

SCOUR DATA TABLE		
SUPPORT LOCATION	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
Abut 1	641.6	4.1
Abut 2	641.6	6.0

NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO NEW CONSTRUCTION.
2. PILES IN CONFLICT WITH PROPOSED BRIDGE MAY BE FULLY REMOVED OR PARTIALLY REMOVED PER SPECIFICATIONS.

LEGEND:

XX.X BOTTOM OF FOOTING ELEVATION (FT)

HYDROLOGIC SUMMARY		
	DESIGN FLOOD	BASE FLOOD
FREQUENCY	50-YR	100-YR
DISCHARGE*	254 CFS	320 CFS
WATER SURFACE ELEVATION AT BRIDGE	643.8 FT	644.0 FT

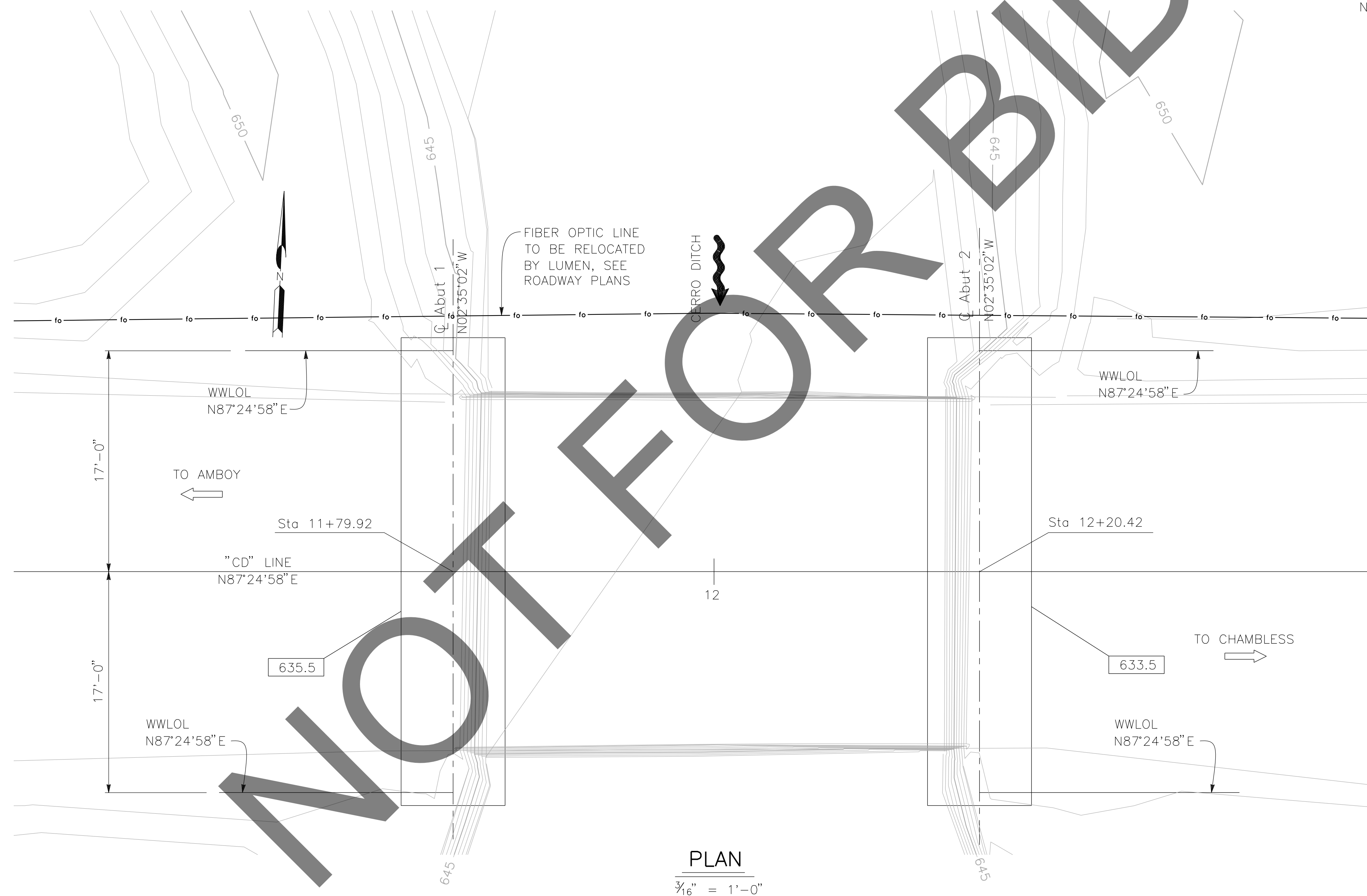
FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.

* BULKED DESIGN FLOWS

SPREAD FOOTING DATA TABLE			
SUPPORT LOCATION	SERVICE LIMIT STATE PERMISSIBLE NET CONTACT STRESS (KSF)	STRENGTH FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 0.45$	EXTREME EVENT FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 1.00$
Abut 1	3.9	6.0	12.4
Abut 2	4.1	6.0	12.2

BENCHMARK

FOUND 3.5" NGS BRASS DSC IN 10"X10" CONC MNMT STAMPED "Z1308-1978 NATIONAL GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704. NGVD-29 ELEVATION = 1097.43'



