



## **INTERIM RECLAMATION PLAN**

**STATE SUNLIGHT - LONG**

SECTION 27, T5S, R65W  
Arapahoe County, Colorado

**ORIGINAL PREPARATION DATE:**

November 2024

**PREPARED FOR:**

Civitas Resources  
Crestone Peak Resources Operating LLC  
555 17th Street, Suite 3700  
Denver, CO 80202

**PREPARED BY:**

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# 1.0 INTRODUCTION

Civitas Resources - Crestone Peak Resources Operating LLC requested Lamp Rynearson to develop an interim reclamation plan for the STATE SUNLIGHT - LONG (the "Site") prior to commencement of construction activities. This interim reclamation plan specifically addresses COGCC 1003 series reclamation regulations. The interim and final reclamation plan covers the Site background, current vegetation on Site, monitoring, and stipulations for a successful reclamation.

## 1.1 Site Location

The Site is located south of E Quincy Road, between Airline Road and County Line Road in Arapahoe County, Colorado (Sec 27, T5S, R65W) within rangeland (See Vicinity Map, Appendix). The surrounding properties are agricultural land, and the field was observed to be rangeland at the time of assessment. Initially, the disturbed area of the proposed site is 35.21 ac but gets reduced to 6.28 ac after interim reclamation is complete.

## 1.2 Vegetation

According to the Land Cover Viewer, the Site intersects only one class of vegetation – Agricultural & Developed Vegetation. There are no known weed infestations at this location.

## 1.3 Soil

The soils within the site are Buick loam and Renohill-Little-Thedalund complex. The soil horizon depths were observed to be 11 inches deep across the location. The soils throughout the site were delineated by changes in the soil structure accompanied by an increase in clay content.

## 1.4 Site Topography

The existing landscape slopes northwest to southeast where any runoff naturally sheet flows downstream as done historically at 1.0-16.0%. This slope pattern will be maintained in the Interim Reclamation Phase; however, the runoff in each phase will be captured in the detention pond at the southern end of the site and released downstream as done historically.

# 2.0 PRE-CONSTRUCTION EARTHWORK

## 2.1 Topsoil Salvaging

Topsoil 11 inches in depth will be salvaged from the Site. Salvaged topsoil should be of sufficient volume to cover the Site to a minimum depth of 11 inches for both interim and final reclamation. Areas from which topsoil is excavated will have been cleared of objectionable vegetation by pulling, mowing, or chemical herbicides. All other litter such as woody vegetation, rocks, and foreign materials will be removed by means that are most effective, to be determined by the contractor.

## 2.2 Topsoil Stockpiling

Topsoil from the Site will be stockpiled on-site. Any surplus topsoil removed from the Site may be utilized for other reclamation sites where topsoil may be needed, provided that all precautions are taken to prevent the spread of noxious weeds from the Site to other locations. Stockpiles should be constructed with no greater than 3:1 side slopes and with a height of nine feet max. The topsoil stockpiles will be seeded immediately after placement with a quick-germination grass seed mix, specified by the SWMP document, or other means shall be employed so that the topsoil is protected from erosion. Additionally, a continuous berm will be placed around any down slope sides of the topsoil stockpile to prevent runoff and erosion. Placement of topsoil stockpiles should incorporate stormwater/runoff BMPs.

## 3.0 INTERIM RECLAMATION

Interim reclamation will occur on all disturbed areas where final reclamation cannot be conducted due to on-going construction or operational activities at the Site. Interim reclamation is considered complete when all disturbed areas have been built on, compacted, covered, or otherwise stabilized to the extent practicable. Civitas Resources - Crestone Peak Resources Operating LLC will consult with the land owner to confirm that the Site will be returned to agricultural land. If the Site is to be reincorporated into the surrounding agricultural land, areas of interim reclamation will be crimped with straw to help control erosion and dust and the State Land Board approved seeding mix will be planted. If the Site will not be utilized for agriculture, areas of interim reclamation will be planted with the seed mix specified by the County. Interim reclamation shall occur no later than (3) months on cropland or (6) months on non-cropland after drilling phase commences. Fall/winter and amendment applications are recommended to optimize dormancy and moisture conditions for suitable winter-spring germination and growth. Planting of native species between May and September will not favor planted grasses, for example, and may encourage weed growth through surface disturbance.

Civitas Resources - Crestone Peak Resources Operating LLC will utilize a temporary above-ground irrigation system to promote seed germination, if needed, during periods of dry and drought conditions. A temporary fresh water tank will be located within the pad and utilized for the temporary irrigation system until germination and seed growth is established. Civitas Resources - Crestone Peak Resources Operating LLC will use a professional landscape maintenance company to maintain the site.

Interim reclamation will also include the control of soil lost from wind and water erosion using best management practices (BMPs). BMPs are selected based on Site-specific conditions and include, but are not limited to, revegetation of disturbed areas, continuous berms, surface roughening, silt fences, sediment basins, straw bale dikes, or any other comparable measures. Interim reclamation helps to ensure the protection of the soil from erosion, to meet diverse needs of wildlife, thermal cover, predatory cover, overall diversity, and to help limit the visual impacts of the pad construction. Site specific BMPs are included at the end of this report.

### 3.1 Soil Sampling Methods

As part of interim reclamation, topsoil from the stockpile(s) will be spread throughout the reclamation site to a minimum depth of 11 inches. Following the distribution of topsoil, soil sampling and analyses will be conducted by a qualified soil scientist to determine the current health of the topsoil by examining chemical and physical attributes. Poor soil conditions may include one or more of the following: low nutrient/organic matter content, high pH values, high sodium absorption ratio (SAR), and high electrical conductivity (EC).

### 3.2 Soil Amendments and Fertilizers

Determination of soil amendments and fertilizers and their respective amounts are based on the soil analyses results. Various types of soil amendments and fertilizers that may be utilized include, but are not limited to, compost, biosolids, the fertilizer Biosol, elemental sulfur, mycorrhizae, and inorganic fertilizers.

Compost, biosolids, and Biosol all provide macronutrients to aid in plant growth of the incoming seed and organic matter which helps with soil aggregation. Elemental sulfur can be used to reduce soil pH and mycorrhizae can aid in plant health and resilience.

Inorganic fertilizers including, but not limited to, nitrogen, phosphorous, and potassium will be determined by the results of the soil analyses and will be applied to the soil following or concurrent with seeding operations.

### 3.3 Interim Reclamation Plan

- 1) Removal of equipment associated with the drilling phase
  - Removal of debris and waste material from site.
  - Removal of all E+P waste and shall be handled according to the series 900 rule.
  - Removal of equipment associated with drilling phase.
  - Cellars, rat holes, and other boreholes unnecessary for further lease operations should be backfilled.

- Recycled asphalt/road base outside of the permanent operational facilities and access will be excavated and hauled from the Site. Road base materials can limit water holding capacity and are often void of essential nutrients that allow for successful revegetation.
- Topsoil will be used to fill any voids left from the removal of recycled asphalt/road base and brought to grade.
- Where needed, disturbed areas will be graded and contoured to pre-disturbance contours, not to exceed 3:1 side slopes, to allow for stability and provide a suitable seedbed.

## 2) Backfilling

- All pits or holes not needed for future operations shall be backfilled as soon as possible.

## 3) Soil Placement

- Soil shall be replaced where necessary in layers; the subsoil shall be placed first, and compacted to the standards described in the State La Plata South Geotechnical Report. The topsoil layer will then be placed to bring the surface to the Interim Reclamation grade. Topsoil shall also be compacted in accordance with the State La Plata South Geotechnical Report.

## 4) Seedbed Preparation

Any imported topsoil not used from the topsoil stockpile is required to have accompanying analytical reports. The fertilizers, other amendment quantities, and application rates applied to seeding area will be typical for grass and forb reclamation. It is expected that amendments and amendment quantities will be specified by the subcontractor for any topsoil that is imported.

This plan is based in part on Colorado Energy and Carbon Management Commission (ECMC) 1003 Series Regulations, as applicable, for seedbed preparation with the following revised considerations:

- Interim reclamation area will be cross-ripped at 90° to a depth of 18 inches to alleviate soil compaction during construction activities. Cross-ripping should be oriented 45° to topographic contours. Cross-ripping shall only occur when soil moisture is below 35% of field capacity.
- Disc the interim reclamation area to blend topsoil and to create a uniform seedbed for the incoming seed mix and amendments.

## 5) Seeding Amendment and Revegetation

- If areas of interim reclamation will be reincorporated into the surrounding agricultural field, all segregated soil horizons removed from croplands shall be replaced to their original relative positions and contour and shall be tilled adequately to re-establish a proper seedbed. Straw crimping will be incorporated to help control erosion and dust until crops are planted.
- If areas of interim reclamation will not be reincorporated into the surrounding agricultural field, the seed mix specified by Arapahoe County will be utilized for reseeding. The reseeded areas will also need to be monitored for revegetation success (see Monitoring and Weed Control below).
- Following, or concurrent with, amendment application, drill-seed interim reclamation area with the seed mix specified by SLB in PBSI Foothills Native Mix table.
- Drill-seeding the remaining topsoil stockpile. If drill-seeding is not feasible, broadcast seeding may be implemented.
- Crimp interim reclamation area with two tons/acre certified weed-free straw after seeding.

Temporary fencing may be required to ensure the interim reclaim does not get overgrazed as the land is currently used as rangeland.

#### 6) Monitoring and Weed Control

Interim reclamation areas shall be free of all undesirable plant species designated to be noxious weeds, as practicable, and weed control shall be conducted in compliance with the Colorado Noxious Weed Act (C.R.S. §35-5.5-115). Additional reseeding shall be necessary if vegetation requirements are not successful.

In the spring and summer, the interim reclamation area will be monitored for revegetation success, weed growth, and presence of noxious weeds until revegetation and site stability is successful.

A local weed control company may be contracted for the removal of any weed infestations that cannot be controlled by mowing.

#### 7) Reclamation Success

Interim reclamation success will be measured based on ECOM 1000 series rules and the County requirements. All ground surface shall be stabilized in a way to prevent erosion and a uniform plant cover will be established to reflect the pre-disturbance area with a total percent plant cover of at least 80% of pre-disturbance levels. If revegetation success is not accomplished within one or two growing seasons, the soil will be amended as necessary and re-seeding will be completed.

## 4.0 FINAL RECLAMATION

Final reclamation includes plugging and abandoning wells and the backfilling of all pits. Within three months of the well plug and abandonment, removal of all debris and surface equipment and abandoned gathering and flow line risers will be completed. Access roads will be closed, graded, and re-contoured, in addition to the removal of any culverts and/or other obstructions that were installed. Following the request for facility closure, a pending remediation site investigation will be conducted. All reclamation work will be completed within three months on cropland or twelve months on non-cropland following the plug and abandon. An extension for final reclamation may be granted if unusual circumstances are encountered and every reasonable effort has been made to complete reclamation before the start of the next growing season (ECMC 2009).

Final reclamation will be considered complete when all disturbed areas have been built on, compacted, covered, paved, or otherwise stabilized to the extent practicable. Areas of final reclamation will be reincorporated into the surrounding agricultural field. Any soil sampling and fertilizer amendments will be based on guidelines from under sections 3.1 and 3.2 of the Interim Reclamation plan, above.

If the Site will be reseeded with the seed mix specified in Table 1 or a mixture specified by Arapahoe County, Civitas Resources - Crestone Peak Resources Operating LLC will utilize a temporary above-ground irrigation system to promote seed germination, including during periods of dry and drought conditions. A temporary fresh water tank will be located within the pad and utilized for the temporary irrigation system until germination and seed growth is established. Civitas Resources - Crestone Peak Resources Operating LLC will use a professional landscape maintenance company to maintain the site. The total plant cover of the disturbed areas should be at least 80% of a prescribed target cover, and noxious weeds should be absent (ECMC 2009).

Pipelines, gathering lines and flowlines shall be removed after one year of non-use when last well utilizing lines are plugged and abandoned unless this requirement is waived in writing by Arapahoe County.

Temporary access roads associated with oil and gas operations at the Well Sites shall be reclaimed and revegetated to the original state within a reasonable amount of time, taking into account planting seasons, or as directed by the landowner in a Surface Use Agreement and subject to applicable ECMC variances. Operator must control erosion while access roads are in use.

### 4.1 Final Reclamation Plan

- 1) Removal of Recycled Asphalt/Road Base from Remaining Pad Area
  - Remaining recycled asphalt/road base will be excavated and hauled from the Site.
  - Remaining topsoil from the stockpile(s) will be used to fill any voids left from the removal of recycled asphalt/road base and brought to grade.
  - The final reclamation area will be graded and contoured to pre-disturbance contours, not to exceed slopes of 3:1, to allow for stability and provide a suitable seedbed.

#### 2) Seedbed Preparation

Any imported topsoil not used from the topsoil stockpile are required to have accompanying analytical reports, when applicable. The fertilizers, other amendment quantities, and application rates applied to seeding area will be typical for grass and forb reclamation. It is expected that amendments and amendment quantities will be specified by the subcontractor for any topsoil that will be imported.

This Plan is based in part on ECMC 1003 Series Regulations, as applicable, for seedbed preparation with the following revised considerations:

- Cross-rip at 90° to a depth of 18 inches to alleviate soil compaction during construction activities. Cross-ripping should be oriented 45° to topographic contours.
- Disc to blend topsoil and to create a uniform seedbed for the incoming seed mix and amendments.

### 3) Seeding and Amendments

If areas of final reclamation will be reincorporated into the surrounding agricultural field, reseeding will not be needed, and straw crimping will be incorporated to help control erosion and dust until crops are planted.

If areas of final reclamation will not be reincorporated into the surrounding agricultural field, the seed mix specified in Table 1 or a mixture specified by Arapahoe County will be utilized for reseeding. The reseeded areas will also need to be monitored for revegetation success (see Monitoring and Weed Control below).

- Following, or concurrent with amendment application, drill-seed with the seed mix specified in Table 1 or mixture specified by Arapahoe County (GESG).
- Crimp with two tons/acre certified weed-free straw after seeding.

### 4) Monitoring and Weed Control

Final reclamation areas shall be free of all undesirable plant species designated to be noxious weeds as practicable and weed control shall be conducted in compliance with the Colorado Noxious Weed Act (C.R.S. §35-5.5-115). Additional reseeding shall be necessary if vegetation requirements are not successful.

- In the spring and summer, the area will be monitored for revegetation success, weed growth, and presence of noxious weeds until revegetation and site stability is successful.








A local weed control company may be contracted for the removal of any weed infestations that cannot be controlled by mowing.

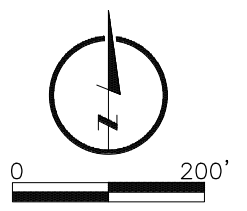
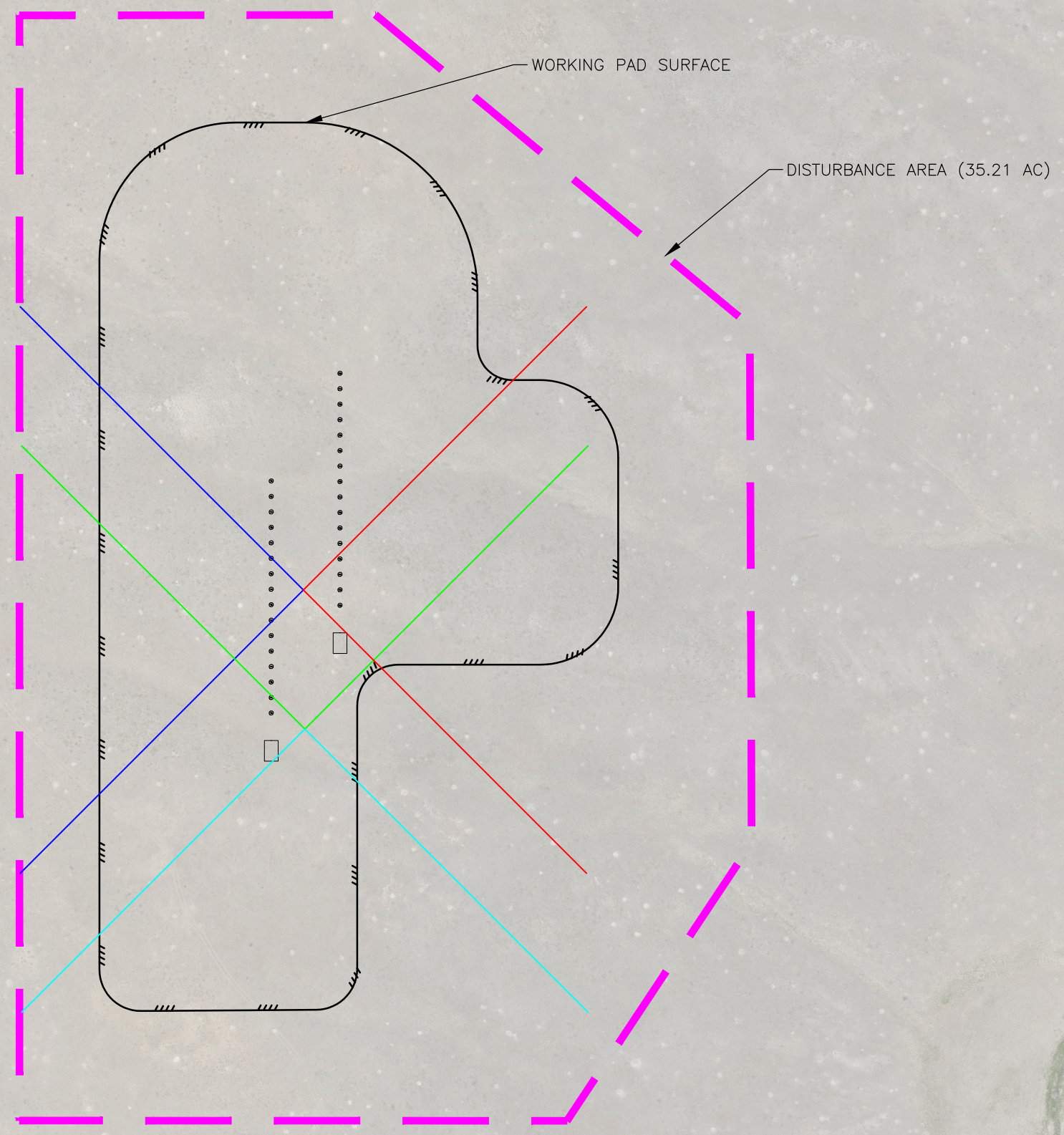
## 5.0 REFERENCES

- (ECMC) Colorado Energy and Carbon Management Commission (November 22, 2023). Reclamation Regulations. 1000 Series Rules. Available online at:  
<https://cogcc.state.co.us/documents/reg/Rules/LATEST/1000%20Series%20-%20Reclamation%20Regulations.pdf>. (Accessed May 2024)
- (NRCS) Natural Resources Conservation Service. 2021. Web Soil Survey. Available online at  
<http://websoilsurvey.nrcs.usda.gov/>. (Accessed May 2024)
- (GESC) Arapahoe County Grading, Erosion And Sediment Control Manual (February, 2023). SEMSWA. Standard Notes and Details. Available online at:  
[https://files.arapahoeco.gov/Public%20Works\\_Development/land%20use%20development/SEMSWA-GESC%20Details\\_24x36%20Revised%20February%202023-ALL%20SHEETS.pdf](https://files.arapahoeco.gov/Public%20Works_Development/land%20use%20development/SEMSWA-GESC%20Details_24x36%20Revised%20February%202023-ALL%20SHEETS.pdf). (Accessed May 2024)

