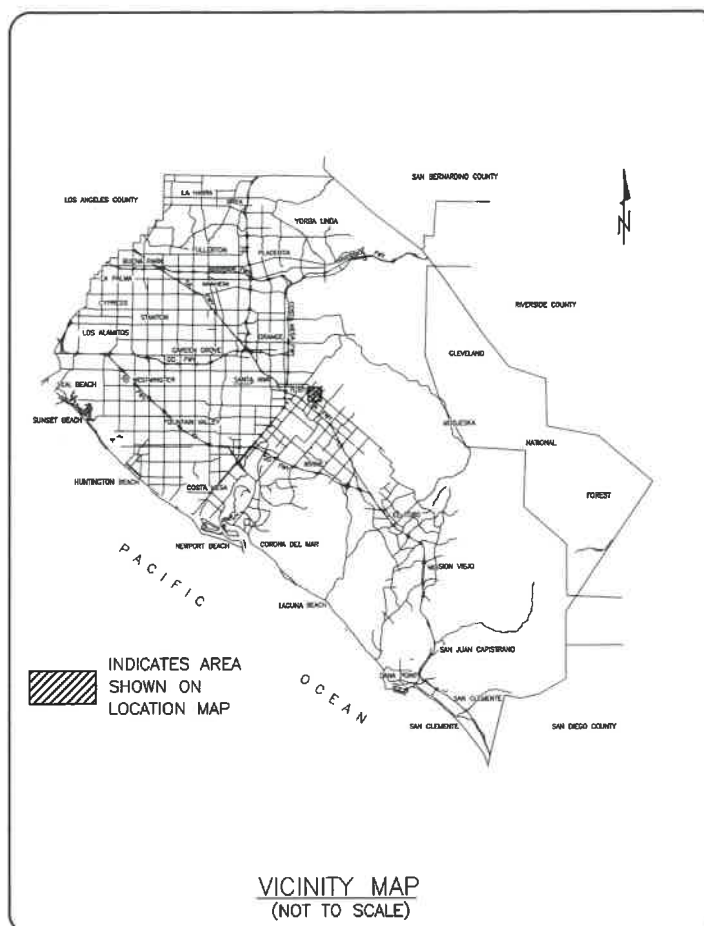




County of Orange

SANTA ANA, CALIFORNIA

PLANS FOR CONSTRUCTION OF

BENT TWIG LANE BRIDGE OVER REDHILL CHANNEL BRIDGE PREVENTATIVE MAINTENANCE

BR. No. 55C0574

W.O. NO. ER 20567

AUGUST 2019

FUNDED BY: SENATE BILL 1(SB-1)
MAINTAINED BY: COUNTY OF ORANGE

2015 CALTRANS STANDARD PLANS

A3A ABBREVIATIONS (SHEET 1 OF 3)

A3B ABBREVIATIONS (SHEET 2 OF 3)

A3C ABBREVIATIONS (SHEET 3 OF 3)

GENERAL NOTES:

CONTACT DIGALERT AT 1(800)422-4133 BEFORE BEGINNING WORK.

ALL NATIVE BIRDS ARE PROTECTED FROM DISTURBANCE WHILE NESTING. AS FAR AS POSSIBLE, CONSTRUCTION ACTIVITIES SHOULD TAKE PLACE OUTSIDE OF THE BIRD NESTING SEASON (FEBRUARY 1ST THROUGH SEPTEMBER 15TH). HOWEVER, IF OTHER RESTRICTIONS MAKE IT IMPOSSIBLE TO AVOID THE NESTING SEASON, THE REGULATORY PERMITTING TEAM AT OCPW MUST BE CONTACTED AT (714) 647-3933 TO ARRANGE FOR PRE-CONSTRUCTION NESTING BIRD SURVEYS OF THE CONSTRUCTION AREAS AT LEAST 7 DAYS BEFORE THE START OF WORK. DISTURBANCE TO ANY ACTIVE NESTS MUST BE AVOIDED. CONSTRUCTION ACTIVITY WITHIN 300 FEET OF AN ACTIVE NEST [500 FEET FOR RAPTORS] SHOULD BE DELAYED UNTIL THE NEST IS NO LONGER ACTIVE, OR OTHERWISE APPROVED BY THE REGULATORY PERMITTING TEAM OR THEIR REPRESENTATIVE.

