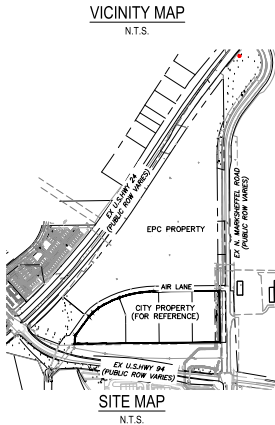
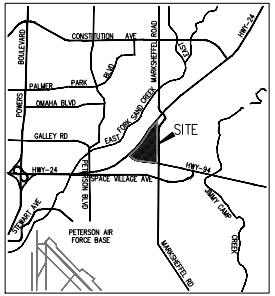


STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- 1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS...
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...
3. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING MAINTENANCE OF THE SWMP DURING CONSTRUCTION...
4. ONCE THE ESQCP IS APPROVED AND A NOTICE TO PROCEED HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED E.C.P. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION...
5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER...
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...
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...
9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS...
10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION...
11. PROTECTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES...
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...
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...
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 CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS...
17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY...
18. TRACKING OF SOLS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED...
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 DRAINAGE AND OTHER DRAINAGE CONVEYANCE SYSTEMS...
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...
21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE EGM ADMINISTRATOR...
22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION...
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'...
25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS...
26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES...
27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS...
28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY CIL THOMPSON, INC., TITLED GEOLOGIC HAZARD EVALUATION AND, PRELIMINARY GEOTECHNICAL INVESTIGATION...
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...

CROSSROADS NORTH COUNTY OF EL PASO, STATE OF COLORADO EARLY GRADING AND EROSION CONTROL PLANS

AUGUST 2023



- STANDARD CONSTRUCTION NOTES:
1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2...
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD LOCATION OF ALL EXISTING UTILITIES...
3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP)...
4. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURACY SHOW EXISTING CONDITION BOTH ON AND OFFSITE ON THE CONSTRUCTION PLANS...
5. ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL (ISQCP) AS INDICATED ON THE E.C.P. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION...
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS...
7. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE CONSTRUCTION SITE AT APPROVED CONSTRUCTION ACCESS POINTS...
8. ANY TEMPORARY SIGNAGE AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA...
9. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS...
10. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED...

BASIS OF BEARINGS:

THE SOUTHEASTERLY LINE OF CDDT RIGHT OF WAY SH-24 (PROJECT NO. 190243-08R UNIT 2) FROM STA. 320+28.40 (125.00' RT) TO STA. 327+61.58 (125.00' RT), MONUMENTED AT BOTH POINTS WITH 3-1/4" ALUMINUM CDDT MONUMENTS STAMPED 745 23381 AND BEARS N137.35°09"E A DISTANCE OF 733.37'. THE UNIT OF MEASUREMENT IS THE U.S. SURVEY FOOT.

BENCHMARKS:

- 1. NATIONAL GEODETIC VERTICAL DATUM OF 1929; BENCHMARK R-78 IS A DISK SET IN TOP OF A CONCRETE MONUMENT STAMPED 'R 78 1935', IS PROJECTED -0.25', AND IS LOCATED ~60' SOUTH OF THE CENTER OF HWY 24 ON THE NORTH SIDE OF SPACE VILLAGE AVENUE. ELEV: 6286.32'
2. #4 REBAR IN AIR LINE NEAR ELECTRIC VAULT ON HILL TOP. N: 57321.59 E: 39206.06 ELEV: 6374.00'

ADDITIONAL NOTES:

STAGION, PORTABLE TOILETS, STOCKPILE, AND CONCRETE WASHOUT AREAS TO BE DETERMINED BY CONTRACTOR ON THE FIELD. THE LOCATIONS SHALL BE DELINEATED ON THIS PLAN BY THE CONTRACTOR. THE EROSION CONTROL DELINEATED ON THIS PLAN SHALL BE REGULARLY UPDATED BY THE CONTRACTOR. EXISTING SITE TERRAIN NEARLY SLOPES FROM NORTH TO SOUTHWEST AT GRADE RATES THAT VARY BETWEEN 2% TO 8%. THERE ARE NO BATCH PLANTS ON SITE. NO PORTION OF THIS PROPERTY IS LOCATED WITHIN A DESIGNATED FEMA FLOODPLAIN IN ACCORDANCE WITH FLOOD INSURANCE RATE MAPS (FIRM) 08041007560, 08041007556, & 08041007556 EFFECTIVE DATES DECEMBER 7, 2018.

EXISTING VEGETATION:

EXISTING, ON-SITE VEGETATION CONSISTS OF SPARSE NATIVE GRASSES (APPROX. 60% COVER), A VISUAL, POST CONSTRUCTION COMPARISON CAN BE MADE TO ADJACENT, UNDEVELOPED PROPERTY.

Table with columns: TIMING: CROSSROADS NORTH, ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING: FALL 2023 - SUMMER 2024, EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETED: SEPTEMBER 2024, AREAS: CROSSROADS NORTH, TOTAL AREA OF THE SITE TO BE CLEARED, EXCAVATED OR GRADED: ~65 AC, CITY PROPERTY OF THE SITE TO BE CLEARED, EXCAVATED OR GRADED: ~19 AC, RECORDING WATERS: EL PASO COUNTY, SAND CREEK WA EAST FORK SAND CREEK SUBTRIBUTARY JIMMY CAMP CREEK, SOIL TYPES: BLACKLAND LOAMY SAND-HYDROLOGIC SOIL GROUP A

AGENCIES

- OWNER/DEVELOPER: COLORADO SPRINGS EQUITIES LLC 90 SOUTH CASCADE AVE, SUITE 1500 COLORADO SPRINGS, CO 80903
CIVIL ENGINEER: M & S CIVIL CONSULTANTS, INC. 212 N. WAHSATCH AVENUE, SUITE 305 COLORADO SPRINGS, CO 80903
COUNTY ENGINEERING: EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910
WATER RESOURCES: CHEROKEE METRO DISTRICT 6250 PALMER PARK COLORADO SPRINGS, CO 80905
FIRE DISTRICT: FALCON FIRE PROTECTION DISTRICT 2170 CAPITAL DRIVE COLORADO SPRINGS, CO 80939
GAS DEPARTMENT: COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947
ELECTRIC DEPARTMENT: COLORADO SPRINGS UTILITIES 7710 DURANT DRIVE COLORADO SPRINGS, CO 80947
COMMUNICATIONS: QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987

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 IN ACCORDANCE WITH 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.

DEVELOPER'S STATEMENT:

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

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 EDC 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.

SHEET INDEX

- SHEET 1 COVER SHEET EL PASO COUNTY
SHEET 2 COVER SHEET CITY OF COLORADO SPRINGS
SHEET 3 EARLY GRADING PLAN
SHEET 4 EARLY GRADING PLAN
SHEET 5 EROSION CONTROL PLAN
SHEET 6 EROSION CONTROL PLAN
SHEET 7 RETAINING WALL PLAN
SHEET 8 CROSS SECTION DETAILS
SHEET 9 EROSION CONTROL DETAILS EL PASO COUNTY
SHEET 10 EROSION CONTROL DETAILS EL PASO COUNTY
SHEET 11 EROSION CONTROL DETAILS EL PASO COUNTY
SHEET 12 EROSION CONTROL DETAILS EL PASO COUNTY
SHEET 13 EROSION CONTROL DETAILS EL PASO COUNTY
SHEET 14 EROSION CONTROL DETAILS CITY OF COLORADO SPRINGS
SHEET 15 EROSION CONTROL DETAILS CITY OF COLORADO SPRINGS

EL PASO COUNTY FILE NO. EGP 231



Table with columns: PROJECT NO., SCALE, DESIGNED BY, DRAWN BY, CHECKED BY. Values: 19-006, 1"=50', DM, VS, N/A.

CROSSROADS NORTH EARLY GRADING & EROSION CONTROL PLANS DATE: 08/29/2023 SHEET 1 OF 15 EGR01

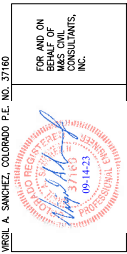


Table with columns: REVISIONS, NO., DATE, BY, DESCRIPTION, APPROVED BY, DATE. Includes a CAUTION label at the bottom.

- LEGEND**
- (6920) EXISTING MAJOR CONTOUR
 - (6918) EXISTING MINOR CONTOUR
 - 6920 PROPOSED MAJOR CONTOUR
 - 6918 PROPOSED MINOR CONTOUR
 - FILING BOUNDARY LINE
 - RIGHT-OF-WAY LINE
 - PROPOSED PROPERTY LINE
 - FUTURE PROPERTY LINE
 - EXISTING PROPERTY LINE
 - LIMITS OF DISTURBANCE/CONST. BOUNDARY/CONST. FENCE
 - PROPOSED STORM DRAIN
 - EXISTING STORM DRAIN
 - PROP SWALE
 - SEDIMENT BASIN TRIBUTARY AREA
 - EXISTING FIBER OPTIC LINE
 - OH EXISTING OVERHEAD ELECTRIC
 - EXISTING LOT LINE
 - EXISTING FENCE
 - CUT/FILL LINE
 - EXISTING LOT LINE
 - UE EXISTING UNDERGROUND ELECTRICAL
 - US EXISTING GAS LINE
 - WL EXISTING WATERLINE
 - EXISTING DRAINAGE BASIN
 - EXIST INLET
 - PROPOSED INLET
 - LOW POINT/HIGH POINT
 - FLOW DIRECTION & SLOPE
 - FLOW DIRECTION ARROW
 - PROPOSED SWALE
 - EXISTING FLOW DIRECTION ARROW
 - EXISTING SWALE/ROADSIDE DITCH
 - EMERGENCY OVERTURN DIRECTION
 - RIPRAP TYP.
 - EXISTING UTILITY POLE
 - EX. STORM INLET
 - EX. IRRIGATION VALVE
 - EX. STORM INLET
 - EX. GAS TEST NODE
 - EX. TRAFFIC SIGNAL CONTROL BOX
 - EX. ELECTRIC VAULT
 - EX. SANITARY MANHOLE
 - EX. WATER VALVE
 - EXISTING WATER WELL
 - EXISTING MONITORING WELL
 - EX. TELEPHONE VAULT
 - EX. ELECTRIC VAULT
 - EX. ELECTRIC PEDESTAL
 - EX. ELECTRIC METER
 - EX. ELECTRIC TRANSFORMER
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 - EX. ELECTRIC PEDESTAL
 - EX. WATER MARKER
 - EX. GAS MARKER
 - EX. FIBER OPTIC MARKER
 - EX. ELECTRIC MANHOLE
 - EX. CABLE TV MARKER
 - EX. SHRUB/TREE
 - EX. WATER YARD HYDRANT
 - EX. FIRE HYDRANT
 - EX. ELECTRIC MARKER
 - EX. TRAFFIC SIGNAL

SEDIMENT BASIN TABLE

SEDIMENT BASIN NO.	UPSTREAM DRAINAGE AREA AC.	BASIN WIDTH FT.	BASIN LENGTH FT.	ANTIC. WATER HT. FT.	MAX. REQ'D VOLUME C.F.	SPILLWAY LENGTH FT.	HOLE DIA. IN.	ROWS OF HOLES IN STANDPIPE
1	3	28	56	3	7,841	5	1 1/2	1
2	10	58.25	116.5	3	27,007	15	15 1/16	1
3	12	64	128	3	31,799	18	1	1
4	13	67.5	135	3	34,848	19	1-1/16	1

CONSTRUCTION NOTES:

ALL TEMPORARY RIPRAP SHOWN ON THE PLANS SHALL BE TYPE 'M'. RIPRAP SHALL BE PLACED IN THE LOCATIONS INDICATED BY THE PLAN OR IN AREAS AS THE CONTRACTOR SEES FIT TO CONTROL EROSION. ALL RIPRAP SHALL BE PLACED AT A MINIMUM THICKNESS OF 1.5' DEEP.

ALL TEMPORARY STORM SEWER SHOWN ON PLANS SHALL BE 24" DIA. HP POLYPROPYLENE BY ADS OR APPROVED EQUAL. ALL PIPE SHALL BE LAID TO ACHIEVE A MIN. SLOPE OF 0.5%.

CONTRACTOR SHALL PROTECT ALL AREAS OUTSIDE OF THE CONSTRUCTION LIMITS WITH SILT FENCE OR OTHER METHOD TO PROTECT UNDISTURBED AREAS FROM EROSION

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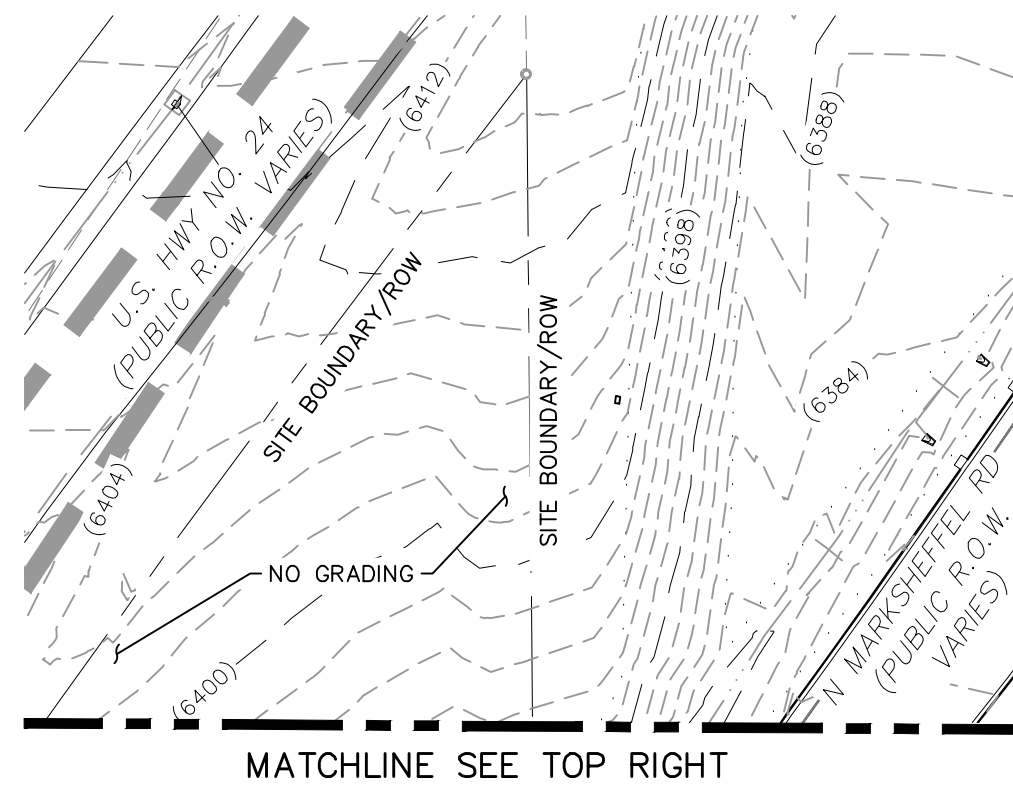
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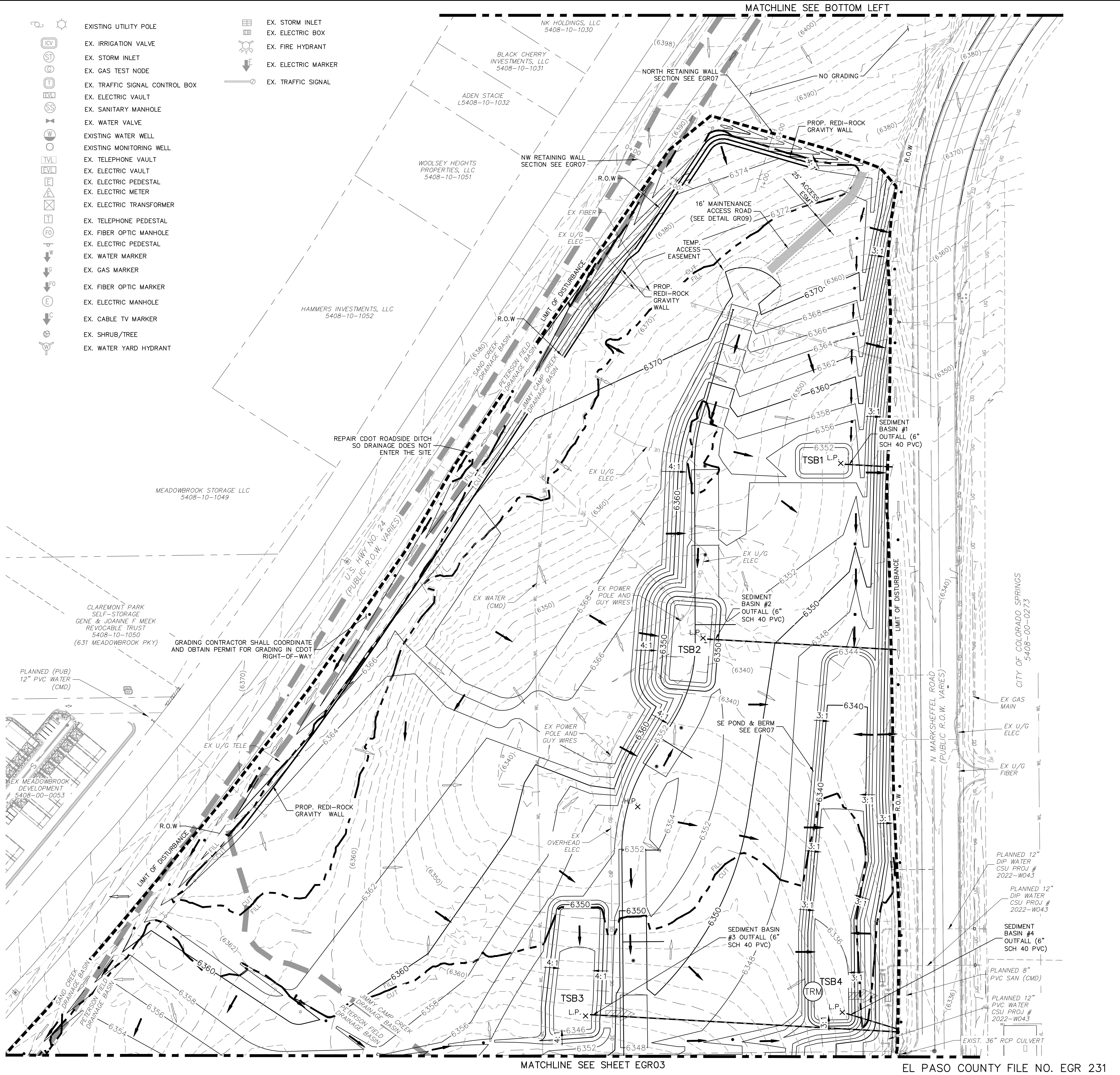
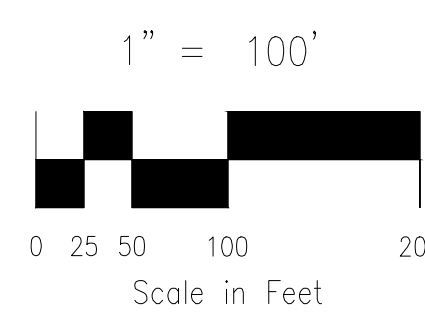
ALL TEMPORARY OR PERMANENT GRADING DISTURBANCES SHALL BE RE-SEEDDED AND MULCHED PER EL PASO COUNTY CRITERIA AND SPECIFICATIONS.

