STORMWATER MANAGEMENT PLAN

FOR LORSON RANCH EAST FILING NO. 4

(SF 19-008)

Stormwater Permit # COR03-----

Certification # _____

Owner/Developer:

Lorson, LLC
212 N. Wahsatch Avenue, Suite 301
Colorado Springs, Colorado 80903
Contact: Jeff Mark
(719) 635-3200

SWMP Administrator:

TNT Landscaping, Inc
Trevor Terrill
4795 Mark Dabling Rd.
Colorado Springs, Colorado 80918
(719) 659-5619

Engineers:

Core Engineering Group, LLC
15004 1st Avenue S.
Burnsville, MN 55306
Contact: Richard Schindler, P.E.
(719) 570-1100

SWMP Location

On-site (copy) and Lorson, LLC (original)

June, 2019

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1.0 INTRODUCTION

The proposed ***Lorson Ranch East Filing No. 4*** development is currently farm and ranching land consisting of 58.471 acres. This SWMP report covers construction that will disturb approximately 71 acres. The project area is bounded on the west by The East Tributary of Jimmy Camp Creek and Lorson Ranch East Filing No. 1, the east side by vacant land in Lorson Ranch, and on the south by vacant land in Lorson Ranch, and the north by Fontaine Boulevard. The property drains generally west towards the East Tributary of Jimmy Camp Creek where runoff is treated/detained before discharge into the East Tributary of Jimmy Camp Creek.

Lorson Ranch East Filing No. 4 consists of 246 residential lots and the supporting street infrastructure that will be completed in one phase. Lorson, LLC is the overall developer and will construct major infrastructure (grading, roads, utilities, etc.) to serve the entire site. This Stormwater Management Plan (SWMP) will only cover construction activities that are provided as the overall developer. As the Lorson Ranch development progresses, this SWMP plan may need to be updated to reflect the revised scope of infrastructure.

The major infrastructure for ***Lorson Ranch East Filing No. 4*** includes but is not limited to construction of residential streets, offsite/onsite utilities, and grading the site for residential lots. Detention/Water quality for this development is located in an adjacent pond (Pond E2) which will also function as temporary sediment basin. Pond E2 will treat and detain stormwater runoff prior to discharging into The East Tributary of Jimmy Camp Creek. Construction of Pond E2 will be covered under this SWMP Permit.

The legal description for ***Lorson Ranch East Filing No. 4*** is:

LORSON RANCH EAST FILING NO. 4 (Parcel A & Parcel B)
LEGAL DESCRIPTION

BASIS OF BEARING: THE EAST LINE OF THE NORTHEAST QUARTER (NE 1/4) SECTION 23, MONUMENTED AT THE NORTHEAST CORNER OF SAID NORTHEAST QUARTER BY A 3.25 INCH ALUMINUM CAP STAMPED "T15S R65W S14 S13 S23 S24 LS 16109" AND AT THE SOUTHEAST CORNER OF SAID NORTHEAST CORNER BY A 3.25 INCH ALUMINUM CAP STAMPED "T15S R65W 1/4 COR S23 S24 PLS 31161", THE LINE IS ASSUMED TO BEAR S00°57'42"E, 2638.33 FEET;

LEGAL DESCRIPTION:

PARCEL A

A PARCEL OF LAND IN THE SOUTHWEST QUARTER (SW 1/4) OF SECTION 13, AND IN THE NORTHWEST QUARTER (NW 1/4) SECTION 24, TOWNSHIP 15 SOUTH, RANGE 65 WEST, OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE QUARTER CORNER COMMON TO SAID SECTIONS 23 AND 24;
THENCE N27°00'27"E, 1937.26 FEET TO THE NORTHWEST LINE OF THAT CERTAIN 100 FOOT WIDE ELECTRICAL EASEMENT DESCRIBED IN BOOK 2665 AT PAGE 715 IN THE RECORDS OF EL PASO COUNTY, COLORADO, AND THE NORTHEAST CORNER OF LORSON BOULEVARD AS PLATTED IN "LORSON RANCH EAST FILING NO. 1" UNDER RECEPTION NO. _____ IN THE EL PASO COUNTY RECORDS, BEING THE POINT OF BEGINNING OF THIS LEGAL DESCRIPTION;

THENCE ALONG THE EASTERLY BOUNDARY OF SAID "LORSON RANCH EAST FILING NO. 1" THE FOLLOWING TWENTY-ONE (21) COURSES;

1) THENCE S89°35'58"W ALONG THE NORTH RIGHT-OF-WAY LINE OF LORSON BOULEVARD 64.03 FEET;
2) THENCE N33°38'32"W A DISTANCE OF 36.48 FEET TO THE EASTERLY RIGHT-OF-WAY LINE OF 60 FOOT WIDE LAMPREY DRIVE AS PLATTED IN AFORESAID "LORSON RANCH FILING NO. 1";
3) THENCE N00°24'02"W ALONG SAID LINE 589.11 FEET;
4) THENCE N38°14'24"E A DISTANCE OF 32.03 FEET;
5) THENCE N00°24'02"W A DISTANCE OF 50.00 FEET;
6) THENCE N39°00'02"W A DISTANCE OF 32.06 FEET;
7) THENCE N00°24'02"W ALONG THE EASTERLY RIGHT-OF-WAY LINE OF LAMPREY DRIVE 339.66 FEET;
8) THENCE N37°56'32"E A DISTANCE OF 32.24 FEET;
9) THENCE N00°23'49"W A DISTANCE OF 50.00 FEET;
10) THENCE N38°57'34"W A DISTANCE OF 32.09 FEET;
11) THENCE N00°24'02"W ALONG THE EASTERLY RIGHT-OF-WAY LINE OF LAMPREY DRIVE 309.91 FEET;
12) THENCE N03°59'22"E A DISTANCE OF 60.18 FEET;
13) THENCE N00°42'26"W A DISTANCE OF 206.65 FEET;
14) THENCE N49°44'55"E A DISTANCE OF 63.21 FEET TO THE SOUTHERLY RIGHT-OF-WAY LINE OF FONTAINE BOULEVARD AS PLATTED IN AFORESAID "LORSON RANCH FILING NO. 1";
15) THENCE N79°04'57"E ALONG SAID LINE 43.60 FEET;
16) THENCE N89°35'58"E ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF FONTAINE BOULEVARD, 299.70 FEET TO A POINT OF CURVE;
17) THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, SAID CURVE HAVING A RADIUS OF 1434.92 FEET, A CENTRAL ANGLE OF 19°23'49", (THE LONG CHORD OF WHICH BEARS S80°42'08"E A DISTANCE OF 483.46 FEET), AN ARC DISTANCE OF 485.78 FEET TO A POINT OF TANGENT;
18) THENCE S71°00'13"E ALONG SAID TANGENT 377.73 FEET;
19) THENCE S70°01'19"E A DISTANCE OF 50.01 FEET;
20) THENCE N64°26'39"E A DISTANCE OF 28.50 FEET;
21) THENCE S70°06'29"E ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF FONTAINE BOULEVARD 38.89 FEET TO THE NORTHWEST LINE OF AFORESAID 100 FOOT WIDE ELECTRICAL EASEMENT DESCRIBED IN BOOK 2665 AT PAGE 715;

THENCE S38°22'41"W ALONG SAID LINE 447.40 FEET TO THE EASTERLY CORNER OF THAT PARCEL CONVEYED TO MOUNTAIN VIEW ELECTRIC ASSOCIATION UNDER RECEPTION NO. 206041590 IN THE EL PASO COUNTY RECORDS;
THENCE ALONG SAID PARCEL THE FOLLOWING THREE (3) COURSES;

1) THENCE N51°37'19"W A DISTANCE OF 295.16 FEET;
2) THENCE S38°22'41"W A DISTANCE OF 295.16 FEET;
3) THENCE S51°37'19"E A DISTANCE OF 295.16 FEET TO THE AFORESAID NORTHWEST LINE OF SAID 100 FOOT WIDE ELECTRICAL EASEMENT;

THENCE S38°22'41"W ALONG SAID LINE 1257.37 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS A CALCULATED AREA OF 28.193 ACRES MORE OR LESS.

Together with
PARCEL B

A PARCEL OF LAND IN THE NORTHEAST QUARTER (NE 1/4) OF SECTION 23, AND IN THE NORTHWEST QUARTER (NW 1/4) SECTION 24, TOWNSHIP 15 SOUTH, RANGE 65 WEST, OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE QUARTER CORNER COMMON TO SAID SECTIONS 23 AND 24;

THENCE N28°47'34"W, 414.39 FEET TO THE NORHTWESTERLY LINE OF THAT CERTAIN 100 FOOT WIDE ELECTRICAL EASEMENT DESCRIBED IN BOOK 2665 AT PAGE 715 IN THE RECORDS OF EL PASO COUNTY, COLORADO, AND THE POINT OF BEGINNING OF THIS LEGAL DESCRIPTION;
THENCE ALONG THE ARC OF A CURVE TO THE RIGHT SAID CURVE HAVING A RADIUS OF 780.00 FEET, A CENTRAL ANGLE OF 11°45'40", (THE LONG CHORD OF WHICH BEARS N58°05'27"W A DISTANCE OF 159.83 FEET), AN ARC DISTANCE OF 160.11 FEET TO A POINT OF TANGENCY .
THENCE N52°12'37"W A DISTANCE OF 365.17 FEET TO A POINT OF CURVE.
THENCE ALONG THE ARC OF A CURVE TO THE RIGHT SAID CURVE HAVING A RADIUS OF 595.00 FEET, A CENTRAL ANGLE OF 51°48'35", (THE LONG CHORD OF WHICH BEARS N26°18'20"W A DISTANCE OF 519.88 FEET), AN ARC DISTANCE OF 538.03 FEET, TO A POINT OF TANGENCY.
THENCE N00°24'02"W A DISTANCE OF 429.71 FEET TO A POINT ON THE SOUTH LINE OF LORSON BOULEVARD AS PLATTED IN "LORSON RANCH EAST FILING NO. 1" UNDER RECEPTION NO. _____ IN THE EL PASO COUNTY RECORDS;
THENCE ALONG THE SOUTHERLY RIGHT-OF-WAY OF SAID LORSON BOULEVARD THE FOLLOWING EIGHT (8) COURSES;

1) THENCE N89°35'58"E A DISTANCE OF 60.00 FEET;
2) THENCE N00°24'02"W A DISTANCE OF 41.57 FEET;
3) THENCE N51°38'32"E A DISTANCE OF 49.80 FEET;
4) THENCE N89°35'58"E A DISTANCE OF 924.41 FEET;
5) THENCE S52°06'10"E A DISTANCE OF 32.27 FEET;
6) THENCE N89°35'58"E A DISTANCE OF 50.00 FEET;
7) THENCE N50°57'37"E A DISTANCE OF 32.03 FEET;
8) THENCE N89°35'58"E A DISTANCE OF 554.18 FEET TO THE NORTHWESTERLY LINE OF AFORESAID 100 FOOT WIDE ELECTRICAL EASEMENT;

THENCE S38°22'41"W, ALONG SAID NORTHWESTERLY LINE, 1642.90 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS A CALCULATED AREA OF 30.278 ACRES MORE OR LESS.

PARCEL A + PARCEL B COMPRISES OF 58.471 ACRES.

2.0 SEQUENCE OF MAJOR ACTIVITIES – Exhibit 1 Construction

The anticipated date for beginning construction activities is May, 2019 and will be complete in July, 2020. Implementation of the storm water management plan should be in place prior to initiating construction activities. The anticipated sequence of construction is as follows:

Lorson Ranch East Filing No. 4:

1. Installation of perimeter erosion control measures as shown on Exhibit 1.
2. Site Clearing/Grubbing and topsoil stockpiling.
3. Construct temporary sediment basins as necessary.
4. Rough grading of the site.
5. Construct underground water/sewer/storm.
6. Construct curb/gutter and pavement.
7. Final stabilize areas outside of ROW.
8. Construct gas/electric/cable/phone in the ROW areas.
9. Final stabilize ROW.
10. Final erosion control measures as areas are completed
11. Remove construction BMP's

3.0 PRE-DEVELOPMENT CONDITIONS

According to the current FEMA Flood Insurance Rate Map (FIRM) Panel No. 08041C0957 G and 08041C0976 G, dated December 7, 2018 (See Appendix A, FEMA FIRM Exhibit) this site is not located within the 100-year floodplain.

Existing Vegetation:
The site is currently undeveloped and has been used as a pasture for many years. Vegetation consists of native grasses/weeds that have been heavily grazed for years. There is no brush or trees within the area to be graded. Existing vegetation is estimated at 70% density.

Existing Slopes:
Existing slopes are around 1-10% that direct runoff westerly to the East Tributary of Jimmy Camp Creek. Portions of The East Tributary of Jimmy Camp Creek next to this grading area was channelized 2013 and include 6:1 side slopes. No grading will be done in the East Tributary of Jimmy Camp Creek under this SWMP.

Existing Drainage Patterns:
The East Tributary of Jimmy Camp Creek flows from north to the south through Lorson East on the west side of the development. Pre-development drainage patterns on-site include flowing overland westerly to the East Tributary of Jimmy Camp Creek and to adjacent storm sewer in Lorson Boulevard and Fontaine Boulevard. The storm sewer in Lorson Boulevard flows to existing Pond D2 and the storm sewer in Fontaine Boulevard flows to existing Pond C5. The drainage patterns will remain the same after construction. A new detention pond, Pond E2, will be constructed as part of Lorson Ranch East Filing No. 4 with a new outlet structure and will treat/detain runoff prior to discharge into the East Tributary of Jimmy Camp Creek. The detention pond will be used as a temporary sediment basin during overlot grading activities.

Existing Soil Types:
The following table summarizes the characteristics of the soil type.

Table 3.1: SCS Soils Survey

Soil	Hydro. Group	Shrink/Swell Potential	Permeability	Surface Runoff Potential	Erosion Hazard
52-Manzanola Clay Loam	C	High	Slow	Medium	Moderate
54-Midway Clay Loam	C	High	Slow	Medium to Rapid	Moderate to High
56-Nelson – Tassel Fine Sandy Loam	B	Moderate	Moderately Rapid	Slow	Moderate
75-Razor Clay Loam	C	High	Slow	Medium	Moderate
108-Wiley Silt Loam	B	Moderate	Moderate	Medium	Moderate

The existing soil types have a moderate potential for erosion which can be mitigated by employing appropriate downstream construction BMP's before/during/after construction to limit potential impacts to discharges. Based upon the location of the different soil types and type of construction, the contractor shall employ the most appropriate method of erosion control measures based on the El Paso County/City of Colorado Springs Drainage Criteria Manual, Vol. 2 or as directed by the SWMP administrator or his representative.

More detailed soils information can be found in the SCS soils survey for El Paso County.

4.0 DEVELOPED CONDITIONS

The overall drainage concept for ***Lorson Ranch East Filing No. 4*** is to direct flow to existing storm sewer in Fontaine Boulevard/Lorson Boulevard and to an adjacent detention pond, Pond E2, for Water Quality and detention prior to discharge into the East Tributary of Jimmy Camp Creek. Proper erosion protection will be installed so no sediment enters the existing storm sewer system or is discharged offsite into the East Tributary.

