and location(s) shown on Site Maps. The kit should be inspected for completeness as a part of weekly stormwater inspections.
- d) All of the product in a container will be used before the container is disposed of. All such containers will be triple rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with storm water discharges.
- e) All products will be stored in and used from the original container with the original product label.
- f) All products will be used in strict compliance with instructions on the product label.
- g) The disposal of excess or used products will be in strict compliance with instructions on the products label and local regulations.

The contractor is responsible for the Spill Prevention and Control Plan (SPCP) included in Appendix D of the GES. If the contractor elects to provide his own SPCP it must be included in Appendix D as a replacement. A contractor provided SPCP shall clearly state measures to stop the source of a spill, contain the spill, clean up the spill, dispose of contaminated materials, and train personnel to prevent and control future spills. In addition, the SPCP must include contact and documentation requirements for each of the Minor, Significant, and Hazardous spill magnitudes. Further requirements are listed below in the equipment fueling section.

Significant Dust or Particulate Generating Processes – Dust and airborne particulates can be expected during clearing and grubbing, site grading, saw cutting, and final stabilization activities. Dust mitigation shall be implemented as necessary.

Routine Maintenance Activities Involving Chemicals, Detergents, Fuels, Solvents, Oils, etc. – On-site routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc. shall occur within the stabilized staging area when possible and shall be kept to a minimum. Routine maintenance activities are expected to occur during all phases of construction activity. The QSM shall show storage locations on the appropriate plan sheets and update them as needed. All chemicals are to be protected from the elements. Spill response kits shall be readily available and accessible at locations

where maintenance takes place. Please refer to the Hazardous Material Management and Spill Reporting Plan section for information on clean-up and disposal of spills.

On-Site Waste Management – Waste generation is expected as a result of construction activities. All waste shall be properly stored and disposed of to minimize the potential for pollution of stormwater or snowmelt runoff. Additionally, on-site waste should be stored such that wind will not transport refuse away from the storage area. This may include the use of storage containers, dumpsters, fencing or covers.

Concrete Truck/Equipment Washing (including truck chute and associated fixtures and equipment) – Concrete washout area shall be installed prior to any concrete placement on site. Signs shall be placed at the construction entrance(s), at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area. The washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted concrete. Concrete and concrete wash water shall be removed from the site and disposed of at an accepted waste facility.

Dedicated Asphalt and Concrete Batch Plants – A small temporary batch plant may be installed to allow on-site storage and mixing of concrete and masonry. This should be protected by sediment traps, silt fence, diversion ditches or other perimeter protection as appropriate to keep stockpiled material within the plant area and located on the Site Maps by the QSM.

Non-Industrial Waste Management

- **Worker's Trash** – The site shall be policed at the end of each work day to be kept free of trash and debris resulting from workers day to day activities. If necessary, utilize clearly marked and protected containers for trash and debris at convenient locations throughout the site. Burying of waste on site is prohibited. Trash must be properly contained at the end of each day.
- **Portable Toilets** – All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities will be provided at the site throughout the construction phase. They must be utilized by all construction personnel and must be serviced weekly by a commercial operator. The location of sanitary facilities shall be shown on the Site Maps. Portable toilets must be securely anchored a minimum of 10' behind curbs and are not allowed within 50' of inlets or within 50' of a water of the State or the municipal storm drain system.
- **Concrete and Saw Cutting Waste** – Concrete and asphalt cutting are expected during demolition activities. The waste material from these operations will be fully contained and

cleaned up immediately by vacuum. Any remaining residue shall be cleaned by vacuum or street sweeping.

Dewatering – Dewatering of excavations shall occur as permitted by a Water Quality Control Division Low Risk Guidance Document. Any water from dewatering operations shall be uncontaminated and discharge to a control measure and captured on-site for infiltration and/or evaporation. Under no circumstances shall construction dewatering water be allowed to leave the site as surface runoff. If contamination of groundwater is suspected, a separate construction dewatering permit will be required.

Control Measures for Stormwater Pollution Prevention

The following erosion control, sediment control, materials management, and site management measures shall be utilized and/or installed as indicated on the site maps to reduce the potential of the sources identified above to contribute pollutants to stormwater discharges.

The following structural control measures are anticipated to be implemented on this site:

BMP	Quantity	Unit
Clear and Grub Site (Entire Site)	0.67	AC
Concrete Washout	1	EA
Inlet Protection	1	EA
Seeding & Mulching	0.29	AC
Silt Fence	360	LF
Stabilized Staging Area	200	SY
Vehicle Tracking Control	1	EA

Site maps and control details can be found in Appendix B of this document.

Erosion Control

Surface Roughening – Surface roughening consists of tracking scarifying, imprinting, or tilling a disturbed area to provide temporary stabilization of disturbed areas. It creates variations in the soil surface that help to minimize wind and water erosion. Depending on the technique used, surface roughening may also help establish conditions favorable to establishment of vegetation. It is used to provide temporary stabilization of disturbed areas, such as when re-vegetation cannot be immediately established. It should also be performed after final grading. It should create depressions 2 to 6 inches deep and approximately 6 inches apart. The surface of exposed soil can be roughened with various techniques and equipment. Horizontal grooves (running parallel to the contours of the land) can be made using tracks from equipment treads, stair-step grading, ripping, or tilling. Surface roughening shall occur throughout the site as needed as earth moving operations proceed.

Temporary and Permanent Seeding – All denuded areas that will be inactive for 14 days or more must be stabilized temporarily with the use of fast-germinating annual grass/grain varieties appropriate for site soil and climate conditions, straw/hay mulch, wood cellulose fibers, tackifiers, netting and/or blankets. Stockpiles and diversion ditches/berms must be stabilized to prevent erosion and dust issues. A Foothills Native seed mix shall be used. All areas at final grade must be seeded or sodded within 14 days after completion of work in that area. Prepare soil and seed immediately after final grade is achieved. At the completion of ground-disturbing activities the entire site must have permanent vegetative cover, meeting vegetative density requirements, or mulch per landscape plan, in all areas not covered by hardscape (pavement, buildings, etc.). Except for small (<100 SF) level spots, seeded areas should be protected with mulch, tackifier, or a rolled erosion control product. Mulch must be crimped by disc or other machinery.

