

**CLARK COUNTY  
REGIONAL FLOOD CONTROL DISTRICT**

**AGENDA ITEM**

**SUBJECT:**

SILVERADO RANCH DETENTION BASIN, COLLECTION & OUTFALL

**PETITIONER:**

DENIS CEDERBURG, DIRECTOR OF PUBLIC WORKS

**RECOMMENDATION OF PETITIONER:**

THAT THE CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT ACCEPT THE PROJECT PRESENTATION ON THE PROPOSED SILVERADO RANCH DETENTION BASIN, COLLECTION & OUTFALL CLA38B20 (OR POSSIBLE ACTION)

**FISCAL IMPACT:** None by this action.

**BACKGROUND:**

The subject project is described in the 2018 Master Plan Update as Facility Numbers BD02 0125, 0151, 0177, 0265, 0277, 0300, 0308, 0310, 0312, 0350, 0359, 0385 and 0404 and DCW4 0000 and 0001. The project proposes construction of the Silverado Ranch Detention Basin, collection facilities crossing Decatur and the outflow conveyance generally extending along Silverado Ranch Boulevard from the detention basin to an existing culvert facility under Interstate 15 near Meranto Avenue.

Representatives from the design consultant, Westwood PS, and Clark County staff will be available to respond to any questions following the brief presentation.

Respectfully submitted,

  
DENIS CEDERBURG  
Director of Public Works

<b>TAC AGENDA</b> ITEM # 11a Date: 02.27.2020	<b>RFCD AGENDA</b> ITEM # Date: 03.12.2020
<b>CAC AGENDA</b> ITEM # 11a Date: 03.02.2020	

Regional Flood Control District  
AGENDA ITEM DEVELOPMENT

**Staff Discussion:**

Date: 02/19/2020

**SILVERADO RANCH DETENTION BASIN, COLLECTION & OUTFALL  
PROJECT PRESENTATION – CLA38B20**

The Silverado Ranch Detention Basin, Collection & Outfall is described in the 2018 Master Plan Update as Facility Numbers BD02 0125, 0151, 0177, 0265, 0277, 0300, 0308, 0310, 0312, 0350, 0359, 0385 and 0404 and DCW4 0000 and 0001. The project proposes construction of the Silverado Ranch Detention Basin, collection facilities crossing Decatur and the outflow conveyance generally extending along Silverado Ranch Boulevard from the detention basin to an existing culvert facility under Interstate 15 near Meranto Avenue.

Representatives from the design consultant, Westwood PS, and Clark County staff will be available to respond to any questions following the brief presentation.

**Staff Recommendation:**

Accept the project presentation.

**Discussion by Technical Advisory Committee:**

AGENDA  
#11a Date: 02/27/2020

**Recommendation:**

**Discussion by Citizens Advisory Committee:**

AGENDA  
#11a Date: 03/02/2020

**Recommendation:**



# Department of Public Works

500 S Grand Central Pky • Box 554000 • Las Vegas NV 89155-4000  
 (702) 455-6000 • Fax (702) 455-6040

Denis Cederburg, P.E., Director • E-Mail: dlc@ClarkCountyNV.gov

February 18, 2020

Steven Parrish, P.E., General Manager/Chief Engineer  
 600 S. Grand Central Parkway, Suite 300  
 Las Vegas, Nevada 89106-4511

## SILVERADO RANCH DETENTION BASIN, COLLECTION & OUTFALL

Dear Mr. Parrish:

The design plans and specifications prepared by Westwood PS for the above referenced project and indicated on "Exhibit A" are at a 90% completion level. The County is pleased to present this project to the Technical Advisory Committee, Citizens Advisory Committee, and the District's Board of Directors.

The following project information is submitted to comply with NRS 543.580.

**Project History & Description:** The project proposes construction of the Silverado Ranch Detention Basin, collection facilities crossing Decatur, and the outfall conveyance generally extending along Silverado Ranch Boulevard from the detention basin to an existing culvert facility under I-15 near Meranto Avenue. The following provides a summary of major facilities proposed.

