VENTURE ON VENETUCCI

GRADING AND EROSION CONTROL PLAN

LOCATED IN THE SOUTH HALF OF SECTION 4,
TOWNSHIP 15 SOUTH, RANGE 66 WEST OF THE 6TH P.M.
COUNTY OF EL PASO, STATE OF COLORADO

Add text:
EPC EDARP Filing #: PPR2444 & SF2431

LEGAL DESCRIPTION

COMMENCING AT THE SOUTHEAST QUARTER OF SAID SECTION 4, AS MONUMENTED BY A RECOVERED 2-1/2" ALUMINUM CAP, 0.1 FEET ABOVE GRADE, STAMPED "ASC 1999 PLS 28651", WHENCE THE EAST QUARTER CORNER OF SAID SECTION 4, AS MONUMENTED BY A RECOVERED 2-1/2" ALUMINUM CAP IN RANGE BOX, STAMPED "ASC 1999 PLS 28651, BEARS N 01°01'43" W, FOR A DISTANCE OF 2633.35 FEET, SAID LINE FORMING THE BASIS OF BEARINGS FOR THIS DESCRIPTION;

THENCE N 73°56'11" W, A DISTANCE OF 2734.78 FEET TO THE NORTHEAST CORNER OF LOT 1, SOUTH ACADEMY HIGHLANDS FILING NO. 4 AS RECORDED AT RECEPTION NO. 222714970 IN THE RECORDS OF EL PASO COUNTY, SAID POINT BEING THE POINT OF BEGINNING;

THENCE COINCIDENT WITH THE NORTH LINE AND EXTENSION THEREOF OF SAID LOT 1 THE FOLLOWING THREE (3) COURSES:

1) S 89°29'47" W, A DISTANCE OF 62.20 FEET;

2) ALONG A TANGENT CURVE TO THE LEFT WITH A CENTRAL ANGLE OF 35°30'48", A RADIUS OF 238.00 FEET, AN ARC LENGTH OF 147.52 FEET; AND A CHORD BEARING AND DISTANCE OF S 71°44'24" W, 145.17 FEET;

3) S 53°58'59" W, A DISTANCE OF 190.82 FEET;

THENCE N 36°03'36" W, A DISTANCE OF 155.64 FEET;

THENCE N 21°58'50" W, A DISTANCE OF 272.69 FEET;

THENCE N 02°31'59" W, A DISTANCE OF 127.26 FEET;

THENCE N 21°58'47" W, A DISTANCE OF 284.99 FEET;

THENCE N 08°14'28" W, A DISTANCE OF 450.13 FEET;

THENCE N 18°57'10" E, A DISTANCE OF 224.76 FEET;

THENCE N 68°01'13" E, A DISTANCE OF 452.74 FEET TO A POINT ON THE WEST LINE OF TRACT B, SOUTH ACADEMY HIGHLANDS FILING NO. 2 AS RECORDED AT RECEPTION NO. 216713726 IN SAID RECORDS;

THENCE COINCIDENT WITH SAID WEST LINE THE FOLLOWING TWO (2) COURSES:

1) S 05°08'13" W, A DISTANCE OF 273.60 FEET;

2) ALONG A TANGENT CURVE TO THE LEFT WITH A CENTRAL ANGLE OF 27°13'21", A RADIUS OF 605.00 FEET, AN ARC LENGTH OF 287.45 FEET; AND A CHORD BEARING AND DISTANCE OF S 08°28'27" E, 284.75 FEET TO A POINT ON THE WEST LINE OF TRACT A, SOUTH ACADEMY HIGHLANDS FILING NO. 1 AS RECORDED AT RECEPTION NO. 214713425 IN SAID RECORDS;

THENCE COINCIDENT WITH THE WEST LINE OF SAID TRACT A AND EXTENSION THEREOF S 22°05'08" E, A DISTANCE OF 501.71 FEET TO A POINT ON THE WEST LINE OF VENETUCCI BOULEVARD AS DEDICATED IN SAID SOUTH ACADEMY HIGHLANDS FILING NO. 1;

THENCE COINCIDENT WITH SAID WEST LINE THE FOLLOWING FOUR (4) COURSES:

1) ALONG A TANGENT CURVE TO THE RIGHT WITH A CENTRAL ANGLE OF 21°34'55", A RADIUS OF 560.00 FEET, AN ARC LENGTH OF 210.94 FEET; AND A CHORD BEARING AND DISTANCE OF S 11°17'40" E, 209.69 FEET;

2) S 00°30'10" E, A DISTANCE OF 51.78 FEET;

3) S 89°29'47" W, A DISTANCE OF 17.00 FEET;

4) S 00°30'13" E, A DISTANCE OF 162.77 FEET TO THE POINT OF BEGINNING.

CONTAINING A CALCULATED AREA OF 706,978 SQUARE FEET OR 16.2300 ACRES, MORE OR LESS.

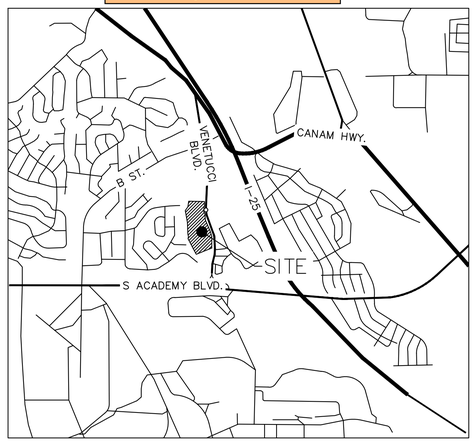
AGENCY CONTACTS:

STRATMOOR HILLS FIRE DISTRICT
2160 B ST.
COLORADO SPRINGS, CO 80906
PHONE: (719) 576-1200
CONTACT: MARK STANWOOD

STRATMOOR HILS WATER AND SANITATION DISTRICTS
1811 B ST.
COLORADO SPRINGS, CO 80906
PHONE: (719) 210-5295
CONTACT: KIRK MEDINA

PIKES PEAK REGIONAL BUILDING DEPT.
2880 INTERNATIONAL CIRCLE,
COLORADO SPRINGS, CO 80910
PHONE: (719) 327-2880

PLANNING AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE,
COLORADO SPRINGS, CO 80910
PHONE: (719) 520-7952
CONTACT: SCOTT WEEKS, P.E.



