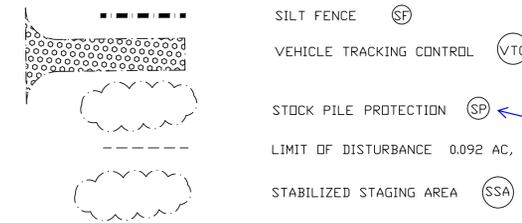


VICINITY MAP
N.T.S.

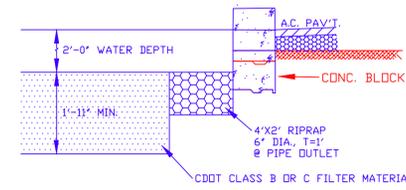
CONTOUR LEGEND:
 --- ORIGINAL CONTOURS:
 - - - FINISH CONTOURS:



Scale 1" = 20'



Provide BMP detail for Vehicle Tracking Control and Stock Pile.



SAND FILTER SECTION

1/2" = 1'-0"

Engineer's Statement:
 This Grading and Erosion Control Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County for Grading and Erosion Control Plans. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this plan.

Name _____ Date _____

Owner's Statement:

The Owner will comply with the requirements of the Grading and Erosion Control Plan.

Name _____ Date _____

El Paso County:

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 112, 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 Directors discretion.

Jennifer Irvine, P.E. _____ Date _____
 County Engineer / ECM Administrator

DRAWN BY: O.E. WATTS DATE: 11-23-18 DWG. NO.: 18-5237-03 TOPOGRAPHY BY: LET FINE BASE PLAN BY: JOHN NELSON	APPROVED BY: PROJ. NO.: DWG.	REVISIONS	OLIVER E. WATTS CONSULTING ENGINEER COLORADO SPRINGS	PROJECT 5819 PALMER PARK BLVD. LOT 1, POWERS CENTER FIL. NO. 3 EL PASO COUNTY	SHEET NO. 1 OF 1	GRADING AND EROSION CONTROL PLAN
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Standard Notes for El Paso County Grading and Erosion Control Plans

- Construction may not commence until a Construction Permit is obtained from Planning and Community Development (PCD) and a preconstruction conference is held with PCD Inspections.
- Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off site waters, including wetlands.
- Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.
- A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. During construction the SWMP is the responsibility of the designated Stormwater Manager, shall be located on site at all times and shall be kept up to date with work progress and changes in the field.
- Once the ESQCP has been issued, the contractor may install the initial stage erosion and sediment control BMPs as indicated on the GEC. A preconstruction meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County PCD Inspections staff.
- Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or final earth disturbance, has been completed. Disturbed areas and stockpiles which are not at final grade but will remain dormant for longer than 30 days shall also be mulched within 21 days after interim grading. An area that is going to remain in an interim state for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMPs shall be maintained until permanent soil erosion control measures are implemented and established.
- Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
- All persons engaged in earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMPs in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
- All temporary erosion control facilities including BMPs and all permanent facilities intended to control erosion of any earth disturbance operations shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
- Any earth disturbance shall be conducted in such a manner so as to effectively reduce accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time.
- Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
- Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.
- Erosion control blanketing shall be used on slopes steeper than 3:1.
- Building, construction, excavation, or other waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. BMP's may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
- Vehicle tracking of soils and construction debris off-site shall be minimized. Materials tracked offsite shall be cleaned up and properly disposed of immediately.

- Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
- The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance system and stormwater apertures as a result of site development.
- The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
- No chemicals are to be used by the contractor, which have the potential to be released in stormwater unless permission for the use of a specific chemical is granted in writing by the ECM Administrator. In granting the use of such chemicals, special conditions and monitoring may be required.
- Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters, including any surface or subsurface storm drainage system or facilities.
- No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditch line.
- Individuals shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS), and the "Clean Water Act" (33 USC 1344), in addition to the requirements included in the DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (NPDES, Floodplain, 404, Fugitive dust, etc.). In the event of conflicts between these requirements and laws, rules, or regulations of other Federal, State, or County agencies, the more restrictive laws, rules, or regulations shall apply.
- All construction traffic must enter/exit the site at approved construction access points.
- Prior to actual construction the permittee shall verify the location of existing utilities.
- A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
- The soils report for this site has been prepared by _____ and shall be considered a part of these plans.
- At least ten days prior to the anticipated start of construction, for projects that will disturb 1 acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this grading and erosion control plan may be a part. For information or application materials contact:

Colorado Department of Public Health and Environment
 Water Quality Control Division
 WQCD - Permits
 4300 Cherry Creek Drive South
 Denver, CO 80246-1530
 Attn: Permits Unit