Mulching – Mulching consists of evenly applying a mulch product to disturbed soils and seedbeds and securing the mulch by crimping, tackifiers, netting, or other measures. Mulch products are intended to reduce rainfall impact (splash) erosion, decrease sheet erosion, promote rain and snowmelt infiltration, increase soil moisture retention, regulate soil temperature, and in most cases, improve soil texture and increase organic matter. Natural mulch products can include materials such as straw, cellulose products, pine needles, shredded wood, coconut fiber, rock, or bark. Synthetic mulch products combine a variety of chemical bonding agents with natural mulch fibers or synthetic fibers. Mulch can be applied with either a standard mechanical dry application method or with hydromulching equipment. Disturbed areas shall be properly mulched and tacked or seeded, mulched, and tacked promptly after final grade is reached (within 14 days) on portions of the site not otherwise permanently stabilized. Mulching shall occur as necessary throughout the duration of construction. Mulch shall not be applied during windy conditions.

Diversion Ditches – Diversion ditches or berms are temporary storm conveyance channels constructed either to divert runoff around slopes or to convey runoff to additional sediment control measures prior to discharge of runoff from a site. Drainage swales must be lined using riprap, plastic or erosion control blankets and are usually used in conjunction with check dams for slowing flow velocities.

Check Dam – Check dams, also called ditch checks, dikes, wattles, etc. are temporary or permanent linear grade control structures placed in drainage channels perpendicular to flows to limit the erosivity of stormwater by reducing flow velocity. Check dams are typically constructed from rock, fiber logs (e.g. wattles), triangular sediment dikes, sandbags, and other materials and prefabricated systems. Reinforced check dams are typically constructed from rock and wire gabion. Straw/hay bales and silt fences should not be used for check dam applications, as they are not intended for concentrated flow areas. Although the primary function of check dams is to reduce the velocity of concentrated flows, a secondary benefit is sediment trapping upstream of the structure. Check dams can be used on mild or

moderately steep slopes. Check dams may be used as temporary grade control facilities along waterways, along permanent swales that need protection prior to installation of a non-erodible lining, and along temporary channels, ditches or swales that need protection where construction of a nonerodable lining is not practicable. Reinforced check dams should be used in areas subject to high flow velocities. Check dams shall be installed when drainage ditches or swales are installed. They shall remain in place until final stabilization.

Rolled Erosion Control Products – RECPs include a variety of temporary or permanently installed manufactured products to control erosion and enhance vegetation establishment and survivability, particularly on slopes and in channels. RECPs function by shielding bare soil and newly seeded areas against rainfall impact (splash) and wind erosion. When biodegradable products are used the material will eventually decompose in place to further aid in plant growth. RECPs also help to increase precipitation infiltration and decrease soil crusting and compaction. For applications where natural vegetation alone will provide sufficient permanent erosion protection, products such as netting and open-weave blankets can be installed at the time of seeding and shall remain in place until root density and top growth are capable of long-term erosion protection. These mats may be made of biodegradable natural materials, in which case they can remain in place indefinitely until they decompose. For applications where natural vegetation alone will not be sustainable under expected flow conditions, permanent RECPs such as turf reinforcement mats can be used. These are designed for discharges that exert velocities and shear stresses that exceed the typical limits of mature natural vegetation. RECPs shall be installed as necessary throughout the duration of construction. Depending on the location and purpose the RECPs can be removed when final stabilization is achieved, left to decompose, or left for permanent stabilization.

Wind Erosion and Dust Control – Wind erosion and dust control measures help to keep soil particles from entering the air as a result of land disturbing construction activities. These control measures include a variety of practices generally focused on either graded disturbed areas or construction roadways. For graded areas, practices such as seeding and mulching, use of soil binders, site watering, or other practices that provide prompt surface cover should be used. For construction roadways, road watering and stabilized surfaces should be considered. Dust control measures should be used on any site where dust poses a problem to air quality. Dust control is important to control for the health of construction workers and surrounding waterbodies. Dust control shall be implemented throughout construction once the site has any exposed, bare soil. It shall be implemented until all bare soil has been covered by final stabilization.

Materials Management

Concrete Washout Area – The concrete washout area shall be installed prior to any concrete placement on site. Signs shall be placed at the construction entrance(s), at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area. The washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted concrete. Concrete shall be removed from the site and disposed of at an accepted waste facility. The concrete washout area shall be installed as shown on site maps prior to any concrete work. It shall remain in place until all concrete work is complete.

Stockpile Management – Stockpile management includes measures to minimize erosion and sediment transport from soil stockpiles. Soil stockpiles shall be located away from all drainage system components including inlets. When practical, choose stockpile locations that will remain undisturbed for the longest period of time as the phases of construction progress. Place sediment control measures such as silt fence, straw wattles, or rock socks around the perimeter of all stockpiles. For stockpiles in active use, provide a stabilized designated access point on the upgradient side of the stockpile. Soils stockpiled for more than 60 days should be seeded and mulched with a temporary grass cover. Soil stockpile management shall be installed when soil stockpiling begins. It shall remain in place until all soil has been replaced or hauled off-site to a permanent location.

Good Housekeeping Practices – A clean and orderly work site reduces the possibility of accidental spills and reduces safety hazards to employees and subcontractors. It will also help minimize potential contamination of stormwater runoff. Housekeeping practices are to include providing waste management, establishing proper building material staging areas, designating paint and concrete washout areas, establishing proper equipment and vehicle fueling and maintenance practices, controlling equipment and vehicle washing and allowable non-stormwater discharges, and developing a spill prevention and response plan. Good housekeeping practices shall be employed throughout the duration of construction.

Sediment Control

Silt Fence – Silt fence is a synthetic permeable woven or non-woven geotextile fabric incorporating support stakes at intervals sufficient to support the fence (5-foot maximum distance between posts), water, and sediment retained by the fence. The fence is designed to retain sediment-laden storm water and allow settlement of suspended soils before the storm water flows through the fabric and discharges off-site. Silt fence shall be located on the contour to capture overland, low-velocity sheet flows. Silt fence shall be installed at the start of construction prior to any earth moving activities. Silt fence shall remain in

place until site construction has been completed to a point where other control measures can control the remaining sediment concerns.

Storm Sewer Inlet Protection – Inlet protection devices intercept and/or filter sediment before it can be transported from a site into the storm drain system and discharged into a lake, river, stream, wetland, or other body of water. These devices also keep sediment from filling or clogging storm drain pipes, ditches, and downgradient sediment traps or ponds. Inlet protection may also include placement of a barrier to create a bypass of an inlet transferring flow downstream to a sediment trap, basin, or other inlet discharging to a non-critical area. The primary mechanism is to place controls in the path of flow sufficient to slow the sediment-laden water to allow settlement of suspended soils before discharging into the storm sewer. It is possible that as construction progresses from storm sewer installation through to paving that the inlet protection devices should change. All inlet protection devices create ponding of storm water. This should be taken into consideration when deciding on which device or devices should be used. Inlet protection shall be installed around all existing inlets at the start of construction prior to any earth moving activities and around all proposed inlets as they are constructed. Inlet protection shall remain in place until final stabilization (pavement and/or landscaping).

