

STORMWATER MANAGEMENT PLAN

FOR LORSON RANCH EAST FILING NO. 2 (EGP 18-002)

Stormwater Permit # _____

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)

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SWMP REPORT REVISION LOG

REVISION #	DATE	BY:	COMMENTS
1.			
2.			
3.			
4.			
5.			

1.0 INTRODUCTION

The proposed **Lorson Ranch East Filing No. 2** development is currently farm and ranching land consisting of 53.866 acres. This SWMP report only covers the residential portion of the final plat which will disturb approximately 42 acres. The adjacent street construction is covered by the Early Grading for Lorson Ranch East SWMP (PUD/SP 16-003). The property is bounded on the west by The East Tributary of Jimmy Camp Creek, the east side by Lamprey Drive, and on the south by Fontaine Boulevard, and the north by unplatted land in Banning Lewis Ranch. The property drains generally west towards the East Tributary of Jimmy Camp Creek where runoff is treated/detained before discharge into Jimmy Camp Creek.

Lorson Ranch East Filing No. 2 consists of 196 residential lots and the supporting street infrastructure that will be completed in one phase. The future phases will require a separate SWMP report as they are constructed. 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. 2** 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 C5) which will also function as temporary sediment basin. Pond C5 will treat and detain stormwater runoff prior to discharging into The East Tributary of Jimmy Camp Creek. Offsite Pond C3 will also be constructed as part of this subdivision.

The legal description for **Lorson Ranch East Filing No. 2** is:

LORSON RANCH EAST FILING NO. 2 LEGAL DESCRIPTION

A PARCEL OF LAND BEING A PORTION OF THE SOUTHWEST QUARTER (SW 1/4) SECTION 13, AND OF THE EAST HALF, SOUTHEAST QUARTER (E 1/2, SE 1/4) SECTION 14, AND A REPLAT OF TRACT E OF "PIONEER LANDING AT LORSON RANCH FILING NO. 2" AS RECORDED UNDER RECEPTION NUMBER 217713888 IN THE RECORDS OF EL PASO COUNTY, COLORADO, ALL IN TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO.

BASIS OF BEARING: THE NORTH LINE OF THE SOUTHWEST QUARTER (SW 1/4) SECTION 13, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EL PASO COUNTY, COLORADO, BEING MONUMENTED AT THE QUARTER CORNER COMMON TO SECTIONS 13 AND 14 WITH A 3" GALVANIZED H20 SCREW ON CAP AND AT THE NORTHEAST CORNER WITH A 3-1/4" ALUMINUM CAP STAMPED "PLS23044". SAID LINE IS ASSUMED TO BEAR N89°32'23"E A DISTANCE OF 2654.23 FEET.

BEGINNING AT THE QUARTER CORNER COMMON TO SECTIONS 13 AND 14;
THENCE N89°32'23"E ALONG SAID NORTH LINE, A DISTANCE OF 1482.79 FEET;
THENCE S00°28'00"E A DISTANCE OF 454.28 FEET;
THENCE S02°33'09"E A DISTANCE OF 136.79 FEET;
THENCE N87°26'51"E A DISTANCE OF 9.30 FEET;

THENCE S02°33'09"E A DISTANCE OF 160.00 FEET TO THE NORTHERLY RIGHT-OF-WAY OF LAMPREY DRIVE, AS RECORDED IN "LORSON RANCH EAST FILING NO. 1" UNDER RECEPTION NUMBER _____ IN THE RECORDS OF EL PASO COUNTY, COLORADO;

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

- 1) THENCE S87°26'51"W A DISTANCE OF 111.93 FEET;
- 2) THENCE N47°33'09"W A DISTANCE OF 18.48 FEET;
- 3) THENCE N02°33'09"W A DISTANCE OF 16.93 FEET;
- 4) THENCE S87°26'51"W A DISTANCE OF 50.00 FEET;
- 5) THENCE S02°33'09"E A DISTANCE OF 19.24 FEET;
- 6) THENCE S71°26'26"W A DISTANCE OF 46.20 FEET;
- 7) THENCE ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 595.00 FEET, A CENTRAL ANGLE OF 56°56'49" (THE CHORD OF WHICH BEARS S54°17'59"W A DISTANCE OF 567.33 FEET), AN ARC DISTANCE OF 591.38 FEET;
- 8) THENCE S58°27'30"W A DISTANCE OF 33.75 FEET;
- 9) THENCE S20°50'17"W A DISTANCE OF 50.00 FEET;
- 10) THENCE S16°33'16"E A DISTANCE OF 33.97 FEET;
- 11) THENCE ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 595.00 FEET, A CENTRAL ANGLE OF 16°13'33" (THE CHORD OF WHICH BEARS S07°42'45"W A DISTANCE OF 167.94 FEET), AN ARC DISTANCE OF 168.50 FEET;
- 12) THENCE S00°24'02"E A DISTANCE OF 41.44 FEET;
- 13) THENCE S04°23'45"W A DISTANCE OF 101.66 FEET;
- 14) THENCE S00°24'02"E A DISTANCE OF 94.82 FEET;
- 15) THENCE S52°37'06"W A DISTANCE OF 48.31 FEET;
- 16) THENCE S89°35'58"W A DISTANCE OF 621.14 FEET;
- 17) THENCE N00°06'29"W A DISTANCE OF 663.07 FEET;
- 18) THENCE S89°54'29"W A DISTANCE OF 221.60 FEET;
- 19) THENCE S49°33'34"W A DISTANCE OF 447.72 FEET;
- 20) THENCE S03°27'32"W A DISTANCE OF 397.12 FEET;
- 21) THENCE S89°35'58"W A DISTANCE OF 242.34 FEET TO THE SOUTHWEST CORNER OF TRACT E OF "PIONEER LANDING AT LORSON RANCH FILING NO. 2" AS RECORDED UNDER RECEPTION NUMBER 217713888 IN THE RECORDS OF EL PASO COUNTY, COLORADO;

THENCE ALONG THE WESTERLY BOUNDARY OF TRACT E, "PIONEER LANDING AT LORSON RANCH FILING NO. 2" THE FOLLOWING FOUR (4) COURSES:

- 1) THENCE N08°50'55"E A DISTANCE OF 436.63 FEET;
- 2) THENCE N42°43'38"E A DISTANCE OF 313.14 FEET;
- 3) THENCE N45°28'23"E A DISTANCE OF 55.11 FEET;
- 4) THENCE N00°17'57"W A DISTANCE OF 939.46 FEET TO THE NORTH LINE OF SAID SOUTHEAST QUARTER SECTION 14;

THENCE N89°42'01"E ALONG SAID NORTH LINE 412.53 FEET TO POINT OF BEGINNING.

SAID PARCEL CONTAINS A CALCULATED AREA OF 2,346,401 S.F. (53.866 ACRES) MORE OR LESS.

PREPARED BY:

2.0 SEQUENCE OF MAJOR ACTIVITIES – Exhibit 1 Construction

The anticipated date for beginning construction activities is August, 2018 and will be complete in May, 2019. 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. 2:

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

3.0 PRE-DEVELOPMENT CONDITIONS

According to the current FEMA Flood Insurance Rate Map (FIRM) number 08041CO957 F and 08041C1000 F, this site is located within the 100-year floodplain. In 2013 the floodplain was modified per LOMR Case No. 14-08-0534P. There is an area north of Fontaine Boulevard that will require a CLOMR for placement of fill in the flood fringe. The CLOMR will also cover construction of a bridge/culvert crossing at Fontaine Boulevard and will be submitted/approved prior grading in that area. The CLOMR is not a part of this project but will be done prior to grading in the floodplain. Infrastructure for all Filing No. 2 lots will be installed in one phase. See Appendix A.

Existing Vegetation:

The site is currently undeveloped and has been used as a pasture for many years. Vegetation consists of native grasses that have been heavily grazed for years. There is no brush or trees within the area to be graded. Existing vegetation is estimated at 85% coverage.

Existing Slopes:

Existing slopes are around 1-10% that direct runoff westerly to the East Tributary of Jimmy Camp Creek. The middle portions of The East Tributary of Jimmy Camp Creek 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. The drainage patterns will remain the same after construction. A new detention pond, Pond C5, will be constructed 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 basins 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
2-Ascalon Sandy Loam	B	Moderate	Moderate	Slow to Medium	Moderate
3-Ascalon Sandy Loam	B	Moderate	Moderate	Slow to Medium	Moderate
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. 2** is to direct flow to an adjacent detention pond, Pond C5, 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 storm sewer system or is discharged offsite into the East Tributary.

Construction Site Estimates:

- Project Site: 53.866 acres
- Disturbed Area: 42acres (Filing No.2 residential area), 10.8 acres offsite

- 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. Most of the creek has been armored and channelized in 2013 and the portion adjacent to this site will be armored at the same time as on-site grading is occurring but will be under a separate permit.
- Description of Storm Sewer System: There is no existing storm sewer system on the site. Construction will include a new storm sewer system that outlets into constructed detention ponds that flow 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 plant species

Site Features and Sensitive Areas to be Protected:

Portions of this site are located within waters of the state (100-year floodplain) but they contains no other sensitive areas including wetlands or endangered species. Grading will occur in the creek under a 404 ACOE permit previously approved for the creek construction. Work in the East Tributary north of Fontaine Boulevard will be done under a separate permit by Kiowa Engineering Corporation under CDR 16-009.

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.

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.

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 onto this project site from the East Tributary of Jimmy Camp Creek. Reconstruction of the East Tributary north of Fontaine Boulevard will be performed under a separate permit. On-site stormwater will be directed to a 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 08/2018:

Date(s) when construction activities permanently cease on a portion of the site: 05/2019

Date(s) when an area is either temporarily or permanently stabilized: 12/2018

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 SE corner of Fontaine Boulevard and Edisto Drive

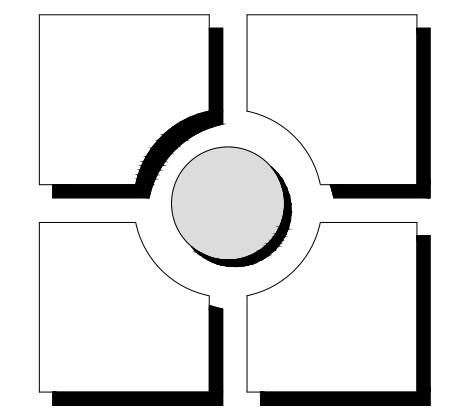
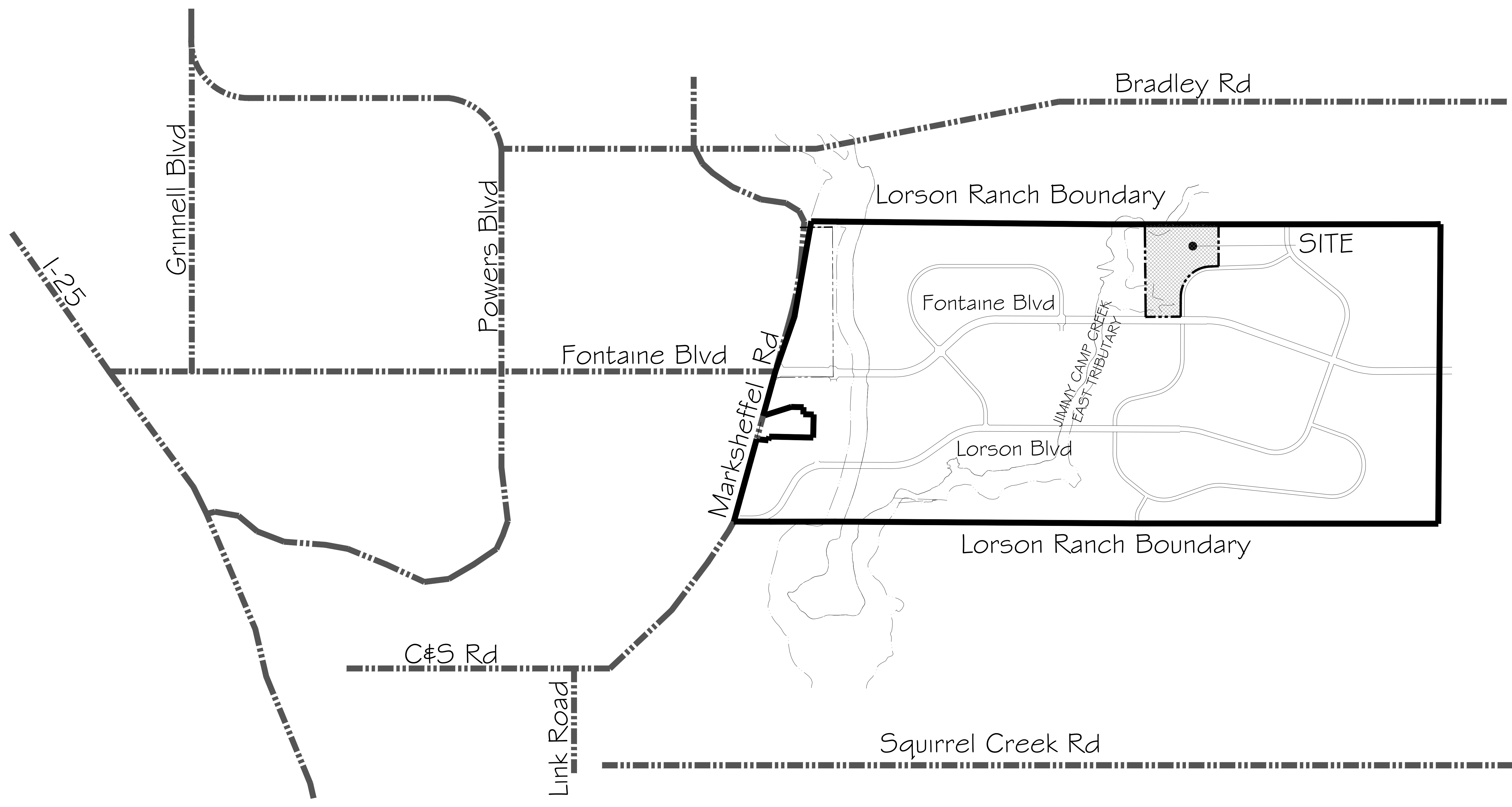
10.0 FINAL STABILIZATION

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 May, 2019

APPENDIX A

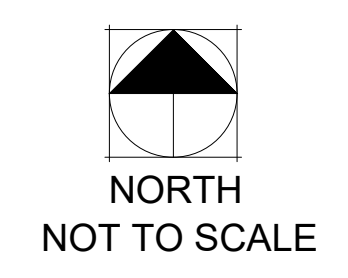
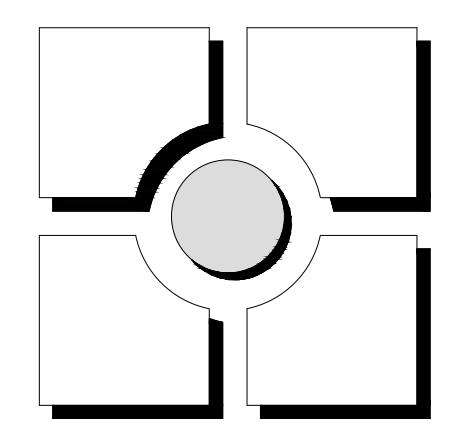


THOMAS THOMAS
 Planning
 Landscape Architecture
 702 North Tejon
 Colorado Springs, Colorado 80903
 (719) 576-8777