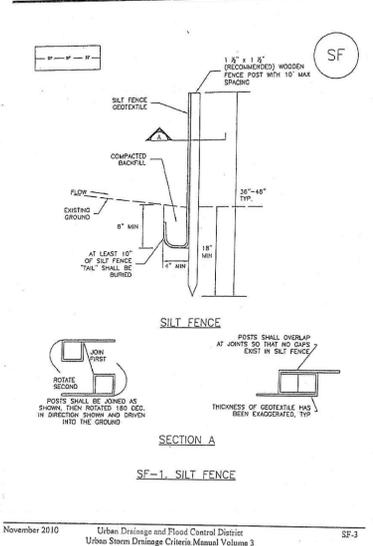
DRAWN BY: O.E. WATTS	APPROVED BY:	REVISIONS
DATE: 12-19-18	PRD. NO.:	
DWG. NO.: 18-5237-04	DWG.:	

OLIVER E. WATTS
 CONSULTING ENGINEER
 COLORADO SPRINGS

PROJECT
 5819 PALMER PARK BLVD.
 LOT 1, POWERS CENTER FIL. NO. 3
 EL PASO COUNTY

SHT. NAME
EROSION CONTROL DETAILS
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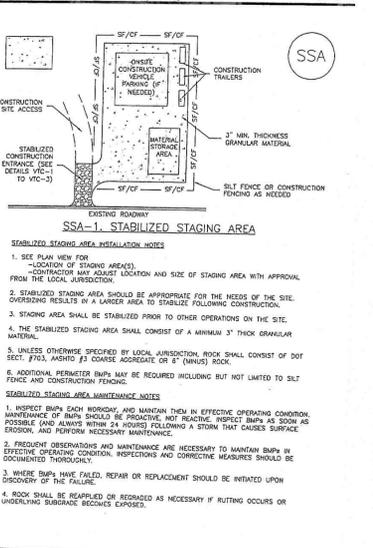
Silt Fence (SF) SC-1



- November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 SF-3
- SILT FENCE INSTALLATION NOTES**
- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PENETRATION. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A PALE LOCATION PERMANENT AND DEPOSITION.
 - 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.
 - COMPACT ANCHOR TRENCH BY HAND WITH A TAMMING IRON OR BY MEANS ROLLING TRENCH BY HAND.
 - SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO HORIZONTAL SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
 - SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" LEGS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC.
 - 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').
 - SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- SILT FENCE MAINTENANCE NOTES**
- INSPECT BUPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BUPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BUPS 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 BUPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BUPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BUP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENT IS APPROXIMATELY 4".
 - REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
 - SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERMANENT SEDIMENT CONTROL BUP.
 - WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDS, AND MULCH OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTES: MANY JURISDICTIONS HAVE BUP DETAILS THAT VARY FROM IUCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

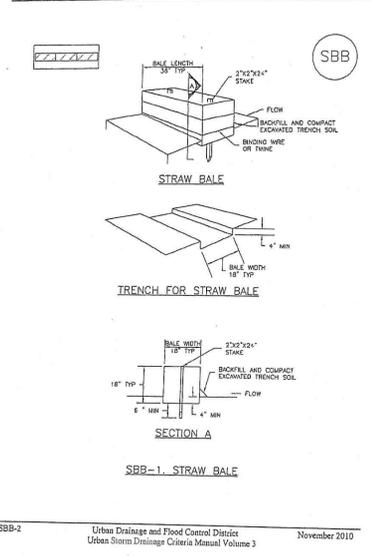
November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 SF-4

Stabilized Staging Area (SSA) SM-6



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

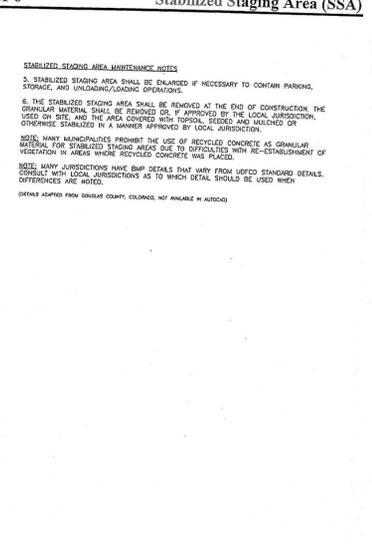
Straw Bale Barrier (SBB) SC-3



- November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 SBB-2
- STRAW BALE INSTALLATION NOTES**
- SEE PLAN VIEW FOR "LOCATION" OF STRAW BALES.
 - STRAW BALES SHALL COVER TOP OF EXCAVATED TRENCH TO PREVENT FLOW OF WATER. JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WOOD FREE.
 - STRAW BALES SHALL BE PLACED IN SERIES AS A BARRIER. THE END OF EACH BALE SHALL BE TIGHTLY BUTTED TO ONE ANCHOR.
 - STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 30x16x16".
 - A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BENCHFILL IS ENCLOSURED TO THE VERTICAL SIDES OF THE BALE. ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPSTREAM SIDE OF THE STRAW BALE(S) AND COMPACTED.
 - 2x4 (2) WOODEN STAKES SHALL BE USED TO HOLD BALE IN PLACE. WOODEN STAKES SHALL BE 2x2x24". WOODEN STAKES SHALL BE GIVEN 6" INTO THE GROUND.
- STRAW BALE MAINTENANCE NOTES**
- INSPECT BUPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BUPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BUPS 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 BUPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BUPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.
 - SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIERS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BUP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENT IS APPROXIMATELY 4" OF THE HEIGHT OF THE STRAW BALE BARRIER.
 - STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDS, AND MULCH OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTES: MANY JURISDICTIONS HAVE BUP DETAILS THAT VARY FROM IUCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

