Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	16	1622

REGISTERED CIVIL ENGINEER 4-2-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER H.S. CHEN No. C48908 Exp. 9-30-16 CIVIL STATE OF CALIFORNIA

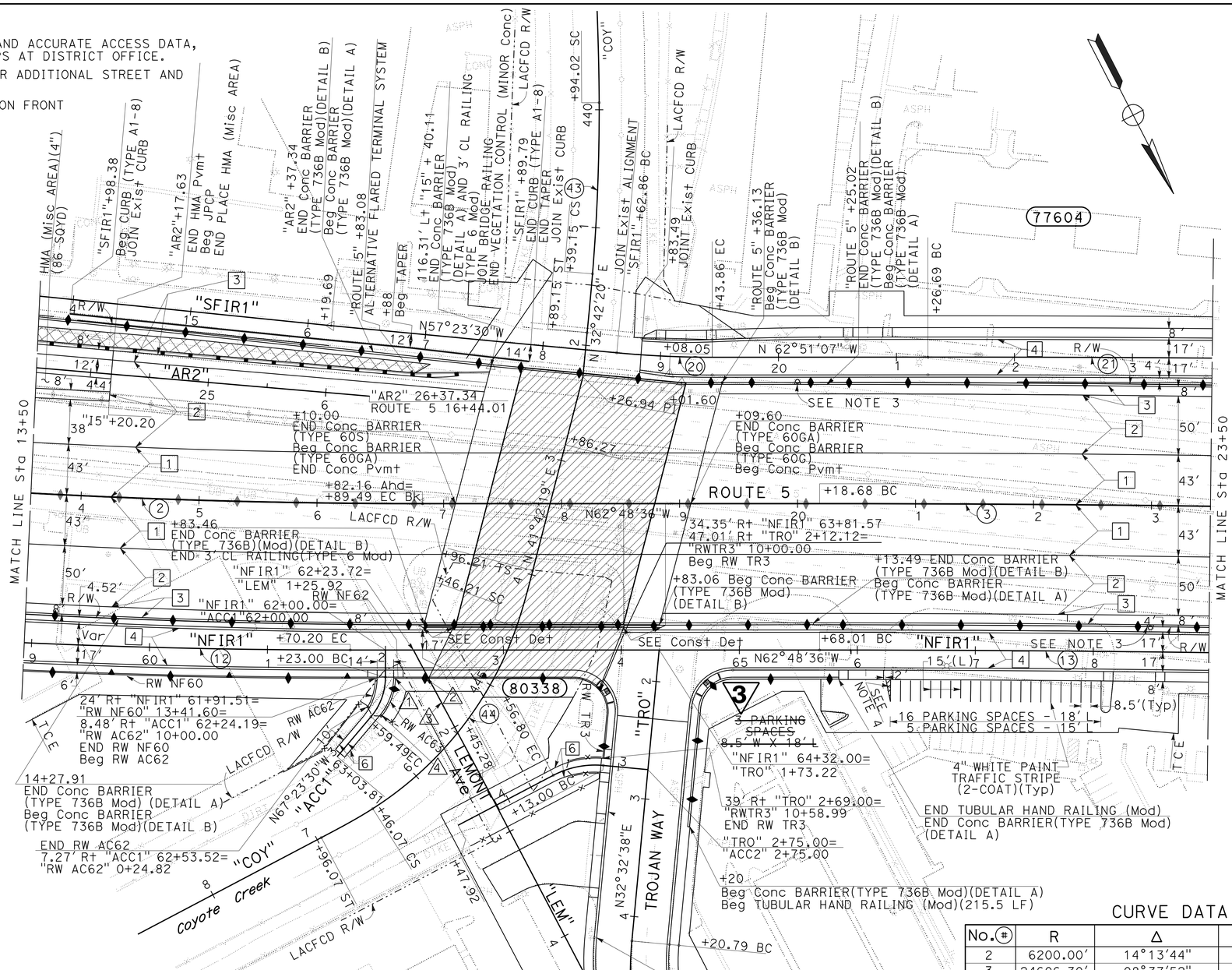
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. SEE CONSTRUCTION DETAILS FOR ADDITIONAL STREET AND DRIVEWAY DETAILS.
3. SEE SDS SHEETS FOR TRANSITION FRONT FACE OF Conc BARRIER.
4. DIAGONAL LINES AT 3' C-C

ABBREVIATIONS:

TS: TANGENT TO SPIRAL
SC: CURVE TO SPIRAL
CS: SPIRAL TO CURVE
ST: SPIRAL TO TANGENT



NOTES:

1. 24.00' Rt "NFIR1" 62+07=
   "RW NF 62" 62+09.39=
   8.48' Lt "ACC1" 62+23.86=
   "RWAC63" 10+00.00
   Beg RW NF62
   Beg RW AC63
2. END RW NF62
   24.00' Rt "NFIR1" 62+33.77=
   "RW NF 62" 10+25.30
3. N0°58'11"W
4. END RW AC63
   6.85' Lt "ACC1" 62+53.49=
   "RW AC63" 0+34.19

CURVE DATA

No. (#)	R	Δ	T	L
2	6200.00'	14°13'44"	773.84'	1539.72'
3	24606.30'	08°37'52"	1856.86'	3706.70'
12	6190.35'	08°22'13"	833.98'	1657.97'
13	24482.25'	01°40'26"	357.64'	715.24'
20	850.00'	05°27'36"	40.53'	81.00'
21	28000.00'	03°25'27"	836.92'	1673.35'
43	1700.00'	04°53'29"	72.61'	145.13'
44	300.00'	38°10'19"	103.80'	199.87'
45	300.00'	33°01'56"	88.96'	172.96'

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

LAYOUT

SCALE: 1" = 50'

L-3

REVISED BY | DATE REVISED
H. S. CHEN | VAN TRAN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: RICHARD CHIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	190	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

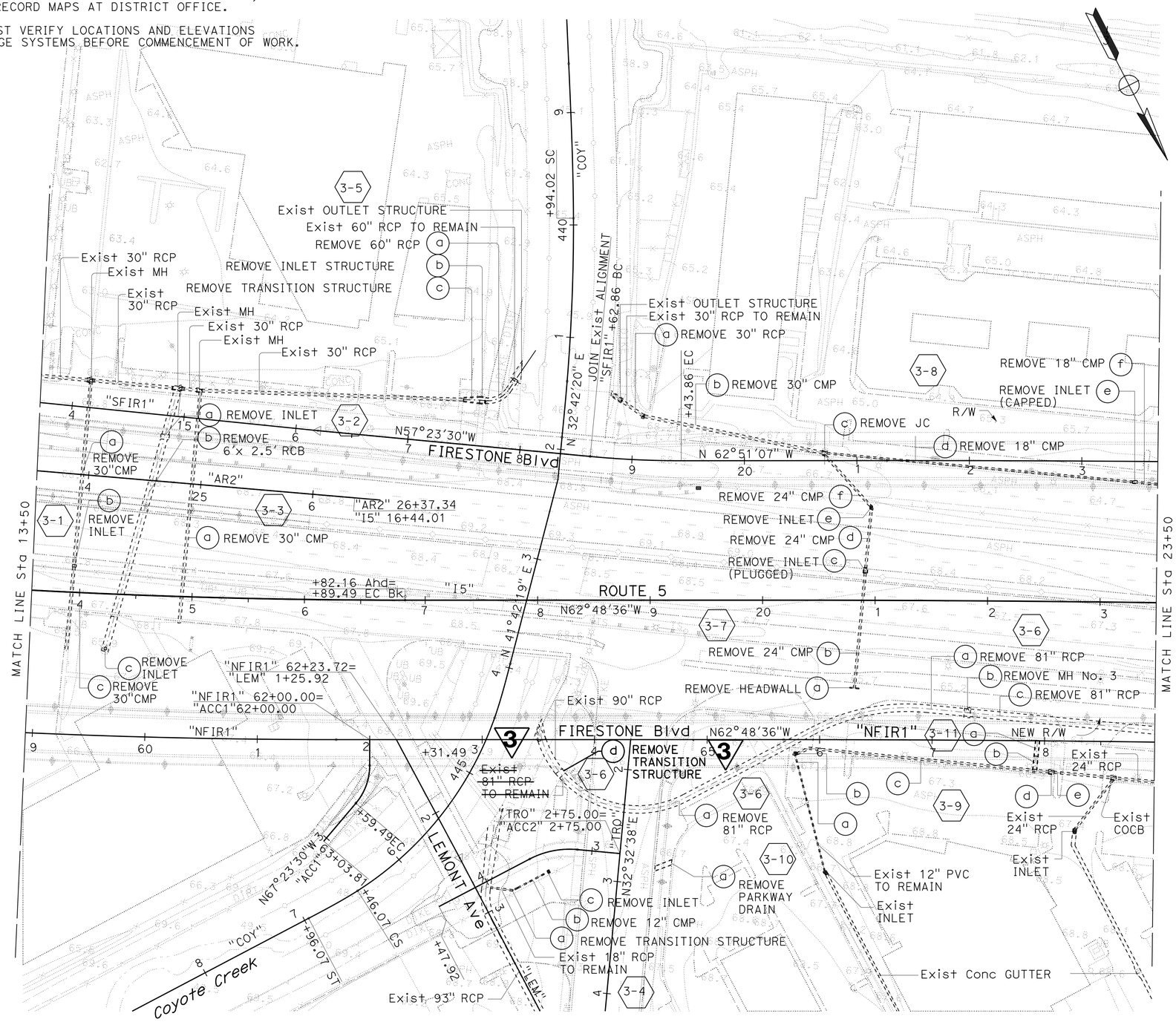
1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTES:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
2. THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



3-9
- (a) REMOVE 12" PVC
- (b) REMOVE COCB
- (c) REMOVE 24" RCP
- (d) REMOVE COCB
- (e) REMOVE 24" RCP

3-11
- (a) REMOVE PARKWAY DRAIN
- (b) REMOVE Conc GUTTER

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

APPROVED FOR DRAINAGE WORK ONLY

DRAINAGE PLAN (REMOVAL ONLY)

SCALE: 1" = 50'

D-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	198	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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NOTES:

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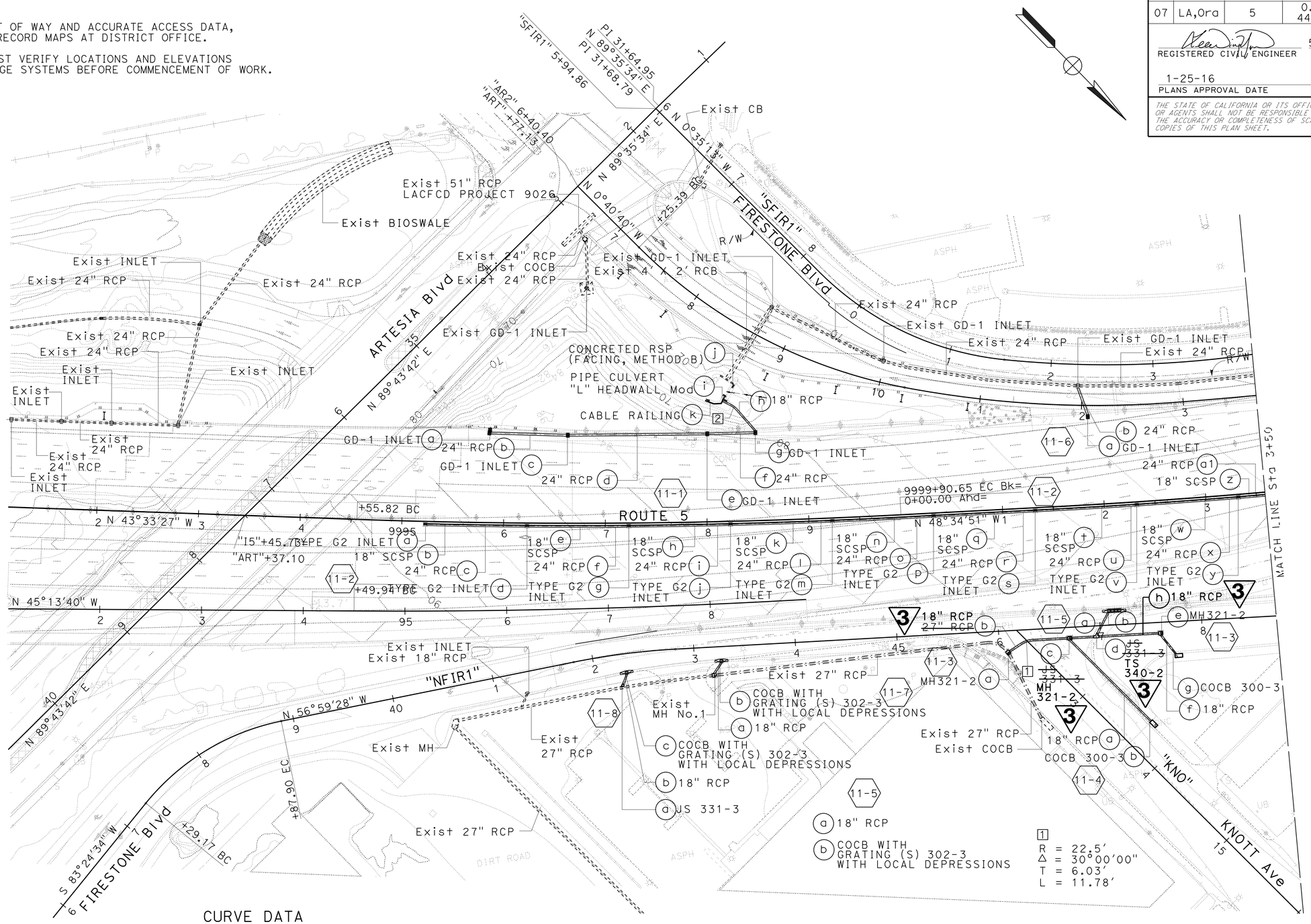
2. THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



CURVE DATA

No. #	R	Δ	T	L
1	22.5'	30°00'00"	6.03	11.78
2	22.5'	22°30'00"	4.48	8.84

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

APPROVED FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: JAI P. THAKUR
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	200	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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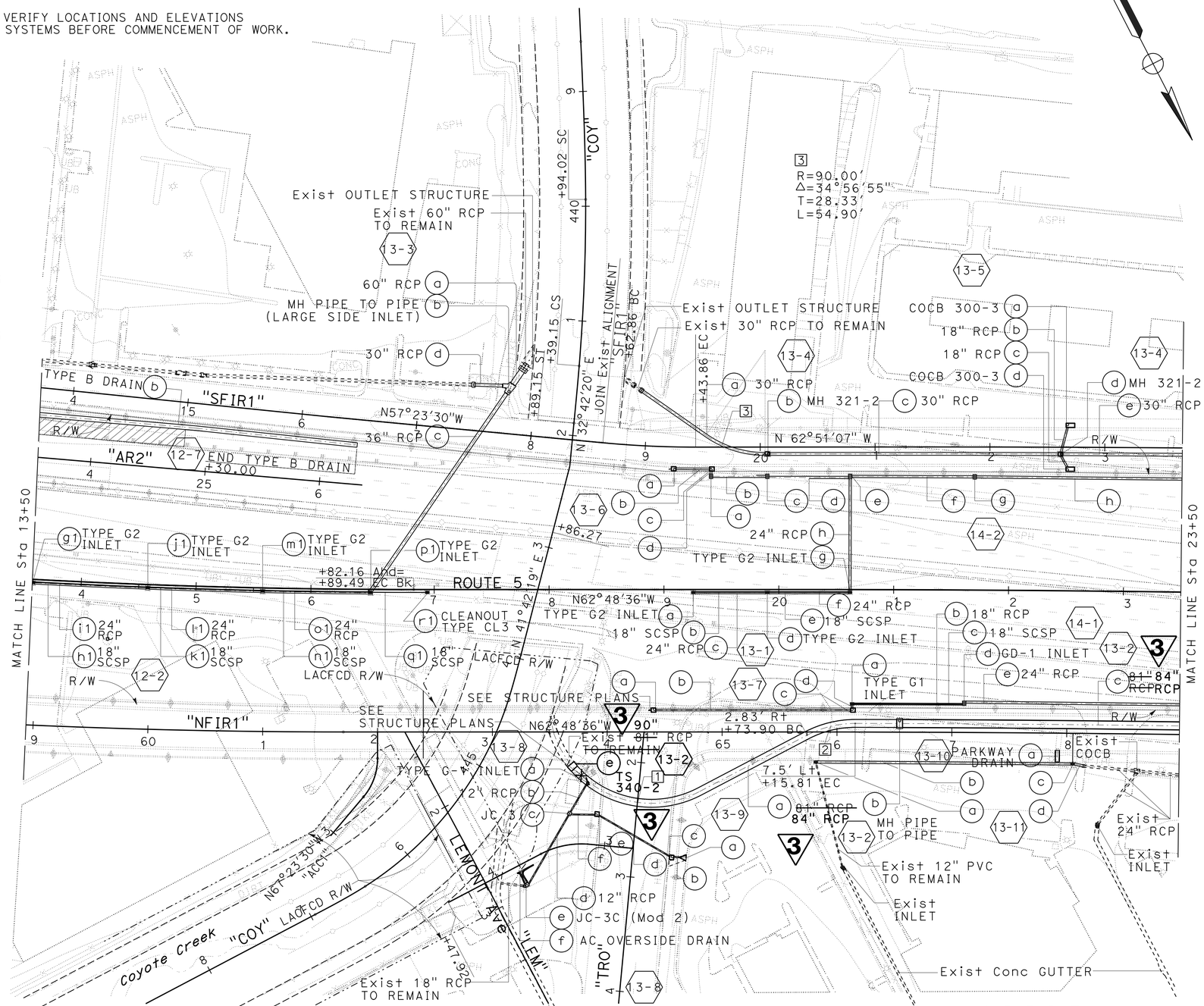

13-6
a COCB 300-3
b 18" RCP
c COCB 300-3
d 18" RCP

14-2
a GD-1 INLET
b 24" RCP
c GD-1 INLET
d 24" RCP
e GD-1 INLET
f 24" RCP
g GD-1 INLET
h 24" RCP

13-7
a COCB 300-3
b 18" RCP
c COCB 300-3
d 18" RCP

13-11
a TYPE G2 INLET
b 24" RCP
c TYPE G2 INLET
d 24" RCP

13-9
a CULVERT TRANSITION
b 12" RCP
c COCB 300-3
d 12" RCP
e COCB 300-3
f 12" RCP

CURVE DATA

No. #	R	Δ	T	L
1	90.0'	70°36'38"	63.74	110.91
2	90.0'	27°46'04"	22.25	43.62
3	90.0'	34°56'55"	28.33	54.90

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

APPROVED FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50'

D-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: JAI P. THAKUR
CALCULATED-DESIGNED BY: SIEW MEI TAN
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DATE REVISED

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DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	201	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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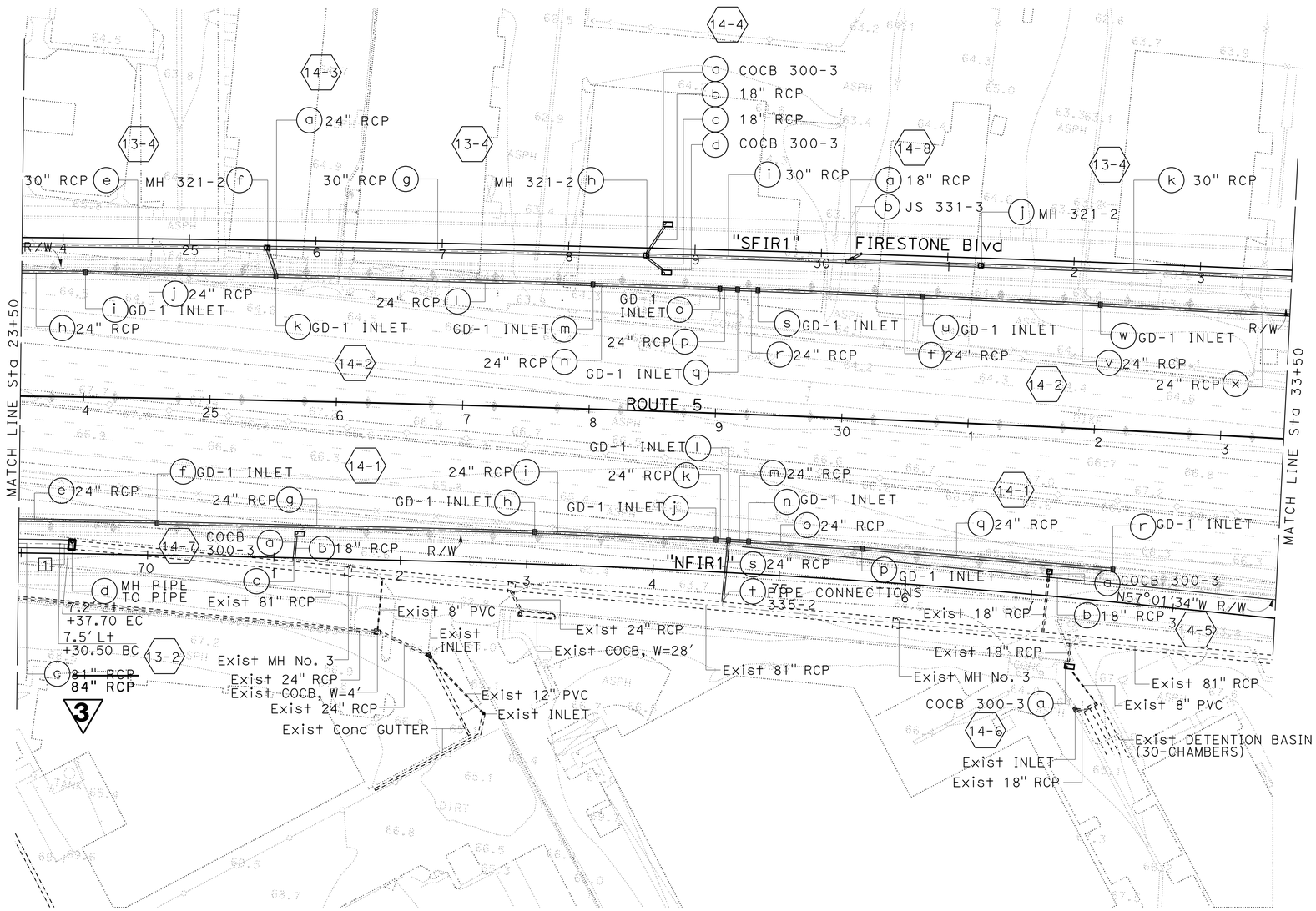

CURVE DATA

No. #	R	Δ	T	L
1	90.0′	04°35′18"	3.61′	7.21′

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

APPROVED FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50′

D-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: JAI P. THAKUR
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CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	204	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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NOTES:

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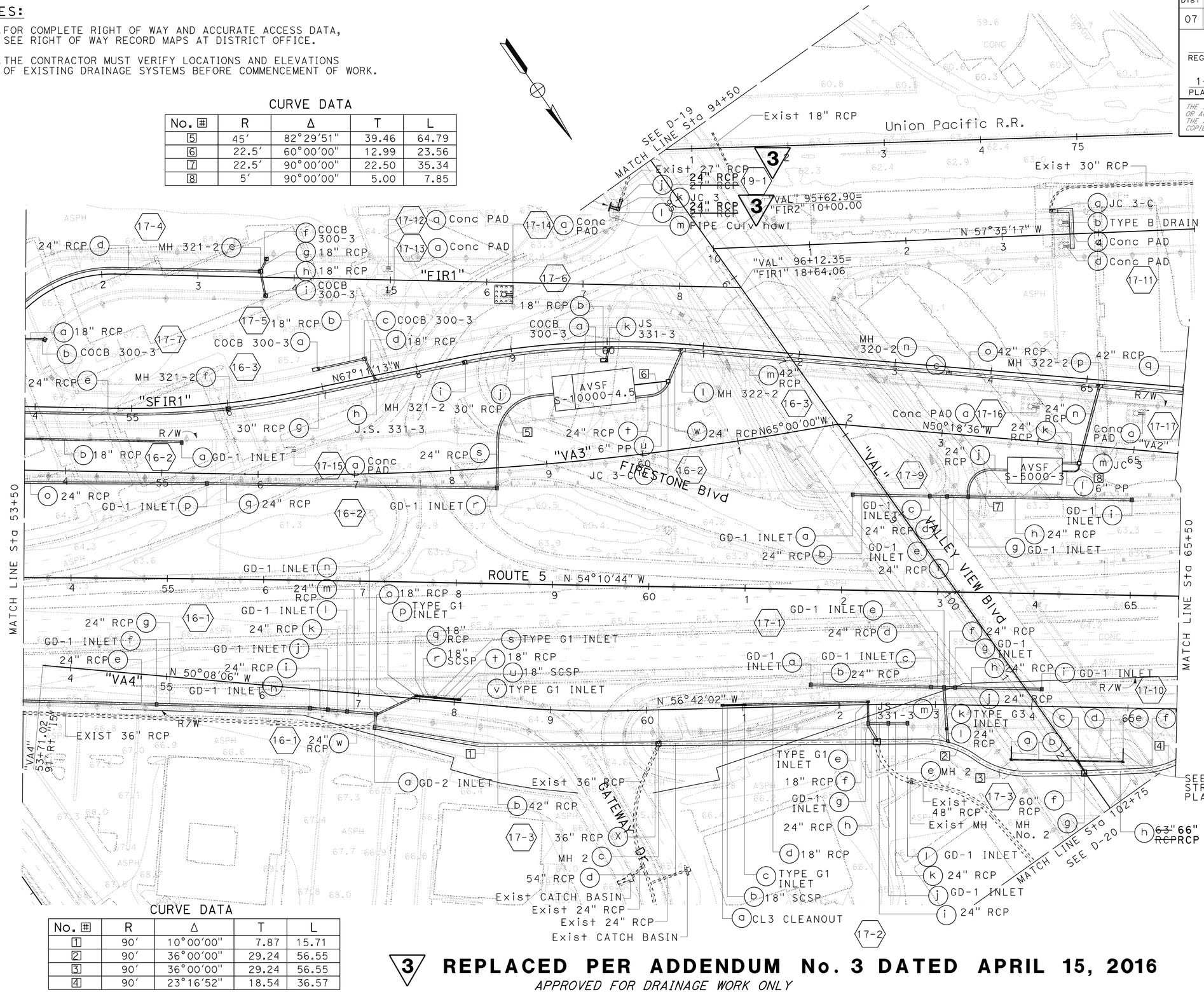
CURVE DATA

No. #	R	Δ	T	L
5	45′	82°29′51″	39.46	64.79
6	22.5′	60°00′00″	12.99	23.56
7	22.5′	90°00′00″	22.50	35.34
8	5′	90°00′00″	5.00	7.85



CURVE DATA

No. #	R	Δ	T	L
1	90′	10°00′00″	7.87	15.71
2	90′	36°00′00″	29.24	56.55
3	90′	36°00′00″	29.24	56.55
4	90′	23°16′52″	18.54	36.57

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

APPROVED FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1" = 50′

D-17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS
FUNCTIONAL SUPERVISOR: JAI P. THAKUR
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

NOTES:

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	205	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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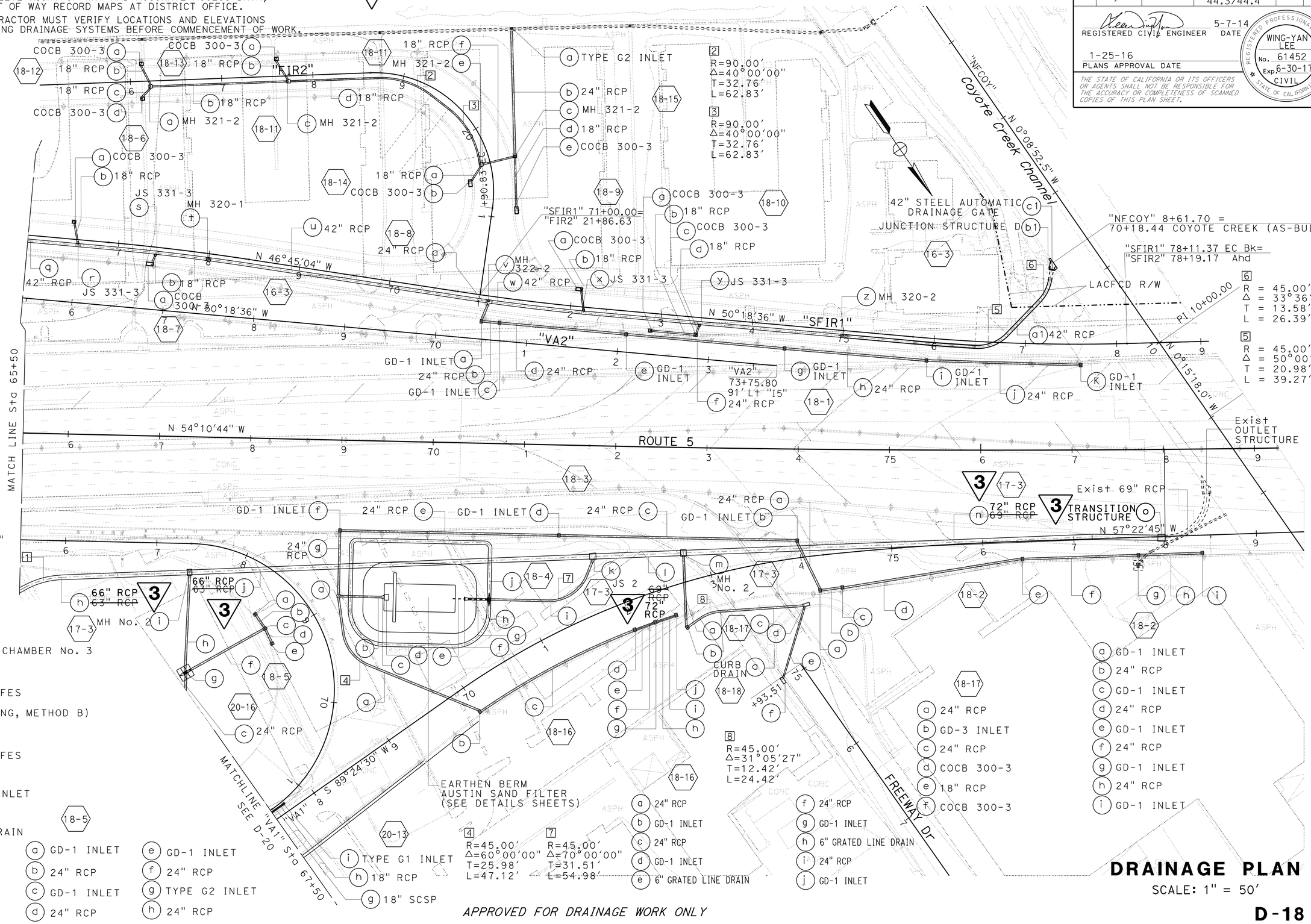

DRAINAGE PLAN

SCALE: 1" = 50'

APPROVED FOR DRAINAGE WORK ONLY

D-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	206	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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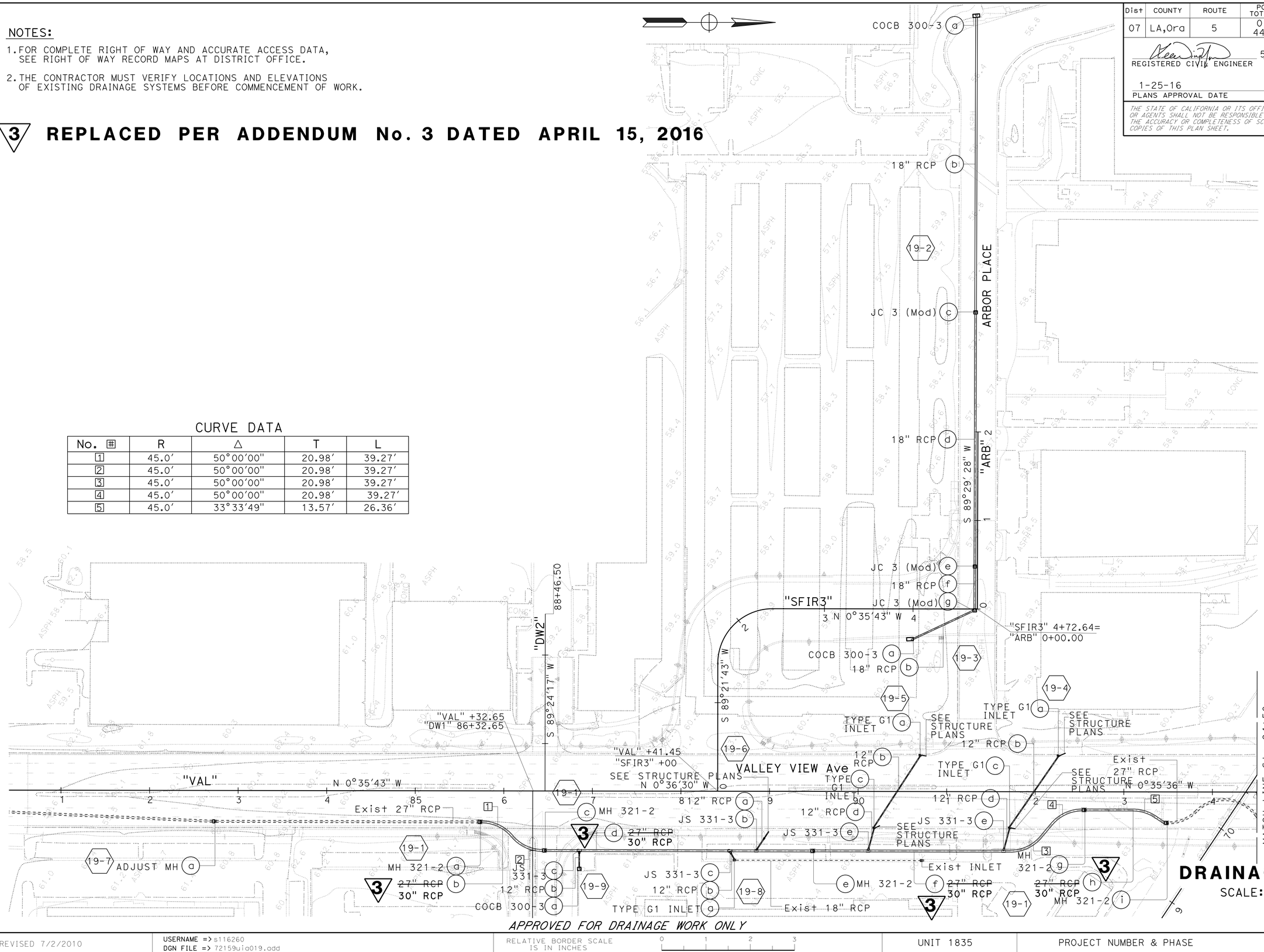
3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

CURVE DATA

No. ⊞	R	Δ	T	L
1	45.0′	50°00′00″	20.98′	39.27′
2	45.0′	50°00′00″	20.98′	39.27′
3	45.0′	50°00′00″	20.98′	39.27′
4	45.0′	50°00′00″	20.98′	39.27′
5	45.0′	33°33′49″	13.57′	26.36′



APPROVED FOR DRAINAGE WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: JAI P. THAKUR
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	218	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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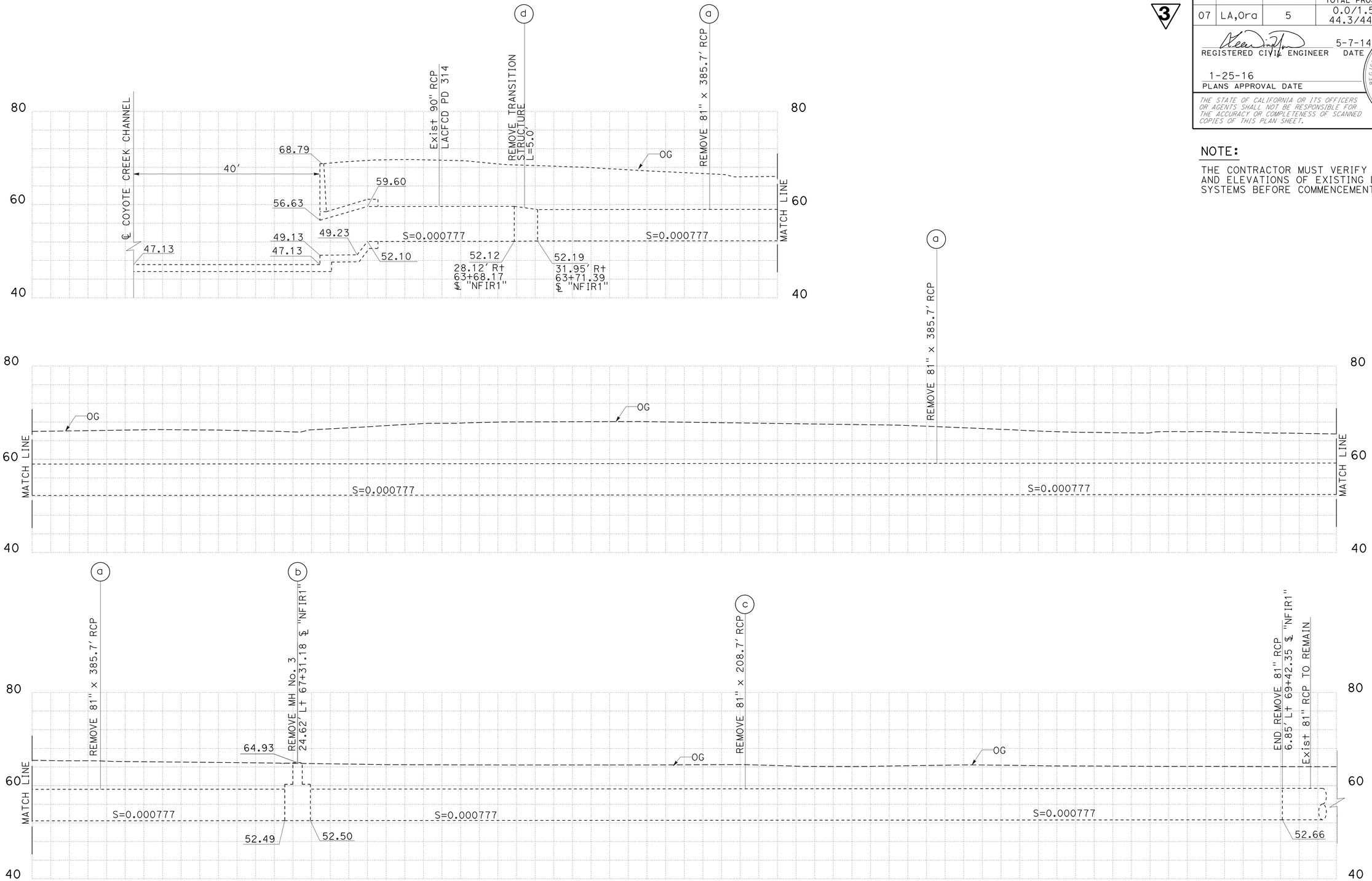
NOTE:

THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



DRAINAGE SYSTEM No. 3-6

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-11

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
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DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	251	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

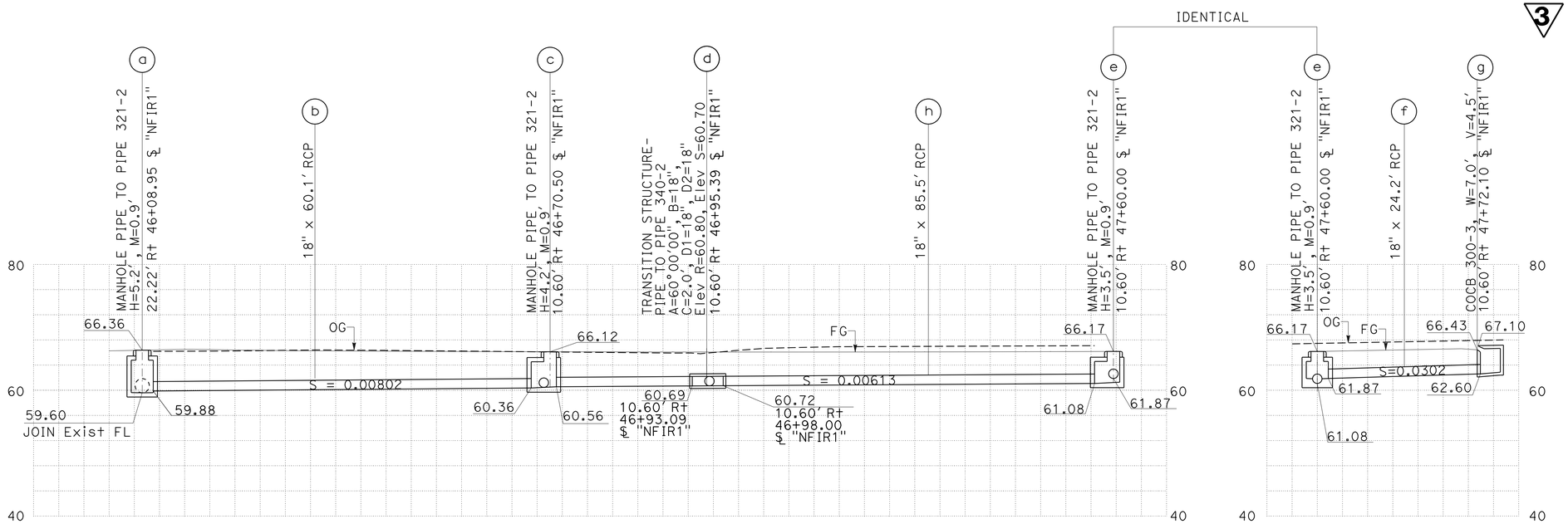
1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

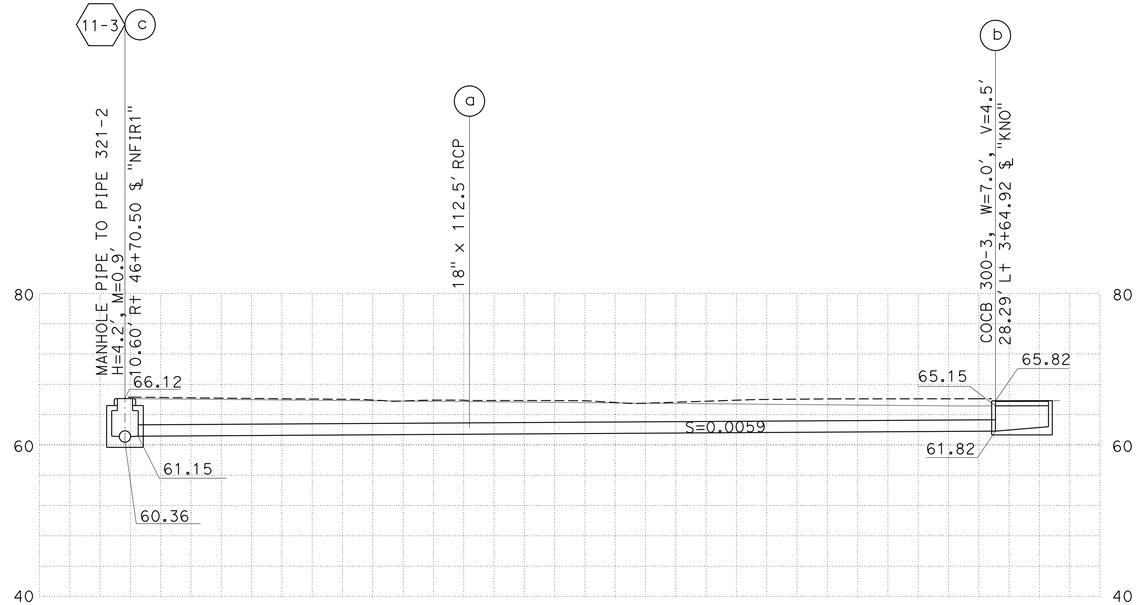
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

3

NOTE:
THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



DRAINAGE SYSTEM No. 11-3



DRAINAGE SYSTEM No. 11-4

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	252	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

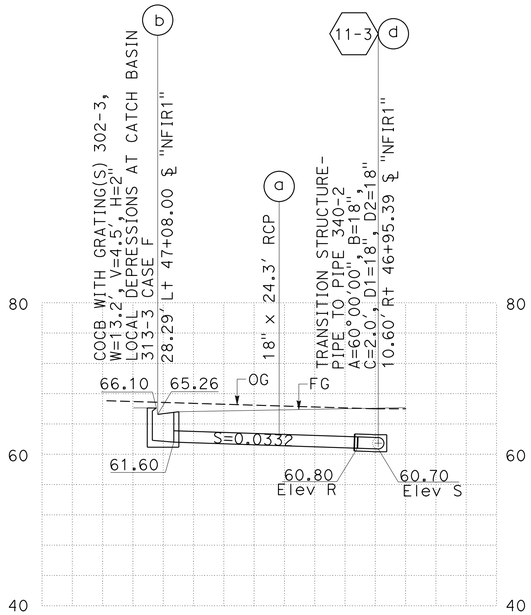
1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

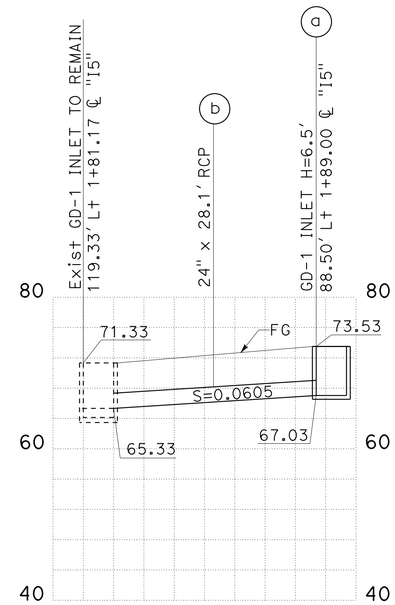
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

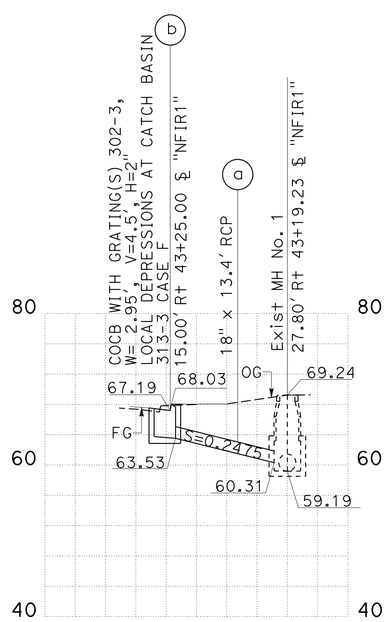
THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



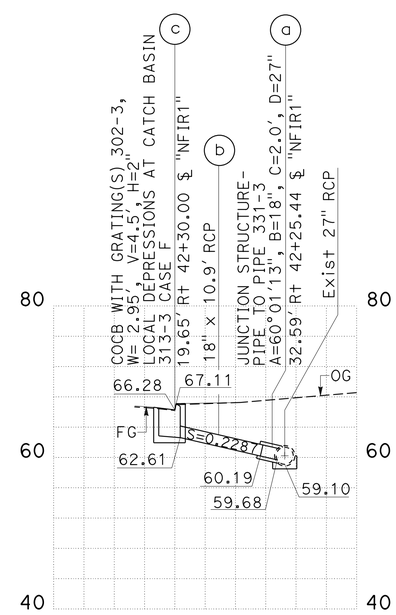
DRAINAGE SYSTEM No. 11-5



DRAINAGE SYSTEM No. 11-6



DRAINAGE SYSTEM No. 11-7



DRAINAGE SYSTEM No. 11-8

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-45

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	264	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

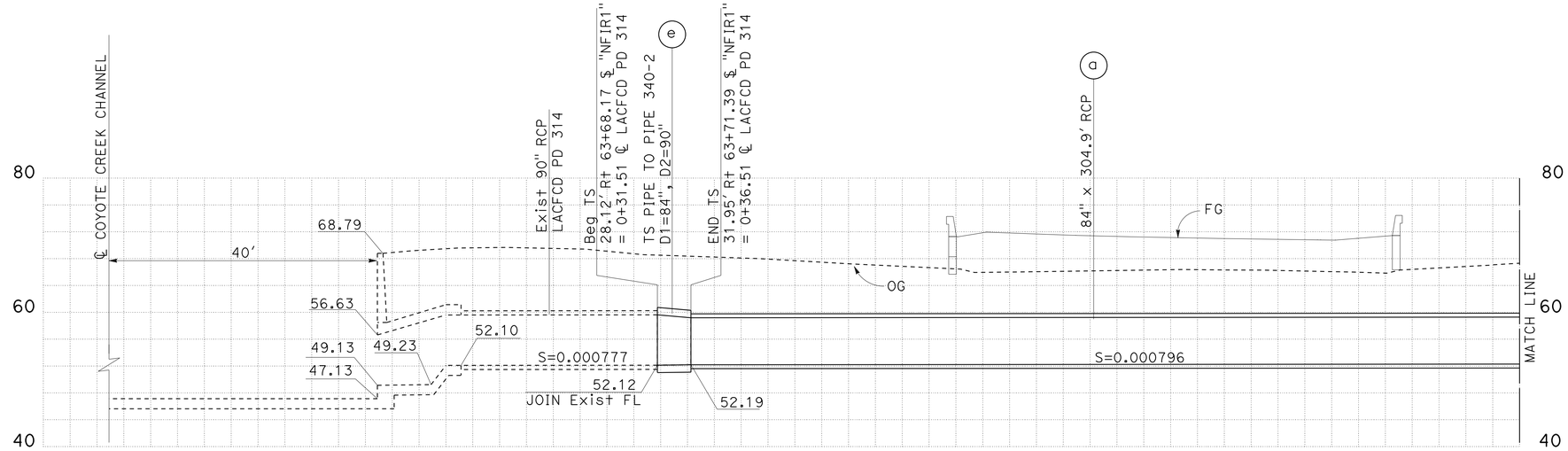
REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

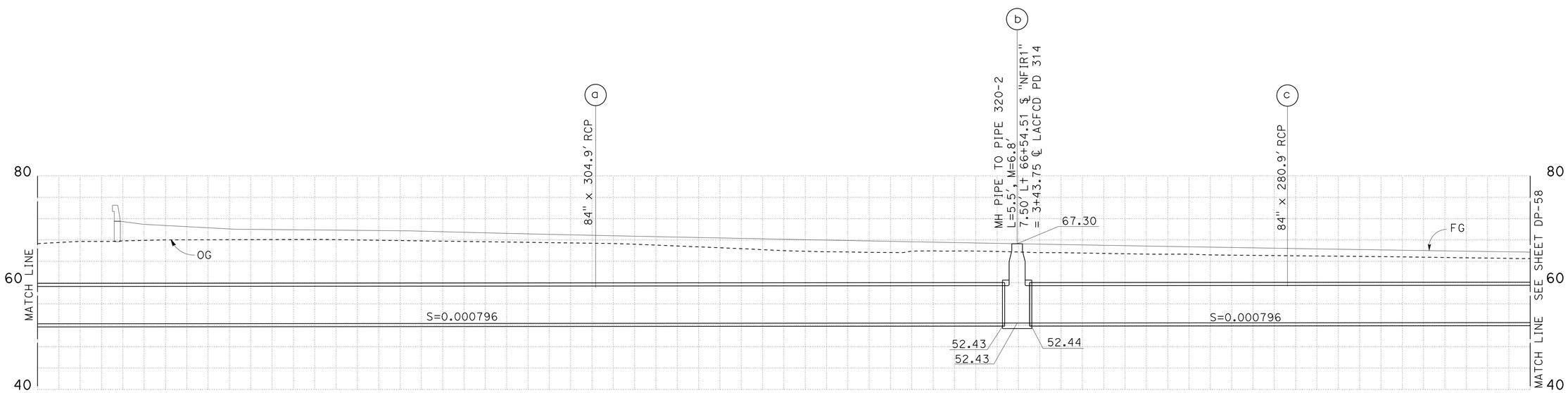
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

3

NOTE:

THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.





DRAINAGE SYSTEM No. 13-2

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	265	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

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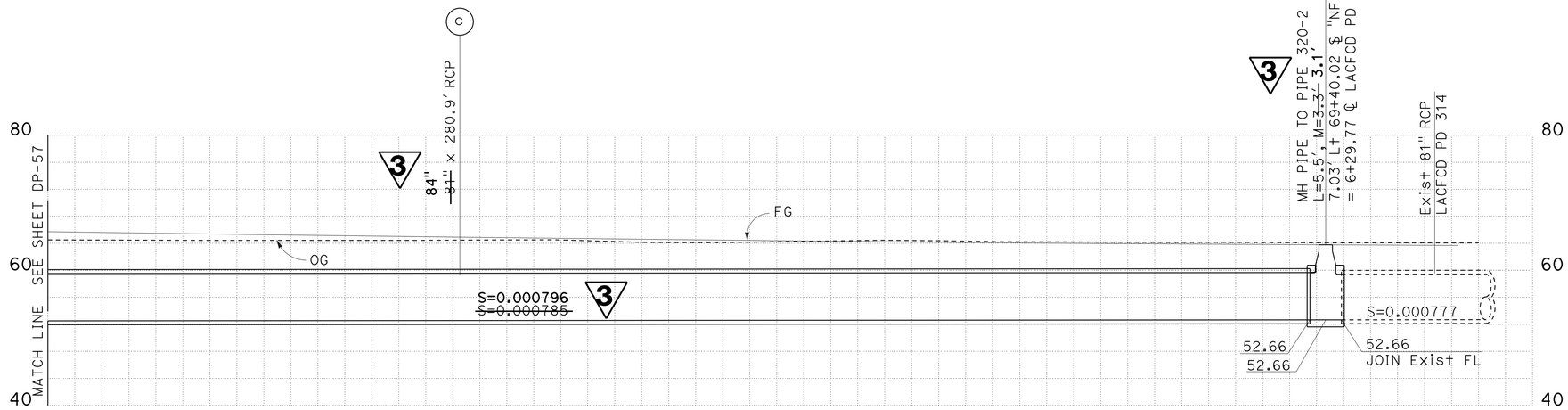
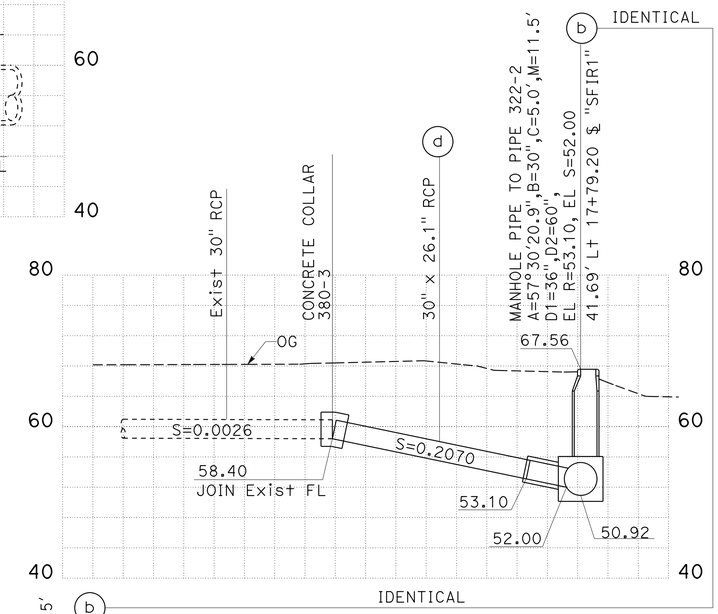
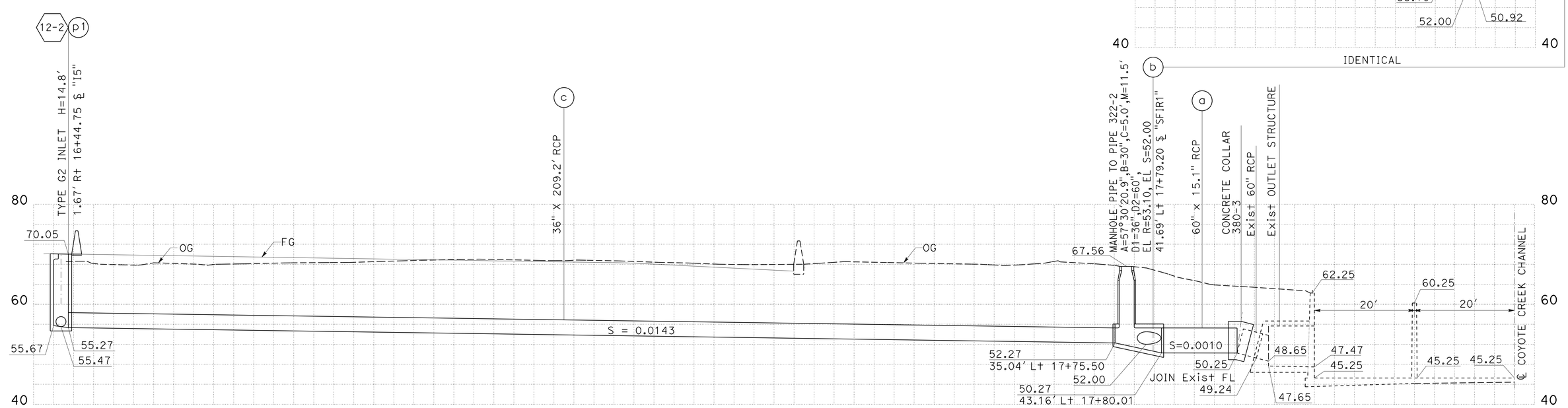


DRAINAGE SYSTEM No. 13-2





DRAINAGE SYSTEM No. 13-3

DRAINAGE PROFILES
SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-58

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	306	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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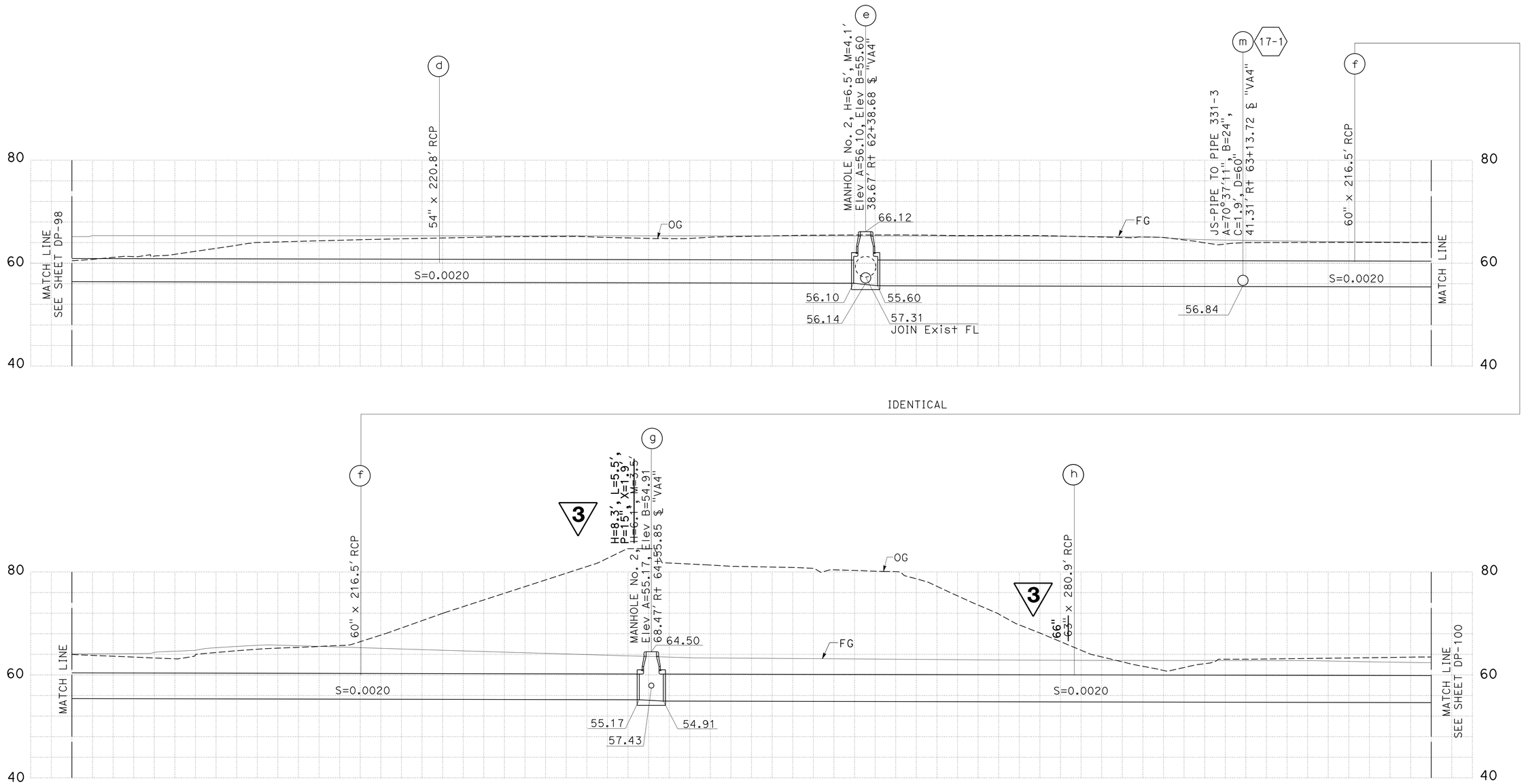

DRAINAGE SYSTEM No. 17-3

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-99

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	307	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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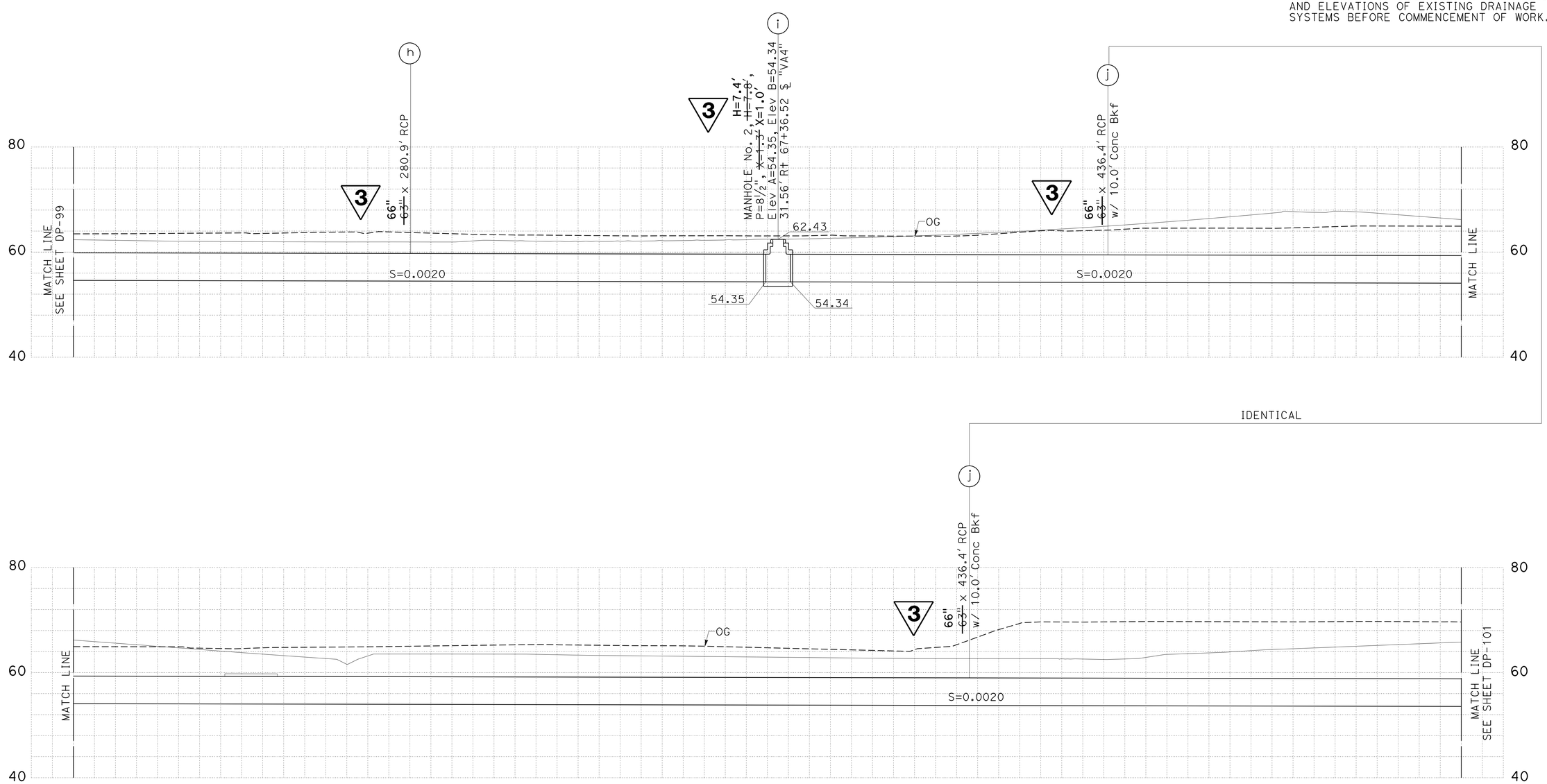

DRAINAGE SYSTEM No. 17-3

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-100

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	308	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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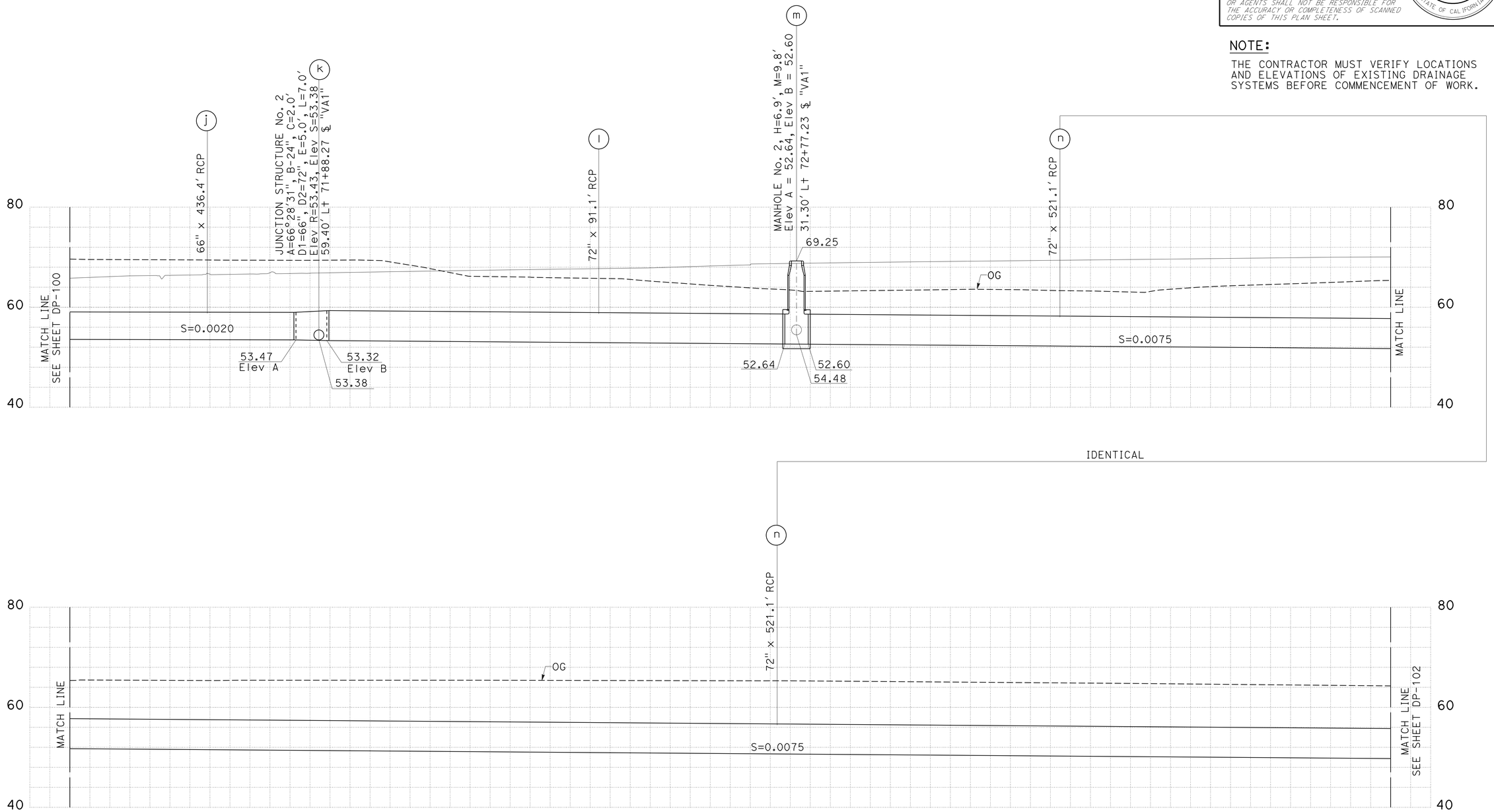
3

NOTE:

THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



DRAINAGE SYSTEM No. 17-3

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-101

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	309	1622

3

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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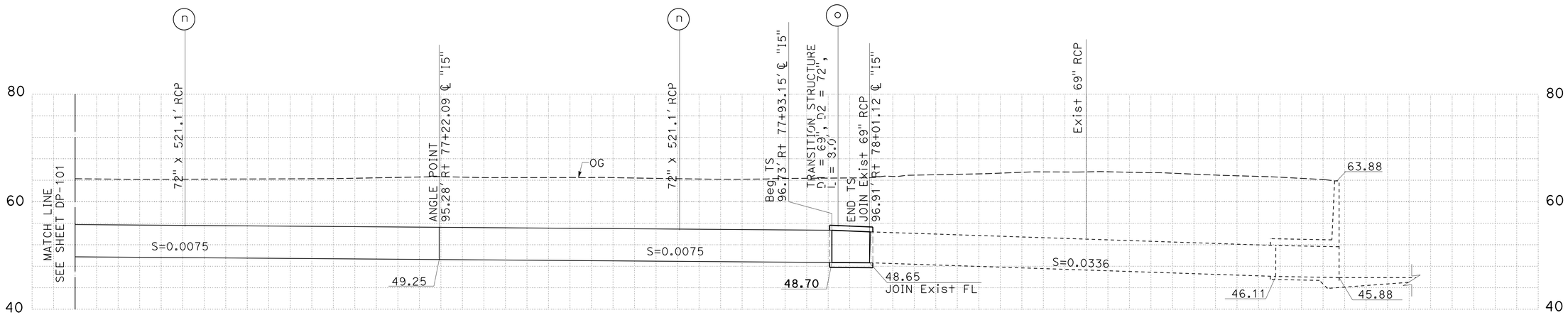

DRAINAGE SYSTEM No. 17-3

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-102

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	315	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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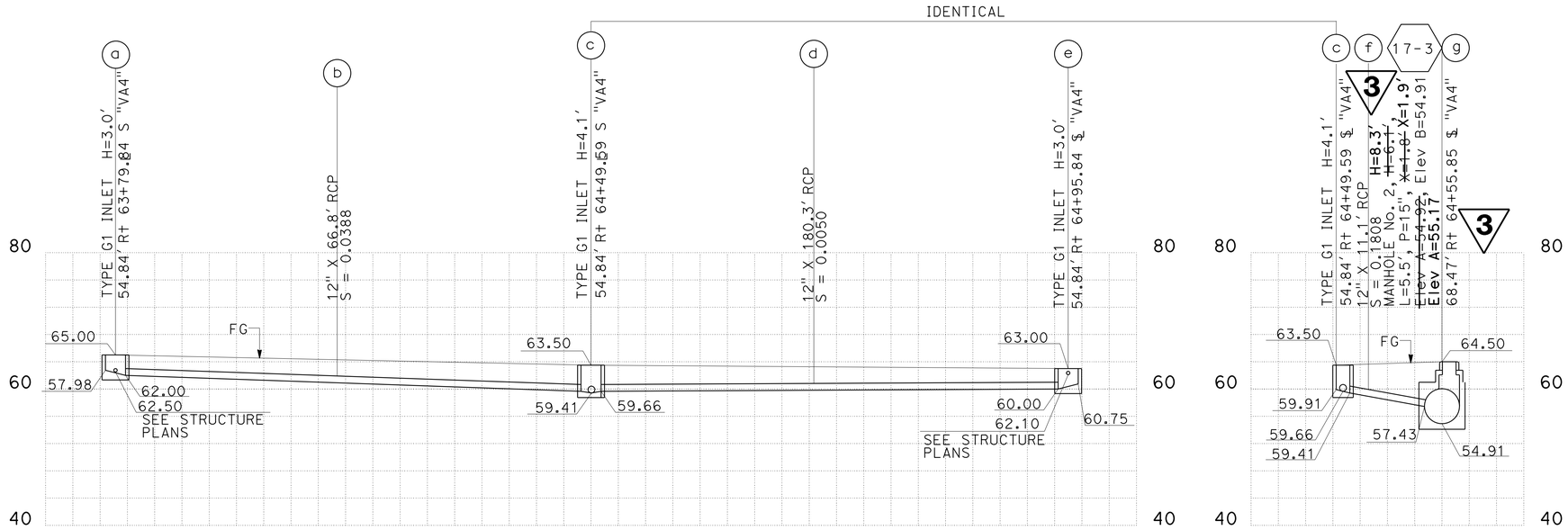
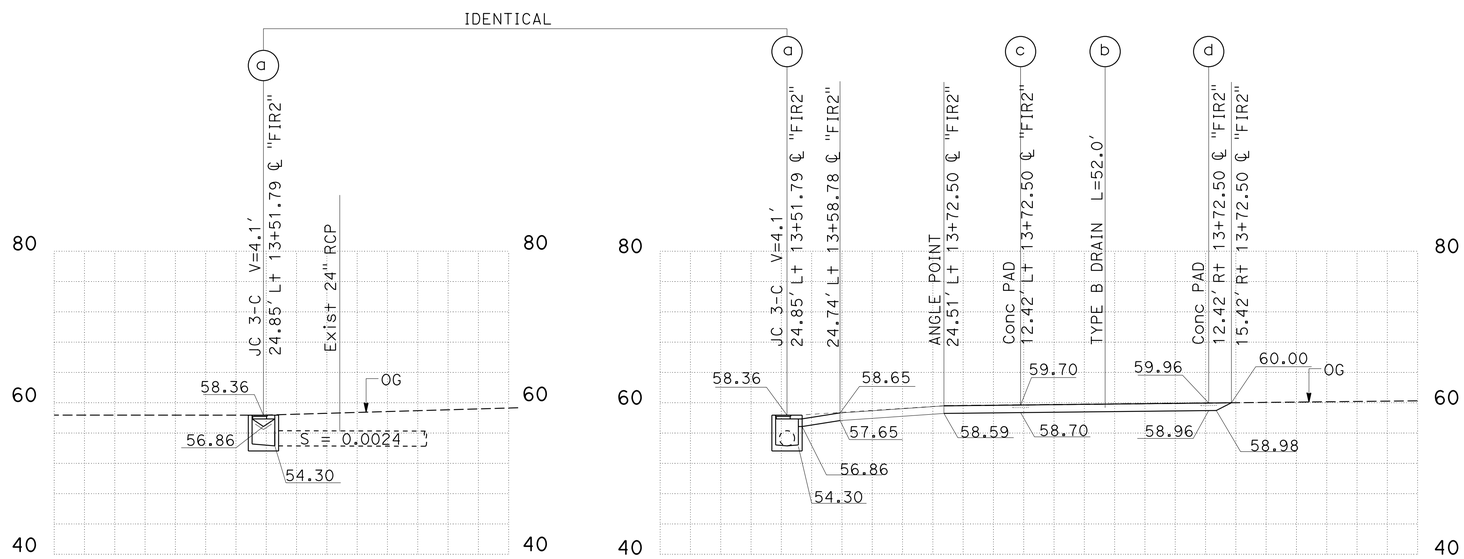


