CONTRACT DRAWINGS FOR CONSTRUCTION OF

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION

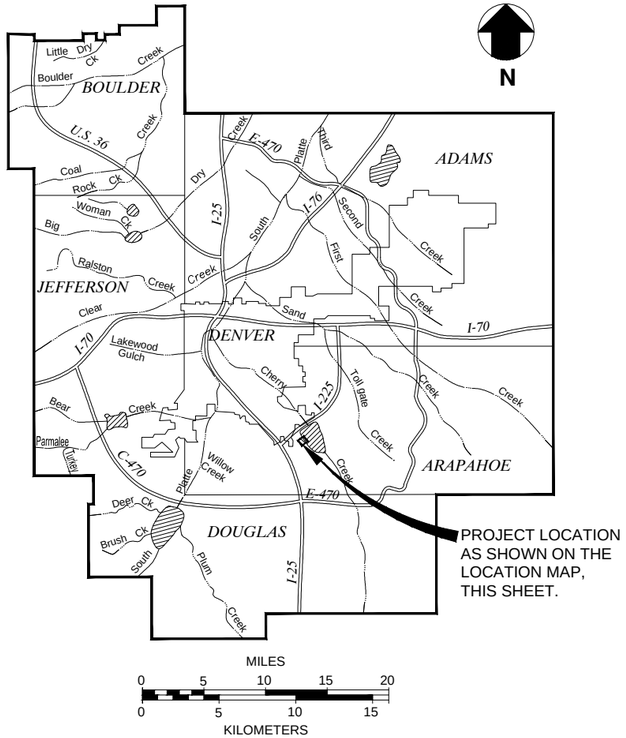
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

JULY 2012

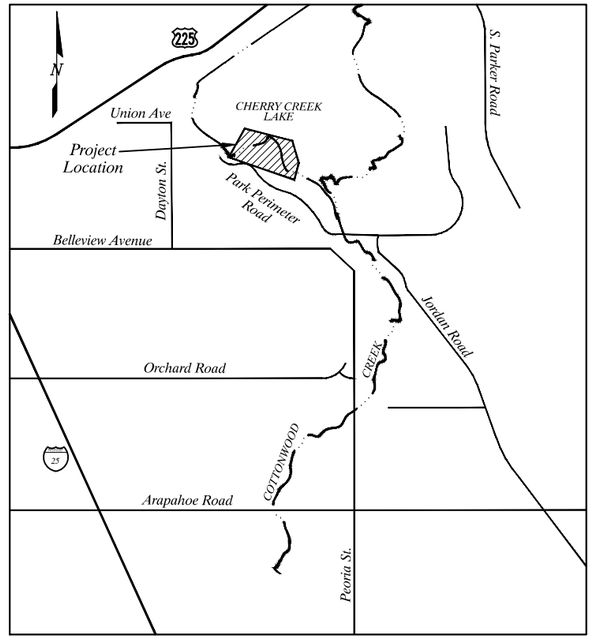
RECORD DRAWING

7/15/13

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



VICINITY MAP



LOCATION MAP

NTS

BENCHMARK:
HORIZONTAL CONTROL FROM ARAPAHOE COUNTY CONTROL POINTS. VERTICAL CONTROL FROM BM 3" BRASS CAP @NW CORNER OF HEADWALL ON SOUTH END OF NEWARK WAY CUL-DE-SAC, NORTH OF COTTONWOOD CREEK STAMPED: "USGS, SEPT. 1992 ELEV. 5632.33". NGVD 1929 DATUM.
NAVD88 = NGVD29 + 2.97'

THIS ***GRADING, EROSION AND SEDIMENT CONTROL (GESC)*** DOCUMENT HAS BEEN PLACED IN THE ARAPAHOE COUNTY FILE FOR THIS PROJECT AND APPEARS TO FULFILL THE LATEST VERSION OF THE *ARAPAHOE COUNTY GRADING, EROSION AND SEDIMENT CONTROL MANUAL*. ADDITIONAL GRADING, EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE OWNER OR HIS/HER AGENTS, DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED GESC PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS GESC PLAN SHALL RUN WITH THE LAND AND BE THE OBLIGATION OF THE LAND OWNER, OR HIS/HER DESIGNATED REPRESENTATIVE(S) UNTIL SUCH TIME AS THE PLAN IS PROPERTY COMPLETED, MODIFIED OR VOIDED.

ARAPAHOE COUNTY CASE NUMBER: E11-009

THESE GESC PLANS HAVE BEEN REVIEWED BY ARAPAHOE COUNTY FOR GRADING, EROSION AND SEDIMENT CONTROL IMPROVEMENTS ONLY.

FOR AND ON BEHALF OF THE ARAPAHOE COUNTY DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT

I HEREBY ATTEST THAT THIS ***GRADING, EROSION AND SEDIMENT CONTROL (GESC)*** DOCUMENT FOR THE MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION HAS BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND TO THE BEST OF MY KNOWLEDGE AND ABILITY HAS BEEN PREPARED IN ACCORDANCE WITH THE LATEST VERSION OF THE ARAPAHOE COUNTY GESC MANUAL. THE SIGNATURE AND STAMP AFFIXED HEREON CERTIFIES THAT THIS GESC DOCUMENT WAS PREPARED IN ACCORDANCE WITH THE REQUIRED REGULATIONS AND CRITERIA; HOWEVER, THE STAMP AND SIGNATURE DO NOT CERTIFY OR GUARANTEE FUTURE PERFORMANCE OF THE EXECUTION OF THE PLAN BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR EXECUTING THE CONSTRUCTION WORK ACCORDING TO THE INFORMATION SET FORTH IN THE PLAN AND IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS.

REGISTERED PROFESSIONAL ENGINEER _____ STATE OF COLORADO NO. _____

I HEREBY CERTIFY THAT THE ***GRADING, EROSION AND SEDIMENT CONTROL (GESC)*** MEASURES FOR THE MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION SHALL BE CONSTRUCTED ACCORDING TO THE DESIGN PRESENTED IN THIS REPORT. I UNDERSTAND THAT ADDITIONAL EROSION CONTROL, SEDIMENT CONTROL AND WATER QUALITY ENHANCING MEASURES MAY BE REQUIRED OF THE OWNER AND HIS OR HER AGENTS DUE TO UNFORSEEN POLLUTANT DISCHARGES OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THE PLAN SHALL BE THE OBLIGATION OF THE LAND OWNER AND/OR HIS SUCCESSORS OR HEIRS; UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED OR VOIDED.

OWNER OR AUTHORIZED AGENT

AUTHORIZED SIGNATURE _____ DATE _____

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	CIVIL	
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5	C-2	GRADING AND STABILIZATION PLAN B
6	C-3	GRADING AND STABILIZATION PLAN C
7	C-4	GRADING AND STABILIZATION PLAN D
8	C-5	GRADING AND STABILIZATION PLAN E
9	C-6	GRADING AND STABILIZATION PLAN F
10	C-7	MOUNTAIN LOOP GRADING PLAN
11	C-8	BOARDWALK DETAILS
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34	EC-8	GESC STANDARD NOTES AND DETAILS (3 OF 3)

CHERRY CREEK BASIN WATER QUALITY AUTHORITY

BILL RUZZO; TECHNICAL MANAGER DATE

COLORADO STATE PARKS

Colorado State Parks

SHAWN KRIER; PROJECT MANAGER DATE

TIM METZGER; PARK MANAGER DATE

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GENERAL
COVER SHEET

DATE JULY 2011
DRAWING NO. G-1
SHEET NO. 1 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\ASBUILTS\08025.02-COVR.dwg DATE: AUG 28, 2013 TIME: 3:39 PM

GENERAL LEGEND

- SOIL/SUBGRADE
- CONCRETE
- BEDDING
- EXISTING TREES / EXISTING SHRUBS
- GEOTECHNICAL TEST PIT
- NEW EMBANKMENT SLOPE AS INDICATED (HORIZ:VERT) (3:1)
- SPOT ELEVATION (5585.75)
- SECTION OR DETAIL DESIGNATION (A / 5)
- DRAWING NUMBER WHERE SECTION OR DETAIL IS SHOWN OR TAKEN
- PROPOSED FENCE
- EXISTING FENCE
- EXISTING MAJOR CONTOUR (5600)
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR (5600)
- PROPOSED MINOR CONTOUR
- EASEMENT LINE
- RIGHT-OF-WAY
- EXISTING CULVERTS
- EDGE OF PAVEMENT/CONCRETE
- CENTER LINE
- EXISTING RIPRAP
- PROPOSED RIPRAP
- CA — CONSTRUCTION ACCESS
- CWA — CONCRETE WASHOUT AREA
- SCL — SEDIMENT CONTROL LOG
- SM — SEEDING AND MULCHING
- SF — SILT FENCE
- SSA — STABILIZED STAGING AREA
- SC — SILT CURTAIN
- SP — STOCKPILES
- VTC — VEHICLE TRACKING CONTROL
- LOC — LIMITS OF CONSTRUCTION
- ECB — EROSION CONTROL BLANKET
- RP — RIPRAP PAD
- CF — CONSTRUCTION FENCE

ABBREVIATIONS

AF	-ACRE - FEET
APPROX.	-APPROXIMATELY
@	-AT
BLDG.	-BUILDING
BLDR	-BOULDER
BOC.	-BACK OF CURB
BOW	-BOTTOM OF WALL
BP	-BANK PROTECTION
BTWN	-BETWEEN
℄	-CENTERLINE
C.O.	-CLEAN OUT
CDOT	-COLORADO DEPARTMENT OF TRANSPORTATION
CLR.	-CLEAR
COMB.	-COMBINATION
CONC.	-CONCRETE
CF	-CUBIC FEET
CJ	-CONSTRUCTION JOINT
DET.	-DETAIL
DIA. OR Ø	-DIAMETER
DIM.	-DIMENSION
DIP	-DUCTILE IRON PIPE
D/S	-DOWNSTREAM
DWG.	-DRAWING
EA.	-EACH
EW.	-EACH WAY
EOP	-EDGE OF PAVEMENT
EOW	-EDGE OF WALK
EL.	-ELEVATION
EXST.	-EXISTING
FES	-FLARED END SECTION
FL	-FLOW LINE
FT.	-FEET OR FOOT
F.F/FF	-FINISHED FLOOR
FS	-FIRE SERVICE
GV	-GATE VALVE
GALV.	-GALVANIZED
G.	-GAS
HC	-HANDICAP
HE.	-HORIZONTAL ELLIPTICAL
H.P.	-HIGH POINT
HORZ. OR H.	-HORIZONTAL
HT.	-HEIGHT
IN.	-INCH
INV.	-INVERT ELEVATION
LF	-LINEAR FOOT/FEET
L.P.	-LOW POINT
MH	-MANHOLE
MAX.	-MAXIMUM
MID	-MIDDLE
MIN.	-MINIMUM
NRCP	-NONREINFORCED CONCRETE PIPE
N.T.S.	-NOT TO SCALE
# OR NO.	-NUMBER
O/C. OR O.C.	-ON CENTER
PC	-POINT OF CURVATURE
PT	-POINT OF TANGENCY
PVI	-POINT OF VERTICAL INTERSECTION
PVC	-POLYVINYL CHLORIDE PIPE
PSF	-POUND/ SQUARE FOOT
PSI	-POUND/ SQUARE INCH
QTY.	-QUANTITY
RAD. OR R	-RADIUS
RCP	-REINFORCED CONCRETE PIPE
REQ`D.	-REQUIRED
RET WALL	-RETAINING WALL
REV.	-REVISED OR REVISION
R.O.W.	-RIGHT OF WAY
SCH. OR SCHED.	-SCHEDULE
SPEC.	-SPECIFICATION
SQ.	-SQUARE
STA	-STATION
STD.	-STANDARD
STL	-STEEL
SAN SEWER	-SANITARY SEWER
SS	-STAINLESS STEEL
TOC	-TOP OF CURB
TOG	-TOP OF GROUT
TOW	-TOP OF WALL
TYP.	-TYPICAL
U.G.	-UNDERGROUND
U/S	-UPSTREAM
U.S.G.S.	-UNITED STATES GEOLOGICAL SURVEY
VERT. OR V.	-VERTICAL
W/	-WITH
W/O	-WITHOUT
WQ	-WATER QUALITY
WS	-WATER SURFACE
WSE	-WATER SURFACE ELEVATION

PROJECT TEAM

CIVIL ENGINEER: MULLER ENGINEERING COMPANY, INC.
777 S WADSWORTH BOULEVARD, #4-100
LAKEWOOD, CO 80226-4355
PHONE: 303-988-4939
FAX: 303-988-4969

LANDSCAPE ARCHITECT: WENK ASSOCIATES, INC.
1335 ELATI STREET
DENVER, CO 80204
PHONE: 303-628-0003
FAX: 303-628-0004

ECOLOGIST: THE RESTORATION GROUP, INC.
5858 WOODBOURNE HOLLOW ROAD
BOULDER, CO 80301
PHONE: 303-530-1783
FAX: 303-581-9219

PERMITTING: ERO RESOURCES CORPORATION
1842 CLARKSON STREET
DENVER, CO 80218
PHONE: 303-830-1188
FAX: 303-830-1199

GENERAL NOTES

1. LOCATIONS OF UTILITIES REPRESENT THE BEST-KNOWN LOCATIONS AT THE TIME OF PREPARATION OF DRAWINGS. THE CONTRACTOR SHALL FIELD-LOCATE ALL UTILITIES IN ADVANCE OF EXCAVATION. RELOCATION OF UTILITIES MAY OR MAY NOT BE NEEDED AFTER THEY ARE EXPOSED. ACTUAL RELOCATION OF LINES WILL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE SHOWN, BUT THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANIES TO COORDINATE THE RELOCATION EFFORT. LINES NOT RELOCATED SHALL BE PROTECTED BY THE CONTRACTOR IN PLACE OR REMOVED AND REPLACED, IN KIND, AS APPROVED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR THE MINOR ADJUSTMENT OF STRUCTURES OR PIPES IN ORDER TO CLEAR A CONFLICTING UTILITY. CONTACT UTILITY COMPANIES 48 HOURS IN ADVANCE WHEN WORKING ADJACENT TO THE UTILITY.

2. THE CONTRACTOR SHALL COMPLY WITH ANY APPLICABLE TRAFFIC CONTROL REQUIREMENTS OF GREENWOOD VILLAGE OR AURORA IN ACCESSING THE CONSTRUCTION SITE.

3. PROJECT FACILITIES ARE TO BE LOCATED BASED ON THE SURVEY COORDINATES, ELEVATIONS, DIMENSIONS, AND/OR GEOMETRIC DESIGN DATA PROVIDED ON THE DRAWINGS. WHERE SUCH INFORMATION IS NOT INDICATED ON THE DRAWINGS, FINISHED GRADES AND FACILITY LOCATIONS ARE TO BE DERIVED FROM PLAN VIEW LAYOUT LINES AND CONTOURS.

4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING STABLE EXCAVATIONS AND TEMPORARY SLOPES AND FOR SATISFYING ALL APPLICABLE OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS. TEMPORARY EXCAVATIONS SHALL PROVIDE, AT MINIMUM, THE TRENCH DIMENSIONS AND CLEARANCES SHOWN OR SPECIFIED. TEMPORARY CONSTRUCTION SLOPES SHALL BE SLOPED, SHORED, SHEETED, AND/OR BRACED IN ACCORDANCE WITH STABILITY REQUIREMENTS AND APPLICABLE REGULATIONS, AND SHALL BE NO STEEPER THAN THE SLOPES SHOWN OR SPECIFIED WITHOUT THE APPROVAL OF THE ENGINEER. ANY SUCH APPROVALS BY THE ENGINEER WILL NOT RELIEVE THE CONTRACTOR FROM SOLE RESPONSIBILITY FOR PROVIDING STABLE EXCAVATIONS AND TEMPORARY SLOPES.

5. THE WORK WILL TAKE PLACE IN AND AROUND A BODY OF WATER, SUBJECT TO PERIODIC FLOODING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF SURFACE AND SUBSURFACE WATER DURING THE COURSE OF THE WORK. ANY DAMAGE TO THE WORK RESULTING FROM SUBSURFACE, BASE FLOWS OR FLOOD FLOWS, INCLUDING BOUYANCY FORCES ON PIPELINES AND OTHER FACILITIES, SHALL BE CORRECTED BY THE CONTRACTOR AT THE CONTRACTOR'S SOLE COST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND SATISFYING THE REQUIREMENTS OF ANY APPLICABLE PERMITS PERTAINING TO WATER AND EROSION CONTROL.

6. THE CONSTRUCTION WORK IS LIMITED TO THE PUBLIC RIGHT OF WAY AND THE CONSTRUCTION LIMITS SHOWN ON THE DRAWINGS.

7. EXISTING FACILITIES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED IN PLACE OR REMOVED AND REPLACED IN KIND, AS APPROVED BY THE ENGINEER.

8. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS (HORIZONTAL AND VERTICAL) AT CONNECTIONS TO ALL EXISTING INFRASTRUCTURE INCLUDING EXISTING SANITARY SEWERS, STORM DRAINS AND EXISTING CONCRETE STRUCTURES. THIS INFORMATION SHALL BE COLLECTED AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION AND/OR PRIOR TO INSTALLATION OF ANY NEW FACILITIES SHOWN ON THESE CONTRACT DRAWINGS. THE ENGINEER WILL DETERMINE IF ANY MINOR MODIFICATIONS TO THE NEW FACILITIES SHOWN ON THE CONTRACT DRAWINGS ARE NECESSARY SUCH AS HORIZONTAL AND VERTICAL ADJUSTMENTS.

9. SCALES SHOWN ARE FOR FULL SIZE (22"x34") SHEETS AND REQUIRE ADJUSTMENT FOR HALF SIZE (11"x17") SHEETS.

10. TOPOGRAPHIC MAPPING ON THE DRAWINGS WAS PREPARED BY CARROLL AND LANGE, INC. BASED ON A TOPOGRAPHIC SURVEY CONDUCTED IN 2009. HORIZONTAL CONTROL FROM ARAPAHOE COUNTY CONTROL POINTS. VERTICAL CONTROL FROM BM 3" BRASS CAP @NW CORNER OF HEADWALL ON SOUTH END OF NEWARK WAY CUL-DE-SAC, NORTH OF COTTONWOOD CREEK STAMPED: "USGS, SEPT. 1992 ELEV. 5632.33". NAVD 1929 DATUM.

11. THE FIRST INSTALLATIONS OF BANK PROTECTION AND OTHER WORK ELEMENTS IDENTIFIED BY THE OWNER SHALL BE CONSIDERED TEST INSTALLATIONS. CONTRACTOR SHALL NOTIFY ENGINEER AT LEAST 48 HOURS IN ADVANCE OF THE INSTALLATIONS SO THAT THE WORK CAN BE OBSERVED BY THE ENGINEER AND OWNER. THE OWNER, ENGINEER AND CONTRACTOR WILL DISCUSS THE WORK, CONFIRM THAT IT IS IN CONFORMANCE WITH THE DRAWINGS AND SPECIFICATIONS, AND CONSIDER ANY MODIFICATIONS THAT MAY ENABLE THE PROJECT TO BETTER EMULATE A NATURAL, FUNCTIONAL ENVIRONMENT.

MISCELLANEOUS MATERIAL SPECIFICATIONS

1. CRUSHER FINES MATERIAL SHALL BE CRUSHED FINE MATERIAL WITH A PREDOMINANTLY GREY COLOR AND SHALL BE FREE OF STONES OVER 2" IN ANY DIMENSION, STICK, ORGANIC MATERIAL OR OTHER FOREIGN DEBRIS. THE CRUSHER FINES SHALL HAVE A SMALL ROCK MAXIMUM OF 3/8", FINES, AND DUST PRODUCED AS A BY PRODUCT OF CRUSHING ROCK. THE GRADATION SHALL BE AS FOLLOWS:

SIEVE DESIGNATION	PERCENTAGE BY WEIGHT PASSING SQUARE MESH SIEVES
3/8"	100
NO. 4	75 - 80
NO. 8	55 - 60
NO. 16	40 - 45
NO. 30	30
NO. 50	20
NO. 100	10 - 15
NO. 200	5 - 10

THE CONTRACTOR SHALL SUBMIT SAMPLE AND DATA SHEET TO THE OWNER FOR APPROVAL PRIOR TO INSTALLATION.

THE TOP SIX-INCHES OF TOPSOIL, IF APPLICABLE, SHALL BE STRIPPED WITHIN THE AREA TO BE SURFACED WITH CRUSHER FINES. FOLLOWING STRIPPING OF THE TOPSOIL, THE UPPER 12 INCHES OF THE SUBGRADE SHALL BE SCARIFIED AND COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (ASTM D698). FILL SHALL BE PLACED WITHIN 2% OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (ASTM D698).

THE CRUSHER FINES SHALL BE PLACED IN 2" LIFTS AND COMPACTED. IF THE MATERIAL IS TOO DRY TO READILY ATTAIN THE REQUIRED DENSITY, IT SHALL BE UNIFORMLY MOISTENED TO THE DEGREE NECESSARY DURING COMPACTION OPERATIONS FOR PROPER COMPACTION. CRUSHER FINES MATERIAL SHALL COMPACTED TO 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (ASTM D698) AND WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. EQUIPMENT USED FOR COMPACTION SHALL BE A SELF-PROPELLED VIBRATORY ROLLER COMPACTOR AND SHALL BE OF SUFFICIENT CAPACITY (MINIMUM OF 1000 POUND SINGLE DRUM ROLLER) TO MEET THE COMPACTION REQUIREMENTS HEREIN. THE SURFACE OF EACH LAYER SHALL BE MAINTAINED DURING COMPACTION OPERATIONS IN SUCH A MANNER THAT A UNIFORM TEXTURE IS PRODUCED AND AGGREGATES FIRMLY KEYED.

RECORD DRAWING
7/15/13

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No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

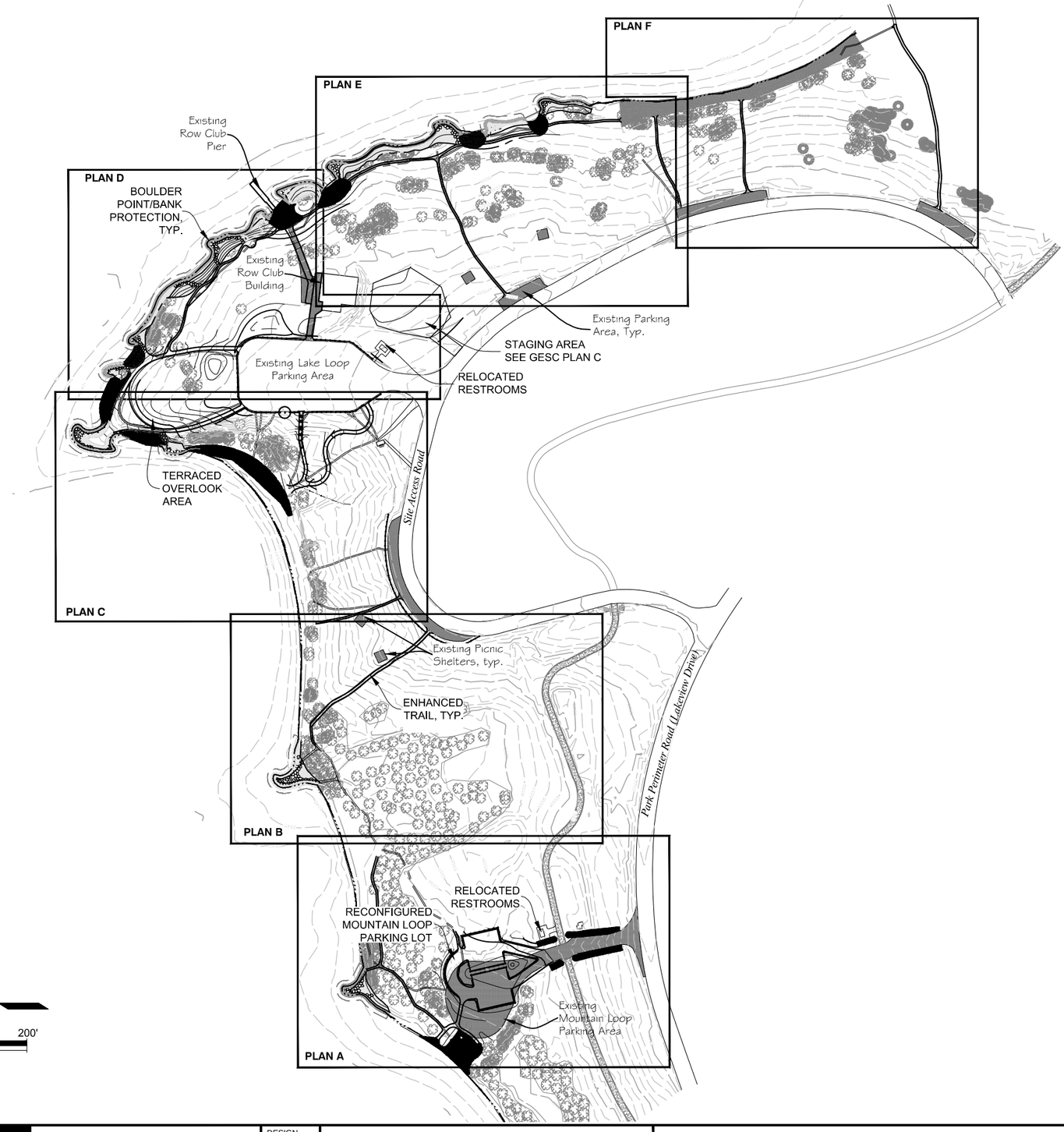
PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GENERAL
GENERAL NOTES

DATE: JULY 2011
DRAWING NO. G-2
SHEET NO. 2 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 04-925.02\CAD Dwg\ASBUILTS\08025.02-GEN.dwg DATE: AUG 26, 2013 TIME: 2:30 PM



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IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
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MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
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303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GENERAL

SITE PLAN

DATE: JULY 2011
DRAWING NO.: G-3
SHEET NO.: 3 OF 34

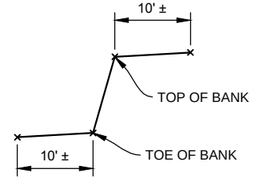
NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\ASBUILTS\08025.02-SITE-PLN.dwg DATE: AUG 26, 2013 TIME: 2:32 PM

MATCH LINE - SEE PLAN B

RECORD DRAWING
7/15/13

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

NOTE:
REQUIRED SHOTS FOR BANK SURVEY AT APPROX. 25' INTERVALS



BANK SURVEY CROSS-SECTION

WATER EDGE AT TIME OF SURVEY, TYP.

FINISHED WATER EDGE (@ NORMAL POOL EL. 49.0)

BANK SURVEY LIMITS (TYP.)

3' CRUSHER FINES TRAIL 550 SF

3' CRUSHER FINES TRAIL 444 SF

3' CRUSHER FINES TRAIL 114 SF

140 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

BOULDER POINT WITH RIPRAP BANK PROTECTION

TYPE L VOID FILLED RIPRAP 754 S.F.

51.50

TOE OF RIPRAP, TYP

SAND BEACH MATERIAL, TYP

MOUNTAIN LOOP PARKING LOT

5' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 554 SF

52.20

52.40

PRESERVE EXISTING WILLOWS

5' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 138 SF

PROTECT EXISTING TREE

CRUSHER FINES TRAIL (WITH HARDNING ADDITIVE) 385 SF

SEE SHEET 10 FOR MOUNTAIN LOOP PARKING LOT DESIGN

NOTES:

1. LOCATION OF CRUSHER FINES TRAILS ARE APPROXIMATELY SHOWN. TRAIL LOCATION SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
2. BOULDERS ABOVE AN ELEVATION OF 51.0 ARE SHOWN AS SHADED AND A SPOT ELEVATION IS GIVEN TO REPRESENT THE TOP OF THE BOULDER BANK.
3. ANY TRAILS NOT SHOWN AS CRUSHER FINES OR TO REMAIN SHALL BE DECOMISSIONED.

0' 10' 20' 40'

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL
GRADING AND STABILIZATION PLAN A

DATE: JULY 2011
DRAWING NO. C-1
SHEET NO. 4 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\ASBUILTS\08025.02-PLN.dwg DATE: AUG 29, 2013 TIME: 2:38 PM

MATCH LINE - SEE PLAN C

3' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 150 SF

35 L.F. FENCE SEE DETAIL SHEET 26

Existing Picnic Structures

REMOVE EXISTING FENCE (20 LF)

FILL PARKING AREA

Site Access Road

96 L.F. FENCE SEE DETAIL SHEET 26

5' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 1305 SF

FENCE
8" THICK CLASS 5 AGGREGATE BASE COURSE
6" TOPSOIL
Existing Site Access Road
Existing Ground
5%
CATCH GRADING @ 6:1 MAX
COMPACTED EMBANKMENT MATERIAL
VARIES
20'

CROSS SECTION M-M

RECORD DRAWING

7/15/13

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

WATER EDGE AT TIME OF SURVEY, TYP.

TRANSITION 5' CRUSHER FINES TRAIL TO 3' CRUSHER FINES TRAIL, 120 SF

FINISHED WATER EDGE (@ NORMAL POOL EL. 49.0)

3' CRUSHER FINES TRAIL 114 SF

TYPE L VOID FILLED RIPRAP 636 S.F.

3' CRUSHER FINES TRAIL 106 SF

BOULDER POINT WITH RIPRAP BANK PROTECTION

TOE OF RIPRAP, TYP

EXISTING TRAIL, TYP

BANK SURVEY LIMITS, TYP.

5550
5555
5560
5556
5557
5558
5559
5566

0' 10' 20' 40'

NOTES:

1. LOCATION OF CRUSHER FINES TRAILS ARE APPROXIMATELY SHOWN. TRAIL LOCATION SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
2. BOULDERS ABOVE AN ELEVATION OF 51.0 ARE SHOWN AS SHADED AND A SPOT ELEVATION IS GIVEN TO REPRESENT THE TOP OF THE BOULDER BANK.
3. ANY TRAILS NOT SHOWN AS CRUSHER FINES OR TO REMAIN SHALL BE DECOMISSIONED.