## 6.0 PHOTOS

**LEGEND**

-  WORKING PAD SURFACE
-  FIELD OF VIEW (NORTH)
-  FIELD OF VIEW (EAST)
-  FIELD OF VIEW (SOUTH)
-  FIELD OF VIEW (WEST)
-  OIL & GAS WELL
-  DISTURBANCE AREA (35.21 AC)



L:\Engineering\0222040 - State Long Drawings\CONSTRUCTION DRAWINGS\0222040 - LOCATION PHOTOS.dwg, 11/19/2024, 2:19:54 PM, AUSTIN LOBSINGER, LAMP RYNEARSON

**LAMP RYNEARSON**

LAMPRYNEARSON.COM

OMAHA, NEBRASKA  
14710 W. DOGGE RD., STE. 100 (402) 496-2498  
NE AUTH. NO.: CA0130

FORT COLLINS, COLORADO  
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KANSAS CITY, MISSOURI  
9001 STATE LINE RD., STE. 200 (816) 361-0440  
MO AUTH. NO.: E-2013011903 | LS-2019043127

**DESIGNER / DRAFTER**  
JJJ/MWB/ARL

**REVIEWER**  
MAP

**PROJECT NUMBER**  
0222040

**DATE**  
11/15/2024

**SURFACE LOCATION**  
S27 T5S R65W

**BOOK AND PAGE**  
1 OF 5

# STATE SUNLIGHT - LONG FIELD OF VIEW



CRESTONE PEAK RESOURCES OPERATING LLC



WEST

DATE PHOTOS TAKEN: 11/05/2024

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# STATE SUNLIGHT - LONG LOCATION PHOTOS



EAST

DATE PHOTOS TAKEN: 11/05/2024

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RYNEARSON**

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**STATE SUNLIGHT - LONG  
LOCATION PHOTOS**



NORTH

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14710 W. DOGGE RD., STE. 100 (402) 496-2498  
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S27 T5S R65W

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CRESTONE PEAK RESOURCES OPERATING LLC

# STATE SUNLIGHT - LONG LOCATION PHOTOS

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SOUTH

DATE PHOTOS TAKEN: 11/05/2024

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# STATE SUNLIGHT - LONG LOCATION PHOTOS

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## **7.0 INTERIM RECLAMATION COMPLETION NOTICE, FORM 4**



DE	ET	OE	ES

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: _____	4. Contact Name _____	Complete the Attachment Checklist  OP OGCC
2. Name of Operator: _____	Phone: _____	
3. Address: _____ City: _____ State: _____ Zip: _____	Fax: _____	
5. API Number 05- _____	OGCC Facility ID Number _____	Survey Plat _____
6. Well/Facility Name: _____	7. Well/Facility Number _____	Directional Survey _____
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): _____		Surface Eqpmt Diagram _____
9. County: _____	10. Field Name: _____	Technical Info Page _____
11. Federal, Indian or State Lease Number: _____		Other _____

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)			
Change of <b>Surface</b> Footage from Exterior Section Lines:	<input type="checkbox"/>	FNL/FSL <input type="checkbox"/>	FEL/FWL <input type="checkbox"/>
Change of <b>Surface</b> Footage to Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Bottomhole</b> Footage from Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change of <b>Bottomhole</b> Footage to Exterior Section Lines:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> attach directional survey
Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer _____			
Latitude _____	Distance to nearest property line _____	Distance to nearest bldg, public rd, utility or RR _____	
Longitude _____	Distance to nearest lease line _____	Is location in a High Density Area (rule 603b)?	Yes/No <input type="checkbox"/>
Ground Elevation _____	Distance to nearest well same formation _____	Surface owner consultation date: _____	
GPS DATA: Date of Measurement _____ PDOP Reading _____ Instrument Operator's Name _____			
<input type="checkbox"/> CHANGE SPACING UNIT Formation _____ Formation Code _____ Spacing order number _____ Unit Acreage _____ Unit configuration _____			<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: _____ Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual		<input type="checkbox"/> CHANGE WELL NAME NUMBER From: _____ To: _____ Effective Date: _____	
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for Inspection: _____		<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT _____	
<input type="checkbox"/> SPUD DATE: _____		<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries			
Method used	Cementing tool setting/perf depth	Cement volume	Cement top Cement bottom Date
_____	_____	_____	_____
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately _____ <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.			

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent Approximate Start Date: _____	<input type="checkbox"/> Report of Work Done Date Work Completed: _____	
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)		
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other: _____	for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_ Email: \_\_\_\_\_  
Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

COGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

## **8.0 SITE-SPECIFIC INTERIM RECLAMATION BMPs**

**GRADING, EROSION, AND SEDIMENT CONTROL (GESC) GENERAL NOTES**

- THE SOUTHEAST METRO STORMWATER AUTHORITY (SEMSWA) LAND DEVELOPMENT REVIEW MANAGER SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES SEMSWA HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL COMPLIANCE WITH THE GRADING, EROSION, AND SEDIMENT CONTROL (GESC) MANUAL. THE LAND DEVELOPMENT REVIEW MANAGER THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY (OTHER THAN AS STATED ABOVE) FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS.
- THE ADEQUACY OF THIS GESC PLAN LIES WITH THE ORIGINAL DESIGN ENGINEER. CHANGES TO DESIGN INTENT THAT MEET THE DEFINITION OF MAJOR MODIFICATIONS MUST GO THROUGH ORIGINAL DESIGN ENGINEER.
- THE GESC PLAN SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY SEMSWA, AFTER WHICH TIME THE PLAN SHALL BE VOID AND WILL BE SUBJECT TO RE-EVALUATION AND RE-ACCEPTANCE BY SEMSWA. PLANS MUST CONFORM TO CURRENT REQUIREMENTS.
- ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY SEMSWA'S INSPECTION DIVISION. SEMSWA RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE GESC MANUAL, GESC PLAN OR GESC PERMIT.
- THE PLACEMENT OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND THE SEMSWA GESC MANUAL.
- ANY VARIATION IN MATERIAL, TYPE OR LOCATION OF EROSION AND SEDIMENT CONTROL MEASURES FROM THE SEMSWA - ACCEPTED GESC PLAN WILL REQUIRE APPROVAL FROM AN ACCOUNTABLE REPRESENTATIVE OF SEMSWA.
- UPON RECEIVING THE APPROVED, SIGNED AND STAMPED GESC PLANS AND REPORT, THE CONTRACTOR MAY INSTALL THE NON-EARTH DISTURBING INITIAL-STAGE EROSION AND SEDIMENT CONTROL MEASURES INDICATED ON THE ACCEPTED GESC PLAN.
- AFTER INSTALLATION OF THE INITIAL-STAGE EROSION AND SEDIMENT CONTROL MEASURES, THE PERMITTEE SHALL CALL THE INSPECTION DIVISION TO SCHEDULE A PRECONSTRUCTION MEETING AT THE PROJECT SITE. THE REQUEST SHALL BE MADE NO LESS THAN 24 HOURS PRIOR TO THE REQUESTED MEETING TIME. NO CONSTRUCTION ACTIVITIES SHALL BE PLANNED WITHIN 24 HOURS AFTER THE PRECONSTRUCTION MEETING.
- IN ADDITION TO THE SEMSWA INSPECTOR AND GESC MANAGER, THE FOLLOWING REPRESENTATIVES SHOULD ATTEND: GENERAL CONTRACTOR, OWNER, OR OWNER'S REPRESENTATIVE AND GRADING SUBCONTRACTOR. IF ANY OF THE REQUIRED PARTICIPANTS FAIL TO ATTEND THE PRECONSTRUCTION MEETING, OR IF THE INSTALLATION OF THE INITIAL CONTROL MEASURES ARE NOT APPROVED BY THE SEMSWA INSPECTOR, THE APPLICANT WILL HAVE TO PAY A RESCHEDULING FEE, ADDRESS ANY PROBLEMS WITH CONTROL MEASURE INSTALLATION, AND CALL TO RESCHEDULE THE MEETING, WITH A CORRESPONDING DELAY IN THE START OF CONSTRUCTION.
- CONSTRUCTION SHALL NOT BEGIN UNTIL THE SEMSWA INSPECTOR APPROVES THE INSTALLATION OF THE INITIAL CONTROL MEASURES AND THE APPROVED GESC PERMIT HAS BEEN ISSUED BY SEMSWA AND IS IN-HAND ON THE SITE. THE COMPLETED PERMIT WILL GENERALLY BE FIELD ISSUED OR ISSUED VIA EMAIL AFTER THE INSTALLATION OF THE INITIAL CONTROL MEASURES ARE APPROVED.
- THE GESC MANAGER SHALL STRICTLY ADHERE TO THE SEMSWA APPROVED LIMITS OF CONSTRUCTION AT ALL TIMES. THE SEMSWA INSPECTION DIVISION MUST APPROVE ANY CHANGES TO THE LIMITS OF CONSTRUCTION AND, AT THE DISCRETION OF THE INSPECTION DIVISION, ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED IN ANY ADDITIONAL AREAS OF CONSTRUCTION/DISTURBANCE ARE NEEDED.
- THE MAXIMUM AREA OF CONSTRUCTION SHALL BE LIMITED TO 40 ACRES (70 ACRES IF APPROVED FOR SOIL MITIGATION OPERATIONS) TO REDUCE THE AMOUNT OF LAND DISTURBED AT ANY ONE TIME. LARGER SITES SHALL BE DIVIDED INTO PHASES THAT ARE EACH 40 (OR 70) ACRES OR LESS IN SIZE. THESE PROJECTS SHALL CONDUCT GRADING ACTIVITIES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN. CONTROL MEASURE INSTALLATION AND APPROVAL BY SEMSWA AT THE START AND COMPLETION OF EACH PHASE SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE GESC MANUAL.
- NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS.
- THE GESC PERMIT SHALL BE VALID FOR A PERIOD OF TWO (2) YEARS.
- A COPY OF THE GESC PERMIT AND APPROVED GESC PLANS SHALL BE ON SITE OR MADE AVAILABLE UPON REQUEST.
- THE GESC MANAGER SHALL BE RESPONSIBLE PARTY FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE WITH THE GESC PERMIT AND SHALL BE THE PERMITTEE'S CONTACT PERSON WITH SEMSWA FOR ALL MATTERS PERTAINING TO THE GESC PERMIT. THE GESC MANAGER SHALL BE ON THE SITE AS NECESSARY TO ENSURE THE GESC REQUIREMENTS ARE BEING MAINTAINED, AND (ALONG WITH THE ALTERNATE GESC MANAGER) SHALL PROVIDE SEMSWA WITH A 24-HOUR EMERGENCY CONTACT NUMBER. IN THE EVENT THAT THE CONTRACTOR'S GESC MANAGER IS NOT ON SITE AND CANNOT BE REACHED DURING A VIOLATION, THE ALTERNATE GESC MANAGER SHALL BE CONTACTED. IF NEITHER THE GESC MANAGER NOR ALTERNATE GESC MANAGER CAN BE CONTACTED DURING ANY VIOLATION, WITHIN 24 HOURS, VIOLATION MAY BE ISSUED TO THE PERMITTEE(S).
- ALL CONSTRUCTION TRAFFIC MUST EXIT THE SITE THROUGH THE SEMSWA-APPROVED ACCESS POINT. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL EXIT POINTS ON THE SITE. ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES MAY BE ADDED WITH AUTHORIZATION FROM THE SEMSWA INSPECTION DIVISION.
- THE GESC MANAGER IS RESPONSIBLE FOR CLEANUP OF SEDIMENT OR CONSTRUCTION DEBRIS TRACKED ONTO ADJACENT PAVED AREAS. PAVED AREAS INCLUDING STREETS ARE TO BE KEPT CLEAN THROUGHOUT BUILD-OUT AND SHALL BE CLEANED, WITH A STREET SWEEPER OR SIMILAR DEVICE, AT FIRST NOTICE OF ACCIDENTAL TRACKING OR AT THE DISCRETION OF THE SEMSWA GESC INSPECTOR. STREET WASHING IS NOT ALLOWED. SEMSWA RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.
- APPROVED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE GESC MANAGER SHALL INSPECT ALL CONTROL MEASURES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND GESC MANUAL. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED WITHIN 48 HOURS. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.
- STRAW BALES ARE NOT A SEMSWA GESC-ACCEPTED SEDIMENT CONTROL MEASURE.
- TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN THE LOCATION SHOWN ON THE ACCEPTED GESC PLAN. THE TOPSOIL STOCKPILE(S) SHALL FOLLOW ALL STOCKPILING CRITERIA DESCRIBED IN THE GESC MANUAL. TOPSOIL SHALL BE REPLACED AT A MINIMUM DEPTH OF 6 INCHES. IF A MINIMUM DEPTH OF 6 INCHES CAN NOT BE OBTAINED, ADDITIONAL TOPSOIL AND/OR APPROVED SOIL AMENDMENTS WILL BE REQUIRED TO BE PLACED PRIOR TO SEEDING AND MULCHING.
- THE ACCEPTED GESC PLAN MAY REQUIRE CHANGES OR ALTERATIONS AFTER APPROVAL TO MEET CHANGING SITE OR PROJECT CONDITIONS OR TO ADDRESS INEFFICIENCIES IN DESIGN OR INSTALLATION. THE GESC MANAGER SHALL OBTAIN PRIOR APPROVAL FOR MAJOR MODIFICATIONS FROM THE DESIGN ENGINEER AND SEMSWA FOR ANY PROPOSED CHANGES.
- LINING OF TEMPORARY SWALES AND DITCHES SHALL BE IN ACCORDANCE WITH THE GESC MANUAL.
- ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE GESC MANAGER. THE GESC MANAGER SHALL BE HELD RESPONSIBLE FOR OBTAINING ACCESS RIGHTS TO ADJACENT PROPERTY, IF NEEDED, AND REMEDIATING ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. NO STOCKPILES SHALL BE PLACED WITHIN ONE HUNDRED (100) FEET OF A DRAINAGE WAY UNLESS APPROVED BY SEMSWA.
- ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, WHICH INCLUDE BUT ARE NOT LIMITED TO, SURFACE WATER, GROUND WATER AND DRY GULLIES OR STORM SEWER SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE CDPE PER CRS 25-8-601, AND SEMSWA. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AS WELL AS THE CDPE. CONTACT INFORMATION FOR CDPE, SEMSWA AND THE NATIONAL RESPONSE CENTER CAN BE FOUND IN APPENDIX A. SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE SHALL BE REPORTED TO 911. FAILURE TO REPORT AND CLEAN UP ANY SPILL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER. TO REPORT SPILLS TO SEMSWA CALL 303-858-8844.
- ALL WORK ON SITE SHALL STAY A MINIMUM OF ONE HUNDRED (100) FEET AWAY FROM ANY DRAINAGE WAY, WETLAND, ETC. UNLESS OTHERWISE NOTED ON AN ACCEPTED SEMSWA GESC PLAN.
- THE USE OF REBAR, STEEL STAKES, STAPLES, OR STEEL FENCE POSTS FOR STAKING OR SUPPORT OF ANY EROSION OR SEDIMENT CONTROL MEASURE IS PROHIBITED (EXCEPT STEEL TEE-POSTS FOR USE IN SUPPORTING CONSTRUCTION FENCES).
- THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO APPROVED CONCRETE WASH OUT LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED AT AN APPROPRIATE LOCATION.
- ALL DEWATERING ON SITE SHALL BE COORDINATED WITH A SEMSWA GESC INSPECTOR AND BE FREE OF SEDIMENT IN ACCORDANCE WITH THE GESC MANUAL, AND STATE OF COLORADO DEWATERING PERMIT.
- ALL PERMANENT INSTALLATIONS OF PIPES FOR STORM SEWERS, SLOPE DRAINS, AND CULVERTS, TOGETHER WITH RIPRAP APRONS OR OTHER INLET AND OUTLET PROTECTION, REQUIRE INSPECTION BY SEMSWA (SEPARATE FROM GESC INSPECTIONS).
- ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE GESC MANUAL WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING, INCLUDING AREAS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS, WHICHEVER IS LESS. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
- HYDRAULIC SEEDING IS NOT AN ACCEPTABLE METHOD OF SEEDING WITHIN THE SEMSWA SERVICE AREA.
- HYDRO-MULCH MAY BE USED FOR LIMITED APPLICATIONS AS APPROVED BY SEMSWA.
- UTILITY LINE INSTALLATION SHALL COMPLY WITH THE FOLLOWING CRITERIA:
  - ALL UTILITY WORK WITHIN A RIGHT-OF-WAY SHALL BE REQUIRED TO OBTAIN A RIGHT-OF-WAY USE AND CONSTRUCTION PERMIT IN ACCORDANCE WITH THE APPROPRIATE STANDARDS.
  - PROVIDE ADEQUATE EROSION AND SEDIMENT CONTROLS.
  - AT THE END OF A WORK DAY, NO TRENCH SHALL BE LEFT OPEN AND BACKFILL MUST BE COMPLETED TO GRADE.
  - WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES.
  - AT NO TIME SHALL EXCAVATED MATERIAL BE PLACED ON THE STREET.
  - TRENCH DEWATERING DEVICES MUST DISCHARGE IN A MANNER THAT WILL NOT EFFECT STREAMS, WETLANDS, DRAINAGE SYSTEMS, OR OFF-SITE PROPERTY. DISCHARGE FROM TRENCH SHALL BE FREE OF ANY SEDIMENT. A RIPRAP PAD SHALL BE PLACED AT THE DISCHARGE END OF THE HOSE TO PREVENT ANY ADDITIONAL EROSION.
  - STORM SEWER INLET PROTECTION SHALL BE PROVIDED WHENEVER SOIL EROSION FROM THE EXCAVATED AREA HAS POTENTIAL OF ENTERING THE STORM DRAINAGE SYSTEM.
  - ALL DISTURBED AREAS SHALL BE DRILL SEEDED AND CRIMP MULCHED WITHIN FIVE DAYS AFTER UTILITY INSTALLATION IS COMPLETED.
  - ALL OTHER APPLICABLE CRITERIA AS OUTLINED IN THE GESC MANUAL.
- ALL SINGLE-FAMILY RESIDENTIAL DEVELOPMENT PROJECTS SHALL COMPLY WITH THE GESC CRITERIA AS PRESENTED IN THE GESC MANUAL.
- NO RECYCLED ASPHALT SHALL BE USED AS A CONTROL MEASURE. RECYCLED CONCRETE MUST BE APPROVED BY SEMSWA.
- SEMSWA MAY ALLOW THE INSTALLATION OF ALTERNATIVE CONTROL MEASURES OTHER THAN THE GESC PLAN STANDARD NOTES AND DETAILS, IF ALTERNATIVE EROSION AND SEDIMENT CONTROL MEASURES WILL BE USED, OUT SHEETS MUST BE SUBMITTED TO THE SEMSWA INSPECTOR.
- IF YOU ARE EXPORTING EXCESS DIRT WITHIN THE SEMSWA SERVICE AREA, YOU WILL BE REQUIRED TO OBTAIN A GESC PERMIT FOR THE SECONDARY SITE.