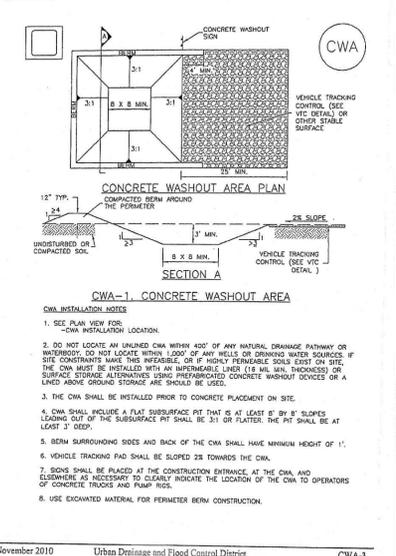
November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 SBB-3

Stabilized Staging Area (SSA) SM-6



November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 SSA-4

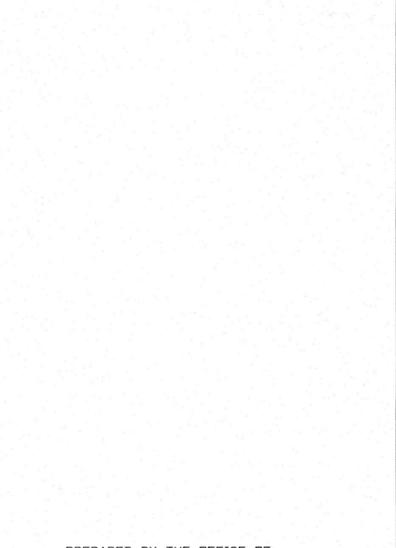
Concrete Washout Area (CWA) MM-1



- November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 CWA-3
- CWA INSTALLATION NOTES**
- SEE PLAN VIEW FOR "CWA" INSTALLATION LOCATION.
 - DO NOT LOCATE AN UNGRADED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONDITIONS MAKE THIS UNFEASIBLE, OR IF HIGHLY FERTILIZABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (12 MIL GAL THICKNESS) OR SURFACE COVERING AS SPECIFIED USING PREPARED CONCRETE WASHOUT DEVICES OR LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
 - THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
 - CWA SHALL INCLUDE A FLAT SUBSURFACE PFT THAT IS AT LEAST 6" OR 8" SLOPES LEADING OUT OF THE SUBSURFACE PFT SHALL BE 3:1 OR GREATER. THE PFT SHALL BE AT LEAST 3' DEEP.
 - BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 12".
 - VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
 - SDS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE AT THE CWA, AND ELEVATIONS AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRUCKS.
 - USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.
- CWA MAINTENANCE NOTES**
- INSPECT BUPS EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BUPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BUPS 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 BUPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 - WHERE BUPS HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASHOUT. CONCRETE MATERIAL ACCUMULATED IN PFT, SHALL BE REMOVED ONCE THE MATERIAL HAS REACHED A DEPTH OF 2".
 - CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PFT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
 - WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEEDS AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION. (DETAIL ADAPTED FROM SOUTHERN COUNTY, COLORADO AND THE CITY OF DENVER, COLORADO, NOT AVAILABLE IN IUCD).
- NOTES: MANY JURISDICTIONS HAVE CWA DETAILS THAT VARY FROM IUCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 CWA-4

Stabilized Staging Area (SSA) SM-6

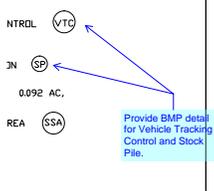


November 2010 Urban Drainage and Flood Control District
 Urban Storm Drainage Criteria Manual Volume 3 SSA-5

PREPARED BY THE OFFICE OF:
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 oliwatts@aol.com

Markup Summary

Daniel Torres (4)



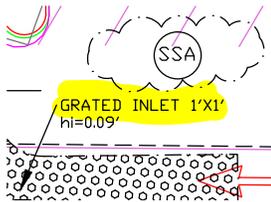
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Provide BMP detail for Vehicle Tracking Control and Stock Pile.

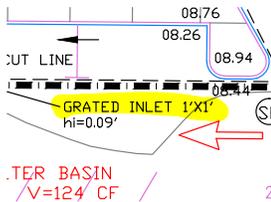


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Provide inlet protection for all graded inlets shown on the plan. Also provide inlet protection BMP detail.



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.TER BASIN /V=124' CF