REV#	REVISIONS	DATE	DRAWN	CHECKED	APPROVED
1					
2					
3					
4					
5					
6					

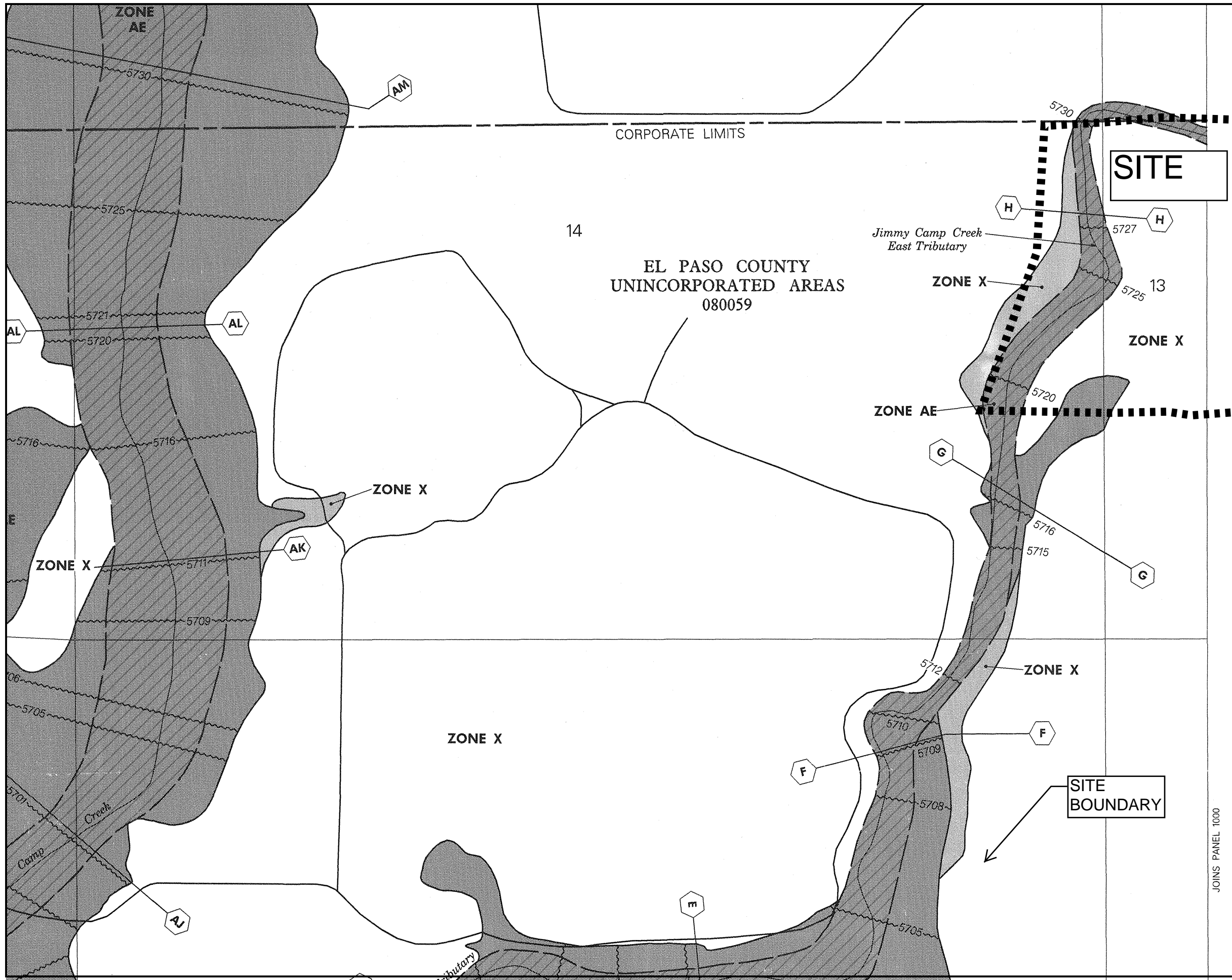
DESIGNED	06.20.18
DRAWN	00.00.00
CHECKED	00.00.00
PROJECT NUMBER:	
SCALE:	AS NOTED

**Lorson Ranch East
 Final Plat Filing 2**
 El Paso County, Colorado
 PROJECT LOCATION





APPROXIMATE SCALE IN FEET
500 0 500



NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

**EL PASO COUNTY,
COLORADO AND
INCORPORATED AREAS**

PANEL 957 OF 1300
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS: COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0957	F
EL PASO COUNTY, UNINCORPORATED AREAS	080059	0957	F
FOUNTAIN, CITY OF	080061	0957	F

**MAP NUMBER
08041C0957 F**

**EFFECTIVE DATE:
MARCH 17, 1997**






Federal Emergency Management Agency

JOINS PANEL 1000

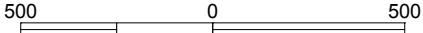
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Legend

-  1% annual chance (100-Year) Floodplain
-  1% annual chance (100-Year) Floodway
-  0.2% annual chance (500-Year) Floodplain



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

EL PASO COUNTY,
COLORADO AND
INCORPORATED AREAS

**REVISED TO
REFLECT LOMR
EFFECTIVE: January 29, 2015**

PANEL 957 OF 1300

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COLORADO SPRINGS, CITY OF	080060	0957	F
EL PASO COUNTY UNINCORPORATED AREAS	080059	0957	F
FOUNTAIN, CITY OF	080061	0957	F

MAP NUMBER
08041C0957 F

EFFECTIVE DATE:
MARCH 17, 1997



Federal Emergency Management Agency

JOINS PANEL 0769

104°37'30"
38°45'00"

NOTE: MAP AREA SHOWN ON THIS
PANEL IS LOCATED WITHIN TOWNSHIP
15 SOUTH, RANGE 65 WEST.

CITY OF
COLORADO SPRINGS
080060

13

*Jimmy Camp Creek
East Tributary*

5730

5731

5733

5729

**REVISED
AREA**

5727

H

ZONE AE

5725

5724

5723

5722

5719

5711

5721

5717

5710

5707

JOINS PANEL 1000

EL PASO COUNTY
UNINCORPORATED AREAS
080059

**AREA REVISED BY LOMR
DATED AUGUST 29, 2007.**

SITE

**SITE
BOUNDARY**

23

PROFILE
BASELINE

*Jimmy Camp Creek
East Tributary*

5702

5699

E

ZONE AE

24

ZONE
AE

5693

5694

5697

E

5701

5700

5698

E

5689

5690

5692

5696

5698

APPENDIX B

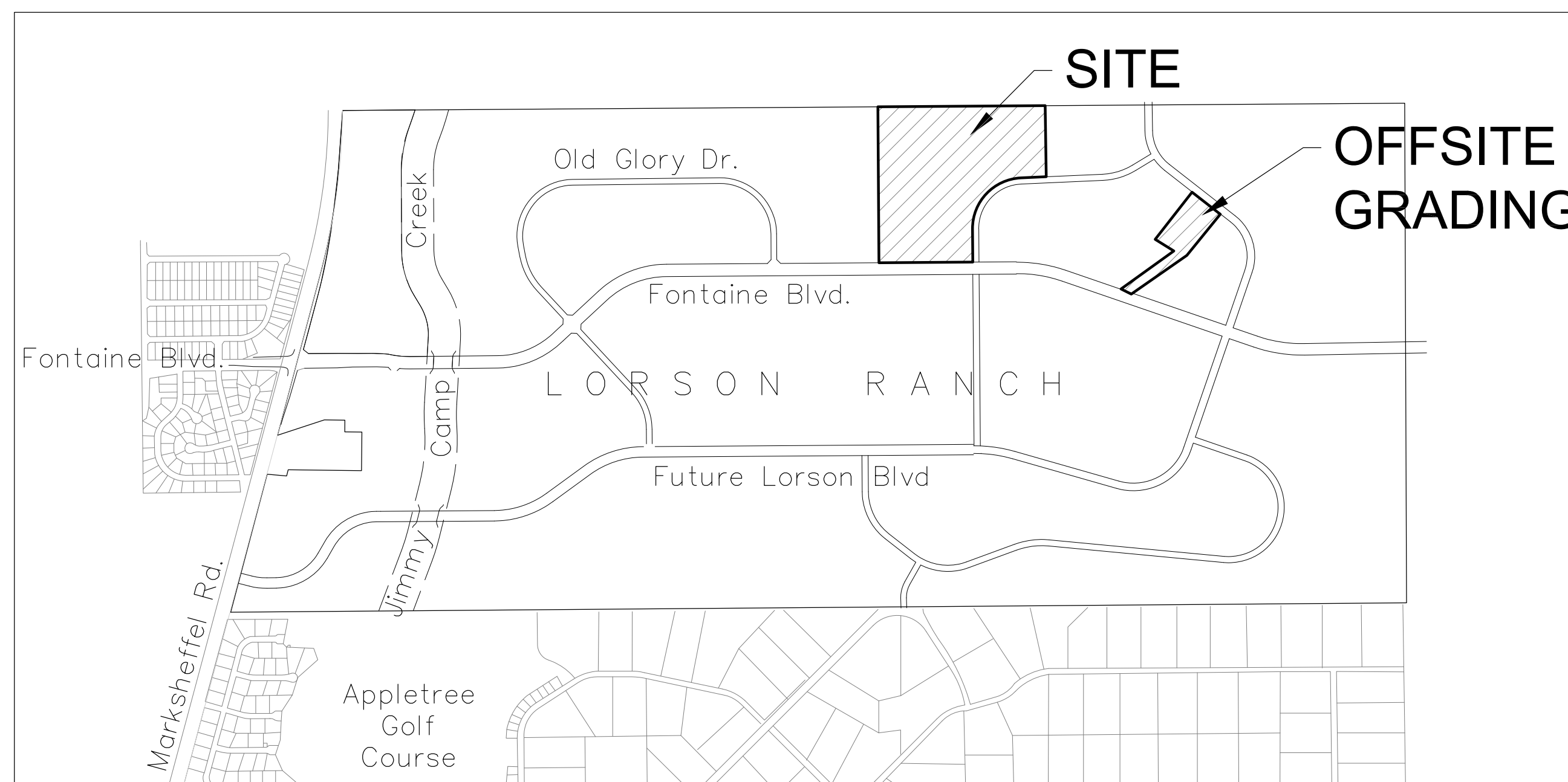
CONSTRUCTION PLANS

FINAL SITE GRADING CONSTRUCTION PLANS
FOR
LORSON RANCH EAST FILING NO. 2
FINAL GRADING / EROSION CONTROL PLANS



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



VICINITY MAP
NO SCALE

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

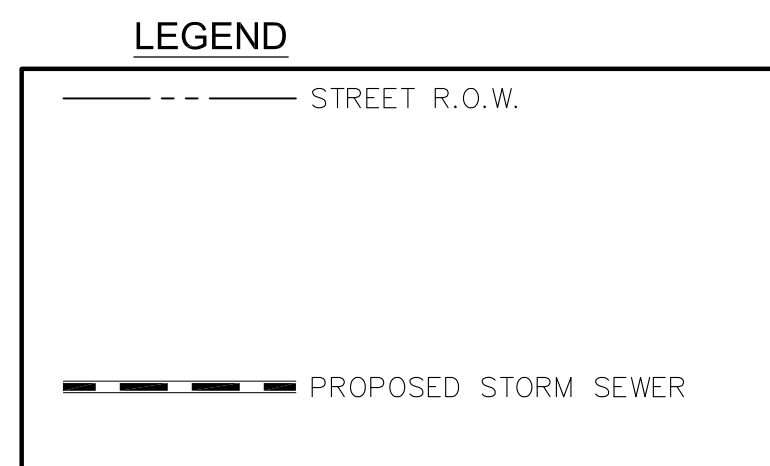
FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUALS VOLUME 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED. CONSTRUCTION DOCUMENTS WILL BE VALID FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER.

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

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



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

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.

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.

PUDSP-16-003
EGP 18-002
SF-18-019

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

DATE: _____
DESCRIPTION: _____
NO. _____
PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

DRAWN: **RLS**
DESIGNED: **RLS**
CHECKED: **RLS**

COVER SHEET
FINAL GRADING AND
EROSION CONTROL PLAN

DATE:
SEPT. 15, 2018

PROJECT NO.
100.044

SHEET NUMBER
C0.1

TOTAL SHEETS: 11

CONSTRUCTION NOTES

- ALL WORK SHALL COMPLY WITH THE CODES AND POLICIES FOR EL PASO COUNTY.
- 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.
- 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
- THE CONTRACTOR IS RESPONSIBLE FOR THE RE-ESTABLISHMENT OF ALL SURVEY MONUMENTS DISTURBED WITHIN THE PROJECT LIMITS.
- THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM FLOODING AT ALL TIMES. AREAS AND FACILITIES SUBJECT TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED.
- 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 (ASTM 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.
- SUBGRADE MATERIALS DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED, DISPOSED OF AND REPLACED WITH APPROVED MATERIALS.
- FILL SHALL BE PLACED IN 8-INCH MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED PRIOR TO SUCCESSIVE LIFTS.
- 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.
- 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.
- ALL GRADING SHALL CONFORM TO THE GEOTECHNICAL 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.
- 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.

WORK WITHIN CSU SOUTHERN DELIVERY SYSTEM EASEMENT CONSTRUCTION NOTES

- CONTRACTOR SHALL COMPLY WITH CSU LESS 2.6.H.8 "CROSSING RAW WATER TRANSMISSION MAINS" FOR ALL WORK WITHIN THE CSU WATERMAIN EASEMENT
- UTILITIES CROSSING OVER THE SDS WATERMAIN MUST BE POTHOLED WITH HYDRO-VAC AT EVERY CROSSING TO OBTAIN VISUAL VERIFICATIN OF THE WATERMAIN ELEVATION.
- A COLORADO SPRINGS UTILITIES WATER INSPECTOR SHALL BE NOTIFIED, 719-668-4658, AND PRESENT BEFORE AND DURING CONSTRUCTION ACTIVITIES WITHIN THE SDS EASEMENT
- CONTACT WAYNE RUST, 719-668-3996, COLORADO SPRINGS UTILITIES, FOR ADDITIONAL INFORMATION REGARDING THE SDS FIBER LINE.
- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 5' OF COVER OVER THE SDS WATERMAIN.
- CONTRACTOR SHALL SALVAGE AND REPLACE ALL CARSONITE WATER MARKERS OVER THE WATERMAIN AFTER CONSTRUCTION.

EL PASO COUNTY STANDARD CONSTRUCTION NOTES:

- 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.
- 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).
- 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
- 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.
- 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.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- 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.
- 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.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- 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.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PUBLIC WORK DEPARTMENT AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PWD, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 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:

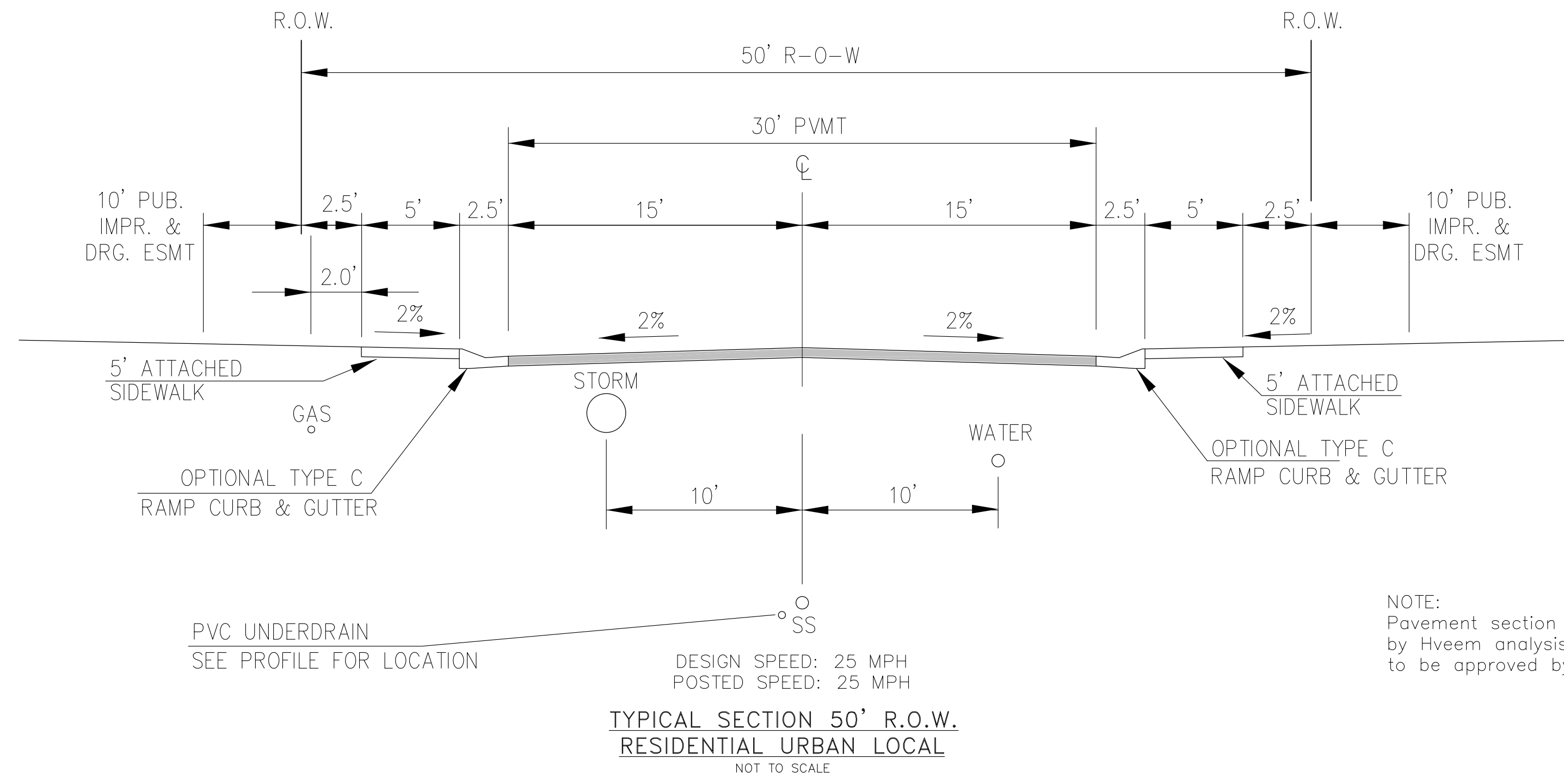
- THE PROJECT SITE VEGETATION CONSISTS OF NATIVE GRASSES THAT HAVE BEEN HEAVILY GRAZED FOR YEARS. THERE ARE NO TREES OR BRUSH WITHIN THE DISTURBED AREA. EXISTING VEGETATIVE COVER IS ESTIMATED AT 85%.
- THERE ARE NO EXISTING STRUCTURES WITHIN THE LIMITS OF DISTURBANCE.
- EXISTING UTILITY EASEMENTS WITHIN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

