# Reclamation District No. 2042 Bishop Tract 2018 Adequate Progress Report For Urban Level of Protection

May 24, 2018

Prepared for:

Reclamation District No. 2042 – Bishop Tract and the City of Stockton

Prepared by:

Kjeldsen, Sinnock & Neudeck, Inc.

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#### Overview

Reclamation District No. 2042 – Bishop Tract (RD 2042) has engaged Kjeldsen, Sinnock and Neudeck, Inc. (KSN) to prepare this document to support the demonstration of "adequate progress" toward the achievement of an Urban Level of Flood Protection (ULOP) within the RD 2042 basin. This document describes the steps that RD 2042 is taking to generate the local funding needed to advance and implement 200-Year levee improvements in accordance with the requirements of Senate Bill 5 (SB5).

RD 2042 is responsible for operating and maintaining the levee system and drainage facilities that provides flood protection for agricultural land, infrastructure, and urban development (comprised of residential and commercial). RD 2042 was formed in 1909, and currently encompasses an area of approximately 3,100 acres, surrounded by 8.0 miles of levee, all located within San Joaquin County. At the time of formation, RD 2042 originally consisted of nearly 2,200 acres. An annexation occurred in 1989 that extended the District's eastern limits to Interstate 5 thereby adding just over 900 acres to RD 2042. Figure 1 shows the RD 2042 levees and boundary.

The levee system of RD 2042 currently provides a 100-year level of protection and is fully accredited by the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA) as meeting the minimum certification criteria as outlined in Title 44, CFR, Section 65.10. FEMA maintains Flood Insurance Rate Maps (FIRMs) that delineate special flood hazard areas and assist lending institutions and federal agencies to determine whether flood insurance is required. RD 2042 is currently located on FIRM panel numbers 06077C0285F, 06077C0295F, 06077C0305F, and 06077C0315F

With the passage of SB5, the State of California has established that a 200-year level of protection shall be the new standard for urban and urbanizing areas. The existing RD 2042 levees currently do not meet the updated Urban Levee Design Criteria (ULDC) standards adopted by the Department of Water Resources, and the existing levees are not currently certified to provide 200-year protection. Accordingly, the City of Stockton as the local land use agency, in coordination with RD 2042, are jointly pursuing efforts to achieve ULOP within the RD 2042 boundary.

On behalf of RD 2042, a team of Professional Engineers consisting of Peterson Brustad Inc. (PBI), KSN, and Kleinfelder has conducted an evaluation of the RD 2042 levee system in accordance with ULDC. The goal of the evaluation was to identify any deficiencies and countermeasures needed to comply with the State's 200-year standards and to meet the requirements of making a ULOP finding for RD 2042's levees for the City of Stockton. The purpose of this Adequate Progress Report is to address the ULOP requirements for adequate requirements:

- 1. Identify the geographic area which will have a ULOP once the improvements are completed
- 2. Describe the scope, schedule, and cost of completing the flood protection improvements described the Engineer's Report
- 3. Identify critical features of the system which are under construction
- 4. Provide evidence that there are revenues sufficient to fund each year of the project improvements.

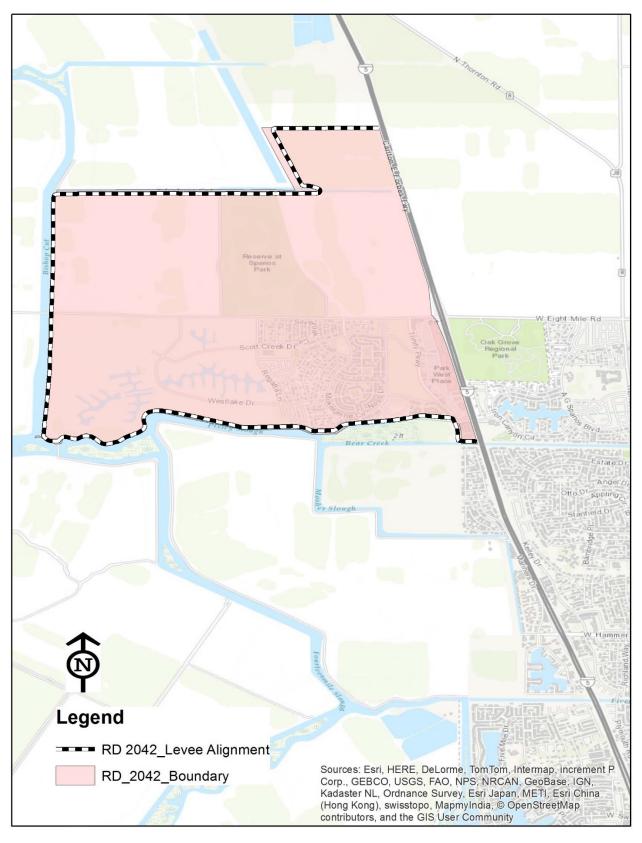


Figure 1 - RD 2042 Levee and Boundary

#### **Project Improvements**

In order for the RD 2042 levee system to meet ULDC, improvements are needed to pipe penetrations. Pipe penetration rehabilitation is necessary at various locations, primarily due to deteriorated conditions. The improvements consist of reconstructing pipe penetrations that cross the levee by removing and replacing the portion of pipe through the levee prism and installing a positive closure device (i.e. gate valve). The new pipes will be installed above the Design Water Surface Elevation (DWSE). Conceptual improvement plans are included in Appendix 1. Locations of the pipe penetrations to be rehabilitated are shown on Figure 2 and listed in Table 1.