VICINITY MAP

GRAPHIC SCALE IN FEET
0 1000 2000 4000

NORTH

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
C002	GEC COVER SHEET
C300	GEC GENERAL NOTES
C301	GEC INITIAL PLAN
C302	GEC INTERIM PLAN
C303	GEC FINAL PLAN
C304	GEC DETAILS
C305	GEC DETAILS
C306	GEC DETAILS
C307	GEC DETAILS

DESIGN TEAM CONTACTS:

OWNER/DEVELOPER
THOMPSON THRIFT DEVELOPMENT, INC.
111 MONUMENT CIRCLE, SUITE 1500,
INDIANAPOLIS, IN 46204
TEL: (336) 609-2131
CONTACT: DONALD DUNGU

CIVIL ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.
6200 SOUTH SYRACUSE WAY, SUITE 300
GREENWOOD VILLAGE, CO 80111
PHONE: (303) 228-2300
CONTACT: MICHAEL HART, P.E.

SURVEYOR
KIMLEY-HORN AND ASSOCIATES, INC.
6200 SOUTH SYRACUSE WAY, SUITE 300
GREENWOOD VILLAGE, CO 80111
PHONE: (303) 228-2300
CONTACT: DARREN WOLTERSTORFF, P.L.S.

ARCHITECT
STUDIO M
275 VETERANS WAY, SUITE 200
CARMEL, IN 46032
PHONE: (317) 810-1502
CONTACT: NICK ALEXANDER, AIA, LEED AP

LANDSCAPE ARCHITECT
N.E.S. INC.
619 N. CASCADE AVENUE, SUITE 200
COLORADO SPRINGS, CO 80903
TEL: (719) 471-0073
CONTACT: JORDAN SMITH

LAND AREA:

TOTAL PROPERTY AREA: ±16.23

BENCHMARK:

ELEVATIONS ARE BASED UPON MONUMENT FH12, A 3-1/4" ALUMINUM CAP IN RANGE BOX IN THE MEDIAN OF THE PARKING LOT AT MARY KYER PARK, COLORADO SPRINGS, COLORADO. (ELEVATION = 6745.47 NAVD 88)

FLOOD ZONE DESIGNATION:

FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, MAP NUMBER 08041C0743G, EFFECTIVE DATE DECEMBER 07, 2018, INDICATES THIS PARCEL OF LAND TO BE LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).

SITE INFORMATION:

TIMING:
ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING:
START: FALL 2025
END: SPRING 2026

EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETE:
FALL 2027

AREAS:
TOTAL DISTURBED AREA: 16.44 ACRES

RECEIVING WATERS:
NAME OF RECEIVING WATERS: FISHER'S CANYON CREEK

DESCRIPTION OF EXISTING VEGETATION:
THE EXISTING SITE IS CURRENTLY UNDEVELOPED AND GROUND COVER CONSISTS OF 100% WEEDS, BRUSH, GRASSES, AND VEGETATIVE SWALES.

DESCRIPTION OF PERMANENT BMPS:
FULL SPECTRUM EXTENDED DETENTION BASIN

SOILS INFORMATION:
100% HYDROLOGIC SOIL GROUP A

OWNER'S STATEMENT

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

THOMPSON THRIFT DEVELOPMENT, INC.
OWNER SIGNATURE DATE

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.

MICHAEL HART, PE – KIMLEY-HORN AND ASSOCIATES, INC. 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 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. DATE

revise to: Joshua Palmer

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

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
6200 South Syracuse Way, Suite 300
Greenwood Village, Colorado 80111 (303) 228-2300

DESIGNED BY: MTH
DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/12/2024

VENTURE ON VENETUCCI
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLAN
GEC COVER SHEET

PROJECT NO.
096302017

SHEET
C002

K:\DEN_Civil\096302017_Venetucci Multi-Family\CADD\PlanSheets\GEC\096302017 - GEC_CV.dwg Rankin, Cormac 11/14/2024 11:55 AM

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 OFF SITE 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, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) 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.
4. ONCE THE ESQCP HAS BEEN 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.
5. 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.
6. 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.
7. 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.
8. 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 PLAN 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.
9. 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.
10. 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 A WATERS OF THE STATE, UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
11. 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 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 MEASURE(S).
12. 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.
13. 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 WASHOUT 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.
14. 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.
15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE COSNTRUCTION 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.
17. 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.
18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
19. 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.
20. 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.
21. 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.
22. BULK STORAGE OF 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 FACILITIES.
23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
24. OWNER/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.
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
26. PRIOR TO CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
27. 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.
28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY INTERTEK PSI, DATED 10/11/2024 AND SHALL BE CONSIDERED A PART OF THESE PLANS.
29. 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

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

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY-HORN AND ASSOCIATES, INC.
6200 South Syracuse Way, Suite 300
Greenwood Village, Colorado 80111 (303) 228-2300

DESIGNED BY: MTH
DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/12/2024

VENTURE ON VENETUCCI
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLAN

GEC GENERAL NOTES

PROJECT NO.
096302017

SHEET
C300

provide a detail for this riprap

Per my comment on Sheet 7 below, revise these to 75ft long.

Also, show some means of funneling traffic from site onto VTC to exit the site, so that the bulk of the VTC isn't bypassed. Consider lining edges of VTC with something like silt fence, construction fence, safety fence, etc.

OWNER: UTW ACADEMY DEVELOPMENT LLC
LOT 1
SOUTH ACADEMY HIGHLANDS FILING NO. 2
REC. 216713726

PRIVATE DRIVE

OWNER: SAMS REAL EST. BUSINESS TRUST
LOT 1
SOUTH ACADEMY HIGHLANDS FILING NO. 1
REC. 214713425

OWNER: UTW ACADEMY DEVELOPMENT LLC
LOT 4
SOUTH ACADEMY HIGHLANDS FILING NO. 1
REC. 214713425

OWNER: SAMS REAL EST. BUSINESS TRUST
LOT 1
SOUTH ACADEMY HIGHLANDS FILING NO. 1
REC. 214713425

VENETUCCI BLVD.
CITY OF FOUNTAIN
JURISDICTIONAL BOUNDARY

TOP OF SEDIMENT BASIN
BOTTOM OF SEDIMENT BASIN
172.0'
112.0'
5860
5865
5870
5875
5880
5885

PROPERTY LINE (TYP.)

26.0'
15" CONCRETE CULVERT

PROPERTY LINE (TYP.)

PROPERTY LINE (TYP.)

