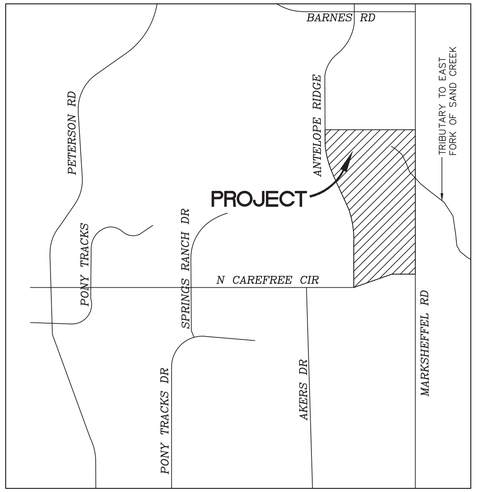
PCD-ENGINEERING REVIEW COMMENTS
IN BLUE BOXES WITH BLUE TEXT

WINDERMERE
EROSION CONTROL AND STORMWATER QUALITY PLAN
E 1/2 OF SECTION 29,
T13S, R65W OF THE 6TH P.M.
EL PASO COUNTY, COLORADO



VICINITY MAP
NOT TO SCALE

SHEET INDEX

AGENCY CONTACTS

COUNTY — EL PASO COUNTY PLANNING & COMMUNITY DEVELOPMENT
KARI PARSONS, PROJECT MANAGER/PLANNER II
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, CO 80910
(719) 520-6300

FIRE — CIMARRON HILLS FIRE DEPARTMENT
STEVE CONNER, FIRE CHIEF
1835 TUSKEGEE PL
COLORADO SPRINGS, CO 80915
(719)591-0960

WATER — CHEROKEE METROPOLITAN DISTRICT
JONATHON SMITH, SUPERINTENDENT OF WATER & WASTEWATER
6250 PALMER PARK BLVD
COLORADO SPRINGS, CO 80915
(719) 597-5080

WASTEWATER — CHEROKEE METROPOLITAN DISTRICT
JONATHON SMITH, SUPERINTENDENT OF WATER & WASTEWATER
6250 PALMER PARK BLVD
COLORADO SPRINGS, CO 80915
(719) 597-5080

ELECTRIC — MOUNTAIN VIEW ELECTRIC ASSOCIATION
LES ULFERS
11140 E. WOODMEN ROAD
FALCON, CO 80831
(719) 495-2283

GAS — COLORADO SPRINGS UTILITIES
TODD STURTEVANT
1521 HANCOCK EXPRESSWAY
COLORADO SPRINGS, CO 80947
(719) 668-3556

TELEPHONE — CENTURY LINK
PATTY MOORE
(719) 636-6096
(LOCATORS) (719) 597-8418
AT&T
(LOCATORS) (719) 635-3674

CABLE — COMCAST
DALE STEWART
213 N. UNION BLVD
COLORADO SPRINGS, CO 80909
(719) 442-4733

ESTIMATED COST OF TEMPORARY + PERMANENT BMPs INCLUDING INSTALLATION AND MAINTENANCE UNTIL FINAL STABILIZATION (FINAL + INTERIM STAGE)

Description	Quantity	Units	Cost		Total	% Complete	Remaining
SECTION 1 - GRADING AND EROSION CONTROL (Construction and Permanent BMPs)							
* Earthwork							
less than 1,000; $5,300 min		CY	$ 8.00	=	$ -		$ -
1,000-5,000; $8,000 min		CY	$ 6.00	=	$ -		$ -
5,001-20,000; $30,000 min		CY	$ 5.00	=	$ -		$ -
20,001-50,000; $100,000 min		CY	$ 3.50	=	$ -		$ -
50,001-200,000; $175,000 min	140,000	CY	$ 2.50	=	$ 350,000.00	100.00%	$ -
greater than 200,000; $500,000 min		CY	$ 2.00	=	$ -		$ -
* Permanent Seeding (inc. noxious weed mgmnt.)	15	AC	$ 828.00	=	$ 12,420.00		$ 12,420.00
* Mulching		AC	$ 777.00	=	$ -		$ -
* Permanent Erosion Control Blanket		SY	$ 6.20	=	$ -		$ -
* Permanent Pond/BMP Construction		CY	$ 21.00	=	$ -		$ -
* Permanent Pond/BMP (spillway)	2	EA	$ 15,000.00	=	$ 30,000.00		$ 30,000.00
* Permanent Pond/BMP (outlet structure)	2	EA	$ 12,000.00	=	$ 24,000.00		$ 24,000.00
Safety Fence		LF	$ 3.10	=	$ -		$ -
Temporary Erosion Control Blanket		SY	$ 3.10	=	$ -		$ -
Vehicle Tracking Control	2	EA	$ 2,453.00	=	$ 4,906.00	100.00%	$ -
Silt Fence	3,470	LF	$ 2.60	=	$ 9,022.00	100.00%	$ -
Temporary Seeding	52	AC	$ 650.00	=	$ 33,800.00		$ 33,800.00
Temporary Mulch	52	AC	$ 777.00	=	$ 40,404.00		$ 40,404.00
Erosion Bales	90	EA	$ 26.00	=	$ 2,340.00	100.00%	$ -
Erosion Logs/Straw Waddle		LF	$ 5.20	=	$ -		$ -
Rock Check Dams		EA	$ 518.00	=	$ -		$ -
Inlet Protection	15	EA	$ 173.00	=	$ 2,595.00	20.00%	$ 2,076.00
Sediment Basin	3	EA	$ 1,824.00	=	$ 5,472.00	100.00%	$ -
Concrete Washout Basin	1	EA	$ 932.00	=	$ 932.00	100.00%	$ -
Riprap rundown	1	EA	$ 10,000.00	=	$ 10,000.00		$ 10,000.00
[insert items not listed but part of construction plans]				=	$ -		$ -
MAINTENANCE (35% of Construction BMPs)				=	$ 38,314.85		$ 38,314.85
* - Subject to defect w arranty financial assurance. A minimum of 20% shall be retained until final acceptance (MAXIMUM OF 80% COMPLETE ALLOWED)			**Section 1 Subtotal**	**=**	**$ 564,205.85**		**$ 191,014.85**

STRUCTURAL FILL

DURING EARTHWORK BALANCING ACROSS THE SITE, AREAS TO RECEIVE STRUCTURAL FILL SHOULD HAVE TOPSOIL, ORGANIC MATERIAL, OR DEBRIS REMOVED. LOOSE, WET SOILS, ESPECIALLY THOSE FROM NOTED DRAINAGE AREAS, SHOULD BE EXCAVATED TO DRY SOLID MATERIAL, STOCKPILED AND EVALUATED FOR SUITABILITY OF RE-USE AS STRUCTURAL FILL. IF SOIL IS FOUND TO BE UNSUITABLE AS STRUCTURAL FILL, IT MAY STILL BE SUITABLE AS BACKFILL IN NON-STRUCTURAL APPLICATIONS.

STRUCTURAL FILL COMPOSED OF ON-SITE SOILS SHOULD CONSIST OF GRANULAR, NIL TO LOW-EXPANSIVE MATERIAL. IF CLAYSTONE IS ELECTED TO BE RE-USED IT SHOULD BE THOROUGHLY PROCESSED, MOISTURE CONDITIONED AND BLENDED WITH SAND SOIL. FILL SHOULD BE SPREAD ACROSS THE SITE AND PLACED IN EVEN LOOSE LIFTS NOT EXCEEDING 10-INCHES, MOISTURE CONDITIONED TO FACILITATE COMPACTION (USUALLY WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT), AND COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROTOR TEST, ASTM D-698. THE MATERIALS SHOULD BE SPREAD AND COMPACTED BY MECHANICAL MEANS.

STRUCTURAL FILL PLACED ON SLOPES SHOULD BE BENCHED INTO THE SLOPE. MAXIMUM BENCH HEIGHTS SHOULD NOT EXCEED 4 FEET, AND BENCH WIDTHS SHOULD BE WIDE ENOUGH TO ACCOMMODATE COMPACTION EQUIPMENT. MATERIALS USED FOR STRUCTURAL FILL SHOULD BE APPROVED BY RMG PRIOR TO USE. STRUCTURAL FILL SHOULD NOT BE PLACED ON FROZEN SUBGRADE OR ALLOWED TO FREEZE DURING MOISTURE CONDITIONING AND PLACEMENT.

BENCHMARK

ELEVATIONS ARE BASED ON COLORADO SPRINGS UTILITIES FACILITIES INFORMATION SYSTEM (FIMS), A 2" ALUMINUM CAP STAMPED "BLT100" IN SE CORNER OF CATCH BASIN ON EAST SIDE OF ANTELOPE RIDGE DRIVE 1500'± NORTH OF NORTH CAREFREE CIR., WITH AN ELEVATION OF 6607.03 (NGVD 29).

LEGAL DESCRIPTION

THE EAST HALF OF SECTION 29, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO.

FLOODPLAIN STATEMENT

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) PANEL #08041C0543 G (DECEMBER 7, 2018) THE PROJECT SITE IS WITHIN A DESIGNATED ZONE X AREA DESCRIBED AS "AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN".

TIMING

ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING: WINTER/SPRING 2021-SUMMER/FALL 2021

AREAS

TOTAL AREA OF THE SITE TO BE CLEARED, EXCAVATED OR GRADED: APPROXIMATELY 54.9 ACRES

RECEIVING WATERS

SAND CREEK

SOILS

HYDROLOGIC TYPE A: TRUCKTON SANDY LOAM

VEGETATION

EXISTING SITE IS UNDEVELOPED AND COVERED WITH NATIVE GRASSES

DESIGN 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.

Tim D McConnell 11-30-21

TIM D. MCCONNELL — DATE
P.E.# 33797

OWNER'S STATEMENT

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

11-30-21

JEFF MARK — DATE
OWNER

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
COUNTY ENGINEER

COUNTY FILE NO.: SF2126

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers • Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
(719)260-0887
BOULDER • COLORADO SPRINGS • GREELEY

CLIENT:

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CONTACT: JEFF MARK

WINDERMERE
GRADING & EROSION CONTROL
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	11/22/21

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECCV

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

COLORADO REGISTERED 33797 PROFESSIONAL ENGINEER — 11-30-21

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

COVER SHEET

PROJECT NO. 21187-01CSCV
DRAWING NO.

EC01

SHEET: 1 OF 10

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 IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY 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 PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.

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 MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL 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 WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.

14. DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER 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 CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

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 ON-SITE 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 ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER 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 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 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 RMG ENGINEERS, OCTOBER 26, 2020 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

COUNTY FILE NO.: SF2126

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers • Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
CONTACT: TIM D. McCONNELL, P.E.
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CLIENT:

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CONTACT: JEFF MARK

WINDERMERE
GRADING & EROSION CONTROL
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	11/22/21

DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECCV

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

COLORADO REGISTERED PROFESSIONAL ENGINEER
33797
11-30-21

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

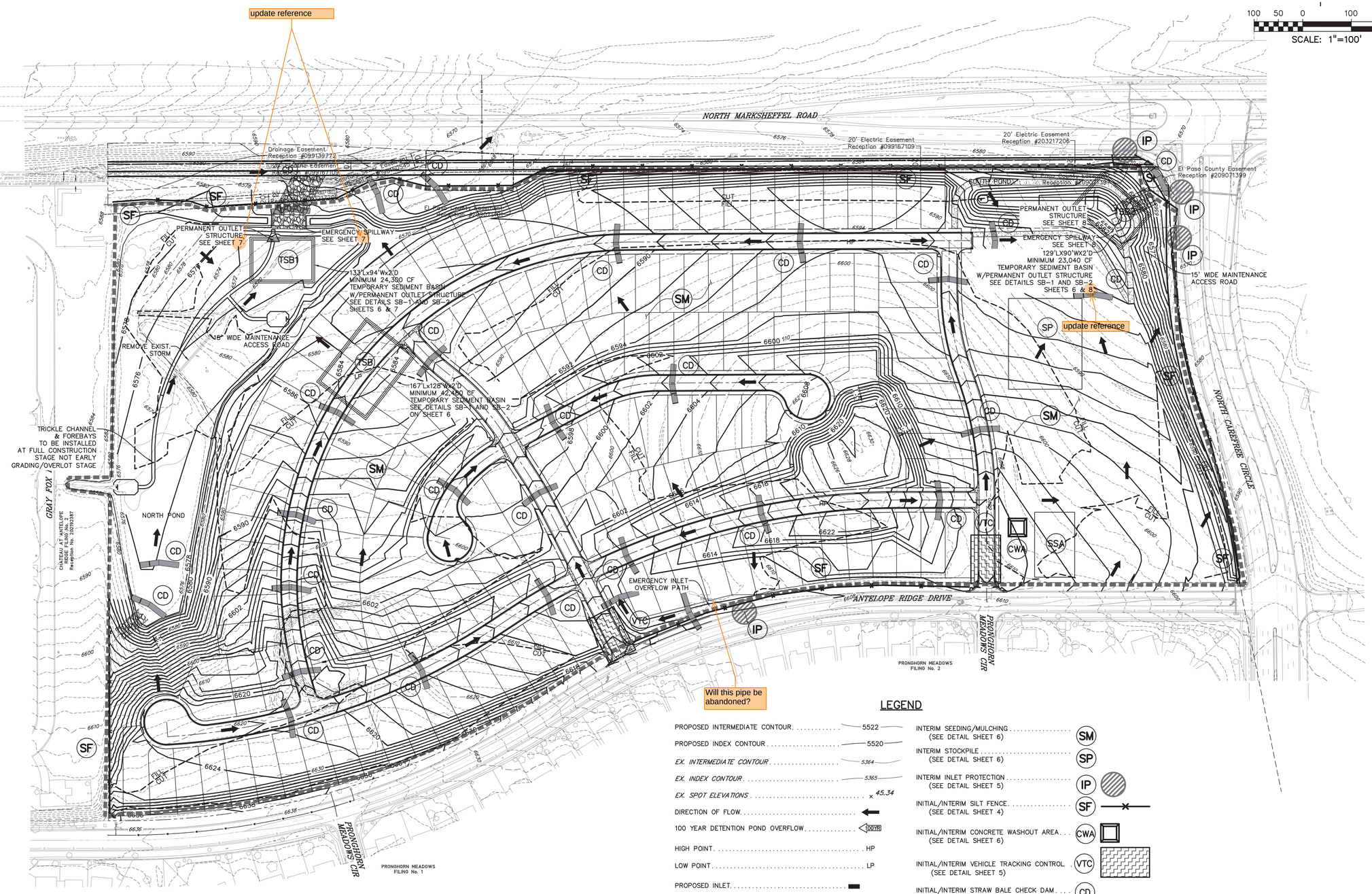
NOTES

PROJECT NO. 21187-01CSCV

DRAWING NO.

EC02

update reference



100 50 0 100 200

SCALE: 1"=100'

LEGEND

PROPOSED INTERMEDIATE CONTOUR	5522
PROPOSED INDEX CONTOUR	5520
EX. INTERMEDIATE CONTOUR	5364
EX. INDEX CONTOUR	5365
EX. SPOT ELEVATIONS	× 45.34
DIRECTION OF FLOW	
100 YEAR DETENTION POND OVERFLOW	100YR
HIGH POINT	HP
LOW POINT	LP
PROPOSED INLET	
PROPOSED MANHOLE	
LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY	
CUT/FILL LINE	CUT / FILL

INTERIM SEEDING/MULCHING (SEE DETAIL SHEET 6)	SM
INTERIM STOCKPILE (SEE DETAIL SHEET 6)	SP
INTERIM INLET PROTECTION (SEE DETAIL SHEET 5)	IP
INITIAL/INTERIM SILT FENCE (SEE DETAIL SHEET 4)	SF
INITIAL/INTERIM CONCRETE WASHOUT AREA (SEE DETAIL SHEET 6)	CWA
INITIAL/INTERIM VEHICLE TRACKING CONTROL (SEE DETAIL SHEET 5)	VTC
INITIAL/INTERIM STRAW BALE CHECK DAM (SEE DETAIL SHEET 5)	CD
INITIAL/INTERIM STABILIZED STAGING AREA (SEE DETAIL SHEET 6)	SSA
INITIAL/INTERIM TEMPORARY SEDIMENT BASIN (SEE DETAIL SHEET 7)	TSB

NOTES:
1. WASTE DISPOSAL BIN LOCATIONS ARE TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
2. ONSITE LOCATION OF THE SWMP IS TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
3. THE NEED FOR DEWATERING IS NOT ANTICIPATED. IN THE EVENT THAT DEWATERING BECOMES NECESSARY THE CONTRACTOR, WITH INPUT FROM THE COUNTY STORMWATER INSPECTOR, WILL DESIGN THE LOCATIONS OF DIVERSION, PUMP & DISCHARGES.

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

CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.: SF2126

PREPARED BY:

DREXEL, BARRELL & CO.
Engineers • Surveyors
3 SOUTH 7TH STREET
COLORADO SPGS, COLORADO 80905
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THE LANDHUIS COMPANY
212 N. WAHSATCH AVE., #301
COLORADO SPRINGS, CO 80903
(719) 635-3200
CONTACT: JEFF MARK

WINDERMERE
GRADING & EROSION CONTROL
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	11/22/21

DESIGNED BY:	GES
DRAWN BY:	GES
CHECKED BY:	TDM
FILE NAME:	21187-01EC2

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

COLORADO REGISTERED 33797 11-30-21 PROFESSIONAL ENGINEER

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

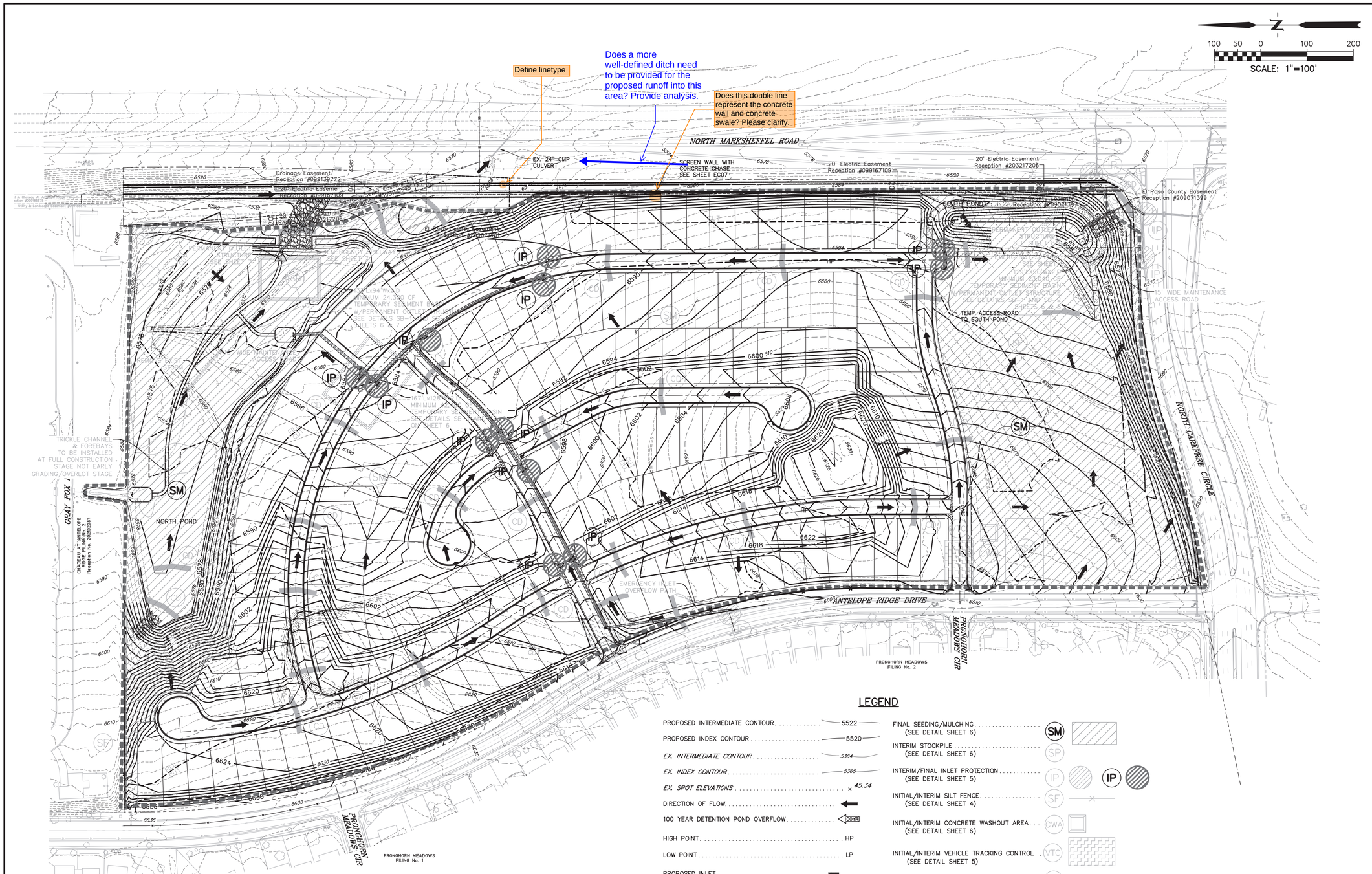
INITIAL/INTERIM EROSION CONTROL PLAN

PROJECT NO. 21187-01CSCV

DRAWING NO.

EC03

SHEET: 3 OF 10



LEGEND

- PROPOSED INTERMEDIATE CONTOUR 5522
- PROPOSED INDEX CONTOUR 5520
- *EX. INTERMEDIATE CONTOUR* 5364
- *EX. INDEX CONTOUR* 5365
- *EX. SPOT ELEVATIONS* ..... × 45.34
- DIRECTION OF FLOW ..... ←
- 100 YEAR DETENTION POND OVERFLOW 100YR
- HIGH POINT ..... HP
- LOW POINT ..... LP
- PROPOSED INLET ..... ▬
- PROPOSED MANHOLE ..... ●
- LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY ..... ▬ ▬ ▬
- CUT/FILL LINE ..... CUT ▬ ▬ FILL

- FINAL SEEDING/MULCHING (SEE DETAIL SHEET 6) ..... SM
- INTERIM STOCKPILE (SEE DETAIL SHEET 6) ..... SP
- INTERIM/FINAL INLET PROTECTION (SEE DETAIL SHEET 5) ..... IP
- INITIAL/INTERIM SILT FENCE (SEE DETAIL SHEET 4) ..... SF
- INITIAL/INTERIM CONCRETE WASHOUT AREA (SEE DETAIL SHEET 6) ..... CWA
- INITIAL/INTERIM VEHICLE TRACKING CONTROL (SEE DETAIL SHEET 5) ..... VTC
- INITIAL/INTERIM STRAW BALE CHECK DAM (SEE DETAIL SHEET 5) ..... CD
- INITIAL/INTERIM STABILIZED STAGING AREA (SEE DETAIL SHEET 6) ..... SSA
- INITIAL/INTERIM TEMPORARY SEDIMENT BASIN (SEE DETAIL SHEET 7) ..... TSB

NOTES:
1. WASTE DISPOSAL BIN LOCATIONS ARE TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
2. ONSITE LOCATION OF THE SWMP IS TBD AND WILL BE ADDED TO THE SWMP ONCE DETERMINED BY THE CONTRACTOR.
3. THE NEED FOR DEWATERING IS NOT ANTICIPATED. IN THE EVENT THAT DEWATERING BECOMES NECESSARY THE CONTRACTOR, WITH INPUT FROM THE COUNTY STORMWATER INSPECTOR, WILL DESIGN THE LOCATIONS OF DIVERSION, PUMP & DISCHARGES.

811 Know what's **below.** **Call** before you dig.
CALL 3-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.: SF2126

PREPARED BY:
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WINDERMERE
GRADING & EROSION CONTROL
N. MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

ISSUE	DATE
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FILE NAME:	21187-01EC3

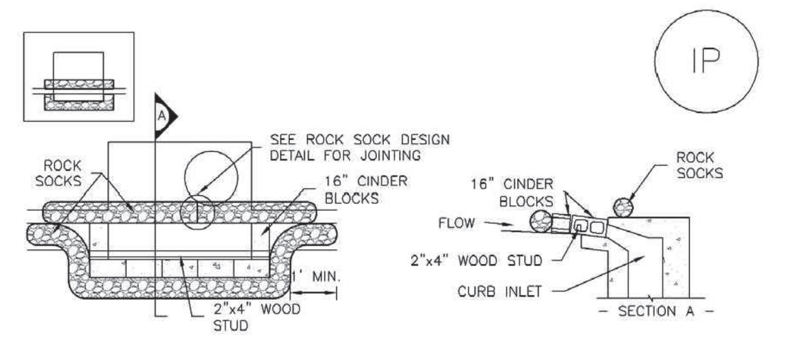
PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.
COLORADO REGISTERED TIMOTHY D. McCONNELL 33797 11-30-21 PROFESSIONAL ENGINEER

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

FINAL EROSION CONTROL PLAN

PROJECT NO. 21187-01CSCV
DRAWING NO.
EC04
SHEET: 4 OF 10

SC-6 Inlet Protection (IP)



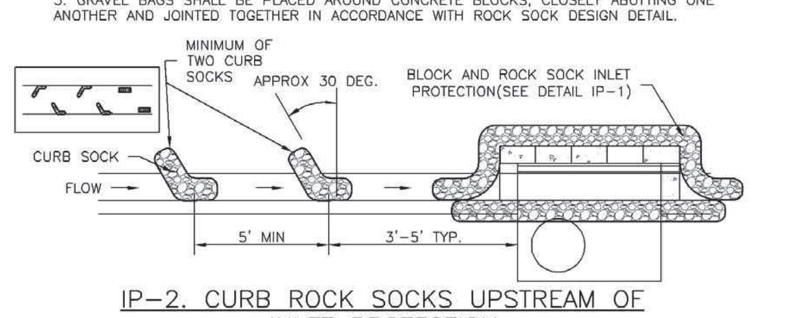
IP–1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

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

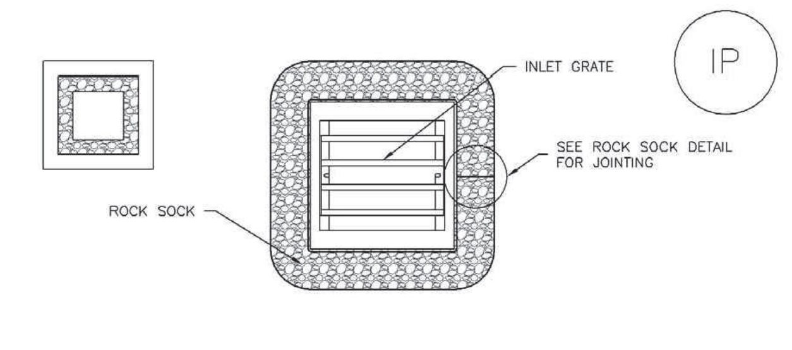
1. SEE ROCK SOCK DESIGN DETAIL INSTALLATION REQUIREMENTS.

