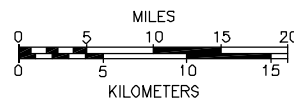
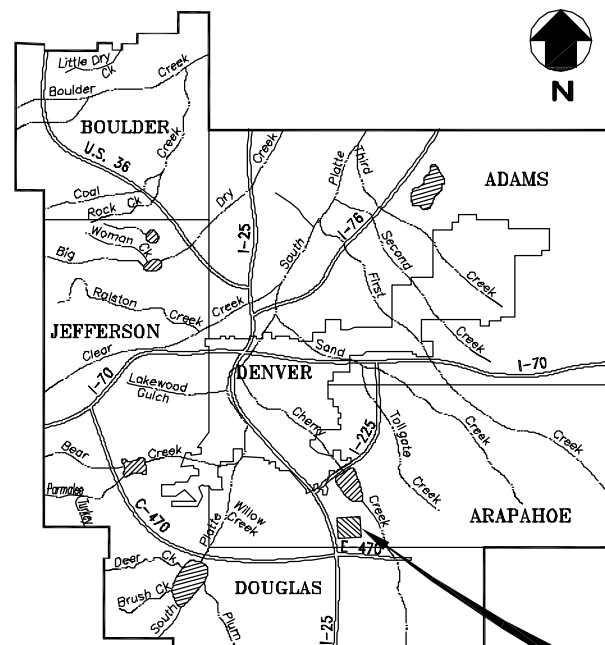


# CONTRACT DRAWINGS FOR CONSTRUCTION OF COTTONWOOD CREEK RECLAMATION - PHASE 1 OCTOBER, 2003

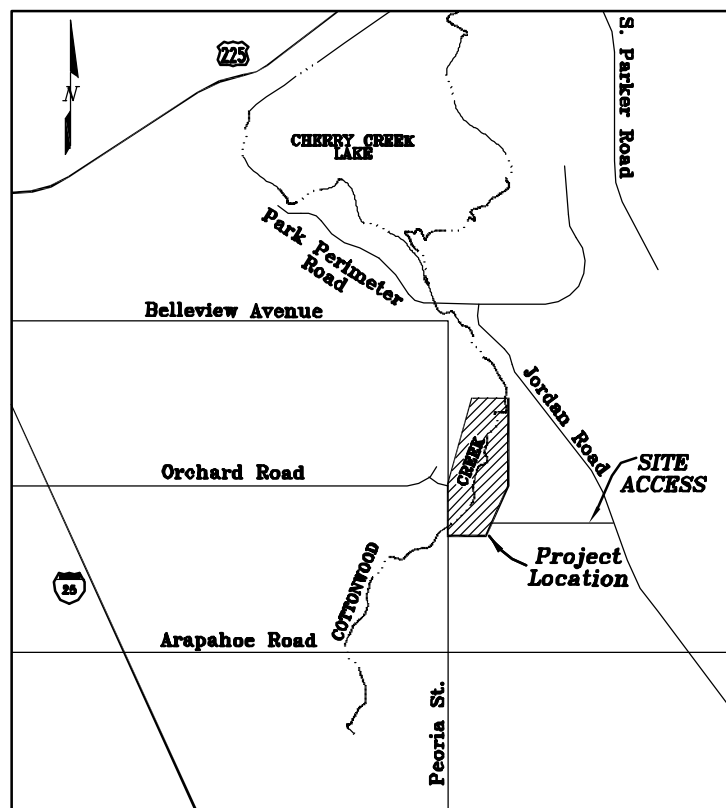
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2	G-2	GENERAL NOTES
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**VICINITY MAP**

PROJECT LOCATION AS SHOWN ON THE LOCATION MAP, THIS SHEET.



**LOCATION MAP**

NTS

### RECORD DRAWING

10/24/05

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 THIS 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.

### SHEETS ADDED DURING CONSTRUCTION

SHEET	DRAWING NO.	TITLE
1	D-1	GRADING PLAN DISPOSAL AREAS NO. 2 & 3
2	D-2	GRADING PLAN DISPOSAL AREA NO. 1
3	D-3	TYPICAL CHANNEL SECTIONS DISPOSAL AREAS
<b>CHANGE ORDER NO. 2</b>		
1	CO2-1	GRADING PLAN LOW FLOW TRAIL CROSSING
2	CO2-2	LOW FLOW TRAIL CROSSING ELEVATION AND NOTES
3	CO2-3	LOW FLOW TRAIL CROSSING PLAN AND PROFILE
4	CO2-4	LOW FLOW TRAIL CROSSING SECTIONS


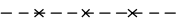

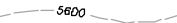




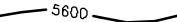







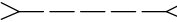

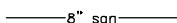

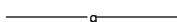

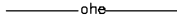

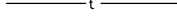










DATE: OCT 17, 2005 TIME: 3:24 PM

NAME: S:\02025.03\Phase 1\RECORD.DWG\02025.03-CVR-REC.dwg

<table border="1"> <tr> <td>10/24/05</td> <td>AS CONSTRUCTED RECORD DRAWINGS</td> <td>MDC</td> </tr> </table>	10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4939	DESIGN MDC DRAWN BKB CHECK DDJ	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION PHASE 1 CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	<b>GENERAL TITLE SHEET</b>	DATE OCTOBER 2003 DRAWING NO. G-1 SHEET NO. 1 OF 27
10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC							
No. DATE REVISIONS APPR. MEC PROJECT No. 02025.03									

**GENERAL LEGEND**

	SOIL/SUBGRADE		EXISTING FENCE
	CONCRETE		EXISTING MAJOR CONTOUR
	BEDDING		EXISTING MINOR CONTOUR
 OR 	EXISTING TREES EXISTING SHRUBS		PROPOSED MAJOR CONTOUR
	CONTROL POINT		PROPOSED MINOR CONTOUR
	GEOTECHNICAL TEST PIT		EASEMENT LINE
	NEW EMBANKMENT SLOPE AS INDICATED (HORIZ:VERT)		RIGHT-OF-WAY
5585.75 	SPOT ELEVATION		EXISTING CULVERTS
	SECTION OR DETAIL DESIGNATION		EXISTING SANITARY SEWER
	DRAWING NUMBER WHERE SECTION OR DETAIL IS SHOWN OR TAKEN		EXISTING UNDERGROUND GAS
	SILT FENCE		EXISTING OVERHEAD ELECTRIC
	VEHICLE TRACKING CONTROL		EXISTING UNDERGROUND TELEPHONE
	CHECK DAM		DITCH
			EDGE OF PAVEMENT/CONCRETE
			SECTION LINE
			CENTER LINE
			PARCEL LINE
			EXISTING RIPRAP
			PROPOSED RIPRAP

**ABBREVIATIONS**

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

**GENERAL NOTES**

- 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.
- EXCEPT WHERE OTHERWISE PROVIDED FOR IN THESE PLANS AND SPECIFICATIONS, THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (1999) AND THE COLORADO DEPARTMENT OF TRANSPORTATION 'M&S' STANDARDS, (OCT. 2000), SHALL APPLY.
- THE CONTRACTOR SHALL COMPLY WITH ANY APPLICABLE TRAFFIC CONTROL REQUIREMENTS OF ARAPAHOE COUNTY IN ACCESSING THE CONSTRUCTION SITE.
- 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.
- 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.
- THE WORK WILL TAKE PLACE IN AND AROUND A FLOWING STREAM, 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.
- THE CONSTRUCTION WORK IS LIMITED TO THE PUBLIC RIGHT OF WAY AND THE CONSTRUCTION LIMITS SHOWN ON THE DRAWINGS.
- EXISTING FACILITIES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED IN PLACE OR REMOVED AND REPLACED IN KIND, AS APPROVED BY THE ENGINEER.
- 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.
- SCALES SHOWN ARE FOR FULL SIZE (22"x34") SHEETS AND REQUIRE ADJUSTMENT FOR HALF SIZE (11"x17") SHEETS.
- TOPOGRAPHIC MAPPING ON THE DRAWINGS WAS PREPARED BY CARROLL AND LANGE, INC. BASED ON AN AERIAL SURVEY CONDUCTED IN 2003. HORIZONTAL CONTROL FROM ARAPAHOE COUNTY CONTROL POINTS. VERTICAL CONTROL FROM BM 3" BRASS CAP ⓈW 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. HORIZONTAL AND VERTICAL CONTROL POINTS ARE SHOWN ON DWG. G-3.
- THE PROJECT IS ORGANIZED INTO A BASE BID AND AN ALTERNATE SCHEDULE OF WORK TASKS. THE OWNER MAY ELECT TO AWARD JUST THE BASE BID, OR THE BASE BID PLUS SELECTED WORK TASKS FROM THE ALTERNATE SCHEDULE.
- THE FIRST INSTALLATIONS OF RIFFLE DROPS, BASEFLOW CHANNEL GRADING, 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 STREAM ENVIRONMENT. SEE SPECIFICATIONS FOR PAYMENT INFORMATION REGARDING MODIFICATIONS TO THE WORK.

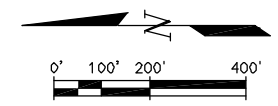
**RECORD DRAWING**  
10/24/05

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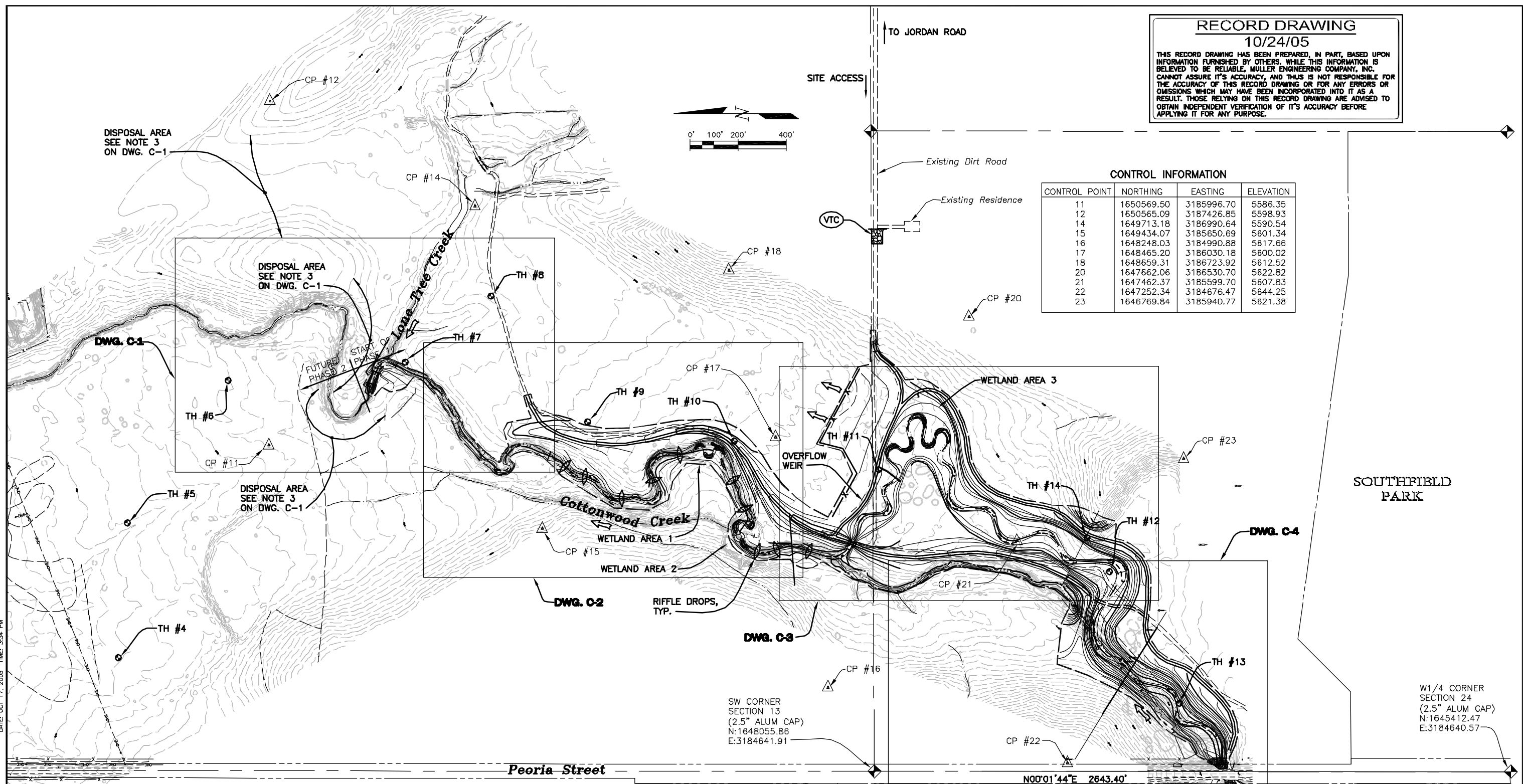
 10/24/05 AS CONSTRUCTED RECORD DRAWINGS MDC		<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS BRONGATE 4, SUITE 100 777 S. WADSWORTH BLDG. LAKEWOOD, COLORADO 80226 (303) 988-4939		DESIGN MDC DRAWN BKB CHECK DDJ	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION          PHASE 1          CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	<b>GENERAL          GENERAL NOTES</b>	DATE OCTOBER 2003 DRAWING NO. G-2 SHEET NO. 2 OF 27
		No. DATE REVISIONS APPR.	<b>MEC PROJECT No. 02025.03</b>					

**RECORD DRAWING**  
**10/24/05**  
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**CONTROL INFORMATION**

CONTROL POINT	NORTHING	EASTING	ELEVATION
11	1650569.50	3185996.70	5586.35
12	1650565.09	3187426.85	5598.93
14	1649713.18	3186990.64	5590.54
15	1649434.07	3185650.69	5601.34
16	1648248.03	3184990.88	5617.66
17	1648465.20	3186030.18	5600.02
18	1648659.31	3186723.92	5612.52
20	1647662.06	3186530.70	5622.82
21	1647462.37	3185599.70	5607.83
22	1647252.34	3184676.47	5644.25
23	1646769.84	3185940.77	5621.38



- NOTES:**
- APPROXIMATELY 2300 LF OF SILT FENCE SHOWN OR NOTED ON THE DRAWINGS SHALL BE INSTALLED. AN ADDITIONAL 800 LF OF SILT FENCE SHALL BE MADE AVAILABLE AS NEEDED AND DIRECTED BY THE ENGINEER FOR INSTALLATION ALONG THE DOWNGRADIENT SIDE OF TEMPORARY STOCKPILES.
  - GEOTECHNICAL TEST PITS SHOWN ON THE PLAN VIEWS WERE COMPLETED IN MARCH 2003. SEE THE "GEOTECHNICAL REPORT, COTTONWOOD CREEK CHANNEL STABILIZATION" (MAXFOUR, MAY 2003) FOR TEST PIT LOGS AND INFORMATION REGARDING SUBSURFACE MATERIAL AND CONDITIONS AT THE TIME OF THE EXPLORATION.

CHERRY CREEK VISTA FILING NO. 15

CHERRY CREEK VISTA FILING NO. 17

CHERRY CREEK VISTA FILING NO. 15

CHERRY CREEK VISTA FILING NO. 17

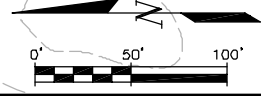
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No. DATE REVISIONS APPR.		<b>MEC PROJECT No. 02025.03</b>											

**RECORD DRAWING**  
10/24/05

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DISPOSAL AREA SEE NOTE 3  
(START HERE AND EXTEND 500 FT EAST)



- NOTES:**
- EXISTING TREES AND SHRUBS WITHIN GRADING LIMITS SHALL BE FLAGGED AND REMOVED AS APPROVED BY THE ENGINEER. ALL EXISTING TREES AND SHRUBS OUTSIDE GRADING LIMITS SHALL BE PROTECTED IN PLACE UNLESS NOTED OTHERWISE.
  - INSTALL CHECK DAM PRIOR TO START OF GRADING ACTIVITIES.
  - THE DISPOSAL AREAS INDICATE THE APPROXIMATE FILL LOCATIONS FOR DISPOSING OF EXCESS EXCAVATED MATERIAL GENERATED FROM THE GRADING ACTIVITIES. A GRADING PLAN AND CONSTRUCTION LIMITS FOR DISPOSAL OF THE EXCESS EXCAVATED MATERIAL WILL BE PROVIDED AT THE START OF CONSTRUCTION. APPROXIMATELY 10 ACRES OF TOTAL SURFACE AREA WILL BE REQUIRED FOR DISPOSAL OF THE EXCESS EXCAVATED MATERIAL. IN ADDITION, APPROXIMATELY 1500 LF OF SILT FENCE WILL BE REQUIRED FOR INSTALLATION ALONG THE DOWNGRADIENT SIDE OF DISPOSAL AREAS. TOPSOIL STRIPPING/REPLACEMENT AND UPLAND SEEDING/MULCHING SHALL BE COMPLETED FOR DISPOSAL AREAS AND SHALL BE PAID FOR UNDER THE FOLLOWING BID ITEMS:  
"TOPSOIL STRIPPING AND REPLACEMENT FOR DISPOSAL AREAS" AND "UPLAND SEEDING AND MULCHING FOR DISPOSAL AREAS".

DATE: OCT 17, 2005 TIME: 3:39 PM  
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10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC
No.	DATE	REVISIONS

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

**MULLER**

MEC PROJECT No. 02025.03

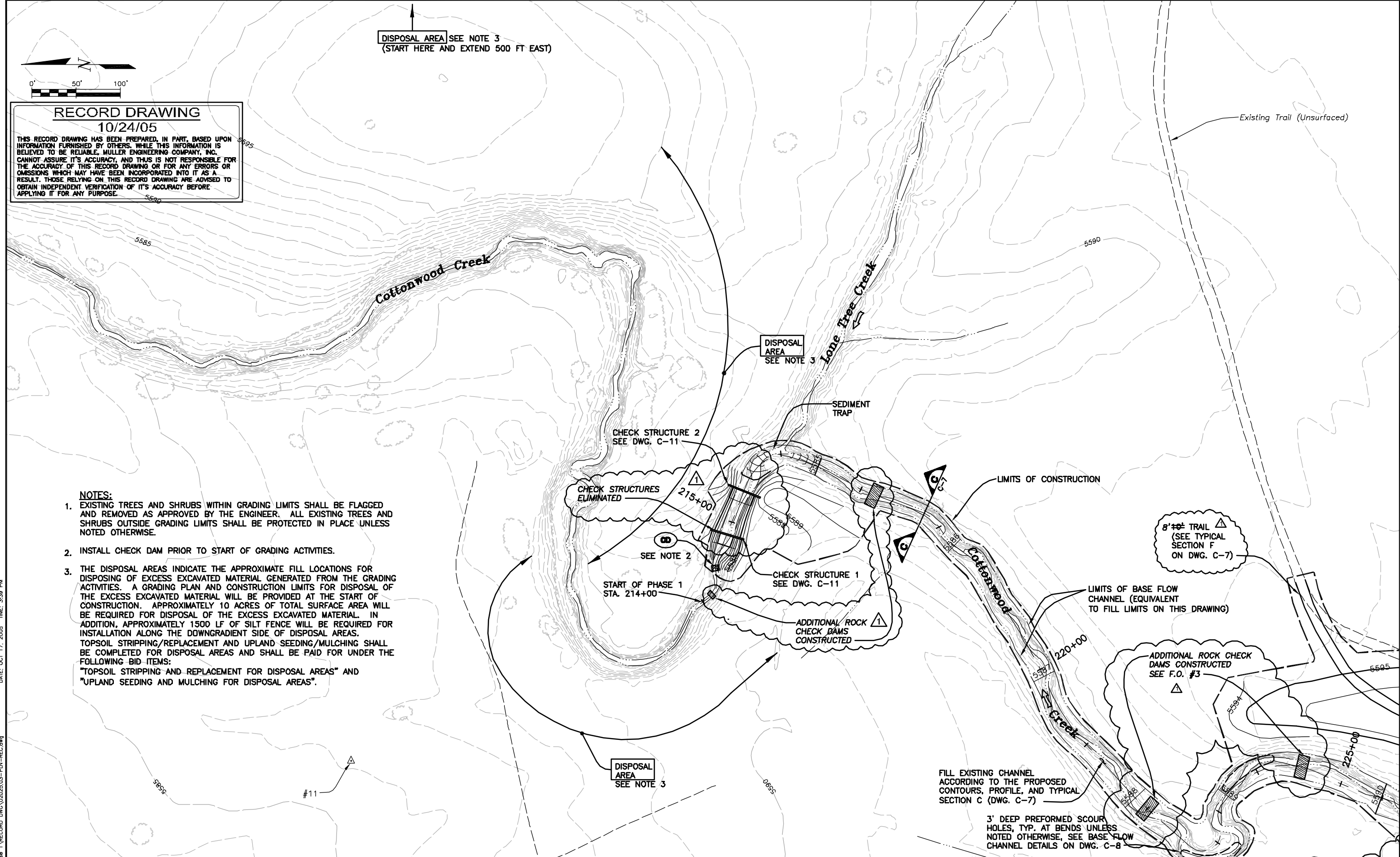
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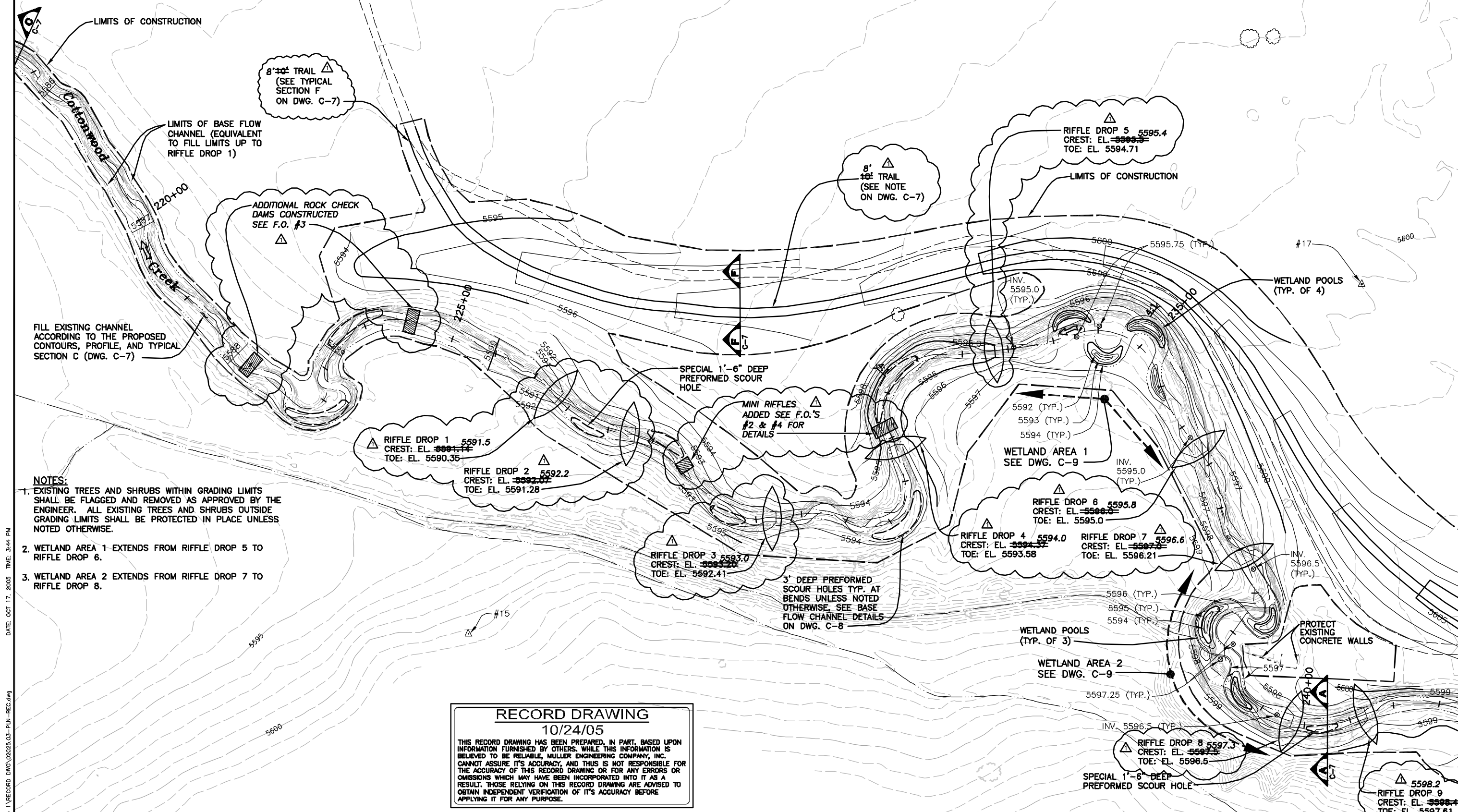
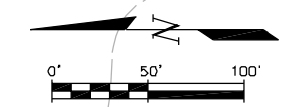
PREPARED FOR:  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

CIVIL  
**GRADING AND EROSION CONTROL  
PLAN A**

DATE  
OCTOBER 2003  
DRAWING NO.  
C-1  
SHEET NO.  
4 OF 27





LIMITS OF CONSTRUCTION

LIMITS OF BASE FLOW CHANNEL (EQUIVALENT TO FILL LIMITS UP TO RIFFLE DROP 1)

8'± TRAIL (SEE TYPICAL SECTION F ON DWG. C-7)

8'± TRAIL (SEE NOTE ON DWG. C-7)

ADDITIONAL ROCK CHECK DAMS CONSTRUCTED SEE F.O. #3

FILL EXISTING CHANNEL ACCORDING TO THE PROPOSED CONTOURS, PROFILE, AND TYPICAL SECTION C (DWG. C-7)

- NOTES:**
- EXISTING TREES AND SHRUBS WITHIN GRADING LIMITS SHALL BE FLAGGED AND REMOVED AS APPROVED BY THE ENGINEER. ALL EXISTING TREES AND SHRUBS OUTSIDE GRADING LIMITS SHALL BE PROTECTED IN PLACE UNLESS NOTED OTHERWISE.
  - WETLAND AREA 1 EXTENDS FROM RIFFLE DROP 5 TO RIFFLE DROP 6.
  - WETLAND AREA 2 EXTENDS FROM RIFFLE DROP 7 TO RIFFLE DROP 8.