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PCD AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PCD INSPECTIONS.
- 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.
- 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.
- 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.
- 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.
- 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 SEEDDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
- 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.
- 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).
- 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.
- 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.
- 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.
- 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.
- EROSION CONTROL BLANKETING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 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.
- VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- 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.
- 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.
- 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.
- 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.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
- 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO ACTUAL CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY RMG AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 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	1500 WEST AVENUE, SUITE 500 BOULDER, CO 80506 PH: 719.570.1100 CONTACT: RICHARD L. SCHINDLER, P.E. EMAIL: Rich@ceg1.com
	DATE: _____
FINAL GRADING PLAN	DESCRIPTION: _____
	NO. _____
NOTES	DRAWN: RLS DESIGNED: RLS CHECKED: RLS
	PROJECT: LORSON RANCH EAST FILING NO. 2 PREPARED FOR: LORSON, LLC 212 N. WAHSATCH AVE. SUITE 301 COLORADO SPRINGS, COLORADO 80903 FONTAINE BLVD. - LAMPREY DR. COLORADO SPRINGS, COLORADO (719) 635-3200 CONTACT: JEFF MARK
DATE:	SEPT. 15, 2018
PROJECT NO.	100.044
SHEET NUMBER	C0.2
TOTAL SHEETS:	11



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

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

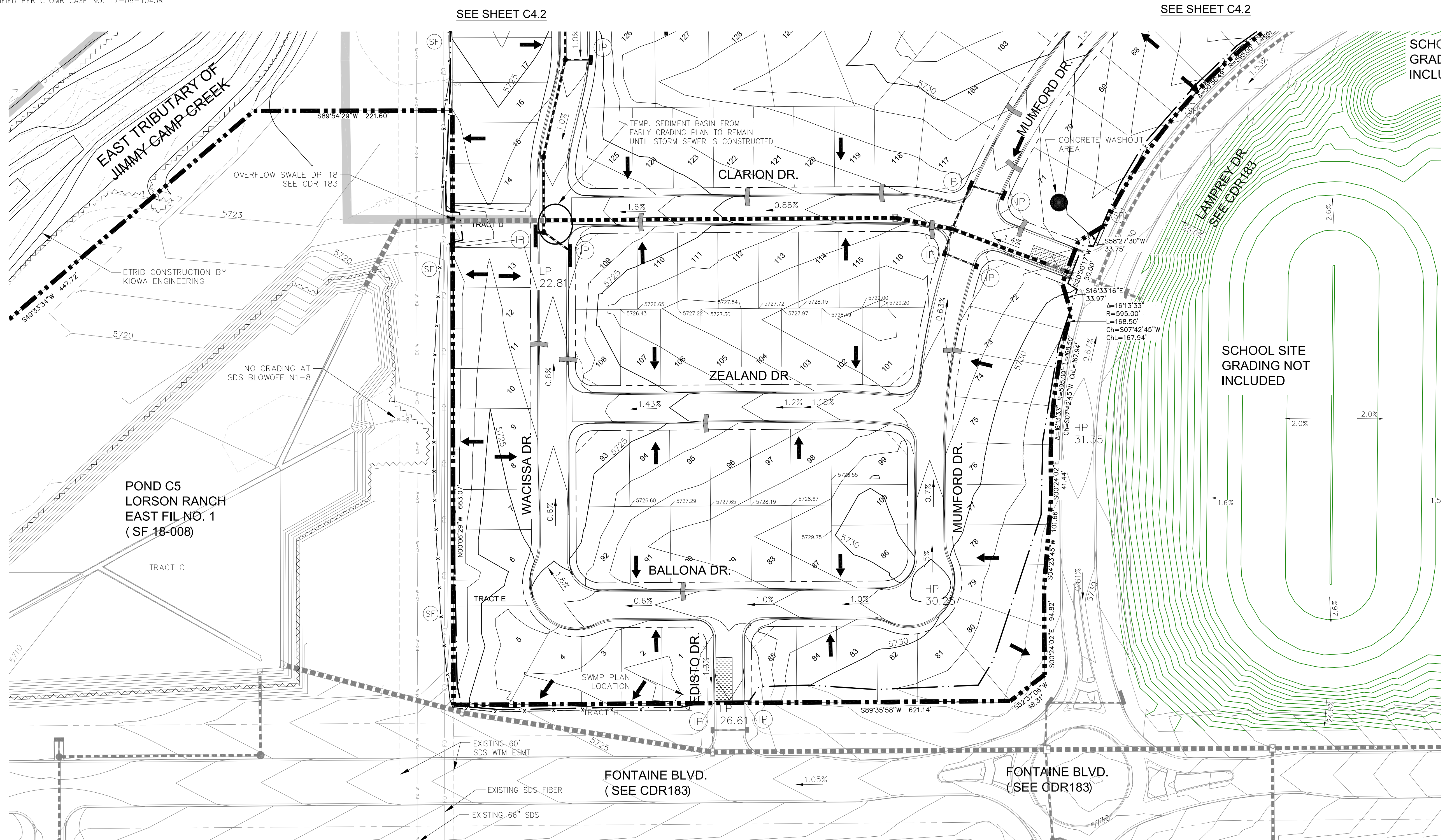
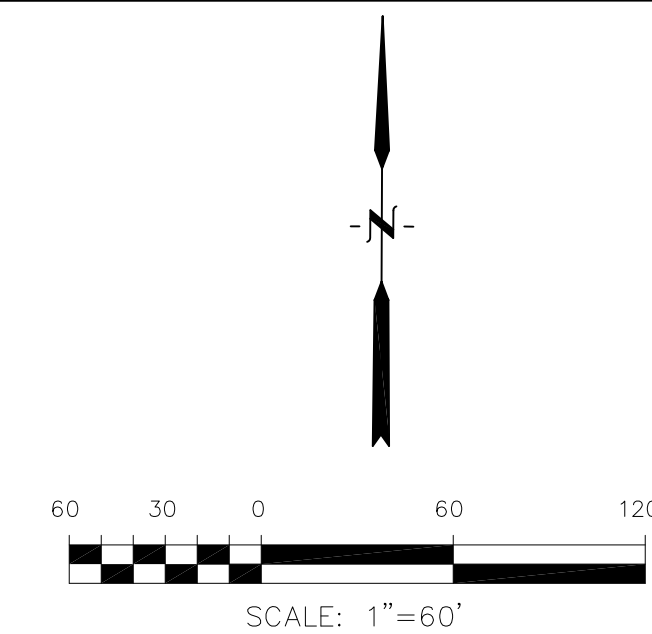
WACISSA DRIVE, TARBELL DRIVE, SHAVERS DRIVE, BALLONA DRIVE, MUMFORD DRIVE, EDISTO DRIVE, ZEALAND DRIVE, CLARION DRIVE, NASH DRIVE

CORE ENGINEERING GROUP													
15004 1ST AVENUE S. BURNSVILLE, MN 55306 PH: 719.570.1100 CONTACT: RICHARD L. SCHINDLER, P.E. EMAIL: Rich@cegi.com													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">NO.</th> <th style="width: 80%;">DESCRIPTION</th> <th style="width: 10%;">DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	DESCRIPTION	DATE										<p>PREPARED FOR: LORSON, LLC 212 N. WAHSATCH AVE, SUITE 301 COLORADO SPRINGS, COLORADO 80903 (719) 635-3200 CONTACT: JEFF MARK</p> <p>PROJECT: LORSON RANCH EAST FILING NO. 2 FONTAINE BLVD - LAMFREY DR COLORADO SPRINGS, COLORADO</p> <p>DRAWN: RLS DESIGNED: RLS CHECKED: RLS</p>
NO.	DESCRIPTION	DATE											
FINAL GRADING PLAN													
TYPICAL ROADWAY SECTIONS													
DATE: SEPT. 15, 2018													
PROJECT NO. 100.044													
SHEET NUMBER C03													
TOTAL SHEETS: 11													

LEGEND

- 5721- - - - - EXISTING MINOR CONTOUR
- 5720- - - - - EXISTING MAJOR CONTOUR
- 5720- - - - - PROPOSED CONTOUR (LORSON RANCH EAST EARLY PH 1 GRADING), PUD SP 16-003
- 5720- - - - - PROPOSED CONTOUR (BY SCHOOL GRADING)
- 5720- - - - - PROPOSED CONTOUR
- (SF) - - - - - EXISTING STORM SEWER (CDR 183)
- (SF) - - - - - PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
- (SF) - - - - - SUBDIVISION BOUNDARY
- (IP) - - - - - LIMITS OF CONSTRUCTION/DISTURBANCE
- (IP) - - - - - INLET PROTECTION
- ACCESS TO ETRIB MAINTENANCE ROAD
- 100-YR FLOODPLAIN PER CLOMR
- PROPOSED STORM SEWER IN FILING NO. 2
- STRAW BALE BARRIER
- VEHICLE TRACKING CONTROL
- PROPOSED RIP RAP
- SLOPE ARROW

- NOTE:**
1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
 2. POND SLOPES SHALL BE 3:1
 3. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES AND PERMANENT SLOPES 6:1 OR STEEPER.
 4. FLOODPLAIN TO BE MODIFIED PER CLOMR CASE NO. 17-08-1043R



CORE ENGINEERING GROUP
 1500R 151ST AVENUE, SUITE 300
 FORT COLLINS, CO 80506
 PH: 970.570.1100
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@ceg1.com

DATE: _____
 DESCRIPTION: _____
 NO: _____
 PROJECT: LORSON RANCH EAST FILING NO. 2
 PREPARED FOR: LORSON, LLC
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 FONTAINE BLVD. - LAMPREY DR. COLORADO SPRINGS, COLORADO (719) 635-3200
 CONTACT: JEFF MARK

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

**LORSON RANCH EAST FILING NO. 2
 FINAL GRADING AND E.C. PLAN
 SOUTH AREA**

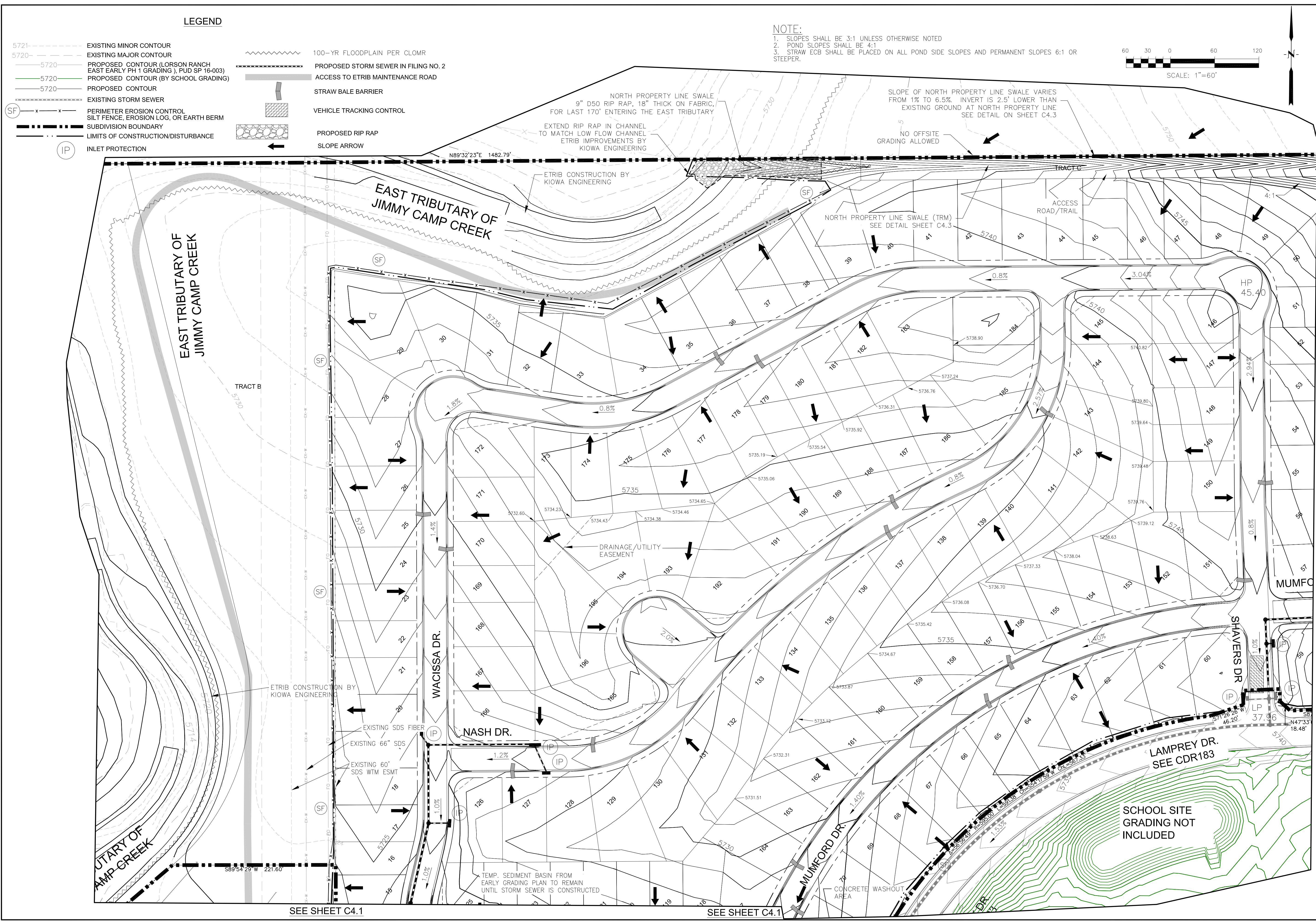
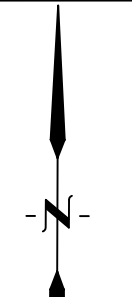
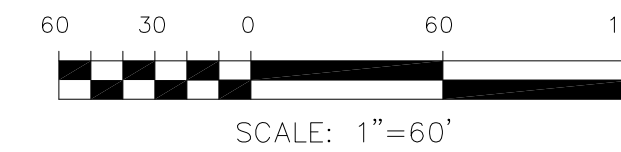
DATE: SEPT 15, 2018
 PROJECT NO. 100.044
 SHEET NUMBER C4.1
 TOTAL SHEETS: 11