Vegetative Buffers – Buffer strips of preserved natural vegetation or grass help protect waterways and wetlands from land disturbing activities. Vegetated buffers improve stormwater runoff quality by straining sediment, promoting infiltration, and slowing runoff velocities. Vegetated buffers can be used to separate land disturbing activities and natural surface waters or conveyances. Oftentimes some type of setback of the construction activities from natural waterways is required. Concentrated flow should not be directed through a buffer; instead, runoff should be in the form of sheet flow. Vegetated buffers are typically used in combination with other perimeter control measures such as sediment control logs or silt fence for multilayered protection. Clearly delineate the boundary of the natural buffer area using construction fencing, silt fence, or a comparable technique. In areas that have been cleared and graded, vegetated buffers such as sod can also be installed to create or restore a vegetated buffer around the perimeter of the site.

Site Management and Other Practices

Construction Phasing and Scheduling – Effective construction site management to minimize erosion and sediment transport includes attention to construction phasing, scheduling, and sequencing of land disturbing activities. On most construction projects, erosion and sediment controls will need to be adjusted as the project progresses and should be documented in the GESC. All construction projects can benefit from upfront planning to phase and sequence construction activities to minimize the extent and duration of disturbance. Larger projects and linear construction projects may benefit most from construction sequencing or phasing, but even small projects can benefit from construction sequencing

that minimizes the duration of disturbance. Typically, erosion and sediment controls needed at a site will change as a site progresses through the major phases of construction. Erosion and sediment control practices corresponding to each phase of construction must be documented in the GESD.

Protection of Existing Vegetation – Existing vegetation should be preserved for the maximum practical duration on a construction site through the use of effective construction phasing. Preserving vegetation helps to minimize erosion and can reduce revegetation costs following construction. Potential sources of injury to existing trees include soil compaction during grading or due to construction traffic, direct equipment-related injury such as bark removal, branch breakage, surface grading and trenching, and soil cut and fill. In order to minimize injuries that may lead to immediate or later death of the tree, tree protection zones shall be established at the beginning of a construction project and remain in place until final stabilization.

Vehicle Tracking Control – Vehicles leaving construction sites can track sediment onto adjoining roadways. This sediment can create safety hazards and contribute significantly to sediment pollution in waterways. The purpose of a vehicle tracking control measure is to prevent soil and mud on work vehicles from being carried offsite and deposited on public roads, parking lots, and other areas. All points closed to the general public and providing access into the construction site shall include a marked construction exit that will be monitored for any signs of tracking from the construction site. It is expected that only trailer delivered equipment will access the exposed subgrades and that vehicle tracking to the adjacent publicly accessible parking and the public rights-of-way should not be evident. However, if that proves not to be the case a roughened exit composed of ribbed steel plate and down-gradient silt dikes is to be installed to the dimensions shown on the site maps. The rough texture of the plates helps to remove clumps of soil adhering to the construction vehicle tires through the action of vibration and jarring over the rough surface and the friction of the ribbed matrix against soils attached to vehicle tires. It may also be necessary to install a wheel wash system. If this is done, a sediment trap control must be installed to treat the wash water before it discharges from the site. Discharge must be directed to the sediment basin within the limits of construction as indicated. The vehicle tracking control shall be installed at all construction access points at the start of construction prior to any earth moving activities. It shall remain in place until permanent pavement is installed.

Stabilized Staging Area – This is a clearly designated area where construction equipment and vehicles, stockpiles, waste bins, and other construction-related materials are stored. The stabilized storage area consists of a stabilized surface, covered with 3-inch diameter aggregate or larger. The stabilized staging area shall be installed as shown on the site maps at the start of construction prior to any earth moving activities. It shall remain in place until permanent pavement is installed.

Street Sweeping and Vacuuming – Street sweeping and vacuuming remove sediment that has been tracked onto roadways to reduce sediment transport into storm drain systems or a surface waterway. Street sweeping or vacuuming should be conducted when there is noticeable sediment accumulation on roadways on or adjacent to the construction site. Typically, this will be concentrated at the entrance/exit to the construction site. Well-maintained stabilized construction entrances, vehicle tracking controls and tire wash facilities can help reduce the necessary frequency of street sweeping and vacuuming. Street sweeping shall occur as needed and at a minimum once a day throughout the duration of construction.

Temporary Diversion Methods – Temporary diversion methods are used to reroute water from a stream or restrict flows to a designated portion of the stream channel to allow for construction activities to take place in the stream, along the banks or beneath the active channel. Temporary diversion methods are often required during the construction of detention ponds, dams, in-stream grade control structures, utility installation and other activities, including maintenance, that require working in waterways. Temporary diversion methods include temporary diversion channels, pump-arounds, piped diversions, coffer dams and other similar practices. The primary purpose of all temporary diversion methods is to protect water quality by passing upstream flows around the active construction zone.

Dewatering Operations – Dewatering typically involves pumping water from an inundated area to a control measure, and then downstream to a receiving waterway, sediment basin, or well-vegetated area. Dewatering typically involves several control measures in sequence. Dewatering operations are used when an area of the construction site needs to be dewatered as the result of a large storm event, groundwater, or existing ponding conditions. This can occur during deep excavation, utility trenching, and wetland or pond excavation. All dewatering discharges must be treated to remove sediment before discharging from the construction site. Discharging water into a sediment trap or basin is an acceptable treatment option. Water may also be treated using a dewatering filter bag and a series of straw bales or sediment logs. If these options are not feasible, a settling tank or an active treatment system may need to be utilized. Settling tanks are manufactured tanks with a series of baffles to promote settling. Flocculants can also be added to the tank to induce more rapid settling. Contact the state agency for special requirements prior to using flocculants and land application techniques. Some commonly used methods to handle the pumped water without surface discharge include land application to vegetated areas through a perforated discharge hose (i.e., the "sprinkler method") or dispersal from a water truck for dust control.

Paving and Grinding Operations – Runoff from paving and grinding operations shall be managed to minimize pollutants entering storm drainage systems and natural waterways. Use runoff management practices during all paving and grinding operations such as surfacing, resurfacing, and saw cutting.

Revising Control Measures and the GESC

Should there be changes to the implemented control measures the QSM shall be notified and the GESC modified to accurately reflect the field conditions. Examples include, but are not limited to, removal of control measures, identification of new potential pollutant sources, addition of control measures, modification of control measure installation and implementation criteria or maintenance procedures, and changes in items included in the Site Map and/or description. GESC revisions must be made prior to changes in site conditions, except for Responsive GESC Changes, as follows:

- GESC revisions must be made immediately after changes are made in the field to address control measure installation and/or implementation issues; or
- GESC revisions that require the development of supporting documentation (e.g. design of sediment basin capacity) must be made as soon as practicable, but in no case more than 72 hours, after change(s) in control measure installation and/or implementation occur at the site.

