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3885 PHEASANT LANE
PEYTON, CO
C. METALS TREATMENT TECHNOLOGIES

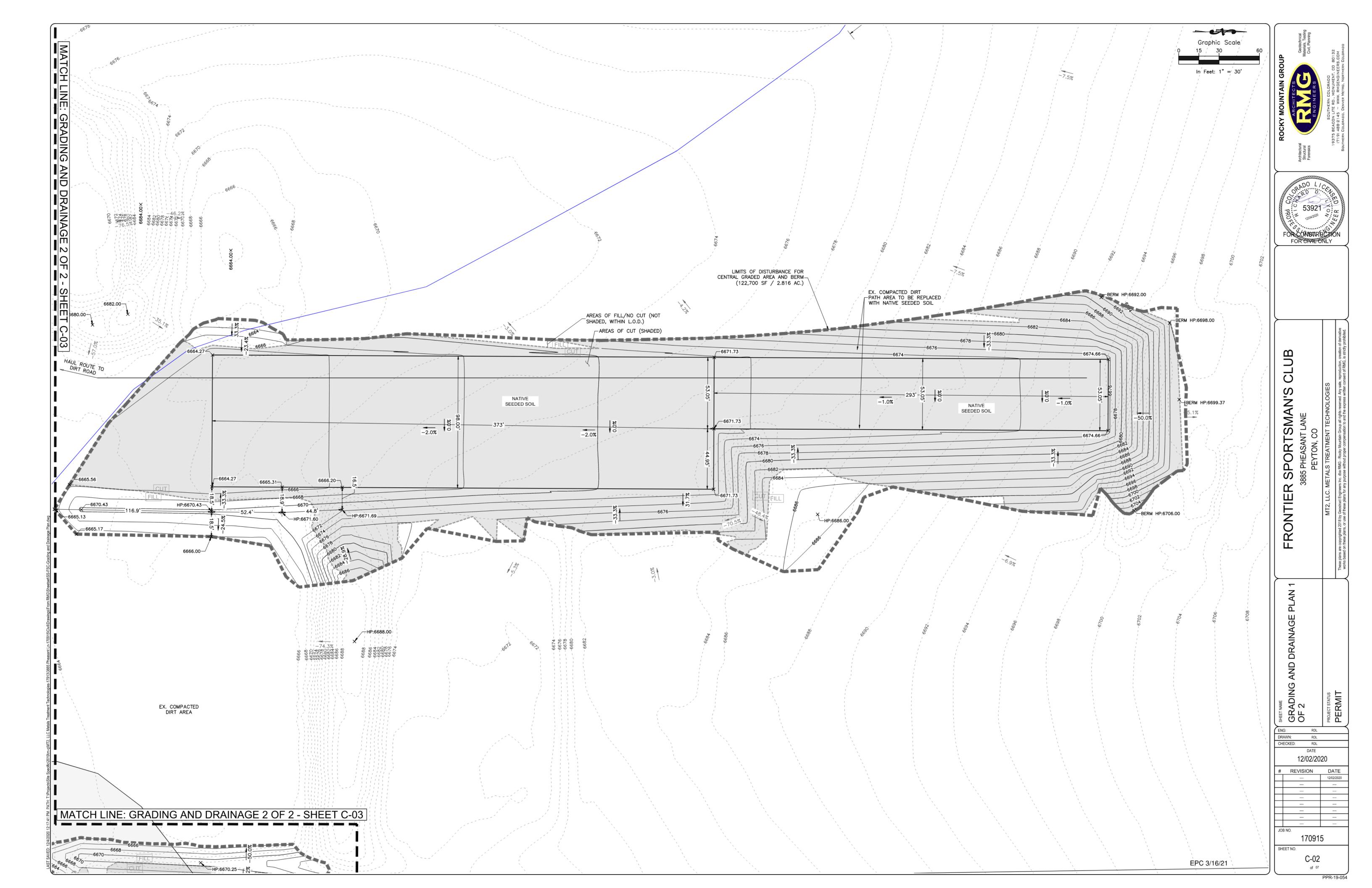
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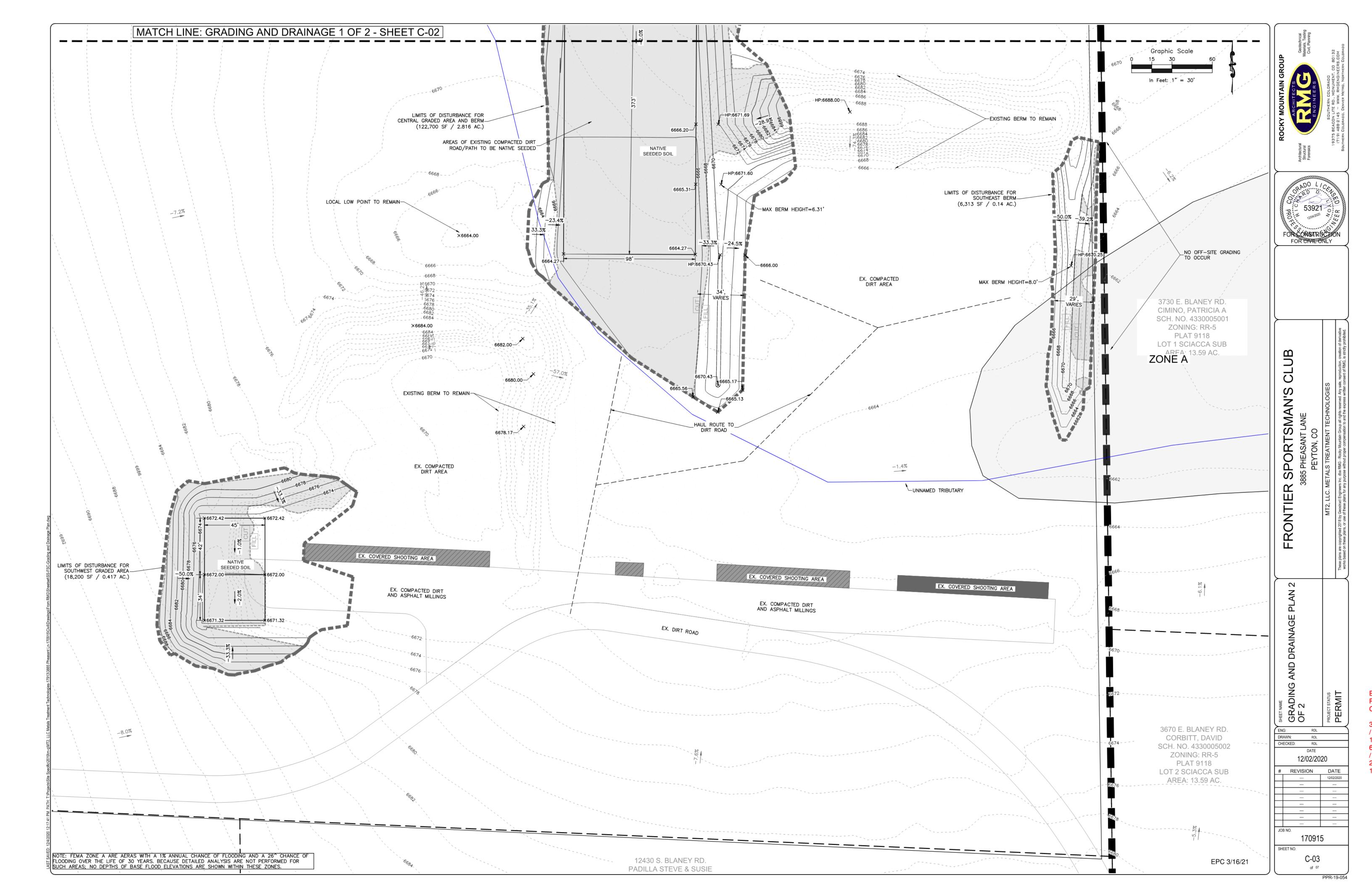
PROJECT STATUS