MATCH LINE - SEE PLAN A

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

GRADING AND STABILIZATION PLAN B

DATE JULY 2011
DRAWING NO. C-2
SHEET NO. 5 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\ASBUILTS\08025.02-PLN.dwg DATE: AUG 29, 2013 TIME: 8:14 AM

MATCH LINE - SEE PLAN D

STONE PAVING 1736 S.F.

TERRACED OVERLOOK AREA. SEE SHEET 24

RELOCATE EXISTING TREES

6 L.F. FENCE SEE DETAIL SHEET 26

67 L.F. FENCE SEE DETAIL SHEET 26

83 L.F. FENCE SEE DETAIL SHEET 26

6' CRUSHER FINES TRAIL 42 SF

105 L.F. FENCE SEE DETAIL SHEET 26

24 L.F. FENCE. SEE DETAIL SHEET 26

2', TYP

CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) VARYING WIDTH 1172 SF

334 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

TIMBER STAIRS. SEE SHEET 25

6' CRUSHER FINES TRAIL 159 SF

BOARDWALK. SEE SHEET 11

1110 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

310 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

5' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 258 SF

334 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

CRUSHER FINES TRAIL 1083 S.F.

SAND BEACH MATERIAL, TYP

BOULDER POINT WITH RIPRAP BANK PROTECTION

TYPE L VOID FILLED RIPRAP 412 S.F.

BOULDER POINT WITH RIPRAP BANK PROTECTION

TOE OF RIPRAP, TYP

TYPE VL VOID FILLED RIPRAP 132 S.F.

BANK SURVEY LIMITS, TYP.

SAND BEACH MATERIAL, TYP

6' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) MAX SLOPE = 5% 1110 SF

CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 389 SF

WATER EDGE AT TIME OF SURVEY, TYP.

FINISHED WATER EDGE (@ NORMAL POOL EL. 49.0)

420 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

145 L.F. FENCE SEE DETAIL SHEET 26

3' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 310 SF

345 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25

38 L.F. FENCE SEE DETAIL SHEET 26

MATCH LINE - SEE PLAN B

0' 10' 20' 40'

NOTES:

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2. BOULDERS ABOVE AN ELEVATION OF 51.0 ARE SHOWN AS SHADED AND A SPOT ELEVATION IS GIVEN TO REPRESENT THE TOP OF THE BOULDER BANK.
3. ANY TRAILS NOT SHOWN AS CRUSHER FINES OR TO REMAIN SHALL BE DECOMISSIONED.

RECORD DRAWING

7/15/13

THIS RECORD DRAWING HAS BEPREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

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CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

GRADING AND STABILIZATION PLAN C

DATE JULY 2011
DRAWING NO. C-3
SHEET NO. 6 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\ASBUILTS\08025.02-PLN.dwg DATE: AUG 26, 2013 TIME: 3:40 PM

0' 10' 20' 40'

NOTES:

1. LOCATION OF CRUSHER FINES TRAILS ARE APPROXIMATELY SHOWN. TRAIL LOCATION SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
2. BOULDERS ABOVE AN ELEVATION OF 51.0 ARE SHOWN AS SHADED AND A SPOT ELEVATION IS GIVEN TO REPRESENT THE TOP OF THE BOULDER BANK.
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RECORD DRAWING
7/15/13

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EXISTING DOCK (RELOCATED BY OTHERS)
BOULDER POINT WITH RIPRAP BANK PROTECTION
TYPE L VOID FILLED RIPRAP 950 S.F.
REMOVE EXISTNG TIMBER STAIRS
TYPE L VOID FILLED RIPRAP 561 S.F.
TOE OF RIPRAP, TYP
SAND BEACH MATERIAL, TYP
26' LONG SILOAM STONE WALL
MATCH LINE - SEE PLAN E
3' CRUSHER FINES TRAIL 102 SF
Existing Bench
570 S.F. DECOMMISSIONED TRAIL RESTORATION. SEE DETAIL SHEET 25
TYPE L VOID FILLED RIPRAP 920 S.F.
TYPE VL VOID FILLED RIPRAP 893 S.F.
10' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 710 SF
WATER EDGE AT TIME OF SURVEY, TYP.
FINISHED WATER EDGE (@ NORMAL POOL EL. 49.0)
3' CRUSHER FINES TRAIL 1040 SF
RIPRAP BANK PROTECTION
TYPE L VOID FILLED RIPRAP 1526 S.F.
TOE OF RIPRAP, TYP
BOULDER POINT WITH RIPRAP BANK PROTECTION
SAND BEACH MATERIAL, TYP
BOULDER POINT WITH RIPRAP BANK PROTECTION
TYPE L VOID FILLED RIPRAP 43 S.F.
Existing Gravel Path
MATCH LINE - SEE PLAN E
INFILTRATION AREA 2700 SF SEE DETAIL SHEETS 12 & 26
RE-GRADE CHANNEL PER SECTION D
Existing Rowing Shed
STAGING AREA SEE GESC PLAN C FOR GRADING PLAN
6' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 1722 SF
10' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 470 SF
RE-GRADE CHANNEL PER SECTION D
Existing Restroom With Concrete Pad
INFILTRATION AREA 1230 SF SEE DETAIL SHEETS 12 & 26
114 L.F. FENCE SEE DETAIL SHEET 26
TRENCH DRAIN (10' LONG) SEE SHEET 16
74 L.F. FENCE SEE DETAIL SHEET 26
114 L.F. FENCE SEE DETAIL SHEET 26
~~TRENCH DRAIN (6' LONG) SEE DETAIL SHEET 18.~~
~~REMOVE AND REPLACE 10 LF OF 5' CONCRETE TRAIL~~
REMOVE EXISTING BOLLARDS, TYP.
EXISTING LAKE LOOP PARKING LOT
MATCH LINE - SEE PLAN C

No.	DATE	REVISIONS	APPR.
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1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL
GRADING AND STABILIZATION PLAN D

DATE JULY 2011
DRAWING NO. C-4
SHEET NO. 7 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\ASBUILTS\08025.02-PLN.dwg DATE: AUG 28, 2013 TIME: 8:31 AM

RECORD DRAWING

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N

0' 10' 20' 40'

MATCH LINE - SEE PLAN F

MATCH LINE - SEE PLAN D

MATCH LINE - SEE PLAN D

BOULDER POINT WITH RIPRAP BANK PROTECTION

WATER EDGE AT TIME OF SURVEY, TYP.

FINISHED WATER EDGE (@ NORMAL POOL EL. 49.0)

RIPRAP BANK PROTECTION

TYPE L VOID FILLED RIPRAP 2843 S.F.

BOULDER POINT WITH RIPRAP BANK PROTECTION

TOE OF RIPRAP, TYP

BOULDER POINT WITH RIPRAP BANK PROTECTION

TYPE L VOID FILLED RIPRAP 1113 S.F.

BOULDER POINT WITH RIPRAP BANK PROTECTION

RIPRAP BANK PROTECTION

SAND BEACH MATERIAL, TYP.

3' CRUSHER FINES TRAIL 232 S.F.

BANK SURVEY LIMITS, TYP.

EXISTING SAND BEACH

3' CRUSHER FINES TRAIL

3' CRUSHER FINES TRAIL 265 SF

3' CRUSHER FINES TRAIL

90 S.F. DECOMMISSIONED TRAIL RESTORTATION. SEE DETAIL SHEET 25

3' CRUSHER FINES TRAIL 260 SF

125 S.F. DECOMMISSIONED TRAIL RESTORTATION. SEE DETAIL SHEET 25

3' CRUSHER FINES TRAIL 445 SF

3' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 777 SF

3' CRUSHER FINES TRAIL (WITH HARDENING ADDITIVE) 477 S.F.

3' CRUSHER FINES TRAIL

Existing Picnic Structre

Existing Rowing Shed

Existing Picnic Structure

STAGING AREA
SEE GESC PLAN C
FOR GRADING PLAN

5555 5556 5557 5558 5559 5560 5561 5562 5563 5564 5566

NOTES:

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2. BOULDERS ABOVE AN ELEVATION OF 51.0 ARE SHOWN AS SHADED AND A SPOT ELEVATION IS GIVEN TO REPRESENT THE TOP OF THE BOULDER BANK.
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No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

GRADING AND STABILIZATION PLAN E

DATE: JULY 2011
DRAWING NO.: C-5
SHEET NO.: 8 OF 34

0' 10' 20' 40'

NOTES:

1. LOCATION OF CRUSHER FINES TRAILS ARE APPROXIMATELY SHOWN. TRAIL LOCATION SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
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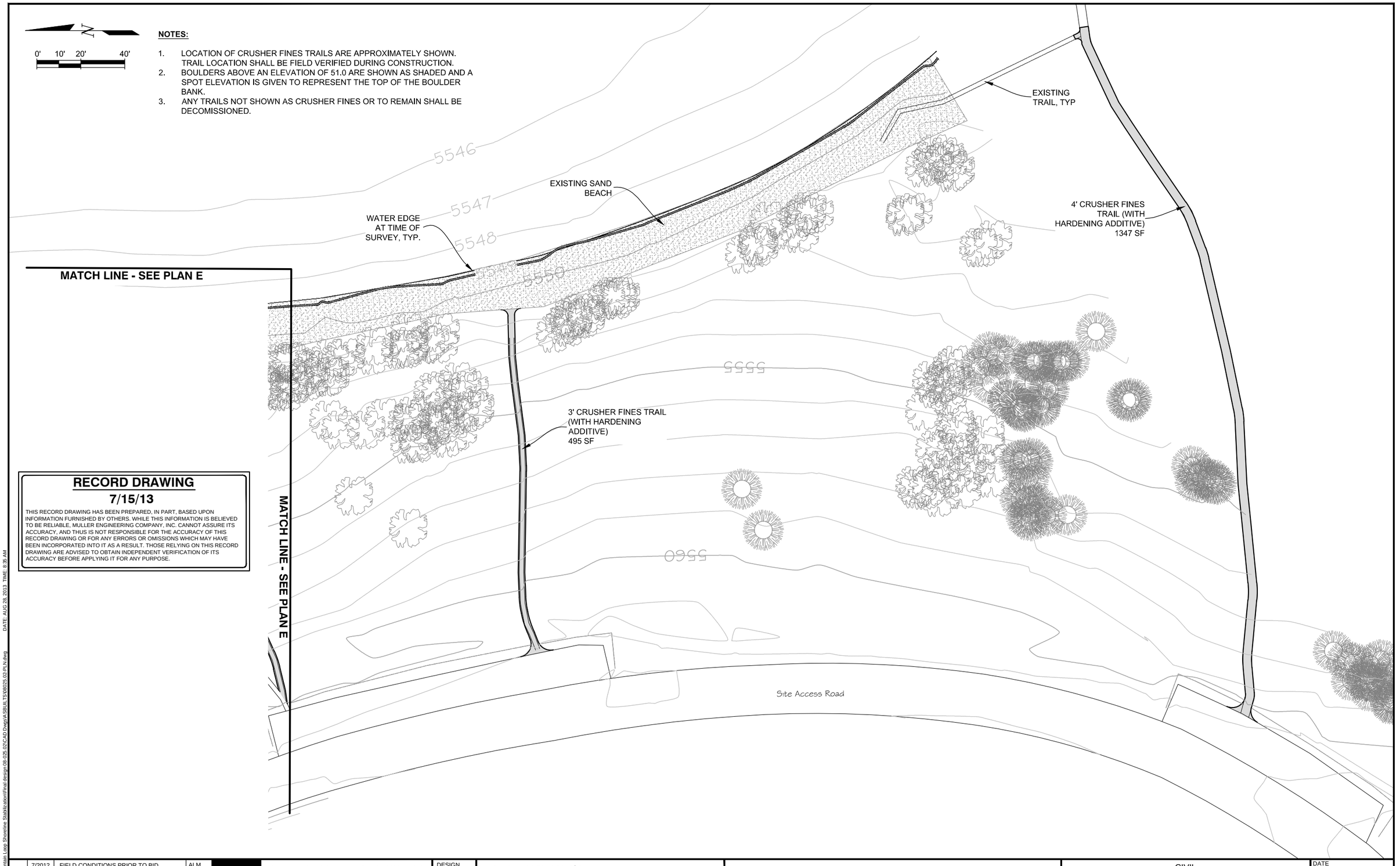
3. ANY TRAILS NOT SHOWN AS CRUSHER FINES OR TO REMAIN SHALL BE DECOMISSIONED.



RECORD DRAWING

7/15/13

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IRONGATE 4, SUITE 100
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LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

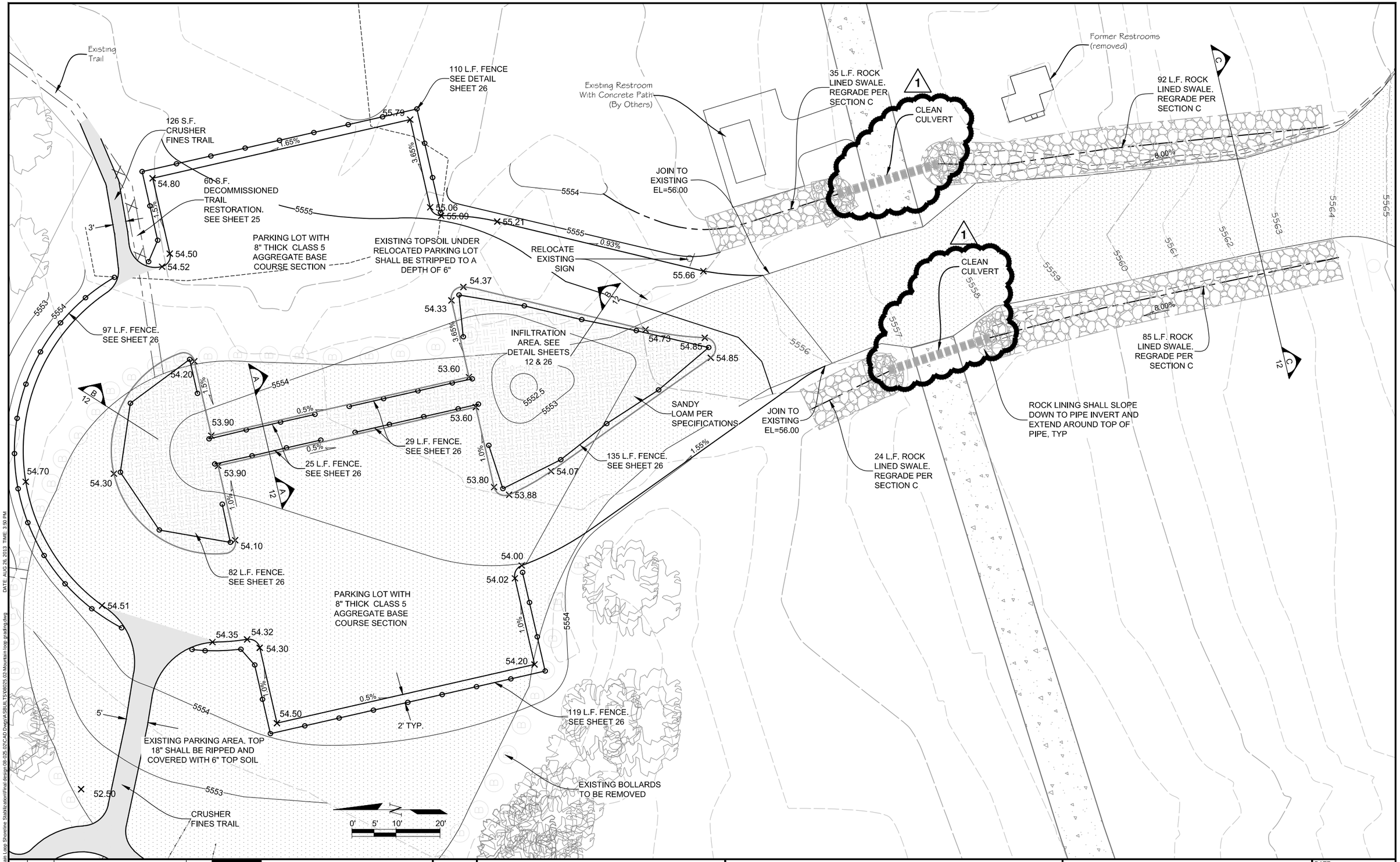
PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

GRADING AND STABILIZATION
PLAN F

DATE: JULY 2011
DRAWING NO.: C-6
SHEET NO.: 9 OF 34



DATE: AUG 29, 2013 TIME: 3:50 PM

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\A SBU\TS\08025.02-Mountain loop grading.dwg

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

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IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
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MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

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GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

GRADING PLAN
MOUNTAIN LOOP PARKING LOT

DATE: JULY 2011
DRAWING NO.: C-7
SHEET NO.: 10 OF 34

RECORD DRAWING

7/15/13

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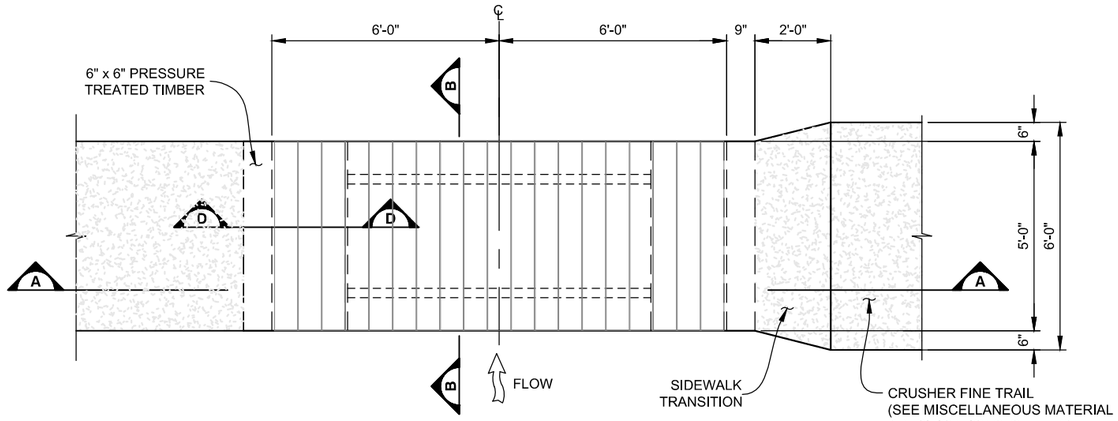
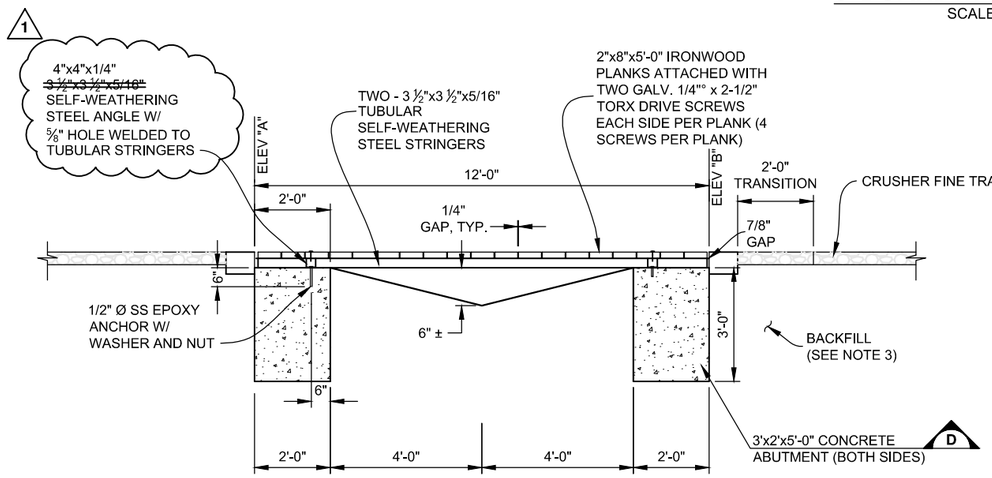


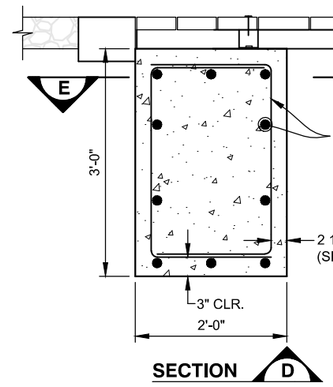
5' BOARDWALK CROSSING (1)

SCALE: 1"=2'-0"



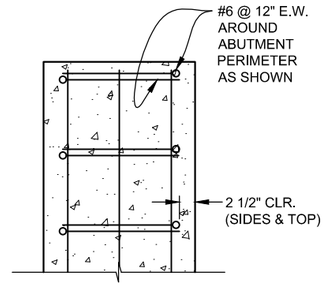
SECTION A (LOOKING DOWNSTREAM)

SCALE: 1/2"=1'-0"



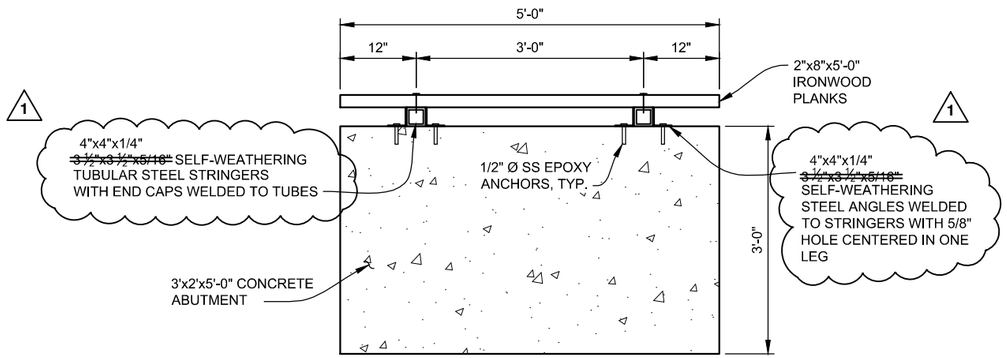
SECTION D

SCALE: 1"=1'-0"



SECTION E

(PLAN VIEW)
SCALE: 1"=1'-0"



SECTION B

SCALE: 1"=1'-0"

GENERAL STRUCTURAL NOTES:

1. CLASS B CONCRETE IS REQUIRED FOR ABUTMENTS AND SIDEWALK TRANSITIONS.
2. ALL REBAR SHALL BE EPOXY COATED.

   THE FOLLOWING TABLE GIVES THE MINIMUM LAP SPLICE LENGTH FOR EPOXY COATED REINFORCING BARS PLACED IN ACCORDANCE WITH CDOT SUBSECTION 602.06. THESE SPLICE LENGTHS SHALL BE INCREASED BY 25% FOR BARS AT LESS THAN 6" ON CENTER.

BAR SIZE	#4	#5	#6	#7	#8
TOP BARS	28"	35"	42"	61"	70"
OTHERS BARS	22"	27"	32"	47"	54"

3. CLASS II STRUCTURAL BACKFILL SHALL BE USED BEHIND ABUTMENTS AND BENEATH SIDEWALK.

No.	DATE	REVISIONS	APPR.
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IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

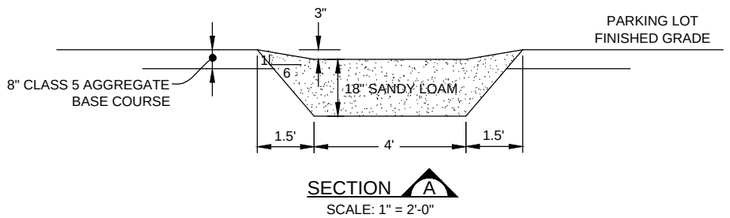
MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

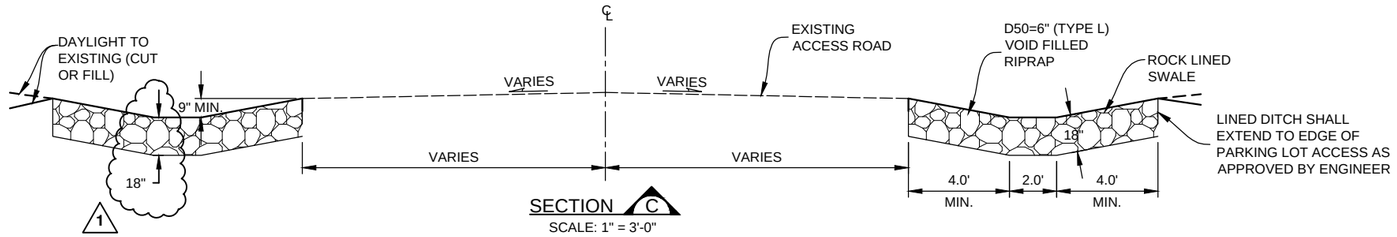
BOARDWALK DETAILS

DATE: JULY 2011
DRAWING NO.: C-8
SHEET NO.: 11 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\ASBUILTS\08025.02-BOARDWALK.dwg DATE: AUG 26, 2013 TIME: 3:09 PM



SECTION A
SCALE: 1" = 2'-0"



SECTION C
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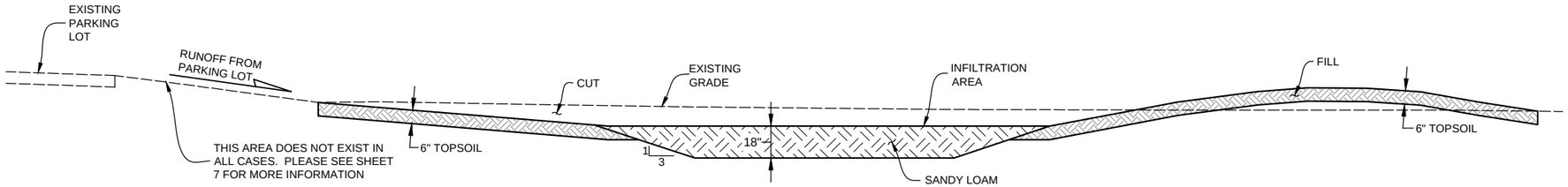
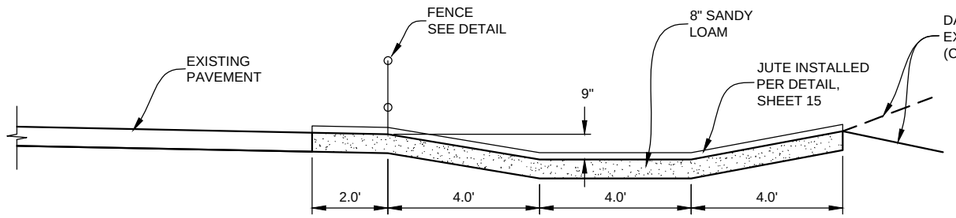


SECTION I
SCALE: 1" = 3'-0"

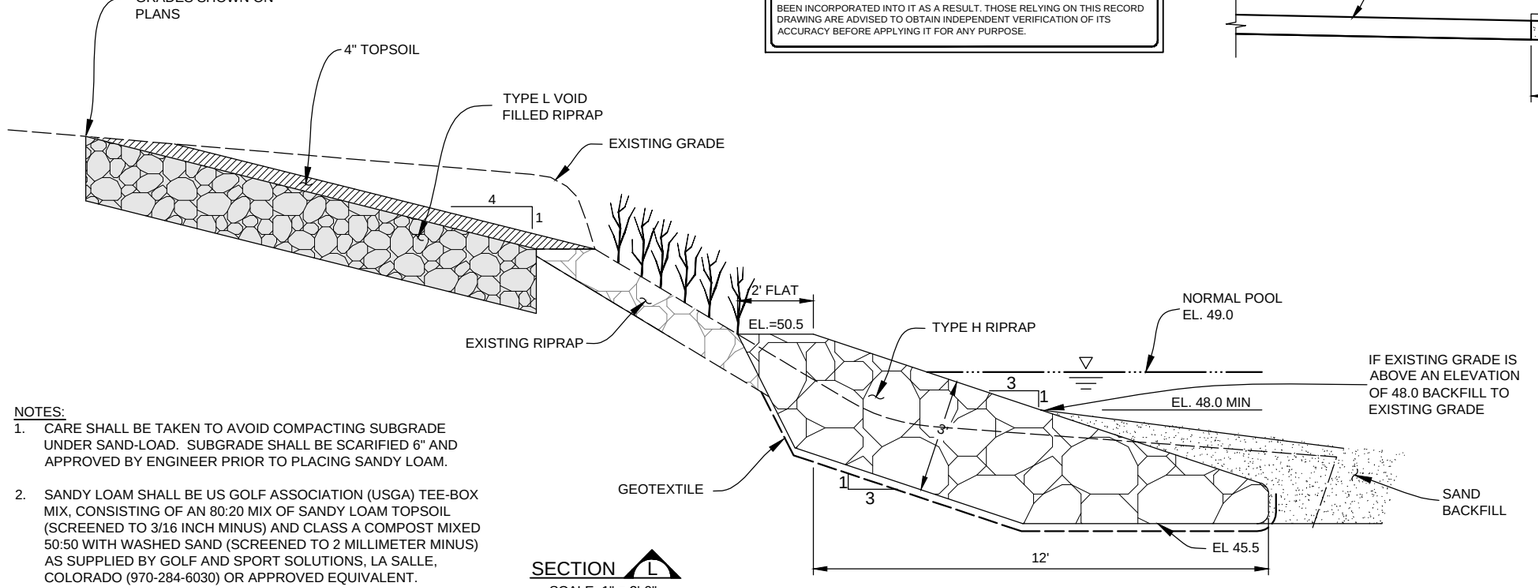
RECORD DRAWING

7/15/13

THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE IT'S ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.



SECTION D
SCALE: 1" = 2'-0"

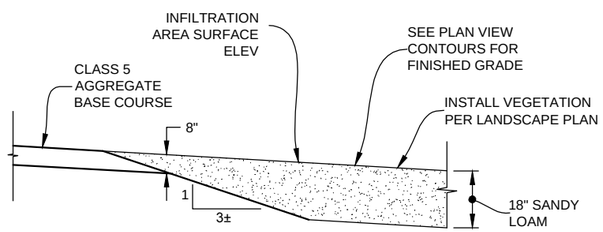


SECTION L
SCALE: 1" = 2'-0"

NOTES:

1. CARE SHALL BE TAKEN TO AVOID COMPACTING SUBGRADE UNDER SAND-LOAD. SUBGRADE SHALL BE SCARIFIED 6" AND APPROVED BY ENGINEER PRIOR TO PLACING SANDY LOAM.