PLAN

$\frac{3}{16}" = 1'-0"$

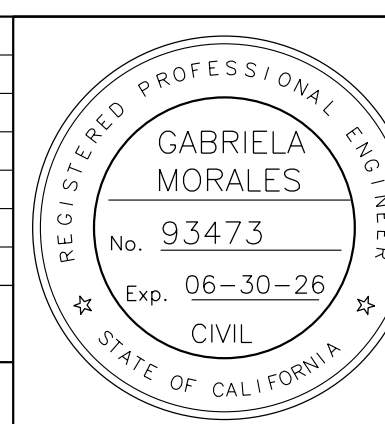


PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

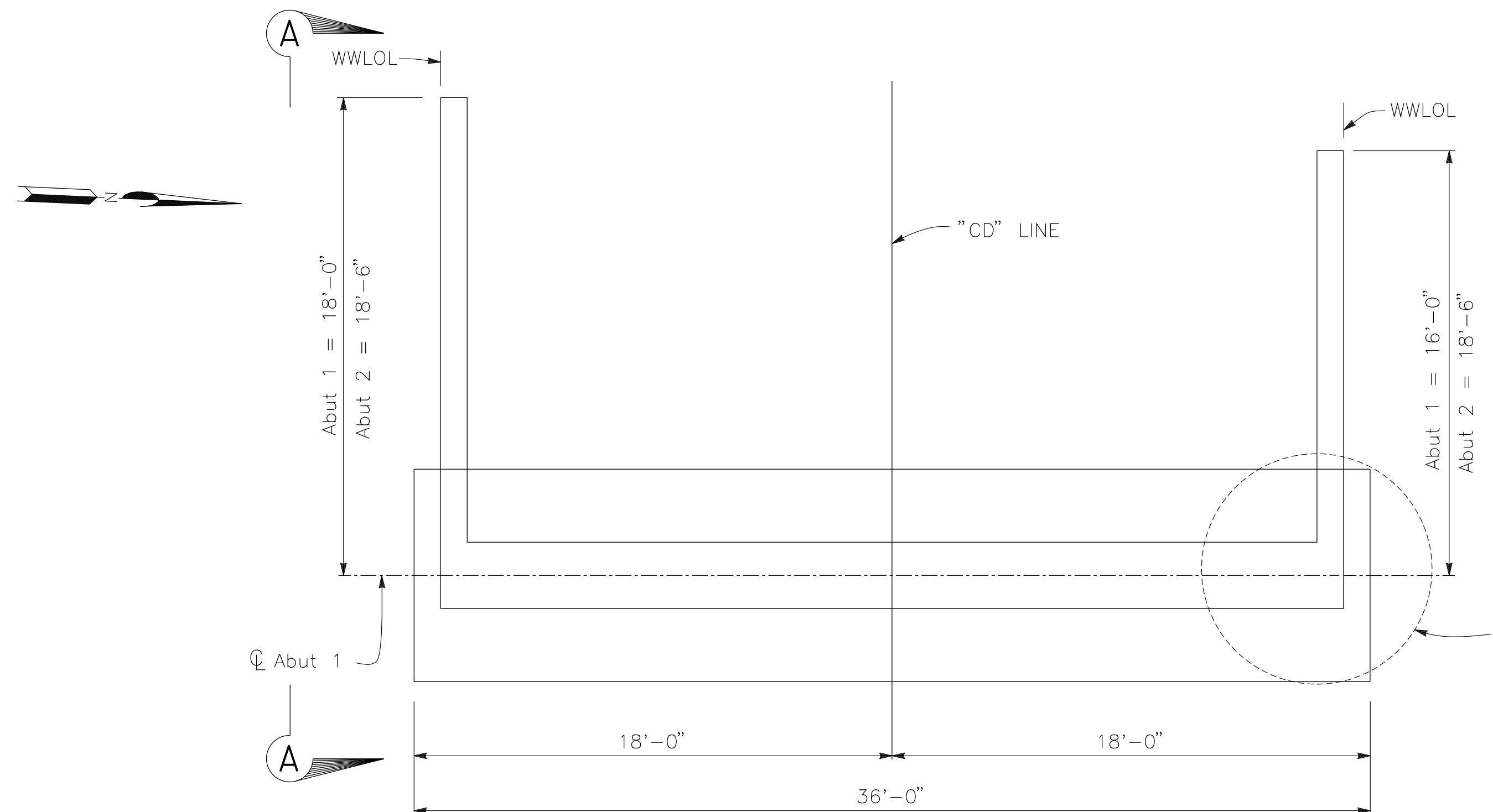


SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

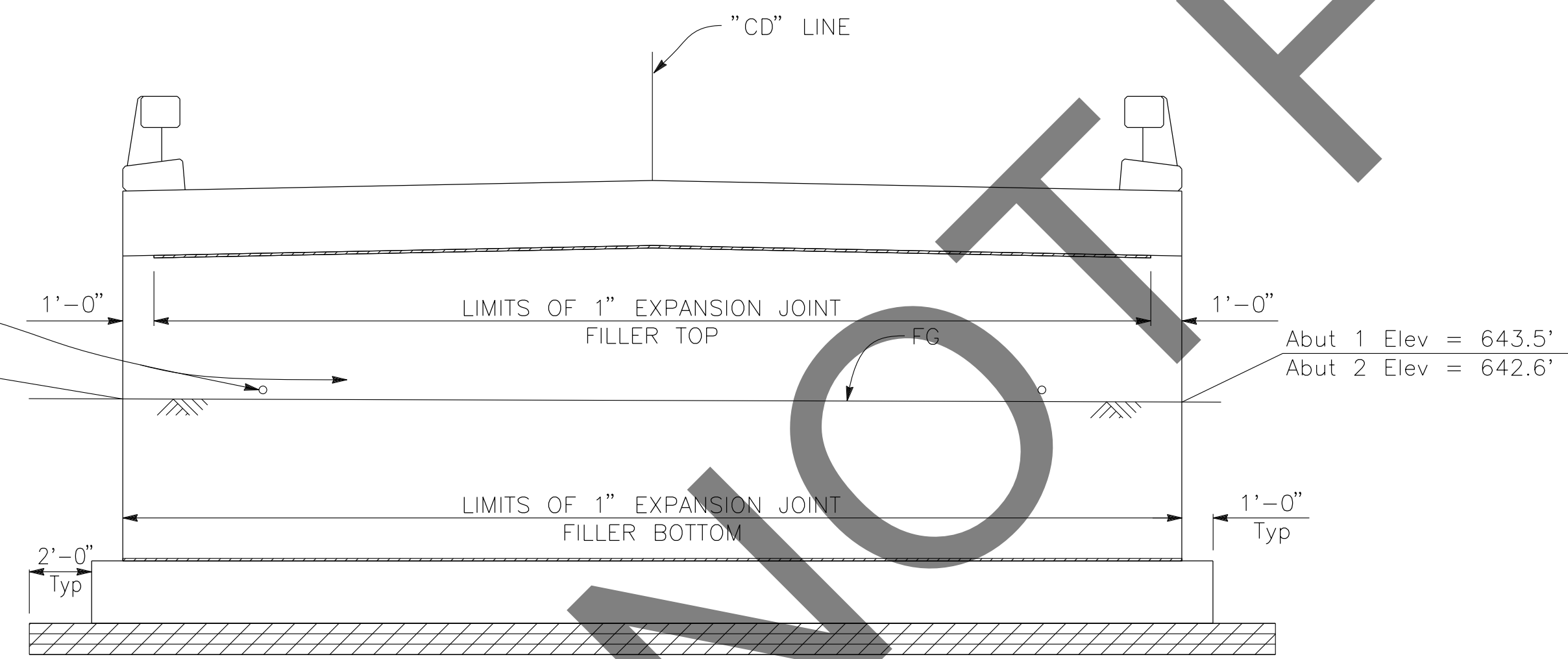
DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>[Signature]</i> 1/14/2025 DATE
APPROVED BY: <i>[Signature]</i> 1/15/2025 DATE			LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 FOUNDATION PLAN
 CERRO DITCH

J.L. REF. J.L. 11800	W.O. NO. H14912	PLAN SCALE AS NOTED	SHT. NO. 150	TOT. SHT'S. 240
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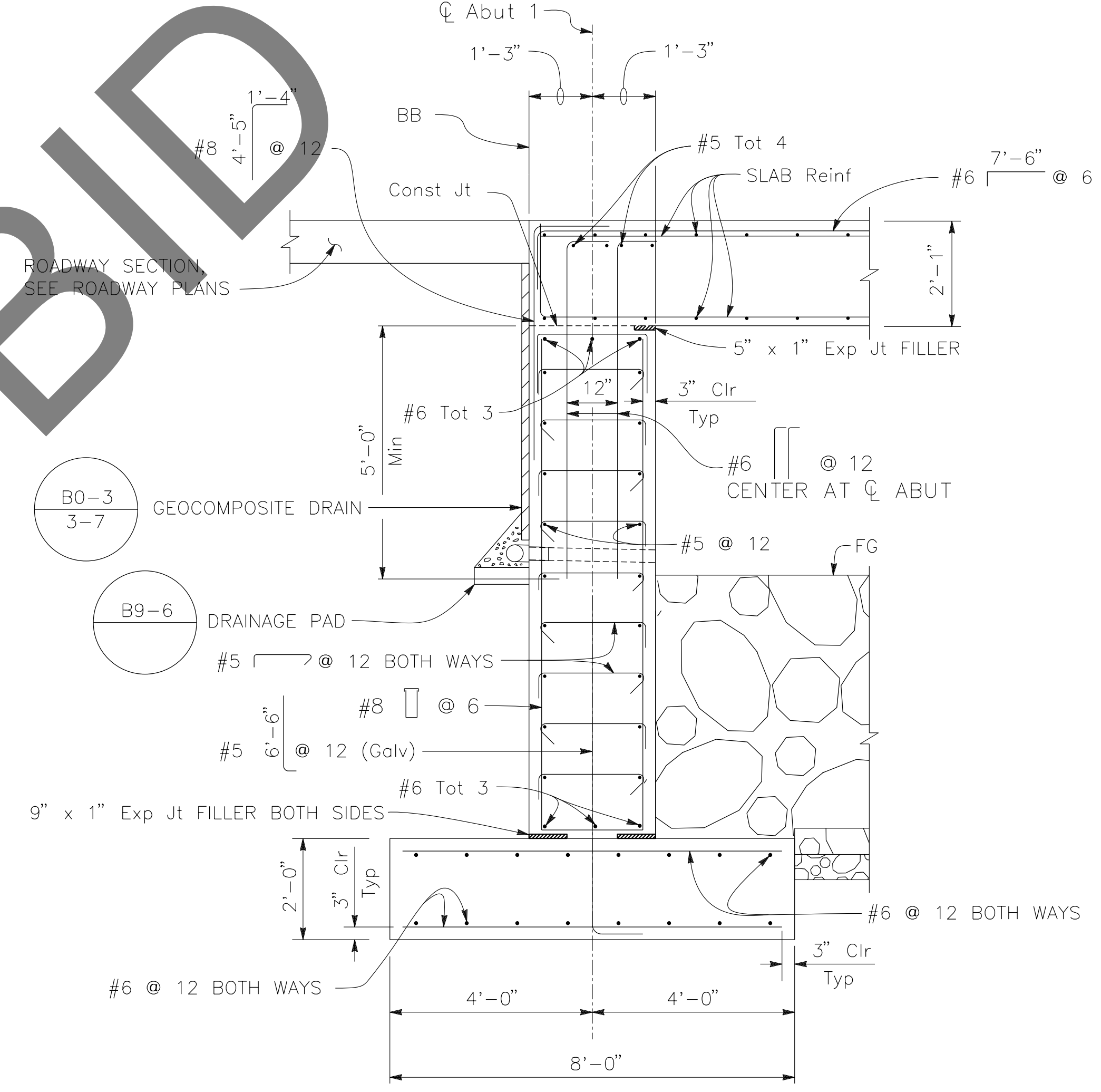


PLAN
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



ELEVATION
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

LEGEND:
 STRUCTURE EXCAVATION (BRIDGE)
 STRUCTURE BACKFILL (BRIDGE)



TYPICAL SECTION
 $\frac{1}{2}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

NOTES:
 1. FOR "VIEW A-A," SEE "ABUTMENT DETAILS" SHEET

REVISIONS	DATE	APPR.

PREPARED BY:

 110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 GABRIELA MORALES
 No. 93473
 Exp. 06-30-26
 CIVIL
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