LEGEND

- 5721- - - - - EXISTING MINOR CONTOUR
- 5720- - - - - EXISTING MAJOR CONTOUR
- 5720- - - - - PROPOSED CONTOUR (LORSON RANCH EAST EARLY PH 1 GRADING), PUD SP 16-003
- 5720- - - - - PROPOSED CONTOUR (BY SCHOOL GRADING)
- 5720- - - - - PROPOSED CONTOUR
- - - - - EXISTING STORM SEWER
- (SF) x - x PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
- - - - - SUBDIVISION BOUNDARY
- - - - - LIMITS OF CONSTRUCTION/DISTURBANCE
- (IP) INLET PROTECTION
- ~~~~~ 100-YR FLOODPLAIN PER CLOMR
- - - - - PROPOSED STORM SEWER IN FILING NO. 2
- - - - - ACCESS TO ETRIB MAINTENANCE ROAD
- ▬ STRAW BALE BARRIER
- ▬ VEHICLE TRACKING CONTROL
- ▬ PROPOSED RIP RAP
- ▬ SLOPE ARROW

NOTE:

1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
2. POND SLOPES SHALL BE 4:1
3. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES AND PERMANENT SLOPES 6:1 OR STEEPER.



SEE SHEET C4.3

SEE SHEET C4.3

SEE SHEET C4.1

SEE SHEET C4.1

CORE ENGINEERING GROUP
 1500 S. 151ST AVENUE, SUITE 100
 FORT COLLINS, CO 80506
 PH: 970.570.1100
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@ceg1.com

DATE: _____
 DESCRIPTION: _____
 NO. _____
 PREPARED FOR: **LORSON, LLC**
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 PROJECT: **LORSON RANCH EAST FILING NO. 2**
 FONTAINE BLVD. - LAMPREY DR.
 COLORADO SPRINGS, COLORADO
 CONTACT: JEFF MARK

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

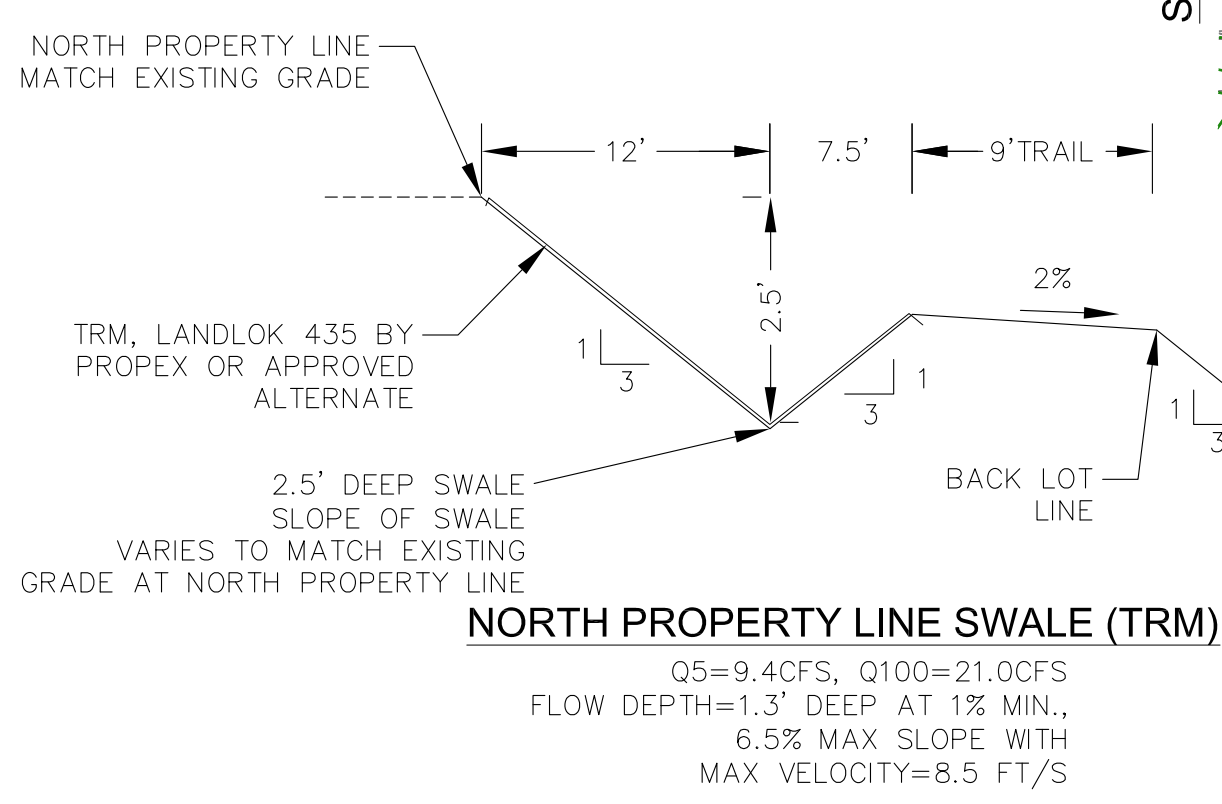
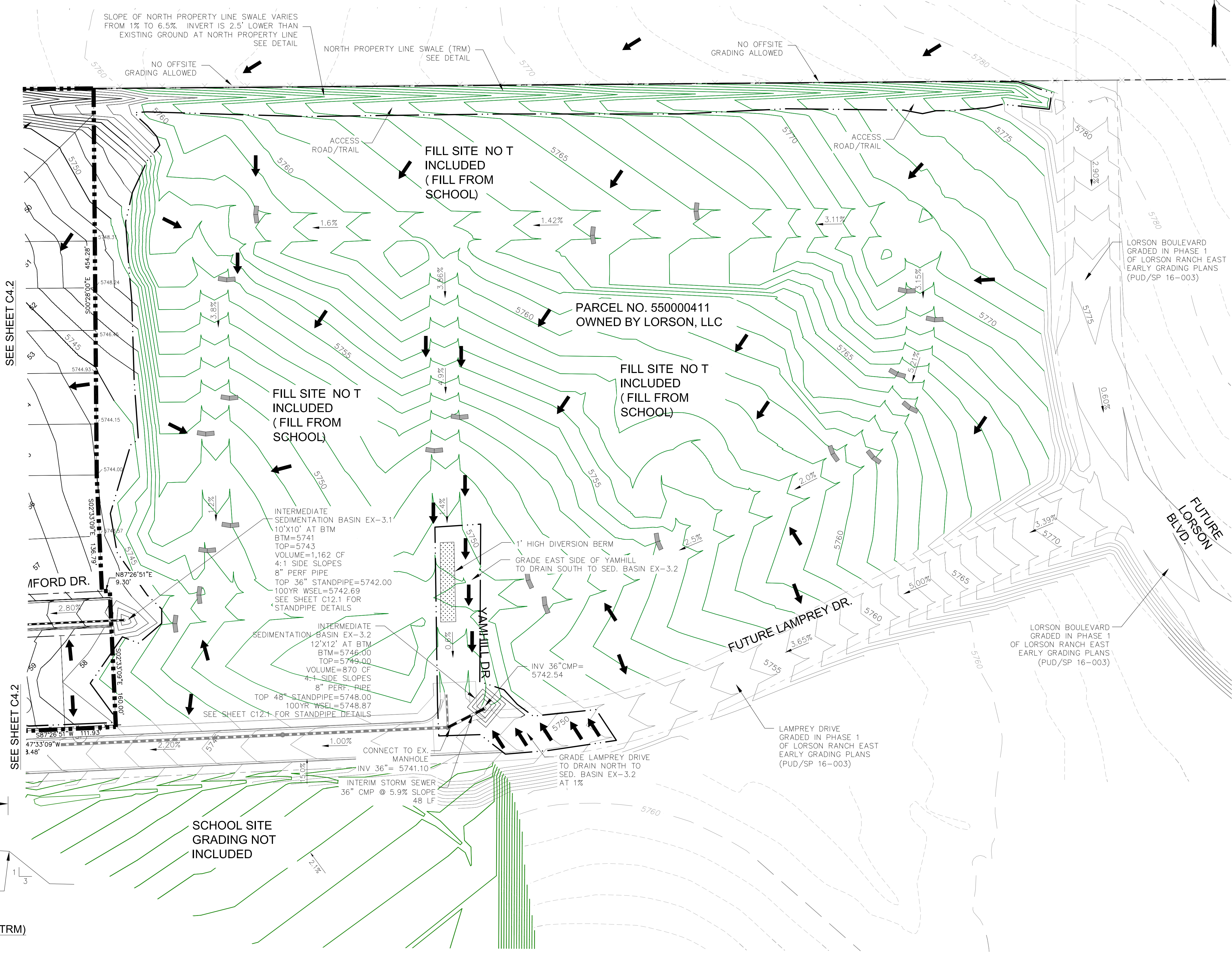
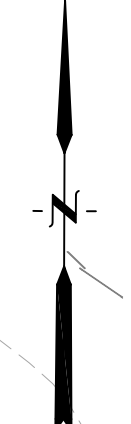
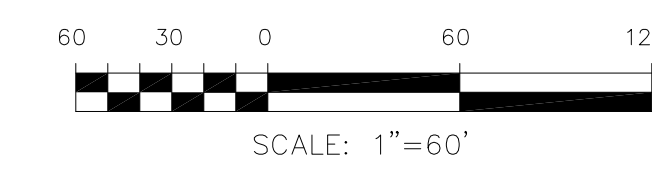
LORSON RANCH EAST FILING NO. 2
FINAL GRADING AND E.C. PLAN
NORTH AREA

DATE: SEPT 15, 2018
 PROJECT NO. 100.044
 SHEET NUMBER **C4.2**
 TOTAL SHEETS: 11

LEGEND

- 5721- - - - - EXISTING MINOR CONTOUR
- 5720- - - - - EXISTING MAJOR CONTOUR
- 5720- - - - - PROPOSED CONTOUR (LORSON RANCH EAST EARLY PH 1 GRADING), PUD SP 16-003
- 5720- - - - - PROPOSED CONTOUR (BY SCHOOL GRADING)
- 5720- - - - - PROPOSED CONTOUR
- - - - - EXISTING STORM SEWER
- (SF) x x x PERIMETER EROSION CONTROL SILT FENCE, EROSION LOG, OR EARTH BERM
- - - - - SUBDIVISION BOUNDARY
- - - - - LIMITS OF CONSTRUCTION/DISTURBANCE
- (IP) INLET PROTECTION
- (S) STRAW BALE BARRIER
- - - - - PROPOSED STORM SEWER IN FILING NO. 2
- (V) VEHICLE TRACKING CONTROL
- (R) PROPOSED RIP RAP
- (A) SLOPE ARROW

NOTE:
 1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
 2. POND SLOPES SHALL BE 4:1
 3. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES AND PERMANENT SLOPES 6:1 OR STEEPER.
 4. SEE SHEET C12.1 FOR SEDIMENT BASIN STANDPIPE DETAILS



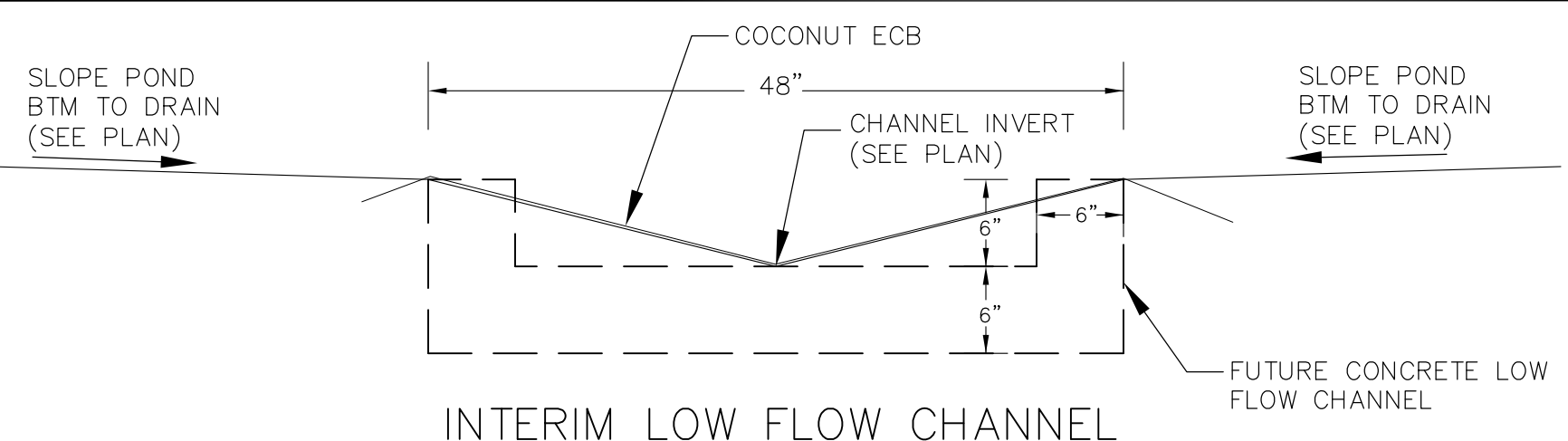
CORE ENGINEERING GROUP
