

Mountain View Academy Stormwater Management Plan

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INTRODUCTION

PROJECT AND SITE DESCRIPTION

This project encompasses the grading of the property located at 2103 Meadowbrook Pkwy, Tract H, Claremont Ranch Filing 4 in the Northeast Quarter of Section 4, Township 14 South, Range 65 West of the Sixth Principal Meridian in El Paso County, CO. Tract H consists of 7.88 acres of currently vacant land covered with low lying native plants and weeds. This property was previously graded during construction activities related to Claremont Ranch Filing 4 construction, sometime around 2003. It is expected that the entirety of the property will be disturbed during the lifetime of the project. Since more than 1 acre of disturbed land will be associated with this project, a Colorado Stormwater Discharge Permit will be required.

The purpose of this project is to prepare the property for the eventual construction of a charter school to be run by National Heritage Academies as sanctioned by El Paso School District 49. The scope of work for this project will consist of grading of the property, the construction of a 42,374 sf school as well as associated parking, queuing lanes, and sporting facilities.

Access to the project site will be off Pinyon Jay Drive, a paved road running generally north-south, in the southeastern corner of the City of Colorado Springs, though the property itself is unincorporated. A stabilized staging area will be constructed in the southern portion of the property in order to provide for the storage of vehicles and equipment during construction. The staging area will be used for material storage, vehicle staging/maintenance, personnel parking, and fueling operations during construction.

The southeast portion of the property is relatively flat and is at a higher elevation than surrounding properties. From this high point the ground slopes gently and generally to the north and west.

Stormwater on the site flows in several different directions. The southern portion of the site drains towards Hames Drive to the south and enters a storm inlet located at roughly the midpoint of the southern property boundary at a low point in Hames Drive. The western portion of the site drains to the west and into a neighboring undeveloped property owned by Cherokee Metropolitan District. The northern portion of the site drains generally north towards Meadowbrook Parkway. Some stormwater in the north portion of the property will enter the storm inlet located at the corner of Pinyon Jay Drive and Meadowbrook Parkway, however the majority will flow west along Meadowbrook Parkway where it eventually enters a storm inlet on Meadowbrook Parkway roughly 200 ft south of the intersection with Killdeer Ct. This storm line eventually outfalls to East Fork Sand Creek through a 54" storm outlet approximately 500 ft due west of the

midpoint of the western boundary of the property. The storm system connected to the inlet on Hames Drive runs south and then west of the site where it eventually outfalls into the East Fork Sand Creek through a 36" storm outlet approximately 750 ft due west of the southwest corner of the property.

Upon completion of this project the high point of the property will be located in the center of the property and stormwater will drain in all directions from this high point. The southern portion of the site will be sloped gently towards Hames Road at a grade of approximately 2%. A nearly flat area will exist on the north side of the property where an AstroTurf field is planned. Grade along the north and much of the west property lines will be quite steep approaching 3:1 in many places. Along the eastern and southern boundaries slopes will be milder ranging between 2% and 10%.

PROPOSED PROJECT SEQUENCING

The expected duration of construction is 2 months with an anticipated start date of May 1, 2020 (or as soon as possible thereafter pending required reviews, permitting, and approvals) and completion date of August 20, 2020. Final stabilization is projected to be complete by August 2022. Stormwater BMP's will be inspected biweekly during active construction activities and monthly upon completion of initial stabilization efforts. Post-storm event inspections are required to be performed within 24 hours of any storm event resulting in run-off during active construction.

Pre-construction activities will include the installation of stormwater control measures. It is expected that pre-construction activities will take approximately one week.

Construction will begin immediately upon completion of pre-construction activities and is expected to take approximately 4 months. Planned activities include clearing and grubbing of the property, the stripping and stockpiling of topsoil, performing preliminary site grading, construction of the building pad, building, associated parking and facilities.

Initial stabilization of the project area will begin immediately upon completion of earth disturbing activities and is expected to take one week.