ANY CRACKS OR CREVICES, VOIDS OR HOLES IN BRIDGES, TREES, BUILDINGS OR OTHER STRUCTURES HAVE THE POTENTIAL TO SUPPORT ROOSTING BATS. THE REGULATORY PERMITTING TEAM MUST BE CONTACTED AT (714) 647-3933 AT LEAST 7 DAYS BEFORE THE START OF WORK TO CONDUCT A BAT SURVEY.

COUNTY OF ORANGE PUBLIC WORKS DEPARTMENT

SUBMITTED:

REGINA HU, P.E.
SENIOR CIVIL ENGINEER
OC INFRASTRUCTURE PROGRAMS
ENGINEERING DIVISION

DATE _____

RECOMMENDED

PAUL JEFFREY ERNST, P.E.
MANAGER
OC INFRASTRUCTURE PROGRAMS
ENGINEERING DIVISION

DATE

RECOMMENDE

NARDY KHAN, P.E.
DEPUTY DIRECTOR
OC INFRASTRUCTURE PROGRAMS

DATE _____

APPROVED:

KHALID BAZMI, P.E.
ASSISTANT PUBLIC WORKS DIRECTOR
COUNTY ENGINEER

DATE _____

RECORD DRAWING

CONTRACTOR:

RESIDENT ENGINEER:

INSPECTOR:

CONSTRUCTION START DATE:

CONSTRUCTION COMPLETION DATE:

PREPARED BY

PREPARED UNDER RESPONSIBLE CHARGE OF:
NCM ENGINEERING CORP.
22362 GILBERTO
RANCHO SANTA MARGARITA, CA 92688

MARK STILLER, P.E.

8/21/19
DATE

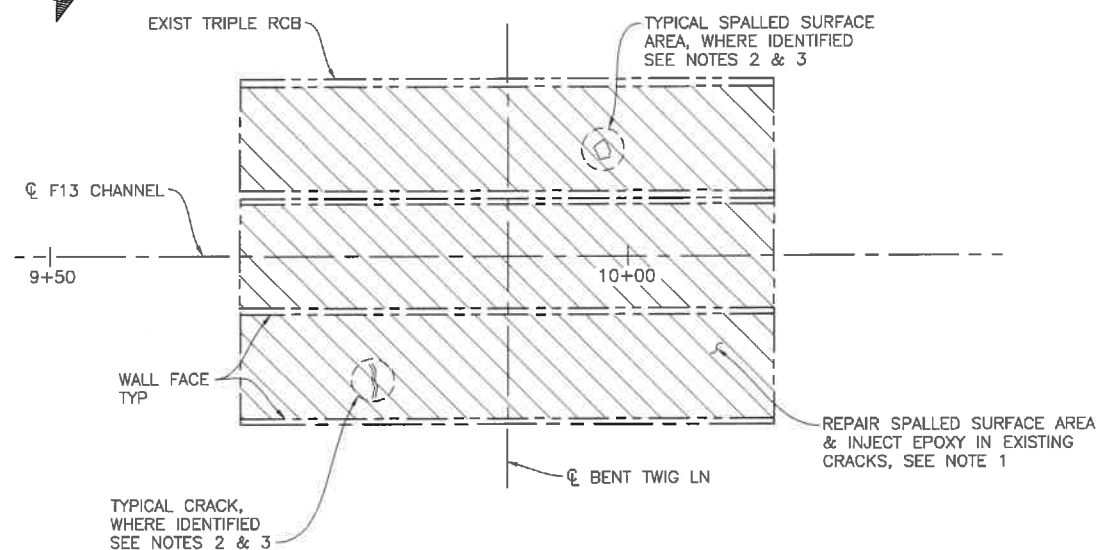
INDEX OF SHEETS

<u>SHEET</u>	<u>REF</u>	<u>DESCRIPTION</u>
1	T1	TITLE SHEET
2	S1	GENERAL PLAN
3	S2	MISCELLANEOUS DETAILS
4	S3	SPALL & CRACK REPAIR DETAILS