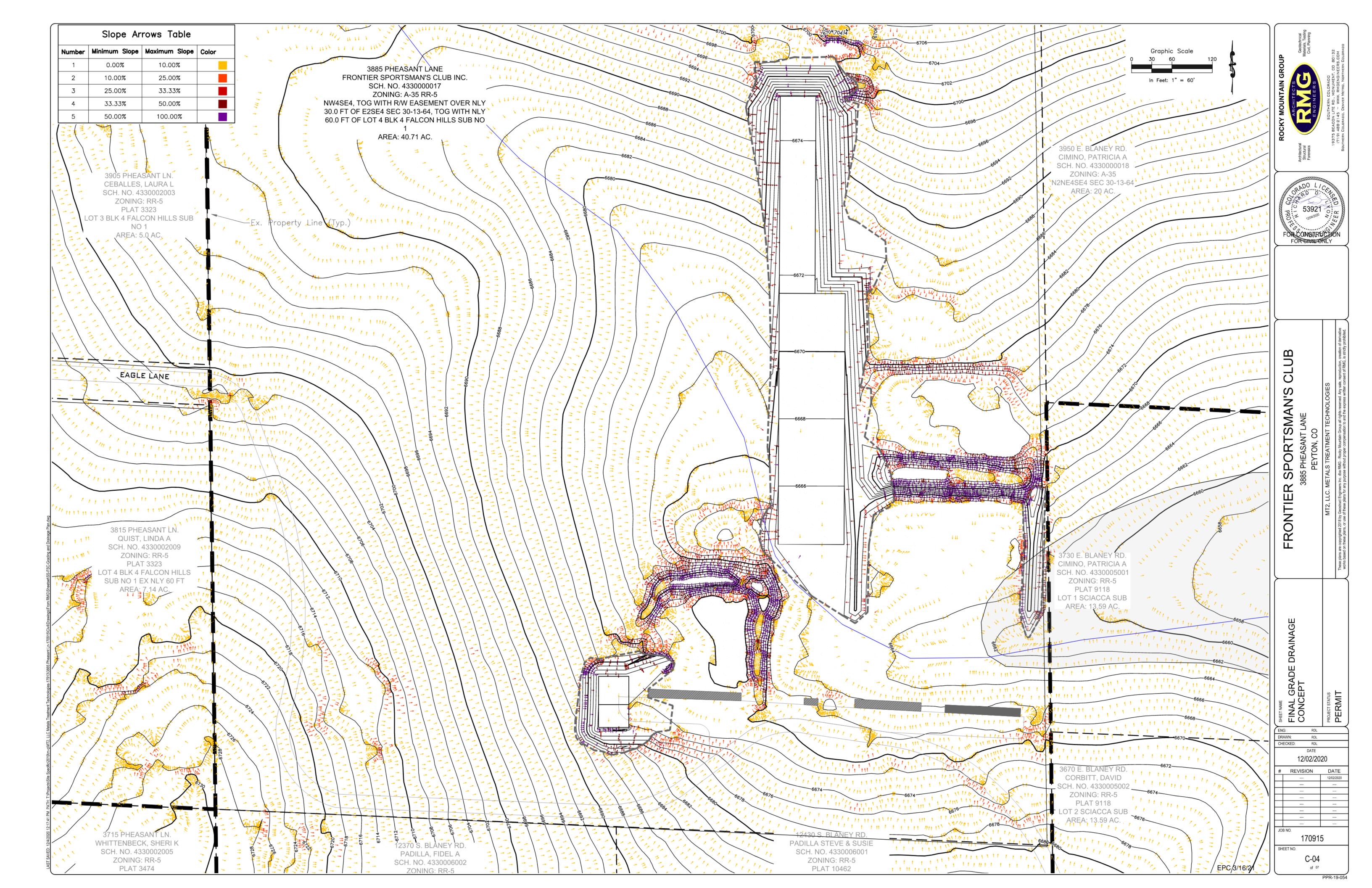
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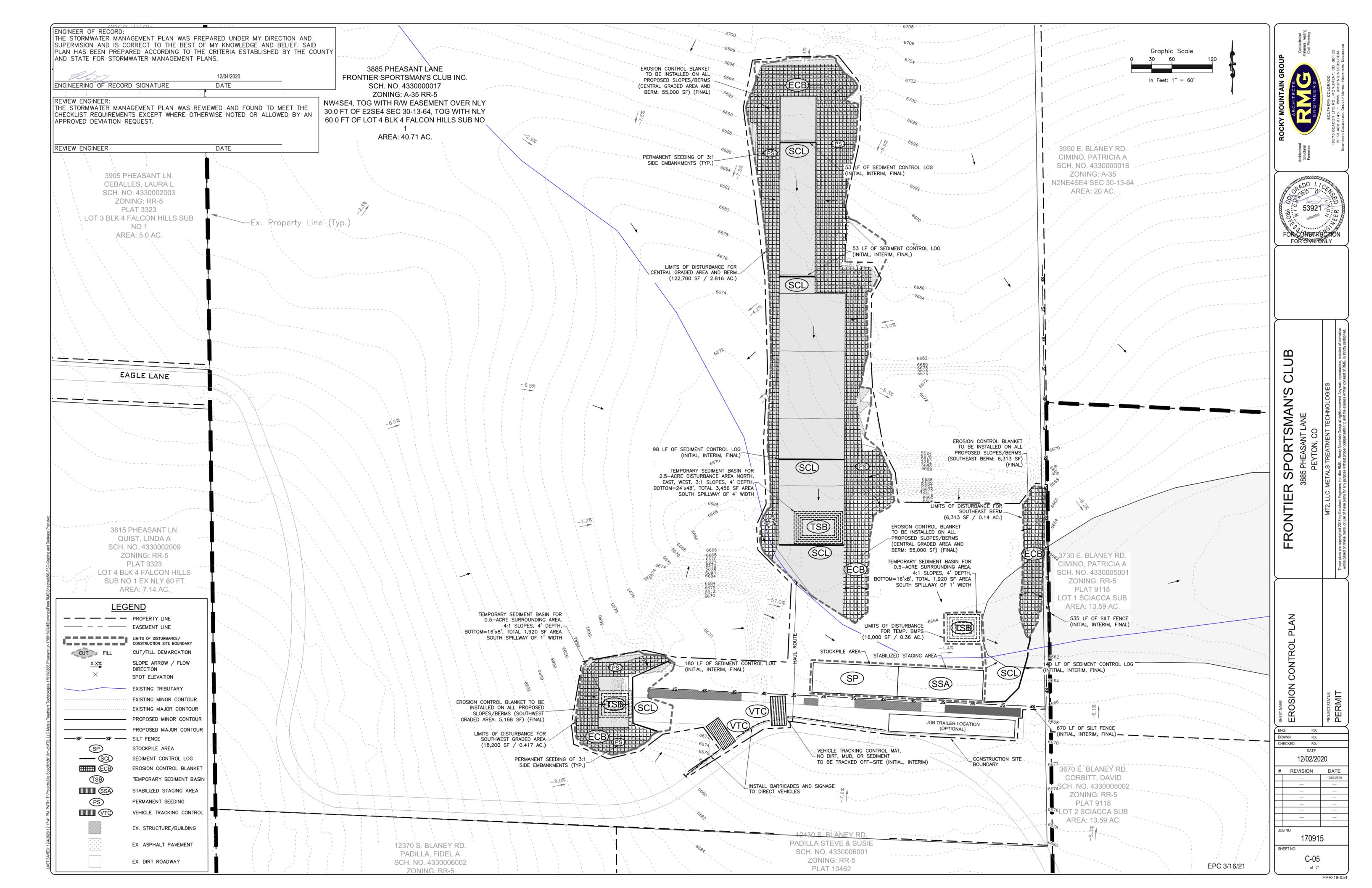
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#### SECTION A SF-1. SILT FENCE