Notation must be included in the plan that identifies:

- The date of the site change
- The control measure removed or modified
- The location(s) of those control measure(s)
- Any changes to the control measure(s)

This GESC should be viewed as a “living document” that is to be continuously reviewed and modified as part of the overall process of assessing and managing stormwater quality issues on-site.

VI. Final Stabilization & Long-Term Stormwater Management

Permanent stabilization of the site will include establishment of permanent landscaping areas, and pavement placement. Final site stabilization is achieved when perennial vegetative cover provides permanent stabilization with a density greater than 70 percent of pre-disturbance levels over the entire area to be stabilized by vegetative cover or equivalent cover has been employed. Additionally, all permanent stormwater control measures must be completed and operational as designed and any stormwater conveyances cleaned of sediment and stabilized. Further, all temporary stormwater control measures must be removed unless designed to decompose on-site.

Inactivation of Permit Coverage

Once the criteria for final stabilization have been met, the Permittee shall make a request to terminate the permit through the Colorado Environmental Online Services (CEOS) system.

The QSM shall provide a completed GESC binder to the owner at the conclusion of the project which will include the original GESC, all markups or other changes to the GESC, and inspection and maintenance records. The owner shall keep this document on file for a minimum of 3 years after construction completion.

VII. Inspection & Maintenance Procedures

The contractor must keep the approved GESC on site at all times. The person(s) inspecting the site may be on the Permittee's staff or a third party hired to conduct stormwater inspections under the direction of the Permittee. The Permittee is responsible for ensuring that the inspector is a qualified stormwater manager. All regulatory authorities may inspect the land or site covered by the GESC at any time, without prior notice, for compliance with the GESC. If site conditions indicate that the objectives of this section are not being met, the operator shall make appropriate modifications to the GESC. Any modification must be recorded on the owner's copy of the GESC and the QSM notified. The Permittee must maintain inspection records on site with the GESC and such records must be provided to the regulatory agencies for review upon request. At a minimum, the inspection report must include:

- The inspection date
- Name(s) and title(s) of personnel conducting the inspection
- Weather conditions at the time of inspection
- Phase of construction at the time of inspection
- Estimated acreage of disturbance at the time of inspection
- Location(s) of discharges of sediment or other pollutants from the site
- Location(s) of control measures needing maintenance
- Location(s) and identification of inadequate control measures
- Location(s) and identification of additional control measures needed that were not in place at the time of inspection.
- Description of the minimum inspection frequency (either in accordance with Part I.D.2., I.D.3. or I.D.4.) utilized when conducting each inspection.
- Deviations from the minimum inspection schedule as required in Part I.D.2.
- After adequate corrective action(s) and maintenance have been taken, or where a report does not identify incidents requiring corrective action or maintenance, the report shall contain a statement as required in Part I.A.3.f.

The State Construction Stormwater Site Inspection Report template has been included in Appendix D. The Permittee may provide their own inspection report if desired, but must ensure it meets the requirements above.

Inspection Schedules

Between the time this GESC is implemented and final Inactivation Notice or Termination Application has been submitted, all disturbed areas and pollutant controls must be inspected with one of the following minimum frequencies:

- At least one inspection every 7 calendar days
- At least one inspection every 14 calendar days, plus post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion.

If more frequent inspections are required to ensure that control measures are properly maintained and operated, the inspection schedule must be modified to meet this need. The first site inspection must occur within 7 calendar days of the commencement of construction activities on site. The contractor and QSM shall adhere to the maintenance schedules listed in the details for each control measure. Permittees must conduct site inspections at least once every 7 calendar days for sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Commission. Preventative maintenance shall be coupled with periodic inspections.

Inspection Procedures

The purpose of site inspections is to assess performance of pollutant controls. Based on these inspections the contractor, in consultation with the QSM (if different) will decide whether it is necessary to modify this GESC, add or relocate controls, or revise or implement additional control measures in order to prevent pollutants from leaving the site via stormwater runoff. The contractor has the duty to cause pollutant control measures to be repaired, modified, supplemented, or take additional steps as necessary in order to achieve effective pollutant control. Note: If a control measure is covered by snow, mark the control measure as not applicable and document the reason the control measure cannot be inspected on the daily report.

The inspection must include observation of:

- The construction site perimeter and discharge points, including discharges into a storm sewer system
- All disturbed areas
- Areas used for material/waste storage that are exposed to precipitation
- Areas determined to have a significant potential for stormwater pollution, such as demolition areas, concrete washout areas, or construction vehicle entrances
- All erosion and sediment control measures identified in the GESC
- Structural control measures that may require maintenance, such as secondary containment around fuel tanks or the condition of spill response kits

Examples of specific items to evaluate during site inspections are listed below. This list is not intended to be comprehensive. During each inspection, the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances. Additional information on maintenance requirements can be found in the BMP Fact Sheets in Volume 3 of the *Urban Storm Drainage Criteria Manual* by the Urban Drainage and Flood Control District.

- **Construction Exit and Track Out** – Locations where vehicles enter and exit the site must be inspected for evidence of off-site sediment tracking. A stabilized construction exit shall be constructed where vehicles enter and exit. Exits shall be maintained or supplemented as necessary to prevent the release of sediment from vehicles leaving the site. Any sediment deposited on the roadway shall be swept as necessary throughout the day or at the end of every day and disposed of in an appropriate manner. Sediment shall NOT be washed into storm sewer systems.
- **Erosion Control Devices** – Rolled erosion control products (nets, blankets, turf reinforcement mats) and marginally vegetated areas (areas not meeting required vegetative densities for final stabilization) must be inspected weekly. Riling, rutting and other signs of erosion indicate the erosion control device is not functioning properly and additional erosion control devices are warranted.
- **Material Storage Areas** – Material storage areas should be located to minimize exposure to weather. Inspections shall evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system or discharging from the site. If necessary, the materials must be covered or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas. All state and local regulations pertaining to material storage areas will be adhered to.
- **Discharge Points** – All discharge points must be inspected to determine whether erosion and sediment control measures are effective in preventing discharge of sediment from the site or impacts to receiving waters.