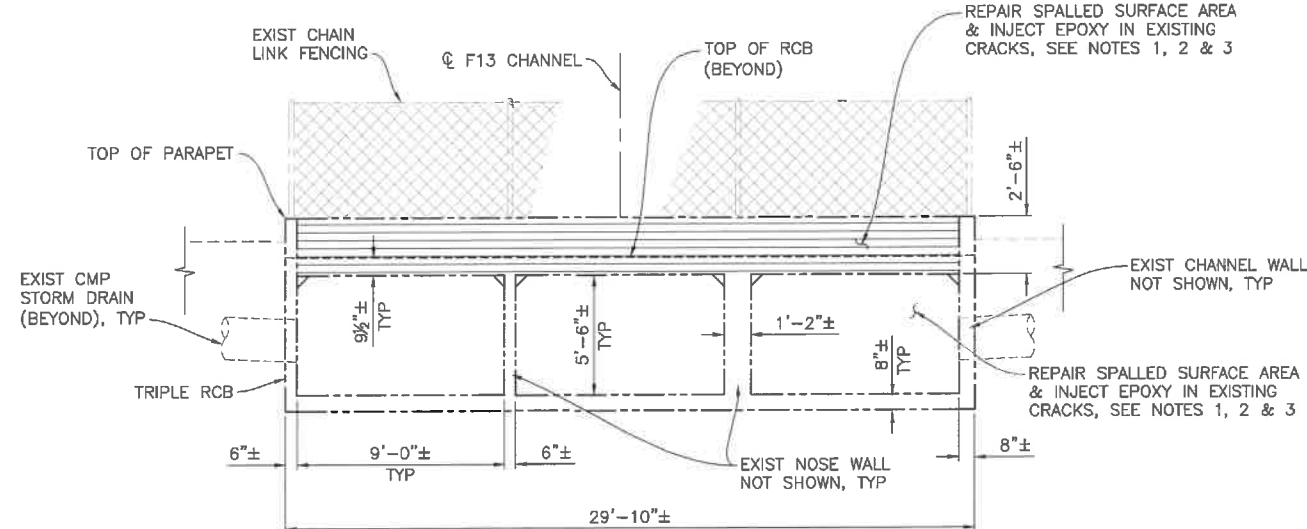
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W. O. NO. ER 20567
DWG. NO. T1