RIFFLE DROP 1 5591.5  
CREST: EL. ~~5591.14~~  
TOE: EL. 5590.35

RIFFLE DROP 2 5592.2  
CREST: EL. ~~5592.07~~  
TOE: EL. 5591.28

RIFFLE DROP 3 5593.0  
CREST: EL. ~~5592.70~~  
TOE: EL. 5592.41

RIFFLE DROP 4 5594.0  
CREST: EL. ~~5593.57~~  
TOE: EL. 5593.58

RIFFLE DROP 7 5596.6  
CREST: EL. ~~5597.0~~  
TOE: EL. 5596.21

RIFFLE DROP 6 5595.8  
CREST: EL. ~~5596.0~~  
TOE: EL. 5595.0

RIFFLE DROP 5 5595.4  
CREST: EL. ~~5595.7~~  
TOE: EL. 5594.71

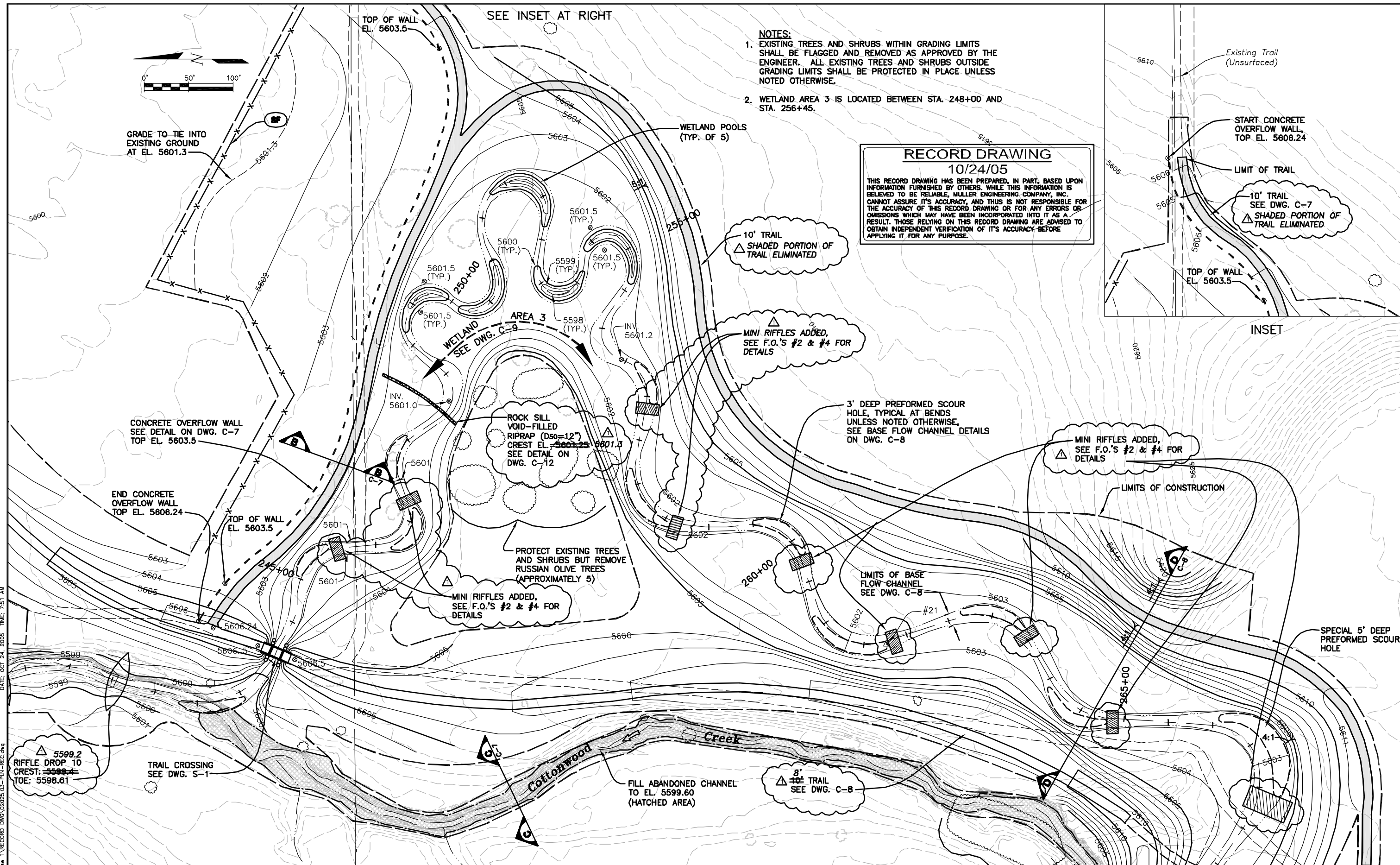
5598.2  
RIFFLE DROP 9  
CREST: EL. ~~5598.10~~  
TOE: EL. 5597.61

**RECORD DRAWING**  
10/24/05

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 THIS 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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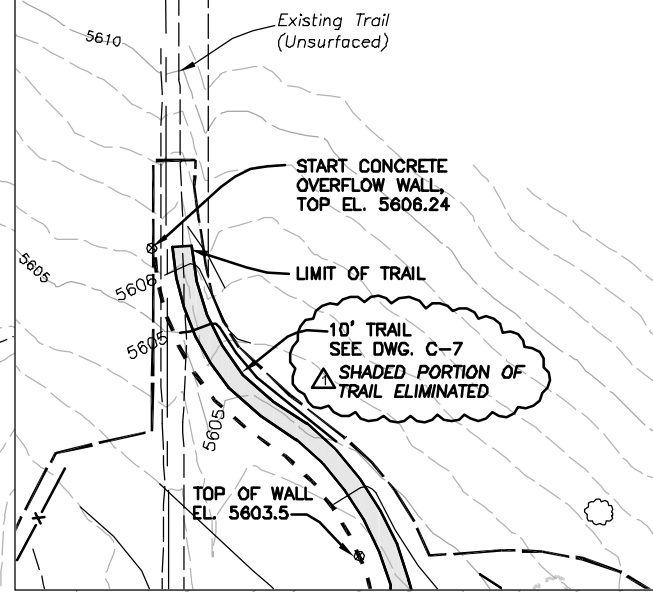
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	No.	DATE	REVISIONS	APPR.										
NAME: S:\02025.03\Phase 1\RECORD DWG\02025.03-PUN-REC.dwg														



- NOTES:**
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  - WETLAND AREA 3 IS LOCATED BETWEEN STA. 248+00 AND STA. 256+45.

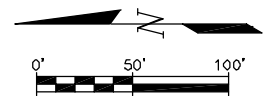
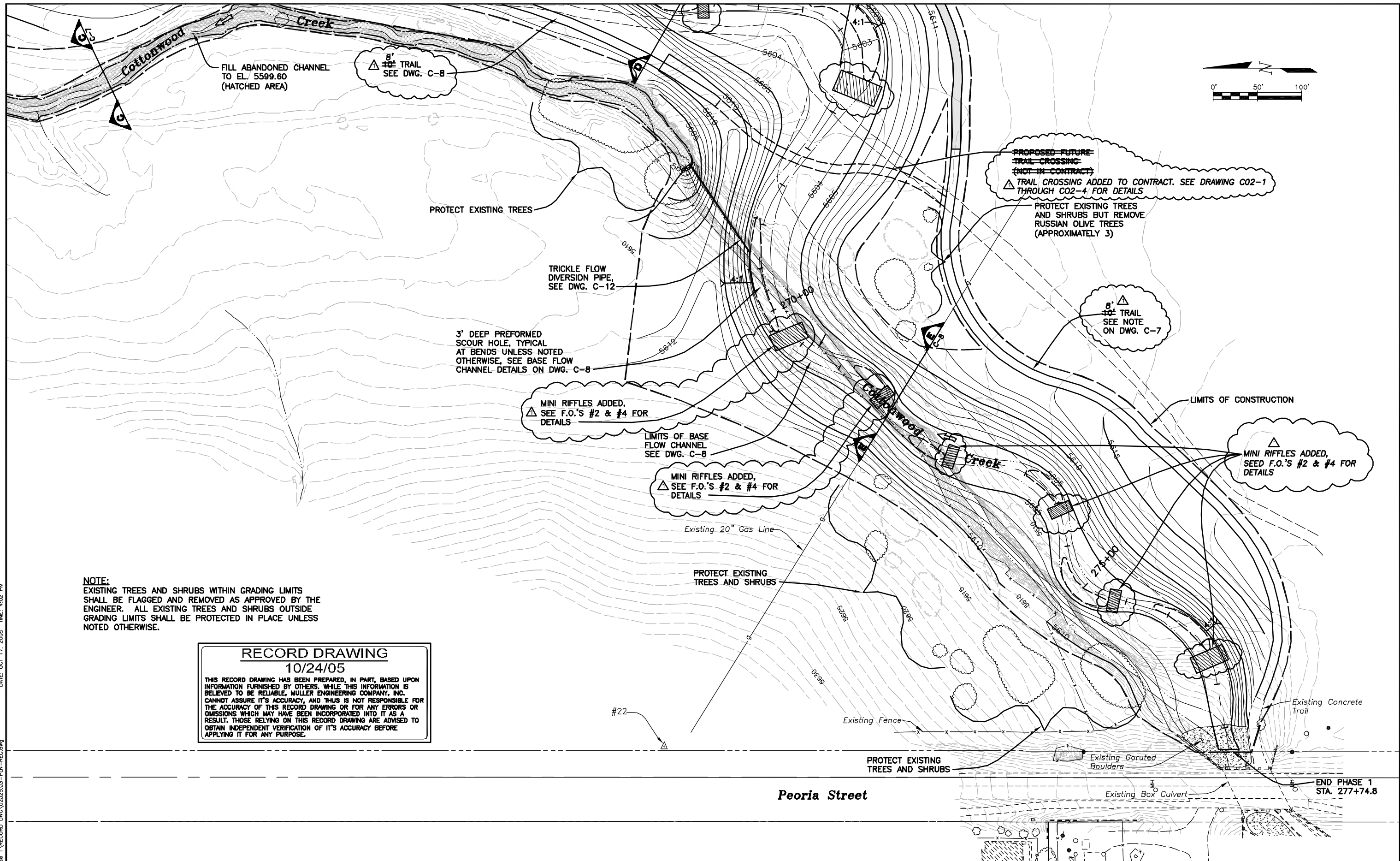
**RECORD DRAWING**  
10/24/05

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DATE: OCT 24, 2005 TIME: 7:51 AM  
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	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS BRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4939	DESIGN MDC DRAWN BKB CHECK DDJ	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION</b> <b>PHASE 1</b> <b>CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	CIVIL <b>GRADING AND EROSION CONTROL</b> <b>PLAN C</b>	DATE: OCTOBER 2003 DRAWING NO.: C-3 SHEET NO.: 6 OF 27
	AS CONSTRUCTED RECORD DRAWINGS MDC MEC PROJECT No. 02025.03					



**NOTE:**  
 EXISTING TREES AND SHRUBS WITHIN GRADING LIMITS SHALL BE FLAGGED AND REMOVED AS APPROVED BY THE ENGINEER. ALL EXISTING TREES AND SHRUBS OUTSIDE GRADING LIMITS SHALL BE PROTECTED IN PLACE UNLESS NOTED OTHERWISE.

**RECORD DRAWING**  
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10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC
No.	DATE	REVISIONS

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

**MULLER**

MEC PROJECT No. 02025.03

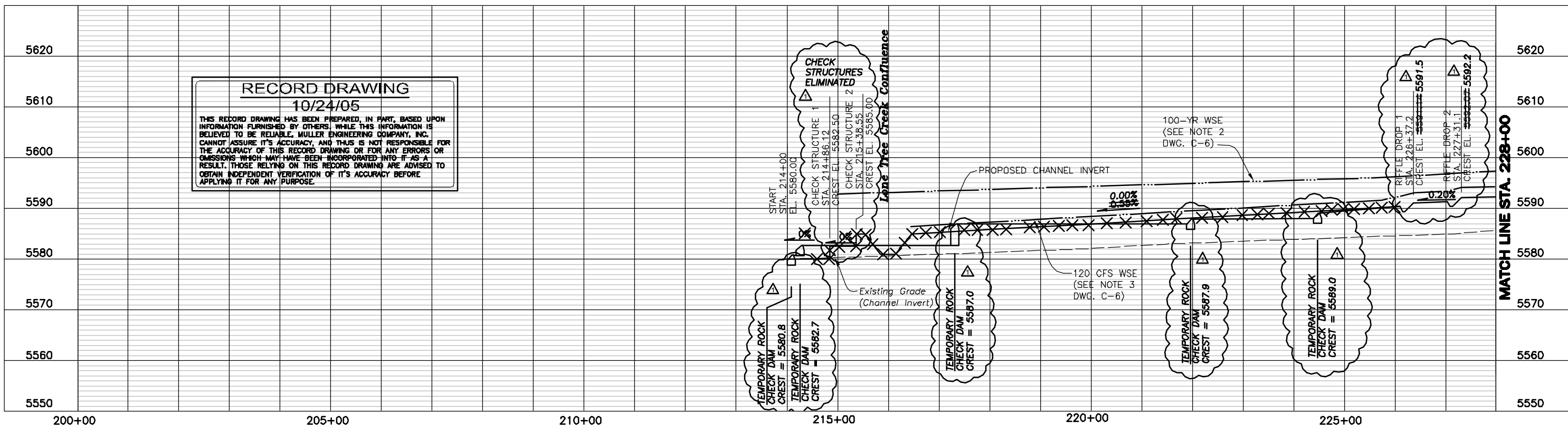
DESIGN: MDC  
 DRAWN: BKB  
 CHECK: DDJ

PREPARED FOR:  
 CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
 6399 S. FIDDLERS GREEN CIR  
 GREENWOOD VILLAGE, CO. 80111  
 303-779-4525

**COTTONWOOD CREEK RECLAMATION  
 PHASE 1  
 CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

CIVIL  
**GRADING AND EROSION CONTROL  
 PLAN D**

DATE: OCTOBER 2003  
 DRAWING NO.: C-4  
 SHEET NO.: 7 OF 27

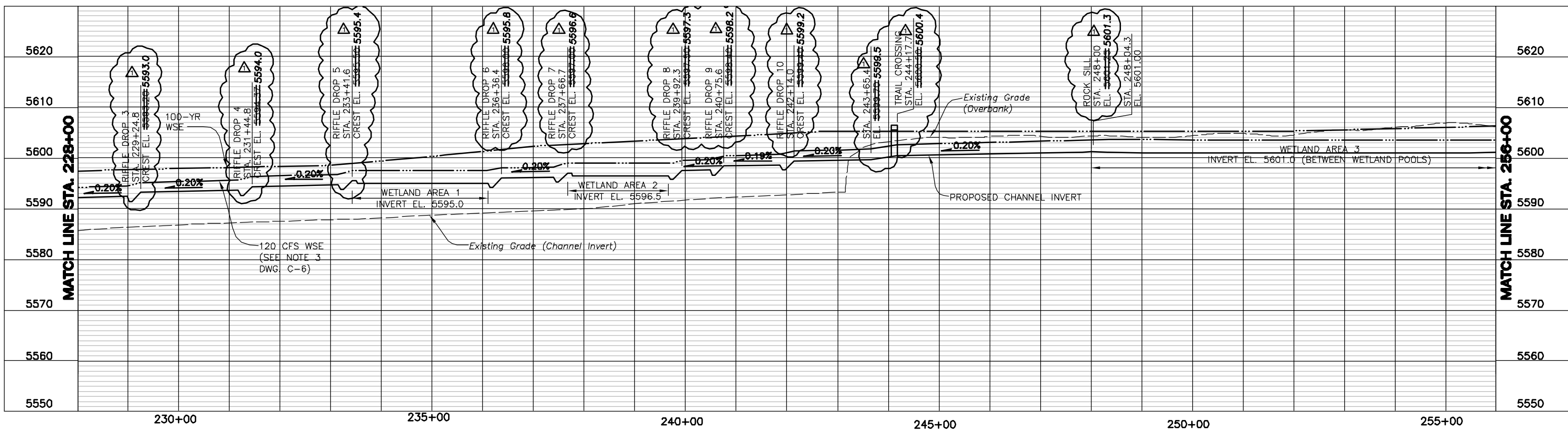


**RECORD DRAWING**  
10/24/05

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SCALE: 1"=100' HORIZ.  
1"=5' VERT.

SEE NOTES, DWG. C-6



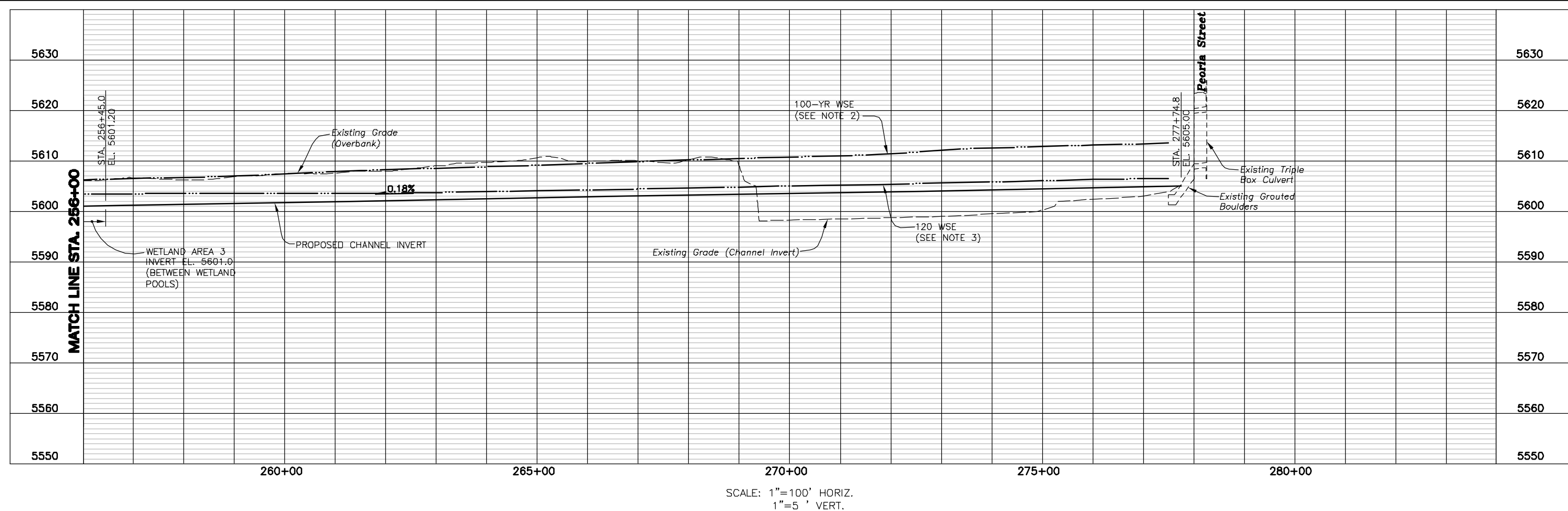
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1"=5' VERT.

SEE NOTES, DWG. C-6

NAME: S:\02025\03\Phase 1\RECORD DWG\02025\_03-PRF-REC.dwg DATE: OCT 24, 2005 TIME: 8:30 AM

10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC	<b>MULLER</b>	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS BRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4939	DESIGN MDC DRAWN BKB CHECK DDJ	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION</b> <b>PHASE 1</b> <b>CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	CIVIL <b>PROFILE</b> <b>STA. 214+00 TO 256+00</b>	DATE OCTOBER 2003 DRAWING NO. C-5 SHEET NO. 8 OF 27	
No.	DATE	REVISIONS	APPR.	MEC PROJECT No. 02025.03						





SCALE: 1"=100' HORIZ.  
1"=5' VERT.

**PROFILE NOTES:**

1. PREFORMED SCOUR HOLES AND WETLAND POOLS ARE NOT SHOWN ON PROFILES. SEE GRADING PLANS AND TYPICAL SECTIONS.
2. 100-YR WSE SHOWN CORRESPONDS TO OVERBANK FLOW, WHERE APPLICABLE, AND ASSUMES COMPLETION OF PHASE 2 CONSTRUCTION.
3. THE DESIGN FLOW OF 120 CFS REPRESENTS THE FLOW WHICH WOULD BE CONVEYED IN THE CHANNEL WITHOUT OVERTOPPING THE OVERFLOW WEIR.

**HYDRAULIC INFORMATION**

PROJECT COMPARISON	EXISTING CREEK	RECLAIMED CREEK
STREAM LENGTH, MI	2.2	2.7
SINUOSITY	1.37	1.74
RIPARIAN WETLANDS, AC	0.5	15.9
RIPARIAN CORRIDOR AREA, AC	4.4	24.9
2-YEAR FLOODPLAIN AREA, AC	6.6	83.3
EFFECTIVE SLOPE, % <sup>1</sup>	0.52	0.11

<sup>1</sup> REFLECTS AVERAGE CHANNEL SLOPE EXCLUDING DROP STRUCTURES FOR PROPOSED CHANNEL

**STORM FLOWS**

RETURN PERIOD	FLOW, CFS
100-YR	4043
10-YR	2529
5-YR	2092
2-YR	1287

SOURCE: OUTFALL PLANNING REPORT FOR THE COTTONWOOD CREEK WATERSHED (UDFCD, JUNE 1991)

**RECORD DRAWING**  
10/24/05

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WIDTH TO DEPTH RATIO	DEPTH, FT	EXISTING WIDTH	PROPOSED WIDTH	EXISTING WIDTH TO DEPTH RATIO	PROPOSED WIDTH TO DEPTH RATIO
BASEFLOW <sup>2</sup>	0.2	8.0	15	40	50
BASEFLOW PLUS RIPARIAN FRINGE	1	14	66	14	66
BASEFLOW PLUS RIPARIAN BENCH	1.5	17	83	11	55
2 FOOT DEPTH	2	19	99	10	49
APPROXIMATE 2-YEAR FLOODPLAIN	6	26	319	4	53

<sup>2</sup> DOES NOT REFLECT SCOUR HOLES FOR PROPOSED CHANNEL

DATE: NOV 23, 2004 TIME: 8:16 AM

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10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC
No.	DATE	REVISIONS
APPR.		

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

**MULLER**

MEC PROJECT No. 02025.03

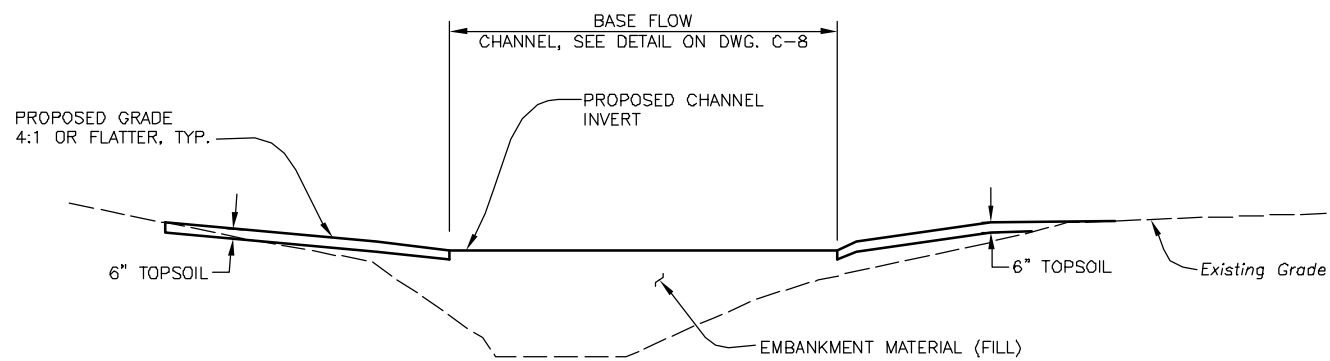
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DRAWN BKB  
CHECK DDJ

PREPARED FOR:  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

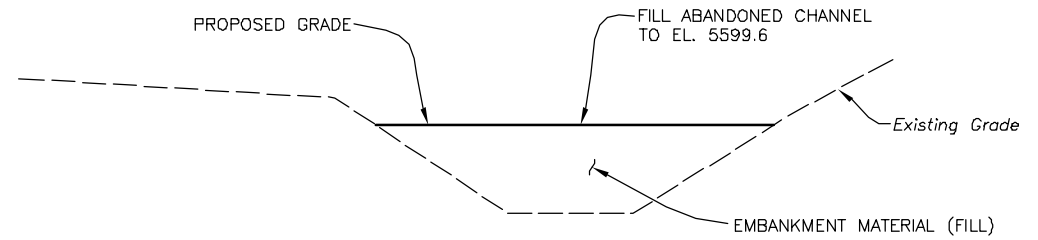
**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

CIVIL  
**PROFILE  
STA. 256+00 TO 277+74.8**

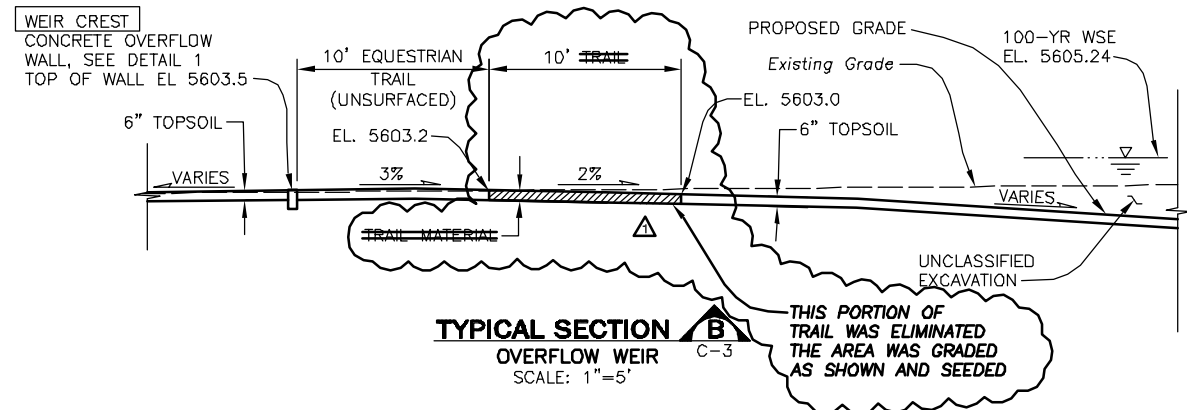
DATE	OCTOBER 2003
DRAWING NO.	C-6
SHEET NO.	9 OF 27



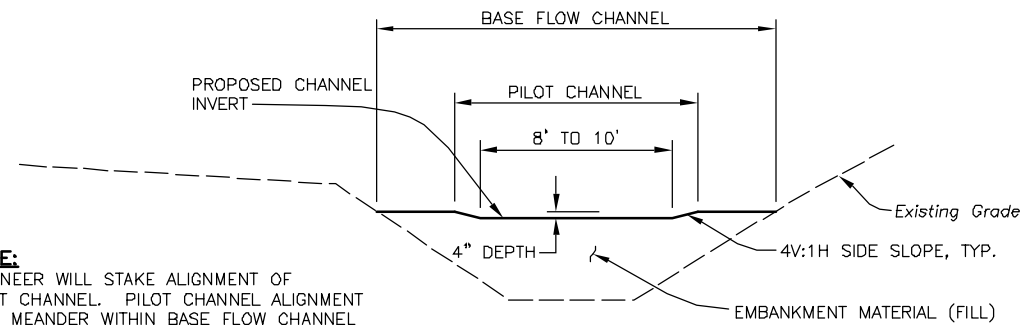
**TYPICAL SECTION A**  
SCALE: 1"=5'  
C-2



**TYPICAL SECTION C**  
ABANDONED CHANNEL C-3  
SCALE: 1"=5'

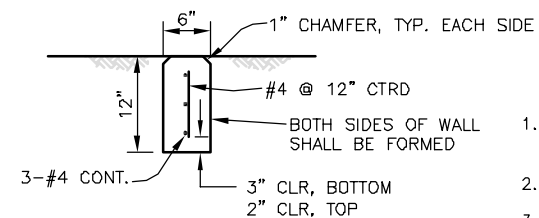


**TYPICAL SECTION B**  
OVERFLOW WEIR C-3  
SCALE: 1"=5'



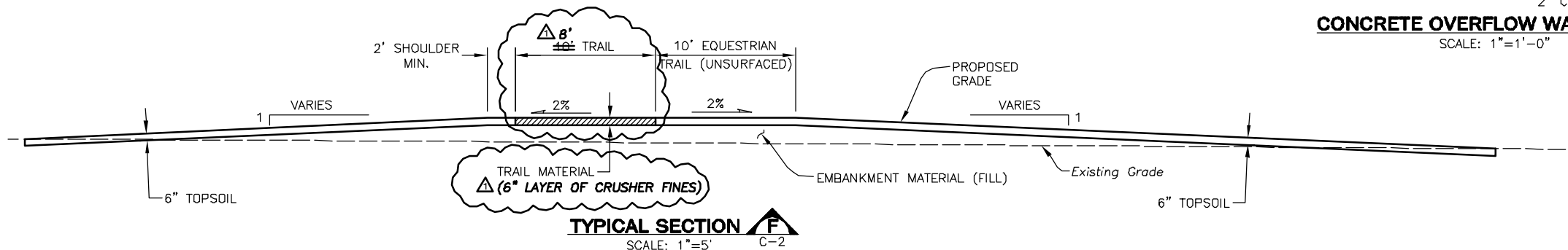
**NOTE:**  
ENGINEER WILL STAKE ALIGNMENT OF PILOT CHANNEL. PILOT CHANNEL ALIGNMENT WILL MEANDER WITHIN BASE FLOW CHANNEL LIMITS.

