

**GRADING, EROSION AND
STORMWATER QUALITY CONTROL PLAN**
for
NEW WIDEFIELD PK-8 SCHOOL

Widefield, CO

March 2018

Prepared for:

Widefield School District 3

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Provide blanks for SWMP Administrator and Contractor, to be filled in.

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NEW WIDFIELD PK-8 SCHOOL**

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1.0 STORMWATER QUALITY STATEMENT & OBJECTIVES

Stormwater quality best management practices shall be implemented to minimize soil erosion, sedimentation, increased pollutant loads and changed water flow characteristics resulting from land disturbing activity, to the maximum extent practicable, so as to minimize pollution of receiving waters.

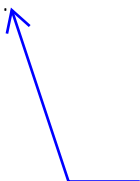
Per Appendix A of the Colorado Department of Health, Water Quality Control Division's (the Division) "General Permit Application for Stormwater Discharge Associated with Construction Activities", the goal of the Stormwater Management Plan (SWMP) is:

"To identify possible pollutant sources that may contribute pollutants to stormwater, and identify Best Management Practices (BMPs) that, when implemented, will reduce or eliminate any possible water quality impacts. The SWMP must be completed and implemented at the time the project breaks ground, and revised if necessary as construction proceeds to accurately reflect the conditions and practices at the site."

This document is not intended to address training, site specific operational procedures, logistics, or other "means and methods" required to construct this project.

Drexel, Barrell & Co. has been retained to provide civil engineering services for the design of this project. Drexel, Barrell & Co. is not responsible for implementation and maintenance of the Stormwater Management Plan.

Address SWMP Administrator who is responsible, reference the blank to be filled in if not known yet.



2.0 SITE DESCRIPTION

2.1 DESCRIPTION OF CONSTRUCTION ACTIVITIES

The project involves the development of a new PK-8 school site at the northeast corner of Fontaine Blvd. and Lamprey Dr. in El Paso County, Colorado. The proposed development is a two story building, a track & field, associated parking, driveways, sidewalk, utilities and landscaping. This report is only to address the early overlot grading that is to be done on the site, which will export soil off-site to areas north and west of Lamprey Dr. where it becomes the responsibility of Lorson Ranch. These grading activities will be completed in just one phase. Since site construction will occur in the future, there are no stockpile areas or asphalt/concrete batch plants.

The associated site work to be completed at a later date will include fine grading, utility and drainage improvements, asphalt and concrete paving, building construction and associated temporary construction BMP's. This work will be done at a later date upon county approval of a site plan.

2.2 EXISTING SITE CONDITIONS

The project area, (comprising approximately 25.1 acres), is located at the northeast corner of Fontaine Blvd. and Lamprey Dr. The majority of the site ground cover consists of native and non-native vegetation including primarily grasses along with some shrubs. The site generally slopes from east to west at slopes of approximately 2 to 18%. The majority of the site lies within the Jimmy Camp Creek Drainage Basin. There are no springs, streams, wetlands or other surface waters on the site.

provide existing % coverage

2.3 ADJACENT AREAS

The site is bound on the west and north by Lamprey Road, on the south by Fontaine Blvd. and on the east by an undeveloped lot to be developed as residential in the future. Also to the east of the site is a utility corridor/easement/open space.

2.4 SOILS

From the Natural Resources Conservation Service (NRCS), the site is underlain by Manzanst clay loam, a type 'C' soil and by Razor-Midway complex, a type 'D' soil. Runoff coefficients were selected based on type 'C' hydrologic soils for the developed condition. See soils map in the Appendix.

← Discuss soil erosion potential and potential impacts upon discharge


2.5 AREAS AND VOLUME STATEMENT

The project area consists of approximately 25.1 acres, all of which will be disturbed. Unadjusted earthwork volumes are approximately 241,000 CY of cut and 97,000 CY of fill for a net export volume of approximately 150,000 CY.