SOILS

On-site soils consist entirely of Blakeland loamy sands (National map unit symbol 369v) with slopes ranging from 1-9%. According to the Geotechnical report by Terracon, subsurface soils consist of sand and silty sand to a depth of at least 5 feet and possibly

as deep as 30 feet (several borings were only 5 feet in depth). The hydrologic soil group of these soils is group A, soils with high infiltration rate and low runoff potential. USDA's soil report for this property and Terracon's Geotechnical Report are included as Appendix D.

EXISTING VEGETATION

Vegetation at the site consists entirely of low-lying species of native grasses and weeds. Existing vegetative cover is somewhat patchy and large nearly bare spots are present in the central and southeast corner of the property. Relative vegetative cover is approximately 70%, this figure was estimated by direct visual observation of the property.

EARTH MOVING ACTIVITIES

The project site is approximately 7.88 acres in size and it is expected that the entirety of the property will be disturbed during construction. It is anticipated that grading of this site will require the import of approximately 5,500 cubic yards of soil. The project will consist of grading, installation of civil infrastructure, building construction and finish, with final landscaping and installation of site amenities.

GEC PLANS

The Pre-Development Grading and GEC Plans are a stand alone CD set and are included as Appendix E.

SWMP / GEC CONTACTS

<p><u>Owner/Operator</u> National Heritage Academies Jacques Soumis Construction Project Manager 3850 Broadmoor SE Grand Rapids, MI 49512 616-285-1589 jsoumis@nhaschools.com</p>	<p><u>Client Representative</u> Bill Torres Gilbane Superintendent 720-633-1268 wtorres@gilbaneco.com</p>
<p><u>SWMP / GEC Developer</u> Merrick & Company Tom Habberfield, PE Engineer 5970 Greenwood Plaza Blvd Greenwood Village, CO 80111 303-353-3927 Tom.habberfield@merrick.com</p>	<p><u>Qualified Stormwater Manager</u> TBD</p>
<p><u>BMP Contractor</u> TBD</p>	<p><u>Stormwater Inspector</u> TBD</p>

POTENTIAL POLLUTANT SOURCES

As required by the CDPS General Permit (COR-400000), the following sources and activities were evaluated for their potential to contribute pollutants to stormwater discharges.

Potential Pollutant Source	Expected on this Project	Processes, Storage Areas, or Activities Associated with this Pollutant and Mitigation Practices
Disturbed/Stockpiled Soils	yes	<p>Disturbed soils will be created wherever clearing, grubbing, grading, excavating, or heavy vehicle traffic operations are performed. Stockpiled soils created by any of these soil disturbing activities will be located in the SSA.</p> <p>Mitigation of disturbed soils will be achieved mainly through the use of silt fence, sediment basins, sediment control logs, inlet protection, surface roughening to increase infiltration, and seeding and mulching of all idle and/or completed areas. Soils present on site have a high hydraulic conductivity so surface roughening will greatly reduce runoff.</p>
Vehicle Tracking on to Public Roadways	yes	<p>Vehicle tracking occurs when vehicles contact disturbed soil areas and move off the site on to paved roadways.</p> <p>The main technique that will be used to mitigate this pollutant source is through the use of a VTC at the properties access point, the use of a stabilized staging area (SSA) and controlling site access. Vehicles not directly involved in construction activities should remain in the SSA whenever possible. If these mitigation techniques are insufficient, street sweeping or scraping of vehicle tires prior to exiting the property may also be required.</p>
Management of Contaminated Soils	no	<p>Contaminated soils are not known to be present on this site. If soils suspected to be contaminated are encountered during construction, all work in the area will halt until a proper assessment has</p>

