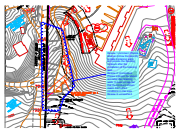


Grading and Erosion Control Plan_V1 REDLINES.pdf Markup Summary

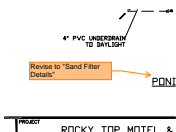
Daniel Torres (1)



Subject: Cloud+
Page Label: 1
Author: Daniel Torres
Date: 6/22/2022 6:50:43 AM
Status:
Color: ■
Layer:
Space:

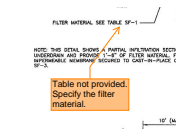
Review 1 comment: Please label and show the recently installed retaining walls and provide the resulting contours after the installation of the retaining wall.
Review 2: Unresolved. Please address the above and label the retaining walls. It does not appear that the contours shown match the current conditions in this area
Review 3: unresolved.

Glenn Reese - EPC Stormwater (31)



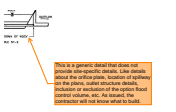
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:04:15 AM
Status:
Color: ■
Layer:
Space:

Revise to "Sand Filter Details"



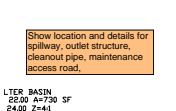
Subject: SW - Textbox with Arrow
Page Label: 2
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:05:25 AM
Status:
Color: ■
Layer:
Space:

Table not provided. Specify the filter material.



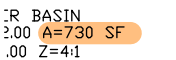
Subject: SW - Textbox with Arrow
Page Label: 2
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:05:30 AM
Status:
Color: ■
Layer:
Space:

This is a generic detail that does not provide site-specific details. Like details about the orifice plate, location of spillway on the plans, outlet structure details, inclusion or exclusion of the option flood control volume, etc. As issued, the contractor will not know what to build.

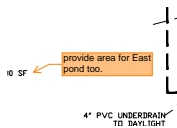


Subject: SW - Textbox
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:07:29 AM
Status:
Color: ■
Layer:
Space:

Show location and details for spillway, outlet structure, cleanout pipe, maintenance access road,

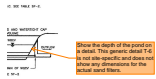


Subject: SW - Highlight
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:12:50 AM
Status:
Color: ■
Layer:
Space:



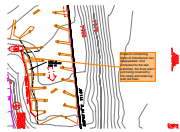
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:12:56 AM
Status:
Color: ■
Layer:
Space:

provide area for East pond too.



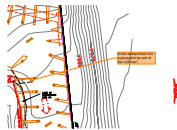
Subject: SW - Textbox with Arrow
Page Label: 2
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 10:14:52 AM
Status:
Color: ■
Layer:
Space:

Show the depth of the pond on a detail. This generic detail T-6 is not site-specific and does not show any dimensions for the actual sand filters.



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:52:16 AM
Status:
Color: ■
Layer:
Space:

linework connecting limits of disturbance has disappeared. And compared to the last submittal, the lines aren't just being covered by the newly add retaining wall red lines.

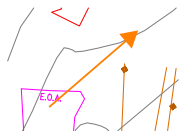


Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:52:53 AM
Status:
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Layer:
Space:

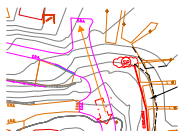
Is this dashed black line supposed to be part of the LOD too?




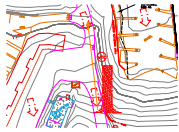
Subject: Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:53:49 AM
Status:
Color: ■
Layer:
Space:




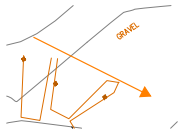
Subject: Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:53:49 AM
Status:
Color: ■
Layer:
Space:




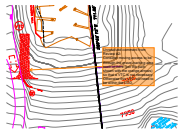
Subject: Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:53:49 AM
Status:
Color: 
Layer:
Space:




Subject: Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:53:49 AM
Status:
Color: 
Layer:
Space:

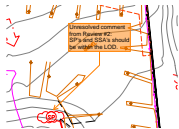



Subject: Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:53:49 AM
Status:
Color: 
Layer:
Space:



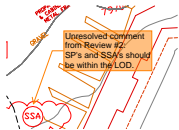
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:54:23 AM
Status:
Color: 
Layer:
Space:


Unresolved comment from Review #2:
Consider moving access to be through the gravel parking area north of here (per the path shown with the orange arrows) so that a VTC is not necessary. Otherwise this VTC will need to be within the LOD.



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:54:26 AM
Status:
Color: 
Layer:
Space:

Unresolved comment from Review #2:
SP's and SSA's should be within the LOD.



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:56:31 AM
Status:
Color: 
Layer:
Space:

Unresolved comment from Review #2:
SP's and SSA's should be within the LOD.



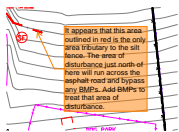
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 6:59:58 AM
Status:
Color: ■
Layer:
Space:

Unresolved comment from Review #2:
show BMPs to treat runoff from this area.



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 7:00:07 AM
Status:
Color: ■
Layer:
Space:

Unresolved comment from Review #2:
BMPs should protect downstream areas from sediment from the whole area of disturbance. This SF is only adjacent to the garage. Add BMPs to treat runoff from the rest of this area of disturbance.



