

**SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



ITEM: 3.33
(ID # 14795)

MEETING DATE:
Tuesday, May 25, 2021

FROM : TLMA-TRANSPORTATION:

SUBJECT: TRANSPORTATION AND LAND MANAGEMENT AGENCY/TRANSPORTATION:
Approve and Execute Contract Change Order No. 7 – Between the County of Riverside and Riverside Construction Co., for the Construction of Avenue 66 at SR-111 and Union Pacific Railroad Grade Separation Project near the Community of Mecca, District 4. [\$963,106 Total Cost – Coachella Valley Water District 100%]

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve and Execute Contract Change Order No. 7 with Riverside Construction Company on the Avenue 66 at SR-111 and Union Pacific Railroad Grade Separation Project; and
2. Authorize the Transportation Department to issue Contract Change Order No. 7 with Riverside Construction Company on the Avenue 66 at SR-111 and Union Pacific Railroad Grade Separation Project.


ACTION:Policy


Mark Lancaster, Director of Transportation 5/6/2021

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Perez, seconded by Supervisor Hewitt and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Spiegel, Washington, Perez, and Hewitt
Nays: None
Absent: None
Date: May 25, 2021
xc: Transp.

Kecia R. Harper
Clerk of the Board
By: 
Deputy

**SUBMITTAL TO THE BOARD OF SUPERVISORS COUNTY OF RIVERSIDE,
STATE OF CALIFORNIA**

FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost
COST	\$ 963,106	\$ 0	\$ 963,106	\$ 0
NET COUNTY COST	\$ 0	\$ 0	\$ 0	\$ 0
SOURCE OF FUNDS: Coachella Valley Water District (CVWD) 100%			Budget Adjustment: No	
			For Fiscal Year: 20/21	

C.E.O. RECOMMENDATION: Approve

BACKGROUND:

Summary

On February 11, 2020 (agenda item 3.34) the Board of Supervisors entered into a contract with Riverside Construction Company of Riverside, California for the Construction of Avenue 66 at SR-111 and Union Pacific Railroad Grade Separation Project near the community of Mecca.

The authorized amount of the contract was \$36,538,151. The total amount of the Contract Change Order No. 7 is \$963,106 (2.64% of the original contract amount) which exceeds the maximum change order amount that can be authorized by the Director of Transportation and requires Board of Supervisors approval in accordance with Resolution No. 2019-035.

During the design of the Avenue 66 Grade Separation Project, Coachella Valley Water District (CVWD) requested that the County include the construction of a 30" domestic water pipeline as part of the County's construction contract. The Board of Supervisors approved the Cooperative Agreement between the County and CVWD on March 10, 2020 (agenda item 3.38) for this work. CVWD is funding 100% of costs related to this change order.

During construction of the project, CVWD requested changes to the 30" waterline design. Contract Change Order No. 7 is necessary to compensate the contractor for these changes which included upgrading the pipe thickness, adding a protective zinc coating, zinc fitting and additional appurtenances, and performing dewatering necessary for the installation of the waterline.

Not including this Contract Change Order, the Transportation Department has issued 9 Contract Change Orders to date totaling, \$339,593 (0.93% of the original contract amount), which are the result of:

- Miscellaneous extra work including cultural monitoring, Dispute Resolution Board, and on-site employee training and staging revisions (\$151,625)
- Temporary soil stabilization and vegetation removal and hazardous waste cleanup (\$115,000)
- Temporary traffic devices and public safety and public convenience measures (\$50,000)

**SUBMITTAL TO THE BOARD OF SUPERVISORS COUNTY OF RIVERSIDE,
STATE OF CALIFORNIA**

- Unforeseen electrical systems, utility relocations and utility conflicts (\$22,968)

Impact on Residents and Businesses

The improvements will increase safety, reduce vehicle emissions, improve access for emergency service responders, and improve the quality of life for residents and commuters along Avenue 66, in the Community of Mecca, and within the Coachella Valley.

Additional Fiscal Information

Contract Change Order No. 7 brings the total authorized contract change order amount to \$1,302,698, which is 3.57% over the originally authorized contract amount of \$36,538,151. The cost increase will be funded by CVWD and the additional cost is covered in the approved Cooperative Agreement between the County and CVWD.

Contract History and Price Reasonableness

N/A

ATTACHMENTS:

Vicinity Map
Change Order Report
Letter of Transmittal



Jason Farin, Principal Management Analyst 5/18/2021

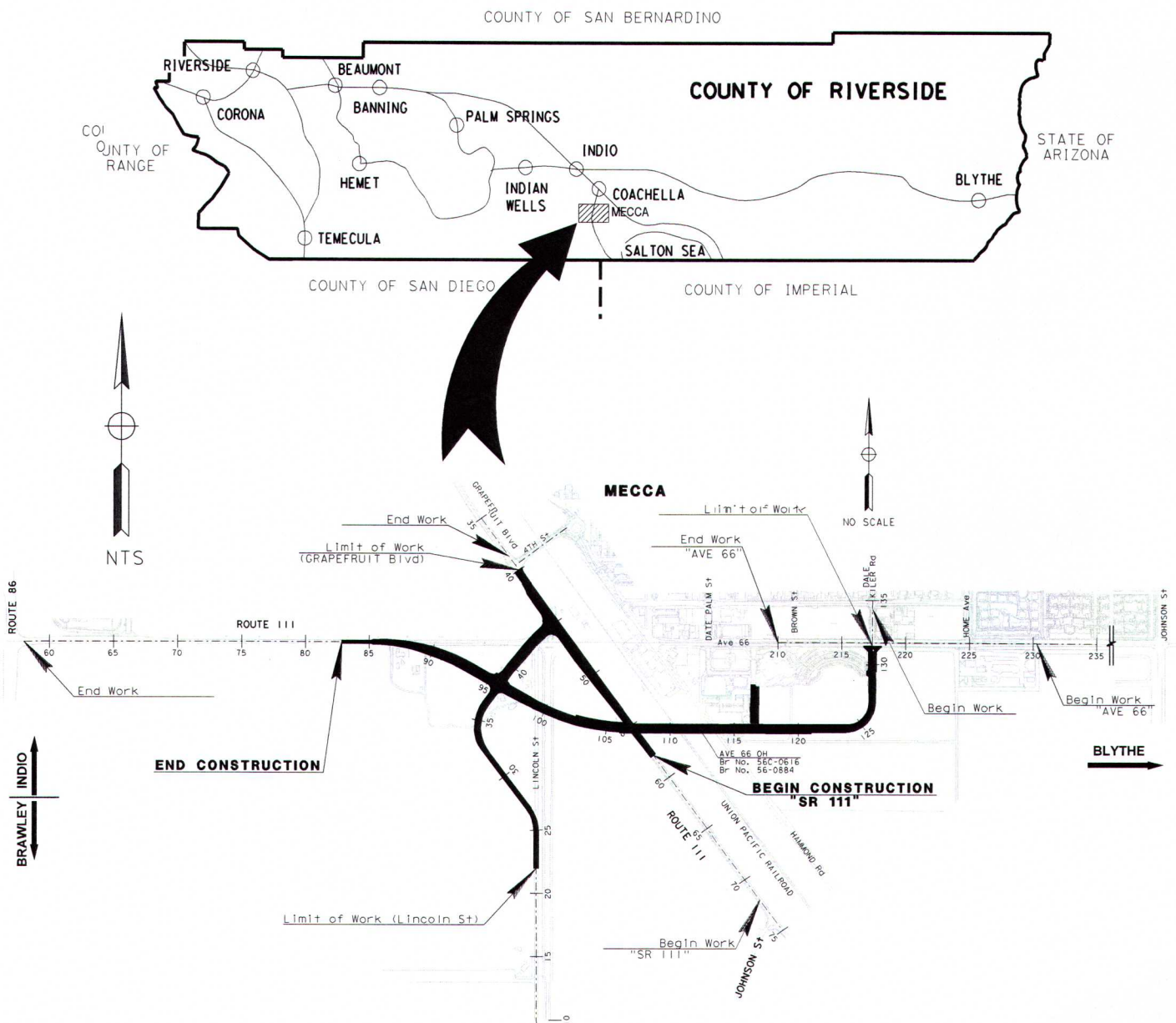


Gregory L. Priamos, Director County Counsel 5/13/2021

COUNTY OF RIVERSIDE TRANSPORTATION DEPARTMENT

AVENUE 66 AT SR-111 AND UNION PACIFIC RAILROAD GRADE SEPARATION PROJECT

COMMUNITY OF MECCA
PROJECT No. B8-0664
FEDERAL AID No. STPTCIFL-5956(221)



VICINITY MAP

CHANGE ORDER REPORT
(Avenue 66 at SR-111 and Union Pacific Railroad Grade Separation)

CCO #	Amount	Percent	Description
	Original Contract Amount \$36,538,151		
1	\$40,000	0.11%	Established a Dispute Resolution Board (DRB) and Partnering to assist with contract administration claims resolution process.
2	\$25,000	0.07%	Temporary soil stabilization measures, temporary sediment control measures and temporary tracking control measures to protect storm water systems and receiving waters from the discharge of potential pollutants.
3	\$50,000	0.14%	As determined by the Engineer, furnish, install, maintain, relocate and remove temporary traffic devices to improve or enhance traffic conditions on the project site necessary for Public Convenience and Public Safety.
4	\$8,000	0.02%	Reimbursement for on-site training as a part of the equal opportunity affirmative action federal trainee program.
5	\$75,000	0.21%	Native American on-site monitoring, storage and reburial of artifacts found on-site .
6	\$90,000	0.25%	Hand removal of vegetation and hazardous waste cleanup of homeless encampments that lie within the project limits, performed by a qualified hazardous waste materials subcontractor.
8	\$152,856	0.42%	Maintain, relocate and/or modify unforeseen electrical systems. Relocate utilities underground to avoid future conflicts and provide support services for third party utility companies as directed by the Engineer.
9	(\$129,888)	(0.36)%	Caltrans signed bridge plans, deletion of MSE retaining wall 101, soil stabilization to address utility conflicts and unsuitable material.
10	\$28,625	0.08%	Revise construction staging for the intersection of Ave 66 and SR-111 to perform all grading and HMA work in one weekend 55-hour extended closure.
Authorized Change Orders	\$339,593	0.93%	
7	\$963,106	2.64%	As directed by CVWD, change 30" waterline design during construction. Changes include upgrading pipe, adding protective zinc coating, zinc fittings and additional appurtenances and dewatering.
Total Change Orders	\$1,302,698	3.57%	
Revised Contract Amount	\$37,840,850		

LETTER OF TRANSMITTAL

**Local Agency: County of Riverside
Transportation Department**

DATE: May 5, 2021

File: Avenue 66 Grade Separation Project

W.O. No.: B8-0664

Federal No.: STPTCIFL-5956(221)

C.C.O.: 7

TO: Mark Lancaster

From: Cindi Wachi

963,105.55 (2.64% of the original contract amount of \$36,538,151.30)

This Contract Change Order provides for CVWD directed changes to the 30" waterline.

CVWD requested changes to the 30" waterline plans after the bid was received. These changes included increasing the thickness (class) of pipe, adding protective coatings, adding zinc coated fittings, and adding appurtenances (valves, blow offs and relief valves). CVWD also specified dewatering of the trenching if water is encountered during the excavations.

The Contractor will be compensated via increase/decrease/elimination of item work, as well as adjustment in compensation at agreed unit prices. A cost estimate is on file in the project records.

This change order will not affect the controlling activity. No time adjustment is warranted.

The amount of this Contract Change Order is \$963,105.55. The accumulation of all Contract Change Orders thus far, including this one, is \$1,302,698.30.

