

WOODMOOR WATER AND SANITATION DISTRICT NO. 1

WELL NO. 22

EL PASO COUNTY, COLORADO SWMP, GRADING AND EROSION CONTROL PLAN

EPC STORMWATER REVIEW COMMENTS
IN ORANGE BOXES WITH BLACK TEXT

CONTACTS

OWNER: WOODMOOR WATER AND SANITATION DISTRICT NO. 1
1845 WOODMOOR DRIVE
MONUMENT, CO 80132

JESSIE SHAFFER, P.E.
(719) 488-2525
JESSIES@WOODMOORWATER.COM

ENVIRONMENTAL ENGINEER: JVA, INC
1675 LARIMER STREET, SUITE 550
DENVER, CO 80202

RICHARD HOOD, P.E.
(303) 444-1951
RHOO@JVAJVA.COM



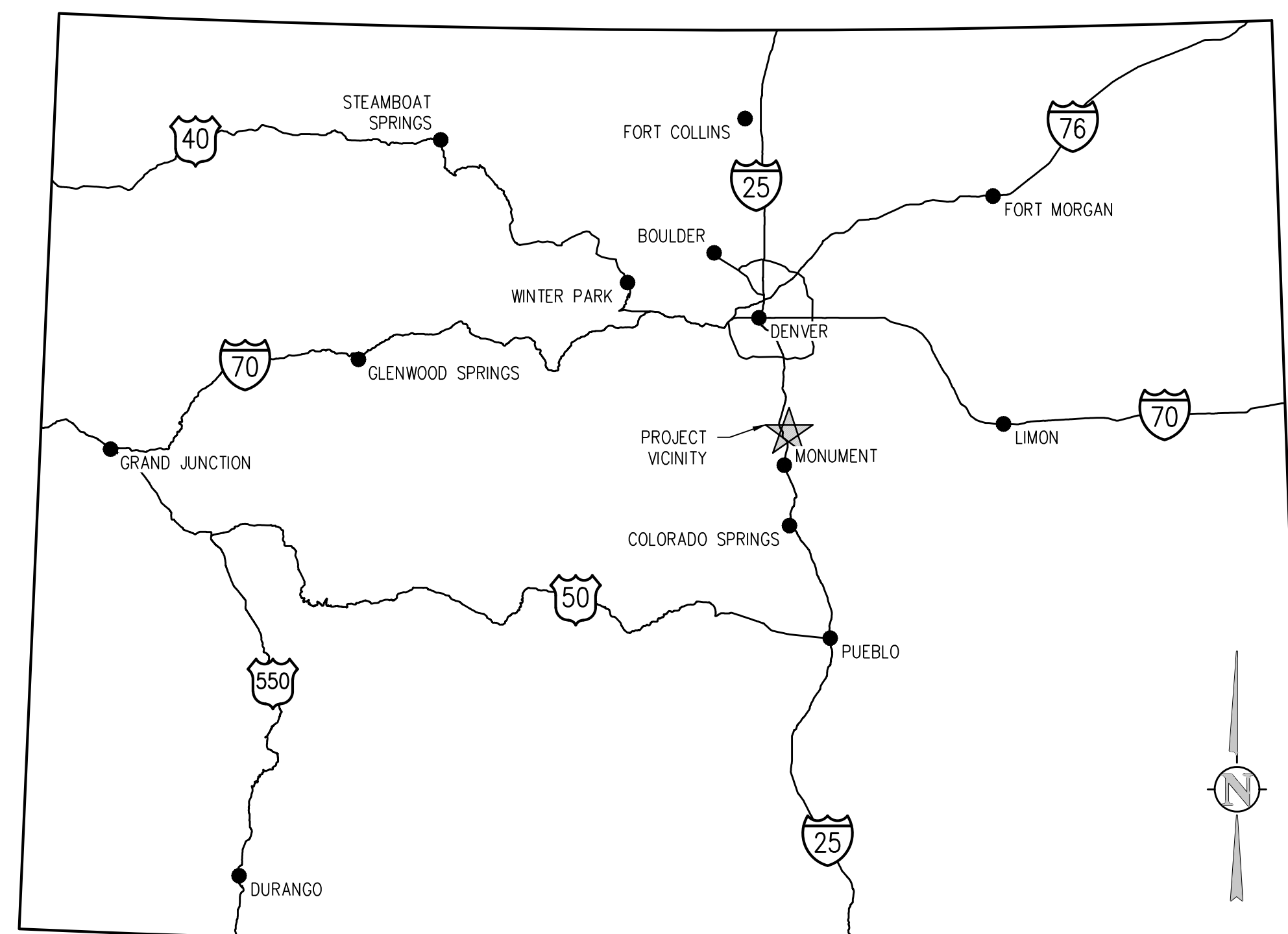
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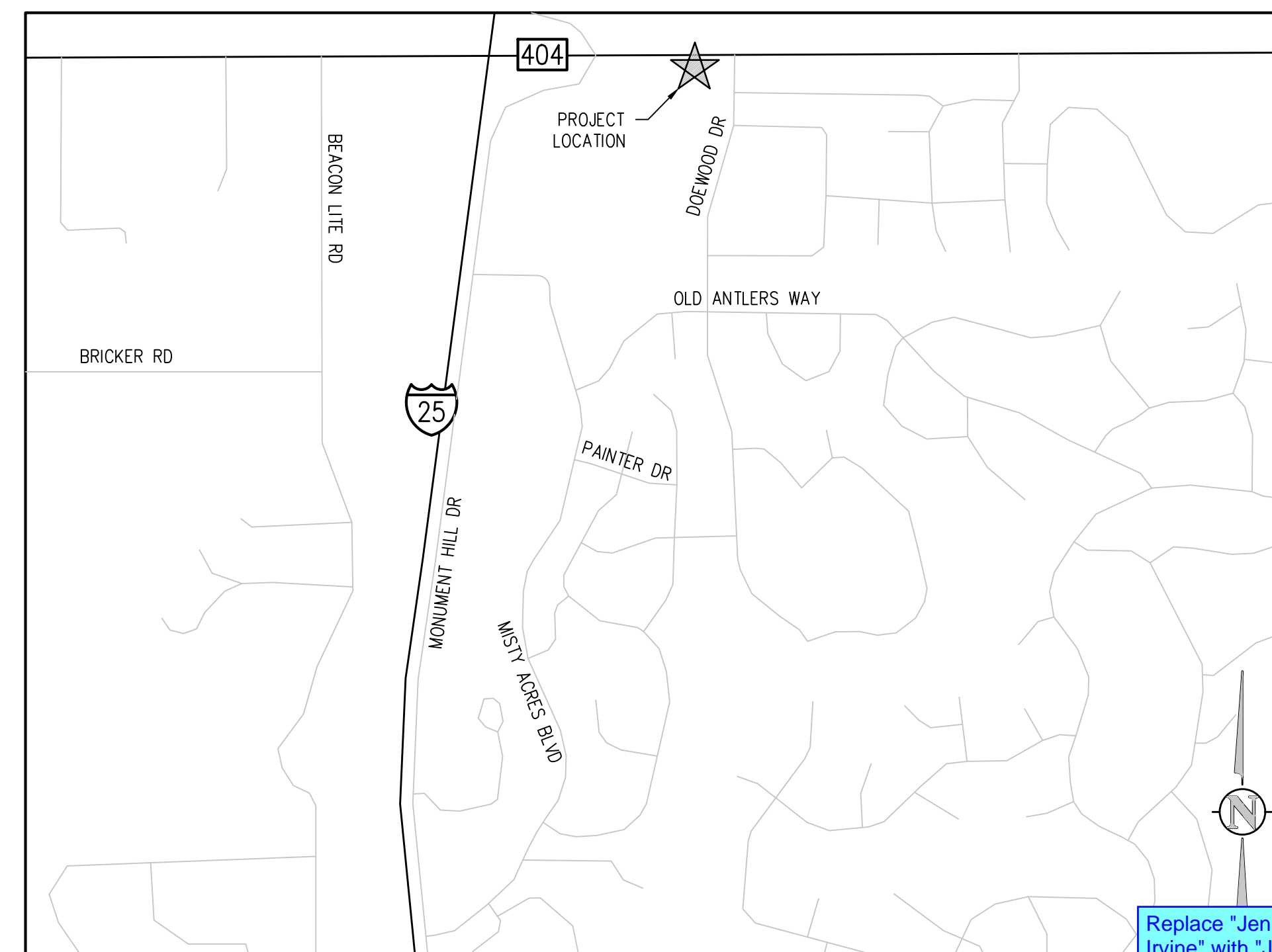
MARCH 2023

PREPARED UNDER THE SUPERVISION OF

JVA, Inc.



VICINITY MAP
NTS

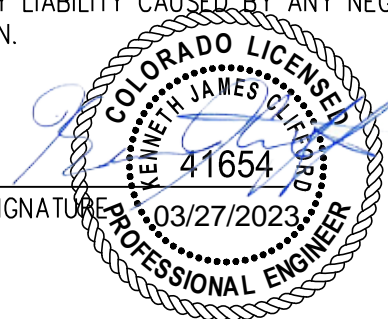


PROJECT LOCATION MAP
NTS

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.

ENGINEER OF RECORD SIGNATURE _____ DATE _____



OWNER'S STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

OWNER SIGNATURE _____ DATE _____

EL PASO COUNTY:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH THE 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.

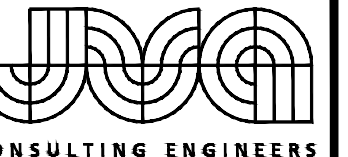
FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE. DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED.

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.

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

Replace "Jennifer Irvine" with "Joshua Palmer".

Add "PCD File No. PPR2317"



JVA, Inc. 1675 Larimer Street, Suite 550
 Denver, CO 80202 303.444.1951
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Label all structures as existing or proposed.

EROSION CONTROL LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- LIMITS OF CONSTRUCTION/DISTURBANCE BOUNDARY
- LIMITS OF EARTHWORK CUT/FILL
- VEHICLE TRACKING CONTROL
- STABILIZED STAGING AREA
- INLET PROTECTION
- CONCRETE WASHOUT AREA
- SILT FENCE
- SEDIMENT CONTROL LOG
- MULCHING AND SEEDING
- HISTORIC DRAINAGE
- DEVELOPED DRAINAGE
- EARTHWORK CUT AREA
- EARTHWORK FILL AREA

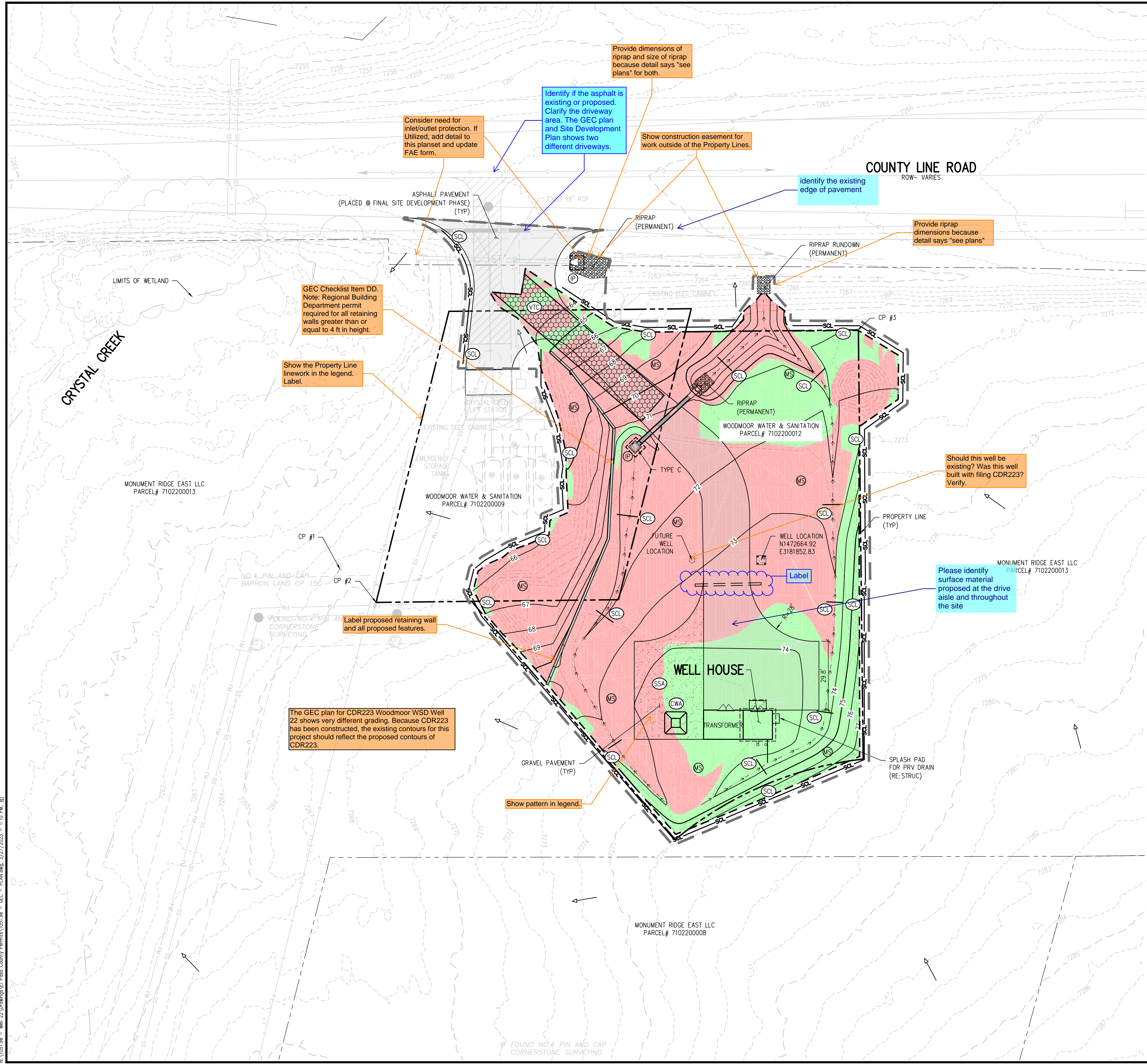
Verify if silt fence is proposed - if not remove from legend. I currently do not see silt fence on the GEC Plan.