THICKNESS OF GEOTEXTILE HAS

BEEN EXAGGERATED, TYPE

- SILT FENCE INSTALLATION NOTES:

  I. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
- 2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS. BACKHOES. OR SIMILAR EQUIPMENT SHALL BE USED. 3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY
- 4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

- NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
- 5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING I" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE. 6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED
- PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').

THEN ROTATED 180 DEG IN DIRECTION

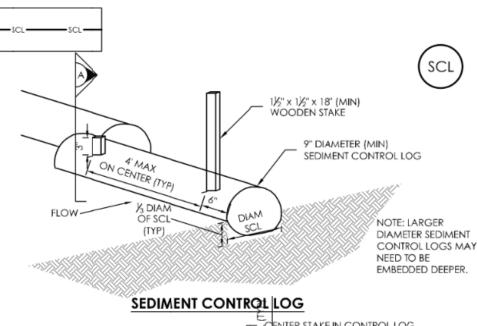
SHOWN AND DRIVEN INTO THE

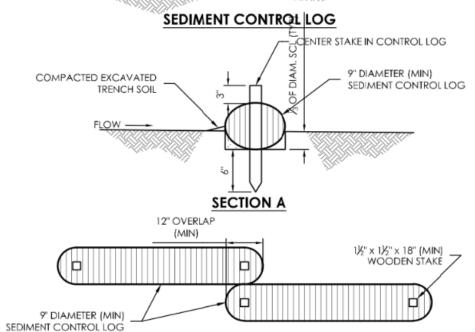
- SILT FENCE MAINTENANCE NOTES

  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
- 3. WHERE BMPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE. 4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN
- THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6" 5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR
- 6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED

MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP. 7. WHEN SILT FENCE IS REMOVED. ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND

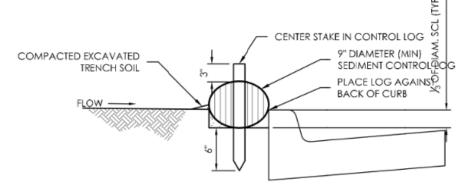




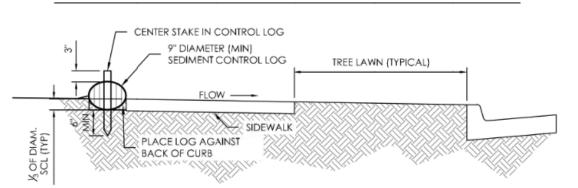
## SEDIMENT CONTROL LOG JOINTS SCL-1. SEDIMENT CONTROL LOG

# SEDIMENT CONTROL LOG INSTALLATION NOTES: 1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.

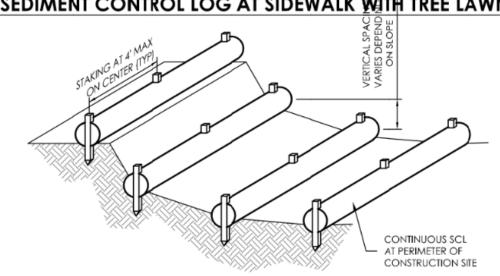
- 2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY
- UPGRADIENT LAND-DISTURBING ACTIVITIES. 3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND
- SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR. 4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER. THEY SHOULD NOT BE USED IN PERENNIAL STREAMS OR HIGH VELOCITY DRAINAGE WAYS. 5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF
- APPROXIMATELY 1/3 OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPE) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING
- 6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER.
- 7. FOLLOW MANUFACTURERS' GUIDANCE FOR STAKING, IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY SPACING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 6" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED



# SCL-2. SEDIMENT CONTROL LOG AT BACK OF CURB



#### SCL-3. SEDIMENT CONTROL LOG AT SIDEWALK WITH TREE LAWN

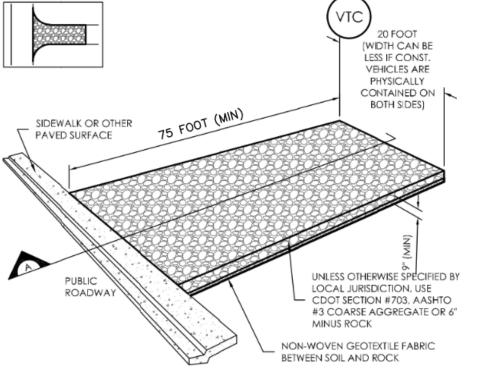


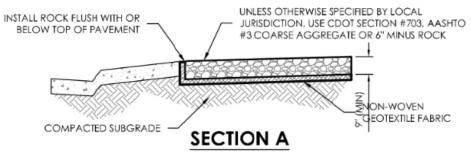
#### SCL-4. SEDIMENT CONTROL LOGS TO CONTROL SLOPE LENGTH

SEDIMENT CONTROL LOG 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.

- 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
- 4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS
- APPROXIMATELY  $\frac{1}{2}$  OF THE HEIGHT OF THE SEDIMENT CONTROL LOG. SEDIMENT CONTROLLOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF DISTURBED AREAS EXIST AFTER REMOVAL. THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.





# STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES 1. SEE PLAN VIEW FOR

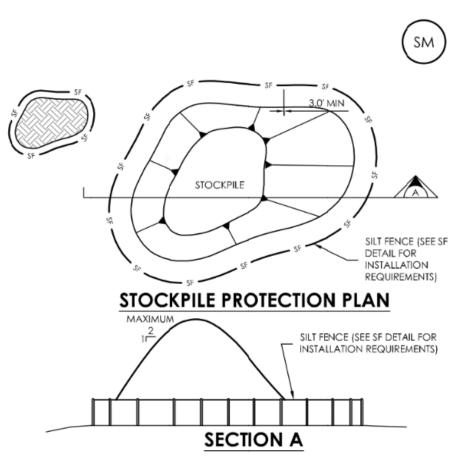
—LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S). -TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT

- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED
- VEHICULAR ACCESS. 3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES
- ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS. 4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING
- 5. A NON—WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION
- ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- 6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION. ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE EXIT MAINTENANCE NOTES

I. 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. 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
- 4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN 5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF
- THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.



#### SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

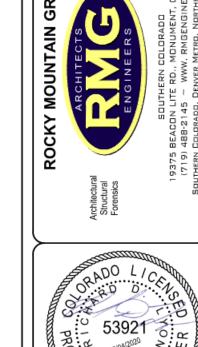
1. SEE PLAN VIEW FOR:

-LOCATION OF STOCKPILES. —TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.

- 3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).
- 4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE. WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL. ARE IN PLACE. STOCKPILE PERIMETER CONTROLS MAY NOT BE
- STOCKPILE PROTECTION 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.
- 4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE. REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
- 5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.





CHECKED: DATE 12/02/2020 # REVISION

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DRAWING NOT TO SCALE 1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6"(15CM) DEEP X 6"(15CM) WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12"(30CM) PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30CM) APART ACROSS THE WIDTH OF THE RECPS. 3. ROLL THE RECPS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. 4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5-12.5CM) OVERLAP DEPENDING ON THE RECPS TYPE. 5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3"(7.5CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12"(30CM) APART ACROSS ENTIRE RECPS WIDTH.

**EROSION CONTROL BLANKET** 

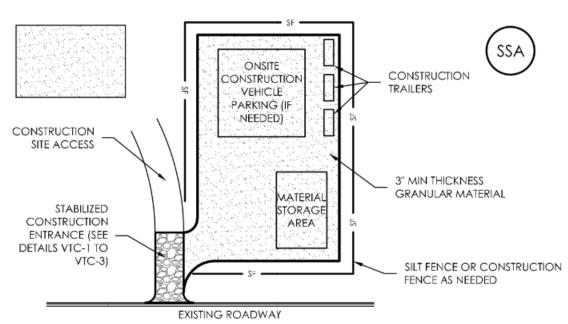
A variety of mulches can be used effectively at construction sites. Consider the following:

| Mulch                    |          |
|--------------------------|----------|
| Functions                |          |
| Erosion Control          | Yes      |
| Sediment Control         | Moderate |
| Site/Material Management | No       |

- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically, however, the frame may have to be weighted to afford proper soil penetration.
- . Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided
- . On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation
- . Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)
- . Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

#### Maintenance and Removal

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.



### SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR

—LOCATION(S) OF STAGING AREA(S).

SHOULD BE DOCUMENTED THOROUGHLY.

—CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

- 2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE.
- OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION. 3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE. 4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR
- 5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF CDOT
- SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
- 6. ADDITIONAL PERIMETER BMPS MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

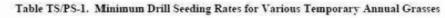
STABILIZED CONSTRUCTION ENTRANCE EXIT MAINTENANCE NOTES

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
- 3. WHERE BMPS HAVE FAILED. REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- 4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR
- UNDERLYING SUBGRADE BECOMES EXPOSED. 5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING,
- STORAGE, AND UNLOADING/LOADING OPERATIONS. 6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR. IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

### Temporary and Permanent Seeding (TS/PS)

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-3 for appropriate seeding dates.



| Species <sup>a</sup><br>(Common name) | Growth<br>Season | Pounds of<br>Pure Live Seed<br>(PLS)/acre | Planting<br>Depth<br>(inches) |  |
|---------------------------------------|------------------|---|-------------------------------|--|
| 1. Oats                               | Cool             | 35 - 50                                   | 1 - 2                         |  |
| 2. Spring wheat                       | Cool             | 25 - 35                                   | 1 - 2                         |  |
| 3. Spring barley                      | Cool             | 25 - 35                                   | 1 - 2                         |  |
| 4. Annual ryegrass                    | Cool             | 10 - 15                                   | 1/2                           |  |
| 5. Millet                             | Warm             | 3 - 15                                    | 1/2 - 3/4                     |  |
| 6. Sudangrass                         | Warm             | 5-10                                      | 1/2 - 3/4                     |  |
| 7. Sorghum                            | Warm             | 5-10                                      | 1/2 - 3/4                     |  |
| 8. Winter wheat                       | Cool             | 20-35                                     | 1 - 2                         |  |
| 9. Winter barley                      | Cool             | 20-35                                     | 1 - 2                         |  |
| 10. Winter rye                        | Cool             | 20-35                                     | 1-2                           |  |
| 11. Triticale                         | Cool             | 25-40                                     | 1 - 2                         |  |

Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.

Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in

See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months. Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

### Temporary and Permanent Seeding (TS/PS)

#### Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses

| Common <sup>a</sup><br>Name    | Botanical<br>Name                 | Growth<br>Season <sup>b</sup> | Growth<br>Form | Seeds/<br>Pound | Pounds of<br>PLS/acre |
|--------------------------------|-----------------------------------|-------------------------------|----------------|-----------------|-----------------------|
| Alakali Soil Seed Mix          | \$                                |                               |                |                 |                       |
| Alkali sacaton                 | Sporoboluz atroidez               | Cool                          | Bunch          | 1,750,000       | 0.25                  |
| Basin wildrye                  | Elymus cinereus                   | Cool                          | Bunch          | 165,000         | 2.5                   |
| Sodar streambank wheatgrass    | Agropyron riparium 'Sodar'        | Cool                          | Sod            | 170,000         | 2.5                   |
| Jose tall wheatgrass           | Agropyron elongatum 'Jose'        | Cool                          | Bunch          | 79,000          | 7.0                   |
| Amiba western wheatgrass       | Agropyron smithii 'Arriba'        | Cool                          | Sod            | 110,000         | 5.5                   |
| Total                          |                                   |                               |                |                 | 17.75                 |
| Fertile Loamy Soil Seed Mix    |                                   |                               |                |                 |                       |
| Ephriam crested wheatgrass     | Agropyron cristatum<br>'Ephriam'  | Cool                          | Sod            | 175,000         | 2.0                   |
| Dural hard fescue              | Festuca ovina 'duriuscula'        | Cool                          | Bunch          | 565,000         | 1.0                   |
| Lincoln smooth brome           | Bromus inernis leyes<br>'Lincoln' | Cool                          | Sod            | 130,000         | 3.0                   |
| Sodar streambank wheatgrass    | Agropyron riparium 'Sodar'        | Cool                          | Sod            | 170,000         | 2.5                   |
| Amiba westem wheatgrass        | Agropyron smithii 'Arriba'        | Cool                          | Sod            | 110,000         | 7.0                   |
| Total                          |                                   |                               |                |                 | 15.5                  |
| High Water Table Soil Seed Mix | •                                 | 0 0                           |                | 8 0             |                       |
| Meadow foxtail                 | Alopecurus pratensis              | Cool                          | Sod            | 900,000         | 0.5                   |
| Redtop                         | Agrostis alba                     | Warm                          | Open sod       | 5,000,000       | 0.25                  |
| Reed canarygrass               | Phalaris arundinacea              | Cool                          | Sod            | 68,000          | 0.5                   |
| Lincoln smooth brome           | Bromuz inermiz leysz<br>Lincoln'  | Cool                          | Sod            | 130,000         | 3.0                   |
| Pathfinder switchgrass         | Panicum virgatum<br>'Pathfinder'  | Warm                          | Sod            | 389,000         | 1.0                   |
| Alkar tall wheatgrass          | Agropyron elongatum<br>'Alkar'    | Cool                          | Bunch          | 79,000          | 5.5                   |
| Total                          |                                   |                               |                |                 | 10.75                 |
| Transition Turf Seed Mix       |                                   |                               |                |                 |                       |
| Ruebens Canadian bluegrass     | Poa compresza 'Ruebens'           | Cool                          | Sod            | 2,500,000       | 0.5                   |
| Dural hard fescue              | Festuca ovina 'duriuscula'        | Cool                          | Bunch          | 565,000         | 1.0                   |
| Citation perennial ryegrass    | Lolium perenne 'Citation'         | Cool                          | Sod            | 247,000         | 3.0                   |
| Lincoln smooth brome           | Bromus inermis leyes<br>'Lincoln' | Cool                          | Sod            | 130,000         | 3.0                   |
| Total                          | 2                                 | 9 8                           |                | 1               | 7.5                   |