 1500 S. AVENUE S.
 SUITE 100, DENVER, CO 80202
 PH: 719.570.1100
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@cegi.com

DATE: _____
 DESCRIPTION: _____
 NO: _____
 PREPARED FOR: **LORSON, LLC**
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 PROJECT: **LORSON RANCH EAST FILING NO. 2**
 FONTAINE BLVD.-LAMPREY DR. COLORADO SPRINGS, COLORADO
 CONTACT: JEFF MARK

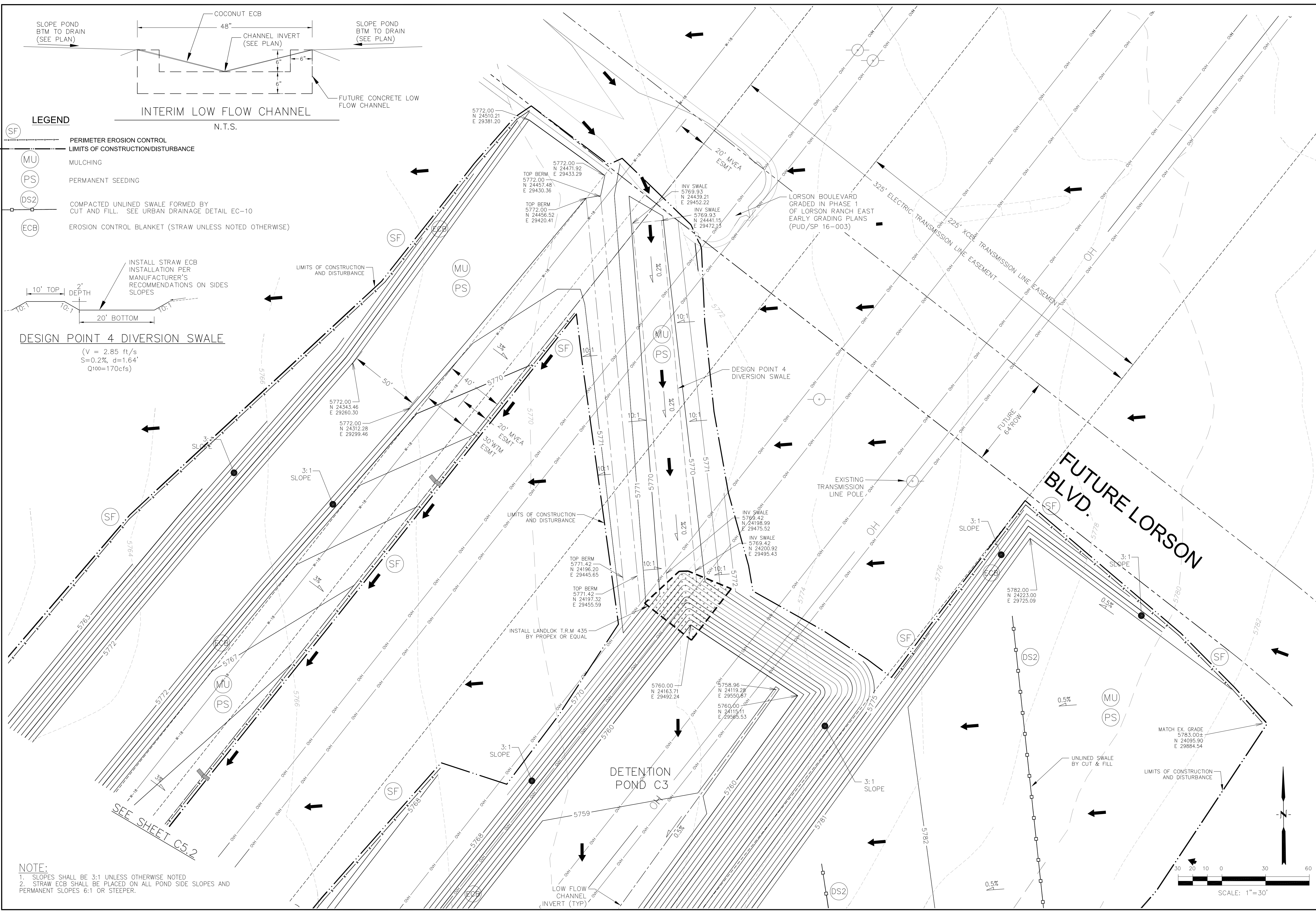
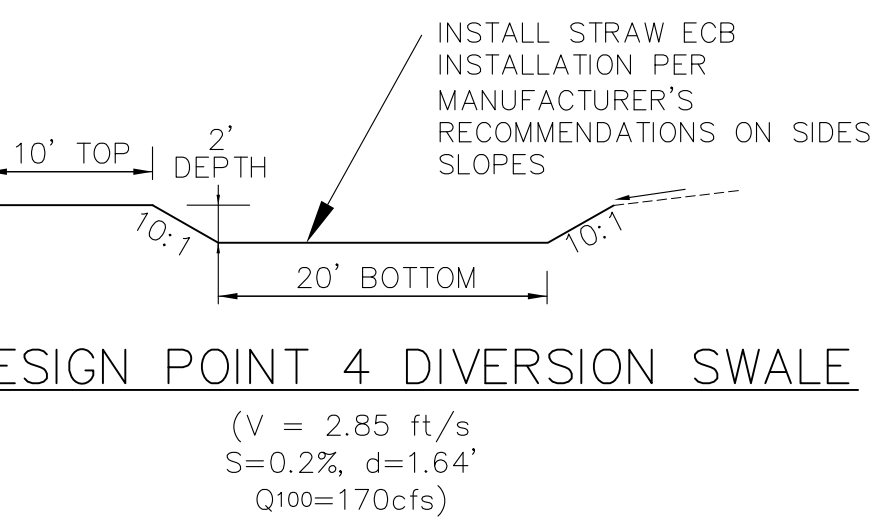
DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

**LORSON RANCH EAST FILING NO. 2
 FINAL GRADING AND E.C. PLAN
 EAST AREA - OFFSITE GRADING**

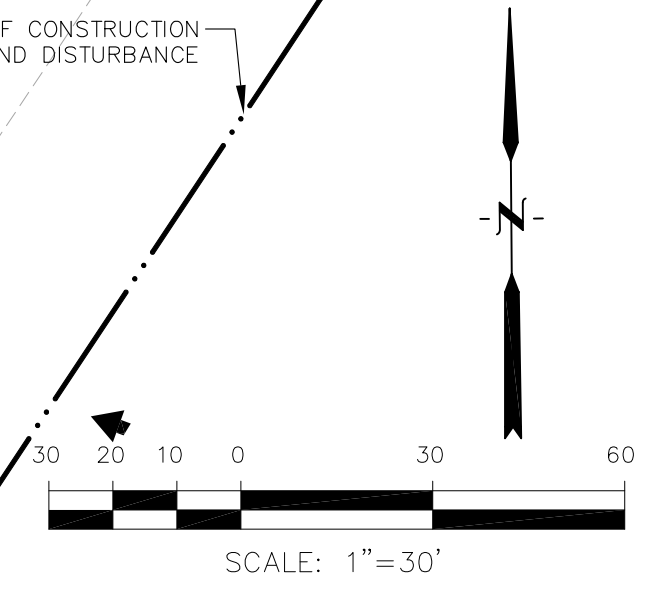
DATE: SEPT 15, 2018
 PROJECT NO: 100.044
 SHEET NUMBER: **C4.3**
 TOTAL SHEETS: 11



- LEGEND**
- (SF) PERIMETER EROSION CONTROL LIMITS OF CONSTRUCTION/DISTURBANCE
 - (MU) MULCHING
 - (PS) PERMANENT SEEDING
 - (DS2) COMPACTED UNLINED SWALE FORMED BY CUT AND FILL. SEE URBAN DRAINAGE DETAIL EC-10
 - (ECB) EROSION CONTROL BLANKET (STRAW UNLESS NOTED OTHERWISE)



NOTE:
 1. SLOPES SHALL BE 3:1 UNLESS OTHERWISE NOTED
 2. STRAW ECB SHALL BE PLACED ON ALL POND SIDE SLOPES AND PERMANENT SLOPES 6:1 OR STEEPER.



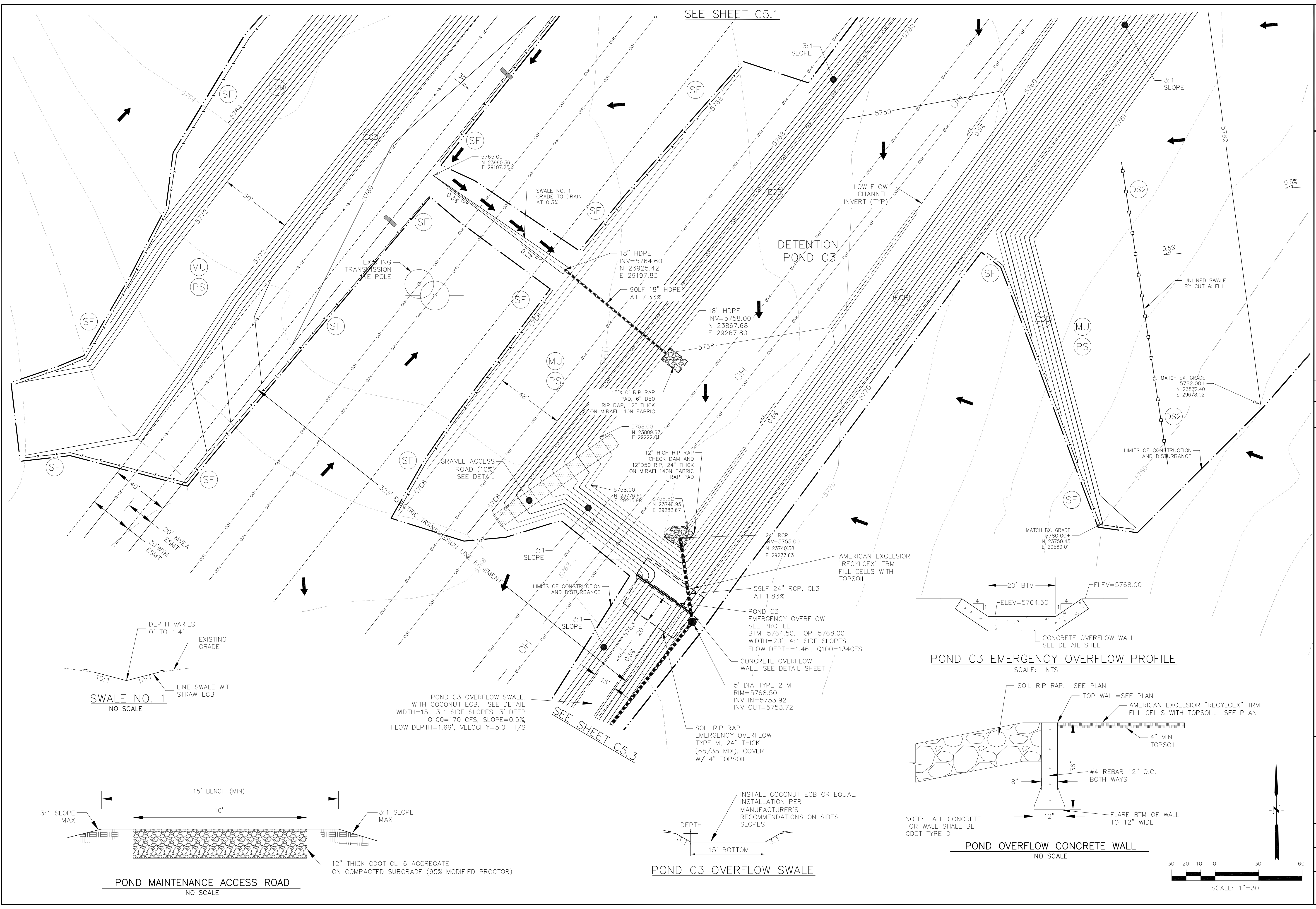
CORE ENGINEERING GROUP
 15004 1ST AVENUE S.
 DENVER, CO 80202
 PHONE: 719.570.1100
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@ceg1.com

DATE: _____
 DESCRIPTION: _____
 NO: _____
 PREPARED FOR:
LORSON RANCH EAST
 FILING NO. 2
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 FONTAINE BLVD. - LAMPREY DR.
 COLORADO SPRINGS, COLORADO
 CONTACT: JEFF MARK

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

**OFFSITE GRADING & POND C3
 FINAL GRADING AND
 EROSION CONTROL PLAN**

DATE:
 SEPT 15, 2018
 PROJECT NO.
 100.044
 SHEET NUMBER
C5.1
 TOTAL SHEETS: 11



CORE
ENGINEERING GROUP
15004 1ST AVENUE, S.
DENVER, CO 80202
PHONE: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

DATE: _____
DESCRIPTION: _____
NO: _____

PREPARED FOR:
LORSON RANCH EAST
FILING NO. 2
FONTAINE BLVD.-LAMPREY DR.
COLORADO SPRINGS, COLORADO

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

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

**OFFSITE GRADING & POND C3
FINAL GRADING AND
EROSION CONTROL PLAN**

DATE:
SEPT 15, 2018

PROJECT NO.
100.044

SHEET NUMBER
C5.2

TOTAL SHEETS: 11

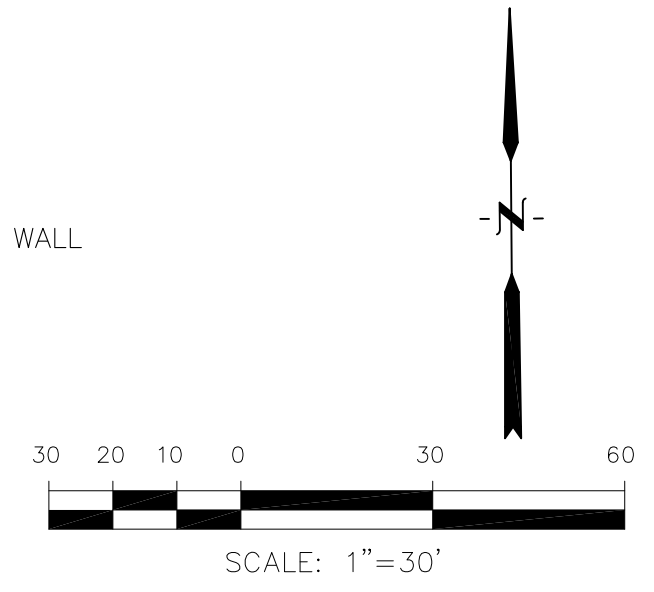


Figure CD-1
Check Dam
Construction Detail and Maintenance Requirements

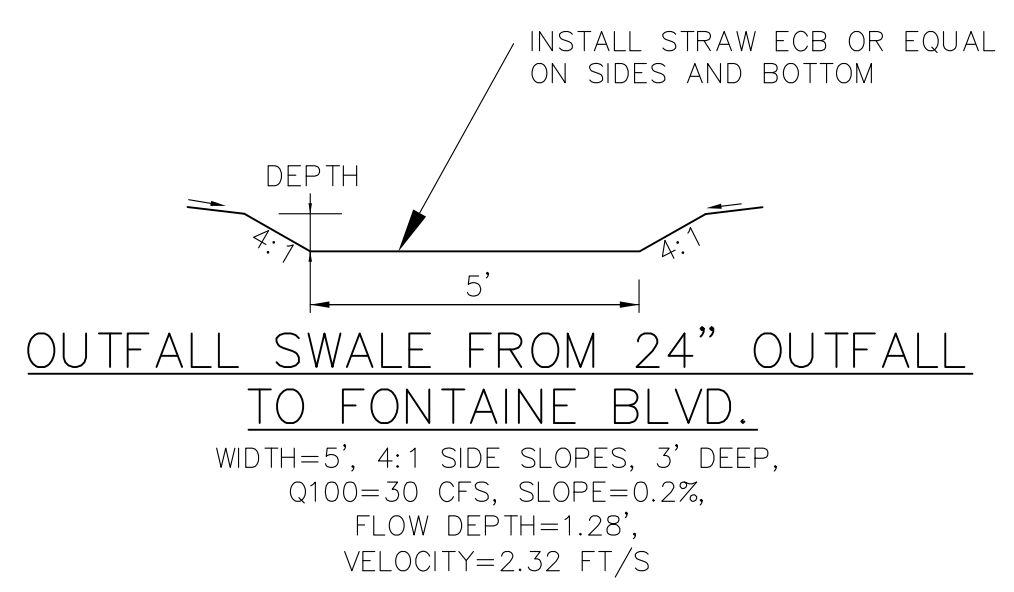
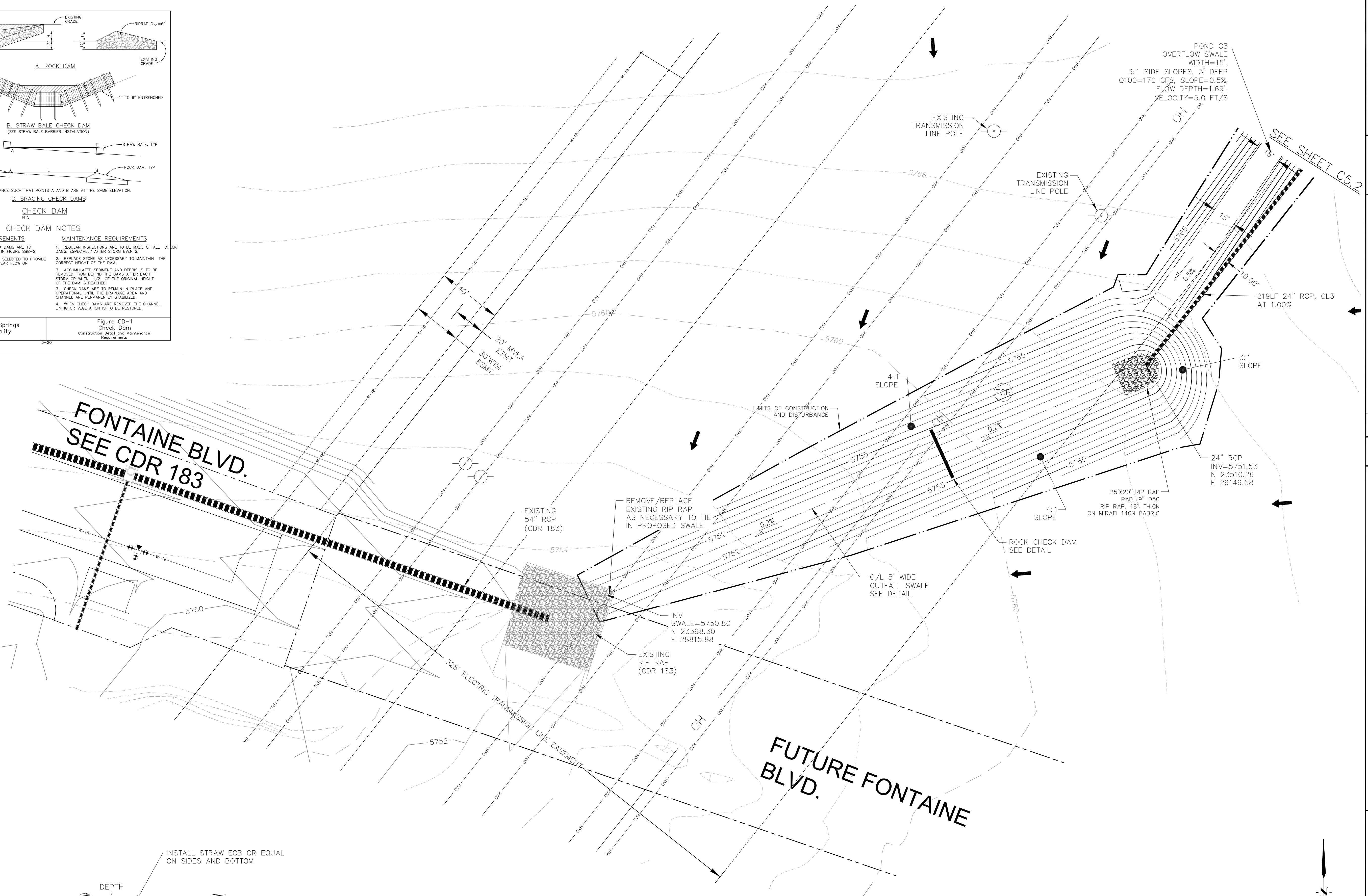
INSTALLATION REQUIREMENTS

1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SB8-2.
2. THE "Y" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs