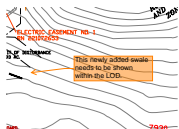
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 7:01:32 AM
Status:
Color: ■
Layer:
Space:

It appears that this area outlined in red is the only area tributary to the silt fence. The area of disturbance just north of here will run across the asphalt road and bypass any BMPs. Add BMPs to treat that area of disturbance.



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 7:36:02 AM
Status:
Color: ■
Layer:
Space:

Unresolved comment from Review #2:
show BMPs to treat runoff from this area (silt fence, sediment basin, etc)



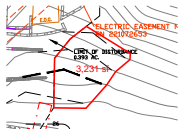
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 7:37:04 AM
Status:
Color: ■
Layer:
Space:

This newly added swale needs to be shown within the LOD.



Subject: Area Measurement
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/21/2022 7:37:17 AM
Status:
Color: ■
Layer:
Space:

5,659 sf



Subject: Area Measurement

3,231 sf

Page Label: 1

Author: Glenn Reese - EPC Stormwater

Date: 6/21/2022 7:37:17 AM

Status:

Color: ■

Layer:

Space:

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show location of newly added runoff reduction (RR) area. The RR area is discussed in the Drainage Report text and calculations were provided but the limits of that area are not delineated anywhere.

Subject: SW - Textbox

Page Label: 1

Author: Glenn Reese - EPC Stormwater

Date: 6/21/2022 8:06:04 AM

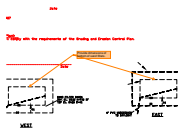
Status:

Color: ■

Layer:

Space:

Show location of newly added runoff reduction (RR) area. The RR area is discussed in the Drainage Report text and calculations were provided but the limits of that area are not delineated anywhere.



Subject: SW - Textbox with Arrow

Provide dimensions of bottom of sand filters.

Page Label: 1

Author: Glenn Reese - EPC Stormwater

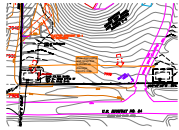
Date: 6/21/2022 8:06:46 AM

Status:

Color: ■

Layer:

Space:



Subject: SW - Textbox with Arrow

show inlet piping and riprap that is shown on drainage report's map.

Page Label: 1

Author: Glenn Reese - EPC Stormwater

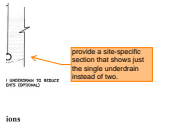
Date: 6/21/2022 8:08:37 AM

Status:

Color: ■

Layer:

Space:



Subject: SW - Textbox with Arrow

provide a site-specific section that shows just the single underdrain instead of two.

Page Label: 2

Author: Glenn Reese - EPC Stormwater

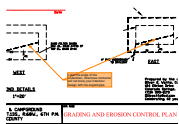
Date: 6/21/2022 9:51:06 AM

Status:

Color: ■

Layer:

Space:



Subject: SW - Textbox with Arrow

Label the angle of the underdrain, otherwise contractor will not know your intention/ design with the angled pipe.

Page Label: 1

Author: Glenn Reese - EPC Stormwater

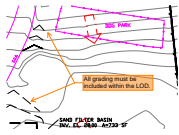
Date: 6/22/2022 8:26:45 AM

Status:

Color: ■

Layer:

Space:



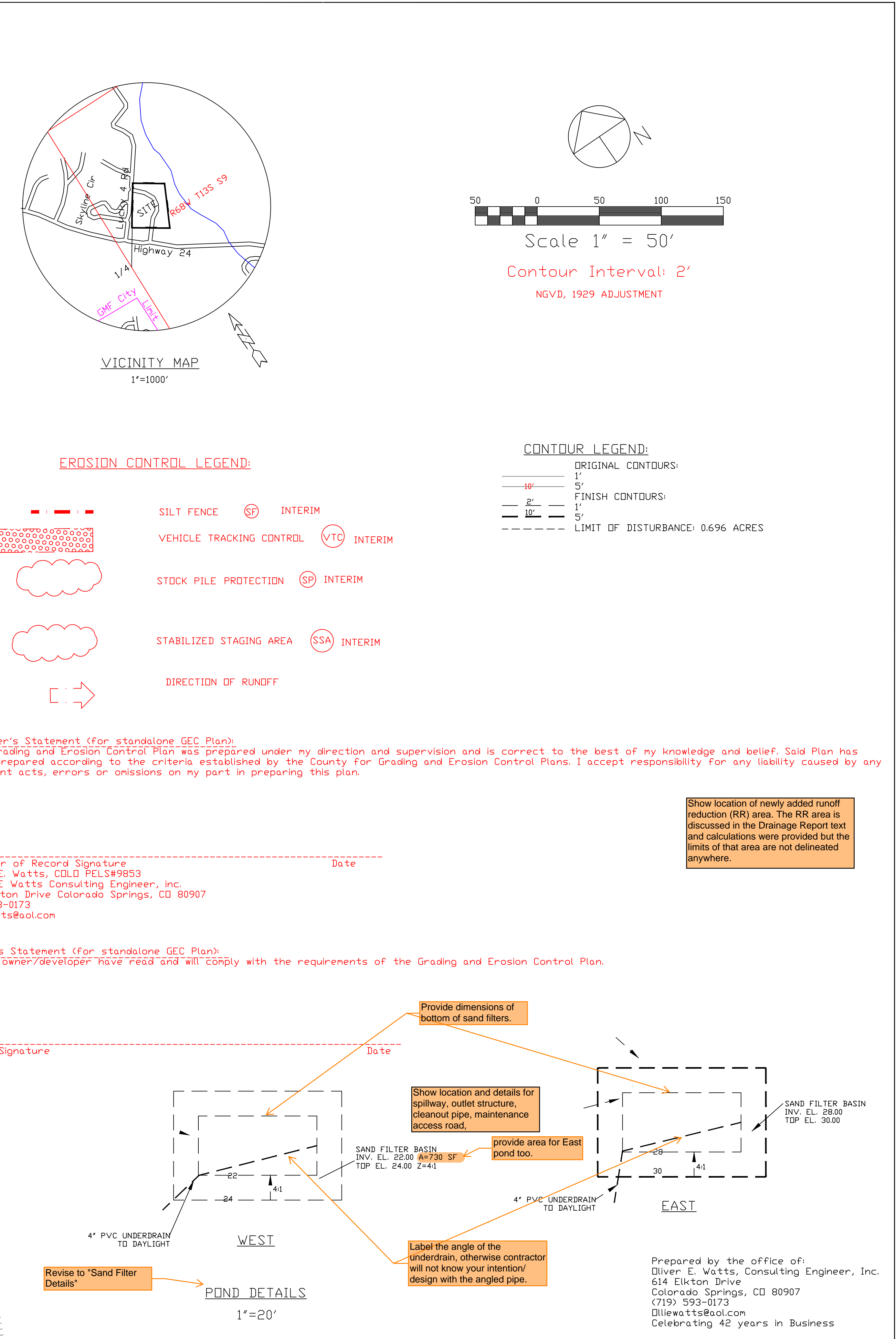
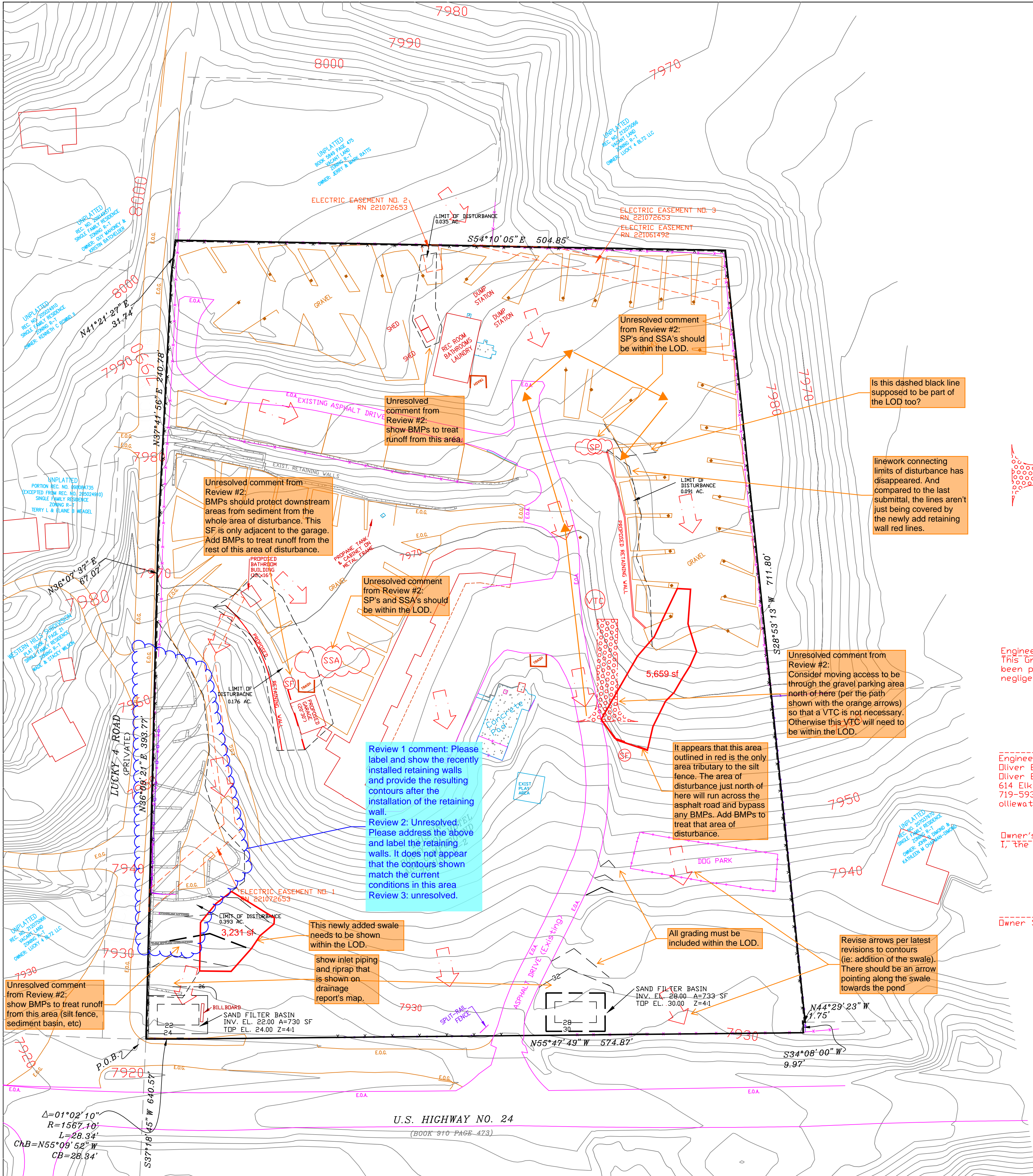
Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/22/2022 8:29:52 AM
Status:
Color: ■
Layer:
Space:

All grading must be included within the LOD.