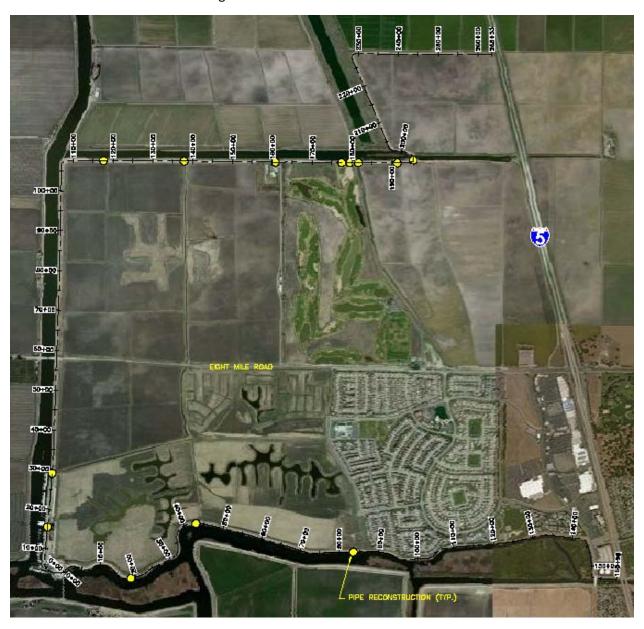


Figure 2 - Pipe Penetration Rehabilitation Locations

Table 1 - Pipe Penetration Rehabilitations

Station	Pipe Diameter (inches)
N 15+50	16
N 29+02	24
N 29+07	24
N 117+57 (completed)	12
N 137+81 (completed)	16
N 160+73 (completed)	16
N 177+38 (underway)	16
N 179+51 (no work needed¹)	24
N 181+58 (underway)	16
N 191+34 (underway)	16
N 195+72	48
S 18+82	12
S 43+01	16
S 83+49	16

#### **Project Cost**

The total cost associated with the pipe penetration rehabilitations amounts to \$2,907,000 in 2017 dollars. This cost represents the total cost to obtain full ULDC compliance for the RD 2042 levee system. A summary of this cost is shown below in Table 2. A more detailed breakdown of the project costs is included in Appendix 2.

Table 2 - Summary of Project Costs

Description		Total Cost (2017\$)
Construction		\$1,730,000
Soft Costs		\$692,000
20% Contingency		\$484,400
	Total:	\$2,907,000

#### **Project Schedule**

It is anticipated that approximately two pipes will be rehabilitated each year over a seven year time period. An estimated schedule of rehabilitation work is shown below in Table 3. An annual escalator of 3% was used to determine the total cost in any given year as shown in Table 3. Work on the 2018 penetrations is currently underway.

Reclamation District No. 2042

<sup>&</sup>lt;sup>1</sup> Further investigation of the pipe penetration at Sta. N 179+51 has revealed that the pipe is newer and in much better condition that originally assessed. Therefore, no work is required for this pipe.

Table 3 - Estimated Project Schedule

Year	Pipe Penetration	Total Cost
2017	N 117+57, N 137+81, N 160+73	\$90,627 (actual)
2018	N 177+38, N 181+58, N 191+34	\$498,200
2019	N 195+72	\$604,700
2020	N 15+50, S 18+82	\$304,700
2021	N 29+02, N 29+07	\$609,500
2022	S 43+01, S 83+49	\$373,800

#### **Project Funding**

RD 2042 is the sole funding entity for the ULDC improvements. A current financial report that indicates balances for all RD 2042 funds is included in Appendix 3. There is currently a balance of \$1,237,820 in the contingency fund and \$503,892 in the ULDC fund.

As the sole funding entity, RD 2042 will be responsible for funding the improvements. The primary source of revenue for RD 2042 is from the existing assessment district which generates approximately \$550,000 per year. Other sources of income generate another \$107,000 per year. A copy of this year's RD 2042 budget is included in Appendix 4. In order to fund the improvements, RD 2042 has created a ULDC fund and will reallocate excess budget funds previously directed to the contingency fund. For the fiscal year 2017/2018, this translates to approximately \$300,000 being available to fund the second year of ULDC improvements.

A cash flow analysis that demonstrates a feasible solution for implementation of the needed 200-year ULDC improvements is shown below in Table 4. Table 4 conservatively assumes that the ULDC fund will be funded at \$300,000 per year. It is expected that this table will be refined over time as the planning and development of the project progress over time.