Show MS limits.

Add developed drainage flow arrows on the plans.

EROSION AND SEDIMENTATION NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL CONTROLS DURING INITIAL, INTERIM, AND FINAL CONDITIONS.
2. AT THE COMPLETION OF THE DRILLING THE CONTRACTOR WILL REDISTRIBUTE THE SOIL STOCK PILES WITHIN THE DISTURBANCE AREA. SOME OF THE SOIL MAY BE HAULED OFF-SITE.
3. ALL CONTROLS SHALL BE INSTALLED WITHIN THE PROPERTY LINES UNLESS OTHERWISE SPECIFIED. WHEN CONSTRUCTION ACTIVITIES DISTURB ADJACENT AND/OR RIGHT-OF-WAY PROPERTIES, COORDINATION WITH PROPERTY OWNERS IS REQUIRED PRIOR TO CONSTRUCTION.
4. THE VEGETATIVE COVER OF THE AREA OF DISTURBANCE IS APPROXIMATELY 95% BASED ON VISUAL OBSERVATIONS AND MOSTLY CONSISTS OF NATIVE GRASSES. THERE ARE A FEW EVERGREEN TREES, ONE OR MORE MAY NEED TO BE REMOVED TO PREPARE THE SITE FOR DRILLING.
5. GRADING/DISTURBANCE WITHIN THE RIGHT-OF-WAY MAY REQUIRE CONTRACTOR TO OBTAIN A WORK WITHIN RIGHT-OF-WAY PERMIT. CONTRACTOR TO VERIFY WITH EL PASO COUNTY PRIOR TO CONSTRUCTION.



Provide dimensions of riprap and size of riprap because detail says "see plans" for both.

Identify if the asphalt is existing or proposed. Clarify the driveway area. The GEC plan and Site Development Plan shows two different driveways.

Show construction easement for work outside of the Property Lines.

Identify the existing edge of pavement

Provide riprap dimensions because detail says "see plans"

Should this well be existing? Was this well built with filing CDR223? Verify.

Please identify surface material proposed at the drive aisle and throughout the site

Label proposed retaining wall and all proposed features.

The GEC plan for CDR223 Woodmoor WSD Well 22 shows very different grading. Because CDR223 has been constructed, the existing contours for this project should reflect the proposed contours of CDR223.

Show pattern in legend.

Consider need for inlet/outlet protection. If Utilized, add detail to this planset and update FAE form.

GEC Checklist item DD. Note: Regional Building Department permit required for all retaining walls greater than or equal to 4 ft in height.

Show the Property Line linework in the legend. Label.

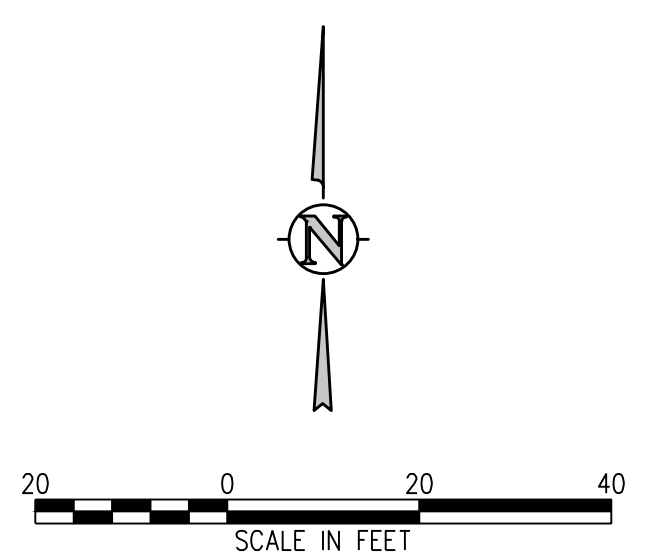
NO.	DATE	DESIGNED	DRAWN	REVISION DESCRIPTION



DESIGNED BY: JGJ
 DRAWN BY: JGJ
 CHECKED BY: KJC
 JOB #: 1051.9e
 DATE: MARCH 2023
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WOODMOOR WSD NO. 1
 WELL NO. 22
 EL PASO COUNTY, COLORADO
 EROSION CONTROL PLAN

SHEET NO.
CE1.0



N:\1051.9e - Well 22 Drawings\El Paso County Permits\1051.9e - GEC - PLAN.dwg, 3/27/2023 - 1:10 PM, JI

STORMWATER MANAGEMENT PLAN (SWMP)

THIS STORMWATER MANAGEMENT PLAN IS TO BE RETAINED AND MAINTAINED ONSITE INCLUDING FINAL LANDSCAPING CONTROL DOCUMENTATION. A SWMP ADMINISTRATOR WILL BE DESIGNATED BY THE CONTRACTOR AND IS RESPONSIBLE FOR DEVELOPING, IMPLEMENTING, MAINTAINING, AND REVISING THIS SWMP. THIS SWMP SHOULD BE VIEWED AS A LIVING DOCUMENT THAT IS CONTINUOUSLY BEING REVIEWED AND MODIFIED AS A PART OF THE OVERALL PROCESS OF EVALUATING AND MANAGING STORMWATER QUALITY ISSUES AT THE SITE.

NAME: _____
CONTACT INFO: _____

THE SITE IS LOCATED AT 1755 COUNTY LINE ROAD IN MONUMENT, COLORADO. THE WOODMOOR WATER & SANITATION DISTRICT NO. 1 (WWSO) PROPOSES TO BUILD A NEW GROUNDWATER WELL (REFERRED TO AS WELL NO. 22) ON THEIR PROPERTY.

Table with 3 columns: PHASE, ESTIMATED, ACTUAL. Includes phases like MOBILIZE TO SITE, INSTALL TEMPORARY EROSION CONTROL, etc.

Removal of temporary erosion control BMPs needs to be added as well.

THE EXISTING SITE CONSISTS OF DEVELOPED LAND AND NATIVE GRASSLAND, AND IS APPROXIMATELY 95% COVERED WITH VEGETATIVE GROUND COVER. THE ESTIMATED HISTORIC AND DEVELOPED RUNOFF COEFFICIENTS ARE 0.25 AND 0.25, RESPECTIVELY.

OFFSITE RUNOFF FLOWS ONTO THE PROPERTY ARE GENERALLY FROM THE SOUTHWEST. ONSITE FLOWS ALSO TYPICALLY FLOW FROM THE SOUTHWEST. THE MAJOR POTENTIAL POLLUTANT SOURCE FROM THE SITE IS EXPECTED TO BE FROM THE EXPOSURE OF SOIL DURING THE EXTENT OF THE DRILLING OPERATIONS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM CONSTRUCTION SITES 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.

OTHER POTENTIAL TEMPORARY POLLUTION SOURCES WOULD BE FROM THE NORMAL DRILLING ACTIVITY SUCH AS VEHICLE TRAFFIC ACCESSING AND LEAVING THE SITE, VEHICLE FUELING, STORAGE OF MATERIALS, AND LOADING/ UNLOADING AREAS.

THERE WILL BE NO OTHER NON-STORMWATER DISCHARGED FROM THE SITE.

BEST MANAGEMENT PRACTICES FOR STORMWATER MANAGEMENT

NON STRUCTURAL BMPs WILL BE IMPLEMENTED TO THE MAXIMUM EXTENT POSSIBLE. THE UTILIZATION OF NON STRUCTURAL BMPs WILL BE AN ONGOING PROCESS DIRECTED AT PREVENTING EROSION. THE NON STRUCTURAL BMPs WILL RECEIVE CONTINUOUS EMPHASIS THROUGHOUT CONSTRUCTION BECAUSE THEY AVERT PROBLEMS BEFORE THEY OCCUR AND REDUCE THE NEED FOR STRUCTURAL BMPs.

PLANNED STRUCTURAL BMPs FOR EROSION AND SEDIMENT CONTROL ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. IMPLEMENTING THESE MEASURES SHOULD MINIMIZE NUISANCE SILT AND SEDIMENTATION EXITING THE SITE AND PREVENT CLOGGING EXISTING STORM SEWERS.

APPLICATION OF THESE BMPs FOR STORMWATER MANAGEMENT ARE FOR CONSTRUCTION PERIODS AND ARE CONSIDERED TEMPORARY. POST-DEVELOPMENT STORMWATER MANAGEMENT IS PROVIDED THROUGH GRADING AND SEEDING STABILIZATION.

Update a CWA is proposed.

CONCRETE WASHOUT AREA (CWA). CONCRETE IS NOT EXPECTED TO BE USED FOR THIS DRILLING OPERATION AND THEREFORE A CONCRETE BATCH PLANT OR CONCRETE WASHOUT ARE WILL NOT BE NECESSARY.

VEHICLE TRACKING CONTROL (VTC).

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED AT COUNTY LINE ROAD (ALSO REFERRED TO COUNTY ROAD 404 OR PALMER DIVIDE AVE). THE CONSTRUCTION ACCESS AND PARKING WILL BE GRADED AND COVERED WITH A CRUSHED STONE BASE COURSE DURING CONSTRUCTION.

SILT FENCING (SF) AND SEDIMENT CONTROL LOGS (SCL).

SILT FENCING AND SEDIMENT CONTROL LOGS SHALL BE INSTALLED WITH RESPECT TO PROPOSED DRAINAGE PATTERNS. SILT FENCE AND SEDIMENT CONTROL LOGS SHALL BE CONSTRUCTED ALONG THE PORTIONS OF THE PERIMETER THE PROPOSED LIMITS OF WORK AND AROUND TEMPORARY SOIL STOCKPILES.

INLET PROTECTION (IP).

THE INLET PROTECTION WILL BE INSTALLED AT THE EXISTING 18" REINFORCED CONCRETE PIPE LOCATED AT THE EXISTING ENTRANCE TO THE CRYSTAL CREEK LIFT STATION. A TEMPORARY INLET SEDIMENT TRAP WILL BE CONSTRUCTED AROUND THE EXISTING FLARED END SECTION LOCATED ON THE EAST SIDE OF THE SAID ENTRANCE.

ROCK CHECK DAMS (RCD).

ROCK CHECK DAMS WILL BE INSTALLED AS SHOWN ON THE GEC PLAN. THEY HAVE BEEN PLACED AT THE OUTFALL OF THE PROPOSED TEMPORARY DRAINAGE SWALES CONSTRUCTED ALONG THE PERMETER OF THE DRILLING PAD. THE ROCK CHECK DAMS WILL BE REMOVED AS PART OF THE FINAL GRADING AND SEEDING OF THE SITE OCCURS.

TEMPORARY SOIL STOCKPILES.

TEMPORARY SOIL STOCKPILES WILL BE ESTABLISHED IN OPEN AREA WITHIN THE WWSO PROPERTY AS SHOWN ON GEC PLAN. SOME OR ALL OF THIS SOIL WILL BE PLACED BACK ONTO THE GRADED DISTURBANCE AREA ONCE THE DRILLING IS COMPLETE.

DUST CONTROL MEASURES.

DISTURBED AREAS NOT YET READY TO BE SEEDED OR OTHERWISE STABILIZED SHALL BE WATERED, OR RIPPED AS NECESSARY TO PRECLUDE VISIBLE DUST EMISSIONS.

ITEMS ARE SCHEDULED TO BE IMPLEMENTED ACCORDING TO THE CONSTRUCTION SCHEDULE. AS WORK PROCEEDS, IMPLEMENTATION OF INDIVIDUAL BMPs IS TO COINCIDE WITH THE CONSTRUCTION THEREBY MINIMIZING THE EXPOSURE OF UNPROTECTED AREAS. THE SILT FENCE, INLET PROTECTION (FOR EXISTING INLETS), AND GRAVELING OF THE CONSTRUCTION ENTRANCE WILL BE PERFORMED WHEN THE GRADING BEGINS.

THE EROSION AND SEDIMENT CONTROL PLAN MAY BE MODIFIED BY THE OWNER'S ENGINEER, COUNTY ENGINEERING INSPECTORS, OR MUNICIPALITY, OR ITS AUTHORIZED REPRESENTATIVE AS FIELD CONDITIONS WARRANT.

PERMANENT STABILIZATION MEASURES.

NATIVE PERENNIAL SEEDING WILL BE ESTABLISHED AFTER FINAL GRADING OF THE SITE IS COMPLETED.

MATERIALS AND SPILL PREVENTION.

THE CONTRACTOR WILL STORE CONSTRUCTION MATERIALS AND EQUIPMENT IN CONFINED AREAS ON SITE FROM WHICH RUNOFF WILL BE CONTAINED AND FILTERED. MATERIALS WILL BE STORED OFF THE GROUND AND PROTECTED FROM THE WEATHER BY A COVER OR STORED IN A CONTAINER SUCH AS A VAN OR TRAILER.

INSPECTION AND MAINTENANCE.