2.6 CONTROLS AND MEASURES DURING CONSTRUCTION

Stabilization activities are anticipated to begin in the Spring of 2018. A construction schedule will be prepared by the contractor prior to land disturbing activities. The general sequence of major construction activities is as follows:

1. Temporary Erosion Control Measures – Temporary erosion control measures, such as silt fence, straw bale check dams and construction of a vehicle tracking pad will be completed prior to any other large scale activity. The vehicle tracking pad will ensure a reduction of tracking of soil on and off the construction site.
2. Trash and Debris Removal – Existing trash and debris shall be removed from the site and hauled to designated receiving facility.
3. Site Clearing – The remainder of the area to be disturbed for construction will be cleared and grubbed, as necessary to the perimeter of erosion control. The sequence of the areas to be cleared and grubbed are subject to the contractor's means and methods of construction of the site.

4. Overlot Grading – Overlot grading will occur on the site to bring the site to the proposed sub-grade elevations in paved and building footprint areas and to finished grade elevations in the landscape and detention areas. Excess dirt from the site will be removed from the site and hauled onto the Lorson Ranch residential development to the north and west.  **Temporary revegetation**
5. Utility Installation – The site will have utilities installed in the future at the time of the school construction, but no utilities are being installed initially.
6. Final Grading – Final grading will occur on the site in the future at the time of the school construction, but not at this time.
7. Permanent Revegetation – Permanent revegetation will occur at the completion of the future construction of the school site with the installation of final landscaping and irrigation.
8. Removal of Temporary BMP's – Temporary erosion control measures will remain on site until the future construction of the school site begins. At which point temporary BMP's for that project construction will be implemented.
9. Housekeeping – The best BMP for a job site is good housekeeping around the site. Routine site trash pickup and routine BMP inspection and maintenance are paramount for keeping a job site clean and tidy. All petroleum storage areas in the staging area should be checked daily for leaks. Any leaks shall be reported to the site foreman for clean up. All personnel on site for both the contractor and subcontractors should be briefed on spill cleanup and containment procedures. Employees shall also be briefed as to where the spill cleanup materials can be found if a spill should occur. The spill plan shall be produced by the general contractor for the project and remain onsite for the duration of the project.

Contractor shall coordinate with City to obtain the necessary contacts in the case that a spill occurs.

Provide initial required contacts and procedures.

2.7 POTENTIAL POLLUTION SOURCES

The following is a summary of potential pollution sources and their associated measures intended to minimize the risk of pollution for this project.

- 1) Disturbed and stored soils: Straw waddles/fiber rolls, straw bale check dams and gravel bag check dams.
- 2) Vehicle tracking and sediments: VTC and Street Sweeping
- 3) Vehicle and equipment maintenance and fueling: Spill prevention procedures
- 4) Dust or particulate generation from earthmoving activities and vehicle movement: water trucks for site watering.
- 5) On site waste management of solid wastes (construction debris): Waste container placement, covering and disposal

The following items are not anticipated to be potential pollution sources for this phase of the project:

- 1) Management of contaminated soils
- 2) Outdoor storage of fertilizers, chemicals or potentially polluting construction material
- 3) Dedicated asphalt or concrete batch plants

2.8 NON-STORMWATER DISCHARGES

Non-stormwater discharges possibly encountered during construction may include: watering down of the site during high winds to minimize wind

erosion and water utilized in soil compaction efforts. No groundwater or construction dewatering is anticipated.

2.9 RECEIVING WATER

Runoff generated by the proposed project will be routed to the temporary sediment basins and outfalls to the existing storm sewer system that eventually continues to Jimmy Camp Creek to the west.

East Trib. JCC, then...

3.0 SITE MAP

Attached as part of this plan is a Site Map (See Appendix). The drawing identifies the following:

- 1) Project area boundary
- 2) Limits of ground surface disturbance
- 3) Location of erosion control facilities or structures (BMP's)
- 4) Boundaries of 100-year floodplains (if applicable)
- 5) Streamside Overlay Boundaries (if applicable)

The following items are not indicated on the attached drawings, but will be determined by the individual contractors prior to and during construction activities:

and shown on the SWMP plan

- 1) Areas used for storage of construction materials, soils, or wastes
- 2) Location of portable toilets and waste receptacles
- 3) Location of additional BMP's that may become necessary as work progresses

These items shall be added to the Site Map by the Contractor.

4.0 BMP's FOR STORMWATER POLLUTION PREVENTION

Best management practices (BMPs) used throughout the site shall include: silt fence, vehicle tracking control, straw bale check dams and temporary sedimentation basins.