Previous Contract Change Order Amounts Approved:

See C.C.O. History
(attached)

\$339,592.75

MAY 25 2020 3.93

File: Avenue 66 Grade Separation Project
W.O. No.: B8-0664
Federal No.: STPTCIFL-5956(221)
C.C.O.: 7

This Contract Change Order was discussed with Dan Ruiz (CVWD), Francisco Montellano (Caltrans Oversight) and County of Riverside staff who gave concurrence to this change.

Adjustment of Time: 0 working days

ESTIMATE OF COST

Items (\$2,627,211.00)
 Force Account \$350,000.00
 Agreed Price \$3,240,316.55
 Adjustment

TOTAL \$963,105.55



Cindi Wachi
 Engineering Division Manger



Lucas Rathe
 Resident Engineer

CCO Category		
AFA	Anticipated Force Account	
CFC	Changed Field Condition	
CME	Contract Management Error	
DO	Design Omission	
OAM	Outside Agency Mandate	√
RWO	Right-of-Way Obligation	
SE	Survey Error	
UB	Upgrade/Betterment	
UI	Utility Interference	√

CCO	Amount	Funding Source
7	\$963,105.55	CVWD 100%



COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT

SHEET 1 OF 22 SHEETS

Contract Change Order No. 7

CONTRACT: Avenue 66 At SR-111 and Union Pacific
Railroad Grade Separation Project

WORK ORDER NO. B8-0664
CALTRANS EA NO. 08-0M9004
LOCAL-FED AID NO. STPTCIFL-5956(221)
STATE-FED AID NO.

TO: Riverside Construction CONTRACTOR: YOU ARE HEREBY DIRECTED TO MAKE THE HEREIN
DESCRIBED CHANGES FROM THE PLANS AND SPECIFICATIONS OR DO THE FOLLOWING DESCRIBED WORK NOT
INCLUDED IN THE PLANS AND SPECIFICATIONS ON THIS CONTRACT.

Description of work to be done, estimate of quantities and prices to be paid. Segregated between additional work at contract price, agreed price
and force account. Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will
be made for idle time.

Extra Work at Agreed Unit Price:

Remove sheets W-1, W-2, W-3, W-4, WP-1, WP-2 and WD-1 from the bid plans and replace with sheets 3 through 10 of this change
order. Contractor to perform all work associated with these plans. As shown on the attached plans, change routing, upgrade pipe to
Class 350 Ductile Iron Pipe, zinc coated, with V-Bio Enhanced Polyethylene, and other associated work at the unit prices shown
below.

For this work, the contractor shall receive and accept the unit rate prices for the items in the chart below. This sum constitutes full and
complete compensation for furnishing all labor, material, equipment, tools, and incidentals including all markups by reason of this
change.

Table with 5 columns: Item ID, Description, Quantity, Unit Price, Total Price. Rows include items like Welded Steel Pipe Casing, Double Ball Expansion Joint, Ductile Iron Pipe, etc.

Total Extra Work at Agreed Unit Price: \$3,240,316.55

Extra Work at Force Account

The Contractor is to dewater the 30" waterline and in accordance with the revised CVWD specification Section 21 23 19 "Dewatering"
(Sheets 11 thru 22 of this CCO). The contractor may also use the revised specifications to for the dewatering and installation of the
8" Sewer Line. At the direction of CVWD, Dewatering may occur at the following 30" waterline locations

- Location A - Pipe Stations 10+00 to 15+50 (550 LF)
Location B - Pipe Station 42+23 to 43+23 (100 LF).

For this work, compensate the contractor in accordance with Section 9-1.04 "Force Account" for all labor, tools, equipment, material
and incidentals for dewatering work pertaining to the CVWD 30" Waterline.

Estimate of Extra Work at Force Account. = \$350,000.00

This change has no effect on the controlling activities; and therefore, no adjustment of time is warranted.

MAY 25 2020 3.33



**COUNTY OF RIVERSIDE
TRANSPORTATION DEPARTMENT**

SHEET 2 OF 22 SHEETS

Contract Change Order No. 7

CONTRACT: **Avenue 66 At SR-111 and Union Pacific
Railroad Grade Separation Project**

WORK ORDER NO. B6-0664
 CALTRANS EA NO. 08-0M9004
 LOCAL-FED AID NO. STPTCIFL-5956(221)
 STATE-FED AID NO. _____

TO: **Riverside Construction** CONTRACTOR: YOU ARE HEREBY DIRECTED TO MAKE THE HEREIN DESCRIBED CHANGES FROM THE PLANS AND SPECIFICATIONS OR DO THE FOLLOWING DESCRIBED WORK NOT INCLUDED IN THE PLANS AND SPECIFICATIONS ON THIS CONTRACT.

Description of work to be done, estimate of quantities and prices to be paid. Segregated between additional work at contract price, agreed price and force account. Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time.

Remove sheets W-1, W-2, W-3, W-4, WP-1, WP-2 and WD-1 from the bid plans and replace with sheets 3 through 10 of this change order. Contractor to perform all work associated with these plans.

Deletion of Bid Items at Unit Cost

Contractor is to eliminate the following items due to changes in the water line design. In accordance with Section 9-1.06D, "Eliminated Items," of the Standard Specifications, the adjustment due to the elimination of the bid item(s) below is zero.

Item 189 Welded Steel Pipe Casing (Bridge)	-156 LF	(-100%)	\$750.00 / LF	-\$117,000.00
Item 190 Double Ball Expansion Joint (Waterline)	-4 EA	(-100%)	\$165,000.00 / EA	-\$660,000.00
Item 191 30" Ductile Iron Pipe (Water Main)	-2,801 LF	(-100%)	\$410.00 / LF	-\$1,148,410.00
Item 192 6" Ductile Iron Pipe Water Line	-37 LF	(-100%)	\$200.00 / LF	-\$7,400.00
Item 193 30" Welded Steel Pipe (0.250" Thick)	-1,091 LF	(-100%)	\$300.00 / LF	-\$327,300.00
Item 194 Fire Hydrant	-2 EA	(-100%)	\$25,000.00 / EA	-\$50,000.00
Item 195 4" Air Release And Air/Vacuum Valve	-1 EA	(-100%)	\$12,000.00 / EA	-\$12,000.00
Item 196 6" Temporary Blow-Off	-1 EA	(-100%)	\$20,000.00 / EA	-\$20,000.00
Item 197 Mobilization, Demobilization and Final Clean	-1 LS	(-100%)	\$1.00 / LS	-\$1.00
Item 198 12" Ductile Iron Pipe Watermain	-109 LS	(-100%)	\$200.00 / LS	-\$21,800.00
Item 199 2" Air Release And Air/Vacuum Valve	-2 EA	(-100%)	\$8,500.00 / EA	-\$17,000.00
Item 200 6" Blow-Off	-2 EA	(-100%)	\$13,000.00 / EA	-\$26,000.00
Item 201 30" Butterfly Valve	-8 EA	(-100%)	\$20,000.00 / EA	-\$160,000.00
Item 202 30" Gate Valve	-1 EA	(-100%)	\$45,000.00 / EA	-\$45,000.00
Item 203 6" Gate Valve	-1 EA	(-100%)	\$1,800.00 / EA	-\$1,800.00
Item 204 12" Gate Valve	-1 EA	(-100%)	\$3,000.00 / EA	-\$3,000.00
Item 205 Waterline Reducer (30" to 12")	-1 EA	(-100%)	\$10,500.00 / EA	-\$10,500.00

Estimated Cost for this Contract Change Order: **-2,627,211.00**

Estimated Cost: Decrease \$ Increase \$963,105.55

Participating: Yes: No: N/A:

ATTEST:
KECIA R. HARPER, Clerk
[Signature]
DEPUTY

WE, the undersigned contractor, have given careful consideration to the change proposed and hereby agree that we will provide all equipment, furnish all materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above. By reason of this proposed change 0 days adjustment of time will be allowed.

Accepted [Signature] 3/12/21
Riverside Construction Date

Cindi A. Wachl 03/11/2021
 Approval Recommended Date
 Cindi Wachl, Engineering Division Manager

Mark Lancaster 5/5/2021
 Approved Date
 Mark Lancaster, Director of Transportation

[Signature] 4/2/2021
 Approved, CVWD Date

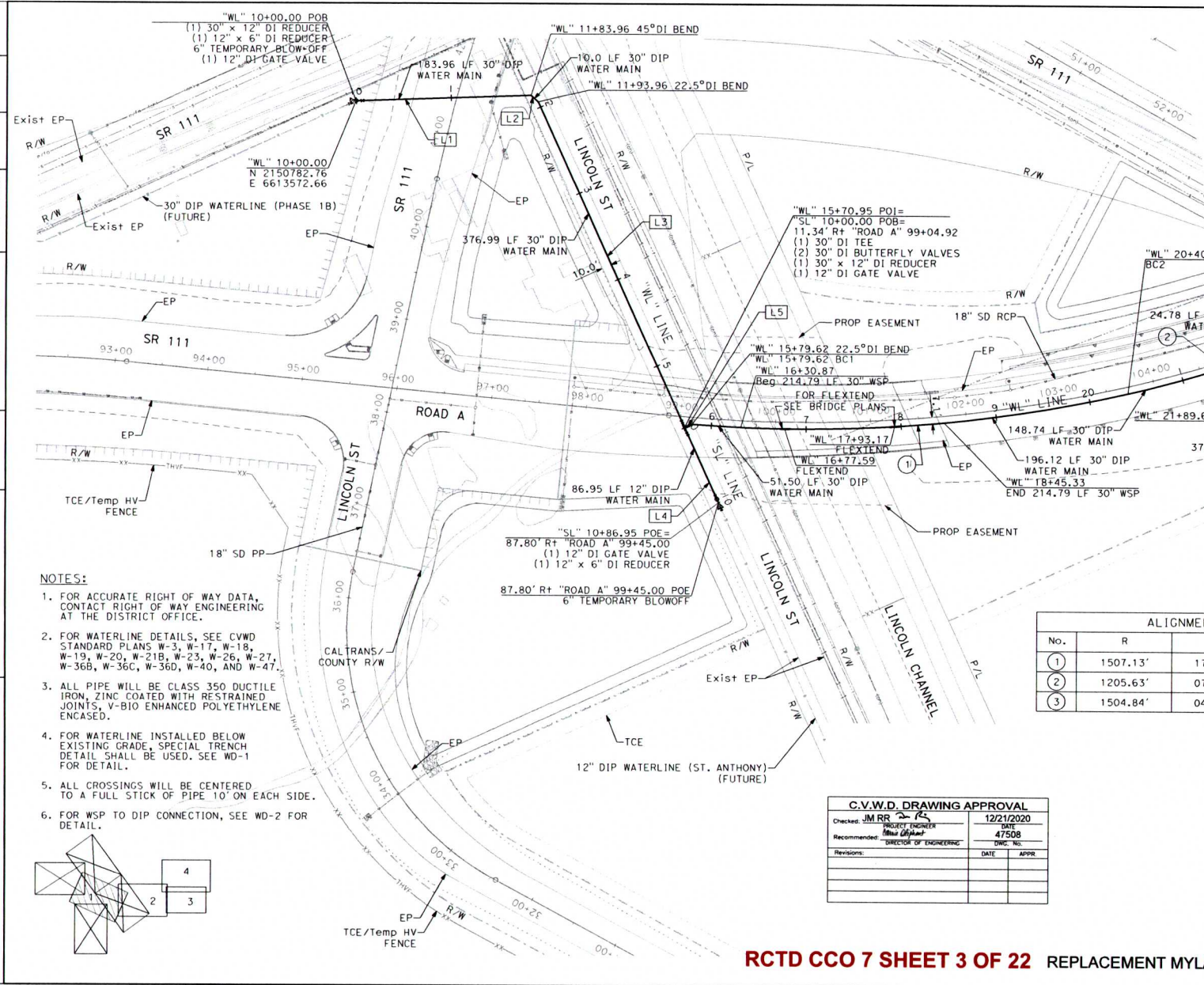
Francisco Montellano 4-19-21
 Concurred, Caltrans Date

Karen S. Spiegel 5.25.21
 Approved Chairman, Riverside County Board of Supervisors Date

NOTE: This change order is not effective until approved by County. If the Contractor does not sign acceptance of this order, his attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest with the time therein specified.