26.0'
12" CONCRETE CULVERT

Check dams in DS to be installed a minimum of every 1.5' of vertical fall. Notate spacing and/or include a table for multiple slopes, based on your selected detail, per the example table shown below.

SEDIMENT BASIN
REQ. VOLUME = 1.04 AC-FT
PROVIDED VOLUME = 1.37 AC-FT
TOP ELEV: 5864
BOTTOM ELEV: 5860
SEDIMENT CLEAN OUT LEVEL ELEV: 5861.79
RISER PIPE INVERT: 5861.29
4:1 SLOPES
SPILLWAY CREST WIDTH: 60'
SPILLWAY CREST LENGTH: 10'
RIPRAP GRADATION: TYPE L
HOLE DIAMETER: 1.7"

30.0' PERMANENT PUBLIC UTILITY EASEMENT BY SEPARATE DOCUMENT

This DS will need to continue following the ~5865 contour (as I've shown in red) in order to be conveyed downhill into the pond. The current path has the DS flowing uphill into the pond.

26.0' PERMANENT ACCESS EASEMENT BY SEPARATE DOCUMENT

PROPERTY LINE (TYP.)

PRIVATE DRIVE

OWNER: CFT NV DEVELOPMENTS LLC
LOT 1
SOUTH ACADEMY HIGHLANDS FILING NO. 4
REC. 222714970

30.0' PERMANENT PUBLIC UTILITY EASEMENT BY SEPARATE DOCUMENT

OWNER: FRG PROPERTIES LLC
LOT 2
SOUTH ACADEMY HIGHLANDS FILING NO. 4
REC. 222714970

FISHER'S CANYON CREEK

provide a detail for this riprap

UNPLATTED

PROPERTY LINE (TYP.)

UNPLATTED

LEGEND

- PROPERTY LINE
- LOC LIMITS OF CONSTRUCTION/DISTURBANCE
- SF SILT FENCE
- CF CONSTRUCTION FENCE
- TOP TEMPORARY OUTLET PROTECTION
- IP INLET/OUTLET PROTECTION
- CWA CONCRETE WASHOUT AREA
- SSA STABILIZED STAGING AREA
- ECB EROSION CONTROL BLANKET
- VTC VEHICLE TRACKING CONTROL
- SS SOIL STOCKPILE
- SB TEMPORARY SEDIMENT BASIN
- SM SEEDING AND MULCHING
- CD CHECK DAM
- DS DIVERSION SWALE
- RS ROCK SOCKS
- SS STREET SWEEPING
- EXISTING FLOW ARROW
- XXXX EXISTING MINOR CONTOUR
- XXXX EXISTING MAJOR CONTOUR
- XXXX PROPOSED MAJOR CONTOUR
- XXXX PROPOSED MINOR CONTOUR

NOTES

1. THE INTENT OF THIS PLAN IS TO IDENTIFY THE EROSION CONTROL PRACTICES RECOMMENDED. THE CONTRACTOR SHALL REFERENCE ADDITIONAL CONSTRUCTION PLANS FOR DEMOLITION OF EXISTING AND CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. ADJACENT STREETS SHALL BE KEPT CLEAN AND FREE OF SEDIMENT AND/OR DEBRIS AT ALL TIMES.
3. TEMPORARY STABILIZATION (TS) SHALL BE IMPLEMENTED WITHIN THE DISTURBED PORTIONS OF THE PROJECT SITE NO LATER THAN 14 DAYS FOLLOWING THE CEASE OF CONSTRUCTION ACTIVITIES WITHIN THE DISTURBED AREAS.
4. PERMANENT STABILIZATION (PS) MAY BE USED WITHIN AREAS OF TEMPORARY STABILIZATION (TS) AT THE CONTRACTOR'S DISCRETION. STABILIZATION SHALL BE APPLIED IN ACCORDANCE WITH APPLICABLE TEMPORARY STABILIZATION SEQUENCING REQUIREMENTS.
5. CONTRACTOR SHALL UTILIZE ROLLED EROSION CONTROL PRODUCTS ON ALL SLOPES 3H:1V OR GREATER TO ACHIEVE REQUIRED STABILIZATION.
6. CONTRACTOR SHALL MAINTAIN ACCEPTABLE EROSION CONTROL PRACTICES WITHIN THE ANTICIPATED LIMITS OF CONSTRUCTION IDENTIFIED HEREIN. BEST MANAGEMENT PRACTICES AND STABILIZATION SHALL BE COMPLETED AS IDENTIFIED HEREIN IN ACCORDANCE WITHIN OWNER REQUIREMENTS.
7. ALL WORK IN THE VENETUCCI BLVD. ROW REQUIRES A ROW PERMIT FROM EL PASO COUNTY. CONTRACTOR IS RESPONSIBLE FOR APPLYING FOR AND OBTAINING ALL NECESSARY ROW PERMITS.
8. SILT FENCE TO BE INSTALLED PRIOR TO COMMENCEMENT OF ONSITE GRADING AND CONSTRUCTION ACTIVITIES.
9. DEMOLITION, REMOVAL, OVEREXCAVATION AND SOIL TREATMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER RECOMMENDATIONS AS NOTED IN THE APPROVED PROJECT GEOTECHNICAL REPORT.
10. SEE THIS SHEET FOR RISER PIPE AND SEDIMENT BASIN DETAILS.
11. EXISTING SITE CONSISTS OF NATIVE WEEDS, BRUSH, GRASSES, AND VEGETATIVE SWALES.

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

Temporary Sediment Basin Design Summary

BASIN NAME	TRIBUTARY AREA (AC)	REQUIRED VOLUME (AC-FT)	PROVIDED VOLUME (AC-FT)	WATER SURFACE ELEVATION (FT)	BASIN TOP ELEVATION (FT)	BASIN BOTTOM ELEVATION (FT)	SPILLWAY CREST LENGTH (FT)
A	12.58	1.04	1.04	5863.23	5864.00	5860.00	50.00

Temporary Pipe Outfall Design Summary

BASIN NAME	100% STORAGE ELEVATION (RISER TOP) (FT)	50% STORAGE ELEVATION (CENTER OF BOTTOM HOLE) (FT)	HOLE DIAMETER (IN)	NUMBER OF COLUMNS	NUMBER OF ROWS	UPSTREAM INVERT OF PIPE OUTFALL (FT)	DOWNSTREAM INVERT OF PIPE OUTFALL (FT)
A	5863.23	5861.79	1.7	1	3	5861.29	5828.58

LIMITS OF CONSTRUCTION

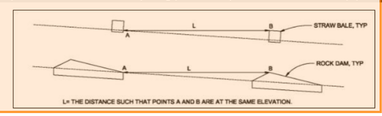
TOTAL DISTURBANCE	= ±16.23 ACRES
OFFSITE DISTURBANCE	= ±0.21 ACRES
TOTAL	= ±16.44 ACRES

GEC Checklist Item O. Public Offsite Grading: Label as offsite grading, to be approved by the El Paso County (or other entity). Just a note. I see your Note #7 to the left.