Control Measure Maintenance/Replacement and Failed Control Measures

The *Colorado General Permit for Stormwater Discharges Associated with Construction Activity* requires that all erosion and sediment control practices and other protective measures identified in the GESG be maintained in effective operating condition and in accordance with good engineering, hydrologic and pollution control practices. Sediment that has been collected by sediment controls, such as silt fence and

inlet protection, shall be removed when observed to prevent failure of control measures, and remove the potential of that sediment from being discharged from the site if the control measure did fail. Removed sediment shall be properly disposed of on-site. Maintenance activities to correct problems noted during inspections must be documented as discussed in the documentation section below. The inspection process must also include procedures to ensure that, when needed, control measures are replaced or new control measures added to adequately manage the pollutant sources at the site. This procedure is part of the ongoing process of revising the control measures and the GESC as discussed above, and any changes to control measures must be recorded in the GESC. The GESC must be modified as soon as practicable to reflect current conditions. Control measures that have failed or have the potential to fail without maintenance or modifications must be addressed as soon as possible, immediately in most cases, to prevent the discharge of pollutants. If it is infeasible to install or repair a control measure immediately after discovering the deficiency, the following information must be documented and kept on record:

- 1) Describe why it is infeasible to initiate the installation or repair immediately; and
- 2) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

If applicable, the Permittee must remove and properly dispose of any unauthorized release or discharge (e.g. discharge of non-stormwater, spill or leak not authorized by the Construction Stormwater Permit). The Permittee must also clean up any contaminated surfaces to minimize discharges of the material in subsequent storm events.

Record Keeping and Documentation

All erosion control measures and stabilizations shall be inspected weekly and after each precipitation or snow melt event. The Permittee must document inspection results and maintain a record of the results for a period of 3 years following closing of permit coverage. These records must be made available to the Owner, the City & County, the State, or the EPA upon request. The following items must be documented as part of the site inspections:

- The inspection date
- Name(s) and title(s) of personnel making the inspection
- Location(s) of discharges of sediment or other pollutants from the site
- Location(s) of control measures that need to be maintained
- Location(s) of control measures that failed to operate as designed or proved inadequate for a particular location
- Location(s) where additional control measures are needed that were not in place at the time of inspection
- Deviations from the minimum inspection schedule as indicated above
- Description and dates of corrective actions taken including requisite changes to the GESC

After adequate corrective action(s) has been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

Record of spills, leaks, or overflows that result in the discharge of pollutants must be documented and maintained. Information that should be recorded for all occurrences includes the time and date, weather conditions, reasons for the spill, who the spill was reported to, etc.

A complete copy of the GESC shall be kept with the inspection and maintenance records for the aforementioned 3-year period. **<Permittee to provide physical address.>**

VIII. Conclusion

Conformance with Standards

The Stormwater Management report for Andy's Custard at Lincoln Professional Park Filing No. 1, a drive thru restaurant development, was prepared in compliance with the *Douglas County Grading, Erosion and Sediment Control Manual* and the *Colorado General Permit for Stormwater Discharges Associated with Construction Activity*.

Drainage Concept

The proposed erosion and sediment control measures do not alter the existing drainage patterns, volumes, or control points from the approved "*Final Drainage Report for Lincoln & Dransfeldt*" applicable to this development.

IX. References

1. Douglas County Grading, Erosion and Sediment Control Manual, Douglas County.
2. Urban Storm Drainage Criteria Manual, Volume 3, Urban Drainage and Flood Control District, revised April 2018.
3. General Permit Application and Stormwater Management Plan Preparation Guidance, Colorado Department of Public Health and Environment, Revised April 2019.

Appendix A – Reference Information

NRCS Web Soil Survey Information

FEMA FIRMette

Hydrologic Soil Group—Castle Rock Area, Colorado
(Andy's Custard)

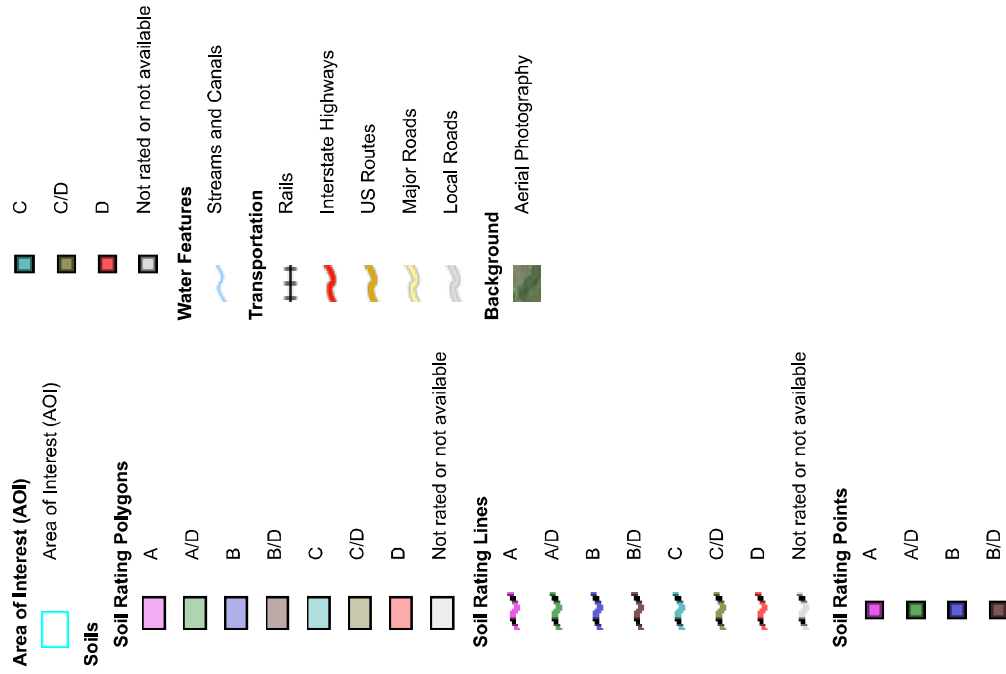


Soil Map may not be valid at this scale.