Major Facility Summary		
Facility	Description	Design Flow
Decatur South Inflow (BD02 0404, 0385, 0359)	6-ft x 5-ft RCB	273 cfs
	8-ft x 6-ft RCB	415 cfs
Decatur North Inflow (BD02 0312)	(2) 10-ft x 7-ft RCB	1,957 cfs
Silverado Ranch Detention Basin (BD02 0277)	294 ac-ft Detention Basin	varies
Detention Basin Outfall Conveyance 9BD02 0177, 0151, 0125)	7-ft x 4-ft RCB	376 cfs
	Concrete Trapezoidal Channel with 20-ft BW, 2:1 SS, H varies 5 to 7 ft	682 cfs

A Pre-Design was performed and completed in 2015. In November of 2016 the project was initiated to commence Final Design.

**Project Cost:** A detailed engineer's cost estimate for construction is attached as Exhibit "B". A summary of estimated costs is as follows:

Cost Estimation Summary	
Description	Estimated Cost
Design Engineering	\$1,248,000
Right-of-Way	\$31,000
Environmental Mitigation	\$81,000
Construction	\$23,120,745
Construction Management	\$2,379,255
Clark County Labor Cost	\$500,000
Emergency Action Plan (EAP)	\$10,000
<b>TOTAL:</b>	<b>\$27,370,000</b>

**BOARD OF COUNTY COMMISSIONERS**  
 MARILYN KIRKPATRICK, Chair • LAWRENCE WEEKLY, Vice Chair  
 LARRY BROWN • JAMES B. GIBSON • JUSTIN C. JONES • MICHAEL NAFT • TICK SEGERBLOM  
 YOLANDA T. KING, County Manager



**Outside Funding Sources:** Clark County Regional Flood Control District (CCRFCD) is the sole funding agency for the project. Facilities proposed for the project are included on the 2018 CCRFCD MPU.

**Project Construction Schedule:** If funding were made available today, listed below are the estimated dates for construction of the project.

- Award of Bid: 07/01/2020
- Project Duration: 18 months
- Construction Start Date: 9/01/2020

**Right-of-Way:** Right-of-way, Inter-entity Memorandum of Understanding (MOU), and easements necessary for the project have been obtained.

**Cash Flow Projection:** Attached as Exhibit "C" is the cash flow projection for the project.

**Economic Benefit:** The project proposes to construct a portion of the 2018 CCRFCD MPU network. In September of 2005, CCRFCD received the document entitled, "Benefit to Cost Analysis of Capital Programs" prepared by Hobbs, Ong & Associates, Inc., Restrepo Consulting Group/Applied Market Analysis, Post, Buckley, Schuh & Jemigan, Inc., and Public Financial Management, Inc.

The report concludes, "The quantifiable public benefits associated with flood control projects, when compared to costs, show that flood control projects have provided a return of \$2.21 for each dollar expended. When those benefits that are not readily quantifiable are taken into consideration, the contribution of these facilities provide to the welfare of Clark County's residents and the vitality of the local economy increase beyond the calculated ratio. It is expected that the benefit to cost ratio of the District construction program will remain at a level that approximates 2 to 1 through the buildout of the Master Plan and over the useful life of the facilities."

**Permit Requirements:** Clark County has obtained necessary permitting requirements for the project as identified below.

- NDOT Encroachment Permit – NDOT Approved 9/23/2019 (Permit #210515-2019)
- USCOE Regional General Permit #7 for disturbance to Waters of the US – USCOE Approved 6/24/2019 (Permit #SPK-2017-00364)
- Nevada Division of Water Resources (NV-DWR) Dam Safety Section Permit – NV-DWR Approved 1/29/2020 (Permit #NV10934)

**Environmental Requirements:** Clark County has met necessary environmental requirements for the project as identified below.

- Section 8 Facility-Specific Environmental Analysis - CCRFCD Approved 11/20/2017

**Project Enhancements:** N/A.

If you have any questions or require additional information, please call the undersigned at 702-455-6043.