EXISTING VEGETATION CONSISTS OF SPARSE, NATIVE GRASSES AND SHRUBS



FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987



CROSSROADS NORTH

EARLY GRADING PLAN

PROJECT NO. 18-006

SCALE: HORIZONTAL: 1"=100' VERTICAL: N/A

DATE: 08/29/2023

DESIGNED BY: DM

DRAWN BY: GT

CHECKED BY: VAS

212 N. WASHCATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

PROFESSIONAL ENGINEER

09-14-23

REVISIONS:

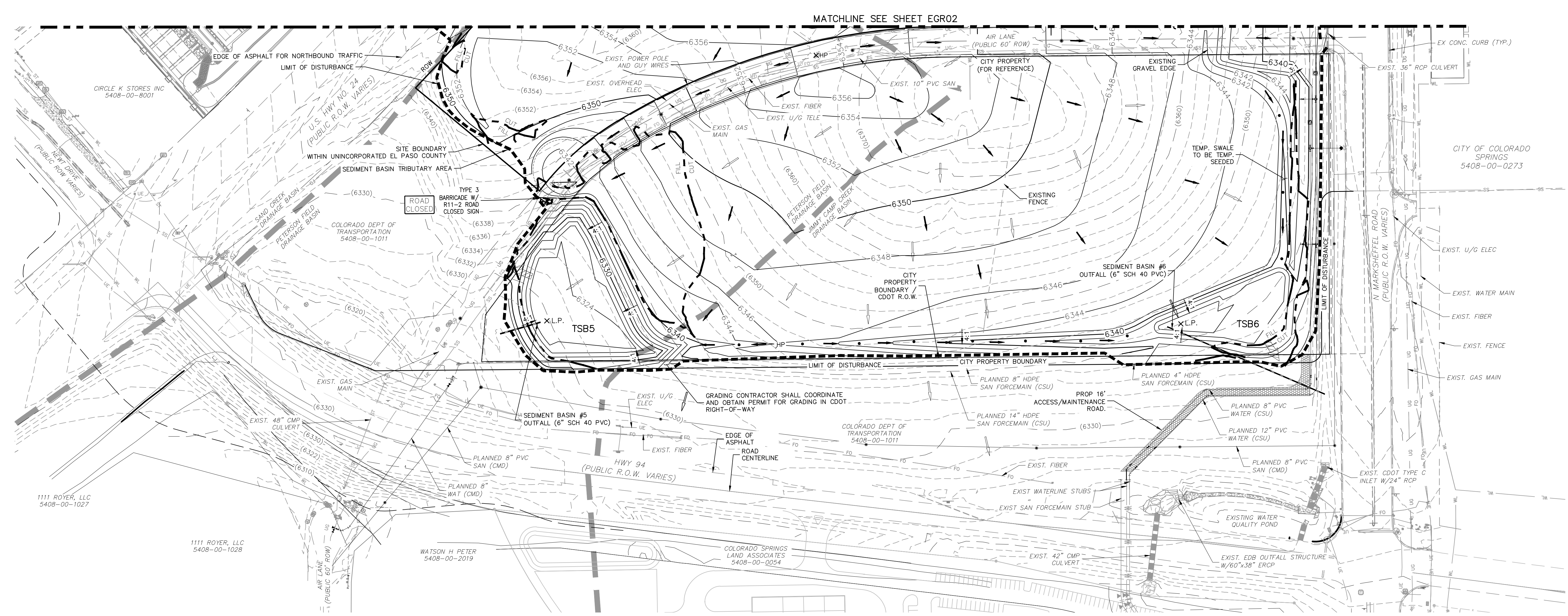
NO.	DATE	BY	DESCRIPTION

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: C:\18006A-Crossroads North Design\Crossroads Development Co\Draw\Const Draw\early grading\El Paso County\EGR02.dwg Plotstamp: 10/16/2023 12:53 PM

File: C:\18006A-Crossroads North Design\Crossroads Development Co\Dwg\Const Dwg\early grading\El Paso County\EGR03.dwg Platstamp: 8/30/2023 2:40 PM



MATCHLINE SEE SHEET EGR02

LEGEND

- | | | | | | | | |
|--------------------|--|---|-------------------------------|---|--------------------------------|---|---------------------|
| — (6920) — | EXISTING MAJOR CONTOUR | □ | EXIST INLET | ☼ | EXISTING UTILITY POLE | ☒ | EX. STORM INLET |
| - - - (6918) - - - | EXISTING MINOR CONTOUR | □ | PROP INLET | ☼ | EXIST. IRRIGATION VALVE | ☒ | EX. ELECTRIC BOX |
| — 6920 — | PROPOSED MAJOR CONTOUR | □ | LOW POINT/HIGH POINT | ☼ | EX. STORM INLET | ☒ | EX. FIRE HYDRANT |
| - - - 6918 - - - | PROPOSED MINOR CONTOUR | □ | FLOW DIRECTION & SLOPE | ☼ | EX. GAS TEST NODE | ☒ | EX. ELECTRIC MARKER |
| — | FILING BOUNDARY LINE | □ | FLOW DIRECTION ARROW | ☼ | EX. TRAFFIC SIGNAL CONTROL BOX | ☒ | EX. TRAFFIC SIGNAL |
| — | RIGHT-OF-WAY LINE | □ | PROPOSED SWALE | ☼ | EX. ELECTRIC VAULT | ☒ | |
| — | PROPOSED PROPERTY LINE | □ | EXISTING FLOW DIRECTION ARROW | ☼ | EX. SANITARY MANHOLE | ☒ | |
| — | FUTURE PROPERTY LINE | □ | EXISTING SWALE/ROADSIDE DITCH | ☼ | EX. WATER VALVE | ☒ | |
| — | EXISTING PROPERTY LINE | □ | EMERGENCY OVERTFLOW DIRECTION | ☼ | EXISTING WATER WELL | ☒ | |
| — | LIMITS OF DISTURBANCE/CONST. BOUNDARY/CONST. FENCE | □ | RIPRAP TYP. | ☼ | EX. TELEPHONE VAULT | ☒ | |
| — | PROPOSED STORM DRAIN | □ | | ☼ | EX. ELECTRIC VAULT | ☒ | |
| — | EXISTING STORM DRAIN | □ | | ☼ | EX. ELECTRIC PEDESTAL | ☒ | |
| — | SWALE | □ | | ☼ | EX. ELECTRIC METER | ☒ | |
| — | SEDIMENT BASIN TRIBUTARY AREA | □ | | ☼ | EX. ELECTRIC TRANSFORMER | ☒ | |
| — | EXISTING FIBER OPTIC LINE | □ | | ☼ | EX. TELEPHONE PEDESTAL | ☒ | |
| — | EXISTING OVERHEAD ELECTRIC | □ | | ☼ | EX. FIBER OPTIC MANHOLE | ☒ | |
| — | EXISTING LOT LINE | □ | | ☼ | EX. ELECTRIC PEDESTAL | ☒ | |
| — | EXISTING FENCE | □ | | ☼ | EX. WATER MARKER | ☒ | |
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| — | EXISTING WATERLINE | □ | | ☼ | EX. SHRUB/TREE | ☒ | |
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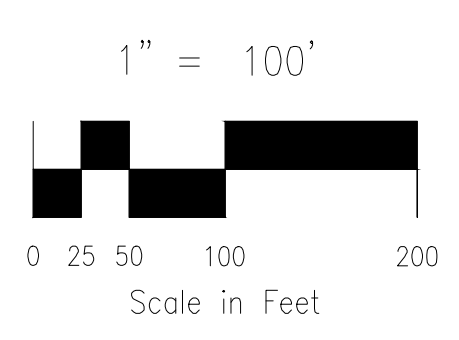
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EXISTING VEGETATION CONSISTS OF SPARSE, NATIVE GRASSES AND SHRUBS

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6	14	70.5	141	3	37,897	21	1-1/8	2



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CROSSROADS NORTH

EARLY GRADING PLAN

DATE: 08/29/2023

SCALE: HORIZONTAL: 1"=100' VERTICAL: N/A

PROJECT NO. 18-006

DESIGNED BY: DM

DRAWN BY: GT

CHECKED BY: VAS

212 N. WABATCH AVE. STE 305
COLORADO SPRINGS CO 80903
PHONE: 719.555.5465

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

09-14-23

NO. DATE: BY: DESCRIPTION:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARE OF THESE PLANS.

EL PASO COUNTY FILE NO. EGR 231

CAUTION

File: C:\18006A-Crossroads North Design\Crossroads Development Co\Draw\Const Draw\early grading\EI Paso County\EGR04.dwg Plotstamp: 8/31/2023 11:01 AM

LEGEND

- (6920) EXISTING MAJOR CONTOUR
- (6918) EXISTING MINOR CONTOUR
- 6920 PROPOSED MAJOR CONTOUR
- 6918 PROPOSED MINOR CONTOUR
- FILING BOUNDARY LINE
- RIGHT-OF-WAY LINE
- PROPOSED PROPERTY LINE
- FUTURE PROPERTY LINE
- EXISTING PROPERTY LINE
- LIMITS OF DISTURBANCE/CONST. BOUNDARY/CONST. FENCE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROP SWALE
- SEDIMENT BASIN TRIBUTARY AREA
- EXISTING FIBER OPTIC LINE
- EXISTING OVERHEAD ELECTRIC
- EXISTING LOT LINE
- EXISTING FENCE
- CUT/FILL LINE
- EXISTING LOT LINE
- EXISTING UNDERGROUND ELECTRICAL
- EXISTING GAS LINE
- EXISTING WATERLINE
- EXISTING DRAINAGE BASIN
- EXIST INLET
- PROPOSED INLET
- L.P./H.P.
- LOW POINT/HIGH POINT
- FLOW DIRECTION & SLOPE (2.0%)
- FLOW DIRECTION ARROW
- PROPOSED SWALE
- EXISTING FLOW DIRECTION ARROW
- EXISTING SWALE/ROADSIDE DITCH
- EMERGENCY OVERFLOW DIRECTION
- RIPRAP TYP.
- INLET PROTECTION - INTERIM
- STRAW BALE DITCH CHECK - INTERIM
- SEDIMENT CONTROL LOG - INTERIM
- TEMPORARY SEDIMENT BASIN - INTERIM
- SILT FENCE - INITIAL/INTERIM
- VEHICLE TRACKING CONTROL - INITIAL/INTERIM
- NORTH AMERICAN GREEN SC150 TEMPORARY EROSION CONTROL BLANKET (OR APPROVED EQUAL) - PERMANENT
- DISTURBED AREA WEST AND NORTH OF THE PROPOSED REDI-ROCK WALL SHALL BE PERMANENTLY SEEDED.
- DISTURBED AREA EAST AND SOUTH OF THE PROPOSED REDI-ROCK WALL SHALL BE TEMPORARILY SEEDED.

CONSTRUCTION NOTES:

ALL TEMPORARY RIPRAP SHOWN ON THE PLANS SHALL BE TYPE 'M'. RIPRAP SHALL BE PLACED IN THE LOCATIONS INDICATED BY THE PLAN OR IN AREAS AS THE CONTRACTOR SEES FIT TO CONTROL EROSION. ALL RIPRAP SHALL BE PLACED AT A MINIMUM THICKNESS OF 1.5' DEEP.

ALL TEMPORARY STORM SEWER SHOWN ON PLANS SHALL BE 24" DIA. HP POLYPROPYLENE BY ADS OR APPROVED EQUAL. ALL PIPE SHALL BE LAID TO ACHIEVE A MIN. SLOPE OF 0.5%.

CONTRACTOR SHALL PROTECT ALL AREAS OUTSIDE OF THE CONSTRUCTION LIMITS WITH SILT FENCE OR OTHER METHOD TO PROTECT UNDISTURBED AREAS FROM EROSION

CONTRACTOR SHALL OBTAIN BUILDING PERMITS PRIOR TO ANY RETAINING WALL CONSTRUCTION

ADDITIONAL NOTES:

STAGING, STORAGE, STOCKPILE, AND WASHOUT AREAS TO BE DETERMINED BY CONTRACTOR IN THE FIELD. THE LOCATIONS SHALL BE DELINEATED ON THIS PLAN BY THE CONTRACTOR.

THE EROSION CONTROL DELINEATED ON THIS PLAN SHALL BE REGULARLY UPDATED BY THE CONTRACTOR.

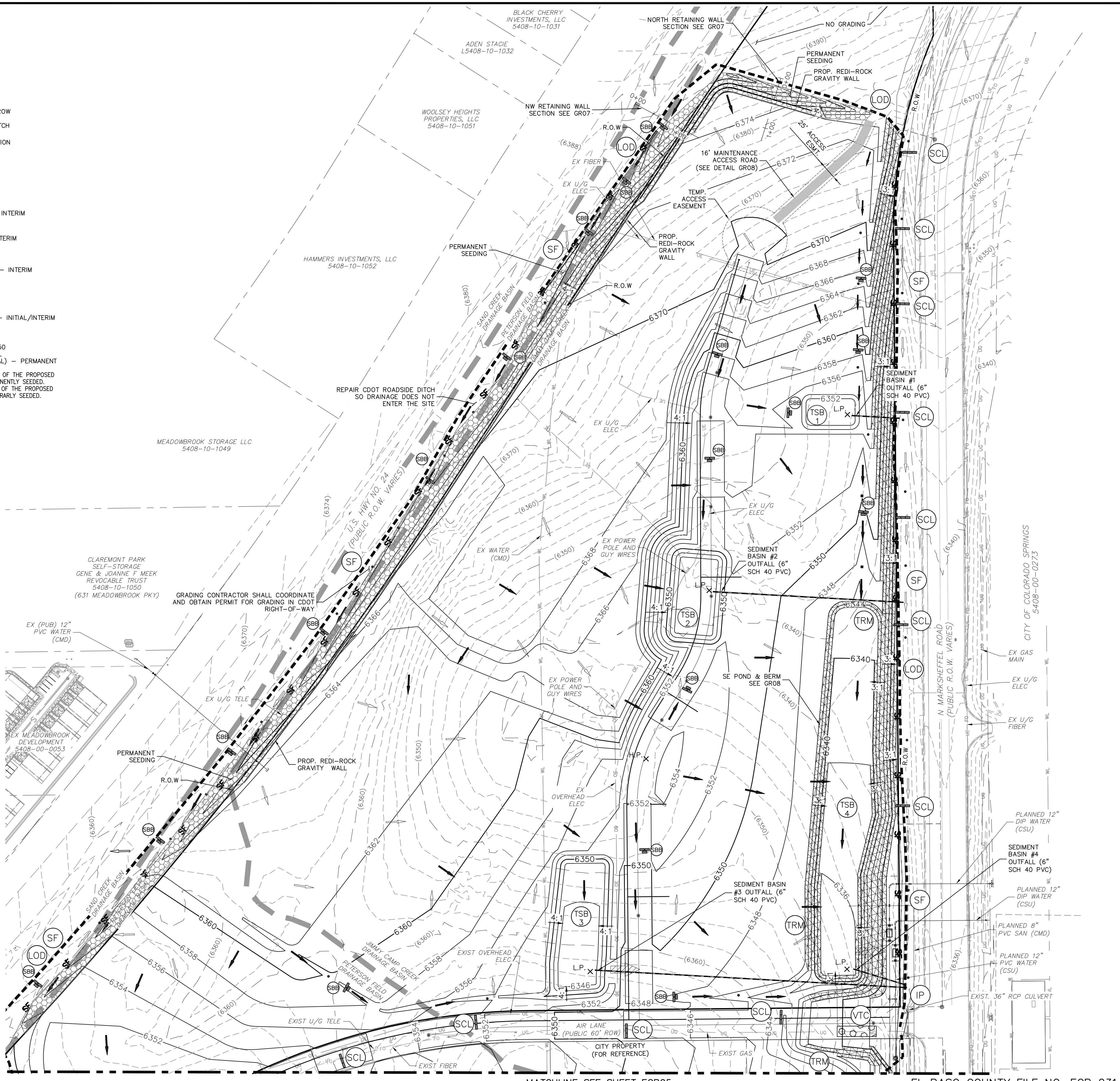
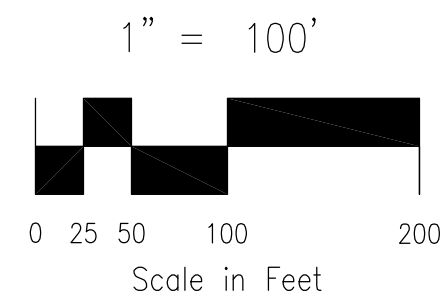
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DISTURBED AREA WEST AND NORTH OF THE PROPOSED REDI-ROCK WALL SHALL BE PERMANENTLY SEEDED. DISTURBED AREA EAST AND SOUTH OF THE PROPOSED REDI-ROCK WALL SHALL BE TEMPORARILY SEEDED.