**LEGEND**

1	①		CBC	CUT BACK CURB
2	①		CD	CHECK DAM
3	①		CWA	CONCRETE WASHOUT AREA
4	①		CF	CONSTRUCTION FENCE
5	①		CM	CONSTRUCTION MARKERS
6	①		CS	CURB SOCK
7	①		DW	DEWATERING
8	②		DD	DIVERSION DITCH
9	②		ECB	EROSION CONTROL BLANKET
10	②		FGM	FLEXIBLE GROWTH MEDIUM
11	②		GMS	GROUT MIXING STATION
12	②		IP	INLET PROTECTION
13	②		RCD	REINFORCED CHECK DAM
14	②		RRB	REINFORCED ROCK BERM
15	②		RRR	RRB FOR CULVERT PROTECTION
16	③		SB	SEDIMENT BASIN
17	③		SCL	SEDIMENT CONTROL LOG
18	③		ST	SEDIMENT TRAP
19	③		SM	SEEDING AND MULCHING
20	③		SF	SILT FENCE
21	③		SFR	SILT FENCE REINFORCED
22	④		SID	SLOPE INTERCEPT DITCH
23	④		SSA	STABILIZED STAGING AREA
24	④		SR	SURFACE ROUGHENING
25	④		TSD	TEMPORARY SLOPE DRAIN
26	④		TSC	TEMPORARY STREAM CROSSING
27	④		VTC	VEHICLE TRACKING CONTROL
28	④		WW	VTC WITH WHEEL WASH
			LOC	LIMITS OF CONSTRUCTION
			*EG	MAY MEET MAJOR MODIFICATION REQUIREMENTS

**ROCK AND RIPRAP GRADATIONS**

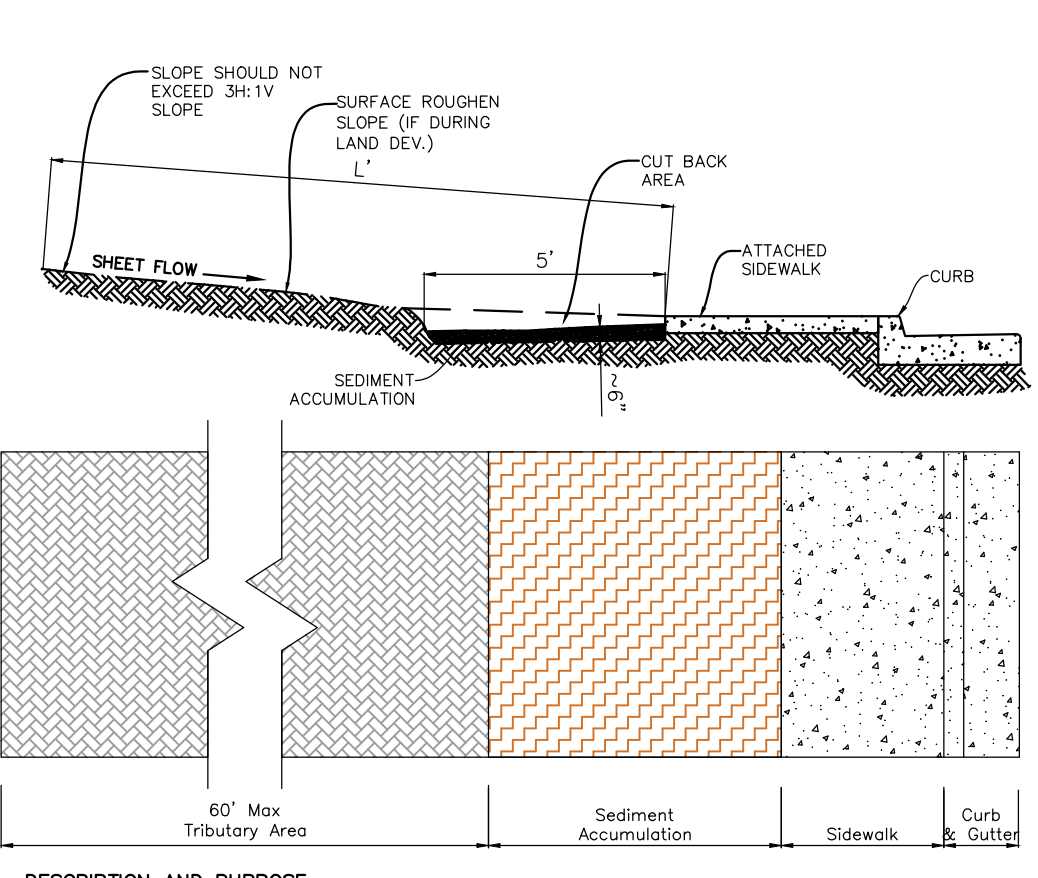
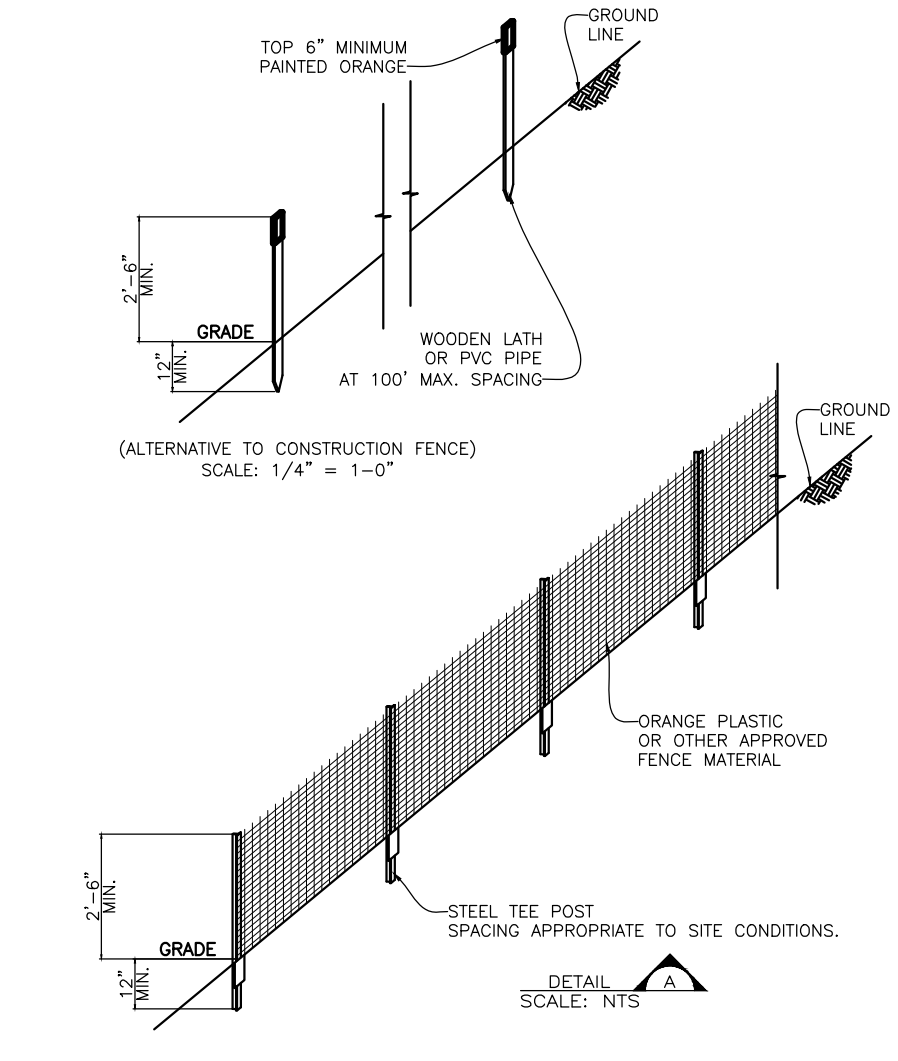
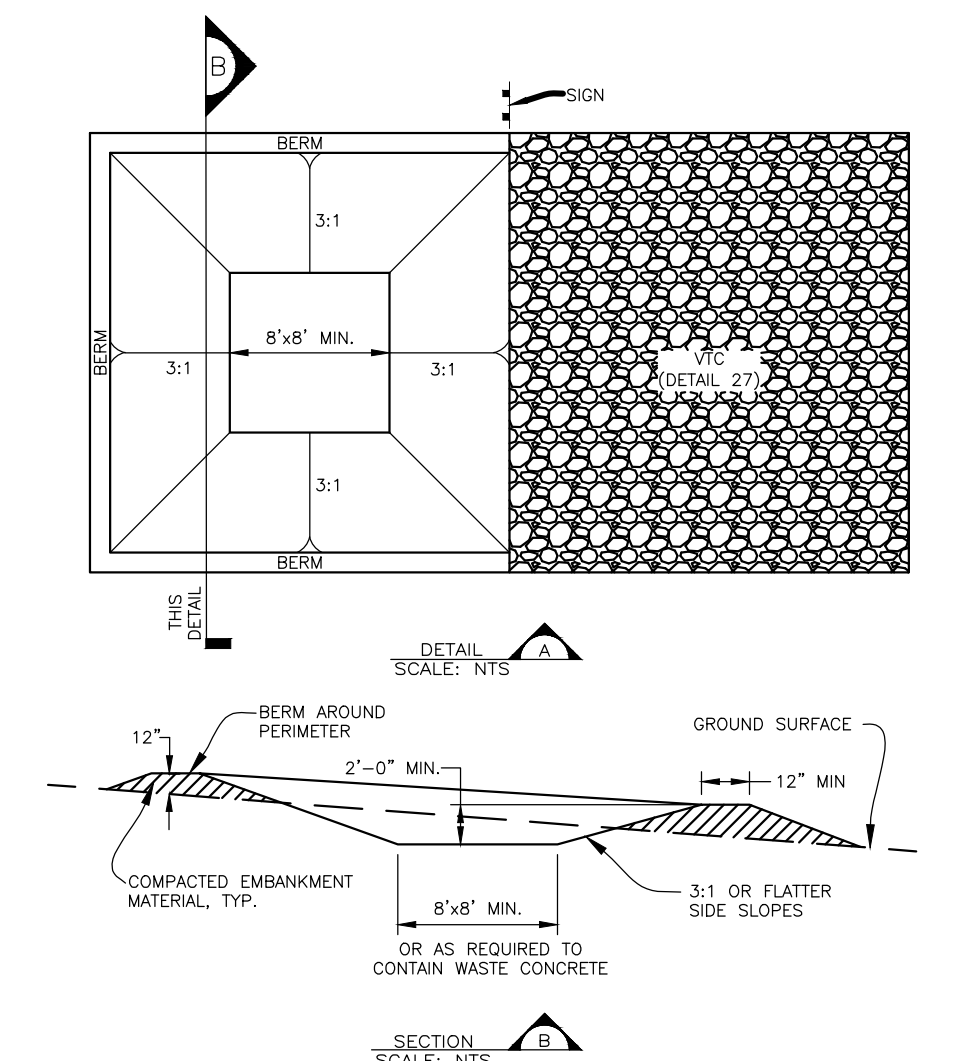
**TABLE 1. RIPRAP GRADATIONS**

DSO MEDIAN STONE SIZE (INCHES)	% OF MATERIAL SMALLER THAN TYPICAL STONE	TYPICAL STONE EQUIVALENT DIAMETER (INCHES)	TYPICAL STONE WEIGHT (POUNDS)
6	70 - 100 50 - 70 2 - 10	12 9 6	85 35 10
9	70 - 100 50 - 70 2 - 10	15 12 9	160 85 35
12	70 - 100 50 - 70 2 - 10	21 18 12	440 275 120
18	100 50 - 70 2 - 10	30 24 18	1280 650 275
24	100 50 - 70 2 - 10	42 33 24	3500 1700 650

**TABLE 2. RIPRAP BEDDING**

SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVE	
	CLASS A	
3"	100	
1 1/2"	20 - 90	
NO. 4	0 - 20	
NO. 200	0 - 3	

MATCHES SPECIFICATIONS FOR CDOT CLASS A FILTER MATERIAL AND UDOT TYPE 1 BEDDING. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.



**DESCRIPTION AND PURPOSE**

- A TEMPORARY SEDIMENT BARRIER AND TRAP FORMED BY EXCAVATION BEHIND CURB OR SIDEWALK TO RETAIN SEDIMENT ON SITE DURING CONSTRUCTION.

**SUITABLE APPLICATIONS**

- DURING LAND DEVELOPMENT AFTER PAVING OR DURING VERTICAL CONSTRUCTION.
- USE IN TREE LAWNS OR IN LANDSCAPE ISLANDS.
- USE SURFACE ROUGHENING ON UPGRADMENT SLOPES IF DURING LAND DEVELOPMENT.

**SIZING**

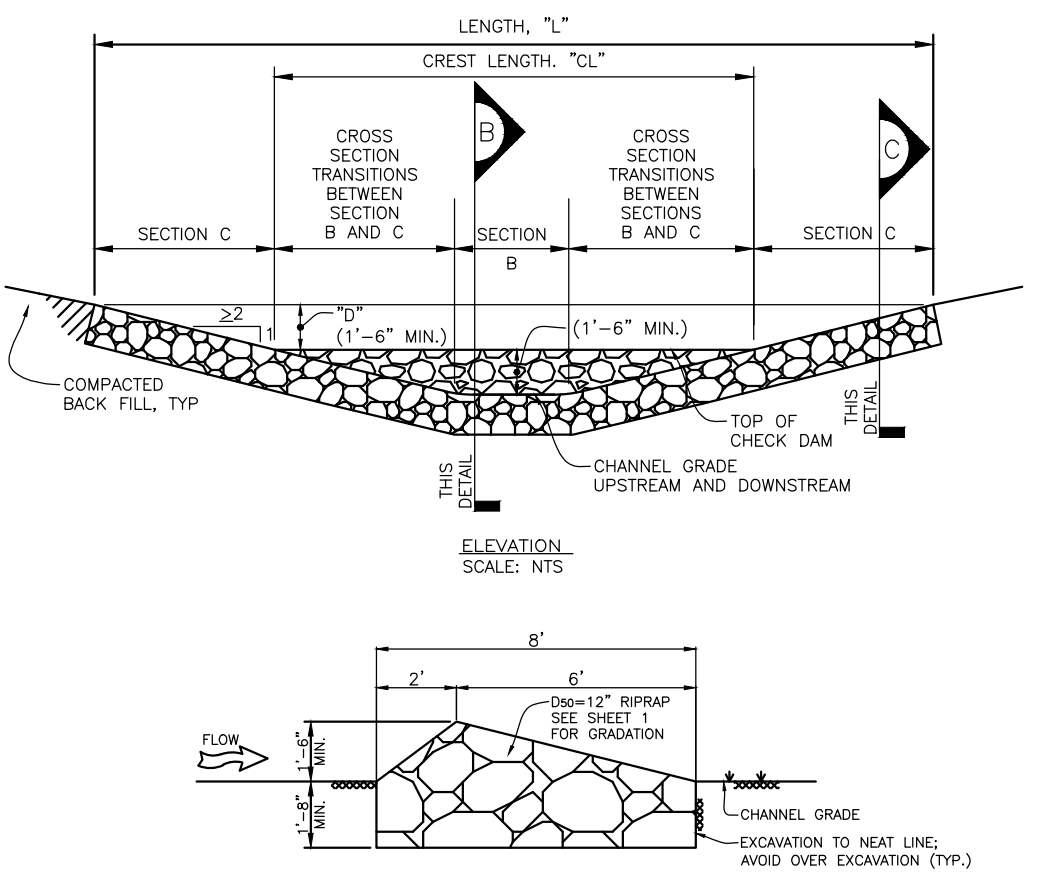
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**LIMITATIONS**

- NOT FOR USE EXCEEDING 3:1V/1H SLOPE.
- NOT FOR USE FOR CONCENTRATED FLOW AREAS.
- PROLONGED STANDING WATER MAY AFFECT SUB-BASE OF PAVING AND COULD CAUSE SOIL TO SETTLE AND POTENTIALLY DAMAGE CONCRETE.