THE EROSION CONTROL MEASURES WILL BE INSPECTED DAILY DURING DRILLING OPERATIONS BY THE CONTRACTOR AND AFTER EACH RAIN EVENT. ALL INSPECTIONS SHALL BE DOCUMENTED AND SHALL INCLUDE THE DATE OF INSPECTION, ANY INCIDENCE OF NON-COMPLIANCE, SIGNED CERTIFICATION THAT THE SITE IS IN COMPLIANCE, AND ANY NOTES, DRAWINGS, MAPS, ETC. PERTAINING TO REPAIRS.

FINAL STABILIZATION AND LONG-TERM STORMWATER QUALITY.

FINAL STABILIZATION IS REACHED WHEN ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% OR PRE-DISTURBANCE LEVELS OR EQUIVALENT PERMANENT, PHYSICAL EROSION REDUCTION METHODS HAVE BEEN EMPLOYED.

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- 1. 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 OFFSITE WATERS, INCLUDING WETLANDS.
2. 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...

Provide notes 28 and 29 from the GEC Checklist - these are missing.

EL PASO COUNTY SELF-MONITORING INSPECTIONS

THE PERMIT HOLDER OR AUTHORIZED AGENT SHALL CONDUCT SELF-MONITORING INSPECTIONS. THE PURPOSE OF SELF-MONITORING INSPECTIONS IS FOR THE PERMIT HOLDER TO ENSURE THAT ALL BMPs ARE INSTALLED ACCORDING TO APPROVED PLANS, THE BMPs ARE ADEQUATE AND ARE BEING PROPERLY MAINTAINED.

- ALL CONSTRUCTION ACTIVITY IS COMPLETED EXCEPT FINAL STABILIZATION BECAUSE PLANTED VEGETATIVE COVER HAS NOT YET BECOME ESTABLISHED;
• ALL ACTIVITIES FOR FINAL STABILIZATION HAVE BEEN COMPLETED WITH THE EXCEPTION OF SEED APPLICATION WHICH MAY NOT HAVE OCCURRED DUE TO SEASONAL CONDITIONS OR THE NECESSITY TO REAPPLY ADDITIONAL SEED TO AUGMENT PREVIOUS EFFORTS; AND
• THE SWMP HAS BEEN UPDATED TO LOCATE THOSE AREAS SUBJECT TO THE REDUCED INSPECTION FREQUENCY. ROUTINE SELF-MONITORING INSPECTIONS AFTER PRECIPITATION EVENTS ARE NOT REQUIRED DURING AN APPROVED 30 DAY INSPECTION CYCLE.

- 1. ROUTINE SELF-MONITORING INSPECTIONS. THE ROUTINE SELF-MONITORING INSPECTIONS ARE TO BE PERFORMED AND DOCUMENTED AT LEAST ONCE EVERY 7 CALENDAR DAYS; OR AT LEAST ONCE EVERY 14 CALENDARS, IF POST-STORM EVENT INSPECTIONS ARE CONDUCTED WITHIN 24 HOURS AFTER THE END OF A PRECIPITATION OR SNOW MELT EVENT.
2. OPERATOR COMPLIANCE INSPECTION. WHEN A COMPLIANCE INSPECTION CONDUCTED BY A COUNTY STORMWATER INSPECTOR DOCUMENTS THE FAILURE TO IMPLEMENT CONTROL MEASURES OR IMPLEMENTATION OF INADEQUATE CONTROL MEASURES, THE COUNTY STORMWATER INSPECTOR MAY REQUIRE THE ESOPC OWNER OR THEIR REPRESENTATIVE TO INSPECT AND PROVIDE A REPORT TO THE COUNTY THAT THE CONTROL MEASURES HAVE BEEN IMPLEMENTED OR CORRECTED.

THE OWNER OR HIS REPRESENTATIVE WILL RECORD THE RESULTS OF ALL INSPECTIONS BY COMPLETING AN INSPECTION REPORT OR SIMILAR INSPECTION CHECKLIST INCLUDED IN THE SWMP. COMPLETED INSPECTION REPORTS SHALL BE KEPT ON SITE AND AVAILABLE TO COUNTY INSPECTORS.

- 2. OPERATOR COMPLIANCE INSPECTION. WHEN A COMPLIANCE INSPECTION CONDUCTED BY A COUNTY STORMWATER INSPECTOR DOCUMENTS THE FAILURE TO IMPLEMENT CONTROL MEASURES OR IMPLEMENTATION OF INADEQUATE CONTROL MEASURES, THE COUNTY STORMWATER INSPECTOR MAY REQUIRE THE ESOPC OWNER OR THEIR REPRESENTATIVE TO INSPECT AND PROVIDE A REPORT TO THE COUNTY THAT THE CONTROL MEASURES HAVE BEEN IMPLEMENTED OR CORRECTED.

MULCHING AND SEEDING NOTES FOR EL PASO COUNTY

- 1. ALL DISTURBED AREAS MUST BE MULCHED WITHIN 21 DAY AFTER FINAL GRADE AND SEEDED AREAS ARE TO BE MULCHED WITH 24 HOURS AFTER SEEDING.
2. MULCH USE FOR MULCH CAN BE EITHER CLEAN, WEED-FREE AND SEED-FREE LONG STEMMED FIELDS OR STRAW OF OATS, BARLEY, WHEAT, RYE OR TRITICALS CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE.
3. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FORM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED WATER. GRAVEL CAN ALSO BE USED.
4. MULCH IS TO BE APPLIED EVENLY AT THE RATE OF 2 TONS PER ACRE.
5. MULCH TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL), USING NETTING (USED IN SMALL AREAS WITH STEEP SLOPES), OR WITH TACKIFIER.
6. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

EL PASO COUNTY CONSERVATION DISTRICT SHOTGUN MIX

Table with 4 columns: COMMON NAME, RECOMMENDED VARIETY, % OF SEED MIX, PLS PER ACRE. Includes rows for Bluestem, Big Native, Little Bluestem, etc.

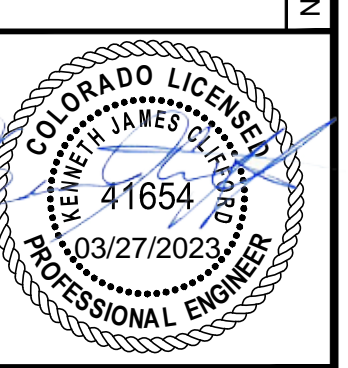
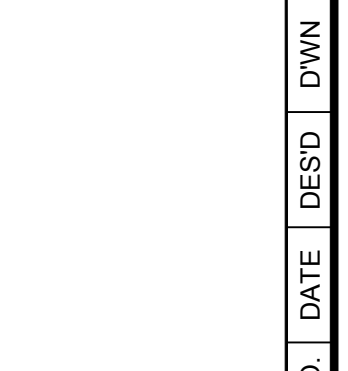
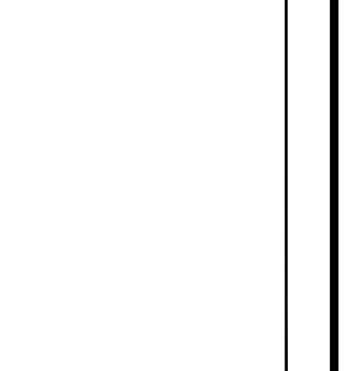
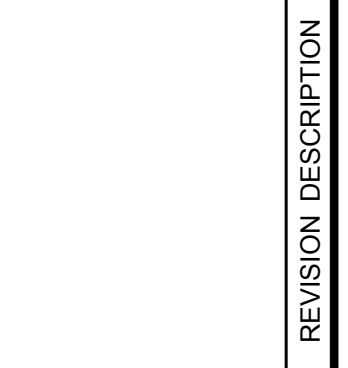
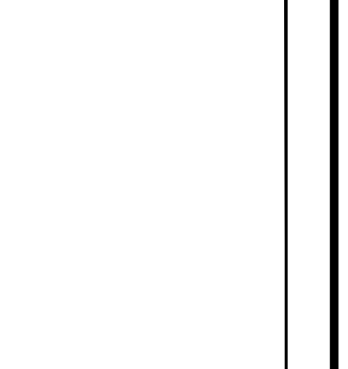
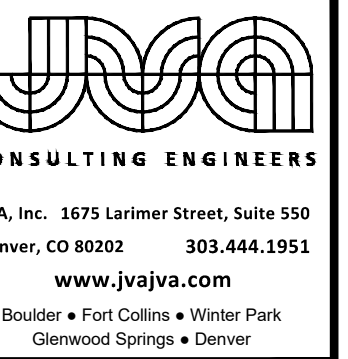


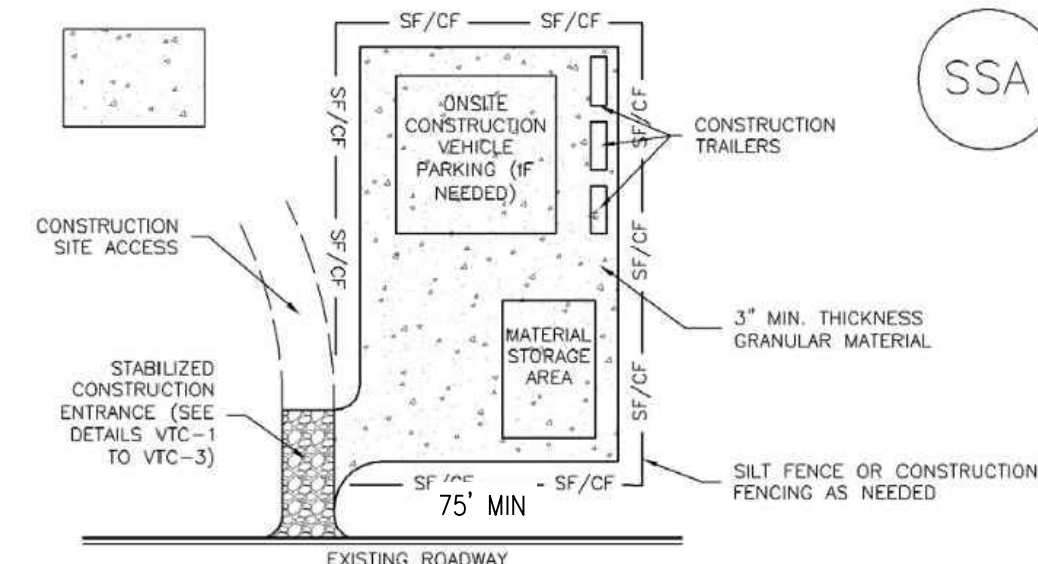
Table with 2 columns: DESIGNED BY: MHT/JGJ, DRAWN BY: MHT/JGJ, CHECKED BY: KJC, JOB #: 1051.9e, DATE: MARCH 2023, © JVA, INC.

WOODMOOR WSD NO. 1 WELL NO. 22 EL PASO COUNTY, COLORADO SWMP AND GEC NOTES

WOODMOOR WSD NO. 1 WELL NO. 22 EL PASO COUNTY, COLORADO SWMP AND GEC NOTES

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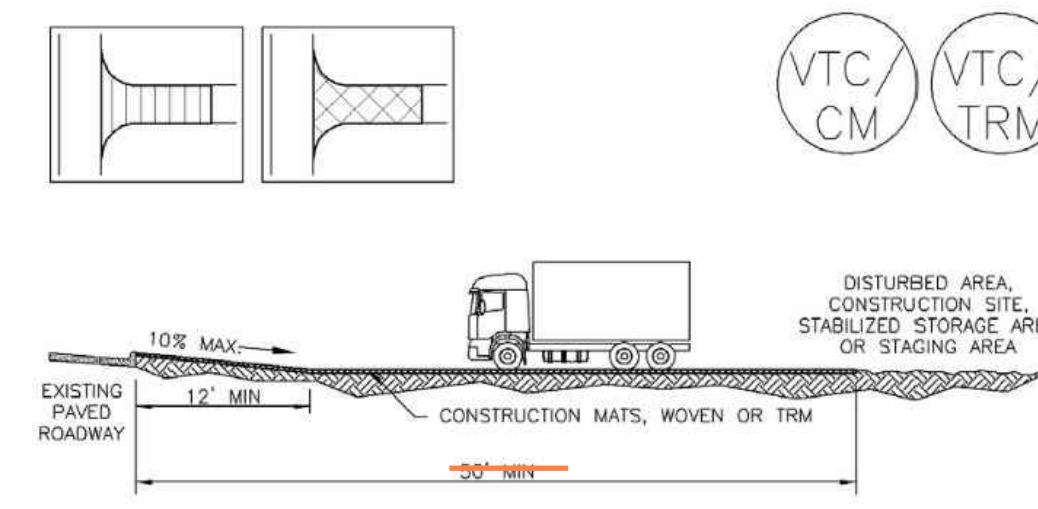
Stabilized Staging Area (SSA) SM-6