Space temporary check dams in ditches per the following table:

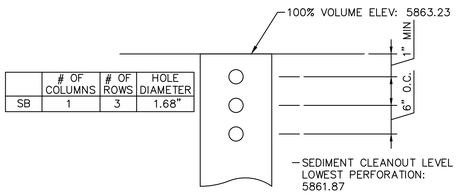
Slope of Ditch Flow Line	2%	3%	4%	5%	6%	Reference	Type
Spacing (ft) (H = 0.5ft)	25	16.7	12.5	10	8.3	CDOT, MHFD, DCMv2	SCL (9" Straw Wattle, buried 3")
Spacing (ft) (H = 1.5ft)	75	50	37.5	30	25	MHFD	Rock
Spacing (ft) (H = 2.0ft)	100	67	50	40	33	CDOT	Rock
Spacing (ft) (H = to convey 2-yr flow)	TBD	TBD	TBD	TBD	TBD	DCMv2	Rock

Typical profile view of check dam spacing (for all except DCMv2 rock check req's):



Earthwork Summary

Cut	Fill	Net
107,498 Cu. Yd.	65,192 Cu. Yd.	42,306 Cu. Yd.<Cut>



	# OF COLUMNS	# OF ROWS	HOLE DIAMETER
SB	1	3	1.68"

RISER PIPE DETAIL
(NTS)

NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

NO.	REVISION	BY	DATE	APPR.

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Greenwood Village, Colorado 80111 (303) 228-2300

DESIGNED BY: MTH
DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/05/2024

VENETUCCI MULTIFAMILY
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLANS
GEC INITIAL PLAN

PROJECT NO. 0963020187

SHEET C301

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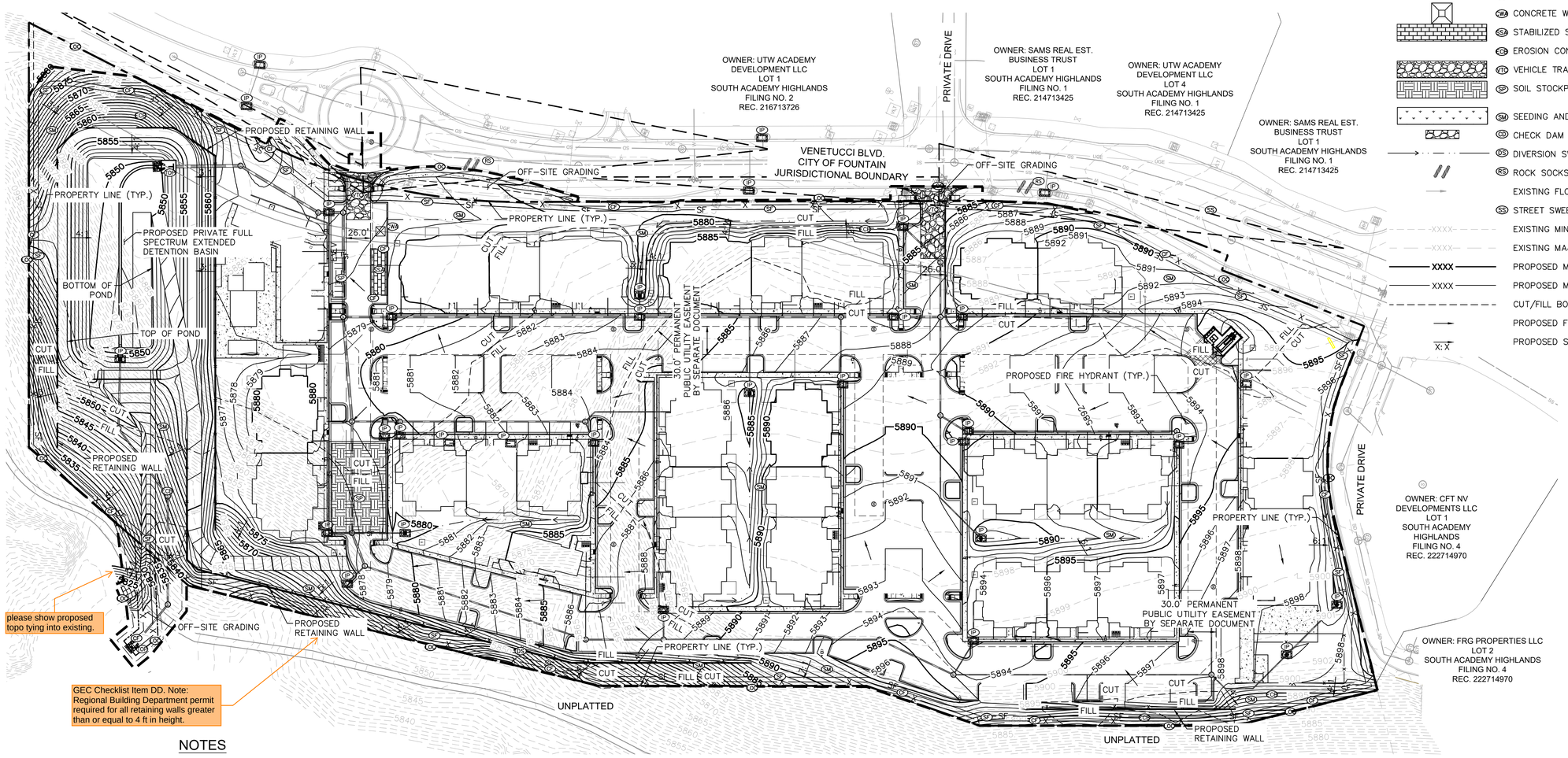