Map Scale: 1:468 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Castle Rock Area, Colorado
 Survey Area Data: Version 14, Aug 31, 2021

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

Date(s) aerial images were photographed: Jun 9, 2021—Jun 12, 2021

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BrB	Bresser sandy loam, cool, 1 to 3 percent slopes	B	0.7	100.0%
Totals for Area of Interest			0.7	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix B – GESC Site Maps and Calculations

GESC Site Maps and Details

Appendix C – Training Documentation

Appendix D – Inspection Report
State Inspection Report Template

Appendix D: Stormwater Inspection Report Template

Facility Name		Permittee					
Date of Inspection		Weather Conditions					
Permit Certification #		Disturbed Acreage					
Phase of Construction		Inspector Title					
Inspector Name							
Is the above inspector a qualified stormwater manager? (permittee is responsible for ensuring that the inspector is a qualified stormwater manager)			<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
YES	NO						
<input type="checkbox"/>	<input type="checkbox"/>						

INSPECTION FREQUENCY					
Check the box that describes the minimum inspection frequency utilized when conducting each inspection					
At least one inspection every 7 calendar days	<input type="checkbox"/>				
At least one inspection every 14 calendar days, with post-storm event inspections conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosions	<input type="checkbox"/>				
<ul style="list-style-type: none"> This is this a post-storm event inspection. Event Date: _____ 	<input type="checkbox"/>				
Reduced inspection frequency - Include site conditions that warrant reduced inspection frequency	<input type="checkbox"/>				
<ul style="list-style-type: none"> Post-storm inspections at temporarily idle sites 	<input type="checkbox"/>				
<ul style="list-style-type: none"> Inspections at completed sites/area 	<input type="checkbox"/>				
<ul style="list-style-type: none"> Winter conditions exclusion 	<input type="checkbox"/>				
Have there been any deviations from the minimum inspection schedule? If yes, describe below.	<table border="1"> <tr> <td>YES</td> <td>NO</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>	YES	NO	<input type="checkbox"/>	<input type="checkbox"/>
YES	NO				
<input type="checkbox"/>	<input type="checkbox"/>				

INSPECTION REQUIREMENTS*
i. Visually verify all implemented control measures are in effective operational condition and are working as designed in the specifications
ii. Determine if there are new potential sources of pollutants
iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges
iv. Identify all areas of non-compliance with the permit requirements, and if necessary, implement corrective action
*Use the attached Control Measures Requiring Routine Maintenance and Inadequate Control Measures Requiring Corrective Action forms to document results of this assessment that trigger either maintenance or corrective actions

AREAS TO BE INSPECTED			
Is there evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters at the following locations?			
	NO	YES	If "YES" describe discharge or potential for discharge below. Document related maintenance, inadequate control measures and corrective actions Inadequate Control Measures Requiring Corrective Action form
Construction site perimeter	<input type="checkbox"/>	<input type="checkbox"/>	
All disturbed areas	<input type="checkbox"/>	<input type="checkbox"/>	
Designated haul routes	<input type="checkbox"/>	<input type="checkbox"/>	
Material and waste storage areas exposed to precipitation	<input type="checkbox"/>	<input type="checkbox"/>	
Locations where stormwater has the potential to discharge offsite	<input type="checkbox"/>	<input type="checkbox"/>	
Locations where vehicles exit the site	<input type="checkbox"/>	<input type="checkbox"/>	
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	

REPORTING REQUIREMENTS

The permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances. The division may waive the written report required if the oral report has been received within 24 hours.

All Noncompliance Requiring 24-Hour Notification per Part II.L.6 of the Permit

a. Endangerment to Health or the Environment

Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident (See Part II.L.6.a of the Permit)

This category would primarily result from the discharge of pollutants in violation of the permit

b. Numeric Effluent Limit Violations

- o Circumstances leading to any unanticipated bypass which exceeds any effluent limitations (See Part II.L.6.b of the Permit)
- o Circumstances leading to any upset which causes an exceedance of any effluent limitation (See Part II.L.6.c of the Permit)
- o Daily maximum violations (See Part II.L.6.d of the Permit)

Numeric effluent limits are very uncommon in certifications under the COR400000 general permit. This category of noncompliance only applies if numeric effluent limits are included in a permit certification.

Has there been an incident of noncompliance requiring 24-hour notification?	NO	YES	
	<input type="checkbox"/>	<input type="checkbox"/>	If "YES" document below

Date and Time of Incident	Location	Description of Noncompliance	Description of Corrective Action	Date and Time of 24 Hour Oral Notification	Date of 5 Day Written Notification *

*Attach copy of 5 day written notification to report. Indicate if written notification was waived, including the name of the division personnel who granted waiver.

After adequate corrective action(s) and maintenance have been taken, or where a report does not identify any incidents requiring corrective action or maintenance, the individual(s) designated as the Qualified Stormwater Manager, shall sign and certify the below statement:

“I verify that, to the best of my knowledge and belief, all corrective action and maintenance items identified during the inspection are complete, and the site is currently in compliance with the permit.”

Name of Qualified Stormwater Manager

Title of Qualified Stormwater Manager

Signature of Qualified Stormwater Manager

Date

Notes/Comments

Appendix E – Spill and Prevention Control

Spill Prevention and Control Plan

Site Spill Log

SPILL PREVENTION AND CONTROL PLAN

Whenever significant quantities of fuels, materials, vehicle fluids, or other pollutants are to be used on site, specific procedures for material containment and spill prevention shall be developed and implemented.

Introduction

The following Spill Prevention and Response Plan shall be implemented during the construction of improvements at Lot 3, Lincoln Professional Park Filing No. 1, an Andy's Custard Restaurant, and associated thereto. This plan will be implemented to meet the requirements of Douglas County and the State of Colorado.

Materials On-Site

Spill control procedures will be implemented when materials are stockpiled or when chemicals and/or fluids are used in the construction area.

Stockpiles of Dry Materials

The following spill prevention procedures shall be implemented:

All materials shall be stockpiled in designated areas, with BMPs used to reduce and minimize the runoff of contaminants. BMPs such as silt fence and sediment control logs will be installed according to Douglas County criteria using the details shown on the SWMP plans. Loading and unloading operations shall be performed in a manner to limit materials from being spilled. Any spilled materials shall be swept up immediately after the operations are performed.

Vehicle Fueling

The following spill prevention procedures shall be implemented:

All vehicle fueling will be done off-site as much as possible. All on-site fueling operations will be performed in designated areas. Measures will be taken where necessary to reduce and minimize spills during vehicle fueling operations. These measures may include the placement of a temporary berm around the fueling area, covering the fueling area under a temporary portable structure, and/or the placement of drip pans under valves and tank openings. Berms will be constructed around all fueling areas. An adequate supply of absorbents will also be stockpiled at each fueling area.

Routine Vehicle and Equipment Maintenance

The following spill prevention procedures shall be implemented:

All vehicle maintenance will be performed off-site when possible. However, there may be occasions where construction equipment and vehicles may break down at the site and on-site repairs are more feasible. On-site vehicle and equipment maintenance, if needed, will be performed in designated areas, where practical, and enclosed by earthen berms. All maintenance areas will maintain an adequate supply of drip pans. These pans will be placed underneath vehicles as needed and absorbents will be used in the event of a minor spill or leak.