**TYPICAL SECTION G**  
EXISTING CHANNEL (STA 215+00 TO STA 226+00)  
SCALE: 1"=5'



**CONCRETE OVERFLOW WALL - DETAIL 1**  
SCALE: 1"=1'-0"

- NOTES:**
- BACKFILL BOTH SIDES OF WALL EVENLY (WITHIN 6" OF EACH OTHER).
  - CONCRETE SHALL BE CLASS B.
  - ALL REINFORCING STEEL SHALL BE GRADE 60.



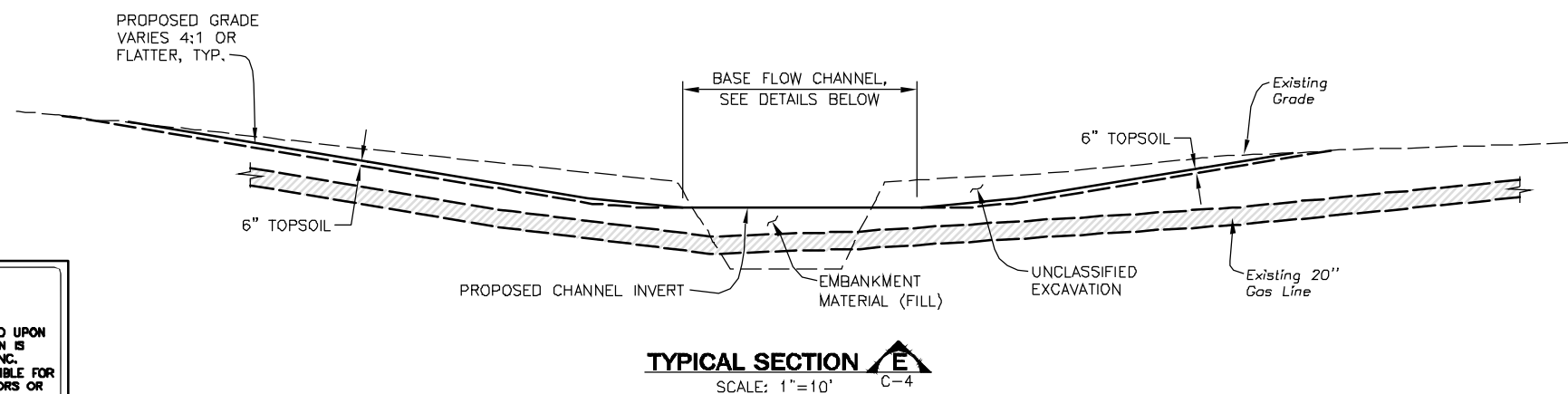
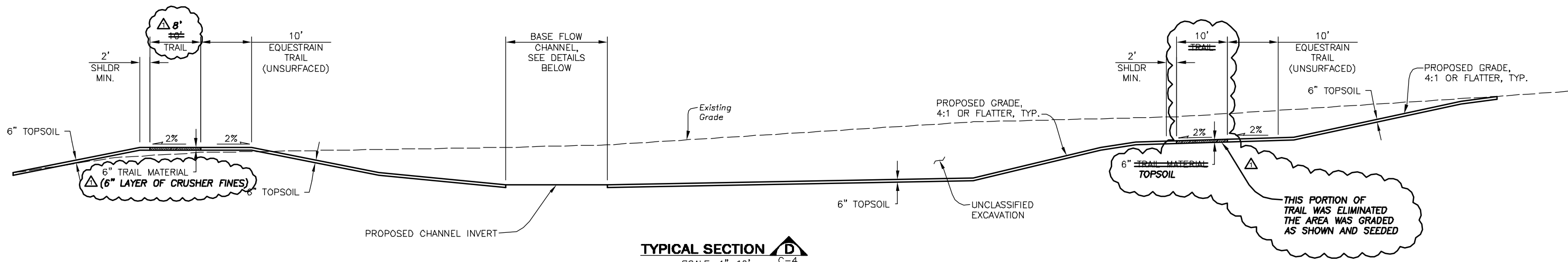
**TYPICAL SECTION F**  
SCALE: 1"=5'  
C-2

**RECORD DRAWING**  
10/24/05

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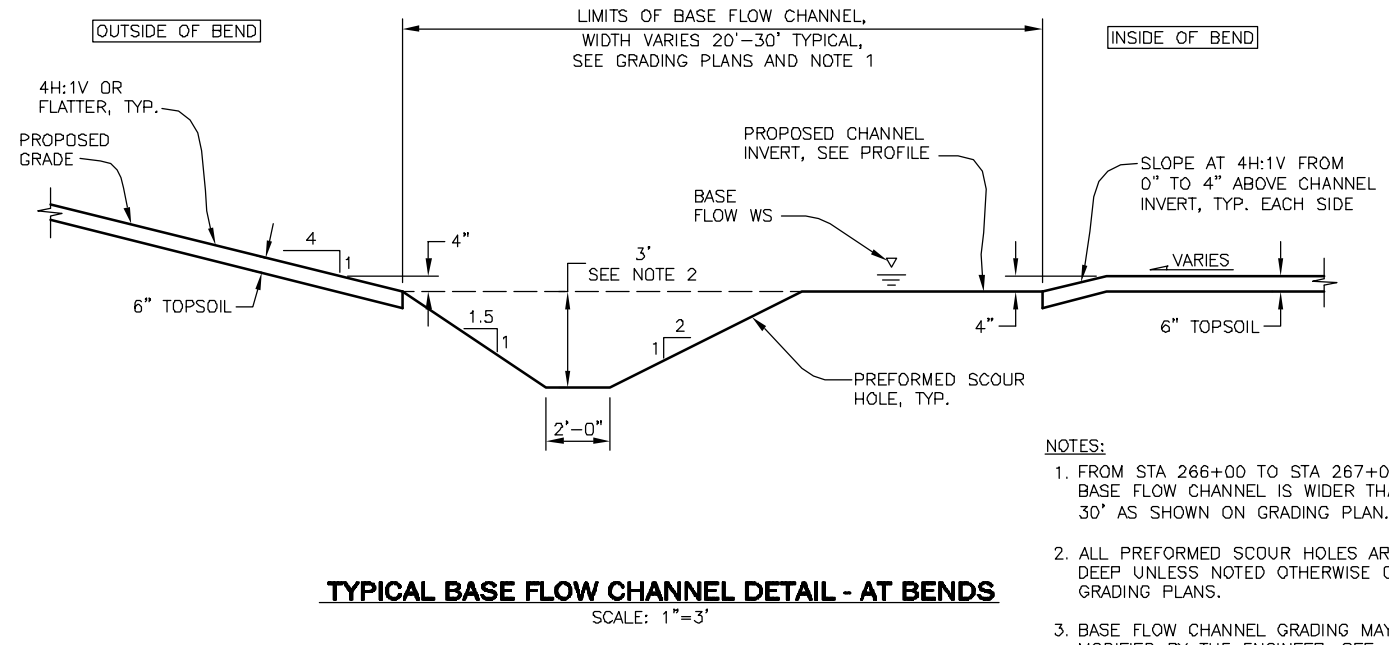
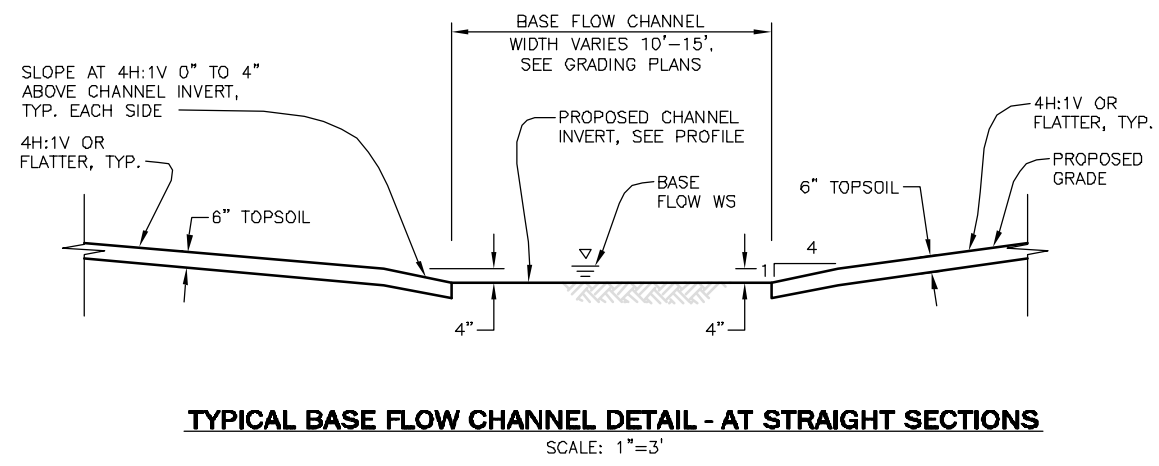
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10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC																
No. DATE REVISIONS APPR.		<b>MEC PROJECT No. 02025.03</b>																



**NOTE:**  
MINIMUM CLEARANCE FROM PROPOSED GRADE TO TOP OF GAS LINE IS 2'-0" WITHIN BASE FLOW CHANNEL AND 2'-6" TO 3'-0" ELSEWHERE. PRIOR TO GRADING, VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF THE GAS LINE VIA POTHOLING (A MINIMUM OF 4). NOTIFY ENGINEER OF POTHOLING RESULTS AND IF CLEARANCE WILL BE LESS. POTHOLING WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

**RECORD DRAWING**  
10/24/05  
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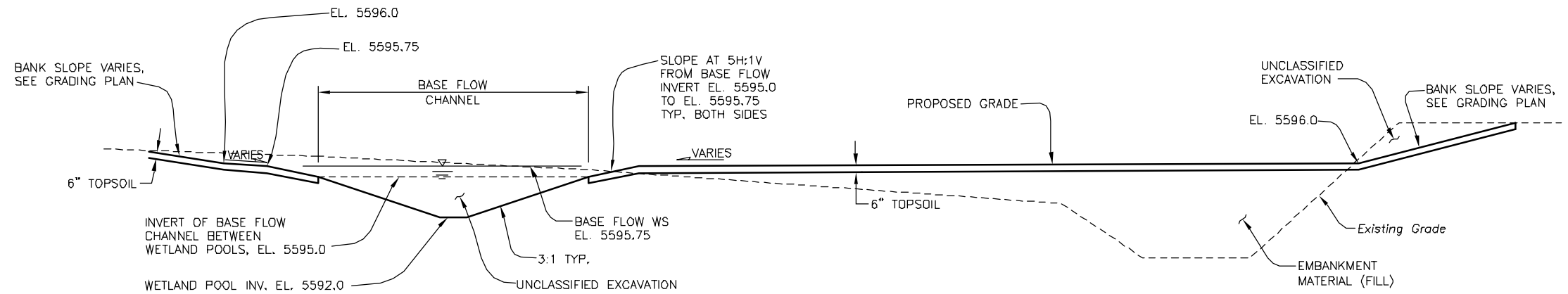


- NOTES:**
- FROM STA 266+00 TO STA 267+00 THE BASE FLOW CHANNEL IS WIDER THAN 30' AS SHOWN ON GRADING PLAN.
  - ALL PREFORMED SCOUR HOLES ARE 3' DEEP UNLESS NOTED OTHERWISE ON GRADING PLANS.
  - BASE FLOW CHANNEL GRADING MAY BE MODIFIED BY THE ENGINEER. SEE SUPPLEMENTARY CONDITIONS.

NOTE: BASE FLOW CHANNEL GRADING MAY BE MODIFIED BY THE ENGINEER. SEE SUPPLEMENTARY CONDITIONS.

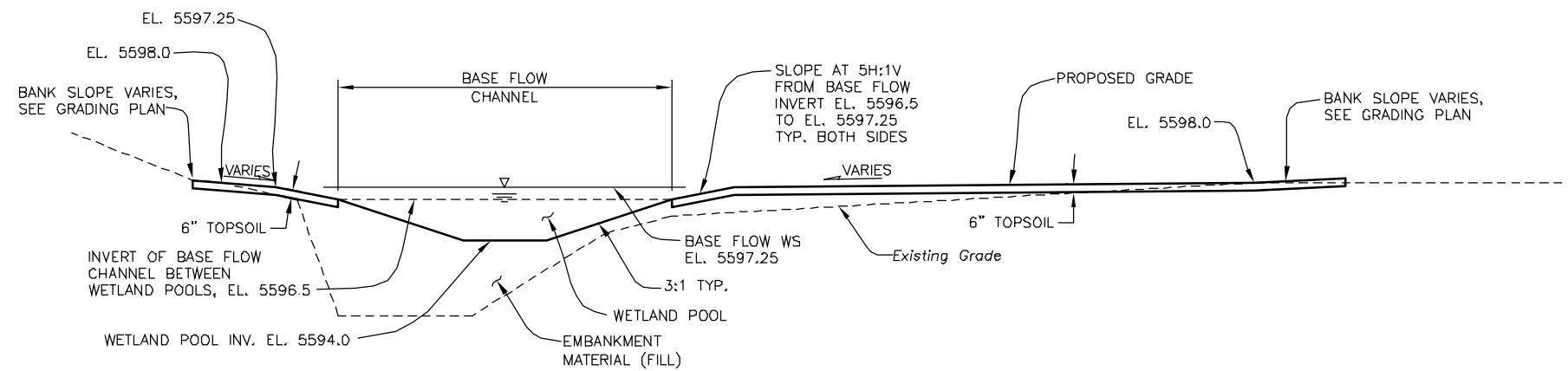
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No. DATE REVISIONS APPR.	<b>MEC PROJECT No. 02025.03</b>																	



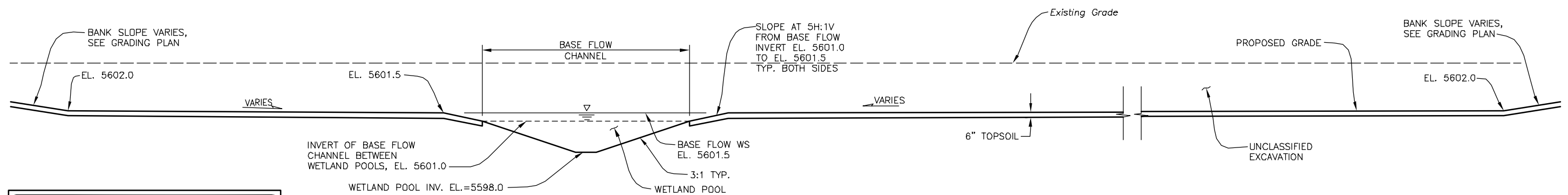
**WETLAND AREA 1 - TYPICAL SECTION**

SCALE: 1"=5' C-2



**WETLAND AREA 2 - TYPICAL SECTION**

SCALE: 1"=5' C-2



**WETLAND AREA 3 - TYPICAL SECTION**

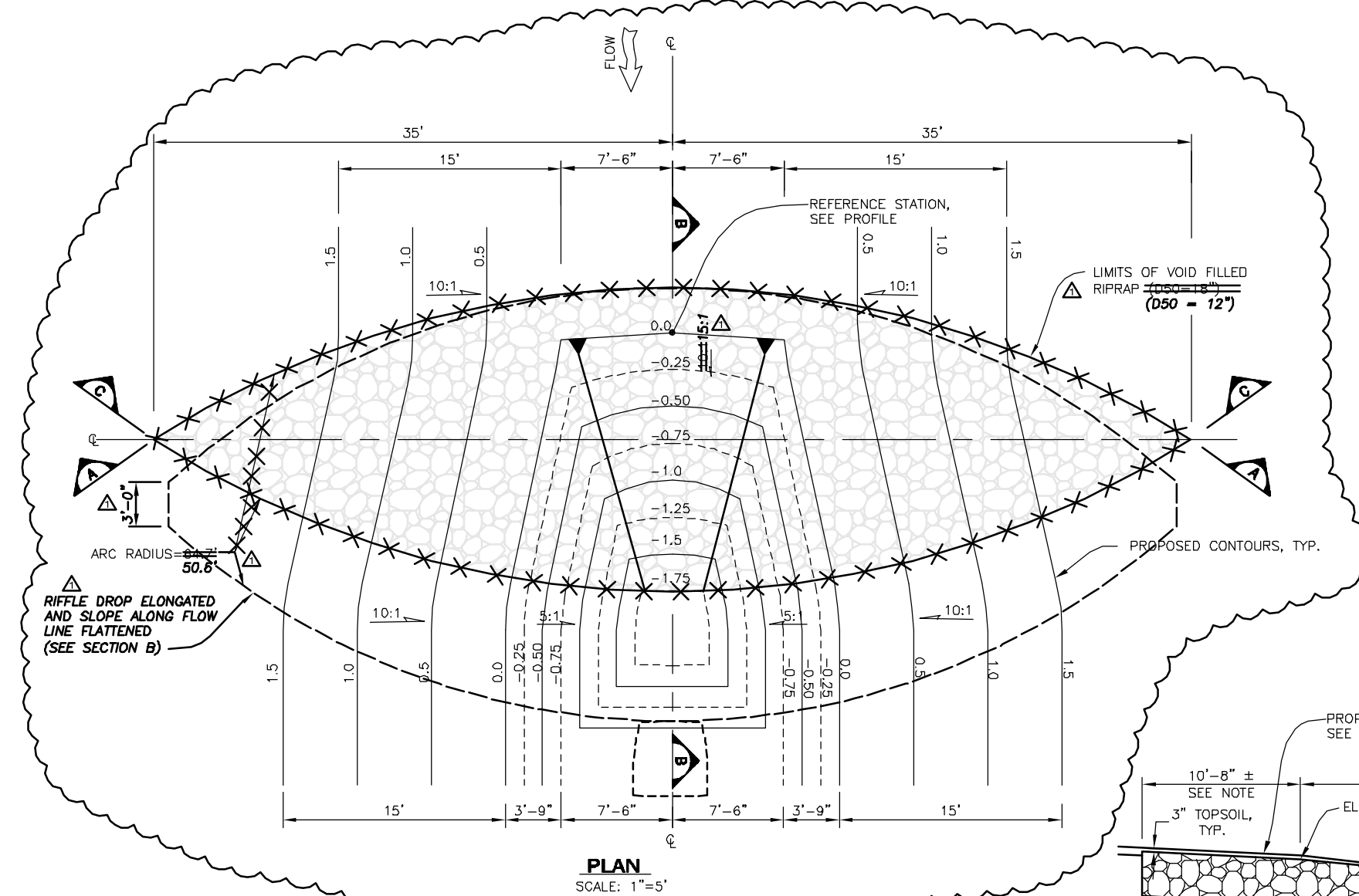
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**RECORD DRAWING**  
10/24/05

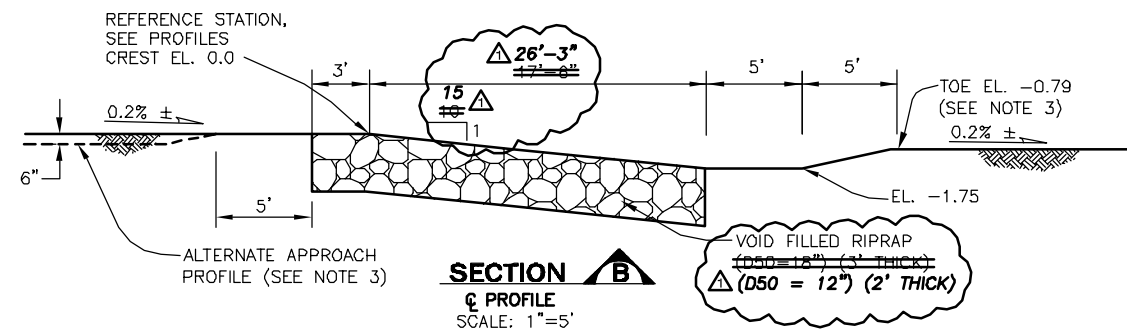
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DATE: OCT 17, 2005 TIME: 4:34 PM  
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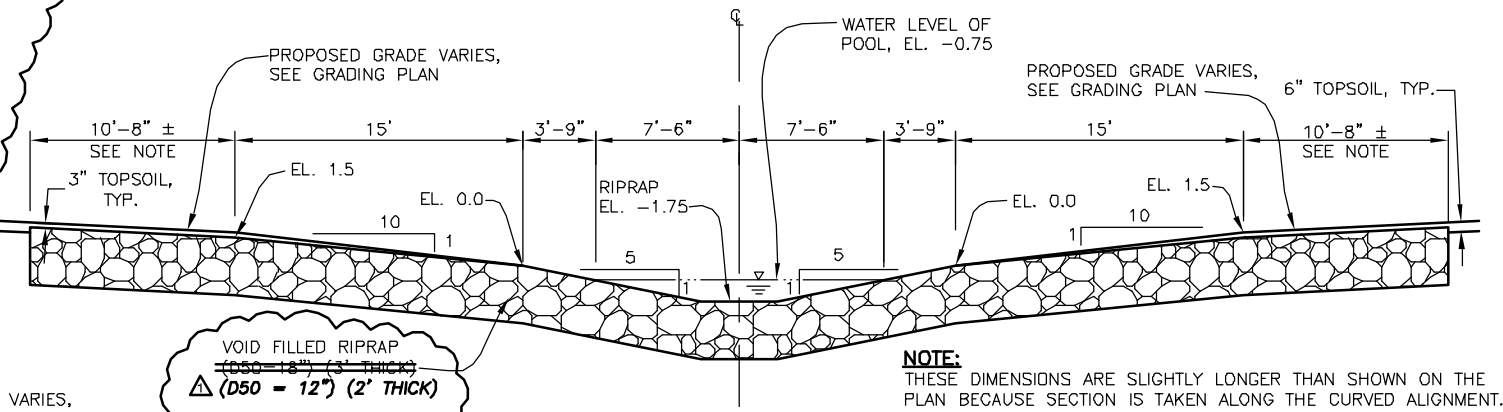
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	10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC															
No. DATE REVISIONS APPR. MEC PROJECT No. 02025.03	OCTOBER 2003 DRAWING NO. C-9 SHEET NO. 12 OF 27																	



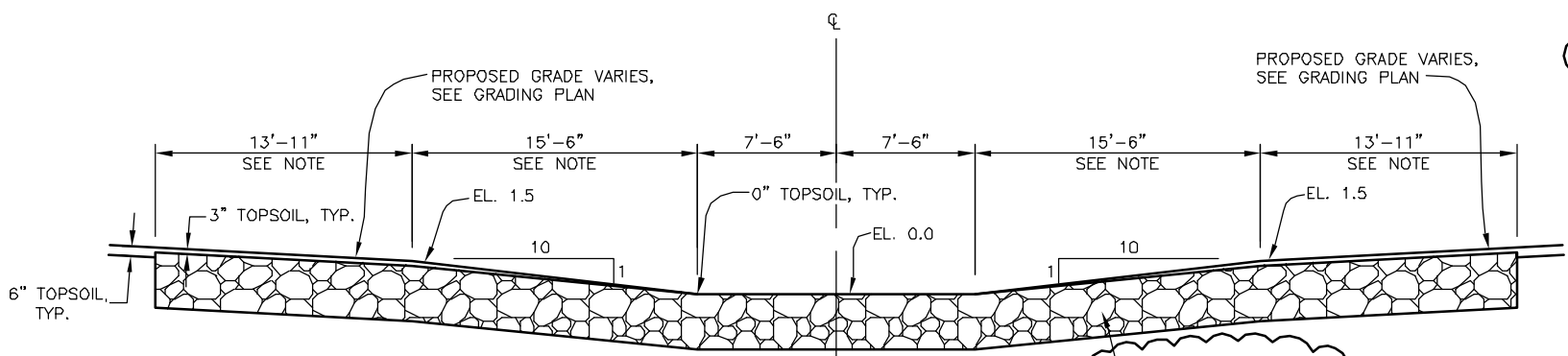
**PLAN**  
SCALE: 1"=5'



**SECTION B**  
PROFILE  
SCALE: 1"=5'



**SECTION C**  
TOE/POOL  
SCALE: 1"=5'



**SECTION A**  
CREST  
SCALE: 1"=5'

- DROP STRUCTURE NOTES:**
- ELEVATIONS SHOWN ARE ARBITRARY AND ARE BASED ON ELEVATION 0.0 FOR THE DROP CREST.
  - SEE GRADING PLAN AND PROFILE FOR ACTUAL ELEVATIONS OF DROP STRUCTURES.
  - VARIATION TO THE PROFILE SHALL BE AS FOLLOWS:
    - RIFFLE DROPS 5 AND 7 SHALL FOLLOW THE ALTERNATE APPROACH PROFILE TO CREATE A 6" POOL IN WETLAND AREAS 1 AND 2.
    - THE RELATIVE TOE ELEVATION FOR RIFFLE DROPS 6 AND 8 SHALL BE -1.0.
  - CONTOURS SHOWN HERE WILL GOVERN GRADING IN THE IMMEDIATE VICINITY OF RIFFLE DROPS.
  - CONFIGURATION OF RIFFLE DROP MAY BE MODIFIED BY THE ENGINEER. SEE SUPPLEMENTARY CONDITIONS.

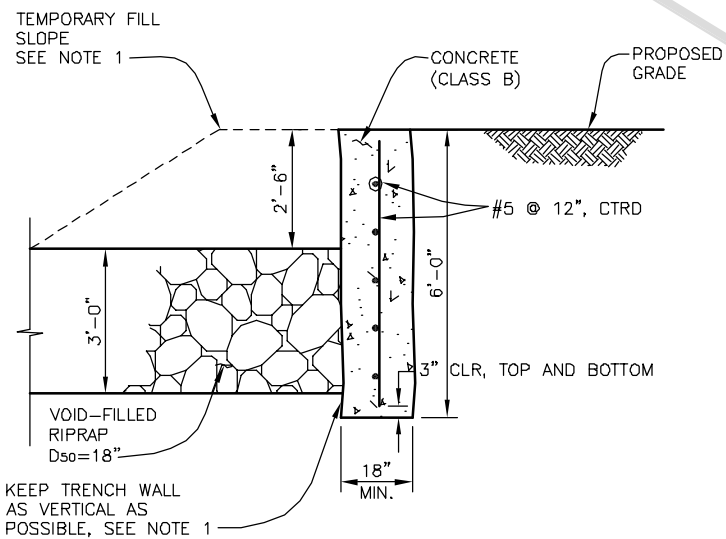
**NOTE:** THESE DIMENSIONS ARE SLIGHTLY LONGER THAN SHOWN ON THE PLAN BECAUSE SECTION IS TAKEN ALONG THE CURVED ALIGNMENT.