EXISTING VEGETATION CONSISTS OF SPARSE, NATIVE GRASSES AND SHRUBS

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987



CROSSROADS NORTH	
EROSION CONTROL PLAN	
PROJECT NO. 18-006	DATE: 08/29/2023
SCALE: HORIZONTAL: 1"=100'	SCALE: VERTICAL: N/A
DESIGNED BY: DM	CHECKED BY: VAS
DRAWN BY: GT	
SHEET 5 OF 15	
EGR04	

212 N. WASHCATCH AVE., STE 305
 COLORADO SPRINGS, CO 80903
 PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

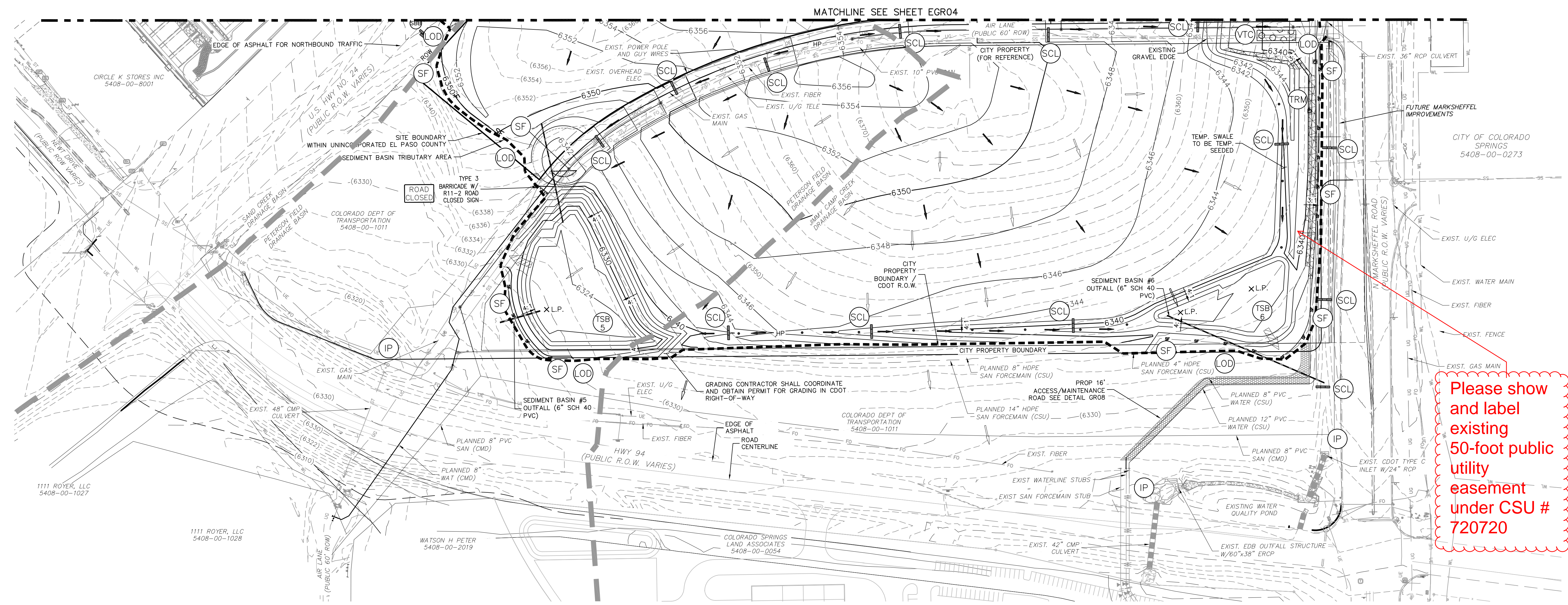
PROFESSIONAL ENGINEER
 LICENSE NO. 371160
 EXPIRES 09-14-23

REV. NO.	DATE	BY	DESCRIPTION

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CAUTION

File: C:\18006A-Crossroads North Design\Crossroads Development Co\Dwg\Const Dwg\early grading\El Paso County\EGR05.dwg Plotstamp: 8/30/2023 4:16 PM



LEGEND

- | | | | |
|----------------|--|-----------|--|
| (6920) ——— | EXISTING MAJOR CONTOUR | □ | EXIST INLET |
| (6918) - - - - | EXISTING MINOR CONTOUR | □ | PROPOSED INLET |
| — 6920 ——— | PROPOSED MAJOR CONTOUR | L.P./H.P. | LOW POINT/HIGH POINT |
| — 6918 ——— | PROPOSED MINOR CONTOUR | → (2.0)% | FLOW DIRECTION & SLOPE |
| — — — — — | FILING BOUNDARY LINE | → | FLOW DIRECTION ARROW |
| — — — — — | RIGHT-OF-WAY LINE | → | PROPOSED SWALE |
| — — — — — | PROPOSED PROPERTY LINE | → | EXISTING FLOW DIRECTION ARROW |
| — — — — — | FUTURE PROPERTY LINE | → | EXISTING SWALE/ROADSIDE DITCH |
| — — — — — | EXISTING PROPERTY LINE | → | EMERGENCY OVERFLOW DIRECTION |
| — — — — — | LIMITS OF DISTURBANCE/CONST. BOUNDARY/CONST. FENCE | → | RIPRAP TYP. |
| — — — — — | PROPOSED STORM DRAIN | IP | INLET PROTECTION - INTERIM |
| — — — — — | EXISTING STORM DRAIN | SB | STRAW BALE DITCH CHECK - INTERIM |
| — — — — — | SWALE | SCL | SEDIMENT CONTROL LOG - INTERIM |
| — — — — — | SEDIMENT BASIN TRIBUTARY AREA | TSB | TEMPORARY SEDIMENT BASIN - INTERIM |
| — — — — — | EXISTING FIBER OPTIC LINE | SF | SILT FENCE - INITIAL/INTERIM |
| — — — — — | EXISTING OVERHEAD ELECTRIC | VTC | VEHICLE TRACKING CONTROL - INITIAL/INTERIM |
| — — — — — | EXISTING LOT LINE | TRM | NORTH AMERICAN GREEN SC150 TEMPORARY EROSION CONTROL BLANKET (OR APPROVED EQUAL) - PERMANENT |
| — — — — — | EXISTING FENCE | | |
| — — — — — | CUT/FILL LINE | | |
| — — — — — | EXISTING LOT LINE | | |
| — — — — — | UNDERGROUND ELECTRICAL | | |
| — — — — — | EXISTING GAS LINE | | |
| — — — — — | EXISTING WATERLINE | | |
| — — — — — | EXISTING DRAINAGE BASIN | | |

CONSTRUCTION NOTES:

ALL TEMPORARY RIPRAP SHOWN ON THE PLANS SHALL BE TYPE 'M'. RIPRAP SHALL BE PLACED IN THE LOCATIONS INDICATED BY THE PLAN OR IN AREAS AS THE CONTRACTOR SEES FIT TO CONTROL EROSION. ALL RIPRAP SHALL BE PLACED AT A MINIMUM THICKNESS OF 1.5' DEEP.

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CONTRACTOR SHALL OBTAIN BUILDING PERMITS PRIOR TO ANY RETAINING WALL CONSTRUCTION

ADDITIONAL NOTES:

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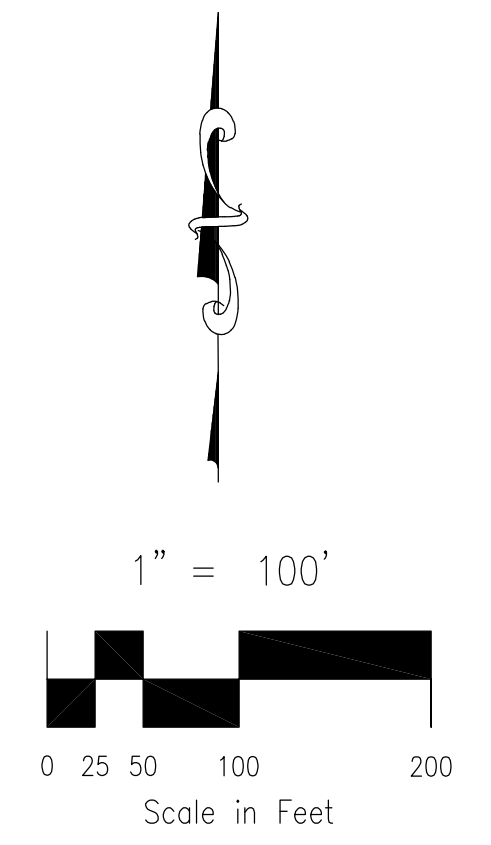
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EXISTING VEGETATION CONSISTS OF SPARSE, NATIVE GRASSES AND SHRUBS

Please show and label existing 50-foot public utility easement under CSU # 720720



FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987

<p>CROSSROADS NORTH</p> <p>EROSION CONTROL PLANS</p>		<p>PROJECT NO. 18-006</p>	<p>SCALE: HORIZONTAL: 1"=100'</p>	<p>DATE: 08/29/2023</p>
		<p>DESIGNED BY: DM</p>	<p>GT</p>	<p>SHEET 6 OF 15</p>
<p>210 N. WABATCH AVE., STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5485</p>		<p>CIVIL CONSULTANTS, INC.</p>		
<p>FOR AND ON BEHALF OF MKS CIVIL CONSULTANTS, INC.</p>		<p>PROFESSIONAL SEAL: VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160</p>		
<p>REVISIONS:</p>	<p>NO. DATE BY DESCRIPTION</p>	<p>APPRO'D. BY:</p>	<p>DATE:</p>	<p>CAUTION</p>

LEGEND

- (6920) EXISTING MAJOR CONTOUR
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 - EXISTING STORM DRAIN
 - SWALE
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 - FO EXISTING FIBER OPTIC LINE
 - OH EXISTING OVERHEAD ELECTRIC
 - EXISTING LOT LINE
 - EXISTING FENCE
 - CUT/FILL LINE
 - EXISTING LOT LINE
 - UE UNDERGROUND ELECTRICAL
 - UG EXISTING GAS LINE
 - WL EXISTING WATERLINE
- INLET
 - L.P./H.P. LOW POINT/HIGH POINT
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 - FLOW DIRECTION ARROW
 - PROPOSED SWALE
 - EXISTING FLOW DIRECTION ARROW
 - EXISTING SWALE/ROADSIDE DITCH
 - EMERGENCY OVERFLOW DIRECTION
 - ▨ RIPRAP TYP.
- TW:63XX.X FINISH GRADE AT THE TOP OF WALL
 BW:63XX.X FINISH GRADE AT THE BOTTOM OF WALL

1. No addressed: Please include the book and page number and/or reception number of all existing and proposed easements.
 2. Partially addressed: Please call out all existing utility service lines and label public/private, pipe material and size.

CONSTRUCTION NOTES:

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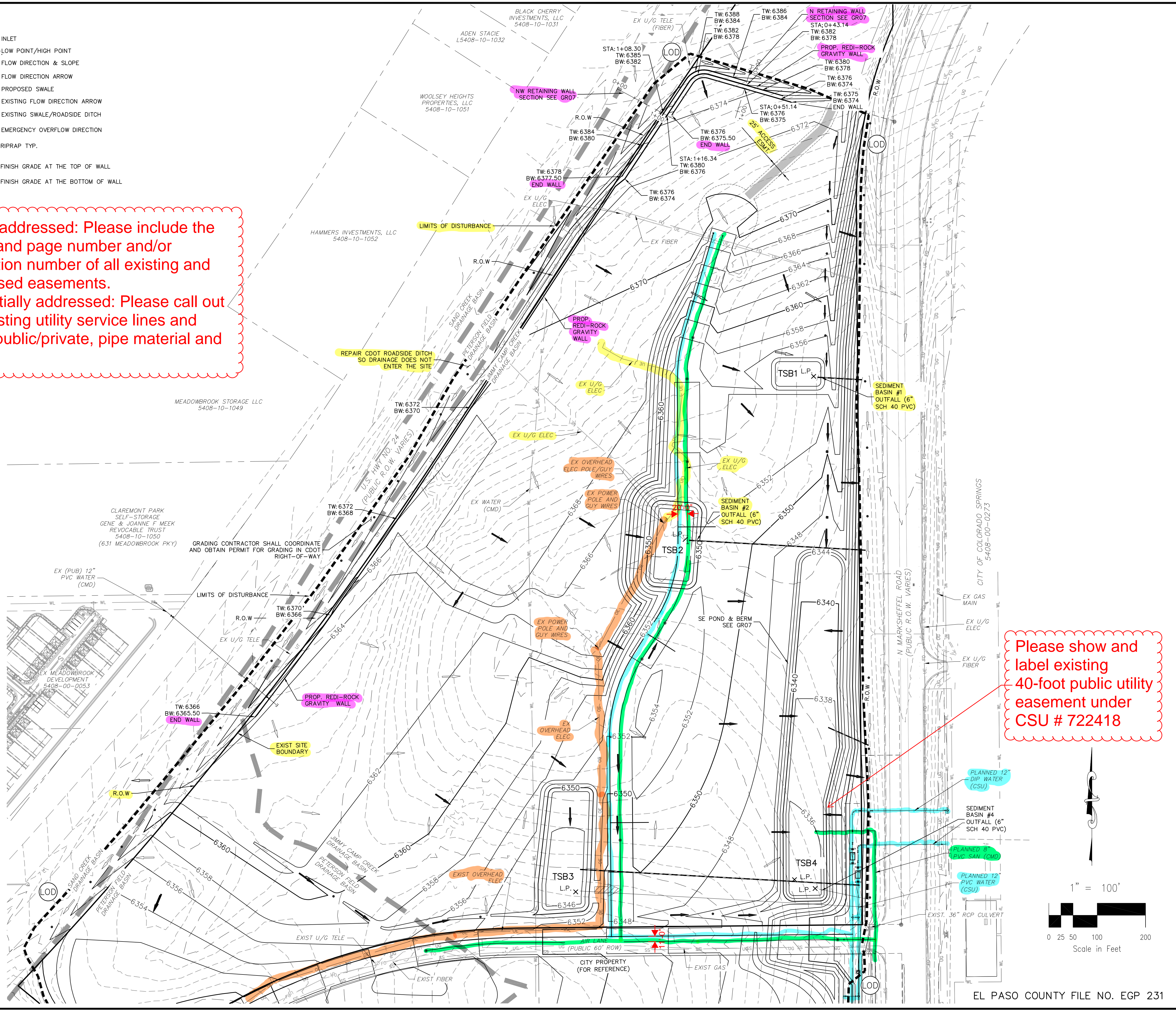
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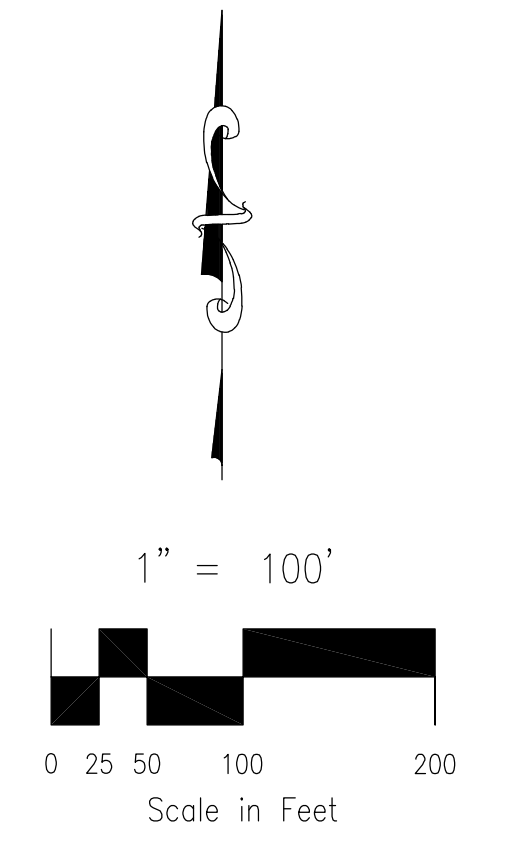
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EXISTING VEGETATION CONSISTS OF SPARSE, NATIVE GRASSES AND SHRUBS



Please show and label existing 40-foot public utility easement under CSU # 722418

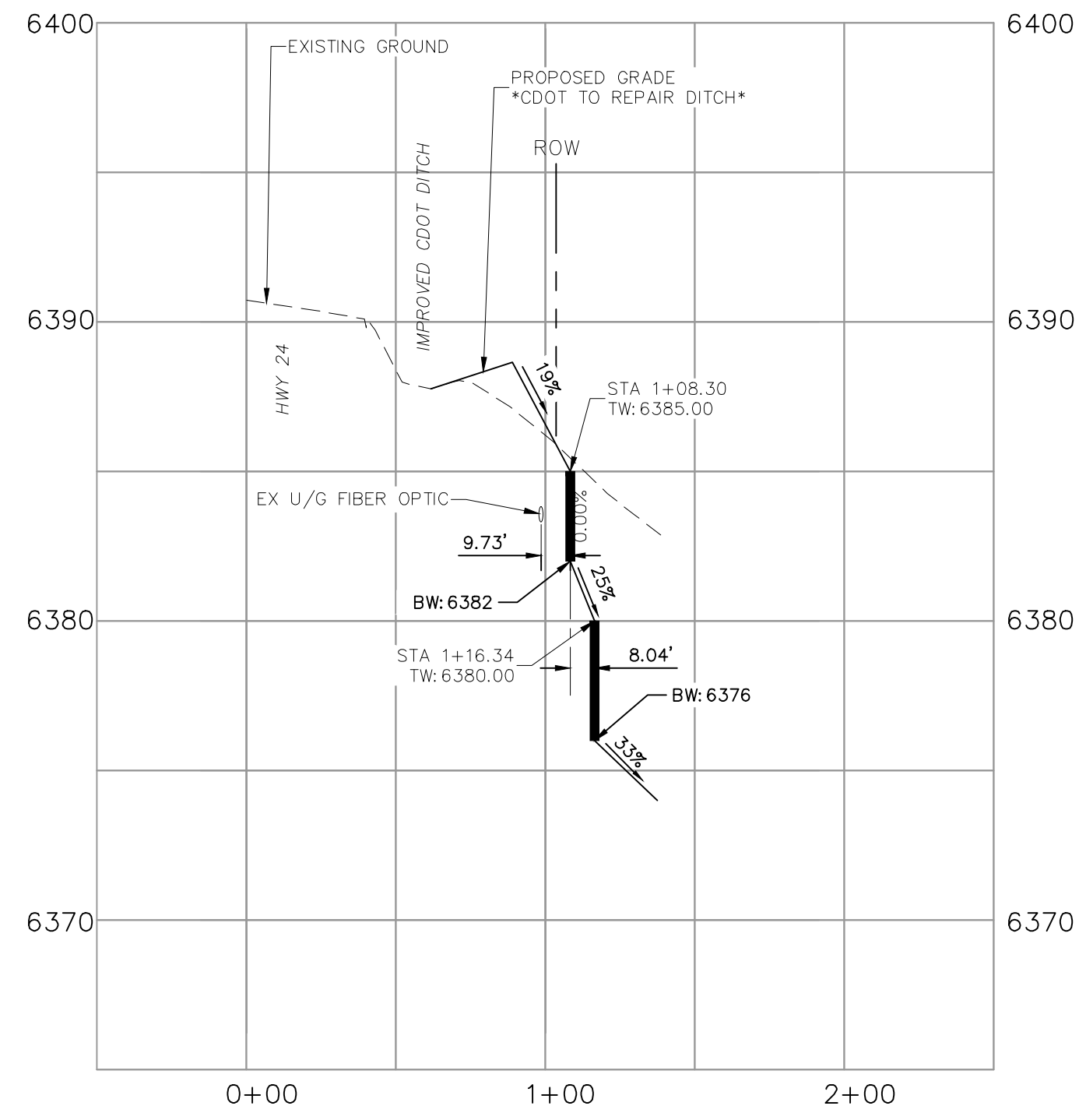
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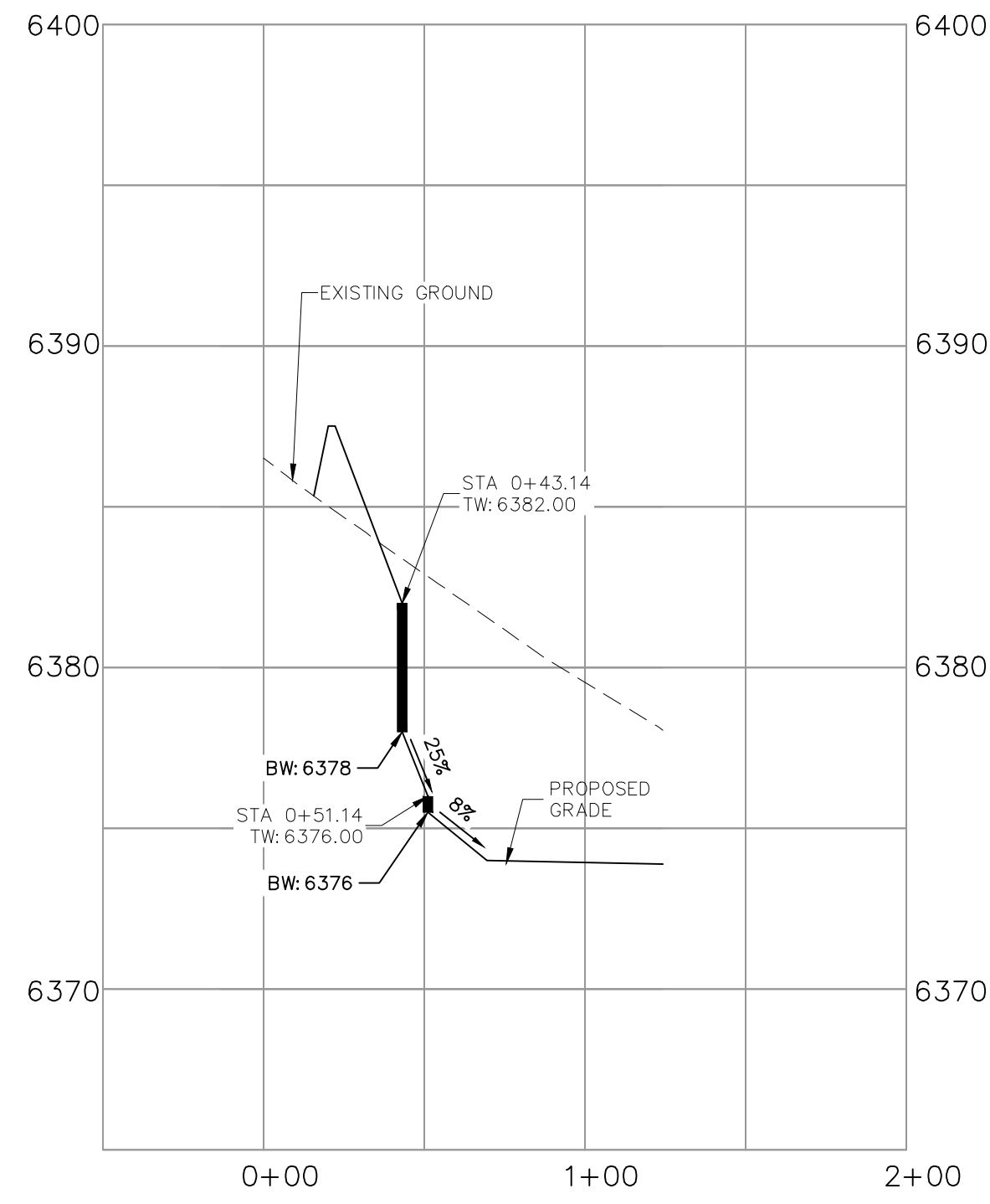
File: C:\18006A-Crossroads North Design\Crossroads Development Co\DWG\Const (DWG)\early grading\El Paso County\EGP06.dwg Platstamp: 8/30/2023 2:54 PM