Table 4 - Cash Flow Analysis

Description	2017	2018	2019	2020	2021	2022
Beginning Balance	\$0	\$409,373	\$271,173	\$26,473	\$263,773	\$14,273
Revenues:						
ULDC Fund	\$0	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Transfer from Contingency Fund	\$500,000	\$60,000	\$60,000	\$242,000	\$60,000	\$60,000
Total Revenues	\$500,000	\$360,000	\$360,000	\$542,000	\$360,000	\$360,000
Expenditures:						
ULDC Improvements	\$90,627	\$498,200	\$604,700	\$304,700	\$609,500	\$373,800
Total Expenditures	\$90,627	\$498,200	\$604,700	\$304,700	\$609,500	\$373,800
Ending Balance	\$409,373	\$271,173	\$26,473	\$263,773	\$14,273	\$473

Reclamation District No. 2042

Adequate Progress Report

Appendix 1
Conceptual Improvement Plans

C-001

### RECLAMATION DISTRICT NO. 2042

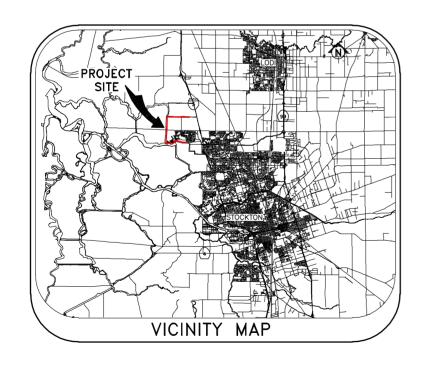
## BISHOP TRACT

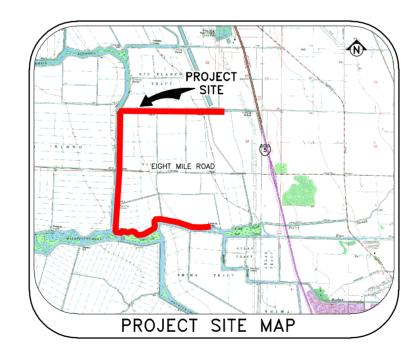
STOCKTON, CALIFORNIA

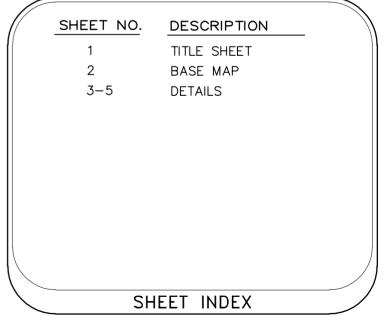
URBAN LEVEE DESIGN CRITERIA, PROJECT NO. 13.1