2. SANDY LOAM SHALL BE US GOLF ASSOCIATION (USGA) TEE-BOX MIX, CONSISTING OF AN 80:20 MIX OF SANDY LOAM TOPSOIL (SCREENED TO 3/16 INCH MINUS) AND CLASS A COMPOST MIXED 50:50 WITH WASHED SAND (SCREENED TO 2 MILLIMETER MINUS) AS SUPPLIED BY GOLF AND SPORT SOLUTIONS, LA SALLE, COLORADO (970-284-6030) OR APPROVED EQUIVALENT.



SECTION B
SCALE: 1" = 2'-0"

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN: MDC
DRAWN: ALM
CHECK: JTW

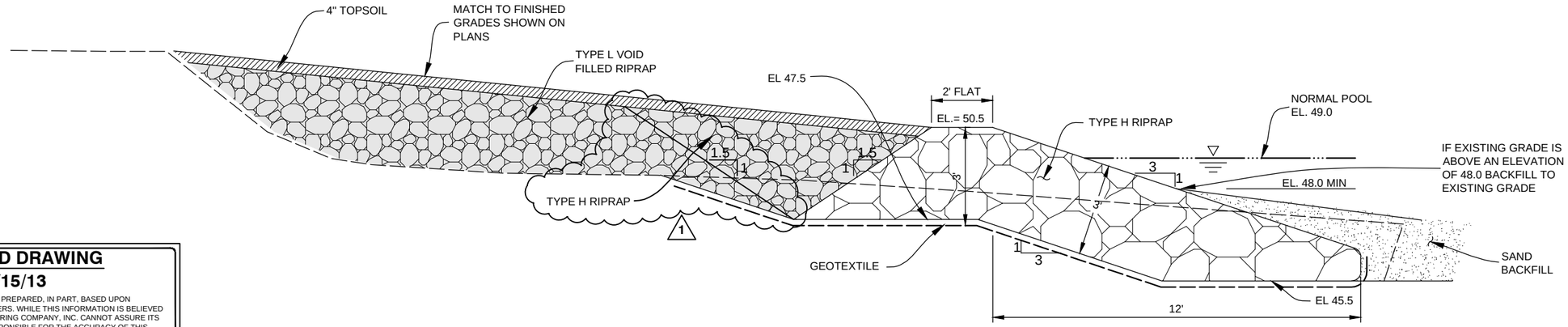
PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CONSTRUCTION DETAILS

DATE: JULY 2011
DRAWING NO.: C-9
SHEET NO.: 12 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\ASBUILTS\08025.02-DETS.dwg
DATE: AUG 26, 2013 TIME: 4:02 PM



SECTION E

SCALE: 1" = 2'-0"

RECORD DRAWING

7/15/13

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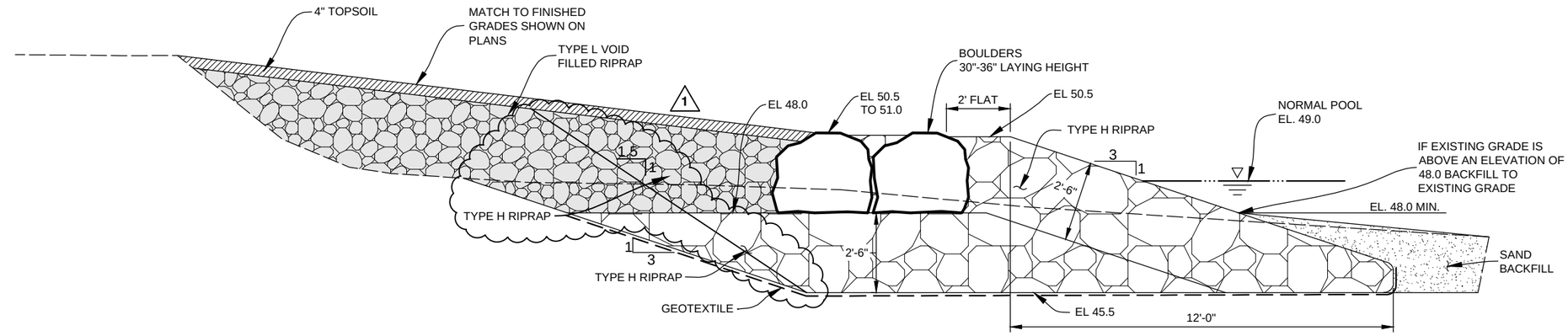
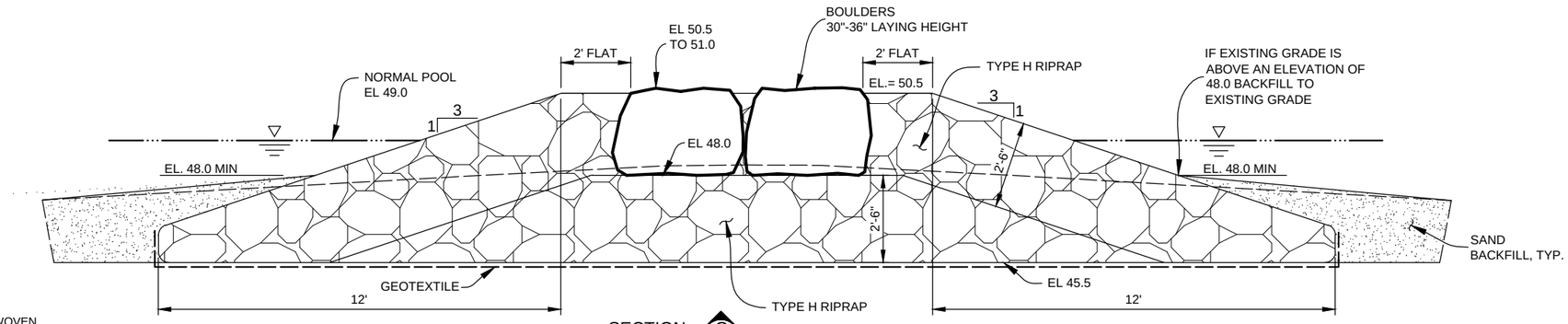


SECTION F

SCALE: 1" = 2'-0"



SECTION G

SCALE: 1" = 2'-0"

NOTE: GEOTEXTILE SHALL BE MIRAFI GEOLON HP570 WOVEN POLYPROPYLENE GEOTEXTILE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. MATERIAL MAY BE SEWED (IN THE FIELD OR IN THE FACTORY) OR OVERLAPPING.

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

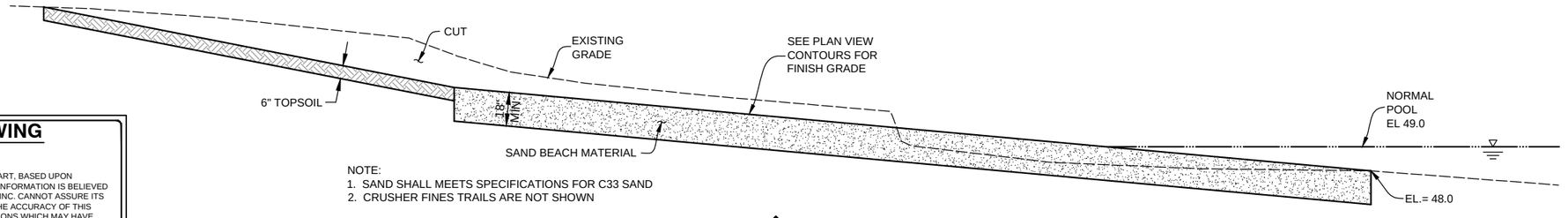
PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CONSTRUCTION DETAILS

DATE: JULY 2011
DRAWING NO.: C-10
SHEET NO.: 13 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\C-AD Dwg\ASBUILTS\08025.02-DETS.dwg DATE: AUG 28, 2013 TIME: 8:38 AM



NOTE:
1. SAND SHALL MEETS SPECIFICATIONS FOR C33 SAND
2. CRUSHER FINES TRAILS ARE NOT SHOWN

SECTION H
SCALE: 1" = 3'-0"

RECORD DRAWING

7/15/13

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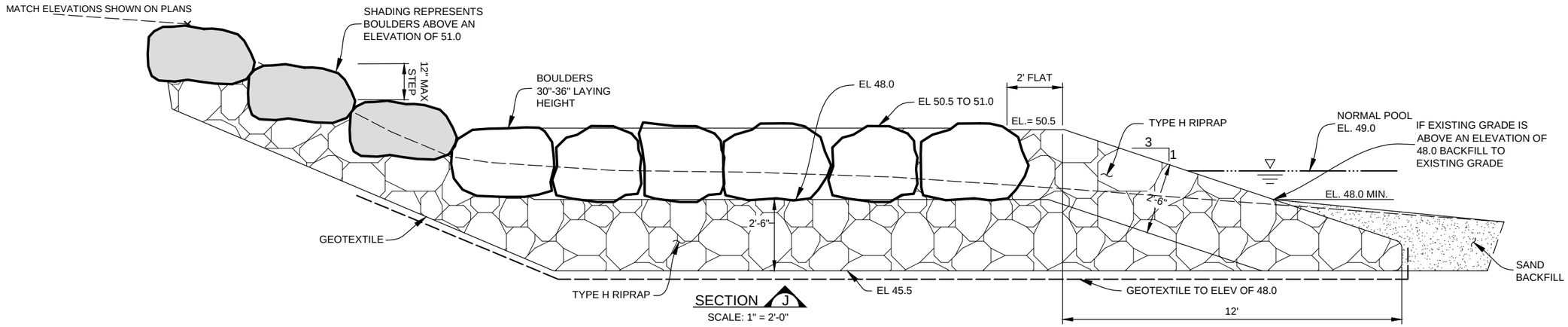
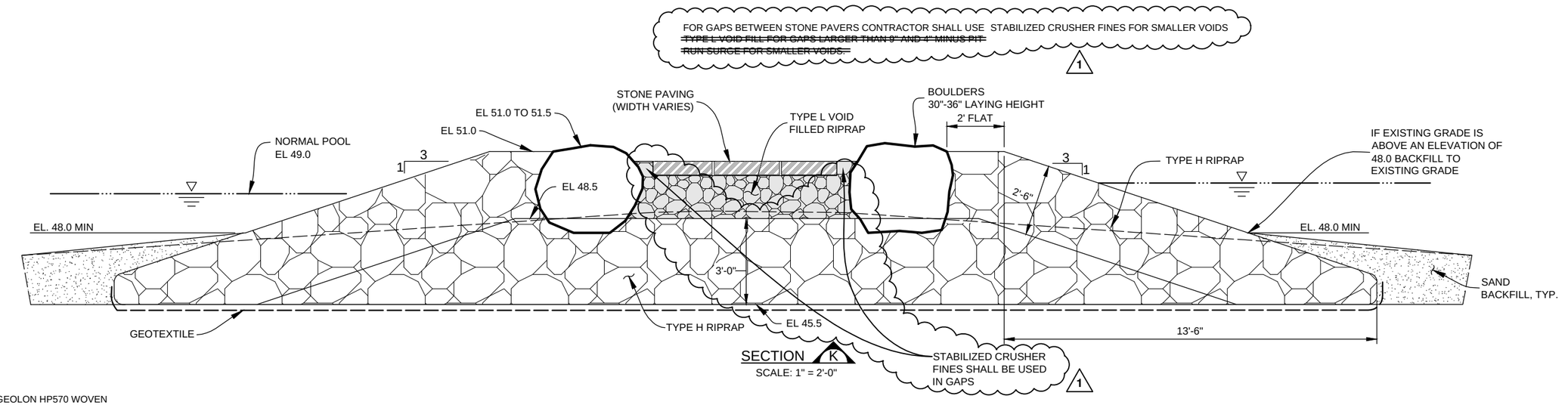


SECTION J
SCALE: 1" = 2'-0"



SECTION K
SCALE: 1" = 2'-0"

NOTE: GEOTEXTILE SHALL BE MIRAFI GEOLON HP570 WOVEN POLYPROPYLENE GEOTEXTILE INSTALLED PER MANUFACTURERS RECOMMENDATIONS. MATERIAL MAY BE SEWED (IN THE FIELD OR IN THE FACTORY) OR OVERLAPPING.

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

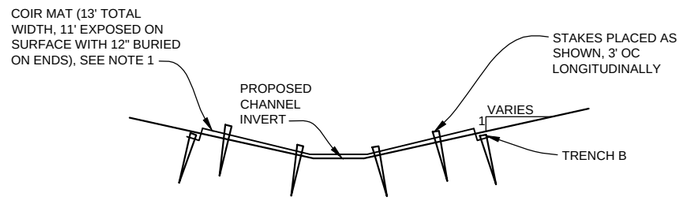
DESIGN	MDC
DRAWN	ALM
CHECK	JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

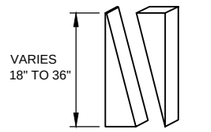
CONSTRUCTION DETAILS

DATE	JULY 2011
DRAWING NO.	C-11
SHEET NO.	14 OF 34



BLANKET LINED SWALE

SCALE: 1" = 3' - 0"



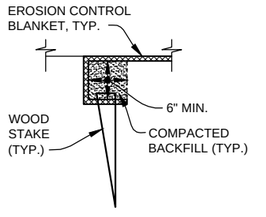
SAW 2" x 4" LUMBER ON DIAGONAL

WOOD STAKE DETAIL

N.T.S.

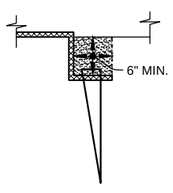
NOTES:

1. SEED AND MULCH PRIOR TO INSTALLING JUTE. JUTE TOTAL WIDTH SHALL BE 13', BUT ONLY 10'-6" TO 11' OF WIDTH WILL BE EXPOSED ON SLOPE. STAKE JUTE BETWEEN ANCHORED ENDS WITH 3 ROWS OF 18" LONG WOOD STAKES @ 36" O.C. (SEE STAKING PATTERN 1 AND 3).
2. POSITION ROW STAKES IN AN ALTERNATING STAGGER PATTERN SO THAT STAKES FOR THE ROW ARE POSITIONED IN BETWEEN STAKES FOR ADJACENT ROWS.
3. CONTRACTOR SHALL USE STEEL PENETRATION RODS OR OTHER MEANS AS NECESSARY TO PENETRATE RIPRAP LAYER WITH WOOD STAKES.
4. JUTE AT LAKE LOOP PARKING LOT AND AT DECOMMISSIONED TRAIL RESTORATION AREAS MAY BE INSTALLED PER STANDARD GESC DETAIL FOR ECB.



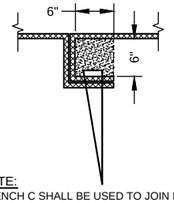
TRENCH A

SCALE = 1" = 1' - 0"



TRENCH B

SCALE = 1" = 1' - 0"

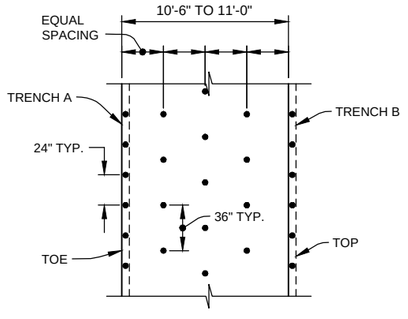


NOTE:
TRENCH C SHALL BE USED TO JOIN BLANKETS TOGETHER (LONGITUDINAL)

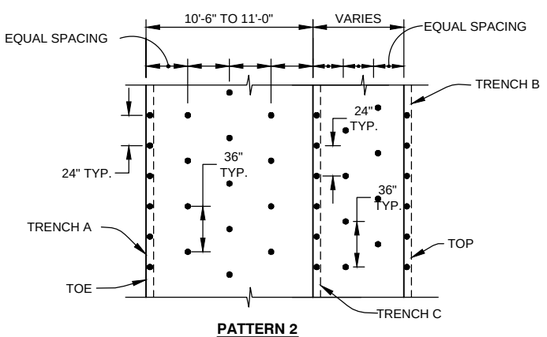
TRENCH C

SCALE= 1"=1'-0"

ANCHOR TRENCH DETAILS FOR EROSION CONTROL BLANKETS



PATTERN 1



PATTERN 2

NOTE:
INSTALL WOOD STAKES SUCH THAT ONLY 1" IS EXPOSED ABOVE GROUND.

STAKING PATTERNS FOR EROSION CONTROL BLANKET

SCALE: 1" =5'

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN	MDC
DRAWN	ALM
CHECK	JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

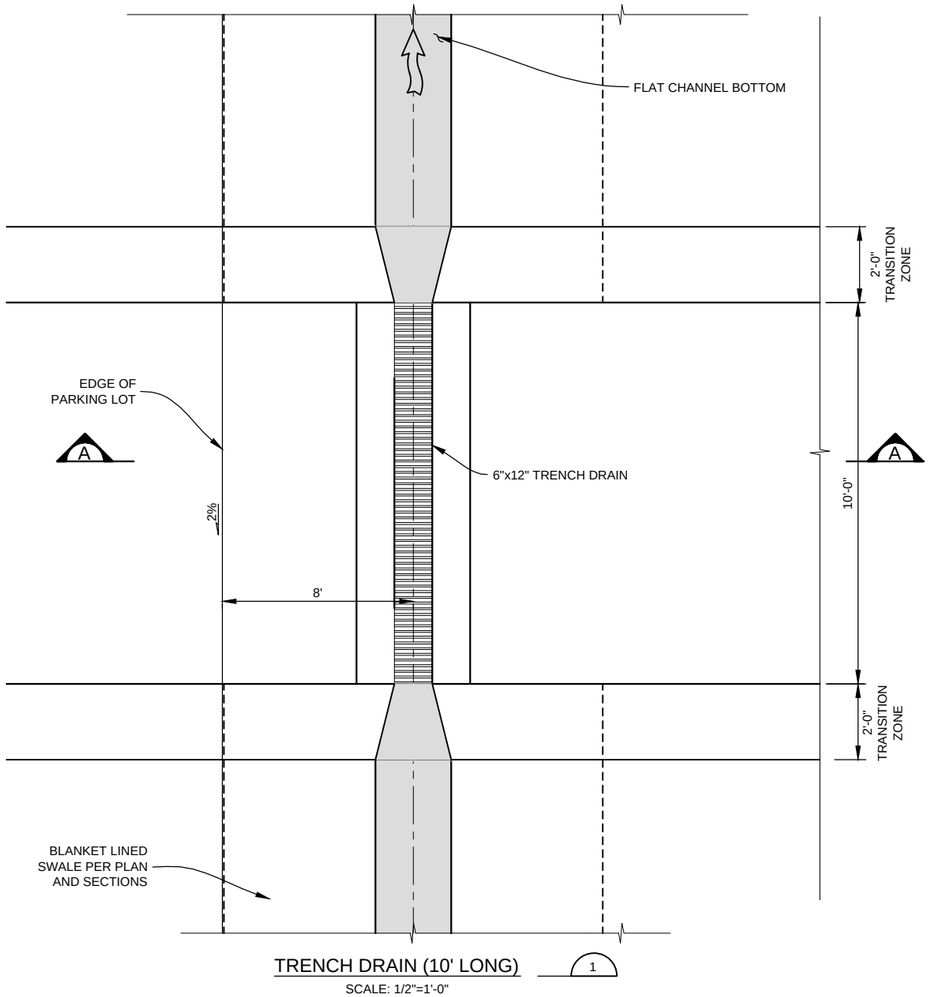
MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

CONSTRUCTION DETAILS

DATE	JULY 2011
DRAWING NO.	C-12
SHEET NO.	15 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwg\#ASBUILTS\08025.02-DETS-BANK.dwg DATE: AUG 28, 2013 TIME: 8:42 AM



TRENCH DRAIN (10' LONG) 1

SCALE: 1/2"=1'-0"

RECORD DRAWING

7/15/13

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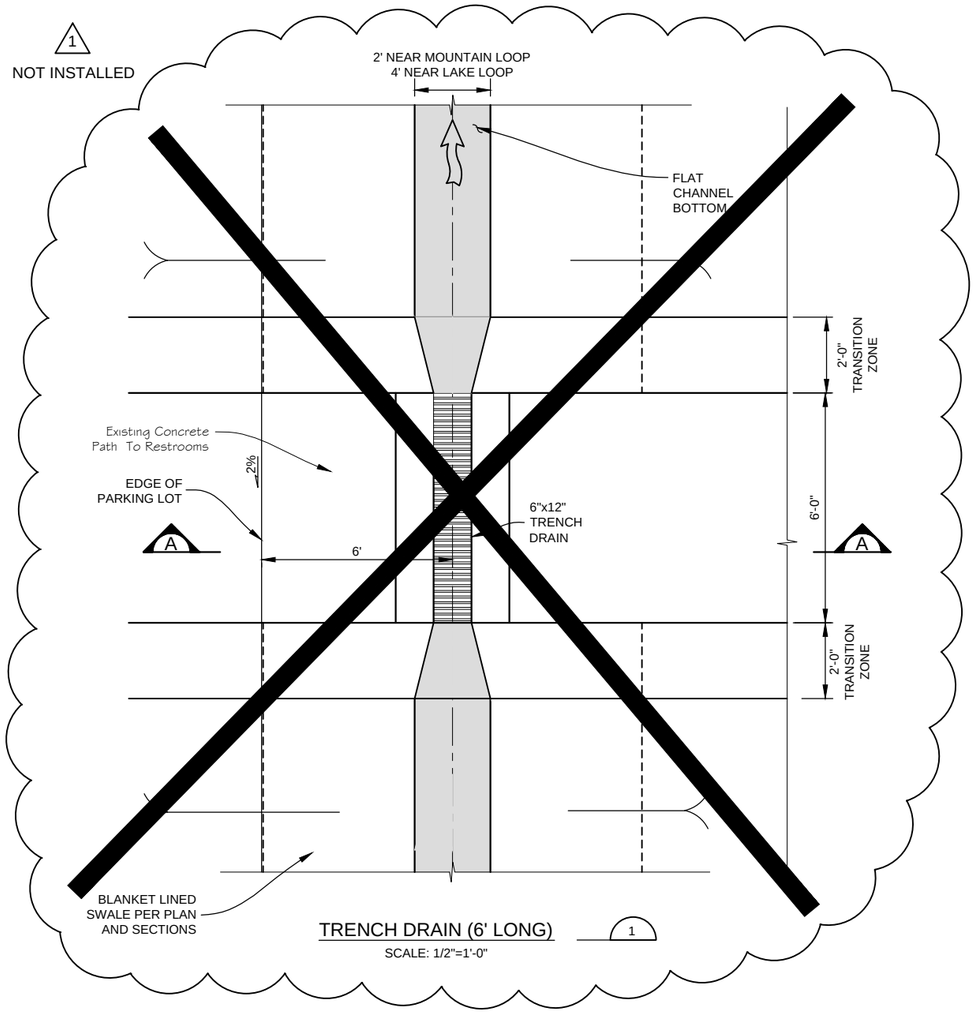
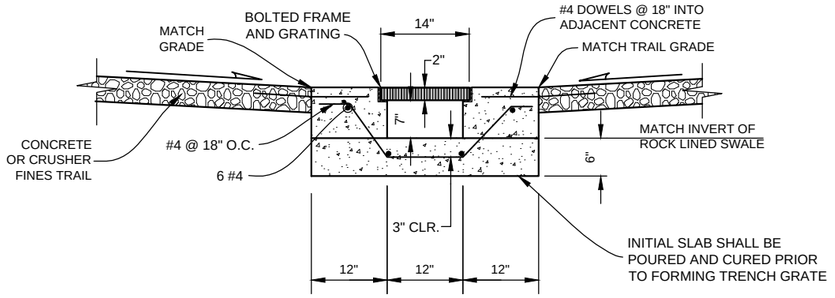
1 NOT INSTALLED



TRENCH DRAIN (6' LONG) 1

SCALE: 1/2"=1'-0"



SECTION A

SCALE: 1"=1'-0"

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

CIVIL

TRENCH DRAIN DETAILS

DATE: JULY 2011
DRAWING NO.: C-13
SHEET NO.: 16 OF 34

LAYOUT & MATERIALS NOTES

1. CONTRACTOR SHALL MAINTAIN AND PRESERVE EXISTING MONUMENTS, BENCHMARKS, AND CONTROL POINTS.

2. LOCATIONS OF UTILITIES ARE GRAPHIC ONLY AND MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. CONTRACTOR SHALL CALL UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987 TO LOCATE ALL UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHALL VERIFY LOCATIONS AND BURY DEPTHS OF ALL UTILITIES ON SITE. EXISTING UTILITIES SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND PROVIDE FOR ADEQUATE DRAINAGE THROUGH THE SITE DURING THE PROCESS OF EXCAVATION, GRADING AND EMBANKMENT. THE GRADE SHALL BE MAINTAINED IN SUCH CONDITION THAT IT IS WELL DRAINED AT ALL TIMES.

3. WORK AND MATERIALS SHALL CONFORM TO COLORADO STATE PARKS SERVICE STANDARDS, REGULATIONS, AND CODES FOR DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS.

4. PROPOSED FINISHED GRADES AND PAVEMENTS SHALL ABUT EXISTING CURBS, PAVEMENTS, ETC., IN BOTH LINE AND GRADE. CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY DISCREPANCIES.

5. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT PREVIOUSLY UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR DECISION. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS AND REPAIRS DUE TO FAILURE TO GIVE SUCH NOTIFICATION AT NO ADDITIONAL COST TO OWNER.

6. CONTRACTOR SHALL PRESENT FOR AUTHORIZATION TO THE OWNER'S REPRESENTATIVE ANY PRUNING, PLANT REMOVAL, OR OTHER LANDSCAPE MAINTENANCE DEEMED NECESSARY FOR THE CONSTRUCTION OF PROPOSED IMPROVEMENTS PRIOR TO COMMENCING WITH WORK.

7. CONTRACTOR SHALL OBTAIN ALL APPLICABLE CODES, LICENSES, PERMITS, BONDS, ETC. NECESSARY TO PERFORM THE PROPOSED WORK 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.

8. CONTRACTOR SHALL SUBMIT A BICYCLE/PEDESTRIAN TRAFFIC DETOUR PLAN FOR APPROVAL PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE LIGHTS, SIGNS, BARRICADES, FLAG MEN, OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY, CUSTOMER ACCESS, AND SAFE TRAFFIC IN ACCORDANCE WITH THE MUTCD, CURRENT EDITION. BICYCLE/PEDESTRIAN THROUGH TRAFFIC SHALL BE MAINTAINED DURING THE DURATION OF CONSTRUCTION.

9. CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE 72 HOURS PRIOR TO START OF ANY CONSTRUCTION. IF WORK IS SUSPENDED FOR ANY PERIOD OF TIME AFTER INITIAL START-UP, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF REASON FOR SUSPENSION AND ESTIMATED TIME OF SUSPENSION WITHIN 72 HOURS OF SUSPENSION . CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE 72 HOURS PRIOR TO RESTART OF CONSTRUCTION.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING EXISTING PAVEMENT MARKINGS, SIGNING, LANDSCAPE, HARDSCAPE, OR OTHER ITEMS THAT HAVE BEEN DAMAGED DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL PROTECT ALL ADJACENT IMPROVEMENTS (BUILDINGS, PARKING LOTS, LANDSCAPE AREAS, ETC.) FROM DAMAGE AND EROSION DUE TO CONSTRUCTION ACTIVITIES. ALL DISTURBED AREAS SHALL BE RESTORED TO A MINIMUM OF THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.

11. CONSTRUCTION SITES AND STAGING AREAS MUST BE FENCED AND MAINTAINED IN A SECURE CONDITION AT ALL TIMES. KEEP FENCING AND SURROUNDING AREAS CLEAR OF TRASH AND DEBRIS. ANY CONSTRUCTION DEBRIS OR MUD DROPPED INTO MANHOLES, PIPES, OR TRACKED ONTO EXISTING ROADWAYS SHALL BE REMOVED IMMEDIATELY BY CONTRACTOR. CONTRACTOR SHALL REPAIR ANY EXCAVATIONS OR PAVEMENT FAILURES CAUSED BY CONSTRUCTION WITHIN OR IN THE VICINITY OF THE LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE DUE TO CONSTRUCTION AT NO ADDITIONAL COSTS TO OWNER. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY ACCUMULATE IN THE FLOW LINES, PRIVATE PROPERTY, AND PUBLIC RIGHTS OF WAYS AS A RESULT OF THIS CONSTRUCTION PROJECT. REMOVAL SHALL BE CONDUCTED WITHIN 48 HOURS. RETURN ALL CONSTRUCTION STAGING SITES TO THEIR ORIGINAL CONDITION UPON COMPLETION OF THE CONSTRUCTION PROJECT.

12. CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS AT THE JOB SITE, INCLUDING SAFETY OF PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK.

13. ALL QUANTITIES ARE BASED ON HORIZONTAL PLAN MEASUREMENTS. CONTRACTOR SHALL MAKE ALLOWANCES FOR SLOPE FACTOR, OVERLAP, TRENCHING, ETC.

TREE & LANDSCAPE PROTECTION NOTES

PROVIDED BY THE RESTORATION GROUP, INC.

1. CONSTRUCTION FENCING SHALL NOT BE CLOSER TO TREES THAN THEIR DRIPLINE (OUTER CANOPY).

2. CONSTRUCTION PARKING SHALL NOT BE ALLOWED UNDER TREES.

3. NOTIFY LANDSCAPE ARCHITECT OR ECOLOGIST AFTER SURVEY AND AT LEAST 48 HOURS PRIOR TO CONSTRUCTION TO INSPECT AREAS FOR IDENTIFICATION OF TREES TO BE PROTECTED.