LEGEND

- PROPERTY LINE
- (LOC) LIMITS OF CONSTRUCTION/DISTURBANCE
- (SF) SILT FENCE
- (CF) CONSTRUCTION FENCE
- (TOP) TEMPORARY OUTLET PROTECTION
- (IP) INLET/OUTLET PROTECTION
- (WW) CONCRETE WASHOUT AREA
- (SSA) STABILIZED STAGING AREA
- (ECB) EROSION CONTROL BLANKET
- (VTC) VEHICLE TRACKING CONTROL
- (SS) SOIL STOCKPILE
- (SM) SEEDING AND MULCHING
- (CD) CHECK DAM
- (DS) DIVERSION SWALE
- (RS) ROCK SOCKS
- EXISTING FLOW ARROW
- (SS) STREET SWEEPING
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- CUT/FILL BOUNDARY
- PROPOSED FLOW ARROW
- PROPOSED SLOPE ARROW

NOTES

1. THE INTENT OF THIS PLAN IS TO IDENTIFY THE EROSION CONTROL PRACTICES RECOMMENDED. THE CONTRACTOR SHALL REFERENCE ADDITIONAL CONSTRUCTION PLANS FOR DEMOLITION OF EXISTING AND CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. ADJACENT STREETS SHALL BE KEPT CLEAN AND FREE OF SEDIMENT AND/OR DEBRIS AT ALL TIMES.
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Know what's **below.** **Call** before you dig.

LIMITS OF CONSTRUCTION

TOTAL DISTURBANCE	= ±16.23 ACRES
OFFSITE DISTURBANCE	= ±0.21 ACRES
TOTAL	= ±16.44 ACRES

Earthwork Summary

Cut	Fill	Net
107,498 Cu. Yd.	65,192 Cu. Yd.	42,306 Cu. Yd.<Cut>

NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

NO.	REVISION	BY	DATE	APPR.

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DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/05/2024

VENETUCCI MULTIFAMILY
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLANS

GEC INTERIM PLAN

PROJECT NO.
0963020187

SHEET
C302

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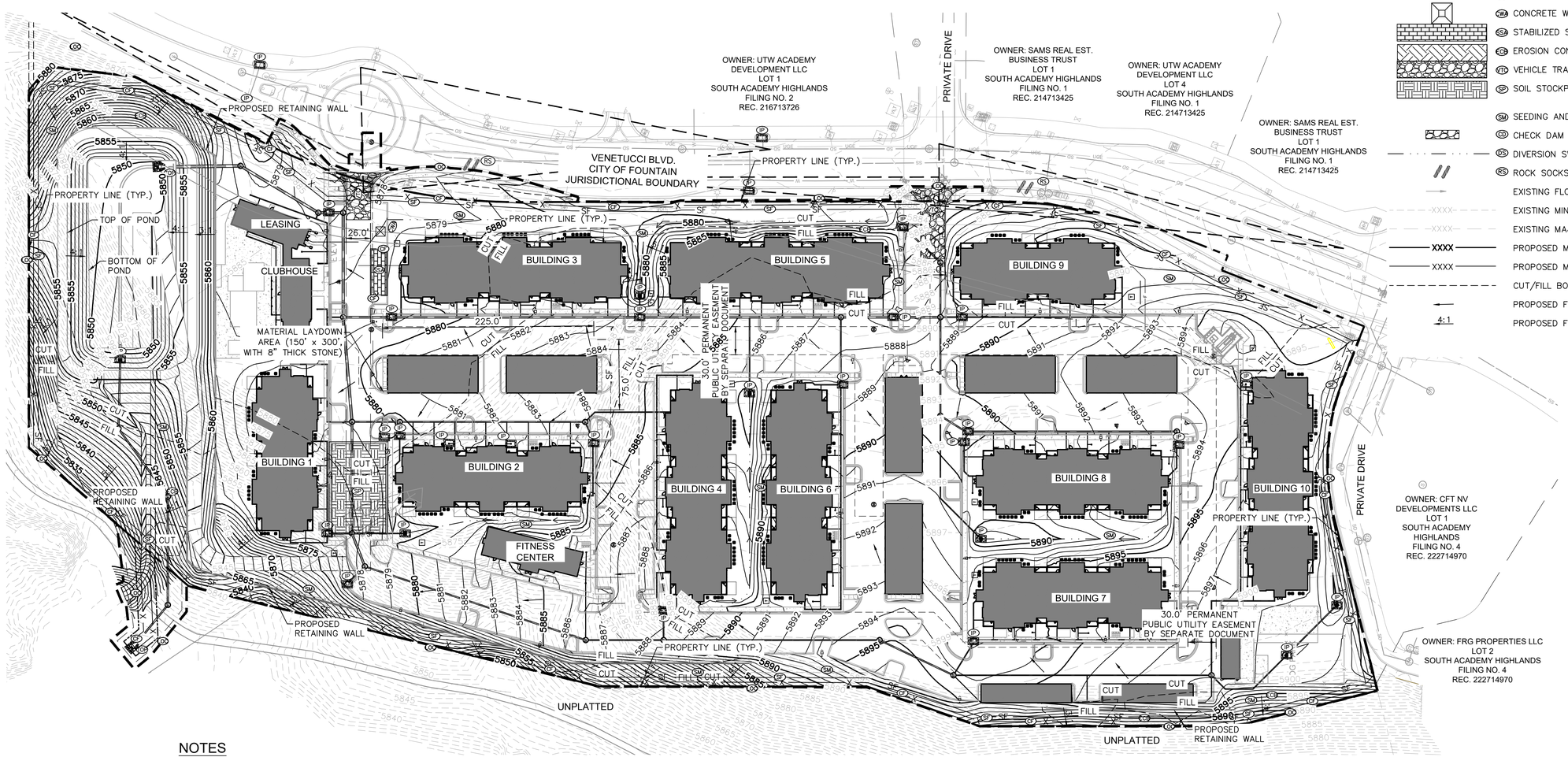

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- (SF) SILT FENCE
- (CF) CONSTRUCTION FENCE
- (TOP) TEMPORARY OUTLET PROTECTION
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- (SM) SEEDING AND MULCHING
- (CD) CHECK DAM
- (DS) DIVERSION SWALE
- (RS) ROCK SOCKS
- EXISTING FLOW ARROW
- XXXX EXISTING MINOR CONTOUR
- XXXX EXISTING MAJOR CONTOUR
- XXXX PROPOSED MAJOR CONTOUR
- XXXX PROPOSED MINOR CONTOUR
- CUT/FILL BOUNDARY
- PROPOSED FLOW ARROW
- 4:1 PROPOSED FLOW ARROW WITH RUN: RISE

NOTES

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Cut	Fill	Net
107,498 Cu. Yd.	65,192 Cu. Yd.	42,306 Cu. Yd.<Cut>

NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

NO.	REVISION	BY	DATE	APPR.