4.1 EROSION CONTROL – STRUCTURAL PRACTICES

The silt fence locations is shown on the Site Map and shall be in place before project grading and remain in place through final stabilization.

One vehicle tracking area will be used. It is located at the north end of the site off of existing Lamprey Dr. to prevent mud from being tracked onto the roadway surface once Lamprey Dr. is complete and paved. Periodic clean up around the entrance area is expected nevertheless.

Straw bale check dams will be installed at the locations shown on the Site Map.

An EDB is proposed for the development of the site and will be utilized as a temporary sediment basin in the interim. It is located at the north end of the site as shown on the Site Map. Two other temporary sediment basins will be installed on the south end of the site as shown on the Site Map.

4.2 EROSION CONTROL – NON-STRUCTURAL PRACTICES

Street sweeping around the construction site will be utilized when tracking of mud occurs on paved streets. The sweeping will be required after any significant tracking has occurred; significant meaning any visible amount that cannot be completely cleaned by hand. The adjacent drive surfaces will be cleaned at the end of each day of construction activities. Sweeping efforts will continue as necessary until construction operations are completed.

Seeding and mulching

4.3 MATERIALS HANDLING

Any waste material found on-site or generated by construction will be disposed of in a manner as to prevent pollutants in storm water

discharges. In the event that waste is to be stored on-site, it shall be in an area located a minimum of 100 feet from all drainage courses, whenever possible. Whenever waste is not stored in a non-porous container, it shall be in an area enclosed by a compacted earthen ridge. If the enclosed waste area is located on porous soil, the area shall be covered with a non-porous liner to prevent soil contamination. Whenever precipitation is predicted, the waste shall be covered with a non-porous cover, anchored on all sides to prevent its removal by wind, in order to prevent precipitation from leaching out potential pollutants from the waste.

Any designated fueling areas shall be located a minimum of 100 feet from all drainage courses, whenever possible. If the fueling area is located on porous soil, the area shall be covered with a non-porous lining to prevent soil contamination and any spillage shall be cleaned up immediately.

Whenever precipitation is predicted, any construction materials stored on site shall be covered with a non-porous cover, anchored on all sides to prevent its removal by wind, in order to prevent precipitation from leaching out potential pollutants from the materials.

Any chemical stored on site should be kept in an area with berms constructed around the perimeter in order to confine any spills or in a lockable storage container.

4.4 GROUNDWATER & STORMWATER DEWATERING

There is not expected to be any groundwater dewatering required as part of this project. In the event that stormwater enters an excavation and dewatering is necessary, a separate construction dewatering permit will be required.

5.0 TIMING SCHEDULE

The project is anticipated to begin construction in the spring of 2018 and be completed in the summer of 2019. The contractor shall be responsible for producing a schedule that will show at a minimum: start and

completion times including site grading operations, and the removal of the temporary erosion and sediment control measures.

6.0 FINAL STABILIZATION/LONG-TERM STORMWATER MANAGEMENT

Final stabilization shall not be considered complete until 70% of original vegetated cover is established on areas not to be hard-surfaced.

Temporary sediment and erosion control measures installed prior to the construction phase will remain in place until this time. Any sediment that collects within the site's drainage system is considered unstabilized soil and must be removed prior to the site being considered finally stabilized.

All stabilization efforts shall conform to the specifications in the Drainage Criteria Manual, Vol. 1, Chapter 14. See Landscape plans.

revise

7.0 INSPECTION AND MAINTENANCE

A site inspection of all erosion control facilities will be conducted every 14 days and within 24 hours after every precipitation event. The entrances to the construction site shall be inspected daily and existing street cleaned, as necessary, of all materials tracked out of the site.

The construction site perimeter, disturbed areas, and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWMP shall be observed to ensure that they are operating correctly.

Based on the results of the inspection, the description of potential pollutant sources and the pollution prevention and control measures that are identified in this plan shall be revised and modified as appropriate as soon as practicable after such inspection. Modification to control measures shall be implemented in a timely manner, but in no case more than seven (7) calendar days after the inspection.