CROSSROADS NORTH RETAINING WALL PLAN		DATE: 08/29/2023 SCALE: HORIZONTAL: 1"=100' VERTICAL: N/A	SHEET 7 OF 15 EGR06
PROJECT NO. 18-006		DESIGNED BY: DM	CHECKED BY: VAS
DRAWN BY: GT		CITY OF COLORADO SPRINGS 5408-00-0273	
212 N. WASHCATCH AVE., STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.555.5485			
CIVIL CONSULTANTS, INC.			
FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.			
REVISIONS: NO. DATE BY DESCRIPTION	APPROV. BY:	DATE:	THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

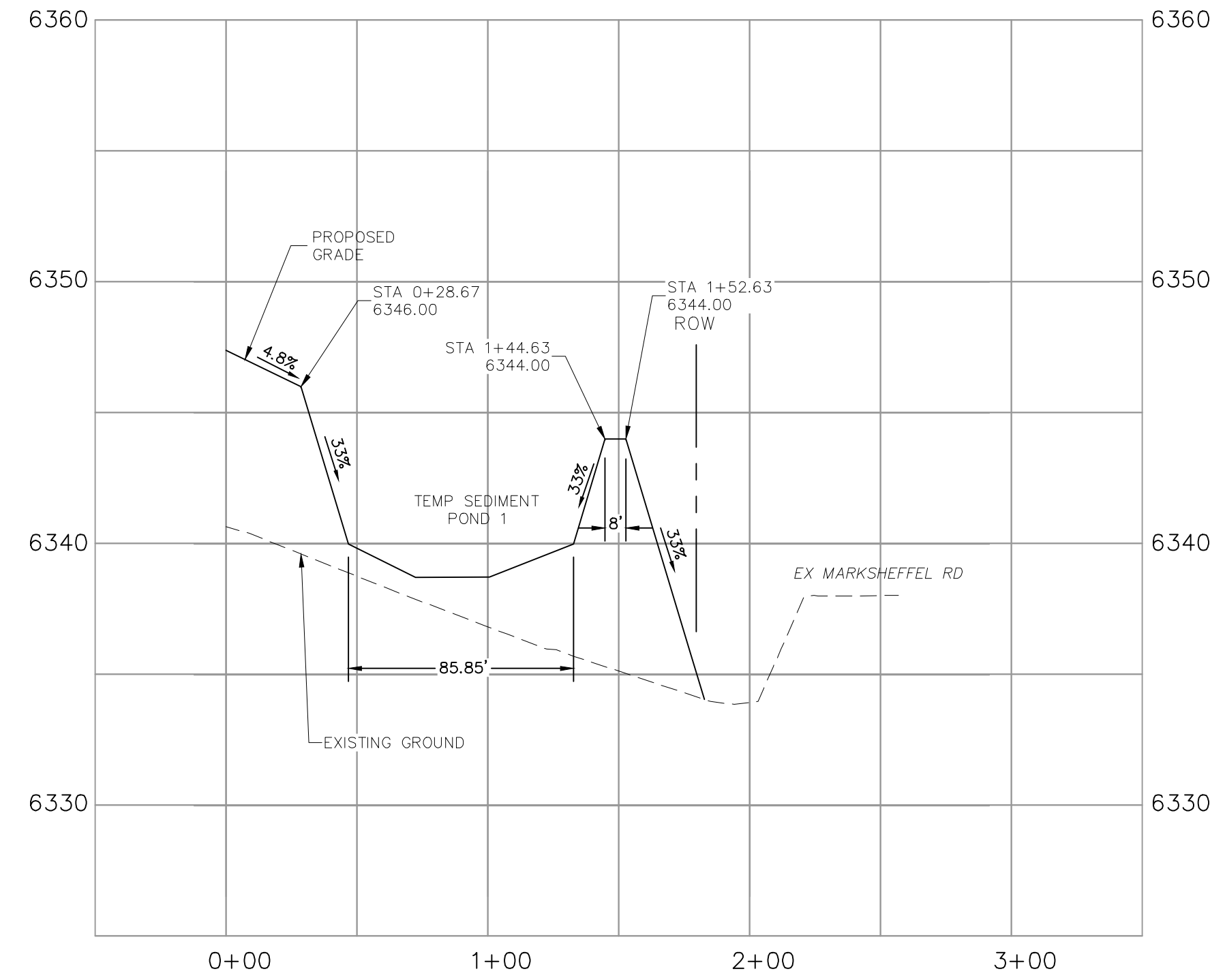
CAUTION



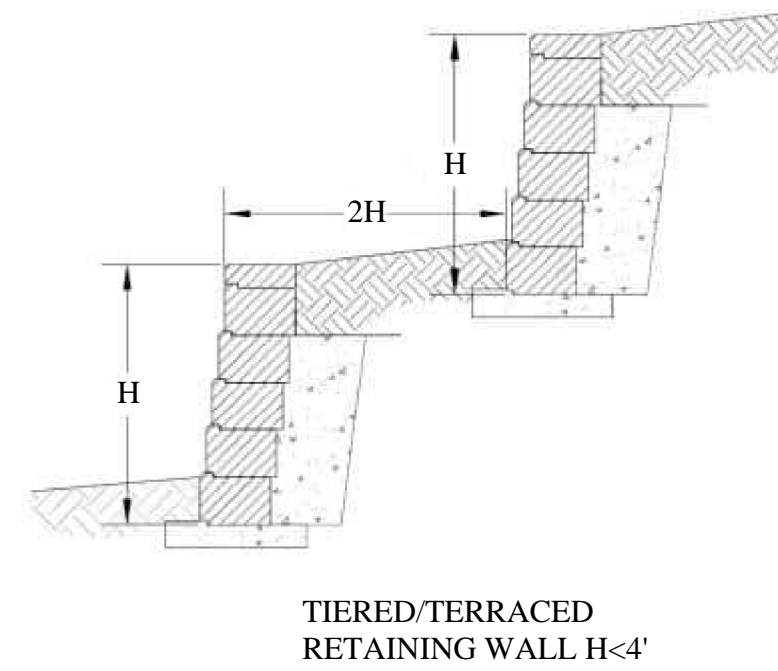
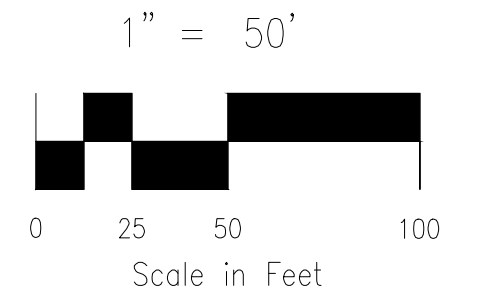
**NORTHWEST RETAINING WALL
TYP. CROSS SECTION**
SCALE: HORIZ: 1"=50'
VERT: 1"=5'



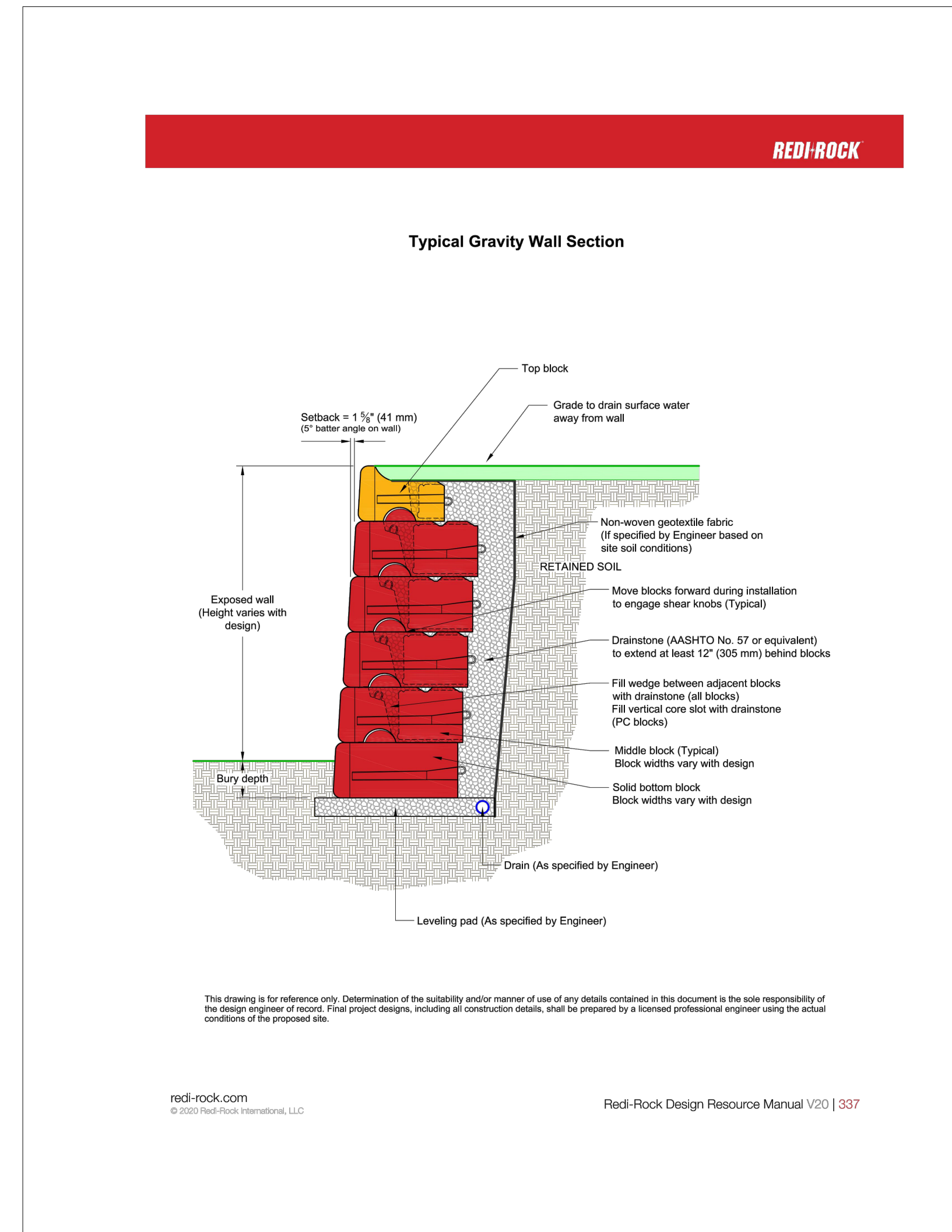
**NORTH RETAINING WALL
TYP. CROSS SECTION**
SCALE: HORIZ: 1"=50'
VERT: 1"=5'



SOUTHEAST POND & BERM TYP. CROSS SECTION
SCALE: HORIZ: 1"=50'
VERT: 1"=5'



**TIERED/TERRACED
RETAINING WALL H<4'**



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

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48 HRS BEFORE YOU DIG
CALL 1-800-922-1987**

CROSSROADS NORTH	
CROSS SECTION DETAILS	
PROJECT NO. 18-006	DATE: 08/29/2023
DESIGNED BY: DM	HORIZONTAL SCALE: 1"=50'
DRAWN BY: GT	VERTICAL SCALE: 1"=5'
CHECKED BY: VAS	SHEET 8 OF 15
EGR07	

212 N. WATKINS AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5465

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

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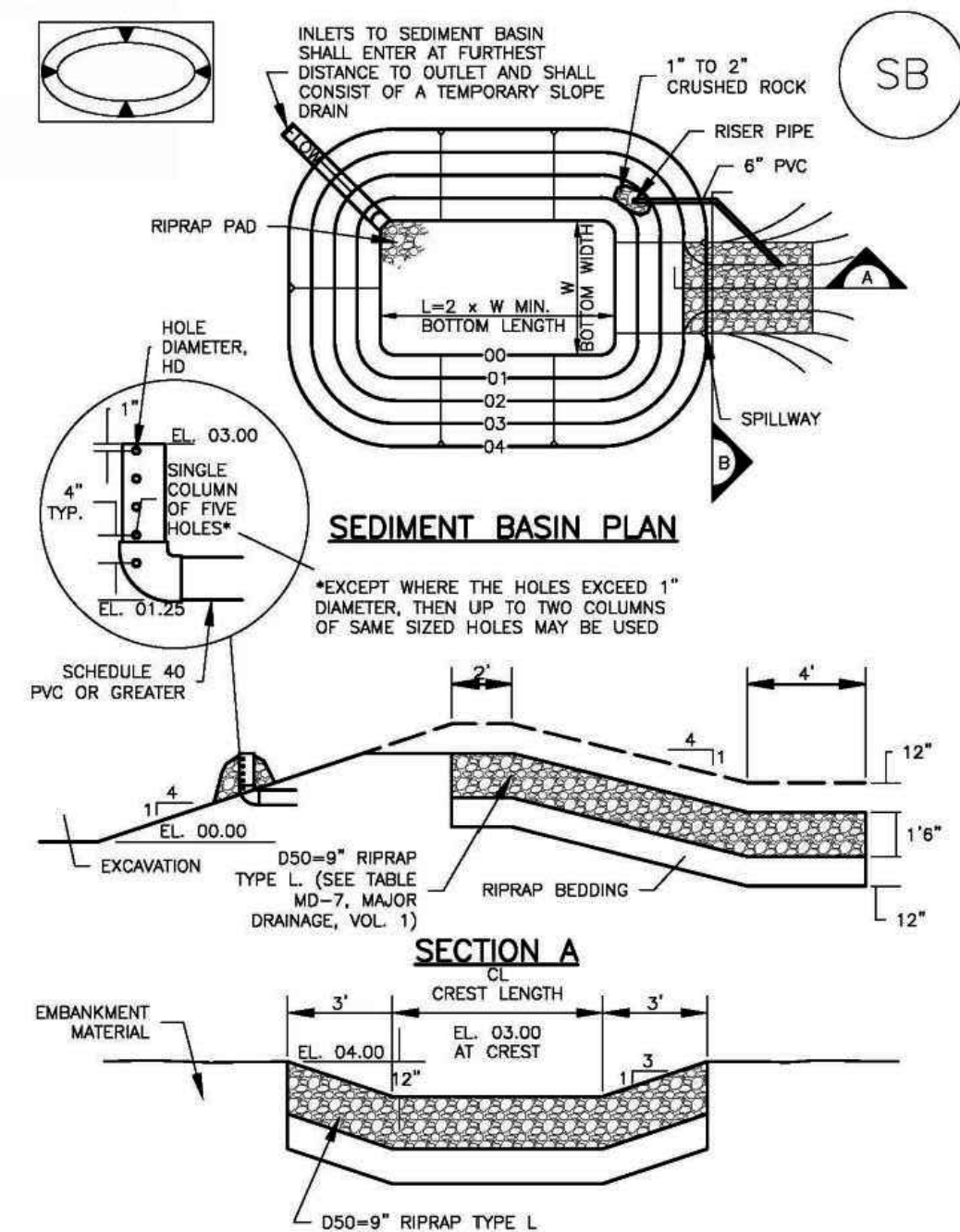
PROFESSIONAL ENGINEER
09-14-23
37160

NO.	DATE	BY	DESCRIPTION

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CAUTION

Sediment Basin (SB) SC-7



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

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 1/2	2	3/4
2	21	3	3/4
3	28	5	3/4
4	33 1/2	6	3/4
5	38 1/2	8	3/4
6	43	9	3/4
7	47 1/2	11	3/4
8	51	12	3/4
9	55	13	3/4
10	58 1/2	15	3/4
11	61	16	3/4
12	64	18	3/4
13	67 1/2	19	1 1/8
14	70 1/2	21	1 1/8
15	73 1/2	22	1 1/8

- SEDIMENT BASIN INSTALLATION NOTES**
- 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.
 - FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
 - SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS A STORMWATER CONTROL.
 - 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.
 - EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
 - PIPE SCH 40 OR GREATER SHALL BE USED.
 - 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.