**RECORD DRAWING**  
10/24/05  
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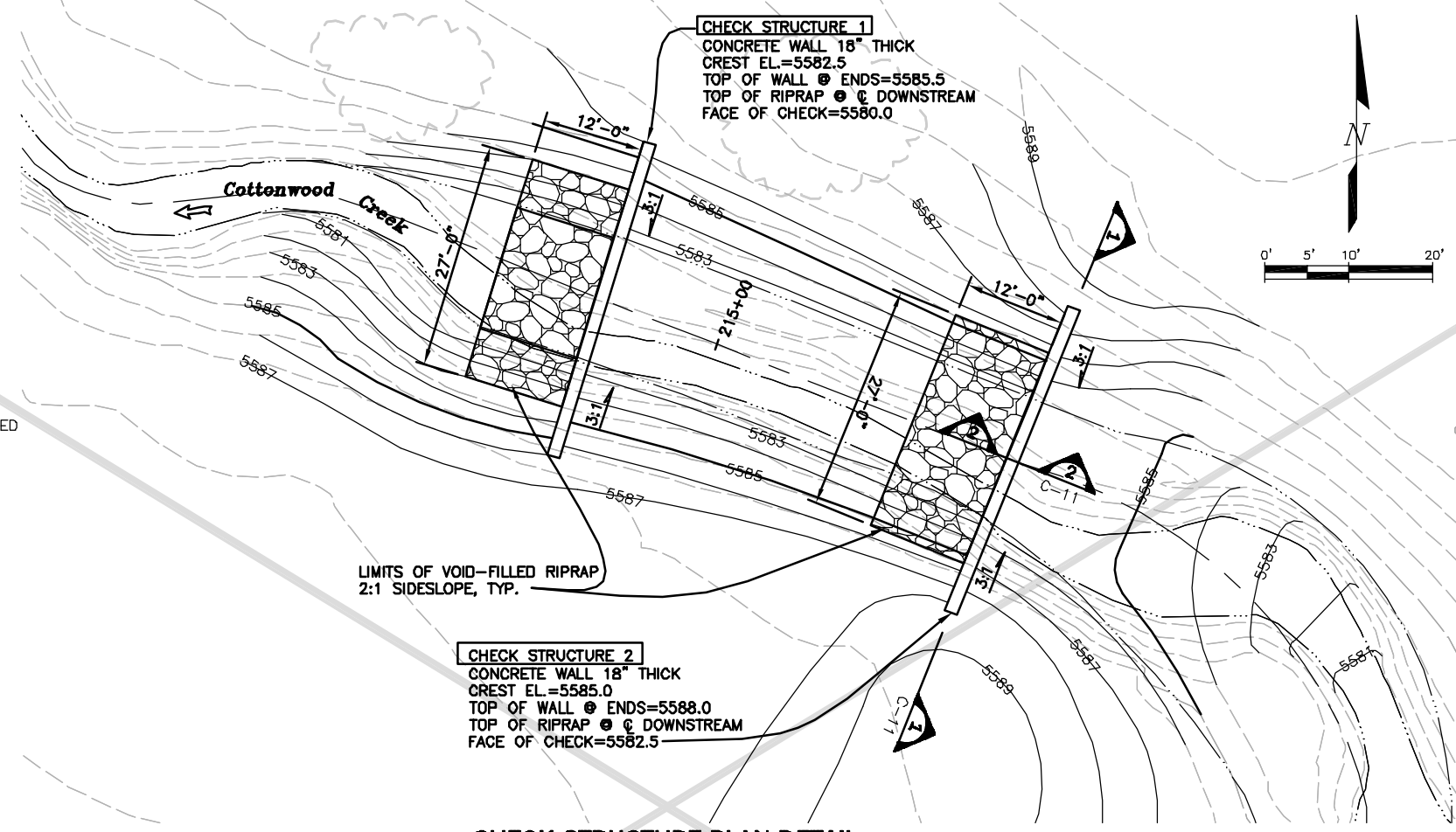
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				DRAWN BKB				DRAWING NO.	C-10
No.	DATE	REVISIONS	APPR.	MEC PROJECT No. 02025.03	DDJ				

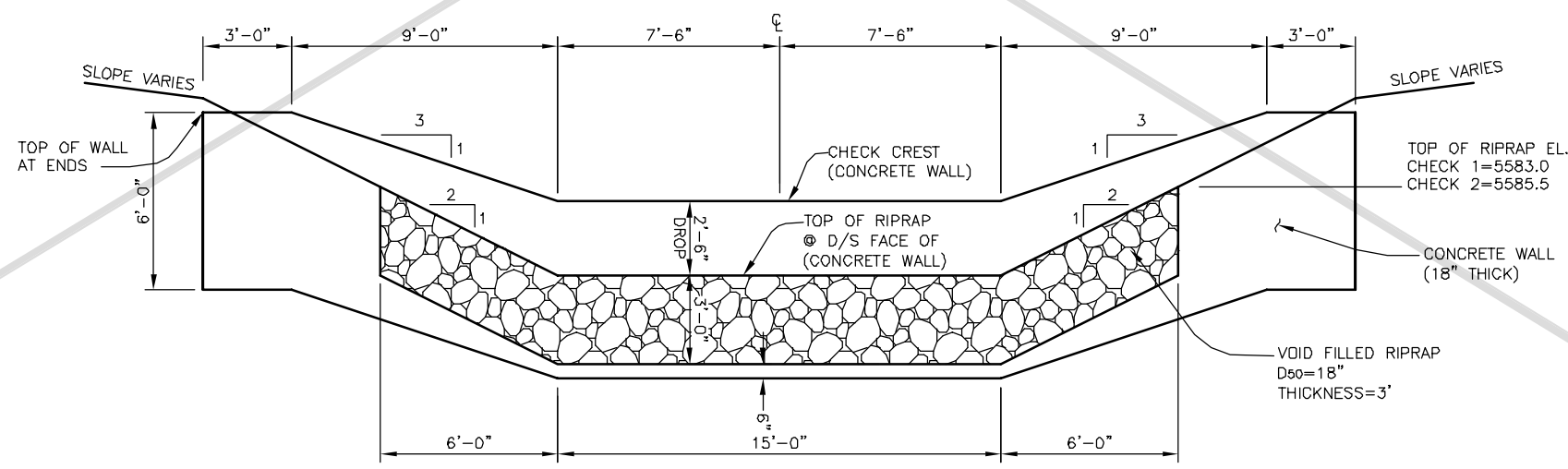


**CHECK STRUCTURE DETAIL**  
SCALE: 1'=2"



**CHECK STRUCTURE PLAN DETAIL**

**1** CHECK STRUCTURES ELIMINATED.



**TYPICAL SECTION 1**  
SCALE: 1'=3"

**RECORD DRAWING**  
10/24/05

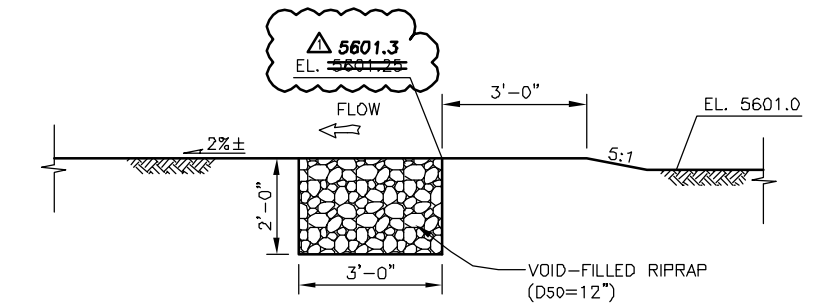
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- NOTES:**
- INTENT OF DESIGN IS TO FIRST FILL THE CHANNEL WITH EMBANKMENT MATERIAL LOCALLY AT EACH CHECK STRUCTURE TO MATCH THE PROPOSED TOP ELEVATION OF THE CONCRETE WALL. THE CONCRETE WALL FOR EACH STRUCTURE IS THEN TO BE CONSTRUCTED BY EXCAVATING AN 18"-WIDE TRENCH AND FILLING WITH CLASS B CONCRETE. AFTER CONCRETE CURES, EXCAVATE AGAINST CONCRETE WALL TO PLACE RIPRAP. CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE NECESSARY MEASURES (DEWATERING, SHORING, BRACING, ETC.) TO PROTECT THE CONCRETE WALL, PARTICULARLY FROM OVERTURNING, DURING PLACEMENT OF RIPRAP.
  - ALL REINFORCING STEEL SHALL BE GRADE 60.

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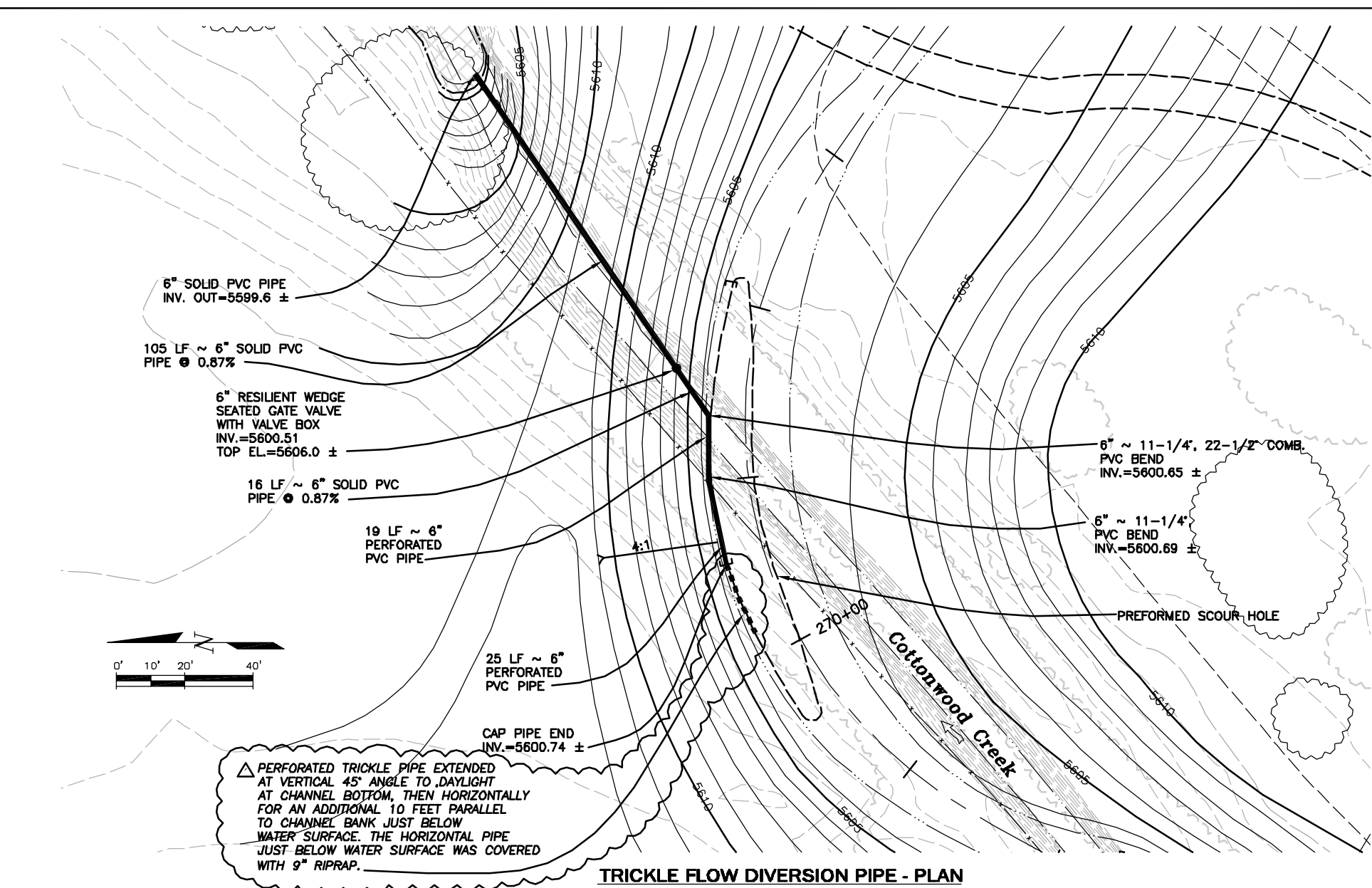
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				DRAWN BKB				SHEET NO.	C-11
			MEC PROJECT No. 02025.03	CHECK DDJ				14 OF 27	

- NOTE:**
1. ALL POLYVINYL CHLORIDE PIPE AND FITTINGS SHALL BE C900. SCHEDULE 80 OR SDR 35 PVC PIPE MAY BE USED AS A SUBSTITUTE FOR C900 IF ACCEPTABLE CONNECTION BE PROVIDED TO VALVE. ENGINEER'S APPROVAL REQUIRED FOR SUBSTITUTE MATERIALS.
  2. PERFORATED PIPE SHALL HAVE 2 ROWS OF SLOTS WITH A MAX. WIDTH=0.125 INCHES. LENGTH=1-3/8" ± 1/4", AND AT SPACING OF 0.516 INCHES.
  3. BACKFILL SOLID PVC PIPE WITH EMBANKMENT MATERIAL.



**ROCK SILL DETAIL**  
SCALE: 1"=2'

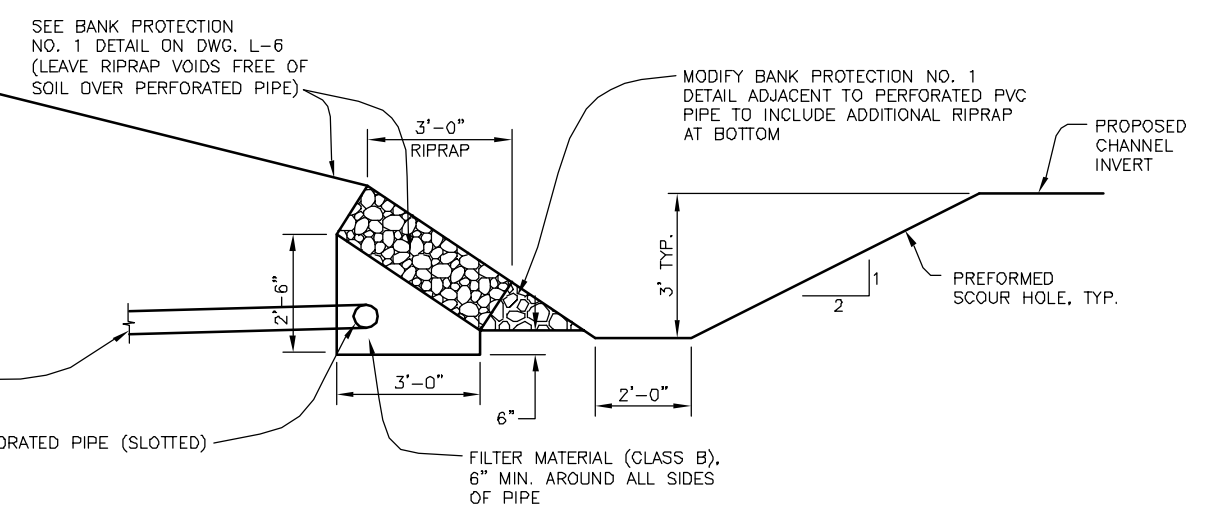
**NOTE:**  
ENDS OF ROCK SILL SHALL SLOPE UP TO MATCH THE PROPOSED GRADE AT ELEVATION 5602.5. SEE GRADING PLAN DWG. C-3.



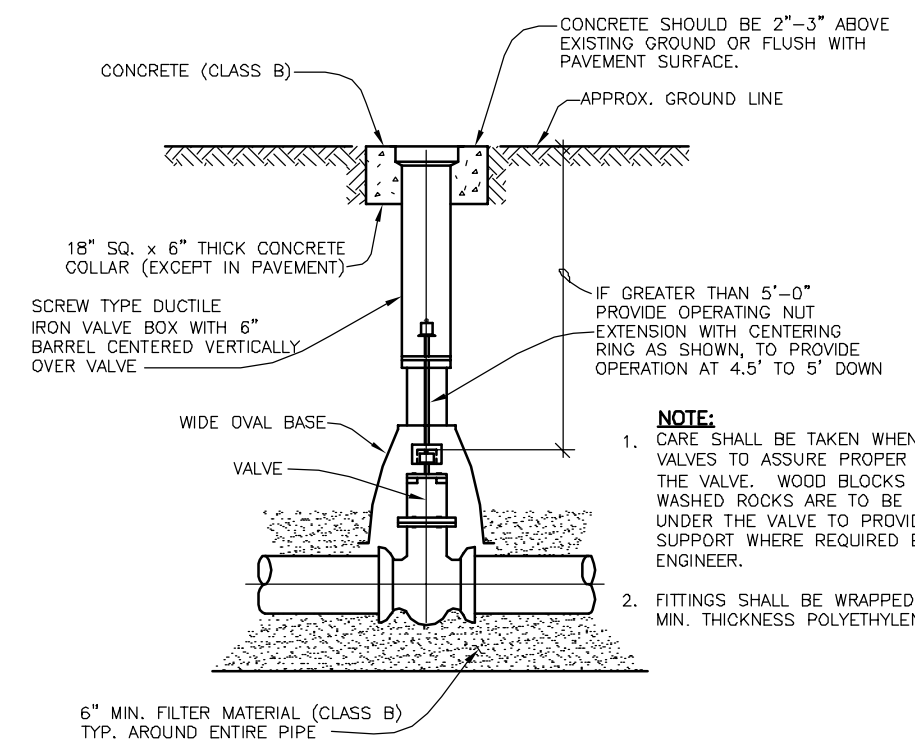
**TRICKLE FLOW DIVERSION PIPE - PLAN**

**RECORD DRAWING**  
10/24/05

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**TRICKLE FLOW DIVERSION PIPE - SECTION**  
SCALE: 1"=2'

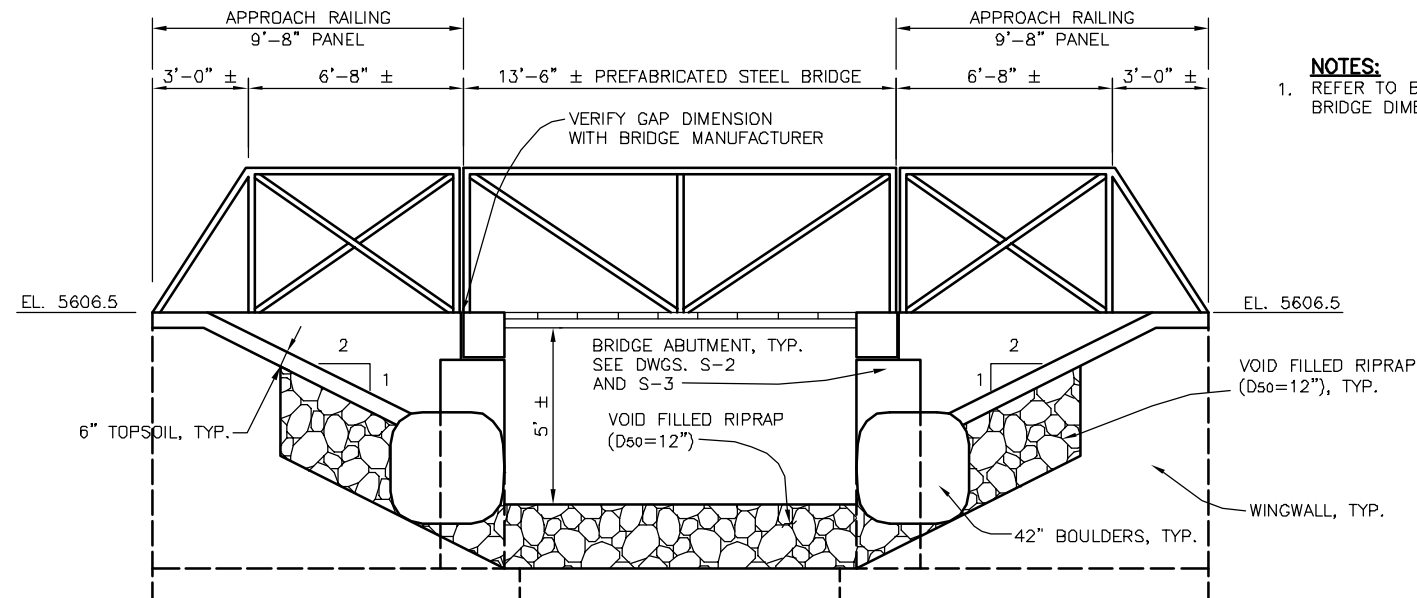


**VALVE BOX DETAIL**  
N.T.S.

- NOTE:**
1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE. WOOD BLOCKS OR 3/4" WASHED ROCKS ARE TO BE INSTALLED UNDER THE VALVE TO PROVIDE PROPER SUPPORT WHERE REQUIRED BY THE ENGINEER.
  2. FITTINGS SHALL BE WRAPPED WITH 8 MIL MIN. THICKNESS POLYETHYLENE.

DATE: OCT 18, 2005 TIME: 8:16 AM  
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(303) 988-4939																																						



**ELEVATION (Looking Downstream)**

SCALE 1"=3'

- NOTES:**  
1. REFER TO BRIDGE SHOP DRAWINGS FOR EXACT BRIDGE DIMENSIONS.

△ THE BRIDGE WAS MANUFACTURED BY STEADFAST BRIDGE COMPANY.

**GENERAL STRUCTURE NOTES**

- THE PREFABRICATED STEEL BRIDGE SHALL BE MANUFACTURED BY:
  - CONTINENTAL MANUFACTURING, INC. 8301 STATE HWY. 29 NORTH, ALEXANDRIA, MINNESOTA 56308, 1(800)328-2047.
  - APPROVED EQUAL
- THE CONTRACTOR IS RESPONSIBLE FOR ORDERING AND PURCHASING THE PREFABRICATED STEEL BRIDGE AND APPROACH RAILINGS. CONTRACTOR IS RESPONSIBLE FOR UNLOADING, ERECTING, INSTALLING BRIDGE AND APPROACH RAILINGS, AND ALL INCIDENTALS REQUIRED TO MAKE THE CONSTRUCTION OF THE BRIDGE COMPLETE IN PLACE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE BRIDGE MANUFACTURER REGARDING SHOP DRAWING AND DIMENSIONS OF THE PREFABRICATED BRIDGE AND APPROACH RAILINGS TO ENSURE THAT THE ABUTMENTS ARE CONSTRUCTED IN THE CORRECT LOCATIONS.
- STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" LATEST EDITION. THE "SERVICE LOAD DESIGN METHOD" (ALLOWABLE STRESS DESIGN) SHALL BE USED FOR STRUCTURAL STEEL.
- FABRICATOR SHALL DESIGN THE BRIDGE FOR THE FOLLOWING LOADS:
  - LIVE LOAD: 85 LBS. PER SQUARE FOOT.
  - VEHICLE LOAD: 1,200 LBS. FOR 2 WHEEL VEHICLES, 10,000 LBS. FOR 4 WHEEL VEHICLES
  - CONCENTRATED LOAD: 1,000 LBS. PLACED ON ANY 2.5 FOOT X 2.5 FOOT SQUARE.
  - WIND LOAD: 25 LBS. PER SQUARE FOOT HORIZONTAL FORCES, 20 LBS. PER SQUARE FOOT OVERTURNING (UPWARD) FORCES.
  - MINIMUM TOP CHORD/RAILING LOADS: 50 LBS. PER LINEAL FOOT OR A 200 LBS. POINT LOAD.
  - SUBMIT STRUCTURAL CALCULATIONS BEARING THE SEAL OF A COLORADO REGISTERED PROFESSIONAL ENGINEER.
- SUBMIT SHOP DRAWINGS: INDICATE SHOP FABRICATION AND FIELD ERECTION DETAILS INCLUDING CUTS, COPES, CONNECTIONS, HOLES, THREADED FASTENERS, AND WELDS FOR BRIDGE STRUCTURAL FRAMEWORK AND RAILINGS.
- SPECIFY THE ANCHOR BOLTS, WHICH ARE EMBEDDED IN CAST-IN-PLACE CONCRETE, IN TIME TO BE INSTALLED BEFORE THE START OF THE CONCRETE OPERATIONS. ANCHOR BOLTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- THE PREFABRICATED BRIDGE SHALL BE SUPPLIED WITH THE FOLLOWING ITEMS:
  - THE BRIDGE SHALL BE 13.5 FEET LONG BY 10 FEET WIDE NOMINALLY (AS MEASURED FROM THE INSIDE FACE OF STRUCTURAL ELEMENTS AT DECK LEVEL).
  - THE BRIDGE SHALL BE CONSTRUCTED OF SELF-WEATHERING CORROSION-RESISTANT STEEL.
  - BRIDGE RAILING HEIGHT SHALL BE 54 INCHES AND CONTINUOUS HORIZONTAL RAILS SHALL BE PROVIDED ON THE OUTSIDE FACE SUCH THAT A FOUR-INCH DIAMETER SPHERE CANNOT PASS THROUGH THE RAILING.
  - IRON WOOD SMOOTH RUB/HAND RAILS SHALL BE ATTACHED AT A HEIGHT OF 3.5 FEET.
  - THE BRIDGE SHALL BE SUPPLIED WITH IRON WOOD DECKING.
  - IRON WOOD SHALL BE NATURALLY DURABLE HARDWOOD IPE (TABEBUIA SPP) LAPACHO GROUP, PARTIALLY AIR DRIED TO A MOISTURE CONTENT OF 15% TO 20%, AND SUPPLIED S4S (SURFACED FOUR SIDES), E4E (EASED FOUR EDGES), WITH THE EDGES EASED TO A RADIUS OF 1/8". ENDS OF EACH PIECE SHALL BE SEALED WITH "ANCHORSEAL" MOBIL CER-M OR EQUAL AQUIOUS WAX LOG SEALER.
  - THE VERTICAL CAMBER AT BRIDGE MID SPAN SHALL BE 1% OF THE BRIDGE LENGTH.
  - STEEL TOE PLATES SHALL BE INCLUDED IN THE BRIDGE FABRICATION ON THE INSIDE FACE OF RAILINGS.
- STEEL COVER PLATES SHALL BE ATTACHED (WELDED) AT THE BRIDGE ENDS TO COVER THE GAP BETWEEN THE BRIDGE END FLOOR BEAM AND CONCRETE ABUTMENT. THE COVER PLATES SHALL BE MANUFACTURED WITH BEVELED EDGES.
- THE CONTRACTOR SHALL CONSTRUCT CAST-IN-PLACE ABUTMENT WALLS & FOOTINGS FOR THE PREFABRICATED BRIDGE AS SHOWN ON THE DRAWINGS.

**GENERAL STRUCTURE NOTES:**

- SEE CONTRACT SPECIFICATIONS REGARDING WATER CONTROL (SURFACE AND SUBSURFACE) DURING CONSTRUCTION.
- SOIL COMPACTION REQUIREMENTS BENEATH STRUCTURES ARE 95% OF THE MAXIMUM DRY DENSITY MEASURED IN ACCORDANCE WITH ASTM D698 (STANDARD PROCTOR) UNLESS OTHERWISE NOTED.
- EXPLORATORY BORINGS AND LOGS WERE PERFORMED BY MAX FOUR ENGINEERS AND ARCHITECTS, LLC.
- CONCRETE IN ALL STRUCTURES SHALL BE CLASS D CONCRETE. ALL EXPOSED CONCRETE SHALL HAVE A CDOT CLASS 2 OR 5 FINISH. ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4" X 3/4" CHAMFER.
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- REFER TO PEDESTRIAN BRIDGE SHOP-DRAWINGS FOR DISTANCE BETWEEN ABUTMENTS, LAYOUT FOR ANCHOR BOLTS AND POSITIONING OF BRIDGE ON ABUTMENT.