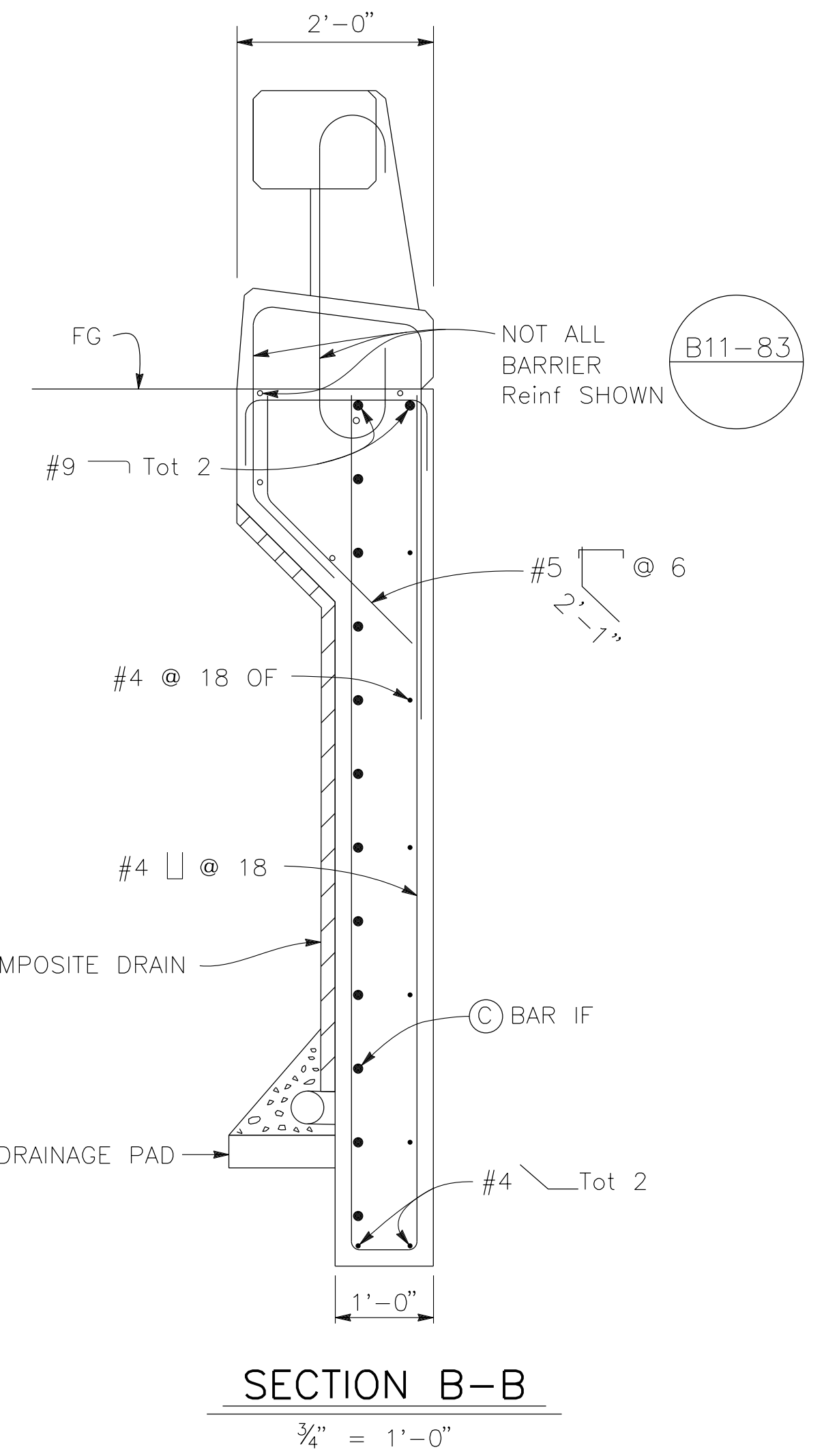
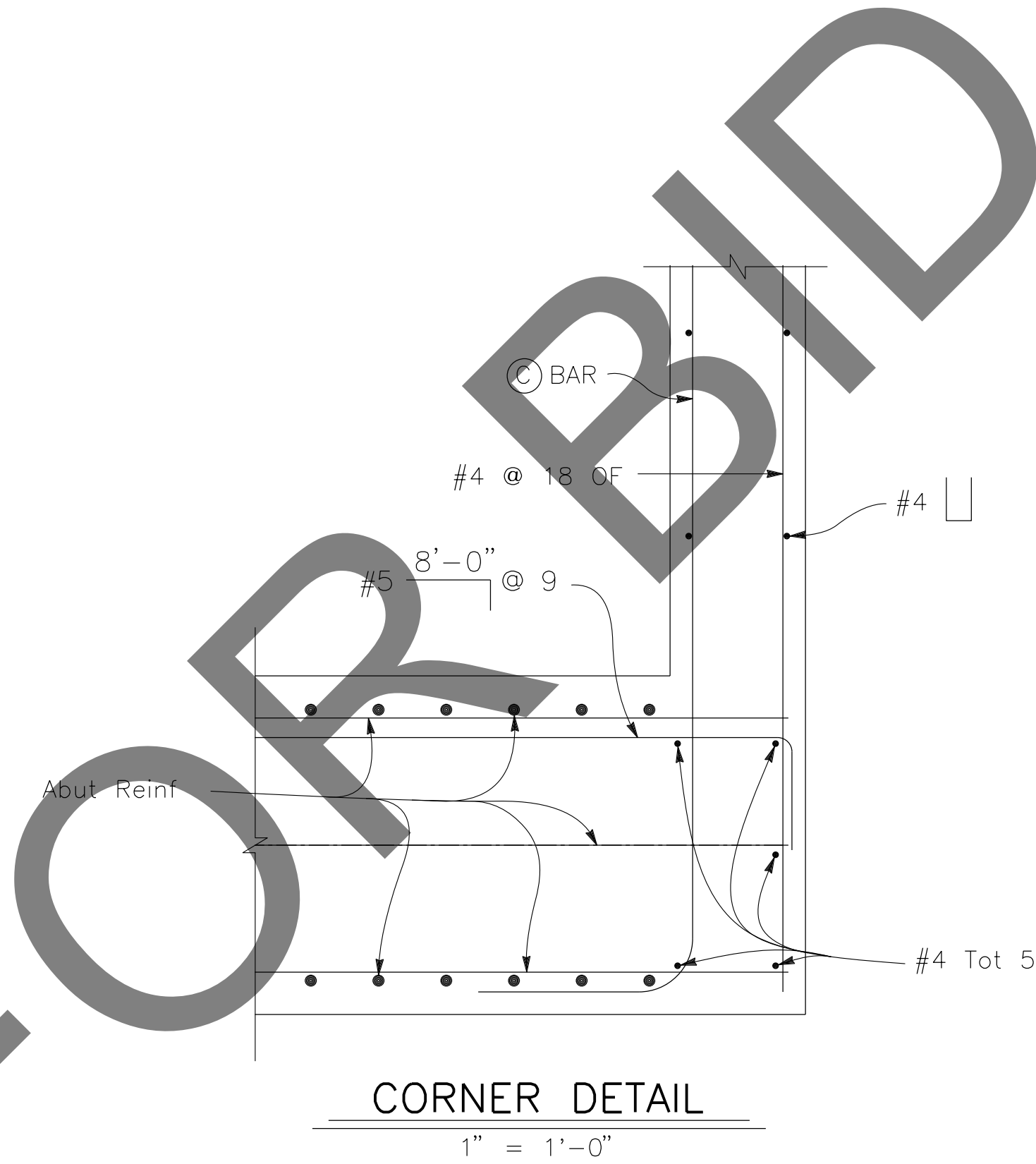
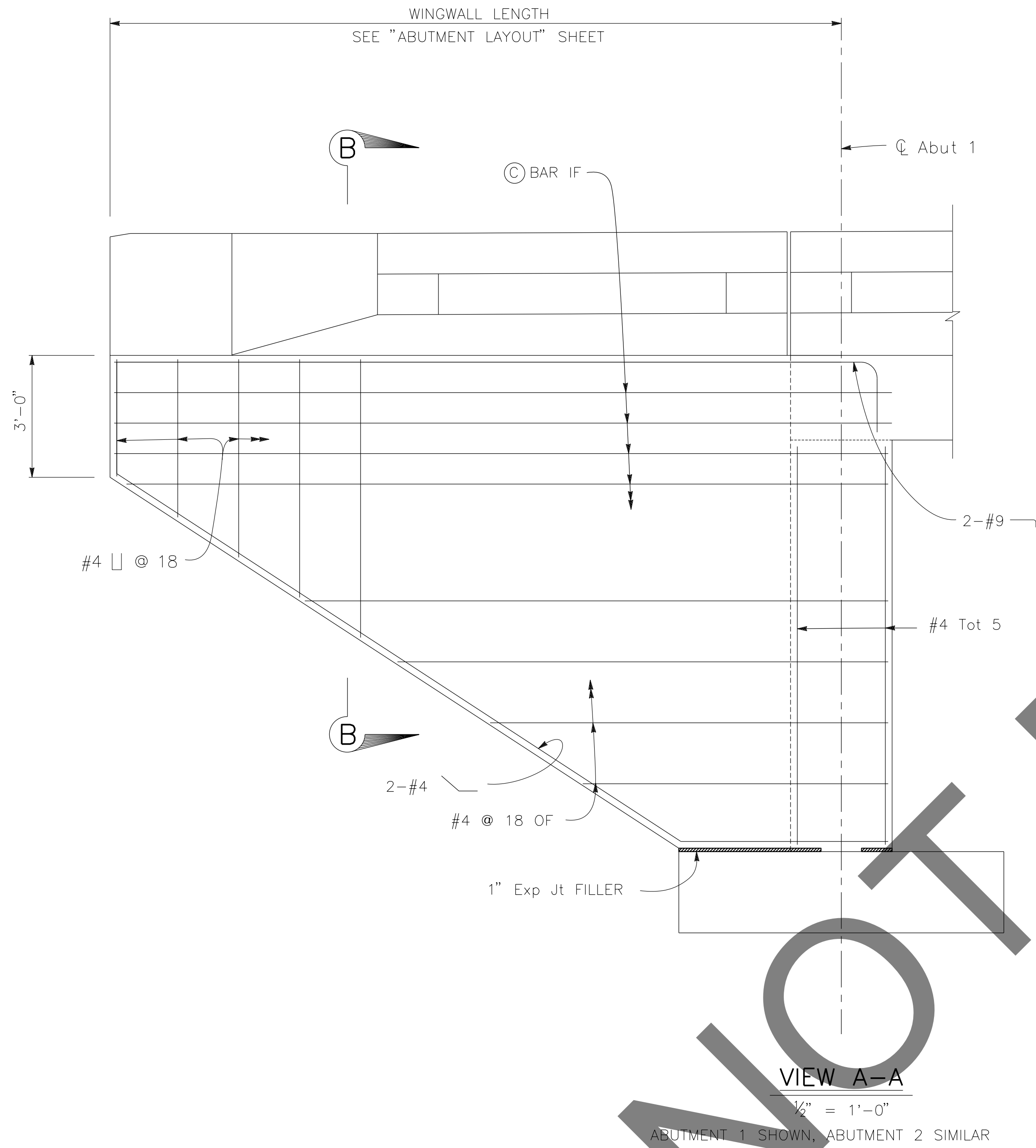
DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025
			CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025
			MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ABUTMENT LAYOUT
 CERRO DITCH

J.L. REF. J.L. 11800	W.O. NO. H14912	PLAN SCALE AS NOTED	SHT. NO. 151	TOT. SHT'S. 240
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BAR	WINGWALL LENGTH		
	16'-0"	18'-0"	18'-6"
Ⓢ	#7 @ 9	#8 @ 9	#9 @ 9

NOTES:
1. FOR DETAILS NOT SHOWN, SEE B0-3



NOT FOR BID

REVISIONS	DATE	APPR.

PREPARED BY:



