

HOMESTEAD AT STERLING RANCH FILING NO. 2

COUNTY OF EL PASO, STATE OF COLORADO SAND CREEK BANK STABILIZATION PLAN

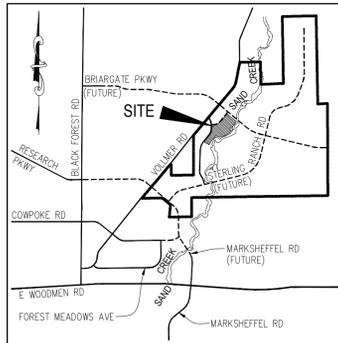
MARCH 2020

STANDARD CONSTRUCTION NOTES:

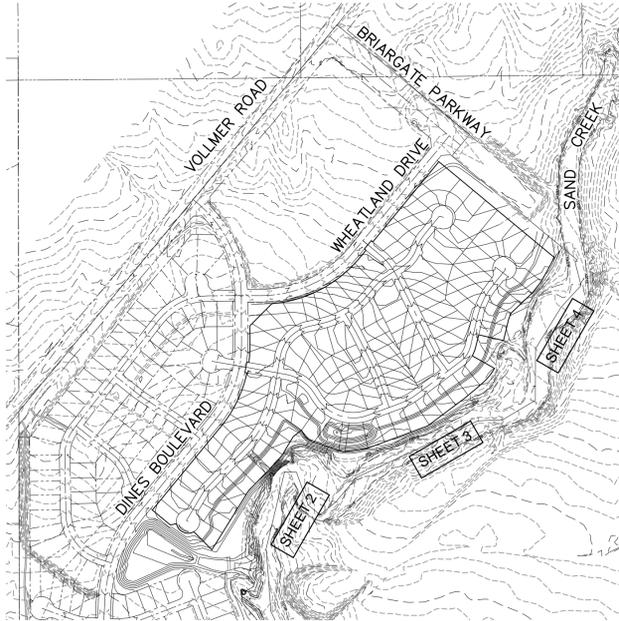
- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO SPRINGS.
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES INCLUDING THE FOLLOWING:
 - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
 - CITY OF COLORADO SPRINGS/EL PASO COUNTY ENGINEERING CRITERIA MANUAL VOLUMES 1 AND 2.
 - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.
 - CDOT M&S STANDARDS.
- IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ACCURACY SHOW EXISTING CONDITION BOTH ONSITE AND OFFSITE ON THE CONSTRUCTION PLANS. ANY MODIFICATION NECESSARY DUE TO CONFLICT OMISSIONS OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPERS RESPONSIBILITY TO RECTIFY.
- ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPs AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY DSD INSPECTIONS STAFF.
- IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORM WATER QUALITY CONTROL PERMIT (ESQCP), US ARMY CORPS OF ENGINEER ISSUED 401 AND/OR 404 PERMITS AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE CONSTRUCTION SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- ANY TEMPORARY SIGNAGE AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOW AND MUTCD CRITERIA.
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRE BY EL PASO COUNTY DOT INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFFSITE DISTURBANCE GRADING, OR CONSTRUCTION.

GRADING AND EROSION CONTROL NOTES:

- STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. 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.
- 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 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.
- 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.
- 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.
- 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.
- 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.
- ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FORM OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 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.
- 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 LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 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.
- 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.
- DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 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.
- 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.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
- NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- 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 ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- 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 1364), 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 (104, 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- 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.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY CTL THOMPSON, INC., ENTITLED GEOTECHNICAL INVESTIGATION TIMBERLINE LANDSCAPING OFFICE AND WAREHOUSE, DATED MAY 5, 2017, AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 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
WOOD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

TIMING: FEBRUARY 2020
ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING: SEPTEMBER 2020
EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETED:

AREAS 1.54 AC.
TOTAL AREA OF THE SITE TO BE CLEARED, EXCAVATED OR GRADED:
RECEIVING WATERS: SAND CREEK

LEGEND

- EXISTING INDEX CONTOUR (10')
- EXISTING NOMINAL CONTOUR (2')
- PROPOSED INDEX CONTOUR (10')
- PROPOSED NOMINAL CONTOUR (2')

Reference the Plans that show the Construction BMP's, SWMP etc for this work.

Engineering Review

03/16/2020 12:49:57 PM
dsdkuehster
stevekuehster@elpasoco.com
(719) 520-6813

EPC Planning & Community
Development Department



AGENCIES

- OWNER: SR LAND, LLC
20 BOULDER CRESCENT, SUITE 201
COLORADO SPRINGS, CO 80903
JM MORLEY (719) 471-1742
- CIVIL ENGINEER: M & S CIVIL CONSULTANTS, INC.
102 E. PIKES PEAK AVE., 5TH FLOOR
COLORADO SPRINGS, CO 80903
VIRGIL A. SANCHEZ P.E. (719) 955-5485
- ENGINEERING DIVISION: EL PASO COUNTY PLANNING
AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE, SUITE 110
COLORADO SPRINGS, CO 80910
JEFF RICE, P.E. (719) 520-6300
- TRAFFIC ENGINEERING: EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS
3275 AKERS DRIVE
COLORADO SPRINGS, CO 80922
JENNIFER IRVINE, P.E. (719) 520-6460
- WATER RESOURCES: STERLING RANCH METRO DISTRICT
JDS-HYDRO CONSULTANTS
545 E. PIKES PEAK AVE., SUITE 300
COLORADO SPRINGS, CO 80903
JOHN MCGINN (719) 668-8769
- FIRE DISTRICT: BLACK FOREST FIRE PROTECTION DISTRICT
11445 TEACOUT ROAD
COLORADO SPRINGS, CO 80908
CHIEF BRYAN JACK (719) 498-4300
- GAS DEPARTMENT: COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947
TIM WENDT (719) 668-3556
- ELECTRIC DEPARTMENT: MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN ROAD
FALCON, CO 80831
(719) 495-2283
- COMMUNICATIONS: QWEST COMMUNICATIONS
(U.N.C.C. LOCATORS) (800) 922-1987
AT&T (LOCATORS) (719) 635-3674