#### PENETRATION REHABILITATION

**VARIOUS LOCATIONS** 





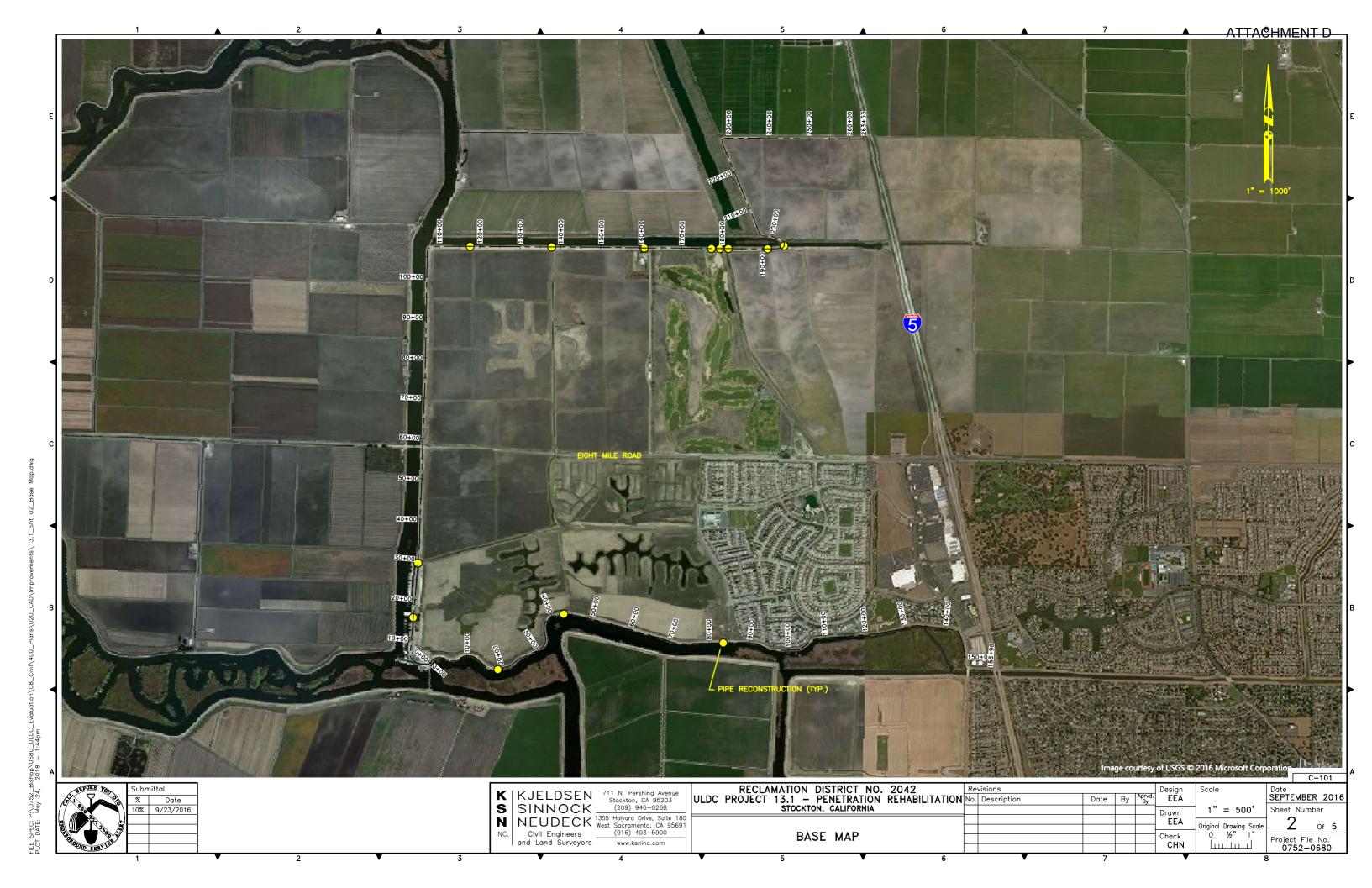


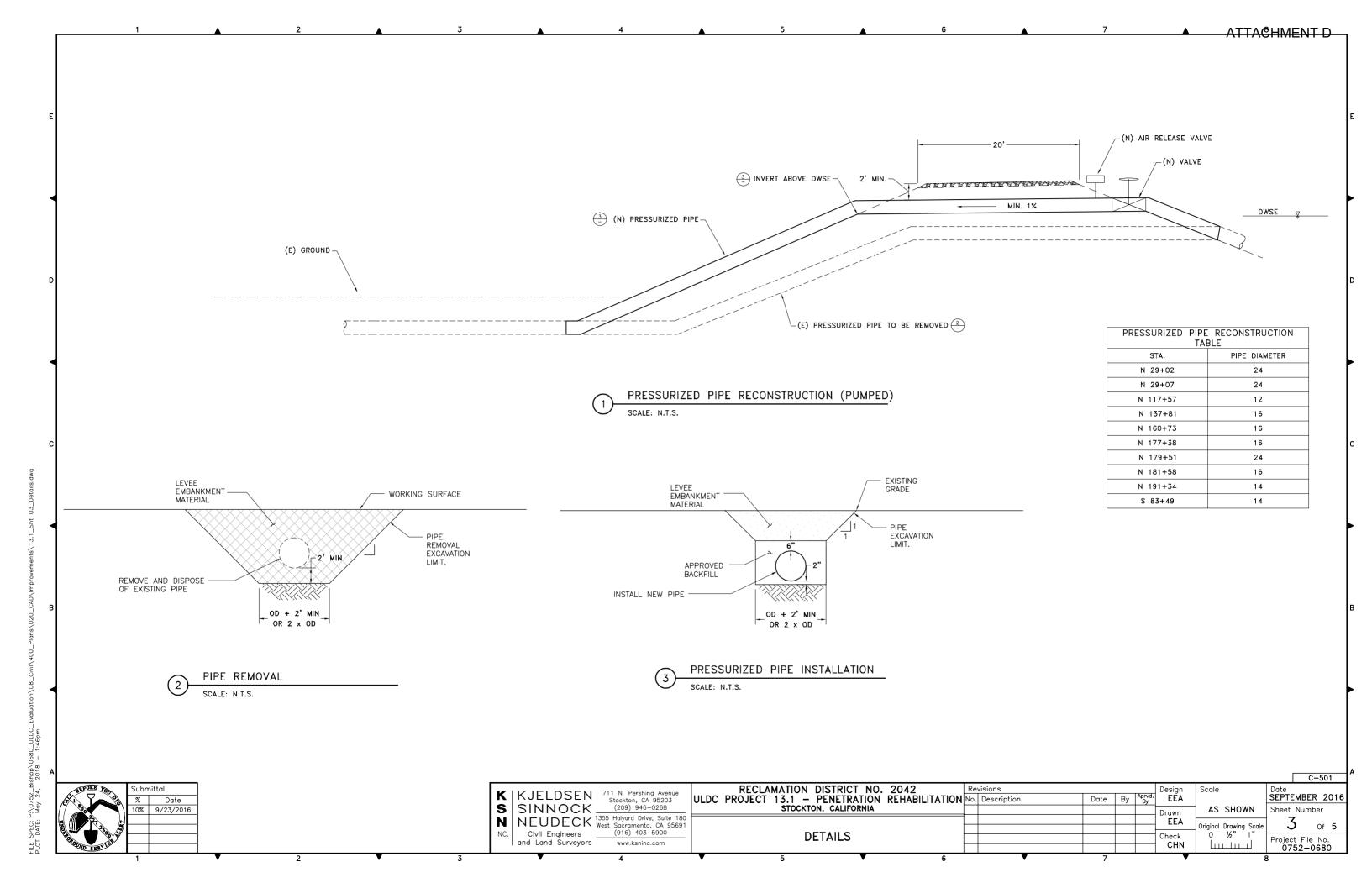
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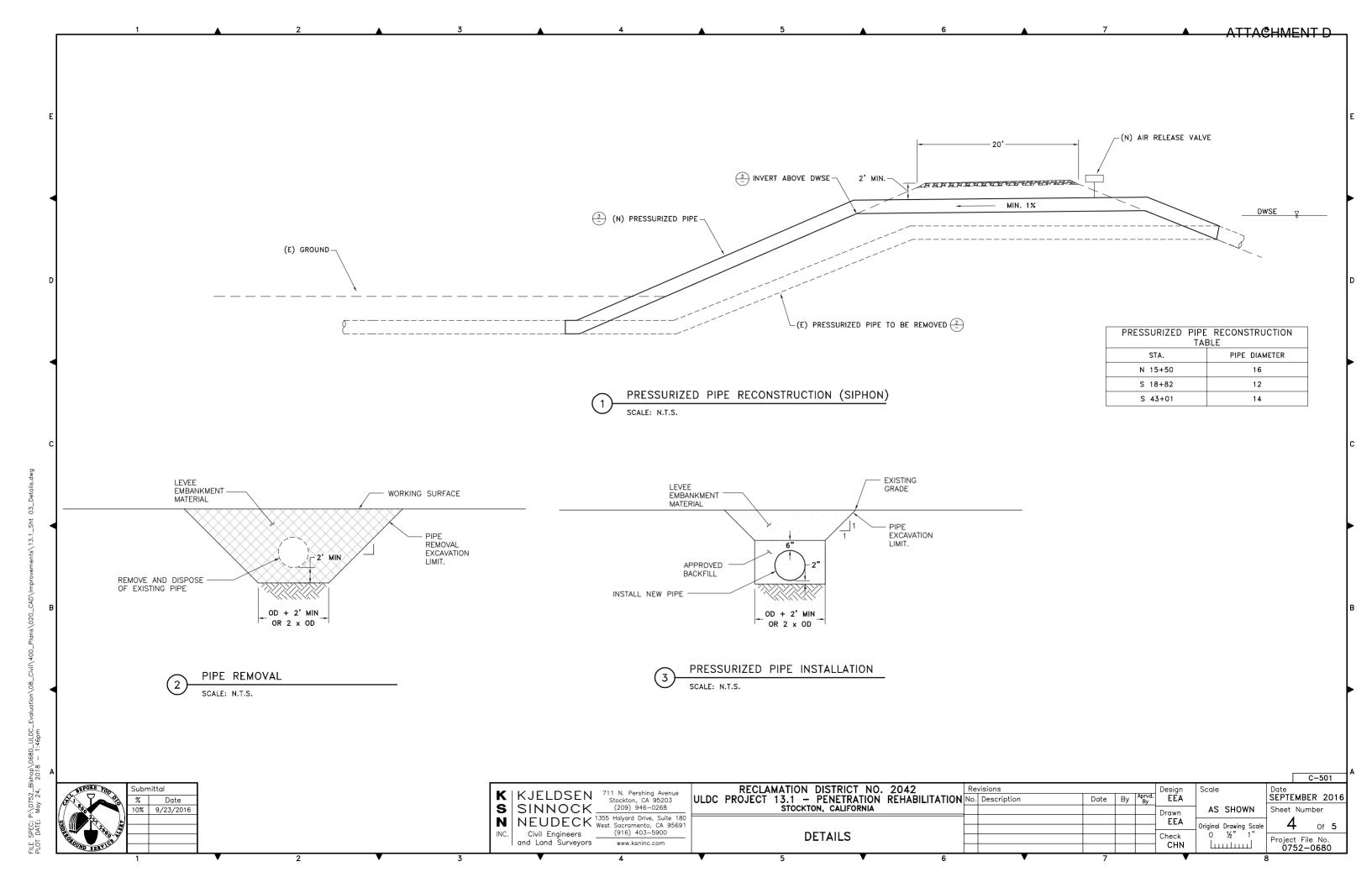
K	KJELDSEN
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INC.	Civil Engineers _
1	and Land Surveyors