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 6/22/2022 8:30:09 AM
Status:
Color: ■
Layer:
Space:

Revise arrows per latest revisions to contours (ie: addition of the swale). There should be an arrow pointing along the swale towards the pond



DRAWN BY: O.E. WATTS		APPROVED BY:		REVISIONS 8-16-21 UPDATED		DEW		OLIVER E. WATTS		PROJECT		SHT. NO.	
DATE: 12-30-21		PROJ. NO. 19-5341-03		12-30-21 REVISED PER COUNTY REVIEW COMMENTS		DEW		CONSULTING ENGINEER		ROCKY TOP MOTEL & CAMPGROUND		1	
DWG. NO. 19-5341-03		DWG.						COLORADO SPRINGS		PART NW1/4 SECTION 9, T.13S., R.68W., 6TH P.M.		OF	
TOPOGRAPHY BY: CITY FMS 6-12-19										EL PASO COUNTY		3	
SURVEY INFORMATION BY: RAMPART JOB NO. 18384										GRADING AND EROSION CONTROL PLAN			

El Paso County (standalone GEC Plan):

County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/ or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/ or accuracy of this document. Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and Engineering Criteria Manual, as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.

County Engineer/ECM Administrator

Date

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands.
- Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.
- A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on site at all times during construction and shall be kept up to date with work progress and changes in the field.
- Once the ESQCP is approved and a "Notice to Proceed" has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.
- Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.
- All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.
- Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.
- Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.
- All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that effect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.
- Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of waters of the state unless shown to be infeasible and specifically requested and approved.
- Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measures(s).
- Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off site.
- Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or facilities. Concrete washouts shall not be located in an area where shallow groundwater may be present, or within 50 feet of a surface water body, creek or stream.
- During dewatering operations of uncontaminated ground water may be discharged on site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.
- Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1.
- Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
- Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
- Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately.
- The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate in roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development.
- The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
- No chemical(s) having the potential to be released in stormwater are to be stored or used onsite unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.
- Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills onsite and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.
- No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.
- Dwner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II, and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.
- All construction traffic must enter/exit the site only at approved construction access points.
- Prior to construction the Permittee shall verify the location of existing utilities.
- A water source shall be available on site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.
- The soils report for this site has been prepared by _____ and shall be considered a part of these plans.
- At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact: Colorado Department of Public Health and Environment Water Quality Control Division WQCD - Permits 4300 Cherry Creek Drive South Denver, CO 80246-1530 Attn: Permits Unit

Review Engineer:

The Grading and Erosion Control Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.