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 NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

3/02/2020

VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

OWNER'S STATEMENT:

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

JAMES F. MORLEY
SR LAND, LLC.
20 BOULDER, SUITE 201
COLORADO SPRINGS, CO 80903

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 THESE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

DATE

SHEET INDEX

- SHEET 1 TITLE SHEET
- SHEET 2 BANK STABILIZATION PLAN STA: 98+00 TO 103+00
- SHEET 3 BANK STABILIZATION PLAN STA: 103+00 TO 115+00
- SHEET 4 BANK STABILIZATION PLAN STA: 115+00 TO 126+00
- SHEET 5 SAND CREEK / CHANNEL SECTIONS & GEC DETAILS
- SHEET 6 EROSION CONTROL DETAILS



HOMESTEAD AT STERLING RANCH FILING NO. 2
SAND CREEK BANK STABILIZATION PLANS
PROJECT NO. 09-007
DATE: 01/15/2020
SCALE: HORIZONTAL: N/A
VERTICAL: N/A
DESIGNED BY: ELY
DRAWN BY: VAS
CHECKED BY: VAS
SHEET 1 OF 6
GR01

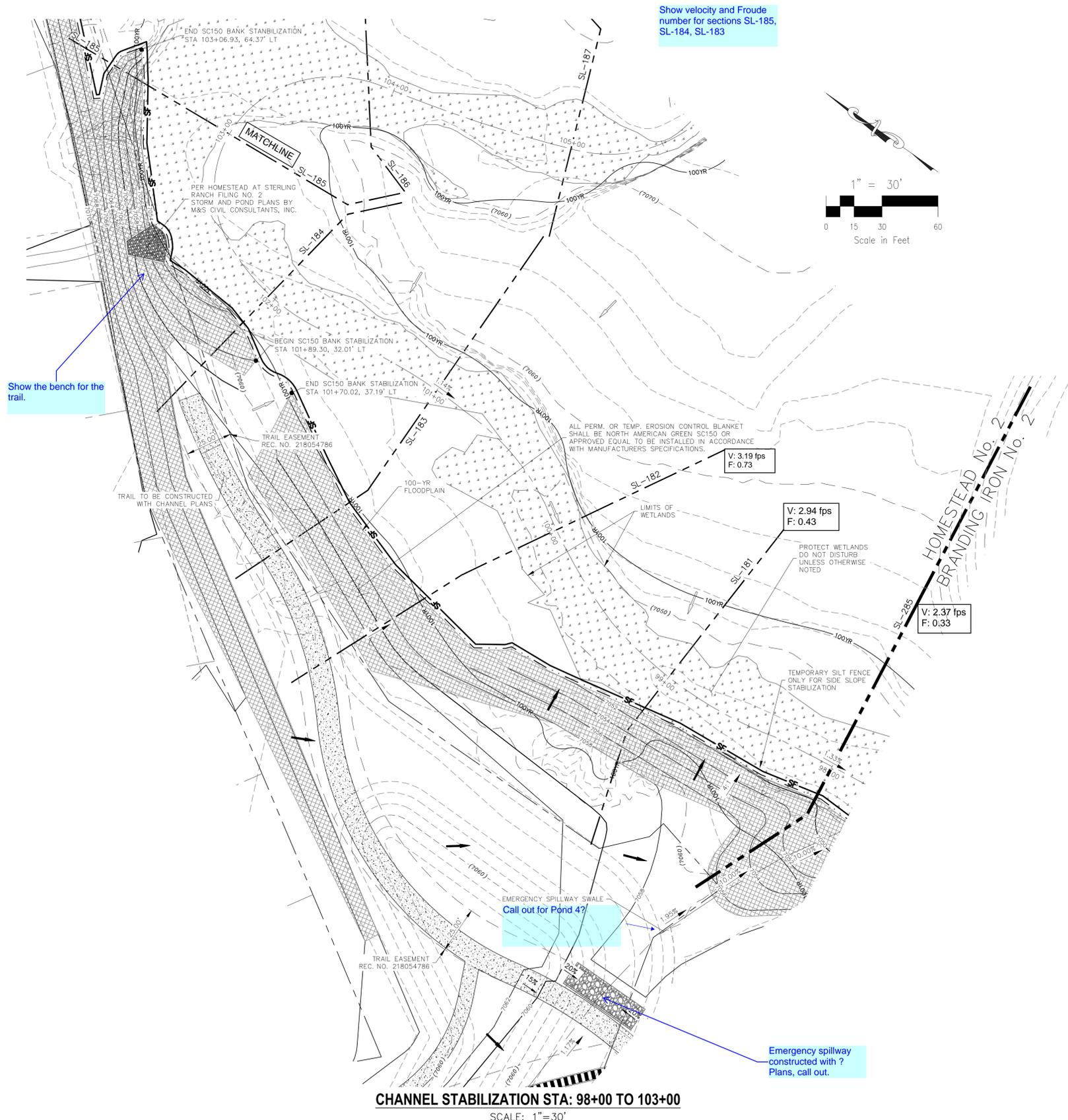
102 E. PIKES PEAK AVE., 5TH FLOOR
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485



FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.
VIRGIL A. SANCHEZ, COLORADO REGISTERED PROFESSIONAL ENGINEER NO. 37160

REVISIONS:
NO. DATE BY: DESCRIPTION
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE 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: 0:\0002A\Sterling Ranch District\Eng\Const\Draw\Grading & Erosion Control\Homestead 2 bank plans\0202.dwg Plot: 1/16/2020 1:02 PM



Show the bench for the trail.

Show velocity and Froude number for sections SL-185, SL-184, SL-183

Call out for Pond 4?