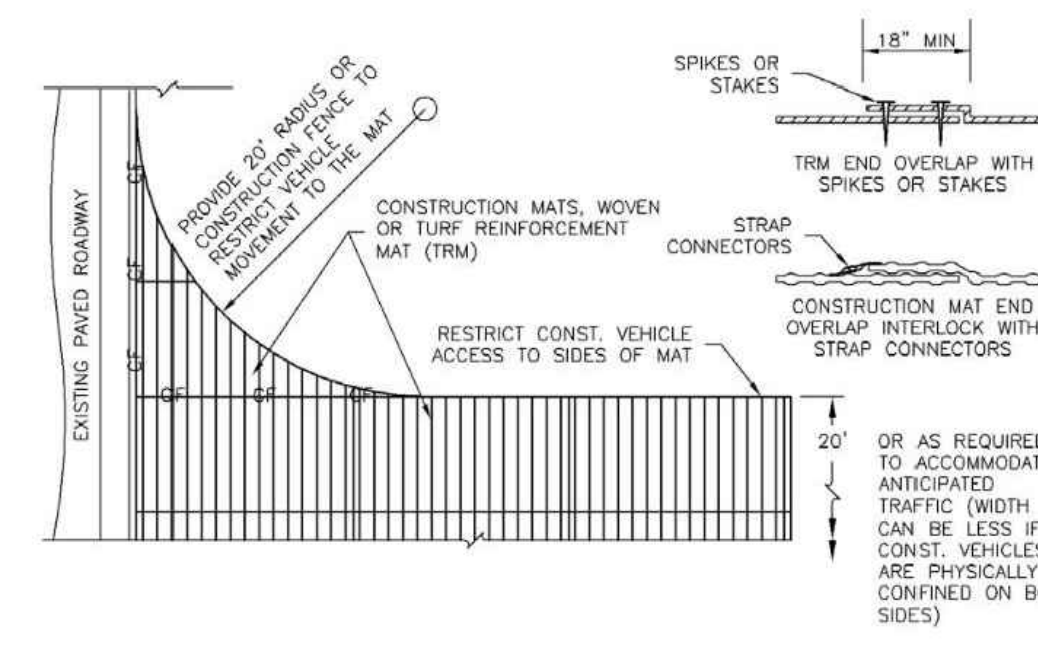
SSA-1. STABILIZED STAGING AREA

- STABILIZED STAGING AREA INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
 - STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
 - STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
 - THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
 - UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
 - ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.
- STABILIZED STAGING AREA MAINTENANCE NOTES**
- 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.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

Vehicle Tracking Control (VTC) SM-4



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

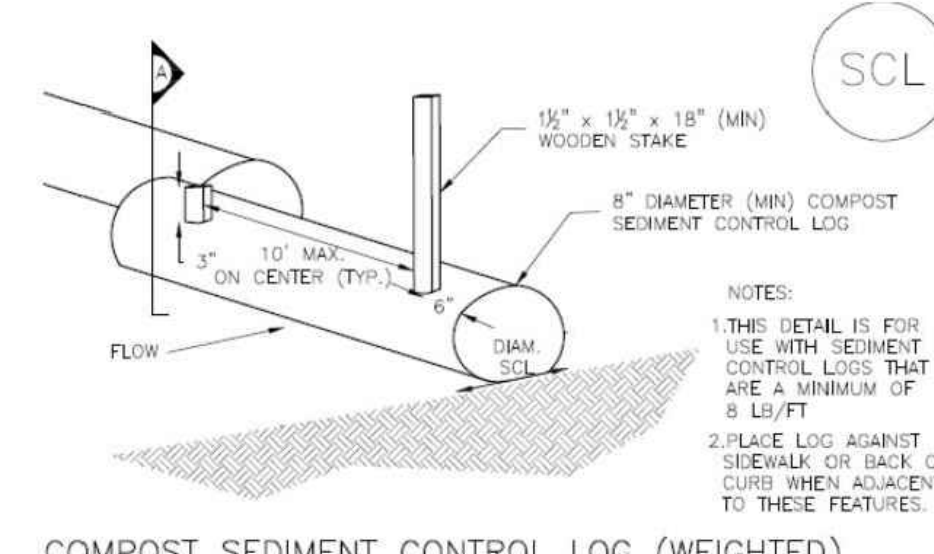


VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

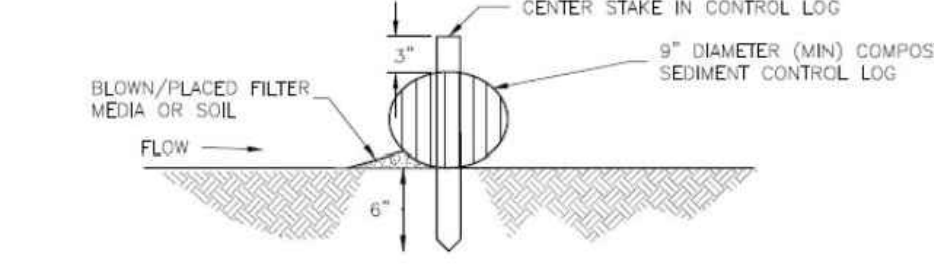
SM-4 Vehicle Tracking Control (VTC)

- STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
 - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
 - 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.
 - A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
 - STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
 - A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
 - 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**
- 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.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A 3" DEPTH.
 - 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.
- 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 CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

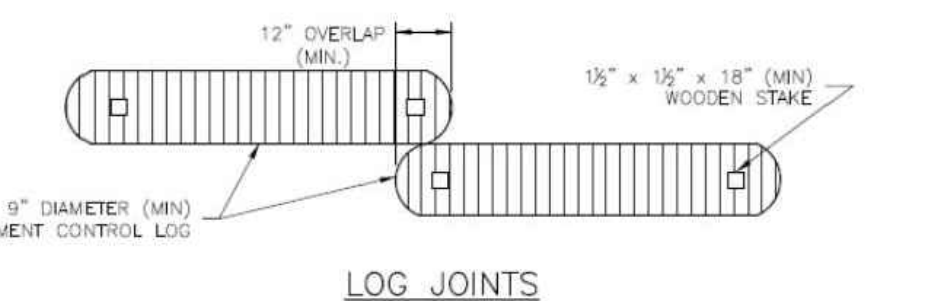
SC-2 Sediment Control Log (SCL)



COMPOST SEDIMENT CONTROL LOG (WEIGHTED)



SECTION A COMPOST SEDIMENT CONTROL LOG



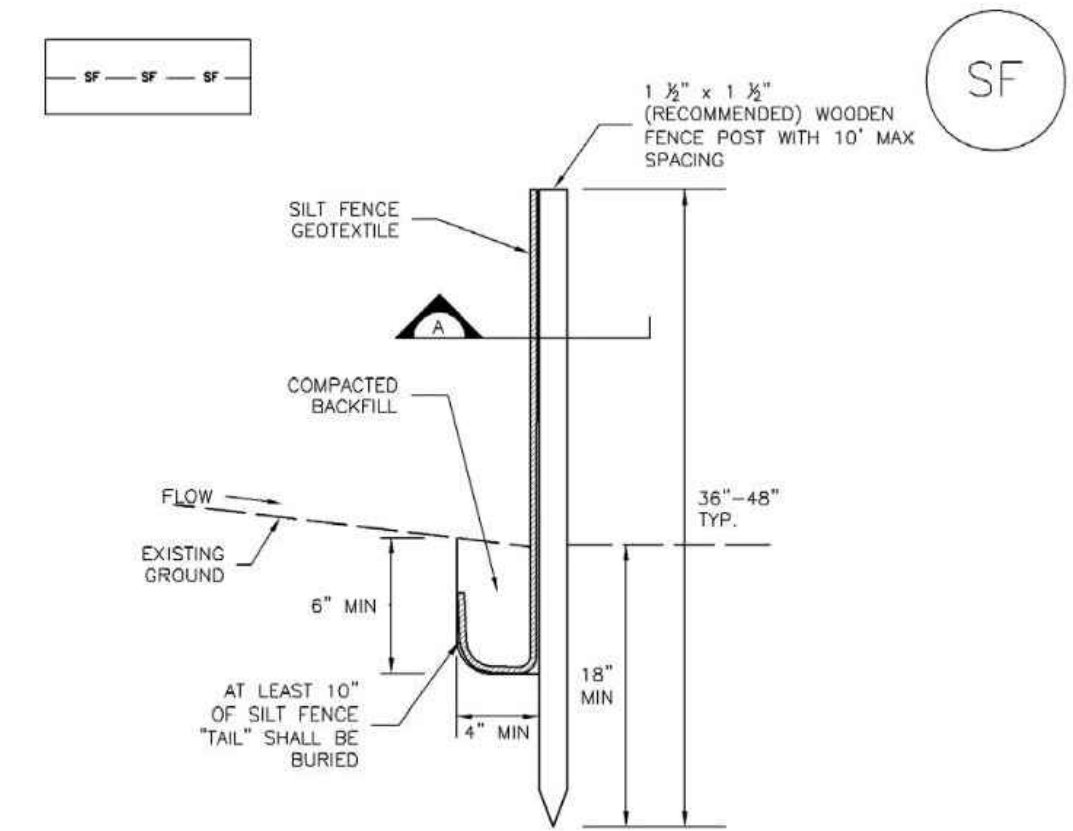
LOG JOINTS

SCL-2. COMPOST SEDIMENT CONTROL LOG (WEIGHTED)

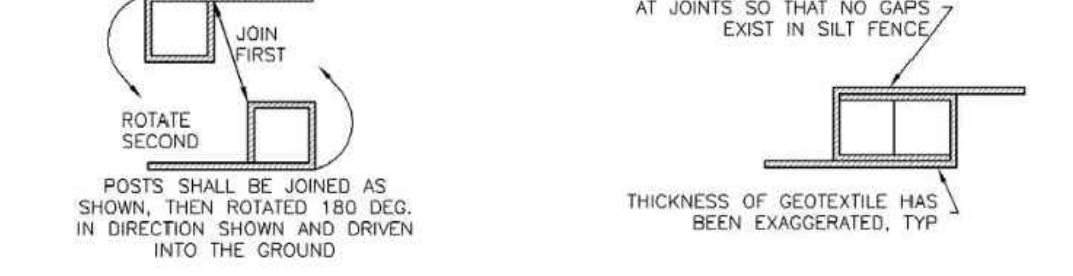
SC-2 Sediment Control Log (SCL)

- SEDIMENT CONTROL LOG INSTALLATION NOTES**
- SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
 - SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADE/LAND-DISTURBING ACTIVITIES.
 - 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.
 - SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES; HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
 - 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. COMPOST LOGS THAT ARE 8 LB/FT DO NOT NEED TO BE TRENCHED.
 - THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL 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 OR BLOWN IN PLACE.
 - 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. COMPOST LOGS SHOULD BE STAKED 10' ON CENTER.
- SEDIMENT CONTROL LOG MAINTENANCE NOTES**
- 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.
 - WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 - 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 1/2 OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
 - SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION/COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BAGS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, Jefferson COUNTY, COLORADO, DOUGLAS COUNTY, COLORADO, AND CITY OF AURORA, 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.

Silt Fence (SF) SC-1



SILT FENCE



SECTION A

SF-1. SILT FENCE

SC-1 Silt Fence (SF)

- SILT FENCE INSTALLATION NOTES**
- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONING. 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 PONING 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 "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTOR SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
 - 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.
 - 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.
 - 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 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.
 - WHERE BMPs 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 BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
 - 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 AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
 - WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDING AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAIL 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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REVISION DESCRIPTION
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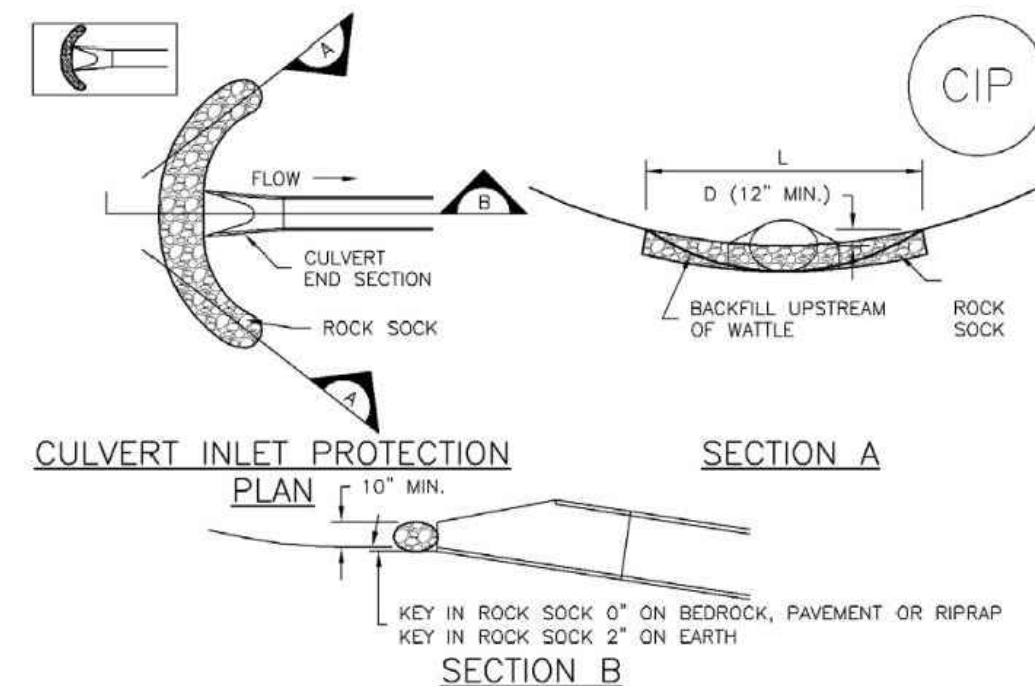


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DRAWN BY: MHT/JGJ
CHECKED BY: KJC
JOB #: 1051.9e
DATE: MARCH 2023
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WOODMOOR WSD NO. 1
WELL NO. 22
EL PASO COUNTY, COLORADO
EROSION CONTROL DETAILS

Inlet Protection (IP)

SC-6



CIP-1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR -LOCATION OF CULVERT INLET PROTECTION.
2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET 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. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS $\frac{1}{2}$ THE HEIGHT OF THE ROCK SOCK.
5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

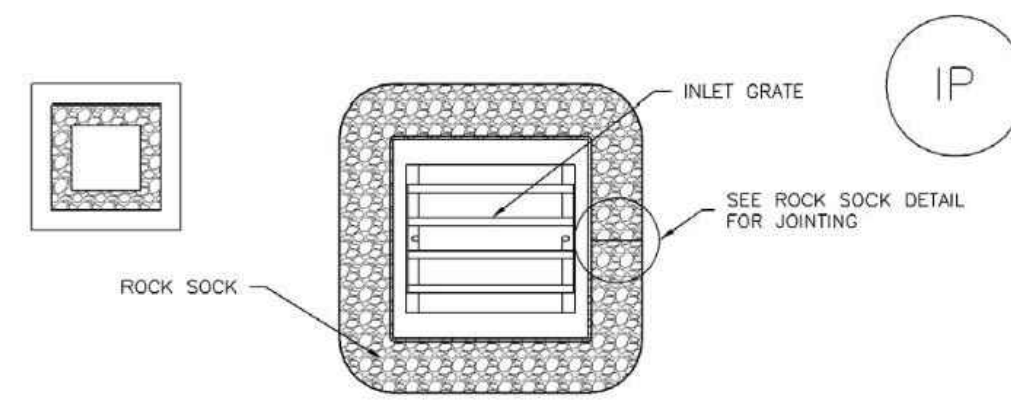
(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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.