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.

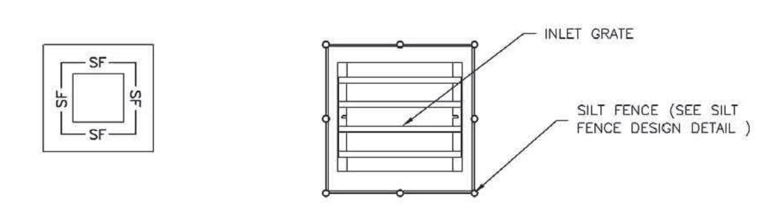
Inlet Protection (IP) SC-6



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

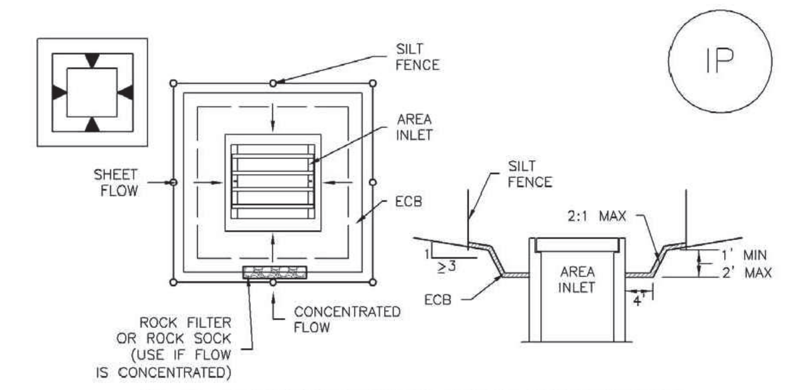
SILT FENCE INLET PROTECTION INSTALLATION NOTES

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.

SC-6 Inlet Protection (IP)



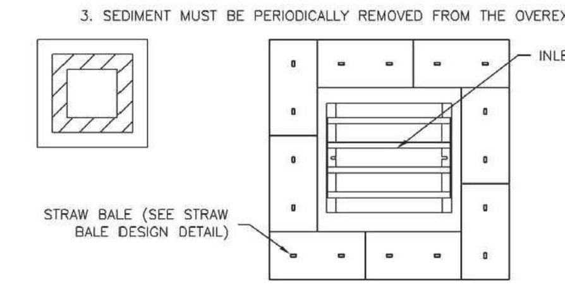
IP–5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

1. 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.

2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.

3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



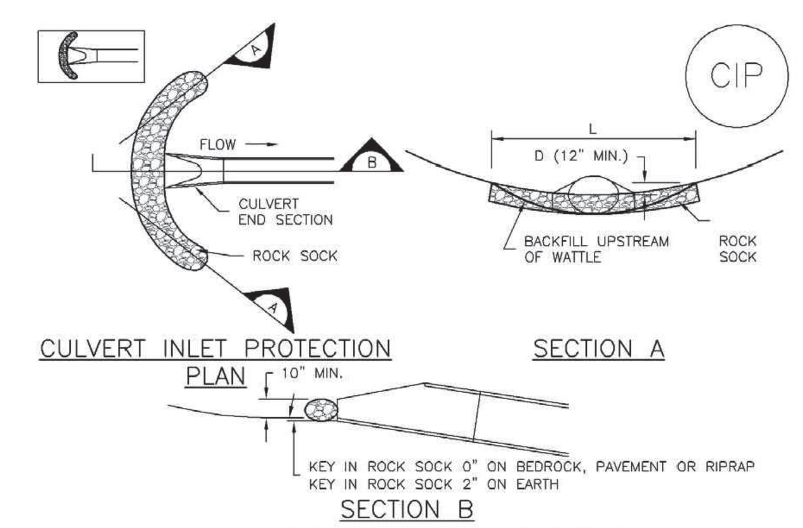
IP–6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.

2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.

Inlet Protection (IP) SC-6



CIP–1. CULVERT INLET PROTECTION

CULVERT INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR
 –LOCATION OF CULVERT INLET PROTECTION.

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING DETAIL.

CULVERT INLET PROTECTION MAINTENANCE NOTES

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

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

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

4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK.

5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

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

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

SC-6 Inlet Protection (IP)

GENERAL INLET PROTECTION INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 –LOCATION OF INLET PROTECTION.
 –TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

2. INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

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

INLET PROTECTION MAINTENANCE NOTES

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

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

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

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR ¼ OF THE HEIGHT FOR STRAW BALES.

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.

6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

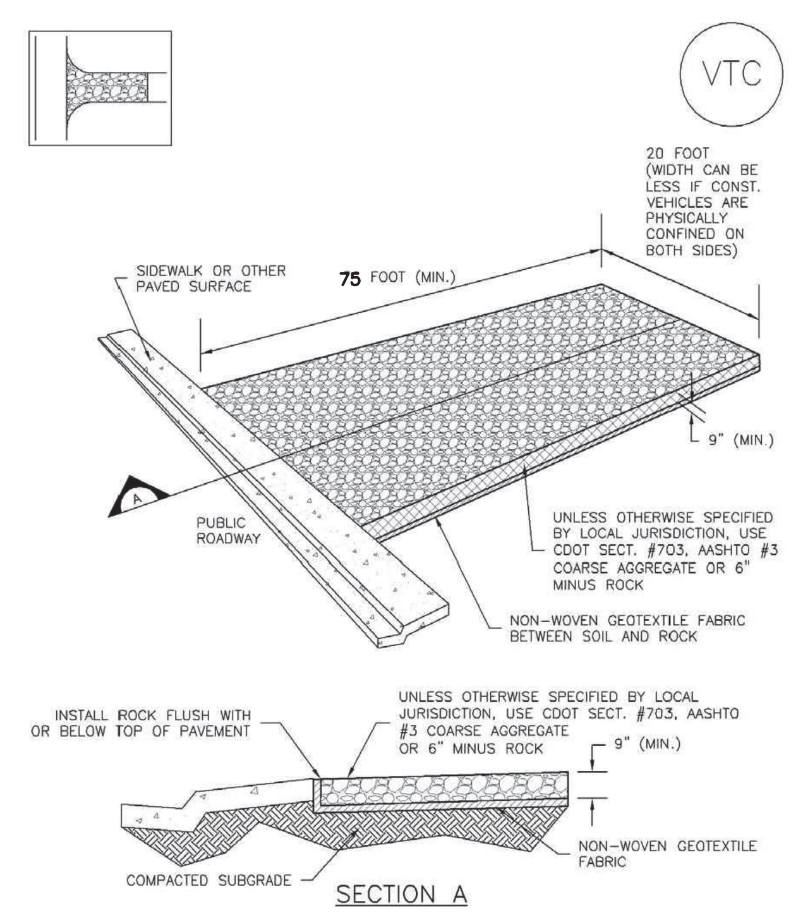
(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

NOTE: THE DETAILS INCLUDED WITH THIS 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.

Vehicle Tracking Control (VTC) SM-4



VTC–1. AGGREGATE VEHICLE TRACKING CONTROL

SM-4 Vehicle Tracking Control (VTC)

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
 –LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
 –TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(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.

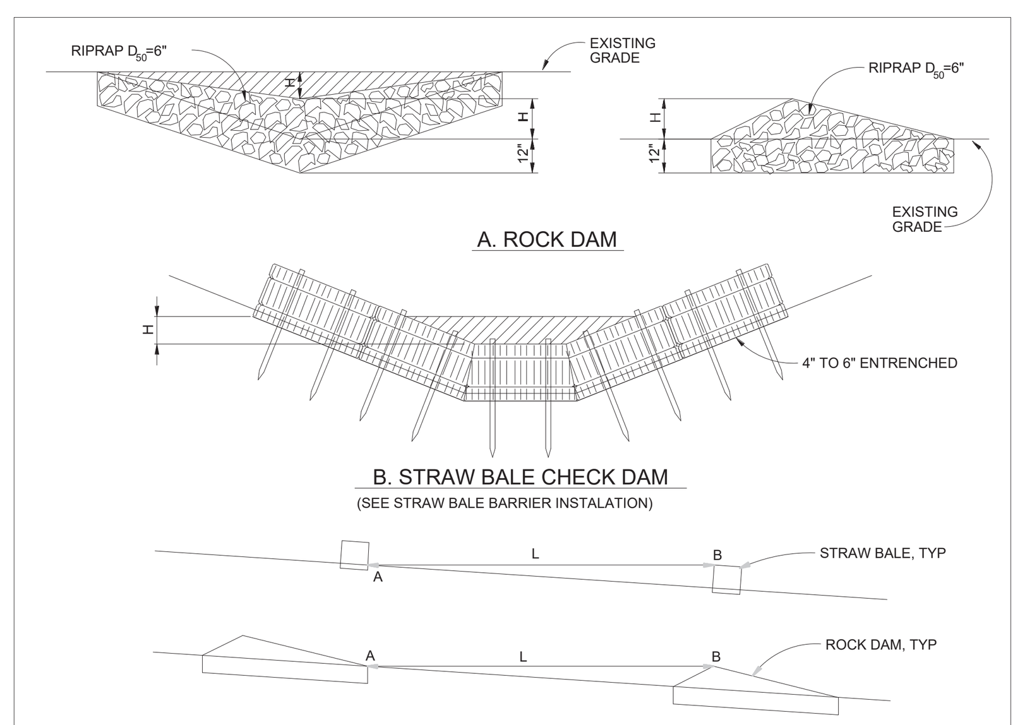
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

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

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)



B. STRAW BALE CHECK DAM
(SEE STRAW BALE BARRIER INSTALATION)

L= THE DISTANCE SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION.

C. SPACING CHECK DAMS

CHECK DAM
NTS

CHECK DAM NOTES

INSTALLATION REQUIREMENTS

1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SBB-2.

2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.

2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.

3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.

3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.

4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs Stormwater Quality | CD | Figure CD-1 Check Dam Construction Detail and Maintenance Requirements

EC-12 Check Dams (CD)

CHECK DAM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
 –LOCATION OF CHECK DAMS.
 –CHECK DAM TYPE (CHECK DAM OR REINFORCED CHECK DAM).
 –LENGTH (L), CREST LENGTH (CL), AND DEPTH (D).

2. CHECK DAMS INDICATED ON INITIAL SWMP SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.

3. RIPRAP UTILIZED FOR CHECK DAMS SHOULD BE OF APPROPRIATE SIZE FOR THE APPLICATION. TYPICAL TYPES OF RIPRAP USED FOR CHECK DAMS ARE TYPE M (D50 12") OR TYPE L (D50 9").

4. RIPRAP PAD SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 1'.

5. THE ENDS OF THE CHECK DAM SHALL BE A MINIMUM OF 1' 6" HIGHER THAN THE CENTER OF THE CHECK DAM.

CHECK DAM MAINTENANCE NOTES

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

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

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

4. SEDIMENT ACCUMULATED UPSTREAM OF THE CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS WITHIN ½ OF THE HEIGHT OF THE CREST.

5. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

6. WHEN CHECK DAMS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL. DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH GEOTEXTILE OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

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DRAWING SCALE:
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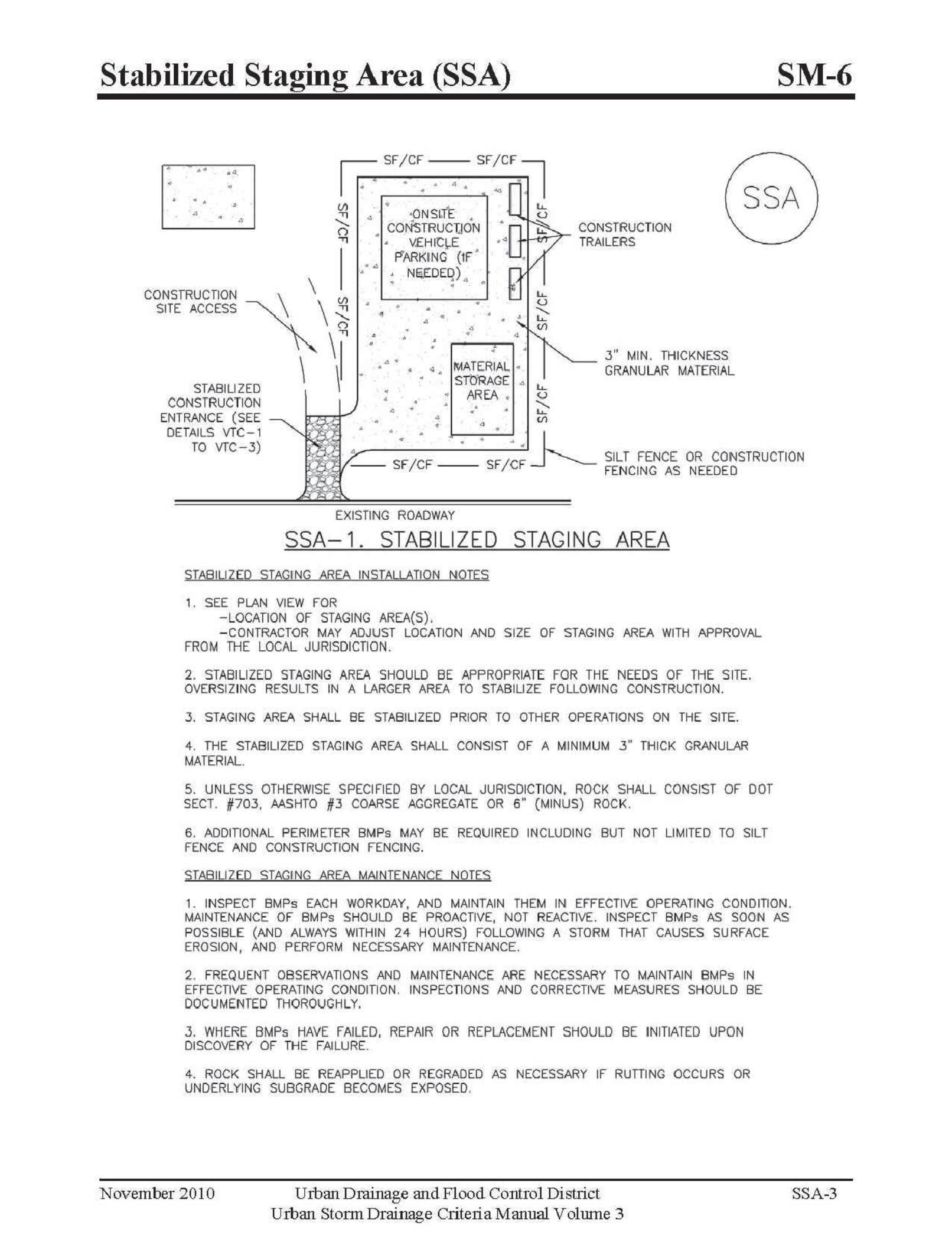
VERTICAL: N/A