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6200 South Syracuse Way, Suite 300
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DESIGNED BY: MTH
DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/05/2024

VENETUCCI MULTIFAMILY
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLANS

GEC FINAL PLAN

PROJECT NO.
0963020187

SHEET
C303

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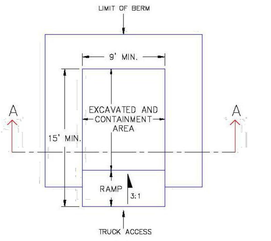
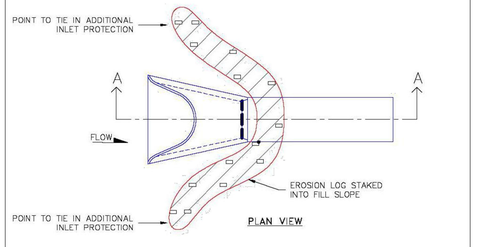
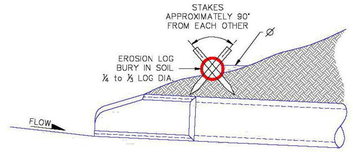


NOTES:
1. SIGN MATERIAL, EXCAVATION, AND RESTORATION ARE INCLUDED IN THE COST OF THE CONCRETE WASHOUT STRUCTURE.
2. EROSION BALES MAY BE USED AS AN ALTERNATIVE FOR THE BERM.

1/1/08 DATE APPROVED: John A. McCarty DEPARTMENT OF TRANSPORTATION	Concrete Washout Structure Standard Drawing REVISION DATE: 7/17/07	FILE NAME: SD_3-84



NOTE:
Ø REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE HALF OF EXPOSED LOG HEIGHT. INSPECTIONS SHALL BE PERFORMED FREQUENTLY FOR PROPER FUNCTION.

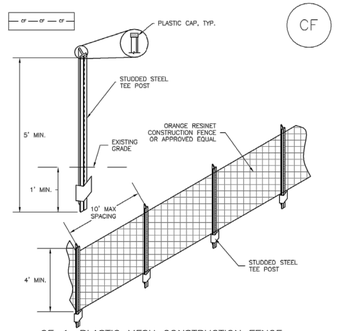


EROSION PROTECTION ABOVE CULVERT OUTLETS IS SIMILAR

EROSION LOGS SHOULD BE KEYED IN TO PREVENT UNDER-CUTTING

1/1/08 DATE APPROVED: John A. McCarty DEPARTMENT OF TRANSPORTATION	Culvert Inlet and Outlet Protection Erosion Logs Above Inlets and Outlets For Slopes 3:1 or Steeper Standard Drawing REVISION DATE: 7/17/07	FILE NAME: SD_3-86

SM-3 Construction Fence (CF)

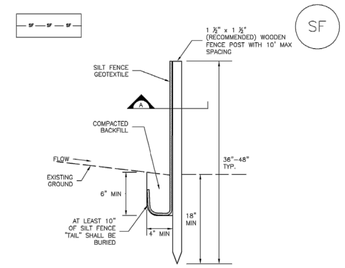


CF-1, PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

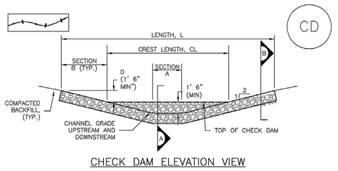
1. SEE PLAN VIEW FOR:
   -LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

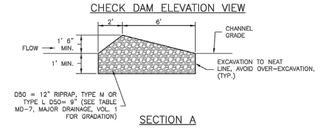
Silt Fence (SF) SC-1

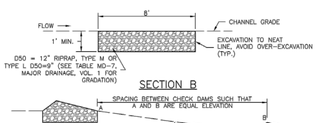


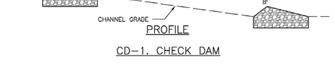
SF-1, SILT FENCE

Check Dams (CD) EC-12



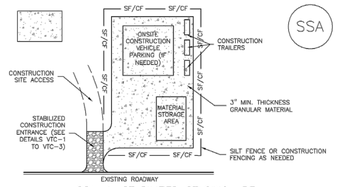






CD-1, CHECK DAM

Stabilized Staging Area (SSA) SM-6



SSA-1, STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF STAGING AREA(S).
   -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. §703, AASHTO §3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA 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. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

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DESIGNED BY: MTH
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DATE: 11/12/2024

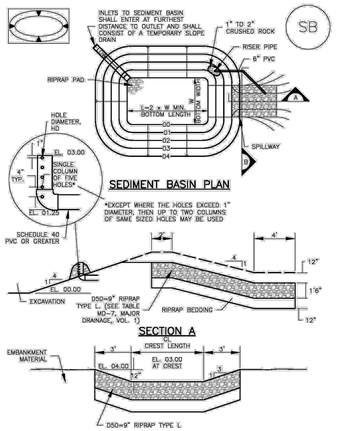
VENTURE ON VENETUCCI
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLAN

GEC DETAILS

PROJECT NO. 096302017

SHEET C304

Sediment Basin (SB) SC-7



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

SC-7 Sediment Basin (SB)

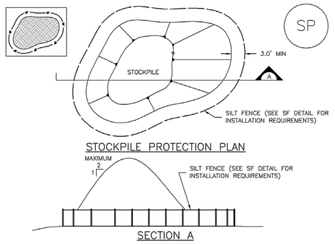
TABLE SB-1. SIZING INFORMATION FOR STANDARD SEDIMENT BASIN			
Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (HD), (in)
1	12 ½	2	9/32
2	21	3	13/32
3	28	5	1/2
4	33 ½	6	9/16
5	38 ½	8	17/32
6	43	9	19/32
7	47 ¼	11	21/32
8	51	12	23/32
9	55	13	3/4
10	58 ¾	15	13/16
11	61	16	25/32
12	64	18	7/8
13	67 ½	19	1 1/16
14	70 ½	21	1 1/8
15	73 ¾	22	1 3/16

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF SEDIMENT BASIN.
   –TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
   –FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD.
   –FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE DIAMETER D.
2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND–DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL.
4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.
5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
6. PIPE SCH 40 OR GREATER SHALL BE USED.
7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