110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

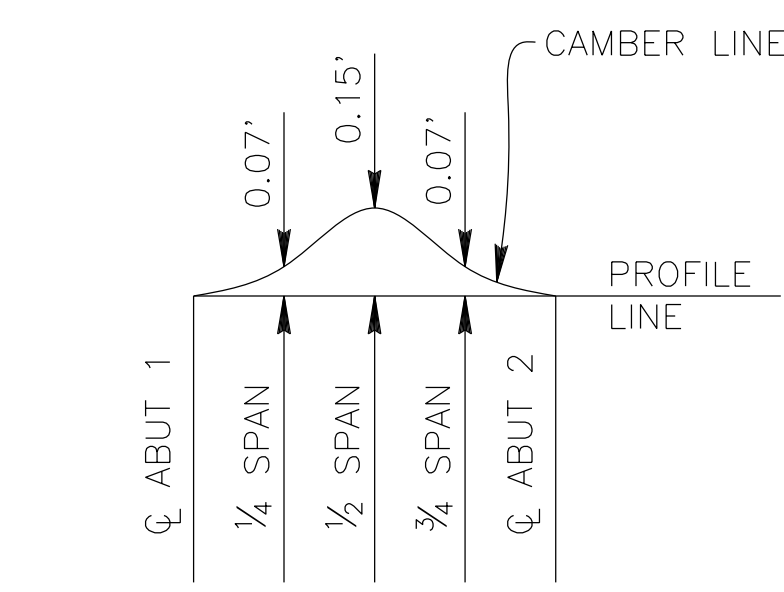
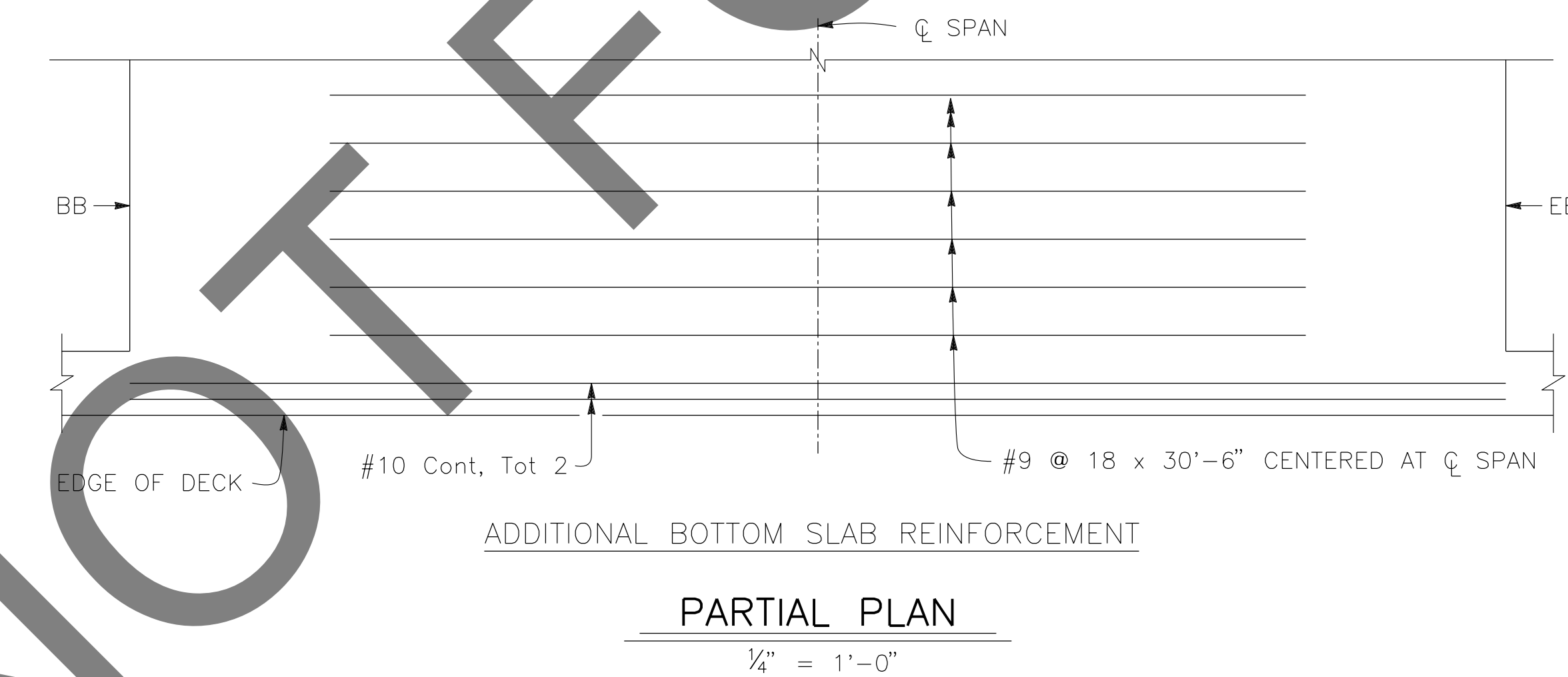
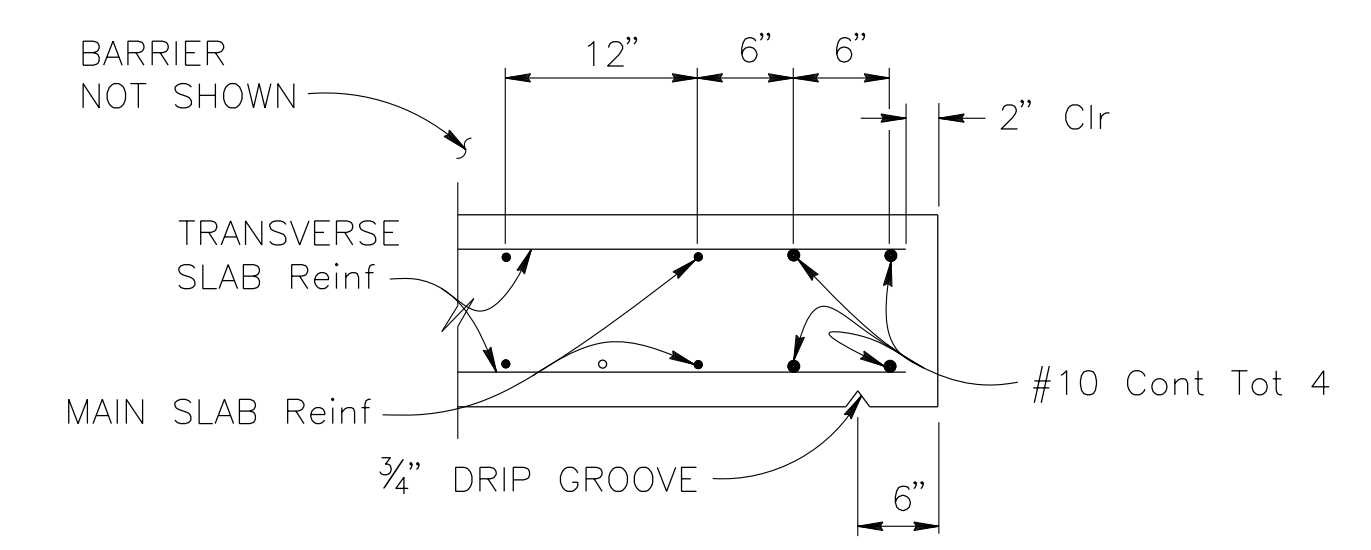
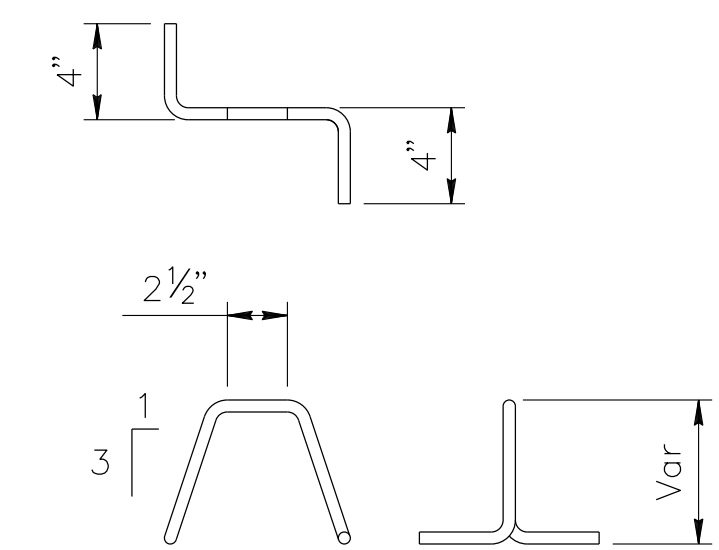
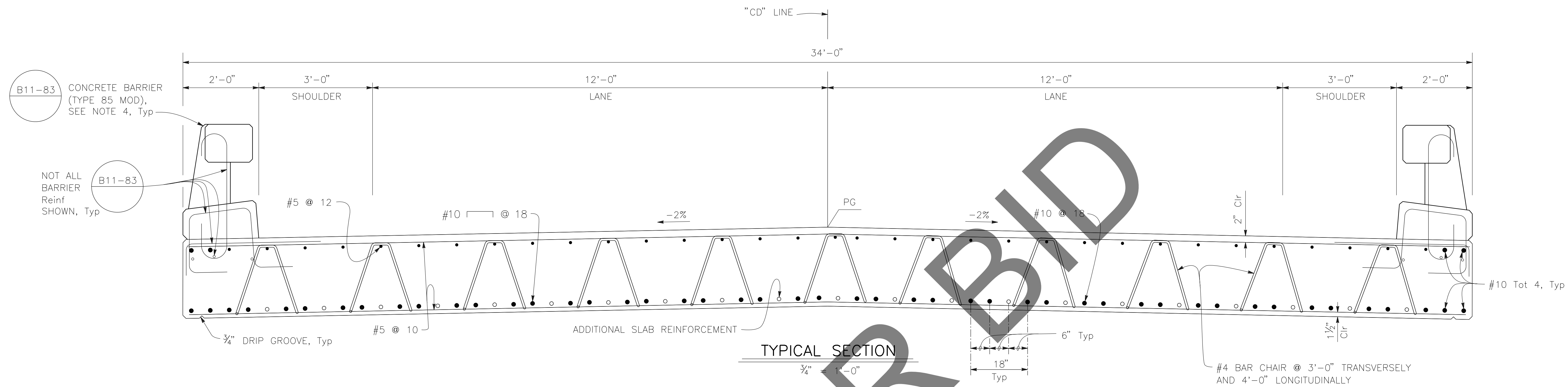
FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
<i>LEI Rocky</i> 1/15/2025 DATE LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			TRANSPORTATION DESIGN ENGINEERING MANAGER APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ABUTMENT DETAILS
 CERRO DITCH

J.L. REF. J.L. 11800	W.D. NO. H14912	PLAN SCALE AS NOTED	SHT. NO. 152	TOT. SHT'S. 240
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- NOTES:**
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO ϕ BRIDGE.
 2. PLACE TRANSVERSE REINFORCEMENT NORMAL TO ϕ BRIDGE.
 3. FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.
 4. ALL EXPOSED SURFACED OF THE BARRIER ABOVE THE SLAB TO BE PAINTED WHITE.

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 GABRIELA MORALES
 No. 93473
 Exp. 06-30-26
 CIVIL
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
APPROVED BY: <i>LEI (Rocky) LI</i> 1/15/2025 DATE			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE

LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER
 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 SLAB DETAILS
 CERRO DITCH

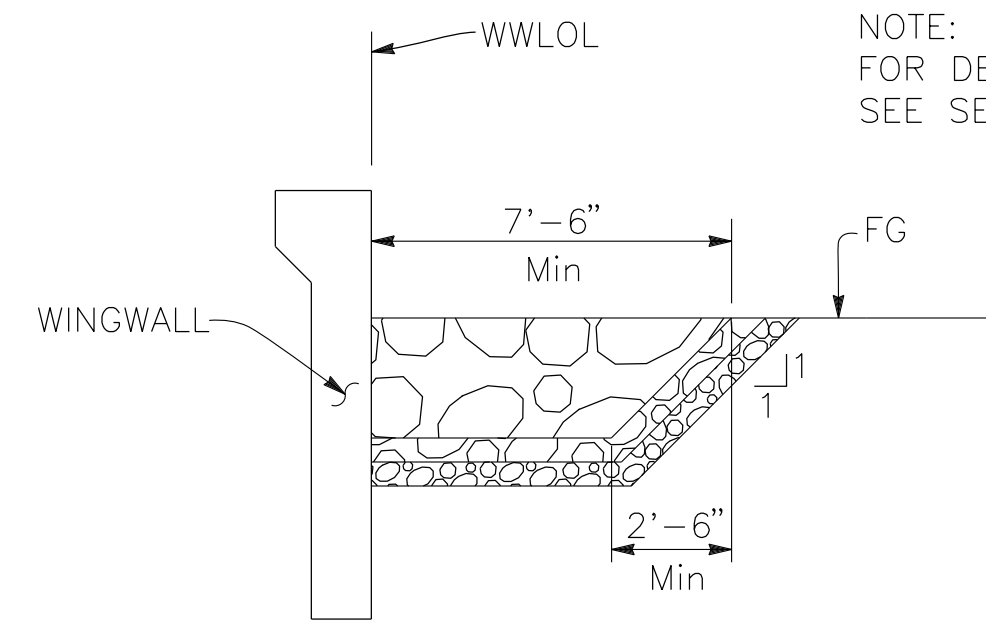
J.L. REF. J.L. 11800	W.D. NO. H14912	PLAN SCALE AS NOTED	SHT. NO. 153	TOT. SHT'S. 240
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REVISIONS	DATE	APPR.

