

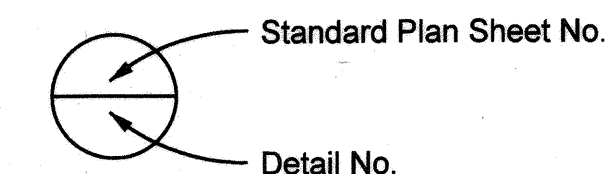
SANTA ANA, CALIFORNIA
BRYAN G. SPEEGLE, DIRECTOR

BARRIER REPLACEMENT FOR SANTIAGO CANYON ROAD BRIDGE SC-8 (BR No. 55C-0049)

MARCH 2007

| INDEX OF SHEETS | |
|-----------------|--------------------------------|
| SHEET | DESCRIPTION |
| 1. | TITLE SHEET |
| 2. | METAL BEAM GUARD RAILING PLAN |
| 3. | TRAFFIC HANDLING PLAN |
| 4. | GENERAL PLAN |
| 5. | DEMOLITION PLAN |
| 6. | ABUTMENT 1 DETAILS |
| 7. | ABUTMENT 4 DETAILS |
| 8. | BARRIER RECONSTRUCTION DETAILS |

| <u>CALTRANS STANDARD PLANS DATED MAY, 2006</u> | |
|--|---|
| ROADWAY | |
| A20A, B & D | PAVEMENT MARKERS & TRAFFIC LINES TYPICAL DETAILS |
| A73B | MARKERS |
| A73C | DELINEATORS, CHANNELIZERS AND BARRICADES |
| A77F1, A77F4 | METAL BEAM GUARD RAILING TYPICAL LAYOUT |
| A77J4 | METAL BEAM GUARD RAILING TRANSITION RAILING (TYPE WB) |
| A77L1 | METAL BEAM RAILING TERMINAL SYSTEM (TYPE SRT) |
| A77L3 | METAL BEAM RAILING TERMINAL SYSTEM (TYPE ET) |
| T2 | TEMPORARY CRASH CUSHION SAND FILLED (SHOULDER INSTALLATION) |
| T3 | TEMPORARY RAILING (TYPE K) |
| BRIDGE | |
| A10A | ACRONYMS AND ABBREVIATION (A-L) |
| A10B | ACRONYMS AND ABBREVIATION (M-Z) |
| A10C & D | SYMBOLS |
| A77J THRU | METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILS, |
| A77J4 | RETAINING WALLS & ABUTMENTS |
| B3-7 | RETAINING WALL TYPE 5 |
| B7-1 | BOX GIRDER DETAILS |
| B7-5 | DECK DRAINS |
| B11-51 | TUBULAR HAND RAILING |
| B11-53 | CONCRETE BARRIER TYPE 25 |



AS BUILT

CORRECTIONS BY RWH

CONTRACT NO. _____

DATE 4/30/08

No As-Built Changes

| UTILITY OWNER | PHONE NO. | CONTACT |
|---|--------------|----------------|
| IRVINE RANCH WATER DISTRICT (I.R.W.D.) | 949-453-5551 | MALCOLM CORTEZ |
| SOUTHERN CALIFORNIA EDISON | 714-934-0847 | JENNIFER WARD |
| SBC (PACIFIC BELL) | 714-237-6950 | STEVE HICKS |
| UNDERGROUND SERVICE ALERT | 800-227-2600 | |

RESIDENT ENGR: DAVE ROCHA / CHRIS KUBASEK
INSPECTOR: ALBERT TRAN
CONTRACTOR: R.J. BULLARD CONST. INC.
DATE OF COMPLETION: 3/21/08

FUNDED BY: THE COUNTY OF ORANGE

POST-PROJECT OWNERSHIP & MAINTENANCE RESPONSIBILITY: THE COUNTY OF ORANGE

DEVIATIONS FROM STANDARDS

THE FOLLOWING RDMD STANDARDS HAVE BEEN MODIFIED:

- STD PLAN 1103, PRIMARY HIGHWAY TYPICAL SECTIONS
 - 11 FT. TRAVEL LANE WIDTH
 - 5'-3 1/2" SHOULDER WIDTH

RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

APPROVED FOR CONTRACT ADMINISTRATION PURPOSES

SUBMITTED: [Signature] 1/24/07
JAVIER SOTO, P.E.
MANAGER, ROAD CAPITAL PROJECTS

RECOMMENDED: [Signature] 1/24/07
EDWARD M.Y. KWAN, P.E.
MANAGER, ROAD DIVISION

APPROVED: [Signature] 1/24/07
IGNACIO G. SCHOA, P.E.
ASSISTANT DIRECTOR OF PUBLIC WORKS/CHIEF ENGINEER

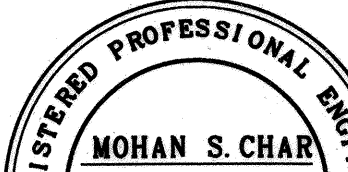
REGISTERED PROFESSIONAL ENGINEER
JAVIER SOTO
No. 56938
Exp. 1/24/07
DATE
CIVIL
STATE OF CALIFORNIA

PREPARED BY

LIM & NASCIMENTO ENGINEERING
12-L MAUCHLY
IRVINE, CALIFORNIA 92618

APPROVED: Michael
REGISTERED CIVIL ENGINEER

12/18/06
DATE


The seal is circular with the text "REGISTERED PROFESSIONAL ENGINEER" around the top and "STATE OF CALIFORNIA" around the bottom. In the center, it reads "MOHAN S. CHAR", "No. C057894", "Exp. 6/30/08", and "CIVIL". There are two stars on the sides.

[illegible]

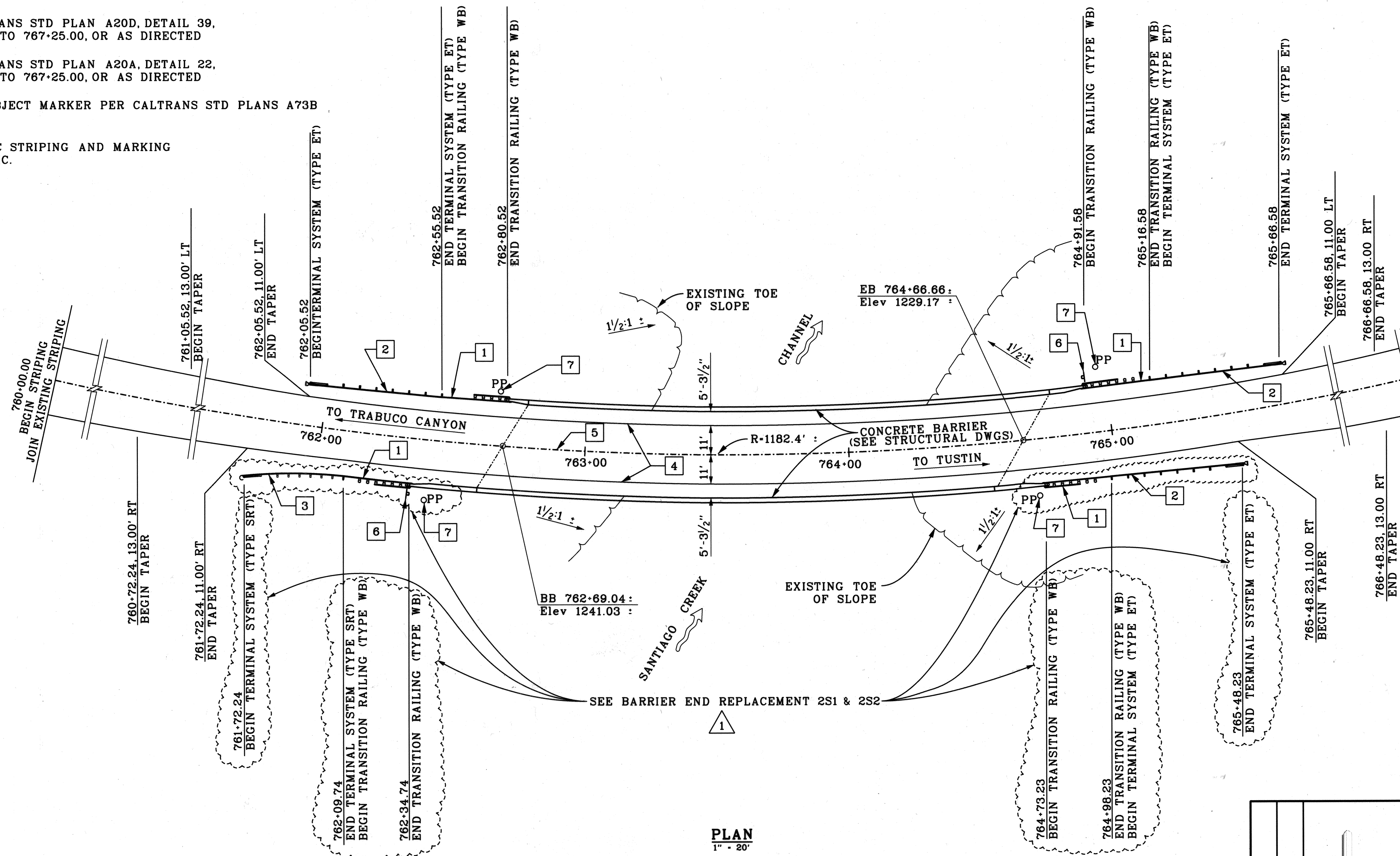
BRIDGE NO. 55C-0049
 DWG. NO. _____

SHEET 1 OF 8

CONSTRUCTION NOTES:

- 1 CONSTRUCT TRANSITION RAILING (TYPE WB) PER CALTRANS STD PLANS A77F1, A77F4, A77J4
- 2 CONSTRUCT TERMINAL SYSTEM (TYPE ET) PER CALTRANS STD PLAN A77L3
- 3 CONSTRUCT TERMINAL SYSTEM (TYPE SRT) PER CALTRANS STD PLAN A77L1
- 4 RESTRIPE PER CALTRANS STD PLAN A20D, DETAIL 39, FROM STA 760+00.00 TO 767+25.00, OR AS DIRECTED BY ENGINEER
- 5 RESTRIPE PER CALTRANS STD PLAN A20A, DETAIL 22, FROM STA 760+00.00 TO 767+25.00, OR AS DIRECTED BY ENGINEER
- 6 INSTALL TYPE "P" OBJECT MARKER PER CALTRANS STD PLANS A73B
- 7 PROTECT IN PLACE

ALL PERMANENT TRAFFIC STRIPING AND MARKING SHALL BE THERMOPLASTIC.



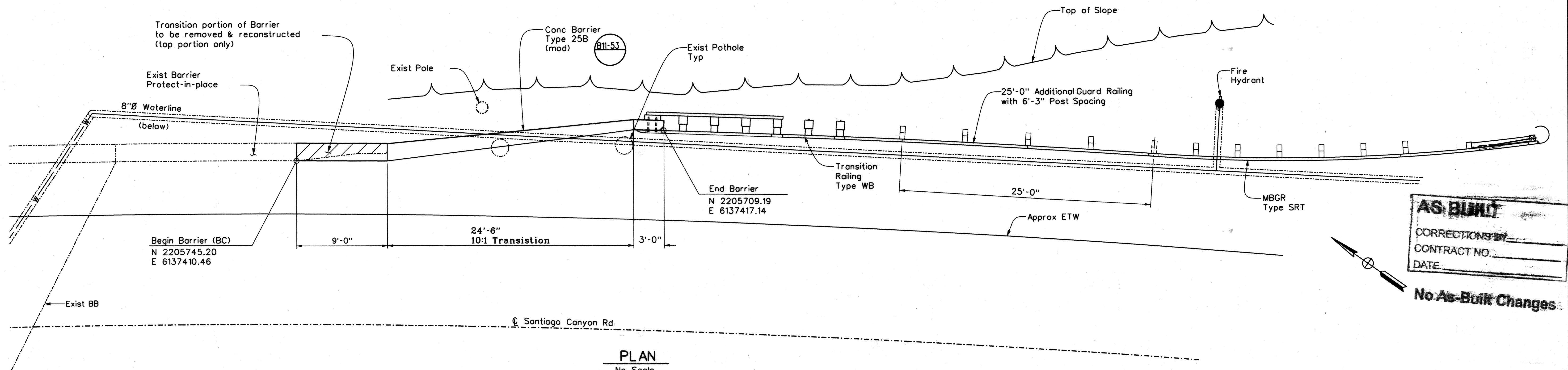
AS BUILT
CORRECTIONS BY: _____
CONTRACT NO. _____
DATE: _____
No As-Built Changes

AS BUILT
CORRECTIONS BY: _____
CONTRACT NO. _____
DATE: _____
No As-Built Changes

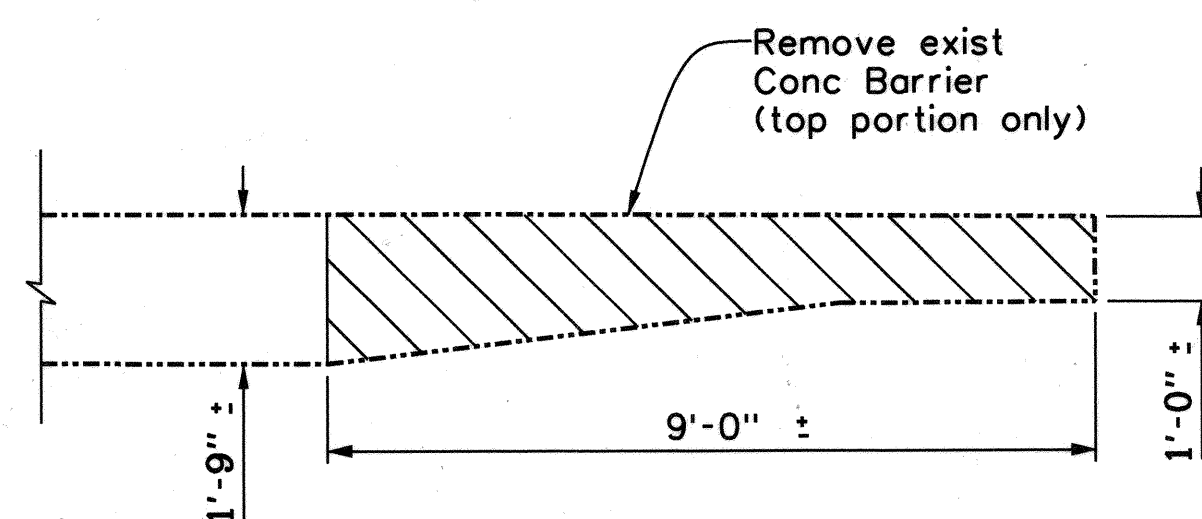
PLAN
1" = 20'

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

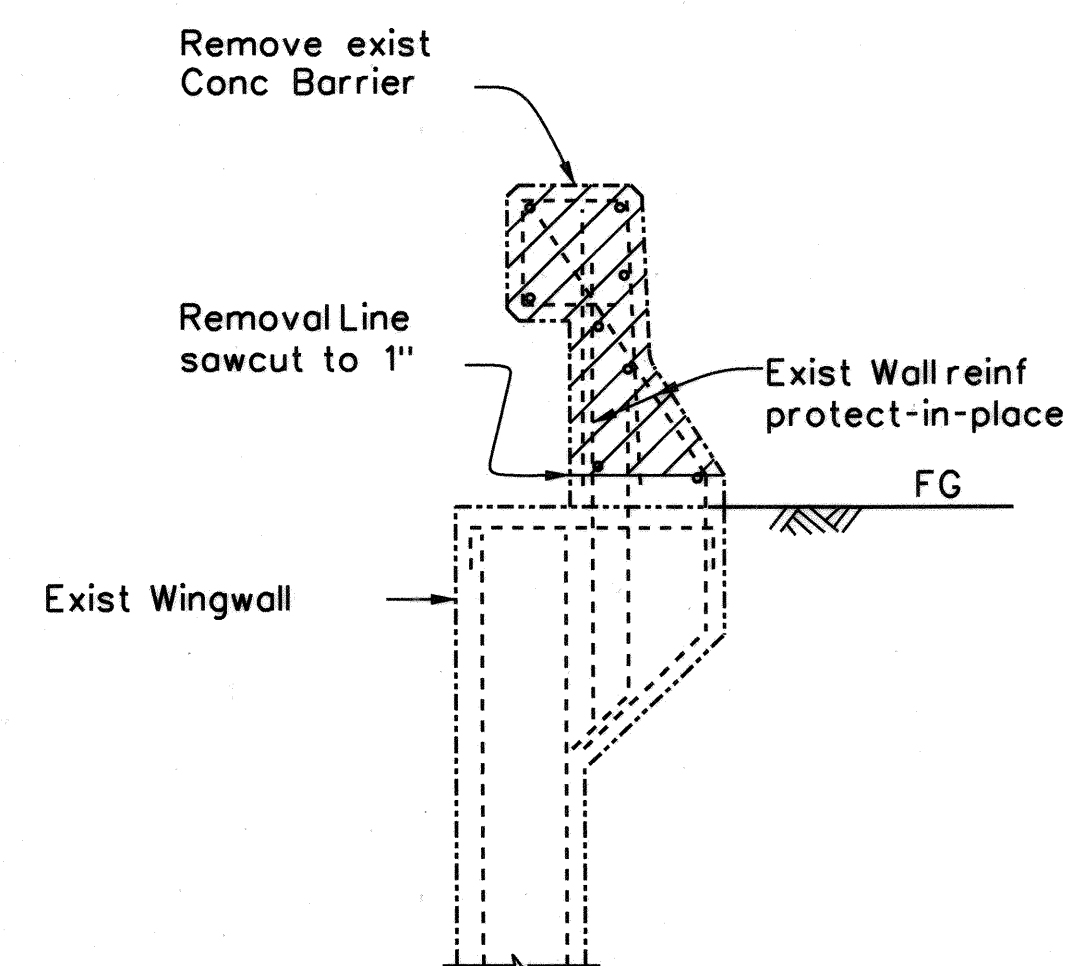
| | |
|--|--------------|
| ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT | |
| SANTIAGO CANYON ROAD BRIDGE SC-8 | |
| BRIDGE No. 55C-0049 | |
| METAL BEAM GUARD RAILING PLAN | |
| DESIGNED F. ONG | SHEET |
| DRAWN F. ONG | 2R |
| SCALE VARIES | DATE 2/14/07 |
| CHECKED M. CHAR | DRAWING NO. |
| DATE 2/14/07 | OF 8 |