DRAINAGE SYSTEM No. 17-10



DRAINAGE SYSTEM No. 17-11

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-108

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	318	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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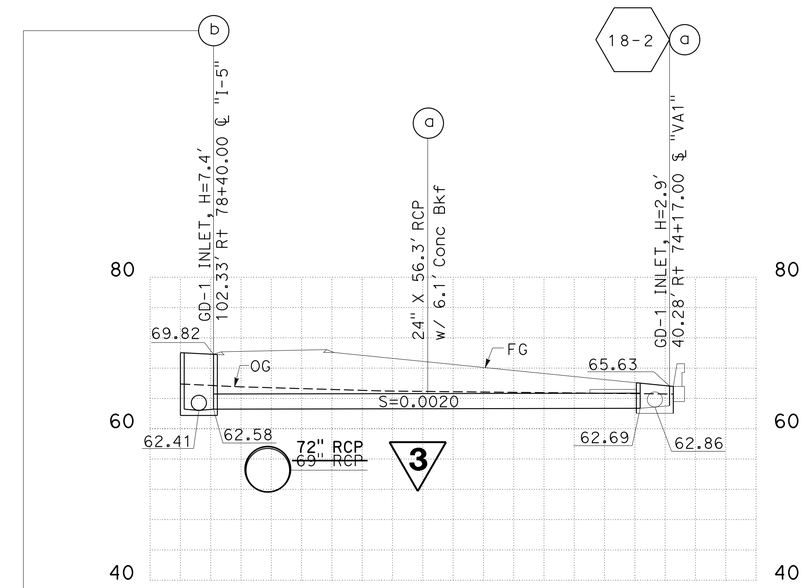
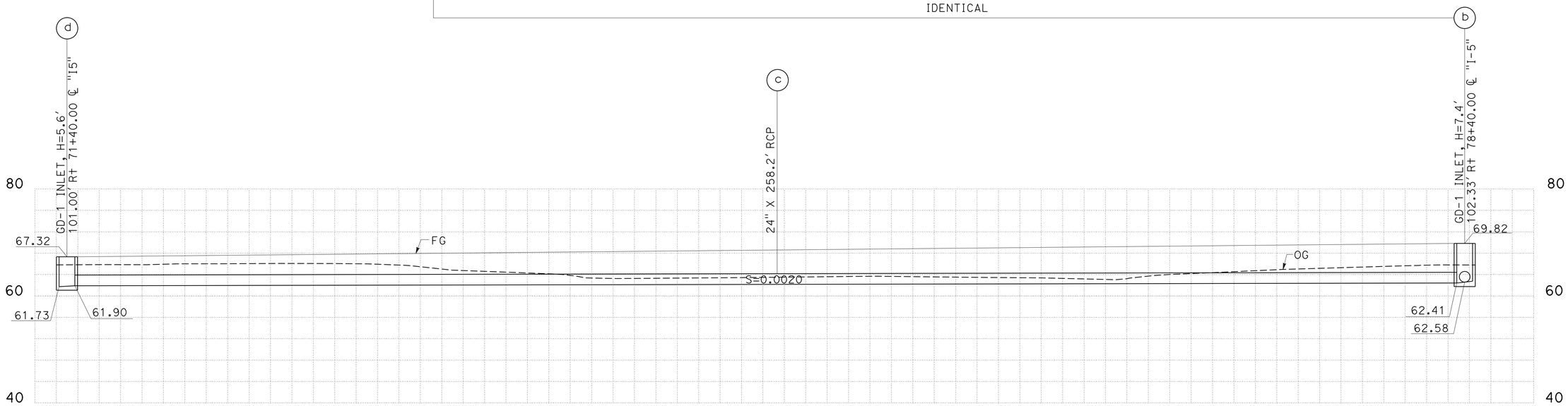


IDENTICAL



DRAINAGE SYSTEM No. 18-3

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-111

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	319	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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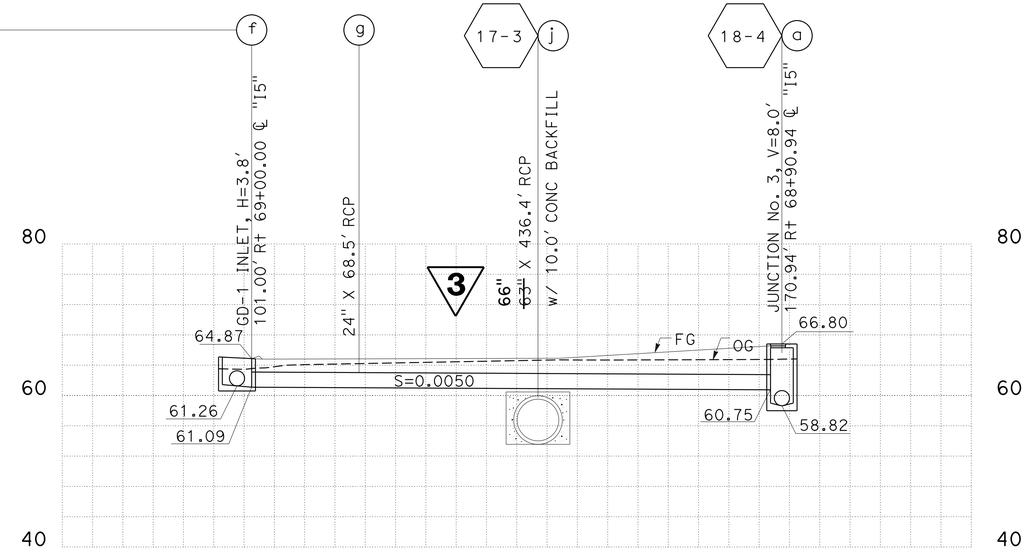

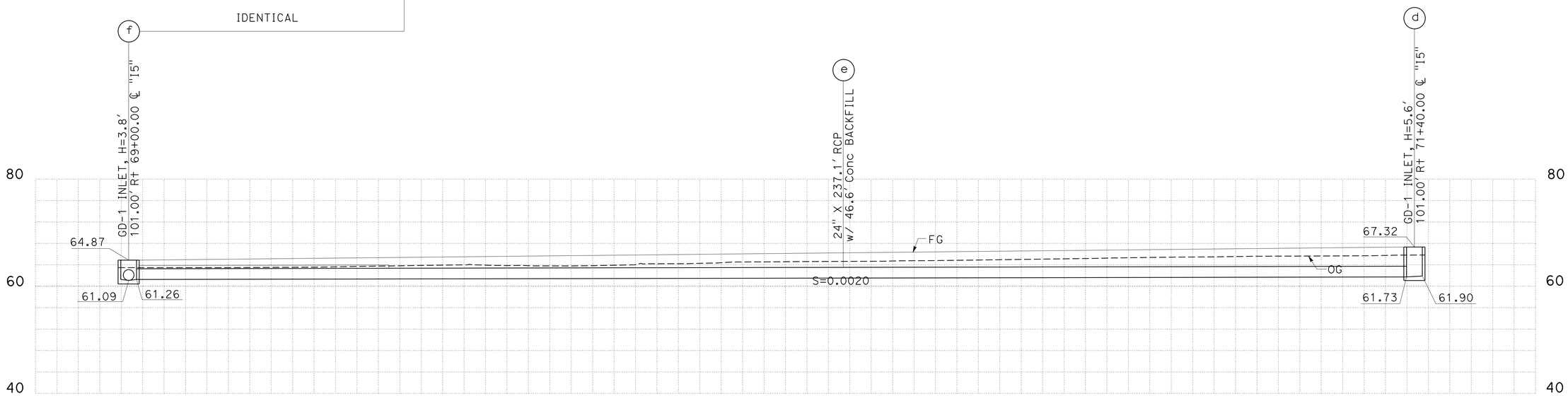

DRAINAGE SYSTEM No. 18-3

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-112

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	320	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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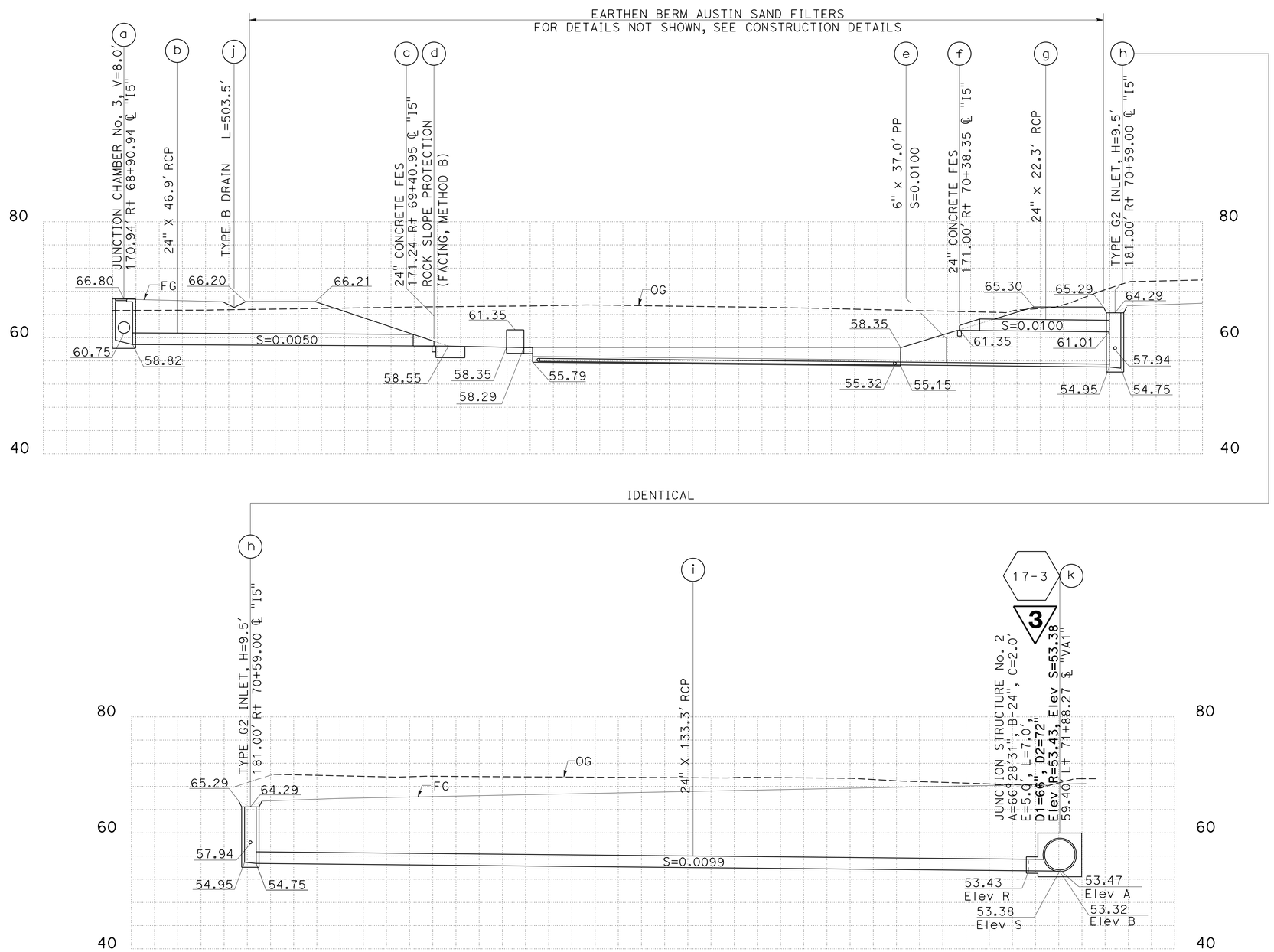

DRAINAGE SYSTEM No. 18-4

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-113

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	321	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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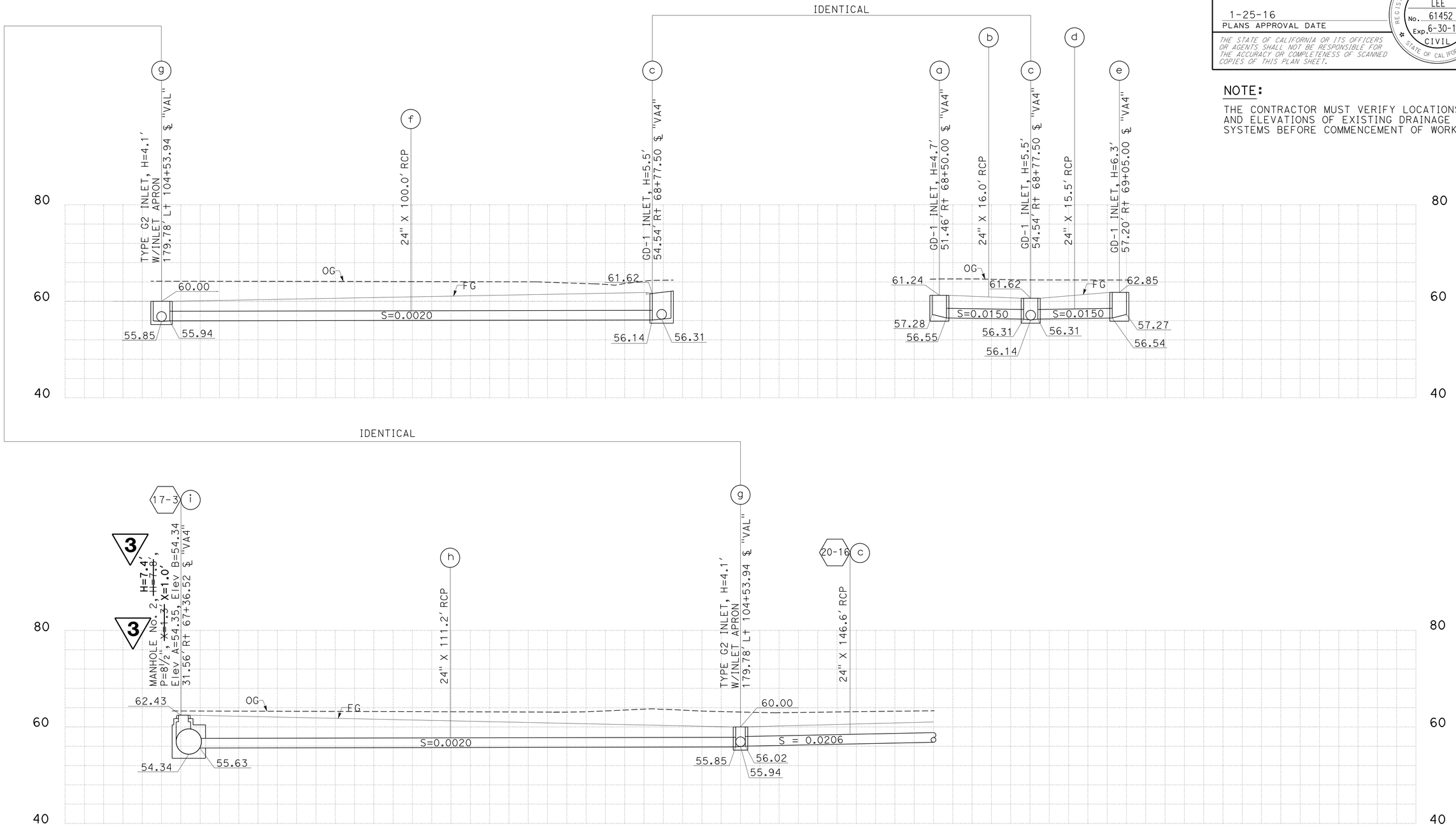

DRAINAGE SYSTEM No. 18-5

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10′
Vert 1" = 10′

DP-114

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 13:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	328	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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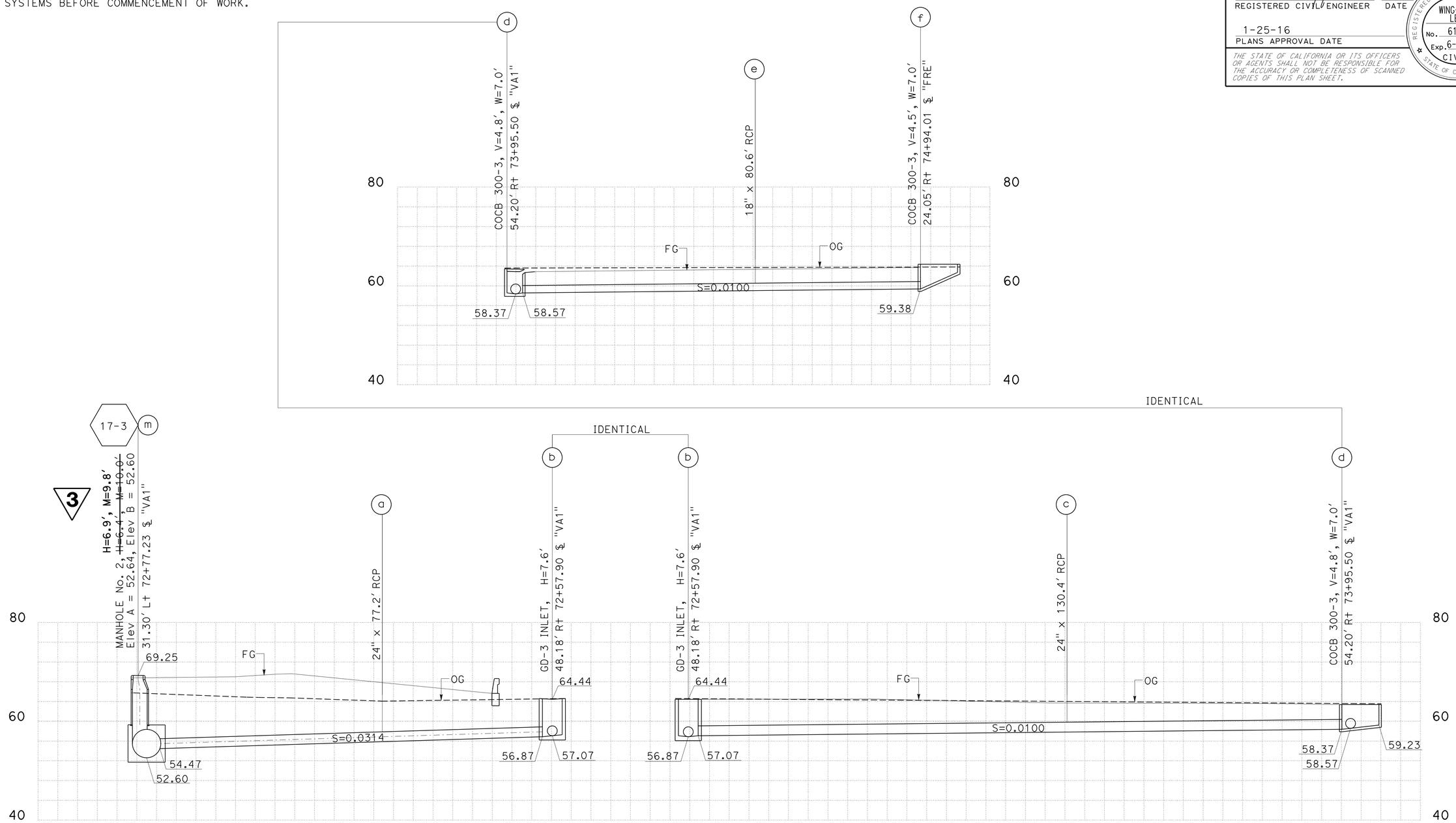

DRAINAGE SYSTEM No. 18-17

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-121

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY / DATE REVISED

LAST REVISION 05-16-14 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	329	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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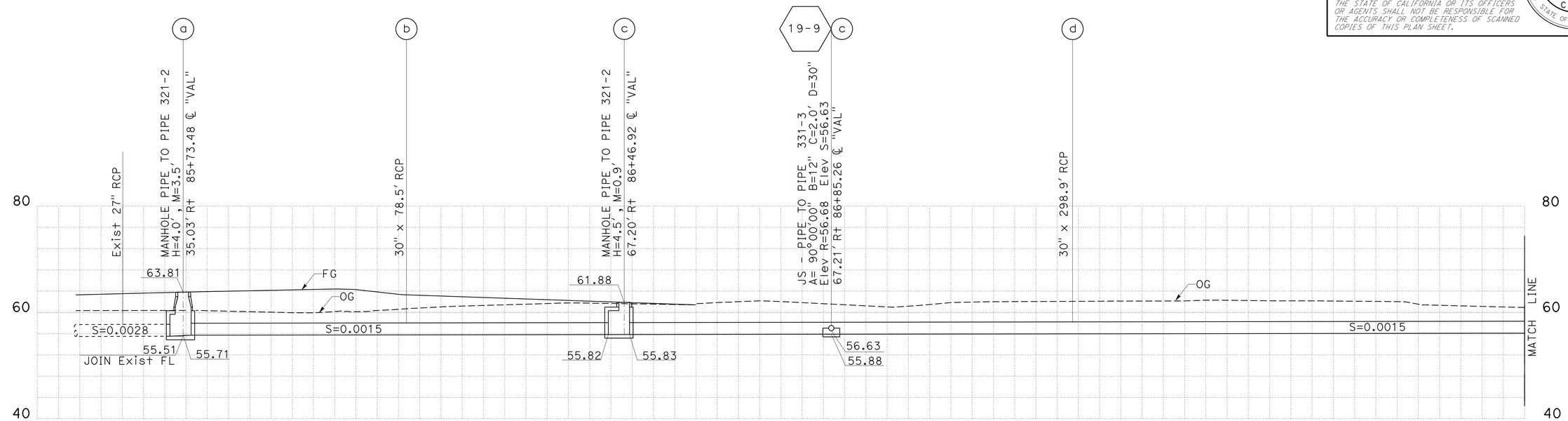

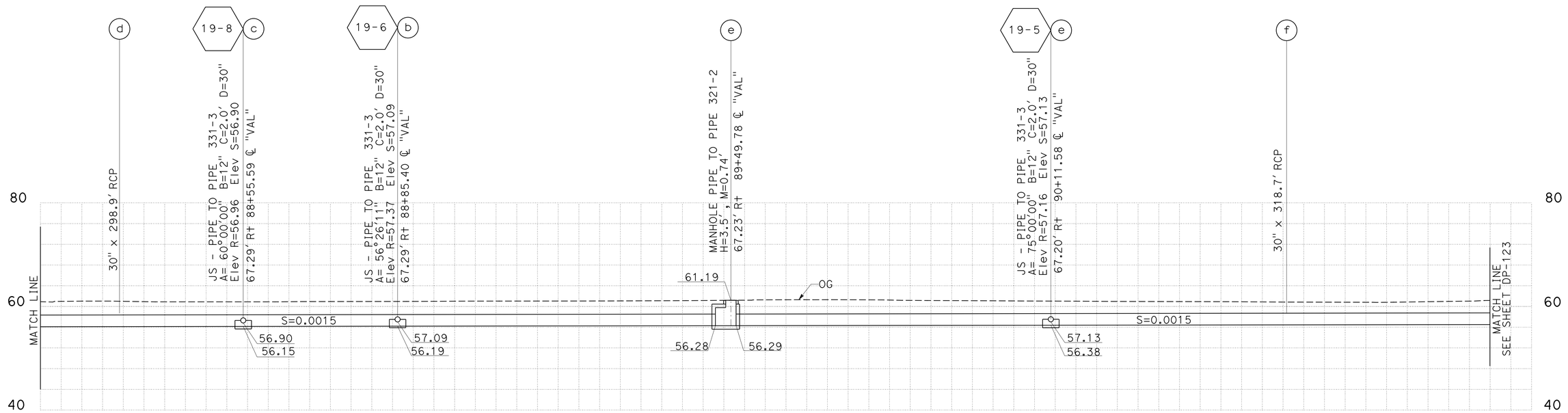

DRAINAGE SYSTEM No. 19-1

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-122

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY / DATE REVISED

LAST REVISION 05-16-14
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	330	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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NOTE:
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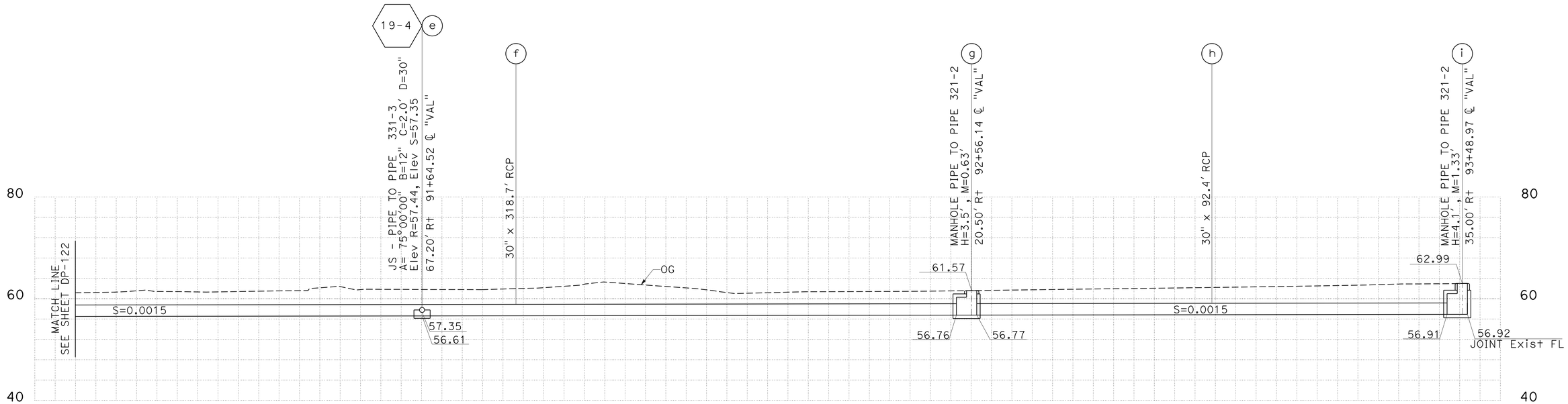
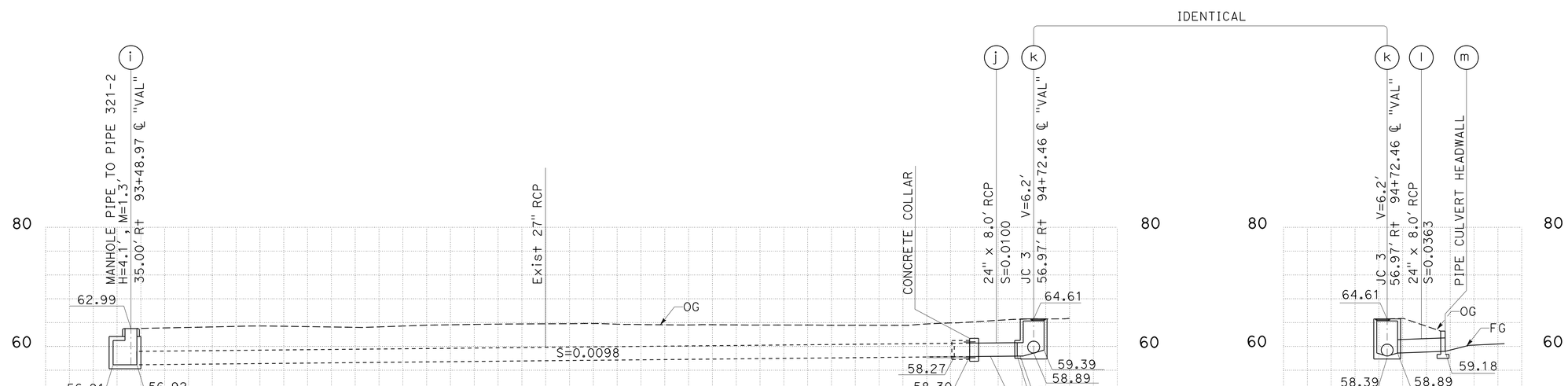




DRAINAGE SYSTEM No. 19-1

DRAINAGE PROFILES
SCALE: Horiz 1" = 10'
Vert 1" = 10'

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DP-123

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® HYDRAULICS
FUNCTIONAL SUPERVISOR MARIA QUINONEZ
CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 05-16-14
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	332	1622

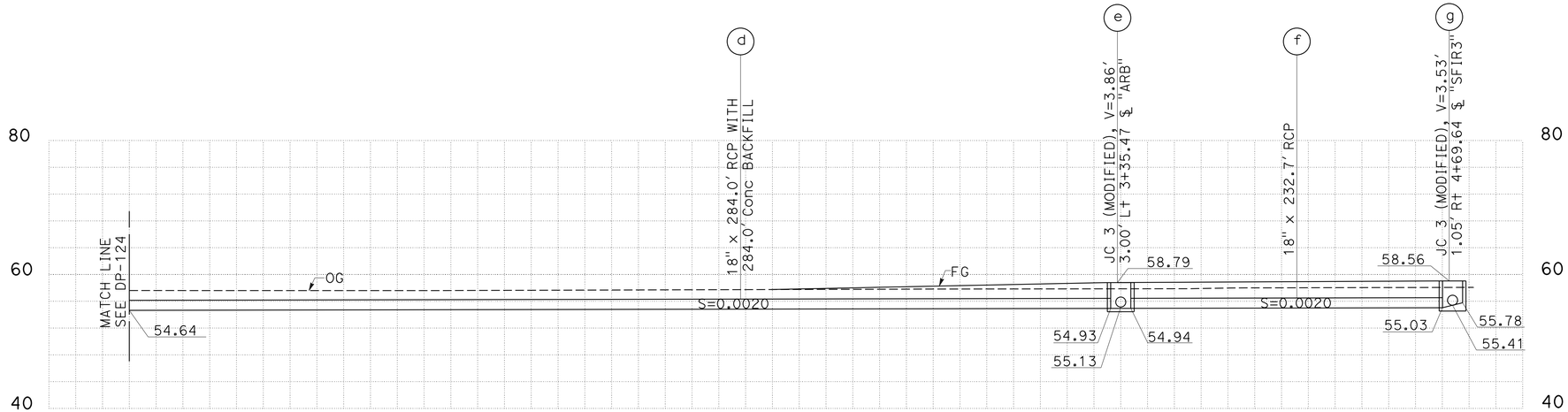
REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

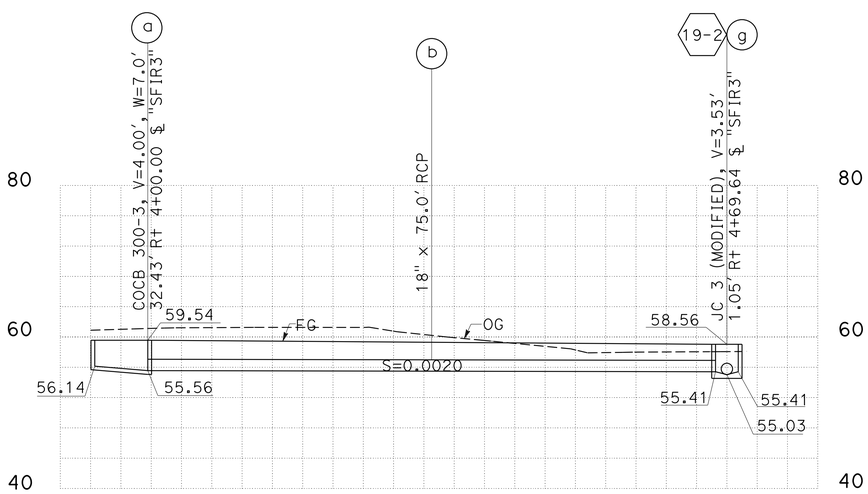
REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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.

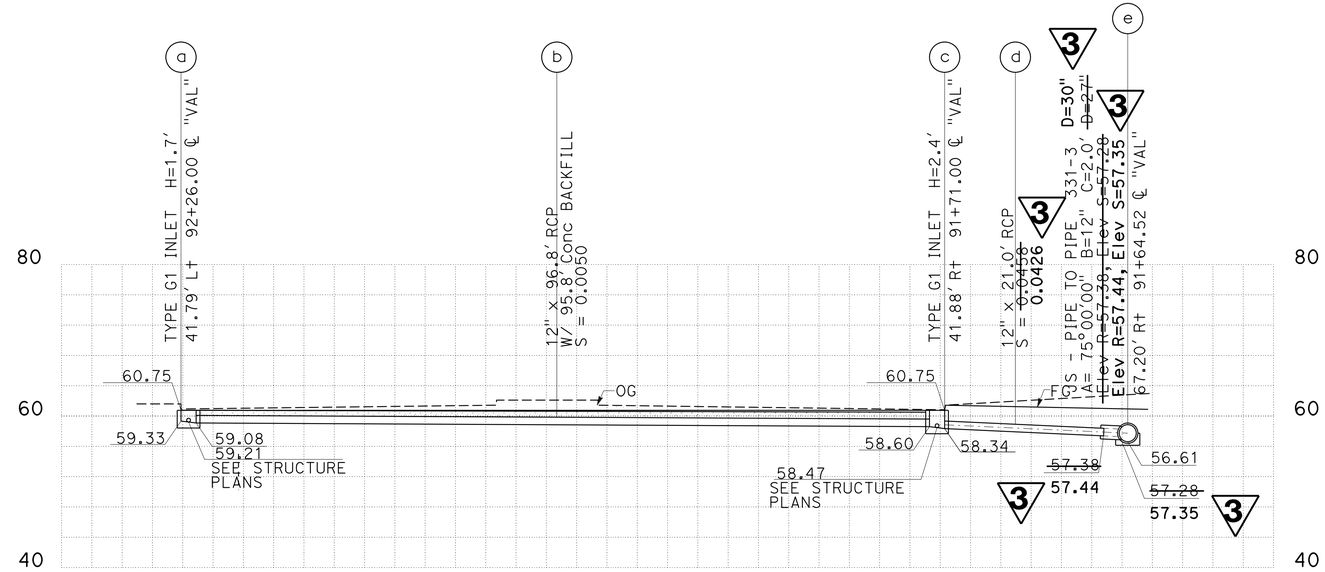
NOTE:
THE CONTRACTOR MUST VERIFY LOCATIONS AND ELEVATIONS OF EXISTING DRAINAGE SYSTEMS BEFORE COMMENCEMENT OF WORK.



DRAINAGE SYSTEM No. 19-2



DRAINAGE SYSTEM No. 19-3



DRAINAGE SYSTEM No. 19-4

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-125

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
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LAST REVISION 05-16-14
DATE PLOTTED => 10-APR-2016
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	333	1622

3

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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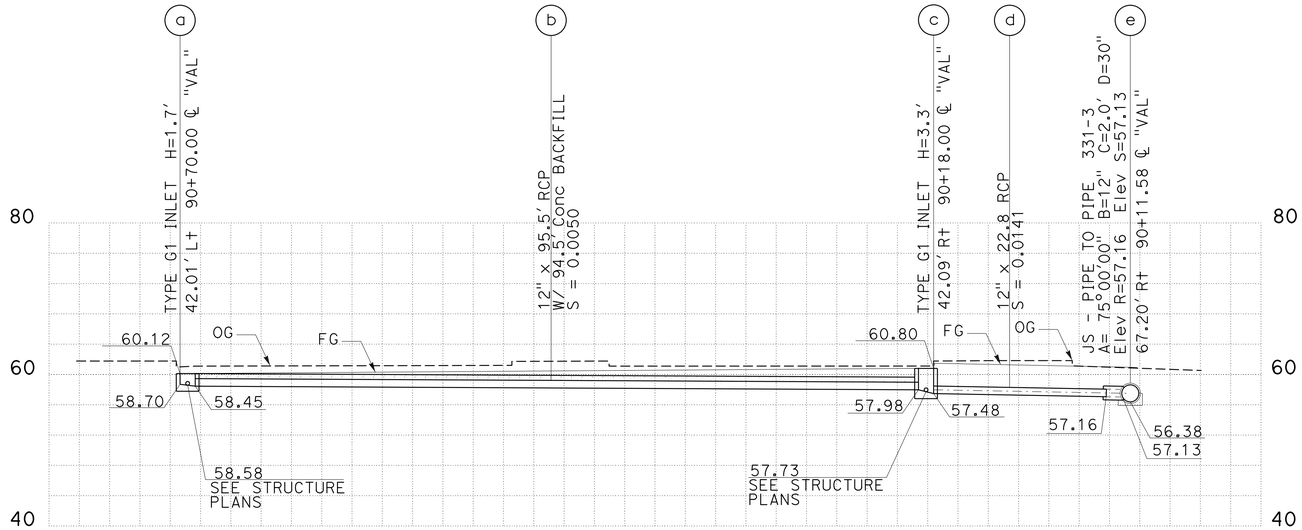
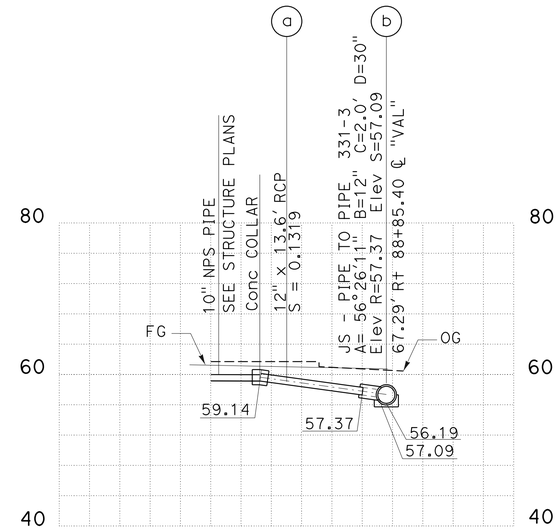
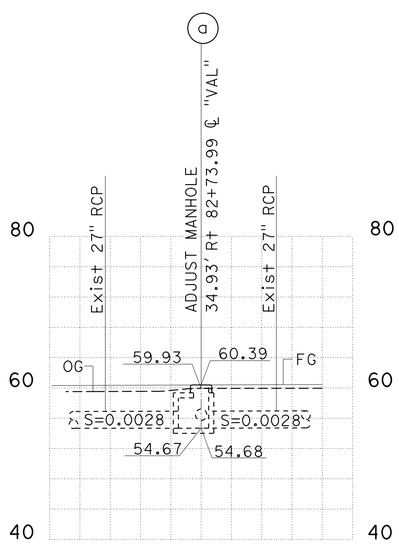


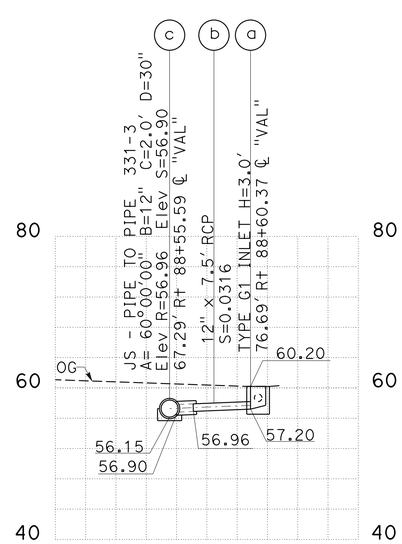
DRAINAGE SYSTEM No. 19-5



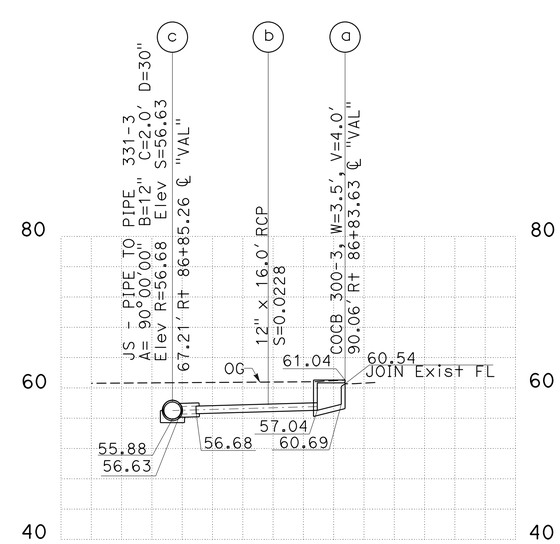
DRAINAGE SYSTEM No. 19-6



DRAINAGE SYSTEM No. 19-7



DRAINAGE SYSTEM No. 19-8



DRAINAGE SYSTEM No. 19-9

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE PROFILES

SCALE: Horiz 1" = 10'
Vert 1" = 10'

DP-126

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY / DATE REVISED

LAST REVISION 05-16-14
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	399	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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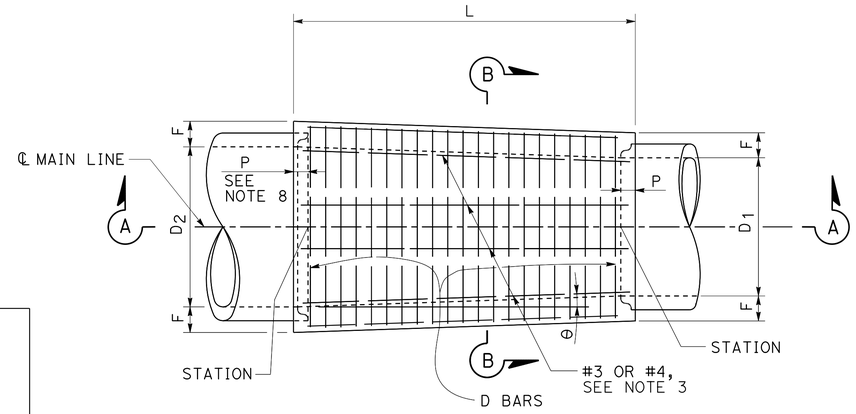
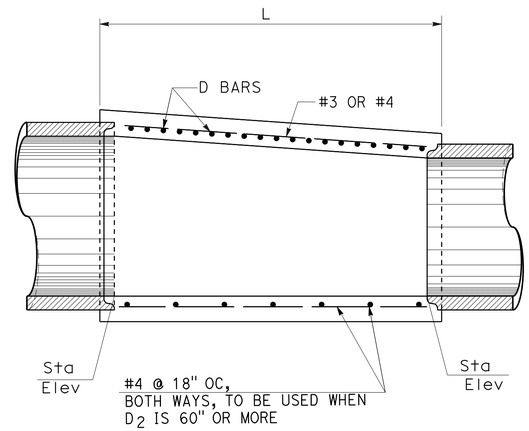
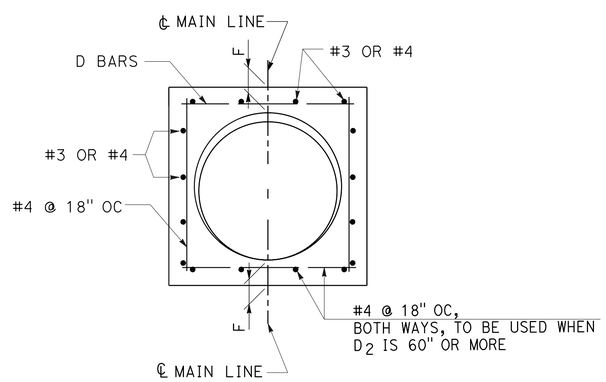


PLAN



SECTION A-A



SECTION B-B

TRANSITION STRUCTURE

TABLE

FOR DIMENSIONS AND BAR SIZES

D_2 OR B	F OR T	D OR F BARS	P (RCP)
12"	4"	#4 @ 6" OC	5"
15"	4 1/4"		
18"	4 1/2"		
21"	5"		
24"	5 1/4"		
27"	5 1/2"		
30"	6"		
33"	6 1/4"		
36"	6 1/2"		
39"	7"		
42"	7 1/2"	#5 @ 6" OC	
45"	7 3/4"		
48"	8"		
51"	8 1/2"		
54"	9"		
57"	9 1/4"		
60"	9 1/2"		
63"	10"		
66"	10 1/4"		
69"	10 3/4"		
72"	11"		
78"	11 3/4"		
84"	12 1/2"		
90"	13 1/4"	#6 @ 6" OC	
96"	14"		
102"	15 1/2"		
108"	16"		
114"	16 1/2"		
120"	17"		
126"	17"		
132"	17 1/2"		
138"	17 1/2"		
144"	18"		8"

NOTES:

1. VALUES FOR D_1, D_2, AND L ARE SHOWN ON THE PLANS.
2. FLOOR OF STRUCTURE SHALL BE STEEL TROWELED TO SPRING LINE.
3. REINFORCEMENT STEEL SHALL CONFORM TO ASTM A 615, GRADE 300, AND SHALL TERMINATE 1 1/2" CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN. LONGITUDINAL BARS SHALL BE #3 OR #4 @ 18" OC OR LESS.
4. TRANSITION STRUCTURE SHALL BE POURED IN ONE CONTINUOUS OPERATION, EXCEPT THAT THE CONTRACTOR SHALL HAVE THE OPTION OF PLACING AT THE SPRING LINE A CONSTRUCTION JOINT LONGITUDINAL KEYWAY.
5. THE LENGTH OF THE STRUCTURE MAY BE INCREASED AT THE OPTION OF THE CONTRACTOR TO MEET RCP ENDS, USING D BARS, LONGITUDINAL AND BOTTOM REINFORCEMENT IN EXTENDED PORTION OF SAME DIAMETER AND SPACING AS SPECIFIED IN THE TABLE, BUT ANY CHANGE IN THE LOCATION OF SPUR MUST BE APPROVED BY THE ENGINEER.
6. EMBEDMENT P SHALL BE AS SPECIFIED IN THE TABLE, UNLESS OTHERWISE SHOWN ON THE PLANS.
7. THE MAXIMUM COVER ABOVE THIS STRUCTURE SHALL BE 25'. IF THE COVER EXCEEDS 25' A SPECIAL STRUCTURE SHALL BE DESIGNED FOR THE COVER AND DETAILED ON THE PLANS.