NOTES:

1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS

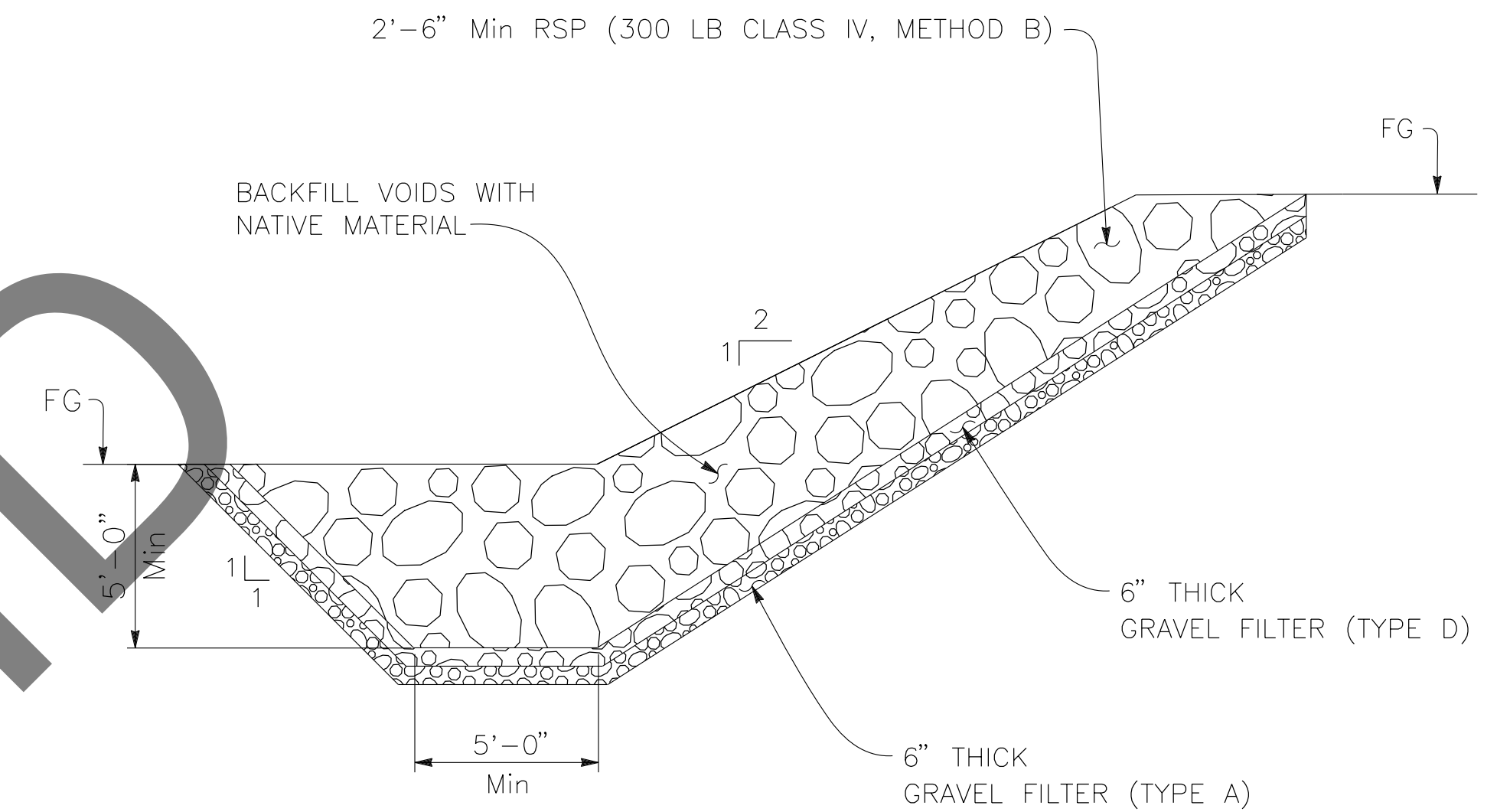
* SEE "LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET



SECTION C-C

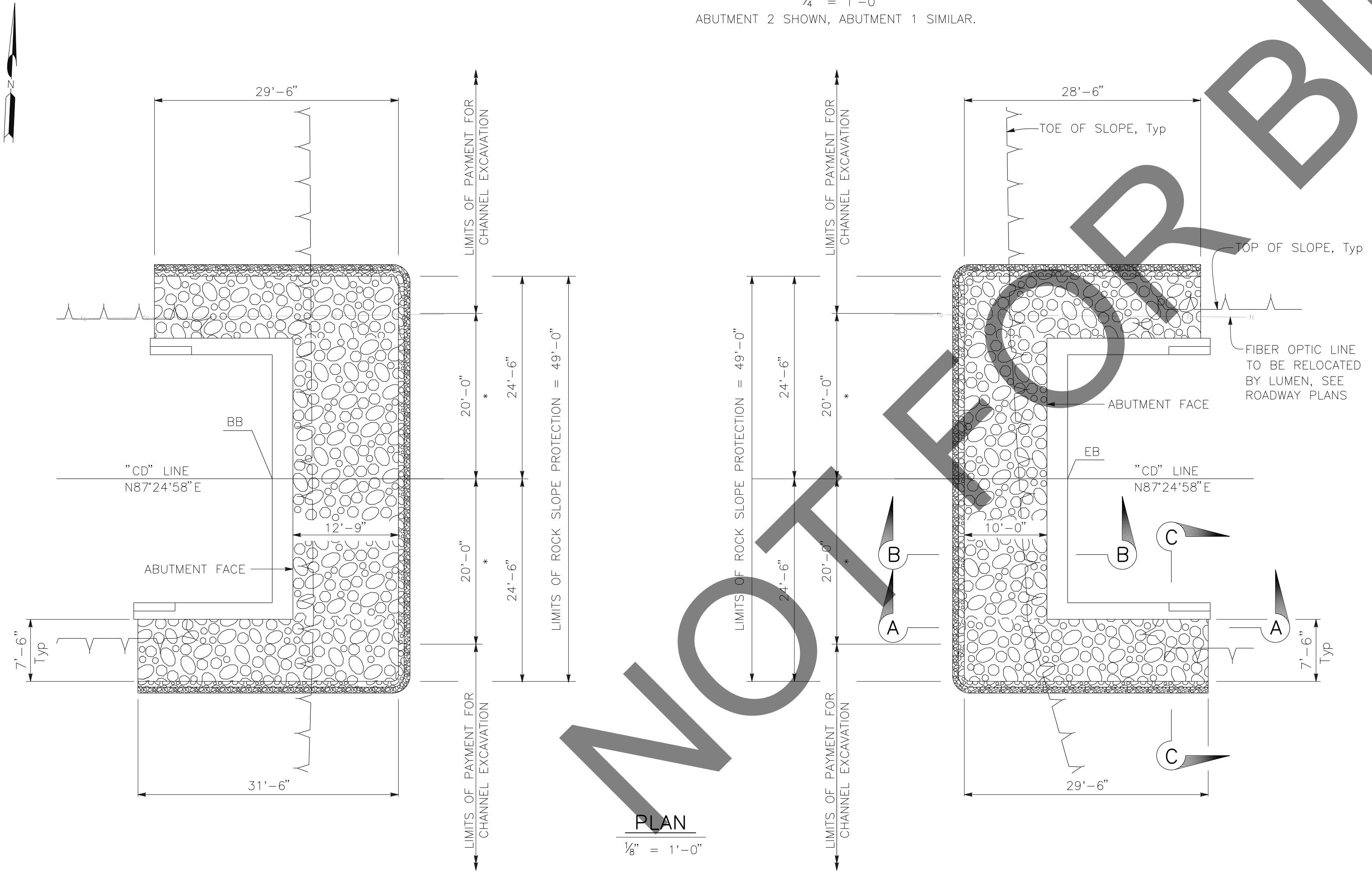
1/4" = 1'-0"
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

NOTE:
FOR DETAILS NOT SHOWN
SEE SECTION A-A



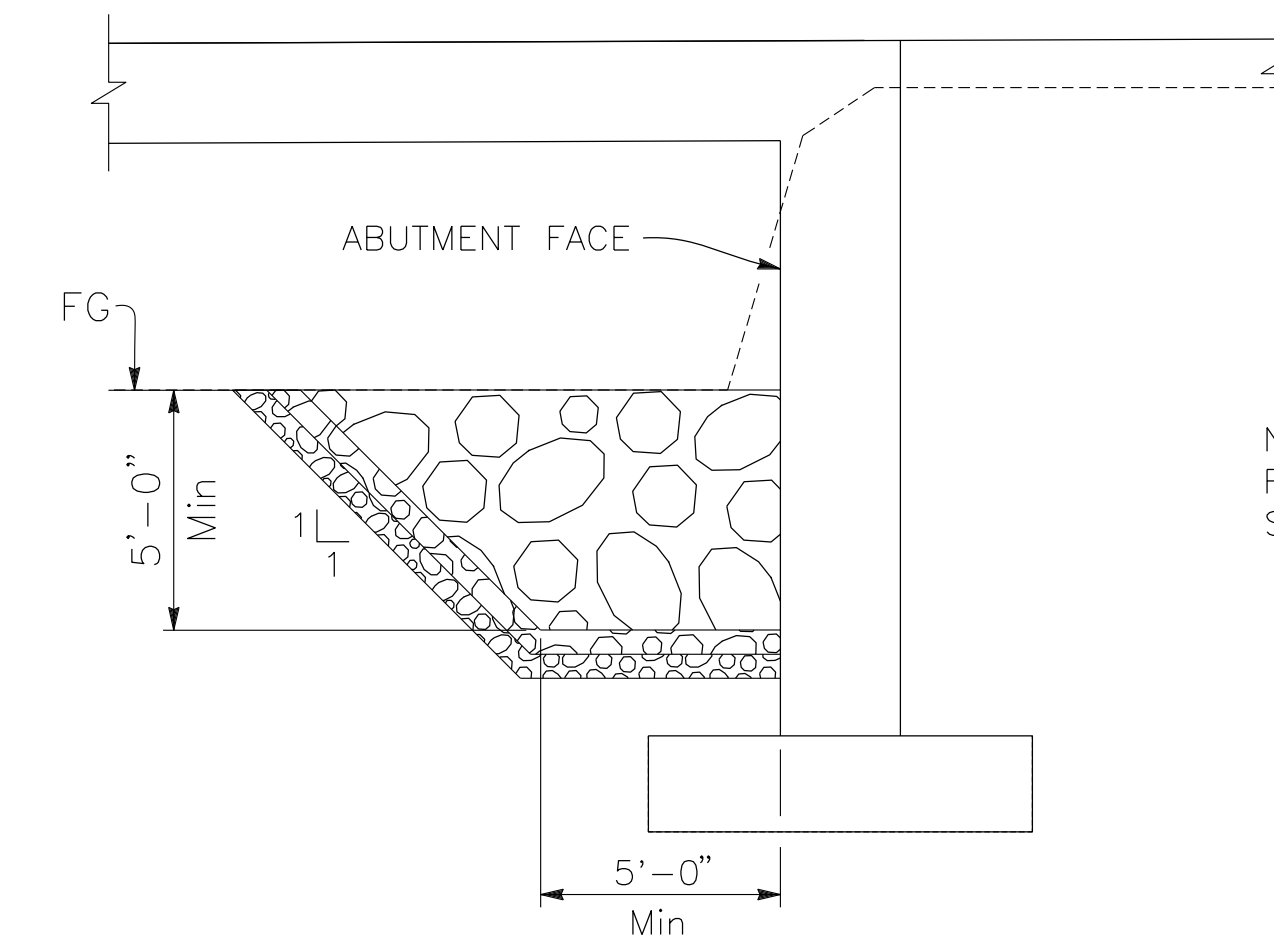
SECTION A-A

1/4" = 1'-0"
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.