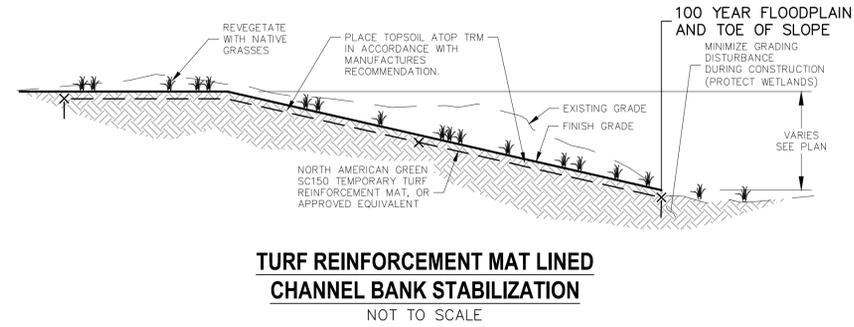
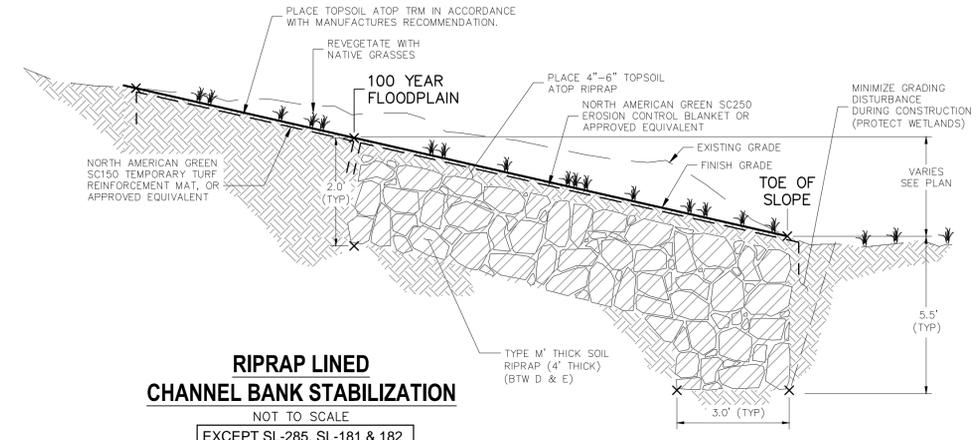
Emergency spillway constructed with ? Plans, call out.

CHANNEL STABILIZATION STA: 98+00 TO 103+00
SCALE: 1" = 30'

LEGEND

EX	EXISTING		EX. FLOW ARROW
FUT	FUTURE		PROP. FLOW ARROW
PROP	PROPOSED		PROPERTY LINE
	PROP MAJ CONT		SILT FENCE / LIMITS OF DISTURBANCE
	PROP MIN CONT		100-YR FLOOD PLAIN
	EXIST MAJ CONT		PROP STORM SEWER PIPE
	EXIST MIN CONT		EX. WETLANDS
	NORTH AMERICAN GREEN SC250 PERMANENT EROSION CONTROL BLANKET (OR APPROVED EQUAL) OVER BURIED TYPE M RIP RAP		WETLAND DISTURBANCE
	NORTH AMERICAN GREEN SC150 TEMPORARY EROSION CONTROL BLANKET (OR APPROVED EQUAL)		RIPRAP TYP.

Show in legend Trail designation.

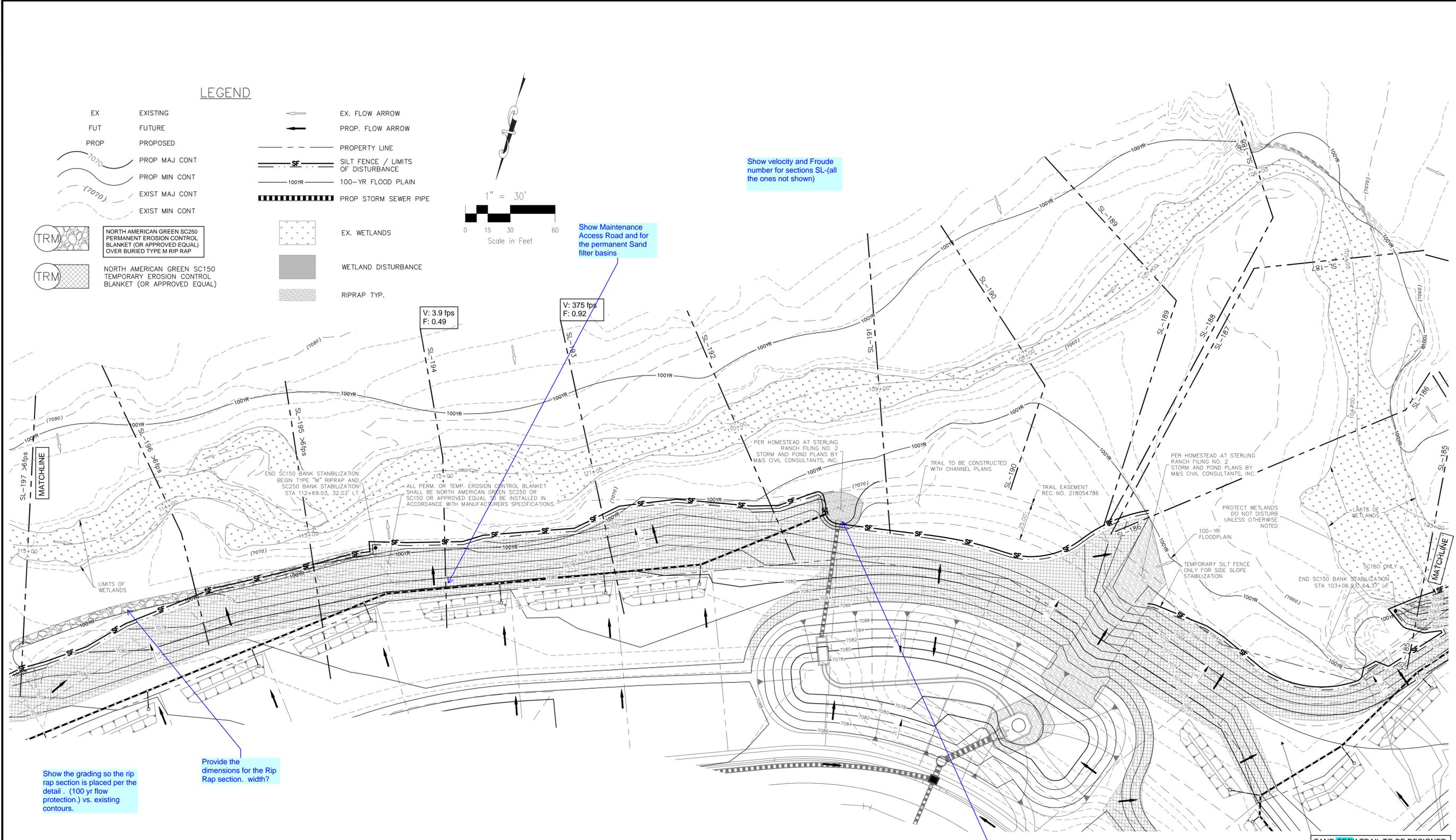
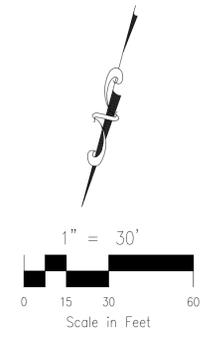


FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

HOMESTEAD AT STERLING RANCH FILING NO. 2 SAND CREEK BANK STABILIZATION PLANS		DATE: 01/15/2020 SCALE: N/A HORIZONTAL: N/A VERTICAL: N/A	PROJECT NO. 09-007 DESIGNED BY: ELY DRAWN BY: VAS CHECKED BY: N/A	GR02 SHEET 2 OF 6
102 E. Pikes Peak Ave., 3rd Floor Colorado Springs, CO 80903 PHONE: 719.555.4485 CIVIL CONSULTANTS, INC.				
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC. DAVID SANCHEZ, P.E., NO. 37160 REGISTERED PROFESSIONAL ENGINEER				
REVISIONS:				
NO.	DATE:	BY:	DESCRIPTION:	APPROVED BY:
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				

LEGEND

- EX EXISTING
- FUT FUTURE
- PROP PROPOSED
- PROF MAJ CONT
- PROF MIN CONT
- EXIST MAJ CONT
- EXIST MIN CONT
- EX. FLOW ARROW
- PROP. FLOW ARROW
- PROPERTY LINE
- SILT FENCE / LIMITS OF DISTURBANCE
- 100YR 100-YR FLOOD PLAIN
- PROP STORM SEWER PIPE
- EX. WETLANDS
- WETLAND DISTURBANCE
- RIPRAP TYP.
- NORTH AMERICAN GREEN SC250 PERMANENT EROSION CONTROL BLANKET (OR APPROVED EQUAL) OVER BURIED TYPE M RIP RAP
- NORTH AMERICAN GREEN SC150 TEMPORARY EROSION CONTROL BLANKET (OR APPROVED EQUAL)



Show velocity and Froude number for sections SL-(all the ones not shown)

Show Maintenance Access Road and for the permanent Sand filter basins

V: 3.9 fps
F: 0.49

V: 375 fps
F: 0.92

Show the grading so the rip rap section is placed per the detail. (100 yr flow protection.) vs. existing contours.

Provide the dimensions for the Rip Rap section. width?

Call out the pond number

CHANNEL STABILIZATION STA: 103+00 TO 115+00
SCALE: 1"=30'

SAND CREEK TRAIL TO BE DESIGNED AND CONSTRUCTED WITH CHANNEL IMPROVEMENT PLANS BY KIW ENGINEERING

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES
FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

HOMESTEAD AT STERLING RANCH FILING NO. 2
SAND CREEK BANK STABILIZATION PLANS
PROJECT NO. 09-007 DATE: 01/15/2020
DESIGNED BY: VAS HORIZONTAL: N/A
DRAWN BY: ELY VERTICAL: N/A
CHECKED BY: VAS

102 E. Pikes Peak Ave., 3rd Floor
Colorado Springs, CO 80903
PHONE: 719.555.4485

M&S CIVIL CONSULTANTS, INC.

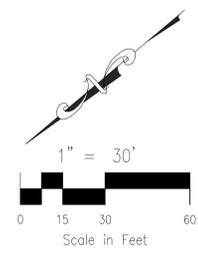
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