Construction Site Estimates:

- Project Site: 58.471 acres
- Disturbed Area: 71acres (58ac on-site + 13ac off-site)

- Percent Impervious before Construction: 0%
- Runoff Coefficient before Construction: 0.35

- Percent Impervious after Construction: 60%
- Runoff Coefficient after Construction: 0.65

Receiving Waters:

- East Tributary of Jimmy Camp Creek.
- Description: The creek channel is a dry creek bed that flows water intermittently after significant rainfall events in the drainage basin. The creek was armored and channelized in 2013 and the portion adjacent to this site was armored at the same time.
- Description of Storm Sewer System: There is existing storm sewer adjacent to the site in Lorson Boulevard and Fontaine Boulevard. There is no existing storm sewer system on the site. Construction will include a new on-site storm sewer system that outlets into the existing storm sewer and the proposed detention pond. All runoff flows into the East Tributary of Jimmy Camp Creek.
- Description of impaired waters or waters subject to TMDLs: The site contains no impaired waters or waters subject to TMDLs.
- Description of unique features that are to be preserved**:** There are no known protected plant species within the project limits.
- Describe measures to protect these features: There are no known protected plan species

Site Features and Sensitive Areas to be Protected:
This site is located outside waters of the state (100-year floodplain) and they contain no other sensitive areas including wetlands or endangered species. Grading will not occur in the creek.

5.0 POTENTIAL SOURCES OF POLLUTION AND CONTROL STRATEGIES

Potential sources of sediment to stormwater runoff include earth moving and concrete activities associated with grading and landscaping and drilling slurry for drilling piers in for a storm sewer crossing of the SDS watermain. (see Section 5.10),.

Potential pollutants and sources, other than sediment, to stormwater runoff include Trash, debris, line transfer, Dewatering, fueling and equipment failure.

A dewatering permit is not required

Construction activities produce many different kinds of pollutants which may cause storm water contamination problems. Grading activities remove rocks, vegetation and other erosion controlling surfaces, resulting in the exposure of underlying soil to the elements. Because the soil surface is unprotected, soil and sand particles are easily picked up by wind and/or washed away by rain or other water sources.

The following sections highlight the potential sources of pollution at the Project Site and list the "Best Management" strategies that will be used to prevent migration of pollution offsite. Chemical materials stored indoors or that have no reasonable chance of impacting storm water quality will not be discussed in this plan.

Materials of significance stored on the project site include:

- Sediment
- Concrete Washout
- Cement
- Trash & Debris
- Sanitary Wastes
- Fuels & Oils

5.1 Wind Erosion & Dust Control

Pollutant: Sediment
Best Management Strategies:

- Daily inspections will occur for areas experiencing excessive winds, vehicle traffic, or precipitation events.
- Water trucks will spray down dust on the project Site as needed to not impact adjacent properties.
- Attention will be given to prevent the over use of water in dust control operations to minimize any muddying of the surface and possible sediment transportation.

5.2 Vehicular Transport

Pollutant: Sediment Tracking
Best Management Strategies:

- Construct a stabilized construction entrance to provide ingress and egress of the site.
- Restrict access to the stabilized construction entrance.

- Fencing will be erected if problems with access control are evident.
- Maintain track out pads by fluffing up the rock material or by adding additional rock as needed.
- Inspect, sweep and clean adjacent streets where track out is evident.

5.3 Stockpiles
Pollutant: Sediment
Best Management Strategies:
- Locate stockpiles clear of any water flow paths.
- Locate stockpiles within the property boundary.
- Stockpiles will have erosion control devices as needed installed around the base to prevent the migration of soil.
- Topsoil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 14 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in the area.

5.4 Grading, Trenching, Export/Import
Pollutant: Sediment
Best management Strategies:
- Earth moving will be minimized by the engineering balancing of the site.
- Disturbed portions of the site where construction activity temporarily ceases for at least 14 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in the area.
- Seed bed preparation is not required if soil is in loose condition.
- Prior to seeding, fertilizer shall be applied to each acre to be stabilized in accordance with the manufacturer's specifications.
- If required seeding areas shall be mulched with straw to a uniformed cover. The straw mulch is to be tacked into place by a disk with blades set nearly straight.
- A site specific erosion control drawing has been developed showing the location of Best Management practices to be used during site construction.
- Where indicated on the erosion control plan, Best Management Practices will be installed.
- Material shall be in accordance with the plans and specifications and all construction shall be provided in accordance with the manufacturer's specifications.
- All BMP's will be inspected bi-weekly and cleaned/maintained as required.

5.5 Waste, Residual Concrete
Pollutant: Concrete, paint, and Phosphoric Acid
Best Management Strategies:
- A cleanup and washout area will be designated and posted.
- Subcontractors will be instructed on the locations and importance of the washout and cleanup areas. No on-site disposal is allowed.
- Instruct subcontractors to remove waste for which proper onsite disposal facilities are not provided back to their own facilities for ultimate transport, storage & disposal.
- Subcontractors and subcontractor employees are held responsible for improper washout.

5.6 Sanitary Facilities, Trash Containers & Littering
Pollutant: Bacteria, Ammonia, Trash

Best Management Strategies:

- Portable facilities will be regularly serviced to prevent excessive waste containment and overflow.
- All waste materials will be collected and stored in a container which will meet all local and any state solid waste management regulations.
- Trash dumpsters will be emptied prior to becoming 90% full or when debris control becomes an issue.
- Employees will be instructed on the importance of recycling and waste management, and will be held responsible for improper waste management.

5.7 Fueling, Hazardous Materials, Equipment Leakage, Fertilizer
Pollutant: Petroleum Hydrocarbons, Ethylene Glycol, Sediment
Best Management Strategies:

- MSDS sheets will be maintained in the project trailer for all onsite materials
- All dry materials such as cement will be covered and protected from rain.
- Secondary containment will be provided for stored fuel, oil, paint and any material classified as hazardous.
- Subcontractors are responsible for hazardous waste removal back to their own facilities for ultimate transportation, storage and disposal.
- Supplies will be kept onsite as necessary to control any potential spill.
- Employees will be held responsible for any illegal dumping.
- Seals will be checked by a qualified professional on all equipment and containers containing significant materials that could contribute potential pollutants and will be replaced as necessary.
- Equipment will be inspected by a qualified professional.
- Drip pans will be available for minor leaks and during fueling operations.
- Fueling nozzles, gauges, hoses, seals, and emergency shutoff valves will be inspected for leaks prior to use.
- Under no circumstances during fueling will the fueling hose/nozzle be left unattended.
- Fertilizers used will be applied only in the minimum amounts recommended by soil tests.
- Once applied, fertilizers will be worked into the soil to limit exposure to storm water.
- Stored fertilizer will be protected from exposure to precipitation and storm water runoff.

5.8 Dewatering – not needed. This shown for information only
Pollutant: Sediment, Oil and/or Grease and Phosphoric Acid
Best Management Strategies:

- All dewatering will be filtered through rock and/or woven geo mesh fabric.
- All dewatering will be tested for Pollutants per state guidelines weekly.

5.9 Concrete and Asphalt Batch Plant This shown for information only
There are no existing batch plants located on this project site and there are no proposed batch plants in the future.

5.10 Drilling Slurry for Drilling Piers. There are several piers to be drilled in an existing watermain easement located near the south side of this project. The piers will support a storm sewer crossing that is above the Colorado Springs Utilities 66” diameter SDS watermain. No drilling slurry is allowed to be deposited onto the job site. All drilling slurry shall be collected and pumped into an on-site frac tank and shall be disposed of off-site.

6.0 BEST MANAGEMENT PRACTICES (BMP's)

Also refer to attached Erosion and Sediment Control notes and plans included in the site plans

6.1 – Erosion and Sediment Control BMP's

6.1.1 Minimize Disturbed Area and Protect Natural Features and Soil

All work will occur inside the limits of construction per the erosion Control Site Plan. See Exhibit 1

6.1.2 Phase Construction Activity

The sequence for the installation and removal of erosion and sediment control measures is as follows:

Perimeter control measures (silt barriers and fencing) installed at designated areas as noted on the site plans (Exhibit 1), cleaning of street surfaces during construction if applicable, site grading, installation of utilities, paving final and grading, installation of sod or other vegetation, removal of temporary practices and perimeter controls, and site cleanup.

6.1.3 Control Stormwater Flowing onto and through the Project

Narrative:
Offsite stormwater flows adjacent to this project site from the East Tributary of Jimmy Camp Creek. Reconstruction of the East Tributary north of this site was performed under a separate permit. On-site stormwater will be directed to detention ponds that will function as sedimentation basins so that no sediment enters the downstream receiving waters into the East Tributary.

6.1.4 Stabilize Soils

No disturbed area which is not actively being worked shall remain denuded for more than 14 calendar days unless otherwise authorized by the director. Temporary cover by seeding or mulching should be provided on areas which will be exposed for a period greater than 14 days before permanent stabilization can be achieved. Permanent cover should be provided on all areas as soon as possible, by means of seeding and mulching, straw or hay mulch is required. All soil stock piles and borrow areas must protected with silt fence within 14 days after grading. All slopes within the project limits that are found to be eroding excessively within two years of permanent stabilization shall be provided additional slope stabilization methods such as seeding and mulching.
Water is to be used for dust control. The Contractor will prevent the escape of this water and any sediment it may carry from the construction site.

6.1.5 Protect Slopes

Temporary stabilization will include the installation of silt fences on level contours spaces at 10-20 foot intervals. Slopes will be seeded and covered with hay, straw or erosion control blankets on slopes greater than 3:1 as needed to provide for temporary stabilization until vegetation is permanently established.
All slopes within the project limits that are found to be eroding excessively within two years of permanent stabilization shall be provided additional slope stabilization methods such as seeding

and mulching. Where slopes are steeper than 3:1 erosion control blankets (per specification requirements) will be utilized for final stabilization.

6.1.6 Protect Storm Drain Inlets

Inlet protection will be installed as soon as storm drain inlets are installed and before land-disturbance activities begin in areas with existing storm drain systems.
At the Contractor's discretion, additional temporary erosion control practices to include rock bags and sand bag barriers may be installed to prevent sediment movement. Inlet protection will include rock bags erosion logs curb inlet sediment filters where an overflow capacity is necessary to prevent excessive ponding in front of the curb inlet. Concrete block and wire screen inlet protection if used detail will be included Appendix C prior to installation, will be used where heavy flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the inlet.
Inlet protection devices will be inspected and accumulated sediment will be removed as needed.

6.1.7 Establish Perimeter Controls and Sediment Barriers

Temporary stabilization will include the installation of silt fences on the downslope perimeter of project area. The silt fence will be trenched in on the uphill side 6 inches deep and 6 inches wide as detailed in the silt fence exhibit. Sediment will be removed when it reaches 1/3 the height of the fence. Silt fence will be inspected and replaced or repaired as needed.

6.1.8 Retain Sediment On-Site

Temporary sediment traps shall be installed to detain sediment laden runoff from small watersheds for a period long enough to allow sediment to settle before discharge into receiving waters. For small drainage locations smaller sediment traps should be used. At a minimum, silt fences, vegetative buffer strips or equivalent sediment controls are required for all down-slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction. The use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal will be utilized. Sediment traps will be checked regularly for sediment cleanout. Sediments shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design volume of the wet storage. Sediment shall be disposed in suitable areas and in such a manner that will not erode or cause sedimentation problems.
The gravel outlets will be checked regularly for sediment buildup which will prevent damage. If the gravel is clogged by sediment, it shall be removed and cleaned or replaced.

An alternate to sediment traps are temporary sediment basins.

6.1.9 Establish Stabilized Construction Exits

The construction entrance will be established in the entry points of roads. The construction entrance will be at least 50 feet in length and approximately 12 feet wide and graded so runoff does not leave the site. The aggregate will be established at 8 inches thick on top of 4 inch minimum thick free draining material on top of geotextile and will consist of Type G dense graded material. A stabilized stone pad with a filter fabric under liner will be placed at points of vehicular ingress and egress.

6.1.10 Additional BMP's

BMP Schedule:

All Sediment and Erosion control BMP's (detailed below and only on BMP site map and details if utilized onsite) will be installed prior to any excavation or demolition and will be coordinated with the construction schedule.
As construction changes and new temporary BMP's are needed to control sediment and erosion temporary BMP's will be installed within 24 hours of inspection report.

Recommended BMP's:
ALL RECOMMENDED BMP'S WILL BE INSTALLED PRIOR TO EXCAVATION NEAR ANY SENSITIVE AREAS.

Culvert Inlet Protection will be used to protect existing and new culvert inlets. Inlet Protection Detail will be included in Appendix before using onsite. Removal of this BMP will occur only after vegetation is established to a minimum of 70% pre construction coverage and after removal of BMP all sediment builds up will be removed and the area exposed shall be seeded.

Silt Fence is to be installed in sensitive areas to protect stream channels, pond, and overland runoff. On this site it will be used to protect runoff from the slip pits. See Silt Fence Detail. Removal of this BMP will occur only after vegetation is established to a minimum of 70% pre construction coverage and after removal of BMP all sediment builds up will be removed and the area exposed shall be seeded.

Vehicle Tracking Control is needed at the main construction entrance location. Vehicle tracking control shall be installed at the edge of the construction staging area where construction vehicles regularly exit onto existing asphalt road. If sediment tracking occurs it will be cleaned within 24 hours.
See Vehicle Tracking Control Detail in Appendix C. Removal of this BMP will occur only after project is substantially complete and is ready for seeding operations; the area will then be seeded per specification with the rest of the project.

Check Dams (rip rap) will be used to reduce storm water velocities in drainage channels during construction as a temporary measure until permanent stabilization can be created and vegetation has been established. Check Dam Detail will be included in the the Appendix before using onsite. Removal of this BMP will occur only after vegetation is established to a minimum of 70% pre construction coverage and after removal of BMP all sediment build-up will be removed and the area exposed shall be seeded.

Portable Toilets: Portable toilets are brought in from a service contractor and will be maintained in accordance with standard waste disposal practices using vacuum trucks and place on stable ground to minimize risk of spillage. All portable toilets will be kept a minimum of 500' from any waterway.

Waste Disposal: If needed Roll offs will be utilized for standard construction waste. A qualified contractor will remove waste weekly and take to an appropriate dump site off this project.

6.1.11 Permanent BMP'S:

Re-vegetation:

During construction any disturbed area not being currently worked left dormant longer than 14 days will be re-vegetated per specification with native seed and mulched and crimped with weed free straw.

Final Stabilization will be considered complete when all disturbed areas have a minimum of 70% preconstruction coverage for the specification requirements. Then all temporary BMP's will be removed and the exposed areas left behind will be seeded.

6.2 Good Housekeeping BMP'S

6.2.1 Material Handling and Waste Management

The site will use a private refuse collector that will remove litter twice weekly. No less than one litter receptacle will be present at the construction site. In the event that unusual items such as tanks, cylinders, unidentified containers, etc. which could contain potentially hazardous materials are discovered or disturbed, the Fire and Rescue services will be notified.
Litter and debris will be picked up and disposed of properly daily.
Temporary toilet facilities will be located 500 feet away from any storm drain inlets and all waters of the state.