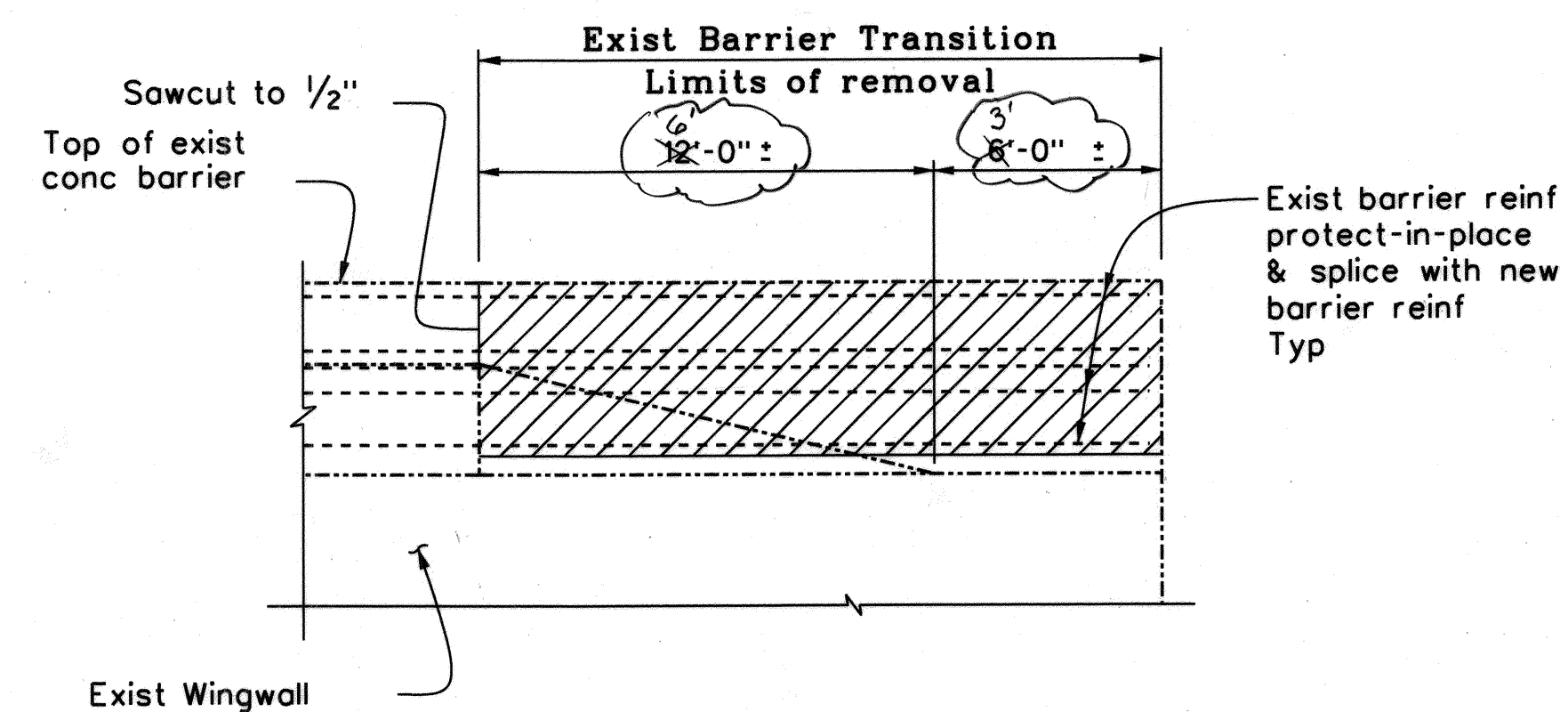
PLAN
No Scale



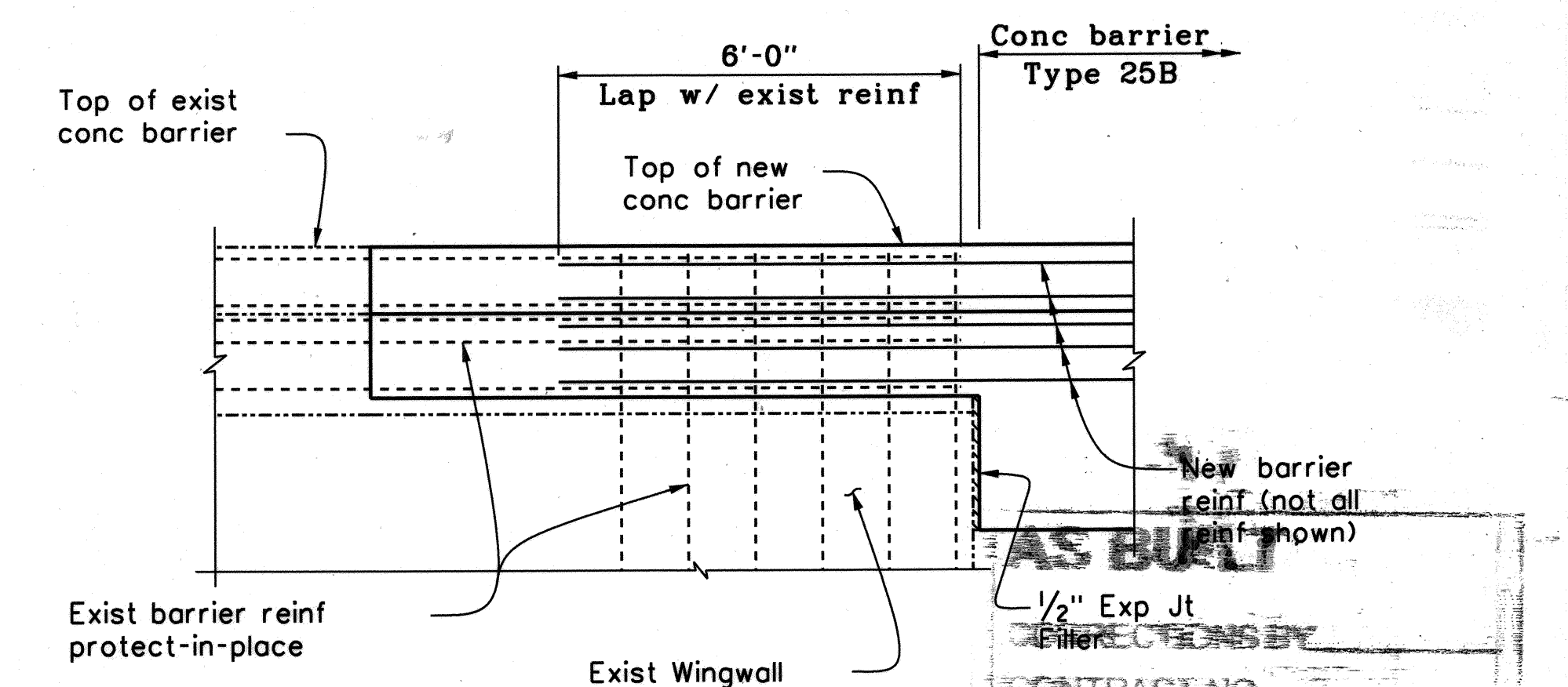
TRANSITION REMOVAL
No Scale



REMOVAL SECTION
No Scale



REMOVAL ELEVATION
No Scale

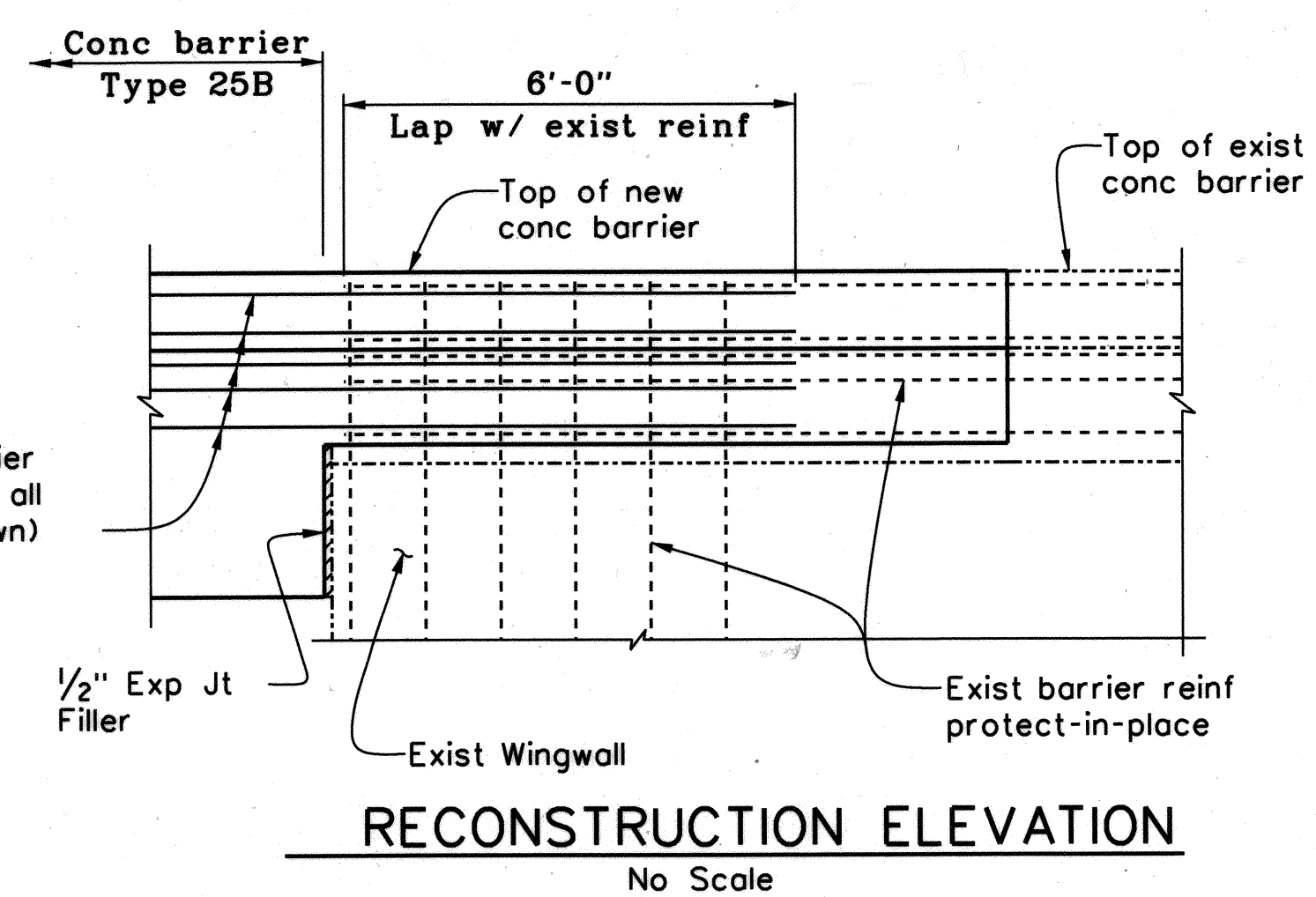
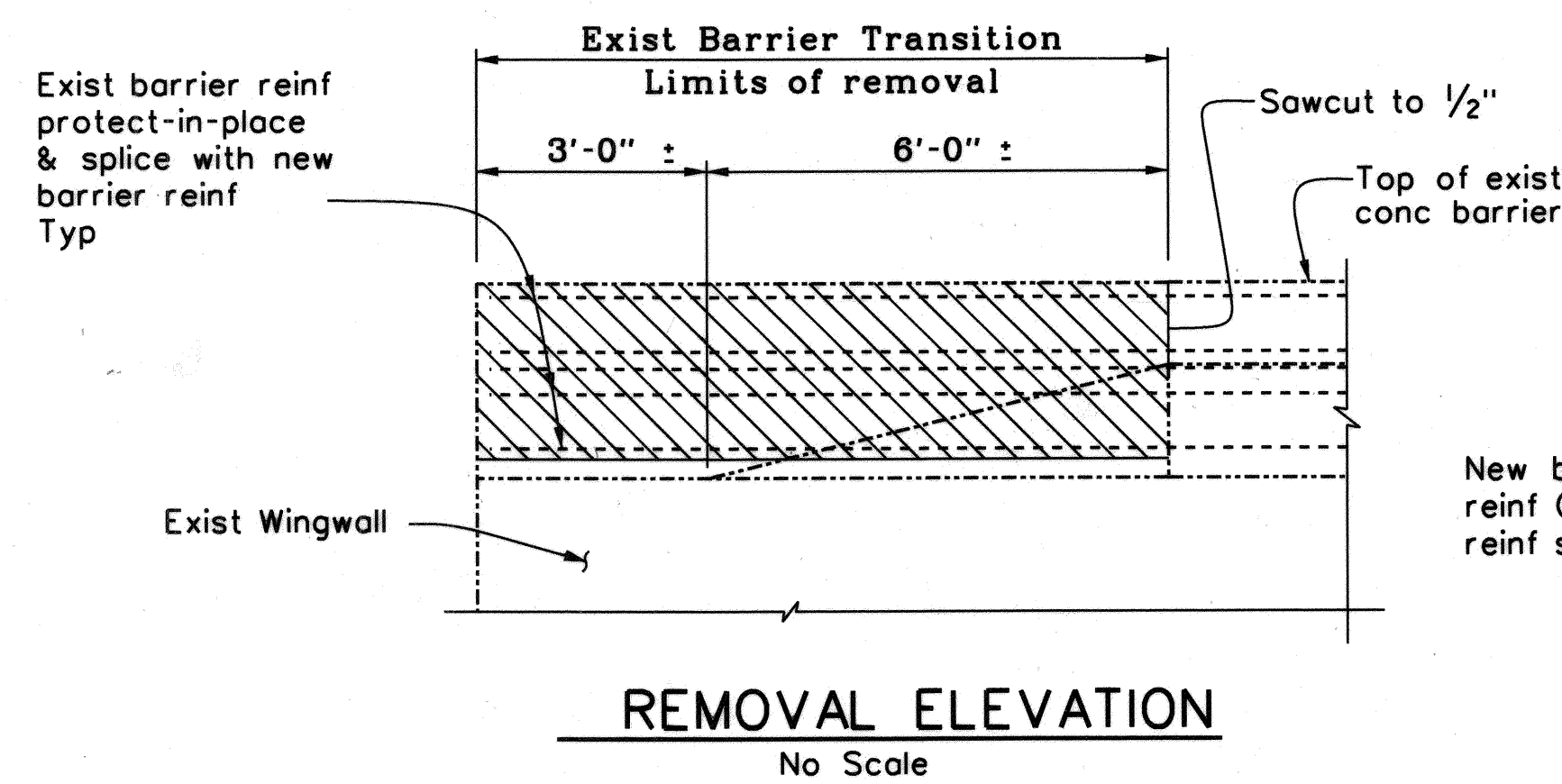
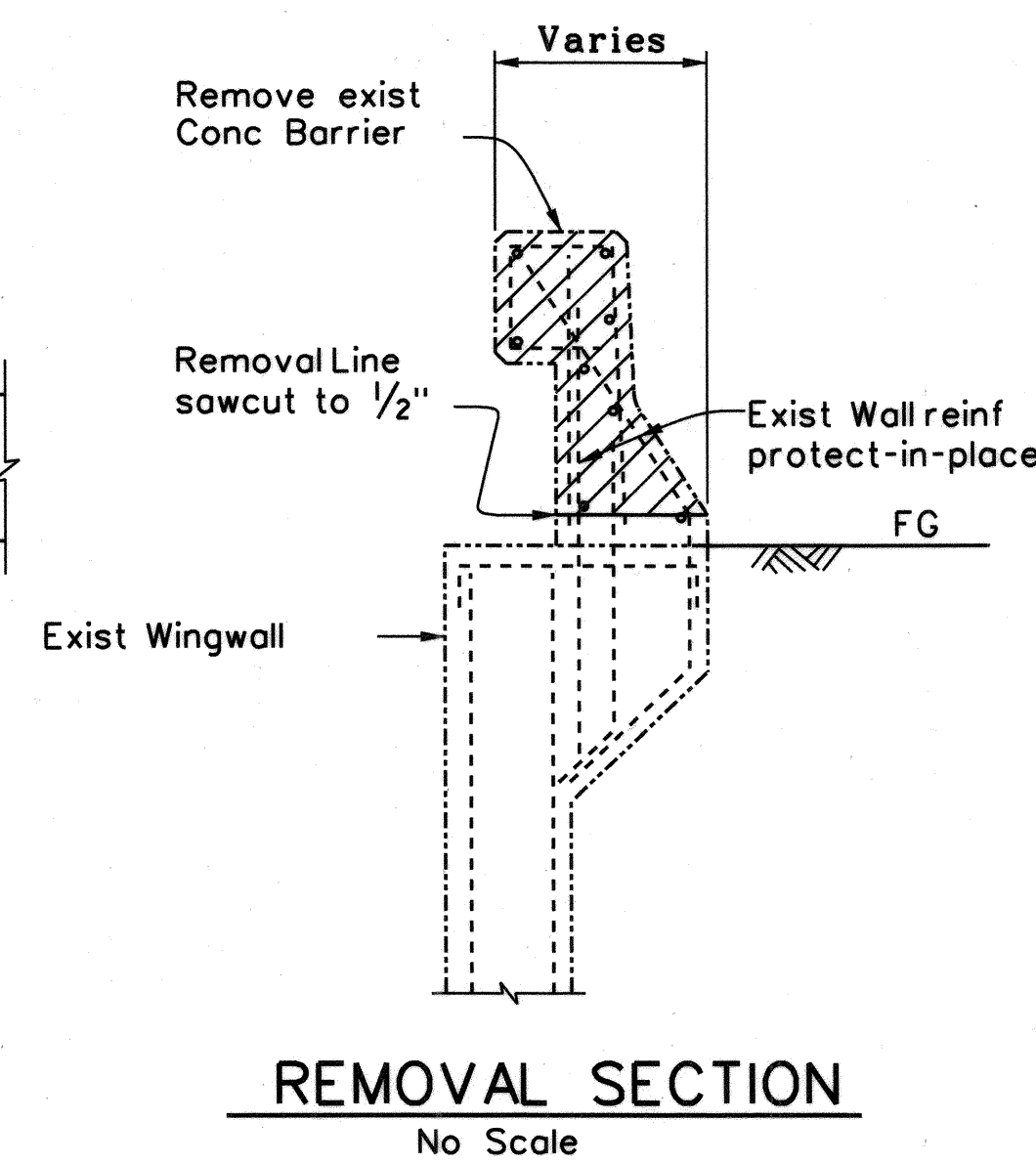
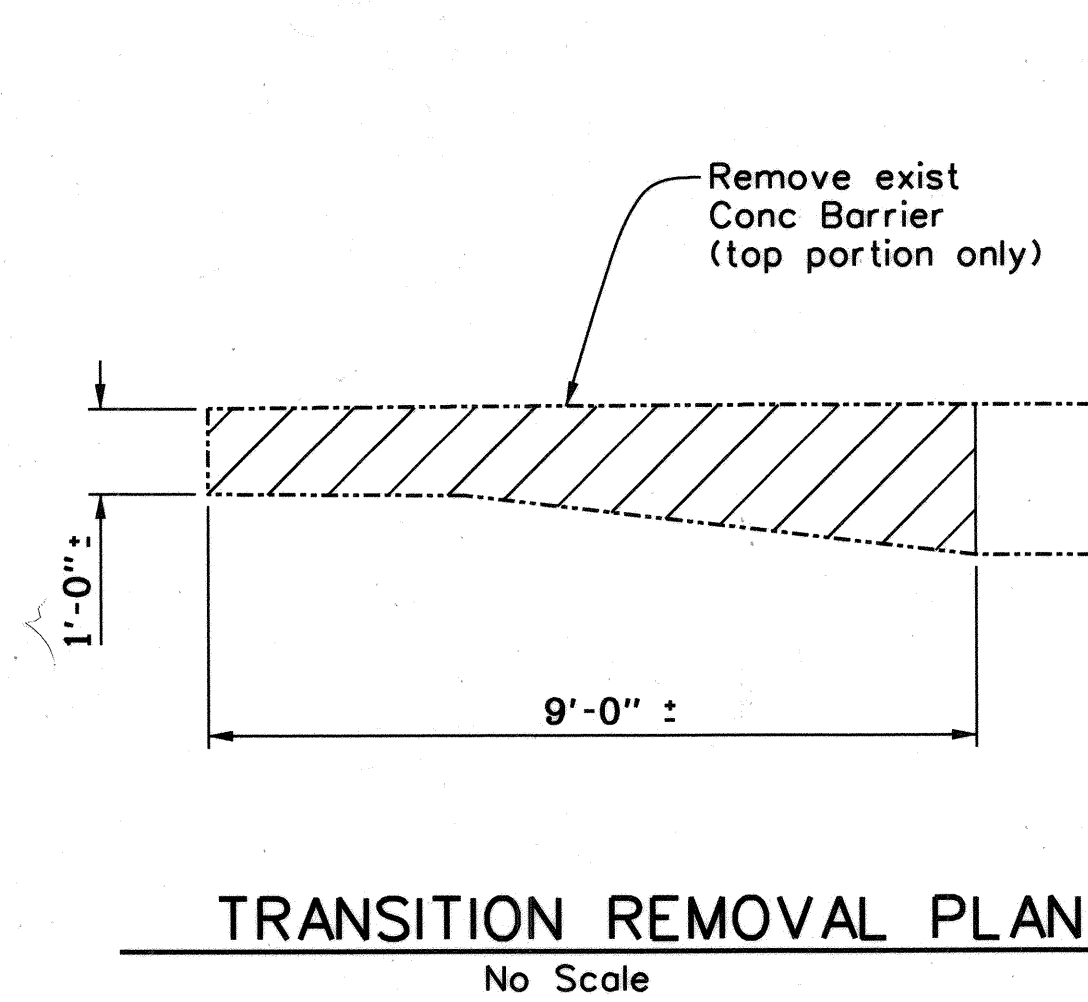
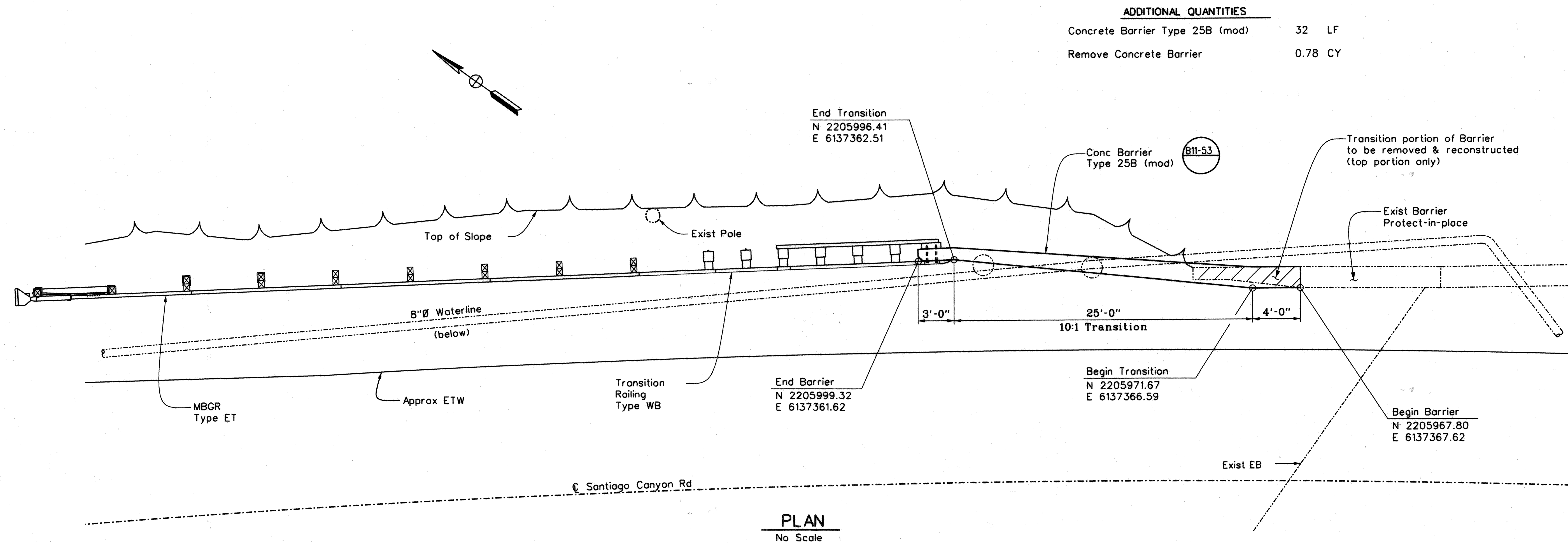


RECONSTRUCTION ELEVATION
No Scale

LEGEND:
--- Indicates existing
/// Indicates Barrier Removal (portion)

| ADDITIONAL QUANTITIES | |
|---------------------------------|---------|
| Concrete Barrier Type 25B (mod) | 36.5 LF |
| Remove Concrete Barrier | 0.78 CY |

| | |
|--|-----------------|
| ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT | |
| SANTIAGO CANYON ROAD BRIDGE SC-8 | |
| BRIDGE No. 55C-0049 | |
| BARRIER END REPLACEMENT ABUTMENT 1 | |
| DESIGNED U. SANDIRA | CHECKED M. CHAR |
| DRAWN R. ANDRASEK | DATE 10/01/07 |
| SCALE VARIES | DRAWING NO. 2S1 |
| DATE 10/01/07 | OF 2 |



LEGEND:

--- Indicates existing

/// Indicates Barrier Removal (portion)

AS BUILT

CORRECTIONS BY CONTRACTOR

AS BUILT

CORRECTIONS BY CONTRACTOR

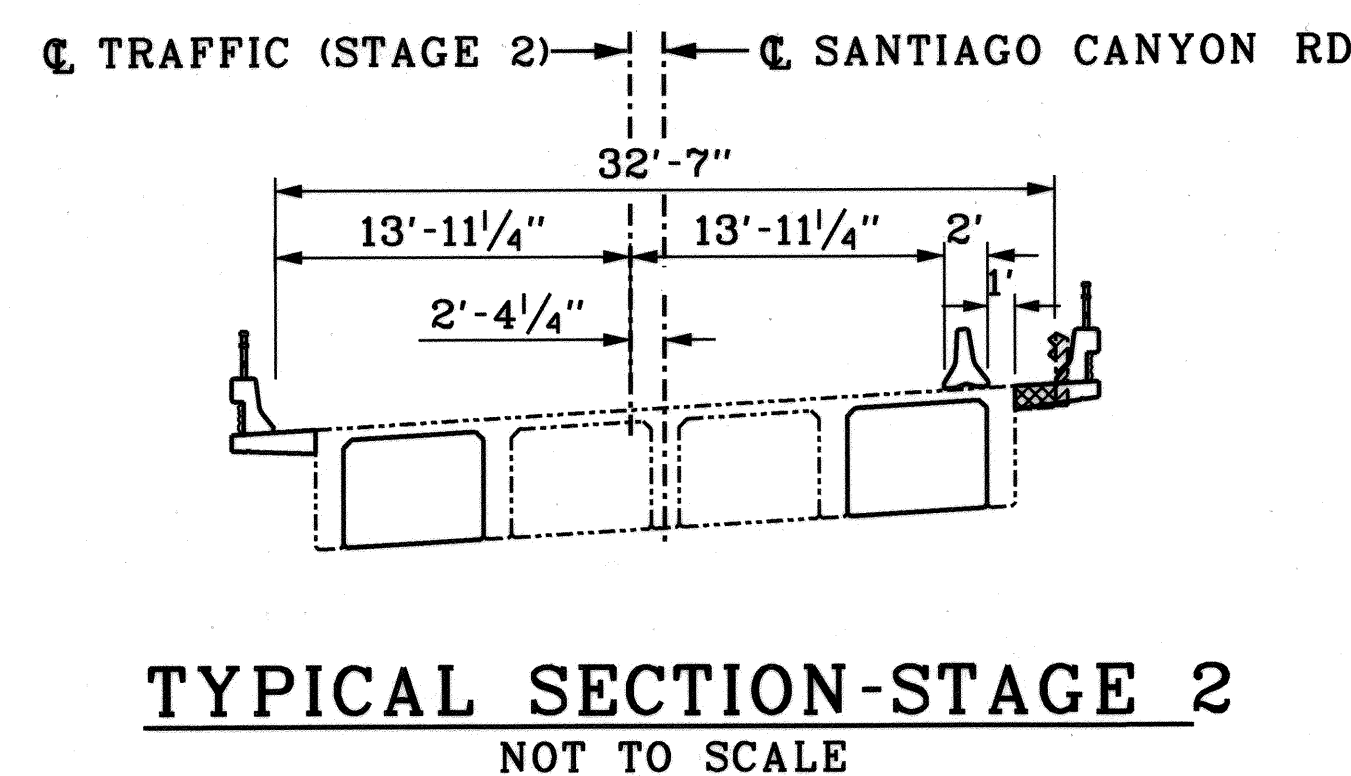
CONTRACT NO. _____

DATE _____

No As-Built Changes