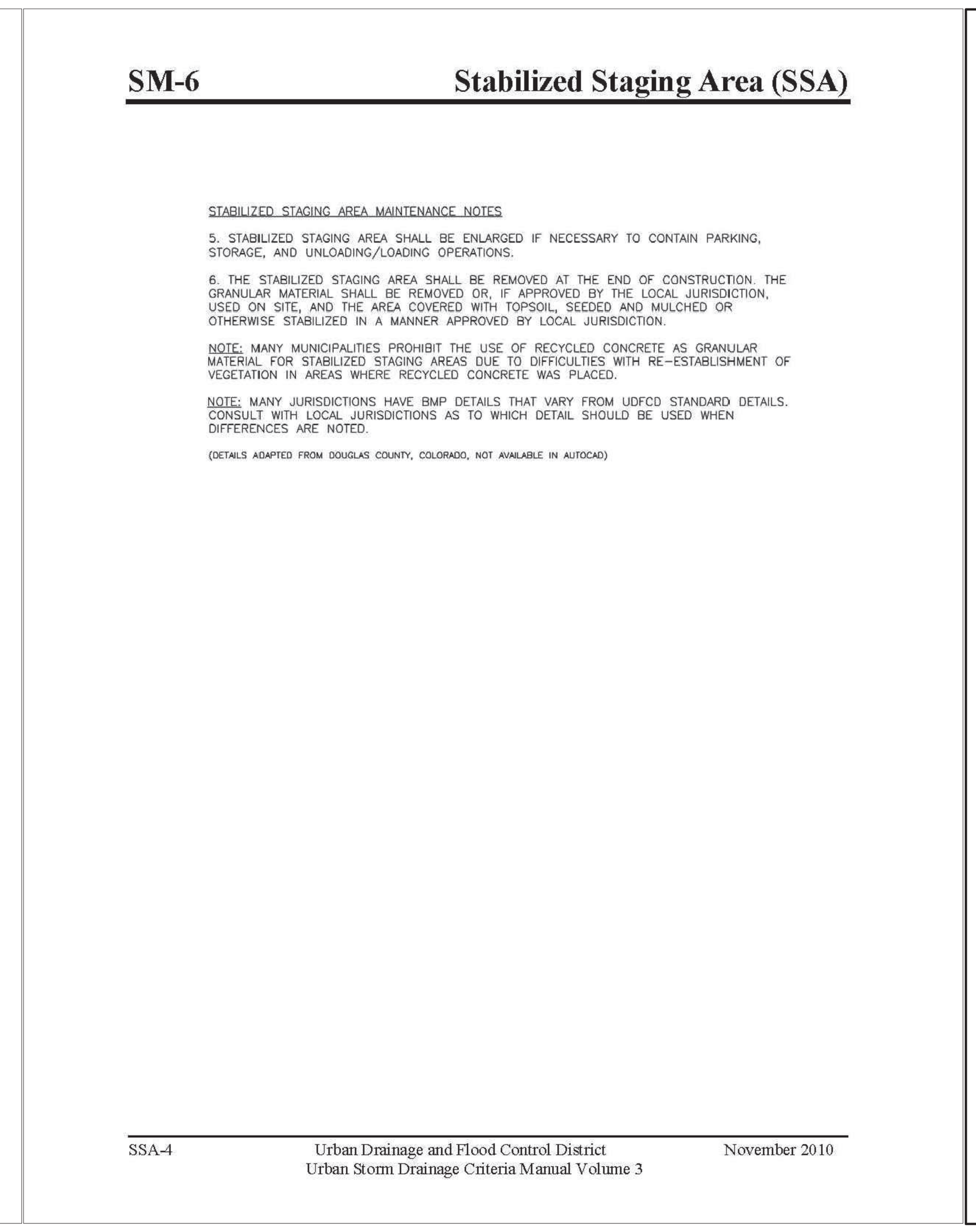
EROSION CONTROL DETAILS

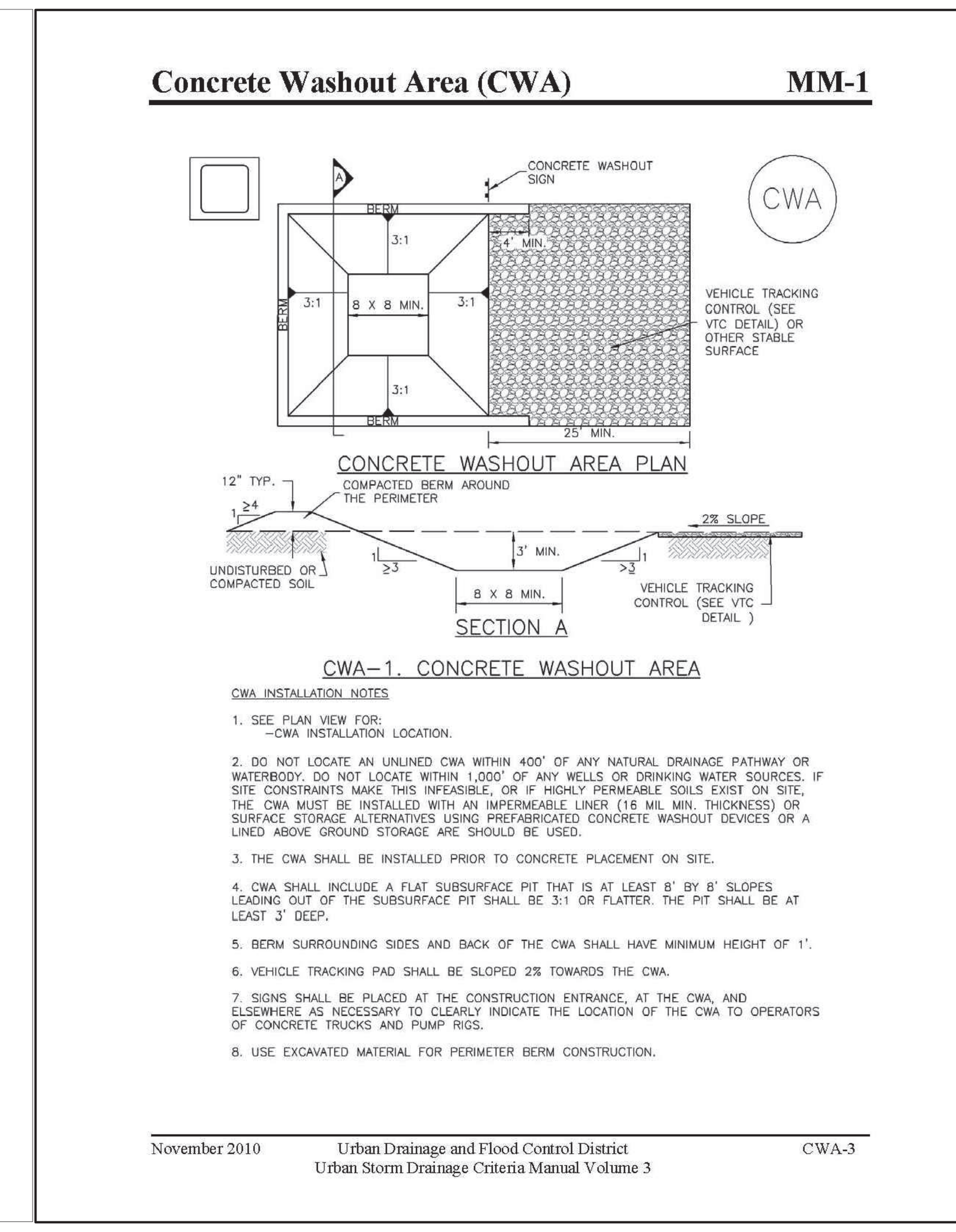
PROJECT NO. 21187–01CSCV

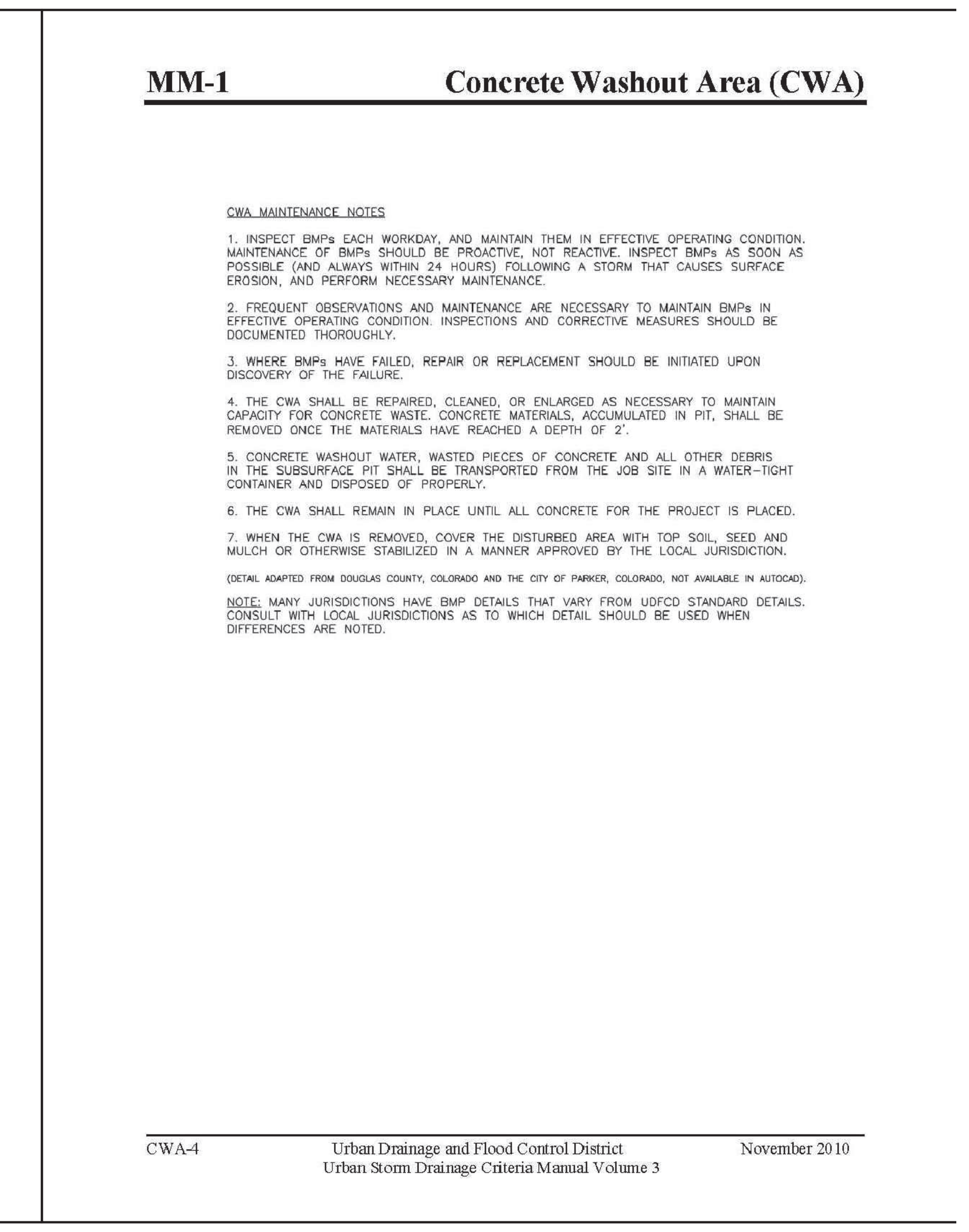
DRAWING NO.