Review Engineer

Date

T-6

Sand Filter

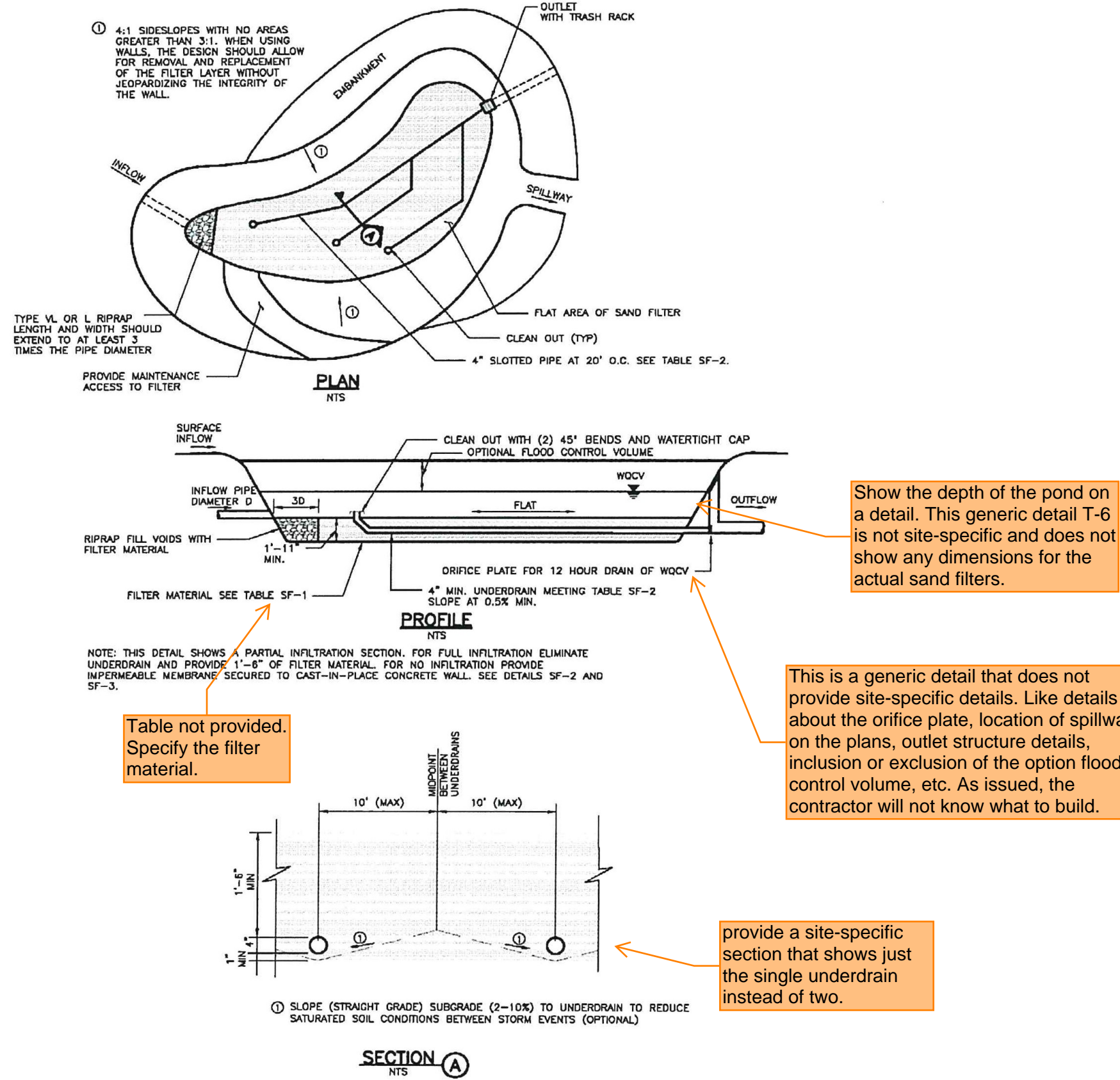


Figure SF-1. Sand Filter Plan and Sections

SF-8

Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

November 2015

DRAWN BY: D.E. WATTS
DATE: 8-16-21
DWG. NO.: 19-5341-05
TOPOGRAPHY BY: CITY FMS 6-12-19
SURVEY INFORMATION BY: RAMPART JOB NO. 18384

APPROVED BY:
PROJ. NO.
DWG.