6.2.2 Establish Proper Building Material Staging Areas

A designated staging area will be used, location to be determined based on available space in the field and plans will be redline. The staging area will be contained per SWMP guidelines. All Equipment and Materials will be brought into the site as needed.

6.2.3 Designate Washout Areas

A concrete washout will be installed to detail as shown in the APPENDIX , and will be placed more than 500 feet away from any waters of the state.

6.2.4 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

During construction the site will be exposed to operation and maintenance of construction equipment. The contractor shall be responsible for all activities such as fueling, oil changing, lubrication and repair which require use of petroleum products. Such products shall be transported to and from the site in special trucks equipped for that purpose. No waste petroleum products, rags, residue, or equipment parts shall be left on site. In the event of a spill or leak, causing soil to be contaminated, that soil shall be excavated placed in sealed barrels and removed from the site for transport to an approved location for disposal.

See section 6.2.6 for the Spill Plan.

6.2.5 Control Equipment/Vehicle Washing

This activity will not be allowed onsite.

6.2.6 Any Additional BMPs

Additional BMP's will be added to this SWMP as needed.

6.2.7 Allowable Non-Stormwater Discharge Management

There are no visible natural springs or irrigation or other non-stormwater discharges anticipated to be encountered. The existing FMIC irrigation ditch was removed from this site in 2006.

6.2.8: SELECTING POST-CONSTRUCTION BMPs

Post Construction BMPs. Re-vegetation including seeding, mulching and erosion control blanket will be final BMP's. Permanent stabilization will be achieved with 70% pre construction vegetative establishment.

7.0 SPILL PREVENTION AND CONTROL PLAN

The SITE SUPERINTENDENT will act as the point of contact for any spill that occurs at this jobsite. The project manager will be responsible for implementation of prevention practices, spill containment / cleanup, worker training, reporting and complete documentation in the event of a spill. The ECO shall immediately notify the Owner, /Construction Manager, STATE and the Local Fire Department in addition to the legally required Federal, State, and Local reporting channels (including the National Response Center,
800.424.8802) if a reportable quantity is released to the environment

.

7.1 SPILL PREVENTION BEST MANAGEMENT PRACTICES

This section describes spill prevention methods Best Management Practices (BMP) that will be practiced to eliminate spills before they happen.

7.1.a Equipment Staging and Maintenance

Store and maintain equipment in a designated area Reduce the amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials.
Use secondary containment (drain pan) to catch spills when removing or changing fluids.
Use proper equipment (pumps, funnels) to transfer fluids Keep spill kits readily accessible Check incoming vehicles for leaking oil and fluids.
Transfer used fluids and oil filters to waste or recycling drums immediately following generation.
Inspect equipment routinely for leaks and spills Repair equipment immediately, if necessary implement a preventative maintenance schedule for equipment and vehicles.

7.1.b Fueling Area

Perform fueling in designated fueling area minimum 50' away from federal waters
Use secondary containment (drain pan) to catch spills
Use proper equipment (pumps, funnels) to transfer fluids
Keep spill kits readily accessible
Inspect fueling areas routinely for leaks and spills

Hazardous Material Storage Areas

Reduce the amount of hazardous materials by substituting non-hazardous or
Less hazardous materials.

7.1. c Hazardous Material Storage Areas

Minimize the quantity of hazardous materials brought onsite
Store hazardous materials in a designated area away from drainage points.

7.1. d Unexpected Contaminated Soil and Water

• Investigate historical site use
• Perform all excavation activities carefully and only after the Owner/Construction Manager directed any activities

7.2 SPILL CONTAINMENT METHODS

The following discussion identifies the types of secondary containment that will be used in the event of a spill. Table 1 summarizes the containment methods for each potential source.

- **Equipment Staging and Maintenance Area.** An equipment leak from a fuel tank, equipment seal, or hydraulic line will be contained within a spill containment cell placed beneath all stationary potential leak sources. An undetected leak from parked equipment will be cleaned up using hand shovels and containerized in a 55-gallon steel drum for offsite disposal.
- **Fueling Area.** A small spill during fueling operations will be contained using fuel absorbent pads at the nozzle. The transfer of fuel into portable equipment will be performed using a funnel and/or hand pump and a spill pad used to absorb any incidental spills/drips. Any leaking tanks or drums will have fluids removed and transferred to another tank, drum, or container for the fluids. A spill response kit will be located near the fueling area or on the fuel truck for easy access. The spill response kit will include plastic sheeting, tarps, over pack drums, absorbent litter, and shovels.
- **Hazardous Material Storage Area.** A spill from containers or cans in a hazardous material storage area will be contained within the storage cabinet these materials are kept in.
- **Unexpected Contaminated Soil.** If contaminated soil is encountered during the project, the Owner/Construction Manager will be notified immediately. Small quantities of suspected contaminated soil will be placed on a 6-mil plastic liner and covered with 6-mil plastic. A soil berm or silt fence will be used to contain the stockpile and prevent migration of contaminated liquids in the soil.

Table 1: Spill Prevention and Containment Methods

Potential Spill Source	Potential Spill Source
Equipment Staging and Maintenance Area	Spill containment pad, spill kit, pumps, funnels
Fueling Area (site equipment only	Spill containment pad, spill kit, pumps, funnels
Hazardous Material Staging Area	Spill containment pad, spill kit, pumps, funnels
Unexpected Contaminated Soil	Plastic liner, plastic cover, soil berm, hay bales, lined super sacks

7.3 SPILL COUNTERMEASURES

Every preventative measure shall be taken to keep contaminated or hazardous materials contained. If a release occurs, the following actions shall be taken:

1. **Stop the Spill:** The severity of a spill at the site is anticipated to be minimal as large containers/quantities of Hazardous Materials (HM) are not anticipated. The type of spill would occur while dispensing material at the HM storage facility and would likely be contained in secondary containment. Thus, the use spill kits or other available absorbent materials should stop the spill.

2. **Warn Others:** Notify co-workers and supervisory personnel of the release. Notify emergency responders if appropriate. For site personnel, an alarm system will consist of three one second blasts on an air horn sounded by the person discovering a spill or fire. In the event of any spill, the Superintendent and Project Manager shall be notified if the spill is 5 gallons or more the STATE will be contacted along with the Fire Department.
3. **Isolate the Area:** Prevent public access to the area and continue to minimize the spread of the material. Minimize personal exposure throughout emergency response actions.
4. **Containment:** A spill shall only be contained by trained personnel and if it is safe to do so. DO NOT PLACE YOURSELF IN DANGER. Attempt to extinguish a fire only if it is in the incipient stage; trash can size or smaller. For larger spills, wait for the arrival of emergency response personnel and provide directions to the location of the emergency.
5. **Complete a Spill and Incident Report:** For each spill of a Hazardous Material a spill and incident report shall be completed and submitted to the Owner/Construction Manager and if applicable to the Engineer and the State of Colorado Department of Public Health and Environment

8.0 INSPECTIONS

8.1 Inspections

Inspections will occur at least every 14 days and within 24 hours of a precipitation event producing runoff, which from past experience this occurs with precipitation of 1/4 inch of rain or more , the primary site for tracking weather data and rainfall measurements will be taken from Weather Underground and a rain gauge will be onsite for verification only.

1. Inspection Personnel:

The contract Stormwater Inspector will conduct the site inspections as mentioned above in Section 1.

2. Inspection Schedule and Procedures:

The inspection schedule will be routinely accomplished every 14 days and after every storm event for the entire site with all BMP's evaluated for performance and need. Any BMP found to be ineffective will be re-accomplished or replaced with a new BMP to provide the level of protection needed. BMP's found to be no longer needed will be removed. Inspections will also be accomplished as soon as practical, but within 24 hours of the end of a precipitation event causing surface erosion, over 1/4” or more.

The general procedures for correcting problems when they are identified will be to document the problem in the report, and devise a solution utilizing all resources available to formulate BMP's that will correct the problem as soon as possible.

A copy of the inspection report to be used for the site is attached. See Appendix.

8.2 Delegation of Authority

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

Authorized representatives for the SWMP plan will be: Jeff Mark – Primary Contact
SWMP INSPECTOR – Trevor Terril

9.0 RECORDKEEPING AND TRAINING

9.1 Recordkeeping

Records will be retained for a minimum period of at least 3 years after the permit is terminated.
Major grading activities will start on 05/2019:
Date(s) when construction activities permanently cease on a portion of the site: 07/2020
Date(s) when an area is either temporarily or permanently stabilized: 5/2020

9.2 ***Procedure for changes to the SWMP by the SWMP Administrator***

a. Document the change in the SWMP Revision Log
b. Note changes on the Grading Plan located in Appendix B or add map to denote changes and attach to Appendix B

9.3 Training

Individual(s) Responsible for Training:
All personnel on site will trained on the site specific SWMP requirements to be conducted by the SWMP Inspector and/or the site superintendent.

9.4 SWMP Location

The on-site SWMP will be located at the SW corner of Lorson Boulevard and Trappe Drive.

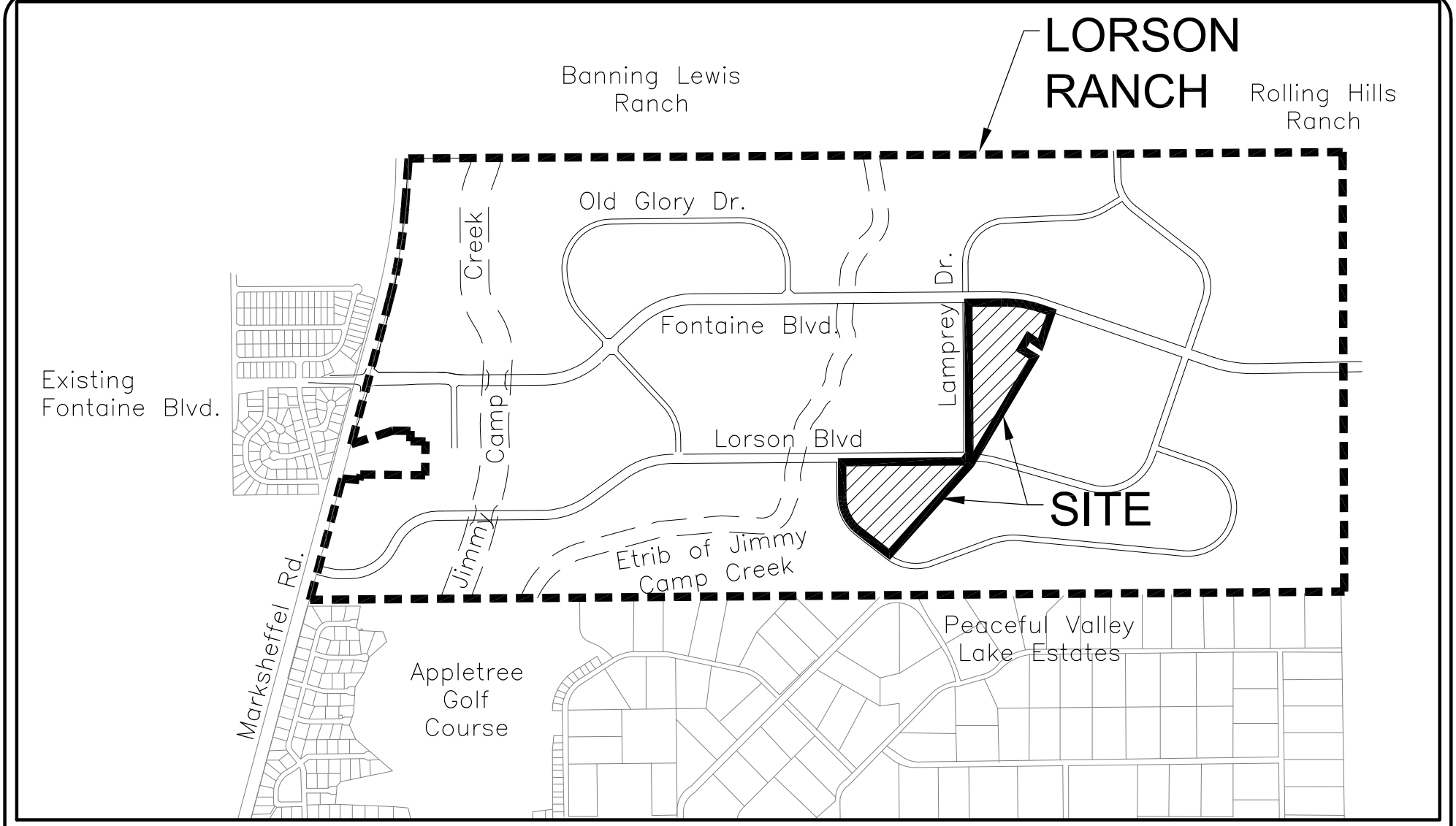
10.0 FINAL STABILIZATION

Final stabilization will be accomplished by contractors to re-vegetate the area of disturbance per the approved plans and specifications. Final stabilization will include permanent seeding/mulching of disturbed areas, sediment forebays, erosion control blankets, turf reinforcement mats, and permanent BMP's.

Once 70% of the pre-development vegetative cover has been established and has been accepted, temporary BMP's will be removed and the permit will be terminated and filed.