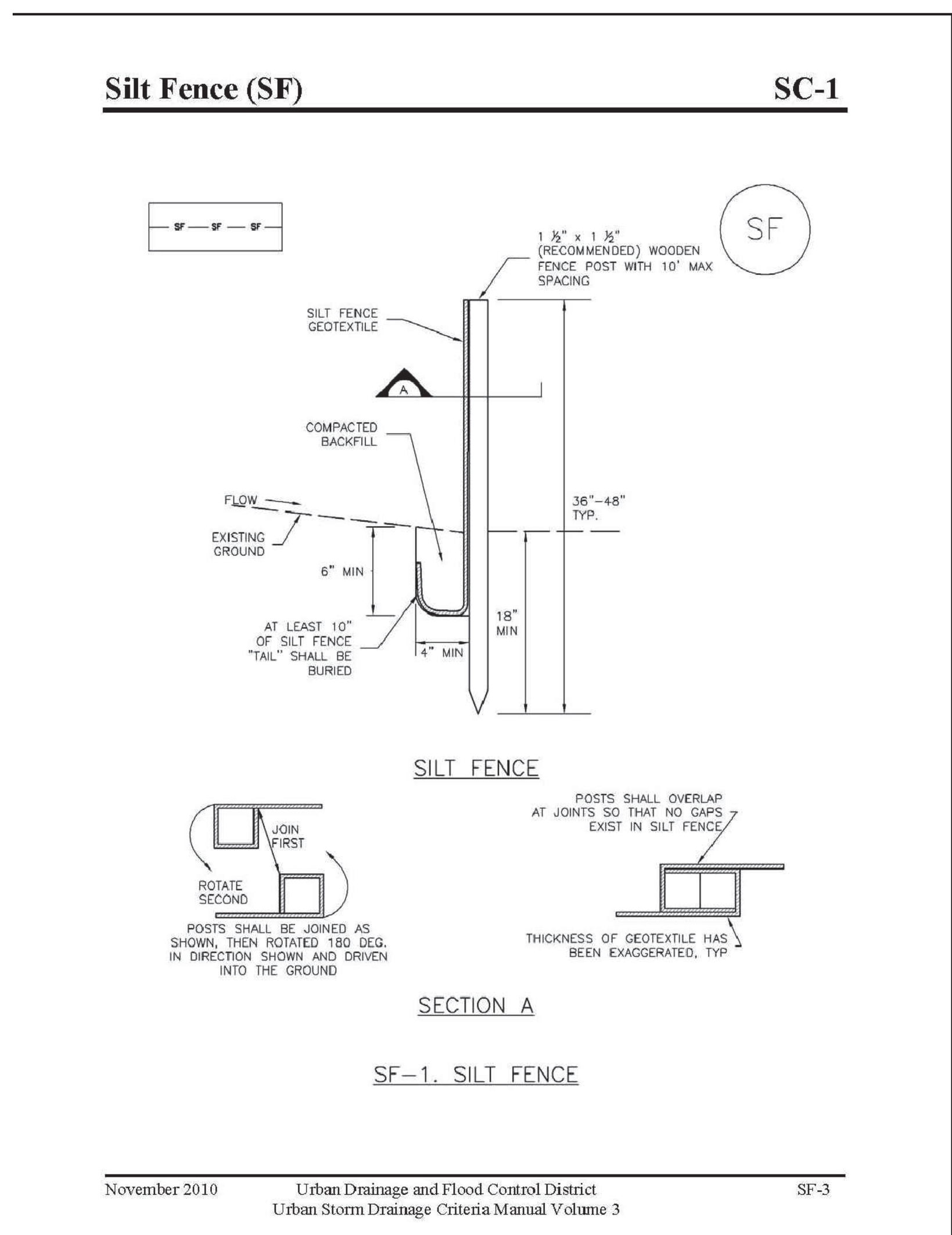
EC05

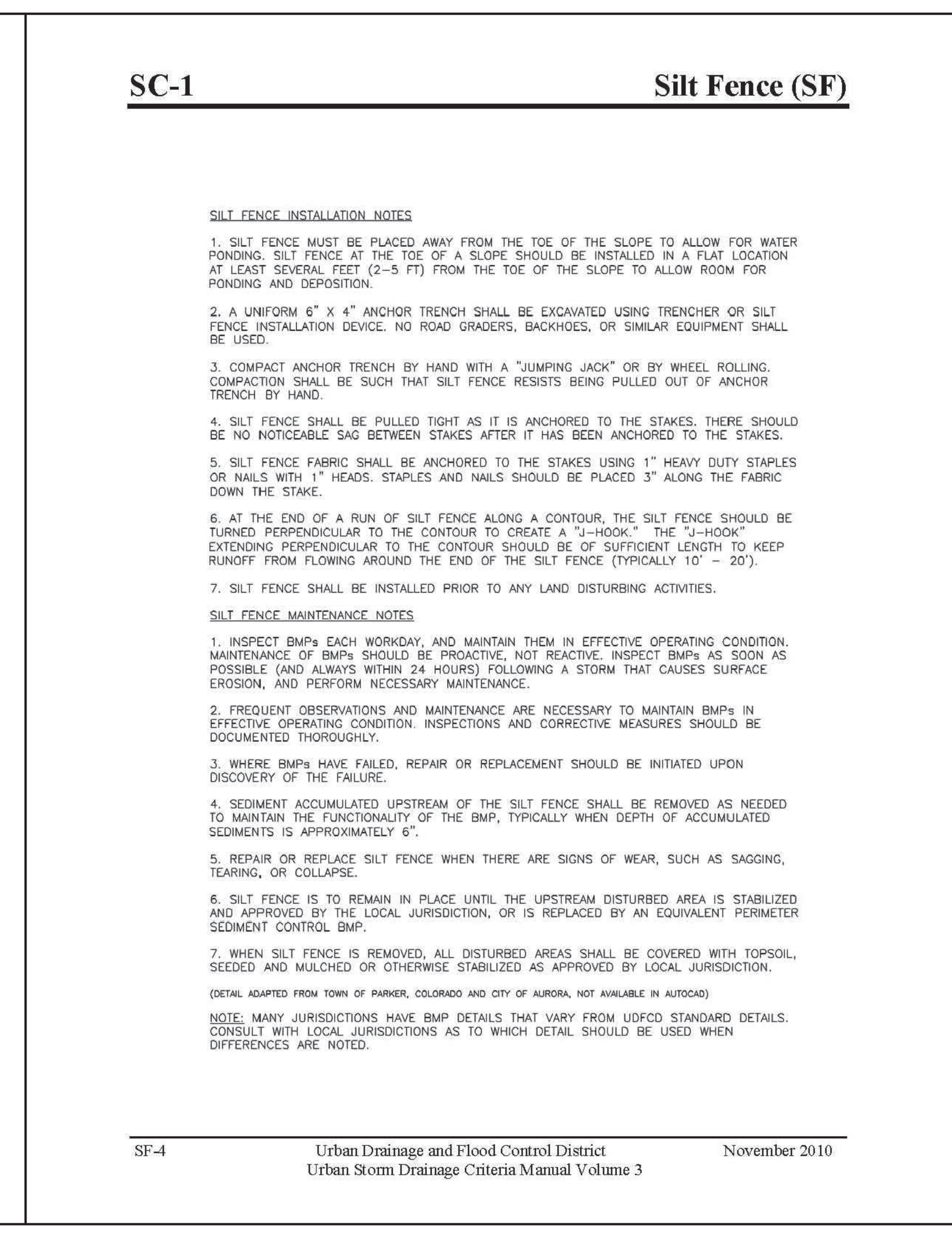


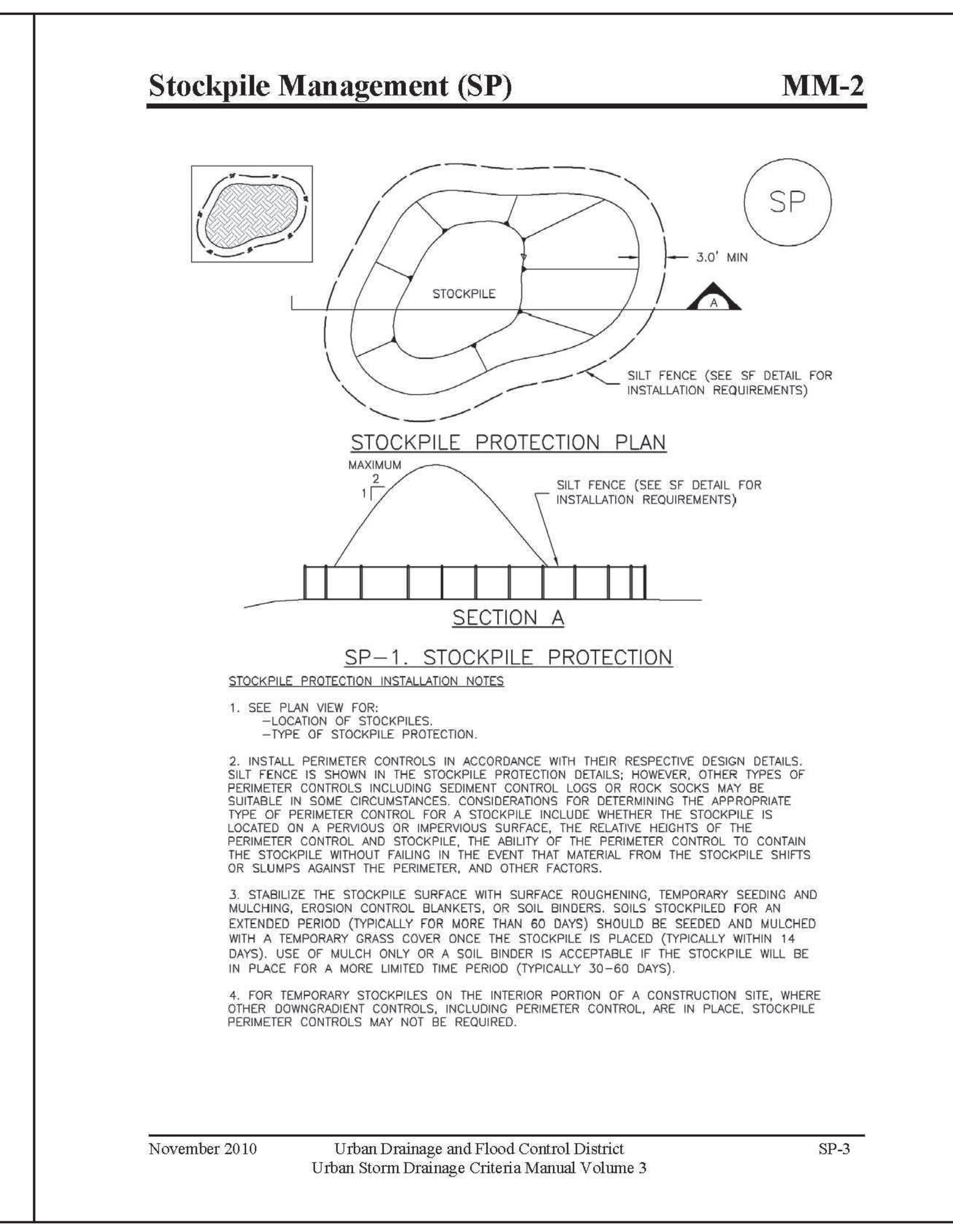


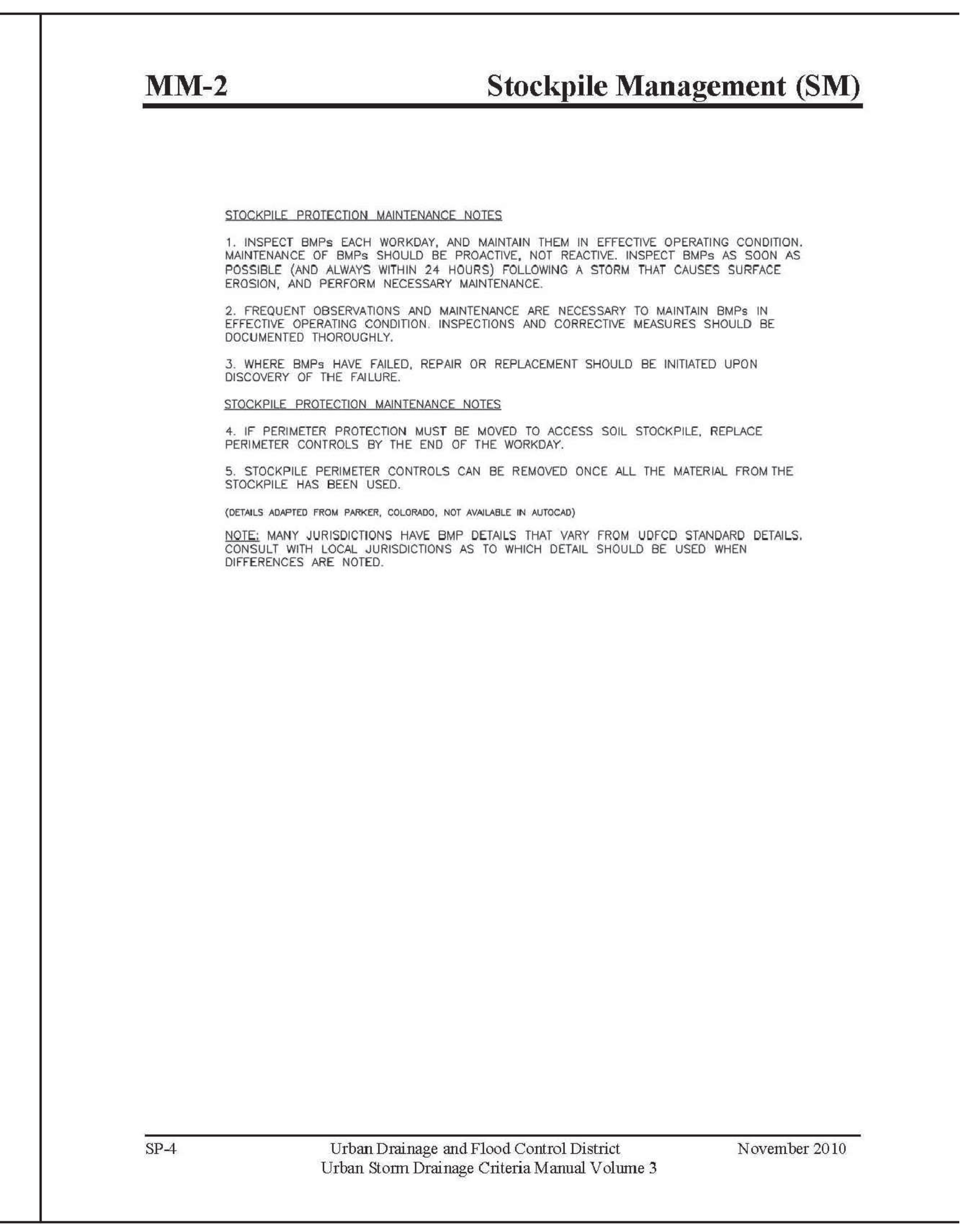












TEMPORARY SEEDING NOTES

1. SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER OR LIME.

2. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENED.

3. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1 AND 1 INCH FOR SLOPES STEEPER THAN 2:1.

4. ANNUAL GRASSES LISTED IN THE TABLE BELOW ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.

5. THE TABLE BELOW ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.

6. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.

7. ALL SEEDED AREAS ARE TO BE MULCHED.

8. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.

MULCHING NOTES

INSTALLATION REQUIREMENTS

1. MATERIAL USED FOR MULCH CAN BE CERTIFIED CLEAN, WEED-AND SEED-FREE LONG STEMMED FIELD OR MARSH HAY, OR STRAW OF OATS, BARLEY, WHEAT, RYE, OR TRITICALE CERTIFIED BY THE COLORADO DEPARTMENT OF AGRICULTURE WEED FREE FORAGE CERTIFICATION PROGRAM.

2. HYDRAULIC MULCHING MATERIAL SHALL CONSIST OF VIRGIN WOOD FIBER MANUFACTURED FROM CLEAN WHOLE WOOD CHIPS. WOOD CHIPS CANNOT CONTAIN ANY GROWTH OR GERMINATION INHIBITORS OR BE PRODUCED FROM RECYCLED MATERIAL.

3. MULCH IS TO BE APPLIED EVENLY AT A RATE OF 2 TONS PER ACRE.

4. MULCH IS TO BE ANCHORED EITHER BY CRIMPING (TUCKING MULCH FIBERS 4 INCHES INTO THE SOIL), USING NETTING (USED ON SMALL AREAS WITH STEEP SLOPES) OR WITH A TACKIFIER.

5. HYDRAULIC MULCHING AND TACKIFIERS ARE NOT TO BE USED IN THE PRESENCE OF FREE SURFACE WATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL MULCHED AREAS.

2. MULCH IS TO BE REPLACED IMMEDIATELY IN THOSE AREAS IT HAS BEEN REMOVED, AND IF NECESSARY THE AREA SHOULD BE RESEEDED.

SEEDING PLAN

NATIVE SEEDING MIX

SOIL PREPARATION, FERTILIZER, SEEDING, MULCHING AND MULCH TACKIFIER WILL BE REQUIRED FOR DISTURBED AREAS EXCLUDING THE RIGHT-OF-WAYS.

THE FOLLOWING TYPES AND RATES SHALL BE USED:

COMMON NAME	SCIENTIFIC NAME	LBS PLS/ACRE
SAND BLUESTEM V. ELIDA	ANDROPOGON HALLII	2.0
WESTERN WHEATGRASS V. ARRIBA	PASCOPYRUM SMITHII	7.0
SIDEOATS GRAMA V. VAUGHN	BOUTELOUA CURTIPENDULA	4.0
GALLETA V. VIVA (CARYOPSIS)	HILARIA JAMESII	1.0
LITTLE BLUESTEM V. PASTURA	SCHIZACHYRIUM SCOPARIUM	3.0
PRARIE SANDREED V. GASHEN	CALAMOVILFA LONGIFOLIA	2.0
SWITCHGRASS V. NEBR 28	PANICUM VIRGATUM	1.0
BLANKETFLOWER	GAILLARDIA ARISTATA	1.0
PRARIE CONEFLOWER	RATIBIDA COLUMINIFERA	0.5
BLUE FLAX	LINUM LEWISII	1.0
OATS	AVENA SATIVA	3.0
WINTER WHEAT	TRITICUM AESTIVUM	3.0
TOTAL/POUNDS/ACRE		28.5

FERTILIZER	RATE PER ACRE
NITROGEN	27
PHOSPHORUS (P205)	69

SEEDING APPLICATION: DRILL SEED 0.25"-0.5" INTO TOPSOIL. AREA NOT ACCESSIBLE TO A DRILL SEEDER AND SLOPES STEEPER THAN 2:1 SHALL BE HAND BROADCAST AT DOUBLE THE ABOVE SEED RATE AND RAKED AT 1/4 TO 1/2 INTO THE TOPSOIL.

MULCHING APPLICATION: 1 1/2 TONS CERTIFIED WEED FREE NATIVE HAY PER ACRE MECHANICALLY CRIMED IN TOPSOIL IN COMBINATION WITH AN ORGANIC MULCH TACKIFIER.

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

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

COUNTY FILE NO.: SF2126

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ISSUE	DATE
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DESIGNED BY:	SBN
DRAWN BY:	SBN
CHECKED BY:	TDM
FILE NAME:	21187-01ECDT

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

COLORADO REGISTERED TIM D. McCONNELL 33797 11-30-21 PROFESSIONAL ENGINEER

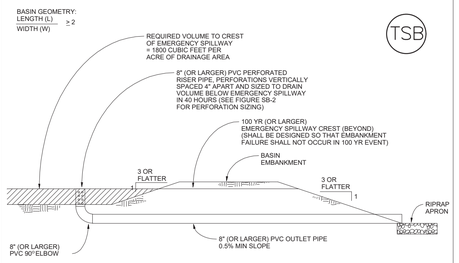
DRAWING SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

EROSION CONTROL DETAILS

PROJECT NO. 21187-01CSCV

DRAWING NO.

EC06



SEDIMENT BASIN
NTS

SEDMENT BASIN NOTES

INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. BAFFLES MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.
5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS NO RAINFALL.
2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.
3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality	Figure SB-1 Sediment Basin Construction Detail and Maintenance Requirements

Required Area per Row (in^2)

Design Volume (acre-ft)	Depth at Outlet (ft)								
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	
2	15.04	7.71	5.10	3.76	2.95	2.41	2.02	1.73	
1	7.52	3.86	2.55	1.88	1.48	1.21	1.01	0.87	TSB2
0.6	4.51	2.31	1.53	1.13	0.89	0.72	0.61	0.52	TSB1&3
0.4	3.01	1.54	1.02	0.75	0.59	0.48	0.40	0.35	
0.2	1.50	0.77	0.51	0.38	0.30	0.24	0.20	0.17	
0.1	0.75	0.39	0.26	0.19	0.15	0.12	0.10	0.09	
0.06	0.45	0.23	0.15	0.11	0.09	0.07	0.06	0.05	
0.04	0.30	0.15	0.10	0.08	0.06	0.05	0.04	0.03	
0.02	0.15	0.08	0.05	0.04	0.03	0.02	0.02	0.02	
0.01	0.08	0.04	0.03	0.02	0.01	0.01	0.01	0.01	

TABLE SB-1

Circular Perforation Sizing

Hole Diameter (in)	Hole Diameter (in)	Area per Row (in^2) n = 1	n = 2	n = 3	
1/4	0.250	0.05	0.10	0.15	
5/16	0.313	0.08	0.15	0.23	
3/8	0.375	0.11	0.22	0.33	
7/16	0.438	0.15	0.30	0.45	
1/2	0.500	0.20	0.39	0.59	
9/16	0.563	0.25	0.50	0.75	
5/8	0.625	0.31	0.61	0.92	
11/16	0.688	0.37	0.74	1.11	
3/4	0.750	0.44	0.88	1.33	
7/8	0.875	0.60	1.20	1.80	
1	1.000	0.79	1.57	2.36	TSB1&3
1 1/8	1.125	0.99	1.99	2.98	
1 1/4	1.250	1.23	2.45	3.68	TSB2
1 3/8	1.375	1.48	2.97	4.45	
1 1/2	1.500	1.77	3.53	5.30	
1 5/8	1.625	2.07	4.15	6.22	
1 3/4	1.750	2.41	4.81	7.22	
1 7/8	1.875	2.76	5.52	8.28	
2	2.000	3.14	6.28	9.42	
n = Number of columns of perforations					
Minimum steel plate thickness		1/4"	5/16"	3/8"	

TABLE SB-2

City of Colorado Springs Stormwater Quality	Figure SB-2 Outlet Sizing Application Techniques and Maintenance Requirements

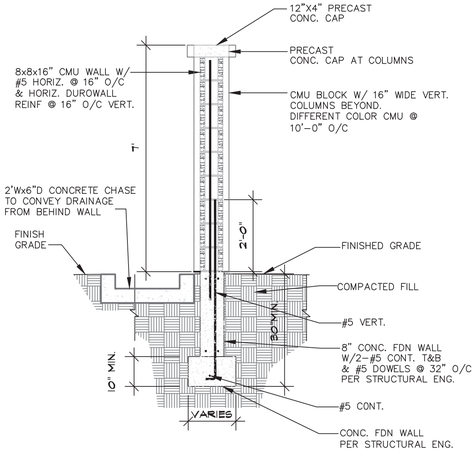
Table 506-2

Pay Item		Percent of Material Smaller Than Typical Stone[2]	Typical Stone Dimensions[3] (Inches)	Typical Stone Weight[4] (Pounds)
	Stone Size d50[1] (Inches)			
Riprap	6	70-100 50-70 35-50 2-10	12 9 6 2	85 35 10 0.4
Riprap	9	70-100 50-70 35-50 2-10	15 12 9 3	160 85 35 1.3
Riprap	12	70-100 50-70 35-50 2-10	21 18 12 4	440 275 85 3
Riprap	18	100 50-70 35-50 2-10	30 24 18 6	1280 650 275 10
Riprap	24	100 50-70 35-50 2-10	42 33 24 9	3500 1700 650 35

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

Nominal stone size and total thickness of the riprap shall be as shown on the plans.