**INSTALLATION AND MAINTENANCE**

- THE GESC MANAGER SHALL INSPECT AS NECESSARY TO ENSURE THE ADEQUACY AND FUNCTIONALITY OF THE CONTROL MEASURE.
- REMOVE ACCUMULATED SEDIMENT WHEN 1/2 CAPACITY. DO NOT ALLOW SEDIMENT TO OVERFLOW ONTO CURB OR SIDEWALK.
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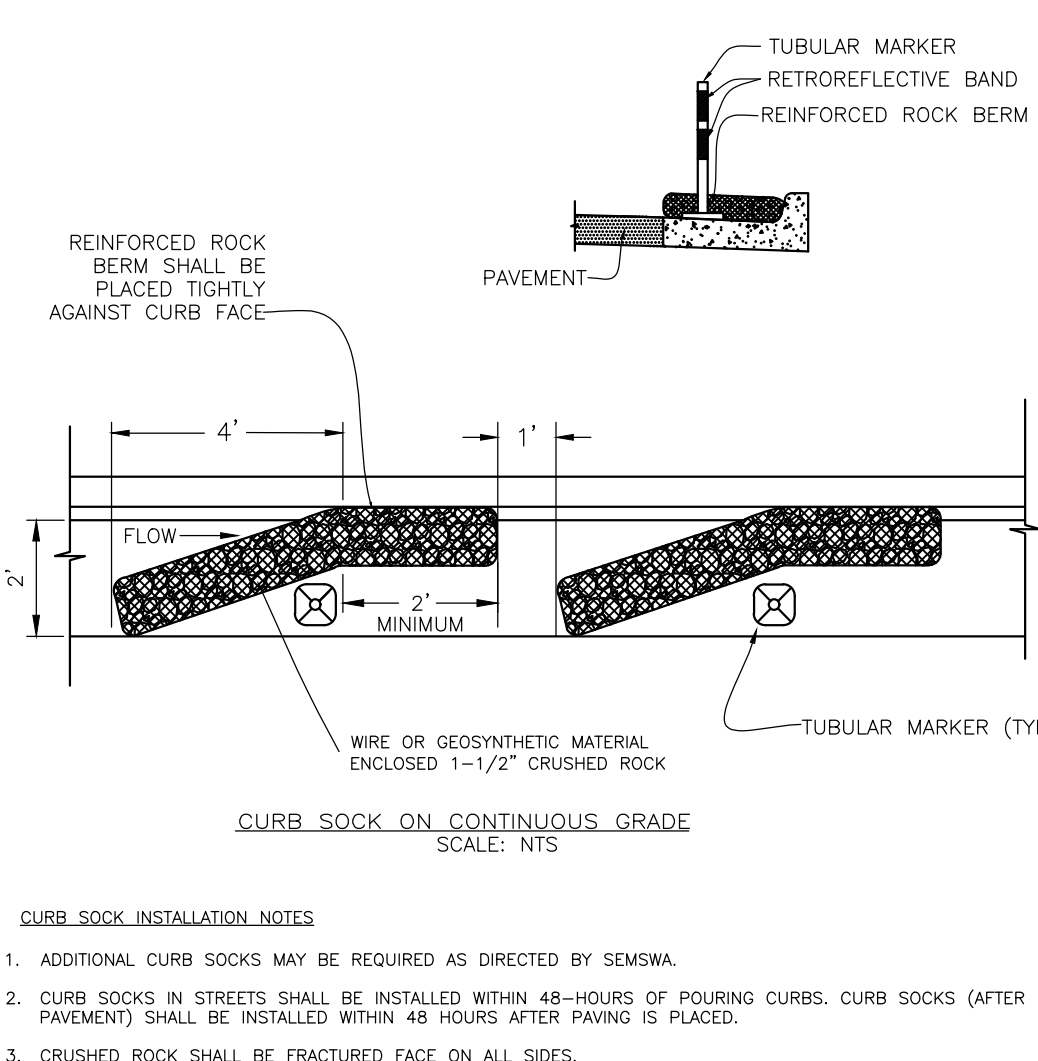
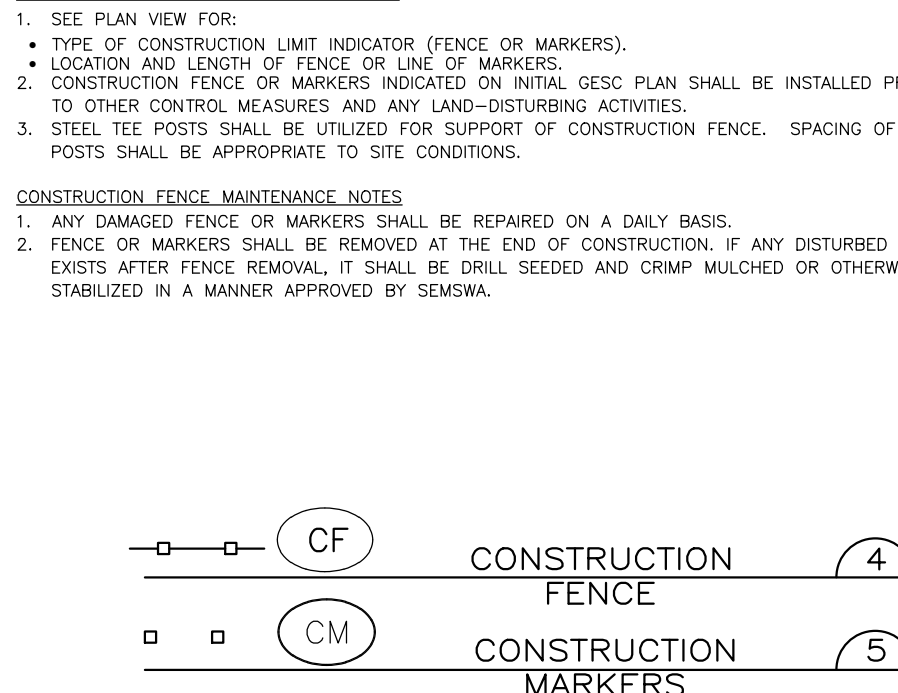
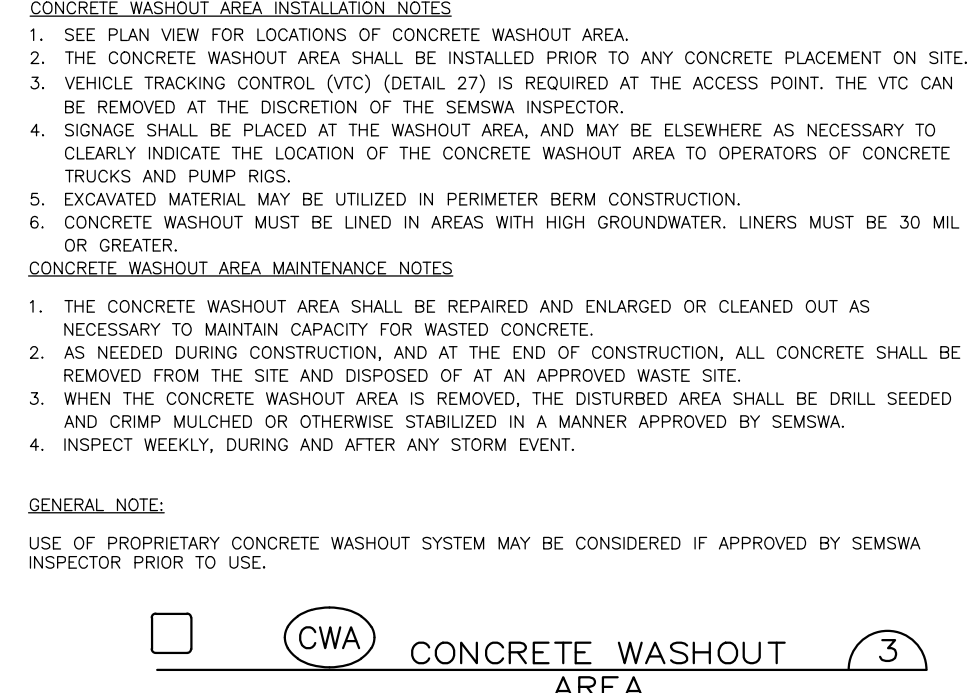
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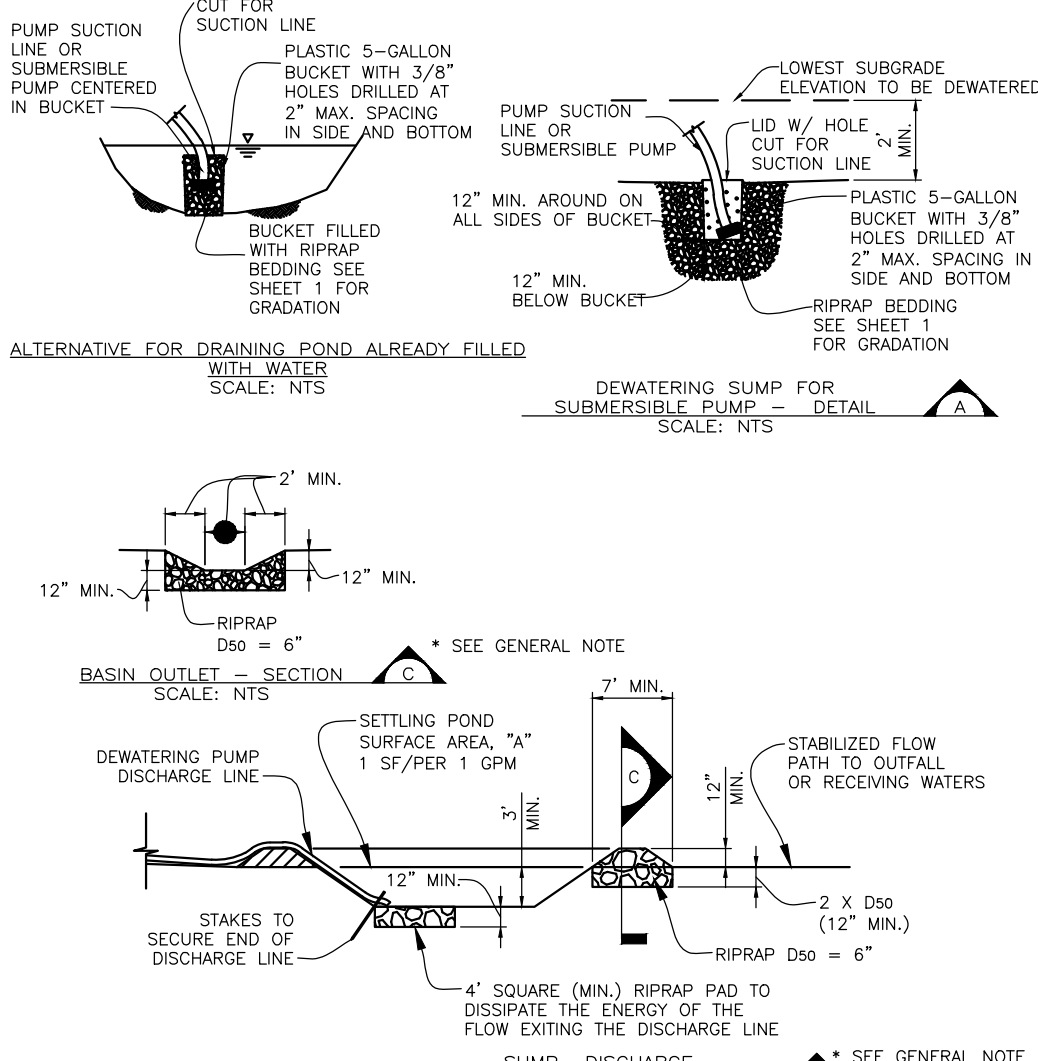
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UTILITY NOTIFICATION CENTER OF COLORADO  
CALL BEFORE YOU DIG  
**811**  
Call 2 days prior to any digging, grading or excavating for the marking of underground member utilities

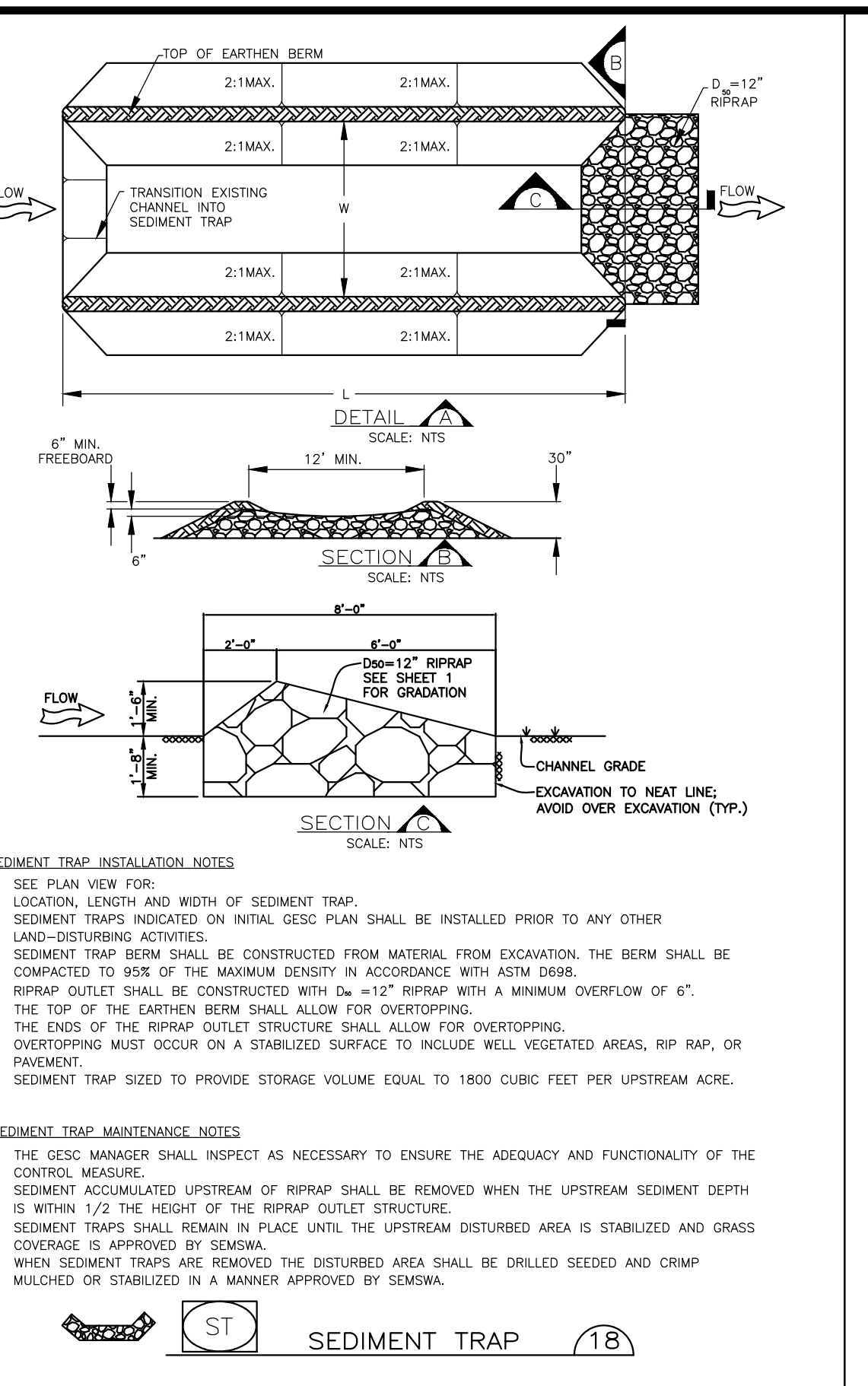
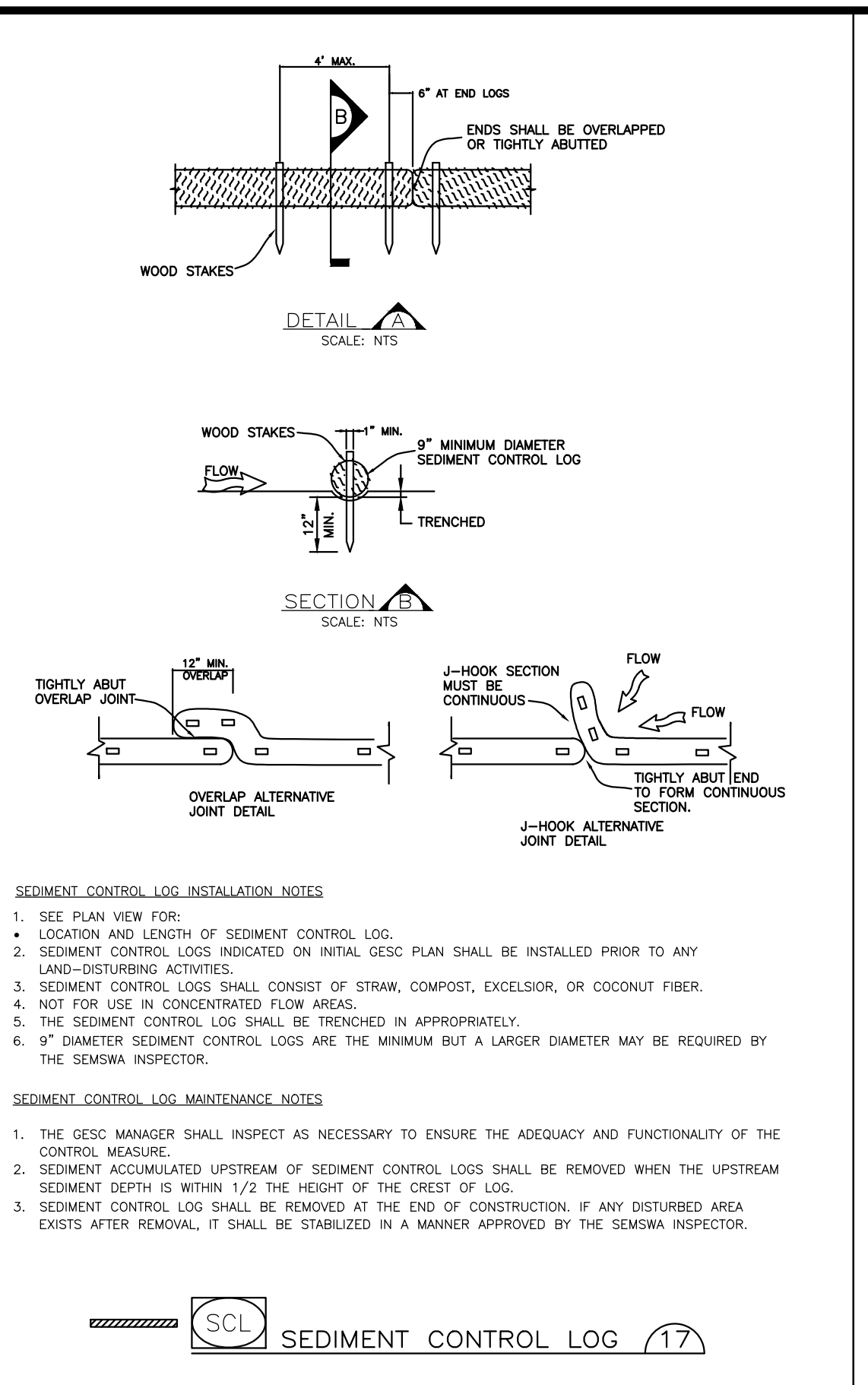
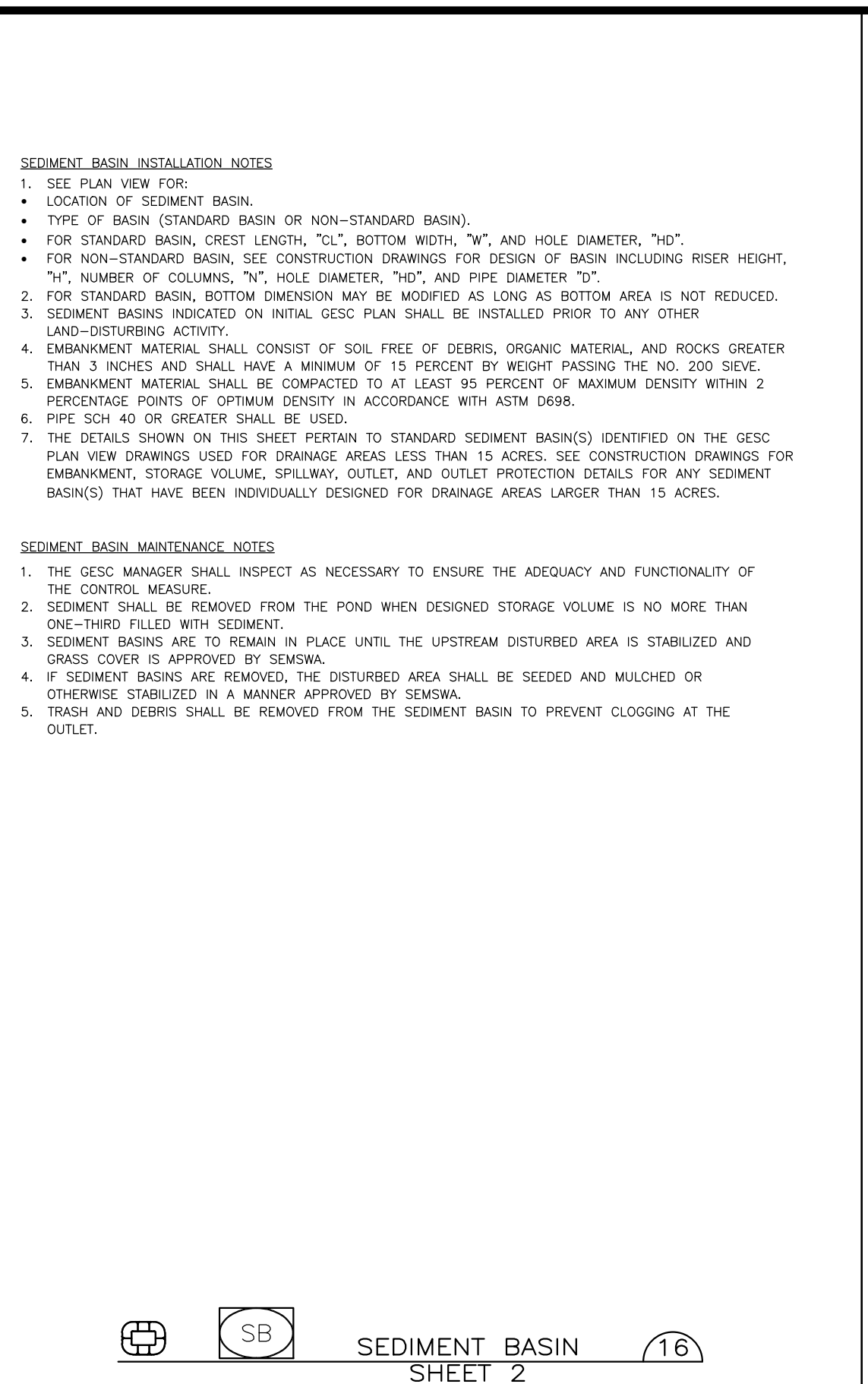
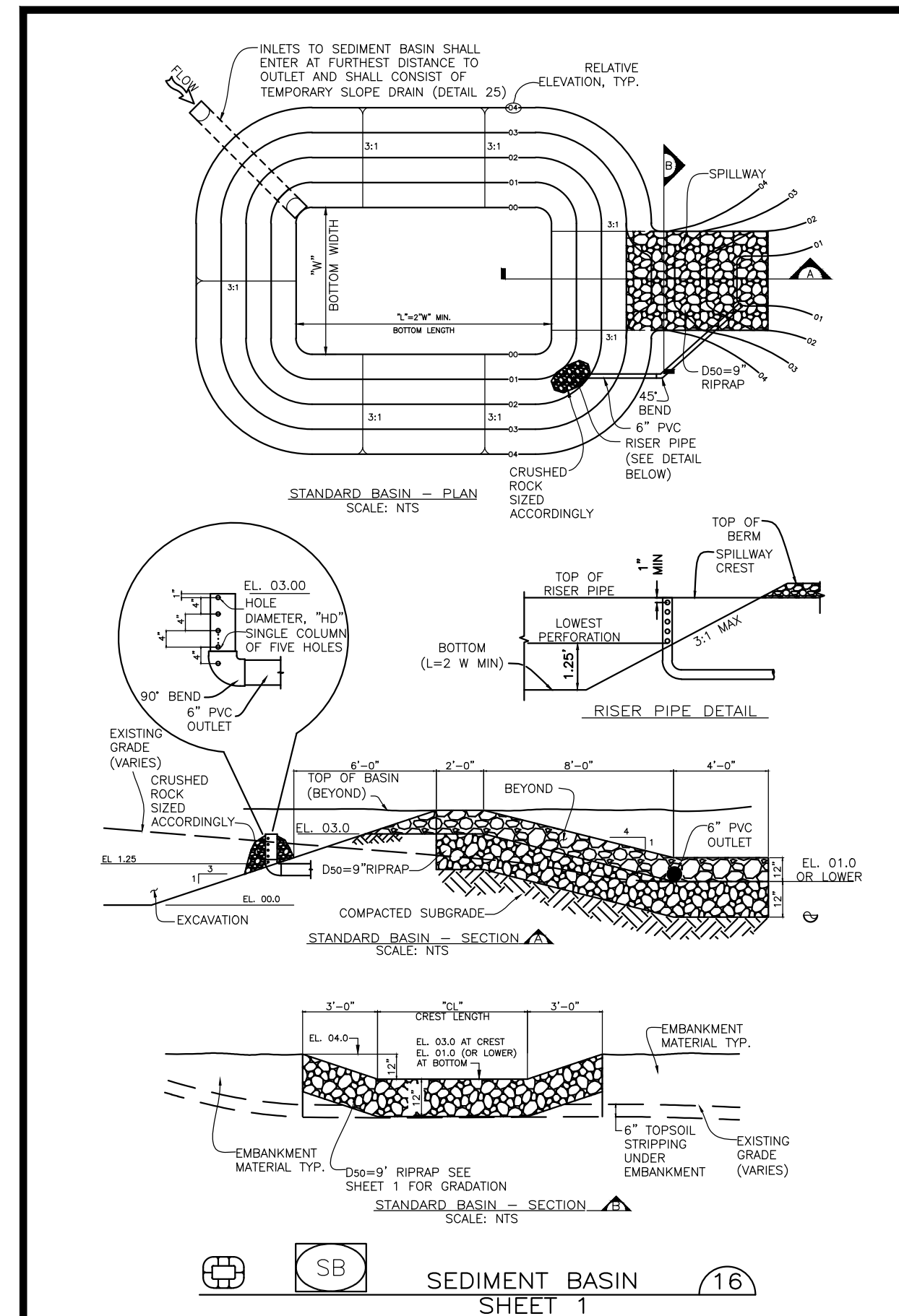
**SOUTHEAST METRO STORMWATER AUTHORITY**  
7437 SOUTH FAIRPLAY STREET  
CENTENNIAL COLORADO  
80112-4486  
(303) 858-8844 - INSPECTION DIVISION