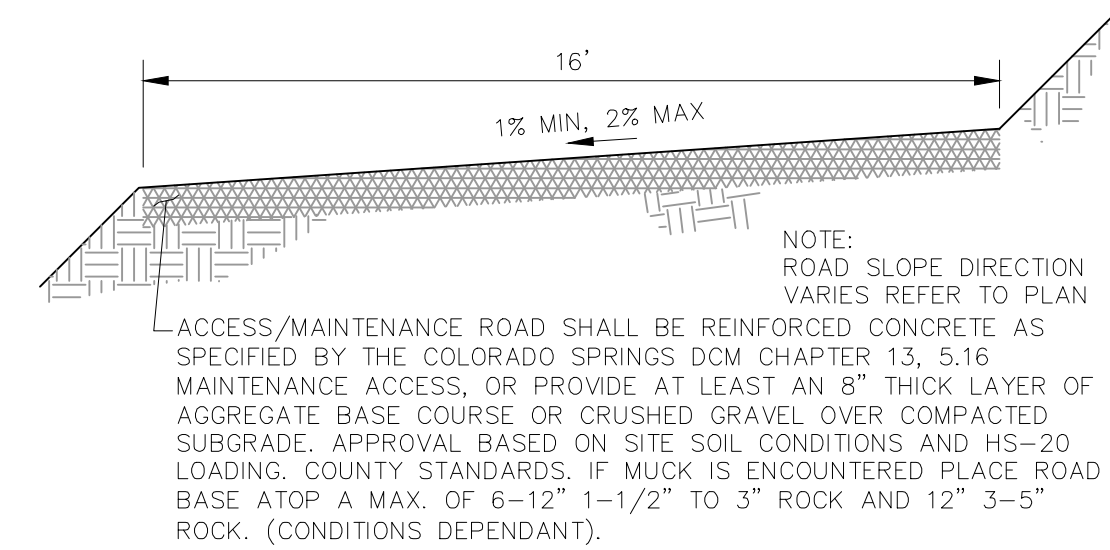
SB-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 August 2013

EL PASO COUNTY DETAILS

Sediment Basin (SB) SC-7

- SEDIMENT BASIN 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 IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET BELOW THE SPILLWAY CREST).
 - SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION.
 - WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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



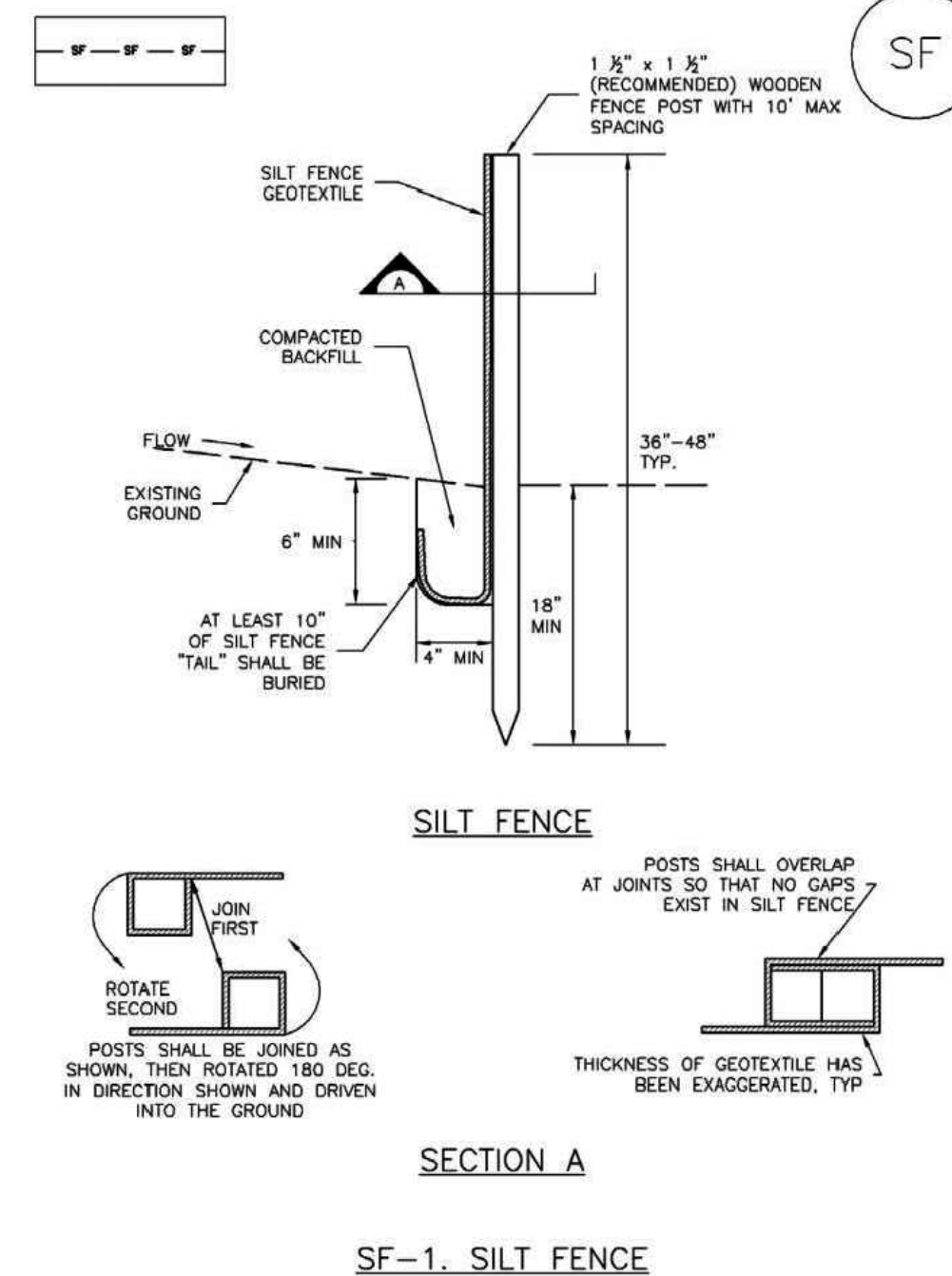
EROSION CONTROL CRITERIA:

- EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IN A MANNER THAT WILL PROTECT PROPERTIES AND PUBLIC FACILITIES FROM THE ADVERSE EFFECTS OF EROSION AND SEDIMENTATION AS A RESULT OF CONSTRUCTION AND EARTHWORK ACTIVITIES WITHIN THE PROJECT SITE.
- PRIOR TO START OF GRADING OPERATIONS, LOCATE AND SET THE SILT FENCE AND VEHICLE TRACKING CONTROL AS SHOWN ON THE EROSION CONTROL PLAN.
 - THE SILT FENCE SHALL BE KEPT IN PLACE AND MAINTAINED UNTIL EROSION AND SEDIMENTATION POTENTIAL IS MITIGATED. REMOVAL OF SILT AND SEDIMENT COLLECTED BY THE SILT FENCES IS REQUIRED ONCE IT REACHES HALF THE HEIGHT OF THE SILT FENCES.
 - EROSION CONTROL DEVICES SHOULD BE CHECKED AFTER EVERY STORM OR NOT MORE THAN EVERY 14 DAYS. REPAIRS OR REPLACEMENT SHOULD BE MADE AS NECESSARY TO MAINTAIN PROPER PROTECTION.
- SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN TWENTY-ONE (21) CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT THE FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPs SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.

NOTE:
SEE URBAN DRAINAGE CRITERIA MANUAL (VOL. 3) FOR INSTALLATION AND MAINTENANCE (TYP)

SC-1 Silt Fence (SF)

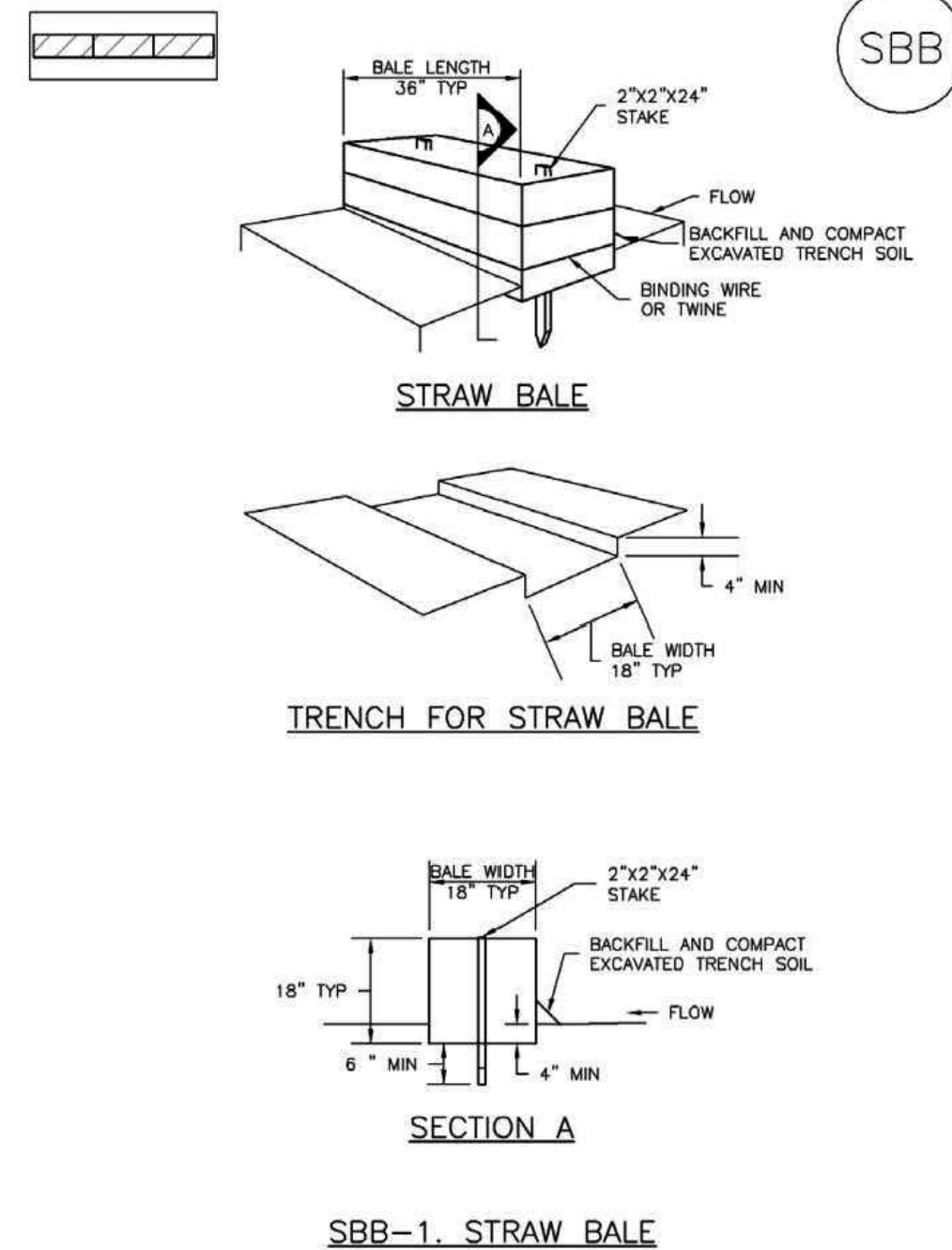
Silt Fence (SF) SC-1



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SC-3 Straw Bale Barrier (SBB)



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Straw Bale Barrier (SBB) SC-3

- STRAW BALE INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION(S) OF STRAW BALES.
 - STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.
 - STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
 - WHEN STRAW BALES ARE USED IN SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ONE ANOTHER.
 - STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"x18"x18".
 - A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALES. ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALE(S) AND COMPACTED.
 - TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"x2"x24". WOODEN STAKES SHALL BE DRIVEN 6" INTO THE GROUND.
- STRAW BALE 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.
 - STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.
 - SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/4 OF THE HEIGHT OF THE STRAW BALE BARRIER.
 - STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 - WHEN STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAILS ADAPTED FROM TOWN 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.

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CROSSROADS NORTH

GRADING & EROSION CONTROL DETAILS

PROJECT NO. 18-006 DATE: 08/29/2023

SCALE: HORIZONTAL: N/A VERTICAL: N/A

DESIGNED BY: DM DRAWN BY: GT CHECKED BY: VAS

212 N. WAHATCH AVE, STE 305 COLORADO SPRINGS CO 80903 PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 37160

FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.

PROFESSIONAL SEAL: VIRGIL A. SANCHEZ, P.E., NO. 37160, 09-14-23

REVISIONS:

NO.	DATE	BY	DESCRIPTION

APPROVED BY: _____ DATE: _____

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CAUTION

File: C:\18006A-Crossroads North Design\Crossroads Development Co\Dwg\Const Dwg\early grading\El Paso County\EGR08-EGR12.dwg Plotstamp: 8/30/2023 1:47 PM

SC-6 Inlet Protection (IP)

- IP-3. Rock Sock Inlet Protection for Sump/Area Inlet
 - IP-4. Silt Fence Inlet Protection for Sump/Area Inlet
 - IP-5. Over-excavation Inlet Protection
 - IP-6. Straw Bale Inlet Protection for Sump/Area Inlet
 - CIP-1. Culvert Inlet Protection
- Proprietary inlet protection devices should be installed in accordance with manufacturer specifications.
- More information is provided below on selecting inlet protection for sump and on-grade locations.

Inlets Located in a Sump

When applying inlet protection in sump conditions, it is important that the inlet continue to function during larger runoff events. For curb inlets, the maximum height of the protective barrier should be lower than the top of the curb opening to allow overflow into the inlet during larger storms without excessive localized flooding. If the inlet protection height is greater than the curb elevation, particularly if the filter becomes clogged with sediment, runoff will not enter the inlet and may bypass it, possibly causing localized flooding, public safety issues, and downstream erosion and damage from bypassed flows.

Area inlets located in a sump setting can be protected through the use of silt fence, concrete block and rock socks (on paved surfaces), sediment control logs/straw wattles embedded in the adjacent soil and stacked around the area inlet (on pervious surfaces), over-excavation around the inlet, and proprietary products providing equivalent functions.

Inlets Located on a Slope

For curb and gutter inlets on paved sloping streets, block and rock sock inlet protection is recommended in conjunction with curb socks in the gutter leading to the inlet. For inlets located along unpaved roads, also see the Check Dam Fact Sheet.

Maintenance and Removal

- Inspect inlet protection frequently. Inspection and maintenance guidance includes:
- Inspect for tears that can result in sediment directly entering the inlet, as well as result in the contents of the BMP (e.g., gravel) washing into the inlet.
 - Check for improper installation resulting in untreated flows bypassing the BMP and directly entering the inlet or bypassing to an unprotected downstream inlet. For example, silt fence that has not been properly trenched around the inlet can result in flows under the silt fence and directly into the inlet.
 - Look for displaced BMPs that are no longer protecting the inlet. Displacement may occur following larger storm events that wash away or reposition the inlet protection. Traffic or equipment may also crush or displace the BMP.
 - Monitor sediment accumulation upgradient of the inlet protection.

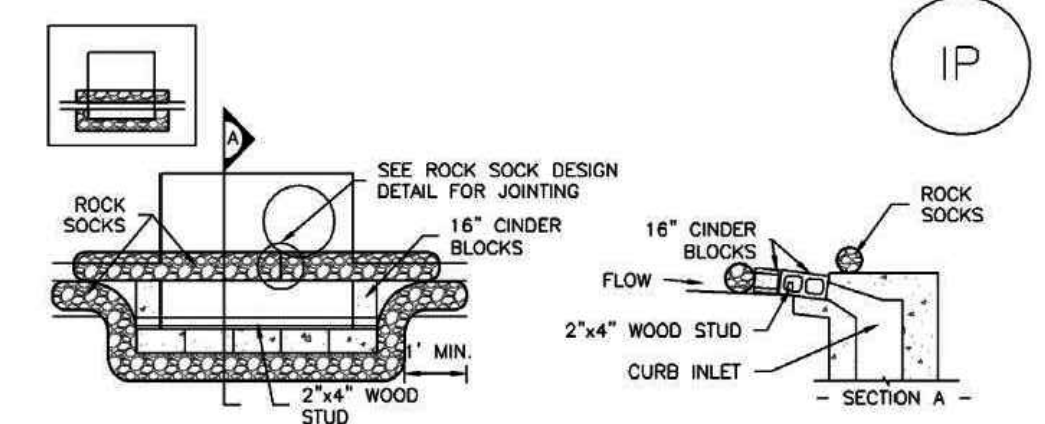
IP-2 Urban Drainage and Flood Control District August 2013
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Inlet Protection (IP) SC-6

- Remove sediment accumulation from the area upstream of the inlet protection, as needed to maintain BMP effectiveness, typically when it reaches no more than half the storage capacity of the inlet protection. For silt fence, remove sediment when it accumulates to a depth of no more than 6 inches. Remove sediment accumulation from the area upstream of the inlet protection as needed to maintain the functionality of the BMP.
 - Proprietary inlet protection devices should be inspected and maintained in accordance with manufacturer specifications. If proprietary inlet insert devices are used, sediment should be removed in a timely manner to prevent devices from breaking and spilling sediment into the storm drain.
- Inlet protection must be removed and properly disposed of when the drainage area for the inlet has reached final stabilization.

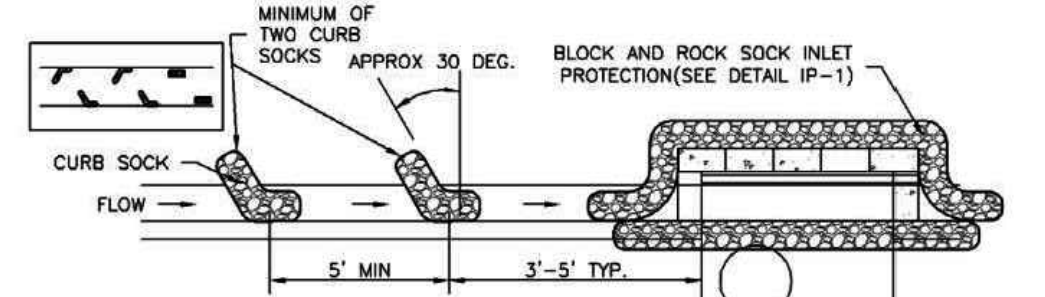
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SC-6 Inlet Protection (IP)



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

- BLOCK AND CURB SOCK INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
 - 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.
 - GRAVEL BAGS SHALL BE PLACED AROUND CONCRETE BLOCKS, CLOSELY ABUTTING ONE ANOTHER AND JOINED TOGETHER IN ACCORDANCE WITH ROCK SOCK DESIGN DETAIL.

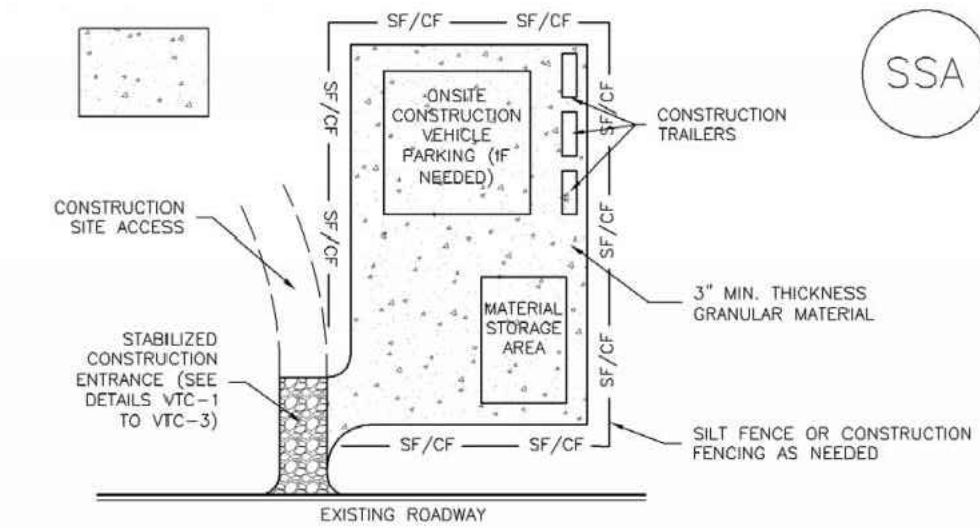


IP-2. CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

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

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SM-6 Stabilized Staging Area (SSA)

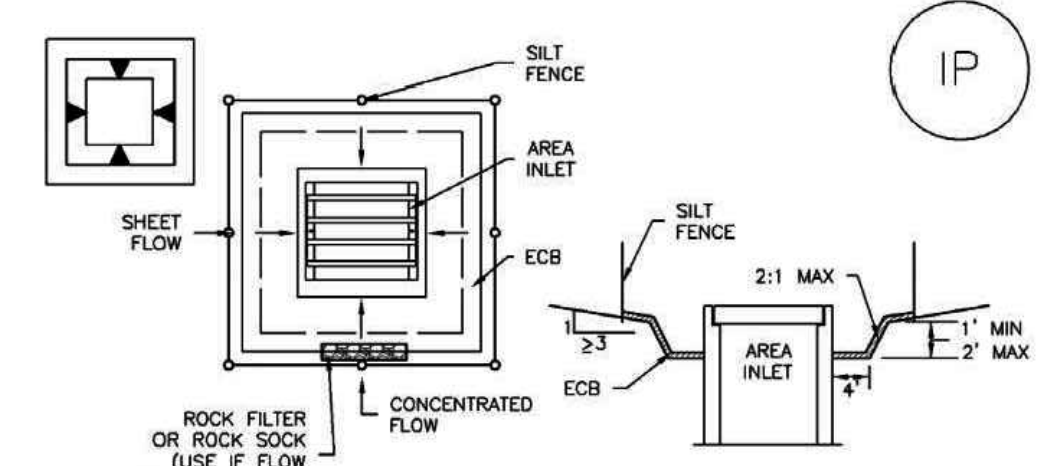


SSA-1. STABILIZED STAGING AREA

- 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.