FORM APPROVED COUNTY COUNSEL
 BY: [Signature]
 DANIELLE D. MALAND

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT FUNCTIONAL SUPERVISOR DESIGNED BY KRIS KOFOED CHECKED BY JUANN RAMOS



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	98	337

REGISTERED CIVIL ENGINEER
 DATE 12/14/20
 DECEMBER 14, 2020
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 ASHLEY ORSABA-FINDERS
 No. 77894
 Exp. 6/30/22
 CIVIL
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD
 SUITE 200
 FOLSOM, CA 95630

COUNTY OF RIVERSIDE
 14TH ST TRANSPORTATION ANNEX
 3525 14TH STREET
 RIVERSIDE, CA 92501

- NOTES:**
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
 2. FOR WATERLINE DETAILS, SEE CWWD STANDARD PLANS W-3, W-17, W-18, W-19, W-20, W-21B, W-23, W-26, W-27, W-36B, W-36C, W-36D, W-40, AND W-47.
 3. ALL PIPE WILL BE CLASS 350 DUCTILE IRON, ZINC COATED WITH RESTRAINED JOINTS, V-BIO ENHANCED POLYETHYLENE ENCASED.
 4. FOR WATERLINE INSTALLED BELOW EXISTING GRADE, SPECIAL TRENCH DETAIL SHALL BE USED. SEE WD-1 FOR DETAIL.
 5. ALL CROSSINGS WILL BE CENTERED TO A FULL STICK OF PIPE 10' ON EACH SIDE.
 6. FOR WSP TO DIP CONNECTION, SEE WD-2 FOR DETAIL.

ALIGNMENT LINE CURVE DATA				
No.	R	Δ	T	L
①	1507.13'	17°32'12"	232.46'	461.29'
②	1205.63'	07°04'07"	74.46'	148.74'
③	1504.84'	04°02'56"	53.19'	106.34'

LINE TABLE		
LINE	LENGTH	BEARING
L1	183.96	S67°38'05"E
L2	10.00	S22°38'05"E
L3	376.99	S00°08'05"E
L4	86.95	S00°08'05"E
L5	8.66	N89°51'55"E
L6	37.10	S85°49'16"E

C.V.W.D. DRAWING APPROVAL

Checked: JM RR	DATE: 12/21/2020
PROJECT ENGINEER	DATE: 4/7/08
Recommended: [Signature]	DRAWING NO.:
DIRECTOR OF ENGINEERING	DATE:
Revisions:	DATE: APPR:

PHASE 1A WATERLINE PLAN
SCALE: 1" = 50'

RCTD CCO 7 SHEET 3 OF 22 REPLACEMENT MYLAR

BORDER LAST REVISED 7/2/2010

USERNAME = Joe
DGN FILE = J:\2450_Ave_66_CWWD_Dom.Trans.Main\511\CWWD bridge channel plans\1822j001_R3.dgn

RELATIVE BORDER SCALE 15 IN INCHES

UNIT 0000

PN 0812000248

EA 0M900

W-1
47508

DATE PLOTTED => 12/16/2020
 TIME PLOTTED => 10:46:32 AM

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR WATERLINE DETAILS, SEE CVWD STANDARD PLANS W-3, W-14, W-17, W-18, W-21C, W-26, W-27, W-36B, W-36C, W-36D, AND W-40.
3. ALL PIPE WILL BE CLASS 350 DUCTILE IRON, ZINC COATED WITH RESTRAINED JOINTS, V-BIO ENHANCED POLYETHYLENE ENCASED.
4. FOR WATERLINE DETAILS INSIDE BRIDGE, SEE STRUCTURE PLANS.
5. FOR WATERLINE INSTALLED BELOW EXISTING GRADE, SPECIAL TRENCH DETAIL SHALL BE USED. SEE WD-1 FOR DETAIL.
6. ALL CROSSINGS WILL BE CENTERED TO A FULL STICK OF PIPE 10' ON EACH SIDE.
7. FOR WSP TO DIP CONNECTION, SEE WD-2 FOR DETAIL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	99	337

REGISTERED CIVIL ENGINEER DATE 12/14/20
 ASHLEY HINSHAW-FINDERS No. 77894 Exp. 6/30/21 CIVIL ENGINEER STATE OF CALIFORNIA

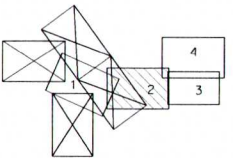
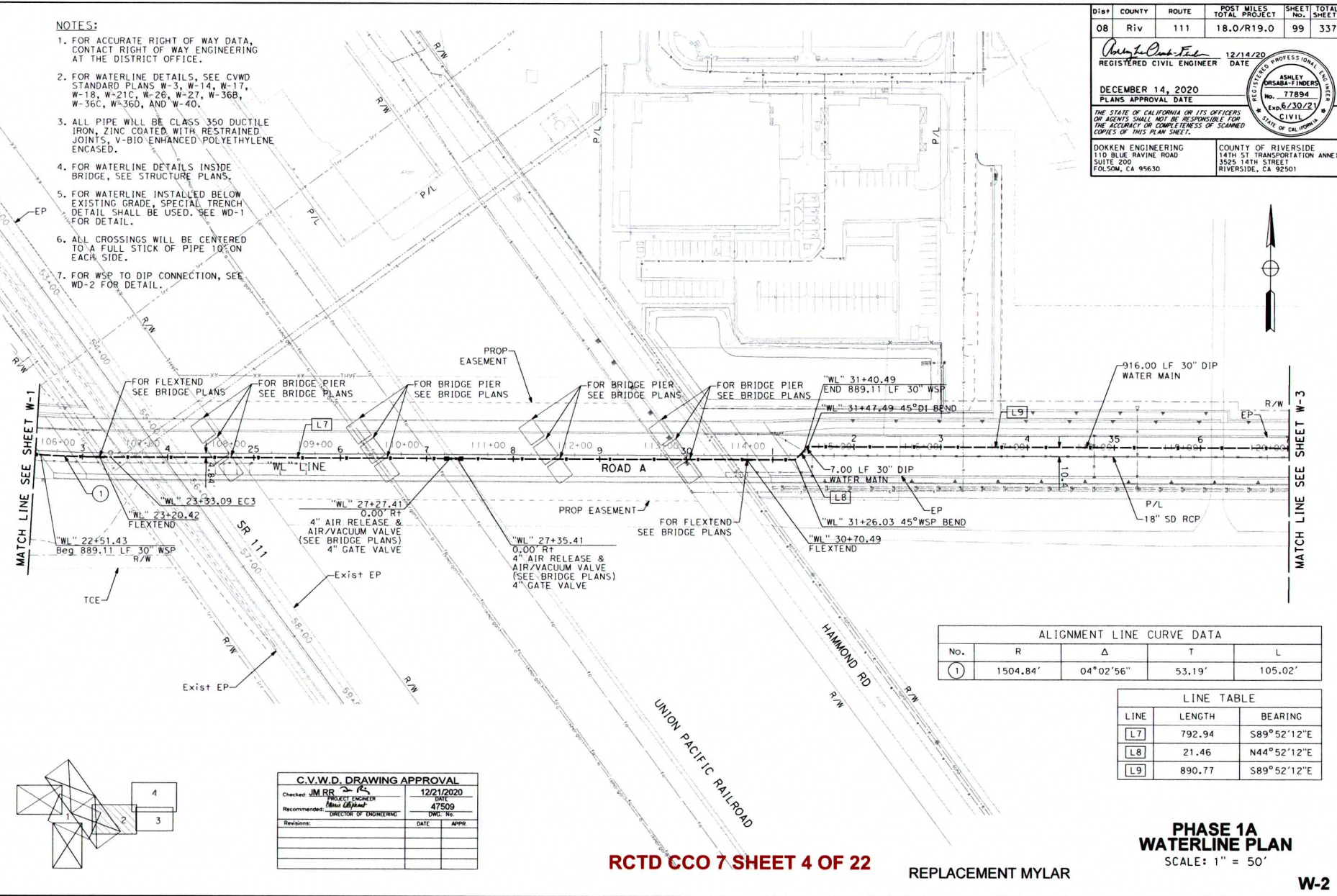
DECEMBER 14, 2020
 PLANS APPROVAL DATE

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DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD
 SUITE 200
 FOLSOM, CA 95630

COUNTY OF RIVERSIDE
 14TH ST TRANSPORTATION ANNEX
 3525 14TH STREET
 RIVERSIDE, CA 92501

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT: JUAN RAMOS
 SUPERVISOR: JUAN RAMOS
 DESIGNED BY: JUAN RAMOS
 CHECKED BY: JUAN RAMOS
 REVISIONS: KRIS KOFOED, JUAN RAMOS
 REVISED BY: JUAN RAMOS
 DATE REVISED:



C.V.W.D. DRAWING APPROVAL			
Checked	JM RR	PROJECT ENGINEER	12/21/2020
Recommended	[Signature]	DIRECTOR OF ENGINEERING	47509
Revisions:	DIRECTOR OF ENGINEERING	DATE	APPR

ALIGNMENT LINE CURVE DATA				
No.	R	Δ	T	L
①	1504.84'	04°02'56"	53.19'	105.02'

LINE TABLE		
LINE	LENGTH	BEARING
[L7]	792.94	S89°52'12"E
[L8]	21.46	N44°52'12"E
[L9]	890.77	S89°52'12"E

RCTD CCO 7 SHEET 4 OF 22

REPLACEMENT MYLAR

PHASE 1A WATERLINE PLAN
SCALE: 1" = 50'