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-7

Inlet Protection (IP)

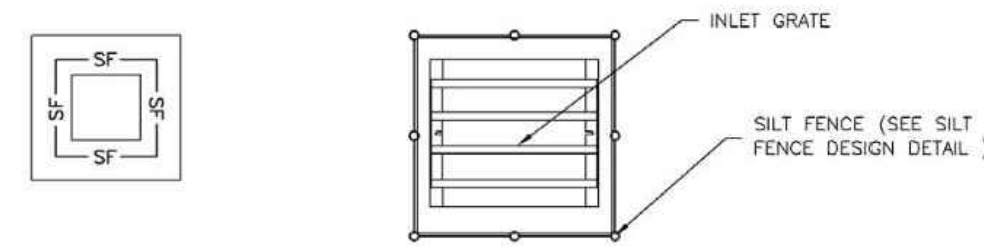
SC-6



IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION

ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES

1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PEROUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



IP-4. SILT FENCE FOR SUMP INLET PROTECTION

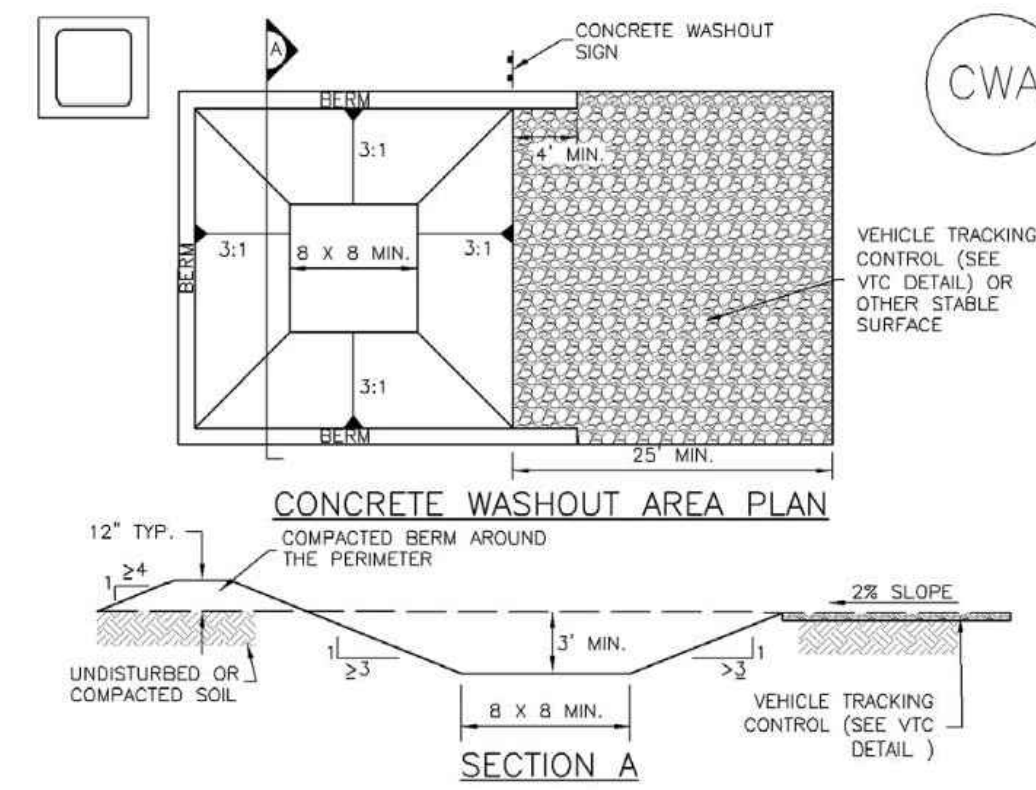
SILT FENCE INLET PROTECTION INSTALLATION NOTES

1. SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
3. STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PEROUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-5

Concrete Washout Area (CWA)

MM-1



CWA-1. CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR: -CWA INSTALLATION LOCATION.
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER THE PIT SHALL BE AT LEAST 3' DEEP.
5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP TRUCKS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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

SC-6

Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR: -LOCATION OF INLET PROTECTION. -TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)
2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
3. 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.

INLET 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. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR $\frac{1}{2}$ OF THE HEIGHT FOR STRAW BALES.
5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, 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.

NOTE: THE DETAILS INCLUDED WITH THIS SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION. HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMM AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

IP-8 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 August 2013

MM-1

Concrete Washout Area (CWA)

CWA MAINTENANCE NOTES

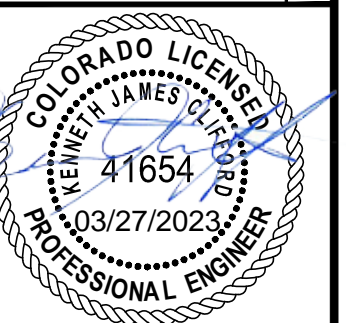
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS 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. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEEDED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF 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.

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

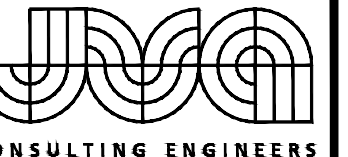
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DRAWN BY: MHT/JGJ
CHECKED BY: KJC
JOB #: 1051.9e
DATE: MARCH 2023
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WOODMOOR WSD NO. 1
WELL NO. 22
EL PASO COUNTY, COLORADO
EROSION CONTROL DETAILS

SHEET NO.
CE1.3



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 Denver, CO 80202 303.444.1951
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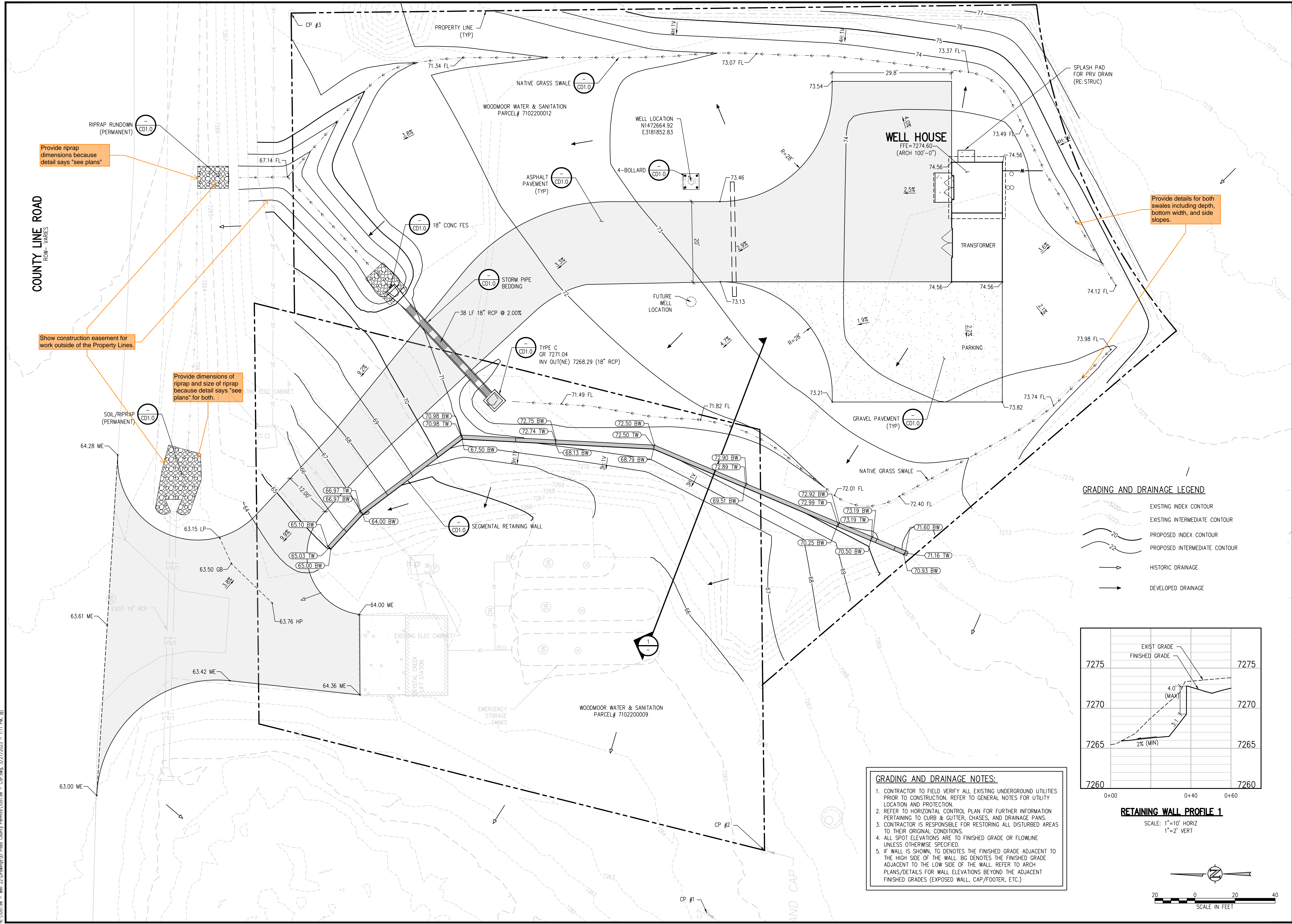
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 CHECKED BY: KJC
 JOB #: 1051.9e
 DATE: MARCH 2023
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WOODMOOR WSD NO. 1
 WELL NO. 22
 EL PASO COUNTY, COLORADO
 GRADING AND DRAINAGE PLAN

SHEET NO.
C1.0



Provide riprap dimensions because detail says "see plans"

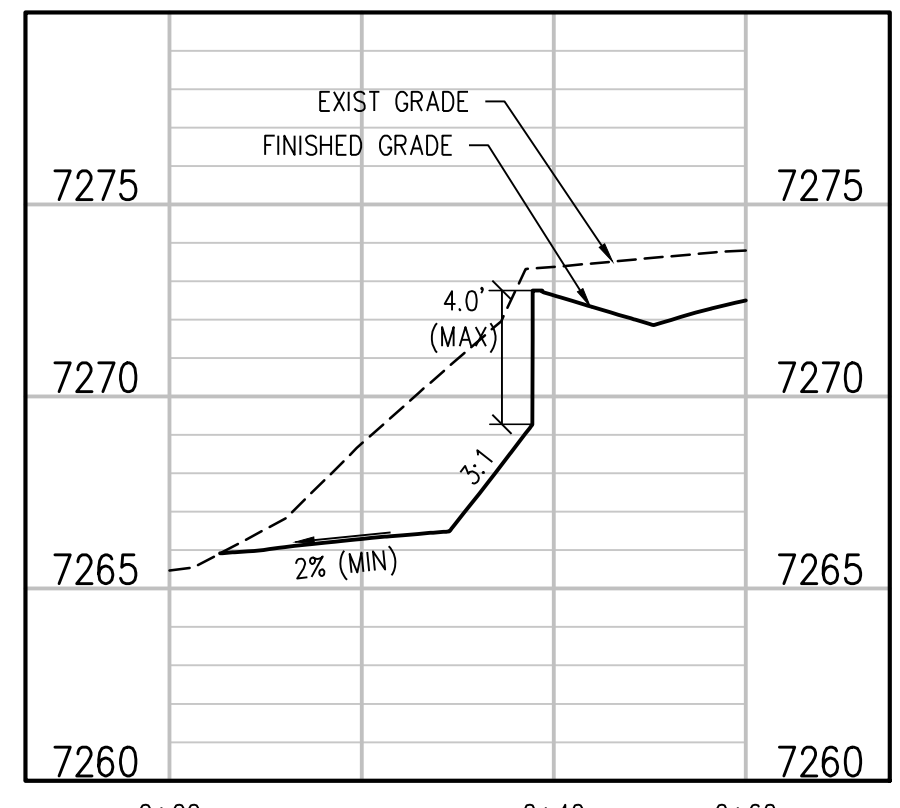
Show construction easement for work outside of the Property Lines.

Provide dimensions of riprap and size of riprap because detail says "see plans" for both.

Provide details for both swales including depth, bottom width, and side slopes.