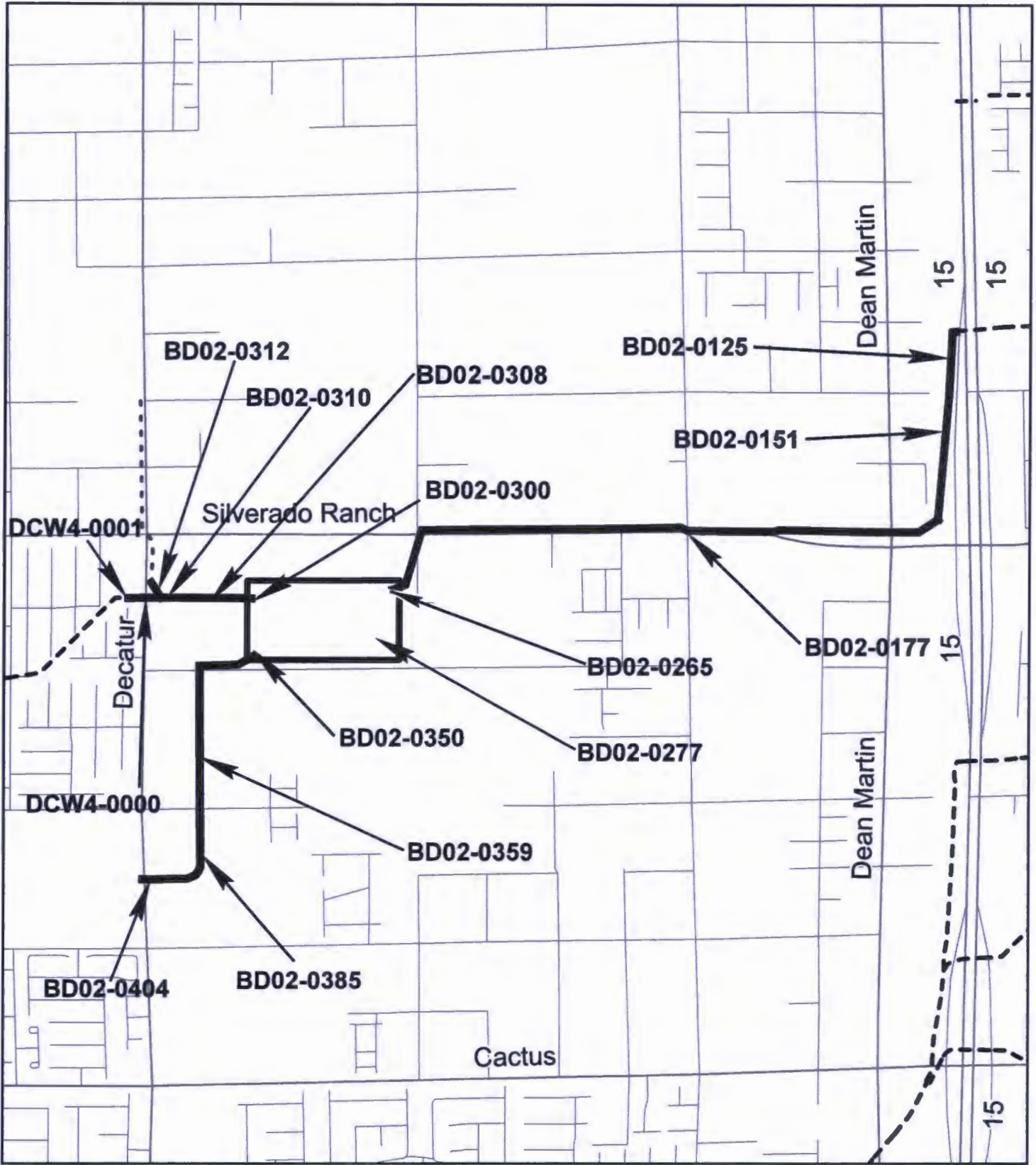
Sincerely,



Kathleen L. Kingston, P.E.  
Principal Civil Engineer

KLK:cm


Enclosures:      Exhibit "A" – Project Location  
                         Exhibit "B" - Detailed Cost Estimate  
                         Exhibit "C" – Cash Flow Projection



### Exhibit A



- Legend**
- Proposed
  - - Existing
  - · Future

	<b>Project Number: CLA38B20</b>	CLARK COUNTY PUBLIC WORKS
	<b>Silverado Ranch Detention Basin, Collection &amp; Outfall</b>	SCALE: NOT TO SCALE
		DATE: 02-19-2020
		SHEET NUMBER: 1 OF 1