SB-6 Urban Drainage and Flood Control District August 2013
Urban Storm Drainage Criteria Manual Volume 3

Stockpile Management (SP) MM-2



SP–1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   –LOCATION OF STOCKPILES.
   –TYPE OF STOCKPILE PROTECTION.
2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROLS AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30–60 DAYS).
4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

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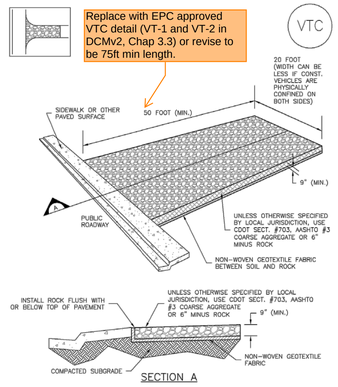
Vehicle Tracking Control (VTC) SM-4

Replace with EPC approved VTC detail (VT-1 and VT-2 in DCMv2, Chap 3.3) or revise to be 75ft min length.



VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

November 2010 Urban Drainage and Flood Control District VTC-3
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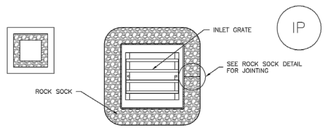
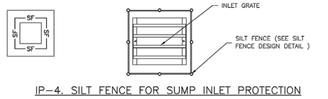
Inlet Protection (IP) SC-6



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 PERVIOUS 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 PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

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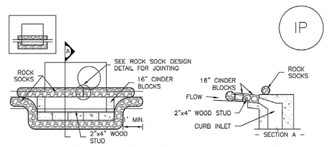
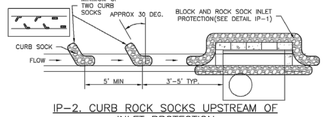
SC-6 Inlet Protection (IP)



IP–1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES
1. SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. CONCRETE "CINDER" BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW, ABUTTING ONE ANOTHER WITH THE OPEN END FACING AWAY FROM THE CURB.
3. GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINTED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.



IP–2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

CURB ROCK SOCK INLET PROTECTION INSTALLATION NOTES
1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE SOCK SHALL BE APPROXIMATELY 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
3. SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5 FEET APART.
4. AT LEAST TWO CURB SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON–GRADE INLETS.

IP–4 Urban Drainage and Flood Control District August 2013
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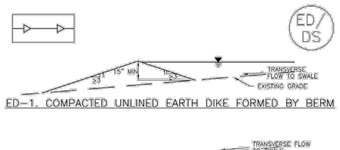
Earth Dikes and Drainage Swales (ED/DS) EC-10



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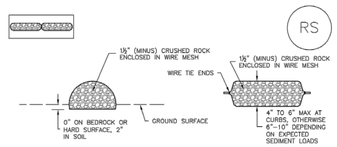
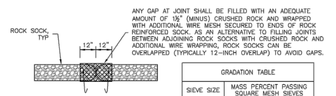
SC-5 Rock Sock (RS)





GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1½"	90 – 100
1"	20 – 55
¾"	0 – 15
⅜"	0 – 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

ROCK SOCK INSTALLATION NOTES
1. SEE PLAN VIEW FOR:
   –LOCATION(S) OF ROCK SOCKS.
2. CRUSHED ROCK SHALL BE 1½" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1½" MINUS).
3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 2", RECOMMENDED MINIMUM ROLL WIDTH OF 48".
4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS–1. ROCK SOCK PERIMETER CONTROL

RS-2 Urban Drainage and Flood Control District November 2010
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NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
2024 KIMLEY–HORN AND ASSOCIATES, INC.
6200 South Syracuse Way, Suite 300
Greenwood Village, Colorado 80111 (303) 228–2300

DESIGNED BY: MTH
DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/12/2024

VENTURE ON VENETUCCI
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLAN

GEC DETAILS

PROJECT NO. 096302017

SHEET C305

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

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

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species[a] (Common name)	Growth Season[b]	Pounds of Pure Live Seed (PLS)/acre[c]	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5–10	½ - ¾
7. Sorghum	Warm	5–10	½ - ¾
8. Winter wheat	Cool	20–35	1 - 2
9. Winter barley	Cool	20–35	1 - 2
10. Winter rye	Cool	20–35	1 - 2
11. Triticale	Cool	25–40	1 - 2

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

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

[b] See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

[c] Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

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

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

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses (cont.)

Common Name	Botanical Name	Growth Season[b]	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Sandy Soil Seed Mix					
Blue grama	*Bouteloua gracilis*	Warm	Sod-forming bunchgrass	825,000	0.5
Camper little bluestem	*Schizachyrium scoparium 'Camper'*	Warm	Bunch	240,000	1.0
Prairie sandreed	*Calamovilfa longifolia*	Warm	Open sod	274,000	1.0
Sand dropseed	*Sporobolus cryptandrus*	Cool	Bunch	5,298,000	0.25
Vaughn sideoats grama	*Bouteloua curtipendula 'Vaughn'*	Warm	Sod	191,000	2.0
Arriba western wheatgrass	*Agropyron smithii 'Arriba'*	Cool	Sod	110,000	5.5
Total					**10.25**
Heavy Clay, Rocky Foothill Seed Mix					
Ephriam crested wheatgrass[d]	*Agropyron cristatum 'Ephriam'*	Cool	Sod	175,000	1.5
Oahe Intermediate wheatgrass	*Agropyron intermedium 'Oahe'*	Cool	Sod	115,000	5.5
Vaughn sideoats grama[e]	*Bouteloua curtipendula 'Vaughn'*	Warm	Sod	191,000	2.0
Lincoln smooth brome	*Bromus inermis leyss 'Lincoln'*	Cool	Sod	130,000	3.0
Arriba western wheatgrass	*Agropyron smithii 'Arriba'*	Cool	Sod	110,000	5.5
Total					**17.5**

[a] All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If hydraulic seeding is used, hydraulic mulching should be done as a separate operation.

[b] See Table TS/PS-3 for seeding dates.

[c] If site is to be irrigated, the transition turf seed rates should be doubled.

[d] Crested wheatgrass should not be used on slopes steeper than 6H to 1V.

[e] Can substitute 0.5 lbs PLS of blue grama for the 2.0 lbs PLS of Vaughn sideoats grama.