4. IF ACCESS CORRIDORS OR TRAIL CONSTRUCTION MUST APPROACH TREES, PROTECT TREE BARK BY TYING STRAW (NEVER HAY) BALES TO THE TRUNK (3 OR MORE BALES TO SURROUND LARGER TREES. PROTECT TREE ROOTS WHERE EQUIPMENT WILL CROSS UNDER TREES, WITH LANDSCAPE FABRIC UNDER 8-12" LAYER OF CHIPPED WOOD MULCH (FROM THINNED TREES). MULCHED TREES WILL REQUIRE 50 GALLONS OF WATER PER TREE; MORE IF ECOLOGIST, LANDSCAPE ARCHITECT, OR ENGINEER REQUESTS. SOAK TREES WITH WATER 2 TIMES PER MONTH OR AS REQUIRED TO KEEP HEALTHY DURING CONSTRUCTION.

5. FOLLOWING CONSTRUCTION, REMOVE ALL CHIPPED MULCH AND FABRIC. RESEED WITH INDICATED MIXTURE (TABLE 1 OR 2 FOR NATIVE AREAS, TABLE 4 FOR LAWNS).

6. "FIELD FIT" TRAILS TO EXISTING LANDSCAPE TO AVOID IMPACTS TO HEALTHY, NATIVE TREES, ALLOWING TRAIL TO BE 5'-10' FROM TREE TRUNK.

7. TREES IDENTIFIED FOR PROTECTION SHALL BE PROTECTED WITH BOARDS, FENCING, & PROTECTIVE STRAW BALES ACCORDING TO TREE PROTECTION DETAIL, NOTES, & SPECS.

RUSSIAN OLIVE REMOVAL NOTES

PROVIDED BY THE RESTORATION GROUP, INC.

1. SAW OR PRUNE RUSSIAN OLIVE TRUNK FLUSH WITH SOIL SURFACE AND IMMEDIATELY PAINT THE FRESH CUT STUMP WITH ROUNDUP ULTRA CONCENTRATE, UNDILUTED. CARE SHOULD BE TAKEN TO THOROUGHLY PAINT THE LIVING CAMBIUM AREA (BETWEEN THE REDDISH BROWN BARK AND THE WOOD OF THE TREES). PRUNE AND RETREAT ANY REGROWTH.

2. REMOVE ANY AND ALL RUSSIAN OLIVES, AS DESIGNATED BY ECOLOGIST, WITHIN A 15 FOOT SWATH OUTSIDE OF THE LIMITS OF WORK.

PLANTING & RESTORATION NOTES

PROVIDED BY THE RESTORATION GROUP, INC.

GENERAL PLANTING :

1. THE CONTRACTOR SHALL SUPPLY ALL PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE PLAN. SHOULD ANY DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN IN THE PLANT LIST AND THOSE SHOWN IN THE DRAWINGS, THE DRAWINGS SHALL TAKE PRECEDENCE.

2. ALL PLANT MATERIAL SHALL BE REVIEWED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. CONTRACTOR SHALL INSURE PLANT MATERIAL MEETS THE SPECIFICATIONS OF THE AMERICAN STANDARDS FOR NURSERY STOCK (LATEST EDITION) AS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

3. CONTRACTOR SHALL FURNISH PLANT MATERIALS FREE OF PESTS OR PLANT DISEASES. PRESELECTED OR "TAGGED" MATERIAL MUST BE INSPECTED BY THE CONTRACTOR AND CERTIFIED PEST AND DISEASE FREE. IT IS THE CONTRACTOR'S OBLIGATION TO WARRANTY ALL PLANT MATERIALS PER THE SPECIFICATIONS. ECOLOGIST SHALL BE NOTIFIED WHICH NURSERY WILL SUPPLY PLANTS AT LEAST TWO WEEKS PRIOR TO ORDER TO INSPECT AND APPROVE PLANTS AND SPECIES.

4. CONTRACTOR SHALL STAKE PLANT LOCATIONS FOR THE REVIEW BY THE OWNER'S REPRESENTATIVE, PRIOR TO DIGGING PLANTING PITS. THE CONTRACTOR SHALL RELOCATE ANY PLANT AS DIRECTED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING AT NO ADDITIONAL COST TO THE OWNER.ECOLOGIST OR LANDSCAPE ARCHITECT SHALL BE NOTIFIED 48 HOURS BEFORE DEEP PLANTING IN ORDER TO BE PRESENT DURING COTTONWOOD INSTALLATION.

5. ANY LANDSCAPE AREAS OUTSIDE OF THE PROJECT LIMITS DISTURBED BY CONSTRUCTION OPERATIONS, NOT DIRECTED BY OWNER'S REPRESENTATIVE, SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

6. CONTAMINATION OF PLANTING MIX/TOPSOIL DURING CONSTRUCTION WILL REQUIRE COMPLETE REPLACEMENT AT CONTRACTOR'S EXPENSE.

7. CONTRACTOR SHALL EVALUATE EXISTING PLANT MATERIAL DESIGNATED FOR REMOVAL WITH OWNER'S REPRESENTATIVE. FOLLOWING REVIEW, THE CONTRACTOR SHALL TRANSPLANT ANY PLANT MATERIAL IDENTIFIED AS WORTHY. IF TRANSPLANT CANNOT BE ACCOMPLISHED IN A TIMELY FASHION, CONTRACTOR SHALL APPROPRIATELY STORE THE PLANT MATERIAL AND TRANSPLANT AT A TIME TO BE DETERMINED BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE THESE SERVICES AT NO ADDITIONAL COST TO OWNER.

SEEDING :

1. ALL CONSTRUCTION TRAFFIC AREAS, STAGING AREAS, OR ANY OTHER DISTURBED AREAS SHALL BE SEEDED AND MULCHED.

2. DISC AND CROSS DRILL OR BROADCAST AND HARROW MIX AS INDICATED ON PLANS.

3. BROADCAST 800 POUNDS PER ACRE BIOSOL SOIL AMENDMENT ON SEEDING AREAS.

4. IMMEDIATELY FOLLOWING SEEDING, HYDROMULCH WITH 2500 POUNDS PER ACRE VIRGIN WOOD FIBER HYDROMULCH AND 150 POUNDS PER ACRE ORGANIC (PSILLIUM SEED) TACKIFIER.

5. SEEDING AND PLANTING OPERATIONS SHALL BE COMPLETED SEPTEMBER 15 TO APRIL 15TH. LATER PLANTING DATES MAY REQUIRE ADDITIONAL ESTABLISHMENT WATERING. TEMPORARY IRRIGATION SYSTEM TO BE BID AS BID ALTERNATE 4 "TEMPORARY IRRIGATION." REFER TO "TEMPORARY IRRIGATION SCHEDULE." TEMPORARY IRRIGATION TO BE OVERHEAD SPRINKLER & WATER TRUCKS, OR APPROVED EQUIVALENT.

6. OVERLAP ADJACENT SEED MIXTURES 24" MINIMUM.

7. SOME AREAS ARE TO BE OVER-SEEDED WITH TWO MIXES, SEE PLAN.

WEED CONTROL :

1. CONSTRUCTION AND WARRANTY PERIOD WEED CONTROL SHOULD BE CONDUCTED TO CONTROL ALL ANNUAL, BIENNIAL AND PERENNIAL NOXIOUS WEEDS TO PREVENT SEED PRODUCTION AND SPREAD TO THE CONSTRUCTION AREAS. AREAS OF WEEDS WITHIN THE CONSTRUCTION ZONE OR WITHIN 1/4 MILE OF MOUNTAIN OR LAKE LOOPS ARE IN THE CRITICAL WEED CONTROL AREA. THIS WILL INCLUDE SPOT MOWING AND HERBICIDE APPLICATION, BY CERTIFIED WEED CONTROL SPECIALISTS, FOR WEEDS INCLUDING BUT NOT LIMITED TO: KOCHIA, CHEATGRASS, SALSOLA, TUMBLE MUSTARD, CURLY DOCK, SWEET CLOVER, DIFFUSE KNAPWEED, TEASEL, ALL EXOTIC THISTLE SPECIES, AND LEAFY SPURGE. TREATMENT OF WEED SPECIES WILL VARY IN SUITABLE CHEMICALS, METHODS AND TIMING, SEE PLANS & SPECS.

2. ECOLOGIST MUST BE CONTACTED AT CONSTRUCTION STARTUP TO WALK SITE WITH WEED CONTROL PERSONNEL TO IDENTIFY TREATMENT AREAS AND PROPOSED TREATMENTS.

INFILTRATION AREAS:

1. INFILTRATION AREAS SHALL CONSIST OF AN 18 INCH LAYER OF SANDY LOAM.

2. MIX VERY THOROUGHLY BEFORE INSTALLATION. INSPECTION AND APPROVAL OF THESE AREAS BY ECOLOGIST OR ENGINEER MUST BE OBTAINED PRIOR TO PLANTING. ADDITIONAL MIXING MAY BE REQUIRED.

DECOMMISSIONED TRAIL AREAS:

1. RIP COMPACTED TRAILS TO 6" DEPTH.

2. IF TRAIL AREA IS ERODED, APPLY SALVAGED TOPSOIL (APPROVED NON-WEED, DIRECT HAUL, IF POSSIBLE) TO SLIGHTLY OVERFILL TRAIL. RE-COMPACT SLIGHTLY TO FIRM SEED BED.

3. CREATE WATER BARS, AS NECESSARY, TO DRAIN AWAY FROM RESTORED TRAIL, AS INDICATED BY ENGINEER, LANDSCAPE ARCHITECT, OR ECOLOGIST.

4. BROADCAST TABLE 1 NATIVE MIDGRASS PRAIRIE SEED MIXTURE AND RAKE TO COVER. APPLY BIOSOL AND HYDROMULCH WITH TACKIFIER. JUTE NETTING SHALL BE APPLIED ON SLOPES OVER 3:1 OR WHERE EROSION MAY OCCUR. ON SLOPES >5:1 INSTALL CHECK SLOTS 10' O.C.

HYRDROMULCH/EROSION CONTROL BLANKET:

1. EROSION CONTROL BLANKET WILL BE APPLIED PRIOR TO HYDROMULCH AND TACKIFIER ON ANY AREAS WHICH MAY REQUIRE ADDITIONAL EROSION PROTECTION, INCLUDING: SLOPES OVER 4:1, NEW TRAIL EDGES, BEACH EDGES, & TRAIL RESTORATION AREAS. PIN JUTE FABRIC 2 FEET ON CENTER ALONG EDGES AND THROUGHOUT BODY OF FABRIC WITH STEEL LANDSCAPE STAPLES TO SECURE. ON SLOPES OVER 3:1, INSTALL CHECK SLOTS 10' O.C.

2. HYDROMULCH: 2500 MECHANICALLY DEFIBRATED VIRGIN WOOD FIBER HYDROMULCH SHALL BE APPLIED AT NO LESS THAN 2500#/ACRE RATE WITH150 #/ACRE ORGANIC (PSILLIUM SEED) TACKIFIER. HYDROMULCH SHALL NOT BE INSTALLED DURING PRECIPITATION, WHEN THERE IS SNOW OR PUDDLING ON SITE.

PLANTING SCHEDULE

DECIDUOUS TREES

QTY.	ABV	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
15	PS	POPULOUS SARGENTII	PLAINS COTTONWOOD	2" Cal.	B&B
ALTERNATE ADD 3					
13	PS	POPULOUS SARGENTII	PLAINS COTTONWOOD	2" Cal.	B&B

SEED MIXES

PROVIDED BY THE RESTORATION GROUP, INC.

TABLE 1

COMMON NAME	SCIENTIFIC NAME	VARIETY	POUND/ACRE
NATIVE MIDGRASS PRAIRIE SEED MIXTURE			
Sideoats grama	*Bouteloua curtipendula*	Butte	5.00
Blue grama	*Chondrosum gracile*	Lovington	5.00
Switchgrass	*Panicum virgatum*	Blackwell	2.00
Indian ricegrass	*Oryzopsis hymenoides*	Rimrock	1.00
Western wheatgrass	*Pascopyrum smithii*	Arriba	7.00
Alkali sacaton	*Sporobolus aeroides*	Native	2.00
Sand dropseed	*Sporobolus cryptandrus*	Native	2.00
Green needlegrass	*Stipa viridula*	Native	5.00
Fringed sage	*Artemisia frigida*	Native	0.05
Aster	*Aster laevis*	Native	0.05
Purple prairie clover	*Dalea purpurea*	Native	0.50
Blanket flower	*Gaillardia aristata*	Native	0.05
Tansy aster	*Machaeranthera tanacetafolia*	Native	0.05
Large-flowered penstemon	*Penstemon grandiflorus*	Native	0.05
Wand penstemon	*Penstemon virgatus*	Native	0.05
Prairie coneflower	*Ratibida columnifera*	Native	0.10
Showy goldeneye	*Vigiuera multiflora*	Native	0.10
Total PLS/acre			**30.00**

TABLE 3

DRAINAGE OVER-SEED MIXTURE	SCIENTIFIC NAME	VARIETY	PLS#/AC.
COMMON NAME			
Buffalograss	*Buchloe dactyloides*	Topgun	2
Nebraska sedge	*Carex nebrascensis*	Native	0.25
Baltic rush	*Juncus balticus*	Native	0.25
Inland saltgrass	*Distichlis stricta*	Native	0.5
Alkali sacaton	*Sporobolus airoides*	Native	2
Western Wheatgrass	*Pascopyrum smithii*	Arriba	1
			6

TABLE 2

UPLAND TURF GRASS MIXTURE FOR MOWED LAWN AREAS		
COMMON NAME	**SCIENTIFIC NAME**	**LS/AC (PLS) ***
Western Wheatgrass, Arriba	*Pascopyrum Smithii*	7
Blue Grama, Lovington	*Bouteloue Gracilis*	1
Sideoats Gama, Hachita	*Bouteloue Curtipendula*	1.5
Switchgrass, Trailblazer	*Panicum Virgatum*	0.5
Yellow Indiangrass, Holt	*Sorghastrum Nutans*	1.2
Junegrass	*Koeleria Macranthera* / *Elymus Trechycaulus*	0.1
Slander Wheatgrass	*Subsp. Trachycaulus*	
Big Bluestem, Kaw	*Andropogon Gerardil*	1.4
Canada Wildrye	*Elymus Canadensis*	1.2
TOTAL		**15.9**

TABLE 2

UPLAND TURF GRASS MIXTURE FOR MOWED LAWN AREAS		
COMMON NAME	**SCIENTIFIC NAME**	**LS/AC (PLS) ***
Western Wheatgrass, Arriba	*Pascopyrum Smithii*	2.5
Blue Grama, Lovington	*Bouteloue Gracilis*	17.5
Buffalograss, Topgun	*Buchloe dactyloides*	20
Junegrass	*Koeleria Macranthera* / *Elymus Trechycaulus*	5
Inland saltgrass	*Distichilis stricta*	5
TOTAL		**50**

TABLE 4

NATIVE SHORTGRASS SEED MIXTURE			
COMMON NAME	**SCIENTIFIC NAME**	**VARIETY**	**PLS LBS/ACRE**
Buffalograss	*Buchloe dactyloides*	Sharp's	7.00
Sideoats grama	*Bouteloua curtipendula*	Butte	6.00
Blue grama	*Chondrosum gracile*	Hachita	7.00
Inland saltgrass	*Distichlis stricta*	Native	2.00
Western wheatgrass	*Pascopyrum smithii*	Arriba	5.00
Sand dropseed	*Sporobolus cryptandrus*	Native	2.50
Fringed sage	*Artemisia frigida*	Native	0.10
Purple prairiedover	*Dalea purpurea*	Native	0.10
Blanket flower	*Gaillardia aristata*	Native	0.10
Prairie coneflower	*Ratibida columnifera*	Native	0.10
Sidebells penstemon	*Penstemon secundiflorus*	Native	0.10
			30.00

TEMPORARY IRRIGATION TABLE

Recommended irrigation for SEEDED LAWN AREAS, assuming installation: late March to April 15th time frame:

Weeks	Program	Inches/Week
1-4	irrigate 3X/week 30 minutes per location	1"/week
5-8	irrigate 2X/week 45 minutes per location	1"/week
9-12	irrigate 1X/week 1 hour per location	2/3"/week
If funding allows:		
Until Sept 1	Irrigate 2X a month 1 hour per location	1/3"/week (ave.)

Schedule B Add Alternate : One (1) extra year of irrigation, March through Sept. as described above

Recommended irrigation for SEEDED NATIVE AREAS, assuming installation: late March to April 15th time frame:

Weeks	Program	Inches/Week
1-4	irrigate 2X/week 30 minutes per location	2/3"/week
5-8	irrigate 1X/week 1 hour per location	2/3"/week
9-12	irrigate 2X/month 1 hour per location	1/3"/week (ave.)

LEGEND:
X COTTONWOOD
W WILLOWS (@ 2' O.C.)
D DOGWOODS (@ 3' O.C.)
S SUMACS (@ 4' O.C.)

RECORD DRAWING
7/15/13
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, IT IS NOT GUARANTEED BY THE PREPARER AS TO ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

PREPARED BY MULLER

ASSOCIATES PLANNERS & LANDSCAPE ARCHITECTS 970.925.6065

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN
DRAWN
CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
NOTES, LEGENDS, & PLANTING SCHEDULE

DATE
DRAWING NO. L-0
SHEET NO. 17 OF 34

MATCH LINE - SEE PLAN B

RECORD DRAWING

7/15/13

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PREPARED BY MULLER

5558
5559
5557
5556
5553

RUSSIAN OLIVE REMOVAL, TO BE MARKED BY ECOLOGIST

EXISTING TRAIL, NO IMPROVEMENTS

POSSIBLE TOPSOIL SALVAGE AREA (CUT AREA EAST OF EXISTING PARKING LOT, RE: CIVIL & NOTES)

Existing Sidewalk- To Remain

Existing Restroom & Crusher Fines Paving

WILLOW STAKES TO REMAIN, VERIFY WITH OWNER'S REPRESENTATIVE

Site of Restroom Removed/Relocated By Others, Supplement Seeding as Required

SITE ACCESS ROAD

RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8

TREE PROTECTION AREA TO BE IDENTIFIED BY ECOLOGIST WITH CONTRACTOR PRIOR TO CONSTRUCTION

CRUSHER FINES PATH, RE: CIVIL

IMPROVE EXISTING TRAIL, RE: CIVIL

FLUSH TRANSITION

BOLLARD, TYP RE: 4/L-8

(2) PS, RE: 2/L-9

5 COTTONWOODS (ALL 5' DEEP)

PROPOSED TRENCH DRAINS, RE: CIVIL

DRAINAGE IMPROVEMENTS, RE: CIVIL

(3) PS, RE: 2/L-9

BOULDER POINT, RE: CIVIL

RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8

RUSSIAN OLIVE REMOVAL, TO BE MARKED BY ECOLOGIST

FLUSH TRANSITION

INFILTRATION AREAS, RE: CIVIL

WILLOW STAKES, SEE SPECS

SPLIT RAIL FENCE, RE: 1/L-9

LEGEND:
8 WILLOWS (@ 2' O.C.)
8 DOGWOODS (@ 2' O.C.)

IMPROVE EXISTING TRAIL, RE: CIVIL

AREA MUST BE RIPPED DOWN TO 12" DEPTH , ADD 6" TOPSOIL BEFORE SEEDING, RE: CIVIL

Existing Beach- To Remain

Existing Toe of Bank

CRUSHER FINES PATH, RE: CIVIL

END TRAIL AT BEACH

LEGEND

- CRUSHER FINES PAVING, RE: 1/L-8
- STABILIZED CRUSHER FINES, RE: 1/L-8
- RIPRAP, RE: CIVIL
- PROPOSED SAND BEACH, RE: CIVIL
- NATIVE MIDGRASS PRAIRIE SEED MIX, TABLE 1
- UPLAND TURF GRASS SEED MIX, TABLE 2
- WILLOW STAKES
- DRAINAGE OVER-SEED MIX, TABLE 3
- NATIVE SHORT GRASS SEED MIX, TABLE 4
- STONE SLAB WALL RE: 2/L-8
- PROPOSED FENCE, RE: 1/L-9
- EXISTING FENCE
- EXISTING SHORELINE

NOTE:
1. SEED ALL DISTURBANCE AREAS WITH NATIVE MIDGRASS PRAIRIE SEED MIXTURE, EXCEPT FOR AREAS LESS THAN 8' FROM ROAD OR TRAIL EDGES TO BE SEEDED WITH NATIVE SHORTGRASS SEED MIXTURE. OVERLAP ADJACENT SEED MIXTURES 24" MINIMUM.
2. SALVAGE TOP SOIL FROM APPROVED AREAS. CONTACT ECOLOGIST TO IDENTIFY ACCEPTABLE TOPSOIL SALVAGE AREAS FOLLOWING SURVEY AND 48 HOURS PRIOR TO START OF GRADING,
3. COTTONWOOD TREES TO BE DEEP PLANTED. LOCATIONS TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.

N

0' 10' 20' 40'

ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.926.0093

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN
DRAWN
CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
PLAN A

DATE
DRAWING NO. L-1
SHEET NO. 18 OF 34

MATCH LINE - SEE PLAN C

IMPROVE EXISTING TRAIL, RE: CIVIL

FLUSH TRANSITION

Existing Parking Area

Site Access Road

Existing Picnic Structures, to Remain

ADD ALTERNATE 1: INTER SEEDING OF EXISTING PICNIC AREA (IF CALLED FOR BY ECOLOGIST)

SPLIT RAIL FENCE, RE: 1/L-9

Existing Toe of Bank

ADD ALTERNATE 1: INTER SEEDING OF EXISTING PICNIC AREA (IF CALLED FOR BY ECOLOGIST)

RESTORE ERODED LANDSCAPE AREA WITH TOPSOIL & SEEDING, SEE TRAIL RESTORATION DETAIL AND NOTES.

Existing Concrete Path

TREE PROTECTION AREA, TO BE DESIGNATED BY ECOLOGIST PRIOR TO CONSTRUCTION

Cherry Creek Reservoir

IMPROVE EXISTING TRAIL, RE: CIVIL

RUSSIAN OLIVE REMOVAL, TO BE MARKED BY ECOLOGIST

CRUSHER FINES TRAIL, RE: CIVIL

LEGEND:
8 WILLOWS (@ 2' O.C.)
8 DOGWOODS (@ 3' O.C.)

BOULDER POINT, RE: CIVIL

WILLOW STAKES, RE: SPECS

WILLOW STAKES, RE: SPECS

TREE PROTECTION AREA, TO BE DESIGNATED BY ECOLOGIST PRIOR TO CONSTRUCTION

EXISTING TRAIL. NO IMPROVEMENTS

5560

5555

5550

5545

5540

5535

ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.828.0003

N

0' 10' 20' 40'

MATCH LINE - SEE PLAN A

RECORD DRAWING
7/15/13

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PREPAIRED BY MULLER

LEGEND

- CRUSHER FINES PAVING, RE: 1/L-8
- STABILIZED CRUSHER FINES, RE: 1/L-8
- RIPRAP, RE: CIVIL
- PROPOSED SAND BEACH, RE: CIVIL
- NATIVE MIDGRASS PRAIRIE SEED MIX, TABLE 1
- UPLAND TURF GRASS SEED MIX, TABLE 2
- WILLOW STAKES
- DRAINAGE OVER-SEED MIX, TABLE 3
- NATIVE SHORT GRASS SEED MIX, TABLE 4
- STONE SLAB WALL RE: 2/L-8
- PROPOSED FENCE, RE: 1/L-9
- EXISTING FENCE
- EXISTING SHORELINE

NOTES:

1. THE INSTALLATION OF ADD ALTERNATIVE SEED AREAS TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND ECOLOGIST PRIOR TO CONSTRUCTION. CONTRACTOR TO ASSUME ACCEPTANCE OF ADD ALTERNATE IN BASE BID.

No.	DATE	REVISIONS	APPR.
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1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER

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CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
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303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
PLAN B

DATE

DRAWING NO. L-2

SHEET NO. 19 OF 34

MATCH LINE - SEE PLAN D

7' DEEP
6' DEEP
5' DEEP
4' DEEP
3' DEEP
8' DEEP (3 1/2")
7' DEEP (3 1/2")

1
7 COTTONWOODS

PICNIC TERRACE ENLARGEMENT
RE: PLAN G SHEET L-7

BOULDER POINT, RE: CIVIL

TREE PROTECTION AREA, TO BE DESIGNATED BY ECOLOGIST PRIOR TO CONSTRUCTION

Existing Beach

Cherry Creek Reservoir

Existing Asphalt Parking Lot

FLUSH TRANSITION
PROPOSED GRADING,TYP RE: CIVIL
FLUSH TRANSITION
FLUSH TRANSITION
RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8
TIMBER STAIRS, RE: 3/L-8 & NOTES
RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8
CRUSHER FINES TRAIL, RE: CIVIL
BOARDWALK, RE: CIVIL
CRUSHER FINES TRAIL, RE: CIVIL
RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8
8:1
RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8
CRUSHER FINES TRAIL, MAX SLOPE = 5%, RE: CIVIL
Existing Restrooms To Be Removed By Others
Site Access Road
5565
Existing Parking Area
RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8
5560
5550
5545
SPLIT RAIL FENCE, RE: 1/L-9
IMPROVE CRUSHER FINES TRAIL, RE: CIVIL
RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8
FLUSH TRANSITION
Existing Toe of Bank

MATCH LINE - SEE PLAN B

RECORD DRAWING
7/15/13

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PREPARED BY MULLER

NOTES:

1. RESEED DISTURBED LAWN WITH UPLAND TURF GRASS SEED MIX, RAKE, APPLY BIOSOL, AND HYDROMULCH.
2. COTTONWOOD TREES TO BE DEEP PLANTED. LOCATIONS TO BE PRE-APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. CONTRACTOR TO PROVIDE A DIMENSIONAL SHOP DRAWING OF TIMBER STAIRS TO INCLUDE NUMBER OF RISERS AND TREADS TO BE CONSTRUCTED FOR APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

LEGEND

- CRUSHER FINES PAVING, RE: 1/L-8
- STABILIZED CRUSHER FINES, RE: 1/L-8
- RIPRAP, RE: CIVIL
- PROPOSED SAND BEACH, RE: CIVIL
- NATIVE MIDGRASS PRAIRIE SEED MIX, TABLE 1
- UPLAND TURF GRASS SEED MIX, TABLE 2
- WILLOW STAKES
- DRAINAGE OVER-SEED MIX, TABLE 3
- NATIVE SHORT GRASS SEED MIX, TABLE 4
- STONE SLAB WALL RE: 2/L-8
- PROPOSED FENCE, RE: 1/L-9
- EXISTING FENCE
- EXISTING SHORELINE

N

0' 10' 20' 40'

nk ASSOCIATES PLANNERS & LANDSCAPE ARCHITECTS 303.628.0003

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN
DRAWN
CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
PLAN C

DATE
DRAWING NO. L-3
SHEET NO. 20 OF 34

n k
ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.828.0003

N

0' 10' 20' 40'

Cherry Creek Reservoir

ROTATE EXISTING DOCK TO BE PERPENDICULAR TO WATER (BY OTHERS)

BOULDER POINT, RE: CIVIL

WILLOW STAKES, SEE SPECS

3' DEEP

PROPOSED BEACH, RE: CIVIL

RUSSIAN OLIVE REMOVAL, TO BE MARKED BY ECOLOGIST

WILLOW STAKES, SEE SPECS

BOULDER POINT, RE: CIVIL

MATCH LINE - SEE PLAN E

REMOVE TIMBER STAIRS

REPLACE EXISTING GRAVEL PATH W/STABLIZED CRUSHER FINES RE: 1/L-8

Existing Bench

FLUSH TRANSITION

RUSSIAN OLIVE REMOVAL, TO BE MARKED BY ECOLOGIST

IMPROVED LAKE EDGE, TYP. RE: CIVIL

5' DEEP

Existing Toe of Bank

IMPROVE EXISTING CRUSHER FINES TRAIL, RE: CIVIL

TREE PROTECTION AREAS, TO BE DESIGNATED BY ECOLOGIST PRIOR TO CONSTRUCTION

Existing Gravel Road

TREE PROTECTION AREAS, TO BE DESIGNATED BY ECOLOGIST PRIOR TO CONSTRUCTION

ADD ALTERNATE 3:
(2) DEEP PLANTED COTTONWOODS AT LAKE EDGES, RE: 5/L-9

RESTORE DECOMMISSIONED TRAIL, RE: 5/L-8

6' DEEP

PICNIC TERRACE ENLARGEMENT RE: PLAN G SHEET L-7

CRUSHER FINES TRAIL, RE: CIVIL

(3) PS, RE: 2/L-9

Existing Row House

PROPOSED TRENCH DRAIN, RE: CIVIL

FLUSH TRANSITION

SPLIT RAIL FENCE, RE: 1/L-9

Existing Restroom

FLUSH TRANSITION

PROPOSED TRENCH DRAIN, RE: CIVIL

FLUSH TRANSITION

INFILTRATION AREA, RE: CIVIL

POTENTIAL TOPSOIL SALVAGE AREAS, RE: CIVIL & NOTES

(2) PS, RE: 2/L-9

Existing Asphalt Parking Lot

MATCH LINE - SEE PLAN C

RECORD DRAWING
7/15/13

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PREPARED BY MULLER

3	COTTONWOODS
12	SUMACS
12	DOGWOODS
8	WILLOWS

LEGEND

- CRUSHER FINES PAVING, RE: 1/L-8
- STABILIZED CRUSHER FINES, RE: 1/L-8
- RIPRAP, RE: CIVIL
- PROPOSED SAND BEACH, RE: CIVIL
- NATIVE MIDGRASS PRAIRIE SEED MIX, TABLE 1
- UPLAND TURF GRASS SEED MIX, TABLE 2
- WILLOW STAKES
- DRAINAGE OVER-SEED MIX, TABLE 3
- NATIVE SHORT GRASS SEED MIX, TABLE 4
- STONE SLAB WALL RE: 2/L-8
- PROPOSED FENCE, RE: 1/L-9
- EXISTING FENCE
- EXISTING SHORELINE

NOTES:

1. RESEED DISTURBED LAWN WITH UPLAND TURF GRASS SEED MIX, RAKE, APPLY BIOSOL, AND HYDROMULCH. COTTONWOODS TO BE DEEP PLANTED. LOCATIONS TO BE PRE-APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
2. SALVAGE TOPSOIL FROM APPROVED AREAS. CONTACT ECOLOGIST TO IDENTIFY ACCEPTABLE TOPSOIL SALVAGE AREAS FOLLOWING SURVEY & 48 HOURS PRIOR TO START OF GRADING.
3. THE INSTALLATION OF ADD ALTERNATE DEEP PLANTING COTTONWOODS TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND ECOLOGIST PRIOR TO CONSTRUCTION. CONTRACTOR TO ASSUME ACCEPTANCE OF ADD ALTERNATE IN BASE BID.