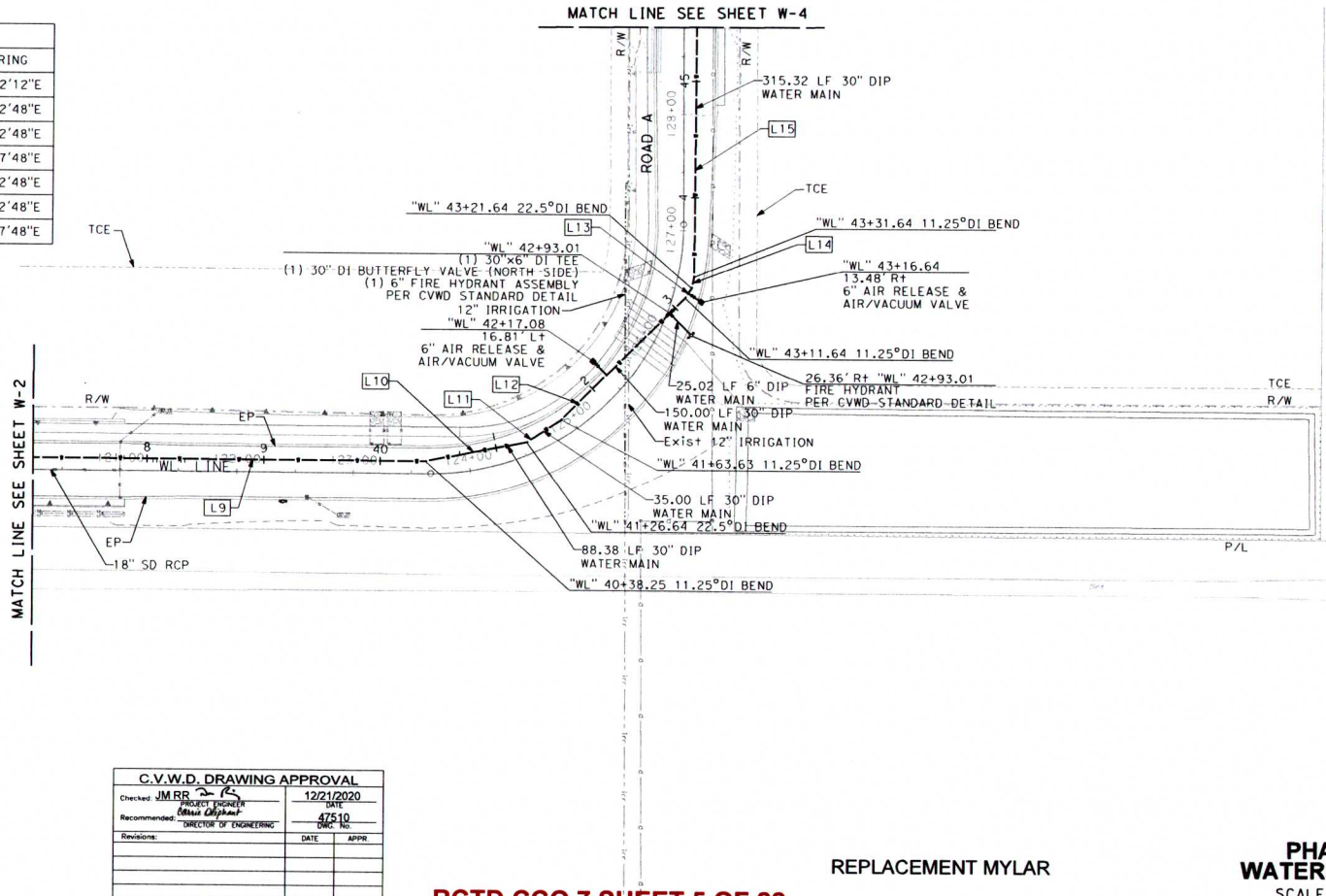
W-2

LAST INCLUSION DATE PLOTTED => 10/16/13 AM 10:00:00 THE PLOTTED => 10/16/13 AM

NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR WATERLINE DETAILS, SEE CVWD STANDARD PLANS W-3, W-17, W-18, W-21C, W-23, W-26, W-27, W-33A, W-36B, W-36C, W-36D, AND W-40.
- ALL PIPE WILL BE CLASS 350 DUCTILE IRON, ZINC COATED WITH RESTRAINED JOINTS, V-BIO ENHANCED POLYETHYLENE ENCASED.
- FOR WATERLINE INSTALLED BELOW EXISTING GRADE, SPECIAL TRENCH DETAIL SHALL BE USED. SEE WD-1 FOR DETAIL.
- ALL CROSSINGS WILL BE CENTERED TO A FULL STICK OF PIPE 10' ON EACH SIDE.

LINE TABLE		
LINE	LENGTH	BEARING
L9	890.77	S89°52'12"E
L10	88.38	N78°52'48"E
L11	35.00	N56°22'48"E
L12	150.00	N45°07'48"E
L13	10.00	N33°52'48"E
L14	10.00	N11°22'48"E
L15	315.33	N00°07'48"E



Dist	COUNTY	ROUTE	POST MILES	SHEET	TOTAL
08	Riv	111	18.0/R19.0	100	337

REGISTERED CIVIL ENGINEER DATE 12/14/20
 ASHLEY ARSABA-FINDERS No. 77894 Exp. 6/30/27
 CIVIL ENGINEER STATE OF CALIFORNIA

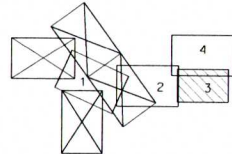
DECEMBER 14, 2020
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING 110 BLUE RAVINE ROAD SUITE 200 FOLSOM, CA 95630
 COUNTY OF RIVERSIDE 14TH ST TRANSPORTATION ANNEX 3525 14TH STREET RIVERSIDE, CA 92501



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT FUNCTIONAL SUPERVISOR
 KRIS KOFOED
 JUANN RAMOS
 REVISIONS: 1, 2, 3, 4



C.V.W.D. DRAWING APPROVAL		
Checked: JMR	DATE: 12/21/2020	
Recommended: [Signature]	DATE: 4/7/10	
Revisions:	DATE	APPR

RCTD CCO 7 SHEET 5 OF 22

REPLACEMENT MYLAR

PHASE 1A WATERLINE PLAN
SCALE: 1" = 50'

W-3

LAST REVISION DATE PLOTTED 12/16/2020 TIME PLOTTED 1:01:46:34 AM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT FUNCTIONAL SUPERVISOR DESIGNED BY CHECKED BY
 KRIS KOFOED JUANN RAMOS
 REVISOR DATE REVISOR
 JUANN RAMOS

NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- AT CVWD'S EXPENSE, CVWD FORCES TO REMOVE EXISTING WATERLINE APPURTENANCES INCLUDING 12" TEE, 12" GATE VALVE, 18"x12" REDUCER AND INSTALL: (1) DI CROSS, (4) 18" DI BUTTERFLY VALVES, (2) 18"x12" DI REDUCERS, (1) 30"x18" DI REDUCER, AND (1) 12" DI BLIND FLANGE.
- CONTRACTOR TO REMOVE 12" BLIND FLANGE AND MAKE CONNECTION TO 12" WATER MAIN.
- SEE WD-1 FOR AVENUE 66 AND DALE KILER ROAD INTERSECTION CONNECTION.
- FOR WATERLINE DETAILS, SEE CVWD STANDARD PLAN W-3, W-17, W-18, W-21C, W-26, W-27, W-33A, W-36B, W-36C, W-36D, AND W-40.
- ALL PIPE WILL BE CLASS 350 DUCTILE IRON, ZINC COATED WITH RESTRAINED JOINTS, V-BIO ENHANCED POLYETHYLENE ENCASED.
- FOR WATERLINE INSTALLED BELOW EXISTING GRADE, SPECIAL TRENCH DETAIL SHALL BE USED. SEE WD-1 FOR DETAIL.
- ALL CROSSINGS WILL BE CENTERED TO A FULL STICK OF PIPE 10' ON EACH SIDE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	101	337

Antonio Ochoa-Figueroa
 REGISTERED CIVIL ENGINEER 12/14/20
 DATE

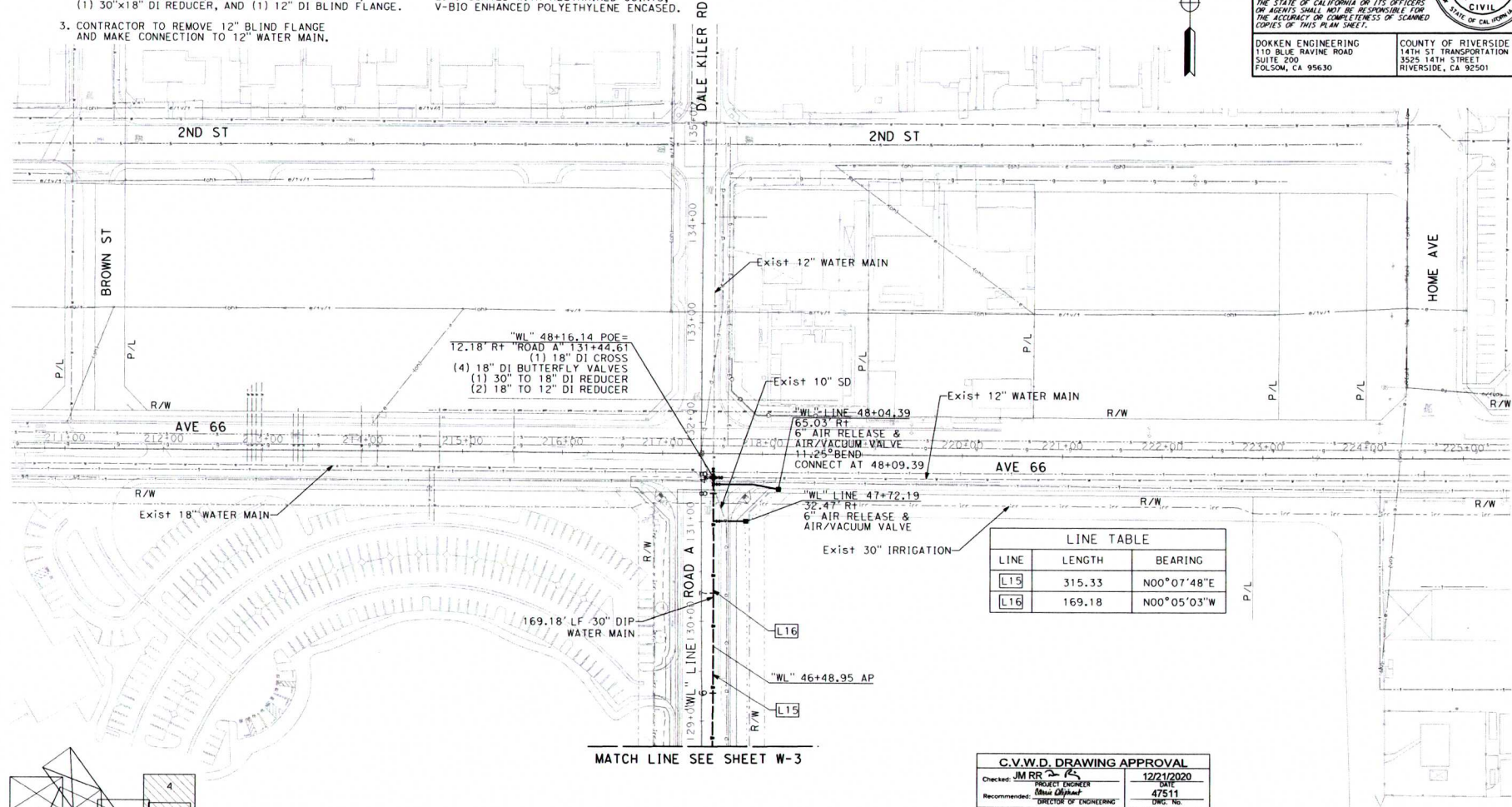
DECEMBER 14, 2020
 PLANS APPROVAL DATE

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DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD
 SUITE 200
 FOLSOM, CA 95630

COUNTY OF RIVERSIDE
 14TH ST TRANSPORTATION ANNEX
 3525 14TH STREET
 RIVERSIDE, CA 92501

ASHLEY ONSABA-FINDERS
 No. 77894
 Exp. 6/30/21
 CIVIL
 STATE OF CALIFORNIA



LINE TABLE		
LINE	LENGTH	BEARING
L15	315.33	N00°07'48"E
L16	169.18	N00°05'03"W

C.V.W.D. DRAWING APPROVAL			
Checked: JM RR	PROJECT ENGINEER	DATE	12/21/2020
Recommended: Asha Ochoa	DIRECTOR OF ENGINEERING	DWG. No.	47511
Revisions:	DIRECTOR OF ENGINEERING	DATE	APPR.