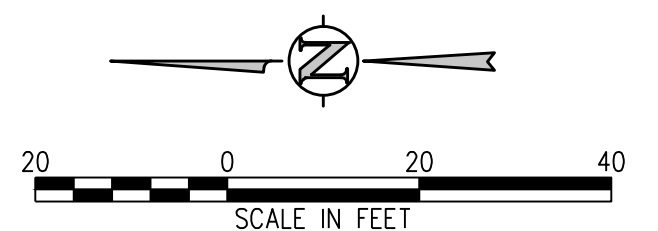
GRADING AND DRAINAGE LEGEND

- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- HISTORIC DRAINAGE
- DEVELOPED DRAINAGE



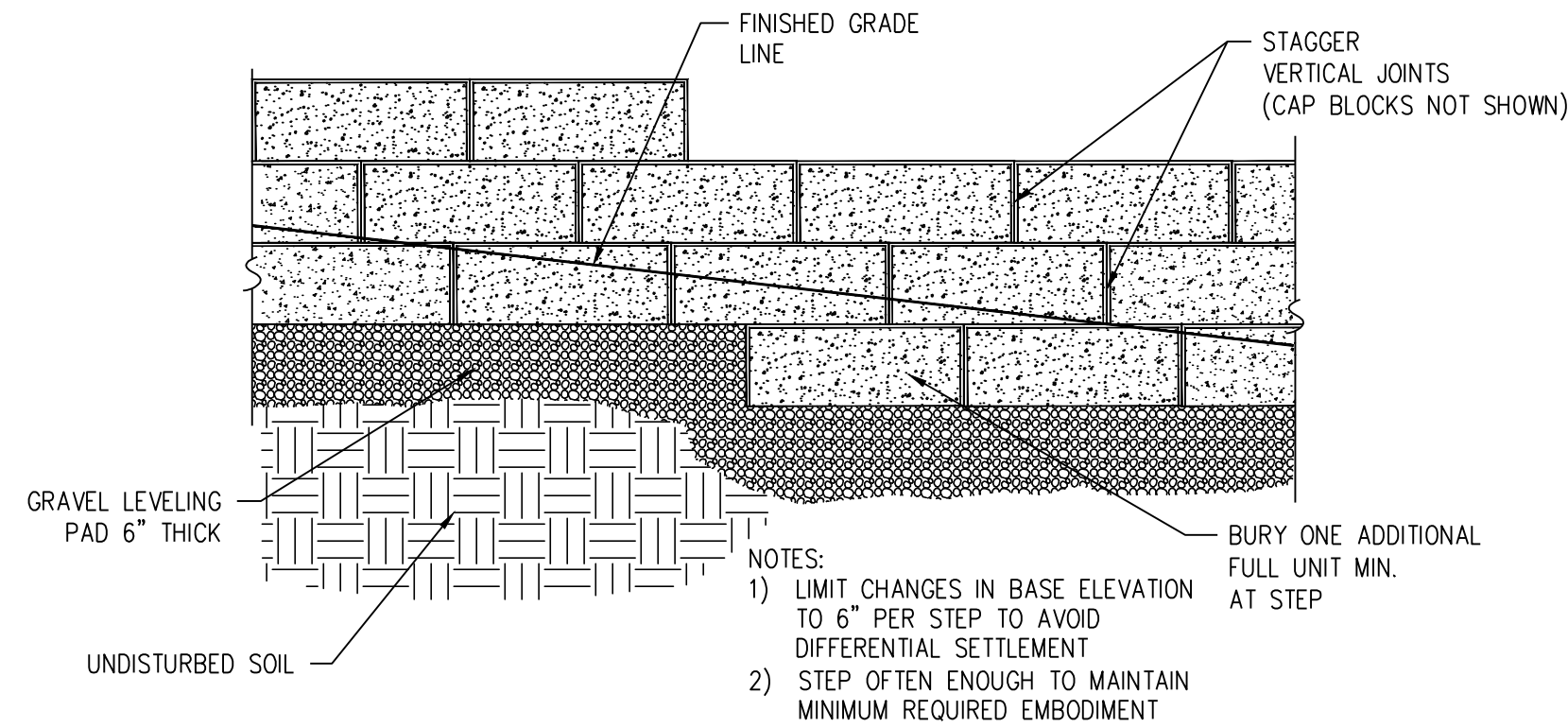
RETAINING WALL PROFILE 1

SCALE: 1"=10' HORIZ
 1"=2' VERT



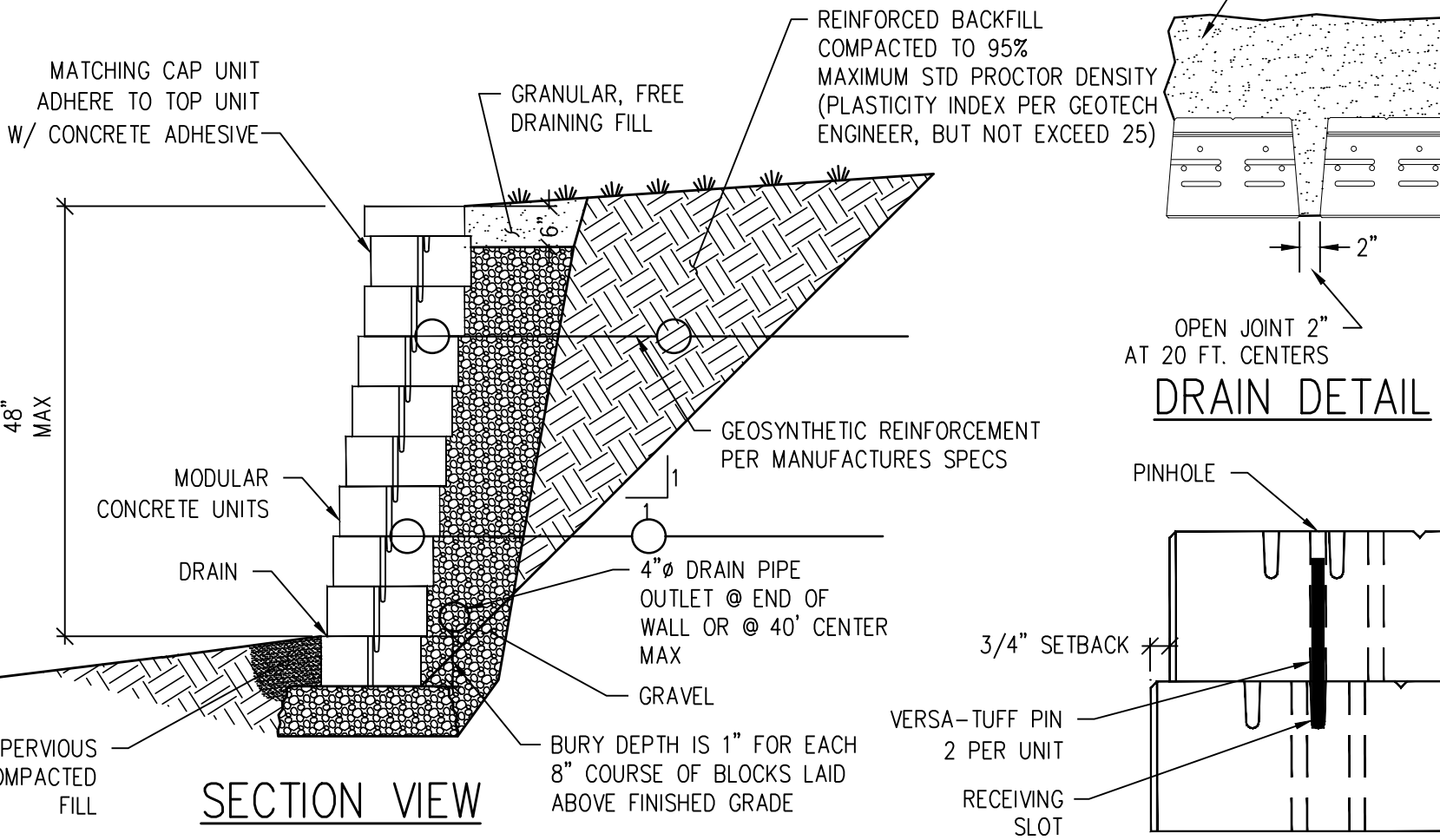
- GRADING AND DRAINAGE NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. REFER TO GENERAL NOTES FOR UTILITY LOCATION AND PROTECTION.
 - REFER TO HORIZONTAL CONTROL PLAN FOR FURTHER INFORMATION PERTAINING TO CURB & GUTTER, CHASES, AND DRAINAGE PANS.
 - CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITIONS.
 - ALL SPOT ELEVATIONS ARE TO FINISHED GRADE OR FLOWLINE UNLESS OTHERWISE SPECIFIED.
 - IF WALL IS SHOWN, TG DENOTES THE FINISHED GRADE ADJACENT TO THE HIGH SIDE OF THE WALL. BG DENOTES THE FINISHED GRADE ADJACENT TO THE LOW SIDE OF THE WALL. REFER TO ARCH PLANS/DETAILS FOR WALL ELEVATIONS BEYOND THE ADJACENT FINISHED GRADES (EXPOSED WALL, CAP/FOOTER, ETC.)

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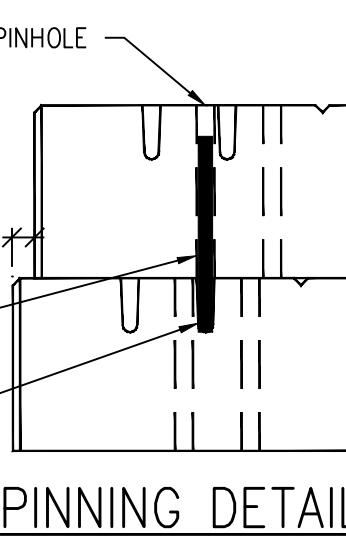


STEPPING BASE DETAIL

NOTES:
 1) LIMIT CHANGES IN BASE ELEVATION TO 6" PER STEP TO AVOID DIFFERENTIAL SETTLEMENT
 2) STEP OFTEN ENOUGH TO MAINTAIN MINIMUM REQUIRED EMBODMENT



DRAIN DETAIL



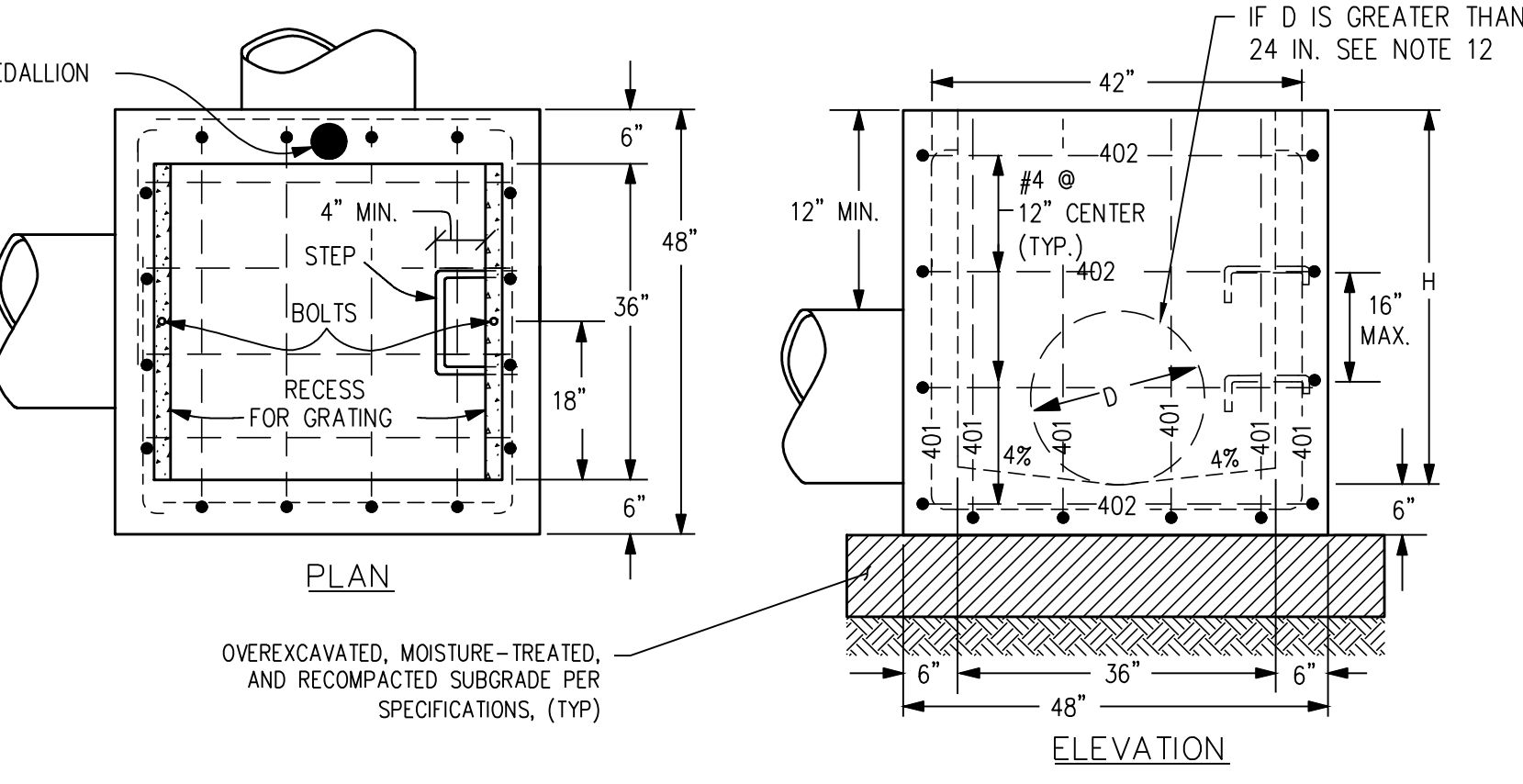
PINNING DETAIL

NOTES:

1. THE ABOVE DETAILS ARE GENERAL WALL LAYOUT & QUALITY INFORMATION. CONTRACTOR TO REVIEW AND FOLLOW ALL OF BLOCK MANUFACTURER'S DESIGN, SUBMITTAL AND INSTALLATION REQUIREMENTS.
2. BLOCKS TO BE VERSA-LOCK "STANDARD" SPLIT FACE OR ACCEPTED. BLOCK COLORS TO BE SUBMITTED FOR APPROVAL.
3. SUBMIT FINAL BLOCK COLOR AND TEXTURE SAMPLE TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
4. BACKFILL TO HAVE MAX PLASTICITY INDEX OF 25.
5. ALL RETAINING WALLS (OR ADDITION OF MULTIPLE TIERED WALLS) THAT EXCEED A FOUR FOOT HEIGHT OR INCLUDE A SURCHARGE LOAD WILL REQUIRE A BUILDING PERMIT PRIOR TO OBTAINING A PUBLIC WORKS PERMIT.