PLAN

1/8" = 1'-0"



SECTION B-B

1/4" = 1'-0"
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

NOTE:
FOR DETAILS NOT SHOWN SEE
SECTION A-A

PREPARED BY:

DE DOKKEN
ENGINEERING
110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER
12-16-24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
GABRIELA MORALES
No. 93473
Exp. 06-30-26
CIVIL
STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei (Rocky) Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
ROCK SLOPE PROTECTION DETAILS
CERRO DITCH

J.L. REF. J.L. 11800	W.D. NO. H14912	PLAN SCALE AS NOTED	SHT. NO. 154	TOT. SHT'S. 240
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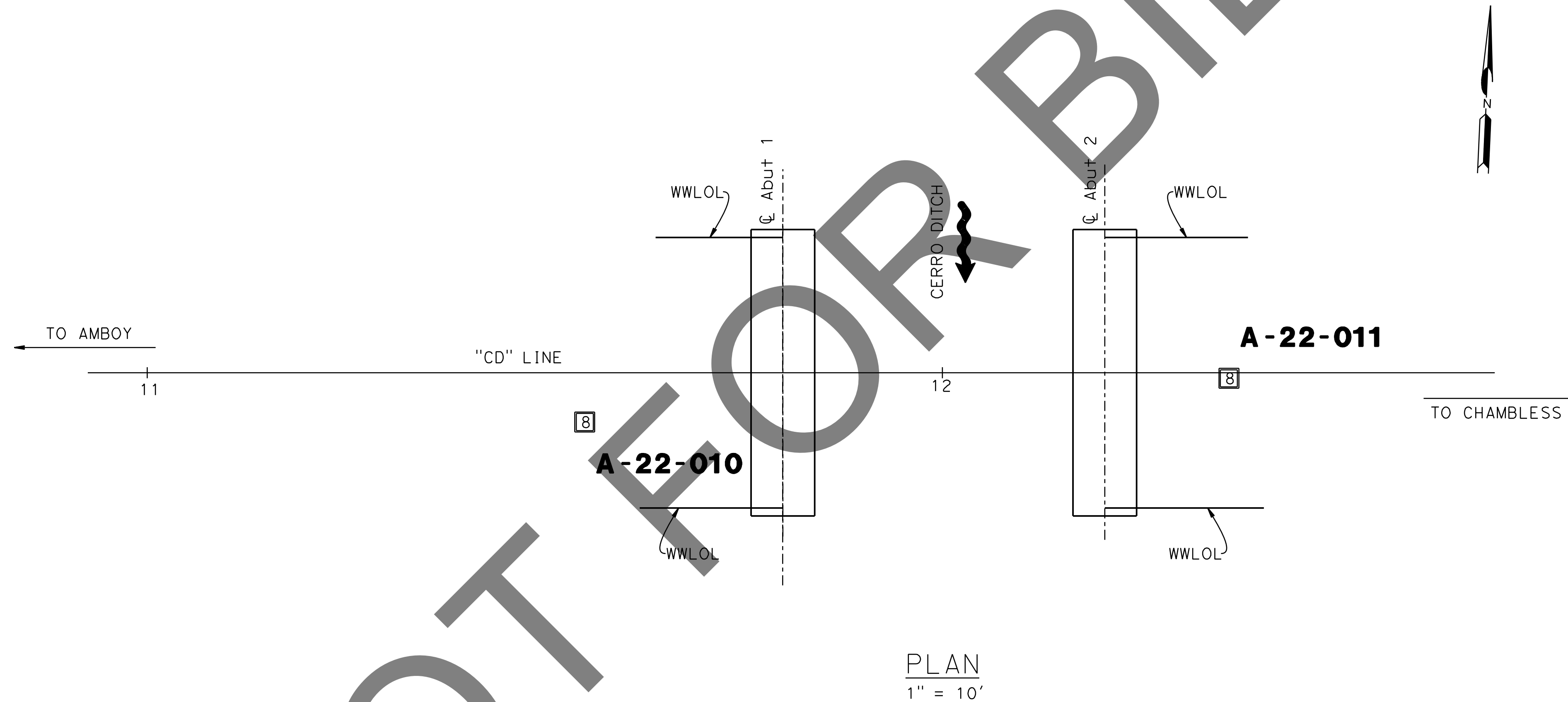
MARK	REVISIONS	DATE

NOTES:

- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans **A10F** and **A10G**.

BOREHOLE LOCATION TABLE

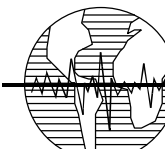
Hole ID	Alignment Name	Station and Offset
A-22-010	"CD" Line	11+55 6.2 Rt.
A-22-011	"CD" Line	12+36 0.7 Rt.



NOT FOR BID

REVISIONS	DATE

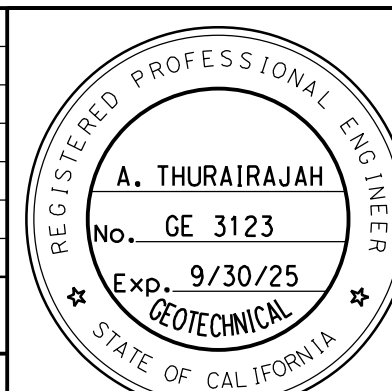
PREPARED BY:



Earth Mechanics, Inc.
Geotechnical & Earthquake Engineering
17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
(Signature)
(ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24

MARK	CHANGES	RESIDENT ENGINEER	DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

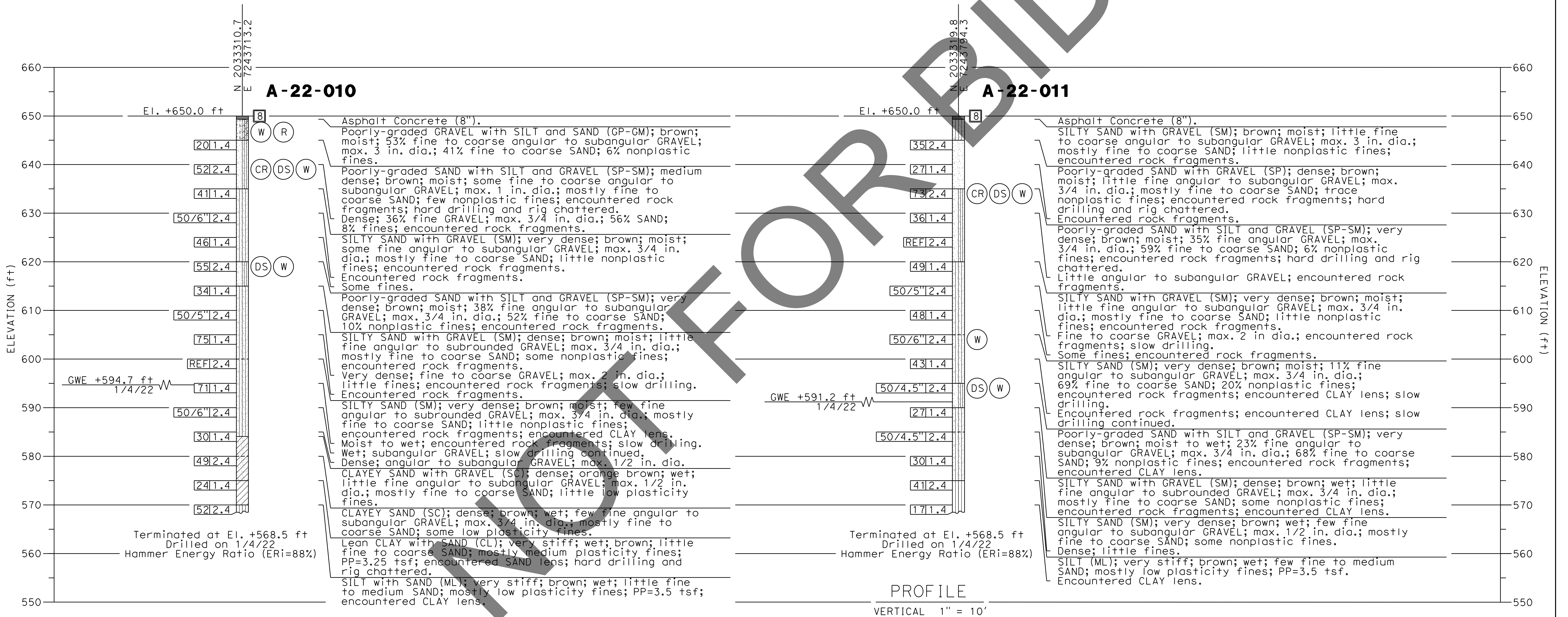
DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: <i>(Signature)</i> 1/14/2025 CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>(Signature)</i> 1/15/2025 LD (ROCKY) L. P.E. SUPERVISING ENGINEER			APPROVED BY: <i>(Signature)</i> 1/16/2025 MERVAT K. MIKHAL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
LOG OF TEST BORINGS 1 OF 2
CERRO DITCH

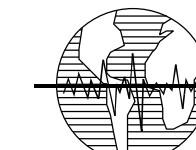
J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11800	H14912	AS NOTED	155	240

BENCH MARK:
 FOUND 3.5" NGS BRASS DISC IN 10"x10"
 Conc Mnmt STAMPED "Z1308-1978 NATIONAL
 GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'

NOTE:
 This LOTB sheet (Boring Record) was prepared in accordance with Caltrans
 Soil and Rock Logging, Classification and Presentation Manual (2022).



REVISIONS	DATE	APPR.

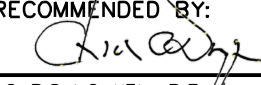
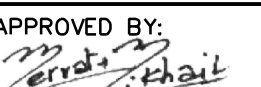
PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 A. THURAIRAJAH
 No. GE 3123
 Exp. 9/30/25
 GEOTECHNICAL
 STATE OF CALIFORNIA

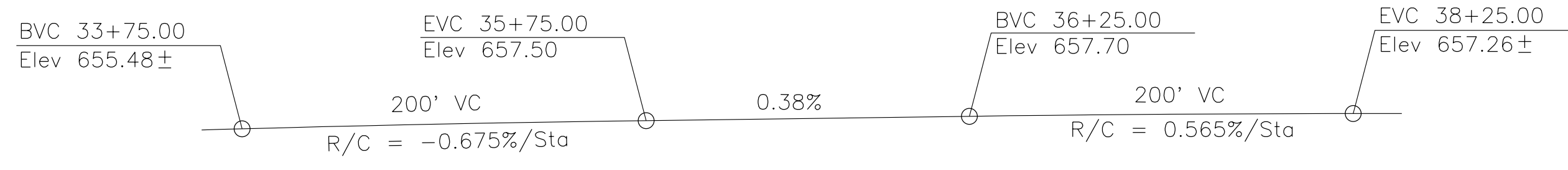
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY:  1/14/2025
			DATE
			CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER
			APPROVED BY:  1/16/2025
			DATE
			MERWAT K. MIKHAL, P.E. / DEPUTY DIRECTOR