**PHASE 1A
 WATERLINE PLAN**
 SCALE: 1" = 50'

REPLACEMENT MYLAR **RCTD CCO 7 SHEET 6 OF 22**

W-4

BORDER LAST REVISED 7/2/2010

USERNAME => Joe
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RELATIVE BORDER SCALE 0 1 2 3
 IS IN INCHES

UNIT 0000

PN 0812000248

EA 0M900 47511

DATE PLOTTED => 12/16/2020
 TIME PLOTTED => 10:46:32 AM

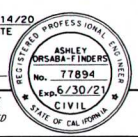
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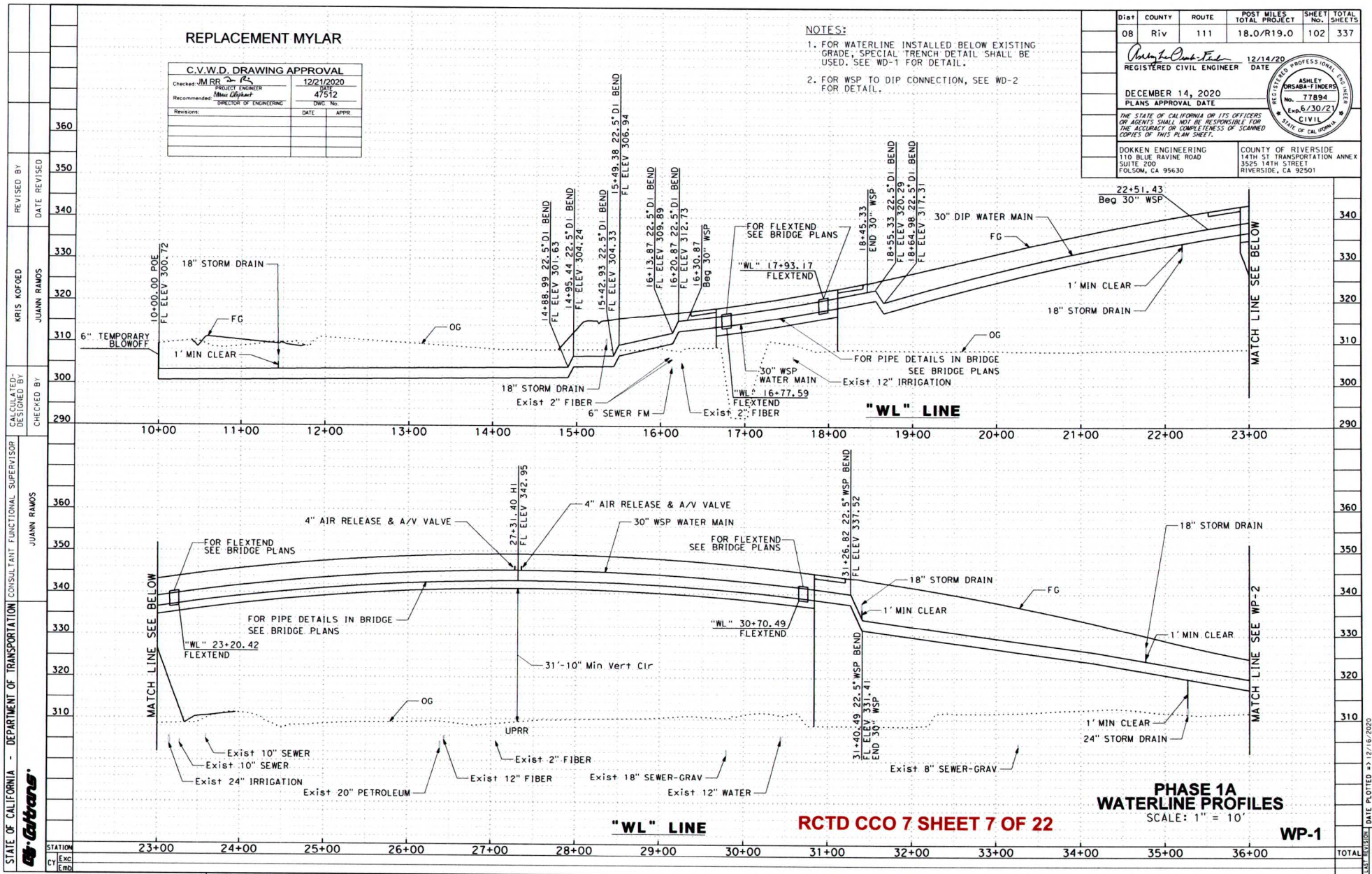
C.V.W.D. DRAWING APPROVAL			
Checked: JMR	12/21/2020	PROJECT NUMBER: 47512	DWG. No.
Recommended: <i>Maria Sphar</i>			
Revisions:	DATE	APPR	

NOTES:

- FOR WATERLINE INSTALLED BELOW EXISTING GRADE, SPECIAL TRENCH DETAIL SHALL BE USED. SEE WD-1 FOR DETAIL.
- FOR WSP TO DIP CONNECTION, SEE WD-2 FOR DETAIL.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	102	337

REGISTERED CIVIL ENGINEER	DATE: 12/14/20
	
DECEMBER 14, 2020	
PLANS APPROVAL DATE	
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DOKKEN ENGINEERING 110 BLUE RAVINE ROAD SUITE 200 FOLSOM, CA 95630	COUNTY OF RIVERSIDE 14TH ST TRANSPORTATION ANNEX 3525 14TH STREET RIVERSIDE, CA 92501



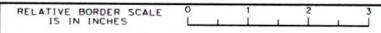
RCDT CCO 7 SHEET 7 OF 22

PHASE 1A WATERLINE PROFILES
SCALE: 1" = 10'

WP-1

BORDER LAST REVISED 7/2/2010

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DGN FILE => J:\2450_Ave_66_CVWD_Dam_Trans_Main\511\CVWD bridge channel plans\1822\p001_R3.dgn



UNIT 0000

PN 0812000248

EA 0M900 47512

DATE PLOTTED => 12/16/2020
 TIME PLOTTED => 10:46:37 AM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT FUNCTIONAL SUPERVISOR
 KRIS KOFOED
 DESIGNED BY
 JUANN RAMOS
 CHECKED BY
 JUANN RAMOS
 REVISIONS

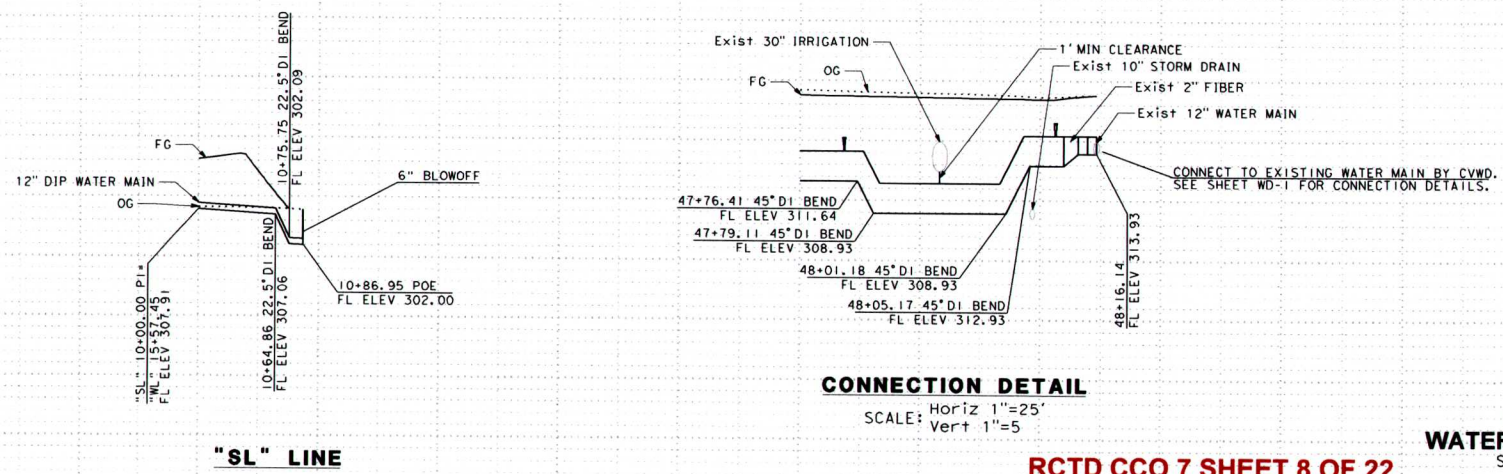
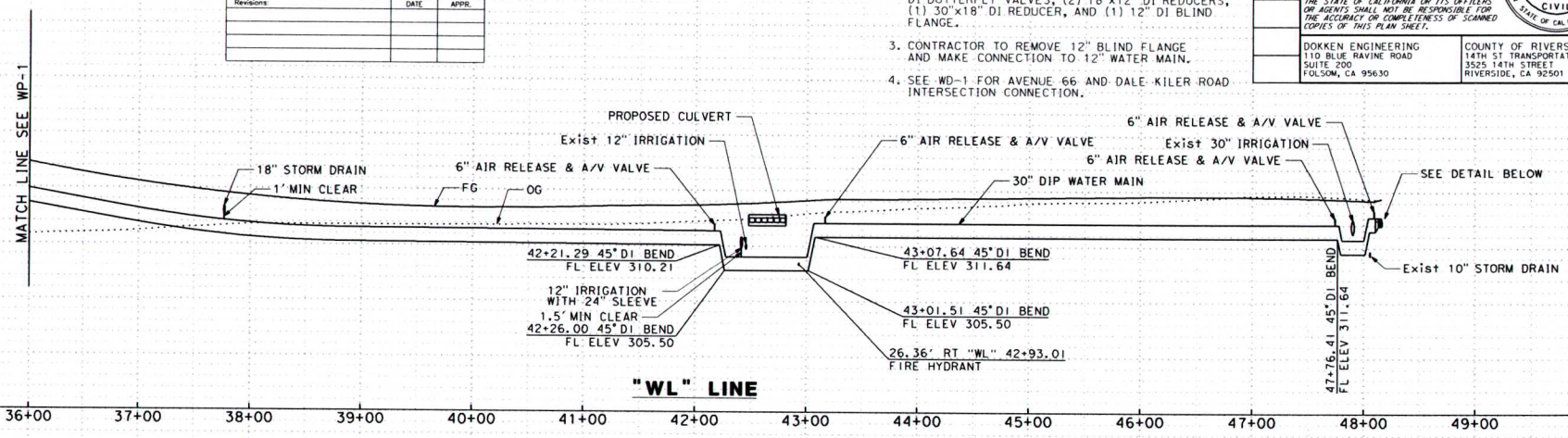
REPLACEMENT MYLAR

C.V.W.D. DRAWING APPROVAL			
Checked: JM RR	DATE: 12/21/2020		
PROJECT ENGINEER: <i>[Signature]</i>	DATE: 47513		
Recommender: <i>[Signature]</i>	DWG. No.		
Revisions:	DATE	APPR.	