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE DETAILS

NO SCALE

DD-56

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: WING YAN LEE
CHECKED BY: ROMULO ROBENIOL
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	407	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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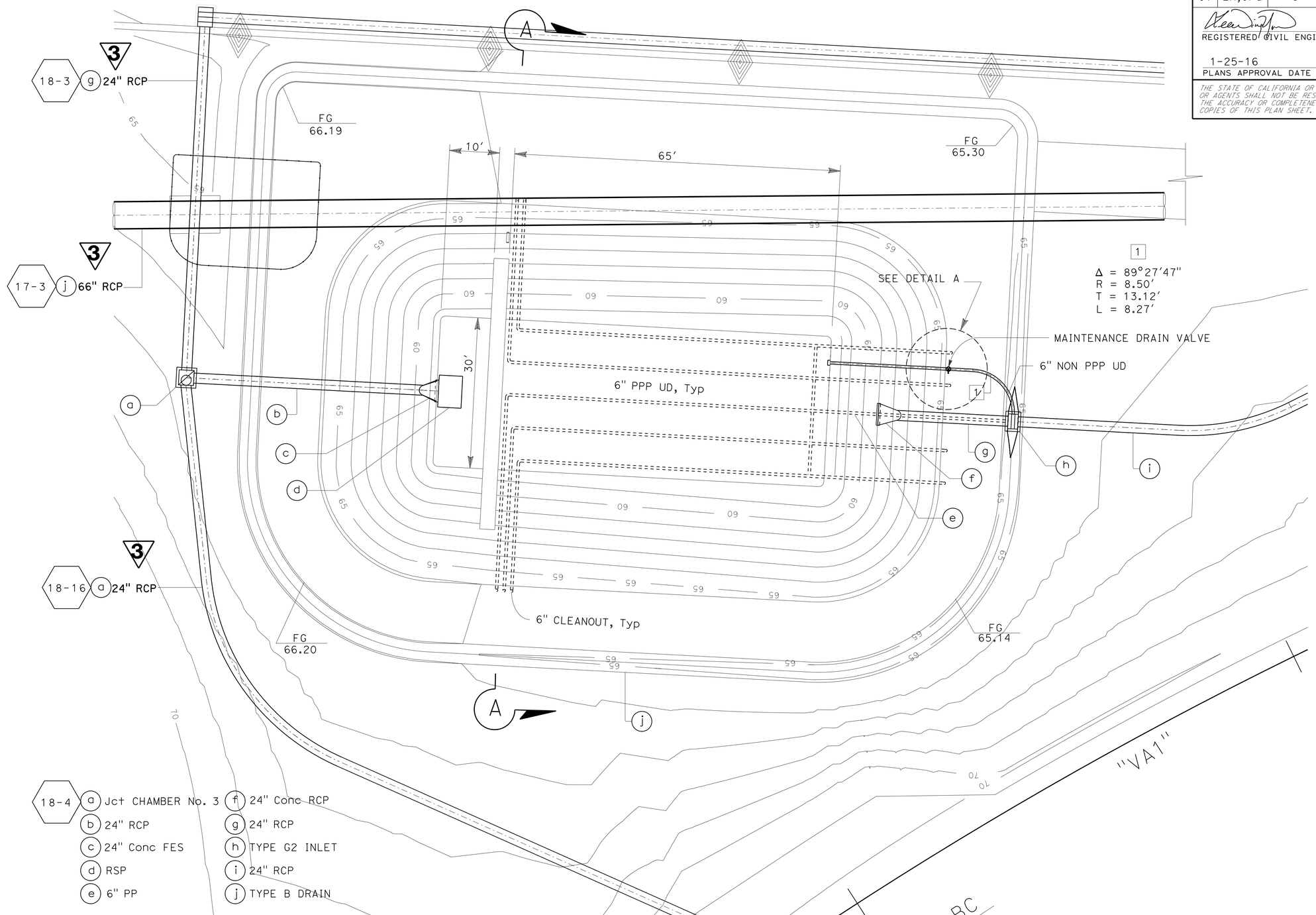
NOTE:
FOR DRAINAGE SYSTEMS SEE DRAINAGE PLANS.



18-4
- a Jct CHAMBER No. 3
- b 24" RCP
- c 24" Conc FES
- d RSP
- e 6" PP
- f 24" Conc RCP
- g 24" RCP
- h TYPE G2 INLET
- i 24" RCP
- j TYPE B DRAIN

EBASF
PARTIAL SEDIMENTATION

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE DETAILS

NO SCALE

DD- 64

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **HYDRAULICS**

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
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REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	408	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
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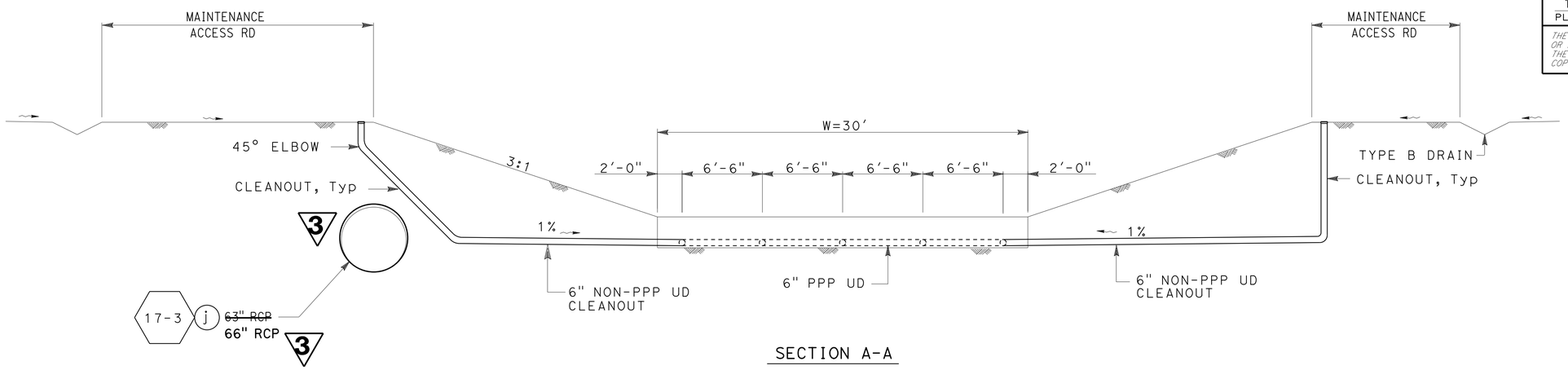
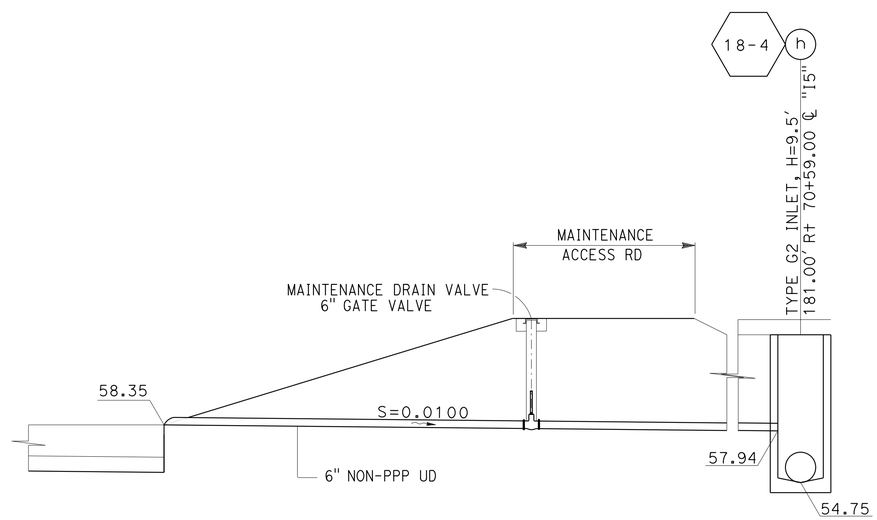


SECTION A-A



DETAIL A

NOTE: FOR INFORMATION AND DETAILS NOT SHOWN SEE STANDARD PLANS

EBASF
PARTIAL SEDIMENTATION

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE DETAILS

NO SCALE

DD- 65

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: ROMULO ROBENIOL
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	412	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

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NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-1	1-1	a																																				1										REMOVE GD-1 INLET	9995+23.23 ℄ "I5"
		b																																			325.0									2.8	REMOVE 24" RCP	
		c																																				1										REMOVE GD-1 INLET	14.50′ Lt 9998+51.41 ℄ "I5"
		d																																			259.5									2.7	REMOVE 24" RCP	
		e																																				1										REMOVE GD-1 INLET	29.96′ Lt 1+123.26 ℄ "I5"
		f																																			128.0									2.2	REMOVE 24" RCP	
		g																																				1										REMOVE GD-1 INLET	41.68′ Lt 2+54.59 ℄ "I5"
		h																																			133.0									2.8	REMOVE 24" RCP	
		i																																				1										REMOVE GD-1 INLET	54.49′ Lt 3+86.23 ℄ "I5"
		j																																			64.0									2.8	REMOVE 24" RCP	
		k																																				1										REMOVE GD-1 INLET	61.00′ Lt 4+50.25 ℄ "I5"
		l																																			64.0									2.8	REMOVE 24" RCP	
	1-2	a																																				1										REMOVE GD-1 INLET	92.90′ Lt 9995+85.85 ℄ "I5"
		b																																			191.0									2.7	REMOVE 24" RCP	
		c																																				1										REMOVE GD-1 INLET	80.81′ Lt 9997.82.72 ℄ "I5"
		d																																			127.0									3.8	REMOVE 24" RCP	
		e																																				1										REMOVE GD-1 INLET	79.60′ Lt 9999+14.16 ℄ "I5"
		f																																			74.5									3.9	REMOVE 24" RCP	
		g																																		1.20											REMOVE STRAIGHT HEADWALL	107.06′ Lt 9998+40.42 ℄ "I5"
		h																																		20.05											REMOVE Conc RSP	
SHEET TOTAL																																				21.25	1,366.0	9											

(N) = NOT A separate PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES DQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
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07	LA,Ora	5	0.0/1.5, 44.3/44.4	413	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

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SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-1	1-3	a																																					1									REMOVE MH	18.77′ R+ 46+08.64 ℄ "NFIR1"
	1-4	a																																			83.0									4.8	REMOVE 18" CMP	
		b																																						1								REMOVE COCB	28.25′ L+ 3+24.12 ℄ "KNO"
D-2	2-1	a																																				1									REMOVE TYPE GT1 INLET	17.29′ R+ 4+32.77 ℄ "SFIR1"
		b																																	71.40												REMOVE 6′ x 1′ RCB	
		c																																				1									REMOVE TYPE GT1 INLET	17.56′ R+ 6+14.39 ℄ "SFIR1"
		d																																	70.60												REMOVE 6′ x 1′ RCB	
		e																																				1									REMOVE TYPE GT1 INLET	17.48′ R+ 8+43.65 ℄ "SFIR1"
	2-2	a																																				1									REMOVE GD-2 INLET	4.77′ L+ 5+93.62 ℄ "I5"
		b																																	47.94												REMOVE 4′ x 1′ RCB	
		c																																				1									REMOVE GD-2 INLET	16.34′ L+ 7+53.73 ℄ "I5"
		d																																	36.86												REMOVE 4′ x 1′ RCB	
		e																																				1									REMOVE GD-2 INLET	29.25′ L+ 8+77.65 ℄ "I5"
		f																																			213.4								4.3	REMOVE 18" RCP	
		g																																				1									REMOVE INLET	29.62′ L+ 10+98.32 ℄ "I5"
SHEET TOTAL																																			226.80	296.4		7	1	1								

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
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REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
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NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-2	2-3	a																																			133.0										0.4	REMOVE 29" x 18" CMP ARCH	
	2-4	a																																			324.0										4.2	REMOVE 2-24" CMP	
	2-5	a																																			210.0										4.5	REMOVE 30" CMP	
	2-6	a																																		17.56												REMOVE PARKWAY DRAIN	
	2-7	a																																			29.6												REMOVE 2-4" CIP	
D-3	3-1	a																																			160.1										6.0	REMOVE 30" CMP	
		b																																				1										REMOVE INLET	22.26′ Lt 13+94.00 ℄ "I5"
		c																																			74.9										5.0	REMOVE 30" CMP	
	3-2	a																																				1										RREMOVE INLET	17.00′ Rt 14+84.95 ⅊ "SFIR1"
		b																																		100.62												REMOVE 6′ x 2.5′ RCB	
		c																																				1										REMOVE INLET	48.68′ Rt 14+24.57 ℄ "I5"
	3-3	a																																			206.4										5.0	REMOVE 30" CMP	
	3-4	a																																		0.61												REMOVE TRANSITION STRUCTURE	
		b																																			33.8										12.0	REMOVE 12" CMP	
		c																																				1										REMOVE INLET	16.98′ Lt 3+44.21 ⅊ "ACC2"
SHEET TOTAL																																				118.79	1,171.8	4											

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	415	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-3	3-5	a																																			30.7									6.0	REMOVE 60" RCP	
		b																																													REMOVE INLET STRUCTURE	40.61' L+ 17+65.97 ℄ "SFIR1"
		c																																	10.44												REMOVE TRANSITION STRUCTURE	
	3-6	a																																			385.7									8.0	REMOVE 81" RCP	
		b																																				1									REMOVE MH No. 3	24.62' L+ 67+31.18 ℄ "NFIR1"
		c																																			208.3									4.2	REMOVE 81" RCP	
		d																																	8.75												REMOVE TRANSITION STRUCTURE	
	3-7	a																																													REMOVE HEADWALL	78.48' R+ 20+81.78 ℄ "I5"
		b																																			103.5									4.5	REMOVE 24" CMP	
		c																																				1									REMOVE INLET (PLUGGED)	26.58' L+ 20+91.41 ℄ "I5"
		d																																			53.0									4.5	REMOVE 24" CMP	
		e																																				1									REMOVE INLET	82.43' L+ 20+96.89 ℄ "I5"
		f																																			61.3									3.0	REMOVE 24" CMP	
	3-8	a																																			17.4									15.0	REMOVE 30" RCP	
		b																																			162.7									8.0	REMOVE 30" RCP	
		c																																				1									REMOVE JUNCTION CHAMBER	6.80' L+ 20+17.30 ℄ "SFIR1"
		d																																			274.0									6.0	REMOVE 18" CMP	
		e																																				1									REMOVE INLET (CAPPED)	18.34' R+ 23.47.23 ℄ "SFIR1"
		f																																			272.0									4.0	REMOVE18" CMP	
		g																																				1									REMOVE INLET (CAPPED)	40.64' R+ 26+21.61 ℄ "SFIR1"
SHEET TOTAL																																			22.95	1,568.6	5	1										

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	416	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-3	3-8	h																																			272.0										2.5	REMOVE18" CMP	
		i																																				1										REMOVE INLET (CAPPED)	60.27′ R+ 28+97.51 ℄ "SFIR1"
		j																																			58.0										2.3	REMOVE18" CMP	
		k																																				1										REMOVE INLET (CAPPED)	22.47′ L+ 29+16.86 ℄ "I5"
		l																																			58.6										4.0	REMOVE 18" CMP	
		m																																				1										REMOVE INLET (CAPPED)	39.05′ R+ 29+13.23 ℄ "I5"
		n																																			62.0										4.0	REMOVE 18" CMP	
		o																																				1										REMOVE INLET (CAPPED)	103.44′ R+ 29+09.46 ℄ "I5"
	3-9	a																																			12.0										3.3	REMOVE 12" PVC	
		b																																						1								REMOVE COCB, W=7′	12.41′ R+ 65+78.38 ℄ "NFIR1"
		c																																			226.2										3.5	REMOVE 24" RCP	
		d																																						1								REMOVE COCB, W=3.5′	32.22′ R+ 68+61.44 ℄ "NFIR1"
		e																																			6.5										4.0	REMOVE 24" RCP	
D-4	4-1	a																																						1								REMOVE COCB, W=7′	26.86′ L+ 72+90.36 ℄ "NFIR1"
		b																																			41.8										6.2	REMOVE 18" RCP	
	4-2	a																																				1										REMOVE CSP FLARE INLET	13.13′ L+ 77+12.15 ℄ "NFIR1"
	4-3	a																																				1										REMOVE CSP FLARE INLET	53.14′ R+ 77+33.87 ℄ "NFIR1"
SHEET TOTAL																																					737.1	6		3									

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	417	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-4	4-4	a																																		0.45												REMOVE CURB DRAIN	73.15′ L+ 27+77.53 ℄ "I5"
		b																																			26.7											REMOVE 4" CIP	
	4-5	a																																		0.45												REMOVE CURB DRAIN	70.26′ L+ 28+22.77 ℄ "I5"
		b																																			25.7											REMOVE 4" CIP	
	4-6	a																																		0.44												REMOVE CURB DRAIN	64.65′ L+ 29+19.25 ℄ "I5"
		b																																			25.6											REMOVE 4" CIP	
D-5	5-1	a																																		1.20												REMOVE HEADWALL	4.34′ L+ 42+85.96 ℄ "I5"
		b																																			90.0										3.7	REMOVE 24" CMP	
		c																																				1										REMOVE JUNCTION CHAMBER	87.66′ R+ 42+85.41 ℄ "I5"
		d																																			96.0										4.2	REMOVE 18" CMP	
		e																																		0.91												REMOVE HEADWALL	185.14′ R+ 42+84.82 ℄ "I5"
	5-2	a																																		0.40												REMOVE CURB DRAIN	36.54′ L+ 34+82.58 ℄ "I5"
		b																																			63.2											REMOVE 4" CIP	
	5-3	a																																		0.47												REMOVE CURB DRAIN	17.24′ L+ 42+10.00 ℄ "I5"
		b																																			93.2											REMOVE 4- 4" CIP	
																																						1										REMOVE INLET	40.50′ L+ 42+10.00 ℄ "I5"
SHEET TOTAL																																				4.32	420.4	2												

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE QUANTITIES
DQ-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	418	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3 66" RCP	~~69" RCP~~ 3 72" RCP	~~81" RCP~~ 3 84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-6	6-1	a																																		6.93											REMOVE HEADWALL	14.90′ Lt 45+35.87 ℄ "I5"
		b																																		185.40											REMOVE 2-6′ x 4′ RCB	
		c																																		6.93											REMOVE HEADWALL	192.19 Rt 45+37.13 ℄ "I5"
	6-2	a																																		0.42											REMOVE CURB DRAIN	20.95′ Lt 50+06.14 ℄ "I5"
		b																																			102.8										REMOVE 4" CIP	
	6-3	a																																		0.75											REMOVE Prkway DRAIN	28.39′ Lt 52+93.76 ℄ "I5"
		b																																		0.40											REMOVE Conc GUTTER	
D-7	7-1	a																																		1.20											REMOVE HEADWALL	107.23′ Lt 57+48.80 ℄ "I5"
		b																																			45.5									0.8	REMOVE 24" CMP	
		c																																				1									REMOVE INLET	84.25′ Lt 57+88.18 ℄ "I5"
		d																																			101.1									0.4	REMOVE 18" CMP	
	7-2	a																																			87.0									3.1	REMOVE 24" CMP	
		b																																				1									REMOVE JC-3-C Mod	47.21′ Rt 60+28.97 ℄ "I5"
		c																																			90.0									3.1	REMOVE 24" CMP	
		d																																		1.20											REMOVE HEADWALL	90.00′ Rt 60+48.97 ℄ "I5"
		e																																		4.47											REMOVE Trap Conc CHANNEL	
SHEET TOTAL																																				207.70	426.4	2										

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016 DRAINAGE QUANTITIES

DQ-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR MARIA QUINONEZ

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	419	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-7	7-3	a																																			82.0										2.4	REMOVE 36" x 22" CMPA	
		b																																					1									REMOVE MANHOLE	158.46' Lt 60+36.10 ℄ "I5"
		c																																			105.6										2.1	REMOVE 2-24" RCP	
		d																																	1.72														REMOVE HEADWALL	107.90' Lt 60+47.30 ℄ "I5"
	7-4	a																																				1										REMOVE INLET	79.57' Rt 60+14.21 ℄ "I5"
		b																																			22.3										1.1	REMOVE 18" RCP	
		c																																	0.91														REMOVE HEADWALL	9.74' Rt 60+23.67 ℄ "I5"
		d																																	3.63														REMOVE Trap CHANNEL	
	7-5	a																																				1										REMOVE CATCH BASIN	95.95' Rt 58+84.40 ℄ "I5"
		b																																			28.2										1.9	REMOVE 18" RCP	
D-7	7-6	a																																	2.34														REMOVE HEADWALL	33.53' Rt 57+10.21 ⅊ "VA4"
		b																																	21.04														REMOVE Trap Conc CHANNEL	
		c																																	1.20														REMOVE HEADWALL	42.76' Rt 58+52.03 ⅊ "VA4"
		d																																			157.0										2.5	REMOVE 24" RCP	
		e																																	1.20														REMOVE HEADWALL	37.37' Rt 60+04.43 ⅊ "VA4"
		f																																	64.40														REMOVE Trap Conc Channel	
		g																																	1.20														REMOVE HEADWALL	2.91' Rt 61+97.42 ⅊ "VA4"
SHEET TOTAL																																			97.64	395.1	2	1											

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	420	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-7	7-6	h																																			32.1										5.1	REMOVE 24" RCP	
		i																																		24.00											REMOVE JUNCTION STRUCTURE	10.30' Lt 62+42.41 ℄ "VA4"
		j																																			161.1										2.7	REMOVE 54" RCP	
		k																																		5.20											REMOVE JUNCTION STRUCTURE	43.14' Lt 64+16.98 ℄ "VA4"
		l																																			277.6										3.9	REMOVE 60" RCP	
		m																																		2.00											REMOVE JUNCTION STRUCTURE	72.85' Rt 66+99.27 ℄ "I5"
		n																																			242.0										5.2	REMOVE 63" RCP	
		o																																		12.70											REMOVE Trans STRUCTURE	58.72' Rt 69+44.45 ℄ "I5"
		p																																			580.3										8.7	REMOVE 69" RCP	
		q																																				1										REMOVE MANHOLE	47.10' Rt 75+38.32 ℄ "I5"
		r																																			268.6										9.4	REMOVE 69" RCP	
	7-7	a																																		2.73											REMOVE HEADWALL	49.45' Lt 66+92.52 ℄ "I5"
		b																																		49.23											REMOVE 4' x 2' RCB	
		c																																		17.86											REMOVE 4' x 2' RCB	
		d																																				1										REMOVE INLET	79.08' Rt 64+19.28 ℄ "I5"
		e																																		1.53											REMOVE 4' x 5' RCB	
SHEET TOTAL																																				115.25	1,561.7	1	1										

(N) = NOT A separate PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016 DRAINAGE QUANTITIES

DQ-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

NOTE:

JOINTS ARE STANDARD JOINT TYPE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	421	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-7	7-8	a																																					1										REMOVE COCB, W=3.5′	99.48′ R+ 63+74.57 ℄ "I5"
		b																																			44.6									1.2	REMOVE 18" RCP	
		c																																					1										REMOVE COCB, W=10′	133.06′ R+ 104+19.50 ℄ "I5"
		d																																			43.8									2.0	REMOVE 18" RCP	
		e																																		21.10											REMOVE Conc CHANNEL	
	7-9	a																																					1										REMOVE COCB, W=5′	68.97′ L+ 54+69.79 ℄ "I5"
		b																																			267.3									2.3	REMOVE 18" RCP	
		c																																				1										REMOVE MANHOLE	155.69′ L+ 57+22.30 ℄ "I5"
		d																																			219.5									2.3	REMOVE 18" RCP	
		e																																					1										REMOVE COCB, W=7′	86.22′ L+ 59+24.01 ⅊ "SFIR1"
		f																																			110.3									3.8	REMOVE 18" RCP	
	7-10	a																																					1										REMOVE COCB, W=5′	40.48′ L+ 59+58.62 ⅊ "SFIR1"
		b																																			89.2									3.0	REMOVE 18" RCP	
	7-11	a																																					1										REMOVE COCB, W=3.5′	15.30′ R+ 62+37.42 ⅊ "VA4"
		b																																			8.0									4.0	REMOVE 18" RCP	
		c																																			50.8									2.7	REMOVE 48" RCP	
	7-12	a																																					1										REMOVE COCB, W=3.5′	141.47′ L+ 64+51.60 ℄ "SFIR1"
		b																																			27.5									3.8	REMOVE 24" RCP	
SHEET TOTAL																																				21.10	861.0		1	7									

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	422	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-7	7-13	a																																		0.45												REMOVE CURB DRAIN	66.67′ Rt 54+11.90 ℄ "VA3"
		b																																			88.1											REMOVE 4" CIP	
	7-14	a																																		0.45												REMOVE CURB DRAIN	46.67′ Rt 54+64.85 ℄ "VA3"
		b																																			15.8											REMOVE 4" CIP	
		c																																				1										REMOVE INLET	36.54′ Rt 54+52.74 ℄ "VA3"
	7-15	a																																		0.37												REMOVE CURB DRAIN	0.34′ Lt 55+78.16 ℄ "VA3"
		b																																			23.4											REMOVE 4" CIP	
	7-16	a																																		0.54												REMOVE CURB DRAIN	10.30′ Lt 56+02.38 ℄ "VA3"
		b																																			31.5											REMOVE 3-4" CIP	
		c																																				1										REMOVE INLET	20.82′ Lt 56+02.74 ℄ "VA3"
	7-17	a																																		2.15												REMOVE Conc V-DITCH	
		b																																		5.10												REMOVE Conc V-DITCH	
		c																																		2.20												REMOVE Conc V-DITCH	
SHEET TOTAL																																				11.26	158.8	2											

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-11

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	423	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-8	8-1	a																																				1										REMOVE INLET	49.45′ L+ 66+92.52 ℄ "I5"
		b																																		34.26											REMOVE 3′ x 2′ RCB	
		c																																		10.17											REMOVE 3′ x 2′ RCB	
		d																																						1							REMOVE CATCH BASIN	112.00′ R+ 67+00.88 ℄ "I5"
	8-2	a																																				1									REMOVE INLET	61.67′ L+ 69+42.11 ℄ "I5"
		b																																			471.2									4.0	REMOVE 4-24" CMP	
		c																																			540.0									2.6	REMOVE 4-24" CMP	
		d																																		1.50											REMOVE HEADWALL	99.14′ R+ 69+51.10 ℄ "I5"
	8-3	a																																				1									REMOVE GD-1 INLET	94.45′ L+ 77+18.00 ℄ "I5"
		b																																			194.7									2.3	REMOVE 24" RCP	
		c																																				1									REMOVE GD-1 INLET	89.04′ L+ 75+20.00 ℄ "I5"
		d																																			197.2									2.5	REMOVE 24" RCP	
		e																																				1									REMOVE GD-1 INLET	81.57′ L+ 73+20.00 ℄ "I5"
		f																																			197.2									2.0	REMOVE 24" RCP	
		g																																				1									REMOVE GD-1 INLET	72.18′ L+ 71+20.00 ℄ "I5"
		h																																			83.4									2.5	REMOVE 24" RCP	
		i																																				1									REMOVE GD-1 INLET	67.89′ L+ 70+32.00 ℄ "I5"
		j																																			113.3									4.0	REMOVE 24" RCP	
SHEET TOTAL																																				45.93	1,797.0	7		1								

(N) = NOT A separate PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	424	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-8	8-3	k																																				1										REMOVE GD-1 INLET	48.87′ R+ 70+32.00 ℄ "I5"
		l																																			2.4									8.8	REMOVE 24" RCP	
		m																																			5.3									1.8	REMOVE 18" RCP	
		n																																				1										REMOVE GD-1 INLET	52.96′ R+ 70+40.00 ℄ "I5"
	8-4	a																																				1										REMOVE GD-1 INLET	43.75′ R+ 72+26.00 ℄ "I5"
		b																																			172.1									5.6	REMOVE 24" RCP	
		c																																				1										REMOVE GD-1 INLET	54.91′ R+ 74+00.00 ℄ "I5"
		d																																			9.6									12.6	REMOVE 24" RCP	
	8-5	a																																				1										REMOVE TYPE G3 INLET	47.81′ L+ 73+63.90 ⅊ "VA1"
		b																																			48.0									2.4	REMOVE 18" RCP	
		c																																				1										REMOVE TYPE G3 INLET	3.65′ L+ 73+90.39 ⅊ "VA1"
		d																																			38.1									2.2	REMOVE 18" RCP	
		e																																				1										REMOVE JC 3-C	35.50′ R+ 73+84.87 ⅊ "VA1"
		f																																		12.50											REMOVE TYPE B DRAIN	
		g																																			106.5									6.3	REMOVE 18" RCP	
		h																																				1										REMOVE TYPE G3 INLET	9.46′ L+ 74+98.97 ⅊ "VA1"
		i																																			197.2									10.8	REMOVE 18" RCP	
		j																																				1										REMOVE GD-1 INLET	14.96′ R+ 76+97.92 ⅊ "VA1"
SHEET TOTAL																																				12.50	579.2	9											

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE QUANTITIES
DQ-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	425	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-8	8-5	k																																			137.5										3.9	REMOVE 18" RCP	
		l																																				1										REMOVE GD-1 INLET	21.48′ R+ 78+38.33 ℄ "VA1"
		m																																			49.2										17.5	REMOVE 24" RCP	
	8-6	a																																						1									REMOVE COCB, W=3.5′	15.18′ R+ 73+04.16 ℄ "VA1"
		b																																			53.9										2.3	REMOVE 18" RCP	
		c																																				1										REMOVE JC 3	10.10′ L+ 73+53.40 ℄ "VA1"
		d																																			82.3										7.5	REMOVE 18" RCP	
		e																																			90.8										2.8	REMOVE 18" RCP	
		f																																						1								REMOVE COCB, W=3.5′	77.05′ R+ 73+91.16 ℄ "VA1"
	8-7	a																																						1								REMOVE COCB, W=3.5′	114.80′ R+ 67+36.56 ℄ "SFIR1"
		b																																			20.9											REMOVE 18" RCP	
		c																																		1.05												REMOVE SIDEWALK CULVERT TRANSITION	91.02′ R+ 67+27.32 ℄ "SFIR1"
	8-8	a																																			18.7											REMOVE 4" CIP	
	8-9	a																																			52.8											REMOVE 4-4" CIP	
	8-10	a																																			48.0											REMOVE 4-4" CIP	
SHEET TOTAL																																				1.05	554.1	2		3									

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	426	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-8	8-11	a																																			24.0											REMOVE 4-4" CIP	
		b																																				1										REMOVE INLET	92.53′ R+ 70+92.13 ℄ "I5"
	8-12	a																																			24.0											REMOVE 4-4" CIP	
		b																																				1										REMOVE INLET	89.54′ R+ 71+54.45 ℄ "I5"
	8-13	a																																			16.0											REMOVE 4" CIP	
	8-14	a																																			35.6											REMOVE 4" CIP	
	8-15	a																																			82.5											REMOVE 5-4" CIP	
	8-16	a																																		1.25												REMOVE PARKWAY DRAIN	23.90′ R+ 74+47.43 ℄ "Fwy Dr"
D-9	9-1	a																																					1									REMOVE MANHOLE	35.03′ R+ 85+73.48 ℄ "VAL"
		b																																			296.1										2.4	REMOVE 27" RCP	
		c																																					1									REMOVE MANHOLE	34.98 R+ 88+74.13 ℄ "VAL"
		d																																			474.8										4.0	REMOVE 27" RCP	
		e																																					1									REMOVE MANHOLE	51.25′ R+ 94+66.30 ℄ "VAL"
		f																																		5.66												REMOVE 5′ x 3′ RCB	
		g																																			166.2										4.0	REMOVE 2-24" RCP	
		h																																		2.72												REMOVE HEADWALL	72.11′ R+ 95+50.35 ℄ "VAL"
SHEET TOTAL																																				9.63	1,119.2	2	3										

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	427	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3 66" RCP	~~69" RCP~~ 3 72" RCP	~~81" RCP~~ 3 84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-9	9-2	a																																						1									REMOVE COCB, W=7′	3.00′ L† 6+68.47 ℄ "ARB"
	9-3	a																																		1.37													REMOVE PARKWAY DRAIN	42.04′ R† 86+84.04 ℄ "VAL"
	9-4	a																																				1											REMOVE INLET	76.69′ R† 88+60.37 ℄ "VAL"
		b																																			42.0												REMOVE 12" RCP	
D-10	10-1	a																																						1									REMOVE COCB, W=10′	30.93′ R† 67+10.35 ℄ "NFIR2"
		b																																			62.0										1.2	REMOVE 30" RCP	
		c																																						1									REMOVE COCB, W=10′	31.07′ L† 67+09.96 ℄ "NFIR2"
		d																																			14.9										2.5	REMOVE 30" RCP	
	10-2	a																																						1									REMOVE COCB, W=3.5′	40.86′ L† 67+00.25 ℄ "NFIR2"
		b																																			7.0										3.0	REMOVE 12" RCP	
	10-3	a																																			142.4										3.5	REMOVE 36" RCP	
		b																																					1									REMOVE MH No. 4	31.58′ R† 107+08.68 ℄ "VAL"
		c																																			298.3										2.2	REMOVE 30" RCP	
		d																																					1									REMOVE MH No. 1	31.59′ R† 110+11.84 ℄ "VAL"
		e																																			4.0										2.4	REMOVE 24" RCP	
SHEET TOTAL																																				1.37	570.6	1	2	4										

(N) = NOT A separate PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	428	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-10	10-4	a																																						1								REMOVE COCB, W=10′	39.91′ R+ 107+18.59 ℄ "VAL"
		b																																			7.0								2.2	REMOVE 24" RCP	
	10-5	a																																						1								REMOVE COCB, W=10′	40.03′ R+ 110+12.01 ℄ "VAL"
		b																																			9.2								2.0	REMOVE 24" RCP	
	10-6	a																																		0.80											REMOVE PARKWAY DRAIN	30.83′ R+ 65+71.36 ℄ "FIR2"
		b																																		0.60											REMOVE 2.75′ x 0.6′ RECTANGULAR CHANNEL	
	10-7	a																																		1.70											REMOVE PARKWAY DRAIN	40.34′ L+ 106+86.58 ℄ "VAL"
	10-8	a																																		1.30											REMOVE PARKWAY DRAIN	40.00′ L+ 107+86.65 ℄ "VAL"
		b																																			35.3										REMOVE 4" CIP	
		c																																				1									REMOVE INLET	62.45′ L+ 108+19.54 ℄ "VAL"
SHEET TOTAL																																				4.40	51.5	1		2									