**GRADING EROSION AND SEDIMENT CONTROL**  
**STANDARD NOTES AND DETAILS**  
REVISED FEBRUARY 2023

**GESC SHEET 1 OF 4**





**TEMPORARY DRILL SEEDING MIX**

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
SMOOTH BROMEGRASS	LINCOLN	PICS	30	3.9
INTERMEDIATE WHEATGRASS	OHAE	PICS	30	4.5
PURBESCENT WHEATGRASS	LUNA	PICS	30	4.2
ANNUAL RYEGRASS	N/A	ACB	10	0.8
TOTAL			100	13.4

NOTES: P=PERENNIAL, A=ANNUAL, W=WITHROUDED, C=COOL SEASON, S=SOFT FLOWER, B=BUNCHEDGRASS

**PERMANENT DRILL SEEDING - WETLAND SEED MIX<sup>1</sup>**

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS <sup>2</sup> /AC
SLOUGH GRASS	BECKMANNIA SYZYGACHE	COOL	20	1,150,000	0.5
CANADIAN REED GRASS	CALAMAGROSTIS CANADENSIS	COOL	20	2,270,000	0.2
TUFTED HAIR GRASS	DESCHAMPSIA CESPIITOSA	COOL	10	2,500,000	0.1
COMMON SPIKE RUSH	ELEOCHARIS PALUSTRIS	COOL	15	620,000	0.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.4
KNOTTED RUSH	JUNCUS NODOSUS	COOL	10	12,300,000	0.1
TORREY'S RUSH	JUNCUS TORREYI	COOL	10	12,300,000	0.1
TOTAL			100		2 LBS PLS <sup>2</sup> /AC

**PERMANENT DRILL SEEDING<sup>1,2</sup> - TRANSITION SEED MIX - WITHOUT FORBS**

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS <sup>2</sup> /AC
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	15	115,000	3.4
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	15	156,000	2.5
SLENDER WHEAT GRASS	ELYMUS TRACHYCALIUS	WARM	10	159,000	1.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.1
SWITCHGRASS	PANICUM VIRGATUM	WARM	15	389,000	1.0
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	15	110,000	3.6
SAND DROPSPEED	SPOROBOIUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100		12.4 LBS PLS <sup>2</sup> /AC

**PERMANENT DRILL SEEDING<sup>1,2</sup> - TRANSITION SEED MIX - WITH FORBS**

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS <sup>2</sup> /AC
NATIVE GRASSES					
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	15	115,000	3.4
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	15	156,000	2.5
SLENDER WHEAT GRASS	ELYMUS TRACHYCALIUS	WARM	10	159,000	1.6
BALTIC RUSH	JUNCUS BALTICUS	COOL	15	10,900,000	0.1
SWITCHGRASS	PANICUM VIRGATUM	WARM	15	389,000	1.0
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	15	110,000	3.6
SAND DROPSPEED	SPOROBOIUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100		15.5 LBS PLS <sup>2</sup> /AC

**PERMANENT DRILL SEEDING<sup>1,2</sup> - TRANSITION SEED MIX - WITH FORBS**

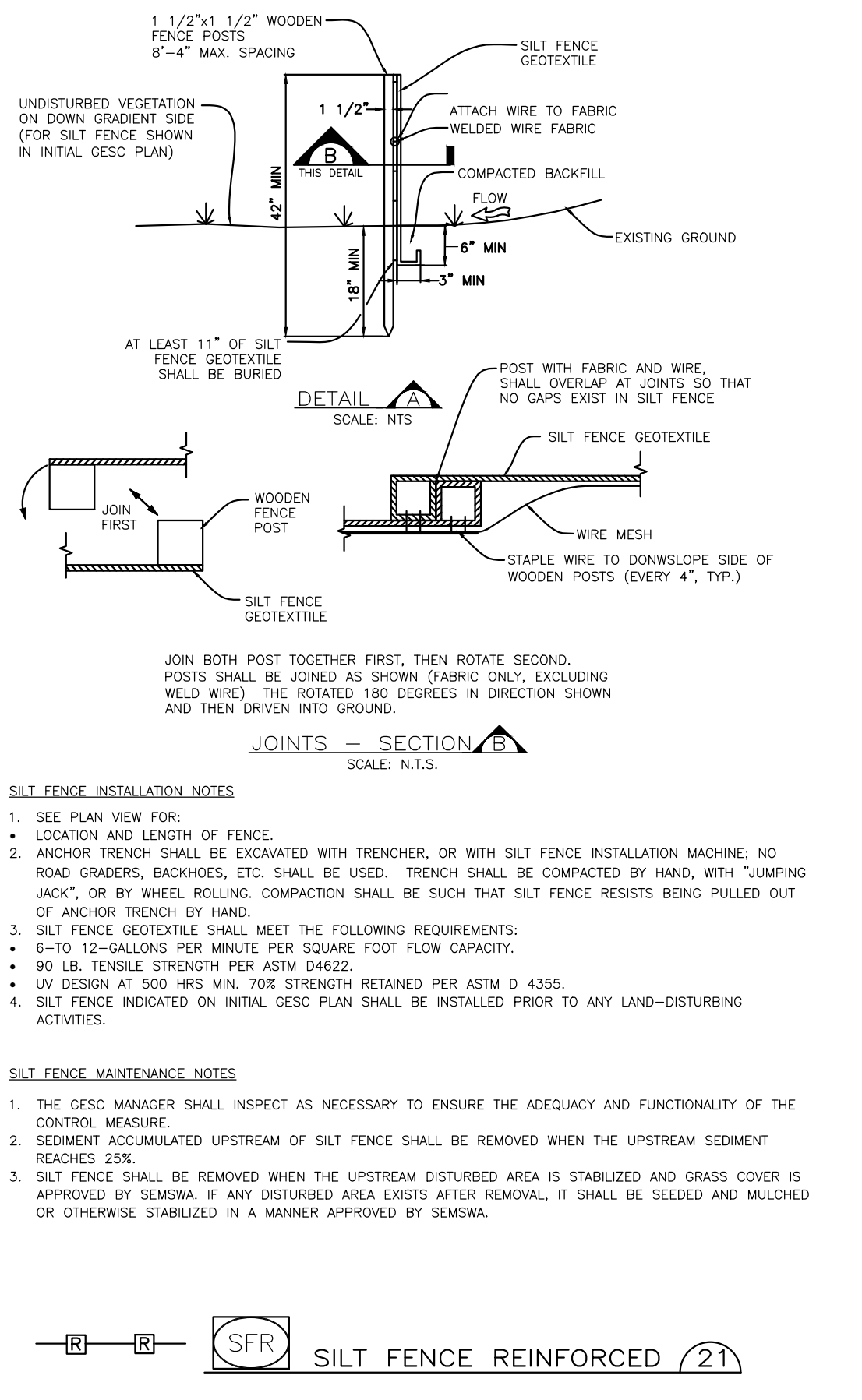
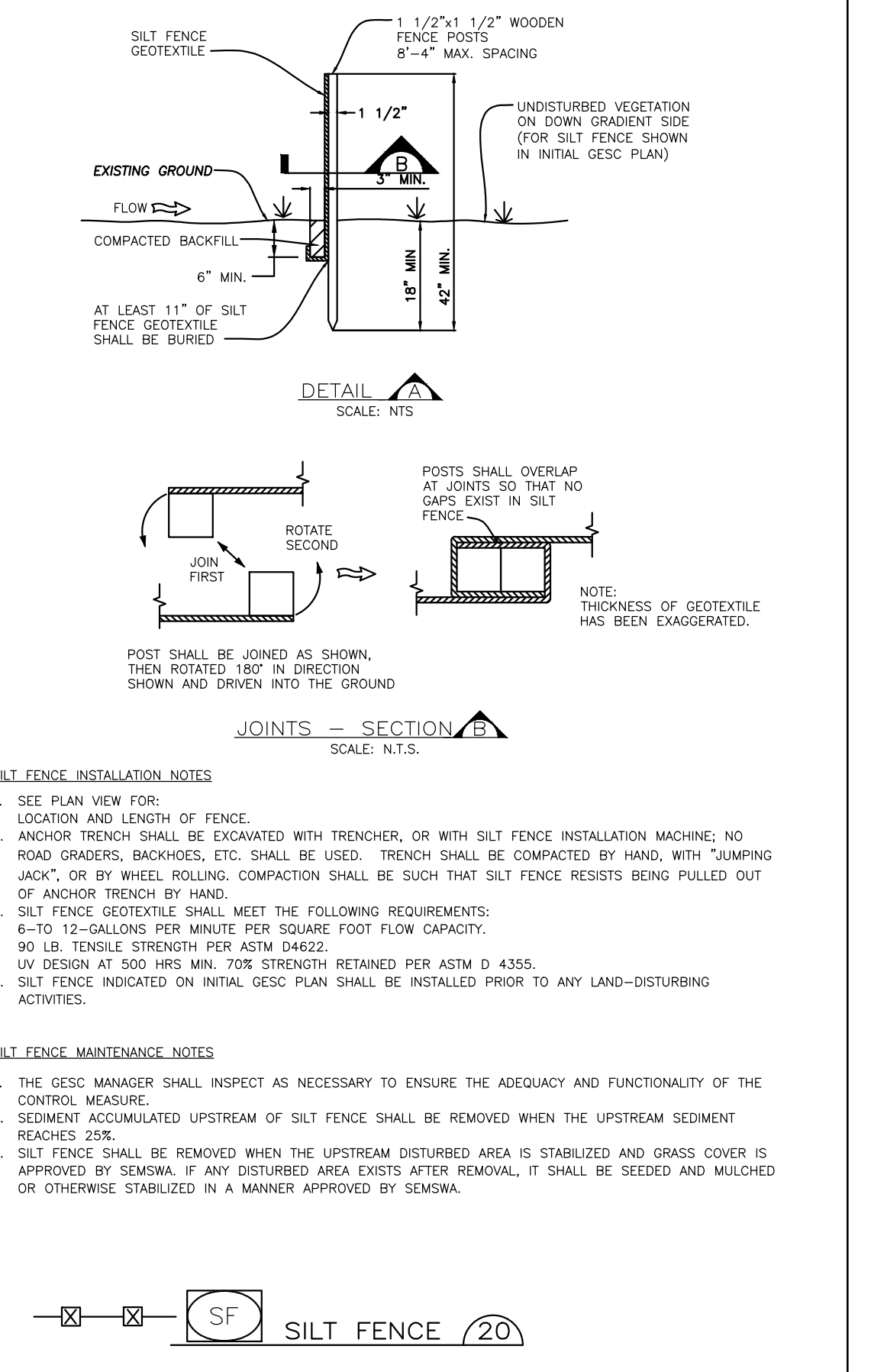
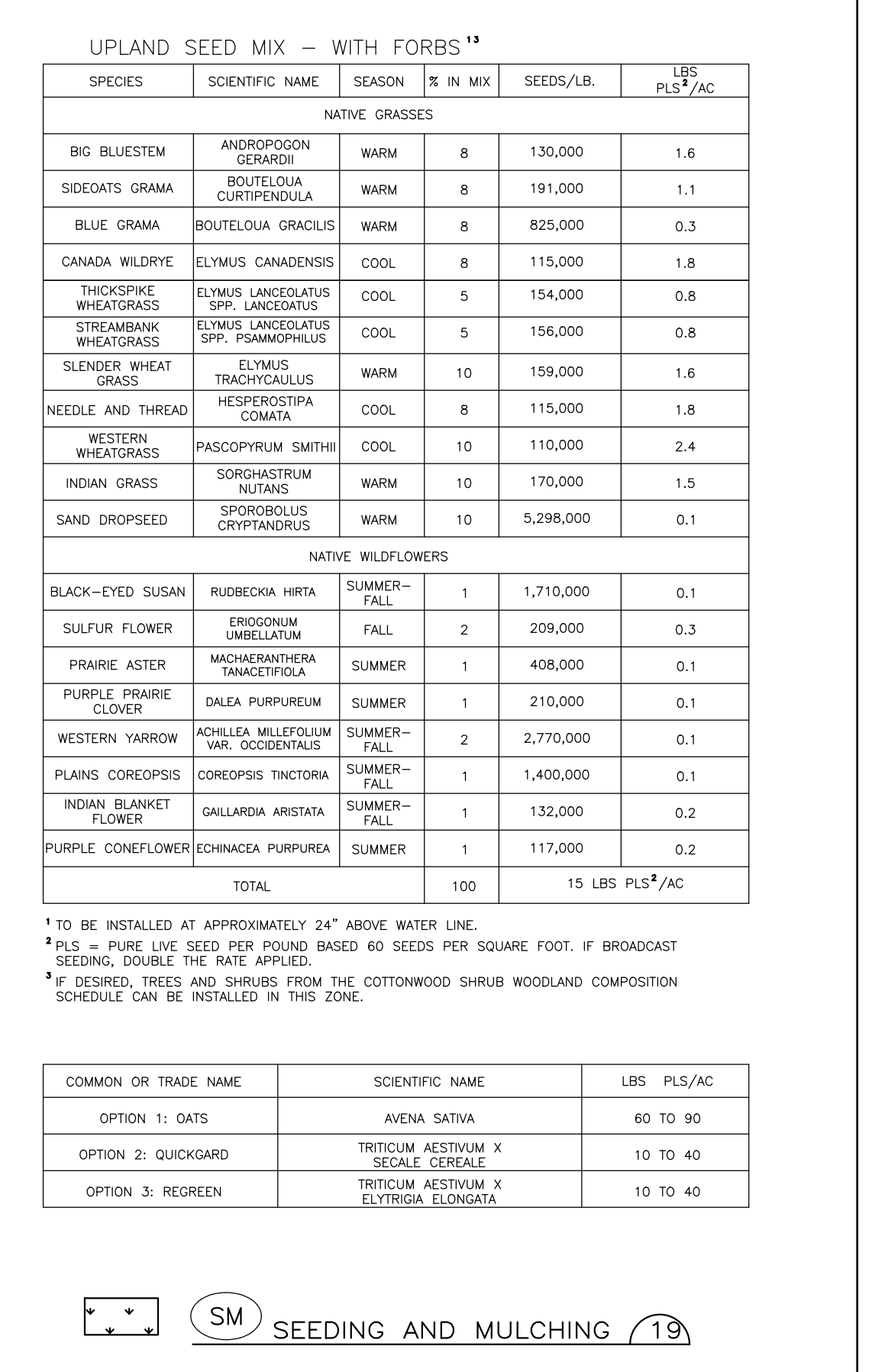
SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS <sup>2</sup> /AC
NATIVE WILDFLOWERS					
INDIAN BLANLET FLOWER	GALLARDA ARISTATA	SUMMER-FALL	1	132,000	0.2
ROCKY MOUNTAIN IRIS	IRIS MISSOURIENSIS	SPRING-SUMMER	2	368,000	0.1
EVENING PRIMROSE	GENETHEIRA ELATA	SUMMER	2	1,300,000	0.1
GOLDEN BANNER	THEMOPHIS MONTANA	SPRING	2	15,000	3.5
MEXICAN HAT	SATIBRA COLUMNIFERA	SUMMER-FALL	1	1,230,000	0.1
SAND DROPSPEED	SPOROBOIUS AIROIDES	WARM	15	1,758,000	0.2
TOTAL			100		14.4 LBS PLS <sup>2</sup> /AC

**PERMANENT DRILL SEEDING<sup>1,2</sup> - UPLAND SEED<sup>3</sup> MIX - WITHOUT FORBS**

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS <sup>2</sup> /AC
NATIVE GRASSES					
BIG BLUESTEM	ANDROPOGON GERARDII	WARM	10	130,000	2.0
SULFUR FLOWER	EROGONUM UMBELATUM	FALL	2	209,000	0.3
BLUE GRAMA	BOUTELOUA GRAECLIS	WARM	10	825,000	0.3
CANADA WILDRYE	ELYMUS CANADENSIS	COOL	10	115,000	1.8
THICKSPIKE WHEATGRASS	ELYMUS LANCEOLATUS SPP. LANCEOLATUS	COOL	5	154,000	0.8
STREAMBANK WHEATGRASS	ELYMUS LANCEOLATUS SPP. PSAMMOPHILUS	COOL	5	154,000	0.8
SLENDER WHEAT GRASS	ELYMUS TRACHYCALIUS	WARM	10	159,000	1.6
NEEDLE AND THREAD	HESPEROSTIPA COMATA	COOL	8	115,000	1.8
WESTERN WHEATGRASS	PASCOPYRUM SMITHI	COOL	10	110,000	2.4
INDIAN GRASS	SORGHASTRUM NJUTANS	WARM	10	170,000	1.5
SAND DROPSPEED	SPOROBOIUS CRYPTANDRUS	WARM	10	5,298,000	0.1
TOTAL			100		15 LBS PLS <sup>2</sup> /AC