The operator shall be responsible for documenting inspections and maintaining records. Uncontrolled releases of mud or muddy water or

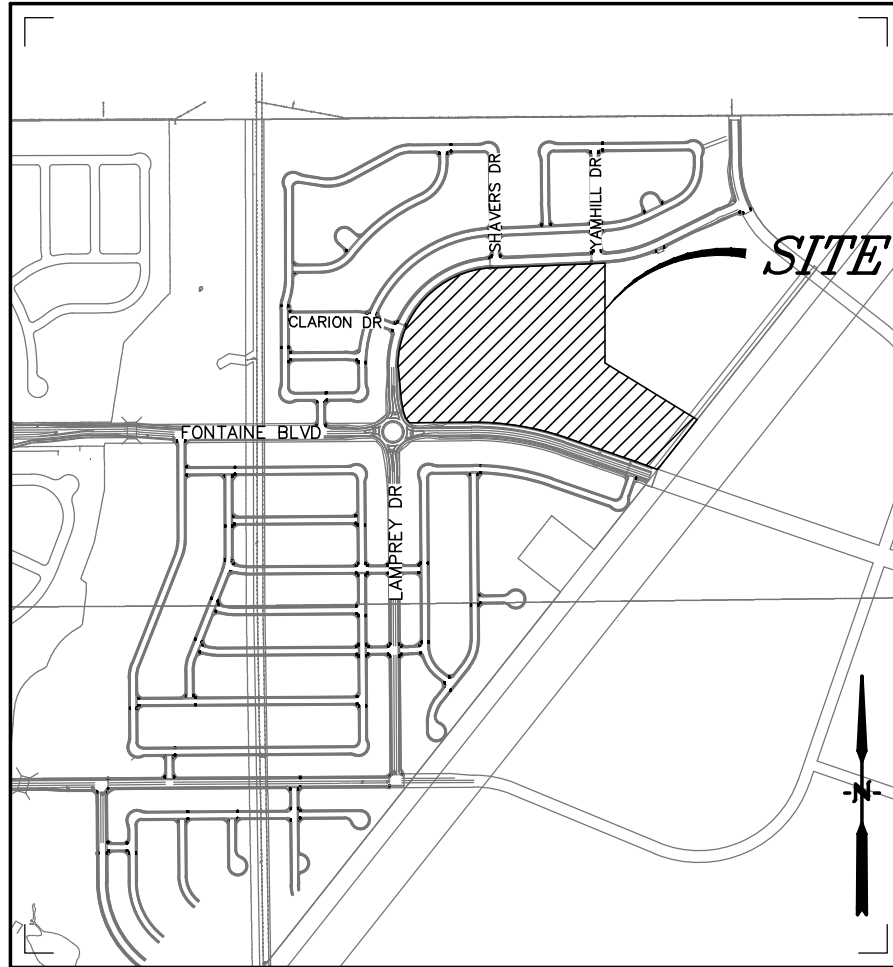
measurable quantities of sediment found off the site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measure taken to clean up the sediment that has left the site. This record/log should be kept on site and made available to the City of Colorado Springs or CDPHE personnel upon request.

All temporary and permanent erosion and sediment control facilities shall be maintained and repaired per manufacturer's specifications to assure continued performance of their intended function. Repairs should be completed within 24 to 48 hours. Silt fences may require periodic replacement.

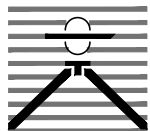
8.0 REFERENCES

- [1] General Permit Application and Stormwater Management Plan Preparation Guidance for Stormwater Discharges Associated with Construction Activities. Prepared by the Colorado Department of Health, Water Quality Control Division. Revised 7/2009.
- [2] City of Colorado Springs– Drainage Criteria Manual, Volume 1 and Volume 2, 2016.
- [3] NRCS Web Soil Survey, www.websoilsurvey.nrcs.usda.gov

APPENDIX



Vicinity Map
Not to scale



NEW WIDFIELD PK-8 SCHOOL
WIDFIELD, CO
VICINITY MAP

Drexel, Barrell & Co.
Engineers • Surveyors

DATE:

DWG. NO.