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	429	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-10	10-9	a																																		1.35											REMOVE CURB DRAIN	
		b																																			48.4											REMOVE 4-4" CIP	
		c																																				1										REMOVE INLET	
	10-10	a																																		2.00											REMOVE CURB DRAIN	
		b																																			71.2											REMOVE 4-4" CIP	
		c																																				1										REMOVE INLET	
	10-11	a																																				1										REMOVE INLET	
		b																																			35.5											REMOVE 12" RCP	
		c																																		0.60											REMOVE HEADWALL	
SHEET TOTAL																																				3.95	155.1	3											

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	430	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-11	11-1	a	3.9	1.61						580																																2						GD-1 INLET	90.17′ Lt 9995+85.00 ℄ "I5"
		b											74.1																																	2.0	24" RCP	
		c	3.8	1.58						580																																2						GD-1 INLET	88.50′ Lt 9996+63.00 ℄ "I5"
		d											134.1																																	1.7	24" RCP	
		e	4.1	1.67						580																																2						GD-1 INLET	88.50′ Lt 9998+02.00 ℄ "I5"
		f											44.4																																	2.0	24" RCP	
		g	6.0	2.22						580																																2						GD-1 INLET	88.50′ Lt 9998+50.00 ℄ "I5"
		h					1.80					47.4																																		2.0	18" RCP W/ Conc Bkf	
		i		3.60																																											PIPE "L" HEADWALL Mod	118.75′ Lt 9998+17.63 ℄ "I5"
		j																														4.00	21.5															CONCRETED RSP	
		k																																22.7														CABLE RAILING	
	11-2	a	5.0	1.82						326														97.1																		1						TYPE G2 INLET	1.50′ Rt 9995+23.00 ℄ "I5"
		b																																														18" SCSP	
		c											97.1																																	2.8	24" RCP	
		d	5.2	1.87						326																																1						TYPE G2 INLET	1.50′ Rt 9996+23.00 ℄ "I5"
		e																						97.1																								18" SCSP	
		f											97.1																																	2.8	24" RCP	
		g	5.2	1.87						326																																1						TYPE G2 INLET	1.50′ Rt 9997+23.00 ℄ "I5"
		h																						97.1																								18" SCSP	
		i											97.1																																	2.8	24" RCP	
		j	5.2	1.87						326																																1						TYPE G2 INLET	1.50′ Rt 9998+23.00 ℄ "I5"
SHEET TOTAL				18.11			1.80			3,624		47.4	543.9											291.3								4.00	21.5		22.7							12							

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-19

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR MARIA QUINONEZ
CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	431	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-11	11-2	k																						97.1																								18" SCSP	
		l											97.1																																	2.8	24" RCP	
		m	5.2	1.87						326																																1					TYPE G2 INLET	1.50′ R† 9999+23.00 ℄ "I5"
		n																						96.7																								18" SCSP	
		o											96.7																																	2.8	24" RCP	
		p	5.2	1.87						326																																1					TYPE G2 INLET	1.50′ R† 0+32.00 ℄ "I5"
		q																						97.1																								18" SCSP	
		r											97.1																																	2.8	24" RCP	
		s	5.2	1.87						326																																1					TYPE G2 INLET	1.50′ R† 1+32.00 ℄ "I5"
		†																						97.1																								18" SCSP	
		u											97.1																																	2.3	24" RCP	
		v	5.2	1.87						326																																1					TYPE G2 INLET	1.50′ R† 2+32.00 ℄ "I5"
		w																						97.1																								18" SCSP	
		x											97.1																																	2.3	24" RCP	
		y	5.2	1.87						326																																1					TYPE G2 INLET	1.50′ R† 3+32.00 ℄ "I5"
		z																						97.1																								18" SCSP	
D-12		a1											97.1																																	2.3	24" RCP	
		b1	5.2	1.87						326																																1					TYPE G2 INLET	1.50′ R† 4+32.00 ℄ "I5"
		c1																						61.0																								18" SCSP	
		d1											61.0																																	2.3	24" RCP	
		e1	5.1	1.85						326																																1					TYPE G2 INLET	1.50′ R† 4+96.00 ℄ "I5"
SHEET TOTAL				13.07						2,282			643.2											643.2																		7						

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-20

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	432	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

3

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No. ⬡	DRAINAGE SYSTEM No. ○	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA			
D-11	11-3	a	5.2	3.15						435															2.9																	1					MH 321-2	22.22′ R+ 46+08.95 ℄ "NFIR1"
		b										60.1																																		7.5	18" RCP	
		c	4.2	2.77						435															0.9																	1					MH 321-2	10.60′ R+ 46+70.50 ℄ "NFIR1"
		d		1.05																																										TS-PIPE TO PIPE 340-2	10.60′ R+ 46+95.39 ℄ "NFIR1"
		e	3.5	2.47						435															0.9																	1					MH 321-2	10.60′ R+ 47+60.00 ℄ "NFIR1"
		f										24.2																																		6.7	18" RCP	
		g	4.5	2.48						115																																1					COCB 300-3, W=7.0′	10.60′ R+ 47+72.10 ℄ "NFIR1"
		h										85.5																																		4.0	18" RCP	
	11-4	a										112.5																																		2.5	18" RCP	
		b	4.5	2.48						115																																1					COCB 300-3, W=7.0′	28.29′ L+ 3+64.92 ℄ "KNO"
	11-5	a										24.3																																		3.8	18" RCP	
		b	4.5	4.88	0.59					2240																																			4		COCB WITH GRATING(S) 302-3,W=13.2′,LD 313-3	28.29′ L+ 47+08.00 ℄ "NFIR1"
	11-6	a	6.5	2.37						580																															2					GD-1 INLET	88.50′ L+ 1+89.00 ℄ "I5"
		b											28.1																																	4.0	24" RCP	
SHEET TOTAL				21.65	0.59					4,355		306.6	28.1												4.7																	2	3	2		4			

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE QUANTITIES
DQ- 21

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	433	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-11	11-7	a										13.4																																			6.9	18" RCP	
		b	4.5	1.29	0.59					560																																				1	COCB WITH GRATING(S) 302-3,W=2.95',LD 313-3	15.00' Rt 43+25.00 ℄ "NFIR1"
	11-8	a		0.66																																											JS-PIPE TO PIPE 331-3	32.59' Rt 42+25.44 ℄ "NFIR1"
		b										10.9																																			5.4	18" RCP	
		c	4.5	1.29	0.59					560																																				1	COCB WITH GRATING(S) 302-3,W=2.95',LD 313-3	19.65' Rt 42+30.00 ℄ "NFIR1"
D-12	12-1	a	3.8	1.58						580																															2						GD-1 INLET	88.50' Lt 3+88.00 ℄ "I5"
		b											66.0																																	1.8	24" RCP	
		c	4.1	1.67						580																															2						GD-1 INLET	88.50' Lt 4+58.00 ℄ "I5"
		d											93.9																																	2.5	24" RCP	
		e											33.9																																	2.0	24" RCP	
		f	4.0	1.65						580																															2						GD-1 INLET	124.41' Lt 4+46.00 ℄ "I5"
SHEET TOTAL				8.14	1.18					2,860		24.3	193.8																												6				2			

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-22

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	434	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-12	12-2	a	2.0	0.73						326																															1						CLEANOUT TYPE CL3	1.50′ R+ 5+28.00 ℄ "I5"
		b																					57.0																								18" SCSP	
		c	5.0	1.82						326																															1						TYPE G2 INLET	1.50′ R+ 5+88.00 ℄ "I5"
		d																					97.1																								18" SCSP	
		e											97.1																																3.0	24" RCP	
		f	5.2	1.87						326																															1						TYPE G2 INLET	1.50′ R+ 6+88.00 ℄ "I5"
		g																					97.1																								18" SCSP	
		h											97.1																																2.6	24" RCP	
		i	5.7	2.00						326																															1						TYPE G2 INLET	1.50′ R+ 7+88.00 ℄ "I5"
		j																					57.0																								18" SCSP	
		k											57.0																																4.2	24" RCP	
		l	6.4	2.18						326																															1						TYPE G2 INLET	1.50′ R+ 8+48.00 ℄ "I5"
		m																					11.4																								18" SCSP	
		n											11.4																																4.5	24" RCP	
		o	9.3	3.94						326																															1						TYPE G2 INLET	1.67′ R+ 8+62.40 ℄ "I5"
		p																					11.6																								18" SCSP	
		q											11.6																																7.3	24" RCP	
		r	9.5	4.01						326																															1						TYPE G2 INLET	1.67′ R+ 8+77.00 ℄ "I5"
		s																					82.0																								18" SCSP	
		t											82.0																																7.8	24" RCP	
SHEET TOTAL				16.55						2,282			356.2										413.2																			7							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-23

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	435	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-12	12-2	u	10.1	4.25						326																															1						TYPE G2 INLET	1.67′ R+ 9+62.00 ℄ "I5"
		v																					93.0																								18" SCSP	
		w											93.0																																	8.5	24" RCP	
		x	10.7	4.44						326																															1						TYPE G2 INLET	1.67′ R+ 10+58.00 ℄ "I5"
		y																					97.1																								18" SCSP	
		z											97.1																																	9.2	24" RCP	
		a1	11.4	4.69						326																															1						TYPE G2 INLET	1.67′ R+ 11+58.00 ℄ "I5"
		b1																					97.1																								18" SCSP	
		c1											97.1																																	9.9	24" RCP	
		d1	12.1	4.94						326																															1						TYPE G2 INLET	1.67′ R+ 12+58.00 ℄ "I5"
		e1																					97.1																								18" SCSP	
		f1											97.1																																	10.6	24" RCP	
D-13		g1	12.8	5.19						326																															1						TYPE G2 INLET	1.67′ R+ 13+58.00 ℄ "I5"
		h1																					97.1																								18" SCSP	
		i1											97.1																																	11.3	24" RCP	
		j1	13.5	5.43						326																															1						TYPE G2 INLET	1.67′ R+ 14+58.00 ℄ "I5"
		k1																					97.1																								18" SCSP	
		l1											97.1																																	11.9	24" RCP	
		m1	14.2	5.71						326																															1						TYPE G2 INLET	1.67′ R+ 15+58.00 ℄ "I5"
		n1																					91.1																								18" SCSP	
SHEET TOTAL				34.65						2,282			578.5										669.6																			7							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-24

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	436	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
	12-2	o1											91.1																																	12.5	24" RCP	
		p1	14.8	5.93						326																															1						TYPE G2 INLET	1.67' Rt 16+52.04 ℄ "I5"
		q1																						46.3																							18" SCSP	
		r1	2.0	0.73						326																															1						CLEANOUT TYPE CL3	1.50' Rt 16+94.00 ℄ "I5"
	12-3	a	4.6	1.81						580																															2						GD-1 INLET	88.50' Lt 6+08.00 ℄ "I5"
		b											117.3																																	2.3	24" RCP	
		c	4.6	1.81						580																															2						GD-1 INLET	88.50' Lt 7+30.00 ℄ "I5"
		d											71.9																																	2.6	24" RCP	
		e	5.0	1.93						580																															2						GD-1 INLET	88.50' Lt 8+06.00 ℄ "I5"
		f																						40.4																							18" SCSP	
		g											40.4																																	3.0	24" RCP	
		h	5.7	2.13						580																															2						GD-1 INLET	88.50' Lt 8+50.00 ℄ "I5"
		i											6.9																																	3.3	24" RCP	
		j	7.1	2.54						580																															2						GD-1 INLET	88.50' Lt 8+60.00 ℄ "I5"
		k											6.9																																	3.5	24" RCP	
		l	6.9	2.48						580																															2						GD-1 INLET	88.50' Lt 8+70.00 ℄ "I5"
		m																						55.2																							18" SCSP	
		n											55.2																																	4.5	24" RCP	
		o	6.6	2.39						580																															2						GD-1 INLET	88.50' Lt 9+29.00 ℄ "I5"
		p											55.2																																	4.3	24" RCP	
		q	6.5	2.37						580																															2						GD-1 INLET	88.50' Lt 9+88.00 ℄ "I5"
SHEET TOTAL				24.12						5,292			444.9											141.9																	18							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-25

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	437	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3 66" RCP	~~69" RCP~~ 3 72" RCP	~~81" RCP~~ 3 84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-12	12-4	a											86.2																																		7.1	24" RCP	
	12-5	a											101.6																																		4.5	24" RCP	
		b	5.0	5.31	0.59					2240																																			4		COCB WITH GRATING(S) 302-3,W=13.2',LD 313-3	23.08' L+ 54+91.00 ℄ "NFIR1"
		c										53.2																																		4.0	18" RCP	
		d	5.0	1.77						115																																1				COCB 300-3, W=3.5'	17.00' R+ 55+25.45 ℄ "NFIR1"
		e										89.9																																		2.6	18" RCP	
		f	4.5	1.63						115																																1				COCB 300-3, W=3.5'	17.00' R+ 54+35.78 ℄ "NFIR1"
	12-6	a											63.8																																		4.1	24" RCP	
		b	5.6	1.18						235																																		1			JC 3-C MOD	40.18' L+ 20+20.00 ℄ "AR2"
		c										187.0																																		2.4	18" RCP	
		d	3.5	1.06						326																															1					TYPE G1 INLET	37.18' L+ 22+10.00 ℄ "AR2"
	12-7	a						22.50																					22.50																			TYPE B DRAIN	
D-13		b						33.30																					33.30																			TYPE B DRAIN	
SHEET TOTAL				10.95	0.59			55.80		3,031		330.1	251.6																55.80												1		2	1	4			

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-26

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:50

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	438	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-13	13-1	a	5.0	1.82						326																															1						TYPE G2 INLET	1.50′ R+ 19+25.50 ℄ "I5"
		b																					61.5																								18" SCSP	
		c											61.5																																3.2	24" RCP	
		d	5.3	1.90						326																															1						TYPE G2 INLET	1.50′ R+ 19+90.00 ℄ "I5"
		e																					69.0																								18" SCSP	
		f											69.0																																3.5	24" RCP	
		g	5.6	1.97						326																															1						TYPE G2 INLET	1.50′ R+ 20+62.00 ℄ "I5"
		h											98.1																																3.6	24" RCP	
	13-2	a																				304.9																								10.8	84" RCP	
		b		8.97						435														6.8																		1					MH 320-2	7.50′ L+ 66+54.51 ℄ "NFIR1"
D-14		c																				280.9																								10.8	84" RCP	
		d		8.79						435														3.1																		1					MH 320-2	7.03′ L+ 69+40.02 ℄ "NFIR1"
		e		6.16																																										TS-PIPE TO PIPE 340-2	
D-13	13-3	a																	15.1																										12.3	60" RCP	
		b		8.09						435														11.5																		1					MH 322-2	41.69′ L+ 17+79.20 ℄ "SFIR1"
		c														209.2																													11.7	36" RCP	
		d													26.1																														13.1	30" RCP	
SHEET TOTAL				37.70						2283			228.6		26.1	209.2			15.1			585.8	130.5	21.4																	3	3						

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 27

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
FUNCTIONAL SUPERVISOR MARIA QUINONEZ
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	439	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-14	13-4	a													123.2																																12.3	30" RCP	
		b	4.0	2.61						435																10.1																1					MH 321-2	6.00′ R† 20+06.77 ℄ "SFIR1"
		c													251.2																																9.1	30" RCP	
		d	4.0	2.61						435																6.8																1					MH 321-2	6.00′ R† 22+62.00 ℄ "SFIR1"
		e													295.9																																8.0	30" RCP	
		f	4.0	2.61						435																5.8																1					MH 321-2	6.00′ R† 25+62.00 ℄ "SFIR1"
		g													295.9																																7.9	30" RCP	
		h	4.0	2.61						435																3.8																1					MH 321-2	6.00′ R† 28+62.00 ℄ "SFIR1"
		i													260.9																																6.0	30" RCP	
		j	4.0	2.61						435																4.0																1					MH 321-2	6.00′ R† 31+27.00 ℄ "SFIR1"
D-15		k													298.4																																6.2	30" RCP	
		l	5.9	3.43						435																0.9																1					MH 321-2	6.00′ R† 34+30.00 ℄ "SFIR1"
		m													266.4																																5.9	30" RCP	
		n	4.0	2.61						435																3.6																1					MH 321-2	6.00′ R† 37+00.00 ℄ "SFIR1"
		o													296.0																																6.0	30" RCP	
D-16		p	4.0	2.61						435																3.7																1					MH 321-2	6.00′ R† 40+00.00 ℄ "SFIR1"
		q													296.0																																5.9	30" RCP	
		r		0.66																																												JUNCTION STRUCTURE 331-3	6.00′ R† 42+13.77 ℄ "SFIR1"
		s	5.3	3.17						435																0.9																1					MH 321-2	6.00′ R† 42+90.00 ℄ "SFIR1"
		†													296.0																																3.8	30" RCP	
		u		0.61																																												JUNCTION STRUCTURE 331-3	6.00′ R† 44+24.33 ℄ "SFIR1"
SHEET TOTAL				26.14						3,915					2,679.9											39.6																9						

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-28

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
FUNCTIONAL SUPERVISOR MARIA QUINONEZ
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	440	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-16	13-4	v	4.6	2.87						435																0.9																	1					MH 321-2	6.00′ Rt 45+93.00 ℄ "SFIR1"
		w													296.0																															3.7	30" RCP	
		x	4.6	2.87						435																0.9																	1					MH 321-2	6.00′ Rt 48+12.00 ℄ "SFIR1"
		y													4.0																															3.7	30" RCP	
D-13	13-5	a	4.5	2.48						115																																	1					COCB 300-3, W=7′	17.00′ Lt 22+63.50 ℄ "SFIR1"
		b										23.2																																		8.7	18" RCP	
		c										12.7																																		8.7	18" RCP	
		d	4.5	2.48						115																																	1					COCB 300-3, W=7′	17.00′ Rt 22+63.50 ℄ "SFIR1"
	13-6	a	7.0	2.33						115																																	1					COCB 300-3, W=3.5′	17.00′ Rt 19+26.70 ℄ "SFIR1"
		b										29.7																																		5.5	18" RCP	
		c	7.1	2.36						115																																	1					COCB 300-3, W=3.5′	17.00′ Rt 19+56.16 ℄ "SFIR1"
		d										2.8																																		4.8	18" RCP	
	13-7	a	4.5	1.63						115																																	1					COCB 300-3, W=3.5′	17.00′ Lt 64+42.00 ℄ "NFIR1"
		b										170.2																																		2.8	18" RCP	
		c	4.5	1.63						115																																	1					COCB 300-3, W=3.5′	17.00′ Lt 66+12.10 ℄ "NFIR1"
		d										2.8																																		3.3	18" RCP	
SHEET TOTAL				18.65						1,560		241.4			300.0											1.8																2	6					

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 29

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	441	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-13	13-8	a	2.7	0.95						326																																1						TYPE G1 INLET	43.51′ R+ 2+22.00 ℄ "TRO"
		b									28.5																																			4.6	12" RCP	
		c	12.7	4.30						235																																	1				JC 3	57.92′ L+ 2+50.00 ℄ "TRO"
		d									69.5																																			13.6	12" RCP	
		e	14.6	7.52						235																																		1			JC 3-C (Mod)	18.30′ L+ 3+80.00 ℄ "ACC2"
		f																												1.4	9.4																	AC OVERSIDE DRAIN	
	13-9	a		0.65																																												RECTANGULAR CHANNEL	46.76′ L+ 2+79.00 ℄ "TRO"
		b									6.0																																			3.3	12" RCP	
		c	4.5	1.63						115																																	1				COCB 300-3, W=3.5′	32.00′ L+ 2+78.00 ℄ "TRO"
		d									72.1																																			5.6	12" RCP	
		e	7.6	2.51						115																																	1				COCB 300-3, W=3.5′	32.00′ R+ 2+50.00 ℄ "TRO"
		f					1.40				21.0																																			4.1	12" RCP W/Conc BACKFILL	
	13-10	a				36.67																																										PARKWAY DRAIN	15.00′ R+ 67+92.00 ℄ "NFIR1"
	13-11	a	6.7	2.24						326																																						TYPE G2 INLET	25.17′ R+ 65+81.50 ℄ "NFIR1"
		b											220.7																													1				4.7	24" RCP	
		c	4.0	1.54						326																																						TYPE G2 INLET	25.68′ R+ 68+05.40 ℄ "NFIR1"
		d											8.0																													1				2.0	24" RCP	
SHEET TOTAL				21.34		36.67	1.40			1,678	197.1		228.7																	1.4	9.4											3	1	2	1				

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-30

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	442	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

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NOTE:

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SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-13	14-1	a	5.0	1.39						326																															1						TYPE G1 INLET	100.50′ R+ 20+64.00 ℄ "I5"
		b											94.7																																	3.3	18" RCP	
		c																						94.7																								18" SCSP	
		d	5.6	2.12						580																															2						GD-1 INLET	100.50′ R+ 21+62.00 ℄ "I5"
D-14		e											293.8																																	2.9	24" RCP	
		f	5.0	1.94						580																															2						GD-1 INLET	100.50′ R+ 24+60.00 ℄ "I5"
		g											295.9																																	2.4	24" RCP	
		h	4.5	1.80						580																															2						GD-1 INLET	100.50′ R+ 27+60.00 ℄ "I5"
		i											140.5																																	2.5	24" RCP	
		j	4.6	1.83						580																															2						GD-1 INLET	101.90′ R+ 29+04.00 ℄ "I5"
		k											7.0																																	2.7	24" RCP	
		l	4.9	1.89						580																															2						GD-1 INLET	102.70′ R+ 29+13.91 ℄ "I5"
		m											13.1																																	2.6	24" RCP	
		n	4.6	1.83						580																																					GD-1 INLET	102.37′ R+ 29+30.00 ℄ "I5"
		o											87.2																																	2.5	24" RCP	
		p	4.4	1.77						580																															2						GD-1 INLET	104.61′ R+ 30+20.00 ℄ "I5"
		q											195.2																																	2.5	24" RCP	
		r	4.3	1.74						580																															2						GD-1 INLET	112.14′ R+ 32+20.00 ℄ "I5"
		s											47.2																																	6.4	24" RCP	
		t					0.20																																								PIPE CONNECTION 335-2	23.49′ R+ 74+56.44 ⅊ "NFIR1"
SHEET TOTAL				16.31			0.20			4,966			1,174.6											94.7																	15							

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 31

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:51

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1-25-16
PLANS APPROVAL DATE

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			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-13	14-2	a	6.5	2.38						580																																2						GD-1 INLET	100.50' L+ 19+41.00 ℄ "I5"
		b											46.0																																	4.6	24" RCP	
		c	6.8	2.47						580																																2						GD-1 INLET	100.50' L+ 19+90.00 ℄ "I5"
		d											69.2																																	4.9	24" RCP	
		e	7.1	2.55						580																																2						GD-1 INLET	100.50' L+ 20+62.00 ℄ "I5"
		f											105.5																																	5.2	24" RCP	
		g	7.3	2.61						580																																2						GD-1 INLET	100.50' L+ 21+70.00 ℄ "I5"
D-14		h											228.0																																	5.4	24" RCP	
		i	7.6	2.70						580																																2						GD-1 INLET	100.50' L+ 24+00.00 ℄ "I5"
		j											147.7																																	5.7	24" RCP	
		k	8.2	3.88						580																																2						GD-1 INLET	100.50' L+ 25+50.00 ℄ "I5"
		l											248.1																																	5.9	24" RCP	
		m	6.1	2.26						580																																2						GD-1 INLET	100.50' L+ 28+00.00 ℄ "I5"
		n											97.5																																	4.0	24" RCP	
	14-2	o	5.5	2.09						580																																2						GD-1 INLET	100.50' L+ 29+00.00 ℄ "I5"
		p											11.1																																	3.3	24" RCP	
		q	5.3	2.03						580																																2						GD-1 INLET	100.50' L+ 29+14.00 ℄ "I5"
		r											13.2																																	3.1	24" RCP	
		s	4.1	1.68						580																																2						GD-1 INLET	100.50' L+ 29+30.00 ℄ "I5"
		t											127.6																																	2.8	24" RCP	
		u	3.9	1.62						580																																2						GD-1 INLET	100.50' L+ 30+60.00 ℄ "I5"
		v											137.7																																	2.6	24" RCP	
SHEET TOTAL				26.27						6,380			1,231.6																													22							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-32

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	444	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	6" GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-14		w	3.8	1.59						580																															2						GD-1 INLET	100.50' L+ 32+00.00 ℄ "I5"
D-15		x											298.3																																2.5	24" RCP	
		y	3.8	1.59						580																															2						GD-1 INLET	100.50' L+ 35+00.00 ℄ "I5"
		z											298.3																																2.2	24" RCP	
		a1	3.6	1.53						580																															2						GD-1 INLET	100.50' L+ 38+00.00 ℄ "I5"
		b1											137.6																																2.0	24" RCP	
		c1	3.5	1.50						580																															2						GD-1 INLET	100.50' L+ 39+40.00 ℄ "I5"
	14-3	a											20.0																																7.0	24" RCP	
	14-4	a	3.0	1.86						115																																1					COCB 300-3, W=7'	17.00' L+ 28+74.50 ⅊ "SFIR1"
		b					2.98					26.3																																	5.7	18" RCP W/ 12.5' Conc Bkf	
		c										16.8																																	5.7	18" RCP	
		d	4.5	2.48						115																																1					COCB 300-3, W=7'	17.00' R+ 28+74.50 ⅊ "SFIR1"
	14-5	a	4.8	1.71						115																																1					COCB 300-3, W=3.5'	12.75' L+ 32+12.14 ⅊ "NFIR1"
		b										5.2																																	2.8	18" RCP	
	14-6	a	7.0	3.51						115																																1					COCB 300-3, W=7.0'	52.43' R+ 77+31.50 ⅊ "NFIR1"
SHEET TOTAL				15.77			2.98			2,780		48.3	754.2																												8		4					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-33

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	445	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-14	14-7	a	4.5	2.48						115																																		1				COCB 300-3, W=7.0′	17.00′ L+ 71+16.50 ℄ "NFIR1"
		b										20.8																																		6.4	18" RCP	
		c					0.20																																								PIPE CONNECTION 335-2	3.00′ R+ 71+15.97 ℄ "NFIR1"
	14-8	a										8.0																																			18" RCP	
		b		0.68																																										JS 331-3	6.00′ R+ 30+23.00 ℄ "SFIR1"
D-15	15-1	a					0.20																																								PIPE CONNECTION 335-2	29.03′ R+ 35+81.68 ℄ "NFIR2"
		b										47.6																																		6.4	18" RCP	
		c	3.5	1.41						235																																	1			JC 3-C	125.50 R+ 35+53.29 ℄ "I5"
		d						43.50																				43.50																			TYPE B DRAIN	
	15-2	a	4.5	2.48						115																																	1				COCB 300-3, W=7′	17.00′ L+ 34+34.00 ℄ "SFIR1"
		b										22.4																																		4.7	18" RCP	
		c										11.1																																		4.7	18" RCP	
		d	4.5	2.48						115																																	1				COCB 300-3, W=7′	17.00′ R+ 34+34.00 ℄ "SFIR1"
	15-3	a	4.5	2.48						115																																	1				COCB 300-3, W=7′	17.00′ R+ 42+16.50 ℄ "SFIR1"
		b										8.6																																		4.7	18" RCP	
SHEET TOTAL				12.01			0.40	43.50		695		118.5																43.50															4	1				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 34

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	446	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-16	16-1	a						48.45																				48.45																			TYPE B DRAIN	
		b	4.2	1.59						235																																	1			JC 3-C	132.53′ R+ 52+36.19 ℄ "I5"
		c					4.18						59.2																																2.9	24" RCP W/ Conc BACKFILL	
		d	3.9	1.61						580																															2					GD-1 INLET	129.03′ R+ 53+00.00 ℄ "I5"
		e					27.34						187.7																																2.3	24" RCP W/ Conc BACKFILL	
D-17		f	4.3	1.72						580																															2					GD-1 INLET	132.63′ R+ 54+90.00 ℄ "I5"
		g											156.4																																2.7	24" RCP	
		h	4.7	1.84						580																															2					GD-1 INLET	21.50′ R+ 56+53.75 ⅊ "VA4"
		i											13.3																																2.8	24" RCP	
		j	4.8	1.87						580																															2					GD-1 INLET	21.50′ R+ 56+70.00 ⅊ "VA4"
		k											17.0																																3.1	24" RCP	
		l	5.1	1.95						580																															2					GD-1 INLET	21.50′ R+ 56+90.00 ⅊ "VA4"
		m											27.0																																3.5	24" RCP	
		n	5.5	2.07						580																															2					GD-1 INLET	21.50′ R+ 57+20.00 ⅊ "VA4"
		o										42.8																																	5.2	18" RCP	
		p	5.0	1.41						326																															1					TYPE G1 INLET	4.00′ L+ 57+60.00 ⅊ "VA4"
		q										17.0																																	3.5	18" RCP	
		r																						17.0																							18" SCSP	
		s	4.7	1.34						326																															1					TYPE G1 INLET	4.00′ L+ 57+60.00 ⅊ "VA4"
		t										17.0																																	3.5	18" RCP	
		u																						17.0																							18" SCSP	
		v	4.3	1.25						326																															1					TYPE G1 INLET	4.00′ L+ 58+00.00 ⅊ "VA4"
SHEET TOTAL				16.65			31.52	48.45		4,693		76.8	460.6											34.0				48.45													15		1					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 35

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR MARIA QUINONEZ

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	447	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	16-1	w											10.3																																		6.4	24" RCP	
	16-2	a	5.0	1.94						580																															2						GD-1 INLET	33.50' Lt 55+20.00 ℄ "VA3"
		b										367.2																																		4.0	18" RCP	
D-16		c	5.6	1.52						326																															1						TYPE G1 INLET	33.50' Lt 51+50.00 ℄ "VA3"
		d																						40.0																							18" SCSP	
		e										40.0																																		4.2	18" RCP	
		f	5.8	1.57						326																															1						TYPE G1 INLET	33.50' Lt 51+07.00 ℄ "VA3"
		g										32.5																																		4.4	18" RCP	
		h	6.1	2.10						326																															1						TYPE G2 INLET	4.00' Rt 51+07.00 ℄ "VA3"
		i										166.0																																		4.7	18" RCP	
		j	3.6	1.08						326																															1						TYPE G1 INLET	4.00' Rt 49+38.00 ℄ "VA3"
		k										16.5																																		4.2	18" RCP	
		l	4.4	1.76						580																															2						GD-1 INLET	101.00' Lt 49+35.04 ℄ "I5"
		m											303.3																																	2.5	24" RCP	
		n	4.2	1.71						580																															2						GD-1 INLET	101.00' Lt 52+40.00 ℄ "I5"
D-17		o											298.2																																	2.2	24" RCP	
		p	5.3	2.03						580																															2						GD-1 INLET	101.00' Lt 55+40.00 ℄ "I5"
		q											298.3																																	2.9	24" RCP	
		r	5.0	1.94						580																															2						GD-1 INLET	101.00' Lt 58+40.00 ℄ "I5"
		s											132.9																																	3.7	24" RCP	
		t					11.86						39.6																																	2.0	24" RCP	
SHEET TOTAL				15.65			11.86			4,204		622.2	1,082.6											40.0																	14							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 36

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	448	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

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NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	16-2	u																							34.0																					11.4	6" PP	
		v	9.5	3.31						235																																		1			JC 3-C	39.50′ R+ 60+65.79 ℄ "SFIR1"
		w											28.6																																	11.0	24" RCP	
D-16	16-3	a											4.0																																	4.0	24" RCP	
		b	4.3	2.74						435																0.9															1					MH 321-2	6.00′ R+ 52+24.44 ℄ "SFIR1"
		c											115.1																																	5.5	24" RCP	
		d	4.0	2.65						435																2.8															1					MH 321-2	6.00′ R+ 53+44.00 ℄ "SFIR1"
		e											252.0																																	8.3	24" RCP	
D-17		f	4.0	2.63						435																5.8															1					MH 321-2	6.00′ R+ 56+00.00 ℄ "SFIR1"
		g													246.0																															8.3	30" RCP	
		h		0.57																																											JUNCTION STRUCTURE 331-3	6.00′ R+ 57+54.90 ℄ "SFIR1"
		i	4.0	2.61						435																3.3															1					MH 321-2	6.00′ R+ 58+50.00 ℄ "SFIR1"
		j													222.5																															5.8	30" RCP	
		k		0.52																																											JUNCTION STRUCTURE 331-3	6.00′ R+ 60+01.90 ℄ "SFIR1"
		l		2.97						435																3.6															1					MH 322-2	6.00′ R+ 60+78.39 ℄ "SFIR1"
		m															272.4																													5.7	42" RCP	
		n		2.64						435																5.1															1					MH 320-2	6.00′ R+ 63+57.15 ℄ "SFIR1"
		o															149.3																													5.8	42" RCP	
		p		3.36						435																4.8															1					MH 322-2	6.00′ R+ 65+13.42 ℄ "SFIR1"
		q															281.0																													5.8	42" RCP	
D-18		r		0.57																																											JUNCTION STRUCTURE 331-3	6.00′ R+ 66+56.06 ℄ "SFIR1"
SHEET TOTAL				24.57						3,280			399.7		468.5		702.7								34.0	26.3															7		1					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	449	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	27" RCP (3)	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	63" RCP 66" RCP (3)	69" RCP 72" RCP (3)	81" RCP 84" RCP (3)	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			ft	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	ft		
D-18	16-3	s		0.57																																											JUNCTION STRUCTURE 331-3	6.00′ R+ 67+41.96 ℄ "SFIR1"
		t		2.64						435															4.1																	1				MH 320-2	6.00′ R+ 68+00.00 ℄ "SFIR1"
		u															305.8																												8.0	42" RCP	
		v		3.36						435															7.4																	1				MH 322-2	6.00′ R+ 71+11.00 ℄ "SFIR1"
		w															383.2																												8.0	42" RCP	
		x		0.57																																										JUNCTION STRUCTURE 331-3	6.00′ R+ 72+15.18 ℄ "SFIR1"
		y		0.57																																										JUNCTION STRUCTURE 331-3	6.00′ R+ 73+42.95 ℄ "SFIR1"
		z		2.64						435															10.1																	1				MH 320-2	6.00′ R+ 75+00.00 ℄ "SFIR1"
		a1															276.0																												13.6	42" RCP	
		b1		9.10																																										JUNCTION STRUCTURE D	81.79′ L+ 77+27.98 ℄ "SFIR1"
		c1																									1																				42" STEEL AUTOMATIC DRAINAGE GATE	
D-16	16-4	a	4.5	5.89						115																																1				COCB 300-3, W=21′	17.00′ L+ 52+18.28 ℄ "SFIR1"
		b										21.8																																	3.5	18" RCP	
		c										11.4																																	3.5	18" RCP	
		d	4.5	2.48						115																																1				COCB 300-3, W=7′	17.00′ R+ 52+18.28 ℄ "SFIR1"
	16-5	a	4.5	2.48						115																																1				COCB 300-3, W=7′	17.00′ L+ 44+36.50 ℄ "SFIR1"
		b										23.0																																	4.4	18" RCP	
SHEET TOTAL				30.30						1,650		56.2					965.0								21.6	1															3	3				

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(3) REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-38

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	450	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-16	16-6	a	4.5	2.48						115																																	1				COCB 300-3, W=7'	17.00' R+ 48+19.00 ℄ "SFIR1"
		b										12.6																																		3.4	18" RCP	
	16-7	a	4.0	1.17						326																															1					TYPE G1 INLET	4.00' R+ 48+70.00 ℄ "VA3"
		b										17.0																																		2.6	18" RCP	
		c	4.2	1.21						326																															1					TYPE G1 INLET	4.00' R+ 48+50.00 ℄ "VA3"
		d										15.9																																		2.2	18" RCP	
		e	4.5	1.28						326																															1					TYPE G1 INLET	4.00' R+ 48+31.00 ℄ "VA3"
		f										133.0																																		4.4	18" RCP	
		g	6.1	2.10						326																															1					TYPE G1 INLET	4.00' R+ 46+95.00 ℄ "VA3"
		h																						20.0																								18" SCSP	
		i										20.0																																		6.3	18" RCP	
		j	6.5	2.20						326																															1					TYPE G1 INLET	4.00' R+ 46+72.00 ℄ "VA3"
		k										52.3																																		4.7	18" RCP	
		l	6.4	2.34						326																															1					TYPE G1 INLET	126.52' L+ 46+12.00 ℄ "I5"
		m											20.3																																	4.4	24" RCP	
		n	6.5	2.38						580																															2					GD-1 INLET	123.79' L+ 46+00.00 ℄ "I5"
		o											14.1																																	4.6	24" RCP	
		p	6.9	2.47						580																															2					GD-1 INLET	122.15' L+ 45+88.00 ℄ "I5"
		q											42.9																																	2.9	24" RCP	
SHEET TOTAL				17.63						3,231		250.8	77.3											20.0																	10		1					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ- 39

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	451	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:
JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	17-1	a	4.0	1.65						580																															2						GD-1 INLET	101.00′ R+ 61+70.00 ℄ "I5"
		b											122.1																																	2.4	24" RCP	
		c	4.5	1.80						580																															2						GD-1 INLET	101.00′ R+ 62+95.00 ℄ "I5"
		d											10.1																																	2.6	24" RCP	
		e	4.7	1.85						580																															2						GD-1 INLET	101.00′ R+ 63+08.00 ℄ "I5"
		f											8.6																																	2.6	24" RCP	
		g	4.6	1.83						580																															2						GD-1 INLET	101.00′ R+ 63+20.00 ℄ "I5"
		h											87.1																																	2.4	24" RCP	
		i	4.1	1.68						580																															2						GD-1 INLET	101.00′ R+ 64+10.00 ℄ "I5"
		j											40.5																																	4.4	24" RCP	
		k	7.0	2.33						326																															1						TYPE G2 INLET	24.17′ R+ 63+12.22 ⅊ "VA4"
		l											9.7																																	5.0	24" RCP	
		m		0.85																																												J.S. 331-3	41.31′ R+ 63+13.72 ⅊ "VA4"
	17-2	a	2.0	0.73						326																															1						TYPE CL3 CLEANOUT	4.00′ L+ 60+79.00 ⅊ "VA4"
		b																						20.0																								18" SCSP	
		c	3.5	1.06						326																															1						TYPE G1 INLET	4.00′ L+ 61+02.00 ⅊ "VA4"
		d										125.0																																		3.2	18" RCP	
		e	4.8	1.35						326																															1						TYPE G1 INLET	4.00′ L+ 62+30.00 ⅊ "VA4"
		f										19.7																																		2.9	18" RCP	
		g	4.9	1.91						580																															2						GD-1 INLET	21.50′ R+ 62+30.00 ⅊ "VA4"
		h											20.3																																	7.4	24" RCP	
		i											17.9																																	2.7	24" RCP	
SHEET TOTAL				17.04						4,784		144.7	316.3											20.0																	16							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-40