**APPROACH RAILING NOTES:**

- RAILINGS SHALL CONSIST OF TUBING, ANGLES, PLATES AND BARS MADE OF SELF-WEATHERING CORROSION-RESISTANT STEEL MATCHING BRIDGE RAILINGS.
- FOUR PANELS SHALL BE PROVIDED, AND SHALL BE 9'-8" ± LONG BY 4'-6" HIGH AS SHOWN ABOVE. EACH PANEL SHALL INCLUDE BASE PLATES AND EXPANSION ANCHORS, IRON WOOD RUB RAILS, TOE PLATES, AND HORIZONTAL SAFETY RAILS TO PROVIDE LESS THAN A 4" OPENING. THE PANEL SHALL BE FABRICATED WITH SQUARE END VERTICAL MEMBERS. MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR RAILINGS.
- EXPANSION ANCHORS SHALL BE INSTALLED IN CONFORMITY WITH THE MANUFACTURER'S RECOMMENDATION FOR MAXIMUM HOLDING CAPACITY. HOLE DEPTH SHALL NOT BE LESS THAN FOUR BOLT HOLE DIAMETERS. THE MINIMUM DISTANCE FROM THE ANCHOR TO THE EDGE OF THE CONCRETE FACE SHALL NOT BE LESS THAN 6 INCHES.
- RAILING PANEL LENGTHS SHALL BE SHORTENED AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE TO BRIDGE RAILING, BUT SHALL MAINTAIN THE REQUIREMENT FOR NON-PASSAGE OF A 4-INCH SPHERE.

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

DESIGN	MDC/DAH
DRAWN	BKB
CHECK	DDJ

**PREPARED FOR:**  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

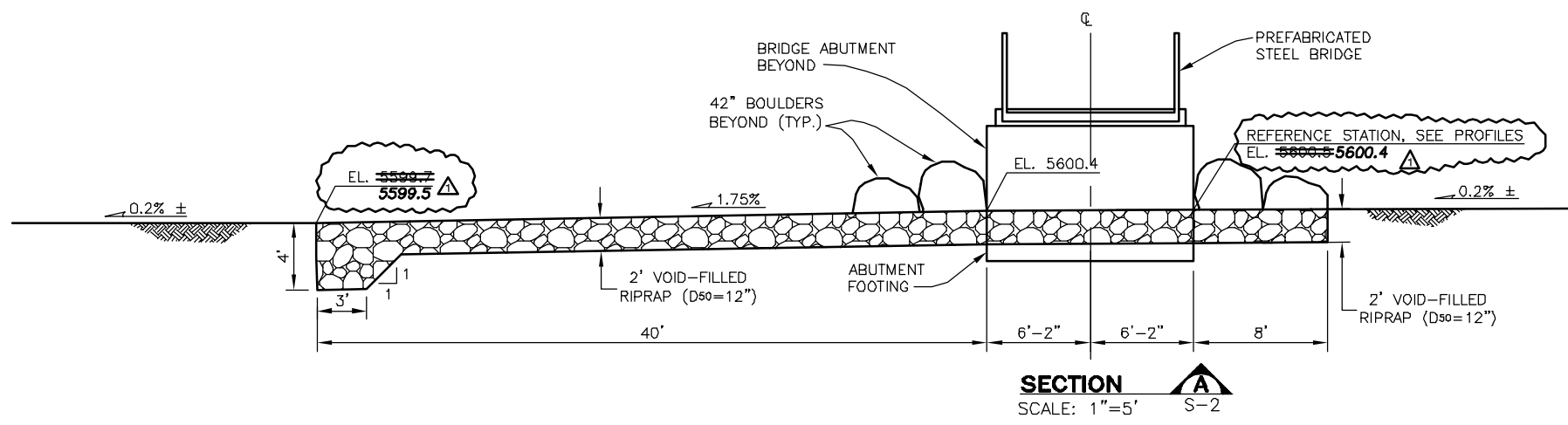
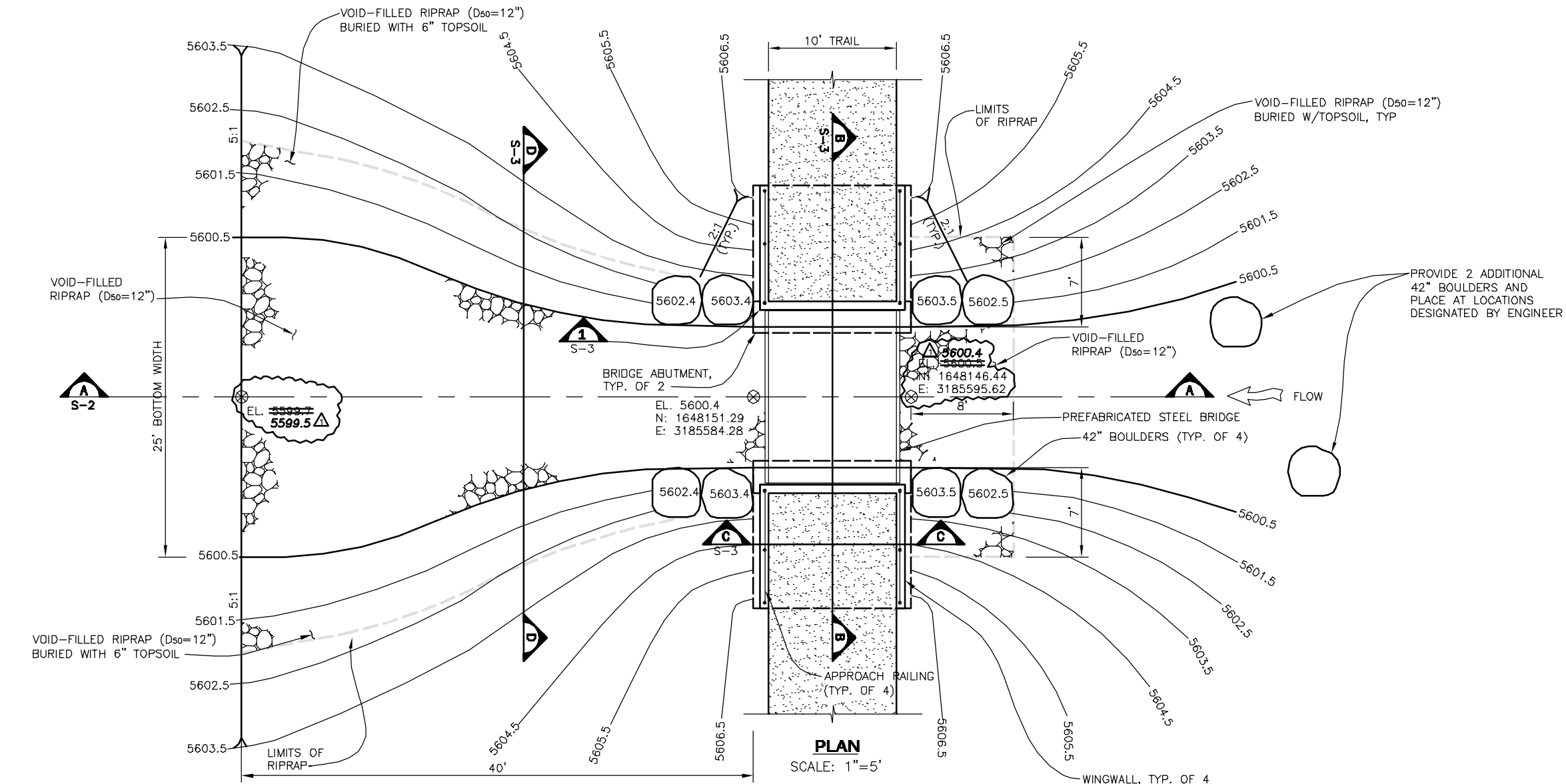
**STRUCTURAL  
TRAIL CROSSING  
ELEVATION AND NOTES**

DATE	OCTOBER 2003
DRAWING NO.	S-1
SHEET NO.	16 OF 27



DATE: OCT 18, 2005 TIME: 8:38 AM

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 LAKEWOOD, COLORADO 80226  
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DESIGN: MDC  
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**COTTONWOOD CREEK RECLAMATION**  
**PHASE 1**  
**CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

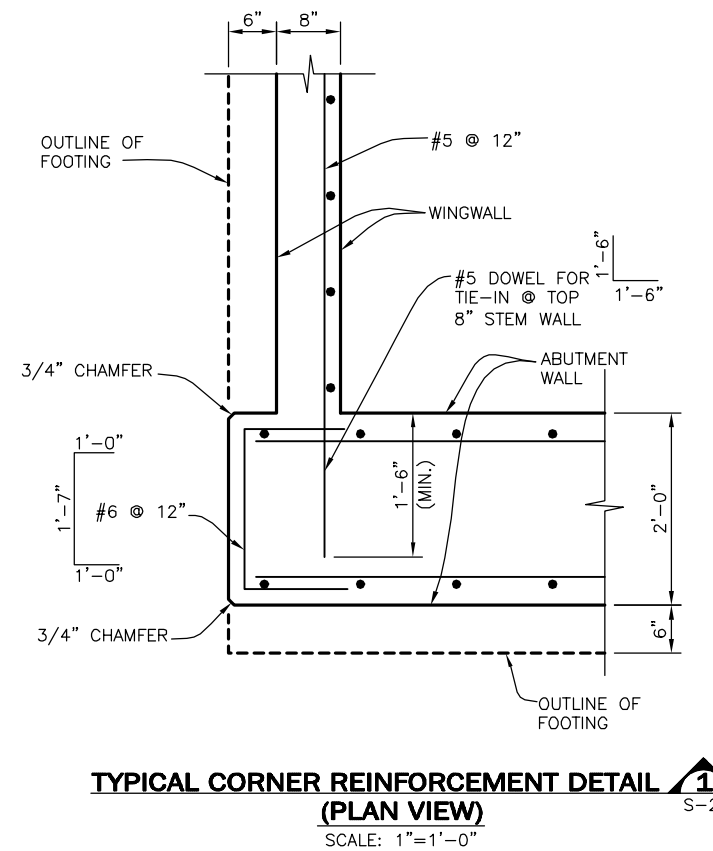
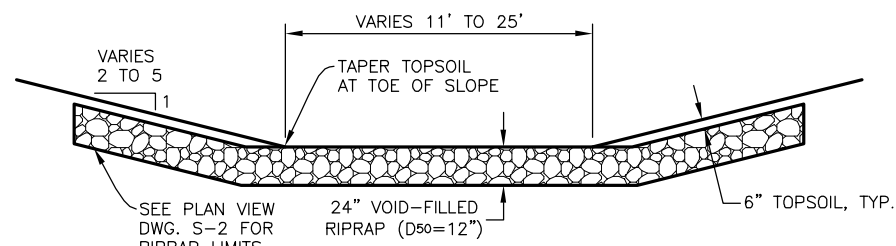
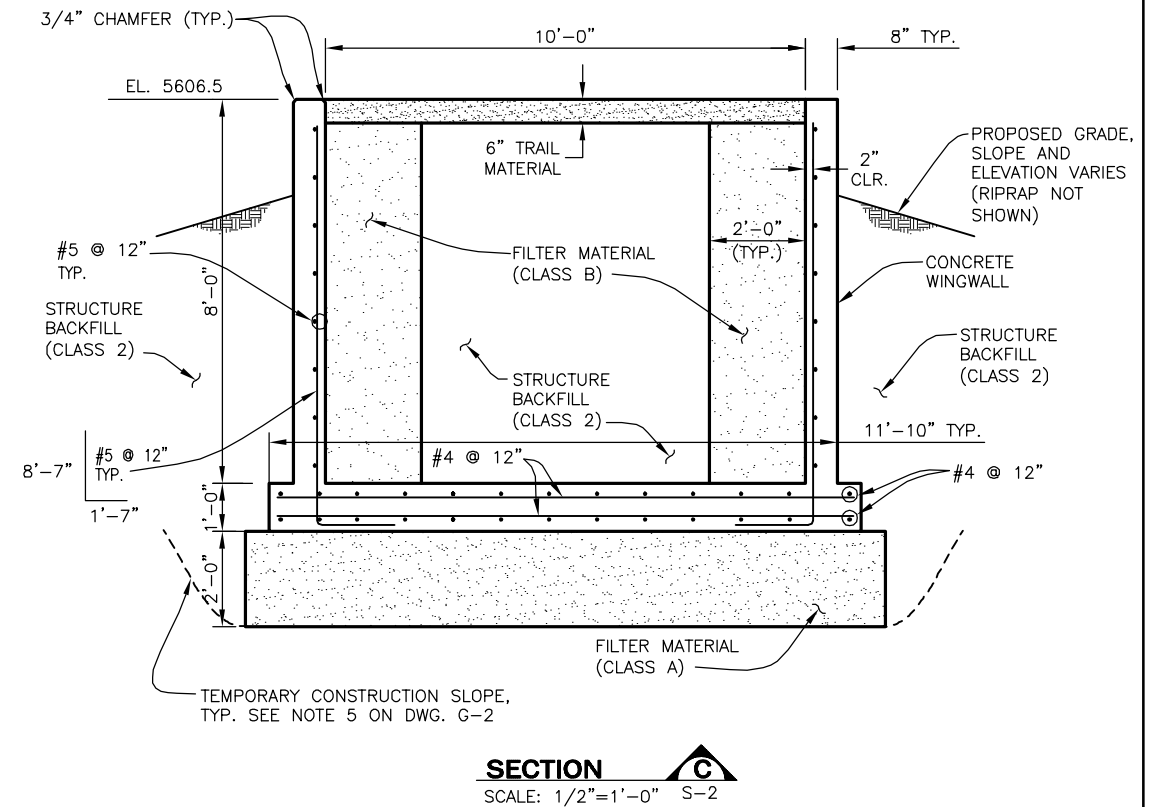
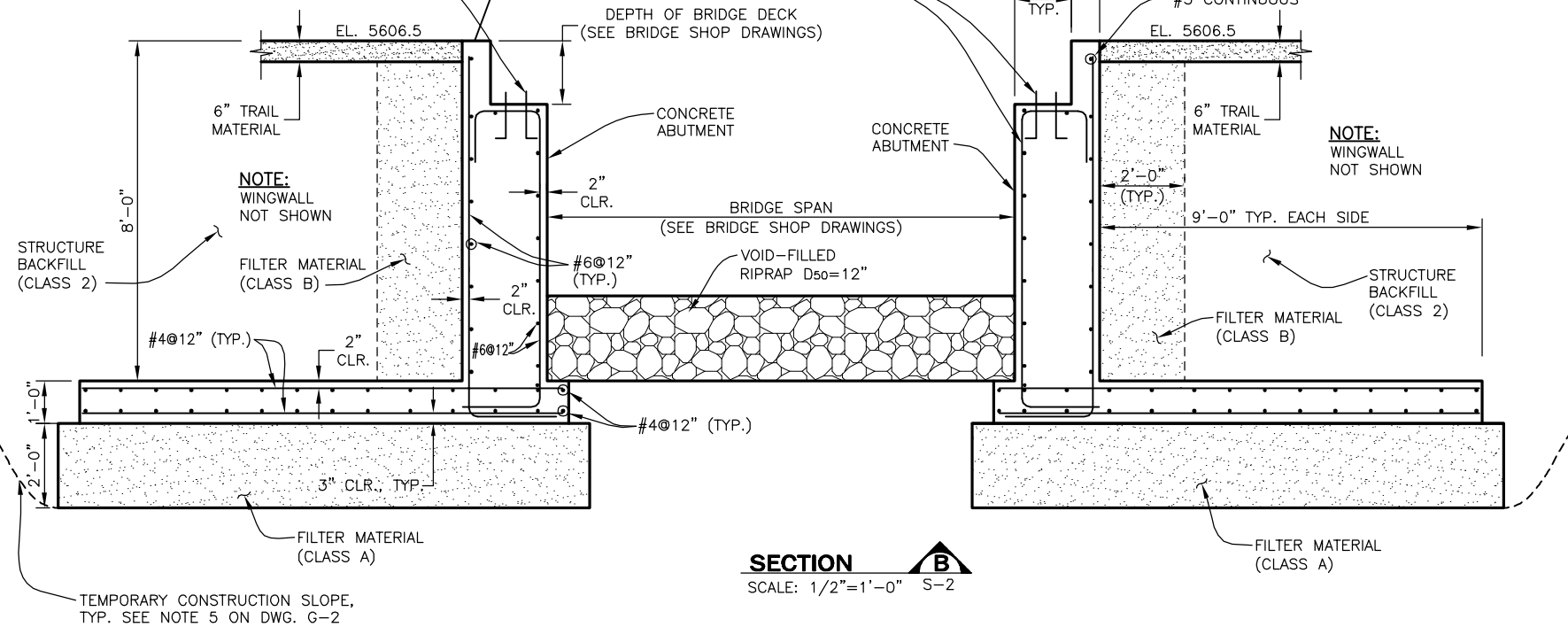
STRUCTURAL  
**TRAIL CROSSING**  
**PLAN AND PROFILE**

DATE: OCTOBER 2003  
 DRAWING NO.: S-2  
 SHEET NO.: 17 OF 27

ANCHOR BOLTS 3/4"x1'-0" W/3" HOOK (CONTRACTOR SHALL FURNISH AND INSTALL PER BRIDGE MANUFACTURER'S SPECIFICATIONS) BOLTS SHALL BE INCLUDED IN THE CONCRETE WORK AND NOT PAID FOR SEPARATELY. EACH BOLT SHALL BE PROVIDED WITH TWO NUTS AND WASHER.

EL. 5606.45

STEEL REINFORCING AND ANCHOR BOLTS SHALL BE THE SAME FOR BOTH ABUTMENTS

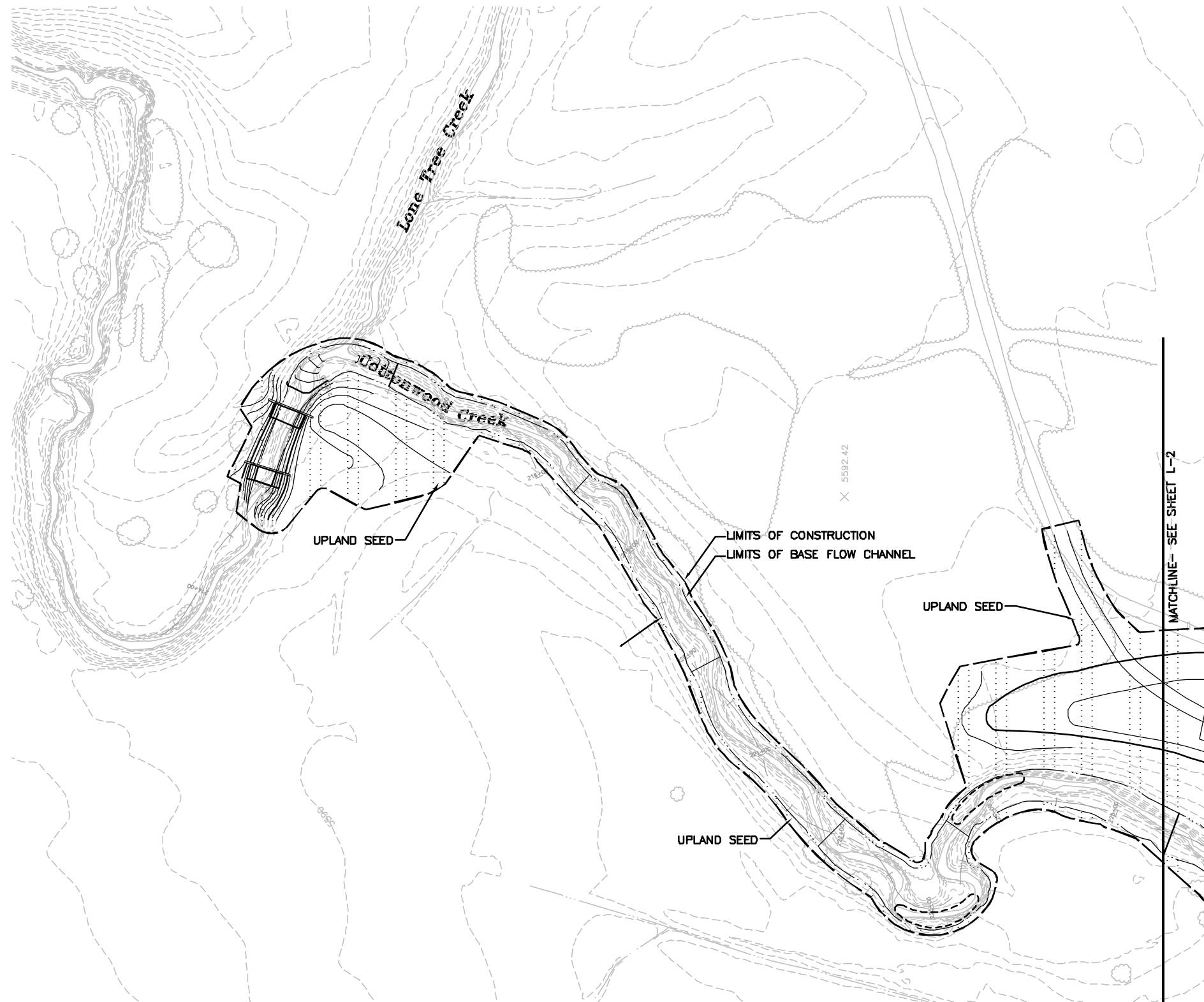


**RECORD DRAWING**  
10/24/05

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 THIS 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.

DATE: OCT 18, 2005 TIME: 8:50 AM  
NAME: S:\02025.03\Phase 1\RECORD DWG\02025.03-SECT1-REC.dwg

10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4939	DESIGN	MDC/DAH	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION</b> <b>PHASE 1</b> <b>CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	STRUCTURAL <b>TRAIL CROSSING SECTIONS</b>	DATE	OCTOBER 2003
				DRAWN	BKB				DRAWING NO.	S-3
No.	DATE	REVISIONS	APPR.	MEC PROJECT No. 02025.03	DDJ					



**LEGEND**

**BASE BID PLANTINGS**

- + PLAINS COTTONWOOD (PS)
- + NARROWLEAF COTTONWOOD (PA)
- o COTTONWOOD POLE (Pp)
- o NATIVE CHOKECHERRY (PV)
- o PEACH-LEAF WILLOW (SA)
- UPLAND SEED
- RIPARIAN SEED
- WILLOW STAKES (SE)

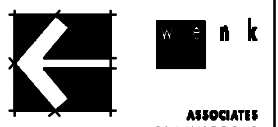
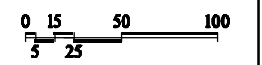
**BID ALTERNATE PLANTINGS**

- + PLAINS COTTONWOOD (PS)
- + NARROWLEAF COTTONWOOD (PA)
- o COTTONWOOD POLE (Pp)
- o NATIVE CHOKECHERRY (PV)
- o PEACH-LEAF WILLOW (SA)
- UPLAND SEED
- WILLOW STAKES (SE)

- NOTES:**
1. OVERLAP RIPARIAN AND UPLAND SEEDING AREAS BY 5'.
  2. STAKE LOCATIONS OF TREES AND SHRUBS AND OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO COMMENCING PLANTING OPERATIONS.
  3. ALL OF THE BID ALTERNATE VEGETATION WAS INSTALLED EXCEPT FOR THE TREES.

**RECORD DRAWING DATE**

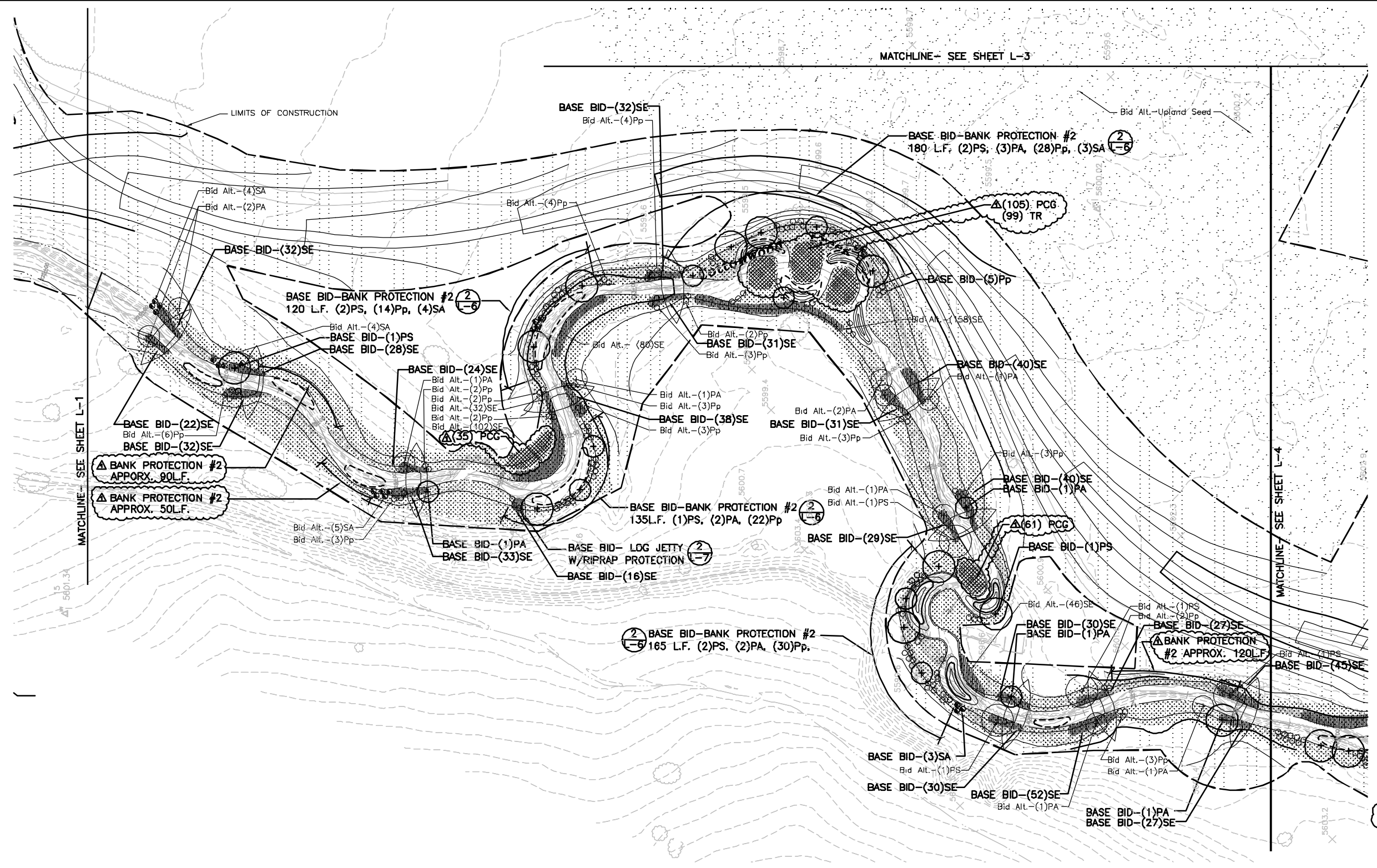
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE IT'S ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS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



**ASSOCIATES**  
PLANNERS &  
LANDSCAPE  
ARCHITECTS  
303.628.0008

1/14/05 AS CONSTRUCTED RECORD DRAWINGS TF		<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONMADE 4, SUITE 100 777 N. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4888	DESIGN PT/AL/CR DRAWN CR CHECK PT	<b>PREPARED FOR:</b> CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION</b> <b>PHASE 1</b> <b>CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	<b>LANDSCAPE</b> <b>BANK STABILIZATION &amp; PLANTING PLAN</b>	DATE OCTOBER 2003
							DRAWING NO. L-1 SHEET NO. 19 OF 27
No. DATE REVISIONS APPR.	<b>MEC PROJECT No. 02025.03</b>						

MATCHLINE-- SEE SHEET L-3



**LEGEND**

**BASE BID PLANTINGS**

- + PLAINS COTTONWOOD (PS)
- + NARROWLEAF COTTONWOOD (PA)
- o COTTONWOOD POLE (Pp)
- o NATIVE CHOKECHERRY (PV)
- PEACH-LEAF WILLOW (SA)
- UPLAND SEED
- ▨ RIPARIAN SEED
- ▩ WILLOW STAKES (SE)

**BID ALTERNATE PLANTINGS**

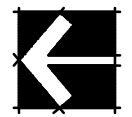
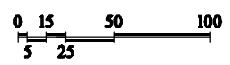
- + PLAINS COTTONWOOD (PS)
- + NARROWLEAF COTTONWOOD (PA)
- o COTTONWOOD POLE (Pp)
- o NATIVE CHOKECHERRY (PV)
- PEACH-LEAF WILLOW (SA)
- UPLAND SEED
- ▩ WILLOW STAKES (SE)
- △ PRAIRIE CORDGRASS (PCG)
- △ TORREY'S RUSH (TR)

**NOTES:**

- OVERLAP RIPARIAN AND UPLAND SEEDING AREAS BY 5'.
- STAKE LOCATIONS OF TREES AND SHRUBS AND OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO COMMENCING PLANTING OPERATIONS.
- ALL OF THE BID ALTERNATE VEGETATION WAS INSTALLED EXCEPT FOR THE TREES.