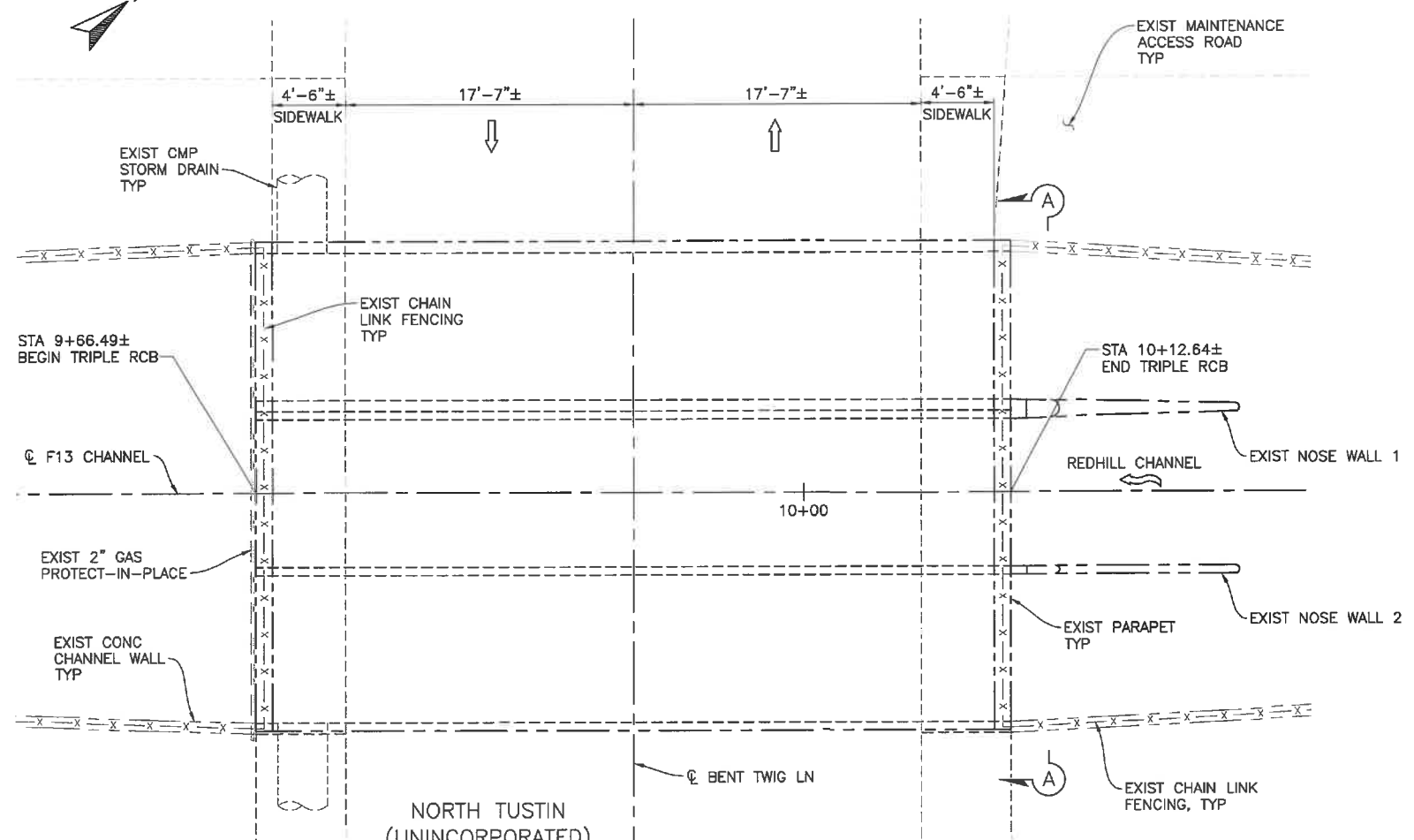
SHEET 1 OF 4



PLAN - RCB TOP & BOTTOM SLAB
SCALE: 1/8"=1'-0"
(BOTTOM SLAB SHOWN, TOP SLAB SIMILAR)



VIEW A-A
SCALE: 1/4"=1'-0"
(UPSTREAM END ONLY)



PLAN
SCALE: 1"=5'

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

NOTES:

1. REPAIR SPALLED SURFACE AREAS AND INJECT EPOXY IN EXISTING CRACKS WITHIN THE LIMITS OF EXISTING BOX CULVERT TOP AND BOTTOM INSIDE FACE, AND PARAPET.
2. FINAL LIMITS OF REPAIR SPALLED SURFACE AREA AND INJECT CRACK (EPOXY) TO BE ESTABLISHED DURING CONSTRUCTION.
3. FOR SPALL REPAIR DETAILS AND CRACKING INJECTION DETAILS, SEE SHEET S3.
4. PROVIDE TRAFFIC CONTROL PER SPECIFICATION F-3.
5. PREPARE AND EXECUTE THE REQUIREMENTS OF AN EROSION, SEDIMENT AND CHEMICAL CONTROL PLAN (ESCCP) PER SPECIFICATION ON F-4.

LEGEND

- LIMITS OF EXISTING CONCRETE BOX CULVERT TOP & BOTTOM INSIDE FACE
- LIMITS OF EXISTING CONCRETE BOX CULVERT WALL FACE
- LIMITS OF EXISTING CONCRETE BOX CULVERT PARAPET
- INDICATES EXISTING
- DIRECTION OF FLOW
- DIRECTION OF TRAFFIC

QUANTITIES

ITEM	QUANTITY
INJECT CRACK (EPOXY)	170 LF
REPAIR SPALLED SURFACE AREA	25 SQFT



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

CIVIL ENGINEER - VINOD K. JAIN
REGISTERED PROFESSIONAL ENGINEER
No. 67830
DATE: 8/21/19

Mark Stiller

DESIGNED BY: M. STILLER
DRAWN BY: R. ANDRASEK
CHECKED BY: M. STILLER
DRAWING CODE: 02 BENT TWIG LN.DWG
FILE NAME: 22362 GILBERTO RANCHO SANTA MARGARITA CALIFORNIA, 92688
PLOT DATE: 8/21/19
SCALE: AS SHOWN