		<p>been performed.</p> <p>Soils contaminated with non-hazardous materials during construction activity (i.e. from minor spills or leaky equipment) will be dug up and moved to the on-site dumpster immediately.</p>
<p>Loading and Unloading Operations</p>	<p>yes</p>	<p>Loading and unloading operations will occur only within the SSA.</p> <p>A specific area/areas within the SSA will be designated for loading/unloading operations. Workers involved in these activities will be properly trained in these operations as well as spill mitigation and containment. Spill kits will be provided in the vicinity of areas designated for loading/unloading operations.</p>
<p>Outdoor Storage Activities</p>	<p>yes</p>	<p>Any chemicals, liquids, powders, etc. stored in small containers should be placed indoors by the end of the workday. Larger containers such as drums, totes or tanks are required to be double-walled or stored in sufficiently sized secondary containment. All materials stored on site should be kept within the SSA.</p> <p>The entirety of the site will be bounded by silt fence so runoff from materials stored outdoors will, at a minimum, pass through silt fence prior to contacting offsite stormwater.</p>
<p>Vehicle and Equipment Maintenance and Fueling</p>	<p>yes</p>	<p>Any leaking equipment should be removed from service and placed in the SSA until repairs are complete. On-site refueling tanks need to be double-walled or placed within secondary containment. A spill kit will be available nearby during all refueling or vehicle maintenance activities.</p> <p>Vehicle maintenance/refueling areas must be located away from any surface water, drainages, or stormwater outfalls. Any soils contaminated during refueling/maintenance operations must be cleaned up ASAP and moved to the dumpster.</p>
<p>Dust and/or particulate generating processes</p>	<p>yes</p>	<p>Site soils consist almost entirely of sand. Sand particles are relatively large compared with most other soils and are less likely to create significant</p>

		<p>dust. However smaller particles do exist in the soil and coupled with the semi-arid climate of the region the potential for dust generation does exist.</p> <p>Should dust generation become an issue, the main technique to mitigate this hazard will be through suppression (usually by wetting the materials).</p> <p>No particulate generating processes are expected on this site.</p>
Routine Maintenance	no	N/A
Waste Management	yes	<p>Dumpsters will be located in the SSA.</p> <p>Non-hazardous solid wastes will be stored in the dumpster located in the stabilized staging area. Whenever the dumpster becomes full it should be removed and replaced ASAP. Liquid wastes will be stored in closed containers either indoors or within secondary containment until they can be disposed of properly.</p>
Concrete Truck/Equipment Washing	yes	<p>The contractor will determine if and where a CWA will be installed. If no on-site CWA is designated, the contractor providing concrete-related services will be responsible for disposal of excess concrete and/or washing operations.</p> <p>If the contractor determines that an on-site CWA is necessary, a CWA will be constructed and maintained in the SSA as detailed in the specifications provided in the El Paso County Drainage Criteria Manual (DCM).</p>
Dedicated Asphalt and Concrete Batch Plants	no	N/A
Non-industrial Waste Sources	yes	<p>Non-industrial waste such as worker trash will be disposed of in trash cans located throughout the property. Larger trash such as scrap building materials and their packaging will be disposed of in larger dumpsters located in the SSA. Portable toilets will be used for sanitary waste and will be located in the SSA and regularly serviced by a licensed sanitation contractor.</p>

		<p>Good housekeeping will be the main BMP for small refuse such as litter or worker trash. Worker trash and litter will be picked up as necessary, placed into small bins, and properly disposed of offsite. Larger refuse will be stored in dumpsters and managed as described under the "Waste Management" section. Portable toilets will be secured in place to avoid tipping over and cleaned out regularly by a subcontractor. Portable toilets will not be located adjacent to surface water or storm drains.</p>
Other Potential Pollutants	no	<p>No other potential pollutants or processes or procedures that could result in a spill were identified for this project.</p>

EROSION AND SEDIMENT CONTROL MEASURES

Structural Best Management Practices (BMP's) utilized on site and their exact locations are noted in the GEC Plans located in Appendix E. BMP's expected or likely to be utilized on site include: silt fence (SF), a VTC, a SSA, sediment control logs (SCL's), inlet protection (IP), surface roughening (SR), erosion control blankets (ECB), diversion ditches (DD), temporary sediment basins (SB), and seeding and mulching (SM).

Site Control

Construction Fence (CF) consists of orange plastic fencing material, or other El Paso County approved material, attached to support posts and used to limit access to the construction site.

A Concrete Washout Area (CWA) is a shallow excavation with a small perimeter berm to isolate concrete truck washout operations. The washout area shall be combined with a vehicle tracking control pad to control tracking of mud. A CWA will be installed in the SSA.

Sediment Control BMP's

Silt Fence (SF) is a temporary sediment barrier constructed of woven fabric stretched across supporting posts. The bottom edge of the fabric is placed in an anchor trench that is backfilled with compacted soil. Silt fence will be installed along the entire perimeter of the site except at the site access point.