APPROVED BY: DATE: _____
BY: DESCRIPTION: _____
NO. DATE: _____

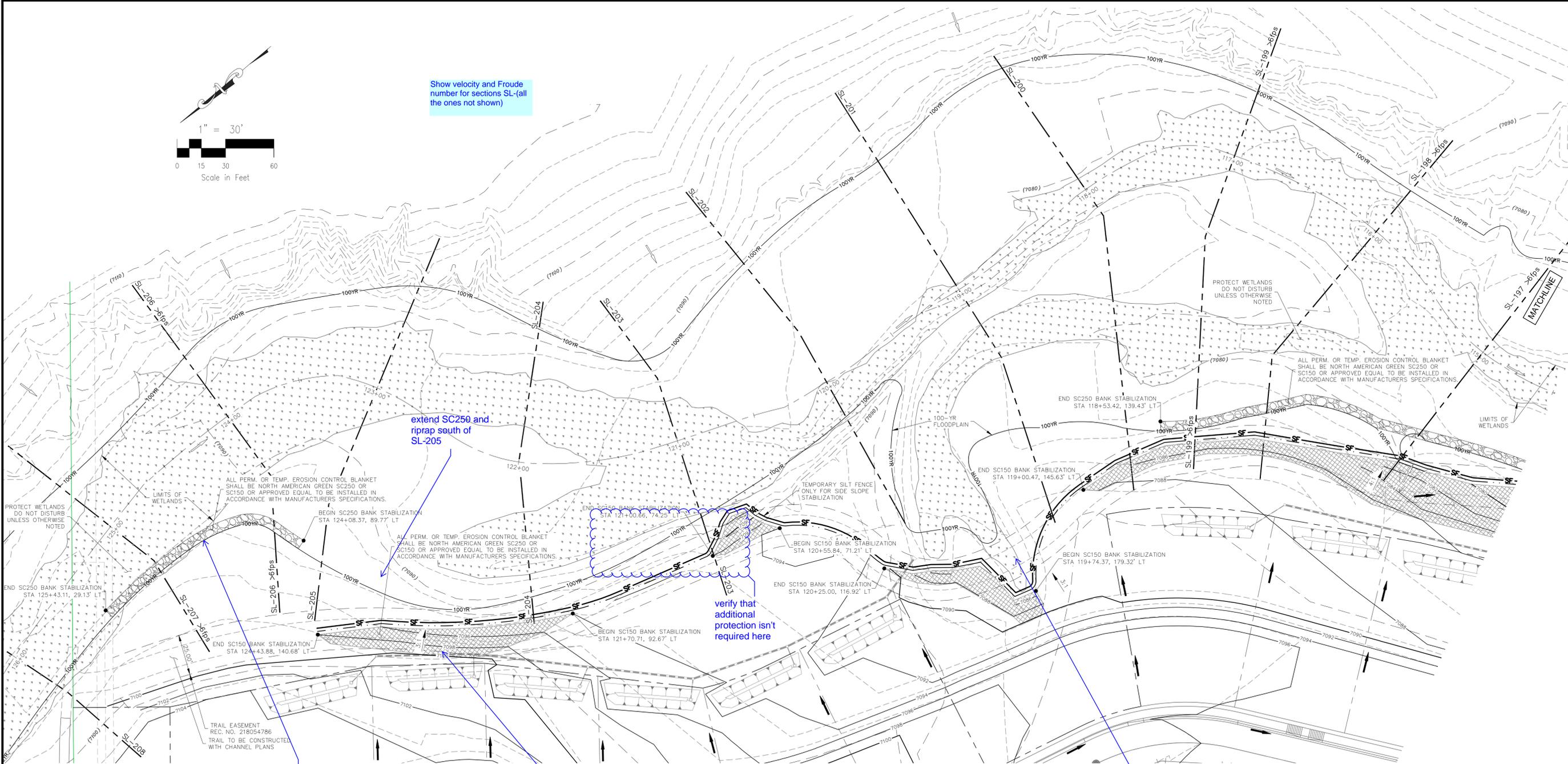
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

File: 0:\09002A\Sterling Ranch District\Bank Stabilization\Homestead 2 bank plans\0903.dwg Plotstamp: 1/16/2020 1:04 PM



Show velocity and Froude number for sections SL-(all the ones not shown)



extend SC250 and riprap south of SL-205

verify that additional protection isn't required here

Provide the dimensions for the Rip Rap section. width?
Show the grading so the rip rap section is placed per the detail. (100 yr flow protection.) vs. existing contours.

provide maintenance access roads

Show the contours for the trail.

CHANNEL STABILIZATION STA: 115+00 TO 126+00
SCALE: 1"=30'

LEGEND

- | | | | |
|------|---|--|------------------------------------|
| EX | EXISTING | | EX. FLOW ARROW |
| FUT | FUTURE | | PROP. FLOW ARROW |
| PROP | PROPOSED | | PROPERTY LINE |
| | PROP MAJ CONT | | SILT FENCE / LIMITS OF DISTURBANCE |
| | PROP MIN CONT | | 100-YR FLOOD PLAIN |
| | EXIST MAJ CONT | | PROP STORM SEWER PIPE |
| | EXIST MIN CONT | | EX. WETLANDS |
| | NORTH AMERICAN GREEN SC250 PERMANENT EROSION CONTROL BLANKET (OR APPROVED EQUAL) OVER BURIED TYPE M RIP RAP | | WETLAND DISTURBANCE |
| | NORTH AMERICAN GREEN SC150 TEMPORARY EROSION CONTROL BLANKET (OR APPROVED EQUAL) | | RIPRAP TYP. |



HOMESTEAD AT STERLING RANCH FILING NO. 2
SAND CREEK BANK STABILIZATION PLANS

PROJECT NO. 09-007
SCALE: 1"=30'
DESIGNED BY: VAS
DRAWN BY: ELY
CHECKED BY: VAS

DATE: 01/15/2020
SHEET 4 OF 6
GR04

102 E. PINE PEAK AVE., 3RD FLOOR
COLORADO SPRINGS, CO 80903
PHONE: 719.555.4485

MAS CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF
MAS CIVIL CONSULTANTS, INC.