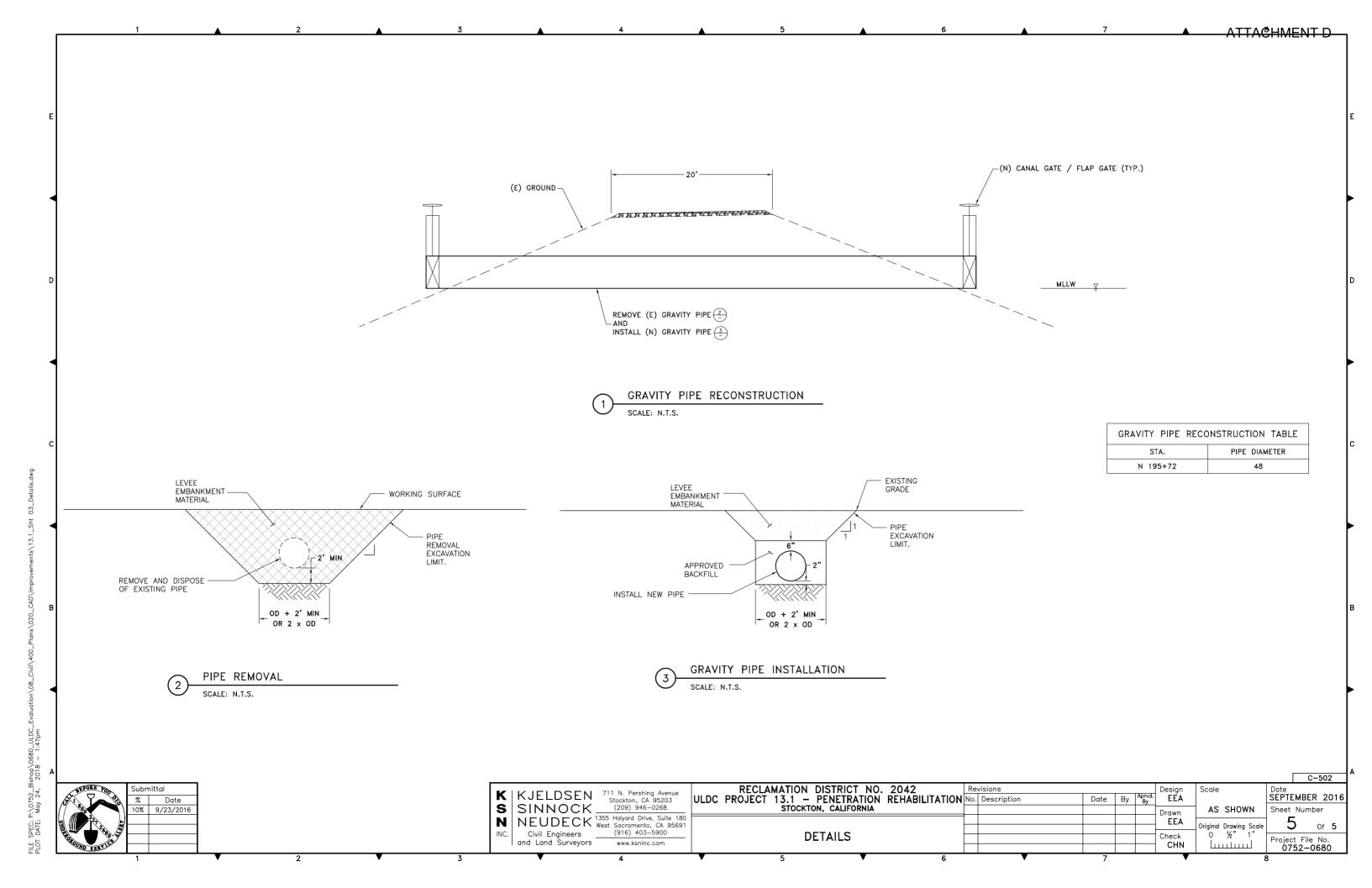
enue 03	ULDC	PROJ
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								C-001
RECLAMATION DISTRICT NO. 2042	Re	evisions				Design	Scale	Date
C PROJECT 13.1 - PENETRATION REHABILITATION	No.	Description	Date	Ву	Aprvd. By	EEA		SEPTEMBER 2016
STOCKTON, CALIFORNIA						Drawn	AS SHOWN	Sheet Number
						EEA		1
TITLE OLIFET							Original Drawing Scale	I Of 5
TITLE SHEET						Check	0 ½" 1"	Project File No.
						CHN		0752-0680
-		V	7					