Vehicle Tracking Control (VTC) consists of a pad of 3" to 6" rock at all entrance/exit points for a site that is intended to help strip mud from tires prior to vehicles leaving the construction site. A VTC will be installed at the access point to the property.

A Sediment Control Log (SCL) consists of a cylindrical bundle of wood, coconut, compost, excelsior, or straw fiber designed to form a semi-porous filter, able to withstand overtopping. The log can be staked into the ground and promotes sediment deposition on its upstream side. SCL's will be installed along the majority of the northern property line in conjunction with the SF.

Inlet Protection (IP) consists of a reinforced rock berm placed in front of (but not blocking) a curb opening inlet or around an area inlet to reduce sediment in runoff approaching the inlet. Inlet protection will be installed at all inlets in vicinity of the site and along some gutters.

A Sediment Basin (SB) is an impoundment that captures sediment laden runoff and releases it slowly, providing prolonged settling times to capture coarse and fine-grained soil particles. Three sediment basins are planned for this site. One to be located in the southern portion of the property that will capture runoff from approximately 3.7 acres of the site. The second in the northern portion of the property that will capture runoff from approximately 3 acres of the site. The last along the central portion of the western property boundary that will capture runoff from approximately 0.9 acres of the site.

Erosion Control BMP's

A Stabilized Staging Area (SSA) consists of stripping topsoil and spreading a layer of granular material in the area to be used for a trailer, parking, storage, unloading and loading. A stabilized staging area reduces the likelihood that the vehicles most frequently entering a site are going to come in contact with mud. A stabilized staging area will be constructed in the southern portion of the property.

A Diversion Ditch (DD) is a small earth channel used to divert and convey runoff. Depending on slope, the diversion swale may need to be lined with erosion control matting, plastic (for temporary installations only), or riprap. Diversion ditches will be constructed in several areas in order to convey water to the planned sediment basins.

A Temporary Slope Drain (TSD) is a small culvert or plastic liner to convey runoff down a slope or channel bank to reduce the occurrence of rill and gully erosion. TSD's are required to be installed at all inlets to temporary sediment basins.

Surface Roughening (SR) consists of creating a series of grooves or furrows on the contour in all disturbed, graded areas to trap rainfall and reduce the formation of rill and gully erosion. Surface roughening will be used throughout the property in all temporarily inactive areas prior to seeding and mulching.

Seeding and Mulching (SM) consists of drill seeding disturbed areas with grasses and crimping in straw mulch to provide immediate protection against raindrop and wind erosion and, as the grass cover becomes established, to provide long-term stabilization of exposed soils. Seeding and mulching will be used across the entire site upon completion of grading activities with the exception of the SSA and VTC areas which will remain in place for future project work. If the operator chooses to remove the SSA or VTC, that remaining area will also be seeded and mulched

Erosion Control Blankets (ECB) are a fibrous blanket of straw, jute, coconut or excelsior material trenched in and staked down over prepared, seeded soil. The blanket reduces both wind and water erosion and helps to establish vegetation. Erosion control blankets will be installed upon completion of grading activities in all areas where grade exceeds 4:1.

STORMWATER MANAGEMENT PRACTICES

The major mechanism for reducing runoff and erosion on site will be through SR, SF, DD's, and SB's. Combined with the high hydraulic conductivity of site soil these methods alone should nearly eliminate all runoff from the site. Maintaining SB's, DD's, and SF and making sure SR is implemented properly are the most important aspect of managing stormwater on site.

VTC's must always be used when exiting the property and vehicles not used for construction should remain in the SSA whenever possible. Likewise, vehicles used in construction activities should refrain from exiting the property whenever possible.

General worker training is an important aspect of stormwater management. Workers who are trained to notice and report damaged or ineffective control measures assist greatly in maintaining an effective stormwater management strategy outside of the scheduled weekly inspections.

Good housekeeping, and proper waste management and storage techniques are important in keeping a clean and orderly project site. Messy sites not only look bad, but spills are more likely, damage to vehicles or building materials are more common, and there are generally higher incidences of worker injury.