SPILL RESPONSE

NOTE: IN CASE OF FIRE, EVACUATE ALL PERSONNEL FROM THE IMMEDIATE AREA, RENDER FIRST AID TO ANYONE WHO IS INJURED, AND DIAL 911 IMMEDIATELY. TAKE APPROPRIATE STEPS TO PROTECT HUMAN LIFE AND TO CONTROL FIRES FIRST. SPILL CONTROL IS A SECONDARY CONCERN.

Cleanup and Removal Procedures

- Upon detection of any spill, the first action to be taken is to ensure personal safety. All possible ignition sources, including running engines, electrical equipment (including cellular telephones, etc.), or other hazards will be immediately turned off or removed from the area. The extent of the spill and the nature of the spilled material will be evaluated to determine if remedial actions could result in any health hazards, escalation of the spill, or further damage that would intensify the problem. If such conditions exist, a designated employee will oversee the area of the spill and the construction supervisor will be notified immediately.
- The source of the spill will be identified and if possible the flow of pollutants stopped if it can be done safely. However, no employee will attend to the source or begin cleanup of the spill until ALL emergency priorities (fire, injuries, etc.) have been addressed.

Small Spills

Small spills (usually <5 gallons) consist of minor quantities of gasoline, oil, anti-freeze, or other materials that can be cleaned up by a single employee using readily available materials.

The following procedures shall be used for clean up of small spills:

1. Ensure personal safety, evaluate the spill, and if possible, stop the flow of pollutants.
2. Contain the spread of the spill using absorbents, portable berms, sandbags, or other available measures.
3. Spread absorbent materials on the area to soak up as much of the liquid as possible and to prevent or minimize infiltration into the soil.
4. Once the liquids have been absorbed, remove all absorbents from the spill and place the materials in a suitable storage container. On paved areas, wipe any remaining liquids from the surface and place the materials in a storage container. Do not spray or wash down the area using water. For open soil areas, excavate any contaminated soil as soon as possible and place the soil in a suitable storage container. All materials will then be transported off-site for disposal.
5. If immediate transfer and storage of the contaminated soil is not practical, excavate and place the contaminated soil on a double thickness sheet of 3-mil or higher polyethylene film. In addition, a small berm should be formed around the outer edges of the soil stockpile, underneath the polyethylene film, to ensure that contaminants are not washed from the site during precipitation events and that materials do not seep through the berm.
6. Record all significant facts and information about the spill, including the following:
 - Type of pollutant
 - Location
 - Apparent source
 - Estimated volume
 - Time of discovery
 - Actions taken to clean up spill

7. Notify the supervisor of the spill and provide the information from Item #6. The supervisor will then contact Douglas County.

Medium to Large Spills

Medium to large spills consist of larger quantities of materials (usually >5 - 25 gallons) that are used on site that cannot be controlled by a single employee. Generally, a number of facility personnel will be needed to control the spill and a response may require the suspension of other facility activities.

The following procedure shall be used for the cleanup of medium to large spills:

1. Ensure personal safety, evaluate the spill, and if possible, stop the flow of pollutants.
2. Immediately dispatch a front-end loader or similar equipment to the spill and construct a berm or berms down gradient of the spill to minimize the spread of potential pollutants. On paved surfaces, portable berms, sandbags, booms, or other measures will be used to control the lateral spread of the pollutants.
3. When the spread of the spill has been laterally contained, contact the supervisor or designated facility employee and provide them information on the location, type, and amount of spilled material, and a briefing on the extent of the spread and measures undertaken to contain the contaminants.
4. Depending on the nature of the spill, mobilize additional resources as needed to contain the contaminants.
5. Cleanup will commence when the lateral spread has been contained and the notification to the supervisor has been made.
6. Freestanding liquid will be bailed or pumped into 55-gallon storage drums, steel tanks, or other suitable storage containers. When all the liquid has been removed from the pavement or soil layer, absorbents will be applied to the surface and transferred to the storage containers when they have soaked up as much of the spill as possible.
7. On paved surfaces, the remaining contaminants will be removed to the extent possible, with rags, sweeping, or similar measures. The area of the spill will not be sprayed or washed down using water. Any contaminant soaked materials will be placed into the storage containers with the other absorbents.
8. The remaining contaminated soils will be excavated and loaded into a dump truck(s) for disposal off-site at a designated facility. If transport off-site is not immediately available, the remaining soils will be stockpiled on a double thickness sheet of 3-mil or higher polyethylene film. In addition, a small berm will be formed around the outer edges of the soil stockpile, underneath the polyethylene film, to ensure that contaminants are not washed from the site during precipitation and do not seep through the berm.
9. Record all significant facts and information about the spill, including the following:
 - Type of pollutant
 - Location
 - Apparent source
 - Estimated volume
 - Time of discovery
 - Actions taken to clean up spill

10. Provide the supervisor (or designated employee) with the information from Item #9. The supervisor will then contact Douglas County.

NOTIFICATION

Notification to the Colorado Department of Public Health & Environment (CDPHE) is required if there is any release or suspected release of any substance, including oil or other substances that spill into or threaten State waters. Unless otherwise noted, notifications are to be made by the supervisor and only after emergency responses related to the release have been implemented. This will prevent misinformation and assures that notifications are properly conducted.

The notification requirements are as follows:

1. Spills into/or Threatens State Waters: Immediate notification is required for releases that occur beneath the surface of the land or impact or threaten waters of the State of threaten the public health and welfare. Notifications that will be made are:
 - a. For any substance, regardless of quantity, contact CDPHE at 1-877-518-5608. State as follows:
 - a) Give you name.
 - b) Give location of spill (name of city).
 - c) Describe the nature of the spill, type of products, and estimate size of spill.
 - d) Describe type of action taken thus far, type of assistance or equipment needed.
 - b. For any quantity of oil or other fluids, call the National Response Center at 1-800-424-8802. State as follows:
 - a) Give your name.
 - b) Give location of spill (name of city and state).
 - c) Describe the nature of the spill, type of product, and estimate size of spill.
 - d) Describe type of action taken thus far, type of assistance or equipment needed.
2. Reportable Quantity Spill on Land Surface: Immediate notification is required of a release upon the land surface of an oil in quantity that exceeds 25 gallons, or of a hazardous substance that equals or exceeds 10 pounds or its reportable quantity under Section 101(14) of the Comprehensive Environmental Response, Compensation Liability Act (CERCLA) of 1980 as amended (40 CFR Part 302) and Section 329c(F3)of the Emergency Planning and Community Right to Know Act of 1986 (40 CFR Part 355) whichever is less. This requirement does apply at a minimum to the substances listed in Table A below.