NOTES:

- FOR WATERLINE INSTALLED BELOW EXISTING GRADE, SPECIAL TRENCH DETAIL SHALL BE USED. SEE WD-1 FOR DETAIL.
- AT CVWD'S EXPENSE, CVWD FORCES TO REMOVE EXISTING WATERLINE APPURTENANCES INCLUDING 12" TEE, 12" GATE VALVE, 18"x12" REDUCER AND INSTALL: (1) DI CROSS, (4) 18" DI BUTTERFLY VALVES, (2) 18"x12" DI REDUCERS, (1) 30"x18" DI REDUCER, AND (1) 12" DI BLIND FLANGE.
- CONTRACTOR TO REMOVE 12" BLIND FLANGE AND MAKE CONNECTION TO 12" WATER MAIN.
- SEE WD-1 FOR AVENUE 66 AND DALE-KILER ROAD INTERSECTION CONNECTION.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	103	337
REGISTERED CIVIL ENGINEER <i>[Signature]</i> DATE: 12/14/20			REGISTERED PROFESSIONAL ENGINEER ASHLEY ORSABA-FINCHER No. 77894 Exp. 6/30/27 CIVIL STATE OF CALIFORNIA		
DECEMBER 14, 2020 PLANS APPROVAL DATE			COUNTY OF RIVERSIDE 14TH ST TRANSPORTATION ANNEX 3525 14TH STREET RIVERSIDE, CA 92501		
DOKKEN ENGINEERING 110 BLUE RAVINE ROAD SUITE 200 FOLSOM, CA 95630					



CONNECTION DETAIL

SCALE: Horiz 1"=25'
 Vert 1"=5'

**PHASE 1A
 WATERLINE PROFILES**
 SCALE: 1" = 10'

RCTD CCO 7 SHEET 8 OF 22

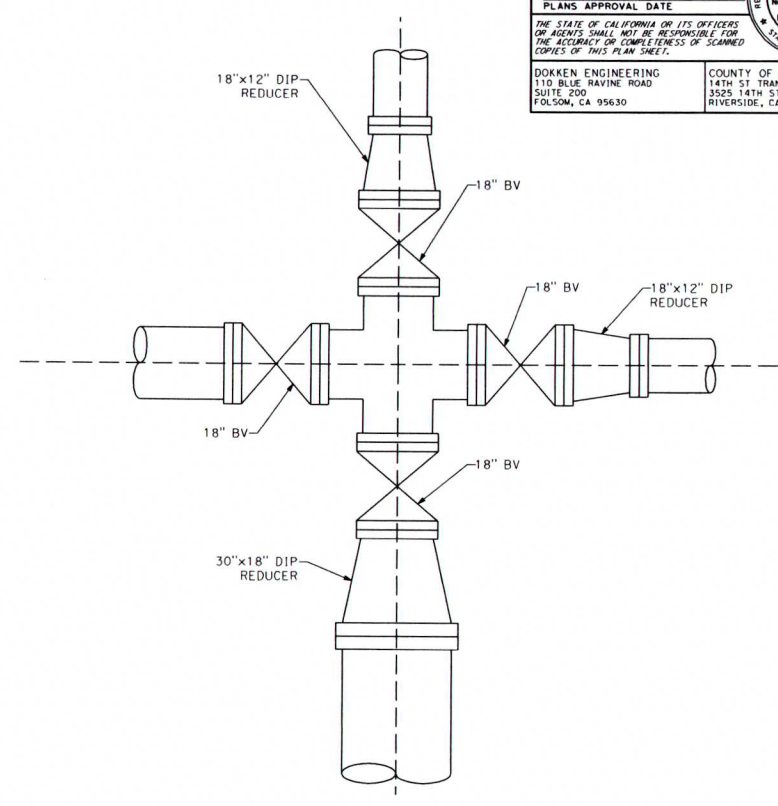
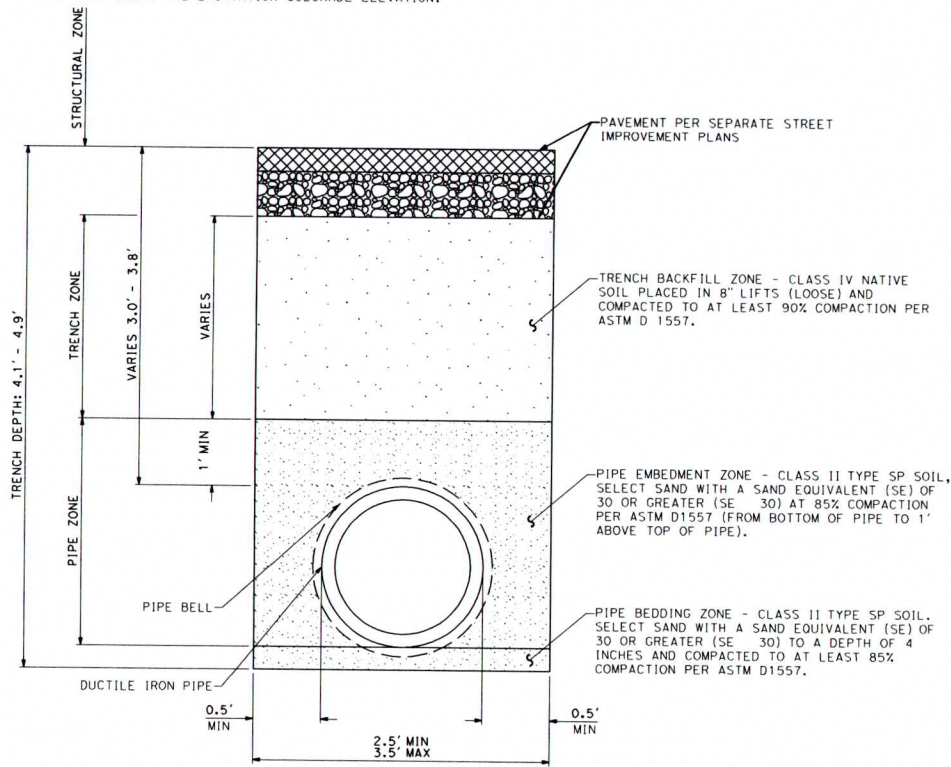
WP-2

DATE PLOTTED => 12/16/2020 TIME PLOTTED => 10:40:38 AM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT FUNCTIONAL SUPERVISOR
 KRIS KOFOED
 DESIGNED BY
 JUANN RAMOS
 CHECKED BY
 JUANN RAMOS
 REVISIONS
 REVISED BY
 DATE REVISED

NOTES:

- IF SOIL CONDITIONS REQUIRE SPECIAL BEDDING, NOTIFY GEOTECHNICAL ENGINEER.
- THE PIPE BARREL MUST REST FIRMLY ON THE PIPE BEDDING TO SUPPORT THE TRENCH LOAD. BELL OR COUPLING HOLES MUST BE DUG TO ENSURE THAT ONLY THE PIPE BARREL SUPPORTS THE TRENCH LOAD. THE BELLS OR COUPLINGS MUST NOT SUPPORT THE TRENCH LOAD.
- GROUNDWATER MUST BE DEWATERED TO AT LEAST 5 FEET BELOW THE EXCAVATION SUBGRADE ELEVATION.



C.V.W.D. DRAWING APPROVAL			
Checked: JM RR	12/21/2020	DATE	
Recommended: <i>[Signature]</i>	47514	DATE	
Director of Engineering	DATE	APPR	
Revisions:	DATE	APPR	

RCTD CCO 7 SHEET 9 OF 22

REPLACEMENT MYLAR

PHASE 1A WATERLINE DETAILS
NO SCALE

WD-1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	103A	337

REGISTERED CIVIL ENGINEER
 12/14/20
 DATE
 DECEMBER 14, 2020
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
 DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD
 SUITE 200
 FOLSOM, CA 95630
 COUNTY OF RIVERSIDE
 14TH ST TRANSPORTATION ANNEX
 3525 14TH STREET
 RIVERSIDE, CA 92501

DATE PLOTTED => 12/16/2020
 TIME PLOTTED => 10:46:35 AM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT: JUAN RAMOS
 SUPERVISOR: JUAN RAMOS
 DESIGNED BY: JUAN RAMOS
 CHECKED BY: JUAN RAMOS
 REVISED BY: KRIS KOFOED
 DATE: JUAN RAMOS

**COACHELLA VALLEY WATER DISTRICT
 GENERAL NOTES FOR DOMESTIC WATER SYSTEMS**

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DOMESTIC WATER SYSTEMS (STANDARD SPECIFICATIONS) OF THE COACHELLA VALLEY WATER DISTRICT (CVWD).
2. CONTRACTOR SHALL CONTACT CVWD'S CHIEF INSPECTOR UPON RECEIPT OF APPROVED DRAWINGS TO ARRANGE THE PRECONSTRUCTION CONFERENCE. NO CONSTRUCTION SHALL BEGIN PRIOR TO THE PRECONSTRUCTION CONFERENCE.
3. CONTRACTOR SHALL SUBMIT TO CVWD A LIST OF MATERIALS TO BE USED PRIOR TO THE PRECONSTRUCTION CONFERENCE. ONLY MATERIALS ON THE APPROVED LIST MAY BE USED. LIST SHALL INCLUDE QUANTITY, MANUFACTURER, MODEL, SIZE AND OTHER PERTINENT DATA.
4. ALL WORK SHALL BE INSPECTED BY CVWD. THE CHARGES FOR INSPECTION SHALL BE IN ACCORDANCE WITH CVWD'S REGULATIONS.
5. CONTRACTOR SHALL SCHEDULE HIS CONSTRUCTION ACTIVITIES DAILY WITH THE INSPECTION DEPARTMENT BETWEEN 3:30 P.M. AND 4:30 P.M. FOR THE FOLLOWING WORKING DAY. IF CVWD IS UNABLE TO PROVIDE AN INSPECTOR OR INSPECTORS, CONTRACTOR SHALL RESCHEDULE THE WORK FOR ANOTHER TIME.

IF CONTRACTOR ELECTS TO CANCEL SCHEDULED WORK WITHOUT PRIOR NOTICE TO CVWD, CONTRACTOR SHALL BE CHARGED ONE HOUR OF INSPECTION TIME FOR EACH DAY OF OCCURRENCE.
6. WORK PERFORMED WITHOUT INSPECTION SHALL BE REJECTED.
7. COPIES OF THE COMPACTION TEST RESULTS SHALL BE FURNISHED TO THE INSPECTOR PRIOR TO PRESSURE TESTING. MINIMUM FREQUENCY OF COMPACTION TESTING SHALL BE AS FOLLOWS: A SET OF PIPE ZONE AND MID-TRENCH TESTS SHALL BE CONDUCTED OVER THE PIPELINE EVERY 300 FEET AND AT EVERY THIRD WATER SERVICE, HYDRANT, DETECTOR CHECK OR MANIFOLD.
8. THE COVER FOR WATER DISTRIBUTION PIPELINES 24 INCHES IN DIAMETER AND SMALLER IN RESIDENTIAL DEVELOPMENTS WITH CURB AND GUTTER SHALL BE 36 INCHES. THE COVER FOR WATER DISTRIBUTION PIPELINES 30 INCHES AND GREATER AND ANY PIPELINES LOCATED IN NON-RESIDENTIAL AREAS SHALL BE 48 INCHES. STREETS SHALL BE BROUGHT TO SUBGRADE, SEWER INSTALLED AND CURB AND GUTTER INSTALLED BEFORE THE PIPELINE IS INSTALLED.
9. POLYETHYLENE ENCASEMENT SHALL BE USED FOR ALL FERROUS PIPES, VALVES AND FITTINGS IN THE AREAS OF CORROSIVE SOILS AND/OR WHERE THE ELECTROCONDUCTIVITY OF THE SOIL IS LESS THAN 2,000 OHMS PER CUBIC CENTIMETER OR AS DIRECTED BY CVWD.
10. ALL CONNECTIONS TO EXISTING FACILITIES WILL BE MADE BY CVWD AT THE OWNER'S EXPENSE. SIXTY DAYS NOTICE REQUIRED. CONTRACTOR SHALL START THE INSTALLATION AT THE TIE-IN CONNECTION PROVIDED.
11. THE SEPARATION BETWEEN WATER AND SEWER FACILITIES SHALL BE AS SPECIFIED IN CVWD STANDARD DRAWING NO. W1.
12. PIPELINES SHALL BE KEPT FREE OF DIRT, ROCKS AND FOREIGN MATERIALS DURING CONSTRUCTION. MECHANICAL CLEANING MAY BE REQUIRED AT THE DISCRETION OF THE CHIEF INSPECTOR.
13. RESTRAINED JOINTS ARE REQUIRED UNDER PAVERS, DECORATIVE CONCRETE, AND THROUGH EACH ENTRYWAY TO THE PROJECT. NO WATER PIPELINES SHALL BE INSTALLED UNDER CURBS OR SIDEWALKS.
14. NO WATER SERVICE LINES OR METER BOXES SHALL BE INSTALLED IN DRIVEWAYS.
15. THESE PLANS MAY BE SUBJECT TO REVIEW AND/OR REVISION BY CVWD IF CONSTRUCTION HAS NOT STARTED WITHIN 12 MONTHS FROM DATE OF APPROVAL AS SHOWN IN CVWD DRAWING APPROVAL BLOCKS.
16. CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-422-4133 AT LEAST TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION AND PROVIDE THE CVWD INSPECTOR THE USA NUMBER PRIOR TO EXCAVATION.