### Temporary and Permanent Seeding (TS/PS) EC-2 EC-2 Temporary and Permanent Seeding (TS/PS)

## Table TS/PS 2 Minimum Duill Seeding Pates for Perennial Graces (cont.)

| Common<br>Name                          | Botanical<br>Name                   | Growth<br>Season <sup>b</sup> | Growth<br>Form            | Seeds/<br>Pound | Pounds of<br>PLS/acre |
|---|-------------------------------------|-------------------------------|---------------------------|-----------------|-----------------------|
| Sandy Soil Seed Mix                     | 42                                  |                               | go .                      | 9               |                       |
| Blue grama                              | Bouteloua gracilis                  | Warm                          | Sod-forming<br>bunchgrass | 825,000         | 0.5                   |
| Camper little bluestem                  | Schizachyrium scoparium<br>'Camper' | Warm                          | Bunch                     | 240,000         | 1.0                   |
| Prairie sandreed                        | Calamovilfa longifolia              | Warm                          | Open sod                  | 274,000         | 1.0                   |
| Sand dropseed                           | Sporobolus cryptandrus              | Cool                          | Bunch                     | 5,298,000       | 0.25                  |
| Vaughn sideoats grama                   | Bouteloua curtipendula<br>'Vaughn'  | Warm                          | Sod                       | 191,000         | 2.0                   |
| Amba western wheatgrass                 | Agropyron smithii 'Arriba'          | Cool                          | Sod                       | 110,000         | 5.5                   |
| Total                                   |                                     |                               | 2                         |                 | 10,25                 |
| Heavy Clay, Rocky Footbill Seed         | l Mix                               | S.                            | 60                        | 80              | 87.                   |
| Ephriam crested wheatgrass <sup>d</sup> | Agropyron cristatum<br>'Ephriam'    | Cool                          | Sod                       | 175,000         | 1.5                   |
| Oahe Intermediate wheatgrass            | Agropyron intermedium 'Oahe'        | Cool                          | Sod                       | 115,000         | 5.5                   |
| Vaughn sideoats grama*                  | Bouteloua curtipendula<br>Vaugin'   | Warm                          | Sod                       | 191,000         | 2.0                   |
| Lincoln smooth brome                    | Bromus inermis leyes<br>'Lincoln'   | Cool                          | Sod                       | 130,000         | 3.0                   |
| Amba western wheatgrass                 | Agropyron smithii 'Arriba'          | Cool                          | Sod                       | 110,000         | 5.5                   |
| T. (2.1)                                |                                     |                               | T                         |                 | 14.                   |

- All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If hydraulic seeding is used, hydraulic mulching should be done as a separate operation.
- See Table TS/PS-3 for seeding dates.
- If site is to be irrigated, the transition turf seed rates should be doubled.
- Crested wheatgrass should not be used on slopes steeper than 6H to 1V. Can substitute 0.5 lbs PLS of blue grams for the 2.0 lbs PLS of Vaughn sideoats grams.