REVISIONS 8-16-21 UPDATED

DEW

OLIVER E. WATTS
CONSULTING ENGINEER
COLORADO SPRINGS

PROJECT
ROCKY TOP MOTEL & CAMPGROUND
PART NW1/4 SECTION 9, T.13S., R.68W., 6TH P.M.
EL PASO COUNTY

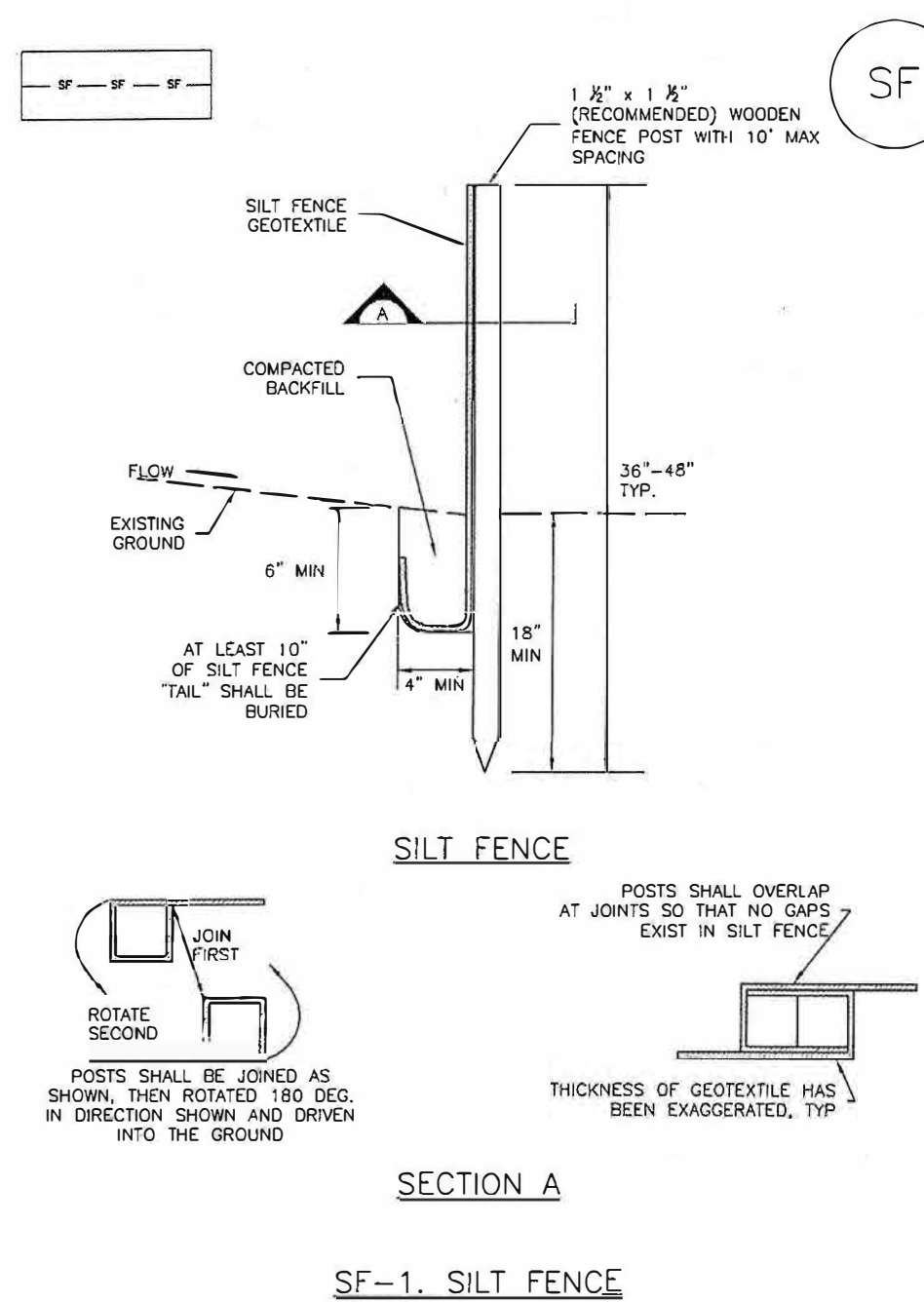
SHT. NAME

EROSION CONTROL PLAN

SHT. NO.
2
OF
2

Silt Fence (SF)

SC-1



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

SF-3

SC-1

Silt Fence (SF)

SILT FENCE INSTALLATION NOTES

1. 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 (2-3 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 HAND.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" 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 "U-HOOK." THE "U-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').
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

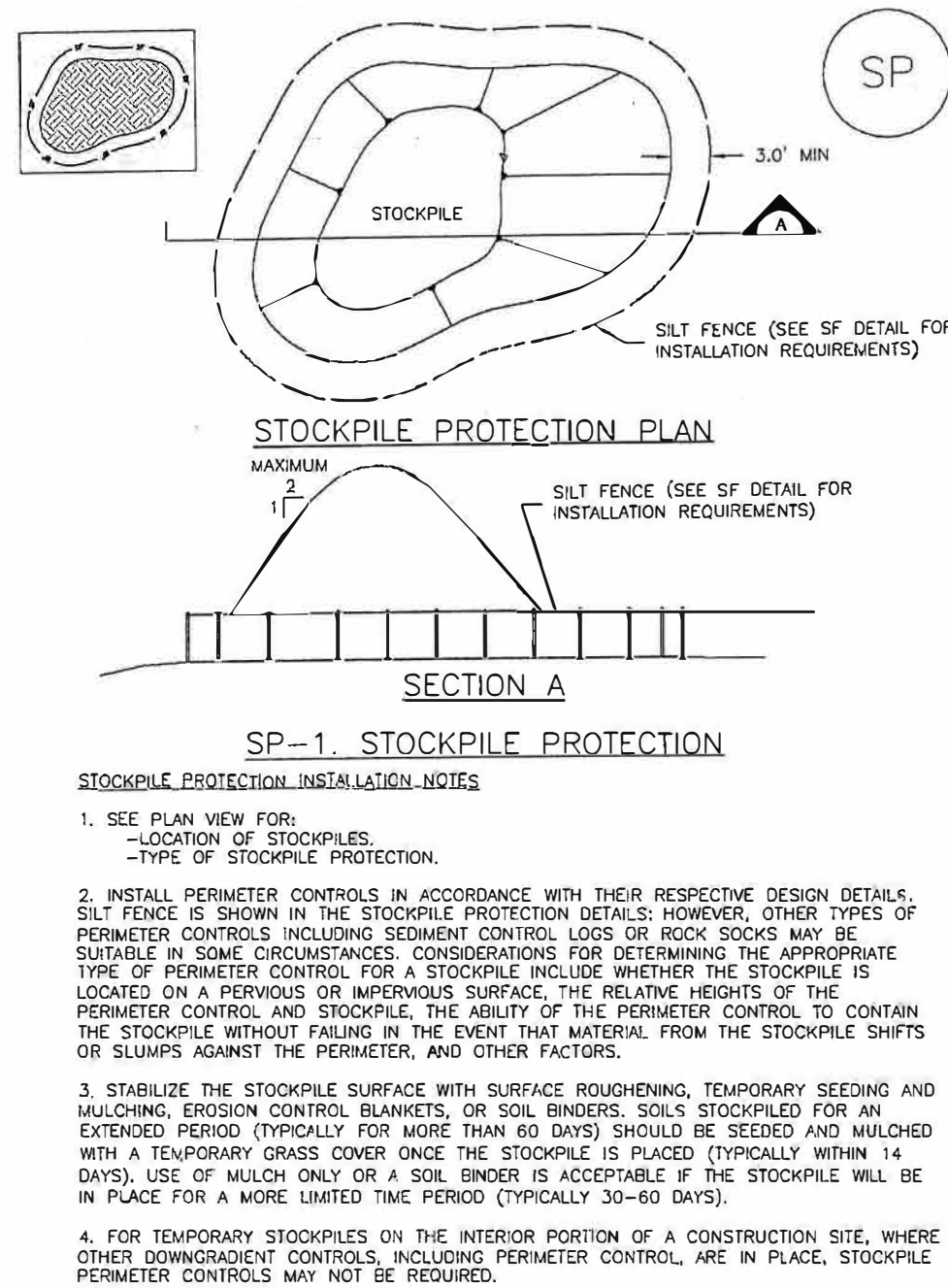
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 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 COLLAPSE.
 6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED 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, SEED, AND MULCH, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, NOT AVAILABLE IN AUTOCAD)
- 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.