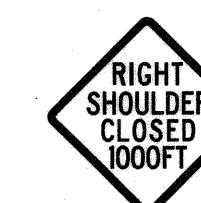
| | |
|--|-------------|
| ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT | |
| SANTIAGO CANYON ROAD BRIDGE SC-8 | |
| BRIDGE No. 55C-0049 | |
| BARRIER END REPLACEMENT ABUTMENT 4 | |
| DESIGNED U. SANDRA | SHEET |
| DRAWN R. ANDRASEK | 252 |
| SCALE VARIES | DRAWING NO. |
| DATE 10/01/07 | OF 2 |

1. THE GRAPHICS SHOWN ON THIS PLAN ARE FOR OBTAINING HORIZONTAL DISTANCE PURPOSE ONLY. THE GRAPHICS SHOWN DO NOT REPRESENT THE ACTUAL GEOMETRY OF THE ROADWAY.
2. ALL TEMPORARY CONSTRUCTION SIGNS SHALL BE INSTALLED AT THE LOCATION SHOWN ON PLANS, OR AS DIRECTED BY ENGINEER.
3. TRAFFIC STRIPING AND PAVEMENT MARKING SHALL BE REMOVED BY SANDBLASTING AND GRINDING, OR AS DIRECTED BY ENGINEER.
4. TEMPORARY STRIPING USED AT STAGE 1 SHALL BE REMOVED BY SANDBLASTING AND GRINDING, OR AS DIRECTED BY ENGINEER, PRIOR TO STAGE 2 CONSTRUCTION.
5. ALL PERMANENT TRAFFIC STRIPING AND MARKING SHALL BE THERMOPLASTIC.
6. FOR DEMOLITION AT STAGE 1 AND STAGE 2, SEE "DEMOLITION PLAN" SHEET.
7. LOCATION OF PROJECT INFORMATION SIGN SHALL BE DETERMINED AS DIRECTED BY ENGINEER. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTION F-20, "PROJECT INFORMATION SIGNS" OF THE PROJECT SPECIAL PROVISIONS.