MATCH LINE - SEE PLAN E

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN
DRAWN
CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
PLAN D

DATE
DRAWING NO. L-4
SHEET NO. 21 OF 34

ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.628.0000

0' 10' 20' 40'

Cherry Creek Reservoir

MATCH LINE - SEE PLAN F

MATCH LINE - SEE PLAN D

MATCH LINE - SEE PLAN D

2 WILLOWS
10 DOGWOODS
29 SUMACS
8 COTTONWOODS

WILLOW STAKES, SEE SPECS
BOULDER POINT, RE: CIVIL
PROPOSED BEACH, RE: CIVIL
PROPOSED GRADING, TYP, RE: CIVIL
IMPROVED LAKE EDGE, TYP. RE: CIVIL
2-5 SUMACS
4' DEEP
2' DEEP
3' DEEP
5' DEEP
TREE PROTECTION AREA, TO BE DESIGNATED BY ECOLOGIST PRIOR TO CONSTRUCTION
IMPROVE EXISTING TRAIL, RE: CIVIL
CRUSHER FINES TRAIL, RE: CIVIL
RESTORE DECOMISSIONED TRAIL, RE: 5/L-9
END TRAIL AT BEACH
Existing Toe of Bank
Existing Sand Beach
FLUSH TRANSITION
Existing Parking Area
Existing Fence
Existing Picnic Structure- to Remain
Existing Row House
Site Access Road

RECORD DRAWING
7/15/13

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PREPARED BY MULLER

LEGEND

- CRUSHER FINES PAVING, RE: 1/L-8
- STABILIZED CRUSHER FINES, RE: 1/L-8
- RIPRAP, RE: CIVIL
- PROPOSED SAND BEACH, RE: CIVIL
- NATIVE MIDGRASS PRAIRIE SEED MIX, TABLE 1
- UPLAND TURF GRASS SEED MIX, TABLE 2
- WILLOW STAKES
- DRAINAGE OVER-SEED MIX, TABLE 3
- NATIVE SHORT GRASS SEED MIX, TABLE 4
- STONE SLAB WALL RE: 2/L-8
- PROPOSED FENCE, RE: 1/L-9
- EXISTING FENCE
- EXISTING SHORELINE

NOTES:

1. USE UPLAND TURF GRASS MIX TO SEED ON LAWN, SHORELINE AND TRAIL DISTURBANCE. RAKE, APPLY BIOSOL, AND HYDROMULCH.
2. THE INSTALLATION OF ADD ALTERNATE DEEP PLANTING COTTONWOODS TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND ECOLOGIST PRIOR TO CONSTRUCTION. CONTRACTOR TO ASSUME ACCEPTANCE OF ADD ALTERNATE IN BASE BID.

No.	DATE	REVISIONS	APPR.
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MEC PROJECT No. 08025.02

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303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
PLAN E

DATE
DRAWING NO. L-5
SHEET NO. 22 OF 34

ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.628.0003

N

0' 10' 20' 40'

Cherry Creek Reservoir

5546
5547
5548
5549
5550

Existing Toe of Bank

Existing Sand Beach

RUSSIAN OLIVES REMOVAL, TO BE MARKED BY ECOLOGIST

IMPROVE EXISTING TRAIL, RE: CIVIL

ADD ALTERNATE 2:
INTER SEEDING OF SOUTHEAST BEACH AREA
(IF CALLED FOR BY ECOLOGIST)

IMPROVE EXISTING TRAIL, RE: CIVIL

Existing Fence

Existing Parking Area

FLUSH TRANSITION

Site Access Road

Existing Fence

Existing Parking Area

FLUSH TRANSITION

MATCH LINE - SEE PLAN E

MATCH LINE - SEE PLAN E

LEGEND

- CRUSHER FINES PAVING, RE: 1/L-8
- STABILIZED CRUSHER FINES, RE: 1/L-8
- RIPRAP, RE: CIVIL
- PROPOSED SAND BEACH, RE: CIVIL
- NATIVE MIDGRASS PRAIRIE SEED MIX, TABLE 1
- UPLAND TURF GRASS SEED MIX, TABLE 2
- WILLOW STAKES
- DRAINAGE OVER-SEED MIX, TABLE 3
- NATIVE SHORT GRASS SEED MIX, TABLE 4
- STONE SLAB WALL RE: 2/L-8
- PROPOSED FENCE, RE: 1/L-9
- EXISTING FENCE
- EXISTING SHORELINE

NOTES:

1. RESEED DISTURBED LAWN WITH UPLAND TURF GRASS SEED MIX, RAKE, APPLY BIOSOL, AND HYDROMULCH.
2. THE INSTALLATION OF ADD ALTERNATIVE SEED AREAS TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND ECOLOGIST PRIOR TO CONSTRUCTION. CONTRACTOR TO ASSUME ACCEPTANCE OF ADD ALTERNATE IN BASE BID.

RECORD DRAWING
7/15/13

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MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

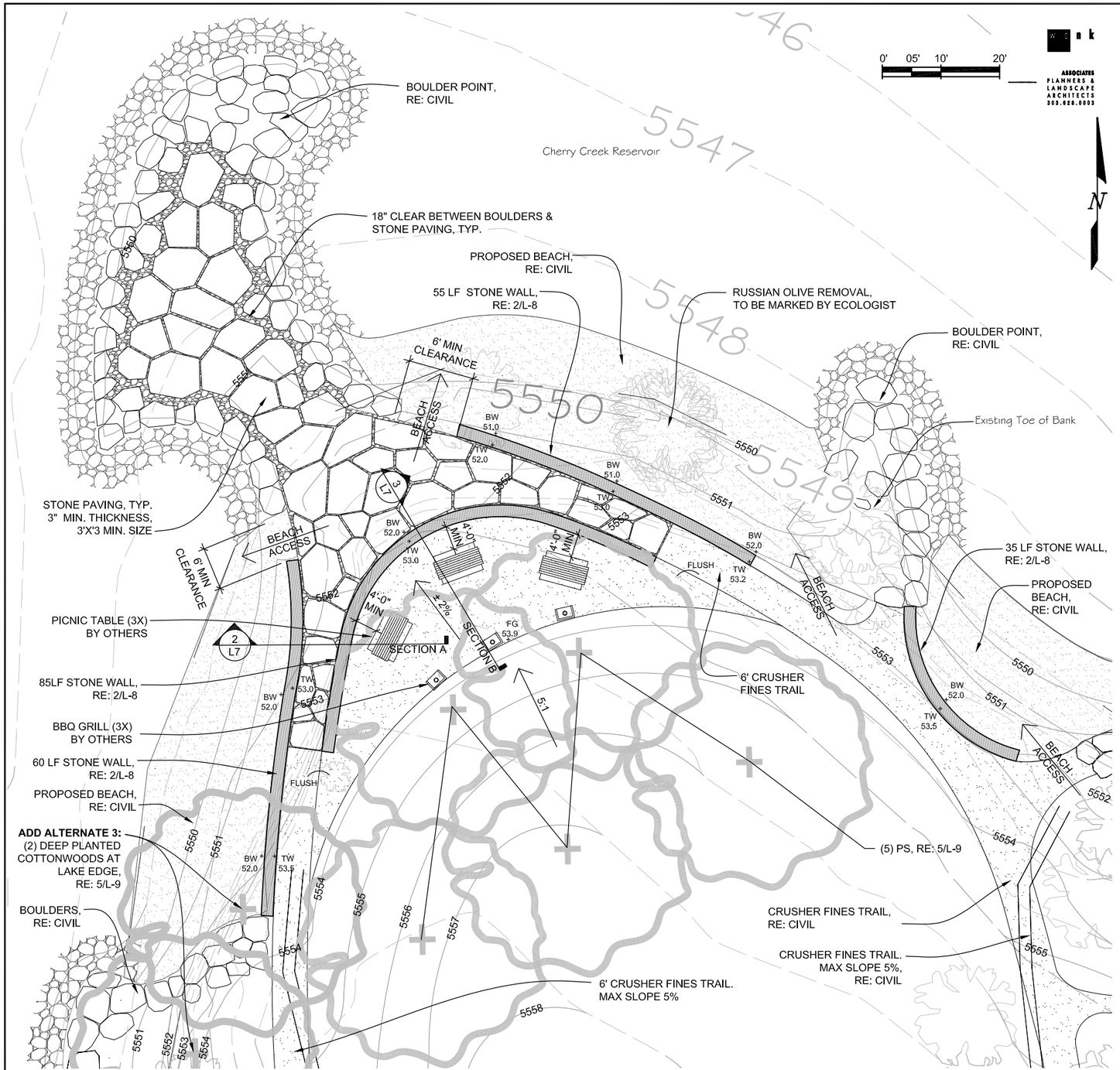
DESIGN
DRAWN
CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

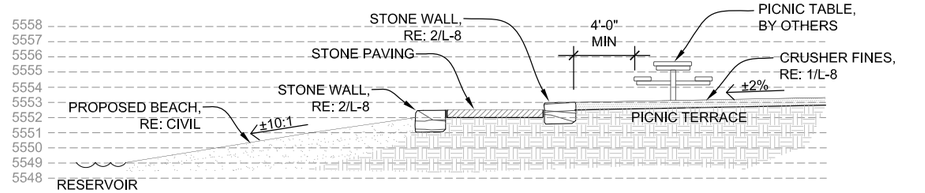
MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE PLANS
PLAN F

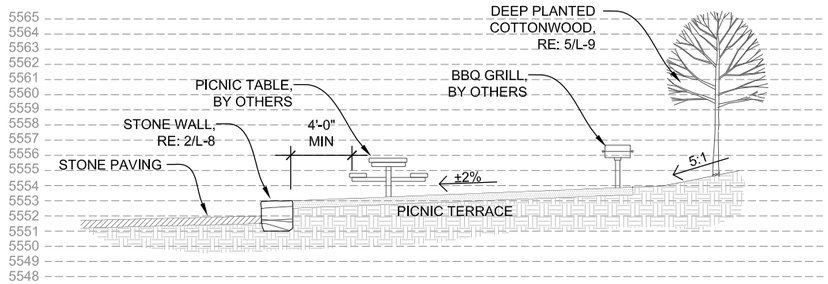
DATE
DRAWING NO. L-6
SHEET NO. 23 OF 34



1 L7 PICNIC TERRACE ENLARGEMENT PLAN 1"=10'-0"



2 L7 SECTION A SECTION 1"=5'-0"



3 L7 SECTION B SECTION 1"=5'-0"

NOTE:

1. SEED ALL DISTURBANCE AREAS WITH UPLAND TURF GRASS.
2. COTTONWOOD TREES TO BE DEEP PLANTED. LOCATIONS TO BE PRE-APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
3. REFERENCE PLAN SHEETS C & D FOR SEEDING & OTHER INFORMATION.
4. LAYOUT OF STONE PLACEMENT FOR SITE WALLS TO BE COORDINATED WITH PROJECT LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT TO BE NOTIFIED OF THIS WORK 7 DAYS PRIOR TO CONSTRUCTION.
5. THE INSTALLATION OF ADD ALTERNATE DEEP PLANTING COTTONWOODS TO BE VERIFIED WITH OWNER'S REPRESENTATIVE AND ECOLOGIST PRIOR TO CONSTRUCTION. CONTRACTOR TO ASSUME ACCEPTANCE OF ADD ALTERNATE IN BASE BID.

RECORD DRAWING
7/15/13

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PREPARED BY MULLER

LEGEND

- CRUSHER FINES PAVING, RE: DETAIL
- STABILIZED CRUSHER FINES
- RIPRAP, RE: CIVIL
- SAND BEACH

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

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CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

PICNIC TERRACE ENLARGEMENT
PLAN G

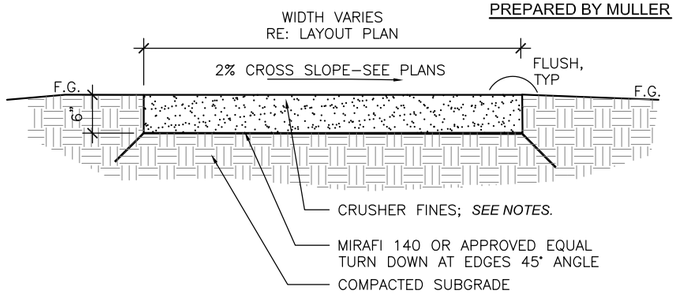
DATE
DRAWING NO. L-7
SHEET NO. 24 OF 34

The Restoration Group, Inc.

RECORD DRAWING
7/15/13
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

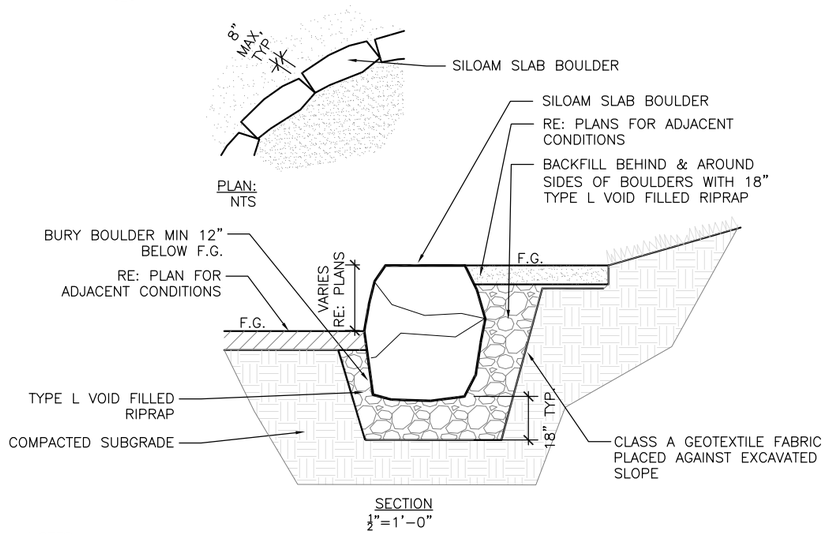
PREPARED BY MULLER

ASSOCIATES
PLANNERS & LANDSCAPE ARCHITECTS
303.628.0003



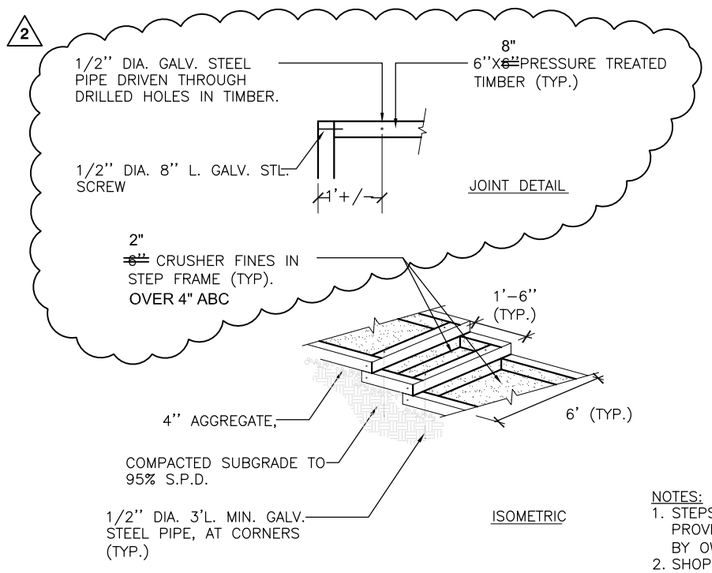
NOTES:
1. CRUSHER FINES PAVING SHALL BE PLACED IN (2) 3" LIFTS MIN.
2. INSTALL CRUSHER FINES PAVING FLUSH WITH ADJACENT HARDSCAPE, TYP.
3. CRUSHER FINES IN AREAS STEEPER THAN 3% SHALL BE STABILIZED.

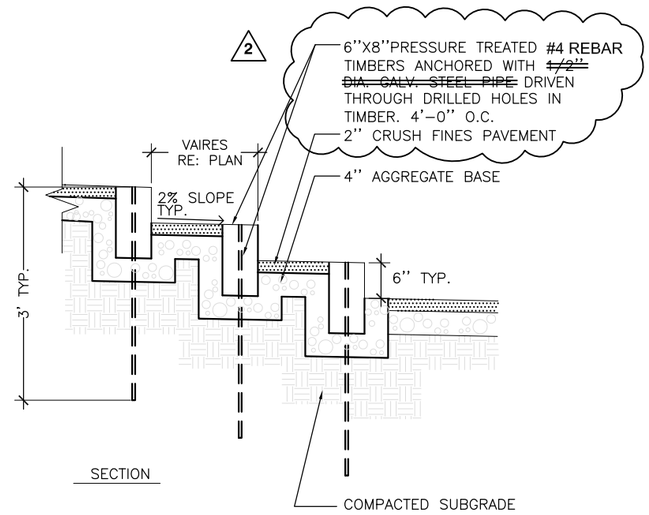
1 / L-8 **CRUSHER FINES PAVING**
SECTION 1" = 1'–0"



NOTES:
1. SMALLER ROCK CAN BE USED AS WEDGES OCCASIONALLY ALONG FRONT FACE TO HELP INTERLOCK/STABILIZE BOULDERS AND FILL VOIDS BETWEEN BOULDERS BUT NEEDS TO BE SUFFICIENTLY LOCKED–IN SO THAT IT WILL NOT FALL OUT
2. CHINK ALL VOIDS GREATER THAN 4–INCHES BETWEEN LARGE BOULDERS FROM BEHIND WITH 9" TO 12" ROCK TO INSURE STABILITY AND THE APPEARANCE OF A SOLID ROCK WALL AND TO INSURE THAT THE TYPE VL VOID–FILLED RIPRAP BACKFILL DOES NOT FALL OUT FROM BEHIND THE BOULDER WALL.

2 / L-8 **STONE SLAB WALL**
SECTION/PLAN AS SHOWN

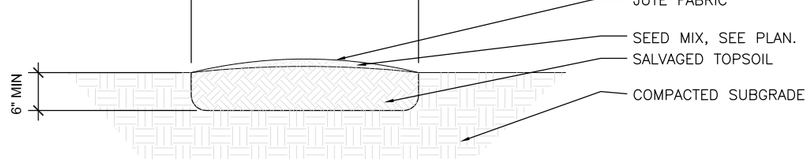




NOTES:
1. STEPS, RISERS, & TREADS CARY DEPENDING ON SLOPE. CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS FOR TIMBER STEPS, TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
2. SHOP DRAWINGS TO BE DIMENSIONED. SHOP DRAWINGS TO BE SPECIFIC TO EXISTING FIELD CONDITIONS AND SLOPE FOR EACH SET OF TIMBER STEPS SHOWN ON THE PLANS.

3 / L-8 **TIMBER STEPS**
ISOMETRIC/SECTION/DETAIL AS SHOWN

4 / L-8 **NOT USED**



NOTES:
1. DECOMPACT TRAIL TO 6" DEPTH.
2. APPLY SALVAGED (APPROVED) TOPSOIL TO SLIGHTLY OVERFILL DEPRESSED TRAIL.
3. LIGHTLY RECOMPACT.
4. SEED WITH SEED MIX INDICATED ON PLAN, RAKE TO COVER SEED, BIOSOL, JUTE NETTING, HYDROMULCH. INSTALL CUT OFF SLOTS ON SLOPES >5:1 10' O.C.
5. INSTALL WATER BARS TO DRAIN AWAY FROM TRAIL AS INDICATED BY ENGINEER.

5 / L-9 **DECOMISSIONED TRAIL RESTORATION**
SECTION AS SHOWN
PROVIDED BY THE RESTORATION GROUP, INC.

No.	DATE	REVISIONS	APPR.
1	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
2	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939
MEC PROJECT No. 08025.02

DESIGN
DRAWN
CHECK

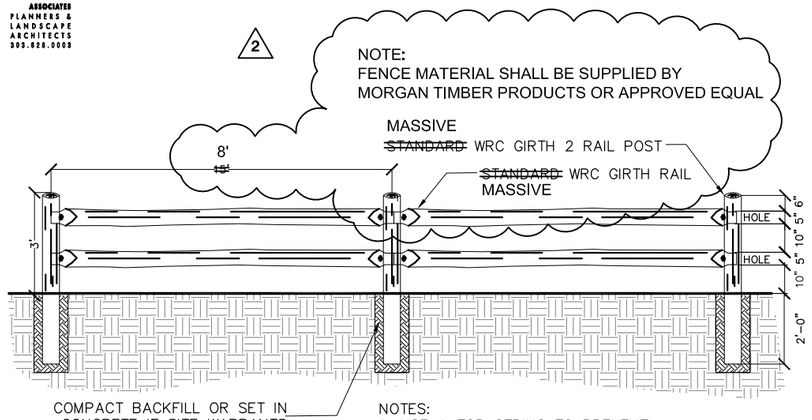
PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

SITE DETAILS

DATE
DRAWING NO. L-8
SHEET NO. 25 OF 34

The Restoration Group, Inc.
n k
ASSOCIATES
PLANNERS &
LANDSCAPE
ARCHITECTS
303.828.0003



1 / L-9 MASSIVE 2 RAIL FENCE
SECTION N.T.S.

RECORD DRAWING
7/15/13

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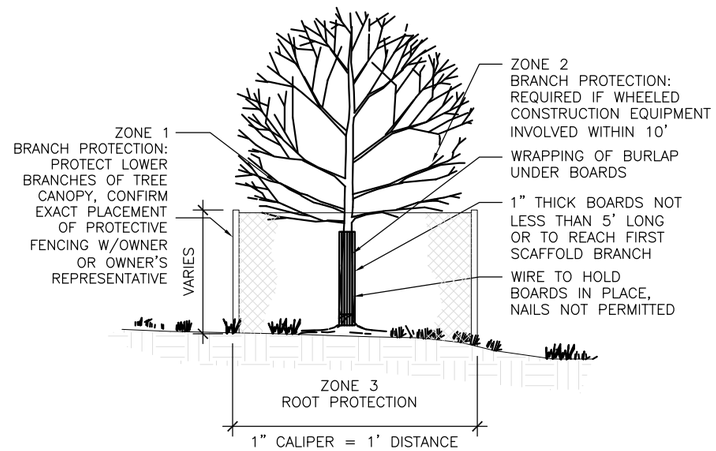
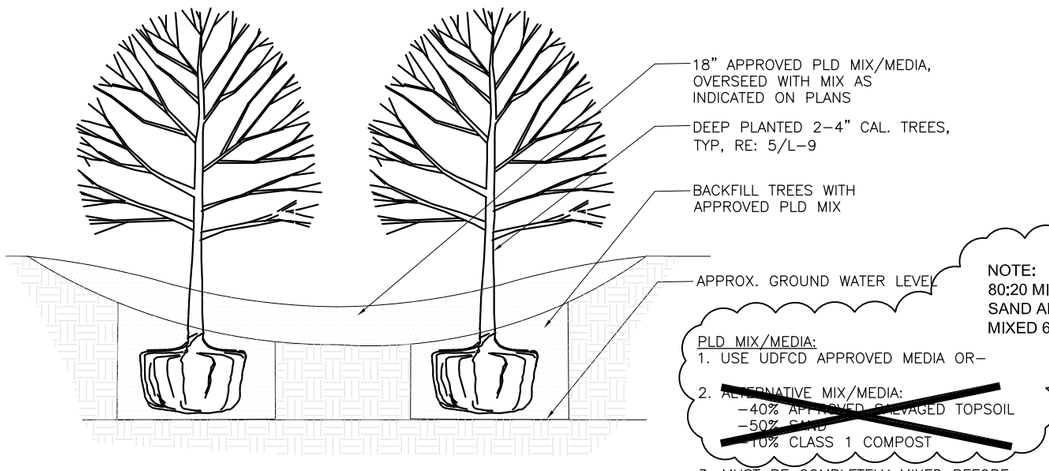
PREPARED BY MULLER

3 / L-9 NOT USED

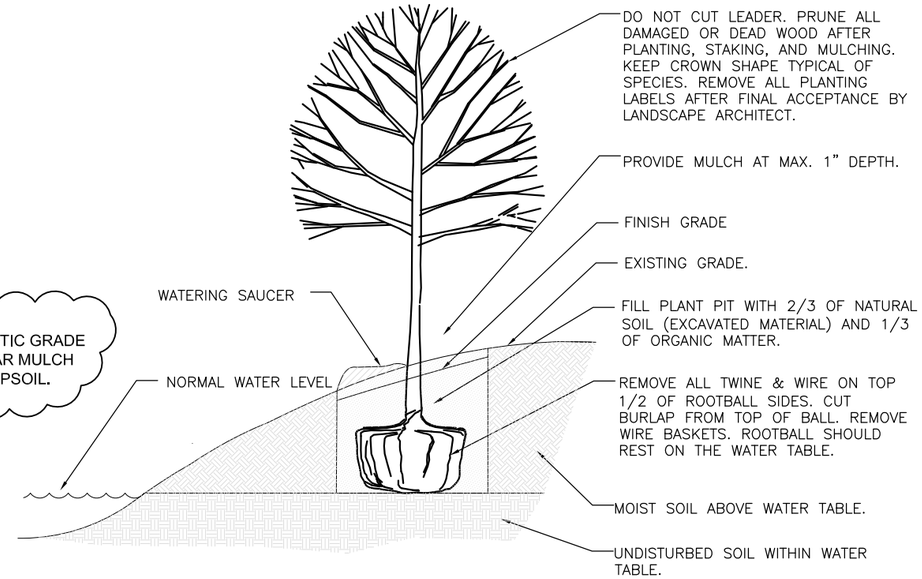


NOTES:
1. WATER TREES DEEPLY 2X/MONTH.
2. FOLLOWING CONSTRUCTION, REMOVE ALL MULCH AND RESEED WITH APPROVED MIX.

4 / L-9 TREE PROTECTION



2 / L-9 BIORENTENTION/PLD PLANTING
SECTION N.T.S.



5 / L-9 COTTON WOOD DEEP PLANTING
SECTION N.T.S.

PROVIDED BY THE RESTORATION GROUP, INC.

PROVIDED BY THE RESTORATION GROUP, INC.