Stormwater Quality



POND C3
OVERFLOW SWALE
WIDTH=15',
3:1 SIDE SLOPES, 3' DEEP
Q100=170 CFS, SLOPE=0.5%,
FLOW DEPTH=1.69',
VELOCITY=5.0 FT/S

SEE SHEET C5.2

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
DENVER, CO 80206
PHONE: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@cegi.com

DATE: _____
DESCRIPTION: _____
NO: _____

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
CONTACT: JEFF MARK

PROJECT:
LORSON RANCH EAST
FILING NO. 2
FONTAINE BLVD.—LAMPREY DR.
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

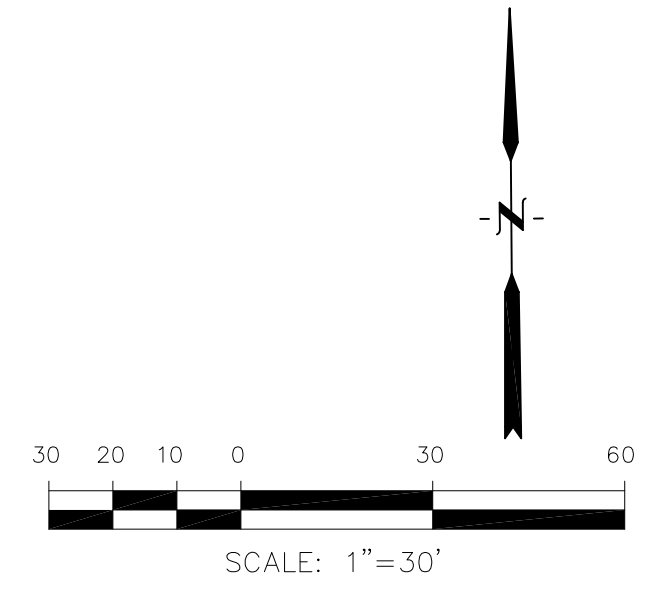
OFFSITE GRADING & POND C3
FINAL GRADING AND
EROSION CONTROL PLAN

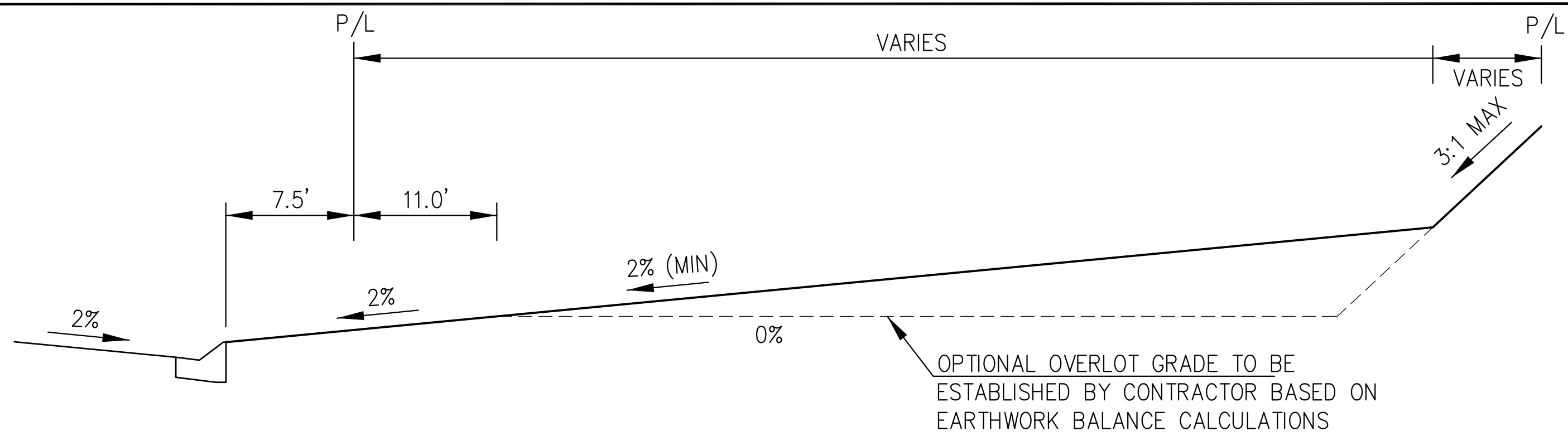
DATE:
SEPT 15, 2018

PROJECT NO.
100.044

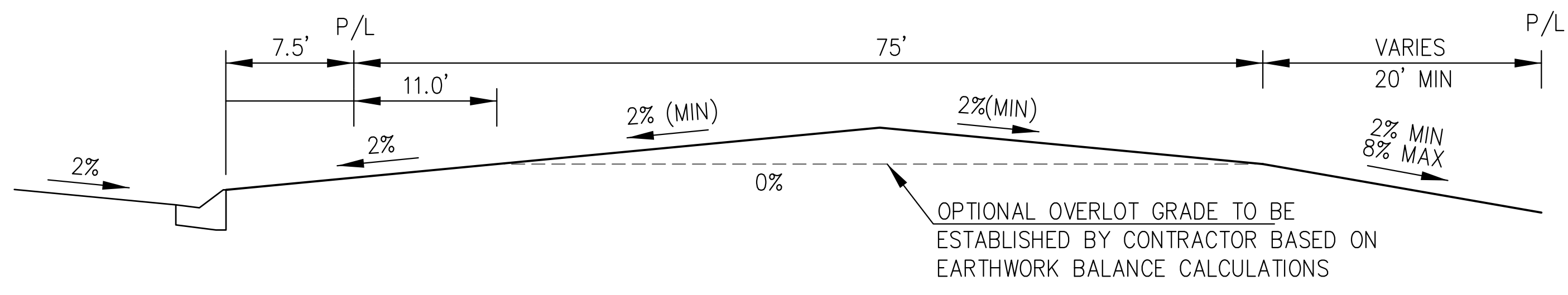
SHEET NUMBER
C5.3

TOTAL SHEETS: 11

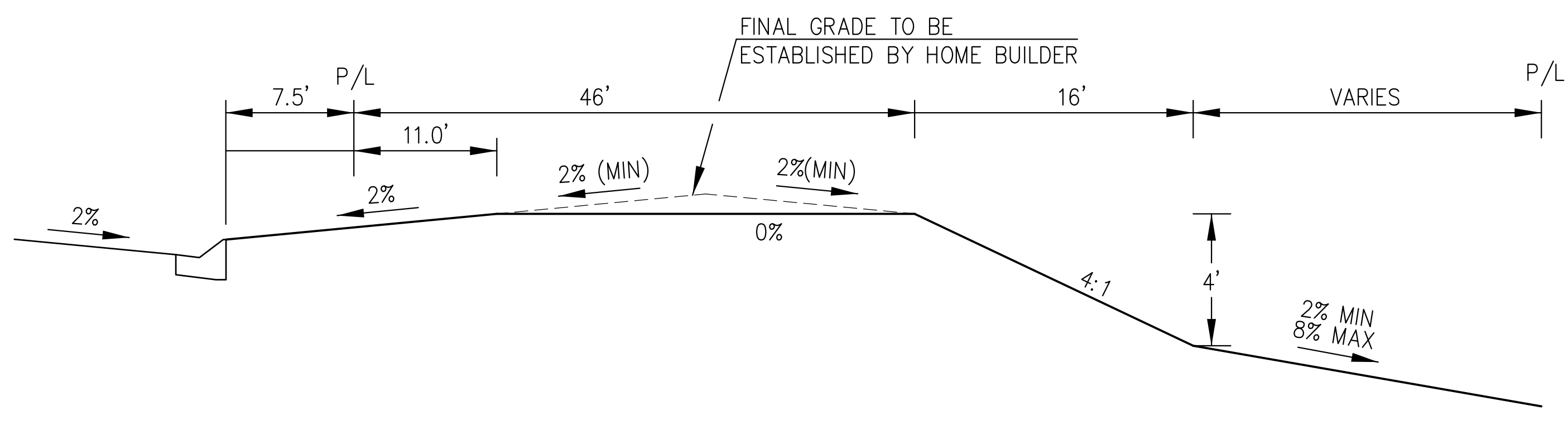




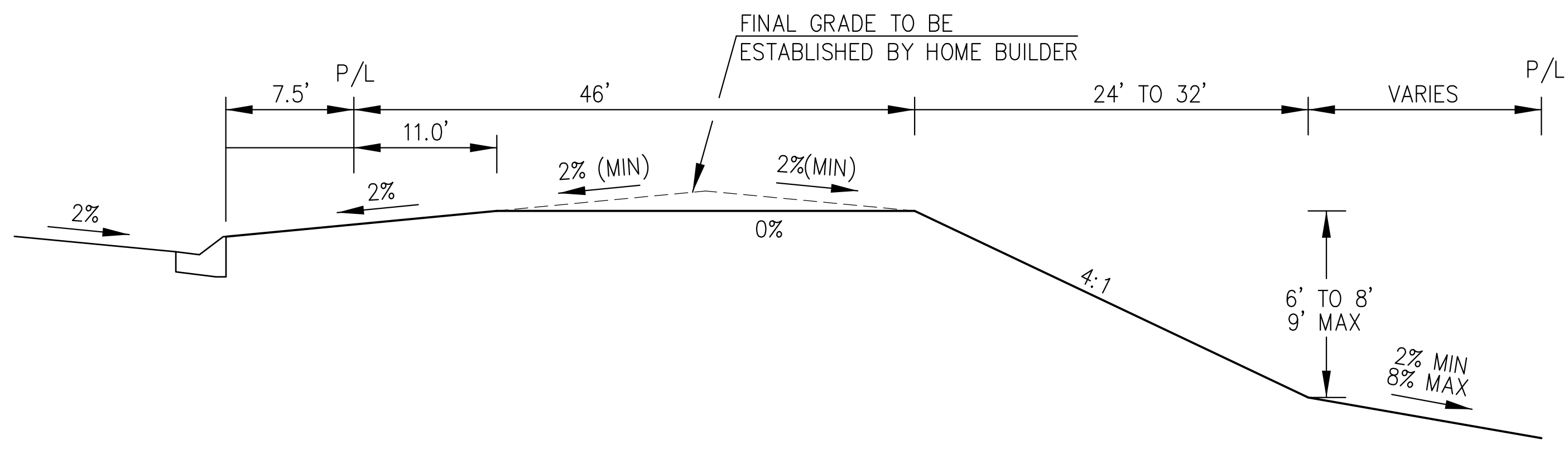
TYPICAL "A" LOT



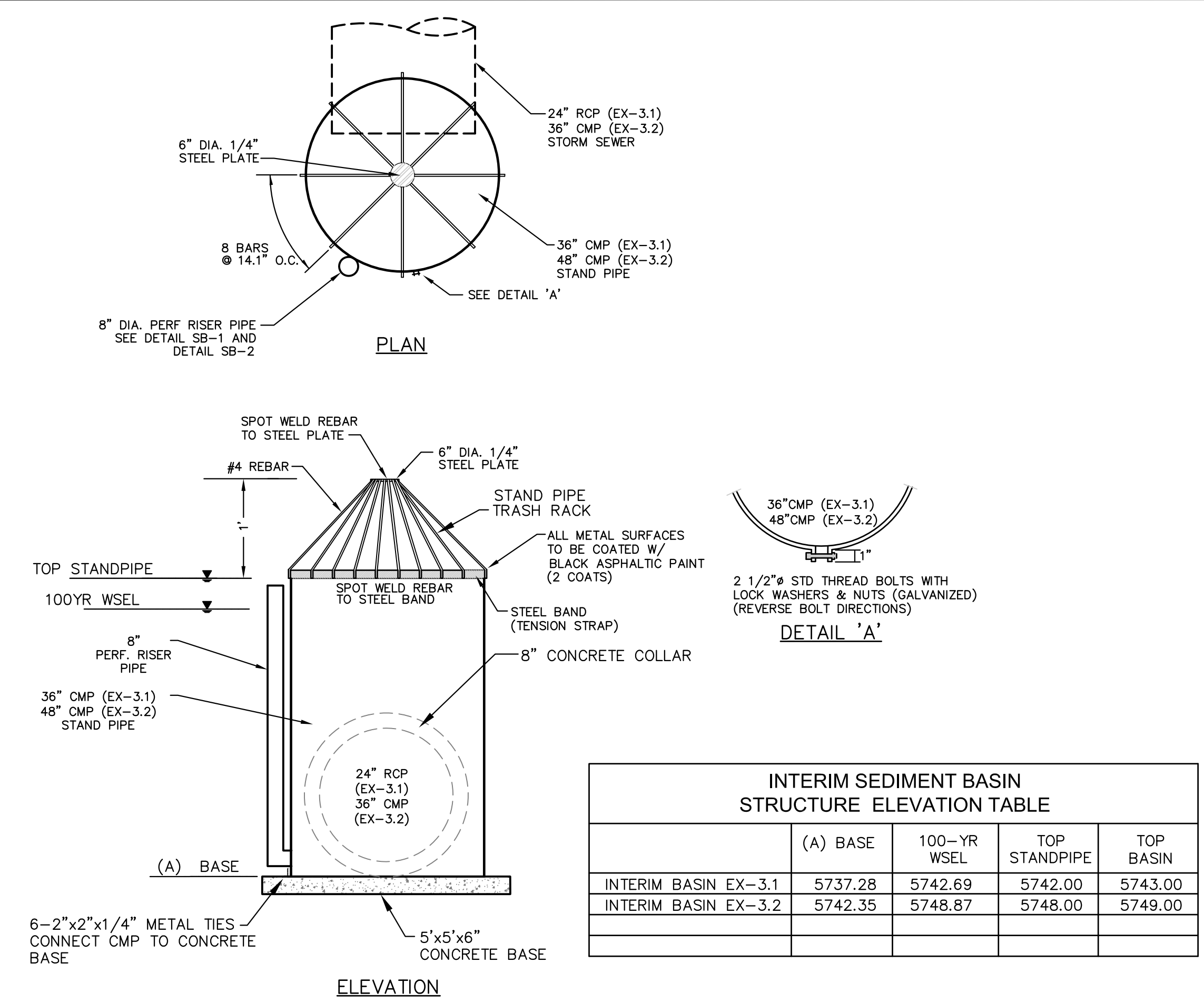
TYPICAL "B" LOT



TYPICAL "GARDEN" LOT

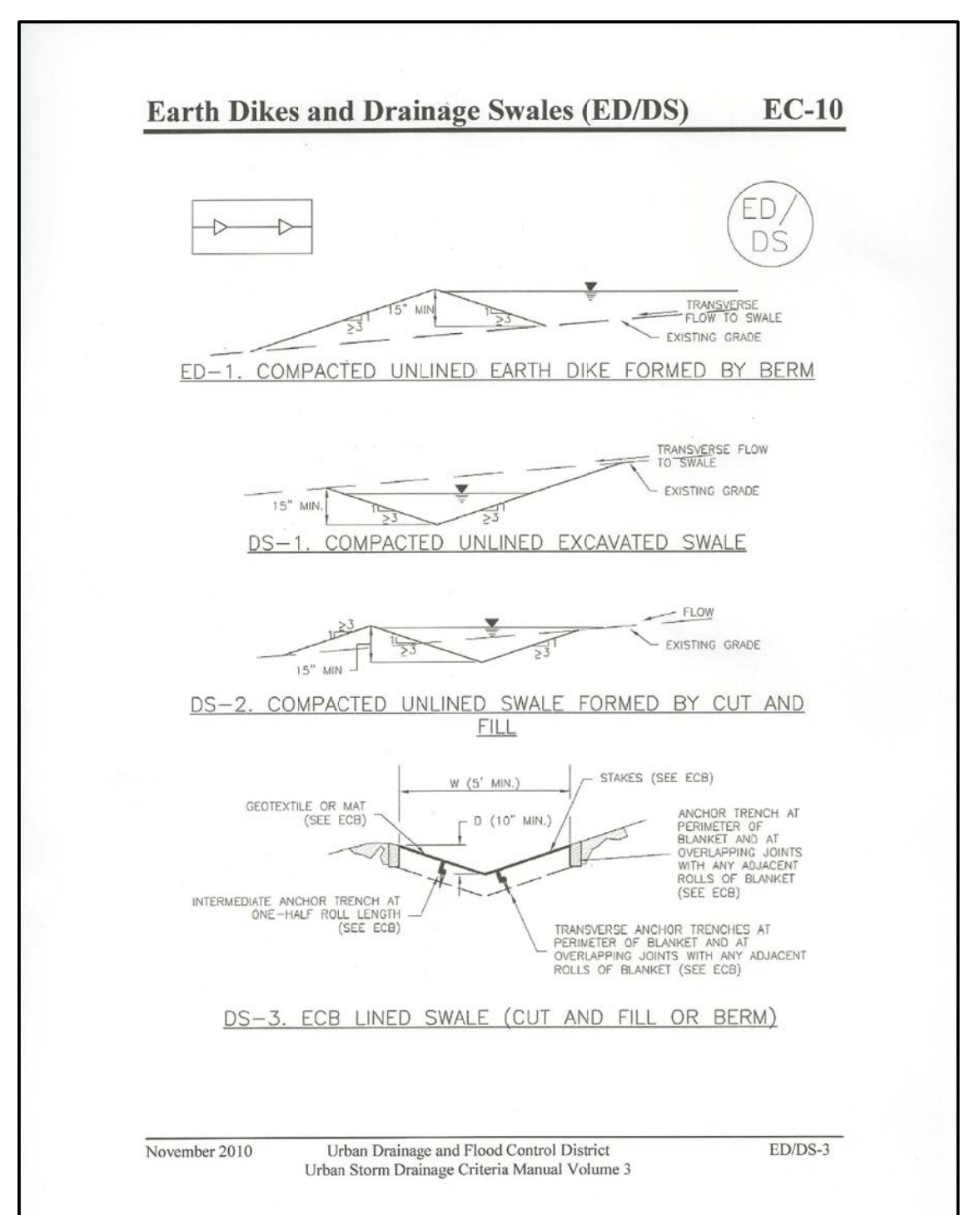
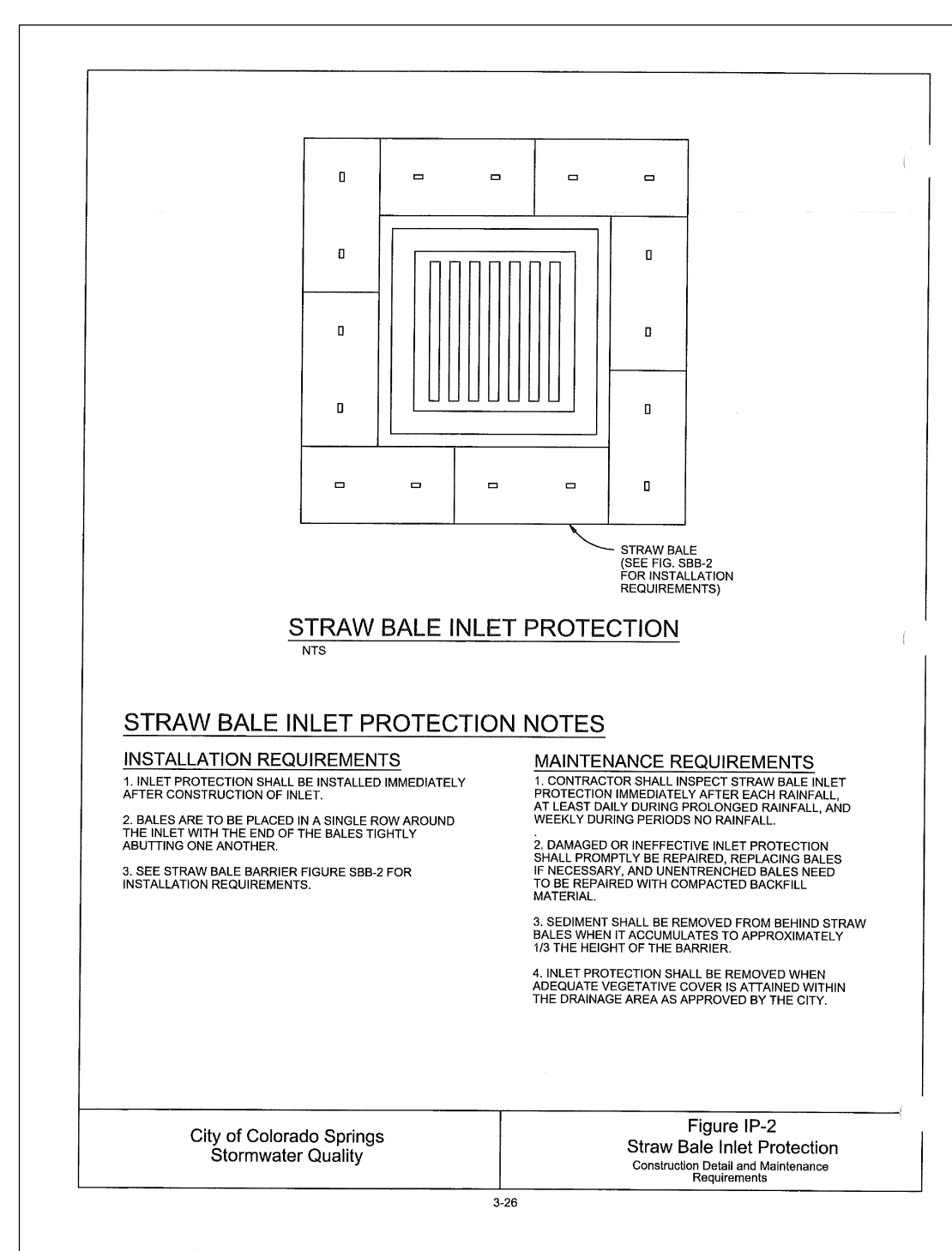


TYPICAL "WALKOUT" LOT



STAND PIPE AND TRASH RACK DETAILS

NOT TO SCALE



CORE ENGINEERING GROUP
 1500 S. 1ST AVENUE, SUITE 35506
 COLORADO SPRINGS, CO 80903
 PHONE: 719.570.1100
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@cegi.com

DATE: _____
 DESCRIPTION: _____
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PREPARED FOR:
LORSON RANCH EAST
 FILING NO. 2
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 (719) 635-3200
 CONTACT: JEFF MARK

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

FINAL GRADING PLAN
 DETAILS

DATE:
 SEPT 15, 2018

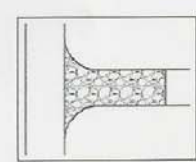
PROJECT NO.
 100.044

SHEET NUMBER
 C12.1

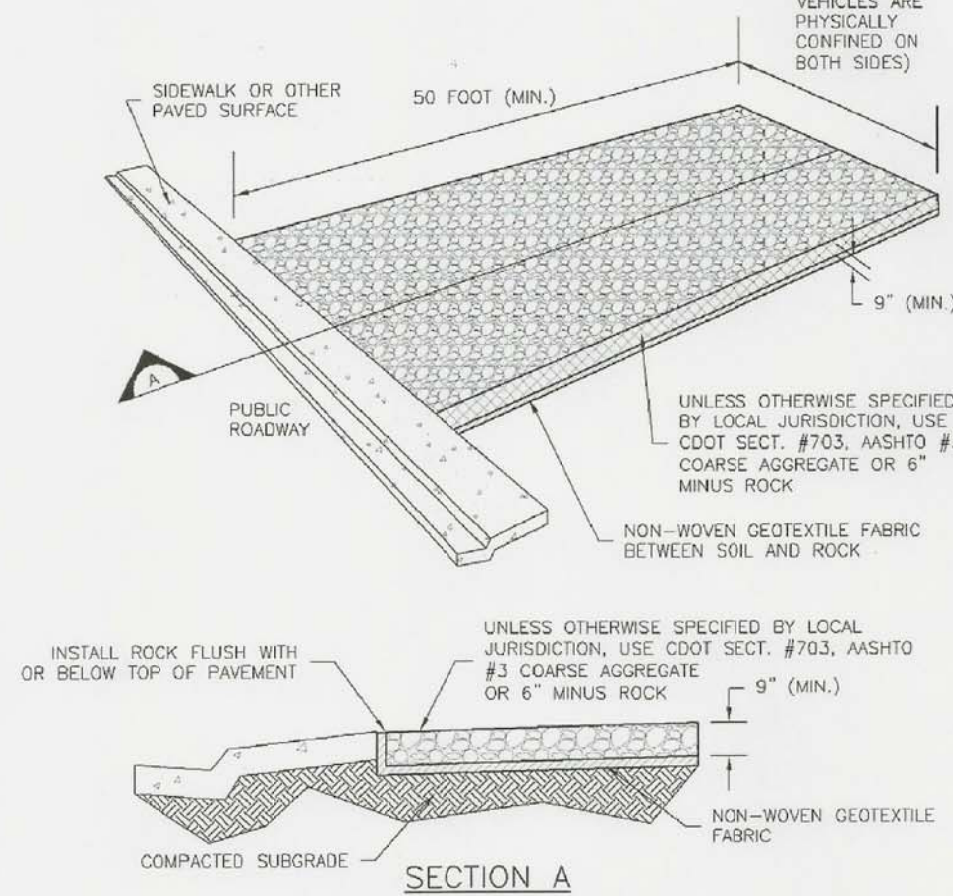
TOTAL SHEETS: 11

Vehicle Tracking Control (VTC)

SM-4



VTC

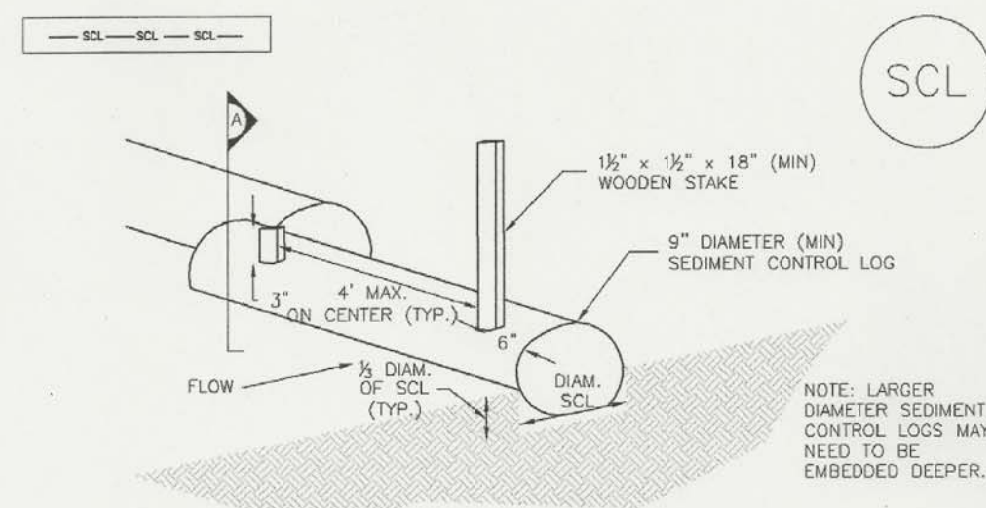


VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

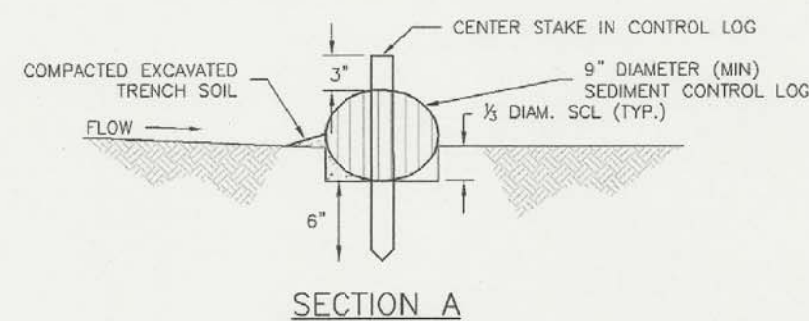
November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-3

Sediment Control Log (SCL)

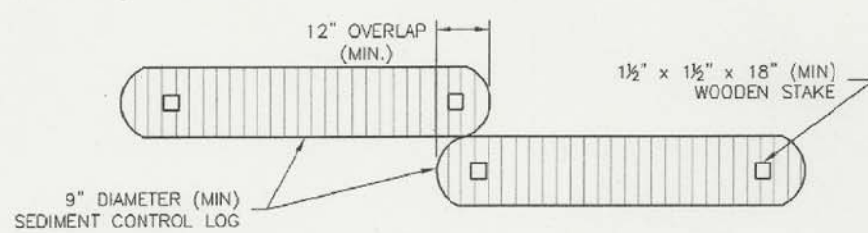
SC-2



SEDIMENT CONTROL LOG



SECTION A



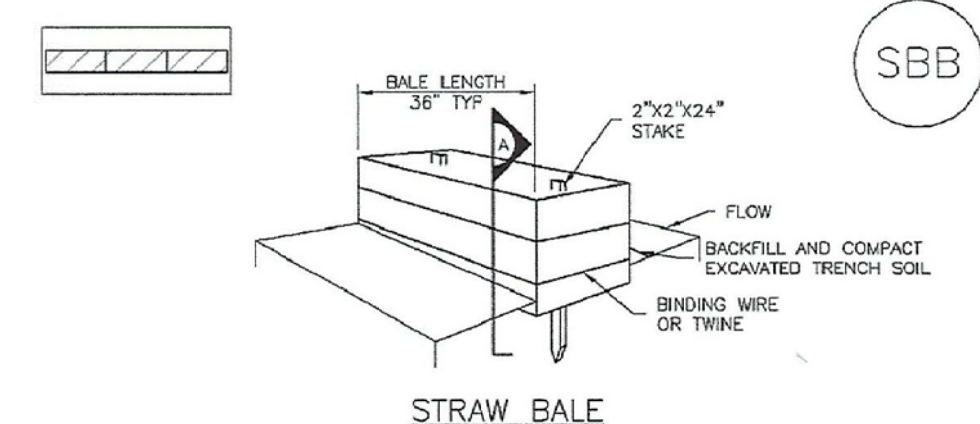
SEDIMENT CONTROL LOG JOINTS

SCL-1. SEDIMENT CONTROL LOG

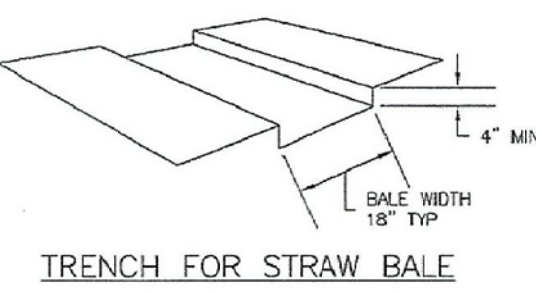
November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 SCL-3

SC-3

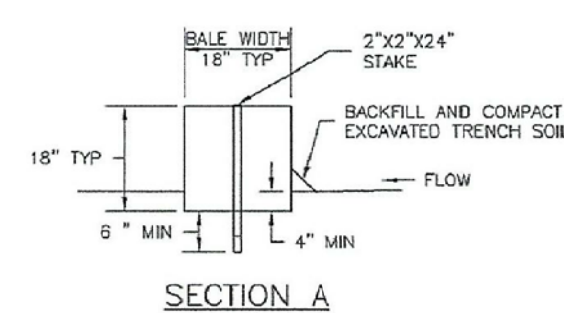
Straw Bale Barrier (SBB)



STRAW BALE



TRENCH FOR STRAW BALE



SECTION A

SBB-1. STRAW BALE

SBB-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

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