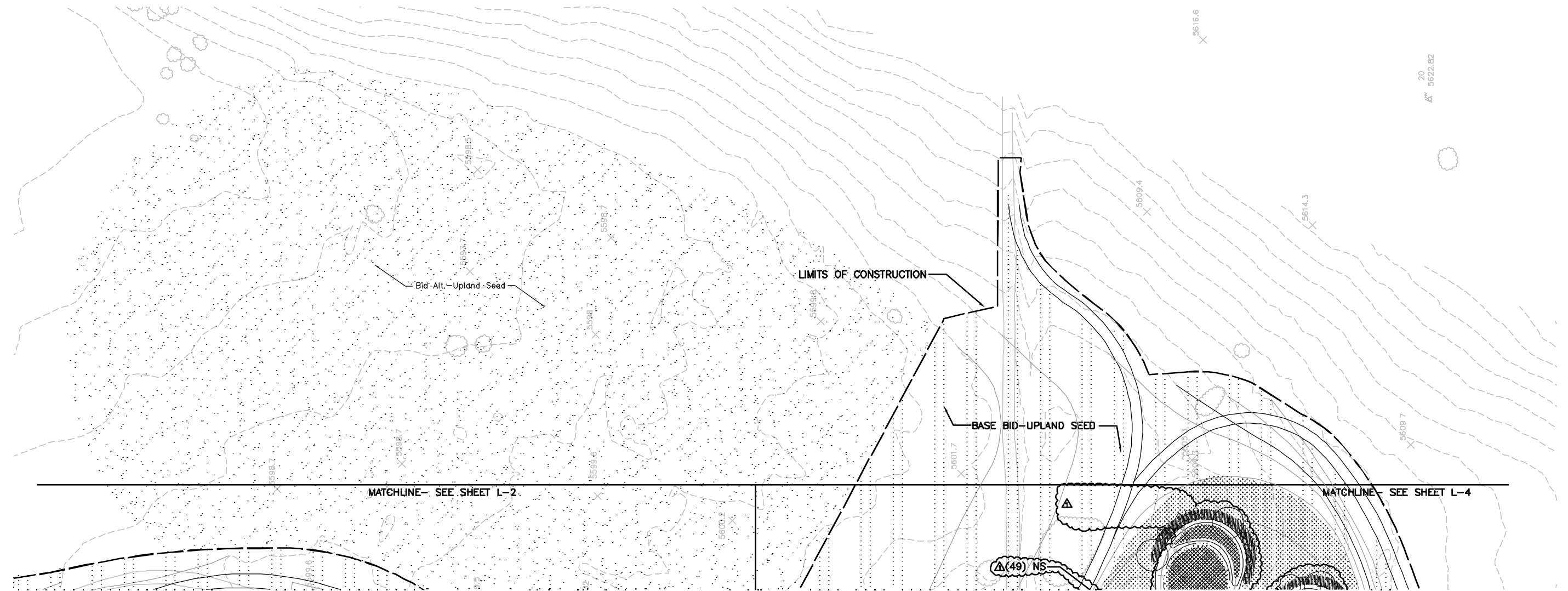
**RECORD DRAWING**  
**DATE**

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**ASSOCIATES**  
**PLANNERS &**  
**LANDSCAPE**  
**ARCHITECTS**  
303.828.0003

No. DATE REVISIONS APPR.	1/14/05 AS CONSTRUCTED RECORD DRAWINGS TF	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80026 (303) 968-4889	DESIGN PT/AL/CR DRAWN CR CHECK PT	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION</b> <b>PHASE 1</b> <b>CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	LANDSCAPE <b>BANK STABILIZATION &amp; PLANTING PLAN</b>	DATE OCTOBER 2003
	MEC PROJECT No. 02025.03						DRAWING NO. L-2

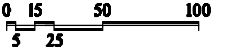


**RECORD DRAWING  
DATE**

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- LEGEND**
- BASE BID PLANTINGS**
- + PLAINS COTTONWOOD (PS)
  - + NARROWLEAF COTTONWOOD (PA)
  - o COTTONWOOD POLE (Pp)
  - ⊗ NATIVE CHOKECHERRY (PV)
  - PEACH-LEAF WILLOW (SA)
  - ░ UPLAND SEED
  - ▒ RIPARIAN SEED
  - ▓ WILLOW STAKES (SE)
- BID ALTERNATE PLANTINGS**
- + PLAINS COTTONWOOD (PS)
  - + NARROWLEAF COTTONWOOD (PA)
  - o COTTONWOOD POLE (Pp)
  - ⊗ NATIVE CHOKECHERRY (PV)
  - PEACH-LEAF WILLOW (SA)
  - ░ UPLAND SEED
  - ▓ WILLOW STAKES (SE)

- NOTES:**
1. OVERLAP RIPARIAN AND UPLAND SEEDING AREAS BY 5'.
  2. STAKE LOCATIONS OF TREES AND SHRUBS AND OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO COMMENCING PLANTING OPERATIONS.
- △ 3. ALL OF THE BID ALTERNATE VEGETATION WAS INSTALLED EXCEPT FOR THE TREES.



**n k**

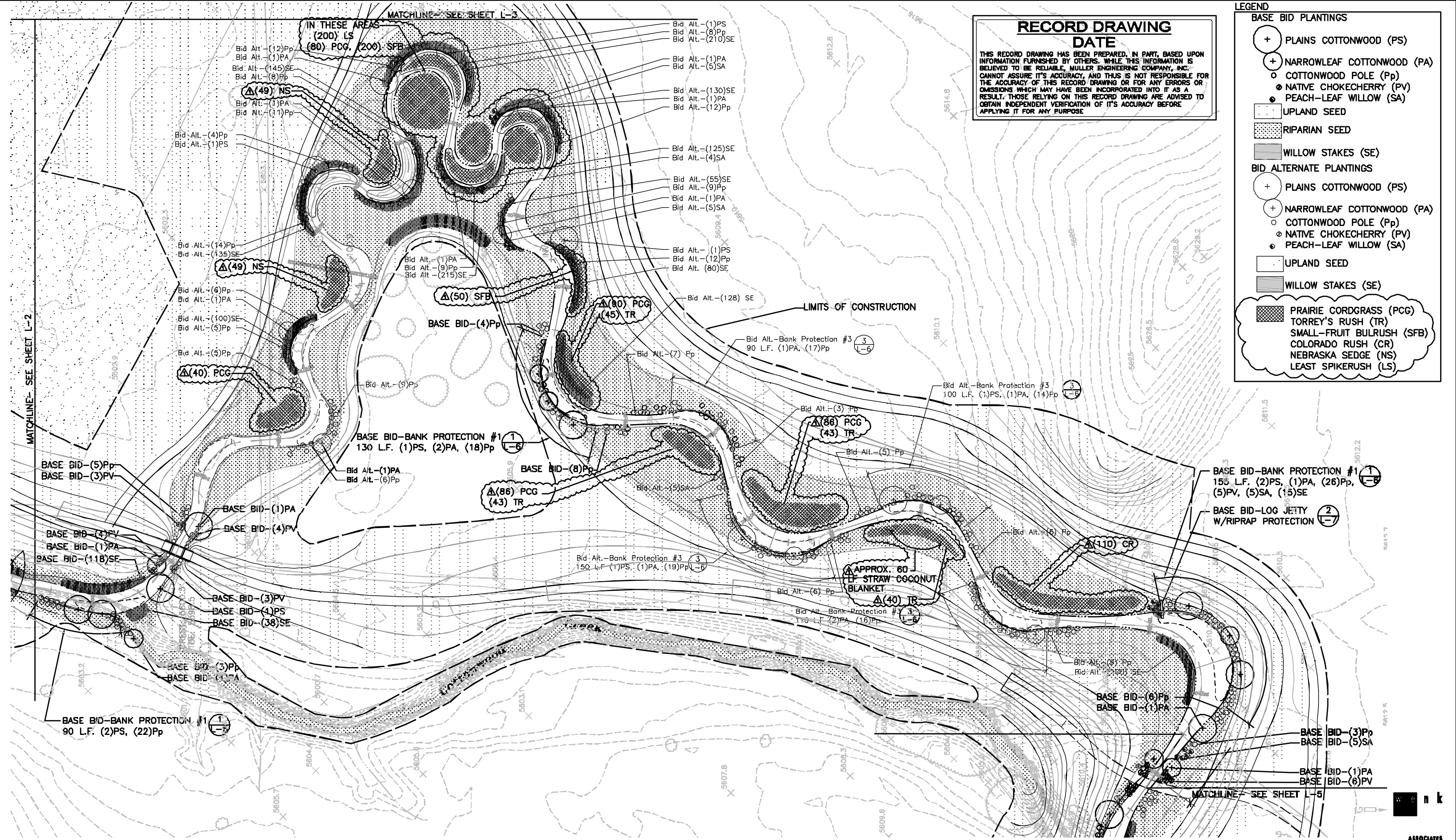
ASSOCIATES  
PLANNERS &  
LANDSCAPE  
ARCHITECTS  
303.828.0003

1/14/05 AS CONSTRUCTED RECORD DRAWINGS TF No. DATE REVISIONS APPR.	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80026 (303) 968-4829	DESIGN PT/AL/CR DRAWN CR CHECK PT	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION PHASE 1 CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	LANDSCAPE <b>BANK STABILIZATION &amp; PLANTING PLAN</b>	DATE OCTOBER 2003
						DRAWING NO. L-3 SHEET NO. 21 OF 27
MEC PROJECT No. 02025.03						

**RECORD DRAWING DATE**

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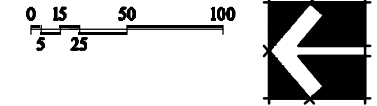
- LEGEND**
- BASE BID PLANTINGS**
- ⊕ PLAINS COTTONWOOD (PS)
  - ⊕ NARROWLEAF COTTONWOOD (PA)
  - COTTONWOOD POLE (Pp)
  - ⊙ NATIVE CHOKECHERRY (PV)
  - PEACH-LEAF WILLOW (SA)
  - UPLAND SEED
  - ▨ RIPARIAN SEED
  - ▨ WILLOW STAKES (SE)
- BID ALTERNATE PLANTINGS**
- ⊕ PLAINS COTTONWOOD (PS)
  - ⊕ NARROWLEAF COTTONWOOD (PA)
  - COTTONWOOD POLE (Pp)
  - ⊙ NATIVE CHOKECHERRY (PV)
  - PEACH-LEAF WILLOW (SA)
  - UPLAND SEED
  - ▨ WILLOW STAKES (SE)
  - ▨ PRAIRIE CORDGRASS (PCG)
  - ▨ TORREY'S RUSH (TR)
  - ▨ SMALL-FRUIT BULRUSH (SFB)
  - ▨ COLORADO RUSH (CR)
  - ▨ NEBRASKA SEDGE (NS)
  - ▨ LEAST SPIKERUSH (LS)



**NOTES:**

1. OVERLAP RIPARIAN AND UPLAND SEEDING AREAS BY 5'.
2. STAKE LOCATIONS OF TREES AND SHRUBS AND OBTAIN APPROVAL FROM OWNER'S REPRESENTATIVE PRIOR TO COMMENCING PLANTING OPERATIONS.
3. ALL OF THE BID ALTERNATE VEGETATION WAS INSTALLED EXCEPT FOR THE TREES.

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No.	DATE	REVISIONS	APPR.	MEC PROJECT No. 02025.03	DESIGN PT/AL/CR	DRAWN CR	CHECK PT	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	COTTONWOOD CREEK RECLAMATION PHASE 1 CHERRY CREEK BASIN WATER QUALITY AUTHORITY	LANDSCAPE BANK STABILIZATION & PLANTING PLAN	DATE OCTOBER 2003
											DRAWING NO. L-4
MULLER ENGINEERING CO., INC. CONSULTING ENGINEERS 1800 GATEWAY 4, SUITE 100 LAKEWOOD, COLORADO 80026 (303) 968-4838											
ASSOCIATES PLANNERS & LANDSCAPE ARCHITECTS 303.828.0003											
SHEET NO. 22 OF 27											

**RECORD DRAWING  
DATE**

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3. ALL OF THE BID ALTERNATE VEGETATION WAS INSTALLED EXCEPT FOR THE TREES.

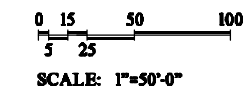
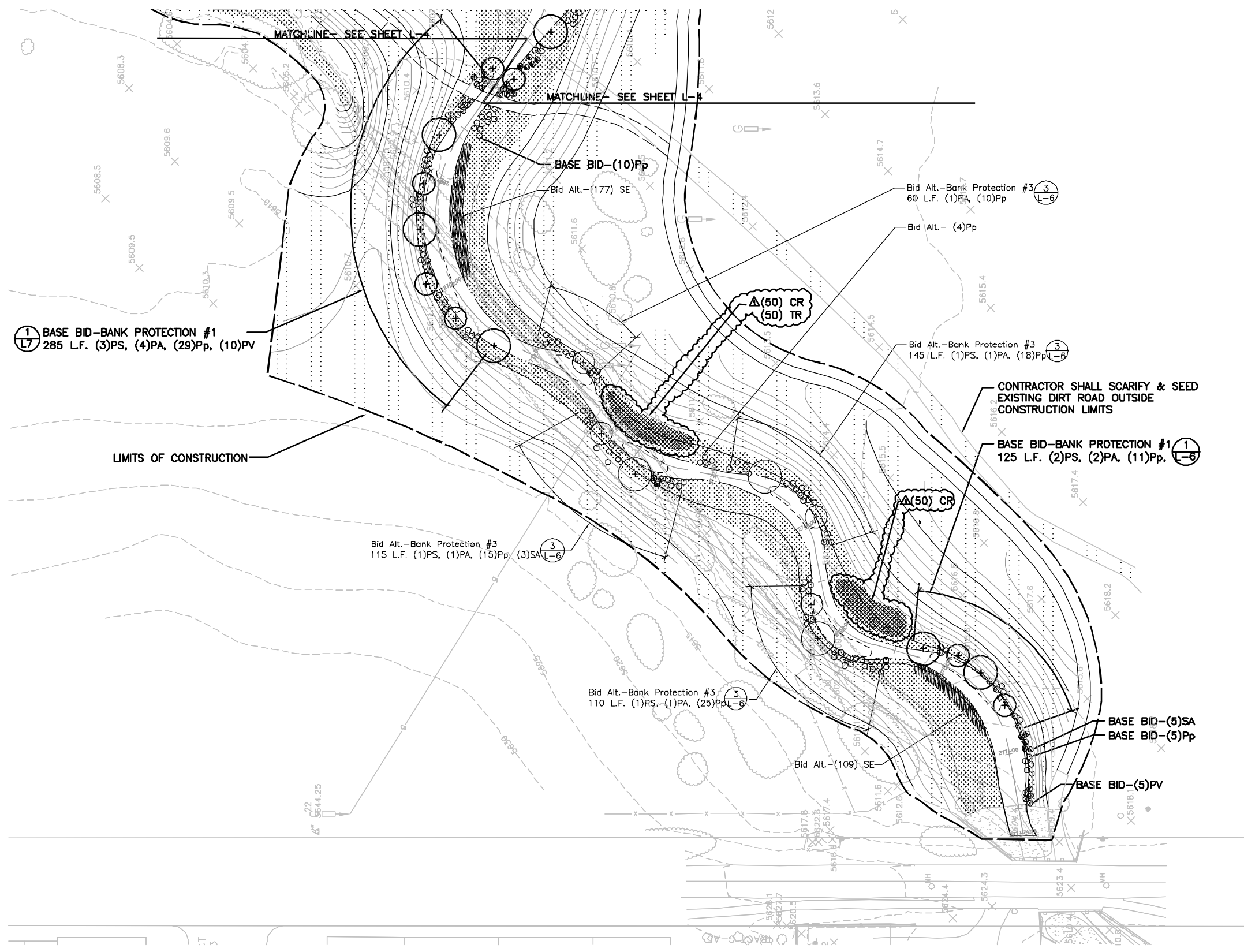
**LEGEND**

**BASE BID PLANTINGS**

- + PLAINS COTTONWOOD (PS)
- + NARROWLEAF COTTONWOOD (PA)
- o COTTONWOOD POLE (Pp)
- NATIVE CHOKECHERRY (PV)
- PEACH-LEAF WILLOW (SA)
- ▨ UPLAND SEED
- ▨ RIPARIAN SEED
- ▨ WILLOW STAKES (SE)

**BID ALTERNATE PLANTINGS**

- + PLAINS COTTONWOOD (PS)
- + NARROWLEAF COTTONWOOD (PA)
- o COTTONWOOD POLE (Pp)
- NATIVE CHOKECHERRY (PV)
- PEACH-LEAF WILLOW (SA)
- ▨ UPLAND SEED
- ▨ WILLOW STAKES (SE)
- ▨ TORREY'S RUSH (TR)
- ▨ COLORADO RUSH (CR)



**ASSOCIATED  
PLANNERS &  
LANDSCAPE  
ARCHITECTS**  
303.828.0003

1/14/05	AS CONSTRUCTED RECORD DRAWINGS	TF
No.	DATE	REVISIONS

**MULLER ENGINEERING CO., INC.**  
CONSULTING ENGINEERS  
1800 GATE 4, SUITE 100  
777 S. WADSWORTH BLVD.  
LAKEWOOD, COLORADO 80226  
(303) 968-4998

DESIGN PT/AL/CR  
DRAWN CR  
CHECK PT

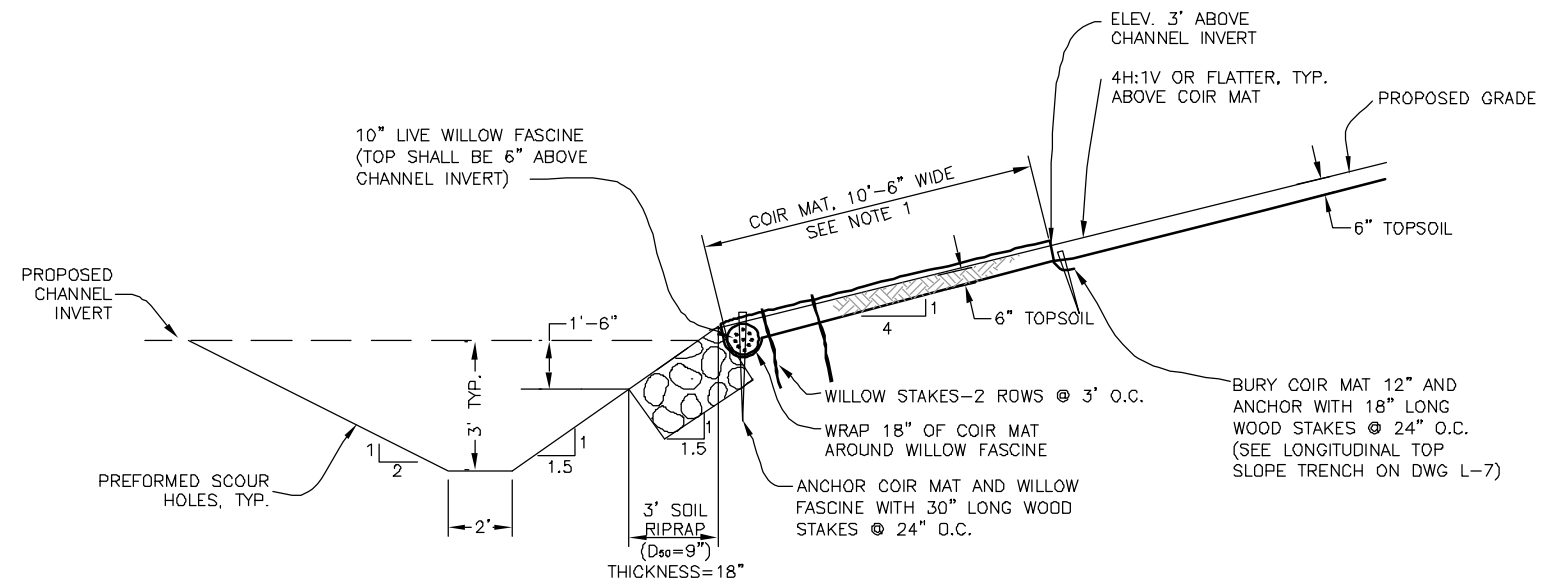
MEC PROJECT No. 02025.03

**PREPARED FOR:**  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

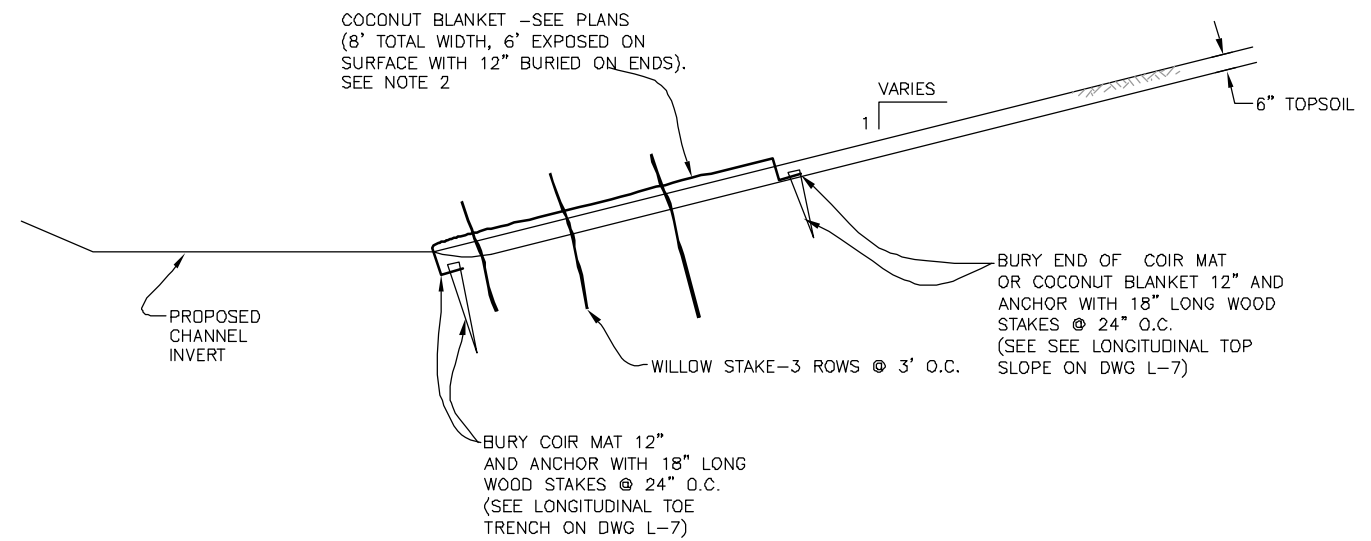
**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

LANDSCAPE  
**BANK STABILIZATION & PLANTING PLAN**

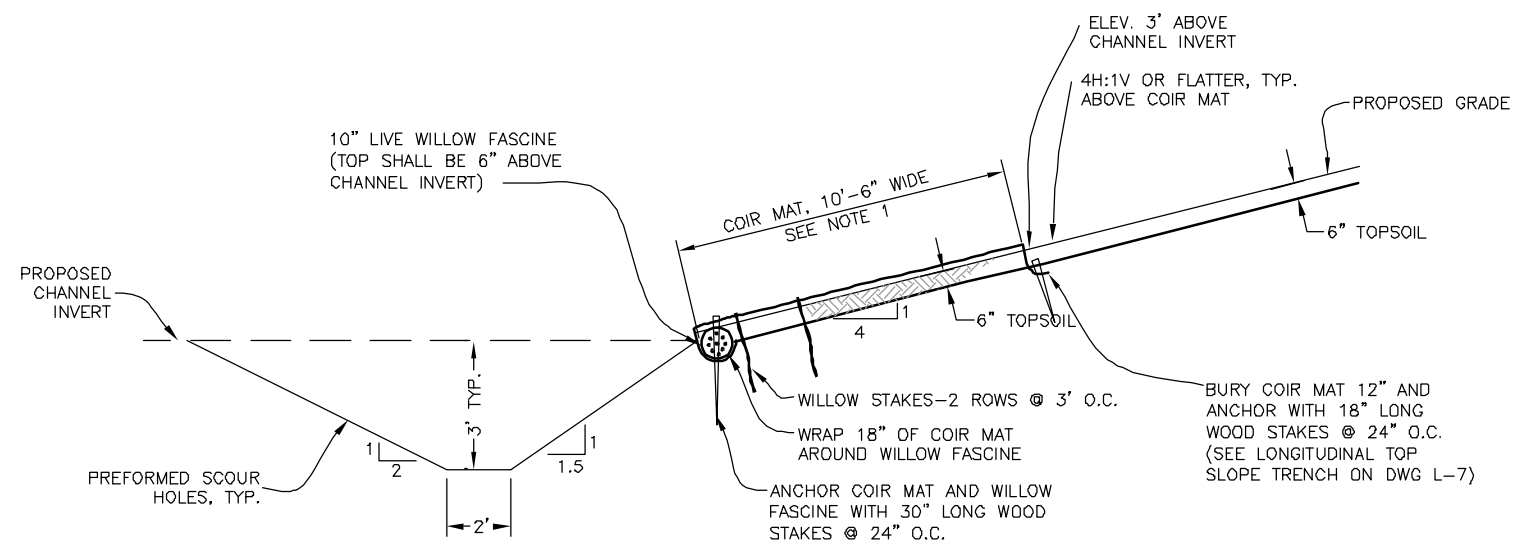
DATE  
OCTOBER 2003  
DRAWING NO.  
L-5  
SHEET NO.  
23 OF 27



1 BANK PROTECTION NO. 1  
L-6 SECTION N.T.S.



3 BANK PROTECTION NO. 3  
L-6 SECTION N.T.S.



2 BANK PROTECTION NO. 2  
L-6 SECTION N.T.S.

**HYDRAULIC INFORMATION:**

- BANK PROTECTION NO. 1 - USED PRIMARILY TO REINFORCE OUTER PORTION OF SHARP BENDS IN THE 100-YR CHANNEL.
- BANK PROTECTION NO. 2 - USED TO REINFORCE OUTER PORTION OF BENDS IN THE 120 CFS CHANNEL.
- BANK PROTECTION NO. 3 - USED TO REINFORCE OUTER PORTION OF MINOR BENDS IN THE 100-YR CHANNEL.