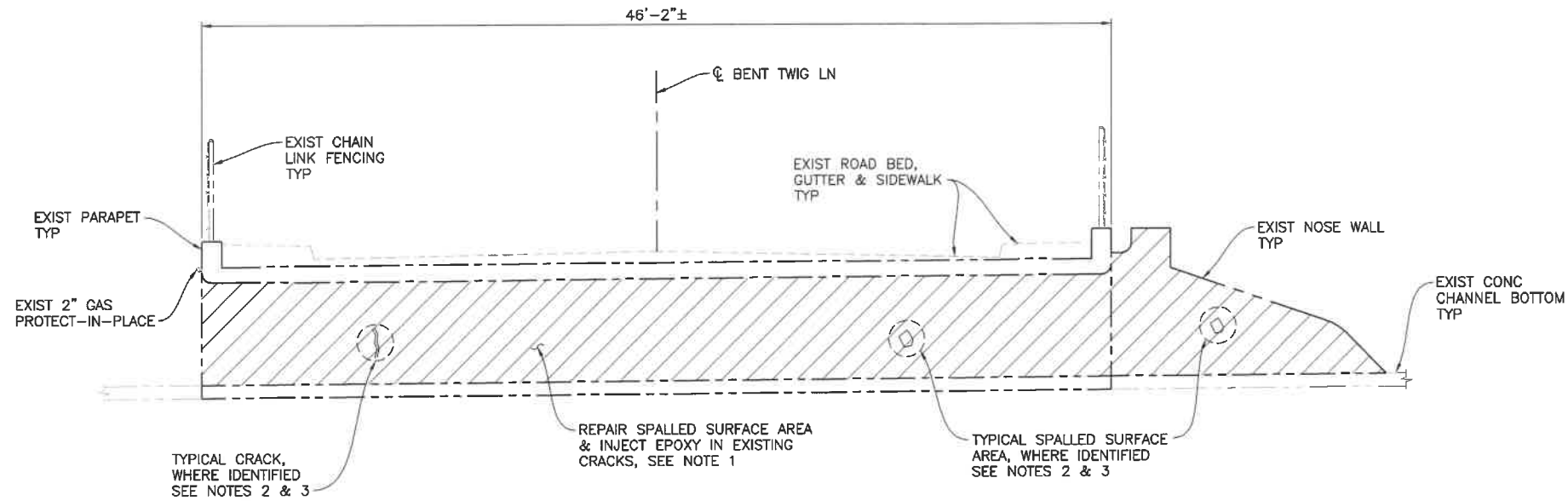
COUNTY OF ORANGE
OC PUBLIC WORKS

NCM ENGINEERING CORP.
22362 GILBERTO RANCHO SANTA MARGARITA CALIFORNIA, 92688

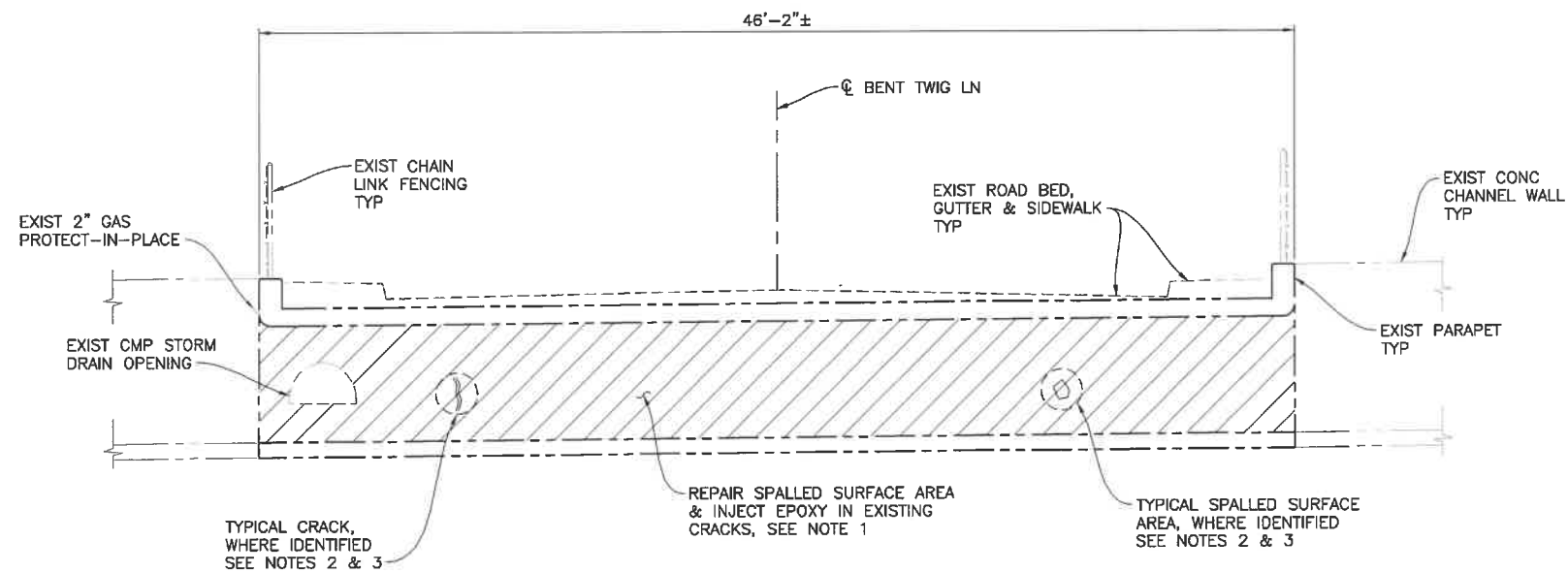
BENT TWIG LANE BRIDGE OVER REDHILL CHANNEL PREVENTATIVE MAINTENANCE
Br. No. 560574