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

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

Mulch

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

Maintenance and Removal

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

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

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

Protect seeded areas from construction equipment and vehicle access.

Compost Blanket and Filter Berm (CB) EC-5

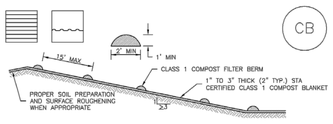

TABLE CB–1. CLASS 1 COMPOST	
PARAMETERS	CHARACTERISTIC
MINIMUM STABILITY INDICATOR	STABLE TO VERY STABLE
SOLUBLE SALTS	MAXIMUM 5 mmhos/cm
PH	6.0 – 8.0
AG INDEX	> 10
MATURITY INDICATOR EXPRESSED AS PERCENTAGE OF GERMINATION/VIGOR	80+/80+
MATURITY INDICATOR EXPRESSED AS AMMONIA N/ NITRATE N RATIO	< 4
MATURITY INDEX AS CARBON TO NITROGEN RATIO	20:1
TESTED FOR CLOPYRALID	YES/NEGATIVE RESULT
MOISTURE CONTENT	30–60%
ORGANIC MATTER CONTENT	25–45% OF DRY WEIGHT
PARTICLE SIZE DISTRIBUTION	3" (75mm) 100% PASSING
PRIMARY, SECONDARY NUTRIENTS; TRACE ELEMENTS	MUST BE REPORTED
TESTING AND TEST REPORT SUBMITTAL REQUIREMENTS	STA + CLOPYRALID
ORGANIC MATTER PER CUBIC YARD	MUST REPORT
CHEMICAL CONTAMINANTS	COMPLY WITH US EPA CLASS A STANDARD, 40 CFR 503.1 TABLES 1 & 3 LEVELS
MINIMUM MANUFACTURING/PRODUCTION REQUIREMENT	FULLY PERMITTED UNDER COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION
RISK FACTOR RELATING TO PLANT GERMINATION AND HEALTH	LOW

CB–1, COMPOST BLANKET AND COMPOST FILTER BERM

COMPOST FILTER BERM AND COMPOST BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF COMPOST FILTER BERM(S).
   –LENGTH OF COMPOST FILTER BERM(S).

2. COMPOST BERMS AND BLANKETS MAY BE USED IN PLACE OF STRAW MULCH OR GEOTEXTILE FABRIC IN AREAS WHERE ACCESS TO LANDSCAPING IS DIFFICULT DUE TO LANDSCAPING OR OTHER OBJECTS OR IN AREAS WHERE A SMOOTH TURF GRASS FINISH IS DESIRED.

3. FILTER BERMS SHALL RUN PARALLEL TO THE CONTOUR.

4. FILTER BERMS SHALL BE A MINIMUM OF 1 FEET HIGH AND 2 FEET WIDE.

5. FILTER BERMS SHALL BE APPLIED BY PNEUMATIC BLOWER OR BY HAND.

6. FILTER BERMS SHALL ONLY BE UTILIZED IN AREAS WHERE SHEET FLOW CONDITIONS PREVAIL AND NOT IN AREAS OF CONCENTRATED FLOW.

7. COMPOST BLANKETS SHALL BE APPLIED AT A DEPTH OF 1 –3 INCHES (TYPICALLY 2 INCHES). FOR AREAS WITH EXISTING VEGETATION THAT ARE TO BE SUPPLEMENTED BY COMPOST, A THIN 0.5–INCH LAYER MAY BE USED.

8. SEEDING SHALL BE PERFORMED PRIOR TO THE APPLICATION OF COMPOST. ALTERNATIVELY, SEED MAY BE COMBINED WITH COMPOST AND BLOWN WITH THE PNEUMATIC BLOWER.

9. WHEN TURF GRASS FINISH IS NOT DESIRED, SURFACE ROUGHENING ON SLOPES SHALL TAKE PLACE PRIOR TO COMPOST APPLICATION.

10. COMPOST SHALL BE A CLASS 1 COMPOST AS DEFINED BY TABLE CB–1.

COMPOST FILTER BERM 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. COMPOST BERMS AND BLANKETS SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RILLING IN THE COMPOST SURFACE OCCURS.

(DETAILS ADAPTED FROM ARAPAHOE COUNTY, 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.

Mulching (MU) EC-4

Description

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary stabilization of areas that cannot be reseeded due to seasonal constraints.

Photograph MU-1. An area that was recently seeded, mulched, and crimped.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways.

Do not apply mulch during windy conditions.

Design and Installation

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking with heavy equipment typically compacts the soil.

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

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

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

Maintenance and Removal

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

NO.	REVISION	BY	DATE	APPR.

Kimley»Horn
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DRAWN BY: FCR
CHECKED BY: MTH
DATE: 11/12/2024

VENTURE ON VENETUCCI
EL PASO COUNTY, COLORADO
GRADING AND EROSION CONTROL PLAN

GEC DETAILS

PROJECT NO. 096302017

SHEET C306

Description

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

Photograph TOP-1. Riprap outlet protection.

Appropriate Uses

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

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

Design and Installation

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

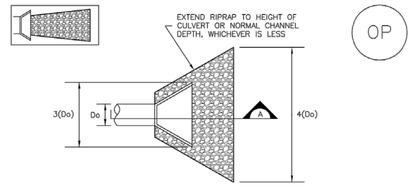
Maintenance and Removal

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

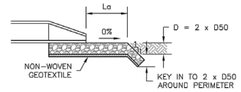
Remove sediment accumulated at the outlet before the outlet protection becomes buried and ineffective. When sediment accumulation is noted, check that upgradient BMPs, including inlet protection, are in effective operating condition.

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

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



TEMPORARY OUTLET PROTECTION PLAN



SECTION A

TABLE OP-1. TEMPORARY OUTLET PROTECTION SIZING TABLE

PIPE DIAMETER, Do (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)
8	2.5 5	5 10	4 6
12	5 10	10 13	4 6
18	10 20 30 40	10 16 23 26	6 9 12 16
24	30 40 50 60	16 26 26 30	9 9 12 16

OP-1. TEMPORARY OUTLET PROTECTION

TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   –LOCATION OF OUTLET PROTECTION.
   –DIMENSIONS OF OUTLET PROTECTION.

2. DETAIL IS INTENDED FOR PIPES WITH SLOPE ≤ 10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.

3. TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

TEMPORARY OUTLET PROTECTION INSPECTION AND MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

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

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

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