**NOTES:**

- SEED AND MULCH PRIOR TO INSTALLING COIR MAT. COIR MAT TOTAL WIDTH SHALL BE 13', BUT ONLY 10'-6" OF WIDTH WILL BE EXPOSED ON SLOPE. STAKE COIR MAT BETWEEN ANCHORED ENDS WITH 3 ROWS OF 18" LONG WOOD STAKES @ 36" O.C. (SEE STAKING PATTERN 1 ON DWG L-7).
- SEED AND MULCH PRIOR TO INSTALLING COCONUT BLANKET. TOTAL WIDTH SHALL BE 8', BUT ONLY 6' OF WIDTH WILL BE EXPOSED ON SLOPE. STAKE BETWEEN ANCHORED ENDS WITH TWO ROWS OF 18" LONG WOOD STAKES @ 36" O.C. (SEE STAKING PATTERN 2 ON DWG L-7).
- CONTRACTOR SHALL USE STEEL PENETRATION RODS OR OTHER MEANS AS NECESSARY TO PENETRATE RIPRAP LAYER WITH WOOD STAKES

**RECORD DRAWING DATE**

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ASSOCIATES  
PLANNERS &  
LANDSCAPE  
ARCHITECTS  
303.828.0003

1/14/05	AS CONSTRUCTED RECORD DRAWINGS	TF
No	DATE	REVISIONS

MULLER ENGINEERING CO., INC.  
CONSULTING ENGINEERS  
777 S. WADSWORTH BLVD.  
LAKEWOOD, COLORADO 80226  
(303) 938-4888

MULLER

MEC PROJECT No. 02025.03

DESIGN  
PT/CR/AL

DRAWN  
WC

CHECK  
PT

PREPARED FOR:  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

**BANK PROTECTION  
DETAILS**

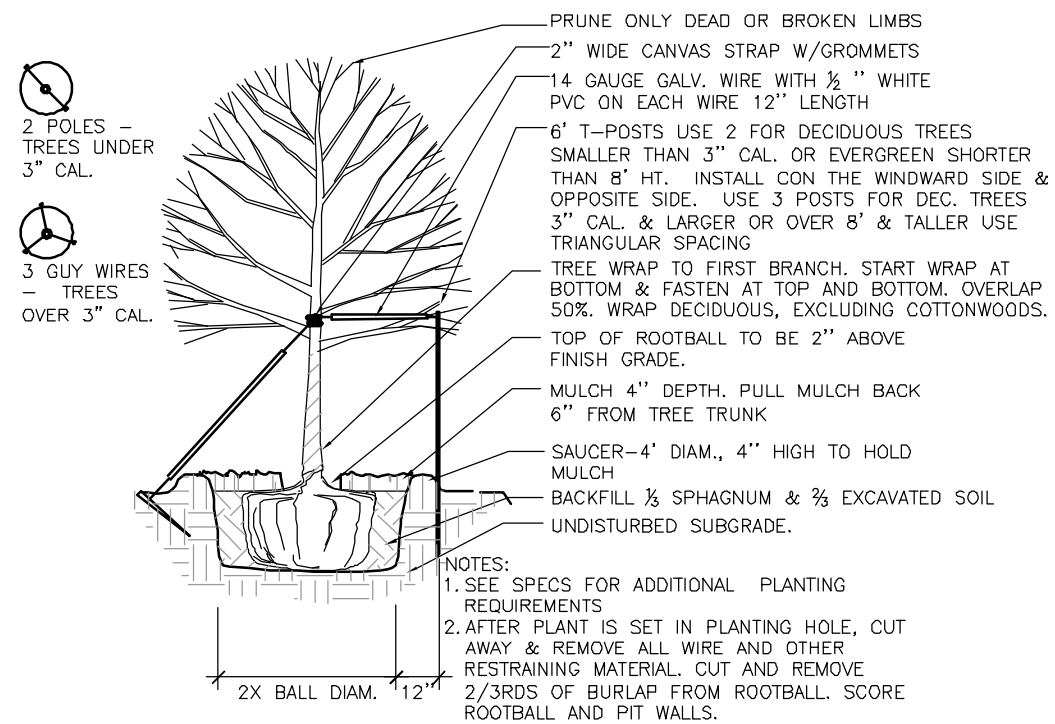
DATE  
OCTOBER 2003

DRAWING NO.  
L-6

SHEET NO.  
24 OF 27

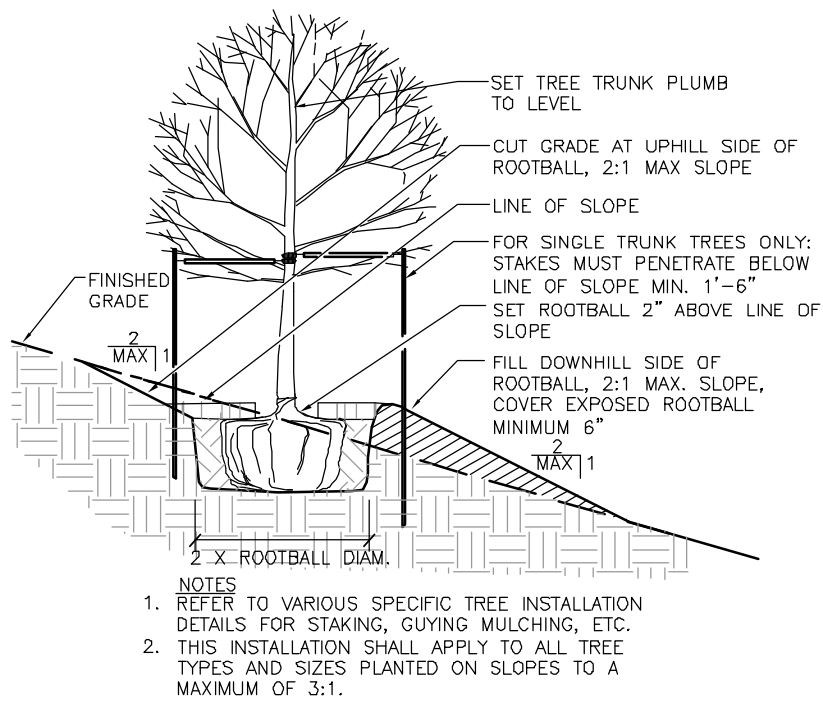






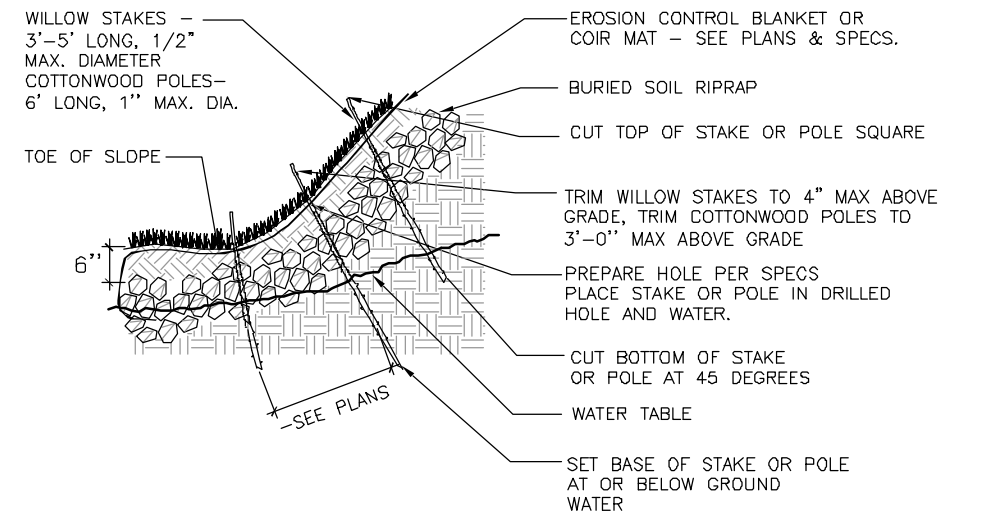
1 TREE PLANTING SECTION  
L-8

N.T.S.



2 TREE PLANTING ON SLOPE SECTION  
L-8

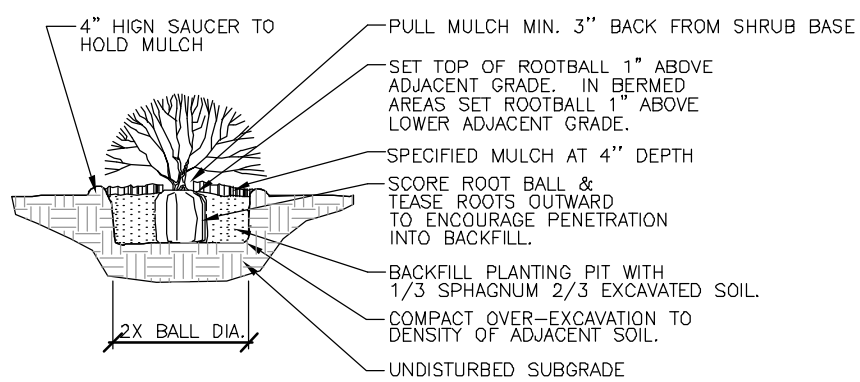
N.T.S.



- NOTES:  
1. REFER TO SPECS. BEFORE PLANTING  
2. CONDITIONS VARY, WILLOW STAKES/COTTONWOOD POLES MAY OCCUR IN AREAS OF EMBANKMENT, SOIL RIPRAP, COIR MAT, AND EROSION CONTROL BLANKET -SEE PLANS FOR SPECIFIC CONDITIONS.  
3. DIG TEST HOLE IN EACH AREA DESIGNATED FOR WILLOW STAKES OR COTTONWOOD POLES, TO DETERMINE DEPTH OF WATER TABLE. PLANT WILLOW STAKES AND COTTONWOOD POLES SO THAT BOTTOM 6" OF STAKE/POLE (MIN.) IS BELOW WATER TABLE DEPTH.  
4. SOURCE FOR WILLOW STAKES AND COTTONWOOD POLES TO BE APPROVED BY OWNER'S REPRESENTATIVE.  
5. WHEN HARVESTING WILLOW STAKES AND COTTONWOOD POLES, CUT BOTTOM OF STAKE OR POLE AT 45 DEGREES AND CUT TOP OF STAKE OR POLE SQUARE. PLANT ANGLED END INTO THE GROUND, PLANT SHOULD BE PLACED IN THE SAME ORIENTATION AS IT WAS HARVESTED (PLANT RIGHT SIDE UP).  
6. WILLOW STAKES AND COTTONWOOD POLES SHOULD ONLY BE COLLECTED WHEN THEY ARE DORMANT, APPROXIMATELY FROM NOVEMBER TO MARCH. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COLLECT THE PROPER NUMBER OF STAKES OR POLES AND STORE THEM IN AN APPROVED MANNER (SEE SPECS).  
7. TWO TO FIVE BUD SCARS SHOULD BE ABOVE THE GROUND. APPROXIMATELY 80% OF THE PLANT SHOULD BE BELOW GRADE. ALL STAKES OR POLES SHOULD BE SOAKED FOR A MINIMUM OF 24 HOURS BEFORE PLANTING.

3 WILLOW STAKE/ COTTONWOOD POLE PLANTING SECTION  
L-8

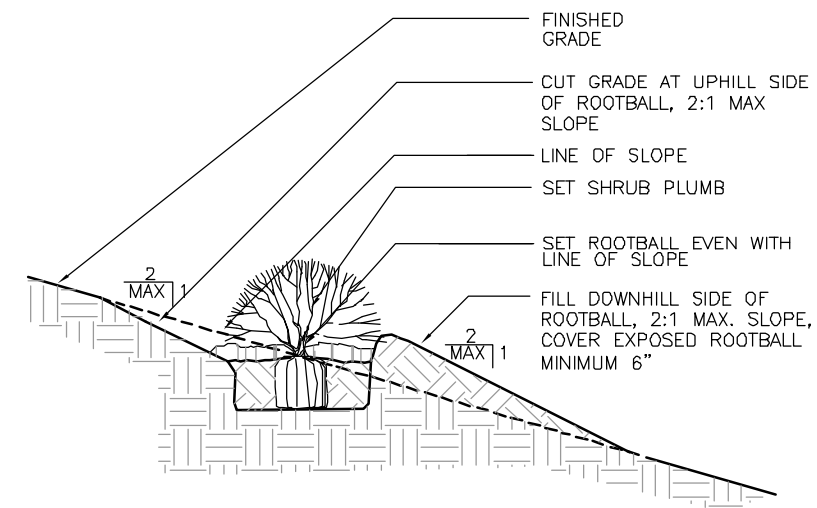
N.T.S.



- NOTES:  
1. SEE SPECS FOR ADDITIONAL PLANTING REQUIREMENTS.  
2. PLUMB AND ORIENT PLANTS FOR BEST APPEARANCE.  
3. REMOVE ALL TWINE FROM ROOT BALL, AND FOLD BURLAP BACK 2/3. REMOVE PLASTIC BURLAP ENTIRELY.  
4. FOR CONTAINER SHRUBS, CAREFULLY REMOVE CONTAINER AND SCORE ROOT BALL.  
5. PRUNE DEAD OR DAMAGED FOLIAGE  
6. DEEP WATER AFTER PLANTING.

4 SHRUB PLANTING SECTION  
L-8

N.T.S.



5 SHRUB PLANTING ON SLOPE SECTION  
L-8

N.T.S.

**RECORD DRAWING DATE**

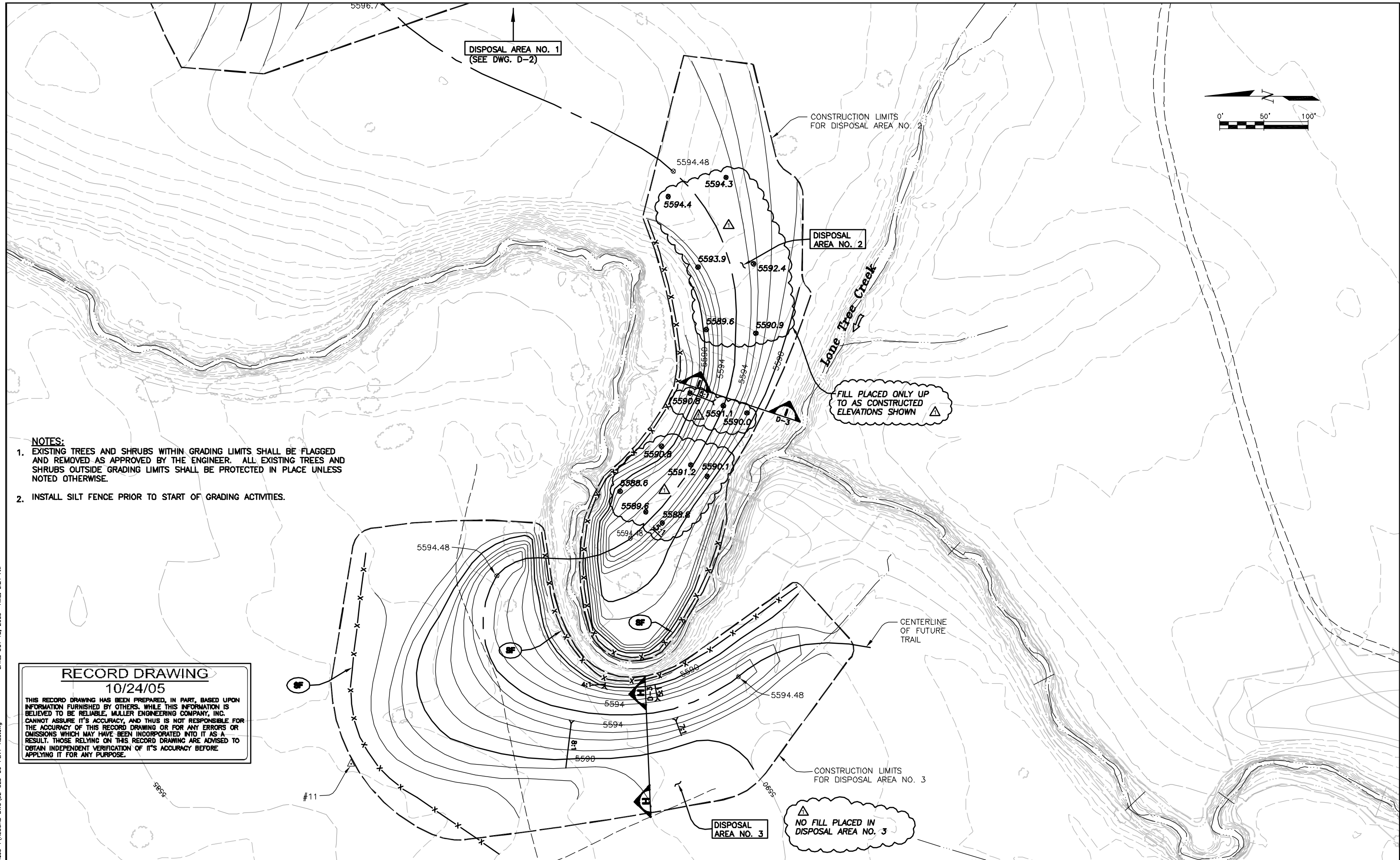
THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS 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.

**W E N K**

ASSOCIATES  
PLANNERS &  
LANDSCAPE  
ARCHITECTS  
303.628.0908

1/14/05	AS CONSTRUCTED RECORD DRAWINGS	TF	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 968-4829	DESIGN PT/CLR	<b>PREPARED FOR:</b> CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION          PHASE 1          CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	<b>PLANTING DETAILS</b>	DATE OCTOBER 2003
No.	DATE	REVISIONS		APPR.				MEC PROJECT No. 02025.03
								SHEET NO. 26 OF 27





- NOTES:**
- EXISTING TREES AND SHRUBS WITHIN GRADING LIMITS SHALL BE FLAGGED AND REMOVED AS APPROVED BY THE ENGINEER. ALL EXISTING TREES AND SHRUBS OUTSIDE GRADING LIMITS SHALL BE PROTECTED IN PLACE UNLESS NOTED OTHERWISE.
  - INSTALL SILT FENCE PRIOR TO START OF GRADING ACTIVITIES.

**RECORD DRAWING**  
**10/24/05**

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 THIS 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.

DATE: OCT 18, 2005 TIME: 9:21 AM  
 NAME: S:\02025\03\Phase 1\RECORD DMC 02-025-06-PLAN-REC.dwg

10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC
No.	DATE	REVISIONS

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

**MULLER**

DESIGN: MDC  
 DRAWN: BKB  
 CHECK: DDJ

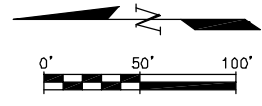
PREPARED FOR:  
 CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
 6399 S. FIDDLERS GREEN CIR  
 GREENWOOD VILLAGE, CO. 80111  
 303-779-4525

**COTTONWOOD CREEK RECLAMATION**  
**PHASE 1**  
**CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

CIVIL  
**GRADING PLAN**  
**DISPOSAL AREAS NO. 2 AND 3**

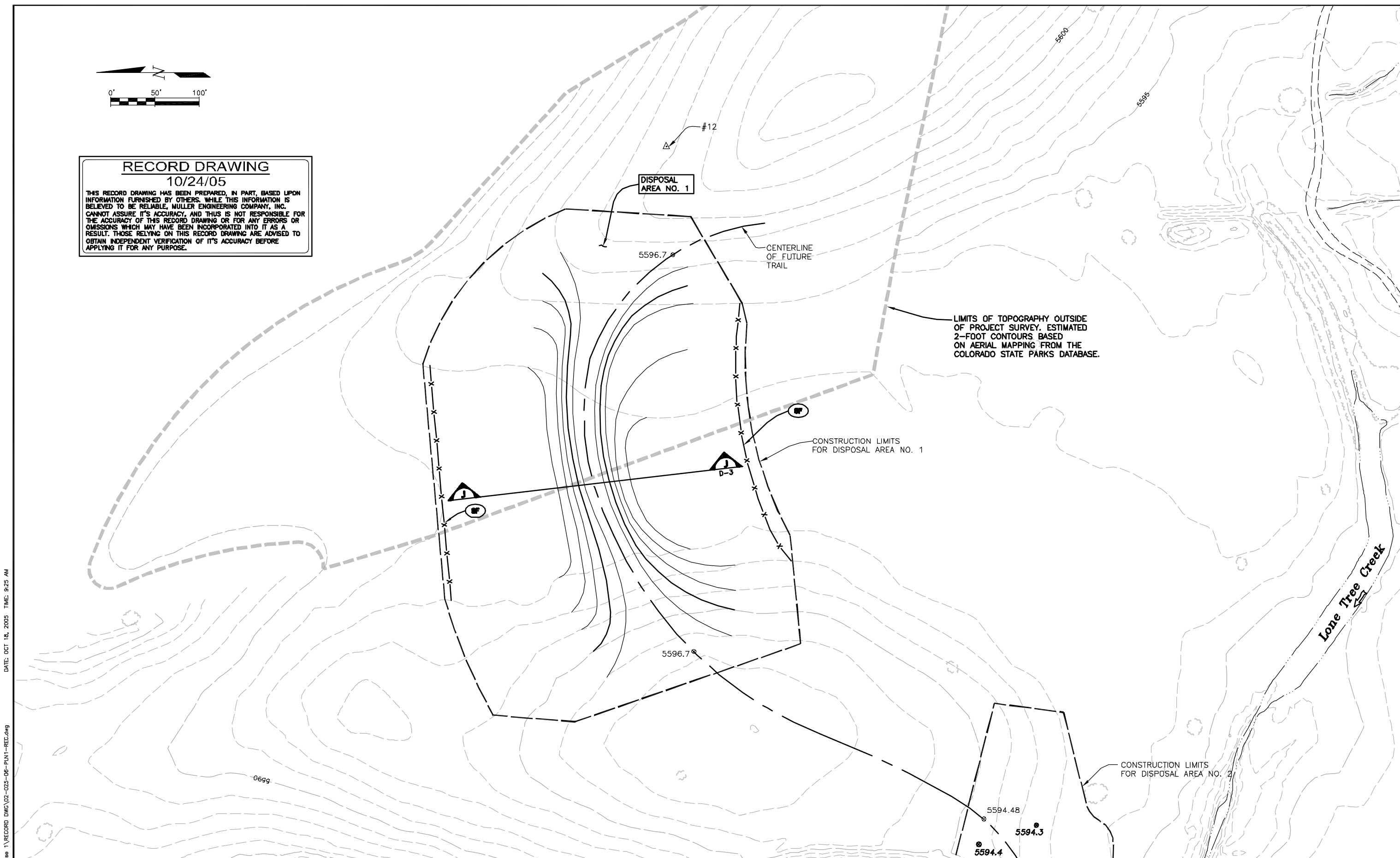
DATE	DECEMBER 2003
DRAWING NO.	D-1
SHEET NO.	1 OF 3

MEC PROJECT No. 02025.06



**RECORD DRAWING**  
10/24/05

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NAME: S:\02025\03\Phase 1\RECORD DWG\02-05-06-PLAN1-REC.dwg DATE: OCT 18, 2005 TIME: 9:25 AM

AS CONSTRUCTED RECORD DRAWINGS	MDC		
No.	DATE	REVISIONS	APPR.