Final stabilization is anticipated to be completed in July, 2020

APPENDIX A



N

VICINITY MAP

NO SCALE

CORE ENGINEERING GROUP

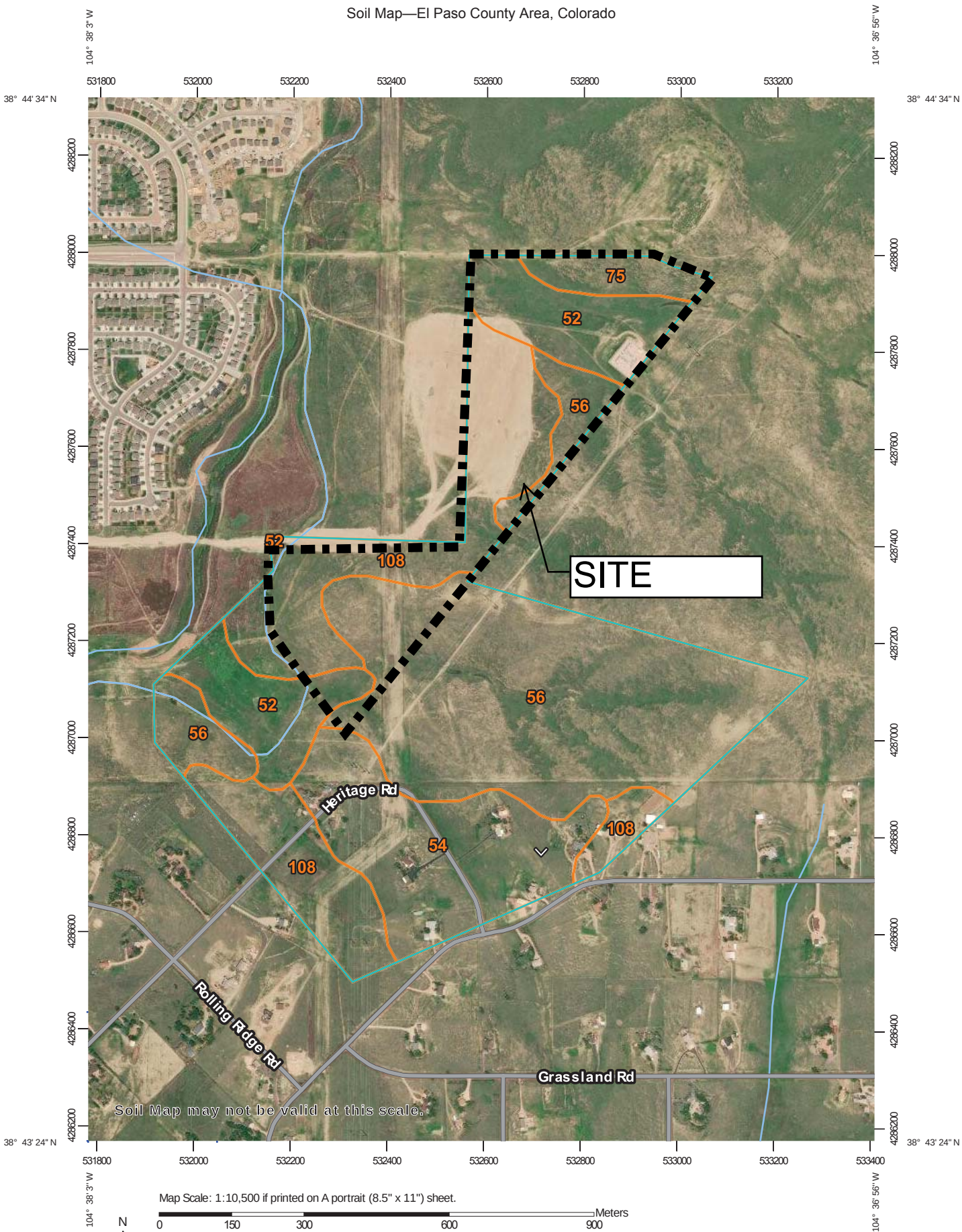
15004 1ST AVE. S.
BURNSVILLE, MN 55306
PH: 719.570.1100

CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

LORSON RANCH EAST FILING NO. 4
VICINITY MAP

SCALE:	DATE:	FIGURE NO.
NTS	JANUARY 31, 2019	--


Zone AE
G
G
F
F
EL PASO COUNTY
080059
E
site
AREA OF MINIMAL FLOOD HAZARD
Zone X
08041C0976G
eff. 12/7/2018



Map Scale: 1:10,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 16, Sep 10, 2018

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

Date(s) aerial images were photographed: Apr 12, 2017—Nov 17, 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.

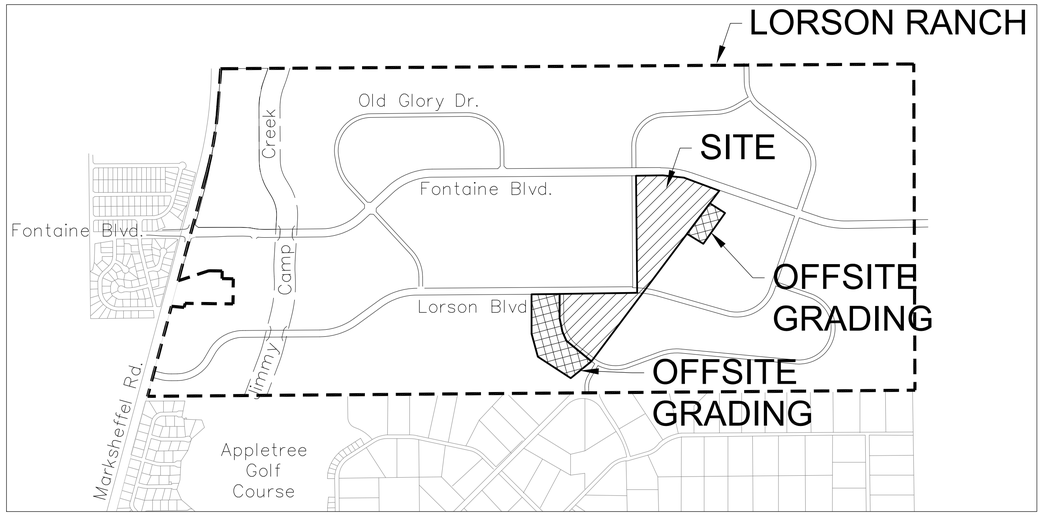
APPENDIX B

CONSTRUCTION PLANS

FINAL SITE GRADING CONSTRUCTION PLANS
FOR

LORSON RANCH EAST FILING NO. 4

FINAL GRADING / EROSION CONTROL PLANS



VICINITY MAP
NO SCALE

LEGEND

STREET R.O.W.

PROPOSED STORM SEWER

WATER / SANITARY
WIDEFIELD WATER AND SANITATION DISTRICT
8495 FONTAINE BLVD.
COLORADO SPRINGS, CO 80925
719-390-7111

CABLE
COMCAST
P.O. BOX 173838
DENVER, CO 80217
970-641-4774

ELECTRIC
MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN RD.
COLORADO SPRINGS, CO 80831
719-495-2283

SECURITY FIRE PROTECTION DISTRICT
400 SECURITY BOULEVARD
SECURITY, CO 80911
719-392-7121

TELEPHONE
CENTURYLINK
7925 INDUSTRY ROAD
COLORADO SPRINGS, CO 80939
719-278-4651

GAS
BLACK HILLS ENGERGY
7060 ALLEGRE ST.
FOUNTAIN, CO 80817
719-393-6639

EL PASO COUNTY
PLANNING AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE
COLORADO SPRINGS, CO 80910
719-520-6300

BASIS OF BEARING
BEARINGS ARE BASED ON THE SOUTH LINE OF THE NORTH HALF OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN AS BEING SOUTH 8941'52" WEST. THE EAST QUARTER CORNER OF SAID SECTION 23 IS A FOUND 3-1/2" ALUMINUM CAP MONUMENT AND THE WEST QUARTER CORNER OF SAID SECTION 23 IS A FOUND 2-1/2" ALUMINUM CAP MONUMENT

BENCHMARK
FIMS MONUMENT F204 LOCATED AT THE NORTHWEST CORNER OF FONTAINE BLVD AND COTTONWOOD GROVE DR. ELEVATION 5724.072 (N.G.V.D. 29)

TRAFFIC CONTROL NOTE
THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES AND MONITORING NECESSARY TO SAFELY COMPLETE THE WORK SHOWN IN THESE CONSTRUCTION DOCUMENTS IN CONFORMANCE WITH M.U.T.C.D. GUIDELINES. THE CONTRACTOR SHALL COMPLETE ALL NECESSARY WORK FOR PLAN REVIEW, PERMITS AND PROCESSING. TRAFFIC CONTROL WILL NOT BE PAID SEPARATELY BUT IS INCLUDED IN THE COST OF THE PROJECT.

PREPARED FOR:
LORSON, LLC
N. WAHSATCH AVE., SUITE 301
COLORADO SPRINGS, CO 80903
719-635-3200
CONTACT: JEFF MARK

PREPARED BY:
CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
719-570-1100
CONTACT: RICHARD L. SCHINDLER P.E.

PUDSP-16-003
EGP 18-002
SF-19-008

Know what's **below.**
Call before you dig.

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

SHEET INDEX	
SHEET NO.	SHEET DESCRIPTION
C0.1	COVER SHEET
C0.2	NOTES (GENERAL, GRADING, EROSION CONTROL)
C0.3	TYPICAL SECTIONS
C4.1 ~ C4.5	FINAL GRADING AND EROSION CONTROL PLAN
C5.1 ~ C5.3	OFFSITE POND C1, C3, AND E2 GRADING PLAN
C12.1 ~ C12.2	DETAILS

DEVELOPER'S STATEMENT
I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

BUSINESS NAME LORSON, LLC

BY JEFF MARK DATE

TITLE MANAGER

ADDRESS 212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, CO 80903

CONSTRUCTION APPROVAL
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUALS VOLUME 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED. CONSTRUCTION DOCUMENTS WILL BE VALID FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER.

JENNIFER IRVINE, P.E., COUNTY ENGINEER/ECM ADMINISTRATOR DATE
CONDITIONS:

ENGINEER'S APPROVAL
THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY NEGLIGENT ACTS, ERRORS, OR OMISSIONS ON MY PART IN PREPARING THIS PLAN

COLORADO REGISTERED 33997 6-1-2019 PROFESSIONAL ENGINEER

RICHARD L. SCHINDLER, P.E. # 33997
FOR AND ON BEHALF OF CORE ENGINEERING GROUP

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceng1.com

NO. | DESCRIPTION | DATE

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 4
LORSON BLVD.-LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

LORSON RANCH EAST FIL. NO. 4
GRADING & EROSION CONTROL PLAN
COVER SHEET

COLORADO REGISTERED 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE:
JUNE 1, 2019

PROJECT NO.
100.048

SHEET NUMBER
C0.1
TOTAL SHEETS: 13

CONSTRUCTION NOTES

1. ALL WORK SHALL COMPLY WITH THE CODES AND POLICIES FOR EL PASO COUNTY.

2. EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THIS GRADING PLAN WAS OBTAINED FROM AERIAL CONTOURS AND PREVIOUS CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO EXAMINE THE SITE AND BE FAMILIAR WITH THE EXISTING CONDITIONS.

3. DEPTH OF MOISTURE–DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
BASE OF ALL CUTS AND FILLS – 12 INCHES,
FULL DEPTH OF ALL EMBANKMENTS

4. THE CONTRACTOR IS RESPONSIBLE FOR THE RE–ESTABLISHMENT OF ALL SURVEY MONUMENTS DISTURBED WITHIN THE PROJECT LIMITS.

5. THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM FLOODING AT ALL TIMES. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED.

6. PRIOR TO PAVING OPERATIONS, THE ENTIRE SUBGRADE SHALL BE PROOF–ROLLED WITH A LOADED 988 FRONT–END LOADER OR SIMILAR HEAVY RUBBER TIRED VEHICLE (GVW OF 50,000 POUNDS WITH 18 KIP PER AXLE AT TIRE PRESSURES OF 90 PSI) TO DETECT ANY SOFT OR LOOSE AREAS. IN AREAS WHERE SOFT OR LOOSE SOILS, PUMPING OR EXCESSIVE MOVEMENT IS OBSERVED, THE EXPOSED MATERIALS SHALL BE OVER–EXCAVATED TO A MINIMUM DEPTH OF TWO FEET BELOW PROPOSED FINAL GRADE OR TO A DEPTH AT WHICH SOILS ARE STABLE. AFTER THIS HAS BEEN COMPLETED, THE EXPOSED MATERIALS SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES AND MOISTURE CONDITIONED. THE SUBGRADE SHALL THEN BE UNIFORMLY COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTMM D–698) AT 0 TO +4.0% OF OPTIMUM MOISTURE CONTENT FOR A–6 AND A–7–6 SOILS ENCOUNTERED. OTHER SUBGRADE TYPES SHALL BE UNIFORMLY COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR DENSITY (ASTM D–1557) AT PLUS OR MINUS 2.0% OF OPTIMUM MOISTURE CONTENT. AREAS WHERE STABLE NATURAL SOILS ARE ENCOUNTERED AT PROPOSED SUBGRADE ELEVATION SHALL ALSO BE SCARIFIED (18 INCHES FOR A–7–6 SOILS BELOW FULL–DEPTH ASPHALT CONCRETE) AND COMPACTED AS OUTLINED ABOVE PRIOR TO PAVING OPERATIONS. SUBGRADE FILL SHALL BE PLACED IN SIX–INCH LIFTS AND UNIFORMLY COMPACTED, MEETING THE REQUIREMENTS AS PREVIOUSLY DESCRIBED.

7. SUBGRADE MATERIALS DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED, DISPOSED OF AND REPLACED WITH APPROVED MATERIALS.

8. FILL SHALL BE PLACED IN 8–INCH MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED PRIOR TO SUCCESSIVE LIFTS.

9. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DURING CONSTRUCTION ACTIVITIES AT ALL TIMES DURING GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES:
   - HAY BALE BARRIERS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
   - SILT FENCE WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
   - TEMPORARY SEDIMENTATION BASINS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
   - MULCHING AND SEEDING OF EXCESSIVE SLOPED AREAS AS NEEDED OR AS DIRECTED BY THE ENGINEER.
   - TEMPORARY VEHICLE TRACKING CONTROL AS NEEDED AND/OR DIRECTED BY THE ENGINEER.
   - CONCRETE WASH AREAS.
   - INLET PROTECTION.

   THESE AND ALL EROSION CONTROL BEST MANAGEMENT PRACTICES AS SHOWN IN THE GRADING AND EROSION CONTROL PLANS SHALL BE STRICTLY ADHERED TO.

10. FINISHED CONTOURS/SPOT ELEVATIONS SHOWN HEREON REPRESENT FINISHED GRADES. ALL PAVEMENT SUBGRADES ARE BASED ON THE COMPOSITE ASPHALT PAVEMENT RECOMMENDATIONS MADE IN THE "GEOTECHNICAL STUDY" FOR THIS PROJECT.

11. ALL GRADING SHALL CONFORM TO THE GEOTECHICAL RECOMMENDATIONS FOR LORSON RANCH EAST PREPARED BY RMG, "PRELIMINARY SOILS AND GEOLOGY FOR LORSON RANCH EAST", DATED SEPTEMBER 7, 2016. CONSTRUCTION OF DETENTION PONDS SHALL CONFORM TO THE GEOTECHNICAL RECOMMENDATIONS IN A REPORT BY RMG TITLED "LORSON RANCH EAST DETENTION PONDS" DATED NOVEMBER 28, 2017. THIS INCLUDES POND OUTFALL DESIGN, KEY–IN, AND SLOPE/EMBANKMENT COMPACTION REQUIREMENTS.

12. THERE MAY BE SOME TOPSOIL WITHIN LORSON RANCH EAST THAT IS NOT SUITABLE FOR RE–USE. CONTRACTOR SHALL AMEND THE TOPSOIL AS NECESSARY AND RE–SPREAD IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS. IF TOPSOIL CANNOT BE AMENDED IT SHALL BE USED AS FILL WHERE NO FUTURE STRUCTURES OR ROADS WILL BE BUILT.