SIDEOTS GRAMA	EL RENO	2.5
		TOTAL 16.5 LBS
GRASS MIX FOR SANDY SOILS:		
GRASS	VARIETY	AMOUNT IN PLS LBS PER ACRE
SIDEOTS GRAMA	EL RENO	3.0
WESTERN WHEAT GRASS	BARTON	2.5
SLENDER WHEAT GRASS	NATIVE	2.0
LITTLE BLUESTEM	PASTURA	2.0
SAND BROUSEEED	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
SIDEOTS GRAMA	EL RENO	2.5
SLENDER WHEAT GRASS	SODAR	3.0
SMOOTH BROME	LINCOLN OR MANCHAR	4.0
CRESTEDWHEAT GRASS	EPHRAIM	3.0
		TOTAL 17.5 LBS

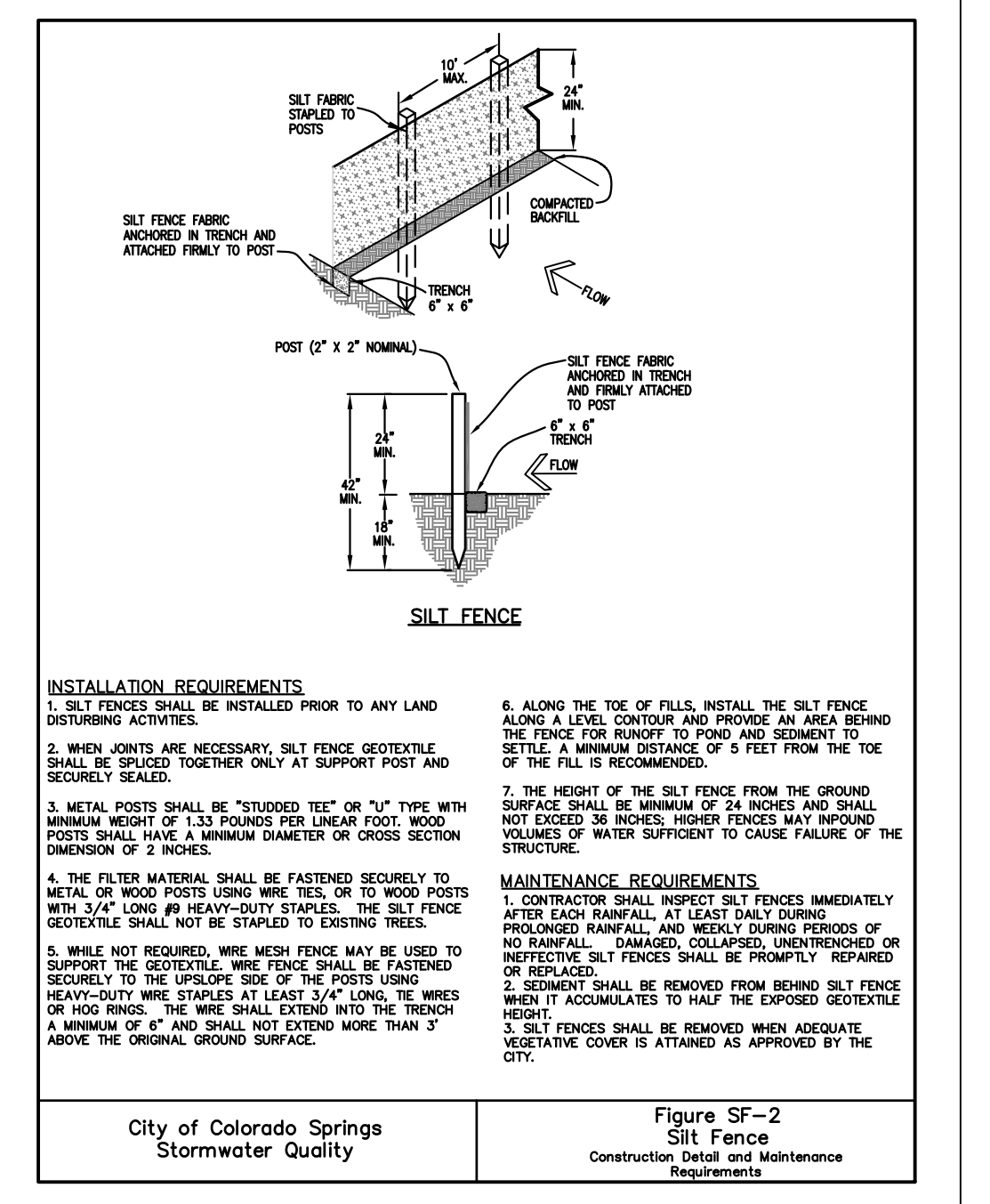
1/1/08 Concrete Washout Structure
 DATE APPROVED: Standard Drawing
 John A. McCarty DEPARTMENT OF TRANSPORTATION REVISION DATE: 7/17/07 FILE NAME: SD_3-84

CORE ENGINEERING GROUP
 1500 S. 1ST AVENUE, SUITE 3506
 P.O. BOX 79, FORT COLLINS, CO 80501
 CONTACT: RICHARD L. SCHINDLER, P.E.
 EMAIL: Rich@cegi.com

DATE: _____
 DESCRIPTION: _____
 NO. _____
 PREPARED FOR: **LORSON RANCH EAST**
FILING NO. 2
 212 N. WAHSATCH AVE, SUITE 301
 COLORADO SPRINGS, COLORADO 80903
 FONTAINE BLVD. - LAMPREY DR.
 COLORADO SPRINGS, COLORADO
 CONTACT: JEFF MARK

DRAWN: RLS
 DESIGNED: RLS
 CHECKED: RLS

FINAL GRADING PLAN DETAILS

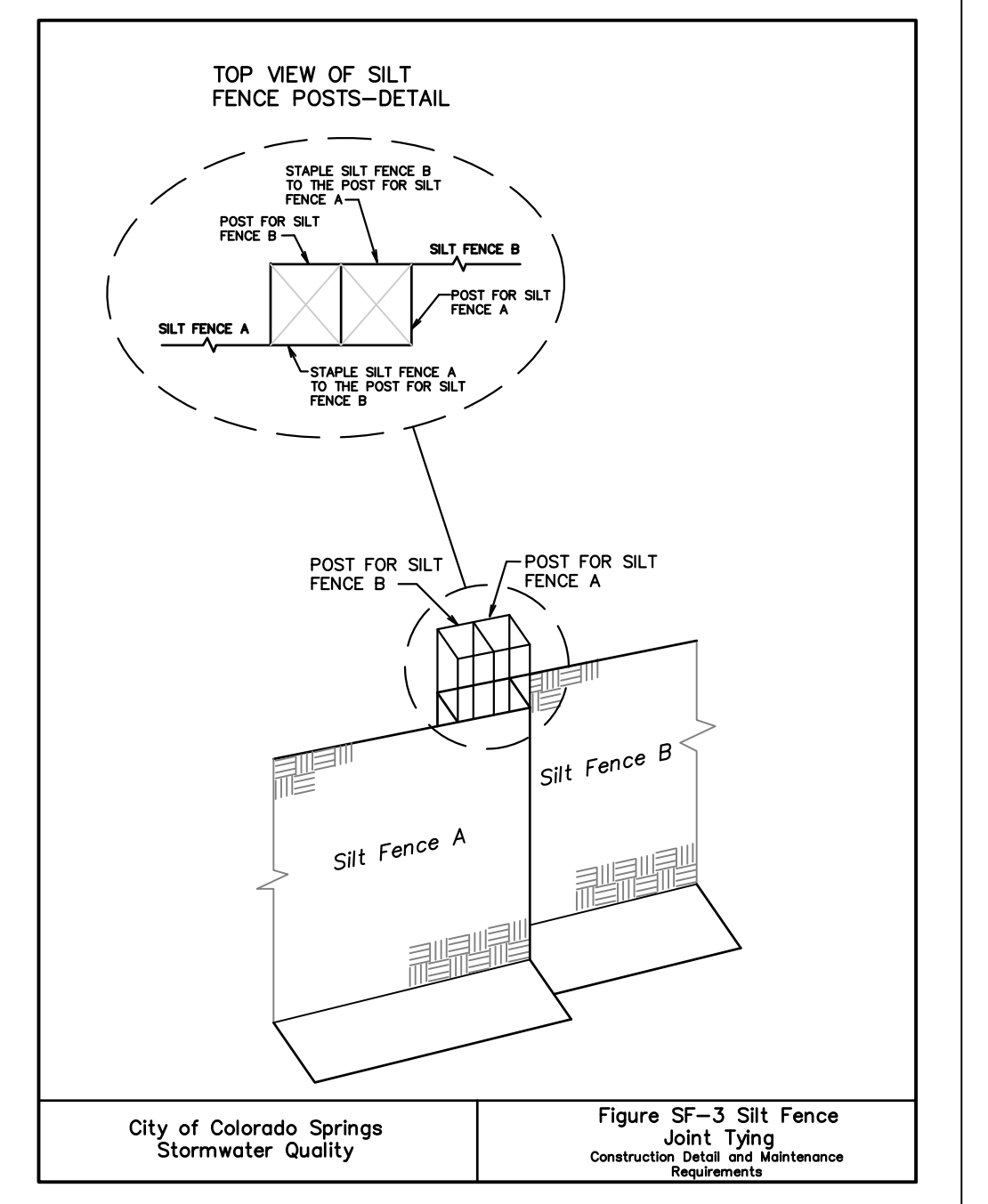


SILT FENCE

- INSTALLATION REQUIREMENTS**
- SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
 - WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPUN TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
 - METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WIDTH OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
 - THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #8 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
 - 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. THE WIRE OR HOOD RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.
 - ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
 - 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.
 - CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL. AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNINTENDED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
 - SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
 - SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

Figure SF-2 Silt Fence Construction Detail and Maintenance Requirements

City of Colorado Springs Stormwater Quality

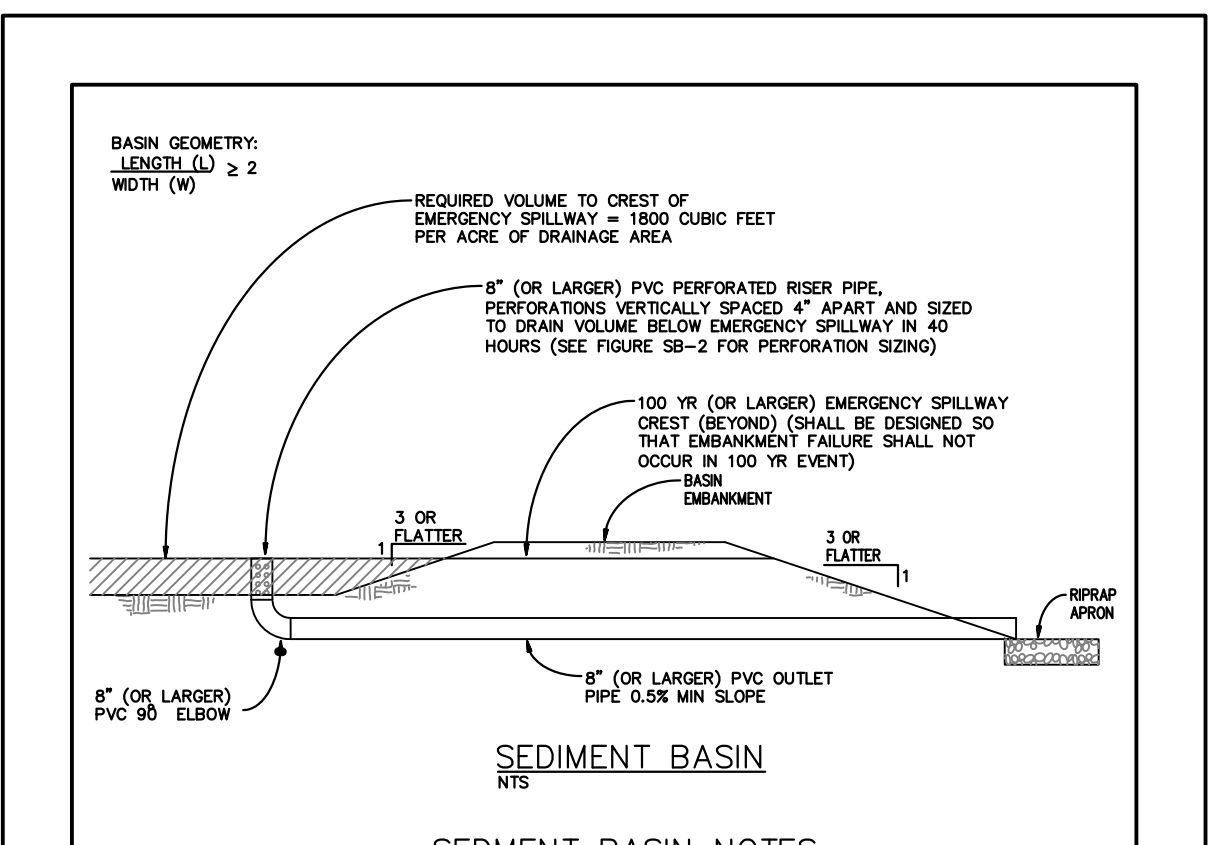


TOP VIEW OF SILT FENCE POSTS-DETAIL

Silt Fence A

Figure SF-3 Silt Fence Joint Tying Construction Detail and Maintenance Requirements

City of Colorado Springs Stormwater Quality



SEDIMENT BASIN

SEDIMENT BASIN NOTES

- INSTALLATION REQUIREMENTS**
- SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
 - THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
 - THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
 - THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. BATTERIES MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.
 - EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THE REQUIREMENT.
 - EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
 - 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**
- CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAINFALL.
 - SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.
 - 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.

Figure SB-1 Sediment Basin Construction Detail and Maintenance Requirements

City of Colorado Springs Stormwater Quality

DATE: SEPT 15, 2018
 PROJECT NO. 100.044
 SHEET NUMBER C12.2
 TOTAL SHEETS: 11

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 <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Tears/Holes <input type="checkbox"/> Burial <input type="checkbox"/> Sed. Accum. <input type="checkbox"/> Sediment bypass	
Const. Exit <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Voids Filled <input type="checkbox"/> Trackout	
Check Dam <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Sediment Accumulation	
Inlet Protection <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Sed. Accum. <input type="checkbox"/> Sed. Bypass <input type="checkbox"/> Application not appropriate	
Diversion Ditch/Berm <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Erosion <input type="checkbox"/> Stabilization	
Sediment Trap <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Sediment Accumulation	
Sediment Basin <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Sed. Accumulation <input type="checkbox"/> Bank erosion <input type="checkbox"/> Stabilization	
Discharge Point <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Erosion <input type="checkbox"/> Sediment Discharge	
Material Storage/Secondary Contain. <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Not shown on Site Map <input type="checkbox"/> Spills <input type="checkbox"/> Out of design. area <input type="checkbox"/> Improper storage: chemicals; solvents; paint; fuels, etc.	

Other Structural Controls <input type="checkbox"/> OK <input type="checkbox"/> N/A		
Non-Structural:		
Good Housekeeping <input type="checkbox"/> OK <input type="checkbox"/> N/A	<input type="checkbox"/> Solid Waste <input type="checkbox"/> Sanitary Waste <input type="checkbox"/> Dust Control	

Project Name and Location: _____ Date: _____ Page 2

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

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