ROAD
WORK
AHEAD

W20-1



C30A(1000 FT)



C30A



SHARE
THE ROAD

W11-1
AND W16-1



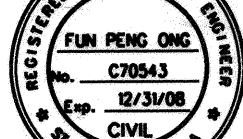
CORRECTIONS:
CONTRACT NO. _____
DATE _____

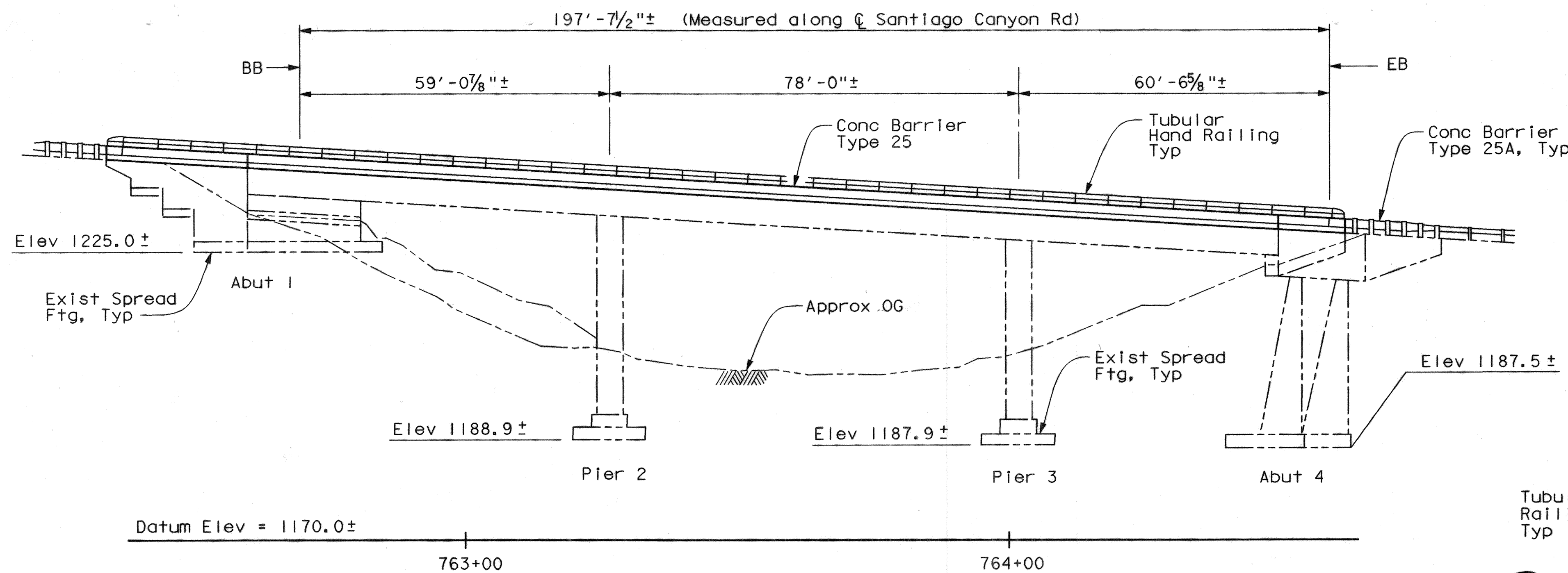
No As-Built Change

AS BUILT

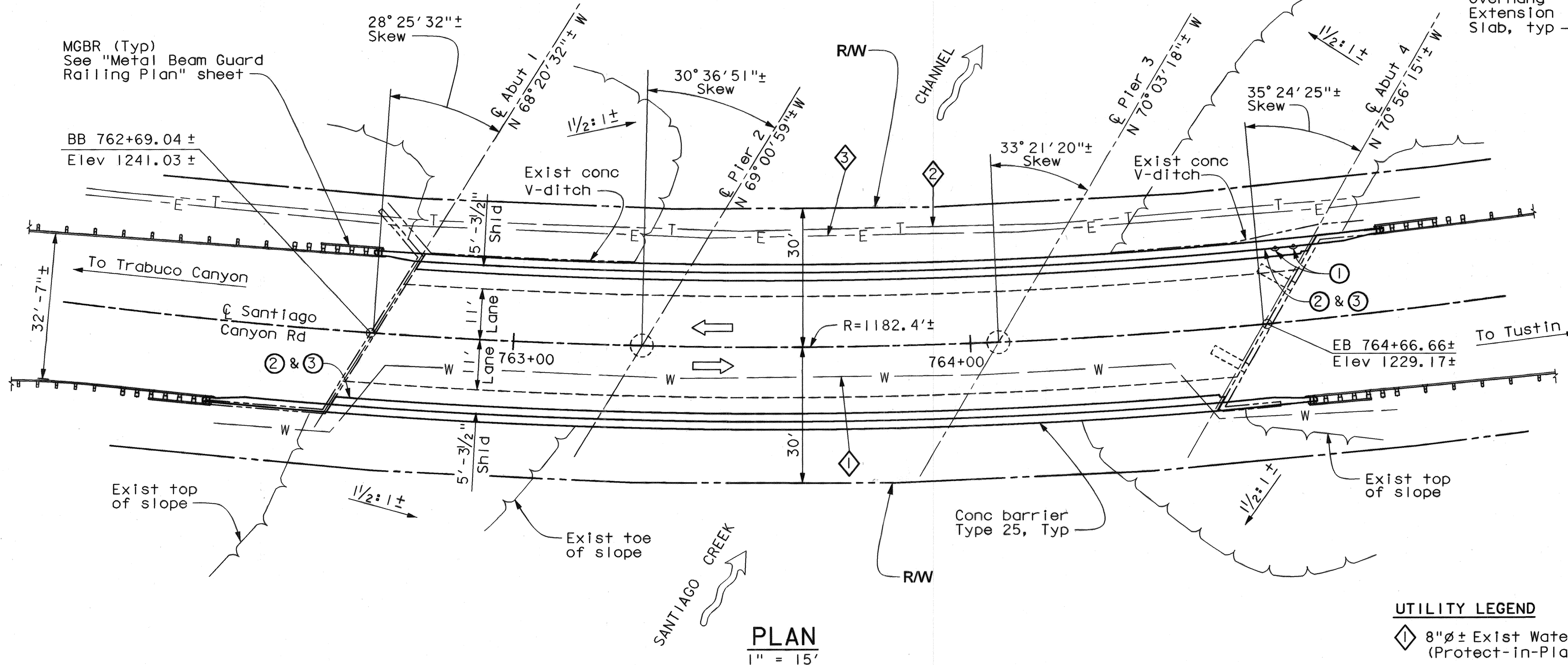
CORRECTIONS BY _____
CONTRACT NO. _____
DATE _____

No As-Built Changes

| | | | | |
|---|-----------------|------------------------|--|--|
| | | | | ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT |
| | | | | SANTIAGO CANYON ROAD BRIDGE SC-8 |
| REV. | DATE | DESCRIPTION | | |
| REVISIONS | | | | |
| PREPARED UNDER SUPERVISION OF | | | | |
|  | | | | |
| 2/14/07 | | | | |
| DATE | | | | |
| DESIGNED <u>F. ONG</u> | | | | |
| DRAWN <u>F. ONG</u> | | CHECKED <u>M. CHAR</u> | | |
| SCALE VARIES | DATE 2/14/07 | DRAWING NO. | | |



ELEVATION
1" = 15'



PLAN
1" = 15'

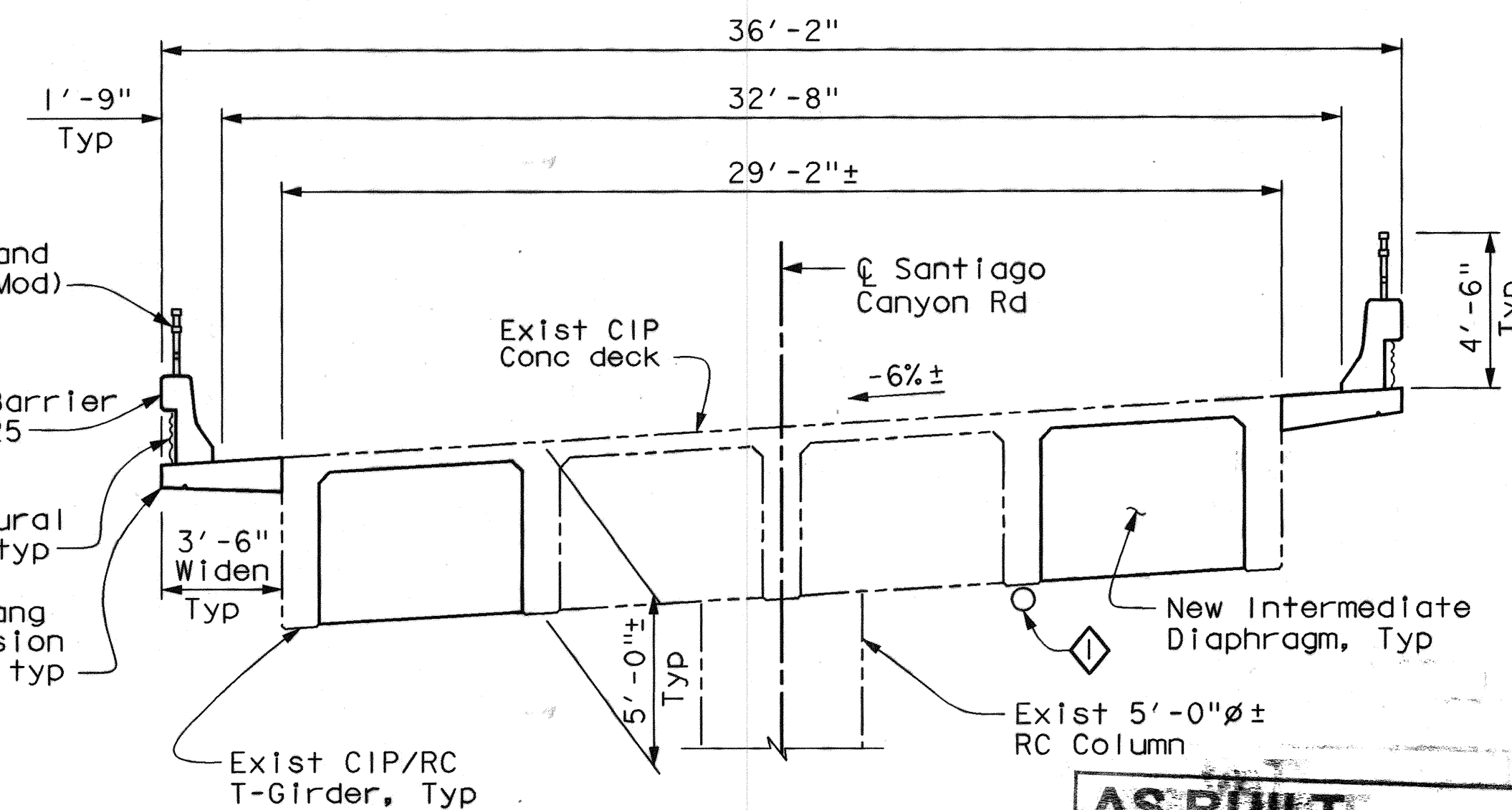
GENERAL NOTES LOAD FACTOR DESIGN

DESIGN: BRIDGE DESIGN SPECIFICATIONS
(1996 AASHTO with Interims and Revisions by CALTRANS)

LIVE LOADING: HS20-44 and alternative and permit design load.

REINFORCED CONCRETE: $f'_c = 4,000$ psi unless noted otherwise
Class 2 (Barrier only)

REINFORCING STEEL: ASTM A706. $f_y = 60,000$ psi



TYPICAL SECTION
1/4" = 1'-0"

AS BUILT

CORRECTIONS BY
CONTRACT NO.
DATE

No As-Built Changes

LEGEND

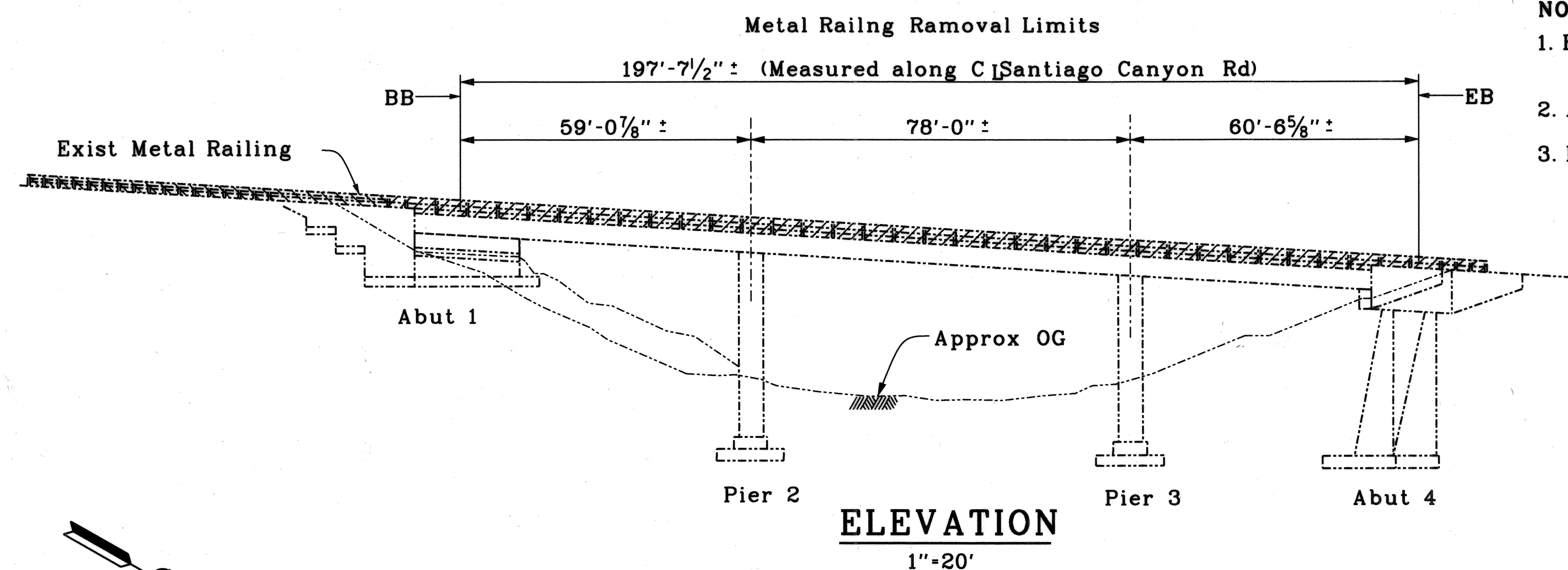
- Existing structure
- New construction
- Direction of traffic
- Direction of flow
- MBGR, See "Roadway Plan"
- ① Deck Drains, Type B (B7-5 7-3)
- ② Paint "Santiago Canyon Road Bridge"
- ③ Paint "Br. No. 55C-0049"

UTILITY LEGEND

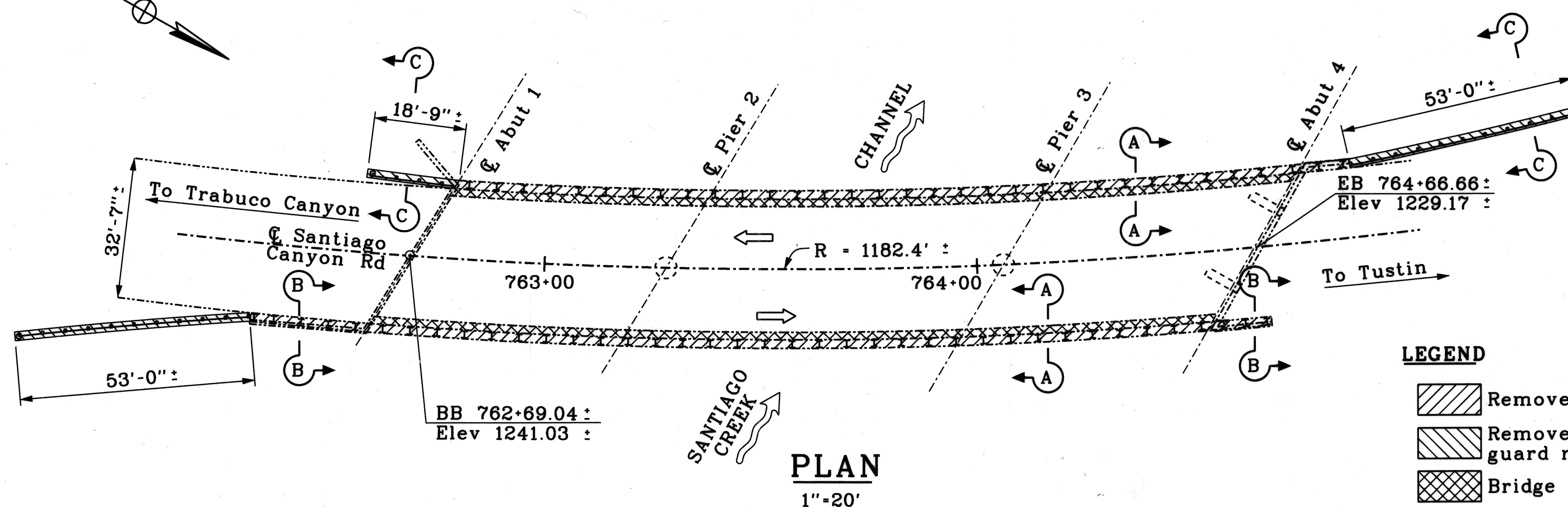
- ① 8"± Exist Water Line (S.C.W.D.) (Protect-In-Place)
- ② Exist overhead SBC Pacific Bell telephone line
- ③ Exist overhead Southern California Edison power line