EL PASO COUNTY STANDARD CONSTRUCTION NOTES:

1. *ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.*

2. *CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).*

3. *CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:*
   a. *EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)*
   b. *CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2*
   c. *COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION*
   d. *CDOT M & S STANDARDS*

4. *NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER–THE–FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.*

5. *IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.*

6. *CONTRACTOR SHALL SCHEDULE A PRE–CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) – INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.*

7. *IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS–ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.*

8. *CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.*

9. *ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.*

10. *CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.*

11. *ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.*

12. *SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.*

13. *SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PUBLIC WORK DEPARTMENT AND MUTCD CRITERIA.*

14. *CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PWD, INCLUDING WORK WITHIN THE RIGHT–OF–WAY AND SPECIAL TRANSPORT PERMITS.*

15. *THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF–SITE DISTURBANCE, GRADING, OR CONSTRUCTION.*

PROJECT SITE NOTES:

1. *THE PROJECT SITE VEGETATION CONSISTS OF NATIVE GRASSES THAT HAVE BEEN HEAVILY GRAZED FOR YEARS. THERE ARE NO TREES OR BRUSH WITHIN THE DISTURBED AREA. EXISTING VEGETATIVE COVER IS ESTIMATED AT 85%.*

2. *THERE ARE NO EXISTING STRUCTURES WITHIN THE LIMITS OF DISTURBANCE.*

3. *EXISTING UTILITY EASEMENTS WITHIN THE PROJECT SITE CONSIST OF A CSU WATERMAIN EASEMENT (SOUTHERN DELIVERY SYSTEM) BUT NO GRADING IS LIMITED IN THE CSU EASEMENT. OFFSITE GRADING FOR POND C3 IS LOCATED WITHIN A XCEL/TRI–STATE UTILITY EASEMENT AND A WATERMAIN EASEMENT AS SHOWN ON THESE DRAWINGS.*

4. *THE DEVELOPER/HOME BUILDER SHALL INSTALL SIDE LOT SWALES TO MINIMIZE THE LOT TO LOT DRAINAGE.*

5. *TRANSITION LOTS IDENTIFIED BY A "T" ARE INCLUDED TO INDICATE LOTS THAT WILL REQUIRE HOME BUILDERS TO PREPARE A SITE SPECIFIC GRADING PLAN TO DETAIL THE GRADING TRANSITION FROM TYPE A/B LOTS TO GARDEN/WALKOUT LOTS*

WORK WITHIN CSU SOUTHERN DELIVERY SYSTEM EASEMENT CONSTRUCTION NOTES

1. CONTRACTOR SHALL COMPLY WITH CSU LESS 2.6.H.8 "CROSSING RAW WATER TRANSMISSION MAINS" FOR ALL WORK WITHIN THE CSU WATERMAIN EASEMENT

2. UTILITIES CROSSING OVER THE SDS WATERMAIN MUST BE POTHOLED WITH HYDRO–VAC AT EVERY CROSSING TO OBTAIN VISUAL VERIFICATIN OF THE WATERMAIN ELEVATION.

3. A COLORADO SPRINGS UTILITIES WATER INSPECTOR SHALL BE NOTIFIED, 719–668–4658, AND PRESENT BEFORE AND DURING CONSTRUCTION ACTIVITIES WITHIN THE SDS EASEMENT

4. CONTACT WAYNE RUST, 719–668–3996, COLORADO SPRINGS UTILITIES, FOR ADDITIONAL INFORMATION REGARDING THE SDS FIBER LINE.

5. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 5' OF COVER OVER THE SDS WATERMAIN.

6. CONTRACTOR SHALL SALVAGE AND REPLACE ALL CARSONITE WATER MARKERS OVER THE WATERMAIN AFTER CONSTRUCTION.

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. *CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PCD AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PCD INSPECTIONS.*

2. *STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON–SITE OR OFF SITE WATERS, INCLUDING WETLANDS.*

3. *NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.*

4. *A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.*

5. *ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY PCD INSPECTIONS STAFF.*

6. *SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.*

7. *TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.*

8. *ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).*

9. *ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPS AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.*

10. *ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.*

11. *ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON–EROSIVE VELOCITY.*

12. *CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.*

13. *EROSION CONTROL BLANKETING SHALL BE USED ON SLOPES STEEPER THAN 3:1.*

14. *BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. BMP'S MAY BE REQUIRED BY EL PASO COUNTY PCD IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.*

15. *VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF–SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.*

16. *CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.*

17. *THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.*

18. *THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON–SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.*

19. *NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.*

20. *BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.*

21. *NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.*

22. *INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.*

23. *ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.*

24. *PRIOR TO ACTUAL CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.*

25. *A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.*

26. *THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY RMG AND SHALL BE CONSIDERED A PART OF THESE PLANS.*

27. *AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:*

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WQCD – PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246–1530
ATTN: PERMITS UNIT

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: rlsin@ecg1.com

NO. | DESCRIPTION | DATE

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE., SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635–3200
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 4
LORSON BLVD.–LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

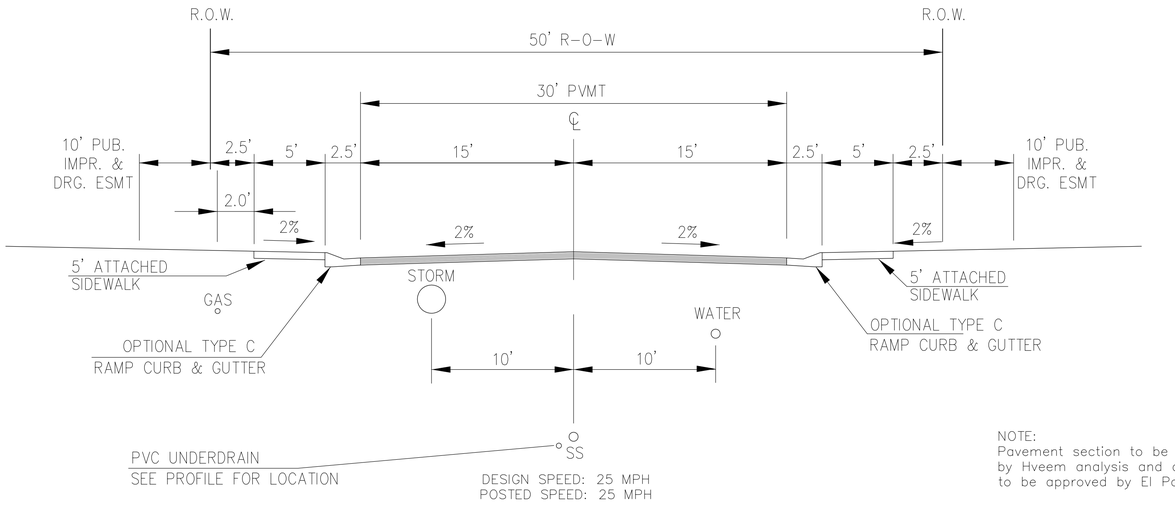
FINAL GRADING PLAN NOTES

COLORADO REGISTERED EL PASO COUNTY 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE:
JUNE 1, 2019

PROJECT NO.
100.048

SHEET NUMBER
C0.2
TOTAL SHEETS: 13

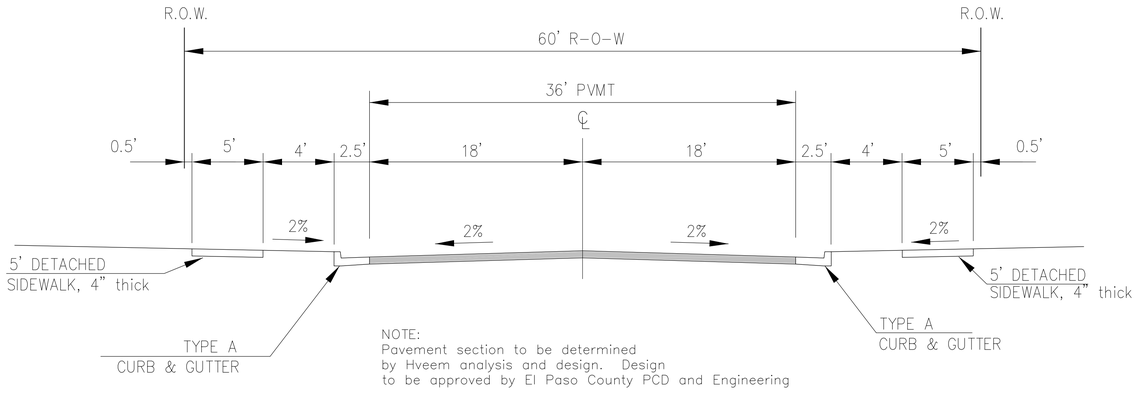


NOTE:
Pavement section to be determined by Hveem analysis and design. Design to be approved by El Paso County PCD Engineering

TYPICAL SECTION 50' R.O.W.
RESIDENTIAL URBAN LOCAL
NOT TO SCALE

VEDDER DRIVE, ROCKCASTLE DRIVE, TILLAMOOK DRIVE, TIFFIN DRIVE, MAGOTHY DRIVE
VOLGA DRIVE, WITCHER DRIVE, HORTON DRIVE, YOCONA DRIVE, ABITA DRIVE, SKUNA DRIVE

NOTE:
ADDITIONAL PUBLIC IMPROVEMENT EASEMENTS ARE REQUIRED WHERE SIDEWALK ENCROACHES INTO THE PRIVATE LOTS. SEE CONSTRUCTION DRAWINGS AND THE FINAL PLAT. SEE CONSTRUCTION DRAWINGS AND PLAT FOR SIGHT TRIANGLES



NOTE:
Pavement section to be determined by Hveem analysis and design. Design to be approved by El Paso County PCD and Engineering

DESIGN SPEED: 40MPH

TYPICAL SECTION 60' R.O.W.
RESIDENTIAL URBAN COLLECTOR
NOT TO SCALE

TRAPPE DRIVE

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CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@eng1.com

NO. | DESCRIPTION | DATE

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PROJECT:
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FILING NO. 4
LORSON BLVD.-LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

FINAL GRADING PLAN
TYPICAL ROADWAY SECTIONS

COLORADO REGISTERED PROFESSIONAL ENGINEER
33997
6-1-2019

DATE:
JUNE 1, 2019

PROJECT NO.
100.048

SHEET NUMBER
C0.3
TOTAL SHEETS: 13

FONTAINE BLVD.

ROCKCASTLE DR.

VEDDER DR

LAMPREY DR

TILLAMOOK DR

TIFFIN DR.

MVEA SUBSTATION

POND C1

POND C1 (SEE SHEET C5.1 FOR POND ELEVATIONS)

N89°35'58"E 299.70'

Δ=19°23'49"
R=1434.92'
L=485.78'
Ch=S80°42'08"E
ChL=483.46'

S71°00'13"E 377.73'

N00°42'26"W 206.65'

N03°59'22"E 60.19'

N00°24'02"W 308.91'

N00°24'02"W 339.66'

S38°22'33"W 295.16'

N51°37'27"W 447.40'

S38°22'41"W 295.16'

S51°37'27"E 295.16'

OVERFLOW SWALE AT DESIGN PT 27 SEE SHEET C4.5

OVERFLOW SWALE AT DESIGN PT 21 SEE SHEET C4.5

SUBSTATION SWALE 2 (TRM) AT DESIGN PT 21 SEE SHEET C4.5

POND C1 OVERFLOW SWALE SEE SHEET C4.5

NO OFFSITE GRADING ALLOWED

NO OFFSITE GRADING ALLOWED ON MVEA SITE

CONSTRUCTION LIMITS FOR SANITARY SEWER CONSTRUCTION

CONCRETE WASHOUT

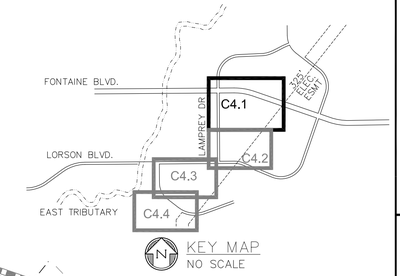
35' TRANSMISSION LINE ELECTRIC EASEMENT

LP 35.22

HP 55.7

TRACT B

SEE SHEET C4.2



KEY MAP
NO SCALE

NOTE:
1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES.
3. STRAW ECB SHALL BE PLACED ON ALL 4:1 SLOPES OR STEEPER

LEGEND

- 5720 — PHASE 1 CONTOURS
- 5720 — EXISTING CONTOURS
- 5720 — PROPOSED CONTOUR
- PROPOSED STORM SEWER
- SF — PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
- SUBDIVISION BOUNDARY
- LIMITS OF CONSTRUCTION
- IP — INLET PROTECTION
- MU — MULCHING
- PS — PERMANENT SEEDING
- 100-YR FEMA FLOODPLAIN
- STRAW BALE CHECK
- VEHICLE TRACKING CONTROL
- CHECK DAM (SD-3-62)

60 30 0 60 120
SCALE: 1"=60'

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DESIGNED: RLS
CHECKED: RLS

LORSON RANCH EAST FILING NO. 4
FINAL GRADING AND E.C. PLAN
NORTH AREA

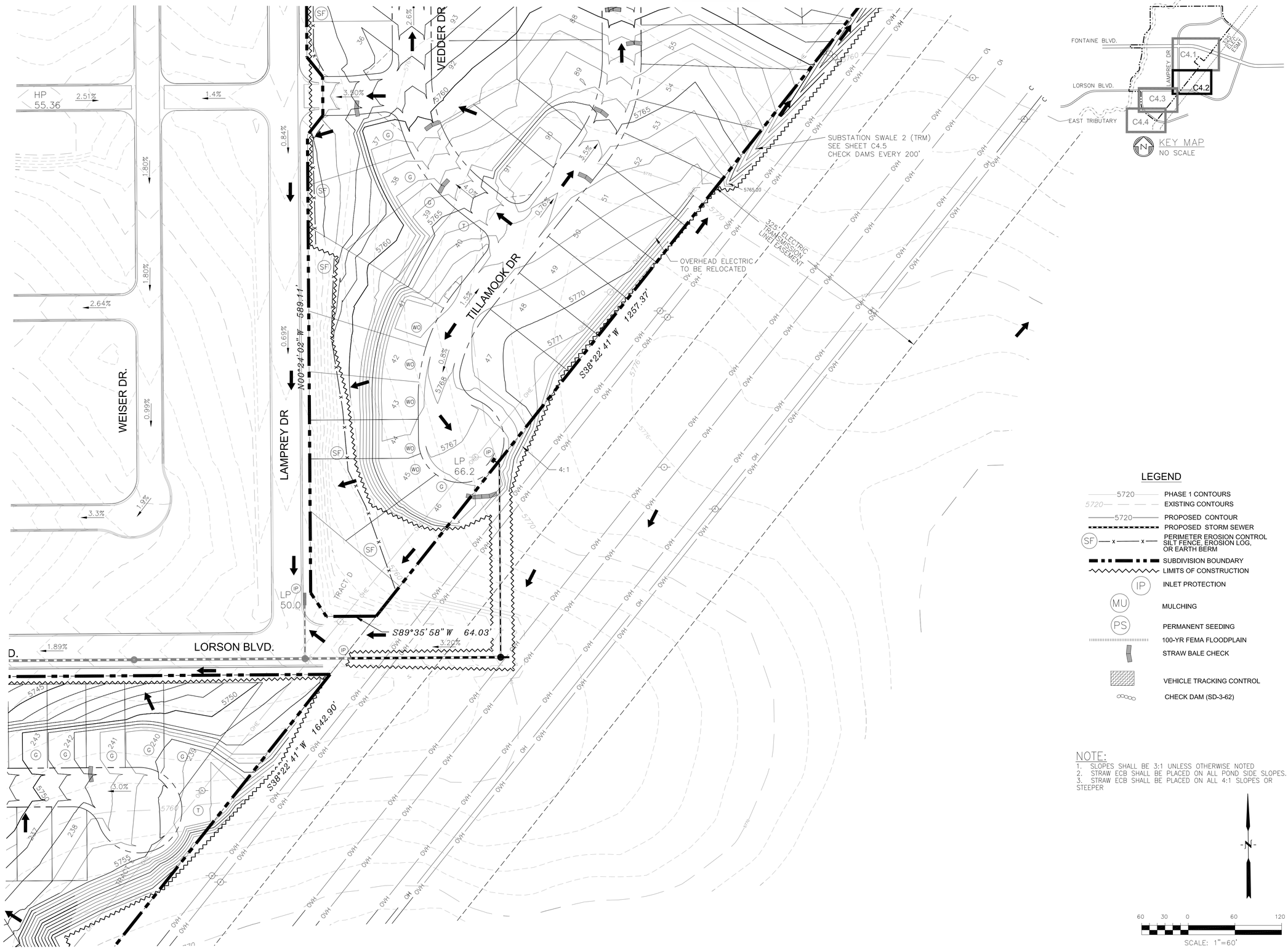
COLORADO REGISTERED RICHARD L. SCHINDLER 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE: JUNE 1, 2019