**EXHIBIT "B"**  
**Silverado Ranch Detention Basin**  
**Presentation Cost Estimate**

Item Number	Description	Unit	Unit Price	Silverado DB	
				Quantity	Cost
105.01	QUALITY CONTROL ADMINISTRATIVE INCENTIVE	LS	\$310,000	1	\$310,000
107.01	TRAFFIC CONTROL	LS	\$250,000	1	\$250,000
109.01	CONSTRUCTION CONFLICTS AND ADDITIONAL WORK	LS	\$600,000	1	\$600,000
109.02	HISTORIC OWNER CAUSED DELAY ALLOWANCE	DAY	\$1,200	30	\$36,000
109.03	HISTORIC OWNER CAUSED DELAY ALLOWANCE (OVER \$1200/DAY)	DAY	\$300	30	\$9,000
200.01	MOBILIZATION	LS	\$939,375	1	\$939,375
201.01	CLEARING AND GRUBBING	LS	\$10,000	1	\$10,000
201.02	REMOVAL OF STOCKPILED SOIL	CY	\$120	388	\$46,560
202.01	REMOVE BITUMINOUS PAVEMENT	SY	\$10	8,953	\$89,530
202.02	REMOVE CROSS GUTTER	SF	\$12	375	\$4,500
202.03	REMOVE CURB AND GUTTER	LF	\$20	16	\$320
202.04	REMOVE CONCRETE SIDEWALK	SF	\$12	48	\$576
202.05	REMOVE AND RESET CHAIN-LINK FENCE	LF	\$15	1,097	\$16,455
202.06	REMOVE EXISTING GROUTED RIPRAP	SY	\$12	39	\$468
202.07	REMOVE EXISTING HEADWALL	EA	\$3,500	1	\$3,500
202.08	REMOVE EXISTING STORM DRAIN PIPE	LF	\$20	373	\$7,460
202.09	REMOVE EXISTING MANHOLE	EA	\$2,000	1	\$2,000
202.10	REMOVE EXISTING RIPRAP	SY	\$10	980	\$9,800
202.11	REMOVE EXISTING CONCRETE ACCESS ROAD	SF	\$12	3,458	\$41,496
202.12	REMOVE EXISTING END SECTION	EA	\$100	2	\$200
202.13	REMOVE EXISTING FENCE	LF	\$4	780	\$3,120
202.14	REMOVE EXISTING CONCRETE	SF	\$10	3,321	\$33,210
202.15	REMOVE EXISTING STORM DRAIN PLUG	EA	\$500	2	\$1,000
202.16	REMOVE SIGN	EA	\$500	1	\$500
202.17	REMOVE AND RESET SIGN	EA	\$600	7	\$4,200
203.01	DETENTION BASIN EXCAVATION AND EMBANKMENT	LS	\$5,000,000	1	\$5,000,000
302.01	TYPE II AGGREGATE BASE	CY	\$40	3,558	\$142,320
402.01	PLANTMIX BITUMINOUS SURFACE (4-INCH)	TON	\$75	132	\$9,900
402.02	PLANTMIX BITUMINOUS SURFACE (6-INCH)	TON	\$65	915	\$59,475
402.03	PLANTMIX BITUMINOUS SURFACE (6.5-INCH)	TON	\$65	1,567	\$101,855
413.01	5/8-INCH UTACS BONDED W/ A PMM, S3 GRADATION	SY	\$6	4,149	\$24,894
502.01	TRAPEZOIDAL CONCRETE CHANNEL	LF	\$790	1,550	\$1,224,500