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

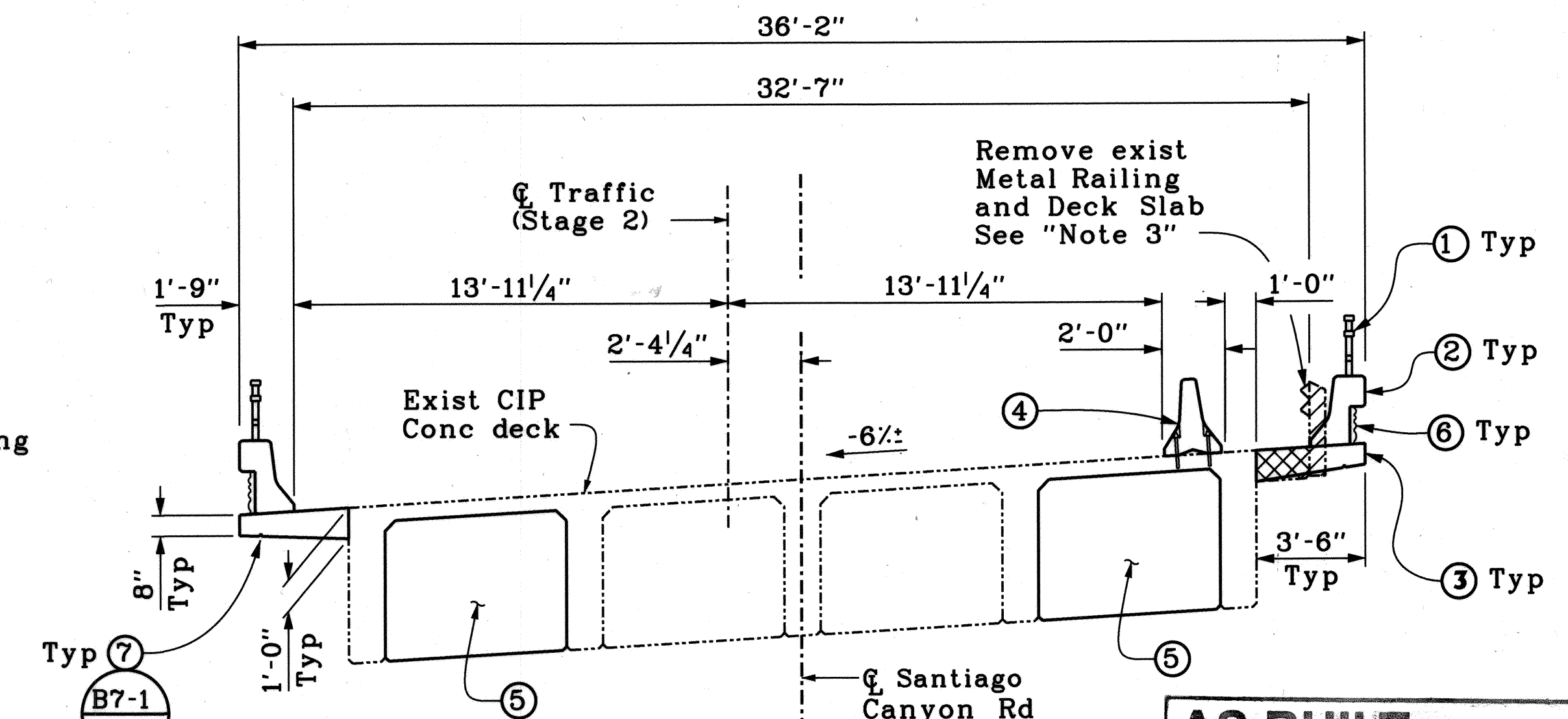
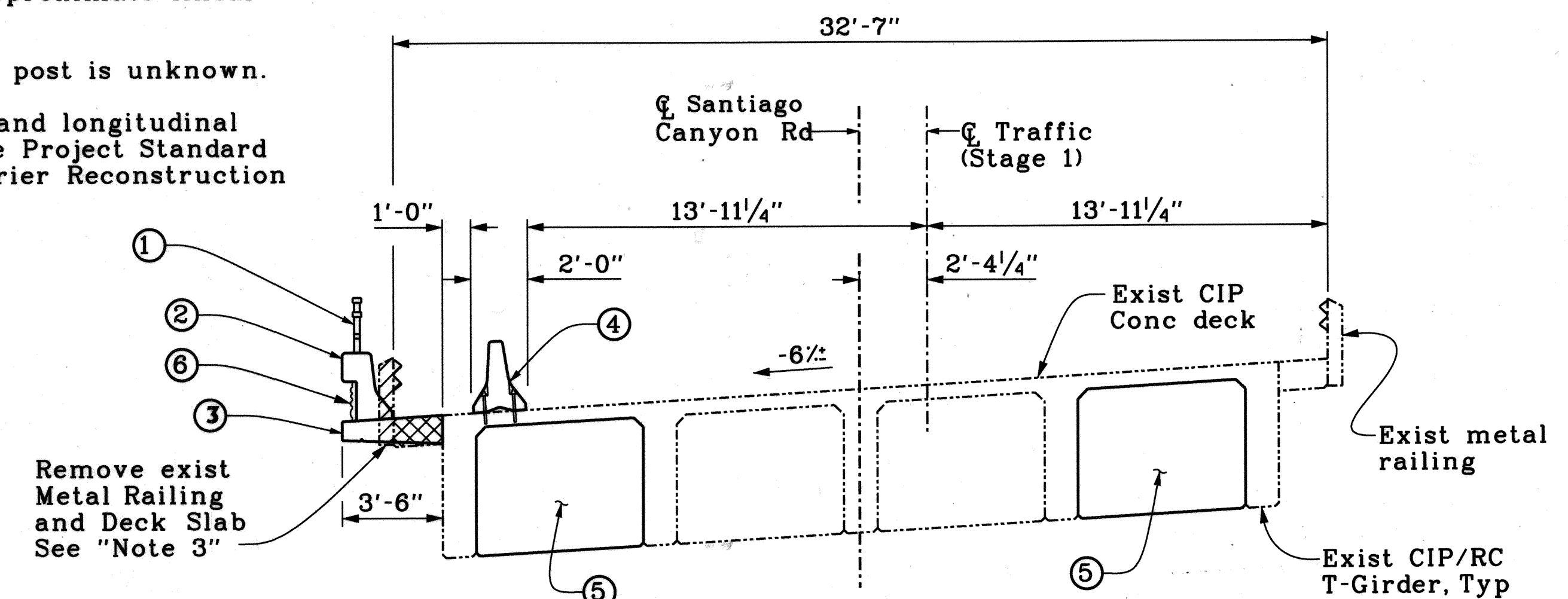
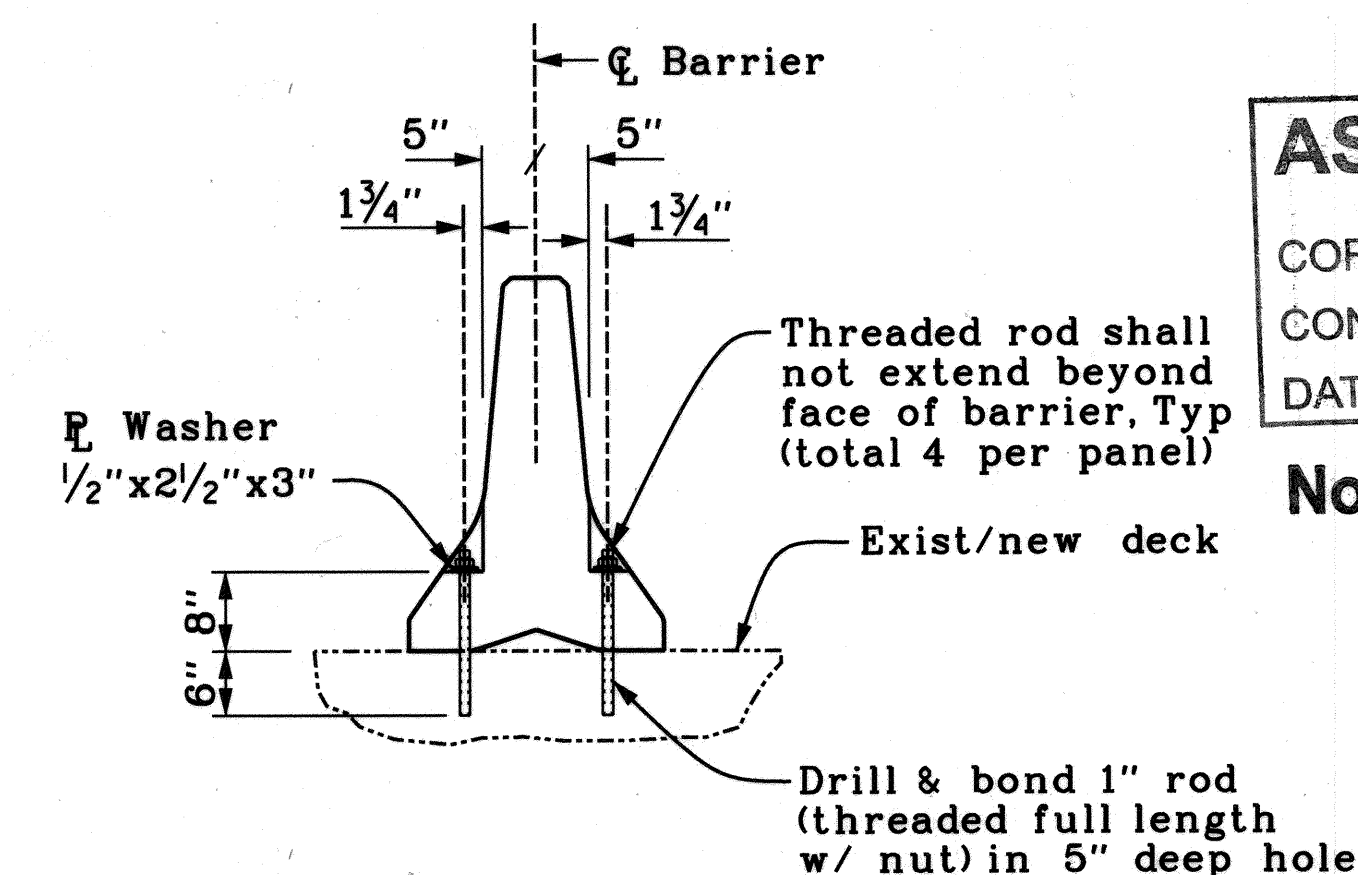
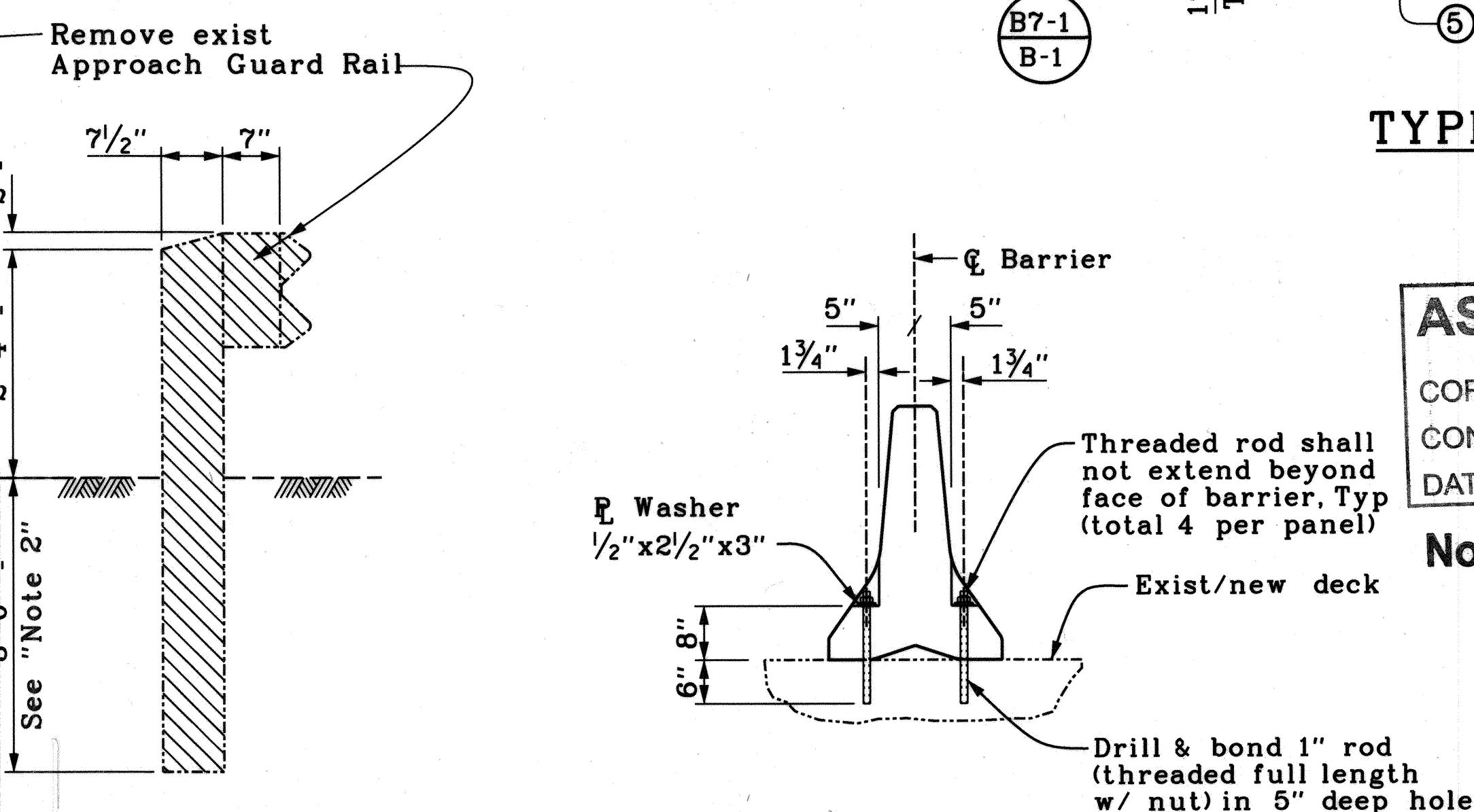
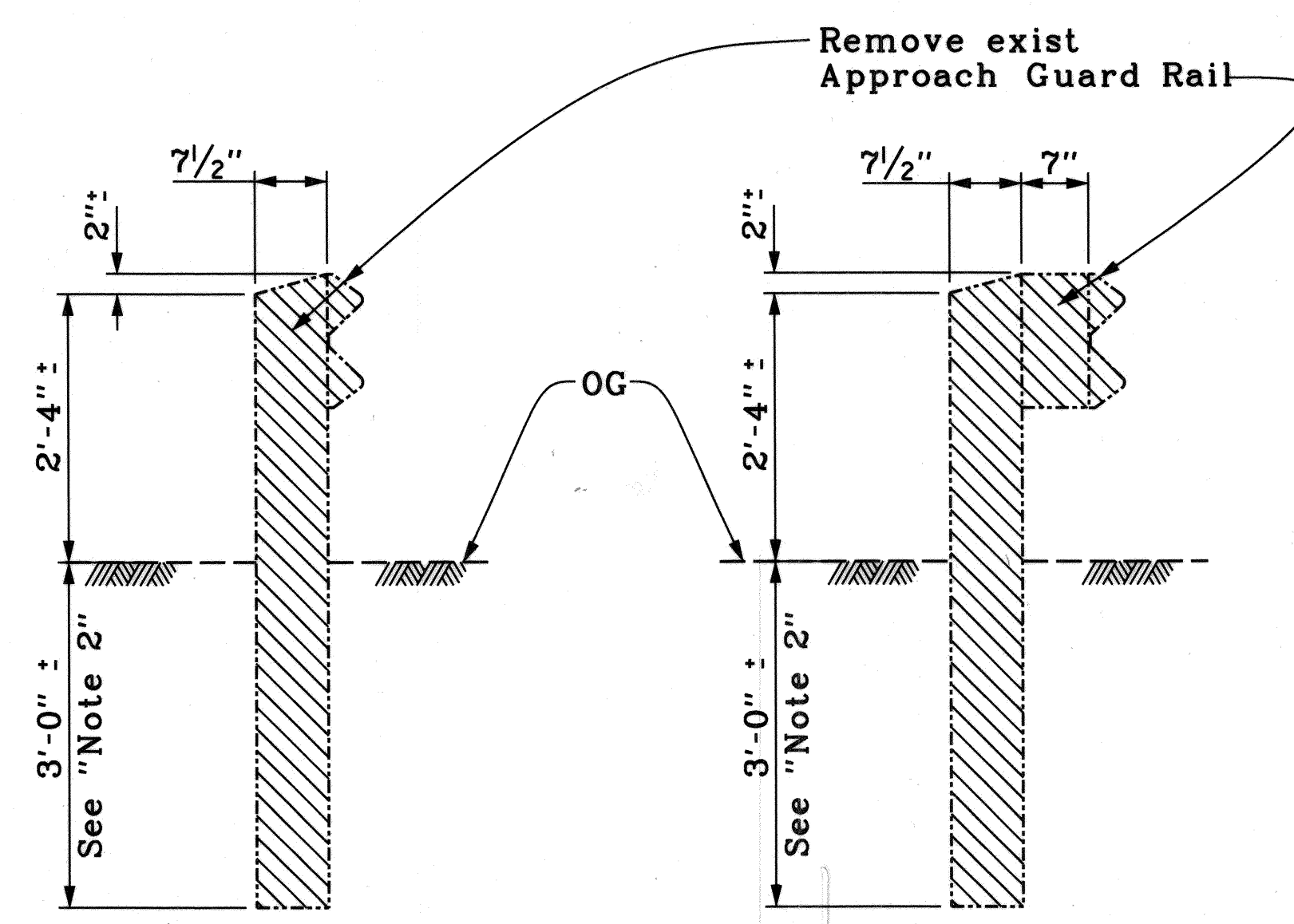
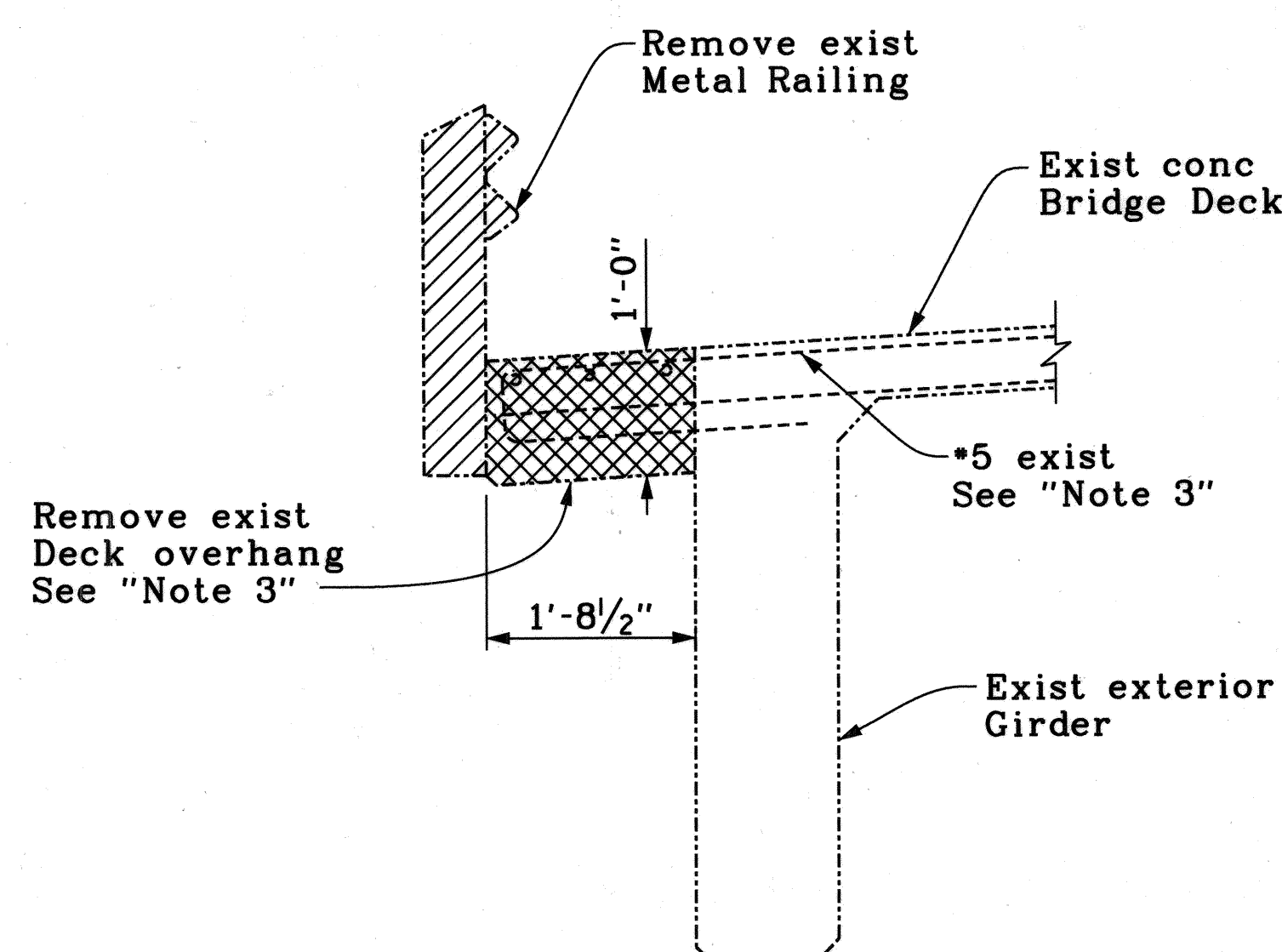
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|--|-------------|-------------|-------------|
| REV. | | DATE | DESCRIPTION |
| REVISIONS | | | |
| PREPARED UNDER SUPERVISION OF | | | |
| | | | |
| ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT SANTIAGO CANYON ROAD BRIDGE SC-8 BRIDGE No. 55C-0049 GENERAL PLAN | | | |
| DESIGNED | U. SANDIRA | CHECKED | M. CHAR |
| DRAWN | M. ANDRASEK | SCALE | VARIES |
| DATE | 12/18/06 | DRAWING NO. | 4 |
| | | | OF 8 |