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	452	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

3

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	17-2	j	4.2	1.71						580																															2						GD-1 INLET	21.50′ Rt 62+51.00 ℄ "VA4"
		k											16.9																																2.0	24" RCP	
		l	4.0	1.65						580																															2						GD-1 INLET	21.50′ Rt 62+71.00 ℄ "VA4"
	17-3	a	8.2	3.38						580																															2						GD-2 INLET	33.38′ Rt 57+20.00 ℄ "VA4"
		b																292.6																											3.8	48" RCP	
		c	5.4	3.23						435															3.7																	1					MANHOLE No. 2	35.00′ Rt 60+12.32 ℄ "VA4"
		d																	220.8																										4.6	54" RCP	
		e	6.5	4.26						435															4.1																	1					MANHOLE No. 2	38.67′ Rt 62+38.68 ℄ "VA4"
		f																		216.5																									4.6	60" RCP	
		g	8.3	6.17						435															1.3																	1					MANHOLE No. 2	68.47′ Rt 64+55.85 ℄ "VA4"
		h																			280.9																								2.8	66" RCP	
		i	7.4	6.14						435															0.7																	1					MANHOLE No. 2	31.56′ Rt 67+36.52 ℄ "VA4"
		j				9.10															436.4																								7.9	66" RCP W/ Conc Bkf	
		k		8.56																																										JUNCTION STRUCTURE No. 2	59.40′ Lt 71+88.27 ℄ "VA1"
		l																				91.1																							10.0	72" RCP	
		m	6.9	6.74						435															9.8																	1					MANHOLE No. 2	31.30′ Lt 72+77.23 ℄ "VA1"
		n																				521.1																							12.5	72" RCP	
		o		9.57																																										TRANSITION STRUCTURE	
SHEET TOTAL				51.41			9.10			3,915			16.9					292.6	220.8	216.5	717.3	612.2			19.6																6	5						

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016 DRAINAGE QUANTITIES**

DQ-41

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: WING YAN LEE
CHECKED BY: SIEW MEI TAN
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	453	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	17-4	a											71.3																																	4.9	24" RCP	
		b	4.3	2.78						435															0.9																	1				MH 321-2	6.00′ Lt 10+70.00 ℄ "FIR1"
		c		0.48																																										JS 331-3	6.00′ Lt 11+05.00 ℄ "FIR1"
		d					22.12						291.3																																	3.8	24" RCP W/ 72.0′ Conc Bkf	
		e	4.5	2.87						435															0.9																	1				MH 321-2	6.00′ Lt 13+65.00 ℄ "FIR1"
		f	4.5	1.63						115																																	1			COCB 300-3, W=3.5′	17.00′ Lt 13+70.00 ℄ "FIR1"
		g										11.1																																		3.4	18" RCP	
		h										22.8																															1			3.4	18" RCP	
		i	4.5	1.63						115																																				COCB 300-3, W=3.5′	17.00′ Rt 13+70.00 ℄ "FIR1"
	17-5	a	4.5	2.48						115																																	1			COCB 300-3, W=7.0′	17.00′ Lt 57+00.00 ℄ "SFIR1"
		b										46.5																																		3.4	18" RCP	
		c	4.8	1.71						115																																	1			COCB 300-3, W=3.5′	17.00′ Lt 57+50.00 ℄ "SFIR1"
		d										24.1																																		3.4	18" RCP	
	17-6	a	4.5	2.48						115																																	1			COCB 300-3, W=7′	17.00′ Rt 60+00.00 ℄ "SFIR1"
		b										8.2																																		4.0	18" RCP	
	17-7	a										47.7																																		3.3	18" RCP	
		b	4.5	1.63						115																																	1			COCB 300-3, W=3.5′	34.84′ Rt 10+98.00 ℄ "FIR1"
SHEET TOTAL				17.69			22.12			1,560		160.4	362.6												1.8																	2	6					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-42

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	454	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3 66" RCP	~~69" RCP~~ 3 72" RCP	~~81" RCP~~ 3 84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	17-8	a	4.5	1.63						115																																	1				COCB 300-3, W=3.5′	26.61′ Lt 11+10.00 ℄ "FIR1"
		b										18.9																																		2.9	18" RCP	
	17-9	a	4.5	1.80						580																															2					GD-1 INLET	101.00′ Lt 62+10.00 ℄ "I5"
		b											67.1																																2.8	24" RCP	
		c	4.9	1.91						580																															2					GD-1 INLET	101.00′ Lt 62+90.00 ℄ "I5"
		d											15.1																																3.0	24" RCP	
		e	5.2	2.00						580																															2					GD-1 INLET	101.00′ Lt 63+08.00 ℄ "I5"
		f											9.1																																3.2	24" RCP	
		g	5.4	2.06						580																															2					GD-1 INLET	101.00′ Lt 63+20.00 ℄ "I5"
		h											167.1																																2.8	24" RCP	
		i	4.8	1.88						580																															2					GD-1 INLET	101.00′ Lt 65+00.00 ℄ "I5"
		j											56.9																																4.7	24" RCP	
		k					4.45						16.0																																1.5	24" RCP w/ 14.5′ Conc Bkf	
		l																							22.4																				8.2	6" PP	
		m	10.6	4.36						235																																	1			JC 3	136.00′ Lt 64+44.50 ℄ "I5"
		n											79.4																																6.9	24" RCP	
SHEET TOTAL				15.64			4.45			3,250		18.9	410.7												22.4																10		1	1				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016 DRAINAGE QUANTITIES

DQ-43

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	455	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No. ⬡	DRAINAGE SYSTEM No. ○	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3 66" RCP	~~69" RCP~~ 3 72" RCP	~~81" RCP~~ 3 84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-17	17-10	a	3.0	0.95						326																																1					TYPE G1 INLET	54.84′ R† 63+79.84 ℄ "VA4"
		b									66.8																																			2.1	12" RCP	
		c	4.1	1.19						326																																1					TYPE G1 INLET	54.84′ R† 64+49.59 ℄ "VA4"
		d									180.3																																			2.9	12" RCP	
		e	3.0	0.95						326																																1					TYPE G1 INLET	54.84′ L† 64+95.84 ℄ "VA4"
		f									11.1																																			5.6	12" RCP	
	17-11	a	4.1	1.57						235																																		1			JC 3-C	24.85′ L† 13+51.79 ℄ "FIR2"
		b					1.27																					1.27																			TYPE B DRAIN	
		c		0.19																																											Conc PAD	
		d		0.19																																											Conc PAD	
	17-12	a		0.13																																											Conc PAD	
	17-13	a		0.13																																											Conc PAD	
	17-14	a		0.19																																											Conc PAD	
	17-15	a		0.13																																											Conc PAD	
	17-16	a		0.19																																											Conc PAD	
	17-17	a		0.19																																											Conc PAD	
SHEET TOTAL				6.00				1.27		1,213	258.2																	1.27														3		1				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	456	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-18	18-1	a	8.0	3.80						580																																2						GD-1 INLET	135.39' L+ 70+50.00 ℄ "I5"
		b											17.1																																	4.7	24" RCP	
		c	6.7	2.44						580																																2						GD-1 INLET	134.21' L+ 70+70.00 ℄ "I5"
		d											136.2																																	4.5	24" RCP	
		e	5.9	2.20						580																																2						GD-1 INLET	124.78' L+ 72+10.00 ℄ "I5"
		f											171.5																																	3.9	24" RCP	
		g	6.0	2.23						580																																2						GD-1 INLET	112.05' L+ 73+80.00 ℄ "I5"
		h											153.0																																	3.9	24" RCP	
		i	4.5	1.80						580																																2						GD-1 INLET	100.04' L+ 75+40.00 ℄ "I5"
		j											166.2																																	3.6	24" RCP	
		k	5.0	1.94						580																																2						GD-1 INLET	95.16' L+ 77+10.00 ℄ "I5"
	18-2	a	2.9	1.32						580																																2						GD-1 INLET	40.28' R+ 74+17.00 ⅊ "VA1"
		b					6.67						21.7																																	1.1	24" RCP W/ Conc BACKFILL	
		c	3.1	1.37						580																																2						GD-1 INLET	39.55' R+ 74+42.00 ⅊ "VA1"
		d					42.83						197.0																																	2.4	24" RCP W/ Conc BACKFILL	
		e	4.4	1.77						580																																2						GD-1 INLET	21.50' R+ 76+43.00 ⅊ "VA1"
		f											124.1																																	2.2	24" RCP	
		g	4.3	1.72						580																																2						GD-1 INLET	21.50' R+ 77+70.00 ⅊ "VA1"
		h											67.1																																	2.3	24" RCP	
		i	4.0	1.63						580																																2						GD-1 INLET	21.50' R+ 78+40.00 ⅊ "VA1"
SHEET TOTAL				22.22			49.50			6,380			1,053.9																													22							

(N) = NOT A separate PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-45

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	457	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-18	18-3	a					1.87						56.3																																	6.4	24" RCP W/ Conc BACKFILL	
		b	7.4	2.62						580																															2					GD-1 INLET	102.33' R+ 78+40.00 ℄ "I5"
		c											258.2																																	6.4	24" RCP	
		d	5.6	2.10						580																															2					GD-1 INLET	101.00' R+ 71+40.00 ℄ "I5"
		e					14.32						237.1																																	3.6	24" RCP W/ Conc BACKFILL	
		f	3.8	1.58						580																															2					GD-1 INLET	101.00' R+ 69+00.00 ℄ "I5"
		g											68.5																																	6.0	24" RCP	
	18-4	a	8.0	2.58						235																																	1				JUNCTION CHAMBER No. 3	170.94' R+ 68+90.94 ℄ "I5"
		b											46.9																																	6.0	24" RCP	
		c																										1																				24" Conc FES	171.24' R+ 69+40.95 ℄ "I5"
		d																														1.3	6.4															CONCRETED RSP	
		e																							37.0																					9.8	6" PP	
		f																										1																				24" Conc FES	
		g											22.3																																	2.3	24" RCP	
		h	9.5	4.02						326																															1					TYPE G2 INLET	181.00' R+ 70+59.00 ℄ "I5"
		i											133.3																																	12.8	24" RCP	
		j						27.52																					27.52																		TYPE B DRAIN	
SHEET TOTAL				12.90			16.19	27.52		2,301			822.6												37.0			2	27.52			1.3	6.4								7		1					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-46

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	458	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-18	18-5	a	4.7	1.84						580																															2						GD-1 INLET	51.46′ R+ 68+50.00 ℄ "VA4"
		b											16.0																																3.5	24" RCP	
		c	5.5	2.07						580																															2						GD-1 INLET	54.54′ R+ 68+77.50 ℄ "VA4"
		d											15.5																																4.3	24" RCP	
		e	6.3	2.30						580																															2						GD-1 INLET	57.20′ R+ 69+05.00 ℄ "VA4"
		f											100.0																																3.5	24" RCP	
		g	4.1	1.57						326																				2.30	20.5										1						TYPE G2 INLET W/INLET APRON	179.78′ L+ 104+53.94 ℄ "VAL"
		h											111.2																																4.8	24" RCP	
	18-6	a	4.5	1.63						115																																	1					COCB 300-3, W=3.5′	17.00′ L+ 66+50.00 ℄ "SFIR1"
		b										19.9																																	5.6	18" RCP	
	18-7	a	4.5	2.48						115																																	1					COCB 300-3, W=7′	17.00′ L+ 67+40.00 ℄ "SFIR1"
		b										7.9																																	4.8	18" RCP	
	18-8	a											18.6																																8.5	24" RCP	
	18-9	a	4.5	2.48						115																																	1					COCB 300-3, W=7′	17.00′ L+ 72+10.00 ℄ "SFIR1"
		b										20.4																																	7.8	18" RCP	
	18-10	a	4.5	1.63						115																																	1					COCB 300-3, W=3.5′	17.00′ L+ 72+90.00 ℄ "SFIR1"
		b										46.5																																	3.4	18" RCP	
SHEET TOTAL				16.00						2,526		94.7	261.3																	2.30	20.5										7		4					

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-47

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	459	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-18	18-10	c	5.9	2.02						115																																	1				COCB 300-3, W=3.5′	17.00′ L+ 73+40.00 ℄ "SFIR1"
		d										8.9																																		7.7	18" RCP	
	18-11	a	4.0	2.68						435															0.7																	1				MH 321-2	6.00′ R+ 16+21.00 ℄ "FIR2"
		b										147.2																																		3.7	18" RCP	
		c	4.0	2.68						435															0.7																	1				MH 321-2	6.00′ R+ 17+72.00 ℄ "FIR2"
		d										253.9																																		3.9	18" RCP	
		e	4.0	2.68						435															0.9																	1				MH 321-2	10.98′ R+ 20+40.50 ℄ "FIR2"
												34.3																																		6.1	18" RCP	
	18-12	a	4.5	1.63						115																																	1				COCB 300-3, W=3.5′	17.00′ L+ 16+11.00 ℄ "FIR2"
		b										24.0																																			18" RCP	
		c										13.8																																		2.7	18" RCP	
		d	4.5	1.63						115																																	1				COCB 300-3, W=3.5′	6.00′ R+ 16+11.00 ℄ "FIR2"
	18-13	a	4.5	1.63						115																																	1				COCB 300-3, W=3.5′	17.00′ L+ 17+59.00 ℄ "FIR2"
		b										25.1																																		2.7	18" RCP	
	18-14	a										18.6																																		3.1	18" RCP	
		b	4.5	2.48						115																																	1				COCB 300-3, W=7.0′	23.00′ R+ 20+57.00 ℄ "FIR2"
	18-15	a	7.7	2.51						326																															1					TYPE G2 INLET	292.96′ L+ 70+91.92 ℄ "SFIR1"
		b											135.4																																	5.8	24" RCP	
SHEET TOTAL				19.94						2,206		525.8	135.4												2.3																1	3	5					

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3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-48

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	460	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No. ⬡	DRAINAGE SYSTEM No. ○	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-18	18-15	c	4.0	2.68						435																3.1																	1					MH 321-2	28.10′ L+ 20+40.00 ℄ "FIR2"
		d										54.2																																		6.1	18" RCP	
		e	4.5	2.48						115																																	1				COCB 300-3, W=7′	23.84′ L+ 20+87.00 ℄ "FIR2"
D-18	18-16	a											216.5																																	4.8	24" RCP	
		b	6.8	2.45						580																															2					GD-1 INLET	33.50 R+ 70+00.00 ⅊ "VA1"
		c											189.1																																	4.8	24" RCP	
		d	4.5	1.78						580																															2					GD-1 INLET	33.50 R+ 72+00.00 ⅊ "VA1"
		e																																21.0													GRATED LINE DRAIN W/ 0.6% PRE-SLOPED SECTIONS	
		f											21.0																																	2.5	24" RCP	
		g	4.2	1.69						580																															2					GD-1 INLET	33.50 R+ 72+25.00 ⅊ "VA1"
		h																																21.0													GRATED LINE DRAIN W/ 0.6% PRE-SLOPED SECTIONS	
		i											21.0																																	2.2	24" RCP	
		j	3.9	1.61						580																															2					GD-1 INLET	33.50 R+ 72+50.00 ⅊ "VA1"
D-18	18-17	a											77.2																																	12.4	24" RCP	
		b	7.6	2.72						652																															2					GD-3 INLET	48.18′ R+ 72+57.90 ⅊ "VA1"
		c											130.4																																	5.6	24" RCP	
		d	4.8	2.60						115																																	1				COCB 300-3, W=7′	54.20′ R+ 73+95.50 ⅊ "VA1"
		e										80.6																																		2.8	18" RCP	
		f	4.5	2.48						115																																	1				COCB 300-3, W=7′	24.05′ R+ 74+94.01 ⅊ "FRE"
	18-18	a				3.52																																										CURB DRAIN	14.60′ R+ 74+64.32 ⅊ "FRE"
SHEET TOTAL				20.49		3.52				3,752		134.8	655.2													3.1								42.0								10	1	3				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-49

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	461	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

3

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-19	19-1	a	4.0	2.63						435															3.5																	1					MH 321-2	35.03′ R+ 85+73.18 ℄ "VAL"
		b													78.5																														5.9	30" RCP	
		c	4.5	2.85						435															0.9																	1					MH 321-2	67.20′ R+ 86+46.92 ℄ "VAL"
		d													298.9																														3.8	30" RCP	
		e	3.5	2.41						435															0.8																	1					MH 321-2	67.23′ R+ 89+49.78 ℄ "VAL"
		f													318.7																														2.6	30" RCP	
		g	3.5	2.41						435															0.7																	1					MH 321-2	20.50′ R+ 92+56.14 ℄ "VAL"
		h													92.4																														3.8	30" RCP	
		i	4.1	2.67						435															1.3																	1					MH 321-2	35.00′ R+ 93+48.97 ℄ "VAL"
		j											8.0																																4.0	24" RCP	
		k	6.2	2.11						235																																1					JC 3	56.97′ R+ 94+72.46 ℄ "VAL"
		l											8.0																																3.5	24" RCP	
		m		1.39																																										PIPE CULVERT HEADWALL	62.69′ R+ 94+64.87 ℄ "VAL"
	19-2	a	2.9	1.80						115																																1					COCB 300-3, W=7′	3.00′ L+ 6+68.47 ⅊ "ARB"
		b					79.21					332.0																																	1.5	18" RCP W/ Conc BACKFILL	
		c	3.0	1.28						235																																	1				JC 3 (MOD)	3.00′ L+ 3+35.47 ⅊ "ARB"
		d					67.76					284.0																																	2.4	18" RCP W/ Conc BACKFILL	
		e	3.9	1.50						235																																	1				JC 3 (MOD)	3.00′ L+ 3+35.47 ⅊ "ARB"
		f										232.7																																	2.0	18" RCP	
		g	3.5	1.42						235																																	1				JC 3 (MOD)	1.05′ R+ 4+69.64 ⅊ "SFIR3"
SHEET TOTAL				22.47			146.97			3,230		848.7	16.0		788.5										7.2																	6	1	3				

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3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016 DRAINAGE QUANTITIES**

DQ-50

CALCULATED-DESIGNED BY SIEW MEI TAN
CHECKED BY WING YAN LEE
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR MARIA QUINONEZ

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

NOTE:

JOINTS ARE STANDARD JOINT TYPE

3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	462	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-19	19-3	a	4.0	2.27						115																																	1				COCB 300-3, W=7′	32.43′ Rt 4+00.00 ℄ "SFIR3"
		b										75.0																																	2.0	18" RCP	
	19-4	a	1.7	0.54						326																															1				TYPE G1 INLET	41.79′ Lt 92+26.00 ℄ "VAL"
		b					16.90				96.8																																		1.2	12" RCP W/ Conc BACKFILL	
		c	2.4	0.76						326																															1				TYPE G1 INLET	41.88′ Rt 91+71.00 ℄ "VAL"
		d									21.0																																		2.5	12" RCP	
		e		0.40																																										JS 331-3	67.20′ Rt 91+64.52 ℄ "VAL"
	19-5	a	1.7	0.54						326																															1				TYPE G1 INLET	42.01′ Lt 90+70.00 ℄ "VAL"
		b					16.68				95.5																																		1.8	12" RCP W/ Conc BACKFILL	
		c	3.3	1.02						326																															1				TYPE G1 INLET	42.09′ Rt 90+18.00 ℄ "VAL"
		d									22.8																																		3.9	12" RCP	
		e		0.40																																										JS 331-3	67.20′ Rt 90+11.58 ℄ "VAL"
SHEET TOTAL				5.93			33.58			1,419	236.1	75.0																													4		1					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE QUANTITIES
DQ-51

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	463	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

3

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No. ⬡	DRAINAGE SYSTEM No. ○	DRAINAGE UNIT	"H" OR "V" FT	MINOR CONCRETE (MINOR STRUCTURE) CY	MINOR CONCRETE (GUTTER DEPRESSION) CY	MINOR CONCRETE (SIDEWALK AND CURB RAMP) CY	CONCRETE BACKFILL (PIPE TRENCH) CY	CONCRETE (DITCH LINING) CY	CONCRETE (CHANNEL LINING) CY	MISCELLANEOUS IRON AND STEEL LB	RCP (12" - 30") 12" RCP LF	18" RCP LF	24" RCP LF		30" RCP LF	36" RCP LF	42" RCP LF	48" RCP LF	54" RCP LF	60" RCP LF	66" RCP LF	72" RCP LF	84" RCP LF	18" SLOTTED CSP (0.079" THICK) LF	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN LF	36" PRECAST CONCRETE PIPE MANHOLE LF	42" AUTOMATIC DRAINAGE GATE EA	24" CONCRETE FLARED END SECTION EA	DITCH EXCAVATION CY	HOT MIX ASPHALT (TYPE A) TON	PLACE HOT MIX ASPHALT (Misc AREA) SQYD	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B) CY	ROCK SLOPE PROTECTION FABRIC (CLASS 8) SQYD	GRATED LINE DRAIN LF	CABLE RAILING LF	REMOVE CONCRETE CY	REMOVE PIPE LF	REMOVE INLET EA	REMOVE MANHOLE EA	REMOVE CATCH BASIN EA	ADJUST MANHOLE EA	TYPE 24-12 FRAME AND GRATE (N) EA	MANHOLE FRAME AND COVER (630-3, U45) (N) EA	MANHOLE FRAME AND COVER (312-3) (N) EA	MANHOLE FRAME AND COVER (U46) (N) EA	FRAME & GRATING FOR CATCH BASINS(311-2) (N) EA	MAXIMUM COVER FT	DESCRIPTION	STATION
D-19	19-6	a									13.6																																			2.5	12" RCP	
		b		0.40																																											JS 331-3	67.29′ R+ 88+85.40 ℄ "VAL"
	19-7	a																																						1							ADJUST MANHOLE	34.93′ R+ 82+73.99 ℄ "VAL"
	19-8	a	3.0	0.95						326																														1							TYPE G1 INLET	76.69′ R+ 88+60.37 ℄ "VAL"
		b									7.5																																			2.7	12" RCP	
		c		0.41																																											JS 331-3	67.29′ R+ 88+55.59 ℄ "VAL"
	19-9	a	4.0	1.48						115																																1						COCB 300-3 , W=3.5′	90.06′ R+ 86+83.63 ℄ "VAL"
		b									16.0																																			3.0	12" RCP	
		c		0.42																																											JS 331-3	67.21′ R+ 86+85.26 ℄ "VAL"
D-20	20-1	a		0.65																																											J.S. 331-3	4.07′ L+ 68+03.09 ⅊ "NFIR2"
		b										42.0																																		12.0	18" RCP	
		c	2.5	0.93						326																														1							TYPE G3 INLET	39.14′ R+ 67+87.92 ⅊ "NFIR2"
		d						26.82																																							TYPE A DRAIN	
SHEET TOTAL				5.24				26.82		767	37.1	42.0																												1	2		1						

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE QUANTITIES
DQ-52

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	464	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-20	20-2	a														142.8																															15.0	36" RCP	
		b		2.54						435															10.1																	1				MH 322-2	31.59′ R+ 107+07.93 ℄ "VAL"
		c														346.7																															10.7	36" RCP	
		d		2.41						435															0.7																	1				MH 322-2	31.59′ R+ 110+59.00 ℄ "VAL"
		e													4.0																															1.9	30" RCP	
	20-3	a	4.5	2.48						115																																1				COCB 300-3, W=7′	54.00′ R+ 103+74.87 ℄ "VAL"
		b										26.3																																	2.9	18" RCP	
		c	5.2	3.21						435															0.9																	1				MH 321-2	30.00′ R+ 103+86.72 ℄ "VAL"
		d											232.3																																	4.3	24" RCP	
		e	5.8	3.43						435															0.9																	1				MH 321-2	30.00′ R+ 116+23.00 ℄ "VAL"
		f											40.2																																	14.9	24" RCP	
		g		0.82																																											JS 331-3	76.72′ R+ 116+24.00 ℄ "VAL"
		h				1.29																		16.6																							2.0	6" PP W/ Conc BACKFILL	
	20-4	a	4.5	3.21						115																																1				COCB 300-3, W=10′	54.00′ R+ 105+58.00 ℄ "VAL"
		b										21.0																																	5.1	18" RCP	
		c		0.55																																						1				JS 331-3	30.00′ R+ 105+66.12 ℄ "VAL"
SHEET TOTAL				18.65			1.29			1,970		47.3	272.5		4.0	489.5								16.6	12.6																	5	2					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-53

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ

CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	465	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-20	20-5	a	4.5	3.21						115																																	1				COCB 300-3, W=10′	53.44′ R+ 107+18.00 ℄ "VAL"
		b											23.6																																	11.5	24" RCP	
	20-6	a	4.5	4.19						115																																		1			COCB 300-3, W=14′	41.23′ R+ 110+63.50 ℄ "VAL"
		b											7.3																																	2.2	24" RCP	
	20-7	a	3.5	2.43						435																0.9																	1				MH 321-2	44.88′ L+ 67+18.36 ⅊ "NFIR2"
		b											164.9																																	2.8	24" RCP	
		c		0.48																																											JS 331-3	44.76′ L+ 66+04.05 ⅊ "NFIR2"
		d	3.5	2.43						435																0.5																	1				MH 321-2	44.00′ L+ 65+26.56 ⅊ "NFIR2"
	20-8	a										7.6																																		5.7	18" RCP	
		b	6.0	5.19						115																																		1			COCB 300-3, W=14′	31.00′ L+ 65+98.82 ⅊ "NFIR2"
		c										63.0																																		3.6	18" RCP	
		d	4.5	4.19						115																																		1			COCB 300-3, W=7′	31.00′ L+ 65+98.82 ⅊ "NFIR2"
SHEET TOTAL				22.12						1,330		70.6	195.8													1.4																	2	4					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-54

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	466	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-20	20-9	a										7.6																																			3.0	18" RCP	
		b	5.1	2.73						115																																	1				COCB 300-3, W=7′	31.00′ L+ 65+25.66 ℄ "NFIR2"
		c										63.0																																		2.7	18" RCP	
		d	4.5	2.48						115																																	1				COCB 300-3, W=7′	31.00′ R+ 65+25.66 ℄ "NFIR2"
		e									39.3																																			2.2	12" RCP	
		f	4.0	1.54						235																																		1			JC 3-C	40.48′ R+ 65+71.75 ℄ "NFIR2"
		g							0.06																																						1.0′ Conc CHANNEL TRANSITION	
	20-10	a	4.0	2.68						435																0.9																	1				MH 321-2	30.00′ L+ 104+58.43 ℄ "VAL"
		b										111.7																																		3.6	24" RCP	
		c	4.0	2.65						435																0.9																	1				MH 321-2	30.00′ L+ 105+74.08 ℄ "VAL"
		d										59.5																																		3.6	24" RCP	
	20-11	a	4.5	2.48						115																																	1				COCB 300-3, W=7′	54.00′ L+ 104+46.30 ℄ "VAL"
		b										26.3																																		2.9	18" RCP	
		c					1.29																		16.6																							6" PP W/ Conc BACKFILL	
SHEET TOTAL				14.56			1.29		0.06	1,450	39.3	268.1													16.6	1.8																2	3	1				

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	467	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No. ⬡	DRAINAGE SYSTEM No. ○	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-20	20-12	a	4.5	2.48						115																																		1				COCB 300-3, W=7′	54.00′ Lt 105+42.00 ℄ "VAL"
		b										24.6																																		2.8	18" RCP	
		c		0.55																																											JS 331-3	30.00′ Lt 105+55.28 ℄ "VAL"
	20-13	a													4.0																															1.9	30" RCP	
		b		1.97						435															1.4																1					MH 322-2	28.00′ Lt 110+60.93 ℄ "VAL"
		c														351.9																													10.7	36" RCP	
		d		2.28						435															10.3																1					MH 322-2	28.00′ Lt 107+04.35 ℄ "VAL"
		e														114.0																													12.4	36" RCP	
		f	15.5	6.79						580																														2					GD-1 INLET	4.00′ Lt 72+18.00 ℄ "VA4"
		g																						89.2																							18" SCSP	
		h										89.2																																	5.7	18" RCP	
		i	6.0	1.61						326																														1					TYPE G1 INLET	4.00′ Lt 71+26.00 ℄ "VA4"
	20-14	a	4.5	4.19						115																																1				COCB 300-3, W=14′	40.90′ Lt 110+67.50 ℄ "VAL"
		b											11.1																																2.7	24" RCP	
	20-15	a	4.5	2.48						115																																1				COCB 300-3, W=7′	54.02′ Lt 107+18.50 ℄ "VAL"
		b											25.4																																12.4	24" RCP	
SHEET TOTAL				22.35						2,121		113.8	36.5		4.0	465.9								89.2	11.7															3	2	3					

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-56

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	468	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

NOTE:

JOINTS ARE STANDARD JOINT TYPE

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP	~~27" RCP~~ 3	30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	~~63" RCP~~ 3	~~69" RCP~~ 3	~~81" RCP~~ 3	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETED-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-20	20-16	a											54.3																																	16.0	24" RCP	
		b	18.3	7.92						580																															2						GD-1 INLET	58.00 R+ 72+18.00 ℄ "VA4"
		c											146.6																																	18.2	24" RCP	
	20-17	a	3.0	1.79						326																															1						TYPE G2 INLET	85.93 R+ 67+20.36 ℄ "VA1"
		b											103.1																																	15.6	24" RCP	
	20-18	a	2.0	0.73						326																															1						TYPE G1 INLET	64.50' L+ 108+19.45 ℄ "VAL"
		b									8.0																																			7.2	12" RCP	
		c					0.05																																								JS 332-2	29.50' L+ 108+19.45 ℄ "VAL"
	20-19	a	2.0	0.73						326																															1						TYPE G1 INLET	55.95' L+ 109+85.50 ℄ "VAL"
		b					0.52				3.0																																			1.0	12" RCP W/ Conc BACKFILL	
		c	2.2	0.78						326																															1						TYPE G1 INLET	53.59' L+ 109+81.68 ℄ "VAL"
		d					0.98				34.1																																			3.8	12" RCP W/ Conc BACKFILL	
		e					0.05																																								JS 332-2	29.50' L+ 109+57.63 ℄ "VAL"
SHEET TOTAL				11.95			1.60			1,884	45.1		304.0																												6							

(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

DRAINAGE QUANTITIES
DQ-57

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: WING YAN LEE
CHECKED BY: SIEW MEI TAN
REVISED BY / DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:51

NOTE:

JOINTS ARE STANDARD JOINT TYPE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	469	1622

REGISTERED CIVIL ENGINEER 5-7-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WING-YAN LEE No. 61452 Exp. 6-30-17 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.

SUMMARY OF DRAINAGE QUANTITIES

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	"H" OR "V"	MINOR CONCRETE (MINOR STRUCTURE)	MINOR CONCRETE (GUTTER DEPRESSION)	MINOR CONCRETE (SIDEWALK AND CURB RAMP)	CONCRETE BACKFILL (PIPE TRENCH)	CONCRETE (DITCH LINING)	CONCRETE (CHANNEL LINING)	MISCELLANEOUS IRON AND STEEL	RCP (12" - 30") 12" RCP	18" RCP	24" RCP		30" RCP	36" RCP	42" RCP	48" RCP	54" RCP	60" RCP	66" RCP	72" RCP	84" RCP	18" SLOTTED CSP (0.079" THICK)	6" NON-PERFORATED PLASTIC PIPE UNDERDRAIN	36" PRECAST CONCRETE PIPE MANHOLE	42" AUTOMATIC DRAINAGE GATE	24" CONCRETE FLARED END SECTION	DITCH EXCAVATION	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (Misc AREA)	CONCRETE-ROCK SLOPE PROTECTION (FACING, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	GRATED LINE DRAIN	CABLE RAILING	REMOVE CONCRETE	REMOVE PIPE	REMOVE INLET	REMOVE MANHOLE	REMOVE CATCH BASIN	ADJUST MANHOLE	TYPE 24-12 FRAME AND GRATE (N)	MANHOLE FRAME AND COVER (630-3, U45) (N)	MANHOLE FRAME AND COVER (312-3) (N)	MANHOLE FRAME AND COVER (U46) (N)	FRAME & GRATING FOR CATCH BASINS(311-2) (N)	MAXIMUM COVER	DESCRIPTION	STATION
			FT	CY	CY	CY	CY	CY	CY	LB	LF	LF	LF		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	CY	TON	SQYD	CY	SQYD	LF	LF	CY	LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT		
D-20	20-20	a	3.0	1.03						326																														1						TYPE G3 INLET	39.09' Lt 67+00.00 ℄ "NFIR2"
		b									13.2																																		3.8	12" RCP	
SHEET TOTAL				1.03						326	13.2																													1							
SUBTOTAL				749.86	2.36	40.19	336.25	203.36	0.06	113,707	826.1	4,667.4	13,537.8		4,271.0	1,164.6	1,667.7	292.6	220.8	231.6	717.3	612.2	585.8	2,587.6	126.6	176.9	1	2	176.54	3.70	29.9	5.3	27.9	42.0	22.7	925.89	13,790.0	65	10	21	1	248	56	58	12	10			
Q-2 SUBTOTAL				2.60																																												
GRAND TOTAL				752.46	2.36	*	336.25	203.36	0.06	113,707	23,302.3					1,164.6	1,667.7	292.6	220.8	231.6	717.3	612.2	585.8	2,587.6	**	176.9	1	2	176.54	*	*	5.3	27.9	42.0	**	925.89	13,790.0	65	10	21	1	248	56	58	12	10			

* INCLUDED IN HIGHWAY QUANTITIES
** SEE DQ-59 FOR GRAND TOTAL
(N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

DRAINAGE QUANTITIES
DQ-58

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans HYDRAULICS

FUNCTIONAL SUPERVISOR: MARIA QUINONEZ
CALCULATED-DESIGNED BY: SIEW MEI TAN
CHECKED BY: WING YAN LEE
REVISED BY
DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	561	1622

REGISTERED CIVIL ENGINEER 4-2-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER KENNY HA No. C75502 Exp. 6-30-16 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.

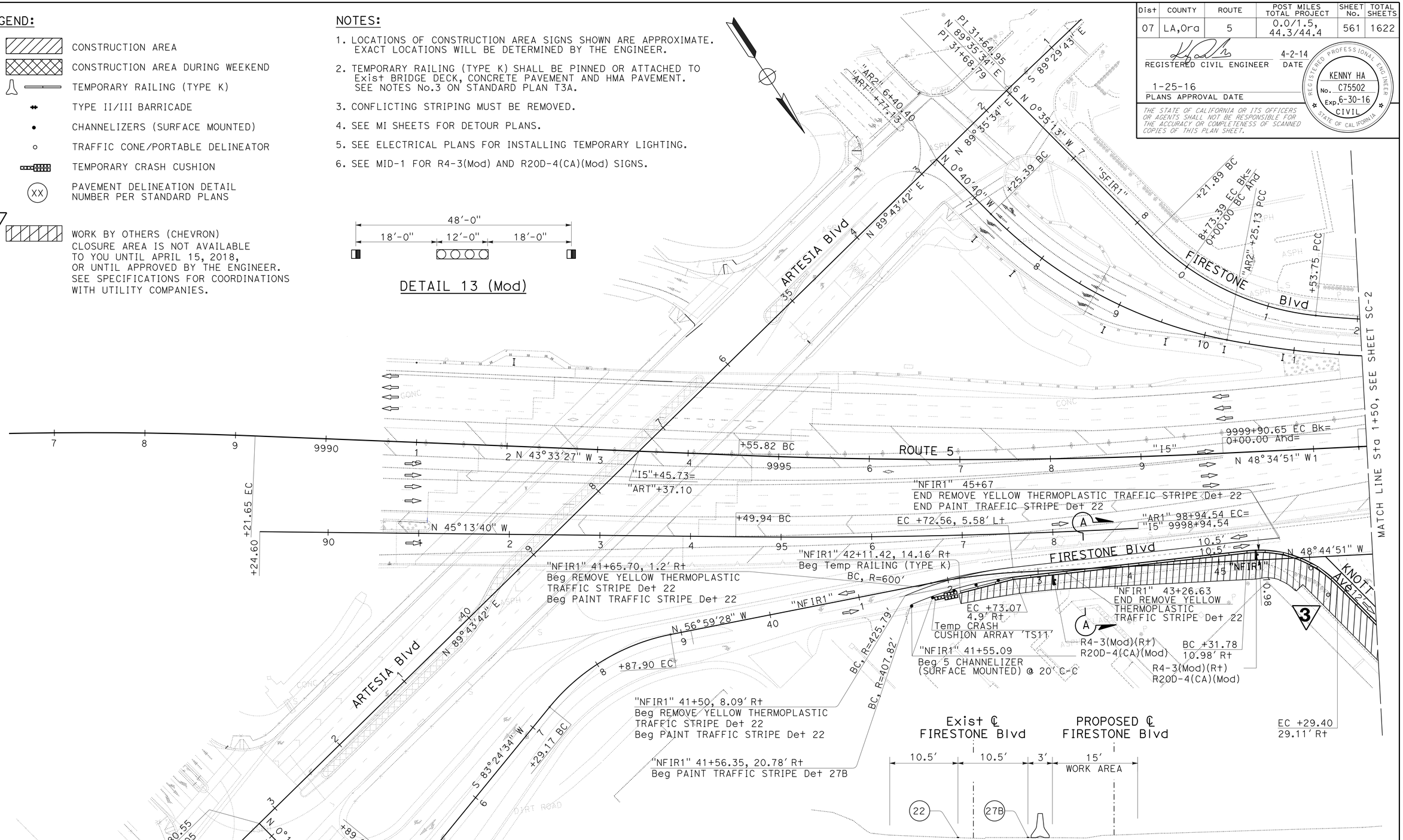
LEGEND:

- CONSTRUCTION AREA
- CONSTRUCTION AREA DURING WEEKEND
- TEMPORARY RAILING (TYPE K)
- TYPE II/III BARRICADE
- CHANNELIZERS (SURFACE MOUNTED)
- TRAFFIC CONE/PORTABLE DELINEATOR
- TEMPORARY CRASH CUSHION
- (XX) PAVEMENT DELINEATION DETAIL NUMBER PER STANDARD PLANS
- 3 WORK BY OTHERS (CHEVRON) CLOSURE AREA IS NOT AVAILABLE TO YOU UNTIL APRIL 15, 2018, OR UNTIL APPROVED BY THE ENGINEER. SEE SPECIFICATIONS FOR COORDINATIONS WITH UTILITY COMPANIES.

NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. TEMPORARY RAILING (TYPE K) SHALL BE PINNED OR ATTACHED TO Exist BRIDGE DECK, CONCRETE PAVEMENT AND HMA PAVEMENT. SEE NOTES No.3 ON STANDARD PLAN T3A.
3. CONFLICTING STRIPING MUST BE REMOVED.
4. SEE MI SHEETS FOR DETOUR PLANS.
5. SEE ELECTRICAL PLANS FOR INSTALLING TEMPORARY LIGHTING.
6. SEE MID-1 FOR R4-3(Mod) AND R20D-4(CA)(Mod) SIGNS.