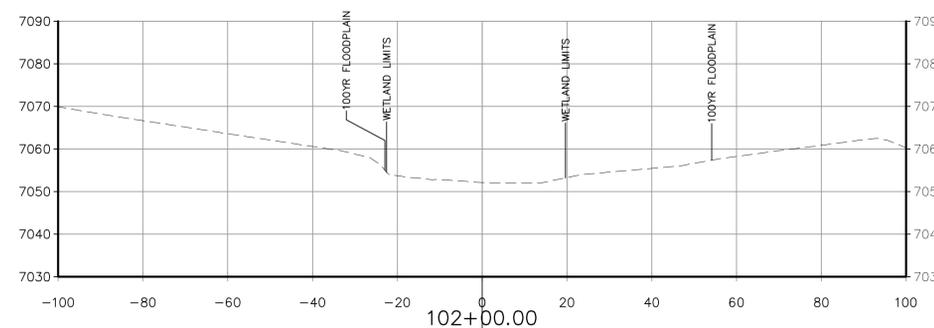
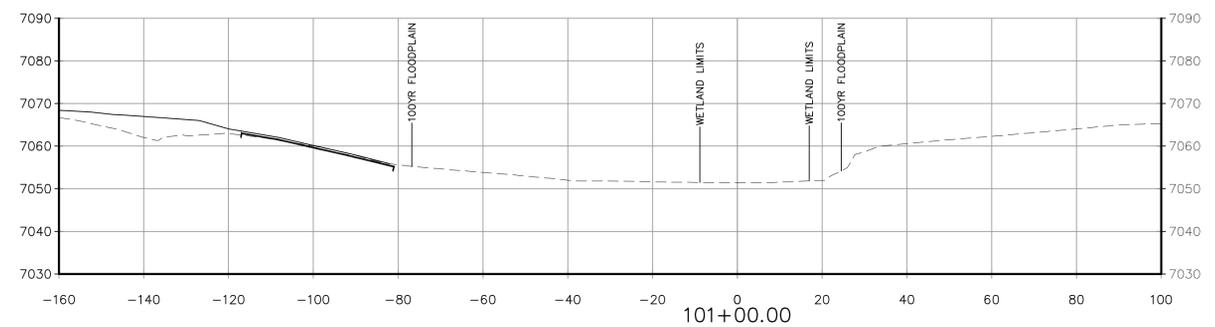
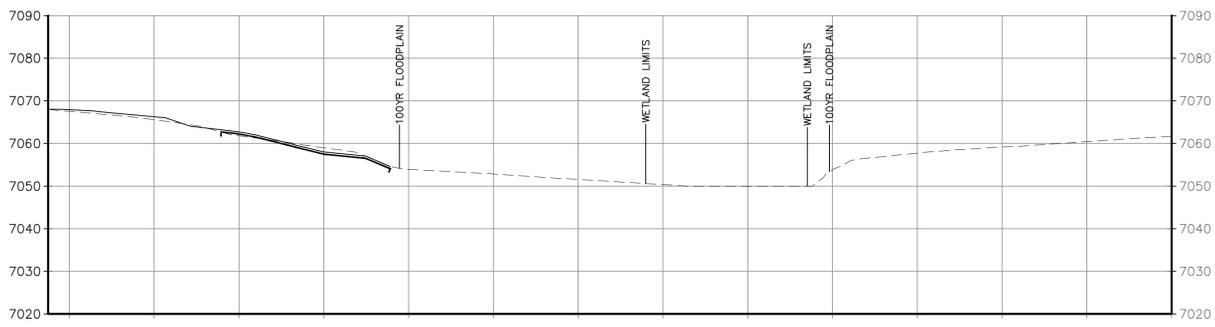
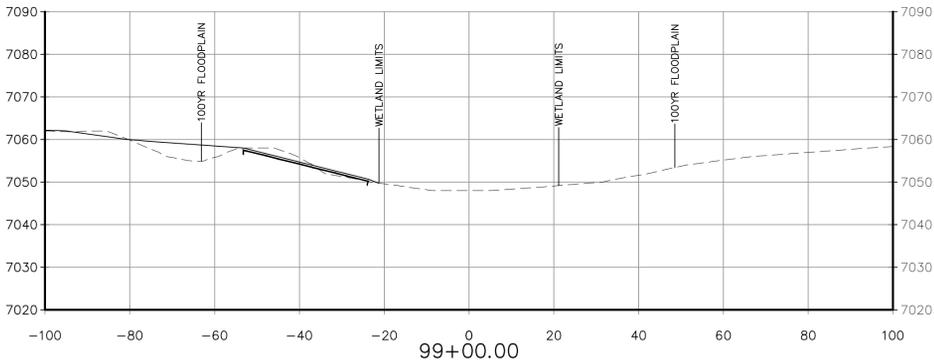
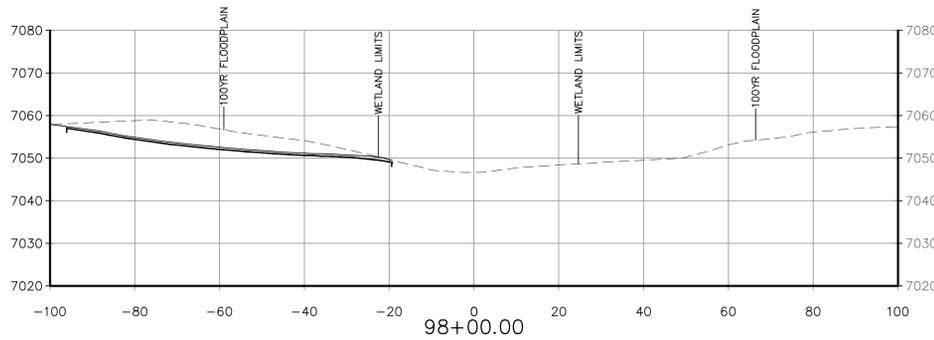
FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES. FOR BURIED UTILITY INFORMATION CALL 1-800-922-1987

NO.	DATE	BY	DESCRIPTION

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE 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: 0:\09002A\Sterling Ranch District\Map\Const\Draw\Grading & Erosion Control\Bank Stabilization\Homestead 2 bank plans\GR04.dwg PlotStamp: 1/16/2020 1:06 PM



Show all the contours where construction is proposed. Show the improvements: Rip rap and erosion blanket for each section.