Reclamation District No. 2042

Adequate Progress Report

Appendix 2

Detailed Cost Estimate

#### **RECLAMATION DISTRICT NO. 2042 - BISHOP TRACT ULDC EVALUATION**

STOCKTON, CALIFORNIA

#### **OPINION OF PROBABLE COSTS DETAILS OF PROPOSED IMPROVEMENTS**

Item	Description	Quantity	Unit	<b>Unit Cost</b>	<b>Total Cost</b>	
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#### PROJECT NO. 13.1 PENETRATION REHABILITATION

Cons	struction				
1.	Mobilization			3%	\$49,000
2.	Erosion Control			3%	\$49,000
3.	Reconstruct Existing 12" Pipe	2	EA	\$60,000	\$120,000
4.	Reconstruct Existing 16" Pipe	8	EA	\$80,000	\$640,000
5.	Reconstruct Existing 24" Pipe	3	EA	\$125,000	\$375,000
6.	Reconstruct Existing 48" Pipe	1	EA	\$200,000	\$200,000
7.	Air Release Valve	13	EA	\$2,000	\$26,000
8.	12" Valve	2	EA	\$4,000	\$8,000
9.	16" Valve	8	EA	\$8,500	\$68,000
10.	24" Valve	3	EA	\$25,000	\$75,000
11.	48" Valve	2	EA	\$60,000	\$120,000
				Subtotal:	\$1,730,000

Man	Mangement / Environmental / Engineering							
1.	Administration	5%	\$86,500					
2.	Planning	3%	\$51,900					
3.	Environmental and Permitting	5%	\$86,500					
4.	Geotechnical Engineering	2%	\$34,600					
5.	Surveying and Civil Engineering	10%	\$173,000					
6.	Construction Management and Inspection	12%	\$207,600					
7.	Mitigation	3%	\$51,900					
		Subtotal:	\$640,100					

SUBTOTAL:	\$2,422,000
CONTINGENCY (20%): PROJECT TOTAL:	\$484,400 <b>\$2,907,000</b>

Reclamation District No. 2042

Adequate Progress Report

Appendix 3

Financial Report (as of 4/30/2018)

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# Reclamation District 2042 GENERAL LEDGER DATES: 5/1/2017 - 4/2017

101 - General Fu	nd 53501
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Date	Description	Debits	Credits	Ref	Doc#	Trans Title
5/1/17	Balance Forward	3480.82	0.00	***	0	
7/31/17	Interest Earned @ County	8.00	0.00	July reports	952	County Fund Report
10/31/17	Interest Earned @ County	9.00			961	County Fund Report
1/31/18	Interest Earned @ County	11.00			968	County Fund Report
3/31/18	Auditor fee	0.00		March report		County Fund Report
	Totals:	3,508.82	341.00	Net	:	3,167.82
106 - Fun	d 53511 Contingency					
Date	Description	Debits	Credits	Ref	Doc#	Trans Title