DETAIL 13 (Mod)



SECTION A-A
NO SCALE

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION TRAFFIC HANDLING PLAN

STAGE 1 (PHASE 1)

SCALE: 1" = 50'

SC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: RICHARD CHIANG
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: KENNY HA
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	562	1622

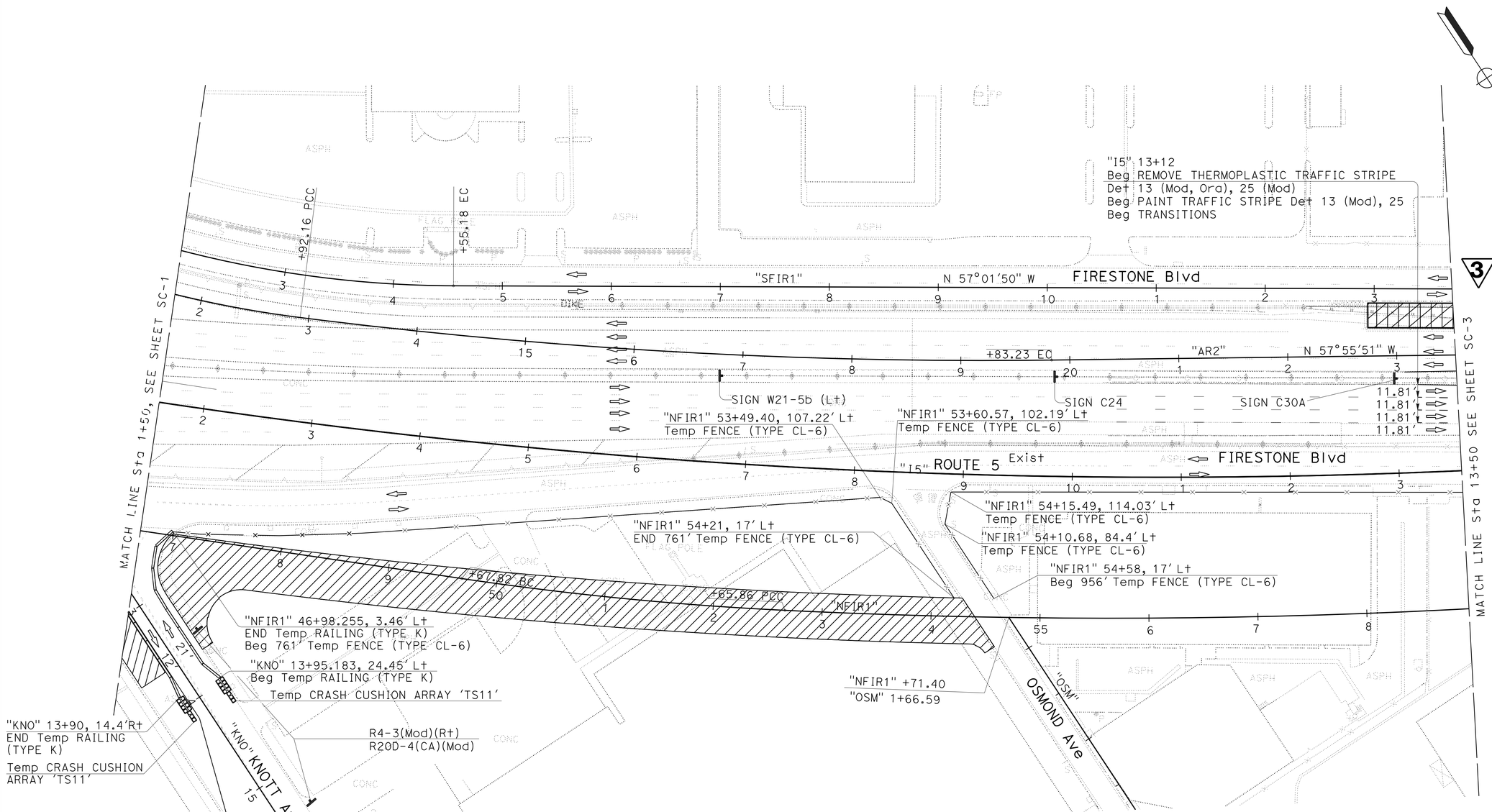
REGISTERED CIVIL ENGINEER 4-2-14 DATE

11-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER KENNY HA No. C75502 Exp. 6/30/16 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.

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016



STAGE CONSTRUCTION TRAFFIC HANDLING PLAN

STAGE 1 (PHASE 1)

SCALE: 1" = 50'

SC-2

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RICHARD CHIANG
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: KENNY HA
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	563	1622

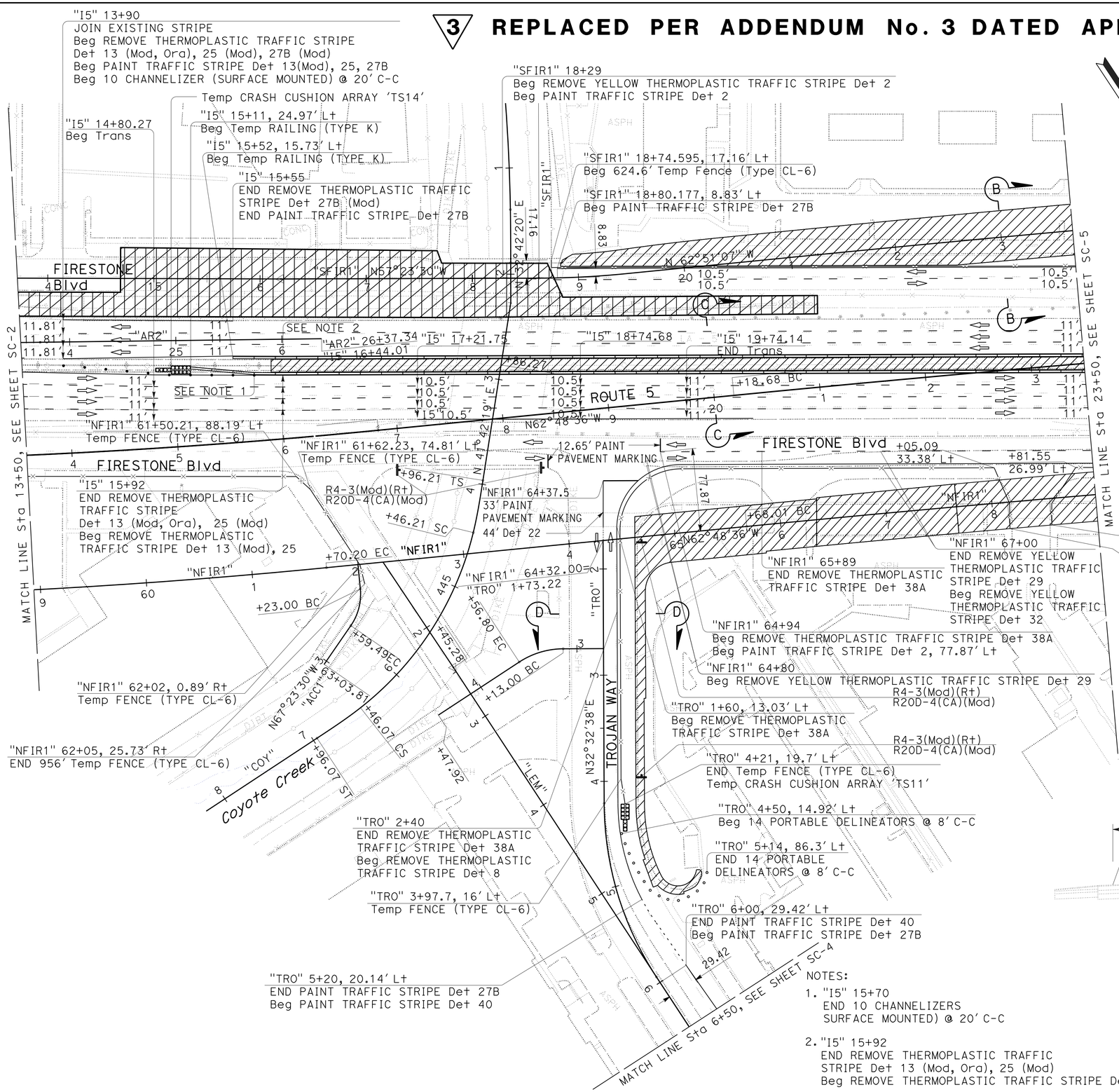
REGISTERED CIVIL ENGINEER 4-2-14 DATE

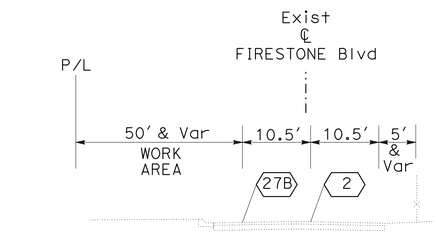
11-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER KENNY HA No. C75502 Exp. 6/30/16 CIVIL STATE OF CALIFORNIA

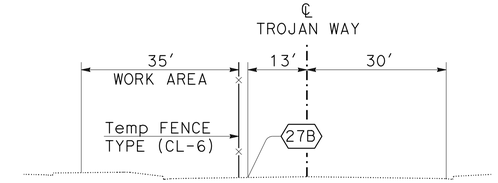
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016** 3

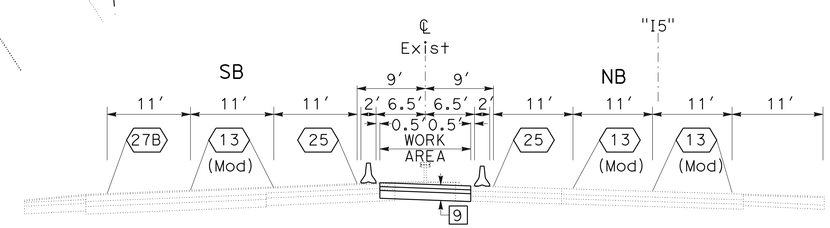




SECTION B-B
NO SCALE



SECTION D-D
NO SCALE



SECTION C-C
NO SCALE

NOTES:

1. "I5" 15+70
   END 10 CHANNELIZERS
   SURFACE MOUNTED) @ 20' C-C

2. "I5" 15+92
   END REMOVE THERMOPLASTIC TRAFFIC
   STRIPE Det 13 (Mod, Ora), 25 (Mod)
   Beg REMOVE THERMOPLASTIC TRAFFIC STRIPE Det 13 (Mod), 25

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION TRAFFIC HANDLING PLAN

STAGE 1 (PHASE 1)

SCALE: 1" = 50'

SC-3

REVISED BY	DATE REVISED	CALCULATED-DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR
H. CHEN	5/2015	ANTOINE NADER	KENNY HA	RICHARD CHIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:51

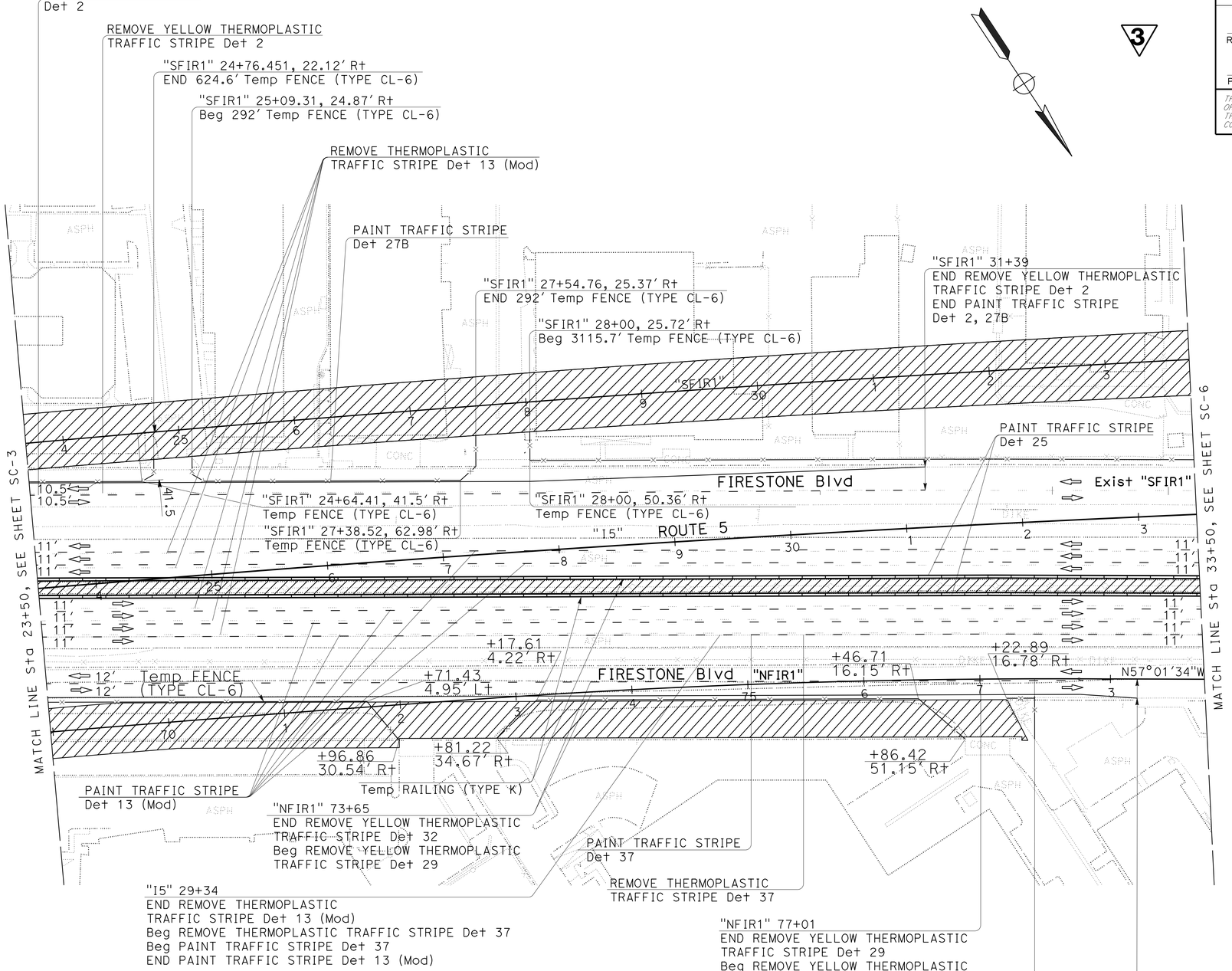
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	565	1622

REGISTERED CIVIL ENGINEER 4-2-14 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER KENNY HA No. C75502 Exp. 6/30/16 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.



3 **REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016**

STAGE CONSTRUCTION TRAFFIC HANDLING PLAN

STAGE 1 (PHASE 1)

SCALE: 1" = 50'

SC-5

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: RICHARD CHIANG
CALCULATED-DESIGNED BY: ANTOINE NADER
CHECKED BY: KENNY HA
REVISED BY: H CHEN
DATE REVISED: 4/2016

LAST REVISION 00-00-00
DATE PLOTTED => 10-APR-2016
TIME PLOTTED => 10:51

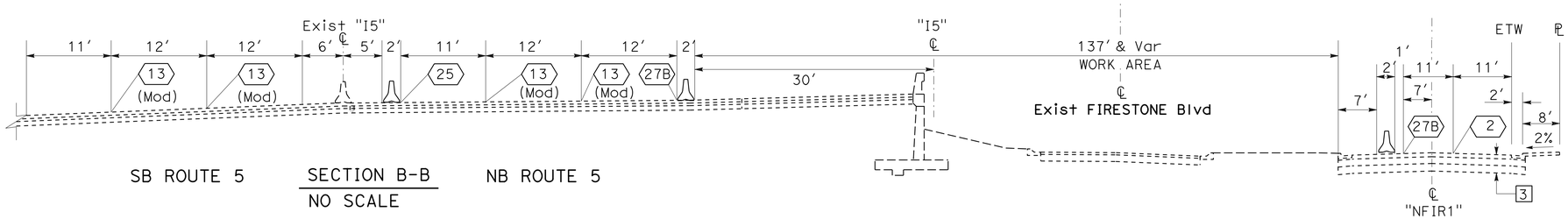
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	585	1622

REGISTERED CIVIL ENGINEER 4-2-14 DATE

11-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER KENNY HA No. C75502 Exp. 6/30/16 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.

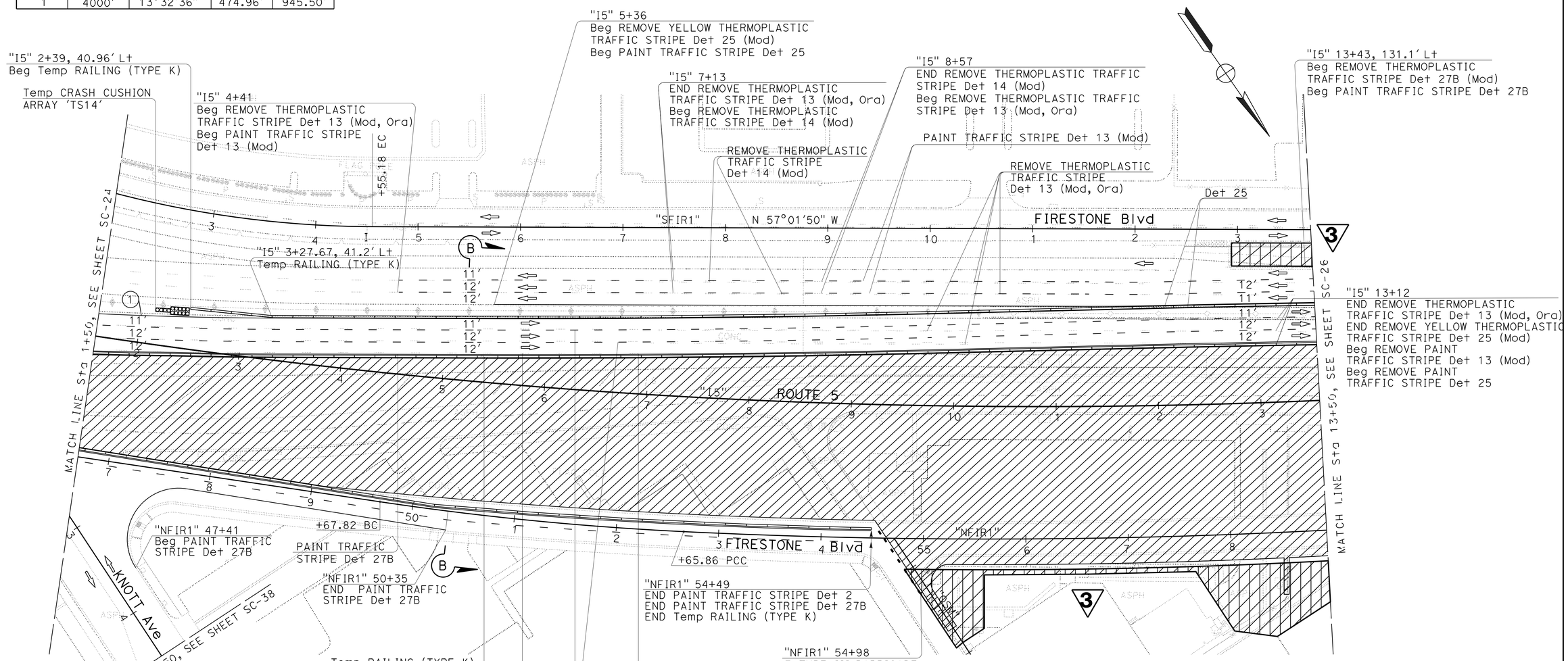


SB ROUTE 5 — SECTION B-B — NB ROUTE 5

NO SCALE

CURVE DATA

No. (H)	R	Δ	T	L
1	4000′	13°32′36″	474.96′	945.50′



3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION TRAFFIC HANDLING PLAN

STAGE 1 (PHASE 3)

SCALE: 1" = 50′

SC-25

REVISED BY	H CHEN
DATE REVISED	4/2016
CALCULATED-DESIGNED BY	ANTOINE NADER
CHECKED BY	KENNY HA
FUNCTIONAL SUPERVISOR	RICHARD CHIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:51

3 REPLACED PER ADDENDUM No. 3 DATED APRIL 15, 2016

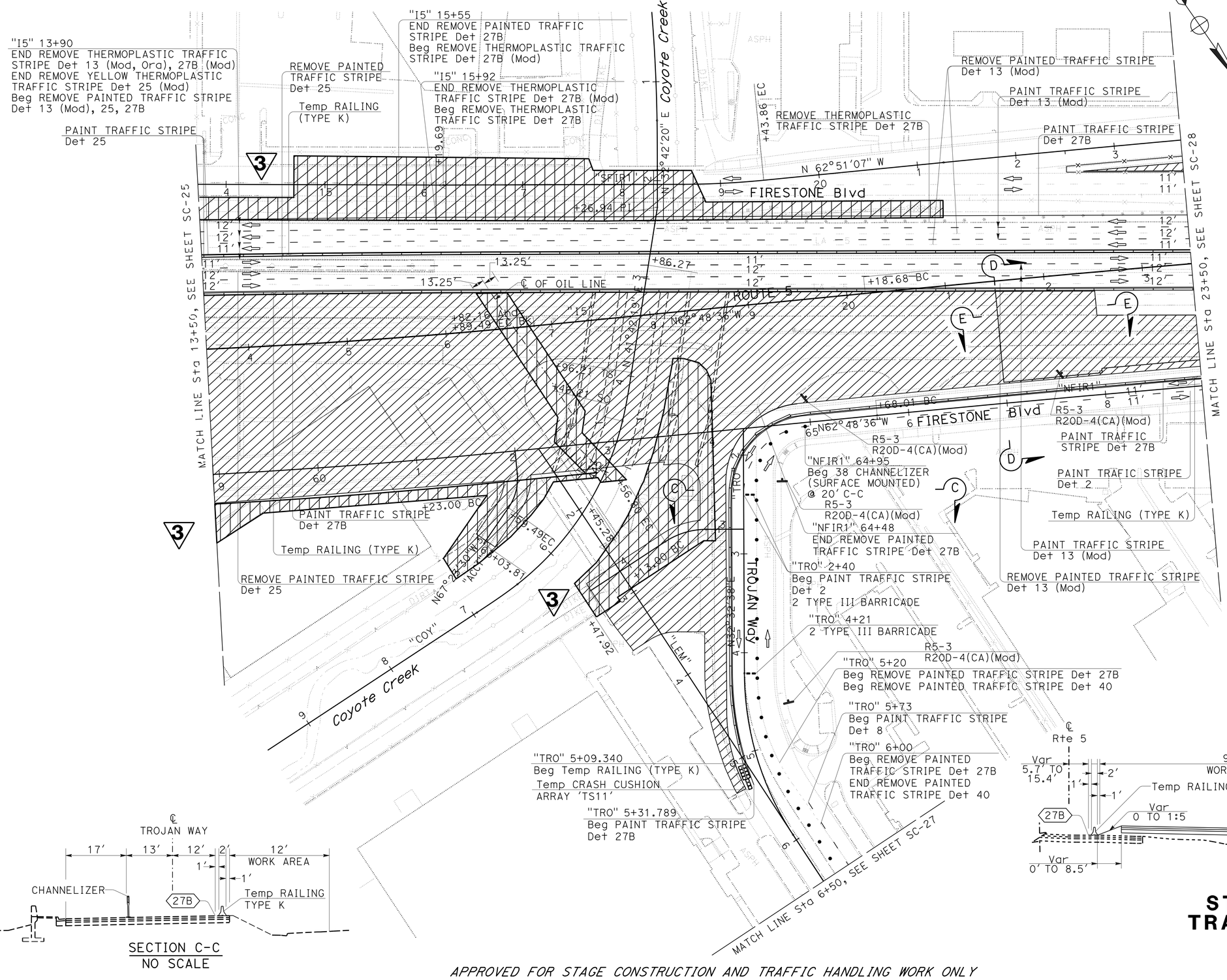
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	586	1622

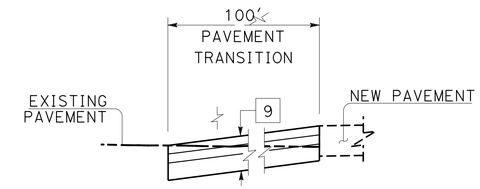
REGISTERED CIVIL ENGINEER 4-2-14 DATE

11-9-15
PLANS APPROVAL DATE

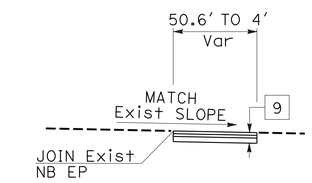
REGISTERED PROFESSIONAL ENGINEER KENNY HA No. C75502 Exp. 6/30/16 CIVIL STATE OF CALIFORNIA

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.



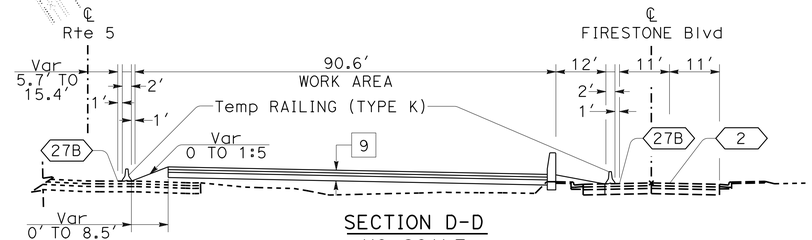


SECTION E-E
"I5" Sta 21+50 TO Sta 22+50
NO SCALE



"I5" Sta 22+50 TO Sta 29+38.85
NO SCALE

SECTION C-C
NO SCALE



SECTION D-D
NO SCALE

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY

STAGE CONSTRUCTION TRAFFIC HANDLING PLAN

STAGE 1 (PHASE 3)

SCALE: 1" = 50'

SC-26

CALCULATED-DESIGNED BY	ANTOINE NADER	REVISED BY	H CHEN
CHECKED BY	KENNY HA	DATE REVISED	4/2016
FUNCTIONAL SUPERVISOR	RICHARD CHIANG		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

LAST REVISION 00-00-00 | DATE PLOTTED => 10-APR-2016 | TIME PLOTTED => 10:51

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1028	1622

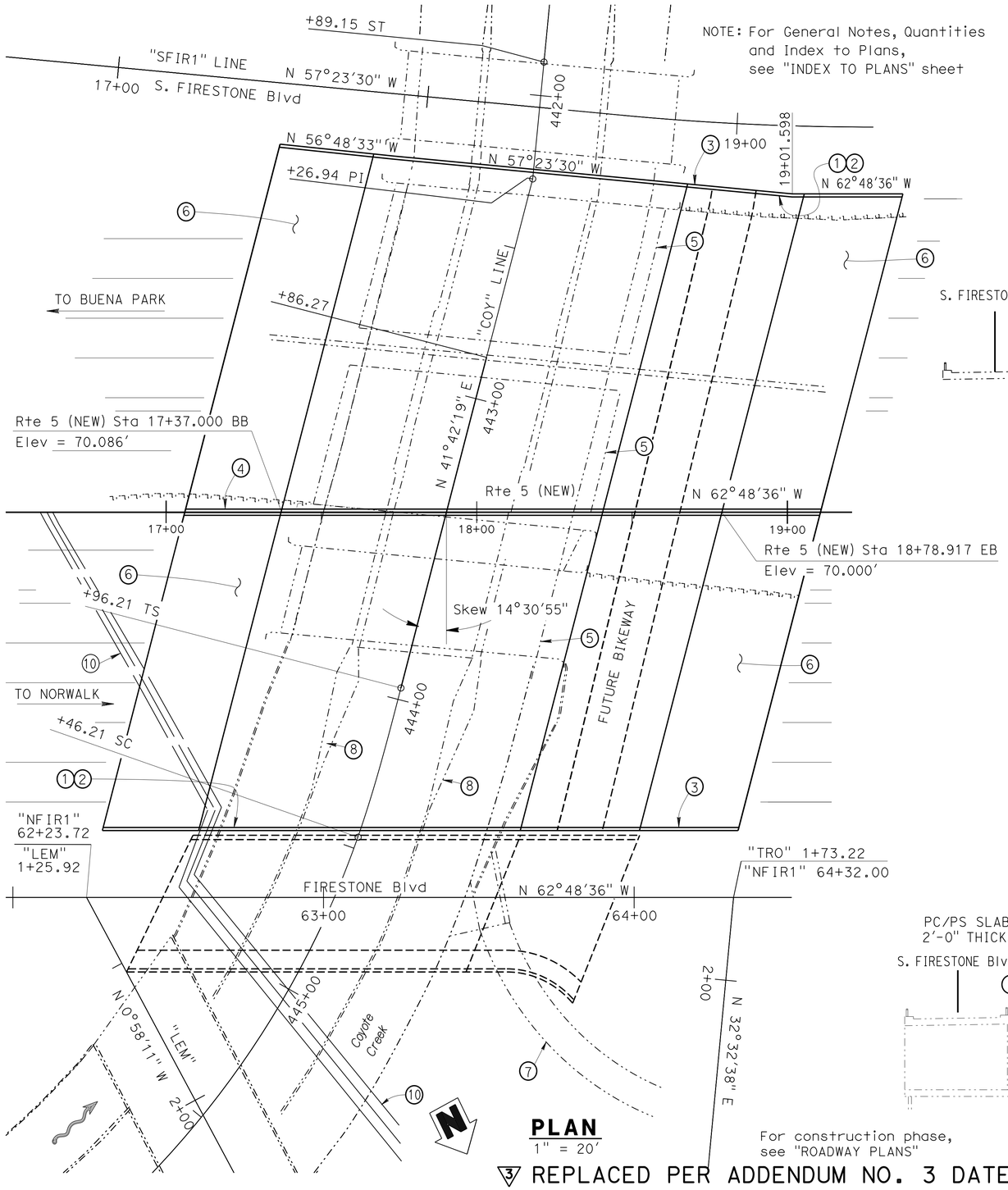
REGISTERED CIVIL ENGINEER Daryoush Tavatli 2-23-15 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Daryoush Tavatli No. 56183 Exp. 12-31-16 CIVIL STATE OF CALIFORNIA

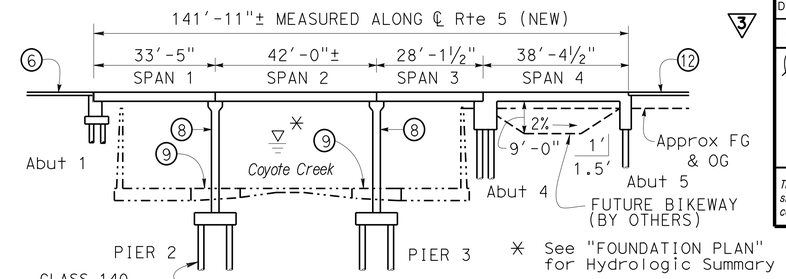
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

NOTE: For General Notes, Quantities and Index to Plans, see "INDEX TO PLANS" sheet



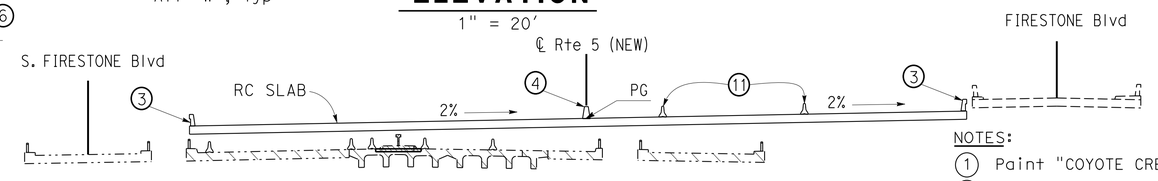
PLAN

1" = 20'



ELEVATION

1" = 20'



TYPICAL SECTION - SPAN 4

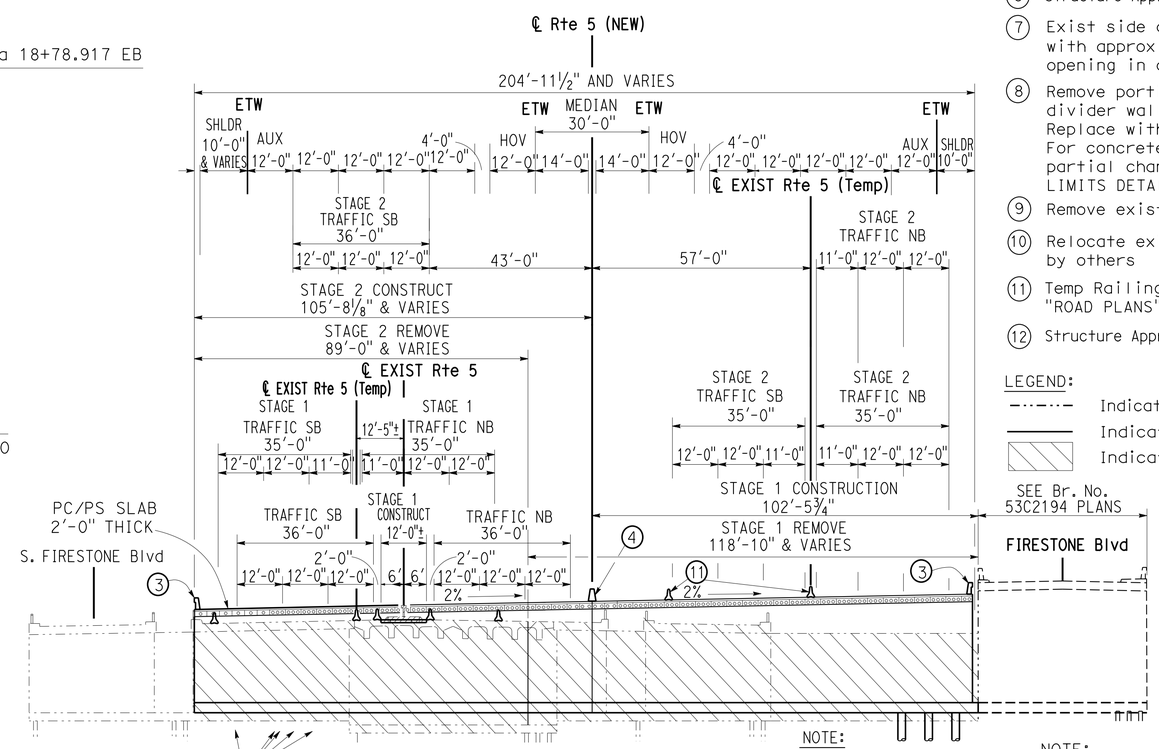
1" = 20'

NOTES:

1. Paint "COYOTE CREEK BR"
2. Paint "53-3044"
3. Conc Barrier, Type 736 Mod
4. Conc Barrier, Type 60GA
5. Remove exist superstructures, abutments and piers
6. Structure Approach Slab Type N(30S)
7. Exist side drain - 90"± ø with approx 7'-6" H x 15' W opening in channel wall
8. Remove portions of exist channel divider walls or bridge piers. Replace with new bridge piers. For concrete remove notes for partial channel wall, see "PAY LIMITS DETAILS NO. 1" sheet
9. Remove existing bridge footings
10. Relocate existing oil pipelines by others
11. Temp Railing Type K, See "ROAD PLANS"
12. Structure Approach Slab Type N(30D)

LEGEND:

- Indicates existing structure
- Indicates New Construction
- Indicates Bridge Removal



NOTE:
All piles not shown

TYPICAL SECTION - SPANS 1, 2 & 3

1" = 20'

NOTE:
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

For construction phase, see "ROADWAY PLANS"

REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

Ramin Rashedi 2-23-15
DESIGN ENGINEER

	BY	CHECKED
DESIGN	D. Tavatli	J. Posey
DETAILS	T. Bittermann	D. Tavatli
QUANTITIES	D. Tavatli	F. Fong

LOAD & RESISTANCE FACTOR DESIGN — LIVE LOADING: HL93 W/"LOW-BOY": PERMIT DESIGN VEHICLE

	BY	CHECKED
LAYOUT	D. Tavatli	J. Posey
SPECIFICATIONS	X. Li	PLANS AND SPECS COMPARED X

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-3044
POST MILE 0.34

COYOTE CREEK BRIDGE (REPLACE)
GENERAL PLAN

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159U4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 3-29-12 9-27-13 2-23-15 9-30-15

SHEET 1 OF 40

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-3044-a-gp.add

USERNAME => s126987 DATE PLOTTED => 12-APR-2016 TIME PLOTTED => 08:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1068	1622

REGISTERED CIVIL ENGINEER 2-26-15 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER WILLIAM D. KEMP No. 55730 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

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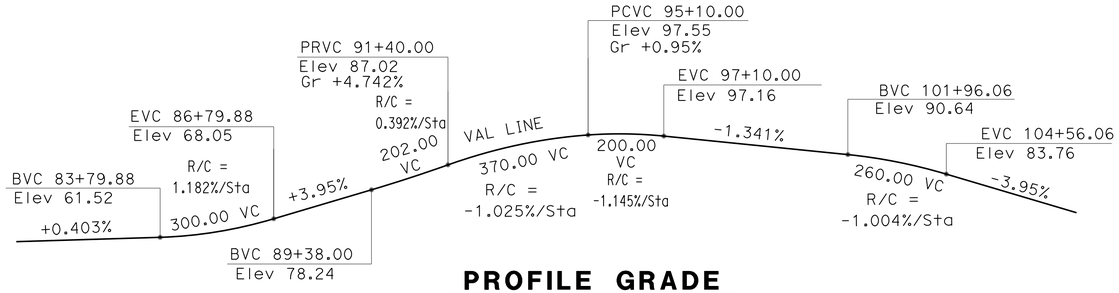
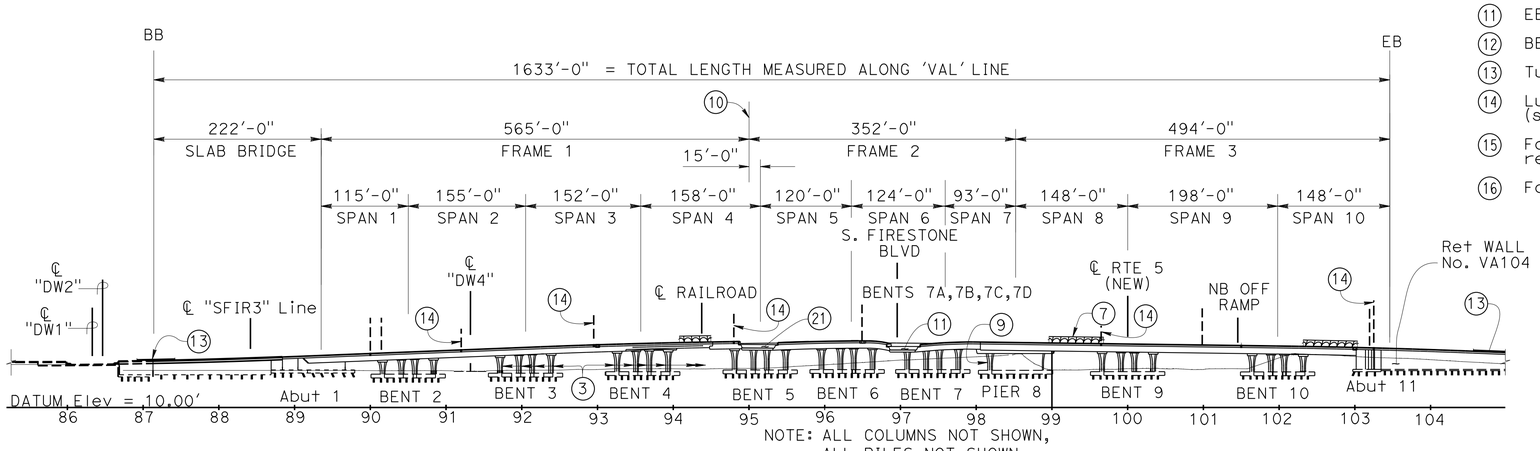