- NOTES:**
1. Removal limits shown are approximate linear measurements.
 2. Actual embedment of timber post is unknown.
 3. Protect existing transverse and longitudinal reinforcement in place. See Project Standard Special Provisions and "Barrier Reconstruction Details" sheet.



- LEGEND**
- Remove existing metal railing
 - Remove existing approach guard railing
 - Bridge removal (Portion)



AS BUILT

CORRECTIONS BY _____

CONTRACT NO. _____

DATE _____

- LEGEND**
- 1 Tubular Hand Railing (mod)
 - 2 Concrete Barrier, Type 25
 - 3 Overhang Extension Slab
 - 4 Temporary Railing, Type K
 - 5 Intermediate Diaphragm
 - 6 Architectural texture
 - 7 Drip Groove

AS BUILT

CORRECTIONS BY _____

CONTRACT NO. _____

DATE _____

No As-Built Changes

No As-Built Changes

| | | | |
|-------------------------------|--|------|-------------|
| REV. | | DATE | DESCRIPTION |
| REVISIONS | | | |
| PREPARED UNDER SUPERVISION OF | | | |
| DESIGNED U. SANDRA | | | |
| DRAWN M. ANDRASEK | | | |
| CHECKED M. CHAR | | | |
| SCALE VARIES | | | |
| DATE 2/14/07 | | | |
| DRAWING NO. | | | |
| SHEET 5 OF 8 | | | |

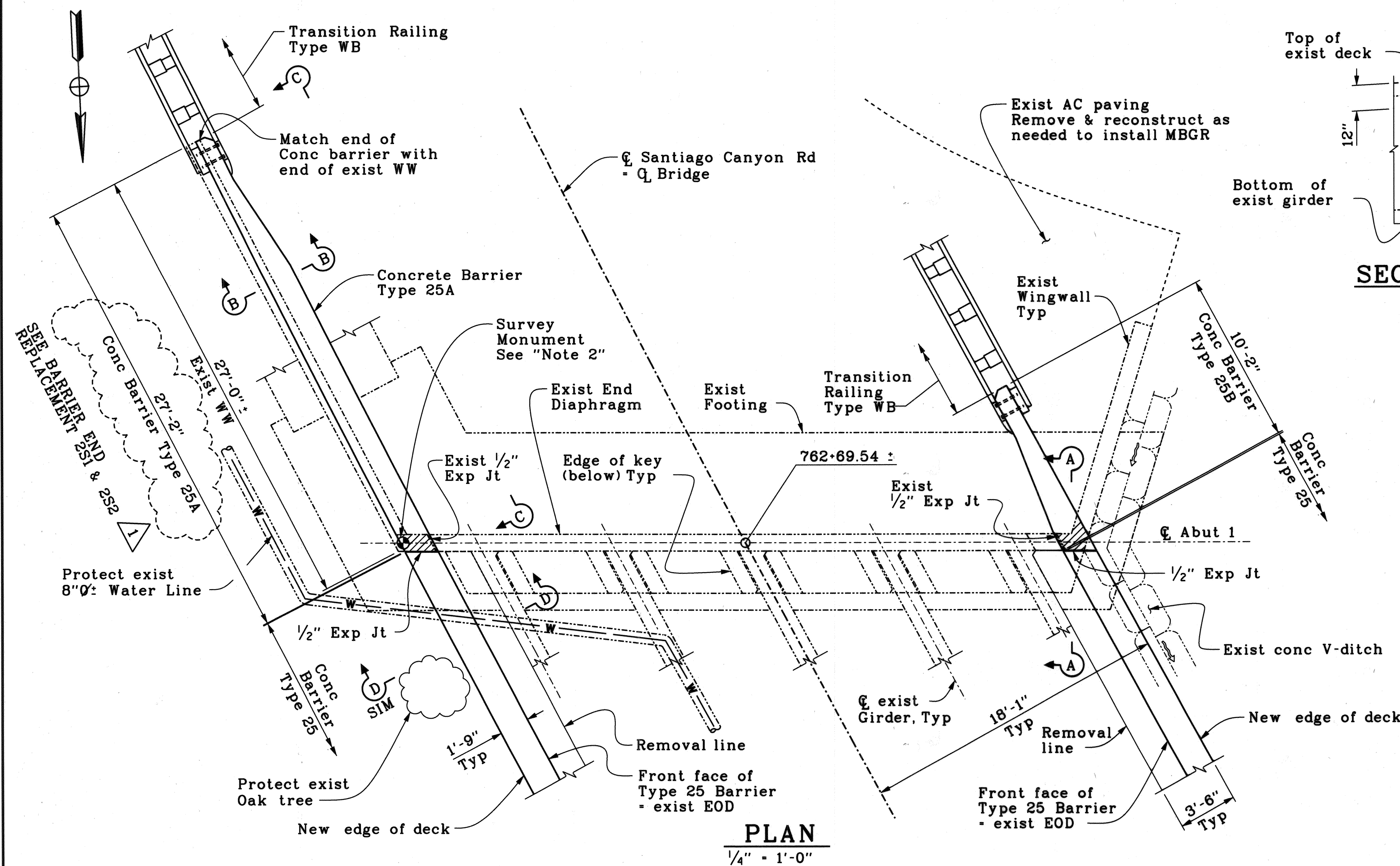
ORANGE COUNTY
RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

SANTIAGO CANYON ROAD
BRIDGE SC-8

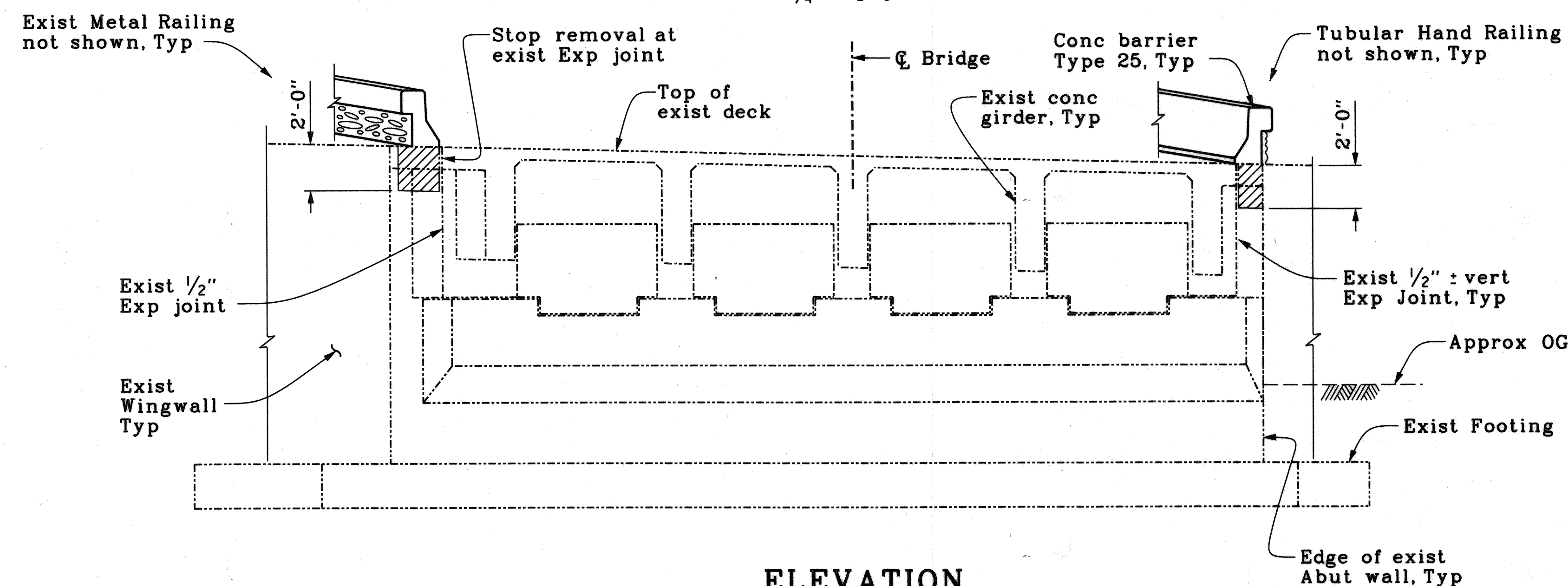
BRIDGE No. 55C-0049

DEMOLITION PLAN

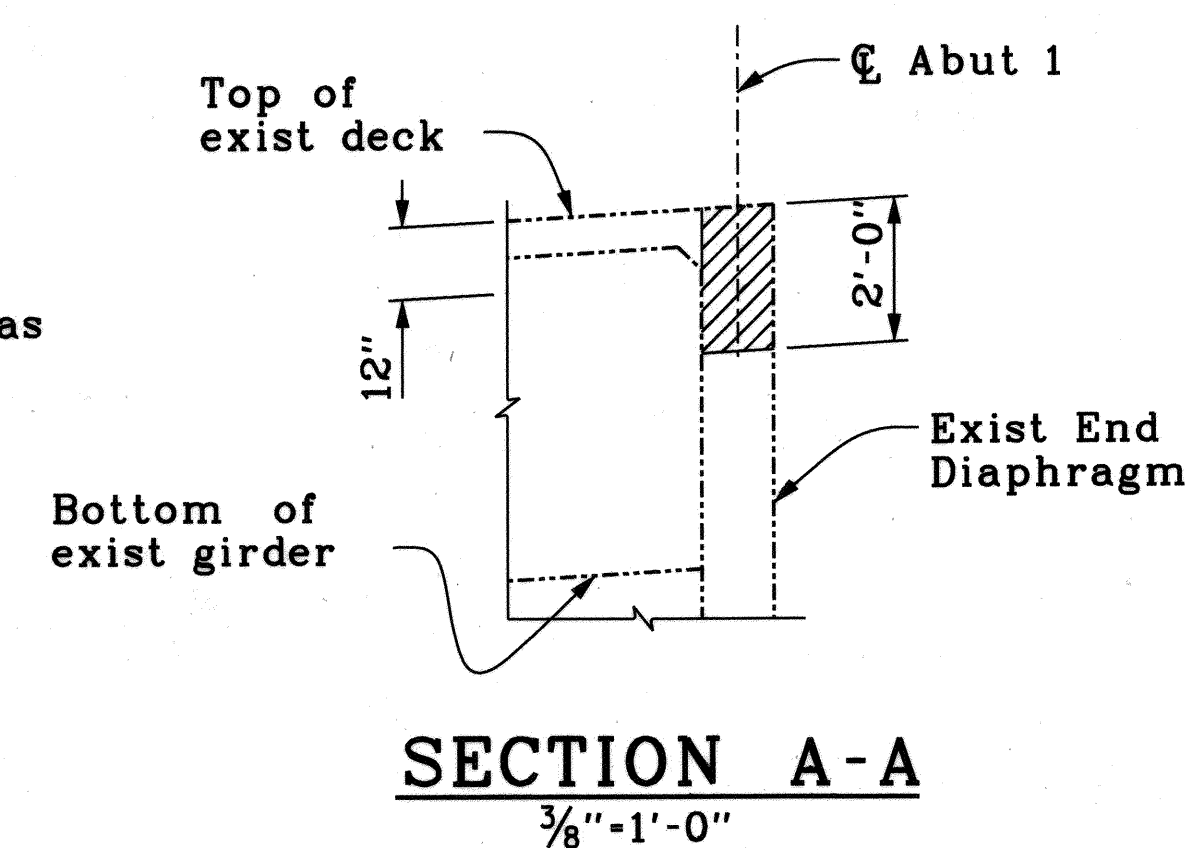
Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.