CDOT SECTION 506 REQUIREMENTS APPLY



SCREEN WALL DETAIL

811 Know what's **below.** **Call** before you dig.
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COUNTY FILE NO.: SF2126

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

EROSION CONTROL DETAILS

PROJECT NO. 21187-01CSCV

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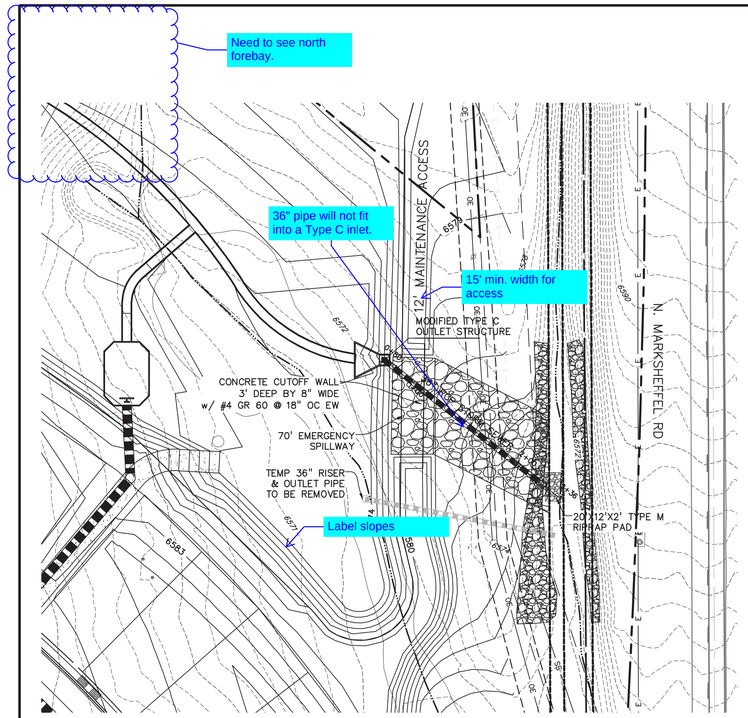
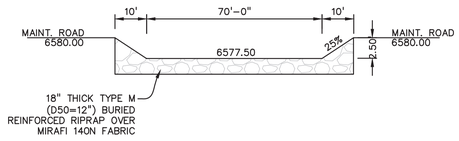
EC07



NORTH POND PLAN VIEW
SCALE: 1"=50'



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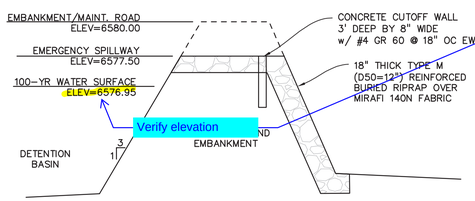

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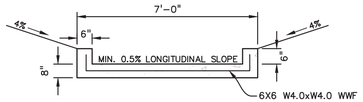

CONCRETE TRICKLE CHANNEL SECTION
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MAINTENANCE ROAD SECTION
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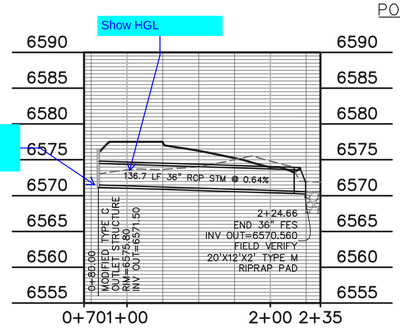
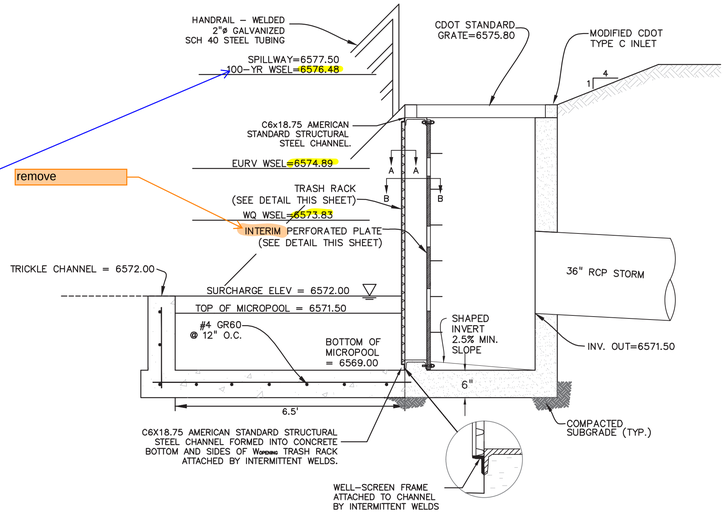


OUTLET PROFILE
SCALE: 1"=50'



POND OUTLET PROFILE SECTION C–C
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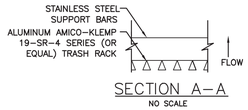

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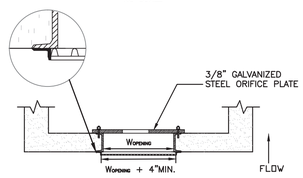

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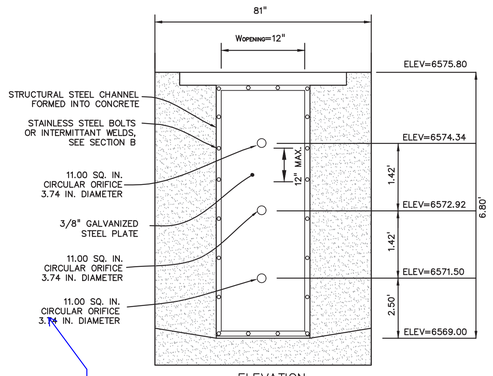


ELEVATION
PERFORATED PLATE DETAIL
NO SCALE

PERFORATED PLATE NOTES:

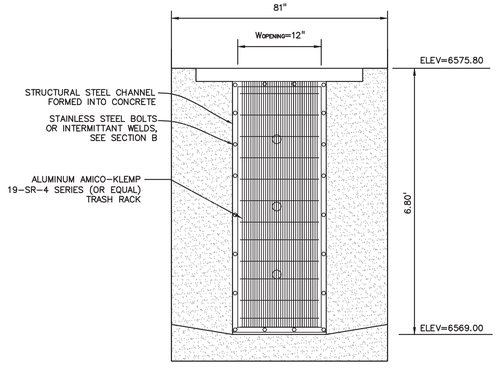
1. PROVIDE GASKET MATERIAL OR CAULK BETWEEN THE ORIFICE PLATE AND CONCRETE.
2. BOLT PLATE TO CONCRETE @ 12" MAX. ON CENTER. ORIFICE PLATE IS TO BE REMOVABLE.
3. ALL STEEL SURFACES ARE TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND.

WQCV TRASH RACKS:

1. TRASH RACKS SHALL BE STAINLESS STEEL OR ALUMINUM AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.

GENERAL NOTES:

1. ALL EXTERIOR STEEL SHALL BE EITHER STAINLESS OR HOT DIPPED GALVANIZED



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TRASH RACK
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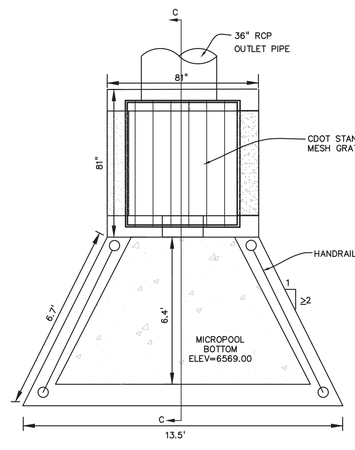

MICROPOOL PLAN
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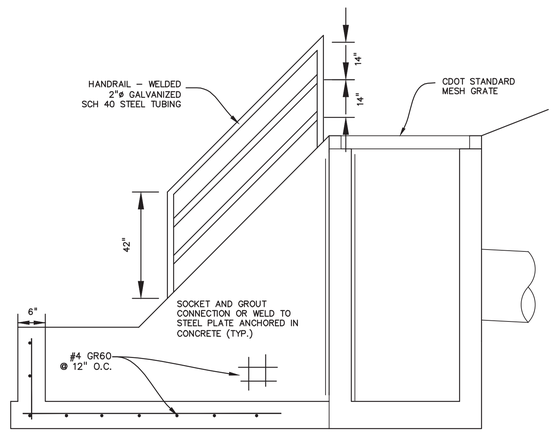

SECTION C–C
NO SCALE

COUNTY FILE NO.: SF2126

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COLORADO REGISTERED TIM D. McCONNELL 37707 11-30-21 PROFESSIONAL ENGINEER

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

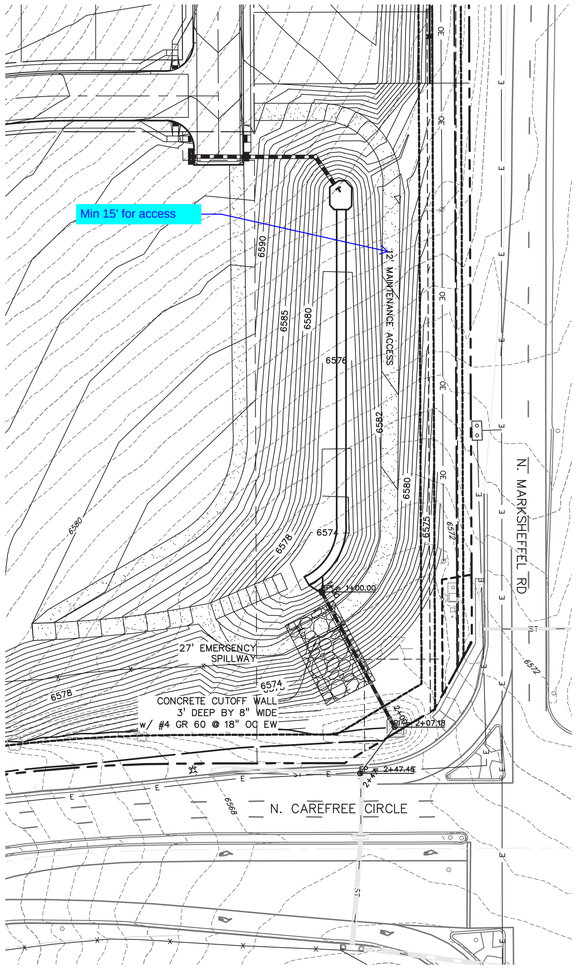
NORTH POND FINAL OUTLET DETAILS

PROJECT NO. 21187-01CSCV

DRAWING NO.