**PERMANENT DRILL SEEDING<sup>1,2</sup> - UPLAND SEED<sup>3</sup> MIX - WITHOUT FORBS**

SPECIES	SCIENTIFIC NAME	SEASON	% IN MIX	SEEDS/LB.	LBS PLS <sup>2</sup> /AC
NATIVE WILDFLOWERS					
BLACK-EYED SUSAN	RUBICHA HIRTA	SUMMER-FALL	1	1,710,000	0.1
SULFUR FLOWER	EROGONUM UMBELATUM	FALL	2	209,000	0.3
PRairie AStER	MADHEPANTHERA TANACEIFOLIA	SUMMER	1	408,000	0.1
PURPLE PRairie CLOVER	DALIA PURPUREA	SUMMER	1	210,000	0.1
WESTERN YARROW	ACHILLEA MILEFOLIUM VAR. OCCIDENTALE	SUMMER-FALL	2	2,770,000	0.1
PLAINS COREOPSIS	COREOPSIS THICTORA	SUMMER-FALL	1	1,450,000	0.1
INDIAN BLANLET FLOWER	GALLARDA ARISTATA	SUMMER-FALL	1	132,000	0.2
PURPLE CONEFLOWER	SCHEUCHZERIA PURPUREA	SUMMER	1	117,000	0.2
TOTAL			100		15.5 LBS PLS <sup>2</sup> /AC

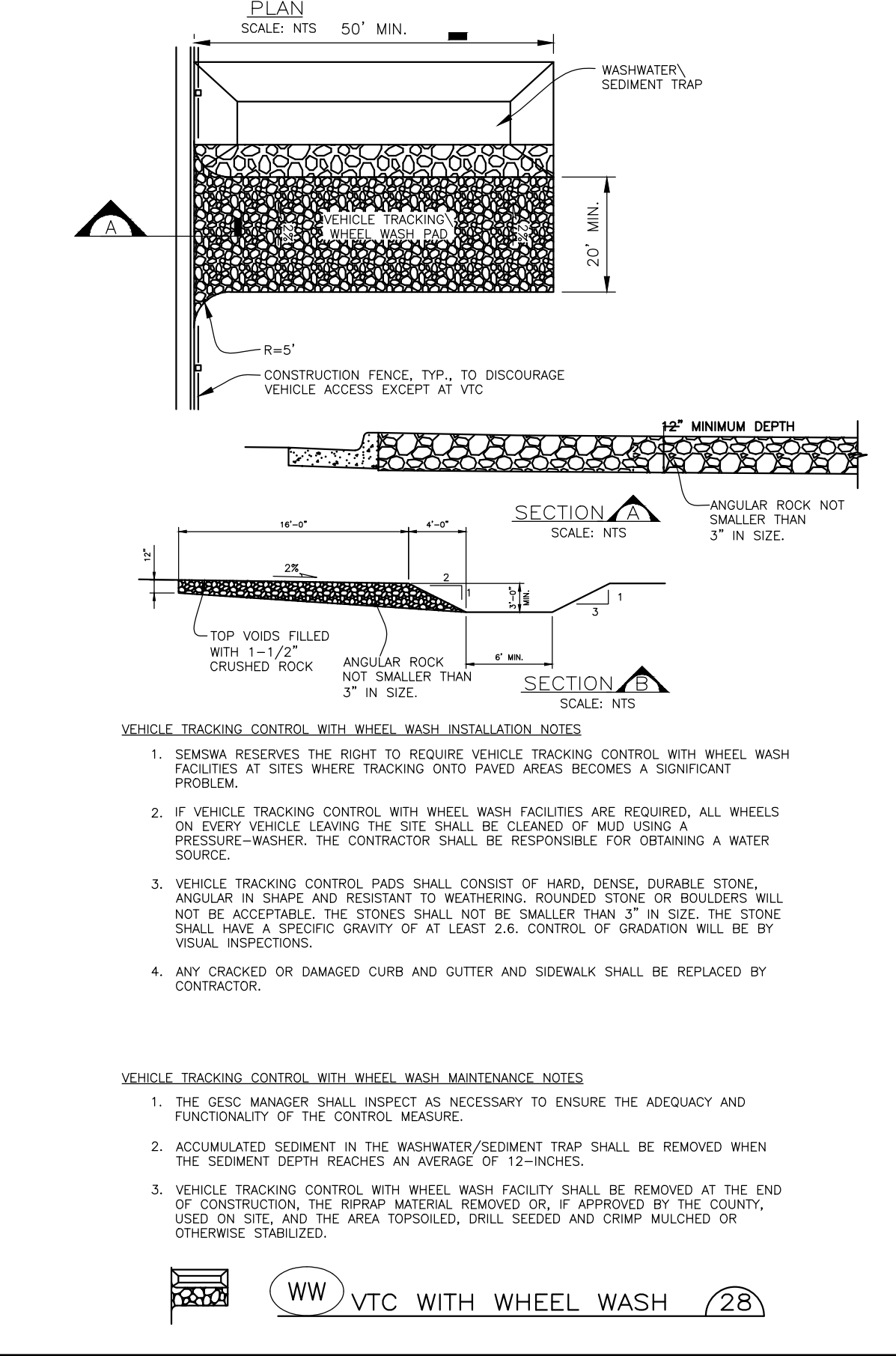
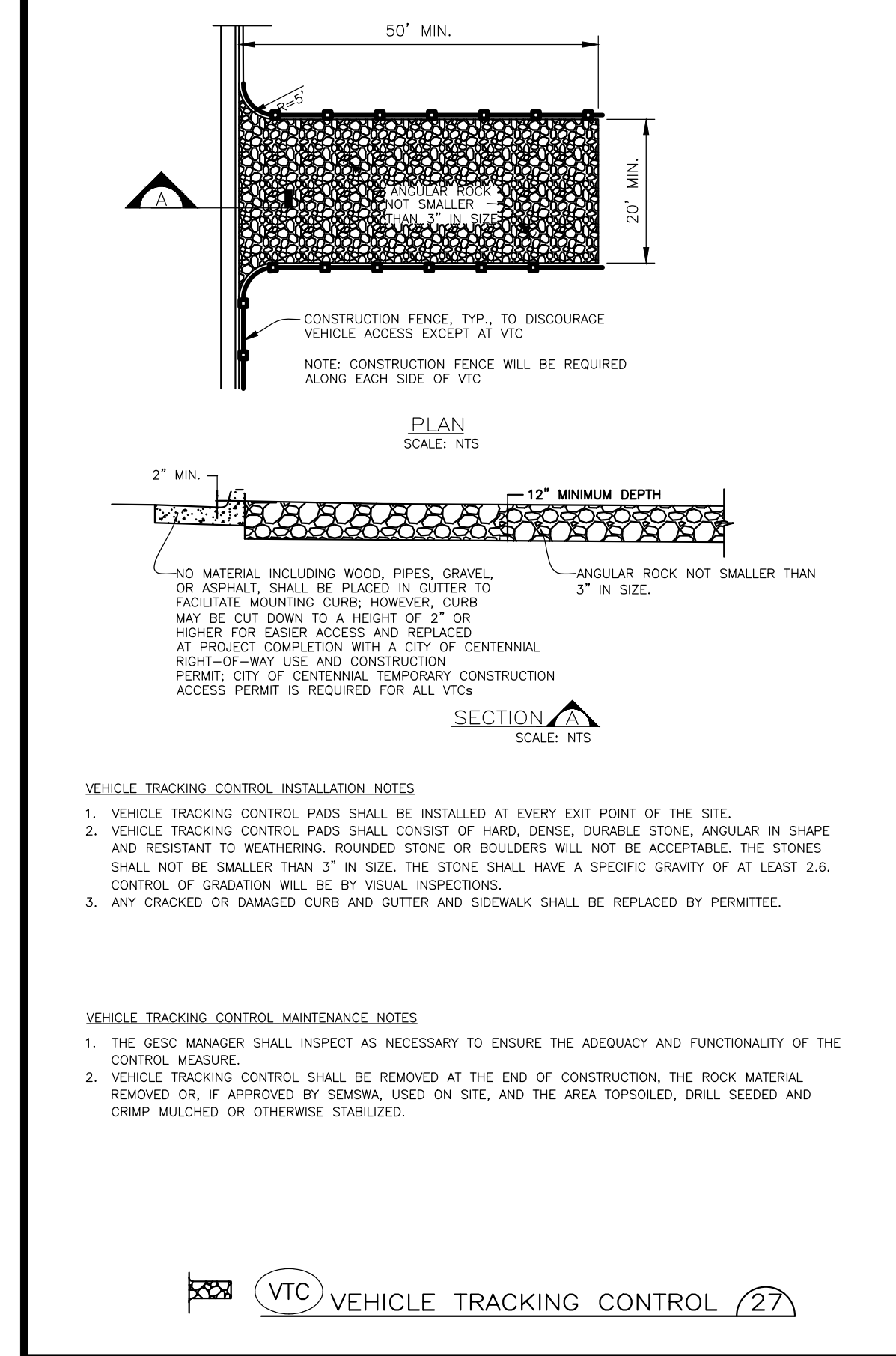
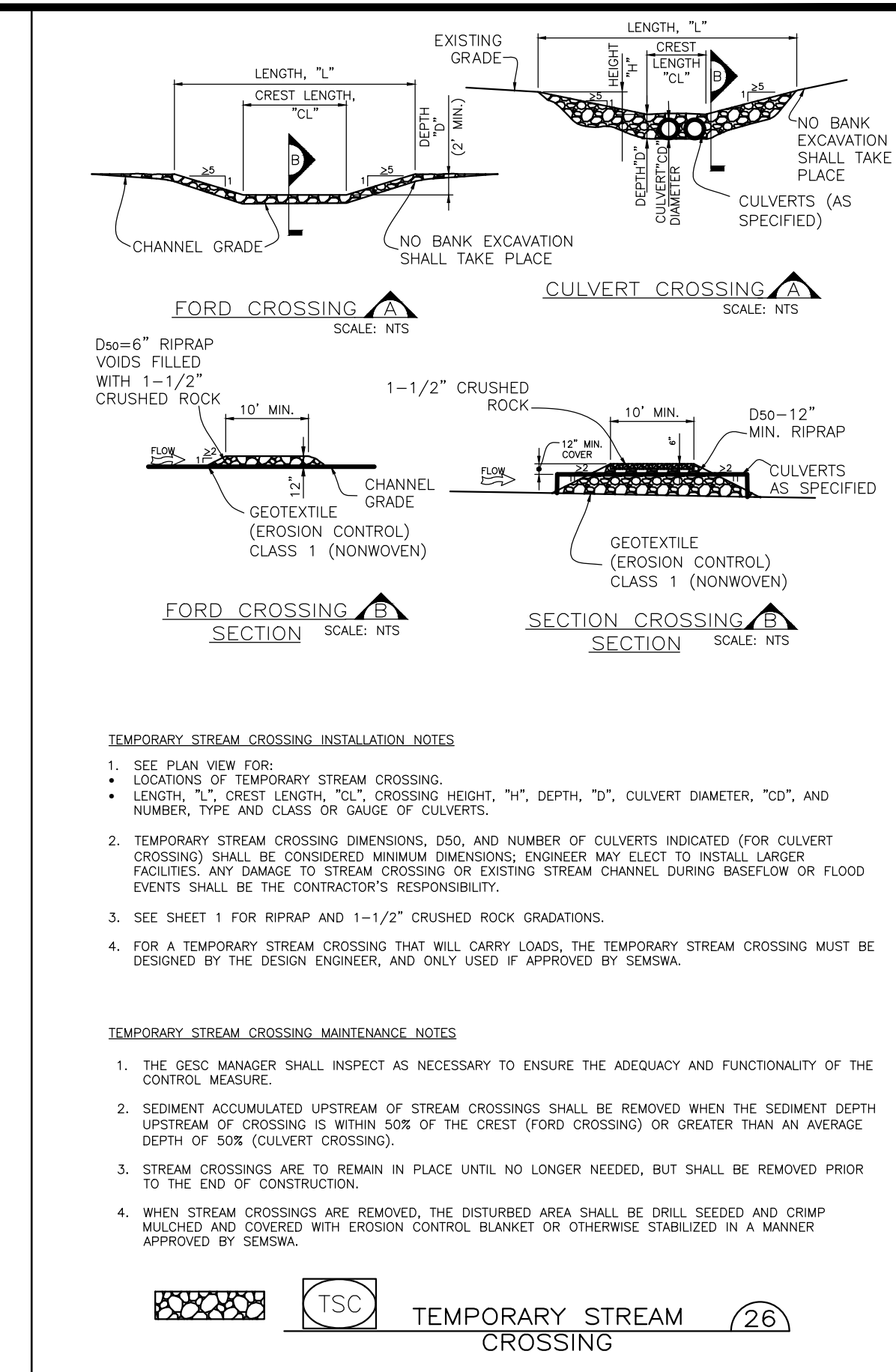
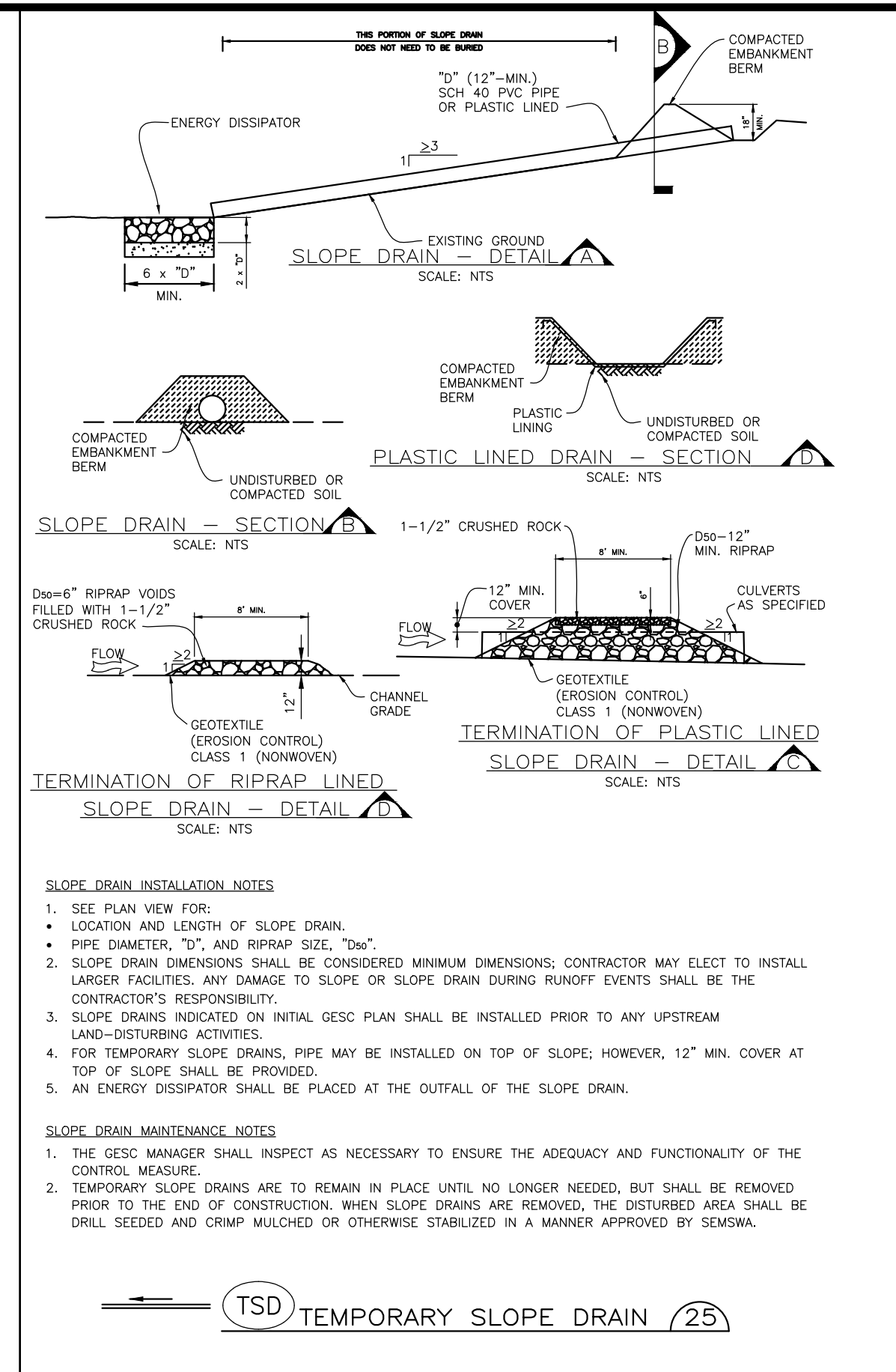
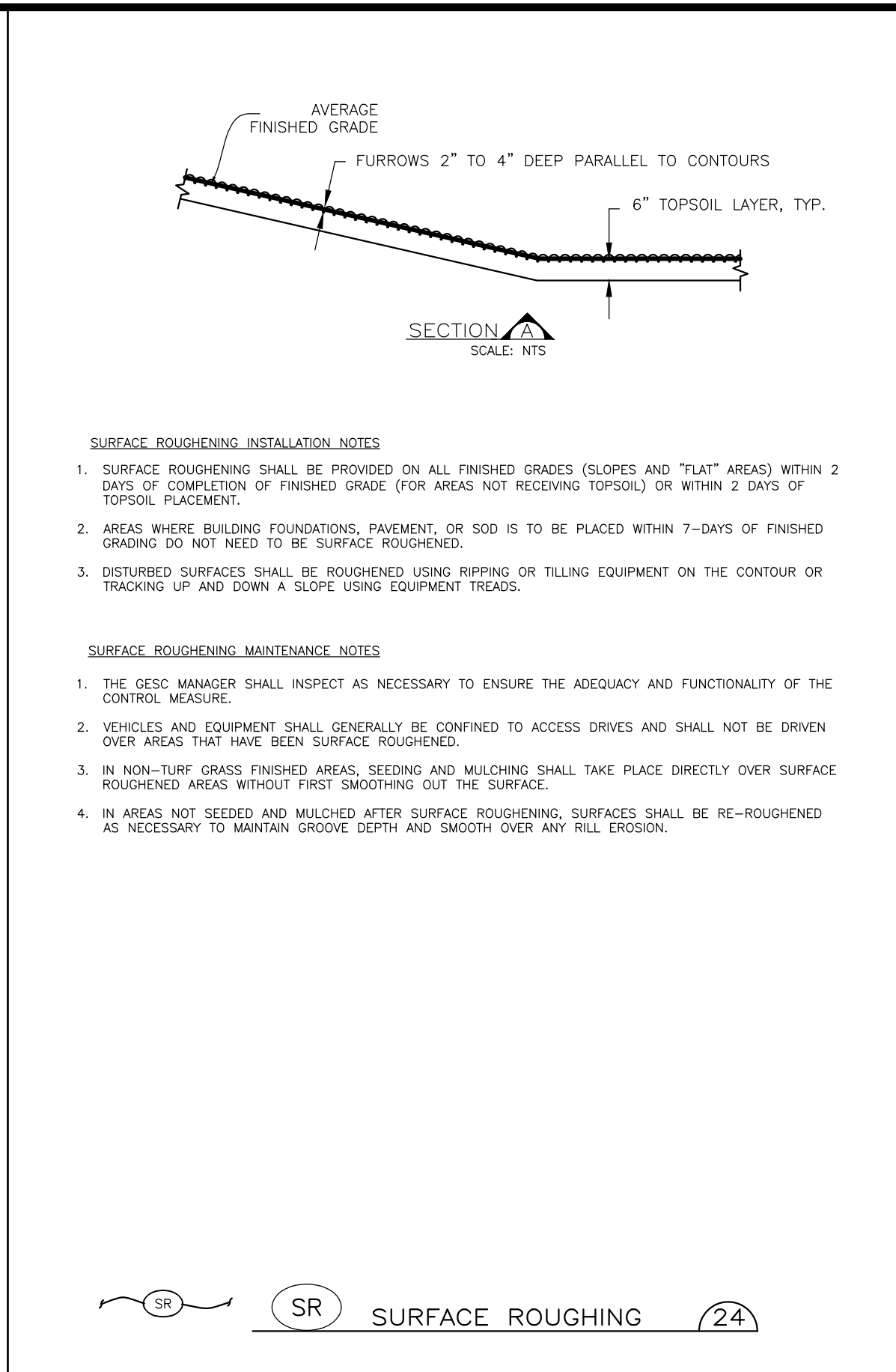
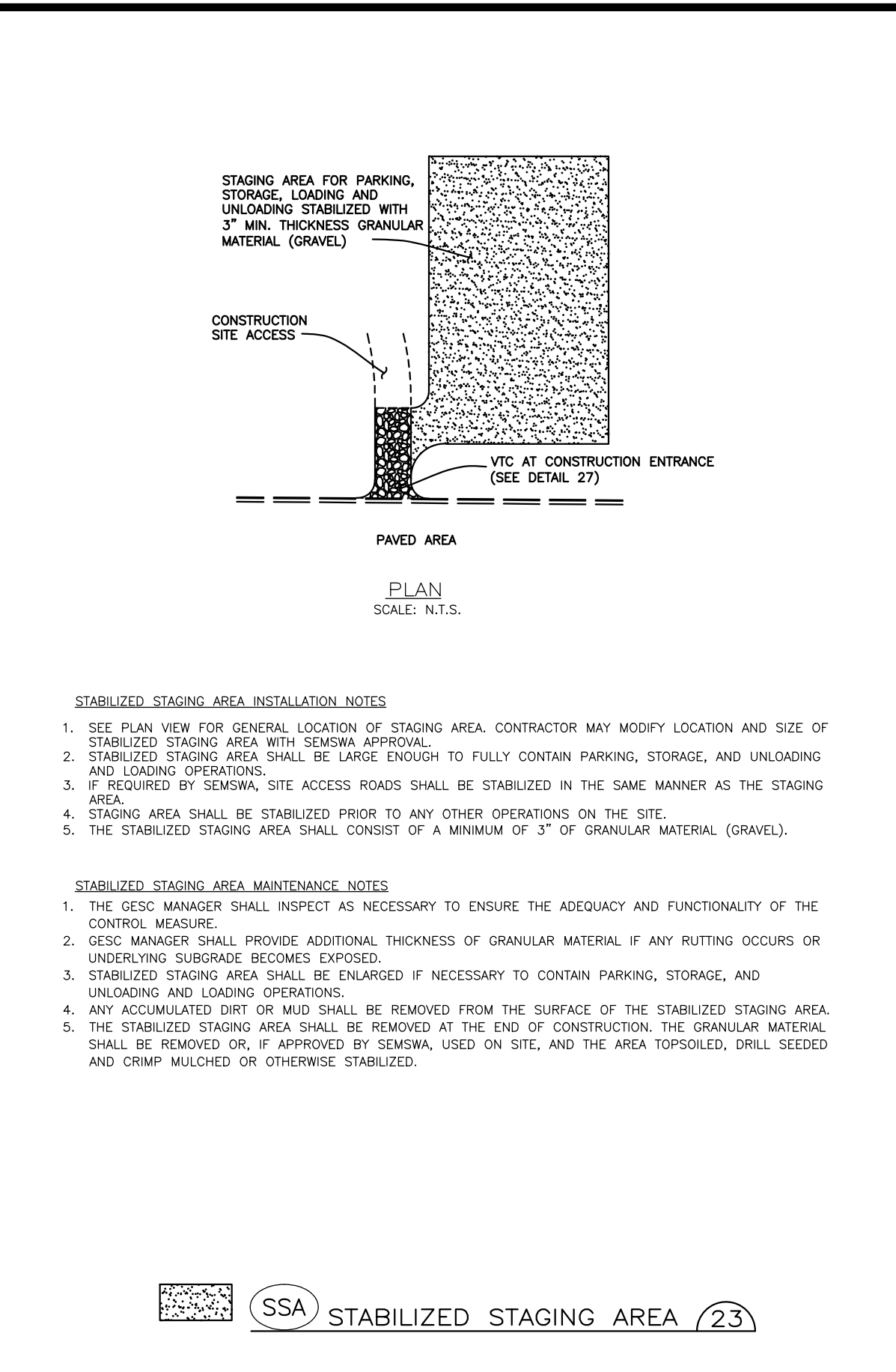
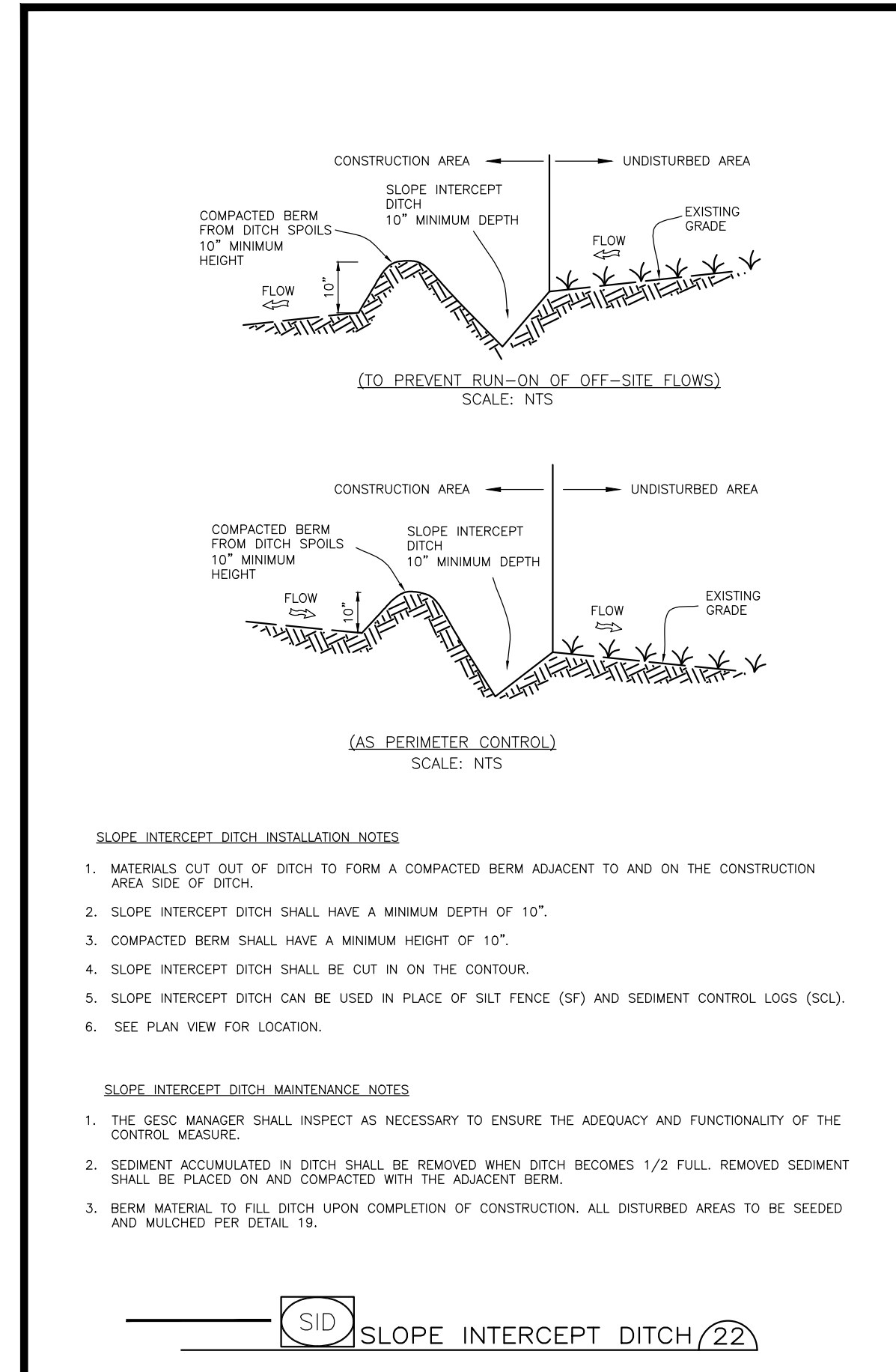