PROJECT NO. 100.048

SHEET NUMBER C4.1
TOTAL SHEETS: 13

SEE SHEET C5.3



LEGEND

- 5720 — PHASE 1 CONTOURS
- 5720 — EXISTING CONTOURS
- 5720 — PROPOSED CONTOUR
- PROPOSED STORM SEWER
- SF — PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
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- 100-YR FEMA FLOODPLAIN
- STRAW BALE CHECK
- VEHICLE TRACKING CONTROL
- CHECK DAM (SD-3-62)

NOTE:

1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES.
3. STRAW ECB SHALL BE PLACED ON ALL 4:1 SLOPES OR STEEPER

60 30 0 60 120

SCALE: 1"=60'

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COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

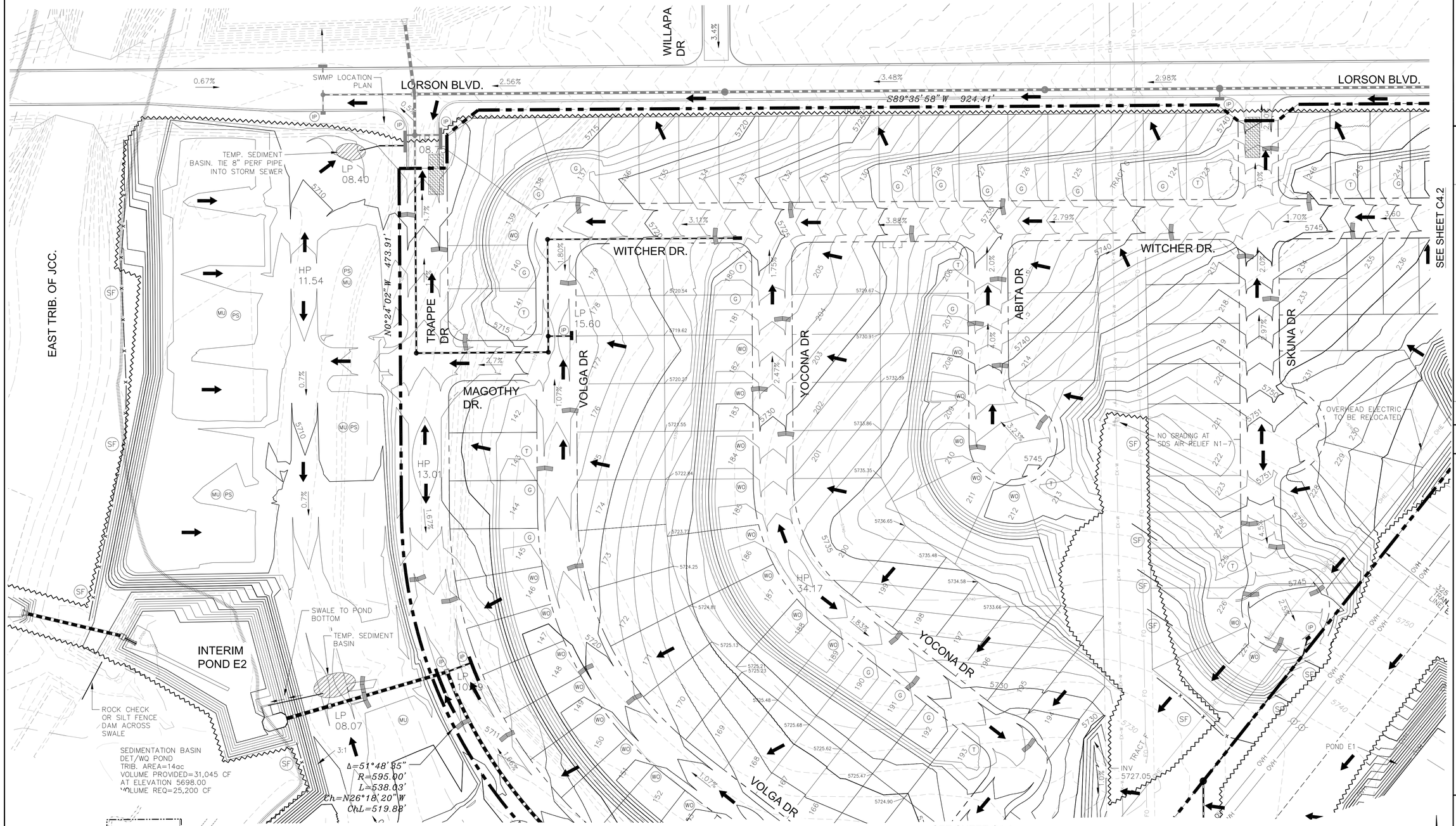
LORSON RANCH EAST FILING NO. 4
FINAL GRADING AND E.C. PLAN
NORTH AREA

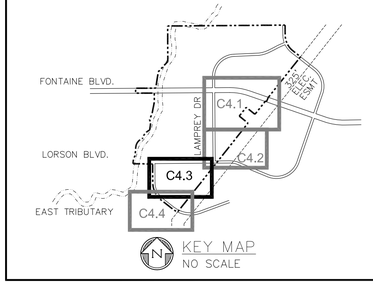
COLORADO REGISTERED RICHARD L. SCHINDLER 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE: JUNE 1, 2019

PROJECT NO. 100.048

SHEET NUMBER C4.2
TOTAL SHEETS: 13





LEGEND

- 5720 — PHASE 1 CONTOURS
- 5720 — EXISTING CONTOURS
- 5720 — PROPOSED CONTOUR
- PROPOSED STORM SEWER
- SF — PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
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- 100-YR FEMA FLOODPLAIN
- STRAW BALE CHECK
- VEHICLE TRACKING CONTROL
- CHECK DAM (SD-3-62)

NOTE:

1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES.
3. STRAW ECB SHALL BE PLACED ON ALL 4:1 SLOPES IN THE ELECTRIC TRANSMISSION LINE EASEMENT.
4. SEE STREET/STORM PLANS FOR POND E2 FOREBAY, LOW FLOW CHANNEL, AND ACCESS ROAD DETAILS

60 30 0 60 120
SCALE: 1"=60'

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COLORADO SPRINGS, COLORADO

DRAWN: RLS
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CHECKED: RLS

LORSON RANCH EAST FILING NO. 4
FINAL GRADING AND E.C. PLAN
SOUTH AREA

COLORADO REGISTERED RICHARD L. SCHINDLER 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE: JUNE 1, 2019

PROJECT NO. 100.048

SHEET NUMBER C4.3

TOTAL SHEETS: 13

SEE SHEET C4.3

INTERIM POND E2

TEMP. SEDIMENT BASIN

LP 10.09

LP 08.07

=31,045 CF
38.00
200 CF

Δ=51°48'35"
R=595.00'
L=538.03'
Ch=N26°18'20"W
ChL=519.88'

TRAPPE DR

VOLGA DR

HORTON DR

YOCONA DR

TRACY PL

HP 23.14

CONCRETE WASHOUT

N52°12'37"W 365.17'

Δ=11°45'40"
R=780.00'
L=160.11'
Ch=N58°05'27"W
ChL=159.83'

POND E1

INV 5727.05

INV 5725.59

INV 5725.19

INV 5724.05

INV 5720.03

INV 5718.00

INV 5717.00

NO GRADING AT SDS BLOW-OFF N1-6

STORM CROSSING SDS REQUIRES DRILLED PIERS

SWALE AT DESIGN PT 67b (TRM) WITH CHECK DAM SEE SHEET C4.5

CHECK DAM

SWALE AT DESIGN PT 67a (ECB) SEE SHEET C4.5

ECB ON SLOPE AND SWALE

ROCK CHECK DAM (TYP)

EXISTING SDS FIBER

EXISTING 66" SDS

EXISTING 60' SDS WTM ESMT

FONTAINE BLVD.

LAMPREY DR

LORSON BLVD.

EAST TRIBUTARY

C4.1

C4.2

C4.3

C4.4

KEY MAP
NO SCALE

LEGEND

- 5720 — PHASE 1 CONTOURS
- 5720 — EXISTING CONTOURS
- 5720 — PROPOSED CONTOUR
- PROPOSED STORM SEWER
- SF — PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
- SUBDIVISION BOUNDARY
- LIMITS OF CONSTRUCTION
- IP — INLET PROTECTION
- MU — MULCHING
- PS — PERMANENT SEEDING
- 100-YR FEMA FLOODPLAIN
- STRAW BALE CHECK
- VEHICLE TRACKING CONTROL
- CHECK DAM (SD-3-62)

NOTE:

1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES.
3. STRAW ECB SHALL BE PLACED ON ALL 4:1 SLOPES OR STEEPER
4. SEE STREET/STORM PLANS FOR POND E2 FOREBAY, LOW FLOW CHANNEL, AND ACCESS ROAD DETAILS

60 30 0 60 120

SCALE: 1"=60'

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CONTACT: RICHARD L. SCHINDLER, P.E.
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NO. | DESCRIPTION | DATE

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, CO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 4
LORSON BLVD.—LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

LORSON RANCH EAST FILING NO. 4
FINAL GRADING AND E.C. PLAN
SOUTH AREA

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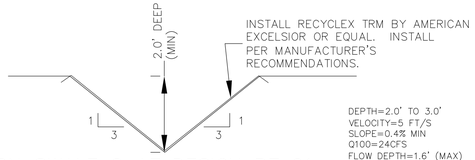
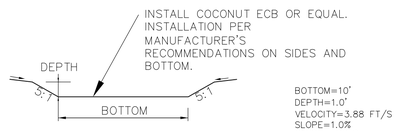
PROJECT NO. 100.048

SHEET NUMBER C4.4
TOTAL SHEETS: 13



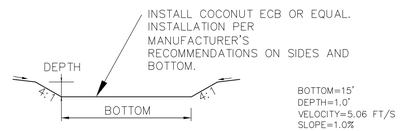
DEPTH=2.0' TO 3.0'
VELOCITY=5 FT/S
SLOPE=0.4% MIN
Q100=24CFS
FLOW DEPTH=1.6' (MAX)

SUBSTATION SWALE 2 AT DESIGN PT 21



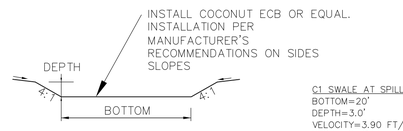
BOTTOM=10'
DEPTH=1.0'
VELOCITY=3.88 FT/S
SLOPE=1.0%
Q100= 36CFS
FLOW DEPTH=0.69'

OVERFLOW SWALE DP-21



BOTTOM=15'
DEPTH=1.0'
VELOCITY=5.06 FT/S
SLOPE=1.0%
Q100= 92.6CFS
FLOW DEPTH=0.97'

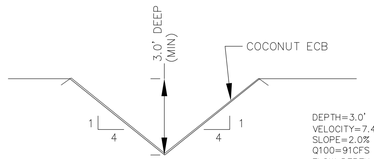
OVERFLOW SWALE DP-27



C1 SWALE AT SPILLWAY
BOTTOM=20'
DEPTH=3.0'
VELOCITY=3.90 FT/S
SLOPE=0.3%
Q100= 175CFS
FLOW DEPTH=1.68'

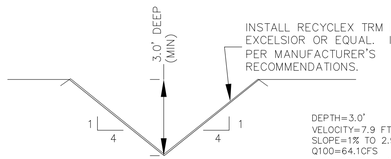
C1 SWALE
BOTTOM=50'
DEPTH=2.0'
VELOCITY=3.14 FT/S
SLOPE=0.3%
Q100= 175CFS
FLOW DEPTH=1.03'

POND C1 OVERFLOW SWALE



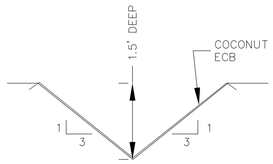
DEPTH=3.0'
VELOCITY=7.43 FT/S
SLOPE=2.0%
Q100=91CFS
FLOW DEPTH=1.75'

SWALE AT
DESIGN PT 67a



DEPTH=3.0'
VELOCITY=7.9 FT/S
SLOPE=1% TO 2.96%
Q100=64.1CFS
FLOW DEPTH=1.47'
EMERGENCY OVERFLOW
FLOW = 210CFS AT DEPTH OF 2.22',
VELOCITY=10.7 FT/S

SWALE AT
DESIGN PT 67b



TEMP SWALE TO POND BTM

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NO. | DESCRIPTION | DATE

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(719) 635-3200
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FILING NO. 4
LORSON BLVD.-LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

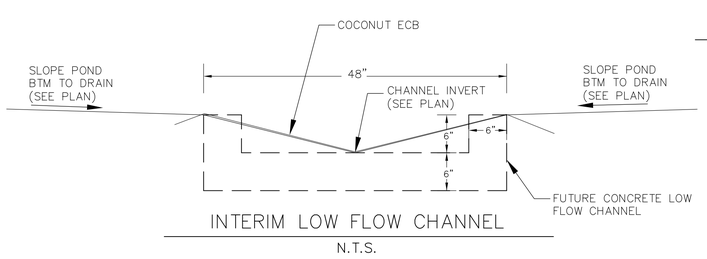
LORSON RANCH EAST FILING NO. 4
FINAL GRADING AND E.C. PLAN
DRAINAGE SWALE DETAILS

COLORADO REGISTERED
RICHARD L. SCHINDLER
33997
6-1-2019
PROFESSIONAL ENGINEER

DATE:
JUNE 1, 2019

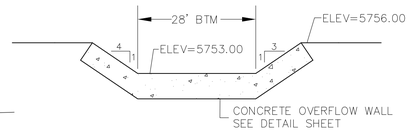
PROJECT NO.
100.048

SHEET NUMBER
C4.5
TOTAL SHEETS: 13



INTERIM LOW FLOW CHANNEL

N.T.S.