Table TS/PS-3. Seeding Dates for Annual and Perennial Grasses

| Seeding Dates            | Annual Grasses<br>(Numbers in table reference<br>species in Table TS/PS-1) |           | Perennial Grasses |      |
|--------------------------|--|-----------|-------------------|------|
|                          | Warm   | Cool      | Warm              | Cool |
| January 1-March 15       |  |           | V                 | 4    |
| March 16-April 30        | 4  | 1,2,3     | ~                 | ~    |
| May 1–May 15             | 4  |           | ~                 |      |
| May 16-June 30           | 4,5,6,7  |           |                   |      |
| July 1-July 15           | 5,6,7  |           |                   |      |
| July 16-August 31        |  |           |                   | Į.   |
| September 1-September 30 |  | 8,9,10,11 |                   |      |
| October 1-December 31    |  |           | ~                 | V    |

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the Mulching BMP Fact Sheet for additional guidance.

### Maintenance and Removal

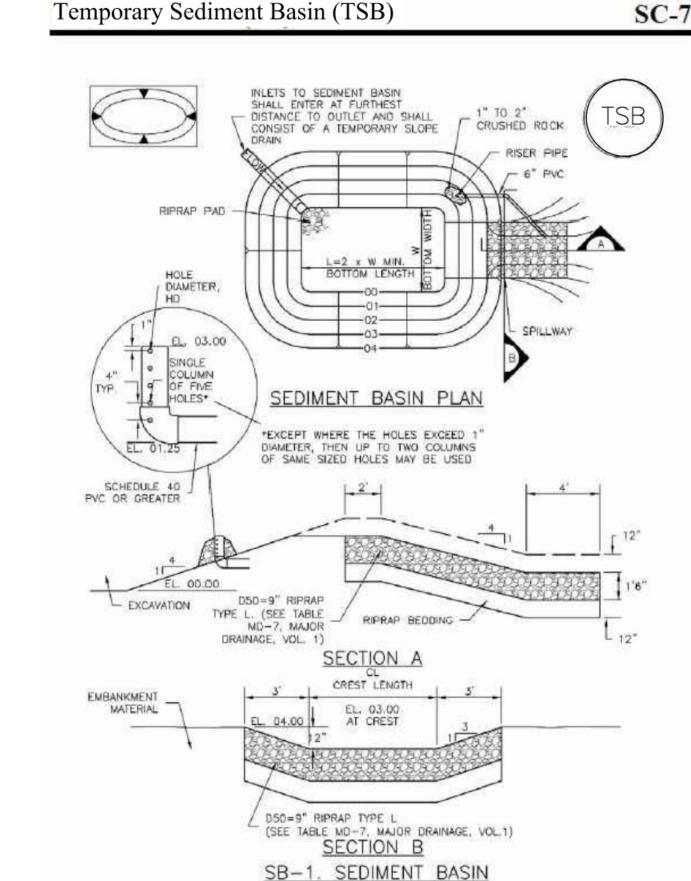
Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may

Protect seeded areas from construction equipment and vehicle access.

# Temporary Sediment Basin (TSB)



|  | TABLE SB-1, SIZING INFORMATION FOR STANDARD SEDIMENT BASIN   |                                 |  |   |
|--|--|---------------------------------|--|---|
|  | Upstream Drainage<br>Area (rounded to<br>nearest acre), (ac) | Bosin Bottom Width<br>(W), (ft) | Spillway Crest<br>Length (CL), (ft)          | Hole<br>Diameter<br>(HD), (in)                                      |
| SEE NOTE ON SHEET                          | <u> </u>   | 12 ½                            | 2 3  | 752<br>76   |
| C-05 FOR 2.5 AC. MIDDLE SHOOTING RANGE TSB | >[3<br>4<br>5  | 28<br>33 ½<br>38 ½<br>43        | 5<br>6<br>8                                  | %<br>%e<br>2/32   |
| NANGE 13B                                  | 6<br>7<br>8  | 43<br>47 %<br>51<br>55          | 9<br>11<br>12                                | %<br>966<br>21/32<br>21/32<br>25/32<br>27/32<br>18<br>15/6<br>31/32 |
|  | 9<br>10  | 55<br>58 %<br>61<br>64          | 12<br>13<br>15<br>16<br>18<br>19<br>21<br>22 | 78<br>15/18<br>314  |
|  | 9<br>10<br>11<br>12<br>13<br>14<br>15                        | 64<br>67 ½<br>70 ½              | 18<br>19                                     | 1   |
|  | 15   | 73 %                            | 22   | 1 %s<br>1 %s<br>1 %s  |

### SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF SEDIMENT BASIN.

SEE NOTE ON SHEET C-05 FOR 0.5 AC. WEST AND EAST SHOOTING RANGE

> -TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN). -FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE -FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N. HOLE DIAMETER HD AND PIPE

2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.

3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL.

4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15

PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE. 5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

6. PIPE SCH 40 OR GREATER SHALL BE USED.

7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

### SEDIMENT BASIN 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.

4. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).

5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.

6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)

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

EPC 3/16/21









CHECKED: DATE 12/02/2020 # REVISION DATE 12/02/2020 JOB NO 170915 SHEET NO

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