**EXHIBIT "B"**  
**Silverado Ranch Detention Basin**  
**Presentation Cost Estimate**

Item Number	Description	Unit	Unit Price	Silverado DB	
				Quantity	Cost
502.02	RECTANGULAR CONCRETE CHANNEL	LF	\$925	341	\$315,425
502.03	CONCRETE CHANNEL TRANSITION	LF	\$900	100	\$90,000
502.04	104-FOOT CHANNEL CONNECTION AND TRANSITION	LF	\$1,000	144	\$144,000
502.05	7-FOOT X 4-FOOT REINFORCED CONCRETE BOX	LF	\$565	5,914	\$3,341,410
502.06	6-FOOT X 5-FOOT REINFORCED CONCRETE BOX	LF	\$560	1,319	\$738,640
502.07	8-FOOT X 6-FOOT REINFORCED CONCRETE BOX	LF	\$715	1,777	\$1,270,555
502.08	10-FOOT X 5-FT REINFORCED CONCRETE BOX	LF	\$800	42	\$33,600
502.09	10-FOOT X 6-FT REINFORCED CONCRETE BOX	LF	\$850	114	\$96,900
502.10	10-FOOT X 7-FT REINFORCED CONCRETE BOX	LF	\$900	1,644	\$1,479,600
502.11	16-FOOT X 6-FOOT REINFORCED CONCRETE BOX	LF	\$1,400	252	\$352,800
502.12	REINFORCED CONCRETE BOX TRANSITION ("DS" 419+51.02)	LS	\$16,000	1	\$16,000
502.13	REINFORCED CONCRETE BOX TRANSITION ("DN1" 110+35.55 TO 111+00.00)	LS	\$1,233,385	1	\$1,233,385
502.14	STEPPED ENERGY DISSIPATOR (SOUTH)	LS	\$60,000	1	\$60,000
502.15	STEPPED ENERGY DISSIPATOR (NORTH)	LS	\$95,000	1	\$95,000
502.16	CONCRETE DEPTH GAUGE	EA	\$15,000	1	\$15,000
502.17	FLOOD THREAT RECOGNITION STATION	LS	\$18,000	1	\$18,000
502.18	CHANNEL ACCESS RAMP	EA	\$50,000	1	\$50,000
502.19	PMF CONCRETE SPILLWAY	LS	\$970,000	1	\$970,000
502.20	PRIMARY OUTFLOW STRUCTURE	LS	\$50,000	1	\$50,000
502.21	WATER QUALITY OUTLET STRUCTURE	LS	\$55,000	1	\$55,000
502.22	SEDIMENT GAUGE	EA	\$1,500	3	\$4,500
502.23	4-FOOT CONCRETE FLUME	LF	\$50	138	\$6,900
502.24	PRECAST CONCRETE BARRIER	LF	\$55	34	\$1,870
502.25	DUAL CULVERT HEADWALL	EA	\$7,500	1	\$7,500
603.01	18-INCH RCP (CLASS III)	LF	\$100	2,528	\$252,800
603.02	24-INCH RCP (CLASS III)	LF	\$150	59	\$8,850
603.03	30-INCH RCP (CLASS III)	LF	\$175	32	\$5,600
603.04	36-INCH RCP (CLASS III)	LF	\$225	391	\$87,975
603.05	42-INCH RCP (CLASS III)	LF	\$250	11	\$2,750
603.06	48-INCH RCP (CLASS III)	LF	\$275	70	\$19,250
609.01	48-INCH RCB ACCESS MANHOLE	EA	\$2,500	30	\$75,000



**EXHIBIT "B"**  
**Silverado Ranch Detention Basin**  
**Presentation Cost Estimate**

Item Number	Description	Unit	Unit Price	Silverado DB	
				Quantity	Cost
609.02	NDOT TYPE 2 DROP INLET WITH CONCRETE APRON	EA	\$6,750	1	\$6,750
609.03	NDOT TYPE 2A DROP INLET WITH CONCRETE APRON	EA	\$6,750	2	\$13,500
609.04	TYPE III MANHOLE (60-INCH)	EA	\$8,000	3	\$24,000
609.05	RISER INLET (SECONDARY OUTFLOW)	EA	\$6,000	1	\$6,000
609.06	LOW COVER MANHOLE	EA	\$5,000	5	\$25,000
609.07	12.5-FT TYPE CM DROP INLET	EA	\$14,000	1	\$14,000
609.08	17.5-FT TYPE CM DROP INLET	EA	\$18,000	1	\$18,000
610.01	RIPRAP (D50 = 6 INCHES)	CY	\$81	103	\$8,343
610.02	RIPRAP (D50 = 12 INCHES)	CY	\$50	121	\$6,050
610.03	GRAVEL MULCH (3/4-INCH, SINGLE LAYER)	SY	\$3	29,200	\$87,600
610.04	GRAVEL MULCH (2-INCH, TH = 4-INCH)	SY	\$5	5,085	\$25,425
613.01	CONCRETE CROSS GUTTER	SF	\$11	375	\$4,125
616.01	POST AND CABLE FENCE	LF	\$25	3,742	\$93,550
616.02	6-FOOT HIGH CHAIN LINK FENCE	LF	\$20	7,469	\$149,380
616.03	16-FOOT SWING GATE	EA	\$5,000	2	\$10,000
626.01	PROJECT CLEANUP	LS	\$10,000	1	\$10,000
627.01	DETENTION BASIN SIGN	EA	\$500	2	\$1,000
627.02	NO TRESPASSING WARNING SIGN	EA	\$500	2	\$1,000
628.01	4-INCH WHITE POLYUREA PAINT MARKING	LF	\$2	700	\$1,400
628.02	6-INCH WHITE POLYUREA PAINT MARKING	LF	\$2	1,467	\$2,934
628.03	WHITE PAVEMENT ARROW	EA	\$250	1	\$250
628.04	24-INCH YELLOW DIAGONAL	LF	\$15	42	\$630
628.05	24-INCH WHITE CHEVRON	LF	\$15	9	\$135
629.01	VERTICALLY ADJUST WATER VALVE BOX	EA	\$2,000	3	\$6,000
629.02	SUPPORT 42-INCH WATER LINE DURING CONSTRUCTION	LS	\$230,000	1	\$230,000
630.01	VERTICALLY ADJUST SANITARY SEWER MANHOLE	EA	\$2,500	1	\$2,500
630.02	SANITARY SEWER MANHOLE	EA	\$5,000	2	\$10,000
630.03	8" PVC SANITARY SEWER PIPE	LF	\$95	89	\$8,455
633.01	NON-REFLECTIVE RAISED PAVEMENT MARKERS	EA	\$4	210	\$840
633.02	REFLECTIVE RAISED PAVEMENT MARKERS	EA	\$4	74	\$296
633.03	TYPE A PAVEMENT MARKERS	EA	\$4	68	\$272
633.04	TYPE B PAVEMENT MARKERS	EA	\$4	23	\$92