No.	DATE	REVISIONS	APPR.
1	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
2	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

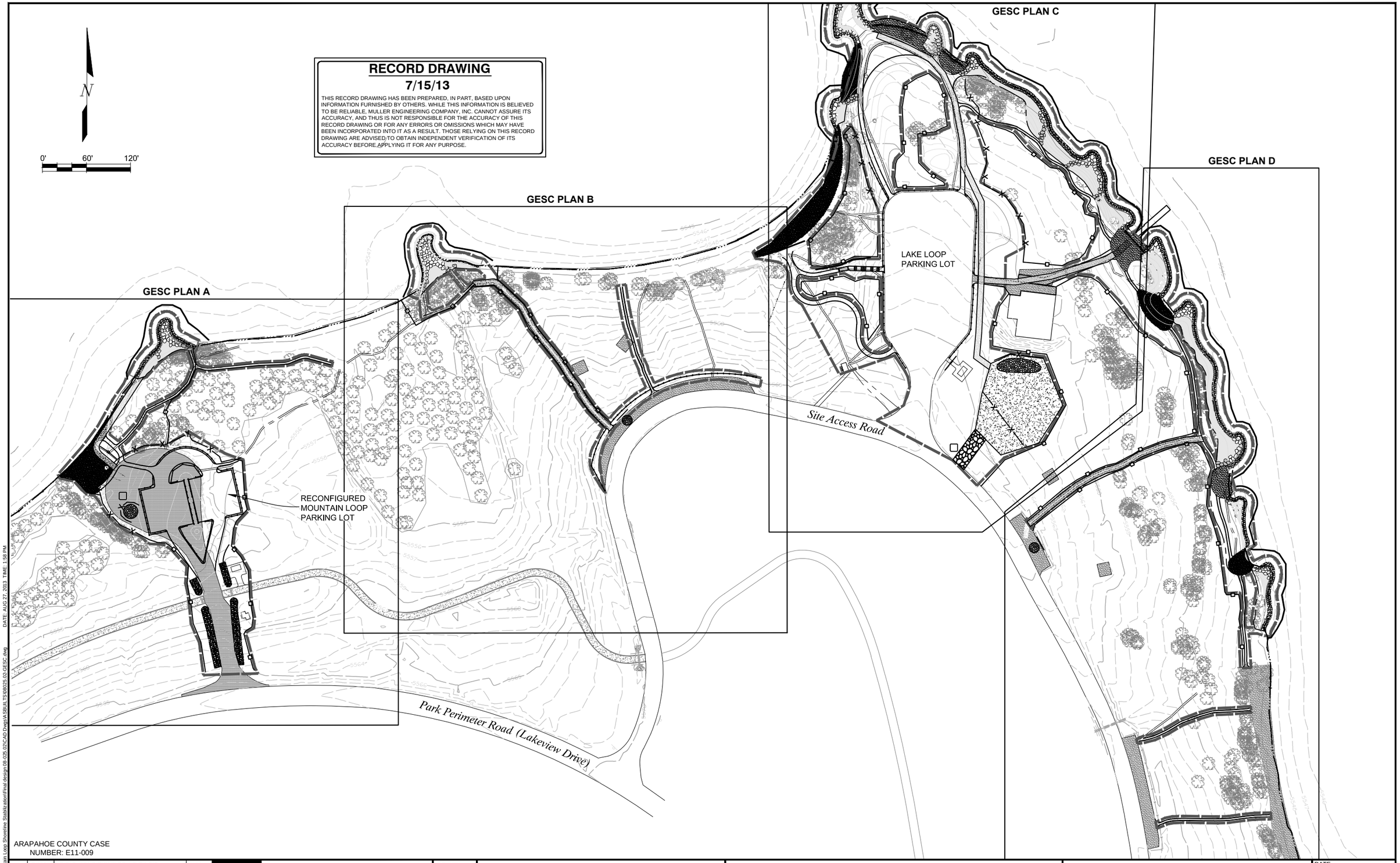
DESIGN
DRAWN
CHECK

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

LANDSCAPE DETAILS

DATE
DRAWING NO. L-9
SHEET NO. 26 OF 34



ARAPAHOE COUNTY CASE NUMBER: E11-009

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MEC PROJECT No. 08025.02

DESIGN	ALM
DRAWN	ALM
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MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GESC

GESC PLAN INDEX

DATE	JULY 2011
DRAWING NO.	EC-1
SHEET NO.	27 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\ASBUILTS\08025.02-GESC-.dwg TIME: 1:58 PM DATE: AUG 27, 2013

RECORD DRAWING

7/15/13

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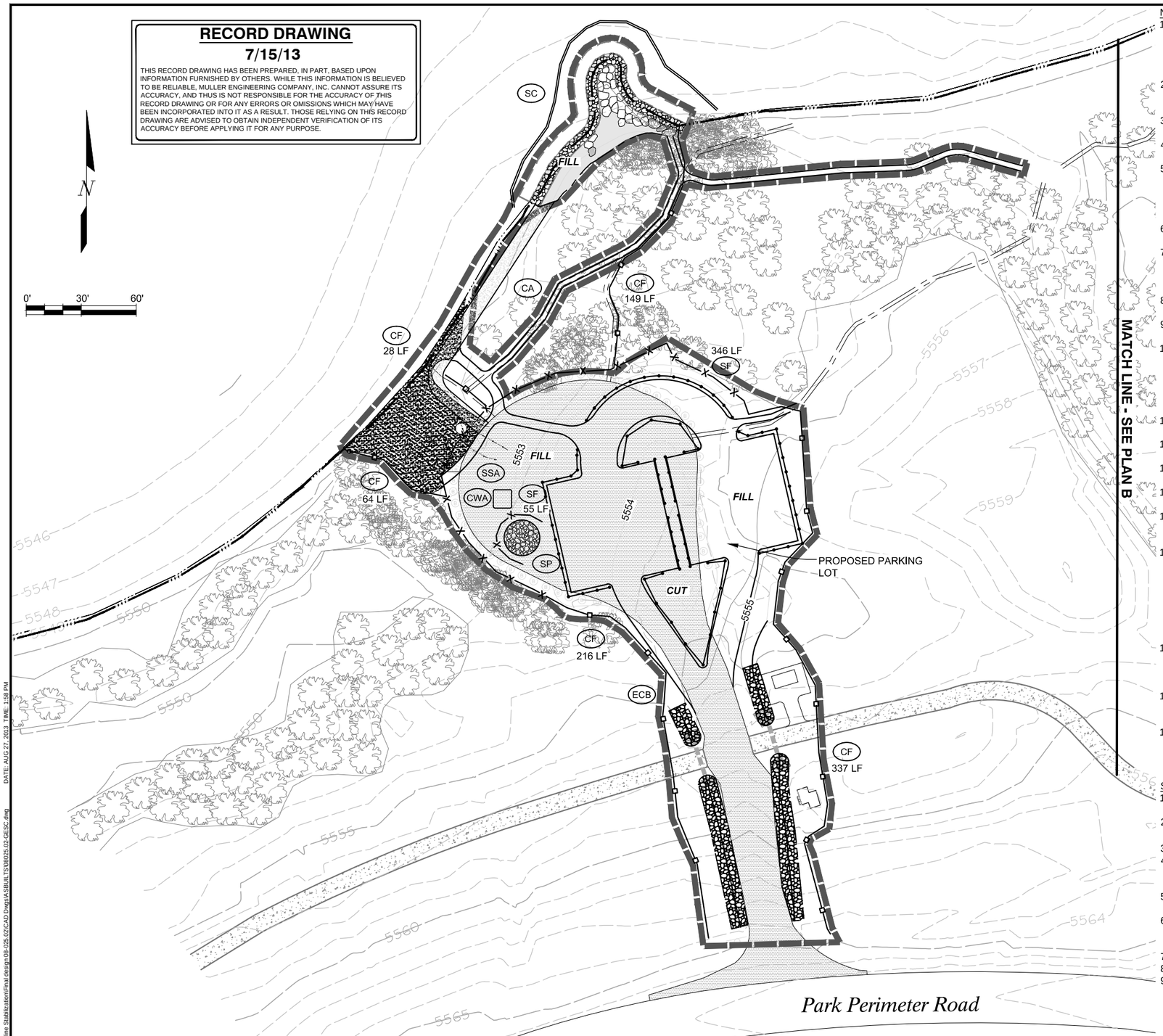

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2. SEE SHEET 2 AND ARAPAHOE COUNTY STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
3. SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT BANK PROTECTION AND DRAINAGE FACILITIES.
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11. PROJECT MUST BE PHASED TO LIMIT DISTURBANCE TO A MAXIMUM OF 40-ACRES AT ANY TIME.
12. SEE CONSTRUCTION DRAWINGS FOR EROSION CONTROL BLANKET DIMENSIONS AND DETAILS.
13. CONSTRUCTION FENCE SHALL BE PROVIDED WHERE INDICATED.
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3. FURL THE CURTAIN SECTIONS WITH $\frac{1}{4}$" DIAMETER OR LARGER SYNTHETIC ROPE.
4. FLOAT THE CURTAIN INTO THE WATER AND SECURE THE LEADING END TO THE WORK BOAT. THE BOAT SHOULD BE RIGGED WITH A LONG LINE WHICH IS ATTACHED TO THE LOAD CABLE SO THAT THE CURTAIN CAN BE POSITIONED WITHOUT INTERFERING WITH THE MANEUVERING OF THE BOAT.
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ARAPAHOE COUNTY CASE NUMBER: E11-009

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MEC PROJECT No. 08025.02

DESIGN ALM
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PREPARED FOR:
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8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
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MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GESC

GESC PLAN A

DATE: JULY 2011
DRAWING NO.: EC-2
SHEET NO.: 28 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\ASBUILTS\08025.02-GESC.dwg DATE: AUG 27, 2013 TIME: 1:58 PM

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ARAPAHOE COUNTY CASE
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MULLER ENGINEERING CO., INC.
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LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN	ALM
DRAWN	ALM
CHECK	JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
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MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GESC

GESC PLAN B

DATE	JULY 2011
DRAWING NO.	EC-3
SHEET NO.	29 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\ASBUILTS\08025.02-GESC.dwg DATE: AUG 27, 2013 TIME: 1:58 PM

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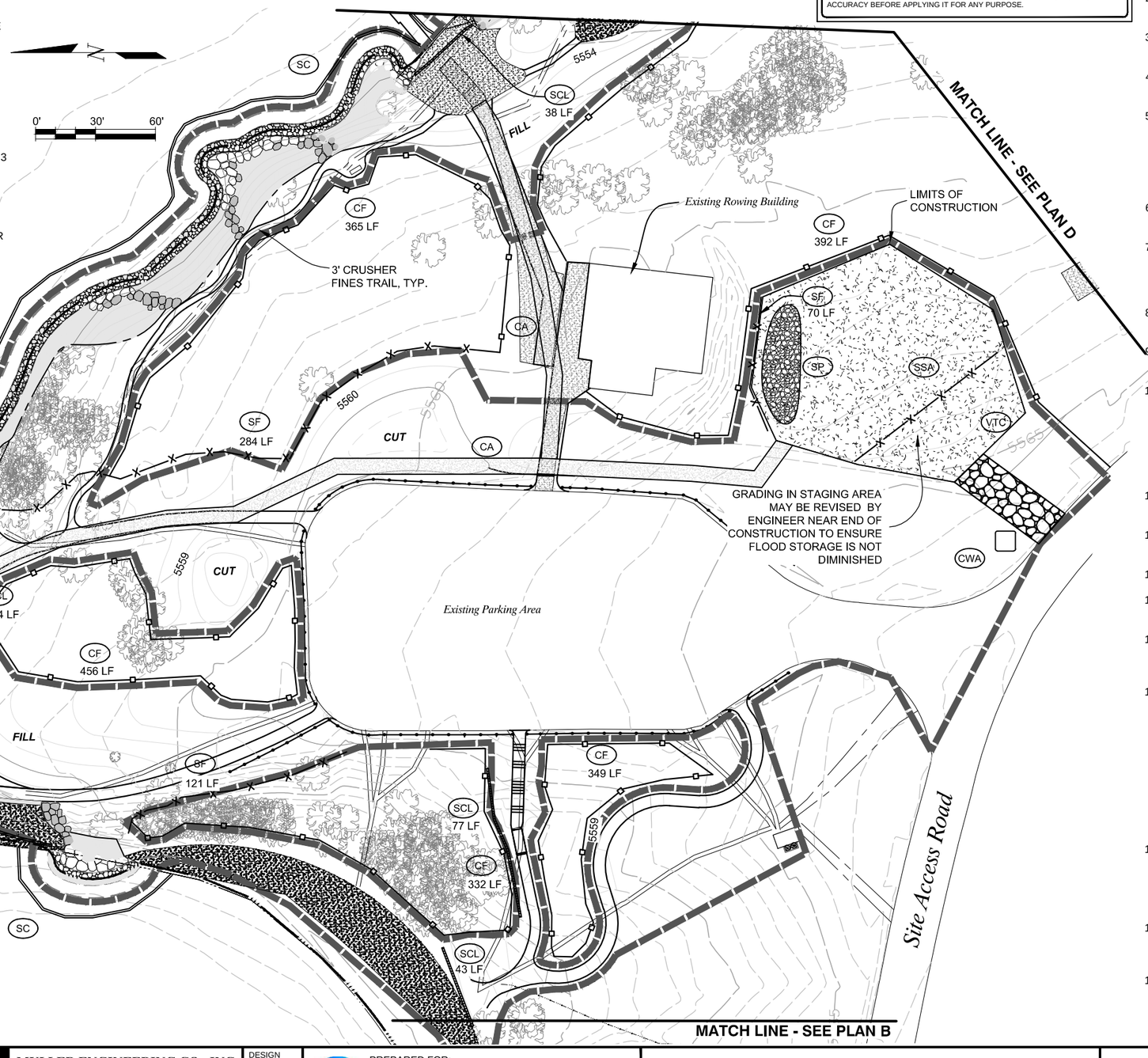

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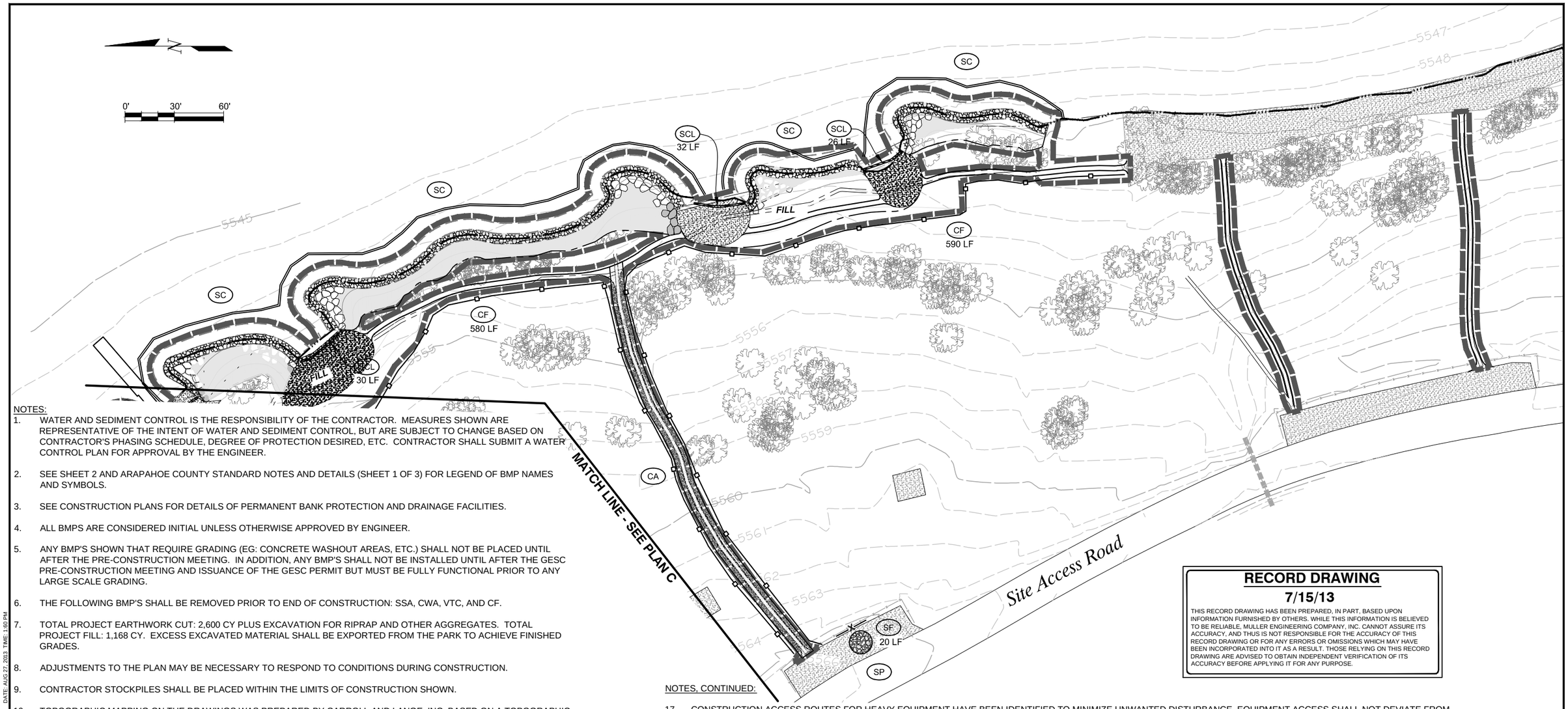
GESC

GESC PLAN C

DATE: JULY 2011
DRAWING NO.: EC-4
SHEET NO.: 30 OF 34

NAME: P:\08-025.01 Mountain Loop Shoreline Stabilization\Final design\08-025.02\CAD Dwgs\A SBUIL TS\08025.02-GESC.dwg DATE: AUG 27, 2013 TIME: 1:59 PM



NOTES:

1. WATER AND SEDIMENT CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR. MEASURES SHOWN ARE REPRESENTATIVE OF THE INTENT OF WATER AND SEDIMENT CONTROL, BUT ARE SUBJECT TO CHANGE BASED ON CONTRACTOR'S PHASING SCHEDULE, DEGREE OF PROTECTION DESIRED, ETC. CONTRACTOR SHALL SUBMIT A WATER CONTROL PLAN FOR APPROVAL BY THE ENGINEER.
2. SEE SHEET 2 AND ARAPAHOE COUNTY STANDARD NOTES AND DETAILS (SHEET 1 OF 3) FOR LEGEND OF BMP NAMES AND SYMBOLS.
3. SEE CONSTRUCTION PLANS FOR DETAILS OF PERMANENT BANK PROTECTION AND DRAINAGE FACILITIES.
4. ALL BMPS ARE CONSIDERED INITIAL UNLESS OTHERWISE APPROVED BY ENGINEER.
5. ANY BMP'S SHOWN THAT REQUIRE GRADING (EG: CONCRETE WASHOUT AREAS, ETC.) SHALL NOT BE PLACED UNTIL AFTER THE PRE-CONSTRUCTION MEETING. IN ADDITION, ANY BMP'S SHALL NOT BE INSTALLED UNTIL AFTER THE GESC PRE-CONSTRUCTION MEETING AND ISSUANCE OF THE GESC PERMIT BUT MUST BE FULLY FUNCTIONAL PRIOR TO ANY LARGE SCALE GRADING.
6. THE FOLLOWING BMP'S SHALL BE REMOVED PRIOR TO END OF CONSTRUCTION: SSA, CWA, VTC, AND CF.
7. TOTAL PROJECT EARTHWORK CUT: 2,600 CY PLUS EXCAVATION FOR RIPRAP AND OTHER AGGREGATES. TOTAL PROJECT FILL: 1,168 CY. EXCESS EXCAVATED MATERIAL SHALL BE EXPORTED FROM THE PARK TO ACHIEVE FINISHED GRADES.
8. ADJUSTMENTS TO THE PLAN MAY BE NECESSARY TO RESPOND TO CONDITIONS DURING CONSTRUCTION.
9. CONTRACTOR STOCKPILES SHALL BE PLACED WITHIN THE LIMITS OF CONSTRUCTION SHOWN.
10. TOPOGRAPHIC MAPPING ON THE DRAWINGS WAS PREPARED BY CARROLL AND LANGE, INC. BASED ON A TOPOGRAPHIC SURVEY CONDUCTED IN 2009. HORIZONTAL CONTROL FROM ARAPAHOE COUNTY CONTROL POINTS. VERTICAL CONTROL FROM BM 3" BRASS CAP @NW CORNER OF HEADWALL ON SOUTH END OF NEWARK WAY CUL-DE-SAC, NORTH OF COTTONWOOD CREEK STAMPED: "USGS, SEPT. 1992 ELEV. 5632.33". NAVD 1929 DATUM.
11. PROJECT MUST BE PHASED TO LIMIT DISTURBANCE TO A MAXIMUM OF 40-ACRES AT ANY TIME.
12. SEE CONSTRUCTION DRAWINGS FOR EROSION CONTROL BLANKET DIMENSIONS AND DETAILS.
13. CONSTRUCTION FENCE SHALL BE PROVIDED WHERE INDICATED.
14. SURFACE ROUGHENING AND SEEDING IS REQUIRED FOR ALL DISTURBED AREAS.
15. ALL EXCAVATION AND PLACEMENT OF ROCK MATERIAL BELOW THE WATER SURFACE OF THE RESERVOIR SHALL TAKE PLACE UNDER WATER WITHOUT THE USE OF COFFERDAMS AND DEWATERING.
16. UNLESS OTHERWISE APPROVED BY THE ENGINEER, ALL WORK ALONG THE SHORELINE SHALL TAKE PLACE WITH A SILT CURTAIN IN PLACE ON THE RESERVOIR SIDE OF THE WORK TO REDUCE THE SPREAD OF TURBID WATER INTO THE MAIN BODY OF THE RESERVOIR. WORK SHALL BE PHASED SO THAT NO MORE THAN A 250-FOOT LONG SILT CURTAIN WILL BE REQUIRED TO ISOLATE THE WORK. MATERIALS, INSTALLATION, AND MOVEMENT OF SILT CURTAIN TO A NEW WORK AREA SHALL BE AS APPROVED BY THE ENGINEER. SILT CURTAIN SHALL BE AN IMPERMEABLE TYPE II DOT TURBIDITY CURTAIN AS MANUFACTURED BY LAYFIELD ENVIRONMENTAL SYSTEMS (1-800-796-6868) OR APPROVED EQUAL.

ARAPAHOE COUNTY CASE NUMBER: E11-009

NOTES, CONTINUED:

17. CONSTRUCTION ACCESS ROUTES FOR HEAVY EQUIPMENT HAVE BEEN IDENTIFIED TO MINIMIZE UNWANTED DISTURBANCE. EQUIPMENT ACCESS SHALL NOT DEVIATE FROM ROUTES SHOWN WITHOUT ENGINEER APPROVAL. ACCESS ROUTES REQUIRE DEEP RIPPING (TO 18") PRIOR TO SEEDING (WHERE APPLICABLE).
18. ALL PROPOSED SLOPES ON THIS PLAN HAVE A MAXIMUM SLOPE OF 4:1. ANY SLOPES BETWEEN 3:1 AND 4:1 WILL REQUIRE THE USE OF EROSION CONTROL BLANKETS OR FLEXIBLE GROWTH MEDIUM.
19. ACCEPTANCE OF THE POST-CONSTRUCTION PERMANENT BMPS WILL NOT OCCUR UNTIL ALL AREA TRIBUTARY TO THE POST-CONSTRUCTION PERMANENT BMP'S ARE COMPLETE AND FINAL LANDSCAPE HAS BEEN ESTABLISHED.

SILT CURTAIN INSTALLATION AND MAINTENANCE GUIDELINES:

1. DETERMINE THE END POINTS OF THE BARRIER LINE AND INSTALL ANCHORS (STEEL OR WOOD POSTS, CONCRETE DEAD MEN OR EXISTING STRUCTURE)
2. UNROLL THE BARRIER SECTIONS AND CONNECT WITH ROPE OR HEAVY DUTY PLASTIC WIRE TIES THROUGH THE GROMMETS
3. FURL THE CURTAIN SECTIONS WITH $\frac{1}{2}$" DIAMETER OR LARGER SYNTHETIC ROPE.
4. FLOAT THE CURTAIN INTO THE WATER AND SECURE THE LEADING END TO THE WORK BOAT. THE BOAT SHOULD BE RIGGED WITH A LONG LINE WHICH IS ATTACHED TO THE LOAD CABLE SO THAT THE CURTAIN CAN BE POSITIONED WITHOUT INTERFERING WITH THE MANEUVERING OF THE BOAT.
5. ONE BY ONE UNFOLD ALL THE REMAINING SECTIONS, CONNECT THE EDGES, BUNDLE, TIE AND EXTEND THE FURLED PORTION INTO THE WATER.
6. CONNECT THE LEADING END OF THE CURTAIN TO ITS ANCHOR POINT BY PASSING A LINE THROUGH AT LEAST 3 OF THE END GROMMETS AND THEN TO THE ANCHOR POINT. CONNECT THE OTHER END IN A SIMILAR WAY.
7. LOOSEN THE FURLING LINES TO LOWER THE SKIRT
8. IT MAY BE NECESSARY TO ATTACH INTERMEDIATE ANCHORS TO KEEP THE BARRIER FROM DRIFTING
9. MAINTENANCE: PERIODIC INSPECTIONS OF THE BARRIER SHOULD BE MADE PARTICULARLY FOLLOWING STORM EVENTS, TO MAKE SURE THE BARRIER AND ANCHOR CONNECTIONS ARE SECURE. DEBRIS SHOULD BE CLEARED AWAY FROM THE BARRIER FLOTATION SECTION. IN ADDITION, SINCE THE BARRIER WILL REST ON THE RESERVOIR BOTTOM, THE BARRIER CAN ACCUMULATE SILT AND CAUSE THE BARRIER TO SINK.

RECORD DRAWING
7/15/13
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DRAWING ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

No.	DATE	REVISIONS	APPR.
	7/2012	FIELD CONDITIONS PRIOR TO BID	ALM
1	7/15/13	AS-BUILT INFORMATION	ALR

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
IRONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN ALM
DRAWN ALM
CHECK JTW

PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP
SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

GESC

GESC PLAN D

DATE: JULY 2011
DRAWING NO.: EC-5
SHEET NO.: 31 OF 34

GRADING, EROSION, AND SEDIMENT CONTROL (GESC) GENERAL NOTES

1. THE ARAPAHOE COUNTY DIRECTOR OF PUBLIC WORKS AND DEVELOPMENT'S (DIRECTOR) SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE ARAPAHOE COUNTY PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION, HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL COMPLIANCE WITH THE ARAPAHOE COUNTY LAND DEVELOPMENT CODE AND/OR THE GRADING, EROSION AND SEDIMENT CONTROL (GESC) CRITERIA MANUAL. THE DIRECTOR THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY (OTHER THAN AS STATED ABOVE) FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS.

2. THE ADEQUACY OF THIS GESC PLAN LIES WITH THE ORIGINAL DESIGN ENGINEER.

3. THE GESC PLAN SHALL BE CONSIDERED VALID FOR TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY ARAPAHOE COUNTY, AFTER WHICH TIME THE PLAN SHALL BE VOID AND WILL BE SUBJECT TO RE-REVIEW AND RE-ACCEPTANCE BY ARAPAHOE COUNTY; PLANS MUST CONFORM TO CURRENT REQUIREMENTS.

4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE ARAPAHOE COUNTY ENGINEERING DIVISION. ARAPAHOE COUNTY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE GESC MANUAL, GESC PLAN OR GESC PERMIT.

5. THE PLACEMENT OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE IN ACCORDANCE WITH THE ARAPAHOE COUNTY – ACCEPTED GESC PLAN AND THE ARAPAHOE COUNTY GESC MANUAL.

6. ANY VARIATION IN MATERIAL, TYPE OR LOCATION OF EROSION AND SEDIMENT CONTROL BMPs FROM THE ARAPAHOE COUNTY – ACCEPTED GESC PLAN WILL REQUIRE APPROVAL FROM AN ACCOUNTABLE REPRESENTATIVE OF THE ARAPAHOE COUNTY ENGINEERING DIVISION.

7. AFTER THE GESC PLAN HAS BEEN ACCEPTED, THE GESC PERMIT APPLIED FOR THE GESC FIELD MANUAL OBTAINED AND REVIEWED, THE CONTRACTOR MAY INSTALL THE INITIAL-STAGE EROSION AND SEDIMENT CONTROL BMPS INDICATED ON THE ACCEPTED GESC PLAN.

8. THE FIRST BMP TO BE INSTALLED ON THE SITE SHALL BE CONSTRUCTION FENCE, MARKERS, OR OTHER BARRIERS MEANT FOR DEFINING THE LIMITS OF CONSTRUCTION, INCLUDING CONSTRUCTION LIMITS ADJACENT TO STREAM CORRIDORS AND OTHER AREAS TO BE PRESERVED.

9. AFTER INSTALLATION OF THE INITIAL-STAGE EROSION AND SEDIMENT CONTROL BMPs, THE PERMITTEE SHALL CALL THE ENGINEERING DEPARTMENT TO SCHEDULE A PRECONSTRUCTION MEETING AT THE PROJECT SITE. THE REQUEST SHALL BE MADE A MINIMUM OF THREE BUSINESS DAYS PRIOR TO THE REQUESTED MEETING TIME. NO CONSTRUCTION ACTIVITIES SHALL BE PLANNED WITHIN 24 HOURS AFTER THE PRECONSTRUCTION MEETING.

10. THE OWNER OR OWNER'S REPRESENTATIVE, THE GESC MANAGER, THE GENERAL CONTRACTOR, AND THE GRADING SUBCONTRACTOR, IF DIFFERENT FROM THE GENERAL CONTRACTOR, MUST ATTEND THE PRECONSTRUCTION MEETING. IF ANY OF THE REQUIRED PARTICIPANTS FAIL TO ATTEND THE PRECONSTRUCTION MEETING, OR IF THE GESC FIELD MANUAL IS NOT ON SITE, OR IF THE INSTALLATION OF THE INITIAL BMPs ARE NOT APPROVED BY THE ARAPAHOE COUNTY GESC INSPECTOR, THE APPLICANT WILL HAVE TO PAY A REINSPECTION FEE, ADDRESS ANY PROBLEMS WITH BMP INSTALLATION, AND CALL TO RESCHEDULE THE MEETING, WITH A CORRESPONDING DELAY IN THE START OF CONSTRUCTION.

11. CONSTRUCTION SHALL NOT BEGIN UNTIL THE ARAPAHOE COUNTY GESC INSPECTOR APPROVES THE INSTALLATION OF THE INITIAL BMPs AND THE APPROVED GESC PERMIT IS PICKED UP FROM THE COUNTY AND IS IN-HAND ON THE SITE. THE COMPLETED PERMIT WILL BE AVAILABLE WITHIN 24-HOURS AFTER THE INSTALLATION OF THE INITIAL BMPs ARE APPROVED.

12. THE GESC MANAGER SHALL STRICTLY ADHERE TO THE ARAPAHOE COUNTY–APPROVED LIMITS OF CONSTRUCTION AT ALL TIMES. THE ARAPAHOE COUNTY ENGINEERING DIVISION MUST APPROVE ANY CHANGES TO THE LIMITS OF CONSTRUCTION AND, AT THE DISCRETION OF THE ENGINEERING DIVISION, ADDITIONAL EROSION/SEDIMENT CONTROLS MAY BE REQUIRED FOR ANY ADDITIONAL AREAS OF CONSTRUCTION.

13. THE MAXIMUM AREA OF CONSTRUCTION SHALL BE LIMITED TO 40 ACRES (70 ACRES IF APPROVED FOR SOIL MITIGATION OPERATIONS) TO REDUCE THE AMOUNT OF LAND DISTURBED AT ANY ONE TIME. LARGER SITES SHALL BE DIVIDED INTO PHASES THAT ARE 40 (OR 70) ACRES OR LESS IN SIZE. THESE PROJECTS SHALL CONDUCT GRADING ACTIVITIES IN ACCORDANCE WITH THE ACCEPTED GESC PLAN. BMP INSTALLATION AND APPROVAL BY ARAPAHOE COUNTY AT THE START AND COMPLETION OF EACH PHASE SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN THE GESC MANUAL AND/OR GESC FIELD MANUAL.

14. PRIOR TO ACTUAL CONSTRUCTION, THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES. FOR INFORMATION, CONTACT THE DENVER INTER-UTILITY GROUP AT 1-800-922-1987 OR FAX AT (303)534-6700.

15. NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED WHEREVER POSSIBLE. EXPOSURE OF SOIL TO EROSION BY REMOVAL OR DISTURBANCE OF VEGETATION SHALL BE LIMITED TO THE AREA REQUIRED FOR IMMEDIATE CONSTRUCTION OPERATIONS.

16. THE GESC PERMIT SHALL BE VALID FOR A PERIOD OF TWO (2) YEARS.

17. A COPY OF THE GESC PERMIT, ACCEPTED GESC PLANS AND THE GESC FIELD MANUAL SHALL BE ON SITE AT ALL TIMES.

18. THE GESC MANAGER SHALL BE RESPONSIBLE PARTY FOR ENSURING THAT THE SITE REMAINS IN COMPLIANCE WITH THE GESC PERMIT AND SHALL BE THE PERMITTEE'S CONTACT PERSON WITH THE COUNTY FOR ALL MATTERS PERTAINING TO THE GESC PERMIT. THE GESC MANAGER SHALL ON THE SITE AS NECESSARY TO ENSURE THE GESC REQUIREMENTS ARE BEING IMPLEMENTED, AND (ALONG WITH THE ALTERNATE GESC MANAGER) SHALL PROVIDE THE COUNTY WITH A 24–HOUR EMERGENCY CONTACT NUMBER. IN THE EVENT THAT THE CONTRACTOR'S GESC MANAGER IS NOT ON SITE AND CANNOT BE REACHED DURING A VIOLATION, THE ALTERNATE GESC MANAGER SHALL BE CONTACTED. IF NEITHER THE GESC MANAGER NOR ALTERNATE GESC MANAGE CAN BE CONTACTED DURING ANY VIOLATION, WITHIN 24 HOURS, VIOLATION MAY BE ISSUED TO THE PERMITTEE(S).

19. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE THROUGH THE ARAPAHOE COUNTY–APPROVED ACCESS POINT. A VEHICLE TRACKING CONTROL PAD IS REQUIRED AT ALL ACCESS POINTS ON THE SITE. ADDITIONAL STABILIZED CONSTRUCTION ENTRANCES MAY BE ADDED WITH AUTHORIZATION FROM THE ARAPAHOE COUNTY ENGINEERING SERVICES DIVISION.

20. THE GESC MANAGER IS RESPONSIBLE FOR CLEANUP OF SEDIMENT OR CONSTRUCTION DEBRIS TRACKED ONTO ADJACENT PAVED AREAS. PAVED AREAS INCLUDING STREETS ARE TO BE KEPT CLEAN THROUGHOUT BUILD–OUT AND SHALL BE CLEANED, WITH A STREET SWEEPER OR SIMILAR DEVICE, AT FIRST NOTICE OF ACCIDENTAL TRACKING OR AT THE DISCRETION OF THE ARAPAHOE COUNTY GESC INSPECTOR. STREET WASHING IS NOT ALLOWED. ARAPAHOE COUNTY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO ENSURE AREA STREETS ARE KEPT FREE OF SEDIMENT AND/OR CONSTRUCTION DEBRIS.

21. APPROVED EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE GESC MANAGER SHALL INSPECT ALL BMPs IN ACCORDANCE WITH THE ACCEPTED GESC PLAN AND GESC MANUAL. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED WITHIN 48 HOURS. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED AND PROPERLY DISPOSED.

22. STRAW BALES ARE NOT A ARAPAHOE COUNTY GESC–ACCEPTED SEDIMENT CONTROL BMP.

23. TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN THE LOCATION SHOWN ON THE ACCEPTED GESC PLAN. THE TOPSOIL STOCKPILE(S) SHALL FOLLOW ALL STOCKPILING CRITERIA DESCRIBED IN THE GESC MANUAL. IT SHALL BE NOTED THAT THERE IS TOPSOIL CERTIFICATION REQUIRED AT THE INITIAL CLOSE–OUT INSPECTION OF THE GESC PERMIT.

24. THE ACCEPTED GESC PLAN MAY REQUIRE CHANGES OR ALTERATIONS AFTER APPROVAL TO MEET CHANGING SITE OR PROJECT CONDITIONS OR TO ADDRESS INEFFICIENCIES IN DESIGN OR INSTALLATION. THE GESC MANAGER SHALL OBTAIN PRIOR APPROVAL FROM THE DESIGN ENGINEER AND ARAPAHOE COUNTY ENGINEERING FOR ANY PROPOSED CHANGES.

25. LINING OF TEMPORARY SWALES AND DITCHES SHALL BE IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.

26. NO PERMANENT EARTH SLOPES GREATER THAN 3:1 SHALL BE ALLOWED.

27. ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE GESC MANAGER. THE GESC MANAGER SHALL BE HELD RESPONSIBLE FOR OBTAINING ACCESS RIGHTS TO ADJACENT PROPERTY, IF NEEDED, AND REMEDIATING ANY OFFSITE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.

28. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

29. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE SEEDED AND MULCHED WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION. NO STOCKPILES SHALL BE PLACED WITHIN ONE HUNDRED (100) FEET OF A DRAINAGE WAY UNLESS APPROVED BY THE ARAPAHOE COUNTY ENGINEERING SERVICES DIVISION.

30. ALL CHEMICAL OR HAZARDOUS MATERIAL SPILLS WHICH MAY ENTER WATERS OF THE STATE OF COLORADO, WHICH INCLUDE BUT ARE NOT LIMITED TO, SURFACE WATER, GROUND WATER AND DRY GULLIES OR STORM SEWER LEADING TO SURFACE WATER, SHALL BE IMMEDIATELY REPORTED TO THE COPHE PER CRS 25–8–601, AND ARAPAHOE COUNTY. RELEASES OF PETROLEUM PRODUCTS AND CERTAIN HAZARDOUS SUBSTANCES LISTED UNDER THE FEDERAL CLEAN WATER ACT (40 CFR PART 116) MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER AS WELL AS THE COPHE. CONTACT INFORMATION FOR COPHE, ARAPAHOE COUNTY AND THE NATIONAL RESPONSE CENTER CAN BE FOUND IN APPENDIX A. SPILLS THAT POSE AN IMMEDIATE RISK TO HUMAN LIFE SHALL BE REPORTED TO 911. FAILURE TO REPORT AND CLEAN UP ANY SPILL SHALL RESULT IN ISSUANCE OF A STOP WORK ORDER, TO WHICH THE REPORT FAILS TO ADDRESS. ARAPAHOE COUNTY CALL ARAPAHOE COUNTY DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT–STORMWATER GROUP AT 720–874–6500.

31. ALL WORK ON SITE SHALL STAY A MINIMUM OF ONE HUNDRED (100) FEET AWAY FROM ANY DRAINAGE WAY, WETLAND, ETC. UNLESS OTHERWISE NOTED ON AN ACCEPTED ARAPAHOE COUNTY GESC PLAN.

32. THE USE OF REBAR, STEEL STAKES OR STEEL FENCE POSTS FOR STAKING OR SUPPORT OF ANY EROSION OR SEDIMENT CONTROL BMP IS PROHIBITED (EXCEPT STEEL TEE–POSTS FOR USE IN SUPPORTING CONSTRUCTION FENCE).

33. THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO CONCRETE WASH OUT LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CONCRETE TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED AT AN APPROPRIATE LOCATION.

34. ALL DEWATERING ON SITE SHALL BE COORDINATED WITH A ARAPAHOE COUNTY GESC INSPECTOR AND BE FREE OF SEDIMENT IN ACCORDANCE WITH THE GESC CRITERIA MANUAL.

35. ALL PERMANENT INSTALLATIONS OF PIPES FOR STORM SEWERS, SLOPE DRAINS, AND CULVERTS, TOGETHER WITH RIPRAP APRONS OR OTHER INLET AND OUTLET PROTECTION, REQUIRE INSPECTION BY ARAPAHOE COUNTY ENGINEERING (SEPARATE FROM GESC INSPECTIONS).

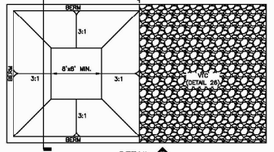
36. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE GESC CRITERIA MANUAL WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING, INCLUDING AREAS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS, WHICHEVER IS LESS. THIS MAY REQUIRE MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.

37. HYDRAULIC SEEDING AND HYDRAULIC MULCHING ARE NOT AN ACCEPTABLE METHOD OF SEEDING OR MULCHING IN ARAPAHOE COUNTY. HYDRAULICALLY APPLIED EROSION CONTROL PRODUCTS WILL BE ALLOWED FOR FLEXIBLE GROWTH MEDIUM, AS APPROVED.

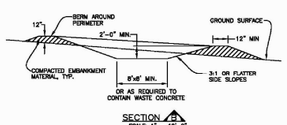
38. ALL INTERIM INLET PROTECTION SHALL BE INSTALLED PRIOR TO PAVING.

39. ALL SINGLE FAMILY RESIDENTIAL PROJECTS SHALL COMPLY WITH THE GESC MANUAL, SECTION 9, THROUGHOUT THE BUILDING PERMIT PERIOD(S).

DETAIL SHEET NO.	NO.	BMP LEGEND	
1	1	CD	CHECK DAM
2	1	CB	COMPOST BLANKET
3	1	CFB	COMPOST FILTER BERM
4	1	CWA	CONCRETE WASHOUT AREA
5	1	CF	CONSTRUCTION FENCE
6	1	CM	CONSTRUCTION MARKERS
7	1	CS	CURB SOCK–INLET PROTECTION
8	1	DW	DEWATERING
9	1	DD	DIVERSION DITCH
10	2	ECB	EROSION CONTROL BLANKET
11	2	FGM	FLEXIBLE GROWTH MEDIUM
12	2	IP	INLET PROTECTION
13	2	RCD	REINFORCED CHECK DAM
14	2	RRB	REINFORCED ROCK BERM
15	2	RRC	RRB FOR CULVERT PROTECTION
16	2	SB	SEDIMENT BASIN
17	3	SCL	SEDIMENT CONTROL LOG
18	3	ST	SEDIMENT TRAP
19	3	SM	SEEDING AND MULCHING
20	3	SF	SILT FENCE
21	3	SSA	STABILIZED STAGING AREA
22	3	SR	SURFACE ROUGHENING
23	3	TSD	TEMPORARY SLOPE DRAIN
24	3	TSC	TEMPORARY STREAM CROSSING
25	3	TER	TERRACING
26	3	VTC	VEHICLE TRACKING CONTROL
27	1	WW	VTC WITH WHEEL WASH
			ROCK AND RIPRAP GRADATIONS
		LOG	LIMITS OF CONSTRUCTION



DETAIL A
SCALE: 1" = 10'-0"



SECTION A
SCALE: 1" = 10'-0"

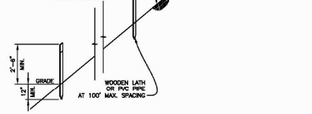
CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CONCRETE WASHOUT AREA.
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL (DETAIL 26) IS REQUIRED AT THIS ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

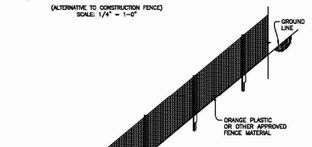
CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

CWA CONCRETE WASHOUT AREA 4



(ALTERNATIVE TO CONSTRUCTION FENCE)
SCALE: 1/4" = 1'-0"



DETAIL A
SCALE: 1/4" = 1'-0"

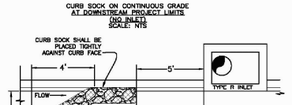
CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - TYPE OF CONSTRUCTION LIMIT INDICATOR (FENCE OR MARKERS).
   - LOCATION AND LENGTH OF FENCE OR LINE OF MARKERS.
2. CONSTRUCTION FENCE OR MARKERS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO OTHER BMPS AND ANY LAND–DISTURBING ACTIVITIES.
3. STEEL TEE POSTS SHALL BE UTILIZED FOR SUPPORT OF CONSTRUCTION FENCE. MAXIMUM SPACING FOR TEE POSTS SHALL BE 15'.

CONSTRUCTION FENCE MAINTENANCE NOTES

1. ANY DAMAGED FENCE OR MARKERS SHALL BE REPAIRED ON A DAILY BASIS.
2. FENCE OR MARKERS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER FENCE REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

CF CONSTRUCTION FENCE 5 — CM CONSTRUCTION MARKERS 6



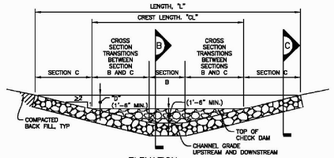
CURB SOCK INSTALLATION NOTES

1. CURB SOCKS SHALL BE USED AS CURB SIDE CHECK DAMS ON LONG CONTINUOUS GRADES IN THE FLOWLINE UPSTREAM OF CURB INLETS TO FILTER SEDIMENT LADEN RUNOFF AND REDUCE THE FLOW VELOCITY TOWARD THE INLET. CURB SOCKS SHALL BE PLACED TIGHTLY AGAINST THE CURB FACE AND SECURED WITH STAKES. THEY SHALL BE SUPPORTED BY THE LENGTH AND GRADE OF THE CURB DRAINAGE FLOWLINE AS DETERMINED BY THE ENGINEER.
2. ADDITIONAL CURB SOCKS MAY BE REQUIRED ON THE DESIGN PLANS OR DURING CONSTRUCTION AS DIRECTED BY ARAPAHOE COUNTY AND/OR AUTHORIZED AGENTS.
3. CURB SOCKS AT DOWNSTREAM PROJECT LIMITS SHALL BE BEGINNING AT THE FURTHEST DOWNSTREAM LIMITS OF THE PROJECT AND SHALL BE PLACED ON A CONTINUOUS GRADE TOWARD THE INLET. THE LENGTH SHALL BE THE DESIGN ENGINEER AND/OR ARAPAHOE COUNTY BASED ON GRADE OF ROADWAY AND VELOCITY OF FLOW AT THE PROJECT LIMITS.
4. INTERIM CONSTRUCTION OF CURB SOCKS SHALL BE INSTALLED WITHIN 48–HOURS OF POURING CURB. CURB SOCKS (AFTER PAVEMENT) SHALL BE INSTALLED WITHIN 48 HOURS AFTER PAVING IS PLACED.
5. CRUSHED ROCK SHALL BE FRACTURED FACE DEL SHEED AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED).
6. THE ENGINEER MAY SPECIFY WOVEN WIRE MESH OR WOVEN POLYPROPYLENE GEOTEXTILE FABRIC FOR THE OUTER SHELL OF THE CURB SOCK.
7. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY KNOWN AS "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48–INCHES.
8. WIRE MESH SHALL BE SECURED USING "SOD RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH SPACING ON ENDS OF BERM.
9. REINFORCED ROCK BERM SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING JOINT DETAIL.
10. TUBULAR MARKERS SHALL MEET REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED.
11. THE TOP OF REINFORCED ROCK BERM SHALL BE 1/3"–1" BELOW TOP OF CURB.

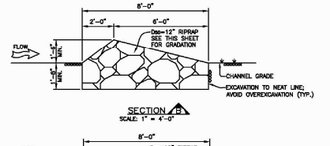
CURB SOCK MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT CURB PROTECTION WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY. MORE FREQUENT INSPECTIONS AND REPAIRS SHALL BE REQUIRED DURING WATER EMERGENCIES AND TO PREVENT FLOOD FLOWS.
2. SEDIMENT ACCUMULATED UPSTREAM OF CURB SOCK SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF SOCK DAM IS WITHIN 1 OF THE HEIGHT OF THE CREST.
3. CURB PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE COUNTY.

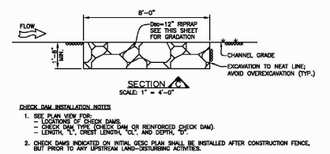
CS CURB SOCK–INLET PROTECTION 7



ELEVATION
NTS



SECTION B
SCALE: 1" = 4'–0"



SECTION A
SCALE: 1" = 4'–0"

CHECK DAM INSTALLATION NOTES

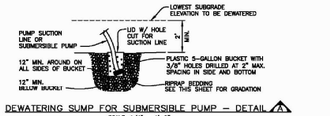
1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CHECK DAMS.
   - CHECK DAM TYPE (CHECK DAM, OR REINFORCED CHECK DAM).
   - LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
2. CHECK DAMS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED AFTER CONSTRUCTION FENCE, BUT PRIOR TO ANY UPSTREAM LAND–DISTURBING ACTIVITIES.
3. RIPRAP UTILIZED FOR CHECK DAMS SHALL HAVE A D_{50} MEDIAN STONE SIZE OF 12".
4. RIPRAP PAD SHALL BE PLACED INTO THE STREAM BEDDING TO A MINIMUM DEPTH OF 1'–6".
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

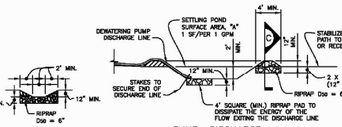
1. THE GESC MANAGER SHALL INSPECT CHECK DAMS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF CHECK DAMS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CHECK DAM IS WITHIN 1 OF THE HEIGHT OF THE CREST.
3. CHECK DAMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE COUNTY.
4. WHEN CHECK DAMS ARE REMOVED, DISTURBED AREAS SHALL BE FILLED WITH SUITABLE COMPACTED BACK FILL. ANY DISTURBED AREA SHALL BE SEEDED AND MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

CD CHECK DAM 1

ALTERNATIVE FOR DRAINING POND ALREADY FILLED WITH WATER
SCALE: 1/4" = 1'–0"



DEWATERING SUMP FOR SUBMERSIBLE PUMP — DETAIL A
SCALE: 1/4" = 1'–0"



BASIN OUTLET — SECTION A
SCALE: 1" = 10'-0"

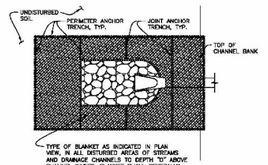
SUMP DISCHARGE SETTLING BASIN — DETAIL B
SCALE: 1" = 10'-0"

DEWATERING INSTALLATION NOTES

1. THE GESC MANAGER SHALL OBTAIN A CONSTRUCTION DISCHARGE (DEWATERING) PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT PRIOR TO ANY DEWATERING OPERATIONS. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DISCHARGE PERMIT AND SHALL BE COORDINATED WITH THE ARAPAHOE COUNTY GESC INSPECTOR.
2. THE GESC MANAGER SHALL PROVIDE, OPERATE, AND MAINTAIN DEWATERING SYSTEMS OF SUFFICIENT SIZE AND CAPACITY TO PERMIT EXCAVATION AND SUBSEQUENT CONSTRUCTION IN DRY CONDITIONS AND TO LOWER AND MAINTAIN THE GROUNDWATER LEVEL A MINIMUM OF 2–FEET BELOW THE LOWEST POINT OF EXCAVATION AND CONTINUOUSLY MAINTAIN EXCAVATIONS FREE OF WATER UNTIL BACKFILLED TO FINAL GRADE.
3. DEWATERING OPERATIONS SHALL USE ONE OR MORE OF THE DEWATERING SUMPS SHOWN ABOVE OR OTHER MEANS APPROVED BY THE COUNTY TO REDUCE THE PUMPING OF SEDIMENT, AND SHALL INCLUDE A TEMPORARY SETTLING BASIN FOR SETTLING PUMPED DISCHARGES PRIOR TO RELEASE OFF SITE OR TO A STORM SEWER SYSTEM. DEWATERING OF THE TRENCH, 16 MAY BE USED IN LIEU OF SUMP DISCHARGE SETTLING BASIN SHOWN ABOVE.
4. A 4' SQUARE RIPRAP PAD SHALL BE PLACED AT DISCHARGE POINT.
5. THE DISCHARGE END OF THE LINE SHALL BE STAKED IN PLACES TO PREVENT MOVEMENT OF RIPRAP PAD.

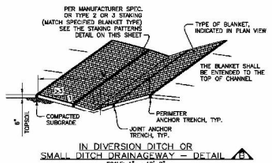
DEWATERING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT DEWATERING SYSTEMS AND PERFORM ANY NECESSARY REPAIRS OR MAINTENANCE ON A HOURLY BASIS.
2. TEMPORARY SETTLING BASINS SHALL BE REMOVED WHEN NO LONGER NEEDED FOR DEWATERING OPERATIONS. ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OT

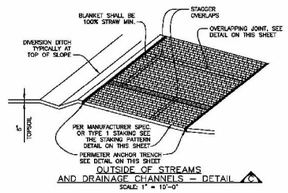


TYPE OF BLANKET AS INDICATED IN PLAN VIEW. IN ALL DISTURBED AREAS OF STREAMS AND DRAINAGE CHANNELS TO DEPTH "D" ABOVE CHANNEL INVERT. BLANKET SHALL GENERALLY BE ORIENTED PARALLEL TO FLOW DIRECTION. STAKING PATTERN SHALL MATCH BLANKET TYPE.

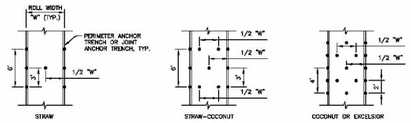
IN DISTURBED AREAS OF STREAMS AND DRAINAGE CHANNELS – DETAIL A
SCALE: 1" = 10'-0"



IN DIVERSION DITCH OR SMALL DITCH DRAINAGEWAY – DETAIL B
SCALE: 1" = 10'-0"

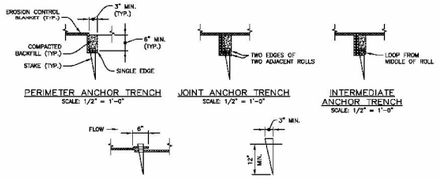


OUTSIDE OF STREAMS AND DRAINAGE CHANNELS – DETAIL A
SCALE: 1" = 10'-0"



STAKING PATTERNS
SCALE: 1" = 10'-0"

SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION. IF NO MANUFACTURER'S SPECIFICATION IS AVAILABLE USE THE ACCEPTABLE STAKING PATTERN (AS SHOWN ABOVE).



PERIMETER ANCHOR TRENCH
SCALE: 1/2" = 1'-0"

JOINT ANCHOR TRENCH
SCALE: 1/2" = 1'-0"

INTERMEDIATE ANCHOR TRENCH
SCALE: 1/2" = 1'-0"

OVERLAPPING JOINT
SCALE: 1/2" = 1'-0"

WOOD STAKE DETAIL
SCALE: 1/2" = 1'-0"
MINIMUM THICKNESS 1/2"

EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF PERIMETER OF EROSION CONTROL BLANKET.
   - TYPE OF BLANKET (STRAW, STRAW–COCONUT, COCONUT, OR EXCELSIOR).
   - AREA "A" IN SQUARE YARDS OF EACH TYPE OF BLANKET.
2. ALL EROSION CONTROL BLANKETS AND NETTING SHALL BE MADE OF 100% NATURAL AND BIODEGRADABLE MATERIAL; NO PLASTIC OR OTHER SYNTHETIC MATERIAL, EVEN IF PHOTO DEGRADABLE, SHALL BE ALLOWED.
3. IN AREAS WHERE EROSION CONTROL BLANKET IS SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING BELOW THE BLANKET IN ACCORDANCE WITH THE GESC PLAN STANDARD NOTES AND DETAILS. SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO BLANKET INSTALLATION AND THE BLANKET SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
4. PERIMETER AND/OR TRENCH SHALL BE USED AT OUTSIDE PERIMETER OF ALL BLANKET AREAS.
5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF BLANKETS TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL BLANKETS EXCEPT STRAW, WHICH MAY USE AN OVERLAPPING JOINT.
6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF THE ROLL LENGTH FOR COCONUT AND EXCELSIOR BLANKETS.
7. THE OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF BLANKETS TOGETHER FOR BLANKETS ON SLOPES.
8. MATERIAL SPECIFICATIONS OF EROSION CONTROL BLANKET SHALL CONFORM TO TABLE 7.1.
9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING EROSION CONTROL BLANKET SHALL BE RESEEDED AND MULCHED IN ACCORDANCE WITH DETAIL 19.
10. SEE DRAINAGE DESIGN PLANS FOR MAJOR DRAINAGEWAY STABILIZATION MEASURES THAT MAY EXCEED THE DESIGN CONDITIONS ASSOCIATED WITH THE DETAILS ABOVE.

TABLE 7.1 – EROSION CONTROL BLANKET TYPE

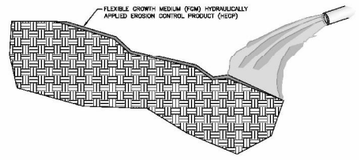
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	NETTING MIN.
STRAW*	–	100%	–	DOUBLE/UNNATURAL
STRAW–COCONUT*	NOR MIN.	YOR MAX.	–	DOUBLE/UNNATURAL
COCONUT	100%	–	–	DOUBLE/UNNATURAL
EXCELSIOR	–	–	100%	DOUBLE/UNNATURAL

* FOR OUTSIDE OF STREAMS AND DRAINAGE CHANNELS

EROSION CONTROL BLANKET MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT EROSION CONTROL BLANKETS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS AS NECESSARY.
2. EROSION CONTROL BLANKET IS TO BE LEFT IN PLACE UNLESS REQUESTED TO BE REMOVED BY THE COUNTY.
3. ANY EROSION CONTROL BLANKET PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE RE-INSTALLED AND OVERLAPPED AROUND EITHER THE TOP OR BOTTOM OF THE DAMAGED AREA. ANY PORTION OF THE BLANKET OR THAT REMAIN EXPOSED AT CROSS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE EROSION CONTROL BLANKET REINSTALLED.

ECB EROSION CONTROL BLANKET 10



GENERAL GUIDELINES FOR APPLICATION RATES FOR SLOPE INSTALLATIONS	
SLOPE CONDITION	APPLICATION RATE
≤3H:1V	3000 LB/ACRE
BELOW ECB	1500 LB/ACRE

FLEXIBLE GROWTH MEDIUM INSTALLATION NOTES:

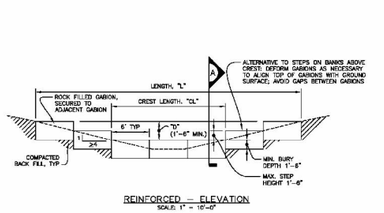
1. IN AREAS WHERE THE FLEXIBLE GROWTH MEDIUM IS SHOWN ON THE PLANS, THE PERMITTEE(S) SHALL PLACE TOPSOIL, AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING BELOW THE BLANKET IN ACCORDANCE WITH THE GESC PLAN STANDARD NOTES AND DETAILS. SEEDING AND MULCHING. APPLY THE FLEXIBLE GROWTH MEDIUM TO GEOTECHNICALLY STABLE SLOPES THAT HAVE BEEN DESIGNED AND CONSTRUCTED TO DIVERT RUNOFF AWAY FROM THE FACE OF THE SLOPE. DO NOT PROCEED WITH INSTALLATION UNTIL SATISFACTORY RUNOFF CONTROL IS ACHIEVED.
2. MIX AND APPLY 50–LB OF FGM PER 125–GALLONS OF WATER OVER FRESHLY SEEDED SURFACES AND DO NOT LEAVE SEEDED SURFACES UNPROTECTED. CONFIRM LOADING RATES WITH EQUIPMENT MANUFACTURER.
3. APPLY FGM FROM OPPOSING DIRECTIONS TO ASSURE 100% SOIL SURFACE COVERAGE. SLOPE DEVICES OR WATER DIVERSION TECHNIQUES ARE RECOMMENDED WHEN SLOPE LENGTHS EXCEED 75'.
4. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING FGM SHALL BE RESEEDED AND MULCHED IN ACCORDANCE WITH DETAIL 19.

NOTE: THE FLEXIBLE GROWTH MEDIUM SHOULD NOT BE APPLIED IN CHANNELS, SWALES OR OTHER AREAS WHERE CONCENTRATED FLOWS ARE ANTICIPATED, UNLESS INSTALLED IN CONJUNCTION WITH A TEMPORARY EROSION CONTROL BLANKET.

FLEXIBLE GROWTH MEDIUM MAINTENANCE NOTES:

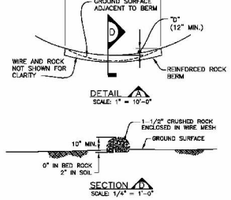
1. THE GESC MANAGER SHALL INSPECT FLEXIBLE GROWTH MEDIUMS WEEKLY AND DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS AS NECESSARY.
2. FLEXIBLE GROWTH MEDIUM SHALL BE LEFT IN PLACE UNLESS REQUESTED TO BE REMOVED BY THE COUNTY.
3. DO NOT LEAVE SEEDED SURFACES UNPROTECTED, ESPECIALLY IF PRECIPITATION IS IMMINENT.
4. ANY FLEXIBLE GROWTH MEDIUM DAMAGED SHALL BE RE-INSTALLED.

FCM FLEXIBLE GROWTH MEDIUM 11



REINFORCED – ELEVATION
SCALE: 1" = 10'-0"

DETAIL A
SCALE: 1" = 10'-0"

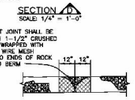


BLOW UP OF TWISTED WIRE GABION
SCALE: NTS

REINFORCED – SECTION A
SCALE: 1/4" = 1'-0"

SECTION A
SCALE: 1/4" = 1'-0"

ANY GAP AT JOINT SHALL BE FILLED WITH 1–1/2" CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED BERM



JOINT DETAIL
SCALE: 1/4" = 1'-0"

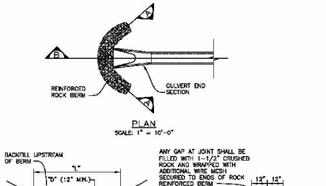
REINFORCED ROCK BERM INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF REINFORCED ROCK BERMS.
   - LENGTH, "L", AND DEPTH, "D" DIMENSIONS.
2. REINFORCED ROCK BERM SECTION APPLIES TO CULVERT INLET FILTER AND INLET PROTECTION.
3. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
4. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE").
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH CENTERS ON ENDS OF BERM.
6. FOR CONCENTRATED FLOW AREAS THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

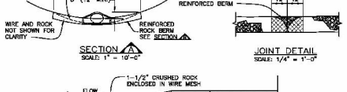
REINFORCED ROCK BERM MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT REINFORCED ROCK BERM WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF REINFORCED ROCK BERM SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS WITHIN 5 INCHES OF THE CREST.
3. REINFORCED ROCK BERMS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE COUNTY.
4. WHEN REINFORCED ROCK BERMS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

RRB REINFORCED ROCK BERM 14

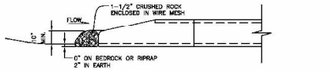


PLAN
SCALE: 1" = 10'-0"



SECTION A
SCALE: 1" = 10'-0"

JOINT DETAIL
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 1/4" = 1'-0"

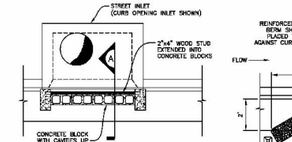
INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF CULVERT INLET FILTERS.
   - LENGTH, "L", AND DEPTH, "D".
2. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
3. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE").
4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ALONG ALL JOINTS AND AT 2–INCH CENTERS ON ENDS OF BERM.
5. THE ENDS OF THE REINFORCED ROCK BERM SHALL BE 12" HIGHER THAN THE CENTER OF THE BERM.