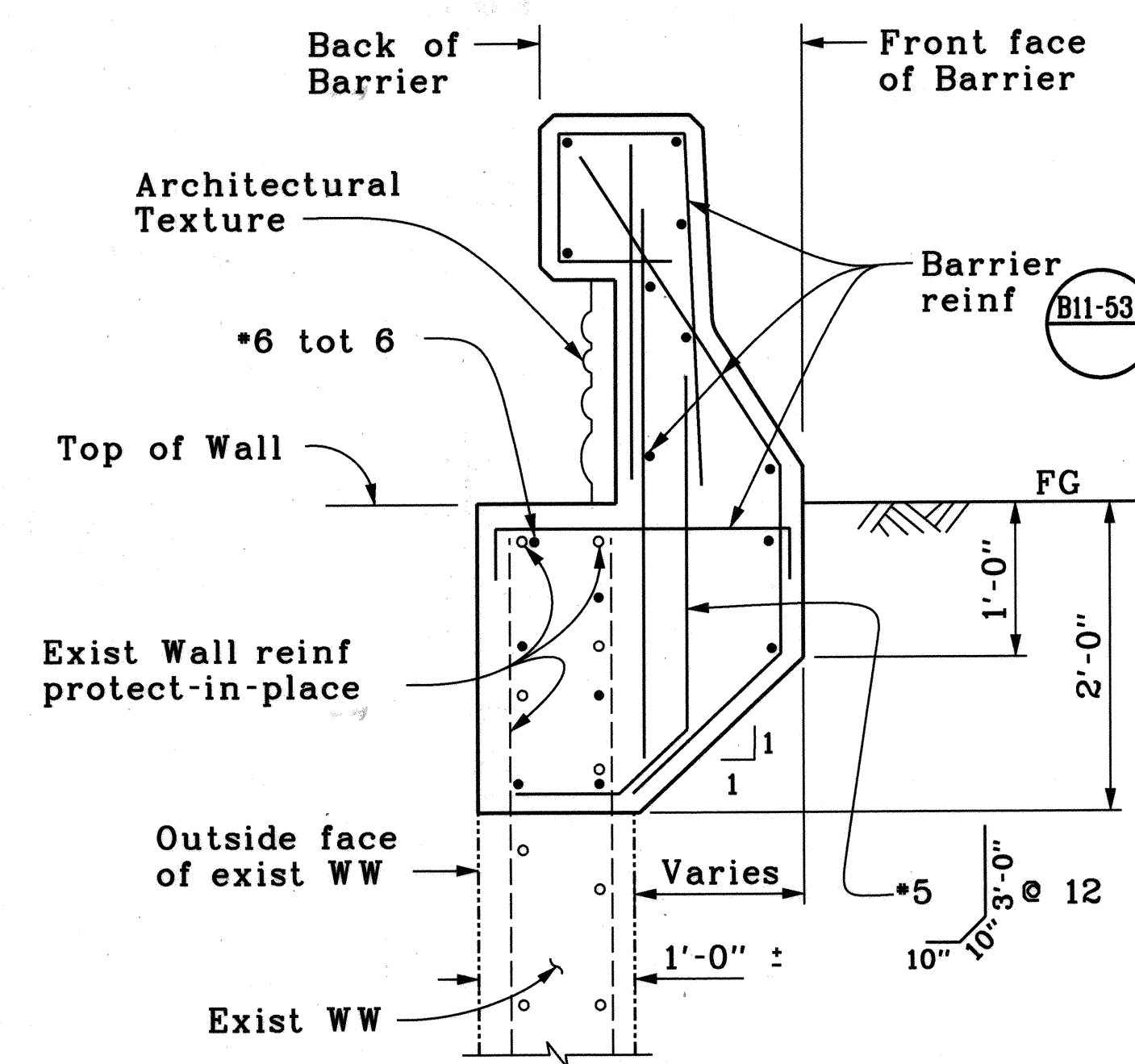
PLAN
1/4" = 1'-0"



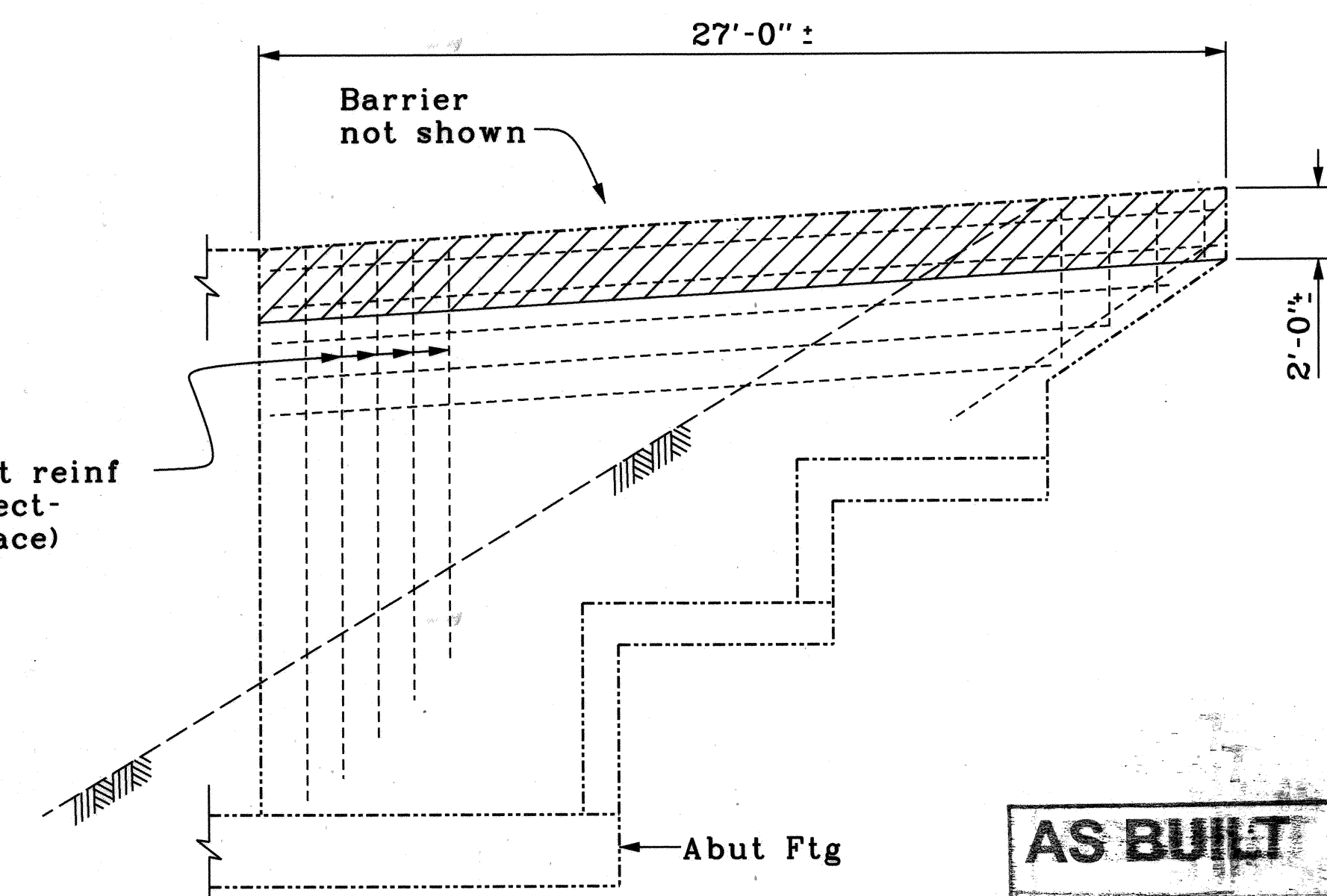
ELEVATION
1/4" = 1'-0"



SECTION A-A
3/8" = 1'-0"



SECTION B-B
1" = 1'-0"



VIEW C-C
1/4" = 1'-0"

Notes:

1. For "Section D-D" similar, see "Abutment 4 Details" sheet.
2. The contractor shall coordinate with County to facilitate removal and re-establishment of survey monument. See "Project Standard Special Provisions, Section C-5 Surveying".

LEGEND

- Bridge removal (Portion)
- Survey Monument

AS BUILT

CORRECTIONS BY: _____

CONTRACT NO. _____

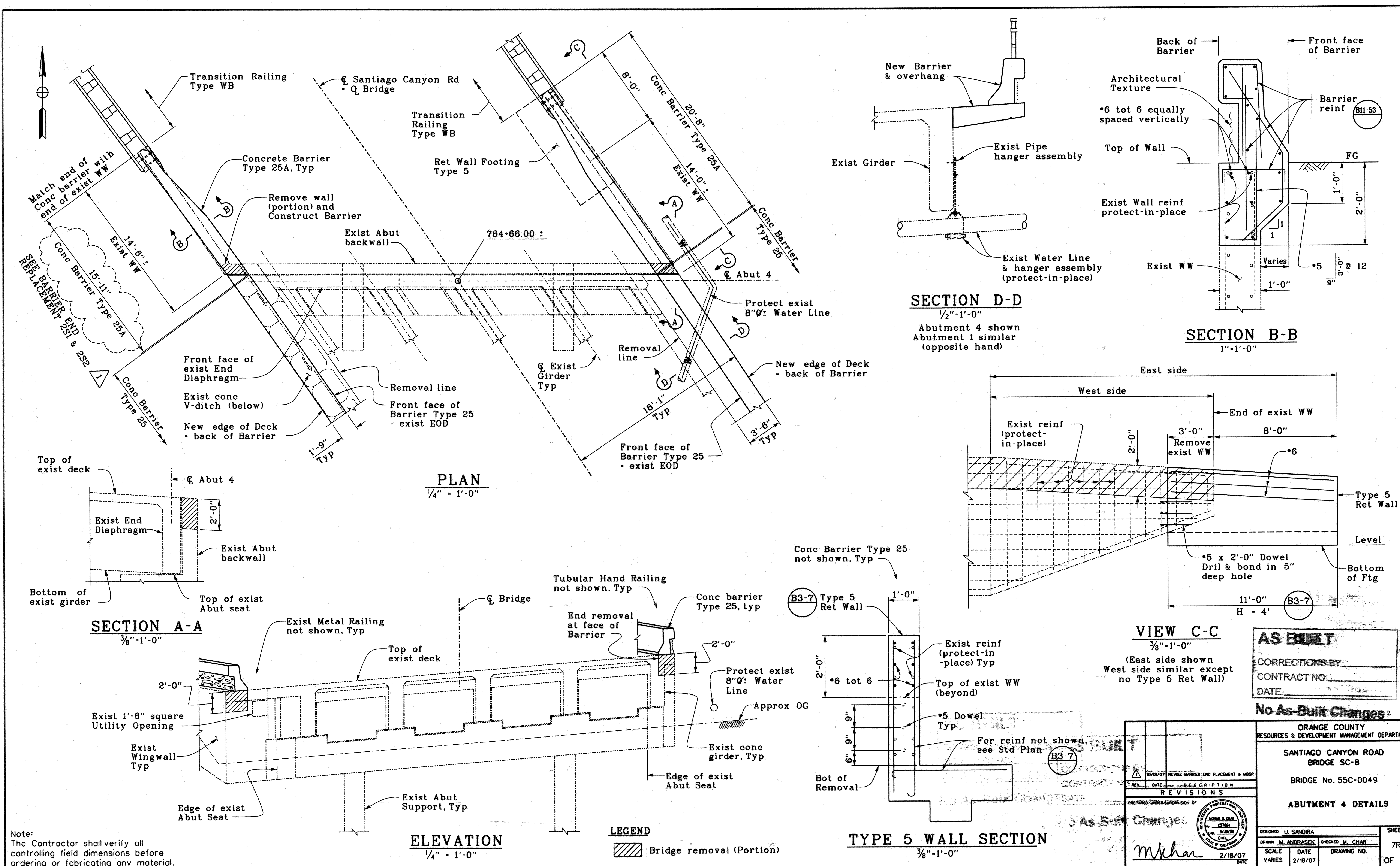
DATE: _____

No As-Built Changes

No As-Built Changes

| | |
|--|------------------|
| ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT | |
| SANTIAGO CANYON ROAD BRIDGE SC-8 | |
| BRIDGE No. 55C-0049 | |
| ABUTMENT 1 DETAILS | |
| DESIGNED: U. SANDIRA | SHEET |
| DRAWN: M. ANDRASEK | 6R |
| SCALE: VARIES | DATE: 2/18/07 |
| DATE: 2/18/07 | DRAWING NO. OF 8 |

Note:
The Contractor shall verify all
controlling field dimensions before
ordering or fabricating any material.



AS BUILT

CORRECTIONS BY _____

CONTRACT NO. _____

DATE _____

No As-Built Changes

ORANGE COUNTY
RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

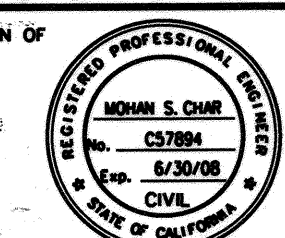
SANTIAGO CANYON ROAD
BRIDGE SC-8

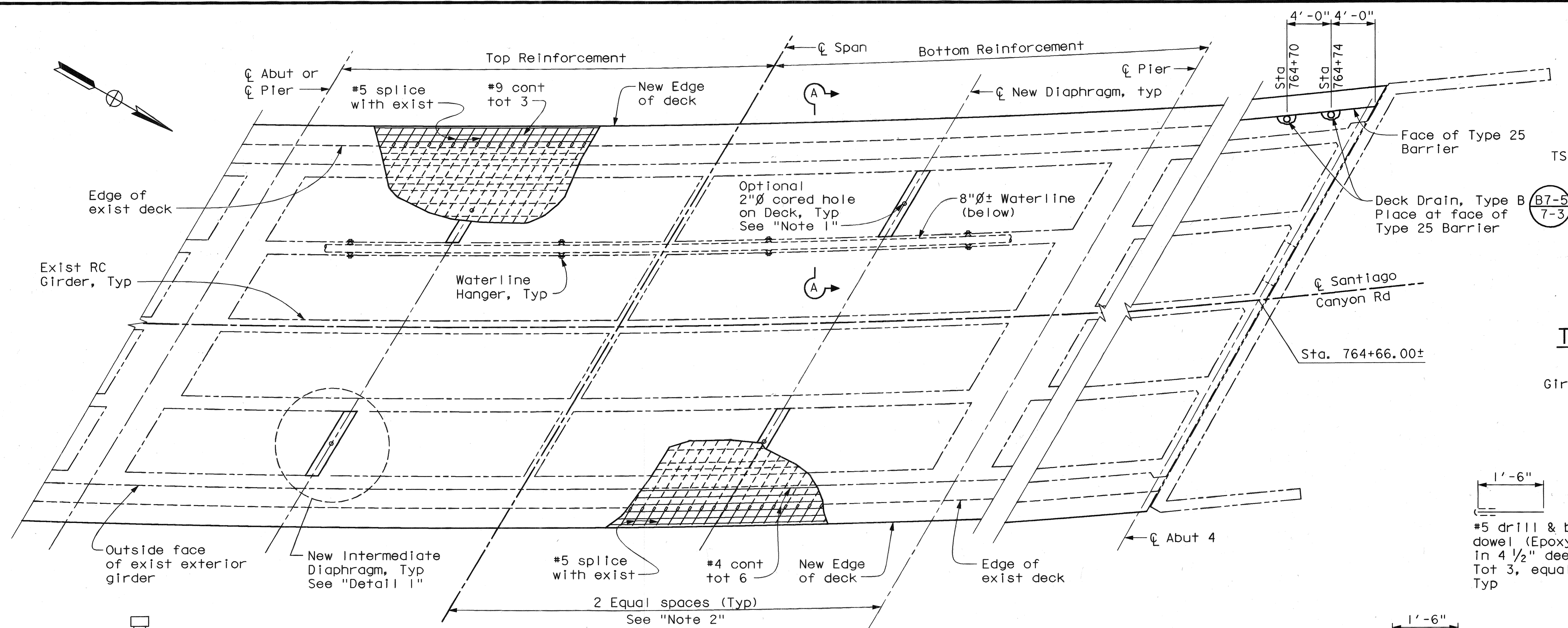
BRIDGE No. 55C-0049

ABUTMENT 4 DETAILS

| | | |
|---------------------|-----------------|-------------|
| DESIGNED U. SANDIRA | CHECKED M. CHAR | SHEET 7R |
| DRAWN M. ANDRASEK | DATE 2/18/07 | DRAWING NO. |
| SCALE VARIES | DATE 2/18/07 | OF 8 |