TABLE A
Substances Requiring Notification

SUBSTANCE	REPORTABLE QUANTITY
Motor Oil	25 Gallons
Hydraulic Oil	25 Gallons
Gasoline/Diesel Fuel	25 Gallons

- The notification procedures to be followed are:
- a) Give your name.
 - b) Give location of spill (name of city and state).
 - c) Describe nature of the spill, type of product, and estimate size of spill.
 - d) Describe type of action taken thus far, type of assistance or equipment needed.
 - e) Give name of land owner
 - f) Specify department responsible for any facilities that may be impacted
3. Notification is not required for release of oil upon the land surface of 25 gallons or less - that will not constitute a threat to public health and welfare, the environmental or a threat of entering the waters of the State.

4. Notification, as required in paragraphs 1 and 2 above, will be made to the CDPHE using the 24-hour telephone number to report environmental spills. All information known about the release at the time of discovery is to be included, such as the time of occurrence, quantity and type of material, location and any corrective or clean-up actions presently being taken. Table B lists these phone numbers.

SPILL RESPONSE CONTACTS

TABLE B
Emergency Notification Contacts

Name/Agency	Number
South Metro Fire Rescue	911
Parker Police Department	911
Ambulance	911
Hospital	911
National Response Center	1-800-424-8802
CDPHE - Report Environmental Spills (24 hrs/day)	1-877-518-5608
Colorado Emergency Planning Committee	303-273-1622
Douglas County Sheriff's Office	303-663-6181
City of Parker	303-805-6262

It is the responsibility of the supervisor to contact the Town of Parker, Douglas County, CDPHE, and/or the National Response Center.

- The **National Response Center** is to be contacted when a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 4- DFR 117, or 40CFR 302 occurs during a 24-hour period.
- Notification to the CDPHE is required if there is any release or suspected release of any material, including oil or hazardous substances that spill into or threaten state waters.

REPORTS

The CDPHE requires written notification of a spill or discharge of oil or other substance that may cause pollution of the waters of the State of Colorado. A written report must be submitted to the Water Quality Control District (WQCD) within five days after becoming aware of the spill or discharge.

The CDPHE requires a written final report within five days for all releases of an oil or hazardous substance that require implementation of a contingency plan. The CDPHE may also require additional reports on the status of the clean up until any required remedial action has been complete.

Written notification of reports must contain at a minimum:

1. Date, time, and duration of the release.
2. Location of the release.
3. Person or persons causing and responsible for the release.
4. Type and amount of oil or substance released.
5. Cause of the release.
6. Environmental damage caused by the release.
7. Actions taken to respond, contain, and clean up the release.
8. Location and method of ultimate disposal of the oil or other fluids.
9. Actions taken to prevent a reoccurrence of the release.
10. Any known or anticipated acute or chronic health risks associated with the release.
11. When appropriate advice regarding medical attention necessary for exposed individuals.

Site Spill Log

Site Location: Lot 3, Lincoln Professional Park Filing No. 1

General Contractor: _____

Any site spill must be reported to the appropriate authorities in accordance with all applicable laws and regulations. Spills must also be reported to the owner's representative immediately, but no later than 24 hours of occurrence.

Date / Time of Spill: _____

Name / Title: _____

Material Spilled and Approximate Quantity: _____

Weather Conditions: _____

Phase of Construction: _____ (Clearing, Rough Grading, Building, Paving, Etc.)

Contractor(s) Representatives Present:

Containment Actions Taken and Authorities Notified:

Date / Time of Spill: _____

Name / Title: _____

Material Spilled and Approximate Quantity:

Weather Conditions: _____

Phase of Construction: _____ (Clearing, Rough Grading, Building, Paving, Etc.)

Contractor(s) Representatives Present:

Containment Actions Taken and Authorities Notified:

Site Visit/Inspection Log

Site Location: Lot 3, Lincoln Professional Park Filing No. 1

General Contractor: _____

Any site visits or inspections must be reported to the owner's representative immediately, but no later than 24 hours of occurrence.

Date: _____ Name of Inspector: _____

Title and Agency of Inspector: _____

Weather Conditions: _____

Phase of Construction: _____ (Clearing, Rough Grading, Building, Paving, Etc.)

Contractor(s) Representatives Present:

Comments:

Date: _____ Name of Inspector: _____

Title and Agency of Inspector: _____

Weather Conditions: _____

Phase of Construction: _____ (Clearing, Rough Grading, Building, Paving, Etc.)

Contractor(s) Representatives Present:

Comments:

Appendix F – Cost Estimate

Opinion of Probable Cost Worksheet

Douglas County GESC Permit
Cost Opinion Spreadsheet

BMP No.	BMP	ID	Unit	Installation Unit Cost	Quantity	Cost
1	Check Dam	CD	LF	\$ 24.00		\$ -
2	Composite Blanket	CB	SF	\$ 0.36		\$ -
3	Composite Filter Berm	CFB	LF	\$ 2.00		\$ -
4	Concrete Washout Area	CWA	EA	\$ 100.00	1	\$ 100.00
5	Construction Fence	CF	LF	\$ 2.00		\$ -
6	Construction Markers	CM	LF	\$ 0.20		\$ -
7	Dewatering	DW	EA	\$ 600.00	1	\$ 600.00
8	Diversion Ditch	DD	LF	\$ 1.60		\$ -
9	Erosion Control Blanket	ECB	SY	\$ 5.00		\$ -
10	Inlet Protection	IP	LF	\$ 20.00	9	\$ 180.00
11	Reinforced Check Dam	RCD	LF	\$ 36.00		\$ -
12	Reinforced Rock Berm	RRB	LF	\$ 9.00		\$ -
13	RRB for Culvert Protection	RRC	LF	\$ 9.00		\$ -
14	Sediment Basin	SB	AC	\$ 1,100.00		\$ -
15	Sediment Control Log	SCL	LF	\$ 2.00		\$ -
16	Sediment Trap	ST	EA	\$ 600.00		\$ -
17	Seeding and Mulching	SM	AC	\$ 2,500.00	0.29	\$ 725.00
18	Silt Fence	SF	LF	\$ 2.00	360	\$ 720.00
19	Stablilized Staging Area	SSA	SY	\$ 2.00	200	\$ 400.00
20	Surface Roughening	SR	AC	\$ 600.00		\$ -
21	Temporary Slope Drain	TSD	LF	\$ 30.00		\$ -
22	Temorary Stream Crossing	TSC	EA	\$ 10,000.00		\$ -
23	Terracing	TER		\$ -		\$ -
24	Vehicle Tracking Control	VTC	EA	\$ 1,000.00	1	\$ 1,000.00
25	VTC with Wheel Wash	WW		\$ -		\$ -
26	Temporary Batch Plant Restoration		AC	\$ 5,000.00		\$ -
TOTAL						\$ 3,725.00