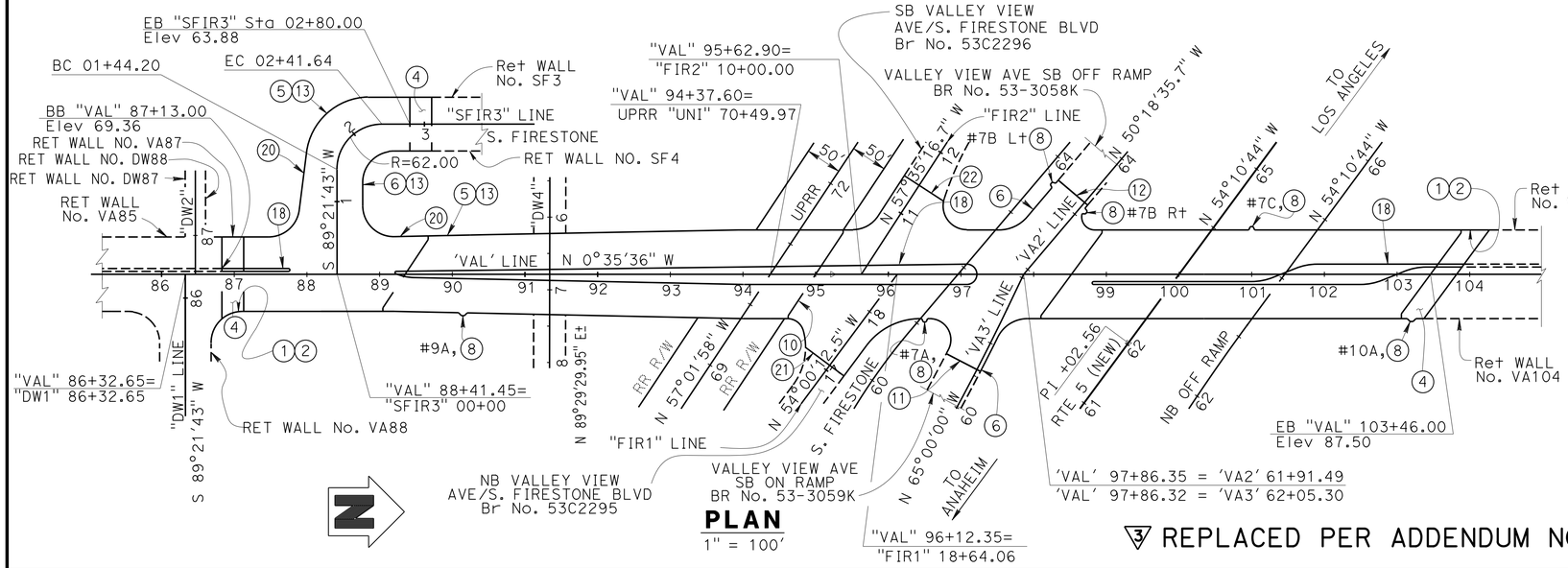
PROFILE GRADE

NO SCALE



ELEVATION

1" = 100'



PLAN

1" = 100'

NOTES:

1. Paint "Br NO. 53-3045"
2. Paint "VALLEY VIEW OH/OC"
3. Paint Bent & Column number "B_C_"
4. Structure Approach Type N(30S) Mod
5. Conc Barrier Type 26 Mod
6. Conc Barrier Type 736 Mod
7. Chain Link Railing (Mod)
8. Sign Pedestal (for signs, see "ROAD PLANS")
9. Pier Wall
10. ℄ Brg Main Hinge
11. EB SB On Ramp Hinge
12. BB SB Off Ramp Hinge
13. Tubular Handrailing (Mod)
14. Luminaire Corbel (see "ROAD PLANS")
15. For location of exist Valley View bridges to be removed, see "STRUCTURE PLAN NO. 4 - FRAME 3" plan
16. For Index, see "INDEX TO PLANS" sheet
18. Median Island
19. Temporary Railing, Type K (see "ROAD PLANS")
20. Concrete Closure Wall
21. EB-NB Valley View Ave/S Firestone Blvd Hinge
22. BB-SB Valley View Ave/N Firestone Blvd Hinge
23. Pendant mounted light fixture with embedded conduit and junction boxes. See "ROAD PLANS"

QUANTITIES

WORK AREA MONITORING (BRIDGE)	LUMP SUM	
REMOVE RETAINING WALL (CY)	48 CY	
BRIDGE REMOVAL, LOCATION A	LUMP SUM	
STRUCTURE EXCAVATION (BRIDGE)	16,700 CY	
STRUCTURE EXCAVATION (CONTAMINATED MATERIALS)	3,850 CY	
STRUCTURE EXCAVATION (TYPE D)	2,420 CY	
STRUCTURE BACKFILL (BRIDGE)	7,973 CY	
FURNISH 24" STEEL PIPE PILING	75,162 LF	
DRIVE 24" STEEL PIPE PILE	1,421 EA	
42" CAST-IN-DRILLED-HOLE CONCRETE PILING	2,416 LF	
FURNISH 24" CAST-IN-STEEL SHELL CONCRETE PILING	9,387 LF	
DRIVE 24" CAST-IN-STEEL SHELL CONCRETE PILE	242 EA	
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP SUM	
STRUCTURAL CONCRETE, BRIDGE FOOTING	5,265 CY	
STRUCTURAL CONCRETE, BRIDGE	22,395 CY	
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N MODIFIED)	420 CY	
ARCHITECTURAL TREATMENT (SPLIT SLATE)	4,140 SQFT	
ARCHITECTURAL TREATMENT (SUNRAY-SPLIT SLATE)	5,100 SQFT	
FURNISH PRECAST PRESTRESSED CONCRETE BULB-TEE GIRDER (120'-130')	14 EA	
ERECT PRECAST PRESTRESSED CONCRETE GIRDER	14 EA	
CONCRETE CLOSURE WALL	8,033 SQFT	
PTFE SPHERICAL BEARING	3 86 EA	~~98 EA~~
JOINT SEAL (MR 1")	178 LF	
JOINT SEAL (MR 1 1/2")	87 LF	
JOINT SEAL ASSEMBLY (MR 3")	237 LF	
JOINT SEAL ASSEMBLY (MR 3 1/2")	135 LF	
JOINT SEAL ASSEMBLY (MR 6")	122 LF	
JOINT SEAL ASSEMBLY (MR 6 1/2")	3 131 LF	~~148 LF~~
JOINT SEAL ASSEMBLY (MR 9")	135 LF	
BAR REINFORCING STEEL (BRIDGE)	8,110,000 LB	
BAR REINFORCING STEEL (GALVANIZED)	3,260 LB	
HEADED BAR REINFORCEMENT	3,830 EA	
MINOR CONCRETE (MEDIAN ISLAND)	43 CY	
MISCELLANEOUS METAL (RESTRAINER - PIPE TYPE)	15,395 LB	
MISCELLANEOUS METAL (BRIDGE)	140 LB	
BRIDGE DECK DRAINAGE SYSTEM	72,600 LB	
CHAIN LINK RAILING (MODIFIED)	2,458 LF	
TUBULAR HANDRAILING (MODIFIED)	1,077 LF	
CONCRETE BARRIER (TYPE 26 MODIFIED)	3,575 LF	
CONCRETE BARRIER (TYPE 736 MODIFIED)	263 LF	

3 REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

Ramin Rashedi 2-26-15
DESIGN ENGINEER

	BY	CHECKED			
DESIGN	BK/KD/KA/MO/JP	SP/DT/KA/PT	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	T. Bittermann	Dauryoush Tavatli	LAYOUT	BK/KD/KA/MO/JP	BK/KD/KA/MO/JP
QUANTITIES	Krishnakant Andurlekar	Ruperd Wilson	SPECIFICATIONS	Xiahong Li	Xiahong Li

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 11

BRIDGE NO. 53-3045
POST MILE 1.21

VALLEY VIEW AVE OH/OC (REPLACEMENT)

GENERAL PLAN NO 1 OF 3

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159U4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES 10-15-12 9-27-13 2-26-15 9-24-13 SHEET 1 OF 182

USERNAME => s126987 DATE PLOTTED => 12-APR-2016 TIME PLOTTED => 08:17

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 53-3045-a-gp01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1072	1622

REGISTERED CIVIL ENGINEER — DATE 3-18-15

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — WILLIAM D. KEMP — No. 55730 — Exp. 12/31/16 — CIVIL — STATE OF CALIFORNIA

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GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
"AASHTO LRFD Bridge Design Specifications, 4th Edition and the Caltrans Amendments, preface dated December 2008

SEISMIC DESIGN:
Caltrans Seismic Design Criteria (SDC), Version 1.6 dated Nov 2010

DEAD LOAD:
Includes 35 psf for future wearing surface.

LIVE LOADING:
HL93 and Permit Design Load

SEISMIC LOADING:
Site Specific Acceleration Response Spectra Curve

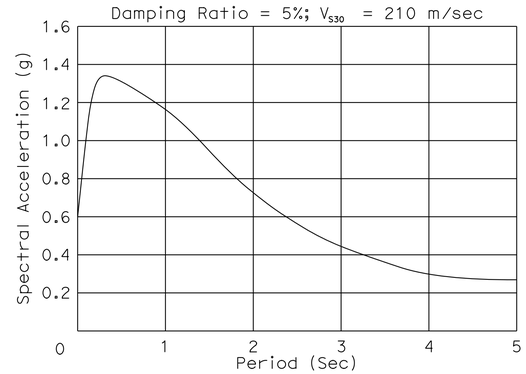
REINFORCED CONCRETE:
fy = 60 ksi
f'c = 4 ksi
n = 8

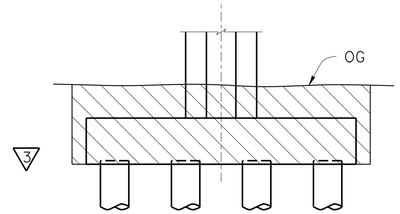
PRESTRESSED CONCRETE:
See "Prestressing Notes" on "Girder Layout No. 2" sheet

Precast Prestressed Bulb Tee Girders:
See "PC/PS BULB TEE GIRDER DETAILS NO. 1" sheet

STRUCTURAL STEEL:
Steel Pipe Piles:
fy = 45 ksi

RECOMMENDED DESIGN ACCELERATION RESPONSE SPECTRUM (ARS)





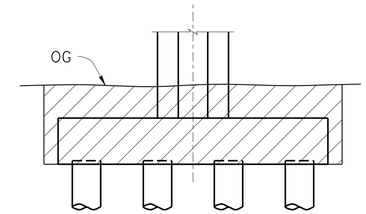
NOTE: For details not shown, see A62C

Structure Excavation (Type "D")

STRUCTURE EXCAVATION (TYPE "D")
NO SCALE

EXCAVATION TABLE

BENT #	COLUMN #
2 & 3	A & B
4	A, B, C & D



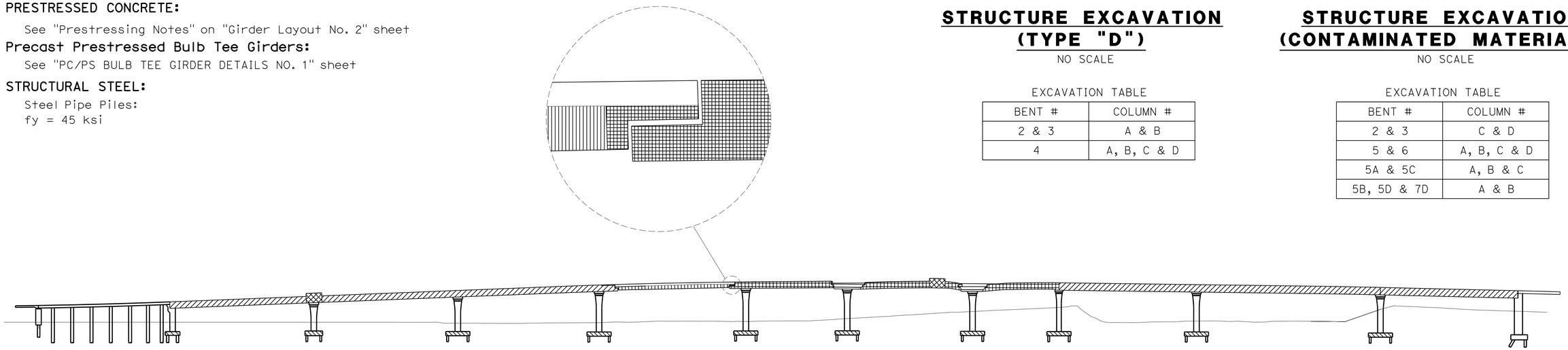
NOTE: For details not shown, see A62C

Limit of contaminated materials

STRUCTURE EXCAVATION (CONTAMINATED MATERIALS)
NO SCALE

EXCAVATION TABLE

BENT #	COLUMN #
2 & 3	C & D
5 & 6	A, B, C & D
5A & 5C	A, B & C
5B, 5D & 7D	A & B



Structural Concrete, Bridge (4,000 psi @ 28 days)
Structural Concrete, Bridge (5,000 psi @ 28 days)
Structural Concrete (P/S), Bridge (4,000 psi @ 28 days)
PC/PS Bulb Tee Girders see "PC/PS BULB TEE GIRDER DETAILS NO. 1" sheet
Structural Concrete, Bridge Footing (4,000 psi @ 28 days)
Structural Concrete, Sign Pedestal (6,000 psi @ 28 days)

CONCRETE STRENGTH AND TYPE LIMITS
NO SCALE

3 REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

	BY	CHECKED
DESIGN	Krishnakant Andurlekar	BK/MO/JP/KD
DETAILS	Jaime Ramirez	Bill Kemp
QUANTITIES	Krishnakant Andurlekar	Ruperd Wilson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-3045
POST MILE 1.21

VALLEY VIEW AVE OH/OC (REPLACEMENT)
INDEX TO PLANS 2 OF 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159U4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 12-2-11 9-24-13 4/12/13 8-21-13

SHEET 5 OF 182

FILE => 53-3045-bb-itp02.add

USERNAME => s126987 DATE PLOTTED => 12-APR-2016 TIME PLOTTED => 08:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1106	1622

William Kemp 3-18-15
REGISTERED CIVIL ENGINEER DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
WILLIAM D. KEMP
No. 55730
Exp. 12/31/16
CIVIL
STATE OF CALIFORNIA

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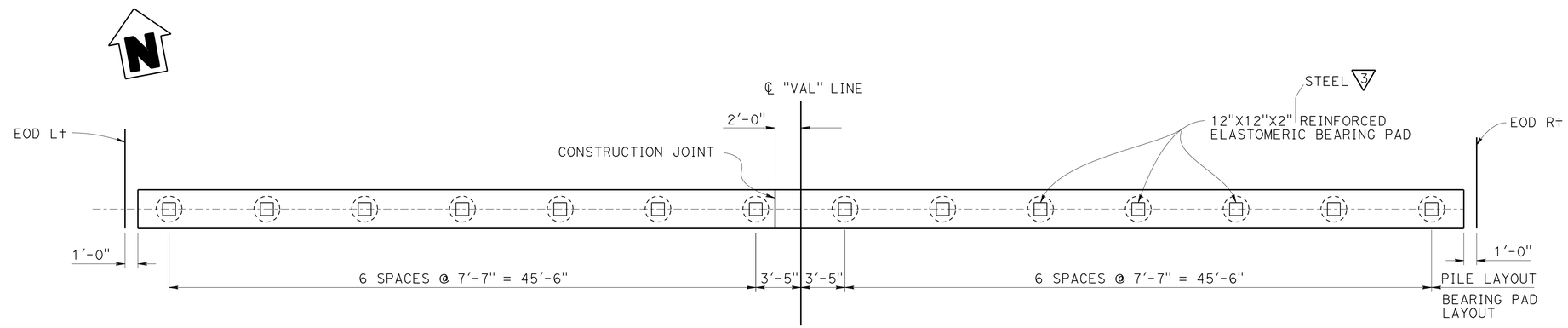
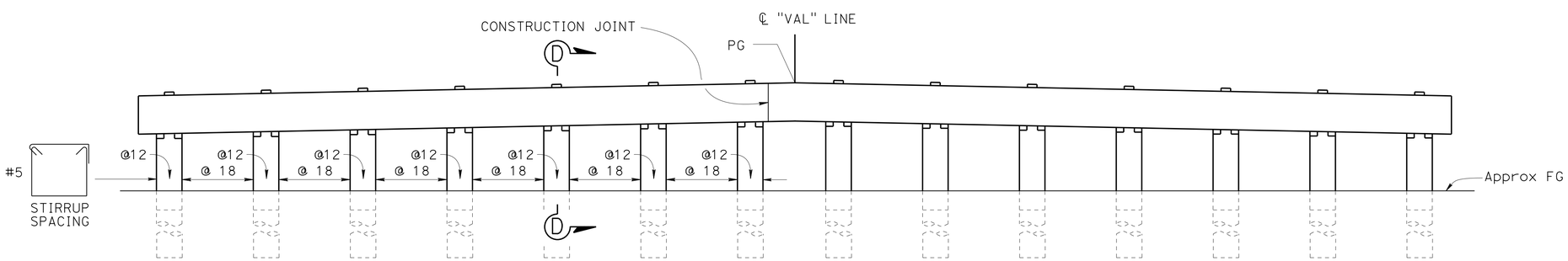
LEGEND:

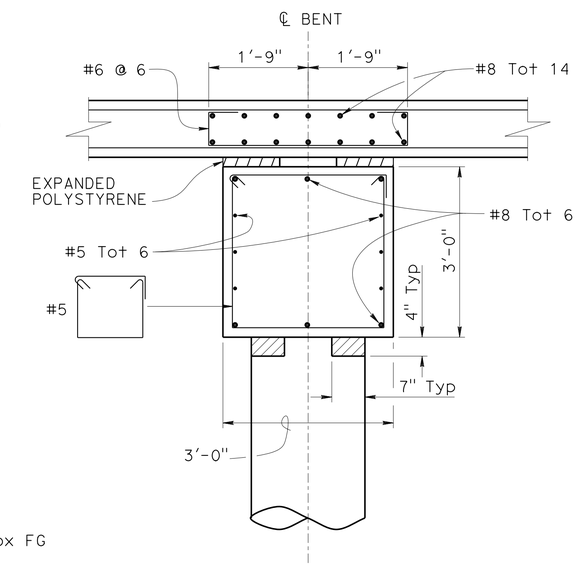
INDICATES EXPANDED POLYSTYRENE



PLAN
1" = 5'-0"



ELEVATION
1" = 5'-0"



SECTION D-D
3/4" = 1'-0"

3 REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

	BY	CHECKED
DESIGN	Karen Doll	S. Pahlavan
DETAILS	Jaime Ramirez	S. Pahlavan
QUANTITIES	K. Doll	N. Shah

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-3045
POST MILE 1.21

VALLEY VIEW AVE OH/OC (REPLACEMENT)
BENT SB2 LAYOUT - SLAB BRIDGE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159U4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 9-13-11 4-18-13 8-22-13 5/16/12

SHEET 39 OF 182

FILE => 53-3045-ha-bsb02_lo1.dgn

USERNAME => s126987 DATE PLOTTED => 12-APR-2016 TIME PLOTTED => 08:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1259	1622

REGISTERED CIVIL ENGINEER — DATE 3-18-15

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — William D. Kemp — No. 55730 — Exp. 12/31/16 — CIVIL — STATE OF CALIFORNIA

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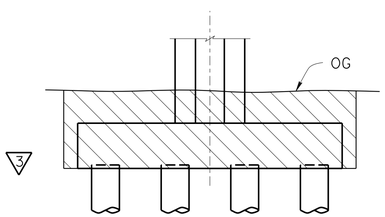
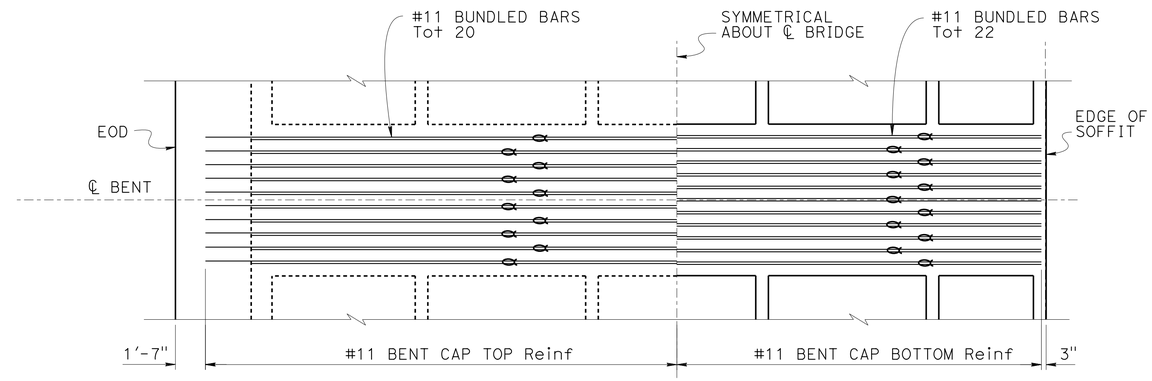


NOTE: For details not shown, see A62C

Structure Excavation (Type "D")

BENT 3
STRUCTURE EXCAVATION (TYPE "D")
NO SCALE



NOTE:
Indicates Bundled Bars

PLAN (Typ)
1/4" = 1'-0"

3 REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

DESIGN	BY Shervin Pahlavan	CHECKED Yeo Yoon	
DETAILS	BY Loren Goldthwait	CHECKED Yeo Yoon	
QUANTITIES	BY Shervin Pahlaban	CHECKED Suzan Moradi	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53-3058K
POST MILE 1.23

VALLEY VIEW AVE SB OFF RAMP
BENT DETAILS NO. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159u4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 10-05-12 9-20-13 3-13-13 9-06-13

SHEET 10 OF 23

FILE => 53-3058k-n-bnt3dt.dgn

USERNAME => s126987 DATE PLOTTED => 12-APR-2016 TIME PLOTTED => 08:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1308	1622

REGISTERED CIVIL ENGINEER 3-18-15 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER DAURYOUSH TAVATLI No. 56183 Exp. 12-31-16 CIVIL STATE OF CALIFORNIA

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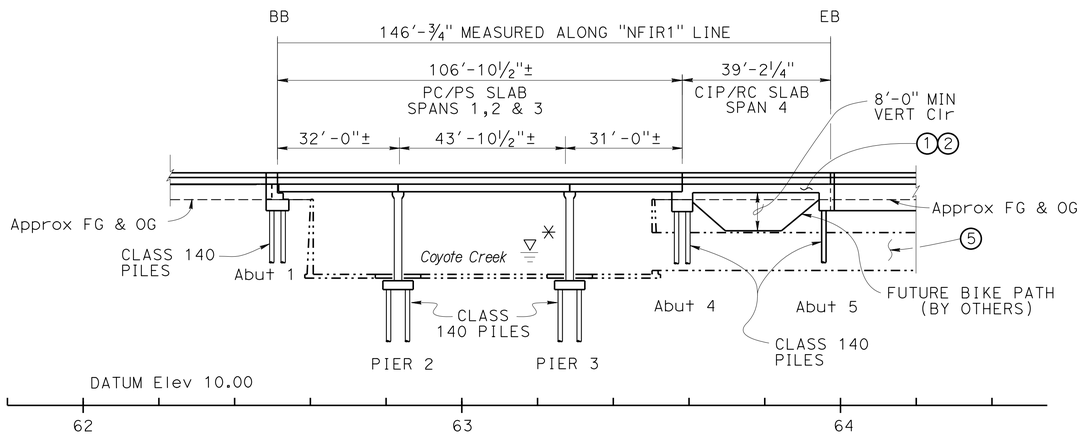


ELEVATION
1" = 20'

NOTE: ELEVATION VIEW PROJECTED VERTICALLY FROM "NFR1" LINE.

✳ See "FOUNDATION PLAN" for Hydrologic Summary

FOR GENERAL NOTES AND INDEX TO PLANS, SEE "INDEX TO PLANS" SHEET

QUANTITIES

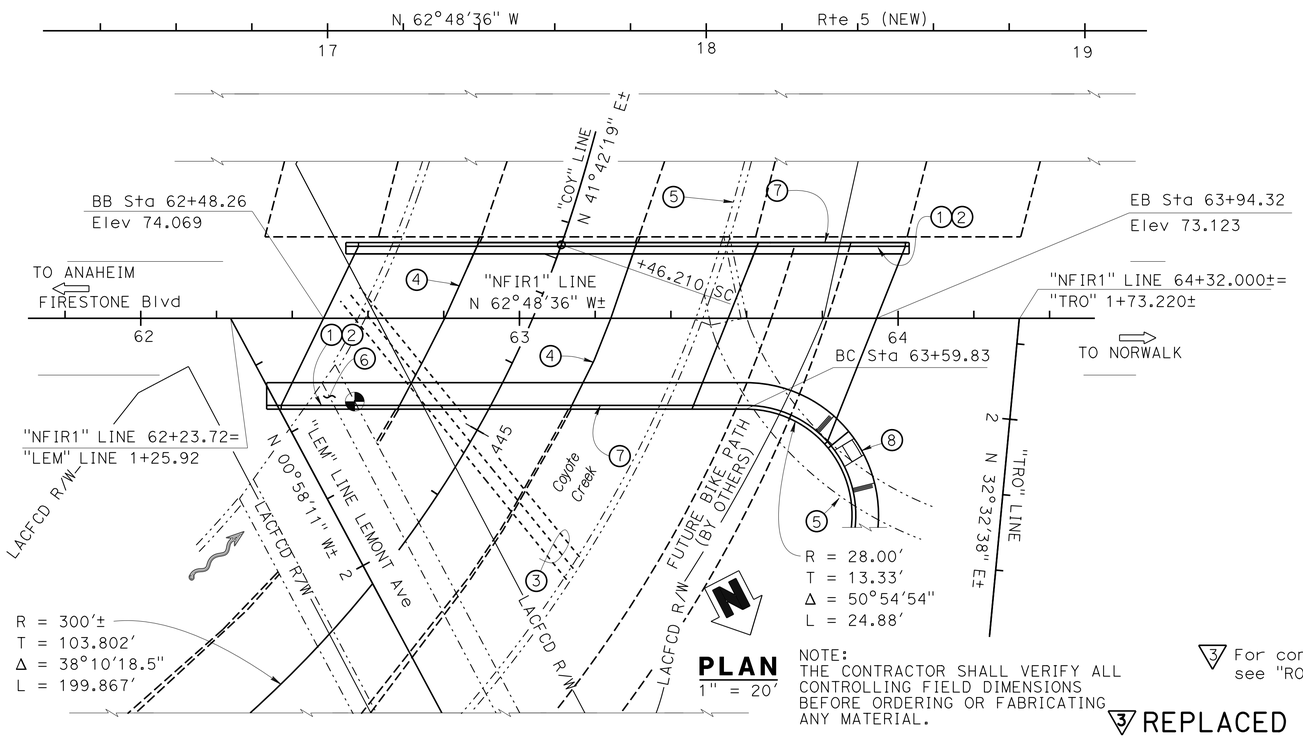
BRIDGE REMOVAL (PORTION), LOCATION A	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	202	CY
STRUCTURE EXCAVATION (TYPE D)	200	CY
STRUCTURE BACKFILL (BRIDGE)	205	CY
GEOSYNTHETIC REINFORCE EMBANKMENT	148	CY
FURNISH PILING (CLASS 140) (ALTERNATIVE W)	5,899	LF
DRIVE PILE (CLASS 140) (ALTERNATIVE W)	98	EA
STRUCTURAL CONCRETE, BRIDGE FOOTING	93	CY
STRUCTURAL CONCRETE, BRIDGE	559	CY
DRILL AND BOND DOWEL	44	LF
DRILL AND BOND DOWEL (CHEMICAL ADHESIVE)	462	EA
FURNISH PRECAST PRESTRESSED CONCRETE SLAB	4,703	SQFT
ERECT PRECAST PRESTRESSED CONCRETE DECK UNIT	33	EA
JOINT SEAL (MR 1/2 ")	97	LF
BAR REINFORCING STEEL (BRIDGE)	208,000	LB
BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE)	1,636	LB
CONCRETE BARRIER (TYPE 26 MODIFIED)	295	LF

NOTES:

1. Paint "FIRESTONE BLVD"
2. Paint 53C-2194
3. Relocate exist oil pipelines by others
4. Remove portions of exist channel divider walls, replace with new bridge piers. For concrete removal notes for partial channel wall, see "INDEX TO PLANS" sheet
5. Exist side drain (owned by Los Angeles County Flood Control District - LACFCD) - 90"± ø with approx 7'-6" H x 15' W opening in channel wall to remain undamaged
6. Remove portion of exist handrail and post mortar pad on Lemont Ave Br
7. Conc Barrier Type 26, Mod A and Mod B
8. Curb Ramp, for locations and details, see "ROAD PLANS"

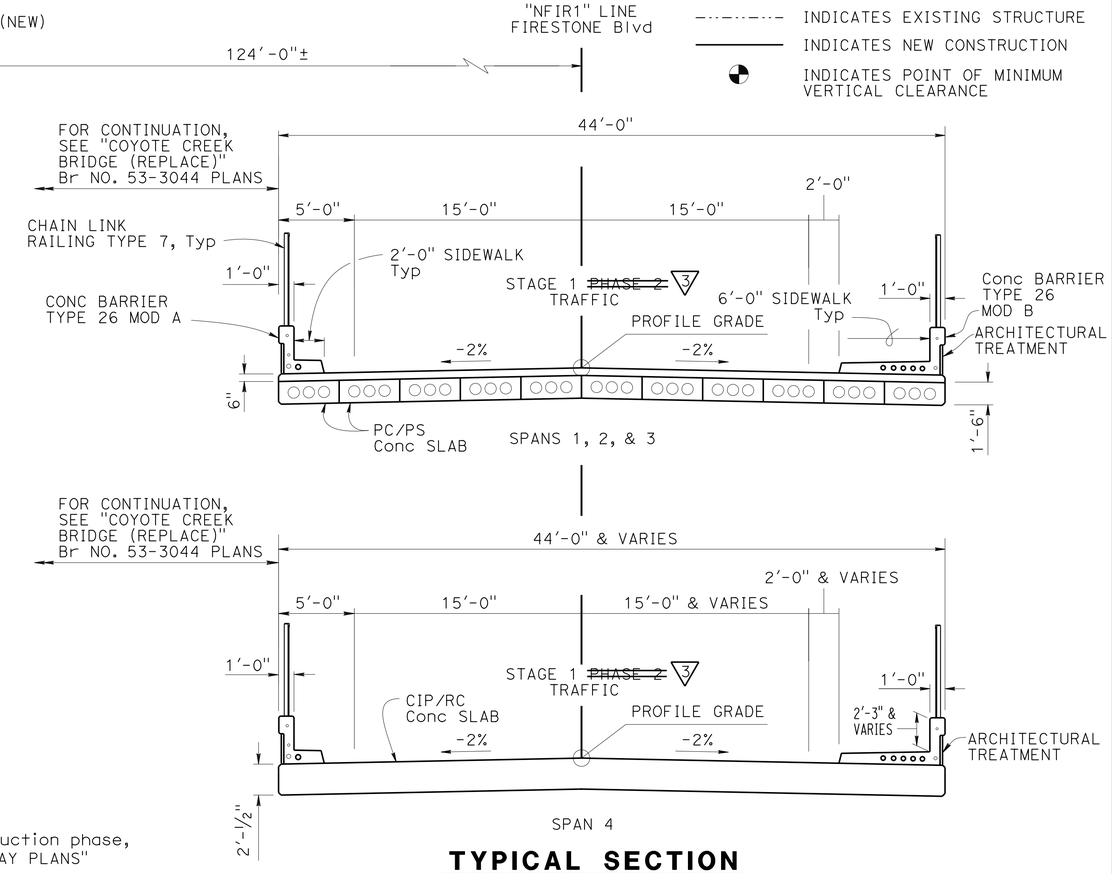
LEGEND:

INDICATES EXISTING STRUCTURE
INDICATES NEW CONSTRUCTION
INDICATES POINT OF MINIMUM VERTICAL CLEARANCE



PLAN
1" = 20'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



▽3 For construction phase, see "ROADWAY PLANS"

TYPICAL SECTION
1" = 5'

▽3 REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

Ramin Rashedi 3-18-15 DESIGN ENGINEER	DESIGN	BY Y. Yoon	CHECKED S. Pahlaban	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
	DETAILS	BY T. Bittermann	CHECKED S. Pahlaban	LAYOUT: BY Y. Yoon	CHECKED S. Pahlaban
	QUANTITIES	BY D. Tavatli	CHECKED C. Chan	SPECIFICATIONS: BY Xiahong Li	PLANS AND SPECS COMPARED Xiahong Li

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. 53C2194
POST MILE 0.34

FIRESTONE BLVD BRIDGE
GENERAL PLAN

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159U4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 1-4-13 9-27-13 8-30-13 9-12-12

SHEET 1 OF 23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA,Ora	5	0.0/1.5, 44.3/44.4	1460	1622

REGISTERED CIVIL ENGINEER 3-18-15 DATE

1-25-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER William D. Kemp No. 55730 Exp. 12/31/16 CIVIL STATE OF CALIFORNIA

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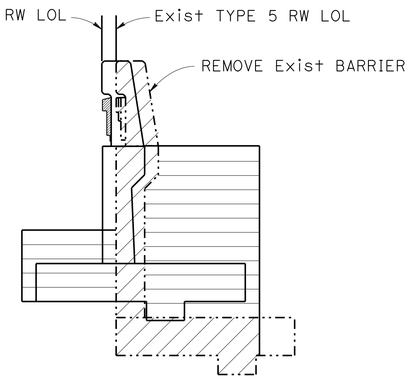
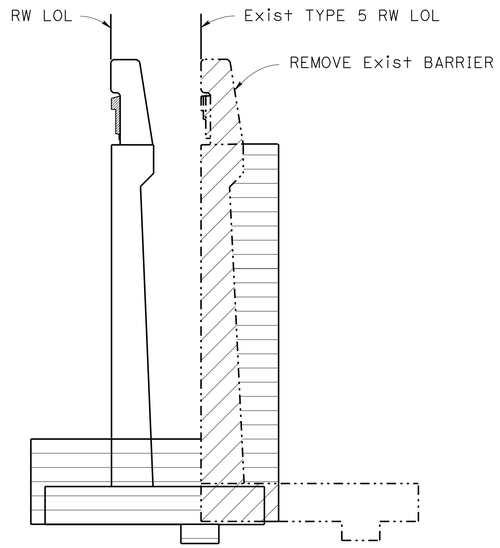
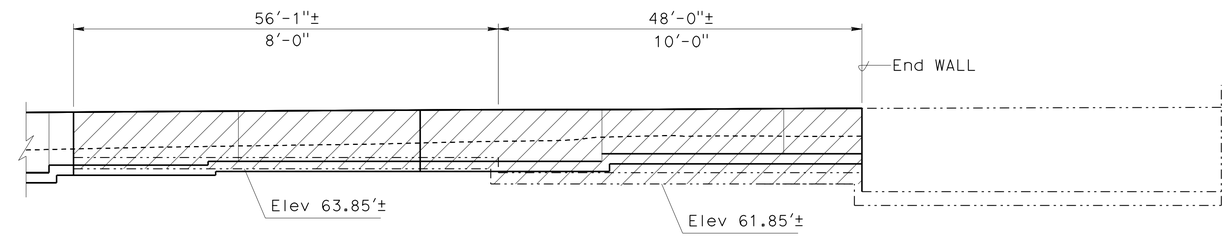


SECTION A-A
NO SCALE



SECTION B-B
NO SCALE



MIRROR ELEVATION
NO SCALE

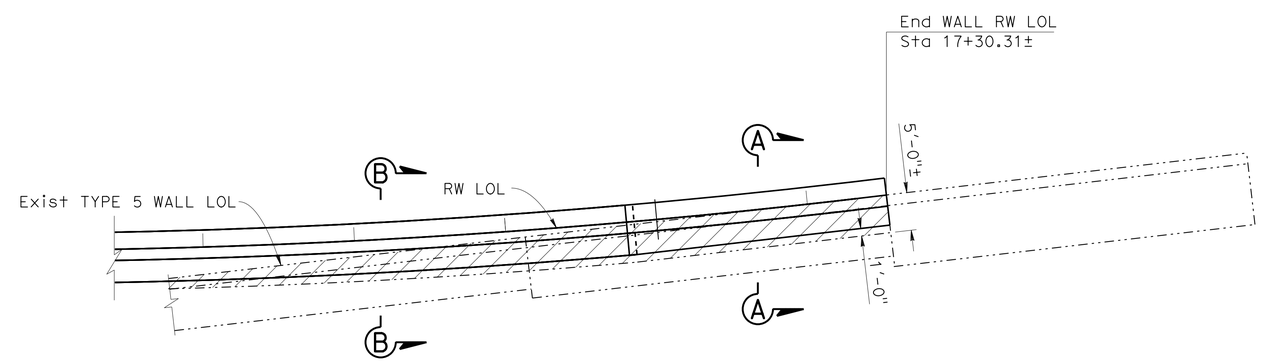
LEGEND:(THIS SHEET)

Indicates ~~Concrete~~ Bridge Removal (Portion) (3)

Indicates Limits of Payment for Structure Excavation

NOTE:

For details not shown, see A62B



PLAN
NO SCALE

(3) REPLACED PER ADDENDUM NO. 3 DATED APRIL 15, 2016

DESIGN	BY Mark Okimura	CHECKED Cipriano Manansala	
DETAILS	BY Jaime Ramirez	CHECKED Cipriano Manansala	
QUANTITIES	BY H. Tuazon	CHECKED G. Reyes-Gutierrez	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 11

BRIDGE NO. RW73
POST MILE 1.32

RETAINING WALL 73
CONCRETE REMOVAL DETAILS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3587
PROJECT NUMBER & PHASE: 0715000160-1
CONTRACT NO.: 07-2159u4

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES 7-12-12 3-18-15 3-29-13 7-19-13

SHEET 6 OF 10

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