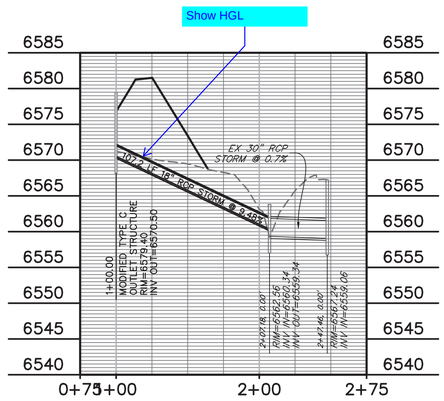
PD-1

SHEET: 8 OF 10



SOUTH POND PLAN VIEW
SCALE: 1"=50'

INTERIM OUTLET PLATE TO REMAIN UNTIL FINAL DESIGN FOR REPLAT OF TRACT B



OUTLET PROFILE
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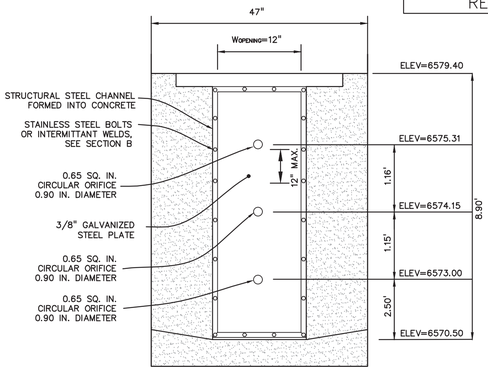

ELEVATION
INTERIM PERFORATED PLATE DETAIL
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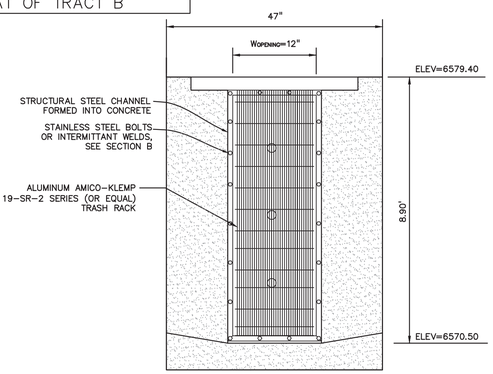

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TRASH RACK
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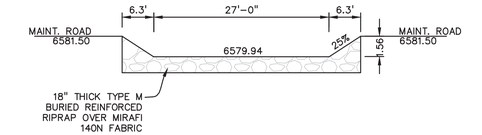

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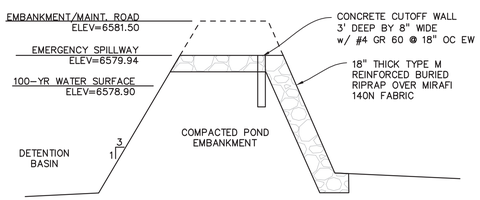

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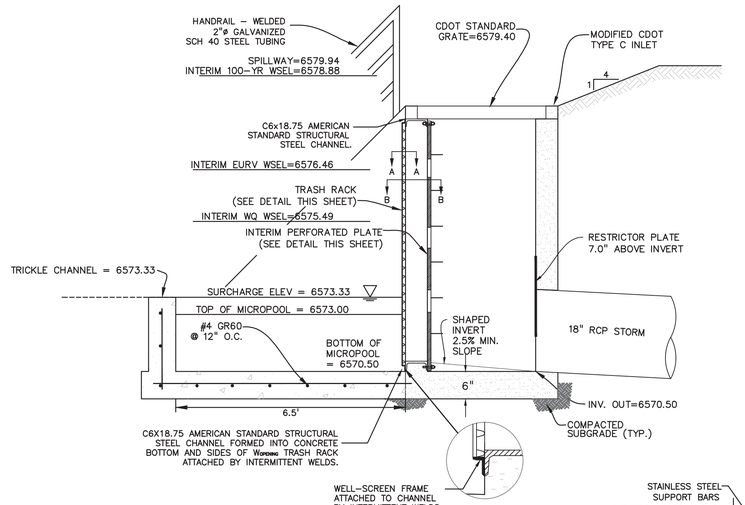

POND OUTLET PROFILE SECTION C–C
NO SCALE

SECTION A–A
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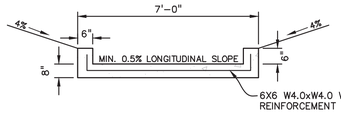

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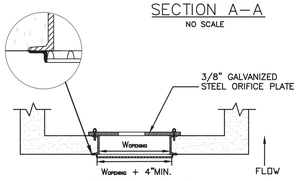
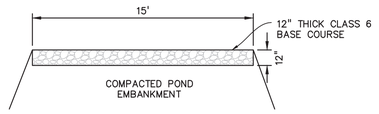


SECTION B–B
NO SCALE



MAINTENANCE ROAD SECTION
NO SCALE

PERFORATED PLATE NOTES:

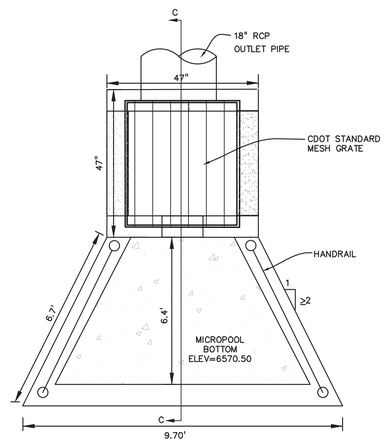
1. PROVIDE GASKET MATERIAL OR CAULK BETWEEN THE ORIFICE PLATE AND CONCRETE.
2. BOLT PLATE TO CONCRETE @ 12" MAX. ON CENTER. ORIFICE PLATE IS TO BE REMOVABLE.
3. ALL STEEL SURFACES ARE TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND.

WQCV TRASH RACKS:

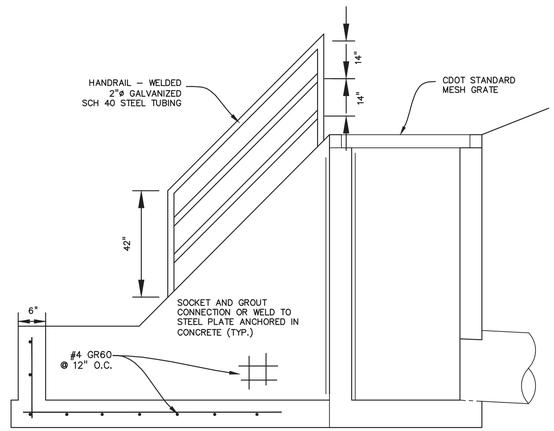
1. TRASH RACKS SHALL BE STAINLESS STEEL OR ALUMINUM AND SHALL BE ATTACHED BY INTERMITTENT WELDS ALONG THE EDGE OF THE MOUNTING FRAME.

GENERAL NOTES:

1. ALL EXTERIOR STEEL SHALL BE EITHER STAINLESS OR HOT DIPPED GALVANIZED



MICROPOOL PLAN
NO SCALE



SECTION C–C
NO SCALE

COUNTY FILE NO.: SF2126

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ISSUE	DATE
INITIAL ISSUE	2/21/19
LATEST ISSUE	11/22/21

DESIGNED BY:	KGV
DRAWN BY:	KGV
CHECKED BY:	TDM
FILE NAME:	21187-01PND1

PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

COLORADO REGISTERED TIMOTHY D. McCONNELL 33707 11-30-21 PROFESSIONAL ENGINEER

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

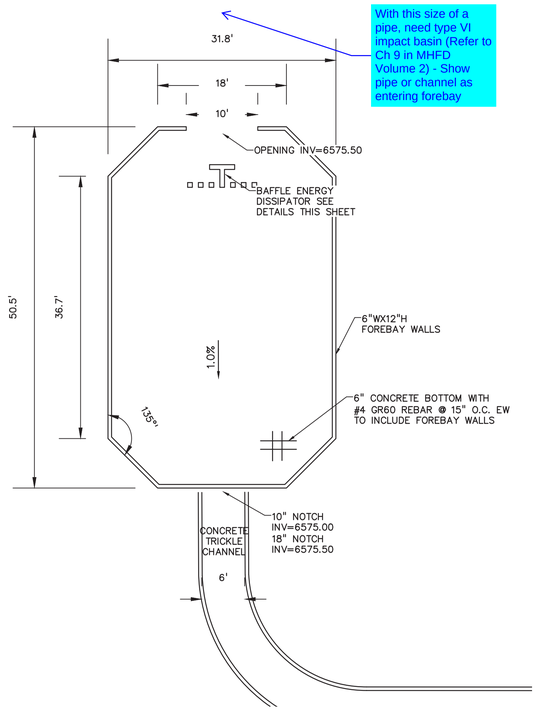
SOUTH POND INTERIM OUTLET DETAILS

PROJECT NO. 21187-01CSCV

DRAWING NO.

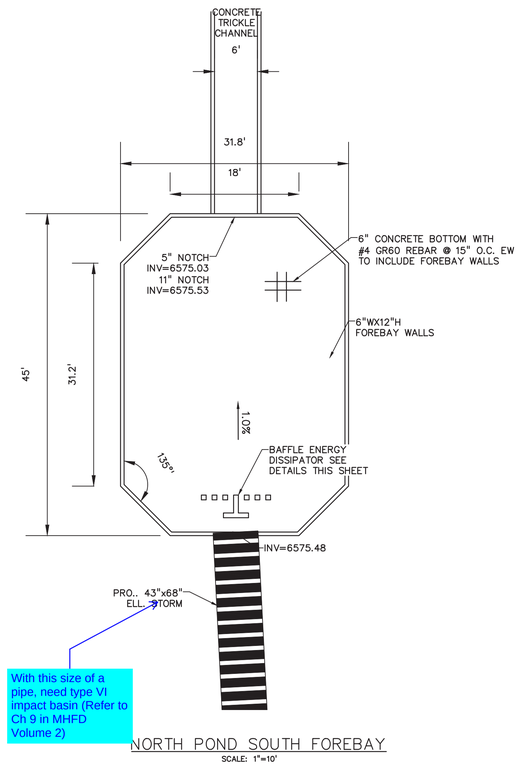
PD-2

SHEET: 9 OF 10



NORTH POND NORTH FOREBAY

SCALE: 1"=10'



NORTH POND SOUTH FOREBAY

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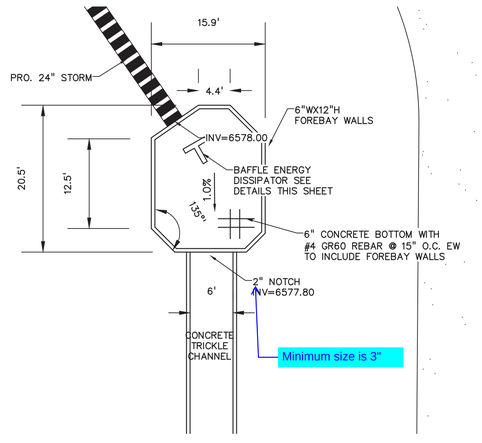
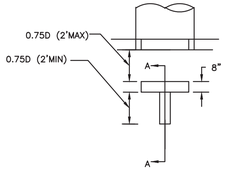
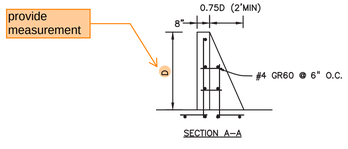


SOUTH POND NORTH FOREBAY

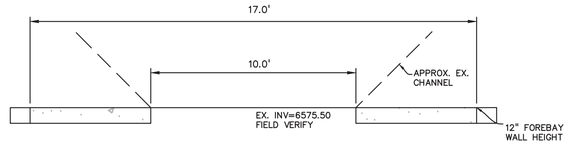
SCALE: 1"=10'





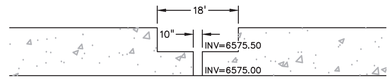
FOREBAY BAFFLE ENERGY DISSIPATORS

NO SCALE



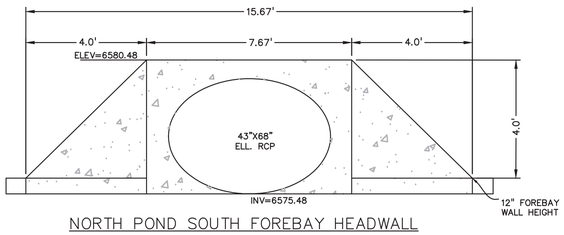
NORTH POND NORTH FOREBAY OPENING

NO SCALE



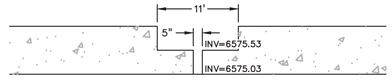
NORTH POND NORTH FOREBAY NOTCH

NO SCALE



NORTH POND SOUTH FOREBAY HEADWALL

NO SCALE



NORTH POND SOUTH FOREBAY NOTCH

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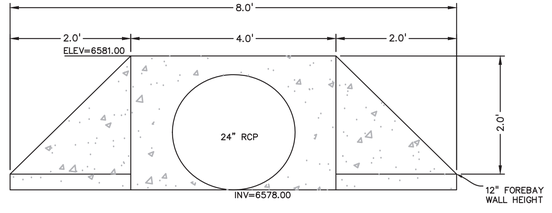
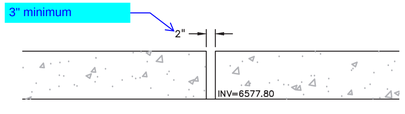


SOUTH POND FOREBAY HEADWALL

NO SCALE



SOUTH POND FOREBAY NOTCH

NO SCALE

COUNTY FILE NO.: SF2126

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CHECKED BY:	TDM
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PREPARED UNDER MY DIRECT SUPERVISION FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

COLORADO REGISTERED 33797 11-30-21 PROFESSIONAL ENGINEER

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

FOREBAY DETAILS

PROJECT NO. 21187-01CSCV

DRAWING NO.

FB

SHEET:10 OF 10