POND C1 EMERGENCY OVERFLOW PROFILE

SCALE: NTS

POINT TABLE				
NUMBER	NORTHING	EASTING	ELEVATION	NOTES
1	22907.80	28456.66	5743.40	INVERT 18" RCP = 5743.40
2	22895.21	28451.54	5644.00	LOW FLOW CHANNEL
3	22914.56	28456.90	5745.00	POND BOTTOM
4	22901.74	28477.08	5745.00	POND BOTTOM
5	22825.41	28400.94	5744.34	LOW FLOW CHANNEL
6	22805.55	28409.10	5745.00	POND BOTTOM

TIFFIN DRIVE

MVEA SUBSTATION

DETENTION POND C1

10:1 SLOPE

4:1 SLOPE

3:1 SLOPE

SOIL RIP RAP EMERGENCY OVERFLOW TYPE M, 24" THICK (65/35 MIX), COVER W/ 4" TOPSOIL

CONCRETE OVERFLOW WALL. SEE DETAIL SHEET

AMERICAN EXCELSIOR "RECYLCEX" TRM FILL CELLS WITH TOPSOIL

30'

18" RCP AT 0.5%

5751.67

51.82

5752

EXISTING TRANSMISSION LINE POLE

POND C1 OVERFLOW SWALE TO FONTAINE WIDTH=50', 4:1 SIDE SLOPES Q100=175cfs, SLOPE=0.3%, FLOW DEPTH=1.04', VELOCITY=3.14 FT/S SEE SHEET C4.5

POND C1 EMERGENCY OVERFLOW WEIR BTM=5753.00, TOP=5756.00 WIDTH=28', 4:1 SIDE SLOPES FLOW DEPTH=1.44', Q100=175CFS

12" HIGH RIP RAP CHECK DAM AND 12"D50 RIP, 24" THICK ON MIRAFI 140N FABRIC RAP PAD

GRAVEL ACCESS ROAD (10%) SEE DETAIL SHEET

5746.00 N 22686.12 E 28365.95

5746.00 N 22640.14 E 28246.15

5745.16 N 22645.19 E 28303.94

5747.00 N 22615.20 E 28389.92

5747.00 N 22527.09 E 28158.47

5747.00 N 22449.08 E 28276.69

5746.23 N 22449.62 E 28386.94

5747.00 N 22441.88 E 28390.23

LOW FLOW CHANNEL INVERT (TYP)

325' ELECTRIC TRANSMISSION LINE EASEMENT

EXISTING TRANSMISSION LINE POLE

AEC PREMIER COCONUT FIBRENET OR EQUAL

0.6%

0.4%

NOTE:
1. POND SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES UNLESS NOTED OTHERWISE

SCALE: 1"=30'

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COLORADO SPRINGS, COLORADO

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LORSON RANCH EAST FILING NO. 4
DETENTION POND C1

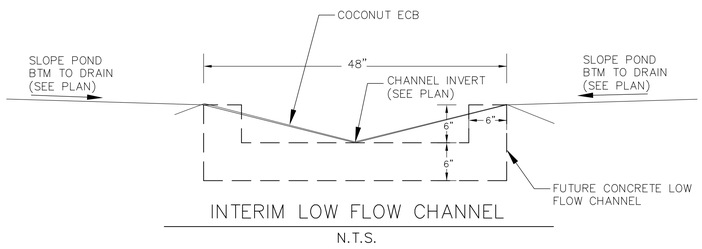
COLORADO REGISTERED 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE: JUNE 1, 2019

PROJECT NO. 100.048

SHEET NUMBER C5.1

TOTAL SHEETS: 13



INTERIM LOW FLOW CHANNEL

N.T.S.

SKUNA DRIVE

YOCONA DRIVE

HORTON DRIVE

TRACT A

GRAVEL ACCESS ROAD (10%) SEE SHEET C4.5

5731.00
N 20930.53
E 26916.54

5730.00
N 20908.91
E 26902.99

5730.57
N 20829.17
E 27013.49

5730.00
N 20839.25
E 26983.72

3:1 SLOPE

0.5%

AEC PREMIER COCONUT FIBRENET OR EQUAL

5729.00
N 20760.02
E 26787.07

3:1 SLOPE

LOW FLOW CHANNEL INVERT (TYP)

24" RCP AT 0.5%

5728.31
N 20736.73
E 26778.89

12" HIGH RIP RAP CHECK DAM AND 12"D50 RIP, 24" THICK ON MIRAFI 140N FABRIC RAP PAD

5729.63
N 20661.16
E 26844.00

DETENTION POND E1

3:1 SLOPE

24" RCP
INV=5727.90
N 20735.16
E 26772.79

325' ELECTRIC TRANSMISSION LINE EASEMENT

30 20 10 0 30 60

SCALE: 1"=30'

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COLORADO SPRINGS, COLORADO

NO. | DESCRIPTION | DATE

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

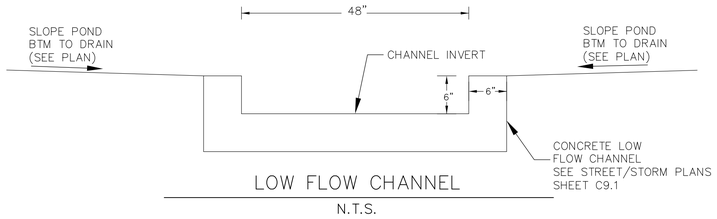
LORSON RANCH EAST FILING NO. 4
DETENTION POND E1

COLORADO REGISTERED RICHARD L. SCHINDLER PROFESSIONAL ENGINEER 33997 6-1-2019

DATE: JUNE 1, 2019

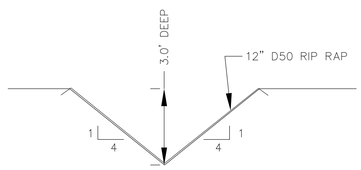
PROJECT NO. 100.048

SHEET NUMBER C5.2
TOTAL SHEETS: 13



LOW FLOW CHANNEL

N.T.S.



TEMP SWALE TO POND BTM

EAST TRIBUTARY OF JCC

TRAPPE DRIVE

26.1LF 48" RCP AT 0.5% INCLUDING END SECTION SEE STREET/STORM PLANS

12" D50 RIP RAP, 24" THICK ON MIRAFI 140N FABRIC EXTEND TO EXISTING TOE WALL CONSTRUCTED BY EAST TRIBUTARY REALIGNMENT CONSTRUCTION PLANS

EXISTING RIP RAP TOE WALL CONSTRUCTED BY EAST TRIBUTARY REALIGNMENT CONSTRUCTION PLANS

EXISTING 12" D50 RIP RAP CONSTRUCTED BY EAST TRIBUTARY REALIGNMENT CONSTRUCTION PLANS

4:1 SLOPE

3:1 SLOPE

POND ACCESS SEE STREET/STORM PLANS SHEET C9.1

3:1 SLOPE

LOW FLOW CHANNEL INVERT (TYP)

0.5%

TEMP SWALE (RIP RAP) TO POND BOTTOM

48" STORM SEWER

54" STORM SEWER

3:1 SLOPE

3:1 SLOPE

8"RISER PIPE

INTERIM POND E2 EMERGENCY OVERFLOW SOIL RIP RAP TYPE M, 24" THICK (65/35 MIX), COVER W/ 4" TOPSOIL SEE DETAIL BELOW

RIP RAP CHECK DAM AND 12"D50 RIP, 24" THICK ON MIRAFI 140N FABRIC RAP PAD TOP=5696.50 BTM=5693.90 3:1 SLOPES

EXISTING SWALE TO REMAIN

OFFSITE DRAIANGE/UTILITY EASEMENT

EXISTING 100-YEAR FLOODPLAIN

5694.00 N 21037.54 E 25277.82

5695.00 N 21055.01 E 25284.15

5695.00 N 21055.71 E 25324.01

5695.00 N 21041.14 E 25330.95

5695.00 N 21042.63 E 25416.25

5694.15 N 20984.43 E 25315.09

5694.00 N 2010.42 E 25262.65

5694.01 N 20956.80 E 25392.36

5695.00 N 20953.30 E 25419.05

5695.00 N 20958.92 E 25438.57

5695.00 N 20937.45 E 25388.48

5694.29 N 20906.05 E 25412.99

5694.40 N 20912.23 E 25434.59

5695.00 N 20901.05 E 25440.73

5695.00 N 20890.70 E 25401.67

5711

5710

5695

5693

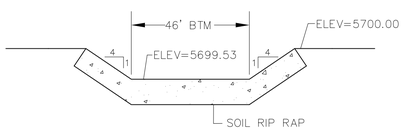
5700

5694

5708

5702

SEDIMENTATION BASIN E2
PER DETAIL SB-1
TRIB. AREA=14ac
VOLUME PROVIDED=26,000 CF
AT ELEVATION 5696.50
VOLUME REQ=25,200 CF
8 ROWS, 1 COLUMNS
1-3/8" HOLES
8" RISER PIPE



INTERIM POND E2 EMERGENCY OVERFLOW PROFILE

SCALE: NTS

NOTE:
1. ALL POND SLOPES SHALL RECEIVE STRAW ECB.

2. SEE STREET/STORM PLANS FOR POND ACCESS ROAD, LOW FLOW CHANNEL AND FOREBAY DETAILS

30 20 10 0 30 60

SCALE: 1"=30'

N

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LORSON RANCH EAST FILING NO. 4
DETENTION POND E2

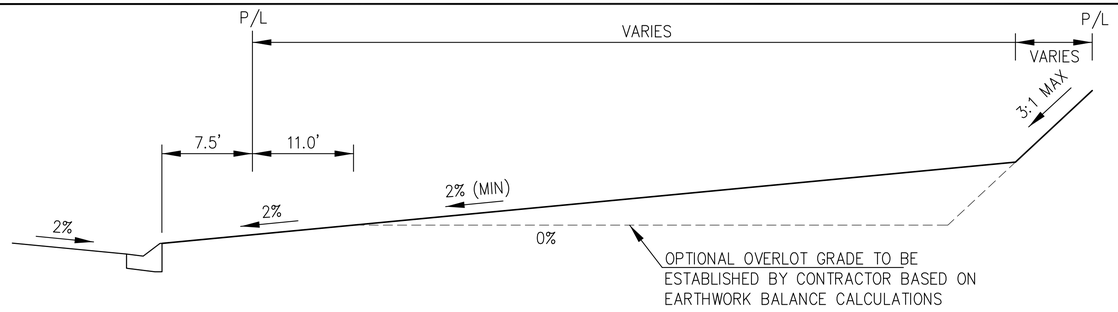
COLORADO REGISTERED 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE: JUNE 1, 2019

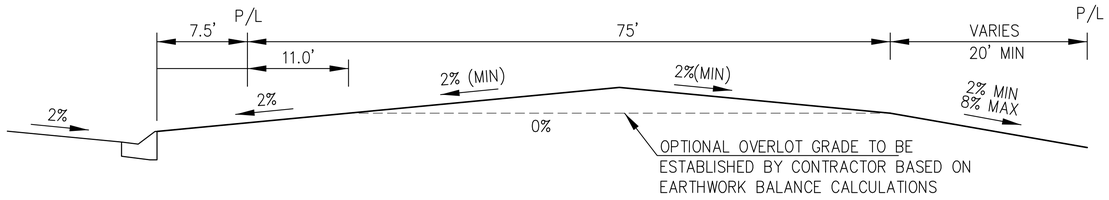
PROJECT NO. 100.048

SHEET NUMBER C5.3

TOTAL SHEETS: 13



TYPICAL "A" LOT

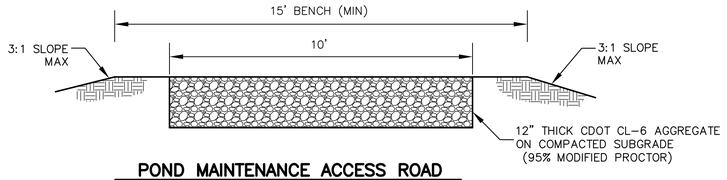


TYPICAL "B" LOT

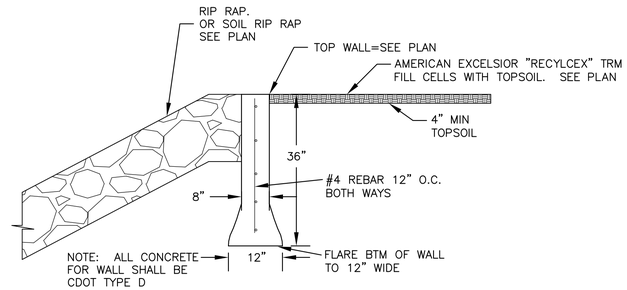
NOTE:

1. TRANSITION LOTS IDENTIFIED BY A "T" ARE INCLUDED TO INDICATE LOTS THAT WILL REQUIRE HOME BUILDERS TO PREPARE A SITE SPECIFIC GRADING PLAN TO DETAIL THE GRADING TRANSITION FROM TYPE A/B LOTS TO GARDEN/WALKOUT LOTS

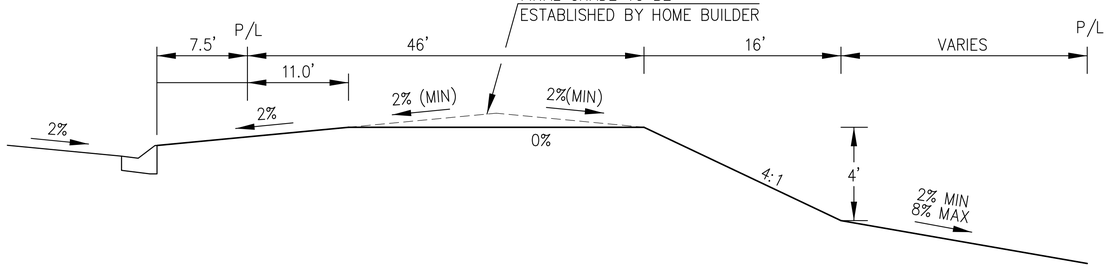
2. THE DEVELOPER/HOME BUILDER SHALL INSTALL SIDE LOT SWALES TO MINIMIZE THE LOT TO LOT DRAINAGE.



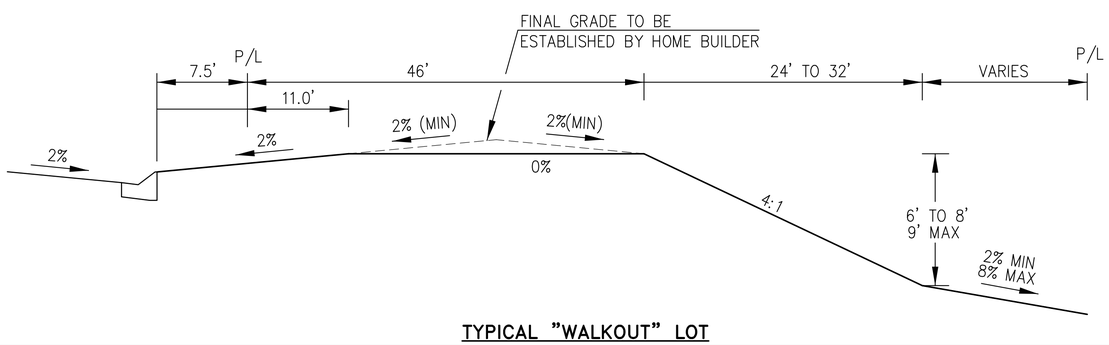
POND MAINTENANCE ACCESS ROAD
NO SCALE



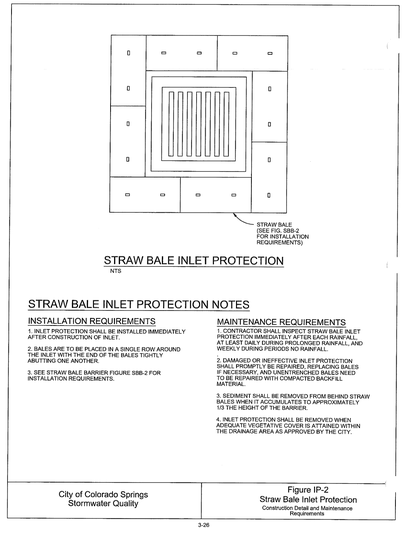
POND OVERFLOW CONCRETE WALL
NO SCALE



TYPICAL "GARDEN" LOT



TYPICAL "WALKOUT" LOT



STRAW BALE INLET PROTECTION
NTS

STRAW BALE INLET PROTECTION NOTES

INSTALLATION REQUIREMENTS

1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.