UTILITY NOTIFICATION CENTER OF COLORADO  
CALL BEFORE YOU DIG  
**811**  
Call 2 days prior to any digging, grading or excavating for the marking of underground member utilities

**SOUTHEAST METRO STORMWATER AUTHORITY**  
7437 SOUTH FAIRPLAY STREET  
CENTENNIAL COLORADO  
80112-4486  
(303) 858-8844 - INSPECTION DIVISION



**GRADING EROSION AND SEDIMENT CONTROL**  
STANDARD NOTES AND DETAILS  
REVISED FEBRUARY 2023  
GESC SHEET 3 OF 4



UTILITY NOTIFICATION CENTER OF COLORADO  
CALL BEFORE YOU DIG  
**811**  
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**SOUTHEAST METRO STORMWATER AUTHORITY**  
7437 SOUTH FAIRPLAY STREET  
CENTENNIAL COLORADO  
80112-4486  
(303) 858-8844 - INSPECTION DIVISION



**GRADING EROSION AND SEDIMENT CONTROL  
STANDARD NOTES AND DETAILS  
REVISED FEBRUARY 2023**

**GESC  
SHEET  
4 OF 4**

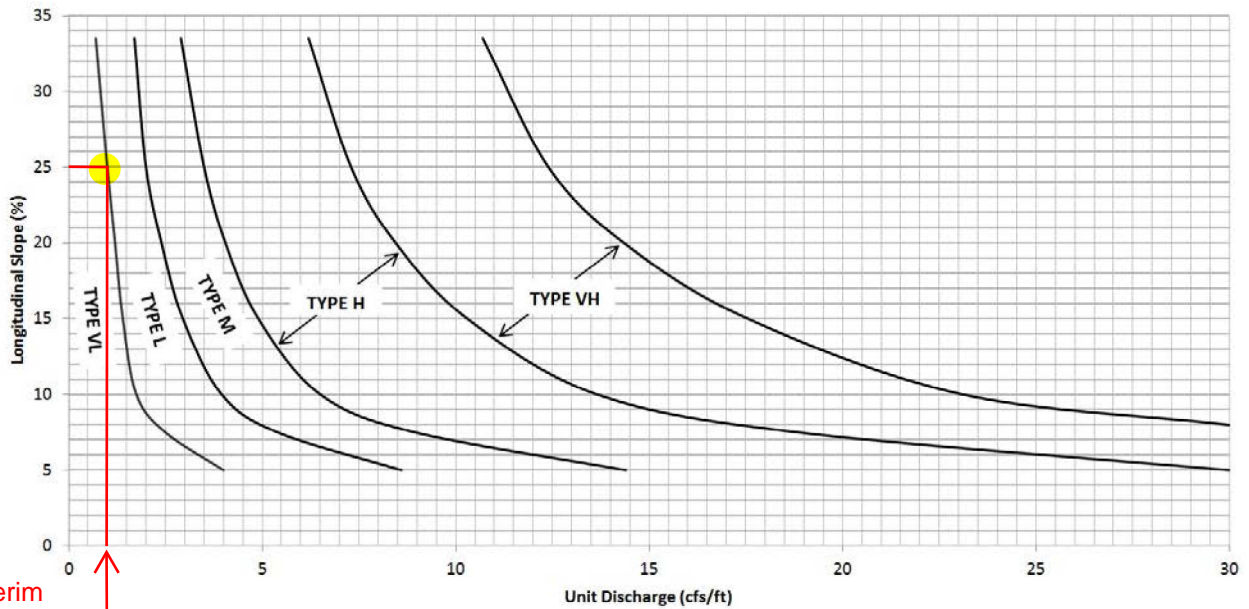
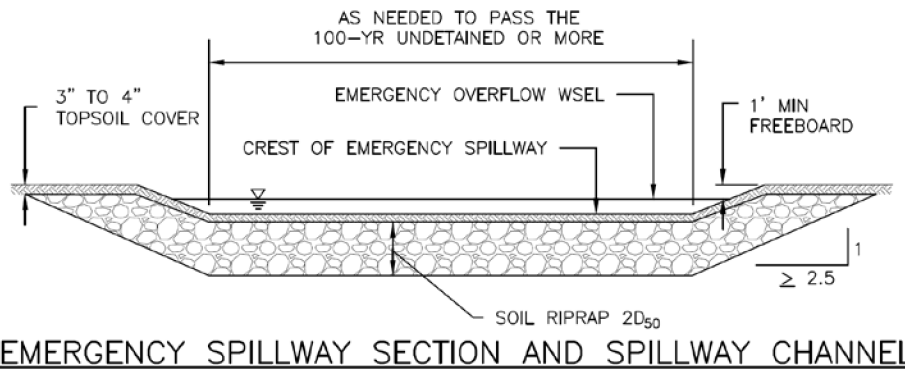
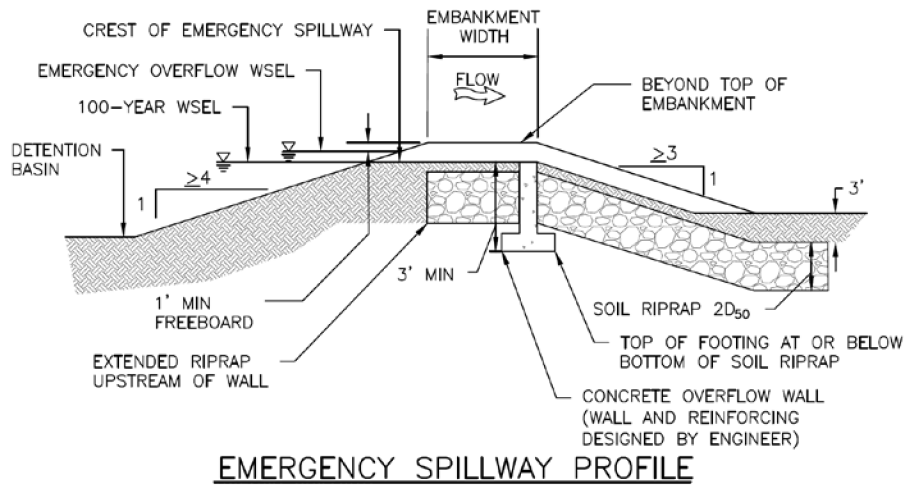


Figure 12-21. Embankment protection details and rock sizing chart (adapted from Arapahoe County)

Emergency Spillway Rip Rap: Type L

## Description

Outlet protection helps to reduce erosion immediately downstream of a pipe, culvert, slope drain, rundown or other conveyance with concentrated, high-velocity flows. Typical outlet protection consists of riprap or rock aprons at the conveyance outlet.



**Photograph TOP-1.** Riprap outlet protection.

## Appropriate Uses

Outlet protection should be used when a conveyance discharges onto a disturbed area where there is potential for accelerated erosion due to concentrated flow. Outlet protection should be provided where the velocity at the culvert outlet exceeds the maximum permissible velocity of the material in the receiving channel.

**Note:** This Fact Sheet and detail are for temporary outlet protection, outlets that are intended to be used for less than 2 years. For permanent, long-term outlet protection, see the *Major Drainage* chapter of Volume 1.

## Design and Installation

Design outlet protection to handle runoff from the largest drainage area that may be contributing runoff during construction (the drainage area may change as a result of grading). Key in rock, around the entire perimeter of the apron, to a minimum depth of 6 inches for stability. Extend riprap to the height of the culvert or the normal flow depth of the downstream channel, whichever is less. Additional erosion control measures such as vegetative lining, turf reinforcement mat and/or other channel lining methods may be required downstream of the outlet protection if the channel is susceptible to erosion. See Design Detail OP-1 for additional information.

## Maintenance and Removal

Inspect apron for damage and displaced rocks. If rocks are missing or significantly displaced, repair or replace as necessary. If rocks are continuously missing or displaced, consider increasing the size of the riprap or deeper keying of the perimeter.

Remove sediment accumulated at the outlet before the outlet protection becomes buried and ineffective. When sediment accumulation is noted, check that upgradient BMPs, including inlet protection, are in effective operating condition.

Outlet protection may be removed once the pipe is no longer draining an upstream area, or once the downstream area has been sufficiently stabilized. If the drainage pipe is permanent, outlet protection can be left in place; however, permanent outlet protection should be designed and constructed in accordance with the requirements of the *Major Drainage* chapter of Volume 2.