BMP INSPECTION AND MAINTENANCE PROCEDURES

During active construction, an inspection of the project site to assess whether BMP's are performing adequately, if any BMP's require maintenance, or if additional BMP's are necessary will occur biweekly. Additional inspections will be required to be conducted within 24 hours following any storm event that results in stormwater runoff conditions. An inspection report form (See Appendix C) must be completed, dated, and signed by the person performing the inspection after every inspection has concluded. These forms will be stored along with this SWMP for the lifetime of the project. Inspections may be suspended if snow cover exists across the entirety of the project site and construction has been temporarily halted. As soon as construction resumes, or snowmelt conditions exist inspections of the project site will resume.

Any BMP's found to be damaged or no longer functioning properly will be repaired, maintained, or replaced as necessary. If a BMP is found to be inadequate the stormwater manager will assess the situation and make changes to the plans as necessary to comply with the stormwater permit. The stormwater manager is free to add additional BMP's as they deem necessary to comply with the stormwater permit as long as the changes are noted in the plans. Any of the aforementioned conditions should be addressed as soon as possible. El Paso County shall be notified of any changes to the SWMP.

Upon completion of construction and initial stabilization of the disturbed areas, inspections will be conducted monthly until relative vegetative cover has rebounded to at least 70% of pre-construction levels. During this phase of the project post-storm event inspections are not required.

This report is to be stored on site for the lifetime of this project including the post-construction phase prior to achieving final stabilization. The report will be stored in the job trailer during active construction and at a yet-to-be-determined location after initial stabilization efforts have concluded when the trailer has been scheduled for removal.

In general, the SWMP, and accompanying GEC, are "living documents" that are constantly updated to 1) show location and describe pollutants and pollutant generating activities on site; and 2) show and describe BMPs used to mitigate against the offsite discharge of pollutants; and 3) show removal of same. The initial matrix of construction activity, potential pollutant sources, and mitigating BMPs contained herein is generally sufficient for a construction site of this size and nature. However, the SWMP Manager is free to choose any other BMP he / she may desire as long as it follows good hydrologic and pollution control practices. A new BMP or control measure would be deemed a SWMP change. The location needs to be noted on the GEC maps, descriptions / details need to be included in the SWMP, and the assigned El Paso County municipal inspector shall be notified.

MATERIALS HANDLING, SPILL PREVENTION, AND WASTE MANAGEMENT AND DISPOSAL

MATERIALS HANDLING AND SPILL PREVENTION

All materials used during construction with the potential to impact stormwater quality are required to have a procedure in place designed to minimize potential impacts to stormwater. Procedures or significant materials required to have these procedures in place include (but are not limited to) the following:

- The storage of exposed building materials
- Concrete (including concrete mix, spoils, and washout)
- Any hydrocarbon containing liquids
- Paints, solvents, and detergents
- Fertilizers or chemicals
- Waste materials
- Equipment maintenance or fueling procedures
- Plastic pellets/wrapping
- Metallic products
- Ashes, slag, and sludge
- Any hazardous substance (CERCLA section 101(14))

Any of these materials must be stored, used and managed in such a way that any stormwater contacting them does not contribute pollutants to runoff. Any of these processes or procedures that have the potential to cause a spill must have a spill prevention and response procedure in place.

All liquids that may contribute pollutants to stormwater runoff will be stored in secondary containment or indoors. Containers used to store these liquids should be checked frequently for signs of leaks or flaws and any issues shall be addressed immediately. Any equipment found to be leaking fluids will be put out of service immediately, a drip pan will be placed beneath the leak, and the equipment will not be allowed to return to service until proper maintenance/repairs are complete.

All procedures that involve the use of these chemicals (such as fueling or spray-on application of paints/chemicals) must have spill kits on hand in the event that a release occurs. Any soils that come in contact with spilled liquids shall be removed and disposed of in accordance with state, local, and/or national laws and regulations.

All spills or releases that enter surface water or sanitary sewers must be reported to CDPHE immediately and written notification must be provided to CDPHE within 5 days of the discovery of the release. Any spill/release of hazardous substances or

spill/release of more than 25 gallons of fuel must also be reported regardless of whether or not the substance comes into contact with water.