GENERAL PLAN

Sheet Reference Number
S1
Sheet 2 of 4



TYPICAL ELEVATION ALONG INSIDE WALL
SCALE: 1/4"=1'-0"



TYPICAL ELEVATION ALONG OUTSIDE WALL
SCALE: 1/4"=1'-0"

NOTES:

1. REPAIR SPALLED SURFACE AREAS AND INJECT EPOXY IN EXISTING CRACKS WITHIN THE LIMITS OF EXISTING BOX CULVERT WALL FACES AND NOSE WALLS.
2. FINAL LIMITS OF REPAIR SPALLED SURFACE AREA AND INJECT CRACK (EPOXY) TO BE ESTABLISHED DURING CONSTRUCTION.
3. FOR SPALL REPAIR DETAILS AND CRACKING INJECTION DETAILS, SEE SHEET S3.

LEGEND

- LIMITS OF EXISTING CONCRETE BOX CULVERT WALL FACE & NOSE WALL
- INDICATES EXISTING

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



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

Mark Stiller

DATE: 8/21/19

DESIGNED BY: M. STILLER	CHECKED BY: R. ANDRASEK
DRAWN BY: R. ANDRASEK	DRAWING CODE:
FILE NAME: 03 BENT TWIG LN.DWG	PLOT DATE: 8/21/19
SCALE:	AS SHOWN

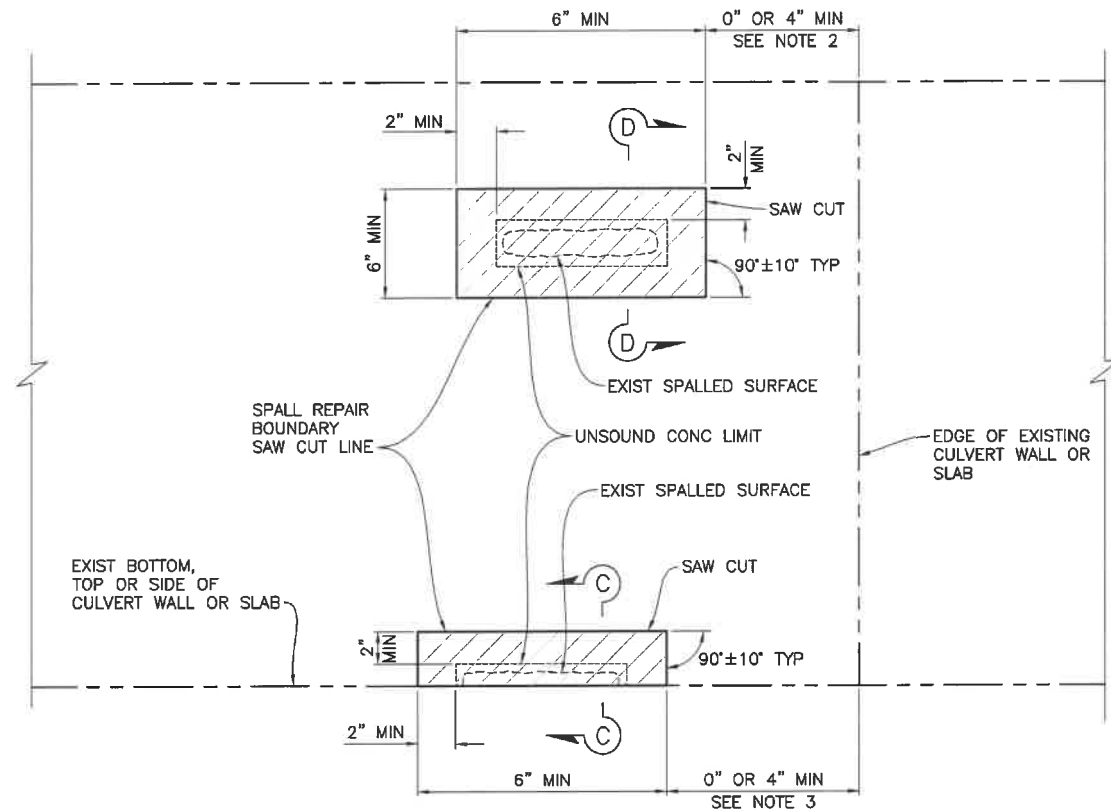
COUNTY OF ORANGE OC PUBLIC WORKS	NCM ENGINEERING CORP. 23362 GILBERTO RANCHO SANTA MARGARITA CALIFORNIA, 92688
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BENT TWIG LANE BRIDGE
OVER REDHILL CHANNEL
PREVENTATIVE MAINTENANCE
Br. No. 58C0574