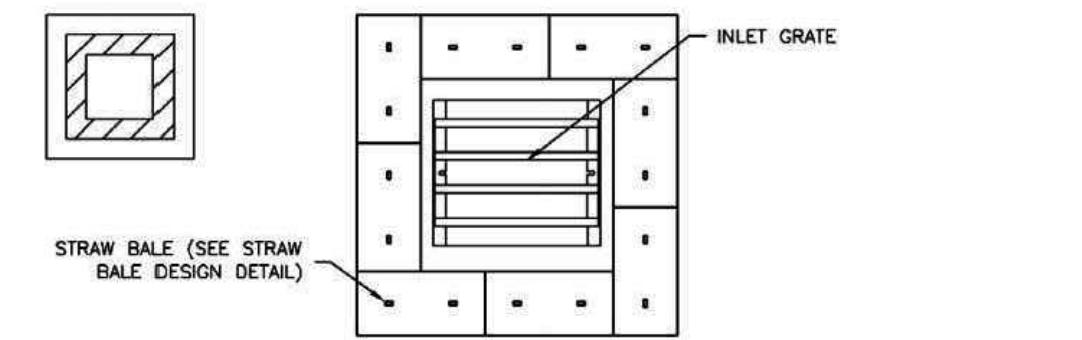
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SC-6 Inlet Protection (IP)



IP-5. OVEREXCAVATION INLET PROTECTION

- OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES**
- THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
 - WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
 - SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.

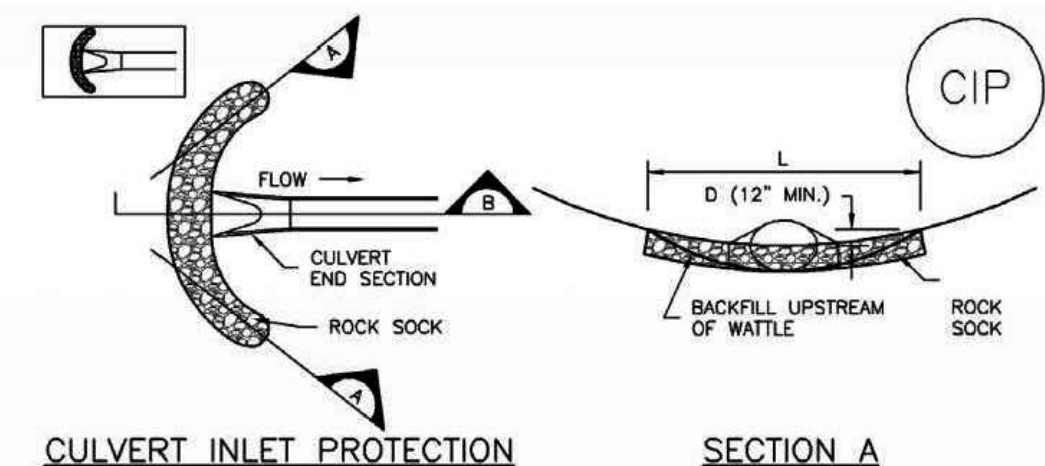


IP-6. STRAW BALE FOR SUMP INLET PROTECTION

- STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES**
- SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
 - BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.

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Inlet Protection (IP) SC-6



CIP-1. CULVERT INLET PROTECTION

- CULVERT INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF CULVERT INLET PROTECTION.
 - SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.
- CULVERT INLET PROTECTION 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 CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS 1/2 THE HEIGHT OF THE ROCK SOCK.
 - 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.

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SC-6 Inlet Protection (IP)

- GENERAL INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR:
 - LOCATION OF INLET PROTECTION.
 - TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)
 - 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 FLOW.
 - 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**
- 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 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 1/3 OF THE HEIGHT FOR STRAW BALES.
 - 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.
 - 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.
- (DETAILS 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 FACT 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 SWMP 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.

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SM-6 Stabilized Staging Area (SSA)

- STABILIZED STAGING AREA MAINTENANCE NOTES**
- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
 - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.
- NOTE:** MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.
- NOTE:** MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

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CROSSROADS NORTH

GRADING & EROSION CONTROL DETAILS

PROJECT NO. 18-006 DATE: 08/29/2023

SCALE: HORIZONTAL: N/A VERTICAL: N/A

DESIGNED BY: DM DRAWN BY: GT CHECKED BY: VAS

212 N. WAHATCH AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

VIRGIL A. SANCHEZ, COLORADO, P.E. NO. 371160

FOR AND ON BEHALF OF MKS CIVIL CONSULTANTS, INC.

NO. DATE: BY: DESCRIPTION: APPROV. BY: DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

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EC-6 Rolled Erosion Control Products (RECP)

Turf Reinforcement Mat (TRM): A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh, and/or other elements, processed into a permanent, three-dimensional matrix of sufficient thickness. TRMs, which may be supplemented with degradable components, are designed to impart immediate erosion protection, enhance vegetation establishment and provide long-term functionality by permanently reinforcing vegetation during and after maturation. Note: TRMs are typically used in hydraulic applications, such as high flow ditches and channels, steep slopes, stream banks, and shorelines, where erosive forces may exceed the limits of natural, unreinforced vegetation or in areas where limited vegetation establishment is anticipated.

Tables RECP-1 and RECP-2 provide guidelines for selecting rolled erosion control products appropriate to site conditions and desired longevity. Table RECP-1 is for conditions where natural vegetation alone will provide permanent erosion control, whereas Table RECP-2 is for conditions where vegetation alone will not be adequately stable to provide long-term erosion protection due to flow or other conditions.

Table RECP-1. ECTC Standard Specification for Temporary Rolled Erosion Control Products
(Adapted from Erosion Control Technology Council 2005)

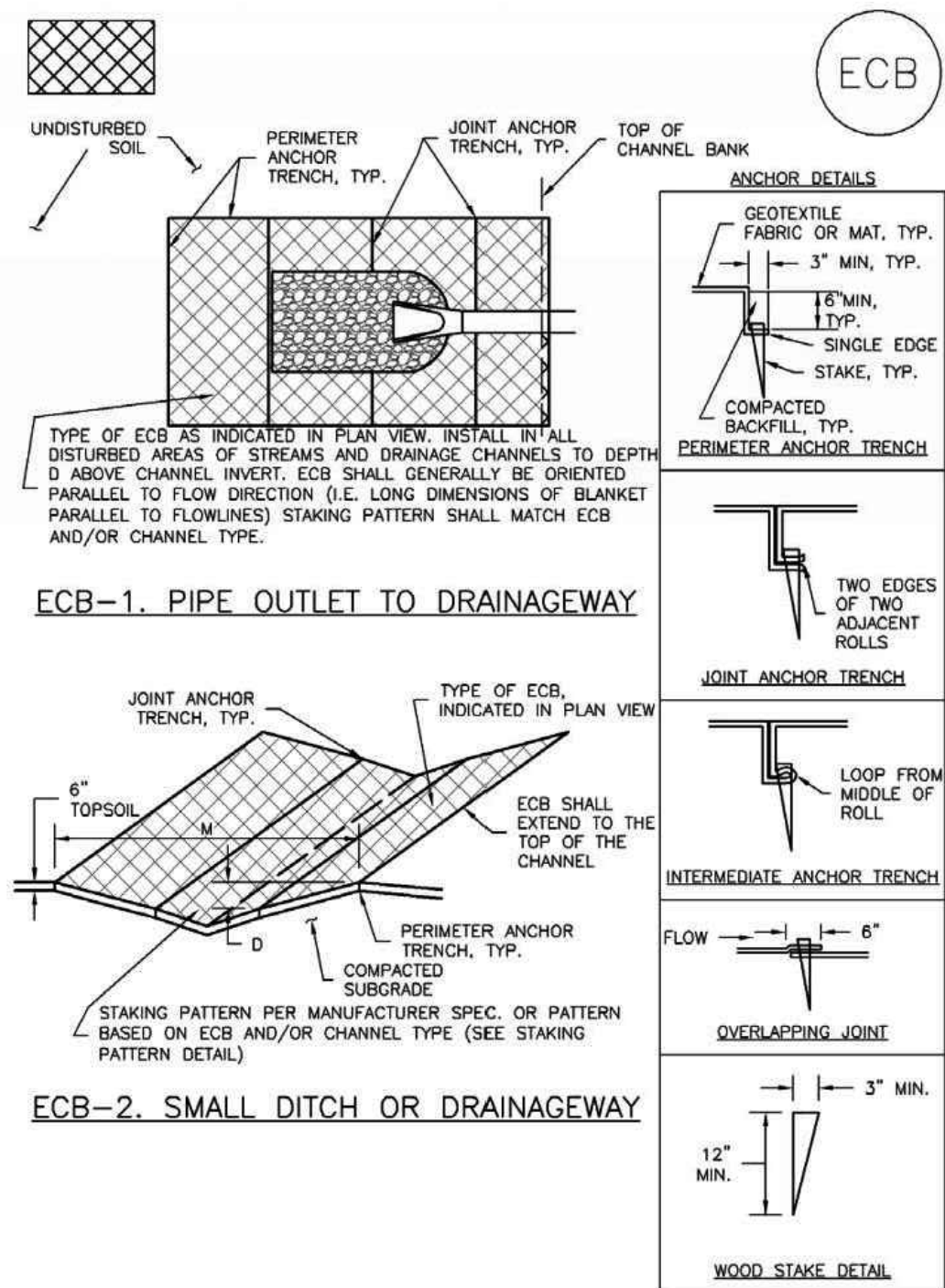
Product Description	Slope Applications*		Channel Applications*	Minimum Tensile Strength ¹	Expected Longevity
	Maximum Gradient	C Factor ^{2,3}			
Mulch Control Nets	5:1 (H:V)	≤0.10 @ 5:1	0.25 lbs/ft ² (12 Pa)	5 lbs/ft (0.073 kN/m)	Up to 12 months
Netless Rolled Erosion Control Blankets	4:1 (H:V)	≤0.10 @ 4:1	0.5 lbs/ft ² (24 Pa)	5 lbs/ft (0.073 kN/m)	
Single-net Erosion Control Blankets & Open Weave Textiles	3:1 (H:V)	≤0.15 @ 3:1	1.5 lbs/ft ² (72 Pa)	50 lbs/ft (0.73 kN/m)	
Double-net Erosion Control Blankets	2:1 (H:V)	≤0.20 @ 2:1	1.75 lbs/ft ² (84 Pa)	75 lbs/ft (1.09 kN/m)	
Mulch Control Nets	5:1 (H:V)	≤0.10 @ 5:1	0.25 lbs/ft ² (12 Pa)	25 lbs/ft (0.36 kN/m)	24 months
Erosion Control Blankets & Open Weave Textiles (slowly degrading)	1.5:1 (H:V)	≤0.25 @ 1.5:1	2.00 lbs/ft ² (96 Pa)	100 lbs/ft (1.45 kN/m)	24 months
Erosion Control Blankets & Open Weave Textiles	1:1 (H:V)	≤0.25 @ 1:1	2.25 lbs/ft ² (108 Pa)	125 lbs/ft (1.82 kN/m)	36 months

* C Factor and shear stress for mulch control nettings must be obtained with netting used in conjunction with pre-applied mulch material. (See Section 5.3 of Chapter 7 Construction BMPs for more information on the C Factor.)
¹ Minimum Average Roll Values, Machine direction using ECTC Mod. ASTM D 5035.
² C Factor calculated as ratio of soil loss from RECP protected slope (tested at specified or greater gradient, H:V) to ratio of soil loss from unprotected (control) plot in large-scale testing.
³ Required minimum shear stress RECP (unvegetated) can sustain without physical damage or excess erosion (> 12.7 mm (0.5 in) soil loss) during a 30-minute flow event in large-scale testing.
⁴ The permissible shear stress levels established for each performance category are based on historical experience with products characterized by Manning's roughness coefficients in the range of 0.01 - 0.05.
⁵ Acceptable large-scale test methods may include ASTM D 6459, or other independent testing deemed acceptable by the engineer.
⁶ Per the engineer's discretion. Recommended acceptable large-scale testing protocol may include ASTM D 6460, or other independent testing deemed acceptable by the engineer.

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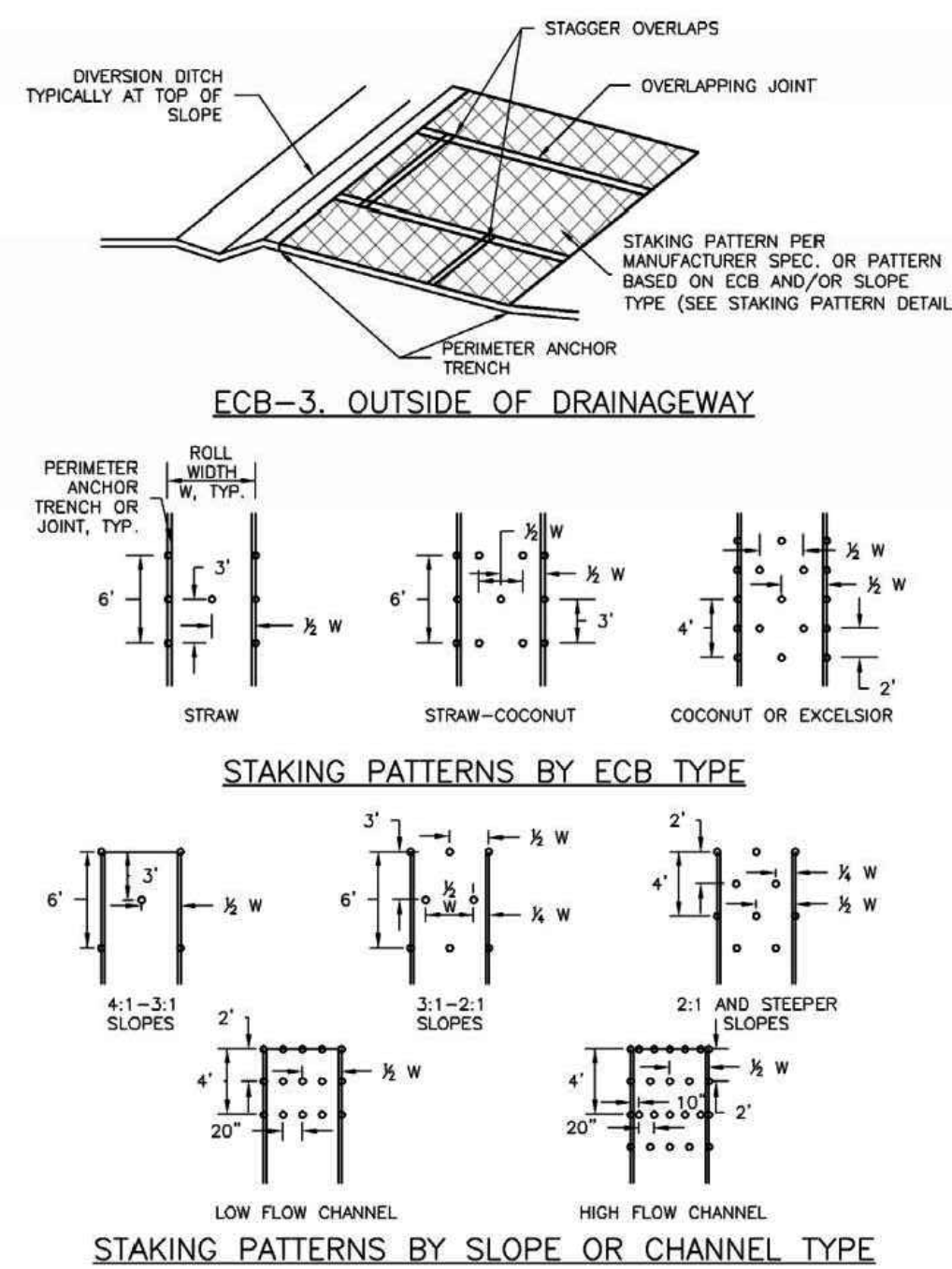
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EC-6 Rolled Erosion Control Products (RECP)



RECP-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EC-6 Rolled Erosion Control Products (RECP)



RECP-7 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EC-6 Rolled Erosion Control Products (RECP)

Table RECP-2. ECTC Standard Specification for Permanent¹ Rolled Erosion Control Products
(Adapted from: Erosion Control Technology Council 2005)

Product Type	Slope Applications	Channel Applications	Minimum Tensile Strength ^{2,3}
TRMs with a minimum thickness of 0.25 inches (6.35 mm) per ASTM D 6525 and UV stability of 80% per ASTM D 4355 (500 hours exposure).	0.5:1 (H:V)	6.0 lbs/ft ² (288 Pa)	125 lbs/ft (1.82 kN/m)
	0.5:1 (H:V)	8.0 lbs/ft ² (384 Pa)	150 lbs/ft (2.19 kN/m)
	0.5:1 (H:V)	10.0 lbs/ft ² (480 Pa)	175 lbs/ft (2.55 kN/m)

¹ For TRMs containing degradable components, all property values must be obtained on the non-degradable portion of the matting alone.
² Minimum Average Roll Values, machine direction only for tensile strength determination using ASTM D 6818 (Supersedes Mod. ASTM D 5035 for RECPs)
³ Field conditions with high loading and/or high survivability requirements may warrant the use of a TRM with a tensile strength of 44 kN/m (3,000 lb/ft) or greater.
⁴ Required minimum shear stress TRM (fully vegetated) can sustain without physical damage or excess erosion (> 12.7 mm (0.5 in) soil loss) during a 30-minute flow event in large scale testing.
⁵ Acceptable large-scale testing protocols may include ASTM D 6460, or other independent testing deemed acceptable by the engineer.

Design and Installation

RECPs should be installed according to manufacturer's specifications and guidelines. Regardless of the type of product used, it is important to ensure no gaps or voids exist under the material and that all corners of the material are secured using stakes and trenching. Continuous contact between the product and the soil is necessary to avoid failure. Never use metal stakes to secure temporary erosion control products. Often wooden stakes are used to anchor RECPs; however, wood stakes may present installation and maintenance challenges and generally take a long time to biodegrade. Some local jurisdictions have had favorable experiences using biodegradable stakes.

This BMP Fact Sheet provides design details for several commonly used ECB applications, including:

- ECB-1 Pipe Outlet to Drainageway
- ECB-2 Small Ditch or Drainageway
- ECB-3 Outside of Drainageway

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

EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET INSTALLATION NOTES

- SEE PLAN VIEW FOR:
 - LOCATION OF ECB.
 - TYPE OF ECB (STRAW, STRAW-COCOONUT, COCONUT, OR EXCELSIOR).
 - AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
- DETAILS ON DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB-1. ECB MATERIAL SPECIFICATIONS

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	-	100%	-	DOUBLE/NATURAL
STRAW-COCOONUT	30% MIN	70% MAX	-	DOUBLE/NATURAL
COCONUT	100%	-	-	DOUBLE/NATURAL
EXCELSIOR	-	-	100%	DOUBLE/NATURAL

*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS.
 **ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

RECP-8 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

EC-6 Rolled Erosion Control Products (RECP)

Staking patterns are also provided in the design details according to these factors:
 • ECB type
 • Slope or channel type

For other types of RECPs including TRMs, these design details are intended to serve as general guidelines for design and installation; however, engineers should adhere to manufacturer's installation recommendations.