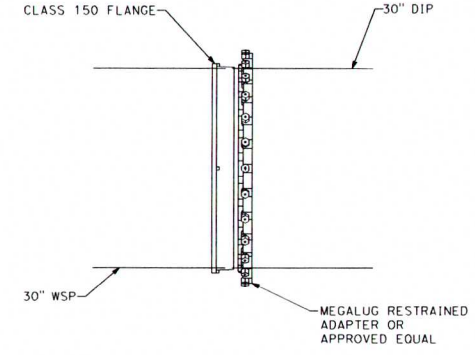
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	111	18.0/R19.0	103C	337

REGISTERED CIVIL ENGINEER
 ASHLEY MRSABA-FINDERS
 No. 77894
 Exp. 6/30/22
 CIVIL
 STATE OF CALIFORNIA

DECEMBER 14, 2020
 PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DOKKEN ENGINEERING 110 BLUE RAVINE ROAD SUITE 200 FOLSOM, CA 95630	COUNTY OF RIVERSIDE 14TH ST TRANSPORTATION ANNEX 3525 14TH STREET RIVERSIDE, CA 92501
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TRANSITION FROM WELDED STEEL TO DUCTILE IRON PIPE
 NO SCALE

C.V.W.D. DRAWING APPROVAL			
Checked: JM RR	PROJECT ENGINEER	12/21/2020	DATE
Recommended: [Signature]	DIRECTOR OF ENGINEERING	47515	DWG. No.
Revisions:	DATE	APPR.	

**PHASE 1A
 WATERLINE DETAILS**
 NO SCALE

REPLACEMENT MYLAR
RCTD CCO 7 SHEET 10 OF 22

WD-2

DATE PLOTTED => 12/16/2020
 TIME PLOTTED => 10:46:10 AM

SECTION 31 23 19
DEWATERING

PART 1 General

1.01 *Description*

- A. Design, furnish, install, operate, monitor, maintain and remove a temporary dewatering system as required to lower and control water levels at least ~~5 feet~~ 3.7 feet below subgrades of excavations and to permit construction to proceed in-the-dry.
- B. Furnish and maintain temporary surface water runoff control measures adequate to capture and remove surface water entering excavations.
- C. Retain the services of a professional engineer registered in the State of California to prepare dewatering system designs and submittals described herein.
- D. Work shall include the design, equipment, materials, installation, protection, and monitoring of the performance of the dewatering system as required herein.
- E. Collect and properly dispose of all discharge water from the dewatering systems in accordance with all State, County, and Local requirements and applicable water quality standards. Under no circumstances shall water from dewatering systems be discharged into the existing or new sanitary sewer systems.
- F. Obtain and pay for all permits required for dewatering systems.
- G. Repair damage caused by dewatering system operations.
- H. Remove temporary surface water runoff control measures after the completion of the excavation and backfilling work, and when approved by the Owner's Representative.

1.02 *Related Work*

Not used.

1.03 *Submittals*

- A. Dewatering system designs shall be prepared by a licensed professional engineer ("Dewatering Engineer") retained by the Contractor and shall, as a minimum, comply with recommendations and/or requirements in the project's Geotechnical Investigation Report. The Contractor is responsible for investigating the soil and groundwater conditions at the site prior to submitting a dewatering plan. The Contractor shall submit the Dewatering Engineer's and the dewatering subcontractor's qualifications for review and approval by CVWD's Representative and the Engineer of Record (CVWD/Engineer).
- B. The Contractor shall submit a dewatering system design plan developed and signed and sealed by the Dewatering Engineer. The plan shall include a description of the proposed dewatering system and include the proposed installation methods to be used for dewatering system elements and for observation wells. The plan shall include equipment, drilling methods, hole sizes, filter sand placement techniques, sealing materials, development techniques, the number and location of dewatering points and observations wells, headers, sumps, ditches, size and location of discharge lines, capacities of pumps and standby units, and detailed description of dewatering methods to be employed to convey the water away from the site to an adequate disposal area, etc. Include the dewatering system design calculations in the plan.
- C. The plan shall identify the anticipated area influenced by the dewatering system and address impacts to adjacent existing and proposed structures.
- D. Coordinate dewatering submittals with the excavation and support of excavation submittals. The dewatering submittal shall show the areas and depths of excavation to be dewatered.
- E. Submit drawings and data showing the method to be employed in dewatering excavated areas 30 days before commencement of excavation. Do not proceed with any excavation or dewatering activities until the dewatering submittal has been reviewed and accepted in writing by the CVWD/Engineer.
- F. Prior to excavation activities, the Dewatering Engineer shall certify in writing that the dewatering system has been installed according to the accepted plan and that it is functioning properly. However, acceptance by the CVWD/Engineer shall not relieve the Contractor of the responsibility for the adequacy of the dewatering system to achieve the required results.
- G. Include a written report outlining control procedures to be adopted if dewatering problems arise.

- H. Materials submitted shall be in a format acceptable for inclusion in required permit applications to any and all regulatory agencies for which permits for discharge water from the dewatering system are required due to the discharge reaching regulated bodies of water.
- I. Insure compliance with all conditions of regulating permits and provide such information to the CVWD/Engineer. Obtain written approval from the CVWD/Engineer before discontinuing operation of the dewatering system.

1.04 References

Not used.

1.05 Quality Assurances

- A. Regulations: Perform all work in accordance with current applicable regulations and codes of all Federal, State and local agencies.
- B. The Contractor shall have at least 5 years of experience with work compatible to the Work shown and specified, employing labor and supervisory personnel who are similarly experienced in this type of work.
- C. The Contractor's Dewatering Engineer shall be registered in the State of California and have a minimum of five (5) years of professional experience in the design and construction of dewatering systems and shall have completed not less than five (5) successful dewatering projects of equal type, size, and complexity that is required for the work.

1.06 Design Requirements

- A. The Contractor is responsible for the proper design and implementation of methods for controlling surface water and groundwater.
- B. Prior to excavation, the Contractor shall lower the groundwater to at least ~~5~~ 3.7 feet feet below the lowest excavation subgrade elevation. Additional groundwater lowering may be necessary beyond the 5-foot requirement, depending on construction methods and equipment used and the prevailing groundwater and soil conditions. The Contractor is responsible for lowering the groundwater as necessary to complete construction in accordance with the plans and specifications at no additional cost to CVWD.
- C. Design wells, well points and sumps, and all other groundwater control system components to prevent loss of fines from surrounding soils. Sand filters shall be used with all dewatering installations unless screens are properly sized by the Contractor's Dewatering Engineer to prevent passage of fines from surrounding soils.

- D. The Contractor shall be responsible for damage to properties, buildings or structures, wet wells, sewers and other utility installations, pavements and work that may result from dewatering or surface water control operations.
- E. Design review and field monitoring activities by CVWD/Engineer shall not relieve the Contractor of his/her responsibilities for the work.
- F. Plan the wells to meet the requirements of Section 1.06.B in the transverse and the longitudinal directions. Submit dewatering plan and calculations to identify the wells to be kept operational in front of, behind, and sides of the active excavation zone.
- G. The dewatering duration should be adequate to allow for soil to be exposed within the excavation bottom to adequately drain and attain stable moisture content prior to excavation.
- H. The groundwater level should be maintained an adequate distance ahead and behind the working area to prevent water from migrating into the excavation during pipeline installation.

1.07 Definitions

- A. Where the phrase "in-the-dry" is used in this Section, it shall be defined as an excavation subgrade where the groundwater level has been lowered to at least ~~5 feet~~ 3.7 feet below the lowest level of the excavation, is stable with no ponded water, mud, or muck, is able to support construction equipment without rutting or disturbance and is suitable for the placement and compaction of fill material and pipe.

PART 2 Products

2.01 Piping and Equipment

- A. Pipe for observation wells shall consist of a minimum 1-inch I.D., Schedule 40 PVC pipe and machine slotted PVC wellpoints, maximum slot size 0.020 inch or as shown on the dewatering Drawings.
- B. Piping, pumping equipment and all other materials required to provide control of surface water and groundwater in excavations shall be suitable for the intended purpose.
- C. Standby pumping systems and a source of standby power shall be maintained at all sites.

PART 3 Execution

3.01 General

- A. Control surface water and groundwater such that excavation to final subgrade is made in-the-dry, the natural undisturbed condition of the subgrade soils are maintained, and softening and/or instability or disturbance due to the presence or seepage of water does not occur. All construction and backfilling shall proceed in-the-dry and flotation of completed portions of work shall be prohibited.
- B. The method and timing of groundwater control shall be such that the groundwater shall be lowered to the required levels starting at a minimum of 48 hours prior to excavation. Achieving the required dewatering level only after excavation (e.g. sump pumping inside an initially wet trench bottom) is not permitted.
- C. Where groundwater levels are above the proposed bottom of the excavation level, a pumped dewatering system will be required prior to excavation, and for maintaining the lowered groundwater level until construction has been completed to such an extent that the structure, pipeline or fill will not be floated or otherwise damaged.
- D. It is expected that the type of system, spacing of dewatering units and other details of the work will have to be varied depending on soil/water conditions at a particular location. Any such field changes or deviations shall be approved in writing by the Dewatering Engineer and CVWD/Engineer.
- E. All work included in this section shall be done in a manner which will protect adjacent structures and utilities and shall not cause loss of ground or disturbance to the pipe bearing soils, lateral pipe support soils, or to soils which support overlying or adjacent structures.
- F. Install, monitor and report data from observation wells. Evaluate the collected data relative to groundwater control system performance and modify systems as necessary to dewater the site in accordance with the Contract requirements.
- G. Locate groundwater control system components where they will not interfere with construction activities adjacent to the work area or interfere with the installation and monitoring of observation wells. Excavations for sumps or drainage ditches shall not be made within or below slopes extending downward and out from the edges of existing or proposed foundation elements or from the downward vertical footprint of the pipe.

3.02 Surface Water Runoff Control

- A. Construct surface water runoff control measures, including dikes, ditches, sumps and other methods to prevent, as necessary, flow of surface water runoff into excavations and to allow construction to proceed without delay.