**EXHIBIT "B"**  
**Silverado Ranch Detention Basin**  
**Presentation Cost Estimate**

Item Number	Description	Unit	Unit Price	Silverado DB	
				Quantity	Cost
633.05	TYPE C PAVEMENT MARKERS	EA	\$4	136	\$544
633.06	TYPE D PAVEMENT MARKERS	EA	\$4	66	\$264
637.01	DUST CONTROL	LS	\$35,000	1	\$35,000
637.02	PRE EMERGENT HERBICIDE	LS	\$35,000	1	\$35,000
SWG	SOUTHWEST GAS RELOCATION COST	LS	\$300,000	1	\$300,000
<b>SUBTOTAL:</b>					<b>\$21,018,859</b>
<b>CONTINGENCY (10%):</b>					<b>\$2,101,886</b>
<b>GRAND TOTAL</b>					<b>\$23,120,745</b>

EXHIBIT "C"

Clark County Regional Flood Control District Cash Flow Projection

Today's Date: February-20

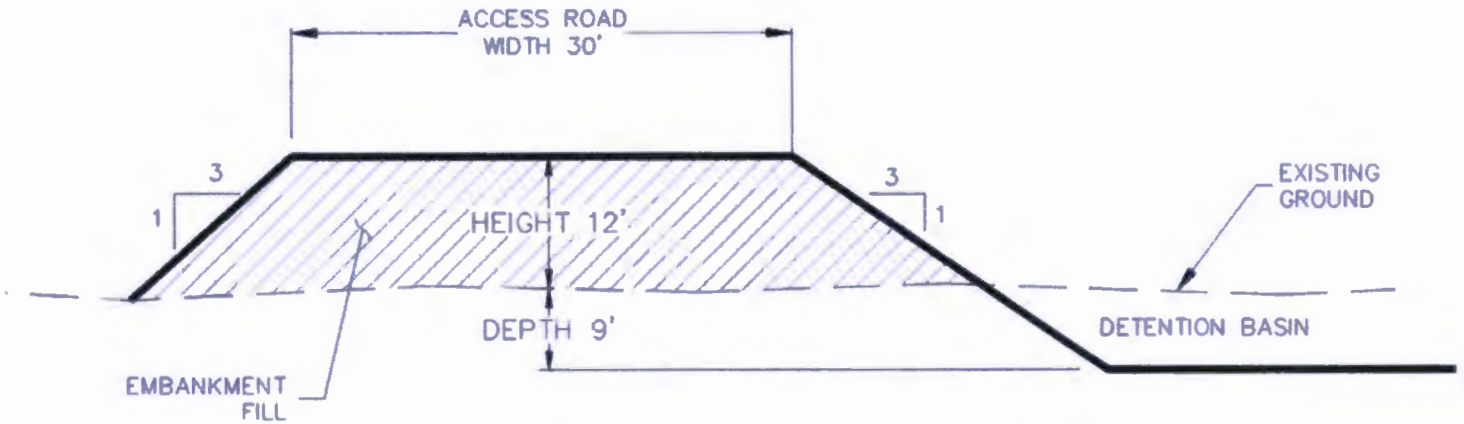
Project Number: CLA38B20  
 Project Name: Silverado Ranch Detention Basin, Collection and Outfall  
 Project Type: Basin and Storm Drain  
 ILC Amount: \$ 26,000,000