Maintenance and Removal

Inspection of erosion control blankets and other RECPs includes:

- Check for general signs of erosion, including voids beneath the mat. If voids are apparent, fill the void with suitable soil and replace the erosion control blanket, following the appropriate staking pattern.
- Check for damaged or loose stakes and secure loose portions of the blanket.

Erosion control blankets and other RECPs that are biodegradable typically do not need to be removed after construction. If they must be removed, then an alternate soil stabilization method should be installed promptly following removal.

Turf reinforcement mats, although generally resistant to biodegradation, are typically left in place as a dense vegetated cover grows in through the mat matrix. The turf reinforcement mat provides long-term stability and helps the established vegetation resist erosive forces.

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

EC-6 Rolled Erosion Control Products (RECP)

EROSION CONTROL BLANKET 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.
- ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
- ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED, AND THE ECB REINSTALLED.

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 DOUGLAS COUNTY, COLORADO AND TOWN OF PARKER COLORADO, NOT AVAILABLE IN AUTOCAD)

RECP-9 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

CROSSROADS NORTH

GRADING & EROSION CONTROL DETAILS

PROJECT NO. 18-006 DATE: 08/29/2023

SCALE: HORIZONTAL: N/A VERTICAL: N/A

DESIGNED BY: DM DRAWN BY: GT CHECKED BY: VAS

SHEET 12 OF 15 EGR 11

210 N WAHATCH AVE, STE 305 COLORADO SPRINGS, CO 80903 PHONE: 719.955.5486

FOR AND ON BEHALF OF CIVIL CONSULTANTS, INC.

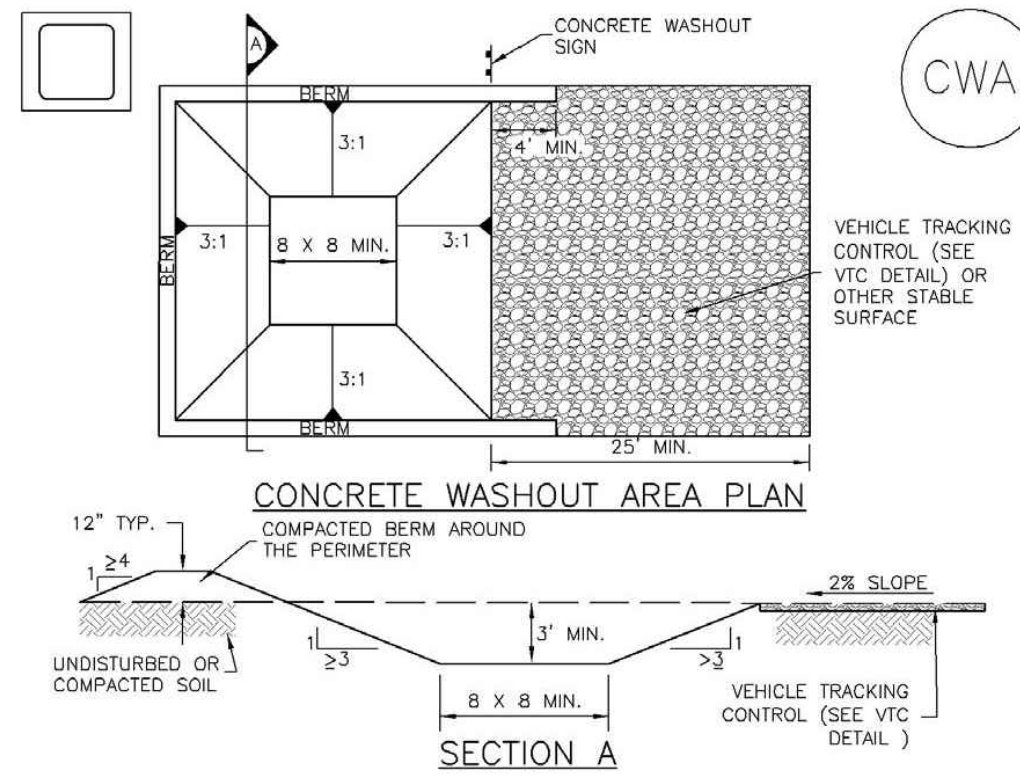
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO. DATE: DESCRIPTION: APPROV. BY: DATE:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPAREY OF THESE PLANS.

CAUTION

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 1,000' 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 RIGS.
8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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

Concrete Washout Area (CWA) MM-1

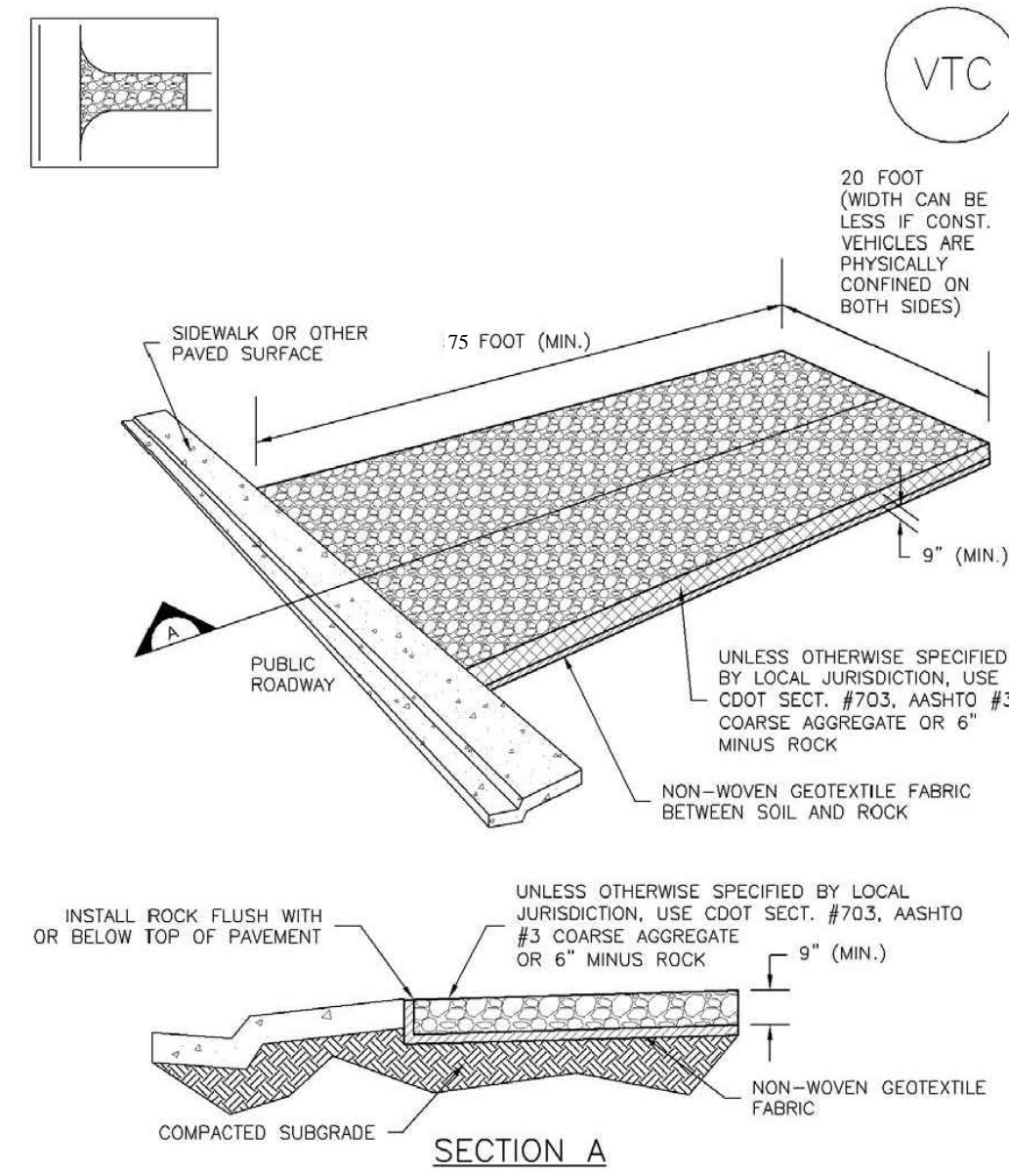
CWA MAINTENANCE NOTES

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, SEED 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 UDPCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

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

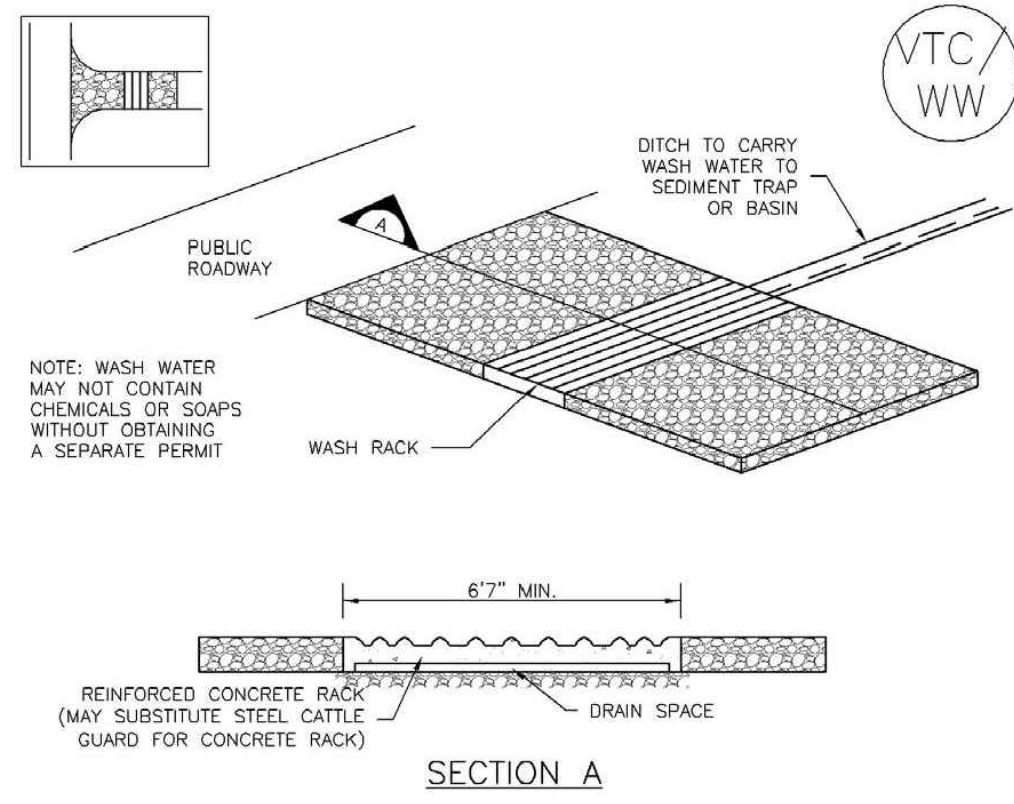
Vehicle Tracking Control (VTC) SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

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

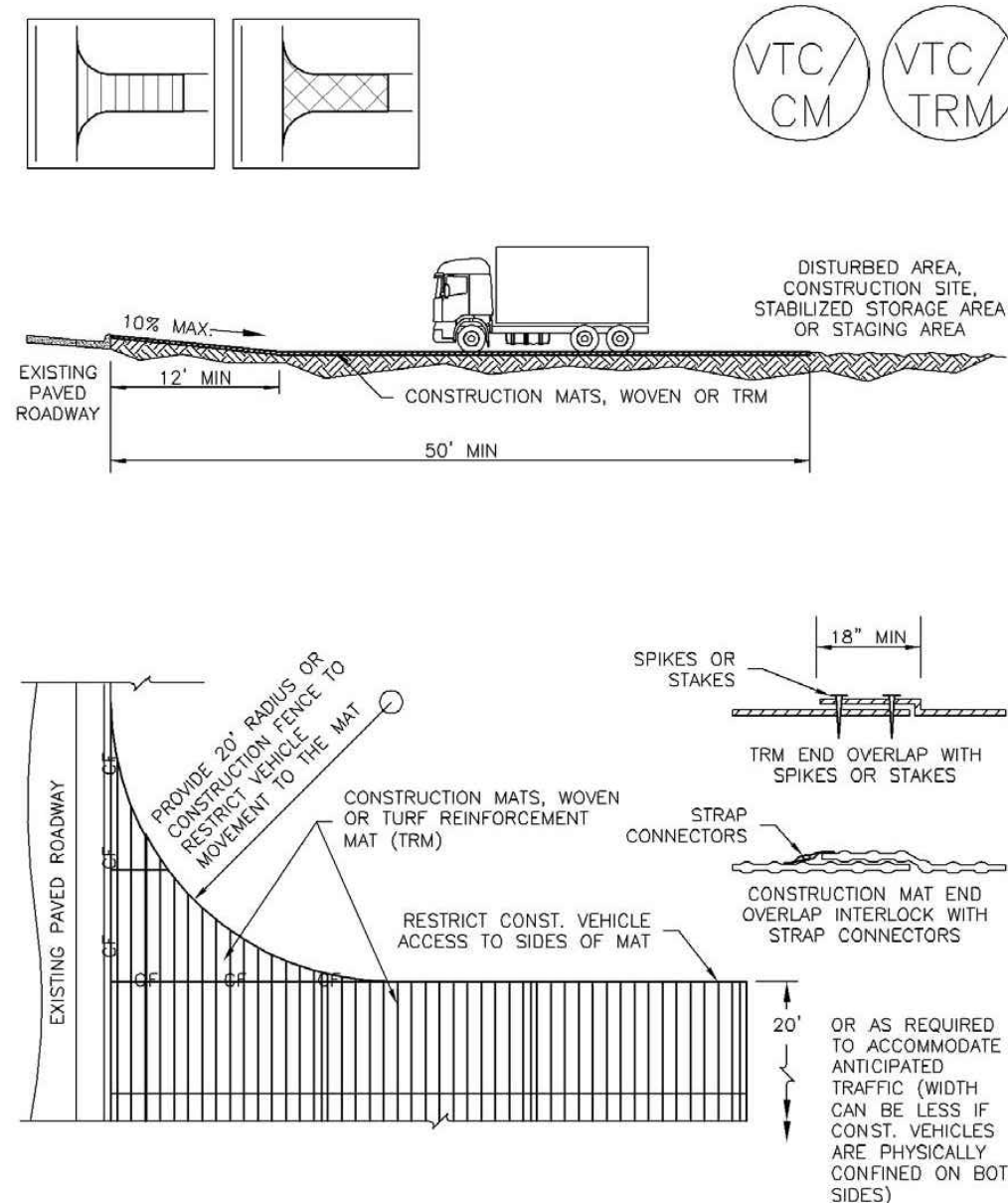
Vehicle Tracking Control (VTC) SM-4



VTC-2. AGGREGATE VEHICLE TRACKING CONTROL WITH WASH RACK

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

Vehicle Tracking Control (VTC) SM-4



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

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

Vehicle Tracking Control (VTC) SM-4

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. 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).
2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6\" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

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 TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDPCD 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)

November 2010 Urban Drainage and Flood Control District VTC-6
Urban Storm Drainage Criteria Manual Volume 3

CROSSROADS NORTH

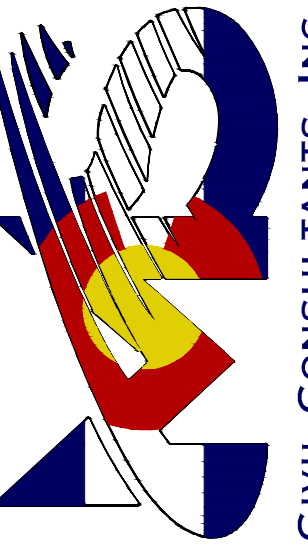
GRADING & EROSION CONTROL DETAILS

PROJECT NO. 18-006 SCALE: DATE: 08/29/2023
DESIGNED BY: DM HORIZONTAL: N/A
DRAWN BY: GT VERTICAL: N/A
CHECKED BY: WAS

EGR12

SHEET 13 OF 15

212 N. WASHACHE AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485



FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

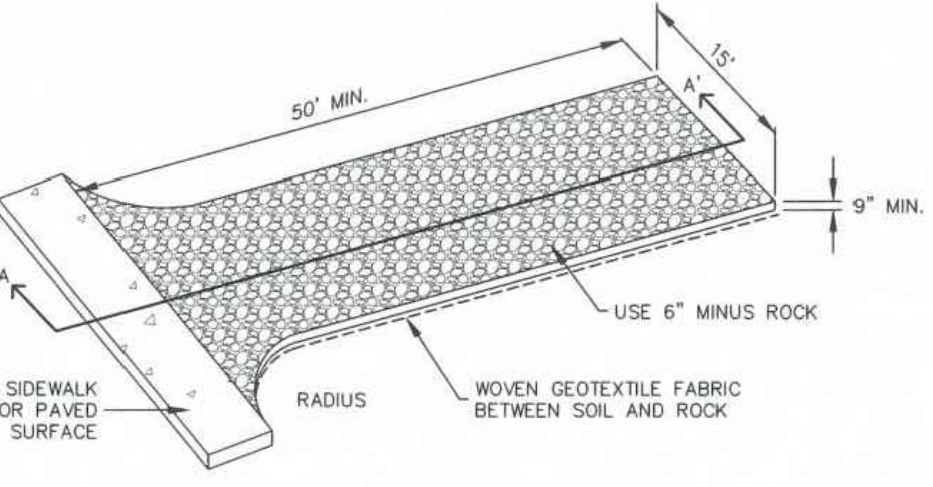
MIRCEL A. SANCHEZ, COLORADO P.E. NO. 37160



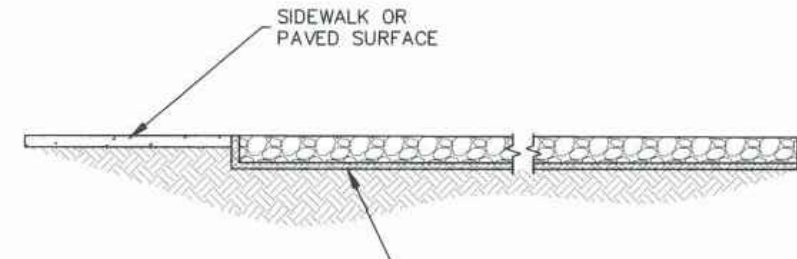
NO.	DATE	BY	DESCRIPTION	APPROVED	DATE

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CAUTION



AGGREGATE VEHICLE TRACKING CONTROL



SECTION A-A'

INSTALLATION NOTES

- 1. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHOULD BE LOCATED AT ALL POINTS WHERE VEHICLES EXIT THE CONSTRUCTION SITE TO ADJACENT ROADWAY.

MAINTENANCE NOTES

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



VEHICLE TRACKING CONTROL approval stamp with signature and dates.

SEEDING & MULCHING

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

SOIL PREPARATION

- 1. IN AREAS TO BE SEEDDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE.

SEEDING

- 1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.

MULCHING

- 1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.



SEEDING & MULCHING approval stamp with signature and dates.

Table 5-1. El Paso County Conservation District All-Purpose Mix for Upland, Transition and Permanent Control Measure Areas

Table with 7 columns: Common Name, Scientific Name, Growth Season/Form, % of Mix, and Pounds PLS (Irrigated broadcast, Non-irrigated broadcast, Non-irrigated drilled).