3.03 Excavation Dewatering

- A. At all times during construction, provide and maintain proper equipment and facilities to promptly remove and properly dispose of all water entering excavations. Excavations shall be maintained in-the-dry. Groundwater levels shall be kept at least ~~5 feet~~ ^{3.7 feet} below the lowest excavation level.
- B. Excavation dewatering shall maintain the subgrade in a natural undisturbed condition and until the fill, structure or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.
- C. Pipe, fabric, bedding, Controlled Low Strength Material (CLSM), Controlled Density Fill (CDF), or concrete shall not be placed in water or water shall not flow over them, or any unbalanced water pressure exerted over them for a minimum of two (2) days after their placement.
- D. Dewatering shall at all times be conducted in such a manner as to preserve the in place condition of the subgrade soils at the proposed bottom of excavation.
- E. If the subgrade of the trench or excavation bottom becomes disturbed due to inadequate dewatering or drainage, excavate below normal grade as directed by the CVWD/Engineer and refill with structural fill, CLSM, CDF or other material as approved by CVWD/Engineer at the Contractor's expense.
- F. The *initial* dewatering plan may have to be modified to suit the variable soil/water conditions to be encountered during construction. This modification shall be designed by the Dewatering Engineer and shall be accepted by CVWD/Engineer. Dewater and excavate, at all times, in a manner which does not cause loss of ground or disturbance to the pipe bearing soil or soil which supports overlying or adjacent structures.

- G. If the method of dewatering does not properly dewater the excavation as specified. install additional wells as required and do not place any pipe or structure until the readings obtained from the observation wells indicate that the groundwater has been lowered a minimum of ~~5 feet~~ ^{3.7 feet} below the bottom of the final excavation within the excavation limits.

- H. Dewatering units used in the work shall be surrounded by suitable filter sand and no fines shall be removed by pumping. Pumping from the dewatering system shall be continuous until pipe or structure is adequately backfilled. Stand-by pumps shall be provided.
- I. Water entering the excavation shall be drained to a sump and pumped from the excavation to maintain a bottom free from standing water. Surface runoff water shall be collected in shallow ditches around the excavation and prevented from entering the excavated area.
- J. Prior to any excavation below the ground water table, place the dewatering system into operation to lower the ground water table as required and provide CVWD/Engineer proof that the dewatering system is operating as required. The dewatering system shall operate continuously 24 hours a day, 7 days a week until utilities and structures have been satisfactorily constructed, which includes the placement of backfill materials and dewatering is no longer required.
- K. The Contractor shall provide complete standby equipment, installed and available for immediate operation. as may be required to adequately maintain dewatering on a continuous basis and in the event that all or any part of the system may become inadequate or fail.
- L. Water removed from dewatering operations shall be disposed of in an approved area in accordance with local, state and federal requirements related to the discharge of dewatering water. Existing or new sanitary sewers shall not be used to dispose of dewatering.

3.04 *Well Point Systems*

- A. Where necessary, install a vacuum wellpoint system around the excavation to dewater the excavation. Each wellpoint and riser pipe shall be surrounded by a sand filter. Sand shall be of such a gradation that, after initial development of the wellpoints, the quantity and size of soil particles discharged shall be negligible. Wellpoint systems shall be capable of operating continuously under the highest possible vacuum.
- B. Installation of well point systems shall be in accordance with the accepted submittal in the presence of the CVWD/Engineer. The installation shall be certified in writing by the Dewatering Engineer that it complies with the design and that it is functioning properly.

3.05 *Deep Wells*

- A. Where necessary, install a deep well system around the excavation to dewater the excavation. Each well shall be surrounded by a sand or gravel filter with adequate gradation such that after development, the quantity and size of soil particles discharged are negligible. A sufficient number of wells shall be installed to lower the groundwater level to allow excavation to proceed in-the-dry.
- B. Installation of a deep well shall be in accordance with the accepted dewatering system design plan submittal. The installation shall be certified in writing by the Dewatering Engineer that it complies with the design and that it is functioning properly.

3.06 *Observation Wells*

- A. Install observation wells to monitor and measure the success of the dewatering prior to commencement of excavations. The number and location of the monitoring wells should be adequate to demonstrate that the water table has been lowered to the required level as required under this Section or in accordance with the accepted dewatering system design plan submittal. Monitor and verify adequately low groundwater levels beneath and around the excavated area until pipelines are completed and backfilled.
- B. Observation Well Locations and Depths:
 - 1. A minimum of one well every 500 feet of pipe shall be installed within approximately 5 feet (+ 1 foot) of the pipe centerline, staggered in an alternating fashion on either side of the pipe to monitor performance of dewatering systems designed by the Contractor's Dewatering Engineer.
 - 2. Observation wells required shall be installed to a depth of at least 10 feet below the deepest level of excavation, unless otherwise approved by the CVWD/Engineer, and to whatever depth is necessary to indicate that the groundwater control system designed by the Contractor's Dewatering Engineer is performing as intended. Additional observation wells may be required by the CVWD/Engineer if deemed necessary to monitor the performance of the Contractor's groundwater control system.
 - 3. Locations and depths of observation wells are subject to approval by CVWD/Engineer.
- C. Protect the observation wells at the ground surface by providing a lockable box or outer protective casing with lockable top and padlock. Design the surface protection to prevent damage by vandalism or construction operations and to prevent surface water from infiltrating.

1. Provide two copies of keys for each padlock to the CVWD/Engineer for access to each well.
2. Observation wells shall be developed so as to provide a reliable indication of groundwater levels. Wells shall be re-developed if well clogging is observed, in the event of apparent erroneous readings, or as directed by the CVWD/Engineer.
3. Submit observation well installation logs, top of casing elevation, and well locations to CVWD/Engineer within 24 hours of completion of well installation.

D. Observation Well Maintenance:

1. The Contractor shall maintain each observation well until pipelines are completed and backfilled. Clean out or replace any observation well which ceases to be operable before adjacent work is completed.
2. It is the Contractor's obligation to maintain observation wells and repair or replace them at no additional cost to CVWD, whether or not the observation wells are damaged by the Contractor's operations or by third parties.

E. Monitoring and Reporting of Observation Well Data:

1. The Contractor shall begin daily monitoring of groundwater levels in work areas prior to initial operation of the dewatering system. Daily monitoring in areas where groundwater control is in operation shall continue until the time that adjacent pipelines are completed and backfilled and until the time that groundwater control systems are turned off.
2. The Contractor is responsible for processing and reporting observation well data to the CVWD/Engineer on a daily basis. Data shall be provided to the CVWD/Engineer on a form that includes the following information: observation well number, depth to groundwater, total depth of well, top of casing elevation, groundwater level elevation and date and time of reading.

3.07 *Removal of Systems*

- A At the completion of the excavation and backfilling work, and when approved by CVWD/Engineer, all pipe, deep wells, wellpoints, pumps, generators, observation wells, other equipment and accessories used for the groundwater and surface water control systems shall be removed from the site. All materials and equipment shall become the property of the Contractor. All areas disturbed by the installation and removal of groundwater control systems and observation wells shall be restored to their original condition.

- B. Leave in place any casings for deep wells, wellpoints or observation wells located within the plan limits of pipelines or within the zone below 1 H:1 V planes extending downward and out from the downward vertical footprint of the pipe, or where removal would otherwise result in ground movements causing adverse settlement to adjacent ground surface, utilities installed pipe, or existing structures.
- C. Where casings are pulled, holes shall be filled with sand or cement slurry. Where left in place, casings shall be filled with cement grout and cut off a minimum of 3 feet below finished ground level.
- D. When directed by the CVWD/Engineer, observation wells shall be left in place for continued monitoring. When so directed, cut casings flush with final ground level and provide protective lockable boxes with locking devices. The protective boxes shall be suitable for traffic and for any other conditions to which the observation wells will be exposed.
- E. Well abandonment or removal shall comply with all conditions of permits required for the dewatering systems and the County well abandonment requirements.

3.08 *Water Disposal*

- A. The Contractor shall be responsible to dispose of water removed from the excavations in such a manner that will
 - 1. Not endanger portions of work under construction or completed.
 - 2. Not cause any inconvenience to others working or residing near site.
 - 3. Not cause or contribute to a violation of water quality standards.
 - 4. Comply with the stipulations of required permits for disposal of water.
 - 5. Control runoff in all work areas including, but not limited to, excavations, access roads, parking areas, laydown, and staging areas. The Contractor shall provide, operate, and maintain all ditches, basins, sumps, culverts, site grading, and pumping facilities to divert, collect, and remove all water from the work areas. All water shall be removed from the immediate work areas and shall be disposed of in accordance with applicable permits.
- B. Excavation Dewatering:
 - 1. The Contractor shall be responsible for providing all facilities required to divert, collect, control, and remove water from all construction work areas and excavations.

2. Drainage features shall have sufficient capacity to avoid flooding of work areas.
 3. Drainage features shall be arranged and altered as required to avoid degradation of the final excavated surface(s).
 4. The Contractor shall utilize all necessary erosion and sediment control measures as described herein to avoid construction related degradation of the natural water quality.
- C. The Contractor shall comply with best management practices as described in the storm water pollution prevention plan for the project. Dewatering fluids shall be disposed of in an approved area in accordance with local, state and federal requirements. Existing or new sanitary sewers shall not be used to dispose of dewatering water or surface runoff water.
- D. Water removed from the dewatering operation and conveyed to a municipal separate storm sewer system or receiving water shall not cause or contribute to an exceedance of the current Colorado River Basin Water Quality Control Plan. The Contractor will be responsible for obtaining appropriate local, state and federal permits related to the discharge of dewatering water.

3.09 *Corrective Action*

- A. If dewatering requirements are not satisfied due to inadequacy or failure of the dewatering system (loosening of the foundation strata, or instability of slopes, or damage to foundations or structures), the Contractor shall be responsible to perform the necessary work for remediation, repair or strengthening of foundation soil and damaged structure resulting from such inadequacy or failure by Contractor, at no additional cost to CVWD.
- B. As the Contractor obtains information about the soil and groundwater conditions in the field, the Contractor is responsible to update and revise the dewatering plan and dewatering system to continue to meet the requirements of this specification.
- C. All corrective actions and applicable repairs of damages caused by dewatering operations shall be completed immediately, at no cost to CVWD.

END OF SECTION 31 23 19

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Avenue 66 Grade Separation Project

Contract CCO History

Contract No. 20-01-005
 Work Order No. B8-0664, STPTCIFL-5956(221)
 Contract Amount \$36,538,151.30

Single Maximum CCO \$210,000.00
 Maximum CCO's \$3,653,815.13

CCO Category Legend	
AFA	Anticipated Force Account
CFC	Changed Field Conditon
CME	Contract Management Error
DO	Design Omission
OAM	Outside Agency Mandate
RWO	Right-of-Way Obligation
SE	Survey Error
UB	Upgrade/Betterment
UI	Utility Interference

CCO No.	Amount This CCO	Authority	Cumulative CCO's	% Original Authorized	Cumulative CCO %	CCO Category	Classification
1	\$40,000.00	Director	\$40,000.00	0.11%	0.11%	AFA	Unavoidable
2	\$25,000.00	Director	\$65,000.00	0.07%	0.18%	OAM	Unavoidable
3	\$50,000.00	Director	\$115,000.00	0.14%	0.31%	OAM	Unavoidable
4	\$8,000.00	Director	\$123,000.00	0.02%	0.34%	AFA	Unavoidable
6	\$90,000.00	Director	\$213,000.00	0.25%	0.58%	OAM	Unavoidable
5	\$75,000.00	Director	\$288,000.00	0.21%	0.79%	DO	Avoidable
8	\$152,855.75	Director	\$440,855.75	0.42%	1.21%	DO	Avoidable
9	-\$129,888.00	Director	\$310,967.75	-0.36%	0.85%	DO	Avoidable
10	\$28,625.00	Director	\$339,592.75	0.08%	0.93%	CFC	Unavoidable
7	\$963,105.55	Board	\$1,302,698.30	2.64%	3.57%	OAM	Unavoidable
\$1,302,698.30				3.57%			

New Authorized Contract Total	\$37,840,849.60
Total CCO Dollars To Date	\$1,302,698.30
Total % Increased by CCO's	3.57%