Date	Description	Debits	Credits	Ref	Doc#	Trans Title
5/1/17	Balance Forward	1726034.00	0.00	,	0	
6/29/17	to fund 53594	0.00	500000.00	June 2017 r	e 945	County Fund Report
7/31/17	Interest Earned @ County	4351.00		July reports		County Fund Report
10/31/17	Interest Earned @ County	3491.00		Oct reports		County Fund Report
1/31/18	Interest Earned @ County	3944.00	0.00	Jan reports	968	County Fund Report
	Totals:	1,737,820.00	500,000.00	Ne	et:	1,237,820.00

#### 107 - Fund 53594 Maint & Op

Date	Description	Debits	Credits	Ref Doc#	Trans Title
5/1/17	Balance Forward	403469.81	0.00	0	
	to fund 53596	0.00	500000.00	Fund transfe 937	Fund Transfer
6/29/17	from fund 53511	500000.00	0.00	June 2017 re 945	County Fund Report
7/31/17	Interest Earned @ County	203.00	0.00	July reports 952	County Fund Report
10/31/17	Interest Earned @ County	1166.00		Oct reports 961	County Fund Report
11/7/17	0082 State of California	131976.00	0.00	1516Hmp rei 304	0082 State of California
12/22/17	0120 Bank of Stockton	0.00	80000.00	to checking 236	0120 Bank of Stockton
12/31/17	2017/18 Assmt-53% Dec 2017	280166.41	0.00	Dec reports 965	County Fund Report
	Auditor SevChg	0.00	5079.00	Dec reports 965	County Fund Report
1/26/18	0067 Reclamation District 2042	0.00	60000.00	deposit to ch 238	0067 Reclamation District 2042
1/31/18	Interest Earned @ County	1949.00	0.00	Jan reports 968	County Fund Report
	Totals:	1,318,930.22	645,079.00	Net:	673,851.22

#### 112 - Fund 53596 ULDC

Date	Description	Debits	Credits	Ref	Doc#	Trans Title
5/1/17	from fund 53511	500000.00	0.00	Fund transfe	937	Fund Transfer
7/31/17	interest Earned @ County	860.00	0.00	July reports	952	County Fund Report
10/31/17	Interest Earned @ County	1424.00		Oct reports		County Fund Report
1/31/18	Interest Earned @ County	1608.00		Jan reports		County Fund Report
	Totals:	503,892.00	0.00	Net		503,892.00