2. BALES ARE TO BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.

3. SEE STRAW BALE BARRIER FIGURE SB8-2 FOR INSTALLATION REQUIREMENTS.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT STRAW BALE INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.

2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED, REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.

3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALES WHEN IT ACCUMULATES TO APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.

4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure IP-2 Straw Bale Inlet Protection Construction Detail and Maintenance Requirements

3-26

CORE
ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: rlschindler@ecgi.com

NO. | DESCRIPTION | DATE

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 4
LORSON BLVD.-LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

FINAL GRADING PLAN DETAILS

COLORADO REGISTERED RICHARD L. SCHINDLER 33997 6-1-2019 PROFESSIONAL ENGINEER

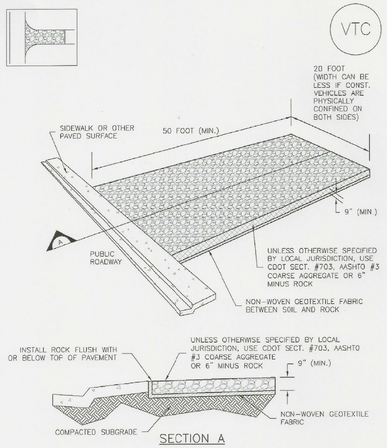
DATE:
JUNE 1, 2019

PROJECT NO.
100.048

SHEET NUMBER
C12.1

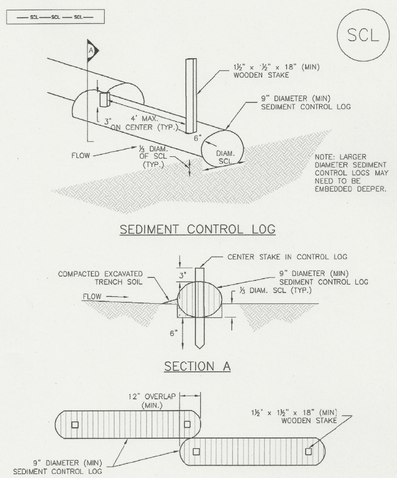
TOTAL SHEETS: 13

Vehicle Tracking Control (VTC) SM-4

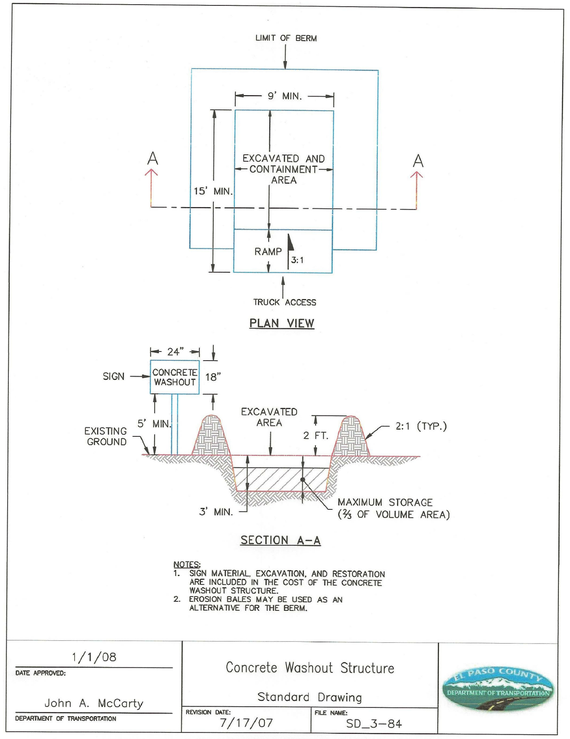


VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

Sediment Control Log (SCL) SC-2



SCL-1. SEDIMENT CONTROL LOG



NOTES:
1. SIGN MATERIAL, EXCAVATION, AND RESTORATION ARE INCLUDED IN THE COST OF THE CONCRETE WASHOUT STRUCTURE.
2. EROSION BALES MAY BE USED AS AN ALTERNATIVE FOR THE BERM.

1/1/08 DATE APPROVED: John A. McCarty DEPARTMENT OF TRANSPORTATION	Concrete Washout Structure Standard Drawing REVISION DATE: 7/17/07 FILE NAME: SD_3-84	EL PASO COUNTY DEPARTMENT OF TRANSPORTATION

SEED MIX TABLE

GRASS MIX FOR QUICK REVEGETATION ALL SITES:

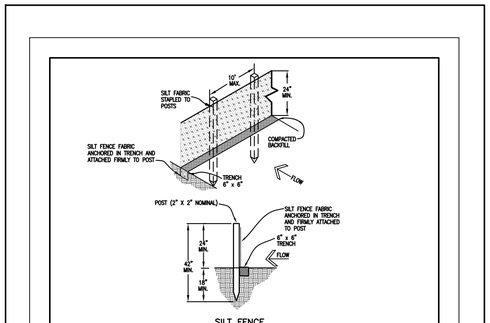
GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
CRESTED WHEAT GRASS	EPHRAIM OR HYCREST	4.0
PERENNIAL RYE	LINN	2.0
WESTERN WHEAT GRASS	BARTON	3.0
SMOOTH BROME GRASS	LINCOLN OR MANCHAR	5.0
SIDEOATS GRAMA	EL RENO	2.5
	TOTAL	16.5 LBS

GRASS MIX FOR SANDY SOILS:

GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
SIDEOATS GRAMA	EL RENO	3.0
WESTERN WHEAT GRASS	BARTON	2.5
SLENDER WHEAT GRASS	NATIVE	2.0
LITTLE BLUESTEM	PASTURA	2.0
SAND DROPSEED	NATIVE	0.5
SWITCH GRASS	NEBRASKA 28	3.0
WEEPING LOVE GRASS	MORPHA	1.0
	TOTAL	14.0 LBS

GRASS MIX FOR HEAVIER SOIL AREAS:

GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
WESTERN WHEAT GRASS	BARTON	5.0
SIDEOATS GRAMA	EL RENO	3.0
SLENDER WHEAT GRASS	SODAR	2.5
SMOOTH BROME	LINCOLN OR MANCHAR	4.0
CRESTEDWHEAT GRASS	EPHRAIM	3.0
	TOTAL	17.5 LBS



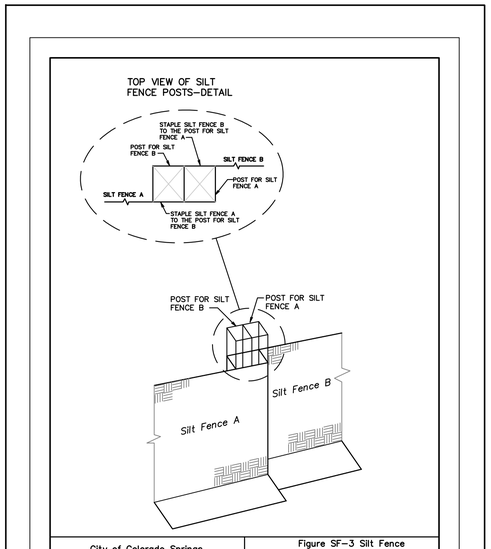
INSTALLATION REQUIREMENTS

1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG, TIE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.
6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE SILT FENCE FOR PONDING AND SEDIMENT STORAGE. SETBACK A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES; HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS

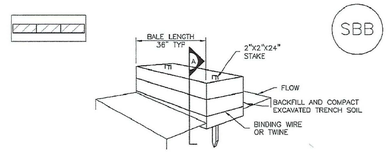
1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

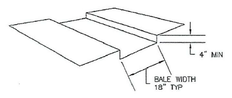
City of Colorado Springs Stormwater Quality	Figure SF-2 Silt Fence Construction Detail and Maintenance Requirements

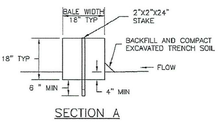


City of Colorado Springs Stormwater Quality	Figure SF-3 Silt Fence Joint Tying Construction Detail and Maintenance Requirements

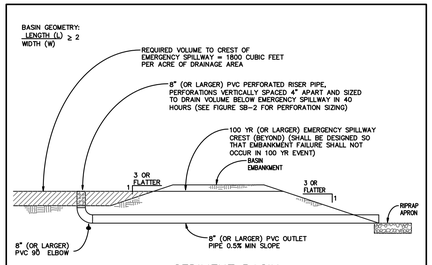
SC-3 Straw Bale Barrier (SBB)







SBB-1. STRAW BALE



SEDMENT BASIN NOTES

INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. BAFFLES MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.
5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS NO RAINFALL.
2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.
3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure SB-1 Sediment Basin Construction Detail and Maintenance Requirements

3-32

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CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: rlsch@cegi.com

NO. | DESCRIPTION | DATE

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 4
LORSON BLVD.-LAMPREY DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

FINAL GRADING PLAN DETAILS

COLORADO REGISTERED RICHARD L. SCHINDLER 33997 6-1-2019 PROFESSIONAL ENGINEER

DATE: JUNE 1, 2019

PROJECT NO. 100.048

SHEET NUMBER C12.2

TOTAL SHEETS: 13

APPENDIX C

STORMWATER INSPECTION REPORT

Stormwater Inspection Report

Project Name and Location: _____

_____

Inspector Name and Title: _____ Director: _____

_____

Date/Time of Inspection: _____ Weather Conditions: _____

_____

Schedule Completion Date: _____ Construction Stage (circle all that apply):

Clearing/Grubbing Paving Rough Grading Infrastructure Building Construction Final Grading Final Stabilization Terminate Permit _____

Type of Control	**Describe status, identify problems, maintenance needs, or non-conformance with details or temporary alteration**	**Problem addressed (date and description of corrective action)**
Structural:		
Silt Fence ❒ OK ❒ N/A	❒Tears/Holes ❒Burial ❒Sed. Accum. ❒Sediment bypass	
Const. Exit ❒ OK ❒ N/A	❒Voids Filled ❒Trackout	
Check Dam ❒ OK ❒ N/A	❒Sediment Accumulation	
Inlet Protection ❒ OK ❒ N/A	❒Sed. Accum. ❒Sed. Bypass ❒Application not appropriate	
DiversionDitch/Berm ❒ OK ❒ N/A	❒Erosion ❒Stabilization	
Sediment Trap ❒ OK ❒ N/A	❒Sediment Accumulation	
Sediment Basin ❒ OK ❒ N/A	❒Sed. Accumulation ❒Bank erosion ❒Stabilization	
Discharge Point ❒ OK ❒ N/A	❒Erosion ❒Sediment Discharge	
Material Storage/ Secondary Contain. ❒ OK ❒ N/A	❒Not shown on Site Map ❒Spills ❒Out of design. area ❒Improper storage: chemicals; solvents; paint; fuels, etc.	

Other Structural Controls ❒ OK ❒ N/A		
Non-Structural:		
Good Housekeeping ❒ OK ❒ N/A	❒Solid Waste ❒Sanitary Waste ❒Dust Control	

Project Name and Location: _____Date: _____ Page 2

Equip. Wash/Maint. ❒ OK ❒ N/A	❒Spills ❒Outside designated area	
Concrete Washout ❒ OK ❒ N/A	❒Spills out of designated area ❒Not shown on Site Map	
Stabilization:		
Seed/Sod Mulching, Geotextile, Blankets ❒ OK ❒ N/A	❒Need Temp. stab. ❒Need final stab. ❒Health of veg.	
Record Keeping:		
Entrance Postings ❒ OK ❒ N/A	❒NOI ❒Permits ❒Construction Site Notice	
SWPPP Notebook ❒ OK ❒ N/A	❒Missing Sections ❒Missing Forms	
Site Map/Details ❒ OK ❒ N/A	❒Activities not up-to-date ❒Deviate from details ❒BMP Additions ❒Modifications ❒Not up-to-date	
Other ❒ OK ❒ N/A		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belied, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Inspector's Signature Date

APPENDIX D

SPILL REPORT FORM

Spill Report Form

Project Type and Location: _____

Spill Reported by: _____

Date/Time Spill: _____

Describe spill location and events leading to spill: _____

_____

_____

Material spilled: _____

Source of spill: _____

Amount spilled: _____ Amount spilled to waterway: _____

Containment or clean up action: _____

_____

_____

Approximate depth of soil excavation: _____

List Injuries or Personal Contamination: _____

Action to be taken to prevent future spills: _____

_____

Modifications to the SWPPP necessary due to this spill: _____

_____

Agencies notified of the spill: _____

_____

_____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____

Contractor Superintendent Date

APPENDIX E

RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITY DATES

SITE STABILIZATION and CONSTRUCTION ACTIVITY DATES

A record of dates when BMPs are installed or removed, stabilization measures are initiated, major grading activities occur, and construction activities temporarily or permanently cease on a portion of the site shall be maintained until final site stabilization is achieved.

MAJOR STABILIZATION AND GRADING ACTIVITIES

Description of Activity:_____

Site Contractor: _____ Begin (date): _____ End(date):_____

Location:_____

Description of Activity:_____

Site Contractor: _____ Begin (date): _____ End(date):_____

Location:_____

Description of Activity:_____

Site Contractor: _____ Begin (date): _____ End(date):_____

Location:_____

APPENDIX F

FEDERAL, STATE, OR LOCAL STORM WATER OR OTHER ENVIRONMENTAL INSPECTOR SITE VISIT LOG

Federal, State, or Local Storm Water or other Environmental Inspector Site Visit Log

Inspectors Name: _____ Agency: _____

Contractors Representative Present: _____

Others Present: _____

Comments: _____

Time and Date: _____ Report Prepared:
Yes No

Inspectors Name: _____ Agency: _____

Contractors Representative Present: _____

Others Present: _____

Comments: _____

Time and Date: _____ Report Prepared:
Yes No

Inspectors Name: _____ Agency: _____

Contractors Representative Present: _____

Others Present: _____

Comments: _____

Time and Date: _____ Report Prepared:
Yes No

APPENDIX G

GENERAL PERMIT

Markup Summary 7-23-2019

RSchindler (4)

Subject: Polygon
Page Label: 22
Author: RSchindler
Date: 2/16/2019 10:46:10 PM
Color:

Subject: Callout
Page Label: 22
Author: RSchindler
Date: 2/16/2019 10:46:31 PM
Color:

site

Subject: Polygonal Line
Page Label: 23
Author: RSchindler
Date: 2/25/2019 2:29:37 PM
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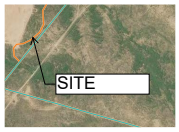

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