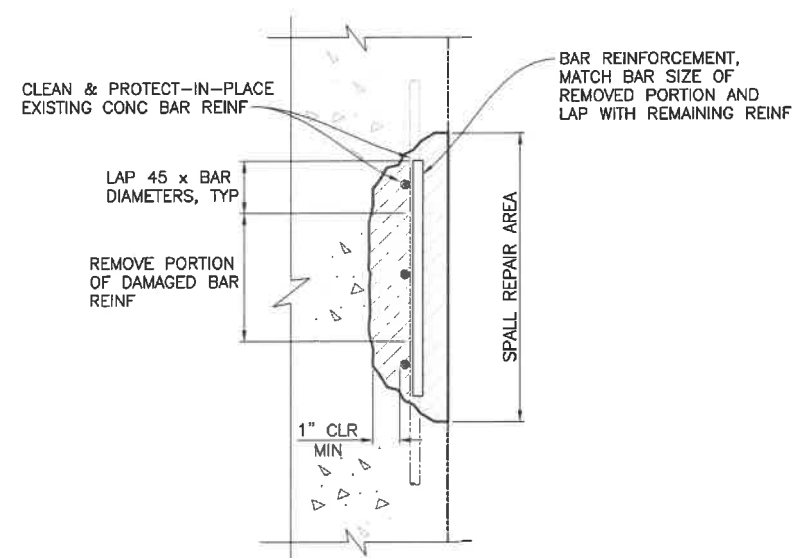
**MISCELLANEOUS
DETAILS**

Sheet
Reference
Number

S2



ELEVATION
NO SCALE



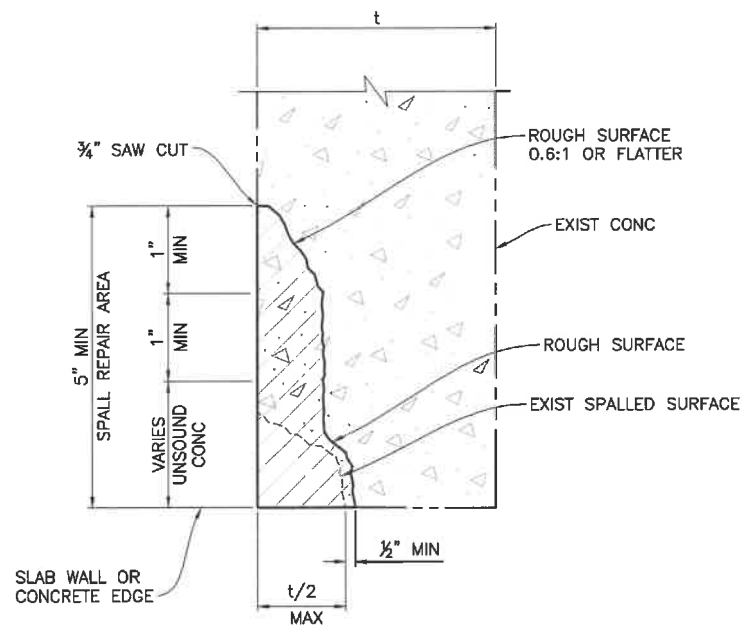
**TYPICAL SPALL REPAIR WITH
BAR REINFORCEMENT REPLACEMENT**
NO SCALE
FOR INFORMATION NOT SHOWN,
SEE SECTION B-B