LEGEND
 D50=24" SOIL RIPRAP
 EROSION CONTROL MAT
 EXISTING GROUND
 PROPOSED FINISH GRADE

Material and Performance Specification Sheet

SC150 Erosion Control Blanket

The extended-term double net erosion control blanket shall be a machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 24 months. (NOTE: functional longevity may vary depending upon climatic conditions, soil, geographical location, and elevation). The blanket shall be of consistent thickness with the straw and coconut evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with a heavy-weight photodegradable polypropylene netting having ultraviolet additives to delay breakdown and an approximate 0.53 x 0.53 (1.59 x 1.59 cm) mesh, and on the bottom side with a lightweight photodegradable polypropylene netting with an approximate 0.50 x 0.50 in (1.27 x 1.27 cm) mesh. The blanket shall be sewn together on 1.50 inch (3.81 cm) centers with degradable thread.

The SC150 shall meet requirements established by the Erosion Control Technology Council (ECTC) Specification and the US Department of Transportation, Federal Highway Administration's (FHWA) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 Section 713.17 as a type 3.B Extended-term Erosion Control Blanket.

The SC150 is also available with the DOT System™, which consists of installation staple patterns clearly marked on the erosion control blanket with environmentally safe paint. The blanket shall be manufactured with a colored thread stitched along both outer edges (approximately 2.5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

Material Content		
Matrix	70% Straw Fiber 30% Coconut Fiber	0.35 lbs/yd ² (0.19 kg/m ²) 0.15 lbs/yd ² (0.08 kg/m ²)
Nettings	Top - Heavyweight Photodegradable with UV additives Bottom - Lightweight Photodegradable	3.0 lb/1000 ft ² (1.47 kg/100 m ²) 1.5 lb/1000 ft ² (0.73 kg/100 m ²)
Thread	Degradable	1.5 lb/1000 ft ² (0.73 kg/100 m ²)

SC150 is available in the following standard roll sizes:

Width	6.67 ft (2.03 m)	16 ft (4.87 m)
Length	108 ft (32.92 m)	108 ft (32.92 m)
Weight ± 10%	44 lbs (19.95 kg)	105.6 lbs (47.9 kg)
Area	80.0 yd ² (66.9 m ²)	192 yd ² (165.5 m ²)

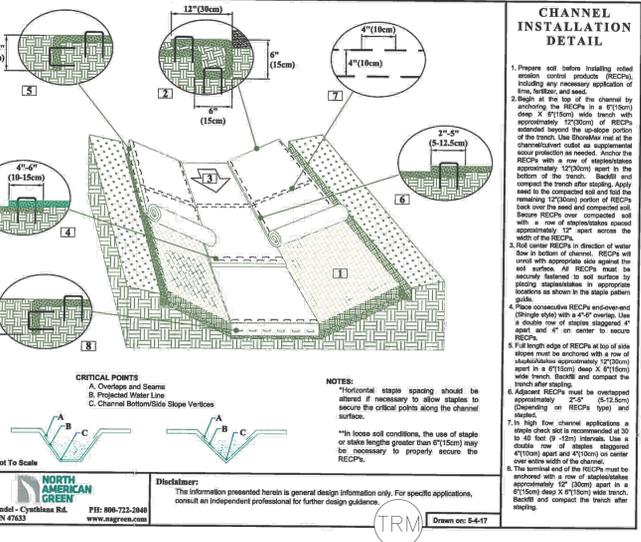
Index Value Properties:		
Property	Test Method	Typical
Thickness	ASTM D6525	0.59 in (9.91 mm)
Resiliency	ECTC Guidelines	75%
Water Absorbency	ASTM D1117	285%
Mass/Unit Area	ASTM 6475	11.44 oz/yd ² (388 g/m ²)
Swell	ECTC Guidelines	30%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	1.11 oz-in
Light Penetration	ECTC Guidelines	8.7%
Tensile Strength - MD	ASTM D6818	146.6 lbf/ft (2.17 kN/m)
Elongation - MD	ASTM D6818	26.9%
Tensile Strength - TD	ASTM D6818	147.6 lbf/ft (2.19 kN/m)
Elongation - TD	ASTM D6818	25.2%

Performance Design Values:		
Maximum Permissible Shear Stress		
Unvegetated Shear Stress	2.00 psf (96 Pa)	
Unvegetated Velocity	6.00 ft/s (2.44 m/s)	
Slope Design Data: C Factors		
Slope Length (L)	≤ 3.1	3.1 - 2.1
≤ 20 ft (6 m)	0.001	0.048
20-50 ft	0.051	0.079
≥ 50 ft (15.2 m)	0.10	0.110
Roughness Coefficients- Unveg.		
Flow Depth	Manning's n	
≤ 0.50 ft (0.15 m)	0.050	
0.50 - 2.0 ft	0.050 - 0.018	
≥ 2.0 ft (0.60 m)	0.018	

Bench Scale Testing* (MTEPP):		
Test Method	Parameters	Results
ECTC Method 2	50 mm (2 in)/hr for 30 min	SLR** = 5.47
Rainfall	100mm (4 in)/hr for 30 min	SLR** = 5.67
	150 mm (6 in)/hr for 30 min	SLR** = 5.88
ECTC Method 3	Shear at 0.50 inch soil loss	2.72 lbf/ft ²
ECTC Method 4	Top Soil, Fescue, 21 day	538% improvement of biomass
Germination	Incubation	

* Bench Scale tests should not be used for design purposes.
 ** Soil Loss Ratio = Soil loss with Bare Soil/Soil Loss with RECP (soil loss is based on regression analysis)

Updated 3/09



Material and Performance Specification Sheet

SC250 Turf Reinforcement Mat

The composite turf reinforcement mat (C-TRM) shall be a machine-produced mat of 70% straw and 30% coconut fiber matrix incorporated into a permanent three-dimensional turf reinforcement matting. The matrix shall be evenly distributed across the entire width of the matting and shall be bonded between a heavy duty UV stabilized netting with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings, an ultra heavy UV stabilized, dramatically corrugated (rimpled) intermediate netting with 0.5 x 0.5 inch (1.27 x 1.27 cm) openings, and covered by an heavy duty UV stabilized nettings with mat. The three nettings shall be stitched together on 1.50 inch (3.81 cm) centers with UV stabilized polypropylene thread to form a permanent three-dimensional turf reinforcement matting.