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

**MULLER**

MEC PROJECT No. 02025.06

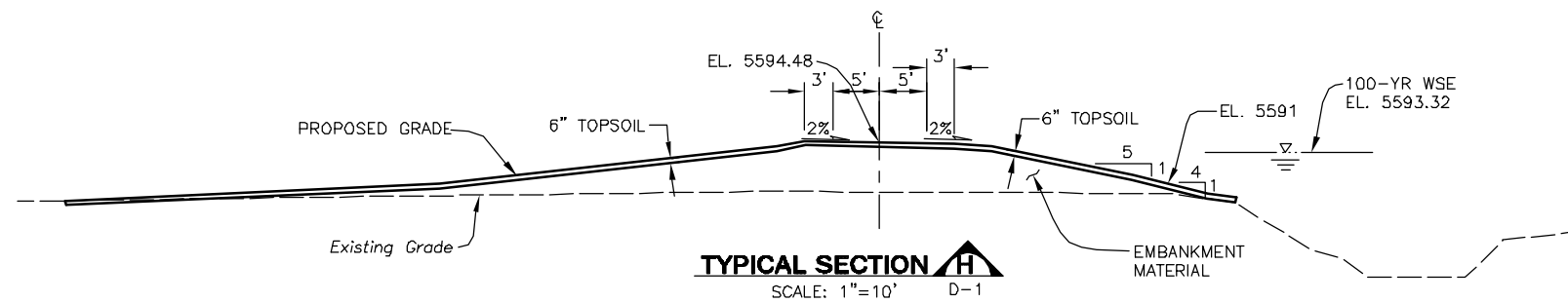
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DRAWN: BKB  
CHECK: DDJ

PREPARED FOR:  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

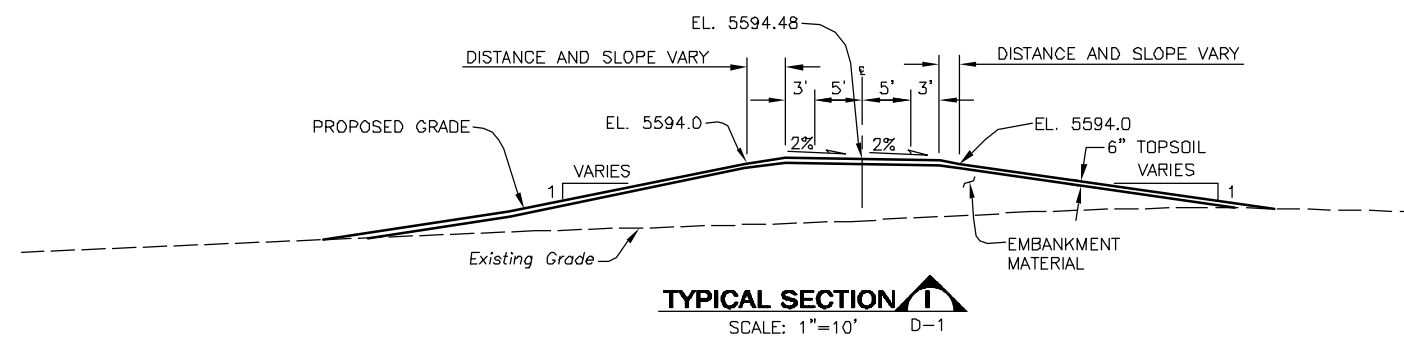
**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

CIVIL  
**GRADING PLAN  
DISPOSAL AREAS NO. 1**

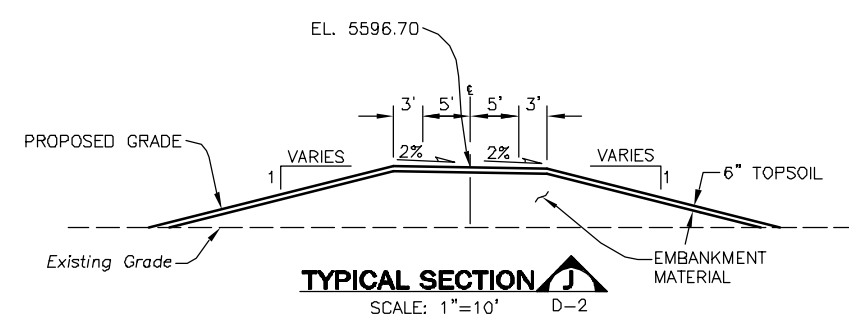
DATE	DECEMBER 2003
DRAWING NO.	D-2
SHEET NO.	2 OF 3



NO FILL PLACED IN DISPOSAL AREA NO. 3



FILL PLACED UP TO AS CONSTRUCTED ELEVATION SHOWN ON DWG. D-1



**RECORD DRAWING**  
10/24/05

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NAME: S:\02025\03\Phase 1\RECORD DWG\02025-06-CHAN-SEC-REC.dwg DATE: OCT 18, 2005 TIME: 10:05 AM

10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC
No.	DATE	REVISIONS

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

DESIGN: MDC  
DRAWN: BKB  
CHECK: DDJ

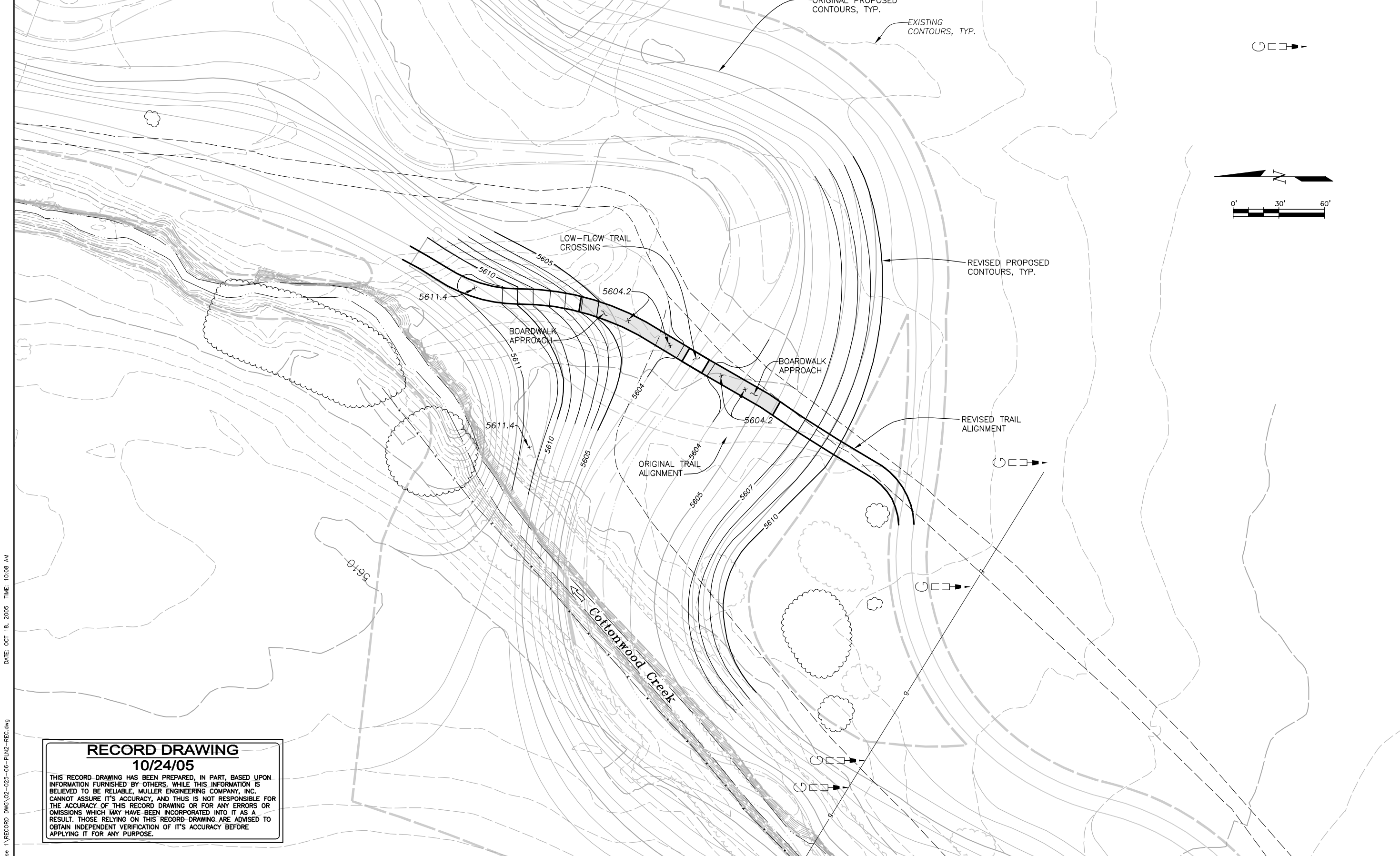
PREPARED FOR:  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
6399 S. FIDDLERS GREEN CIR  
GREENWOOD VILLAGE, CO. 80111  
303-779-4525

**COTTONWOOD CREEK RECLAMATION  
PHASE 1  
CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

CIVIL  
**TYPICAL CHANNEL SECTIONS  
DISPOSAL AREAS**

DATE	DECEMBER 2003
DRAWING NO.	D-3
SHEET NO.	3 OF 3

MEC PROJECT No. 02025.06

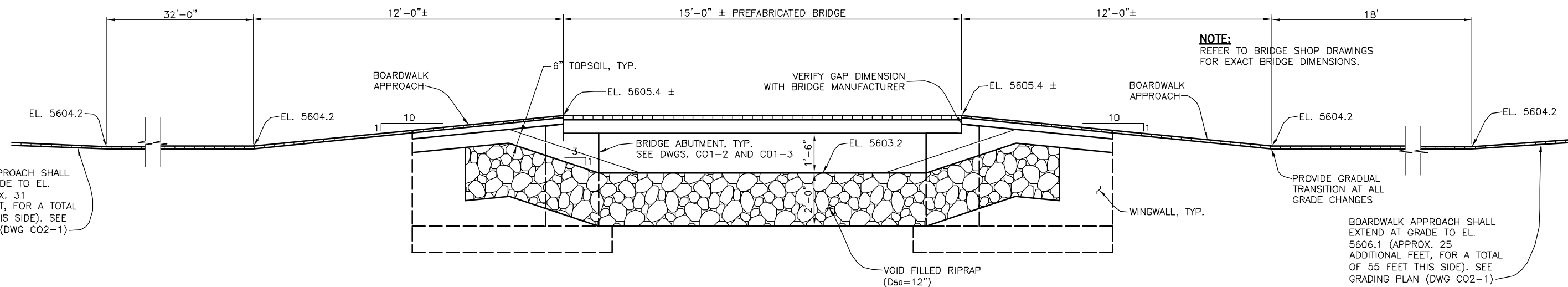


**RECORD DRAWING**  
**10/24/05**  
 THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, MULLER ENGINEERING COMPANY, INC. CANNOT ASSURE ITS ACCURACY, AND THIS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD 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.

NAME: S:\02025\03\Phase 1\RECORD DWG\02-025-06-PLN2-REC.dwg DATE: OCT 18, 2005 TIME: 10:08 AM

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	10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC															
No. DATE REVISIONS APPR. MEC PROJECT No. 02025.06	SHEET NO. CO2-1 1 OF 4																	

DATE: OCT 18, 2005 TIME: 10:09 AM  
NAME: S:\02025\03\Phase 1\RECORD DWG\02025.06-BRIDGE-REC.dwg



**ELEVATION (Looking Downstream)**  
SCALE 1"=2'

**GENERAL STRUCTURE NOTES**

1. THE PREFABRICATED STEEL BRIDGE SHALL BE MANUFACTURED BY:  
BIG R MANUFACTURING, LLC  
P.O. BOX 1290  
GREELEY, COLORADO 80632, 1-800-234-0734  
CONTACT: JEFF HANDLEY, 720-289-5745  
OR APPROVED EQUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ORDERING AND PURCHASING THE PREFABRICATED STEEL BRIDGE AND APPROACH. CONTRACTOR IS RESPONSIBLE FOR UNLOADING, ERECTING, INSTALLING BRIDGE AND APPROACH, AND ALL INCIDENTALS REQUIRED TO MAKE THE CONSTRUCTION OF THE BRIDGE COMPLETE IN PLACE. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE BRIDGE MANUFACTURER REGARDING SHOP DRAWING AND DIMENSIONS OF THE PREFABRICATED BRIDGE AND APPROACH TO ENSURE THAT THE ABUTMENTS AND APPROACH SUPPORTS ARE CONSTRUCTED IN THE CORRECT LOCATIONS.
3. STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" LATEST EDITION. THE "SERVICE LOAD DESIGN METHOD" (ALLOWABLE STRESS DESIGN) SHALL BE USED FOR STRUCTURAL STEEL.
4. FABRICATOR SHALL DESIGN THE BRIDGE FOR THE FOLLOWING LOADS:  
A. LIVE LOAD: 85 LBS. PER SQUARE FOOT.  
B. VEHICLE LOAD: 1,200 LBS. FOR 2 WHEEL VEHICLES, 10,000 LBS. FOR 4 WHEEL VEHICLES  
C. CONCENTRATED LOAD: 1,000 LBS. PLACED ON ANY 2.5 FOOT X 2.5 FOOT SQUARE.  
D. WIND LOAD: 25 LBS. PER SQUARE FOOT HORIZONTAL FORCES, 20 LBS. PER SQUARE FOOT OVERTURNING (UPWARD) FORCES.  
E. WATER LOAD: COTTONWOOD CREEK WILL OVERTOP THE BRIDGE ABOUT 20 TIMES PER YEAR. THE BRIDGE SHALL BE DESIGNED TO STAY IN PLACE AND WITHSTAND OVERTOPPING WATER FORCES ASSUMING THE FOLLOWING:  
    - \_\_\_ LBS/SQ FT HORIZONTAL FORCES  
    - BUOYANCY FORCES ASSUMING A WATER ELEVATION OF 5611.  
F. SUBMIT STRUCTURAL CALCULATIONS BEARING THE SEAL OF A COLORADO REGISTERED PROFESSIONAL ENGINEER.
5. SUBMIT SHOP DRAWINGS: INDICATE SHOP FABRICATION AND FIELD ERECTION DETAILS INCLUDING CUTS, COPEs, CONNECTIONS, HOLES, THREADED FASTENERS, AND WELDS FOR BRIDGE STRUCTURAL FRAMEWORK.
6. SPECIFY THE ANCHOR BOLTS, WHICH ARE EMBEDDED IN CAST-IN-PLACE CONCRETE, IN TIME TO BE INSTALLED BEFORE THE START OF THE CONCRETE OPERATIONS. ANCHOR BOLTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
7. THE PREFABRICATED BRIDGE SHALL BE SUPPLIED WITH THE FOLLOWING ITEMS:  
A. THE BRIDGE SHALL BE 15 FEET LONG BY 10 FEET WIDE.  
B. THE BRIDGE SHALL BE CONSTRUCTED OF SELF-WEATHERING CORROSION-RESISTANT STEEL.  
C. THE BRIDGE SHALL BE SUPPLIED WITH IRON WOOD DECKING.  
D. IRON WOOD SHALL BE NATURALLY DURABLE HARDWOOD IPE (TABEBUIA SPP) LAPACHO GROUP, PARTIALLY AIR DRIED TO A MOISTURE CONTENT OF 15% TO 20%, AND SUPPLIED S4S (SURFACED FOUR SIDES), E4E (EASED FOUR EDGES), WITH THE EDGES EASED TO A RADIUS OF 1/8". ENDS OF EACH PIECE SHALL BE SEALED WITH "ANCHORSEAL" MOBIL CER-M OR EQUAL AQUIOUS WAX LOG SEALER.  
F. THE VERTICAL CAMBER AT BRIDGE MID SPAN SHALL BE 1% OF THE BRIDGE LENGTH.
8. THE CONTRACTOR SHALL CONSTRUCT CAST-IN-PLACE ABUTMENT WALLS & FOOTINGS FOR THE PREFABRICATED BRIDGE AS SHOWN ON THE DRAWINGS.

**GENERAL STRUCTURE NOTES:**

1. SEE CONTRACT SPECIFICATIONS REGARDING WATER CONTROL (SURFACE AND SUBSURFACE) DURING CONSTRUCTION.
2. SOIL COMPACTION REQUIREMENTS BENEATH STRUCTURES ARE 95% OF THE MAXIMUM DRY DENSITY MEASURED IN ACCORDANCE WITH ASTM D698 (STANDARD PROCTOR) UNLESS OTHERWISE NOTED.
3. EXPLORATORY BORINGS AND LOGS WERE PERFORMED BY MAX FOUR ENGINEERS AND ARCHITECTS, LLC.
4. CONCRETE IN ALL STRUCTURES SHALL BE CLASS D CONCRETE. ALL EXPOSED CONCRETE SHALL HAVE A CDOT CLASS 2 OR 5 FINISH. ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4" X 3/4" CHAMFER.
5. ALL REINFORCING STEEL SHALL BE GRADE 60.
6. REFER TO PEDESTRIAN BRIDGE SHOP-DRAWINGS FOR DISTANCE BETWEEN ABUTMENTS, LAYOUT FOR ANCHOR BOLTS AND POSITIONING OF BRIDGE ON ABUTMENT.

**RECORD DRAWING**  
10/24/05

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	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4939	DESIGN MDC/DAH DRAWN BKB CHECK DDJ	<b>PREPARED FOR:</b> CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION          PHASE 1          CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	<b>CHANGE ORDER NO. 2          LOW FLOW TRAIL CROSSING          ELEVATION AND NOTES</b>	DATE APRIL 2004 DRAWING NO. CO2-2 SHEET NO. 2 OF 4	
10/24/05 AS CONSTRUCTED RECORD DRAWINGS MDC		MEC PROJECT No. 02025.06					



VOID-FILLED  
RIPRAP (D<sub>50</sub>=12")

CO1-2

10' BOARDWALK APPROACH

CO1-3

BRIDGE  
ABUTMENT

LOW FLOW  
CHANNEL

VOID-FILLED  
RIPRAP (D<sub>50</sub>=12")

PREFABRICATED  
BRIDGE

LOW FLOW  
CHANNEL

FLOW

22'-4"

CO1-3

CO1-3

CO1-3

CO1-3

WINGWALL, TYP. OF 4

10' BOARDWALK APPROACH

PLAN

SCALE: 1"=3'

TOTAL BRIDGE THICKNESS  
APPROX. 8" (SEE BRIDGE SHOP DWGS.)

15'-0"

10'-0"

8'-0"

TOTAL HEIGHT  
NOT TO EXCEED 2'-6"

0.2% ±

FLOW

2"x8" IRONWOOD PLANKS

BRIDGE  
ABUTMENT,  
BEYOND

6"x6" (APPROX.)  
TUBULAR STEEL

EL. 5603.2

4'-0"

3'-0"

ABUTMENT FOOTING

2' VOID-FILLED  
RIPRAP (D<sub>50</sub>=12")

SECTION A

SCALE: 1"=3' CO1-2

RECORD DRAWING

10/24/05

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DATE: OCT 18, 2005 TIME: 10:34 AM

NAME: S:\02025\03 Phase 1\RECORD DWG\02025.06-SEC072-REC.dwg

10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC
No.	DATE	REVISIONS

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

**MULLER**

MEC PROJECT No. 02025.06

DESIGN  
MDC/DAH  
 DRAWN  
BKB  
 CHECK  
DDJ

PREPARED FOR:  
 CHERRY CREEK BASIN WATER QUALITY AUTHORITY  
 6399 S. FIDDLERS GREEN CIR  
 GREENWOOD VILLAGE, CO. 80111  
 303-779-4525

**COTTONWOOD CREEK RECLAMATION  
 PHASE 1  
 CHERRY CREEK BASIN WATER QUALITY AUTHORITY**

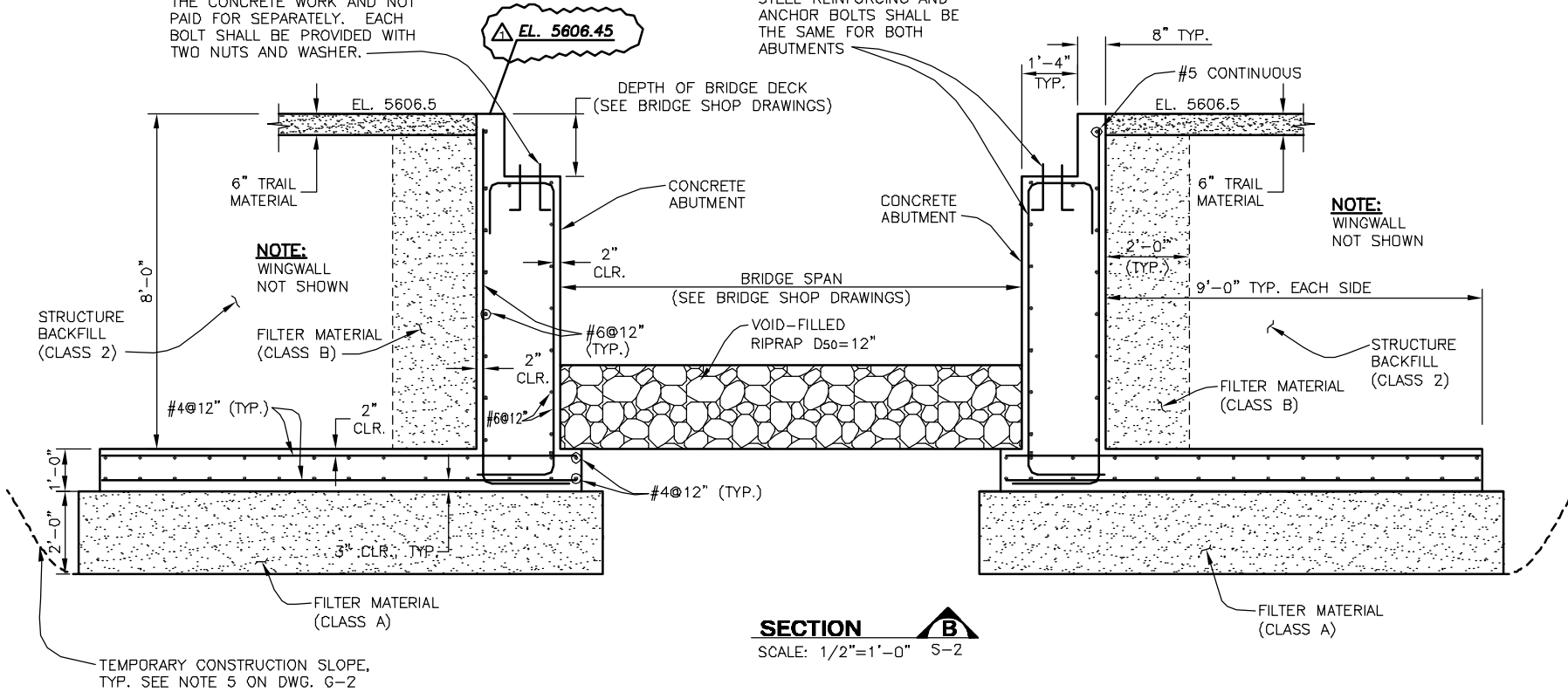
CHANGE ORDER NO. 2  
**LOW FLOW TRAIL CROSSING  
 PLAN AND PROFILE**

DATE  
APRIL 2004  
 DRAWING NO.  
CO2-3  
 SHEET NO.  
3 OF 4

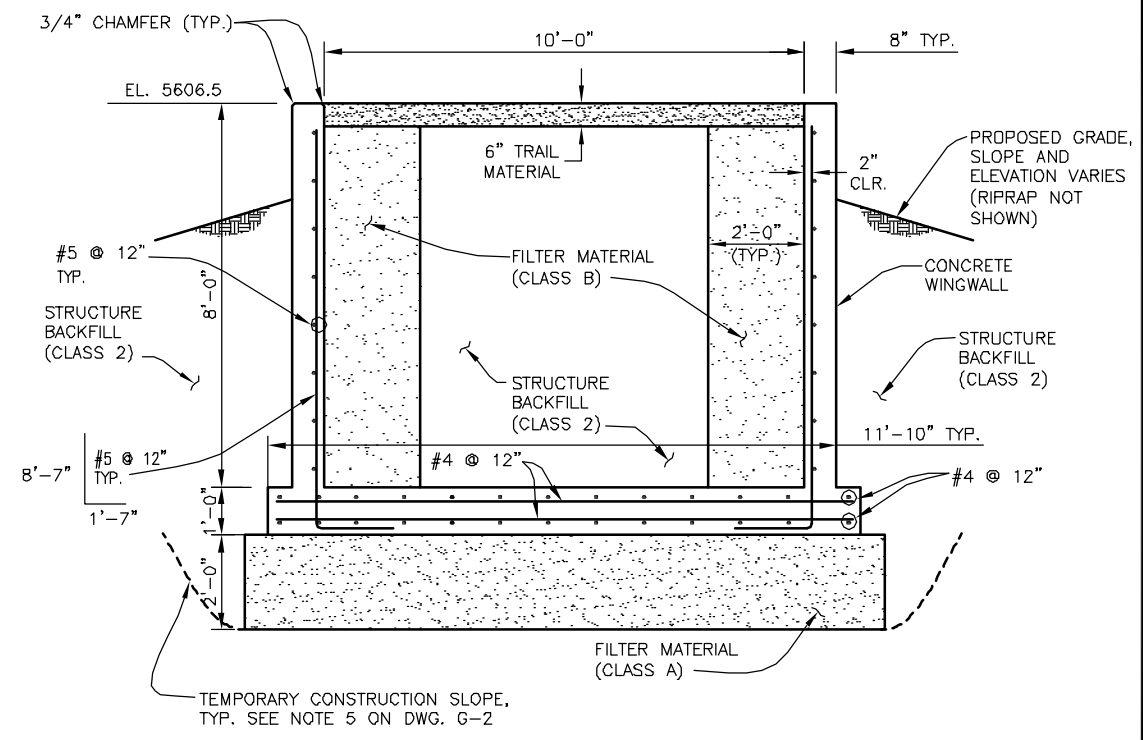
ANCHOR BOLTS 3/4"x1'-0" W/3" HOOK (CONTRACTOR SHALL FURNISH AND INSTALL PER BRIDGE MANUFACTURER'S SPECIFICATIONS) BOLTS SHALL BE INCLUDED IN THE CONCRETE WORK AND NOT PAID FOR SEPARATELY. EACH BOLT SHALL BE PROVIDED WITH TWO NUTS AND WASHER.

EL. 5606.45

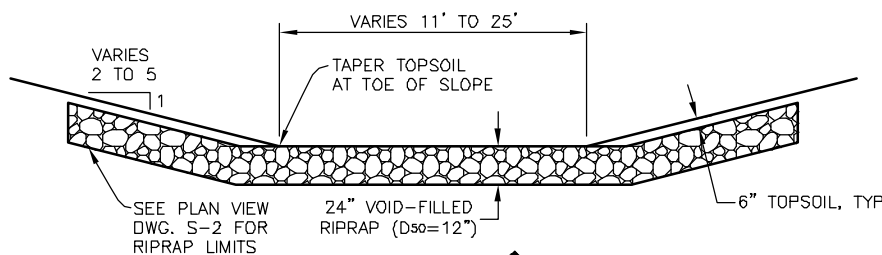
STEEL REINFORCING AND ANCHOR BOLTS SHALL BE THE SAME FOR BOTH ABUTMENTS



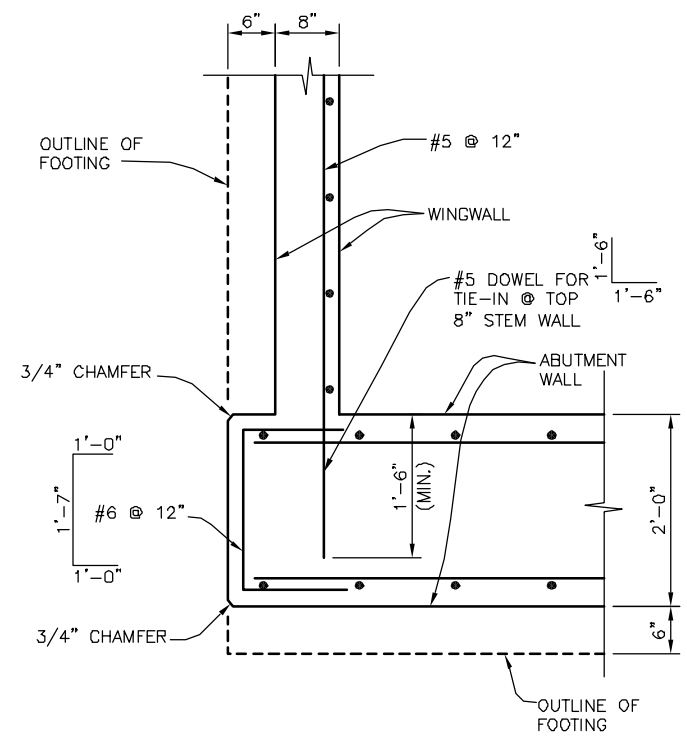
**SECTION B**  
SCALE: 1/2"=1'-0" S-2



**SECTION C**  
SCALE: 1/2"=1'-0" S-2



**SECTION D**  
SCALE: 1"=5' S-2



**TYPICAL CORNER REINFORCEMENT DETAIL (PLAN VIEW)**  
SCALE: 1"=1'-0" S-2

**RECORD DRAWING**  
10/24/05  
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DATE: OCT 18, 2005 TIME: 8:50 AM  
NAME: S:\02025\03\Phase 1\RECORD DWG\02025\_03-SECT1-REC.dwg

10/24/05	AS CONSTRUCTED RECORD DRAWINGS	MDC	<b>MULLER ENGINEERING CO., INC.</b> CONSULTING ENGINEERS IRONGATE 4, SUITE 100 777 S. WADSWORTH BLVD. LAKEWOOD, COLORADO 80226 (303) 988-4939	DESIGN	MDC/DAH	PREPARED FOR: CHERRY CREEK BASIN WATER QUALITY AUTHORITY 6399 S. FIDDLERS GREEN CIR GREENWOOD VILLAGE, CO. 80111 303-779-4525	<b>COTTONWOOD CREEK RECLAMATION</b> <b>PHASE 1</b> <b>CHERRY CREEK BASIN WATER QUALITY AUTHORITY</b>	STRUCTURAL <b>TRAIL CROSSING SECTIONS</b>	DATE	OCTOBER 2003
				DRAWN	BKB				DRAWING NO.	S-3
No.	DATE	REVISIONS	APPR.	MEC PROJECT No. 02025.03						