Construction Schedule			
Milestone	Estimate	Revised	Actual
Award of Bid	July-20		
CONS Start	September-20		
CONS Complete	February-22		
Project Duration	18 months		

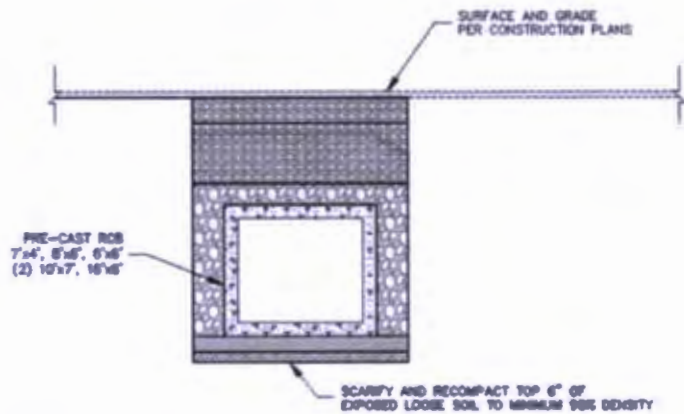
Billing Month	Original Estimate		Actual Drawdowns		Variance		Revised Estimate	
	\$	%	\$	%	\$	%	\$	%
Sep-20	520,000	2%						
Oct-20	780,000	3%						
Nov-20	1,300,000	5%						
Dec-20	1,300,000	5%						
Jan-21	1,820,000	7%						
Feb-21	2,080,000	8%						
Mar-21	2,340,000	9%						
Apr-21	2,600,000	10%						
May-21	2,600,000	10%						
Jun-21	2,080,000	8%						
Jul-21	2,080,000	8%						
Aug-21	1,300,000	5%						
Sep-21	1,300,000	5%						
Oct-21	1,300,000	5%						
Nov-21	780,000	3%						
Dec-21	780,000	3%						
Jan-22	520,000	2%						
Feb-22	520,000	2%						
Mar-22	0							
Apr-22	0							
May-22	0							
Jun-22	0							
Jul-22	0							
Aug-22	0							
<b>Total</b>	<b>\$ 26,000,000</b>	<b>100%</b>					<b>\$ -</b>	<b>0%</b>



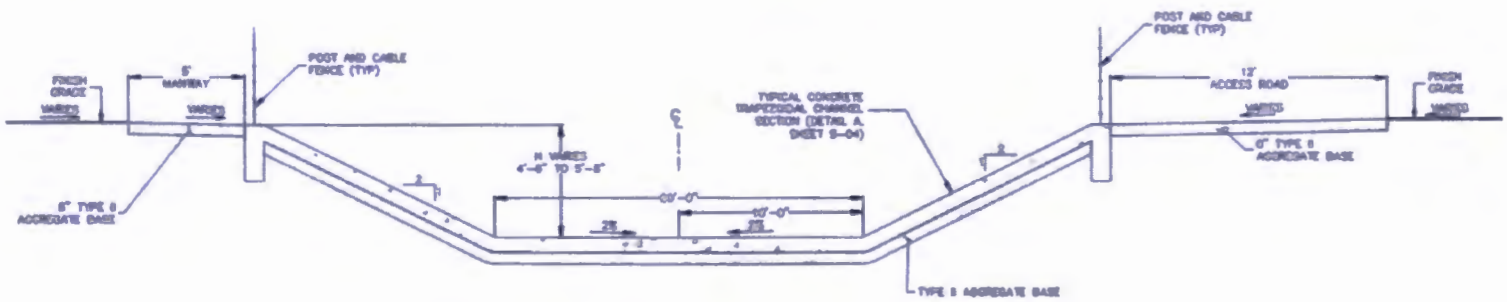
# FCLA08S – Silverado Ranch Detention Basin – Construction Details



EMBANKMENT SECTION, NORTH SIDE OF BASIN  
(not to scale)



PRE-CAST REINFORCED CONCRETE BOX SECTION  
(not to scale)



20' TRAPEZOIDAL CONCRETE CHANNEL  
(not to scale)