*For portions of facilities located near or on the bottom or where wet soil conditions occur. Planting of potted nursery stock wetland plants 2-foot on-center is recommended for sites with wetland hydrology.

†Species that will do well in the bottom of pond areas.

Table 5-2. El Paso County All-Purpose Low Grow Mix for Upland and Transition Areas

Table with 7 columns: Common Name, Scientific Name, Growth Season/Form, % of Mix, and Pounds PLS (Irrigated broadcast, Non-irrigated broadcast, Non-irrigated drilled).

INSTALLATION NOTES

- 1. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE REQUIRED FOR EROSION CONTROL BLANKETS. TRM PRODUCTS MAY BE USED WHERE APPROPRIATE AS DESIGNATED BY THE ENGINEER.

MAINTENANCE NOTES

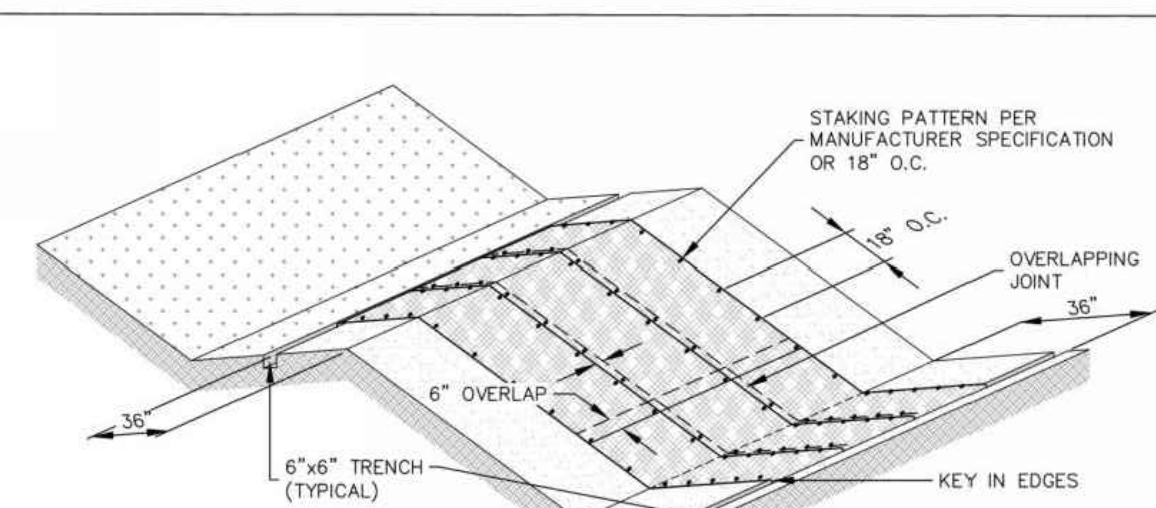
- 1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

TABLE ECB-1, EROSION CONTROL BLANKET MATERIAL SPECIFICATIONS

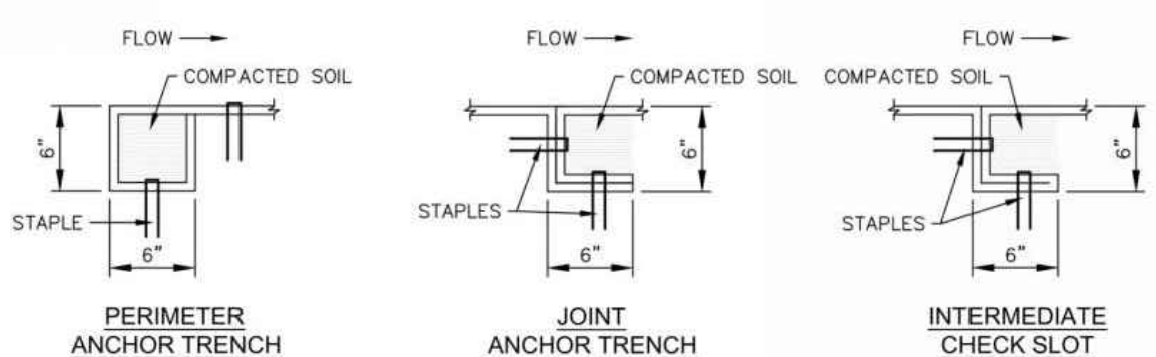
Table with 5 columns: TYPE, COCONUT CONTENT, STRAW CONTENT, EXCELSIOR CONTENT, RECOMMENDED NETTING.



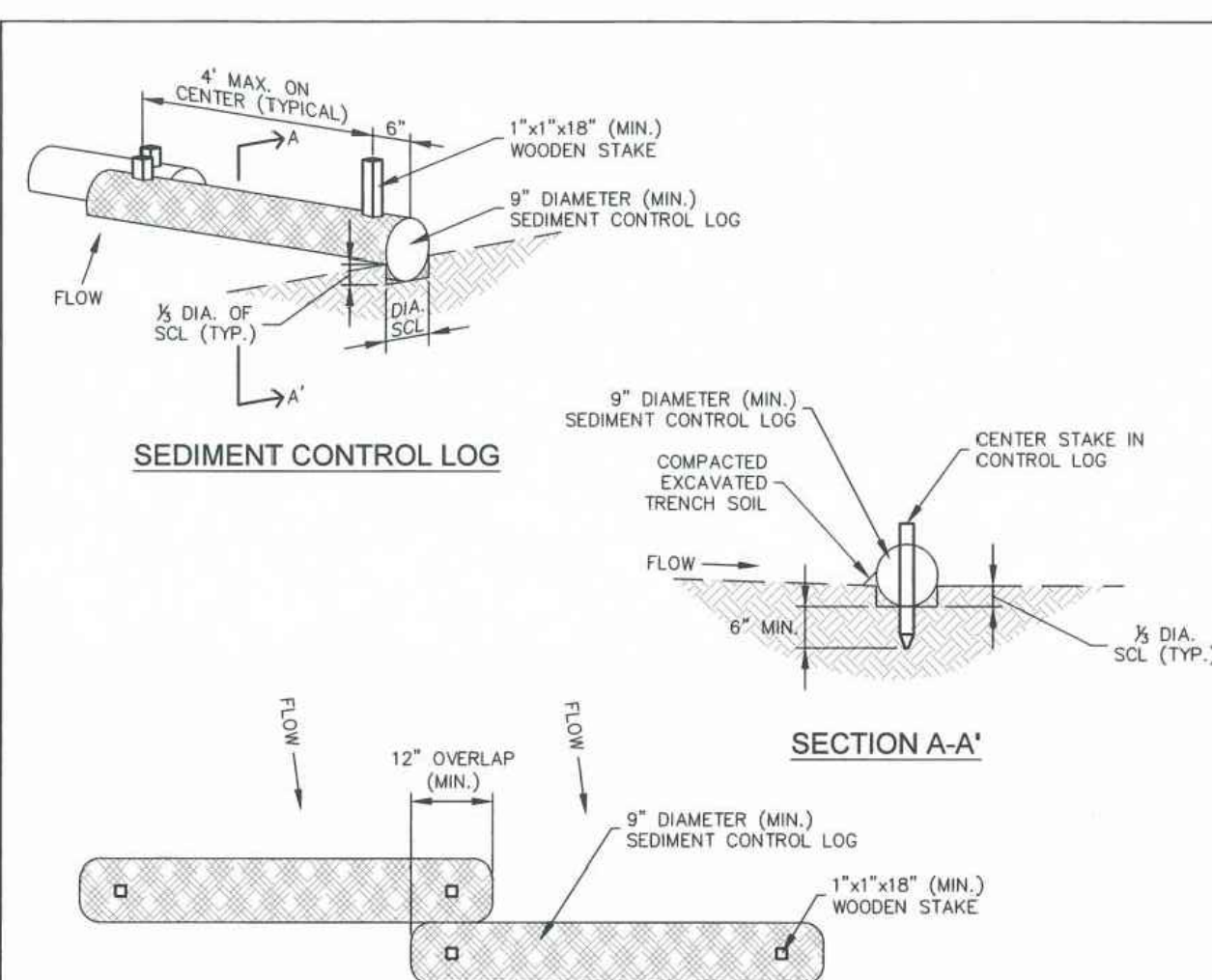
EROSION CONTROL BLANKET approval stamp with signature and dates.



EROSION CONTROL BLANKET



EROSION CONTROL BLANKET approval stamp with signature and dates.



SEDIMENT CONTROL LOG

SEDIMENT CONTROL LOG JOINTS

INSTALLATION NOTES

- 1. ALL SEDIMENT CONTROL LOGS MUST BE EMBEDDED TO 1/3 OF THE HEIGHT OF THE LOG.

MAINTENANCE NOTES

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



SEDIMENT CONTROL LOGS approval stamp with signature and dates.

Table 17.1 Standard CDOT gradations for rock riprap.

Table with 5 columns: Pay Item, Stone Size d50 (Inches), Percent of Material Smaller Than Typical Stone, Typical Stone Dimensions (Inches), and Typical Stone Weight (Pounds).

1d50 = nominal stone size, 2based on typical rock mass, 3equivalent spherical diameter, 4based on a specific gravity = 2.5

Vertical sidebar containing project information (CROSSROADS NORTH, GRADING & EROSION CONTROL DETAILS), scale (1"=10'), date (08/29/2023), sheet number (SHEET 14 OF 15), and EGR13 logo.

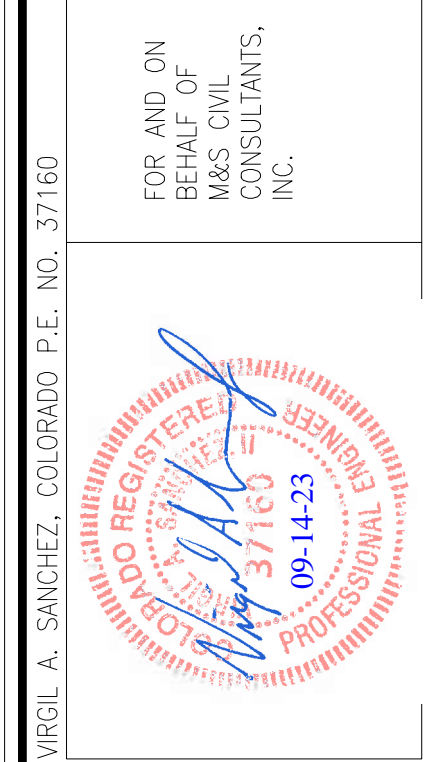
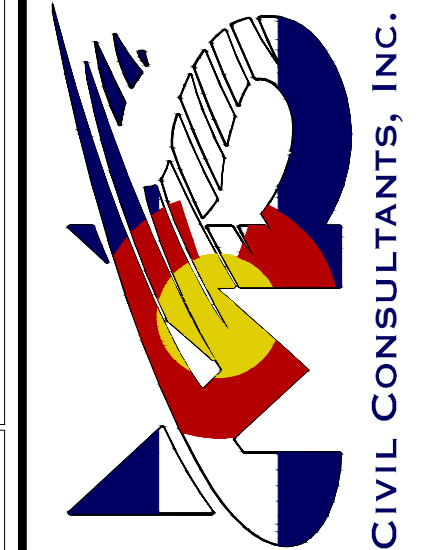


Table for revisions with columns for NO., DATE, BY, DESCRIPTION, and APPROVED BY.

CAUTION

CULVERT INLET PROTECTION PLAN

SECTION A-A'

SECTION B-B'

INSTALLATION NOTES

- SEE ROCK SOCK DETAIL.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- ACCUMULATED SEDIMENT UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS 1/2 HEIGHT OF THE ROCK SOCK.
- CULVERT INLET PROTECTION SHALL REMAIN UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.

CIP

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-IP-1 REVISIONS: 8/19/2020 DRAWING NO. 900-IP-1

ROCK SOCK SUMP INLET PROTECTION PLAN

SECTION A-A'

INSTALLATION NOTES

- SEE ROCK SOCK DETAIL FOR INSTALLATION REQUIREMENTS.
- SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS IN PEROUS AREAS.
- CONTROL MEASURES MUST BE WRAPPED AROUND INLET AS TIGHTLY AS POSSIBLE.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES 1/2 OF THE DESIGN DEPTH OF THE INLET BARRIER.
- ROCK SOCKS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
- PERMANENTLY STABILIZE AREA AROUND INLET AFTER ROCK SOCKS ARE REMOVED WHEN REMOVAL IS APPROPRIATE.

IP-2

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-IP-2 REVISIONS: 8/19/2020 DRAWING NO. 900-IP-2

SILT FENCE SUMP INLET PROTECTION PLAN

SECTION A-A'

INSTALLATION NOTES

- SEE SILT FENCE DETAIL FOR INSTALLATION REQUIREMENTS.
- POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF THREE FEET.
- SILT FENCE FABRIC SHOULD HAVE A FLOW RATE IN EXCESS OF 30 GALLONS PER MINUTE PER SQUARE YARD SO AS TO ALLOW SOME WATER FLOW AND NOT DAM THE WATER. STANDARD, LOW-FLOW SILT FENCE FABRIC WILL NOT BE ALLOWED.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES 1/2 OF THE DESIGN DEPTH OF THE INLET BARRIER.
- SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
- PERMANENTLY STABILIZE AREA AROUND INLET AFTER SILT FENCE IS REMOVED WHEN REMOVAL IS APPROPRIATE.

IP-3

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-IP-3 REVISIONS: 8/19/2020 DRAWING NO. 900-IP-3

STRAW BALE SUMP INLET PROTECTION PLAN

SECTION A-A'

INSTALLATION NOTES

- BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE ENDS OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
- STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.
- STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
- CORNER BALE DIMENSIONS SHALL BE APPROXIMATELY 36" X 18" X 18".
- A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PACED SO THAT THE BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S).
- TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"x2"x24" (MIN.). WOODEN STAKES SHALL BE DRIVEN A MINIMUM OF 6" INTO THE GROUND.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES 1/2 OF THE DESIGN DEPTH OF THE INLET BARRIER.
- STRAW BALES MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
- PERMANENTLY STABILIZE AREA AROUND INLET AFTER STRAW BALES ARE REMOVED WHEN REMOVAL IS APPROPRIATE.
- STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN OR DAMAGED BEYOND REPAIR.

IP-4

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-IP-4 REVISIONS: 8/19/2020 DRAWING NO. 900-IP-4

SILT FENCE

J-HOOK INSTALLATION

SECTION A-A'

INSTALLATION NOTES

- SILT FENCE MUST BE PLACED ON A FLAT SURFACE 2'-5' AWAY FROM TOE OF THE SLOPE TO ALLOW FOR PONDING AND DEPOSITION.
- COMPACT THE TRENCH USING A JUMPING JACK OR WHEEL ROLLING TO THE POINT THAT THE FENCE RESISTS BEING PULLED OUT OF THE GROUND BY HAND.
- SILT FENCE SHALL BE TAUT WITH NO SAGS AFTER IT HAS BEEN ANCHORED.
- FABRIC SHALL BE ATTACHED TO POSTS WITH 1" HEAVY DUTY STAPLES OR 1" NAILS. THESE SHOULD BE PLACED VERTICALLY DOWN THE POST, 3" APART.
- THE PREFERRED INSTALLATION METHOD USES A TRENCHER OR SILT FENCE INSTALLATION DEVICE.
- INSTALL SILT FENCE ALONG THE CONTOUR OF THE SLOPES OR IN A MANNER TO AVOID CREATING CONCENTRATED FLOW (SUCH AS A "J-HOOK" INSTALLATION).

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES 1/2 OF THE DESIGN HEIGHT OF THE SILT FENCE.
- SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
- PERMANENTLY STABILIZE AREA AFTER SILT FENCE IS REMOVED.

SF

STORMWATER ENTERPRISE

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ISSUED: 10/7/19 SHEET NUMBER: 900-SF REVISIONS: 8/19/2020 DRAWING NO. 900-SF

UPSTREAM DRAINAGE AREA (ROUNDED TO NEAREST ACRE), (AC)	BASIN BOTTOM WIDTH (W), (FT)	SPILLWAY CREST LENGTH (CL), (FT)	HOLE DIAMETER (HD), (IN)
1	12 1/2	2	3/4
2	21	3	1 1/8
3	28	4	1 1/4
4	33 1/2	5	1 3/8
5	38 1/2	6	1 1/2
6	43	7	1 5/8
7	47 1/2	8	1 3/4
8	51	9	1 7/8
9	55	10	2
10	58 1/2	11	2 1/8
11	61	12	2 1/4
12	64	13	2 1/2
13	67 1/2	14	2 3/8
14	70 1/2	15	2 1/2
15	73 1/2	16	2 3/4

INSTALLATION NOTES

- FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
- 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 WEIGHT PASSING THE NO. 200 SIEVE.
- EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-698.
- PIPE SCHEDULE 40 OR GREATER SHALL BE USED.
- 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. DESIGN CALCULATIONS MUST BE APPROVED PRIOR TO IMPLEMENTATION.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN CONTROL MEASURE EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E. TWO FEET BELOW SPILLWAY CREST).
- SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED.
- PERMANENTLY STABILIZE AREA AFTER SEDIMENT BASIN REMOVAL.

TSB

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-TSB-1 REVISIONS: 8/19/2020 DRAWING NO. 900-TSB-1

SEDIMENT BASIN PLAN

SECTION A-A'

SECTION B-B'

INSTALLATION NOTES

- INLETS TO SEDIMENT BASIN SHALL ENTER AT FURTHEST DISTANCE TO OUTLET AND SHALL CONSIST OF A TEMPORARY SLOPE DRAIN.
- INLET TO BASIN SHALL BE 1" TO 2" CRUSHED ROCK.
- SPILLWAY SHALL BE 12" MIN. HIGH AT CREST.
- EMBANKMENT SHALL BE 3' MIN. HIGH AT CREST.
- EMBANKMENT SHALL BE 3' MIN. WIDE AT CREST.
- EMBANKMENT SHALL BE 3' MIN. HIGH AT CREST.
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MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN CONTROL MEASURE EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E. TWO FEET BELOW SPILLWAY CREST).
- SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED.
- PERMANENTLY STABILIZE AREA AFTER SEDIMENT BASIN REMOVAL.

TSB

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-TSB-2 REVISIONS: 8/19/2020 DRAWING NO. 900-TSB-2

STOCKPILE PROTECTION PLAN

STOCKPILE PROTECTION ELEVATION

INSTALLATION NOTES

- INSTALL PERIMETER CONTROL AROUND STOCKPILE ON DOWNGRADIENT SIDE.
- PERIMETER CONTROL MUST BE SUITABLE TO SITE CONDITIONS AND INSTALLED ACCORDING TO THE RELEVANT DETAIL.
- IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
- ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.

MAINTENANCE NOTES

- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
- ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.

SP

STORMWATER ENTERPRISE

APPROVED: [Signature]

ISSUED: 10/7/19 SHEET NUMBER: 900-SP REVISIONS: 8/19/2020 DRAWING NO. 900-SP

CROSSROADS NORTH

GRADING & EROSION CONTROL DETAILS

PROJECT NO. 18-006

DATE: 08/29/2023

HORIZONTAL: N/A

VERTICAL: N/A

DESIGNED BY: DM

DRAWN BY: GT

CHECKED BY: VAS

212 N. WAHATCH AVE., STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

SHEET 15 OF 15

EGR14

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.

PROFESSIONAL ENGINEER REG. NO. 57160

09-14-23

REVISIONS:

NO.	DATE	BY	DESCRIPTION

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

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