WASTE MANAGEMENT AND DISPOSAL INCLUDING CONCRETE WASHOUT

Solid wastes generated from construction activity will be moved off-site as soon as is practical. If temporary storage of solid waste materials on-site is necessary, all waste materials will be placed into a dumpster. As soon as dumpsters are full, they will be removed from the project site and sent to a recycling center or waste processing facility as applicable. If any waste materials are found outside of their designated areas project personnel will move them to the proper location as soon as possible.

Portable restroom facilities will be located away from high traffic areas, any areas where surface water exists all or part of the time, storm drain locations, areas where concentrated flow of stormwater runoff is likely, and if possible, paved surfaces.

Portable sanitary facilities will be anchored in such a way as to prevent tipping over and cleaned and maintained by a licensed contractor.

Excess concrete and/or washout water may only be discharged to the ground surface if a formal designated Concrete Washout Area (CWA) has been installed on site (See Appendix E for design details and requirements for a CWA) and must never be discharged to surface waters, drainages, or storm sewer systems. CWA's consist of a shallow excavation with bermed areas on 3 sides and a small ramp leading down to the washout area. CWA's must also be equipped with a Vehicle Tracking Control (VTC) on the ramp side and proper signage. As with other BMP's, proper inspection and maintenance of a CWA is required. Concrete waste must be removed from the CWA by an approved disposal contractor whenever the excavated area reaches 2/3 of its maximum capacity. If a CWA is deemed necessary it will be constructed in the SSA.

ALLOWABLE NON-STORMWATER DISCHARGES

Allowable non-stormwater discharges include:

- Emergency fire-fighting activities
- Concrete washout water
- Construction dewatering activities

Though not anticipated, the discharge of water associated with emergency fire-fighting activities is always a possibility. Likewise, the point of discharge cannot be determined as there is no way to predict the location of any fire-fighting activity.

Concrete washout water may be discharged to a designated CWA that is constructed to El Paso County standards.

Though unlikely, it is possible that groundwater may be encountered during this project. Should groundwater be encountered in an excavation, the contractor may discharge the water to the ground surface provided that they have previously obtained an excavation dewatering permit for the site from Colorado Department of Public Health and Environment (CDPHE).

The locations of all sources (if encountered) of allowable non-stormwater discharges will be noted in the SWMP and on the accompanying GEC maps.

PROJECT SEQUENCING

Project Phase	BMPs to be implemented during each phase*
Pre-construction – 1 week	<ul style="list-style-type: none"> • Install initial BMP's, perimeter controls, and access points. Initial BMP's include SB's, DD's, CS, IP, SF, VTC's, SSA, and SCL's
Pre-construction Inspection	<ul style="list-style-type: none"> • Meet with the City Engineering Inspector prior to the start of construction • Install and/or alter BMP's as instructed by the Engineering Inspector
Construction –Utility installation – 3 weeks	<ul style="list-style-type: none"> • Install storm, sanitary, and water utilities • Fine grading of foundation area, place concrete for building foundation • Place concrete for sporting facilities
Construction – Fine grading, building construction, parking lot and roadway construction – 3 months	<ul style="list-style-type: none"> • Fine grading of the remainder of the site • Place concrete and asphalt for parking lot, roadways, sidewalks, and sporting facilities • Building construction
Construction – Initial Stabilization Preparation – 1 week	<ul style="list-style-type: none"> • Surface roughen all exposed soil on site • Apply seed and mulch to exposed soils

**Stormwater
Management Plan**
*National Heritage Academies
El Paso County, CO*

<p>Post-construction – 2 years (or until additional construction phases have been approved)</p>	<ul style="list-style-type: none"> • Perform monthly inspections to monitor vegetation growth • Perform BMP maintenance/repairs and reseed where necessary • Apply noxious weed control measures as necessary • Continue to monitor until 70% vegetative cover is achieved
<p>Final Inspection</p>	<ul style="list-style-type: none"> • Meet with the City Engineering Inspector • Make changes or repairs as instructed by the inspector. • If requirements have been met, receive approval from the inspector that requirements have been met.
<p>Permit Closure</p>	<ul style="list-style-type: none"> • Submit a termination application to the CDPHE WQCD notifying them that the required vegetative cover has been achieved and request a Notice of Termination • The stormwater permit is considered closed as soon as the Notice of Termination from CDPHE WQCD is received. • Follow up with El Paso County for closure of any local grading or erosion control permits (ESQCP) • Ensure return of surety