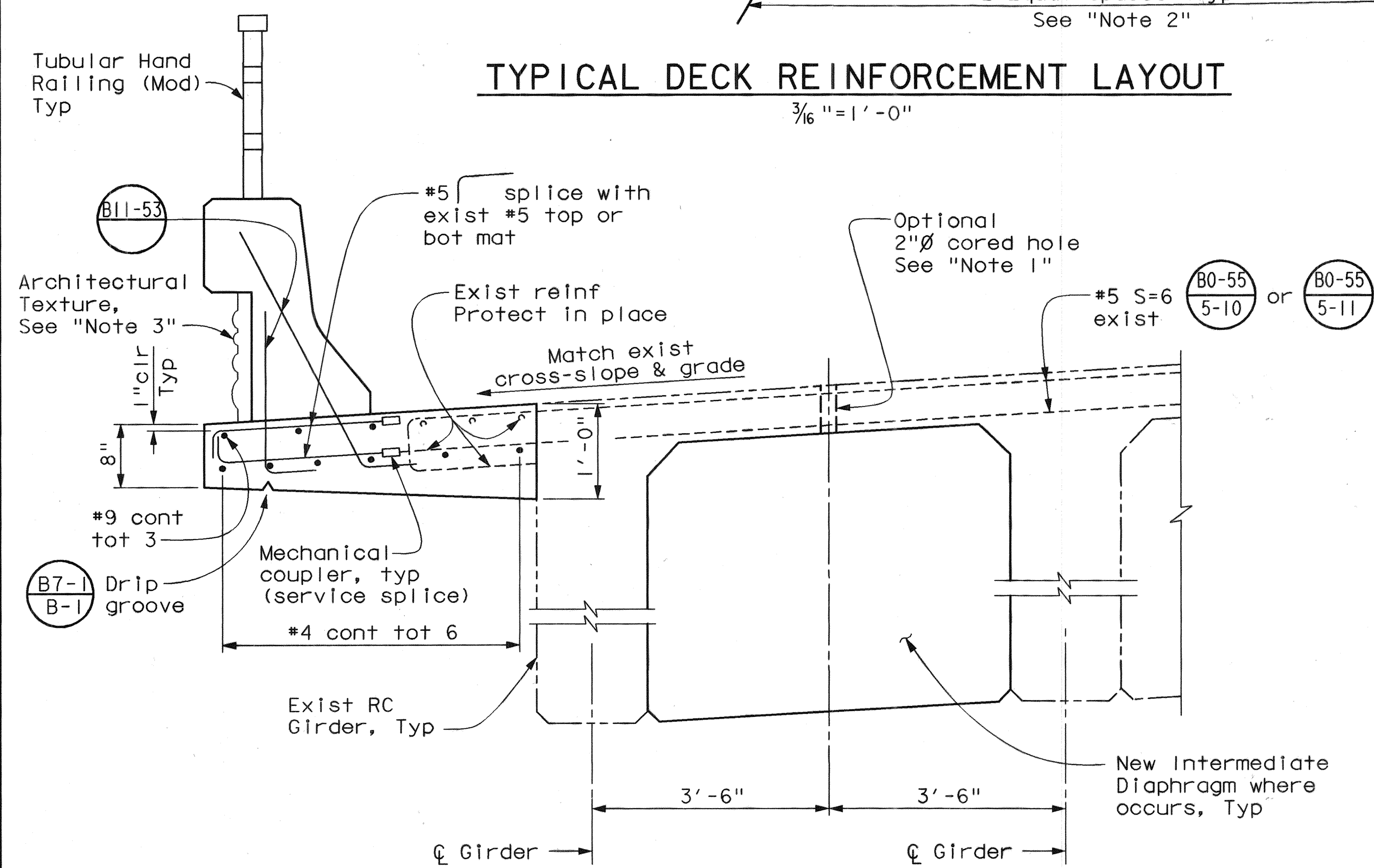
| REV. | DATE | DESCRIPTION |
|------|----------|------------------------------------|
| 1 | 10/01/07 | REVISE BARRIER END PLACEMENT & MGR |
| 2 | 02/18/07 | REVISE BARRIER END PLACEMENT & MGR |





TYPICAL DECK REINFORCEMENT LAYOUT

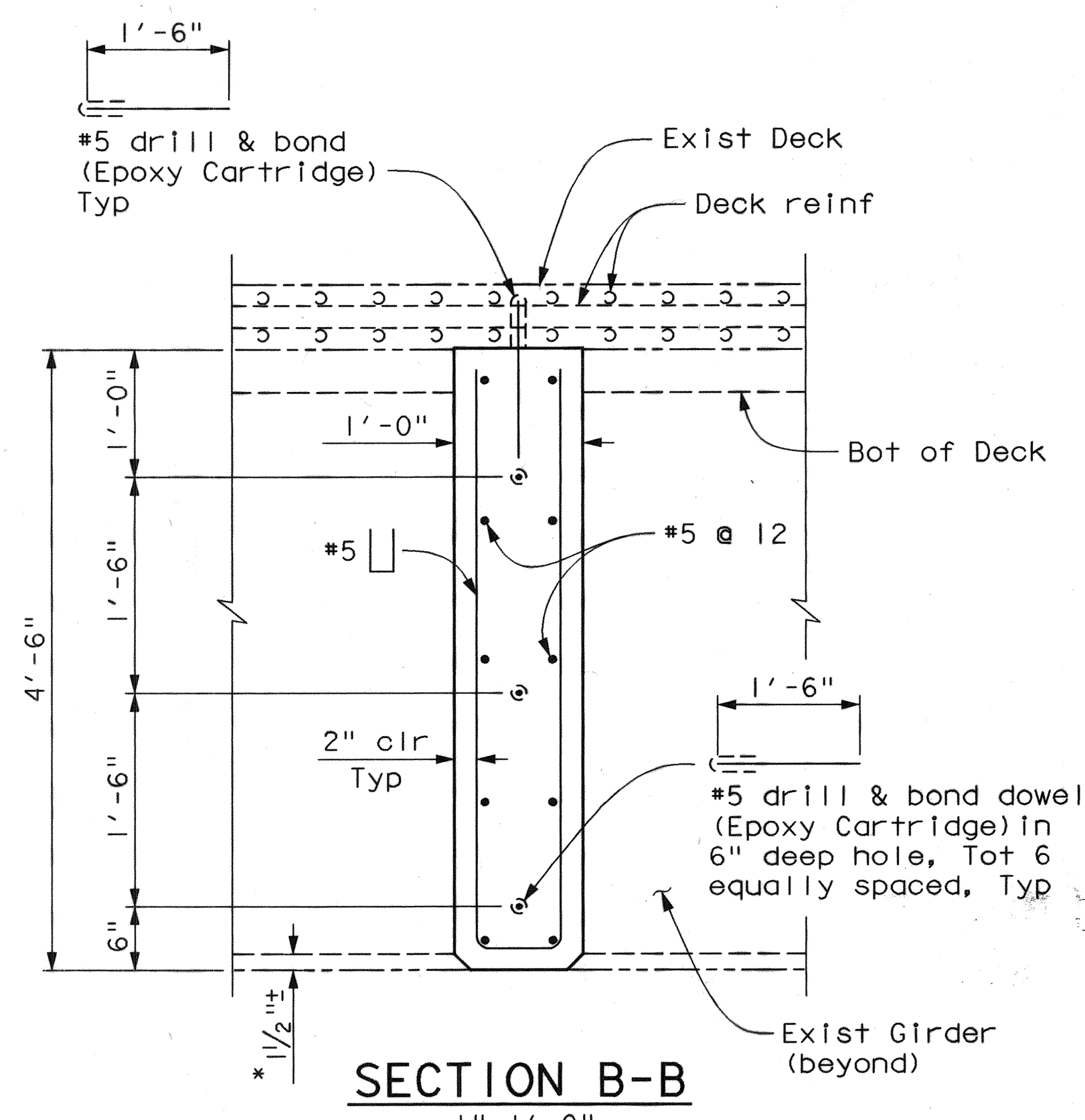
3/8" = 1'-0"



SECTION A-A

1" = 1'-0"

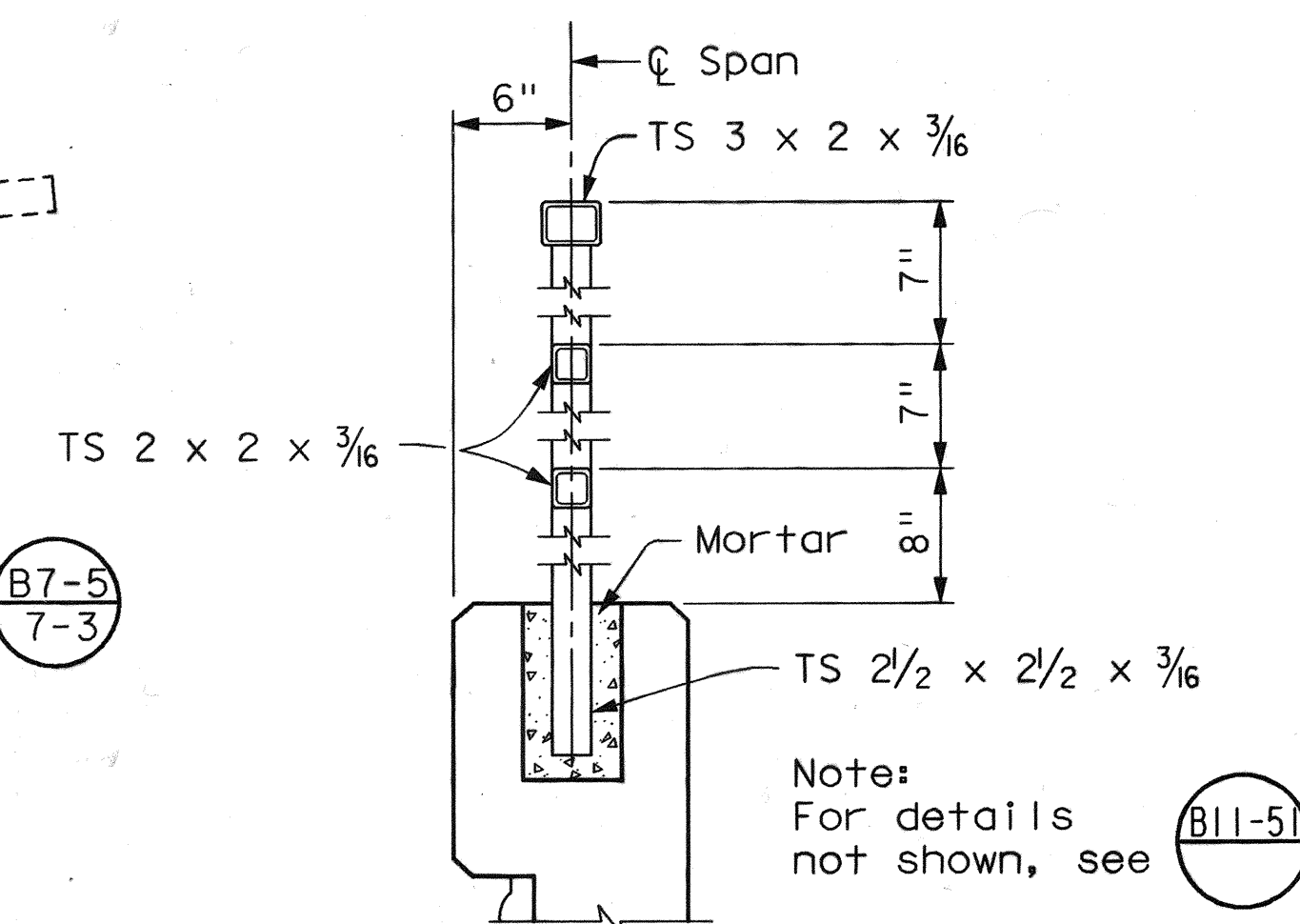
Note:
The Contractor shall verify all
controlling field dimensions before
ordering or fabricating any material.



SECTION B-B

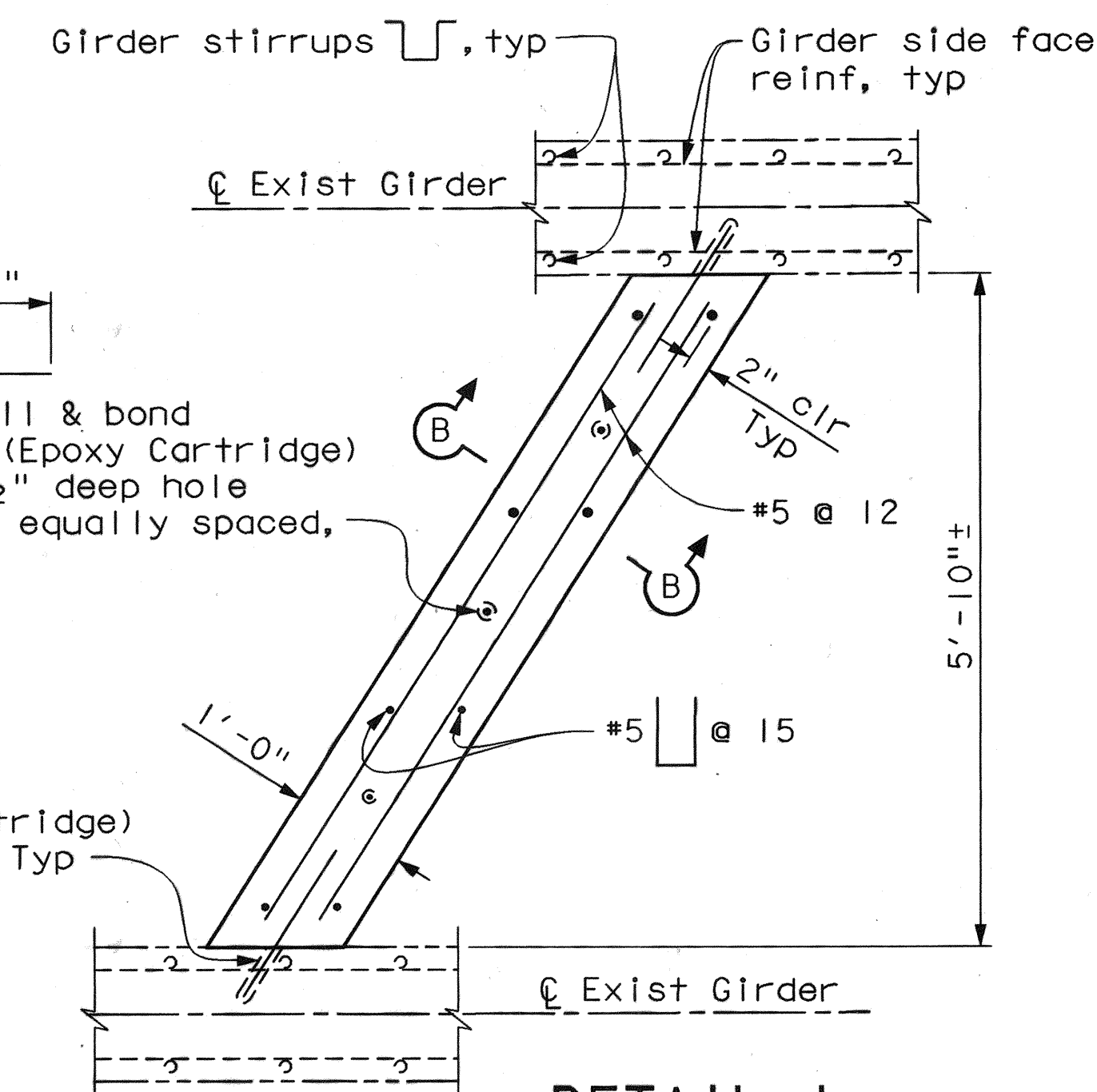
1" = 1'-0"

* Match exist
girder chamfer



TUBULAR HAND RAILING (MOD)

No Scale



DETAIL 1

3/4" = 1'-0"

Notes:

- Optional 2"Ø cored holes through deck for CIP concrete placement. Prior to coring operation, contractor shall locate all existing deck reinforcement and submit locations of holes to be cored to the Engineer for approval.
- Location of Intermediate Diaphragm shall be adjusted within 12" maximum to clear deck reinforcement for coring and to clear any waterline hangers.
- Architectural texture shall be of type Fitzgerald pattern #16985 "Indiana River Rock" or Custom Rock pattern #1204 "Riverstone". See Project Standard Special Provisions.

AS BUILT
CORRECTIONS BY _____
CONTRACT NO. _____
DATE _____

No As-Built Changes

| | |
|--|----------------|
| ORANGE COUNTY RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT | |
| SANTIAGO CANYON ROAD BRIDGE SC-8 | |
| BRIDGE No. 55C-0049 | |
| BARRIER RECONSTRUCTION DETAILS | |
| DESIGNED: L. SANDRA | SHEET |
| DRAWN: M. ANDRASEK | 8 |
| CHECKED: M. CHAR | OF 8 |
| SCALE: VARIES | DATE: 12/18/06 |
| DRAWING NO. | |