Grand Totals: 3,564,151.04 1,145,420.00 Net: 2,418,731.04

Reclamation District No. 2042

Adequate Progress Report

Appendix 4 2017/2018 Budget

#### RECLAMATION DISTRICT 2042 2017/18 BUDGET

#### ATTACHMENT D

REVENUE	Jul-17	Aug 17	Son 17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Anu 10	Mov. 10	I 10	TOTAL
REVENUE  Regular Assessment - County roll	(to be revised after f	Aug-17	Sep-17	Oct-1/	1404-1/	\$250,000	Jan-18	ren-18	маг-18	Apr-18	May-18	Jun-18 \$250,000	\$500,000
Regular Assessment - County roll Regular Assessment - Invoiced	(to be revised after i	ormai assessment	ievieu)			25,000						25,000	50,000
Regular Assessment - Invoiced						25,000						23,000	50,000
Checking & Savings 7/19/17	82,868												82,868
County Operating Funds		let of \$150,000 Fur	ds Transferred to	Contingency Fun	d								50,000
Subventions Reimbursement	30,000	(Ct 01 \$130,000 1 ul	ius Transicircu to	Contingency 1 un	<b></b>							23,100	23,100
ULDC fund	500,000											23,100	500,000
Total Revenues	\$632,868	\$0	\$0	\$0	\$0	\$275,000	\$0	\$0	\$0	\$0	\$0	\$298,100	\$1,205,968
		-	-		-	4-1-,	-	-	-				,,-
General Operations	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	TOTAL
PG & E	\$700	700	700	700	700	700	700	700	700	700	700	700	\$8,400
Engineering	450	450	450	450	450	450	450	450	450	450	450	450	5,400
G 1M:				6,000						5.000			11,000
Canal Maintenance	100	100	100	6,000	100	100	100	100	100	5,000	100	100	11,000
Office Supplies, Dues, Fees, & Misc	100	100	100	100	100	100	100	100	100	100	100 750	100	1,200
Accounting Services	750 500	750 500	750 500	750 500	700 500	7,000 500	750 500	750 500	750 500	750 500	500	750 500	15,200 6,000
Legal Services	750	750	750	750	750	750	750	750	750	750	750	750	9,000
Professional Services Worker's Compensation	1,200	730	300	730	730	300	/30	/30	300	730	730	300	2,400
1	1,200		300			300	15,000	6,000	300			300	
Insurance, E&O & Liability Agency Fees - County							15,000 7,000	6,000	1,000				21,000 8,000
SJ Flood Control	-						7,000		1,000				0,000
Property Taxes	-					2,200				300			2,500
Pump Maintenance - labor	100	100	100	100	100	100	100	100	100	100	100	100	1,200
R/M Pumps & Pump Station	150	150	150	150	150	150	15,000	150	150	150	150	150	16,650
ULDC Expenses	150	130	85,000	85,000	85,000	85,000	13,000	130	130	130	130	130	340,000
Total General Operations Expense - se	e (\$4,700)	(\$3,500)	(\$88,800)	(\$94,500)	(\$88,450)	(\$97,250)	(\$40,350)	(\$9,500)	(\$4,800)	(\$8,800)	(\$3,500)	(\$3,800)	(\$447,950)
Total General Operations Expense se	(\$1,700)	(50,000)	(\$00,000)	(0) 1,000)	(\$00,100)	(\$7.,200)	(\$10,000)	(03,000)	(0.,000)	(50,000)	(00,000)	(\$2,000)	(\$111,500)
Routine Maintenance	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	TOTAL
Engineering	1,000	2,000	2,000	10,000	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	22,500
Labor	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Rodent Control		500						1,000					1,500
Vegetation Control			6,000		7,000				5,000		10,000		28,000
Levee Patrol	170	170	170	170	170	170	170	170	170	170	170	170	2,040
Levee Maintenance			2,000		2,000			2,000			2,000		8,000
Toe Ditch Maintenance					6,000					1,000			7,000
Professional Services	500	500	500	500	500	500	500	500	500	500	500	500	6,000
Backslope m=Maintenance		10,000											10,000
Erosion repairs - rip rap						20,000							20,000
Road Maintenance				20,000						5,000			25,000
<b>Total Routine Maint. Expenses</b>	(\$1,790)	(\$13,290)	(\$10,790)	(\$30,790)	(\$16,290)	(\$21,790)	(\$1,790)	(\$4,790)	(\$6,790)	(\$7,790)	(\$13,790)	(\$1,790)	(\$131,480)
Completine Emerge Tetal	(07.400)	(\$22.200)	(0100.070)	(\$249.160)	(\$2.52.000)	(\$471.040)	(0514000)	(0520.270)	(0520.060)	(055( 550)	(0572.940)	(0570.420)	
Cumulative Expense Total	(\$6,490)	(\$23,280)	(\$122,870)	(\$248,160)	(\$352,900)	(\$471,940)	(\$514,080)	(\$528,370)	(\$539,960)	(\$556,550)	(\$573,840)	(\$579,430)	
Cumulative Revenue Total	\$632,868	\$632,868	\$632,868	\$632,868	\$632,868	\$907,868	\$907,868	\$907,868	\$907,868	\$907,868	\$907,868	\$1,205,968	
Net Cumulative Total	\$626,378	\$609,588	\$509,998	\$384,708	\$279,968	\$435,928	\$393,788	\$379,498	\$367,908	\$351,318	\$334,028	\$626,538	
											Estimate	ed excess to con	tingency fund

#### RESOLUTION AUTHORIZING THE PREPARATION AND APPROVAL OF 2018 ADEQUATE PROGRESS REPORT DELTA FARMS RECLAMATION DISTRICT NO. 2042 BISHOP TRACT FOR URBAN LEVEL OF FLOOD PROTECTION (ULOP)

WHEREAS, State of California Senate Bill 5 has determined that a 200-year level of protection shall be the new standard for urban and urbanizing areas to achieve Urban Level of Flood Protection (ULOP); and,

WHEREAS, this Reclamation District is desirous of achieving said 200-year level of protection for Urban Level of Flood Protection (ULOP); and,

WHEREAS, the Reclamation District's Engineers have conducted an evaluation of its levee system to identify the work needed to comply with the Urban Levee Design Criteria (ULDC); and,

WHEREAS, the City of Stockton has requested the District prepare annually an Adequate Progress Report for Urban Level of Protection (ULOP)to demonstrate the steps RD 2042 is taking to secure adequate funding to implement the levee improvements necessary to achieve 200 Year Urban Levee of Flood Protection; and,

WHEREAS, the Reclamation District's Engineers, under the direction of the Board of Trustees, have prepared a 2018 Adequate Progress Report indicating work to be performed and the funding sources for said work through 2024.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the Board of Trustees of Delta Farms Reclamation District No. 2042 – Bishop Tract, as follows:

- 1. That that certain 2018 Adequate Progress Report prepared by the District Engineers on behalf of this Reclamation District is hereby approved.
- 2. That the officers of the District, the Chairman, and/or the Secretary, be, and either of them individually are, hereby authorized and directed to approve on behalf of this Reclamation District, the said 2018 Adequate Progress Report and any and all other agreements, addenda or other documents associated with the said 2018 Adequate Progress Report.

#### **CERTIFICATE**

I, MARC HARDY, Chairman of Delta Farms Reclamation District No. 2042, do hereby certify that the foregoing Resolution is a full, true and correct copy of a Resolution passed by the Board of Trustees of Delta Farms Reclamation District No. 2042 at a meeting thereof held on the 11th day of July, 2018, at which meeting a quorum was present; that said Resolution has never been revoked, and the same is now in full force and effect.

DATED: July 11, 2018

CHAIRMAN OF THE BOARD OF TRUSTEES OF DELTA FARMS RECLAMATION DISTRICT NO. 2042