FINAL STABILIZATION

FINAL STABILIZATION METHODS

Final stabilization is the process that is undertaken at the completion of construction activities in order to provide of means of mitigating stormwater pollutants, particularly erosion and sedimentation, on a permanent basis. Several different methods are commonly used achieve permanent stabilization of disturbed areas including:

- Hardscaping – includes the use of concrete, asphalt, gravel, or other impervious surfaces
- Landscaping – gardens are an acceptable method of final stabilization and do not need to meet the 80% revegetation criteria
- Soil preparation – includes addition of fertilizer, soil buffers to control pH, and/or tilling of the soil to provide an adequate seed bed
- Stabilizing the soil – includes the use of crimp mulch and erosion control blankets to prevent soils from mobilizing
- Selection of an appropriate seed mix – this depends largely on the region in which the project is located and the future use of the property.
- Maintenance of any structural BMP's necessary to prevent erosion and sedimentation prior to achieving final stabilization
- Removal of BMP's once final stabilization is achieved

PLAN TO ACHIEVE FINAL STABILIZATION

Upon completion of construction activities, remaining disturbed areas will undergo initial stabilization. Initial stabilization will consist seeding and mulching of the entirety of the site using a native grasses seed mix. See plan drawings located in Appendix E.

COMPLETION OF FINAL STABILIZATION

Final stabilization is reached when all ground surface disturbing activities at the site have been completed, and uniform vegetative cover has been established with an individual plant density of at least 70% of pre-disturbance levels, or equivalent permanent, physical erosion reduction methods have been employed. Upon attaining the required vegetation coverage, all temporary BMP's must be removed prior to terminating the permit.

LONG-TERM STORMWATER MANAGEMENT

A detention basin will be constructed on the south side of the property between the parking lot and Hames Drive. All stormwater from the main building, parking areas, and roadways will drain to this detention basin. The design of the detention basin is detailed in the Drainage Report.

All non-hardscaped areas will be seeded and mulched upon completion of construction activities. Astro-turf generally has a low runoff coefficient and the field will be sloped very gradually to the northwest so the potential for contributing pollutants to stormwater via runoff is low from this area. The proposed playground area will be covered in wood chips and is unlikely to contribute contaminants to stormwater. Due to its purpose, vehicular traffic along the emergency access road will be low and as such the potential of contributing pollutants to stormwater is low. Likewise, the outdoor court will have no vehicular traffic, and therefore has a low potential of contributing pollutants to stormwater. Grass buffers will be present between all of these hardscaped areas and the nearest stormwater inlets allowing for the capture of particulates carried by stormwater. Additionally, Type A soils are present across site. Type A soils have a high infiltration potential and further reduce runoff potential from the property.

INSPECTION REQUIREMENTS

Inspection requirements are detailed in the permits located in Appendix A. The City of Colorado Springs inspection form, as adopted by El Paso County is included as Appendix C.

Note that all inspections, whether self-performed by the contractor, or by a third party inspector, will become a permanent part of the SWMP document and they need to be signed and kept onsite with the rest of the SWMP materials.

APPENDIX A
PERMITS

CDPS Permit Certification COR [#####]

CDPS General Permit

El Paso Erosion and Stormwater Quality Control Permit (ESQCP)

APPENDIX B

BMP DETAILS/SPECIFICATIONS

All BMP / Control Measure Details and specifications are contained in the standalone Pre-Development Grading and Erosion Control Plans, contained in Appendix E.

APPENDIX C
INSPECTION REPORTS

APPENDIX D
MISCELLANEOUS INFORMATION

NRCS Soils Report

Terracon Geotechnical Report

FEMA FIRM maps

APPENDIX E
PRE DEVELOPEMNT GRADING & GEC PLANS