SEGMENTAL RETAINING WALL

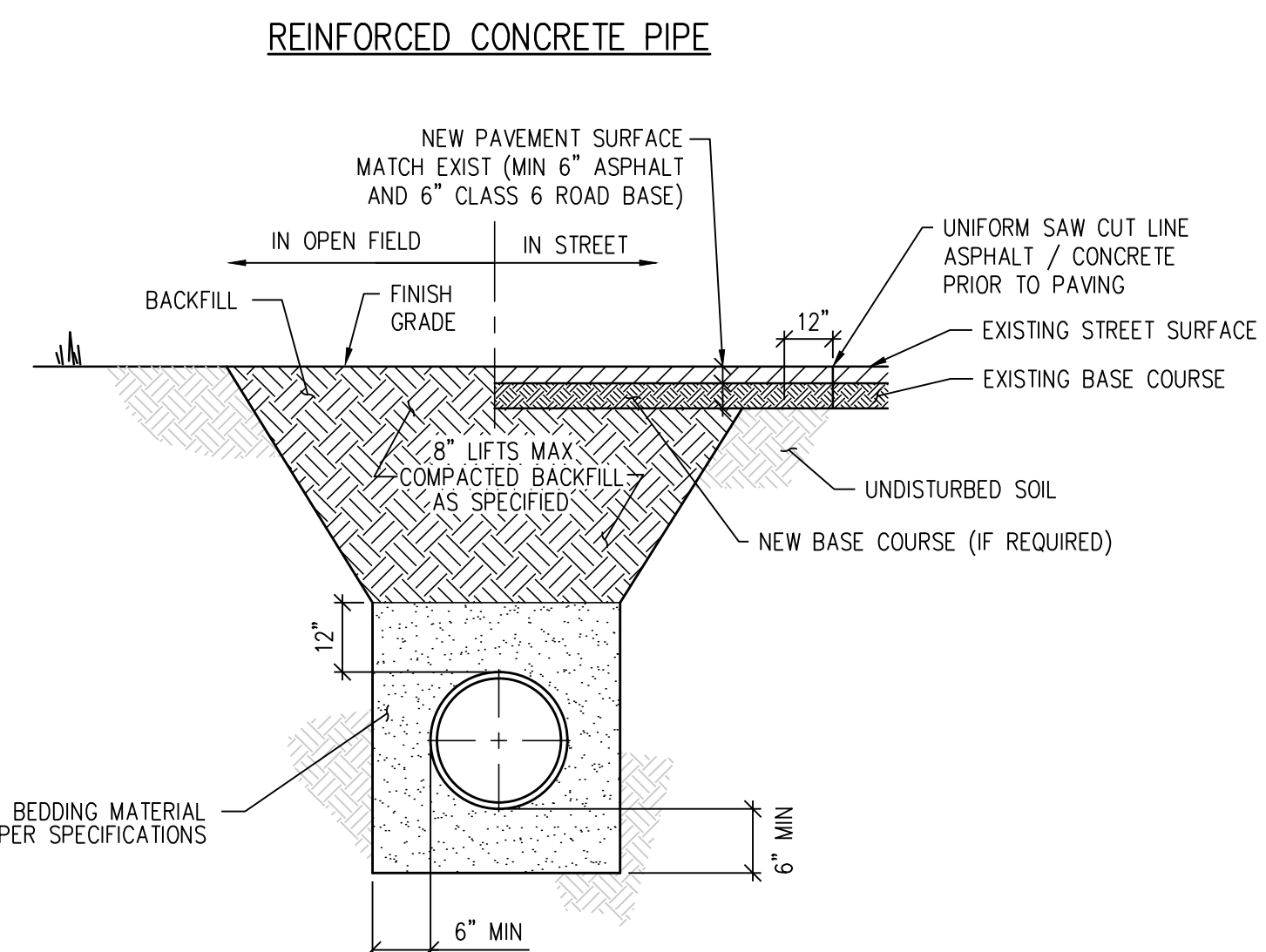
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TYPE C INLET DETAIL

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- NOTES:**
1. INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
 2. CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
 3. REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4, AND SHALL HAVE A MINIMUM 2 IN. CLEARANCE. CUT OR BEND AROUND PIPES AS REQUIRED.
 4. CONCRETE SLOPE AND DITCH PAVING SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6 X 6 - W1.4 X W1.4 OR 6 X 6 - W2.1 X W2.1.
 5. STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
 6. THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
 7. CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
 8. STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT. - 6 IN., AND SHALL CONFORM TO AASHTO M 199.
 9. ALL INLETS SHALL HAVE A 4 IN. DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.
 10. SEE PLANS FOR SIZE AND LOCATION OF PIPE.
 11. FOR FULL DETAIL INCLUDING BAR LIST, DIMENSIONS AND QTY. TABLE, SEE CDOT DETAIL M-604-10
 12. ALL CONNECTED PIPES WITH A DIAMETER (D) GREATER THAN 24" AND/OR ENTERING AT AN ANGLE GREATER THAN 80° A CUSTOM CONC BOX MUST BE CONSTRUCTED. CONTRACTOR TO COORDINATE BOX DIMENSIONS AND SPECS WITH MANUFACTURER.

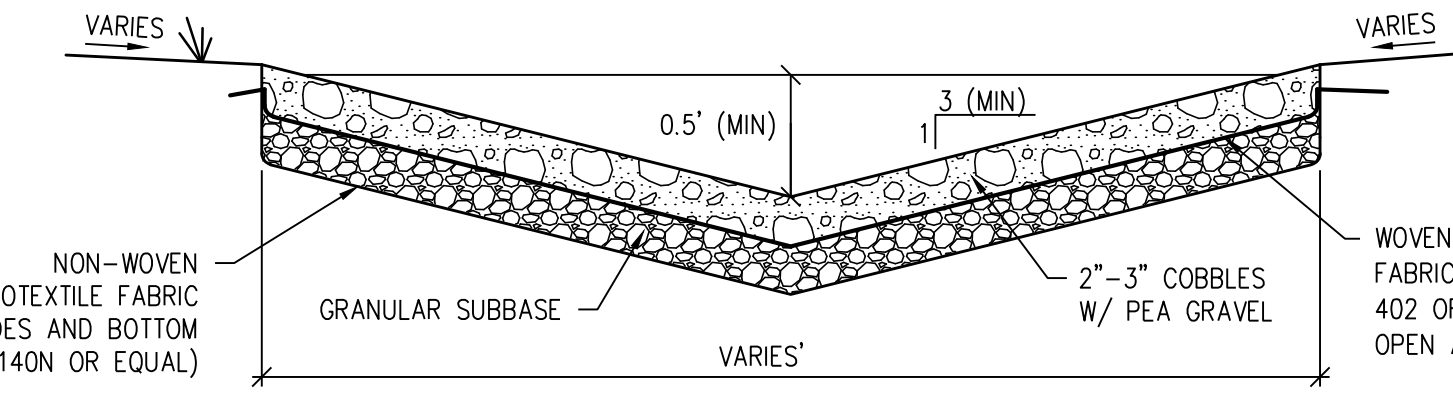


CMP/PVC/HDPE PIPE (SEE PLANS FOR MATERIAL)

- NOTES:**
1. IF UNSTABLE MATERIALS ARE FOUND IN TRENCH, OVEREXCAVATED PER SPECIFICATIONS OR AS REQUIRED.
 2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKERS AND THE PROTECTION OF OTHER UTILITIES.
 3. MINIMUM COVER IS 18" BELOW FINISHED GRADE.

STORM SEWER PIPE BEDDING DETAIL

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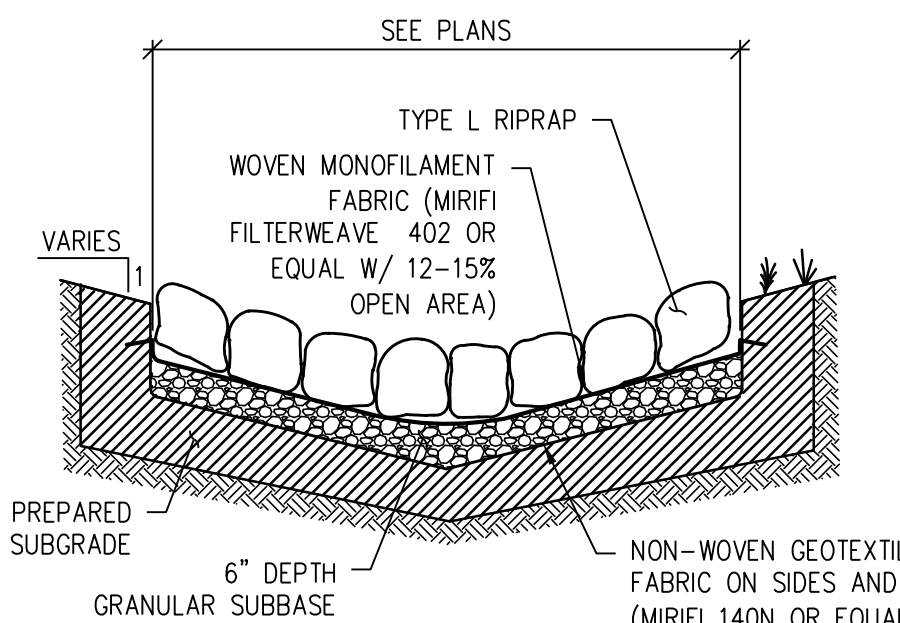
LOW GRADIENT WATER QUALITY INFILTRATION SWALE

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- NOTES:**
1. GRANULAR SUBBASE SHALL MEET AASHTO No. 4 COARSE AGGREGATE (WASHED 3/4" - 1-1/2" GRAVEL). COBBLES SHALL BE 2"-3" AVERAGE DIAMETER. PEA GRAVEL SHALL MEET CDOT CLASS B FILTER MATERIAL.
 2. MAINTENANCE REQUIREMENTS:
 - a) NONIRRIGATED NATIVE GRASS AT 6 TO 8 INCHES TALL. COLLECT CUTTINGS AND DISPOSE OF THEM OFFSITE OR USE A MULCHING MOWER.
 - b) AS NEEDED BY INSPECTION, REMOVE ALL COLLECTED DEBRIS AND LITTER. KEEP THE AREA CLEAN FOR AESTHETIC REASONS, WHICH ALSO REDUCES FLOATABLES BEING FLUSHED DOWNSTREAM. REPAIR SWALE IF DAMAGED AFTER STORM EVENTS
 - c) ANNUALLY CHECK THE SWALE FOR RIPRAP PLACEMENT, COBBLE LAYER COVERAGE, AND SEDIMENT ACCUMULATED IN SWALE AND NEAR INLETS AND FLARED END SECTIONS.
 - d) ROUTINELY REMOVE ACCUMULATED SEDIMENT NEAR CULVERTS AND WITHIN THE CHANNEL TO MAINTAIN FLOW CAPACITY. REPLACE THE GRASS AREAS DAMAGED IN THE PROCESS. PERIODICALLY REPAIR AND REVEGETATE ERODED AREAS IN THE CHANNELS DUE TO HIGH FLOWS.
 - e) WHEN THE WATER IN THE SWALE FAILS TO INFILTRATE DUE TO HIGH SEDIMENT DEPOSITS IN THE COBBLE/PEA GRAVEL LAYER, REMOVE CLEAN AND STOCKPILE THE COBBLE/PEA GRAVEL LAYER.
 3. REMOVE AND REPLACE THE WORN GEO FABRIC LAYER IF NECESSARY, REPLACE THE CLEANED COBBLE/PEA GRAVEL LAYER.