The SC250 shall meet requirements established by the Erosion Control Technology Council (ECTC) Specification and the US Department of Transportation, Federal Highway Administration's (FHWA) Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 Section 713.16 as a type 5A, B, and C Permanent Turf Reinforcement Mat.

Installation staple patterns shall be clearly marked on the turf reinforcement matting with environmentally safe paint. All mats shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

Material Content		
Matrix	70% Straw / 30% Coconut fibers	0.35 lbs/yd ² (0.19 kg/m ²) / 0.15 lbs/yd ² (0.08 kg/m ²)
Nettings	Top and Bottom, UV stabilized Polypropylene Middle, corrugated UV stabilized Polypropylene	5 lb/1000 ft ² (2.44 kg/100 m ²) 24 lb/1000 ft ² (11.7 kg/100 m ²)
Thread	Polypropylene, UV stabilized	24 lb/1000 ft ² (11.7 kg/100 m ²)

SC250 is available in the following roll sizes:

Width	6.5 ft (2.0 m)
Length	55.5 ft (16.9 m)
Weight ± 10%	34 lbs (15.42 kg)
Area	40.0 yd ² (33.4 m ²)

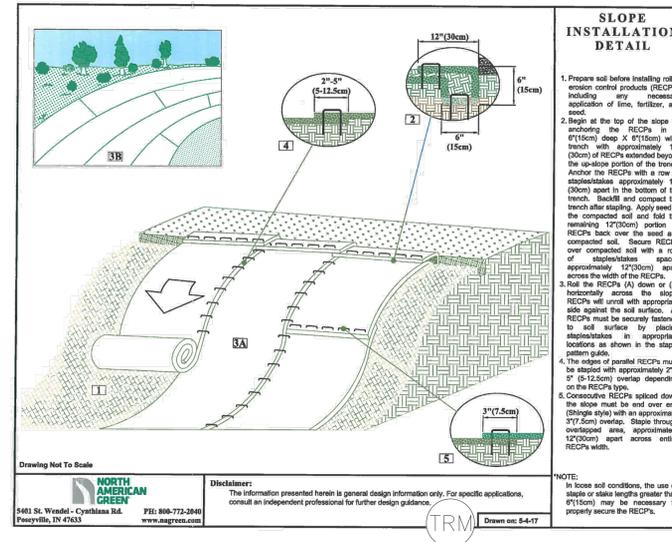
Index Value Properties:		
Property	Test Method	Typical
Thickness	ASTM D6525	0.72 in (18.3 mm)
Resiliency	ASTM 6524	55.2%
Density	ASTM D792	0.53 oz/in ³
Mass/Unit Area	ASTM 6566	17.88 oz/yd ² (606 g/m ²)
Porosity	ECTC Guidelines	99%
Stiffness	ASTM D1388	222.65 oz-in
Light Penetration	ECTC Guidelines	8.9%
UV Stability	ASTM D4355/1000 hr	100%
Tensile Strength MD	ASTM D6818	620 lbf/ft (9.05 kN/m)
Elongation MD	ASTM D6818	35%
Tensile Strength TD	ASTM D6818	737 lbf/ft (10.75 kN/m)
Elongation TD	ASTM D6818	16%

Performance Design Values:		
Maximum Permissible Shear Stress		
Phase 1 Unvegetated	3.0 lbf/ft ² (144 Pa)	2.5 lbf/ft ² (120 Pa)
Phase 2 Partially Veg.	8.0 lbf/ft ² (383 Pa)	8.0 lbf/ft ² (383 Pa)
Phase 3 Fully Veg.	10.0 lbf/ft ² (480 Pa)	8.0 lbf/ft ² (383 Pa)
Velocity Unveg.	9.5 ft/s (2.9 m/s)	9.0 ft/s (2.7 m/s)
Velocity Veg.	15 ft/s (4.6 m/s)	15 ft/s (4.6 m/s)
Slope Design Data: C Factors		
Slope Length (L)	≤ 3.1	3.1 - 2.1
≤ 20 ft (6 m)	0.0010	0.0209
20-50 ft	0.0081	0.0296
≥ 50 ft (15.2 m)	0.0455	0.0554
Roughness Coefficients- Unveg.		
Flow Depth	Manning's n	
≤ 0.50 ft (0.15 m)	0.040	
0.50 - 2.0 ft	0.040 - 0.012	
≥ 2.0 ft (0.60 m)	0.011	

Bench Scale Testing* (MTEPP):		
Test Method	Parameters	Results
ECTC Method 2	50 mm (2 in)/hr for 30 min	SLR** = 18.25
Rainfall	100mm (4 in)/hr for 30 min	SLR** = 20.97
	150 mm (6 in)/hr for 30 min	SLR** = 22.74
ECTC Method 3	Shear at 0.50 inch soil loss	7.7 lbf/ft ²
ECTC Method 4	Top Soil, Fescue, 21 day	523% improvement of biomass
Germination	Incubation	

* Bench Scale tests should not be used for design purposes.
 ** Soil Loss Ratio = Soil loss with Bare Soil/Soil Loss with RECP (soil loss is based on regression analysis)

Updated 3/09



ADDITIONAL CROSS SECTIONS PROVIDED TO EPC

HOMESTEAD AT STERLING RANCH FILING NO. 2

SAND CREEK BANK STABILIZATION PLANS

PROJECT NO. 09-007
 DATE: 01/15/2020
 SCALE: N/A
 HORIZONTAL: N/A
 VERTICAL: N/A
 DESIGNED BY: ELY
 DRAWN BY: VAS
 CHECKED BY: VAS
 SHEET 5 OF 6
 GR05

102 E. Pikes Peak Ave., 3rd Floor
 Colorado Springs, CO 80903
 PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

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

REGISTERED PROFESSIONAL ENGINEER
 NO. 31160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:

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

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CAUTION