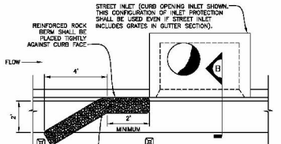
MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT CULVERT INLET FILTER WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF CULVERT INLET FILTER SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF FILTER IS 3 THE HEIGHT OF THE REINFORCED ROCK BERM.
3. RRB FOR CULVERT PROTECTION ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE COUNTY.
4. WHEN CULVERT INLET FILTERS ARE REMOVED, ANY DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

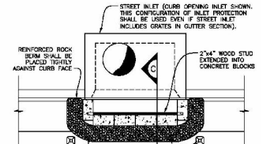
RRC RRB FOR CULVERT PROTECTION 15



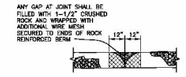
INTERIM CONFIGURATION (BEFORE PAVING) STREET INLET – PLAN
SCALE: 1/4" = 1'-0"



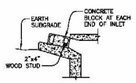
STREET INLET ON CONTINUOUS GRADE (AFTER PAVING) – PLAN
SCALE: 1/4" = 1'-0"



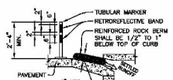
STREET INLET IN SUMP (AFTER PAVING) – PLAN
SCALE: 1/4" = 1'-0"



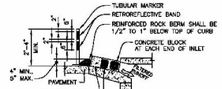
JOINT DETAIL
SCALE: 1/4" = 1'-0"



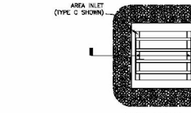
SECTION A
SCALE: 1/4" = 1'-0"



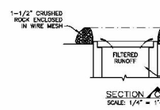
SECTION B
SCALE: 1/4" = 1'-0"



SECTION C
SCALE: 1/4" = 1'-0"



AREA INLET – PLAN
SCALE: 1/4" = 1'-0"



SECTION A
SCALE: 1/4" = 1'-0"

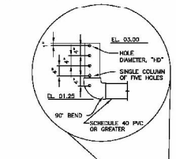
INLET PROTECTION INSTALLATION NOTES

1. INTERIM CONFIGURATION OF INLET PROTECTION IN STREETS SHALL BE INSTALLED WITHIN 48–HOURS OF POURING INLET. INLET PROTECTION (AFTER PAVEMENT) SHALL BE INSTALLED WITHIN 48 HOURS AFTER PAVING IS PLACED.
2. INLET PROTECTION AT AREA INLETS SHALL BE INSTALLED WITHIN 48–HOURS OF POURING INLET.
3. CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1–1/2" MINUS). RECYCLED CONCRETE MEETING THIS GRADATION MAY BE USED.
4. WIRE MESH SHALL BE FABRICATED OF 10 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1.0 INCH (COMMONLY TERMED "CHICKEN WIRE"). ROLL WIDTH SHALL BE 48–INCHES.
5. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6–INCH CENTERS ON ENDS OF BERM.
6. REINFORCED ROCK BERM SHALL BE CONSTRUCTED IN ONE PIECE OR SHALL BE CONSTRUCTED USING JOINT DETAIL.
7. TUBULAR MARKERS SHALL MEET REQUIREMENTS OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AS AMENDED.
8. THE TOP OF REINFORCED ROCK BERM SHALL BE 1/2"–1" BELOW TOP OF CURB.

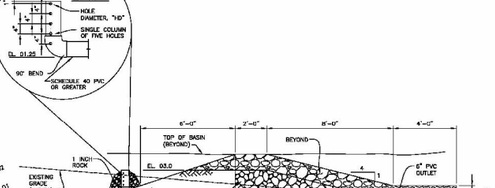
INLET PROTECTION MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT INLET PROTECTION WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY. MORE FREQUENT INSPECTIONS AND REPAIRS SHALL BE REQUIRED DURING WINTER CONDITIONS DUE TO FREEZE/THAW PROBLEMS.
2. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF ROCK BERM IS WITHIN 2–1/2 INCHES OF THE CREST.
3. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED, UNLESS THE COUNTY APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
4. WHEN INLET PROTECTION AT AREA INLETS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

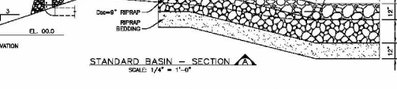
IP INLET PROTECTION 12



STANDARD BASIN – PLAN
SCALE: 1" = 10'-0"



STANDARD BASIN – SECTION A
SCALE: 1/4" = 1'-0"



STANDARD BASIN – SECTION B
SCALE: 1/4" = 1'-0"

SEDIMENT BASIN INSTALLATION NOTES

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

SEDIMENT BASIN MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SEDIMENT BASIN WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT AS NECESSARY.
2. SEDIMENT SHALL BE REMOVED FROM THE POND ONCE IT REACHES 1 FOOT IN DEPTH OR 20% OF THE PONDS WATER QUALITY CAPTURE VOLUME, WHICHEVER IS LESS.
3. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE COUNTY.
4. IF SEDIMENT BASINS ARE REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

SB SEDIMENT BASIN 16

Arapahoe County Colorado's First

DEPARTMENT OF PUBLIC WORKS AND DEVELOPMENT – ENGINEERING SERVICES DIVISION

GESC GRADING, EROSION, AND SEDIMENT CONTROL

GESC PLAN STANDARD NOTES AND DETAILS

JANUARY 2005, REVISED JANUARY 2010

SHEET 2 OF 3

No.	DATE	REVISIONS	APPR.

MULLER

MULLER ENGINEERING CO., INC.
CONSULTING ENGINEERS
1RONGATE 4, SUITE 100
777 S. WADSWORTH BLVD.
LAKEWOOD, COLORADO 80226
(303) 988-4939

MEC PROJECT No. 08025.02

DESIGN MDC
DRAWN ALM
CHECK JTW

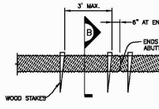
PREPARED FOR:
CHERRY CREEK BASIN WATER QUALITY AUTHORITY
8390 E. CRESCENT PKWY., SUITE 500
GREENWOOD VILLAGE, CO. 80111
303-779-4525

MOUNTAIN & LAKE LOOP SHORELINE STABILIZATION
CHERRY CREEK BASIN WATER QUALITY AUTHORITY

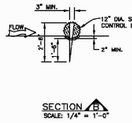
GESC
GESC DETAILS

DATE JULY 2011
DRAWING NO. EC-7
SHEET NO. 33 OF 34

NAME: P:\08-025.01 Mountain Lake Shoreline Stabilization\Final design 08-025.02\CAD Dwgs\08025.02-GESCADET.dwg DATE: JUL 05, 2011 TIME: 11:19 PM



DETAIL A
SCALE: 1/4" = 1'-0"



SECTION B
SCALE: 1/4" = 1'-0"

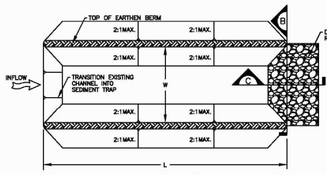
SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SEDIMENT CONTROL LOG.
2. SEDIMENT CONTROL LOGS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
4. NOT FOR USE IN CONCENTRATED FLOW AREAS.
5. THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2".

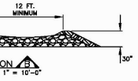
SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE CREST OF LOG.
3. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION, IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

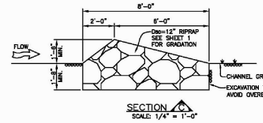
SCL SEDIMENT CONTROL LOG (17)



DETAIL A
SCALE: 1" = 10'-0"



SECTION B
SCALE: 1" = 10'-0"



SECTION B
SCALE: 1/4" = 1'-0"

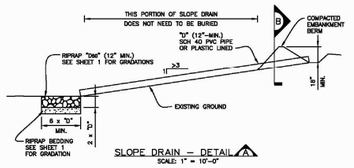
SEDIMENT TRAP INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
2. SEDIMENT TRAPS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
3. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
4. RIPRAP OUTLET SHALL BE CONSTRUCTED WITH D_{50}=12" RIPRAP WITH A MINIMUM OVERFLOW OF 6".
5. THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE RIPRAP OUTLET STRUCTURE.
6. THE ENDS OF THE RIPRAP OUTLET STRUCTURE SHALL BE MINIMUM OF 6" HIGHER THAN THE CENTER OF THE OUTLET STRUCTURE.

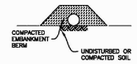
SEDIMENT TRAP MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SEDIMENT TRAPS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF RIPRAP SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN ½ THE HEIGHT OF THE RIPRAP OUTLET STRUCTURE.
3. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVERAGE IS APPROVED BY THE COUNTY.
4. WHEN SEDIMENT TRAPS ARE REMOVED THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR STABILIZED IN A MANNER APPROVED BY THE COUNTY.

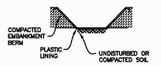
ST SEDIMENT TRAP (18)



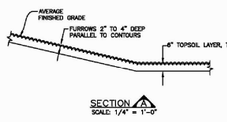
SLOPE DRAIN — DETAIL A
SCALE: 1" = 10'-0"



SLOPE DRAIN — SECTION A
SCALE: 1" = 10'-0"



PLASTIC LINED DRAIN — SECTION A
SCALE: 1" = 10'-0"



SECTION A
SCALE: 1/4" = 1'-0"

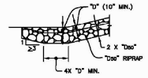
SURFACE ROUGHENING INSTALLATION NOTES

1. SURFACE ROUGHENING SHALL BE PROVIDED ON ALL FINISHED GRADES (SLOPES AND "FLAT" AREAS) WITHIN 2 DAYS OF COMPLETION OF FINISHED GRADE (FOR AREAS NOT RECEIVING TOPSOIL) OR WITHIN 2 DAYS OF TOPSOIL PLACEMENT.
2. ANCHOR MULCH BUILDING FOUNDATIONS, PAVEMENT, OR CURB IS TO BE PLACED WITHIN 7-DAYS OF FINISHED GRADING. DO NOT SEED TO BE SURFACE ROUGHENED.
3. ROUGHENING SURFACES SHALL BE ROUGHENED USING RIPPING OR TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.

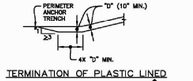
SURFACE ROUGHENING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT THE SURFACE ROUGHENING WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. VEHICLES AND EQUIPMENT SHALL GENERALLY BE CONFINED TO ACCESS SPACE AND SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
3. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT FURTHER SMOOTHING OUT THE SURFACE.
4. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER ANY RILL EROSION.

SR SURFACE ROUGHENING (22)



TERMINATION OF RIPRAP LINED SLOPE DRAIN — DETAIL B
SCALE: 1" = 10'-0"



TERMINATION OF PLASTIC LINED SLOPE DRAIN — DETAIL B
SCALE: 1" = 10'-0"

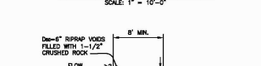
SLOPE DRAIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SLOPE DRAIN.
   - PIPE DIAMETER, "D", AND RIPRAP SIZE, "Dm".
2. SLOPE DRAIN DIMENSIONS SHALL BE CONSIDERED MINIMUM DIMENSIONS; CONTRACTOR MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO SLOPE OR SLOPE DRAIN DURING RUNOFF EVENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. SLOPE DRAINS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY UPSTREAM LAND-DISTURBING ACTIVITIES.
4. FOR TEMPORARY SLOPE DRAINS, PIPE MAY BE INSTALLED ON TOP OF SLOPE; HOWEVER, 12" MIN. COVER AT TOP OF SLOPE SHALL BE PROVIDED.
5. A RIPRAP PAD SHALL BE PLACED AT THE OUTFALL OF THE SLOPE DRAIN.

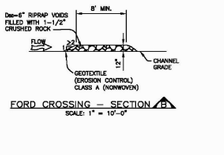
SLOPE DRAIN MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SLOPE DRAINS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS AS NECESSARY.
2. TEMPORARY SLOPE DRAINS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION. WHEN SLOPE DRAINS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

TSD TEMPORARY SLOPE DRAIN (23)



FORD CROSSING — DETAIL A
SCALE: 1" = 10'-0"



FORD CROSSING — SECTION B
SCALE: 1" = 10'-0"

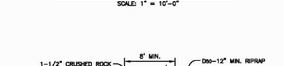
TEMPORARY STREAM CROSSING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATIONS OF TEMPORARY STREAM CROSSING.
   - STREAM CROSSING TYPE (FORD OR CULVERT).
   - FOR FORD CROSSING: LENGTH, "L", CREST LENGTH, "CL", AND DEPTH, "D".
   - FOR CULVERT CROSSING: LENGTH, "L", CREST LENGTH, "CL", CROSSING HEIGHT, "H", DEPTH, "D", CULVERT DIAMETER, "CD", AND NUMBER, TYPE AND CLASS OR GAUGE OF CULVERTS.
2. TEMPORARY STREAM CROSSING DIMENSIONS, QTY., AND NUMBER OF CULVERTS INDICATED (FOR CULVERT CROSSING) SHALL BE CONSIDERED MINIMUM DIMENSIONS; ENGINEER MAY ELECT TO INSTALL LARGER FACILITIES. ANY DAMAGE TO STREAM CROSSING OR EXISTING STREAM CHANNEL DURING BASEFLOW OR FLOOD EVENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. SEE SHEET 1 FOR RIPRAP AND 1-1/2" CRUSHED ROCK GRADATIONS.
4. FOR A TEMPORARY STREAM CROSSING THAT WILL CARRY LOADS, THE TEMPORARY STREAM CROSSING MUST BE DESIGNED BY THE DESIGN ENGINEERS.

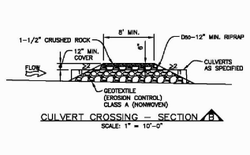
TEMPORARY STREAM CROSSING MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT STREAM CROSSINGS WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF STREAM CROSSINGS SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF CROSSING IS WITHIN 6-INCHES OF THE CREST (FORD CROSSING) OR GREATER THAN AN AVERAGE DEPTH OF 12-INCHES (CULVERT CROSSING).
3. STREAM CROSSINGS ARE TO REMAIN IN PLACE UNTIL NO LONGER NEEDED, BUT SHALL BE REMOVED PRIOR TO THE END OF CONSTRUCTION.
4. WHEN STREAM CROSSINGS ARE REMOVED, THE DISTURBED AREA SHALL BE DRILL SEEDED AND CRIMP MULCHED AND COVERED WITH EROSION CONTROL BLANKET OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

TSC TEMPORARY STREAM CROSSING (24)



CULVERT CROSSING — DETAIL A
SCALE: 1" = 10'-0"



CULVERT CROSSING — SECTION A
SCALE: 1" = 10'-0"

SEEDING AND MULCHING INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - AREA OF SEEDING AND MULCHING.
   - TYPES OF SEED MIX (PERMANENT, TEMPORARY, OR LOW-GROWTH).
2. ALL SEEDING FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COARSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, KNAP WEED AND LEAFY SPURGE.
3. THE SEEDER SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY, SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE. SEED TICKETS SHALL BE PROVIDED TO ARAPAHOE COUNTY UPON REQUEST.
4. DRILL SEEDING MIX SHALL CONFORM TO THE TABLE ON THE RIGHT; UNLESS OTHERWISE APPROVED BY THE COUNTY.
5. IF THE SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OR GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE VARIATION FROM THE SEED MIXES MUST BE SUPPLIED TO CONTRACTOR AND FORWARDED TO THE ARAPAHOE COUNTY GESC INSPECTOR.
6. THE FORMULA USED FOR DETERMINING THE QUANTITY OF PURE LIVE SEED (PLS) SHALL BE (POUNDS OF SEED) X (PURITY) X (GERMINATION) = POUNDS OF PURE LIVE SEED (PLS).
7. PERMANENT SEED MIX SHALL BE USED UNLESS OTHERWISE APPROVED BY THE COUNTY.
8. ALL AREAS TO BE SEEDED AND MULCHED SHALL HAVE NATIVE TOPSOIL OR APPROVED SOIL AMENDMENTS SPREAD TO A DEPTH OF AT LEAST 6 INCHES (LOOSE DEPTH). HAUL ROADS AND OTHER COMPACTED AREAS SHALL BE LOOSENED TO A DEPTH OF 6 INCHES PRIOR TO SPREADING TOPSOIL.
9. SOIL IS TO BE THOROUGHLY LOOSENED (TILLED) TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO SEEDING. THE TOP 6 INCHES OF THE SEED BED SHALL BE FREE OF ROCKS GREATER THAN 4 INCHES AND SOIL CLODS GREATER THAN 2 INCHES. SEEDING OVER ANY COMPACTED AREAS THAT HAVEN'T BEEN THOROUGHLY LOOSENED SHALL BE REJECTED.
10. SEED IS TO BE APPLIED USING A MECHANICAL DRILL TO A DEPTH OF 1/4 INCH. HOW SPROING SHALL BE NO MORE THAN 8 INCHES. MATERIAL USED FOR MULCH SHALL CONSIST OF LONG-STEMMED STRAW, AT LEAST 50 PERCENT OF THE MULCH, BY WEIGHT, SHALL BE 10 INCHES OR MORE IN LENGTH. MULCH SHALL BE APPLIED AND MECHANICALLY ANCHORED TO A DEPTH OF AT LEAST 2 INCHES. MULCH SHALL BE APPLIED AT A RATE OF 4000 LB. STRAW PER ACRE.
11. IF THE PERMITTEE DEMONSTRATES TO THE COUNTY THAT IT IS NOT POSSIBLE TO DRILL SEED, SEED IS TO BE UNIFORMLY BROADCAST AT TWO TIMES THE DRILLED RATE, THEN LIGHTLY HARROWED TO PROVIDE A SEED DEPTH OF APPROXIMATELY 1/4 INCH, THEN ROLLED TO COMPACT, THEN MULCHED AS SPECIFIED ABOVE.
12. WHEN SEEDING AND MULCHING IS USED TO STABILIZED DISTURBED AREAS, ALL DISTRIBUTED AREAS WHICH ARE EITHER FINAL GRADED, OR WILL REMAIN INACTIVE FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE REQUIRED TO BE STABILIZED WITHIN 14 DAYS OF THE COMPLETION OF THE LAND-DISTURBING ACTIVITIES. THIS MAY REQUIRED MULTIPLE MOBILIZATIONS FOR SEEDING AND MULCHING.
13. MULCH SHALL BE APPLIED WITHIN 24-HOURS OF SEEDING.
14. TACKIFIER SHOULD BE UTILIZED TO HELP WITH STRAW DISPLACEMENT.

SEEDING AND MULCHING MAINTENANCE NOTES

1. SEEDED AND MULCHED AREAS SHALL BE INSPECTED FOR REQUIRED COVERAGE MONTHLY FOR A PERIOD OF TWO YEARS FOLLOWING INITIAL SEEDING. REPAIRS AND RE-SEEDING AND MULCHING SHALL BE UNDERTAKEN AFTER THE FIRST GROWING SEASON FOR ANY AREAS FAILING TO MEET THE REQUIRED COVERAGE.
2. REQUIRED COVERAGE FOR STANDARD, OPEN SPACE AND LOW GROWTH SEED MIXES SHALL BE DEFINED AS FOLLOWS:
   1. THREE (3) PLANTS PER SQUARE FOOT WITH A MINIMUM HEIGHT OF 3 INCHES. THE 3 PLANTS PER SQUARE FOOT SHALL BE OF THE VARIETY AND SPECIES FOUND IN THE ARAPAHOE COUNTY-APPROVED MIX.
   2. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
   3. FREE OF ERODED AREAS.
   4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH APPENDIX V OF THE GESC CRITERIA MANUAL.
3. REQUIRED COVERAGE FOR TURF GRASS AREAS SHALL BE DEFINED AS FOLLOWS:
   1. AT LEAST 90% VEGETATIVE COVER OF GRASS SPECIES PLANTED.
   2. NO BARE AREAS LARGER THAN 4 SQUARE FEET (TWO-FEET BY TWO-FEET OR EQUIVALENT).
   3. FREE OF ERODED AREAS.
   4. FREE FROM INFESTATION OF NOXIOUS WEEDS IN ACCORDANCE WITH APPENDIX V OF THE GESC CRITERIA MANUAL.
4. RILL AND GULLY EROSION SHALL BE FILLED WITH TOPSOIL PRIOR TO RESEEDING. THE RESEEDING METHOD SHALL BE APPROVED BY THE COUNTY.

ARAPAHOE COUNTY PERMANENT DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
BIG BLUESTEM	KAW	PNWS	10	1.1
YELLOW INDIANGRASS	CHEYENNE	PNWS	10	1
SWITCHGRASS	BLACKWELL	PNWS	10	0.4
SIDEOATS GRAMA	VAUGHN	PNWD	10	0.9
WESTERN WHEATGRASS	ARRIBA	PNCS	10	1.8
BLUE GRAMA	HACHITA	PNWS	10	0.3
THICKSPIKE WHEATGRASS	CRITANA	PNCS	10	1
PRAIRIE SANDREED	GOSHEN	PNWS	10	0.7
GREEN NEEDLEGRASS	LODORM	PNCB	10	1
SLENDER WHEATGRASS	PRYOR	PNCB	5	0.6
STREAMBANK WHEATGRASS	SODAR	PNCS	5	0.8
		TOTAL		9.2

ARAPAHOE COUNTY TEMPORARY DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
SMOOTH BROMEGRASS	LINCOLN	PICS	30	3.9
INTERMEDIATE WHEATGRASS	OAHE	PICS	30	4.5
FUSECUENT WHEATGRASS	LUNA	PICS	30	4.2
ANNUAL RYEGRASS	N/A	AICB	10	0.8
		TOTAL		13.4

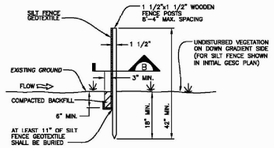
ARAPAHOE COUNTY LOW-GROWTH DRILL SEEDING MIX

SPECIES	VARIETY	NOTES	% IN MIX	POUNDS OF PLS PER ACRE
BUFFALOGRASS	TEXOKA	PNWS	20	3.2
BLUE GRAMA	HACHITA	PNWD	20	0.6
WESTERN WHEATGRASS	ARRIBA	PNCS	20	3.2
SIDEOATS GRAMA	VAUGHN	PNWD	20	1.8
THICKSPIKE WHEATGRASS	CRITANA	PNCS	10	1
STREAMBANK WHEATGRASS	SODAR	PNCS	10	1.2
		TOTAL		11.0

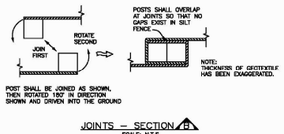
NOTES:
P=PERENNIAL
A=ANNUAL
N=NATIVE
I=INTRODUCED
W=WARM SEASON
C=COOL SEASON
S=SOD FORMER
B=BUNCHGRASS

USE SEED MIXES AND HYDROMULCH DIRECTIONS SHOWN ON LANDSCAPE PLAN INSTEAD OF INFORMATION SHOWN ON THIS SHEET

SM SEEDING AND MULCHING (19)



DETAIL A
SCALE: 1/2" = 1'-0"



POST SHALL BE JOINED AS SHOWN, THEN ROTATED 180° IN DIRECTION SHOWN AND DRIVEN INTO THE GROUND

JOINTS — SECTION B
SCALE: N.T.S.

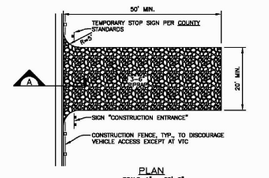
SILT FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF FENCE.
2. ANCHOR TRENCH SHALL BE EXCAVATED WITH TRENCHER, OR WITH SILT FENCE INSTALLATION MACHINE; NO ROAD GRADERS, BACKHOES, ETC. SHALL BE USED. TRENCH SHALL BE COMPACTED BY HAND, WITH "JUMPING JACK", OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
3. SILT FENCE GEOTEXTILE SHALL MEET THE FOLLOWING REQUIREMENTS:
   - 6-10 12-GALLONS PER MINUTE PER SQUARE FOOT FLOW CAPACITY.
   - 90 LB. TENSILE STRENGTH PER ASTM D4632.
   - UV DESIGN AT 500 HRS MIN. 70% STRENGTH RETAINED PER ASTM D 4355.
4. SILT FENCE INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.

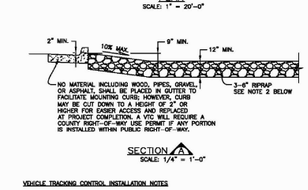
SILT FENCE MAINTENANCE NOTES

1. THE GESC MANAGER SHALL INSPECT SILT FENCE DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT REACHES A DEPTH OF 6-INCHES.
3. SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS APPROVED BY THE COUNTY. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL IT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

SF SILT FENCE (20)



PLAN
SCALE: 1" = 20'-0"



SECTION A
SCALE: 1/4" = 1'-0"

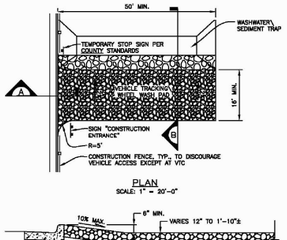
VEHICLE TRACKING CONTROL INSTALLATION NOTES

1. VEHICLE TRACKING CONTROL PADS SHALL BE INSTALLED AT EVERY ACCESS POINT TO SITE.
2. VEHICLE TRACKING CONTROL PADS SHALL CONSIST OF HARD, DENSE, DURABLE STONE, ANGULAR IN SHAPE AND RESISTANT TO WEATHERING. ROUNDED STONE OR BOULDERS WILL NOT BE ACCEPTABLE. THE STONES SHALL BE 3" WITH A MAXIMUM SIZE OF 6", THE STONE SHALL HAVE A SPECIFIC GRAVITY OF AT LEAST 2.6. CONTROL OF GRADATION WILL BE BY VISUAL INSPECTIONS.
3. ANY CRACKED OR DAMAGED CURB AND GUTTER AND SIDEWALK SHALL BE REPLACED BY CONTRACTOR.
4. A VTC WILL REQUIRE A COUNTY STREET CUT & RIGHT-OF-WAY USE PERMIT IF ANY PORTION IS INSTALLED WITHIN PUBLIC RIGHT-OF-WAY
5. A TEMPORARY STOP SIGN INSTALLED IN ACCORDANCE TO COUNTY CRITERIA, AS AMENDED, SHALL BE INSTALLED FOR EXITING TRAFFIC AT THE VTC. IF A PERMANENT STOP SIGN IS INSTALLED THAN THE APPROPRIATE PERMITS SHALL BE OBTAINED FROM THE COUNTY.

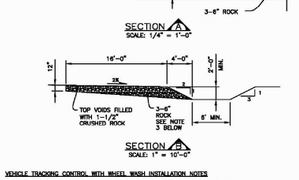
VEHICLE TRACKING CONTROL MAINTENANCE NOTES

1. GESC MANAGER SHALL INSPECT VEHICLE TRACKING CONTROL DAILY. GRAVEL SURFACE SHALL BE CLEAN AND LOOSE ENOUGH TO RUT SLIGHTLY UNDER WHEEL LOADS AND CAUSE LOOSE GRAVEL TO DISLODGE MUD FROM TIRES. WHEN GRAVEL BECOMES COMPACTED OR FILLED WITH SEDIMENT SO THAT THE EFFECTIVENESS OF THE PAD IS DIMINISHED, CONSTRUCTION STAKE OUT, TURN OVER, OR OTHERWISE LOOSEN GRAVEL, PLACE ADDITIONAL NEW GRAVEL, OR REPLACE WITH NEW GRAVEL AS NECESSARY TO RESTORE EFFECTIVENESS.
2. VEHICLE TRACKING CONTROL SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRAVEL MATERIAL REMOVED OR, IF APPROVED BY THE COUNTY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

VTC VEHICLE TRACKING CONTROL (26)



PLAN
SCALE: 1" = 20'-0"



SECTION A
SCALE: 1/4" = 1'-0"

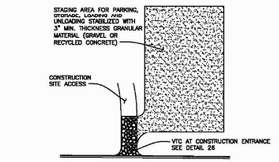
VEHICLE TRACKING CONTROL WITH WHEEL WASH INSTALLATION NOTES

1. ALTHOUGH NOT NORMALLY USED, THE COUNTY RESERVES THE RIGHT TO REQUIRE VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITIES AT SITES WHERE TRACKING ONTO PAVED AREAS BECOMES A SIGNIFICANT PROBLEM.
2. IF VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITIES ARE REQUIRED, ALL WHEELS ON EVERY VEHICLE LEAVING THE SITE SHALL BE CLEANED OF MUD USING A PRESSURE-WASHER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A WATER SOURCE.
3. VEHICLE TRACKING CONTROL PADS SHALL CONSIST OF HARD, DENSE, DURABLE STONE, ANGULAR IN SHAPE AND RESISTANT TO WEATHERING. ROUNDED STONE OR BOULDERS WILL NOT BE ACCEPTABLE. THE STONES SHALL BE 3" WITH A MAXIMUM SIZE OF 6". THE STONE SHALL HAVE A SPECIFIC GRAVITY OF AT LEAST 2.6. CONTROL OF GRADATION WILL BE BY VISUAL INSPECTIONS.
4. ANY CRACKED OR DAMAGED CURB AND GUTTER AND SIDEWALK SHALL BE REPLACED BY CONTRACTOR.
5. A TEMPORARY STOP SIGN INSTALLED IN ACCORDANCE TO COUNTY CRITERIA, AS AMENDED, SHALL BE INSTALLED FOR EXITING TRAFFIC AT THE VTC. IF A PERMANENT STOP SIGN IS INSTALLED THAN THE APPROPRIATE PERMITS SHALL BE OBTAINED FROM THE COUNTY.

VEHICLE TRACKING CONTROL WITH WHEEL WASH MAINTENANCE NOTES

1. GESC MANAGER SHALL INSPECT VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITIES DAILY. ACCUMULATED SEDIMENTS SHALL BE REMOVED FROM PAD SURFACE.
2. ACCUMULATED SEDIMENT IN THE WASHWATER/SEDIMENT TRAP SHALL BE REMOVED WHEN THE SEDIMENT DEPTH REACHES AN AVERAGE OF 12-INCHES.
3. VEHICLE TRACKING CONTROL WITH WHEEL WASH FACILITY SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE RIPRAP MATERIAL REMOVED OR, IF APPROVED BY THE COUNTY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

WW VTC WITH WHEEL WASH (27)



PLAN
SCALE: N.T.S.

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR GENERAL LOCATION