LEGEND

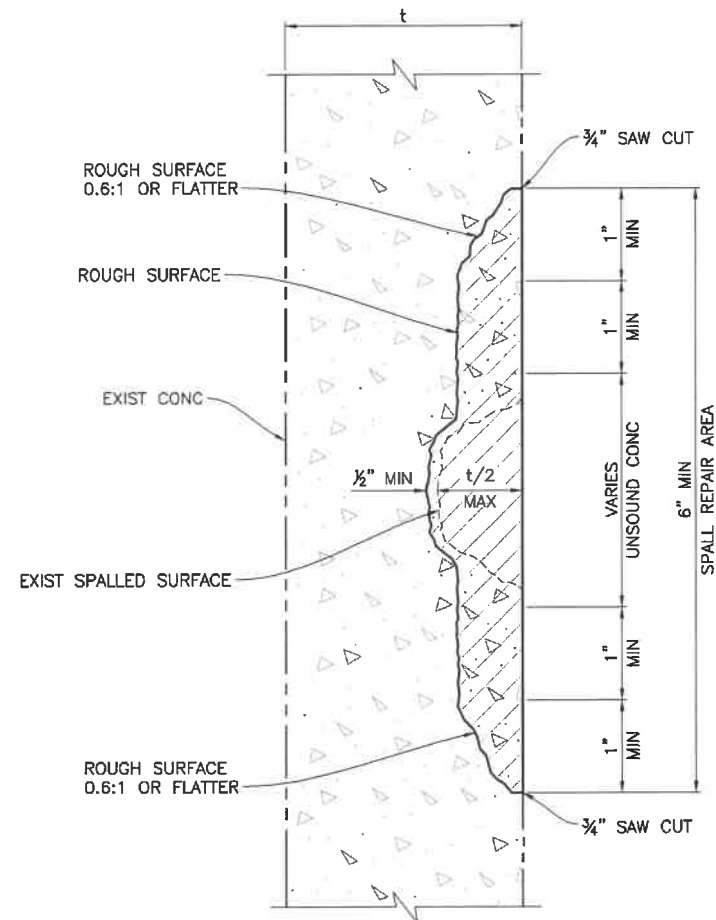
- MORTAR SPALL REPAIR
- INDICATES EXISTING

NOTES:

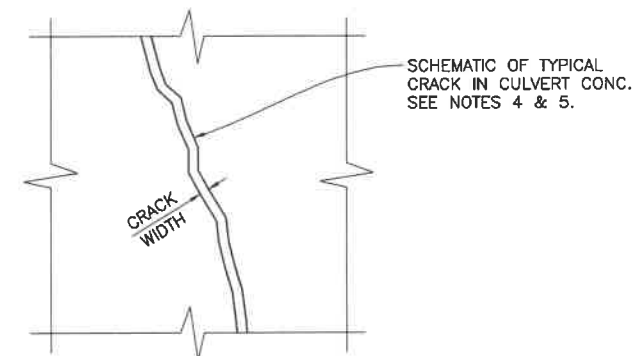
- SEE "GENERAL PLAN" SHEET FOR SPALL REPAIR LOCATIONS. SEE SPECIFICATION F-46.
- IF SPALL REPAIR AREA IS LESS THAN 4" FROM AN EDGE, EXTEND THE REPAIR TO THE JOINT.
- PROTECT EXISTING REINFORCING IN-PLACE. WHERE DAMAGED REINFORCEMENT IS FOUND, REPLACE AS SHOWN IN "TYPICAL SPALL REPAIR WITH BAR REINFORCEMENT REPLACEMENT" DETAIL.
- INJECT EPOXY INTO CRACKS HAVING A CRACK WIDTH OF 0.050" OR GREATER. IF CRACKS HAVE A CRACK WIDTH 0.050" OR GREATER AND ALSO HAVE PORTIONS LESS THAN 0.050" IN WIDTH, INJECT EPOXY IN ALL PORTIONS OF THE CRACK DOWN TO 0.010" IN WIDTH. SEE SPECIFICATION F-45.
- FOR CRACKS GREATER THAN 0.250" IN WIDTH, CONSIDER AS A SPALL AND REPAIR PER DETAILS HEREON. SEE SPECIFICATION F-46.



SECTION C-C
JOINT, CRACK OR EDGE OF CONCRETE REPAIR
NO SCALE



SECTION D-D
MISCELLANEOUS SPALL REPAIR
NO SCALE



CRACK DETAIL
NO SCALE

SCHEMATIC OF TYPICAL
CRACK IN CULVERT CONC.
SEE NOTES 4 & 5.

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



MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

CIVIL ENGINEER * UNEXPIRED

MARK STILLER

8/21/19

DATE

DESIGNED BY: M. STILLER

CHECKED BY: R. ANDRASEK

COUNTY OF ORANGE
OC PUBLIC WORKS

NCM ENGINEERING CORP.
22362 GILBERTO
RANCHO SANTA MARGARITA
CALIFORNIA, 92688

FILE NAME: 04 BENT TWIG L.N.DWG

PLOT DATE: 8/21/19

SCALE: AS SHOWN

BENT TWIG LANE BRIDGE
OVER REDHILL CHANNEL
PREVENTATIVE MAINTENANCE

Br. No. 55C0574

**SPALL & CRACK
REPAIR DETAILS**

Sheet
Reference
Number

S3

Sheet 4 of 4