JOB NO:

21126-00CSCV

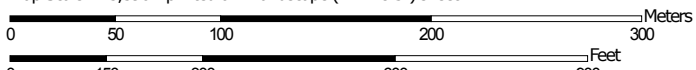
VMAP

SHEET 1 OF 1

Hydrologic Soil Group—El Paso County Area, Colorado



































Map Scale: 1:3,590 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

- Area of Interest (AOI)**
 -  Area of Interest (AOI)
- Soils**
 - Soil Rating Polygons**
 -  A
 -  A/D
 -  B
 -  B/D
 -  C
 -  C/D
 -  D
 -  Not rated or not available
 - Soil Rating Lines**
 -  A
 -  A/D
 -  B
 -  B/D
 -  C
 -  C/D
 -  D
 -  Not rated or not available
 - Soil Rating Points**
 -  A
 -  A/D
 -  B
 -  B/D
- Water Features**
 -  Streams and Canals
- Transportation**
 -  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
- Background**
 -  Aerial Photography
- Other**
 -  C
 -  C/D
 -  D
 -  Not rated or not available

MAP INFORMATION

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado
 Survey Area Data: Version 15, Oct 10, 2017

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

Date(s) aerial images were photographed: Nov 7, 2015—Mar 9, 2017

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
52	Manzanst clay loam, 0 to 3 percent slopes	C	30.9	58.3%
75	Razor-Midway complex	D	20.2	38.2%
108	Wiley silt loam, 3 to 9 percent slopes	B	1.9	3.5%
Totals for Area of Interest			53.0	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:

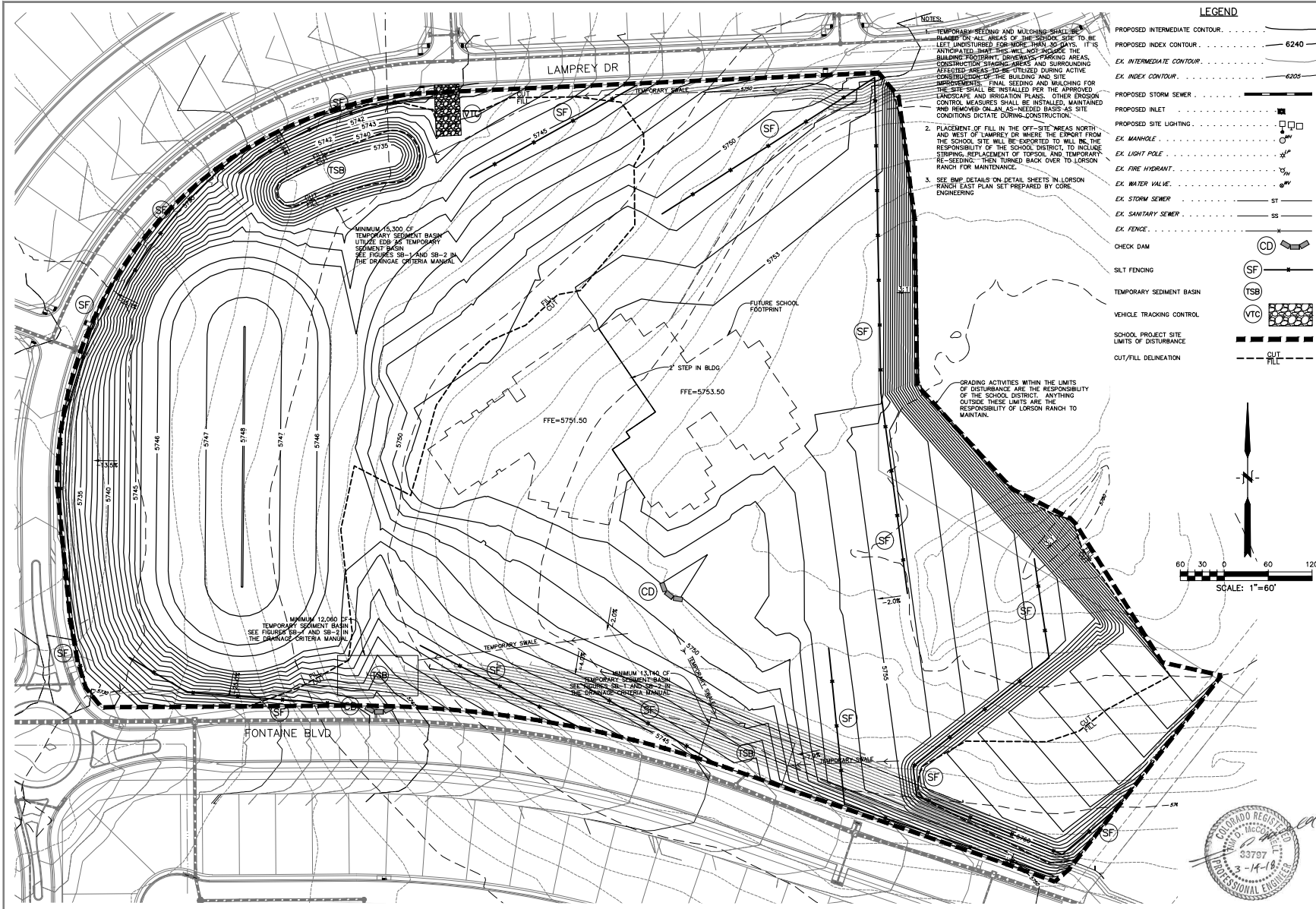
Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