TYPE L RIPRAP RUNDOWN DETAIL

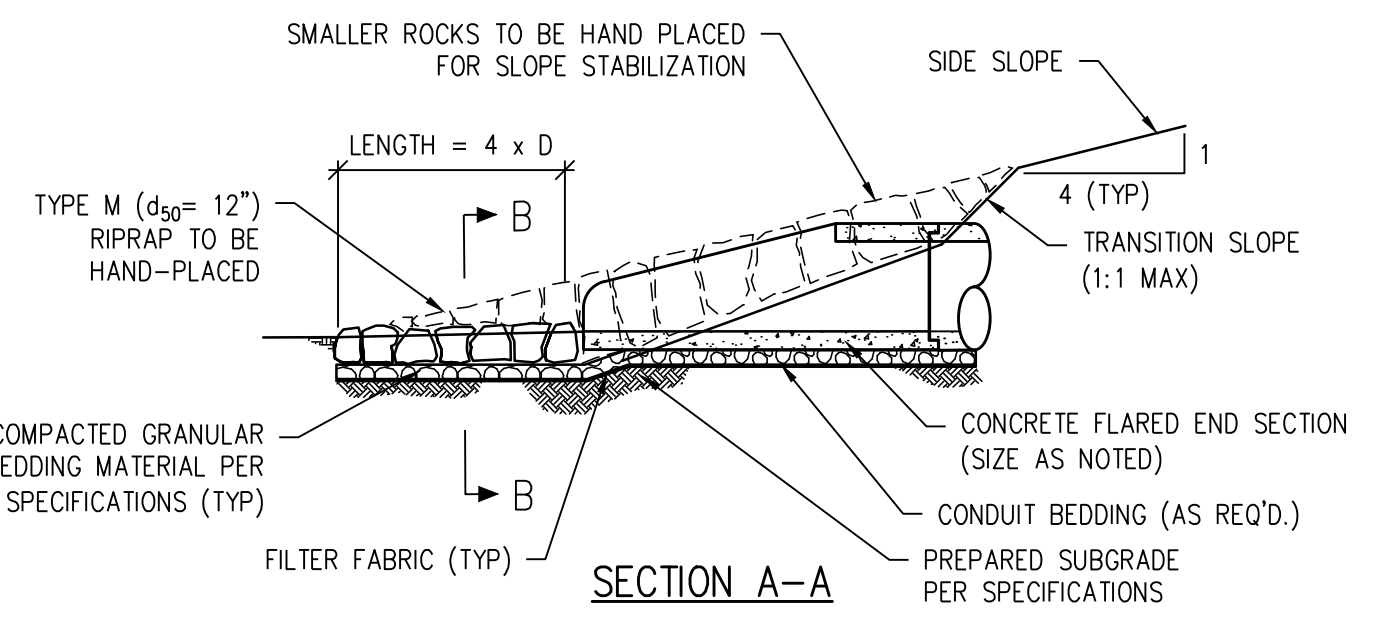
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GRAVEL SECTION DETAIL

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- NOTES:**
1. GRANULAR SUBBASE SHALL MEET AASHTO No. 4 COARSE AGGREGATE (WASHED 3/4" - 1-1/2" GRAVEL). RIPRAP SHALL BE TYPE L.
 2. COMPACT SUBGRADE PER SPECIFICATIONS.

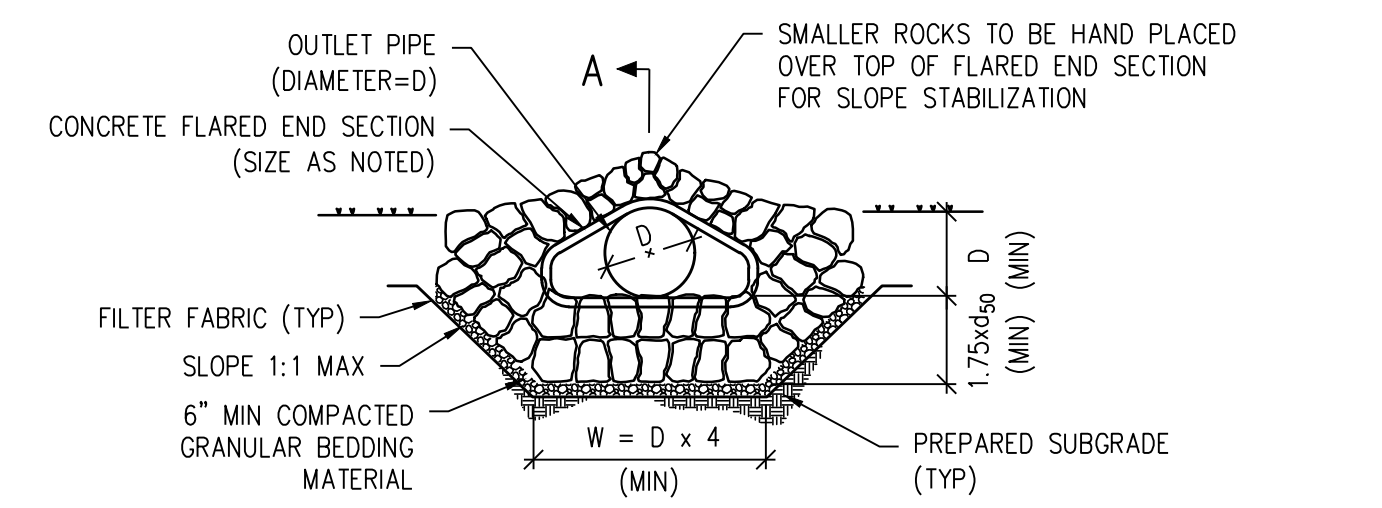


STORM SEWER FLARED END SECTION DETAIL



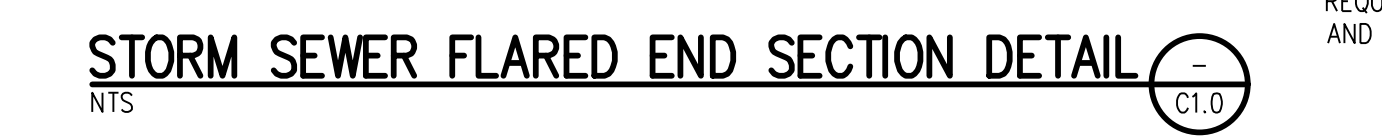
STORM SEWER FLARED END SECTION DETAIL

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STORM SEWER FLARED END SECTION DETAIL

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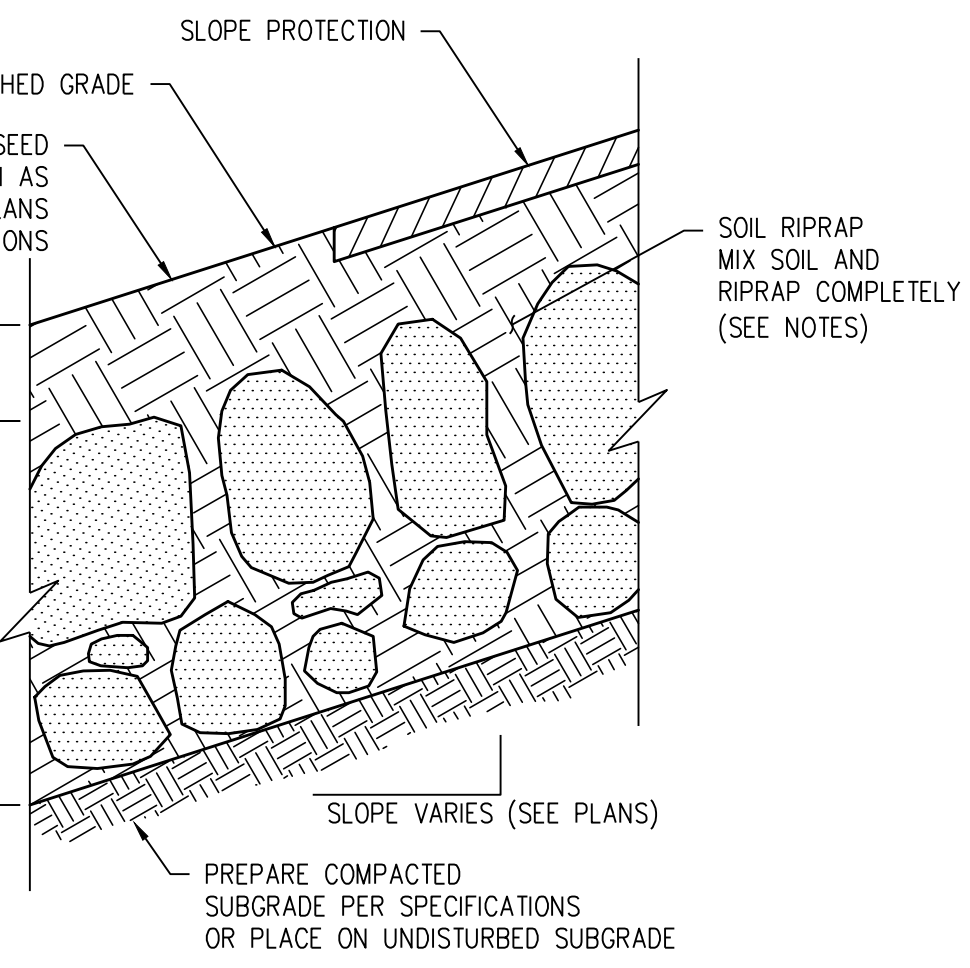
FULL DEPTH ASPHALT PAVEMENT SECTION DETAIL

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GRAVEL SECTION DETAIL

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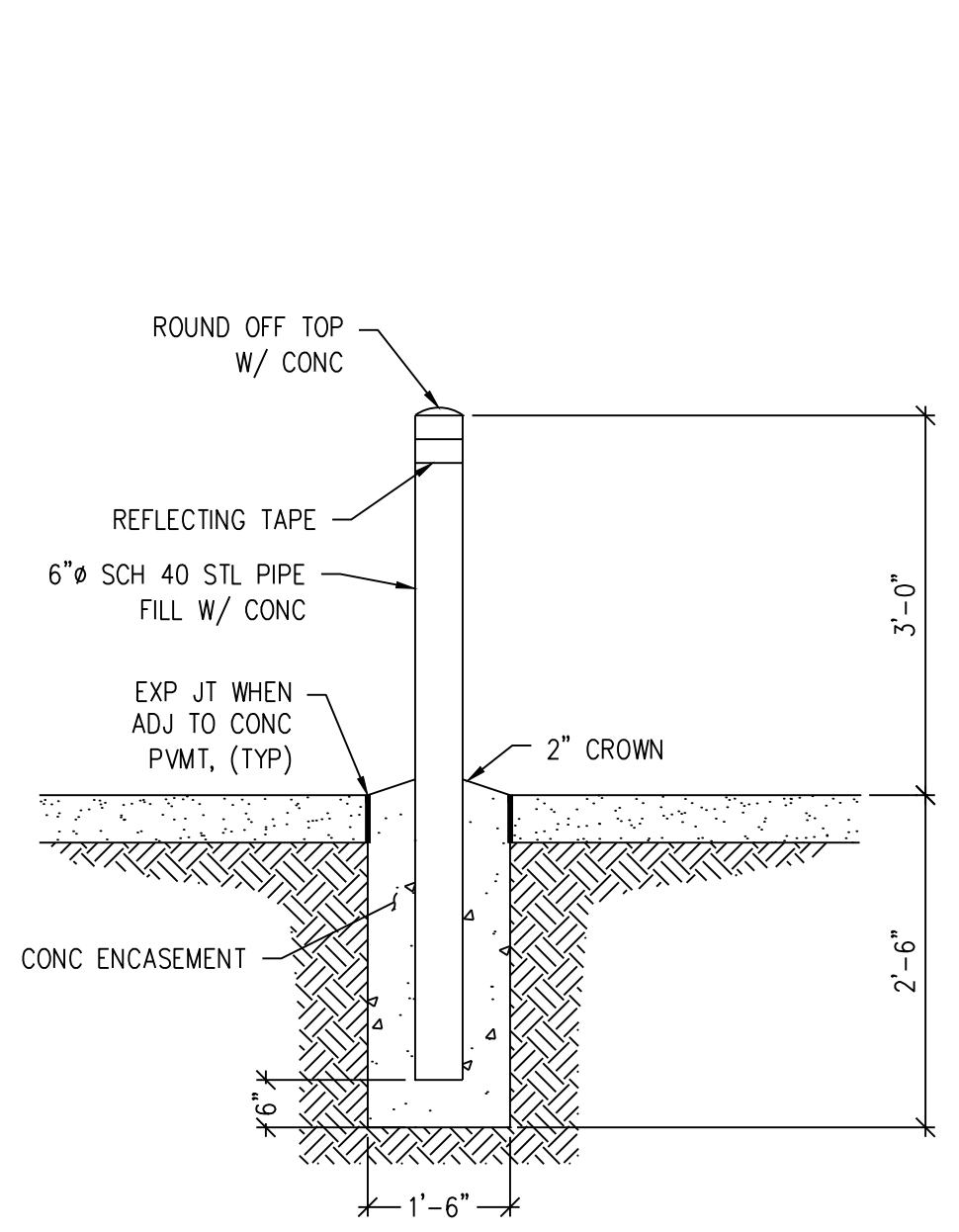
SOIL/RIPRAP DETAIL

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- NOTES:**
1. SOIL RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREAS. REFER TO THE SITE PLAN ACTUAL LOCATION AND LIMITS.
 2. MIX UNIFORM ALLY 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL BY VOLUME PRIOR TO PLACEMENT.
 3. PLACE STONE-SOIL MIX TO RESULT IN SECURELY INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE. COMPACT AND LEVEL TO ELIMINATE ALL VOIDS AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
 4. CRIMP OR TACKIFY MULCH OR USE APPROVED HYDROMULCH AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
 5. D50 = AVERAGE DIAMETER OF PLAN-SPECIFIED RIPRAP

BOLLARD DETAIL

NTS



BOLLARD DETAIL

NTS

NO.	DATE	DESIGNED	DWNN



DESIGNED BY: JGJ
 DRAWN BY: JGJ
 CHECKED BY: KJC
 JOB #: 1051.9e
 DATE: MARCH 2023
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WOODMOOR WSD NO. 1
 WELL NO. 22
 EL PASO COUNTY, COLORADO

CIVIL DETAILS

SHEET NO. CD1.0

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