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Stockpile Management (SP)

MM-2



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Stockpile Management (SM)

STOCKPILE PROTECTION MAINTENANCE NOTES

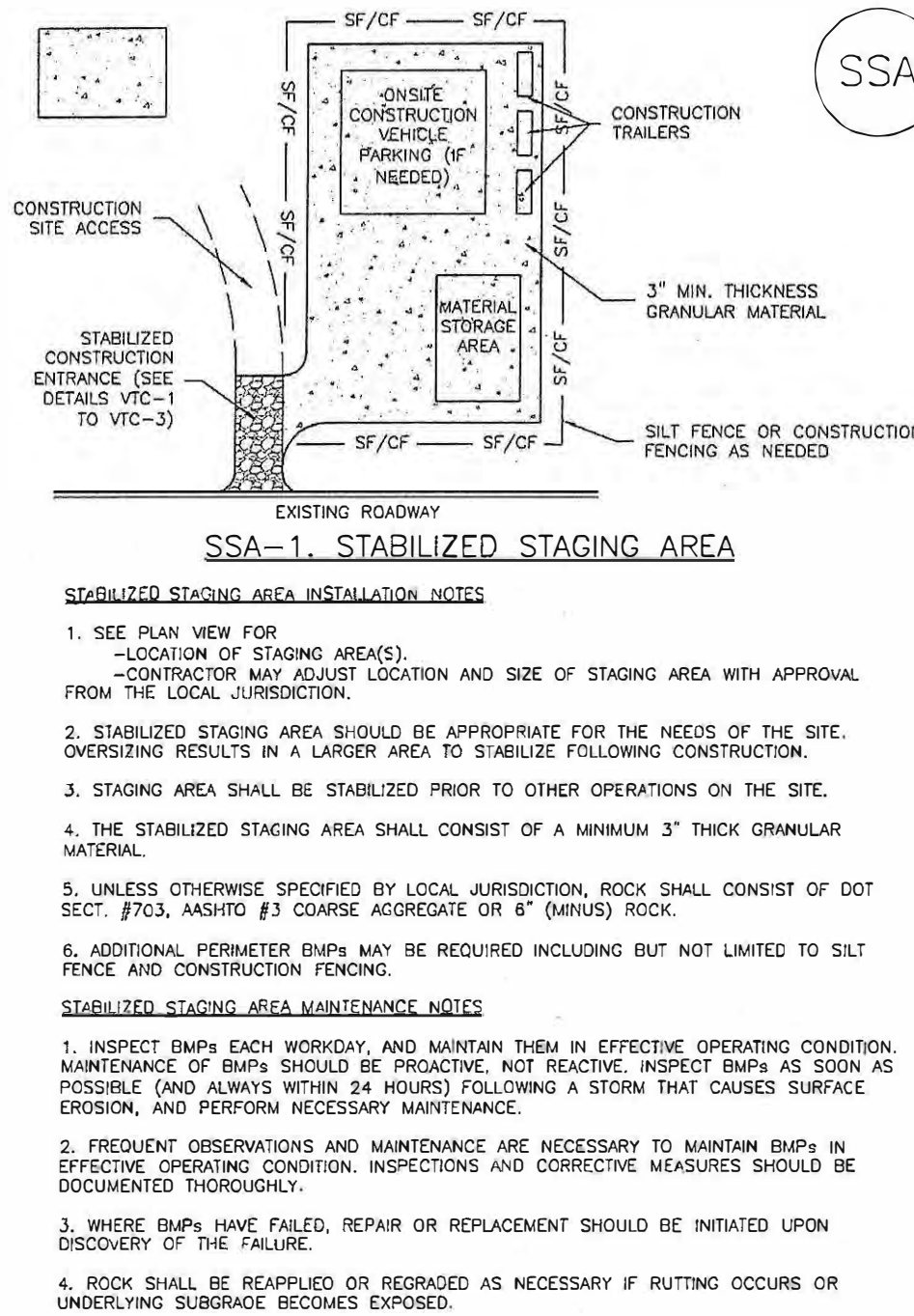
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
 2. FREQUENT OBSERVATIONS 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.
- (DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
- 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.