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.



- NOTES:**
1. TEMPORARY SEEDING AND MULCHING SHALL BE PLACED ON ALL AREAS OF THE SCHOOL SITE TO BE LEFT UNDISTURBED FOR MORE THAN 30 DAYS. IT IS ANTICIPATED THAT THIS WILL NOT REQUIRE THE BUILDING FOOTPRINT, DRIVEWAYS, PARKING AREAS, CONSTRUCTION STAGING AREAS AND SURROUNDING AFFECTED AREAS TO BE UTILIZED DURING ACTIVE CONSTRUCTION OF THE BUILDING AND SITE IMPROVEMENTS. FINAL SEEDING AND MULCHING FOR THE SITE SHALL BE INSTALLED PER THE APPROVED LANDSCAPE AND IRRIGATION PLANS. OTHER EROSION CONTROL MEASURES SHALL BE INSTALLED, MAINTAINED AND REMOVED ON AN AS-NEEDED BASIS AS SITE CONDITIONS DICTATE DURING CONSTRUCTION.
 2. PLACEMENT OF FILL IN THE OFF-SITE AREAS NORTH AND WEST OF LAMPREY DR WHERE THE EXPORT FROM THE SCHOOL SITE WILL BE EXPORTED TO WILL BE THE RESPONSIBILITY OF THE SCHOOL DISTRICT, TO INCLUDE STRIPPING, REPLACEMENT OF TOPSOIL AND TEMPORARY PLANTING, THEN TURNED BACK OVER TO LORSON RANCH FOR MAINTENANCE.
 3. SEE RMP DETAILS ON DETAIL SHEETS IN LORSON RANCH EAST PLAN SET PREPARED BY CORE ENGINEERING.

LEGEND

PROPOSED INTERMEDIATE CONTOUR	---
PROPOSED INDEX CONTOUR	----
EX. INTERMEDIATE CONTOUR	----
EX. INDEX CONTOUR	----
PROPOSED STORM SEWER	---
PROPOSED INLET	□
PROPOSED SITE LIGHTING	□
EX. MANHOLE	○
EX. LIGHT POLE	○
EX. FIRE HYDRANT	○
EX. WATER VALVE	○
EX. STORM SEWER	---
EX. SANITARY SEWER	---
EX. FENCE	---
CHECK DIAM	CD
SILT FENCING	SF
TEMPORARY SEDIMENT BASIN	TSB
VEHICLE TRACKING CONTROL	VTC
SCHOOL PROJECT SITE LIMITS OF DISTURBANCE	---
CUT/FILL DELINEATION	---

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 BOLLER + COLORADO SPRINGS + O'REILLY

LORSON RANCH EAST
 EARLY SITE GRADING
 OFFSITE BORROW AREA - SCHOOL SITE

DATE: MARCH 14, 2018
 PROJECT NO: 100.040
 SHEET NUMBER: C5.12
 TOTAL SHEETS: 28

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]

PROFESSIONAL ENGINEER
 COLORADO REGISTERED
 33707
 3-14-18