Outlet Protection	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

## TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
  - LOCATION OF OUTLET PROTECTION.
  - DIMENSIONS OF OUTLET PROTECTION.
2. DETAIL IS INTENDED FOR PIPES WITH SLOPE  $\leq$  10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.
3. TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

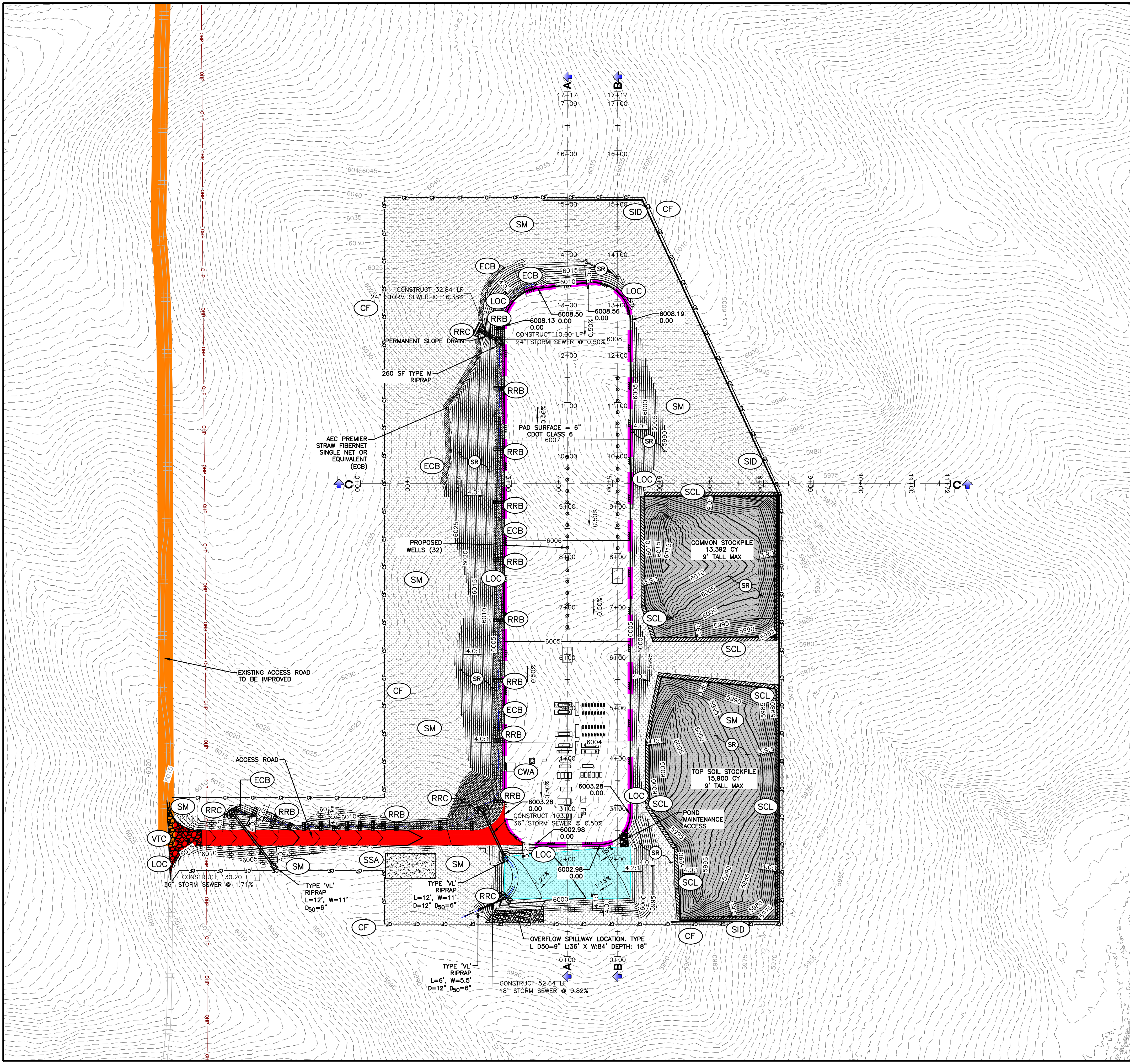
## TEMPORARY OUTLET PROTECTION INSPECTION AND MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)

L:\Engineering\222240 - State Long Sunlight Construction Drawings\222240 - ECP INTERIM RECLAIM - 11/25/2024 6:28:47 PM MAX BEAUPRE, LAMP RYNEARSON



**LEGEND**

- EXISTING ROAD
- WORKING PAD SURFACE
- LIMITS OF DISTURBANCE
- EXISTING OVERHEAD POWER
- EXISTING POWER POLE
- ACCESS ROAD
- EXISTING ACCESS ROAD TO BE IMPROVED
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- GRADE BREAK
- TOPSOIL STOCKPILE
- BOTTOM OF POND

**EROSION CONTROL LEGEND**

- CF CONSTRUCTION FENCE
- ECB EROSION CONTROL BLANKET
- RRB REINFORCED ROCK BERM
- RRB FOR CULVERT PROTECTION
- SCL SEDIMENT CONTROL LOG
- SM SEEDING AND MULCHING
- SID SLOPE INTERCEPT DITCH
- VTC VEHICLE TRACKING CONTROL

**APPROXIMATE INTERIM RECLAMATION PHASE EARTHWORK CALCULATIONS:**

ITEM	QUANTITY
SITE AREA (DISTURBANCE AREA)	24.59 AC
<b>ON-SITE RAW QUANTITIES:</b>	
EXCAVATION	144,442 CY (CUT)
EMBANKMENT FILL	144,721 CY (FILL)
<b>CONSTRUCTION EXPORT:</b>	
6" GRAVEL	7,511 CY
<b>STOCKPILE:</b>	
TOPSOIL(11" STRIPPING)	15,900 CY
COMMON	13,392 CY
<b>TOTAL IMPORT/EXPORT:</b>	
EXPORT (STOCKPILE ONSITE)	13,392 CY

**ACREAGE BREAKDOWN**

ACREAGE	DESCRIPTION
6.28 AC	INTERIM RECLAMATION DISTURBANCE AREA
6.28 AC	INTERIM RECLAMATION WORKING PAD SURFACE
0.54 AC	ACCESS ROAD DISTURBED AREA
14.11 AC	EXISTING ACCESS ROAD TO BE IMPROVED
20.93 AC	TOTAL DISTURBANCE

**WELLS**

17	STATE SUNLIGHT EAST 5-65 22-21-24 1AH	1	STATE SUNLIGHT WEST 5-65 22-21-20-19 1AH
18	STATE SUNLIGHT EAST 5-65 22-23-24 1BH	2	STATE SUNLIGHT WEST 5-65 22-21-20-19 1BH
19	STATE SUNLIGHT EAST 5-65 22-23-24 2AH	3	STATE SUNLIGHT WEST 5-65 22-21-20-19 2AH
20	STATE SUNLIGHT EAST 5-65 22-23-24 2BH	4	STATE SUNLIGHT WEST 5-65 22-21-20-19 2AH
21	STATE SUNLIGHT EAST 5-65 22-23-24 3AH	5	STATE SUNLIGHT WEST 5-65 22-21-20-19 3AH
22	STATE SUNLIGHT EAST 5-65 22-23-24 3BH	6	STATE SUNLIGHT WEST 5-65 22-21-20-19 3BH
23	STATE SUNLIGHT EAST 5-65 22-23-24 4AH	7	STATE SUNLIGHT WEST 5-65 22-21-20-19 4AH
24	STATE SUNLIGHT EAST 5-65 22-23-24 4BH	8	STATE SUNLIGHT WEST 5-65 22-21-20-19 4BH
25	STATE LONG EAST 5-65 27-26-25 1AH	9	STATE LONG WEST 5-65 27-28-29-30 1AH
26	STATE LONG EAST 5-65 27-26-25 1BH	10	STATE LONG WEST 5-65 27-28-29-30 1AH
27	STATE LONG EAST 5-65 27-26-25 2AH	11	STATE LONG WEST 5-65 27-28-29-30 2AH
28	STATE LONG EAST 5-65 27-26-25 2BH	12	STATE LONG WEST 5-65 27-28-29-30 2BH
29	STATE LONG EAST 5-65 27-26-25 3AH	13	STATE LONG WEST 5-65 27-28-29-30 3AH
30	STATE LONG EAST 5-65 27-26-25 3BH	14	STATE LONG WEST 5-65 27-28-29-30 3BH
31	STATE LONG EAST 5-65 27-26-25 4AH	15	STATE LONG WEST 5-65 27-28-29-30 4AH
32	STATE LONG EAST 5-65 27-26-25 4BH	16	STATE LONG WEST 5-65 27-28-29-30 4BH

**LAMP RYNEARSON**  
LAMPRYNEARSON.COM  
OMAHA, NEBRASKA  
14710 W. DODGE RD, STE. 100 (402) 486-2488  
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FORT COLLINS, COLORADO  
4715 INNOVATION DR., STE. 100 (970) 225-0342  
KANSAS CITY, MISSOURI  
9001 STATE LINE RD, STE. 200 (816) 361-0440  
MO AUTH. NO. - E-2013011903 | LS-2019043127

**CIVITAS**  
CRESTONE PEAK RESOURCES OPERATING LLC

PRELIMINARY

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MAP

INTERIM RECLAMATION AND STORMWATER-EROSION CONTROL  
DRAWING 1

STATE SUNLIGHT - LONG  
ARAPAHOE COUNTY, COLORADO

**811**  
Know what's below.  
Call before you dig.

ALL UTILITIES ARE SHOWN BASED ON THE INFORMATION AVAILABLE TO THE ENGINEER. THERE IS NO GUARANTEE ALL UTILITIES ARE SHOWN OR THAT THE LOCATION, DEPTH, AND SIZE OF EACH FACILITY IS CORRECT. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES AND SERVICE LINES PRIOR TO CONSTRUCTION.

DESIGNER / DRAFTER  
JJI/MMS/ARL  
DATE  
11/25/2024  
PROJECT NUMBER  
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BOOK AND PAGE

SHEET  
8 OF 11



CRESTONE PEAK RESOURCES OPERATING LLC

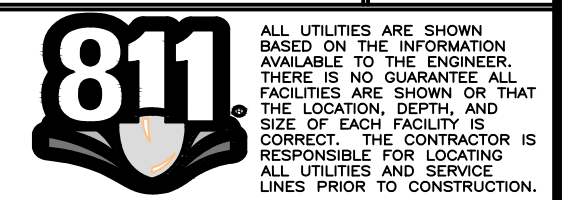
PRELIMINARY

NOT RELEASED FOR CONSTRUCTION

MAP

INTERIM RECLAMATION AND STORMWATER-EROSION CONTROL  
 DRAWING 2

STATE SUNLIGHT - LONG  
 ARAPAHOE COUNTY, COLORADO



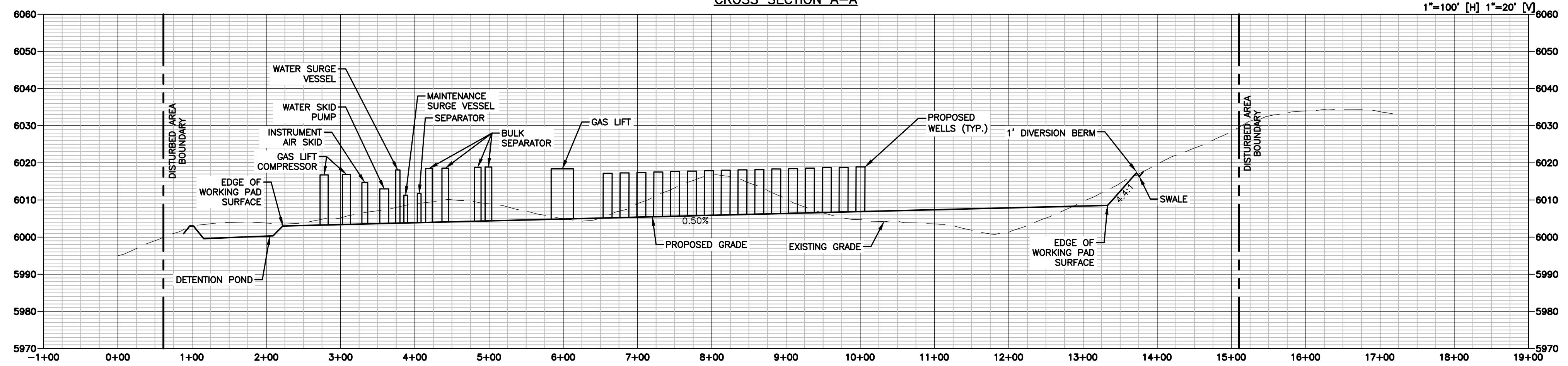
Know what's below.  
 Call before you dig.

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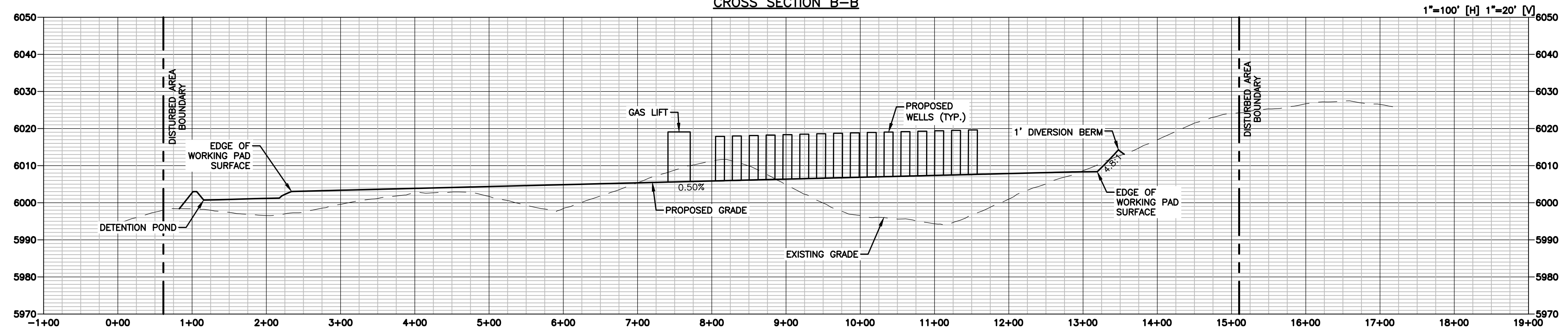
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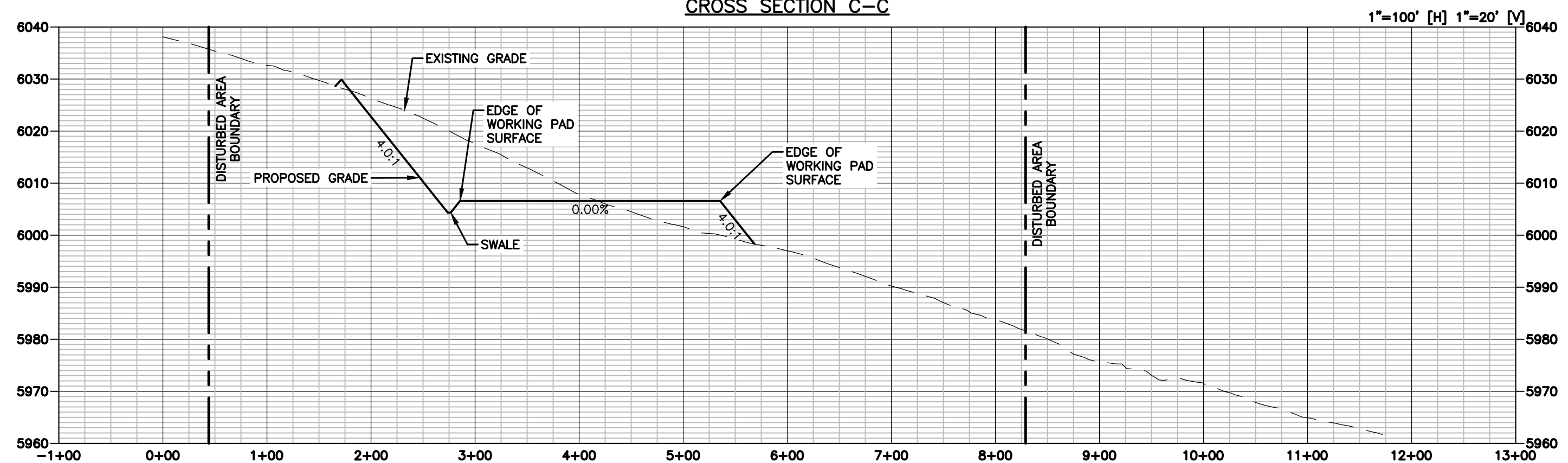
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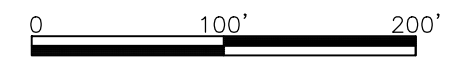
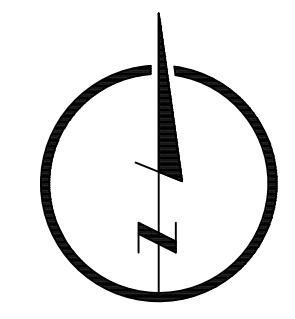
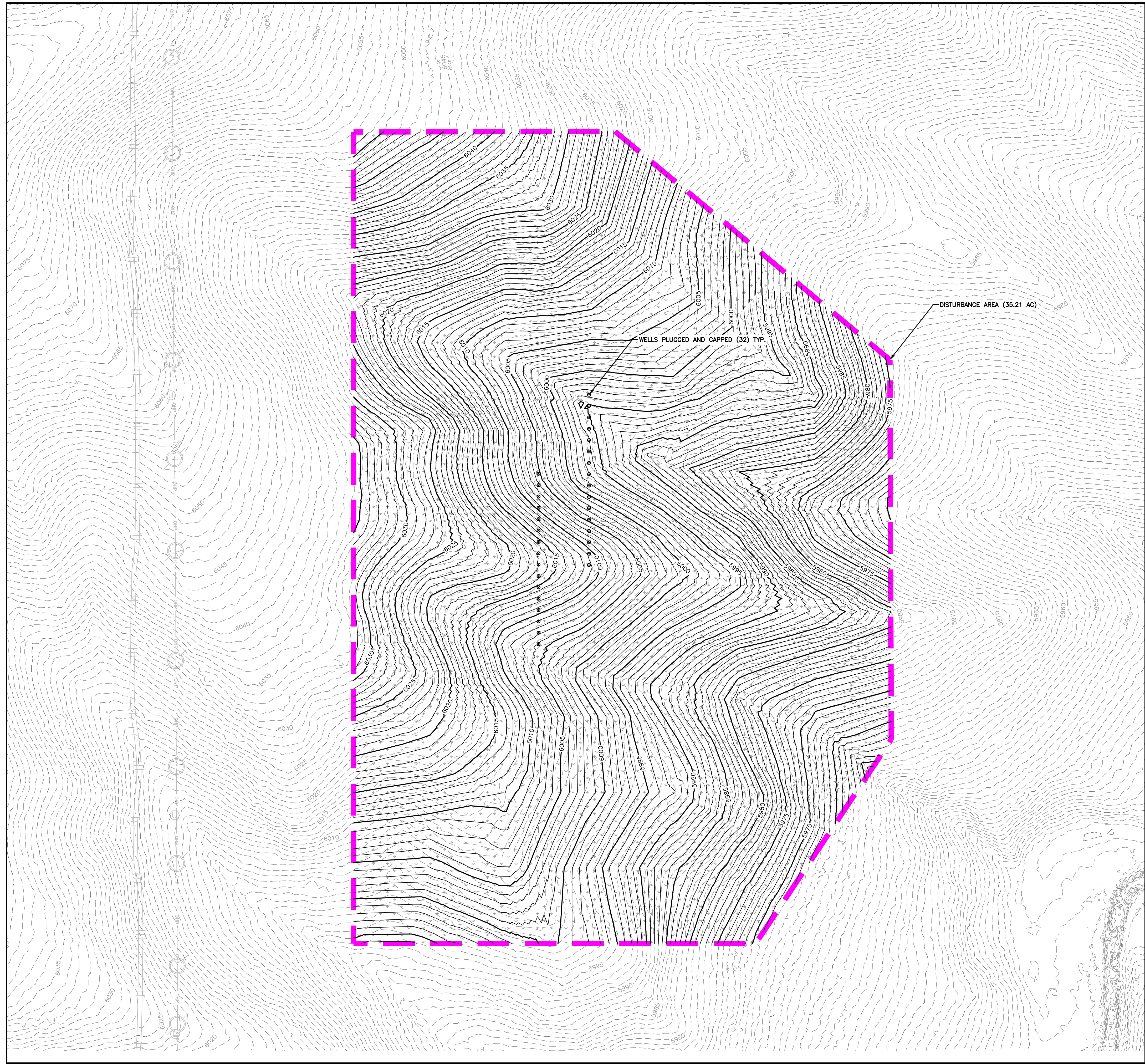
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CROSS SECTION C-C



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**LEGEND**

- LIMITS OF DISTURBANCE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- FINAL RECLAMATION SEEDING AREA (23.05 AC)

**KEY NOTES**

1. REMAINING RECYCLED ASPHALT/ROAD WILL BE EXCAVATED AND HAULED FROM THE SITE.
2. REMAINING TOPSOIL FROM THE STOCKPILE(S) WILL BE USED TO FILL ANY VOIDS LEFT FROM THE REMOVAL OF RECYCLED ASPHALT/ROAD AND BROUGHT TO GRADE.
3. THE FINAL RECLAMATION AREA WILL BE GRADED AND CONTOURED TO PRE-DISTURBANCE CONTOURS, NOT TO EXCEED SLOPES OF 3:1, TO ALLOW FOR STABILITY AND PROVIDE A SUITABLE SEEDBED.

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 KANSAS CITY, MISSOURI  
 9001 STATE LINE RD., STE. 200 (816) 361-0440  
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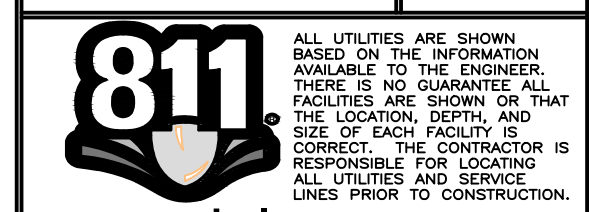


PRELIMINARY

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MAP

STATE SUNLIGHT - LONG  
 FINAL RECLAMATION PLAN

STATE SUNLIGHT - LONG  
 ARAPAHOE COUNTY, CO



Know what's below.  
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