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Stabilized Staging Area (SSA)

SM-6



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Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

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, SEED, AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- 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 PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

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SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

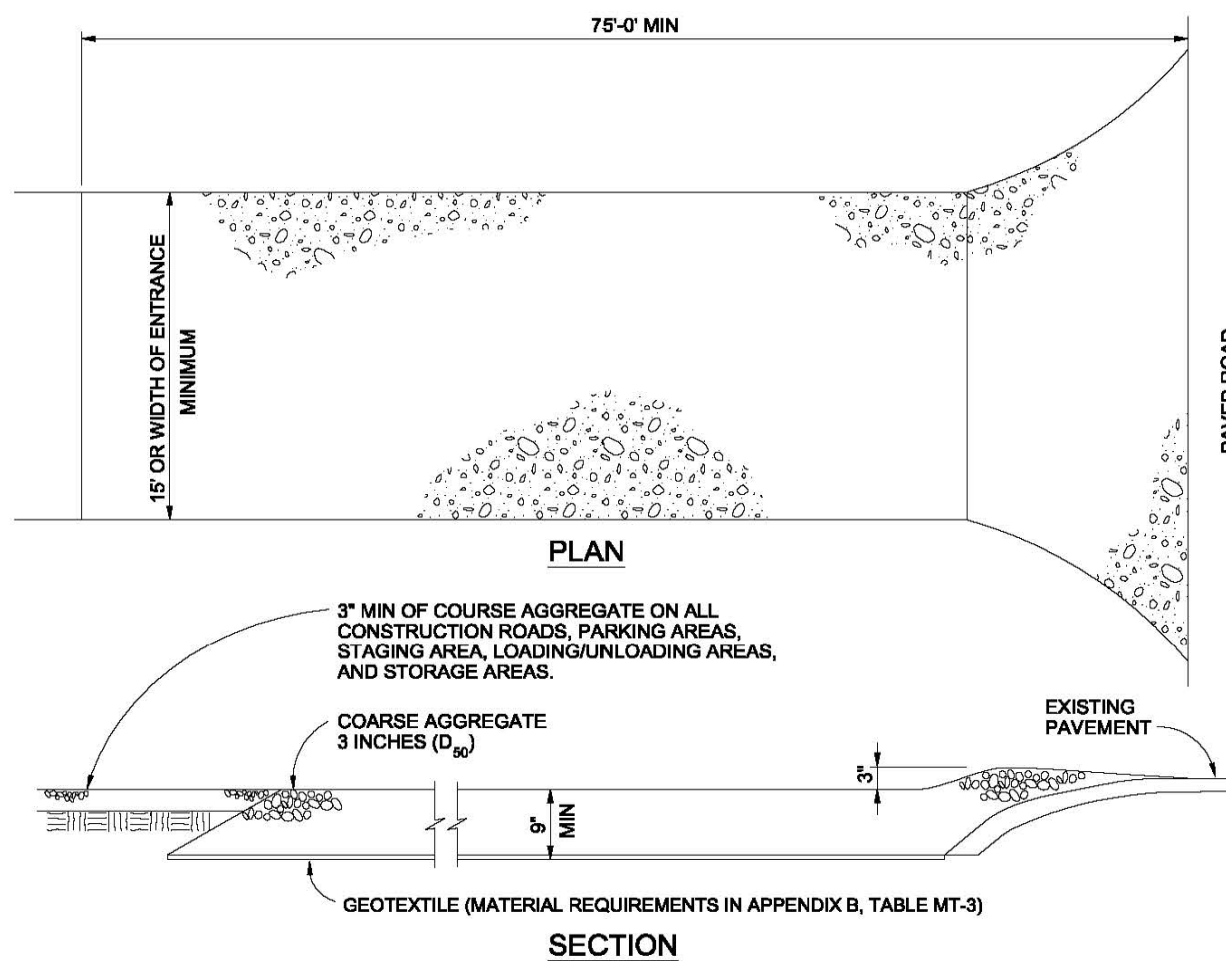
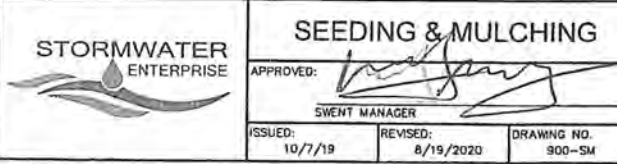
1. IN AREAS TO BE SEED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF CONACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZER DEFICIENCIES SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE, AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL-SEED WHENEVER POSSIBLE.
3. SEED DEPTH MUST BE 1/2 TO 3/4 INCHES WHEN DRILL-SEEDING IS USED.
4. BROADCAST SEEDING OR HYDRO-SEEDING WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
5. SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLIANT DRILL OR HYDRO-SEEDING.
6. BROADCAST SEEDING MUST BE LIGHTLY HAND-RAKED INTO THE SOIL.

MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
 - HAY OR STRAW MULCH
 - ONLY CERTIFIED WEED-FREE AND CERTIFIED SEED-FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
 - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
 - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
 - HYDRAULIC MULCHING
 - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
 - IF HYDRO-SEEDING IS USED, MULCHING MUST BE A SEPARATE, SECOND OPERATION.
 - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
 - EROSION CONTROL BLANKET
 - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.



VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAY.
3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SLOPES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

City of Colorado Springs
Stormwater Quality

Figure VT-2
Vehicle Tracking
Application Examples

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COLORADO SPRINGS

PROJECT

SHT. NAME

EROSION CONTROL DETAILS

SHT. NO.

OF