LD (ROCKY) L. P.E. SUPERVISING ENGINEER

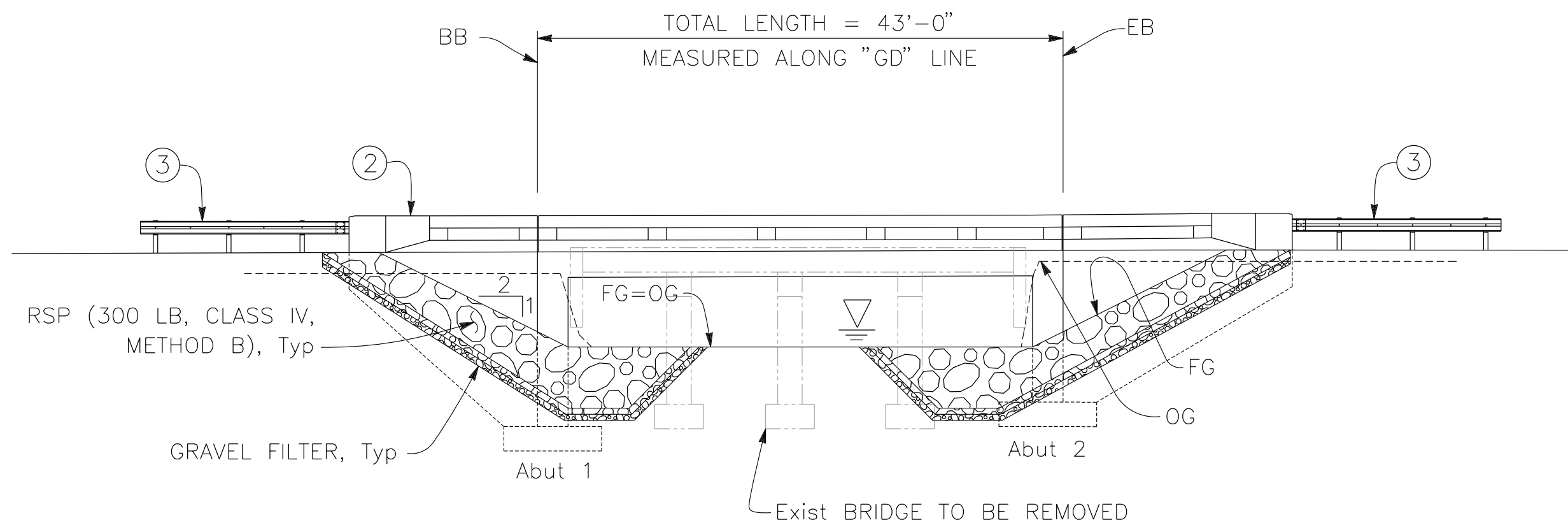
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
LOG OF TEST BORINGS 2 OF 2
CERRO DITCH

J.L. REF. J.L. 11800	W.O. NO. H14912	PLAN SCALE AS NOTED	SHT. NO. 156	TOT. SHT'S. 240
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PROFILE GRADE

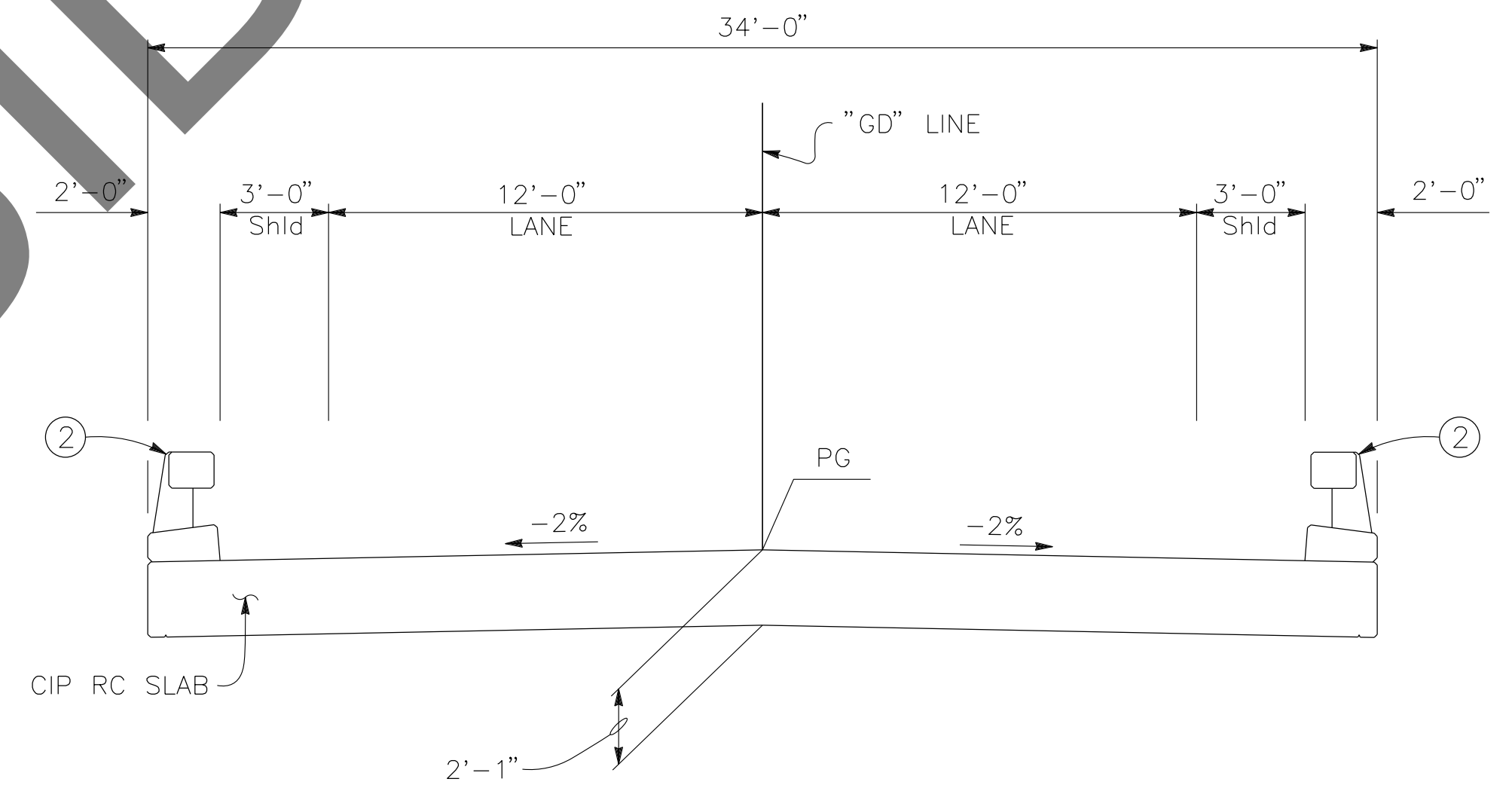
NO SCALE



DATUM ELEV = 630'

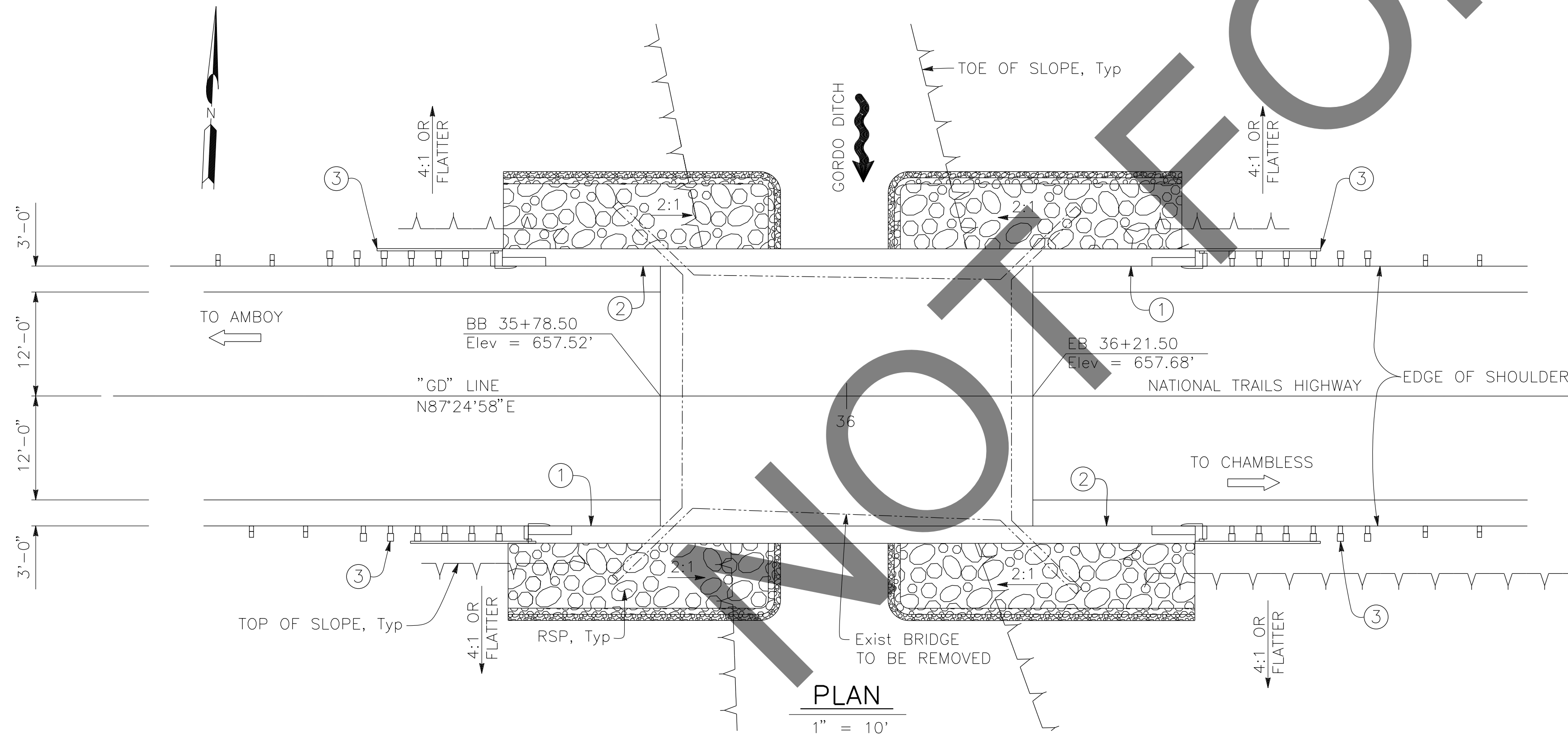
ELEVATION

1" = 10'



TYPICAL SECTION

1/4" = 1'-0"



PLAN

1" = 10'

NOTES:

- FOR TEMPORARY DETOUR DURING CONSTRUCTION, SEE ROADWAY PLANS.
- THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LEGEND:

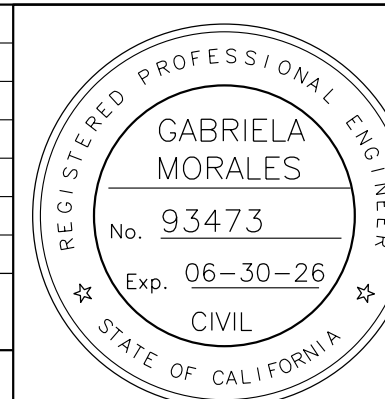
- ① PAINT "GORDO DITCH BRIDGE" "BR NO. 54C0812" AND YEAR CONSTRUCTED
- ② CONCRETE BARRIER (TYPE 85 MOD), TO BE PAINTED WHITE.
- ③ MGS, SEE ROADWAY PLANS
- ▽ WATER SURFACE ELEVATION, FOR "HYDROLOGIC SUMMARY" TABLE, SEE "FOUNDATION PLAN" SHEET.
- EXISTING STRUCTURE, TO BE REMOVED

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 GENERAL PLAN
 GORDO DITCH

J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 157	TOT. SHT'S. 240
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REVISIONS	DATE	APPR.

**GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN**

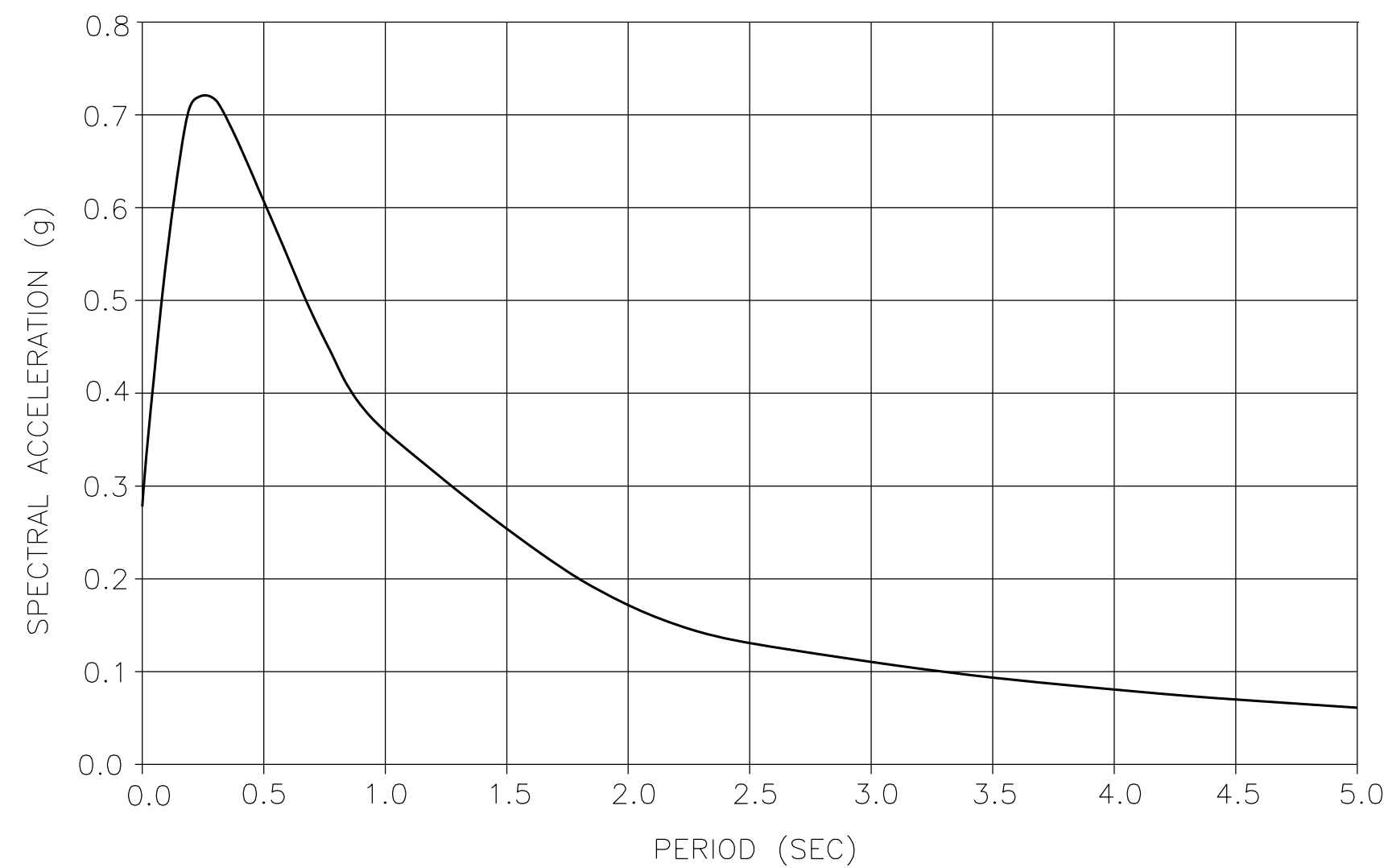
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE DATED JUNE 2024
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION WITH REVISED STANDARD PLANS, DATED OCTOBER 2024

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 2.0, APRIL 2019

DEAD LOAD: INCLUDES 0.035 KSF FOR FUTURE WEARING SURFACE

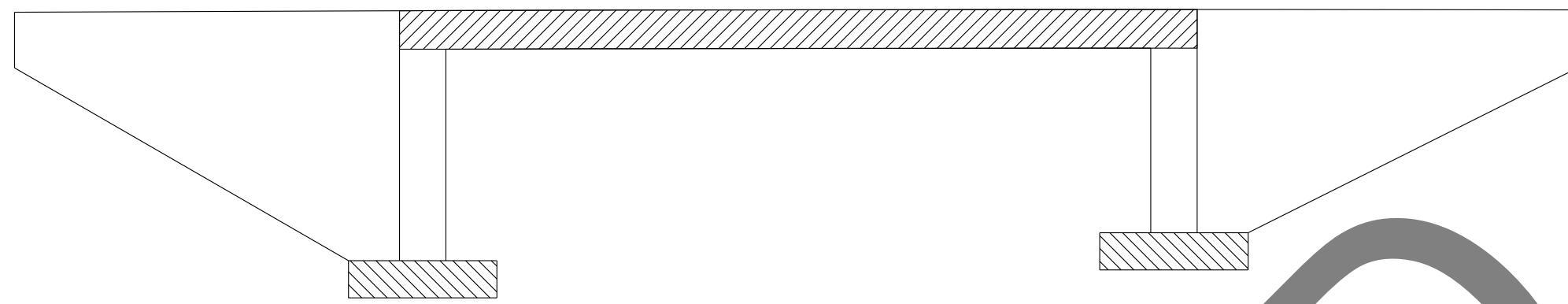
LIVE LOAD: HL-93 AND PERMIT DESIGN LOAD

SEISMIC DATA: SOIL PROFILE : $V_{S30} = 1033$ FT/S
MOMENT MAGNITUDE : 6.38
PEAK GROUND ACCELERATION = 0.28g
5% DAMPING



ARS CURVE
NO SCALE

REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See "CONCRETE STRENGTH AND TYPE LIMITS"
 $n = 8$



- LEGEND:**
- STRUCTURAL CONCRETE, BRIDGE ($f'_c = 3.6$ KSI @ 28 DAYS)
 - STRUCTURAL CONCRETE, BRIDGE FOOTING ($f'_c = 3.6$ KSI @ 28 DAYS)
 - STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER) ($f'_c = 4.0$ KSI)

CONCRETE STRENGTH AND TYPE LIMITS
NO SCALE

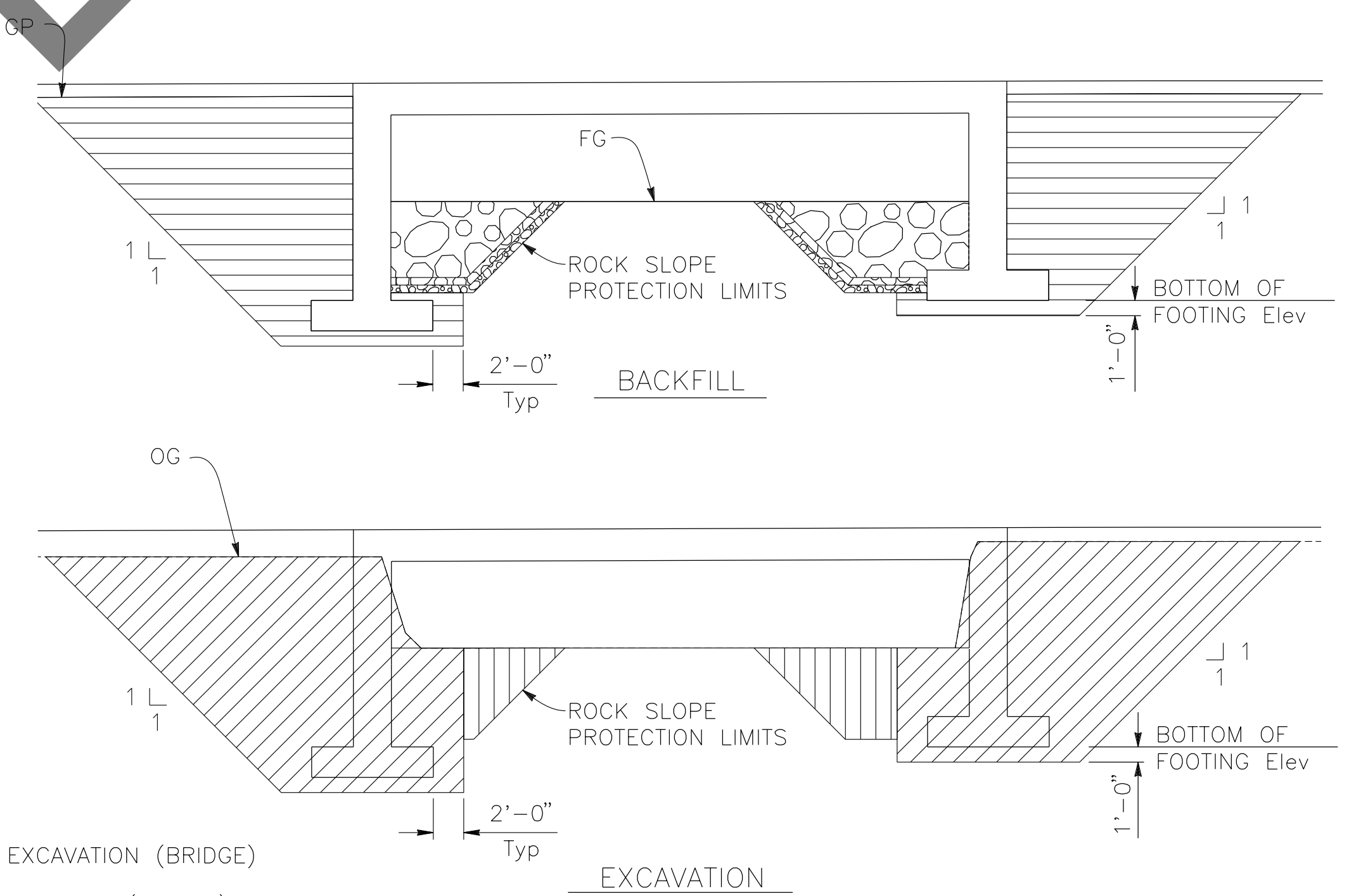
INDEX TO PLANS

SHEET No.	TITLE
157	GENERAL PLAN
158	INDEX TO PLANS
159	DECK CONTOURS
160	FOUNDATION PLAN
161	ABUTMENT LAYOUT
162	ABUTMENT DETAILS
163	SLAB DETAILS
164	ROCK SLOPE PROTECTION DETAILS
165	LOG OF TEST BORINGS 1 OF 2
166	LOG OF TEST BORINGS 2 OF 2

STANDARD PLAN SHEET No.
 DETAIL No.

QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	255	CY
STRUCTURE EXCAVATION (BRIDGE)	850	CY
STRUCTURE BACKFILL (BRIDGE)	600	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	43	CY
STRUCTURAL CONCRETE, BRIDGE	94	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	113	CY
BAR REINFORCING STEEL (BRIDGE)	48340	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (300 LB, CLASS IV, METHOD B)	214	CY
GRAVEL FILTER (TYPE A)	50	CY
GRAVEL FILTER (TYPE D)	46	CY
CONCRETE BARRIER (TYPE 85 MOD)	157	LF



- LEGEND:**
- STRUCTURE EXCAVATION (BRIDGE)
 - STRUCTURE BACKFILL (BRIDGE)
 - CHANNEL EXCAVATION
 - ROCK SLOPE PROTECTION. SEE "ROCK SLOPE PROTECTION" SHEET

NOTES:
FOR WINGWALL EXCAVATION & BACKFILL LIMITS
SEE STANDARD PLAN A62C.

**LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL**
NO SCALE

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

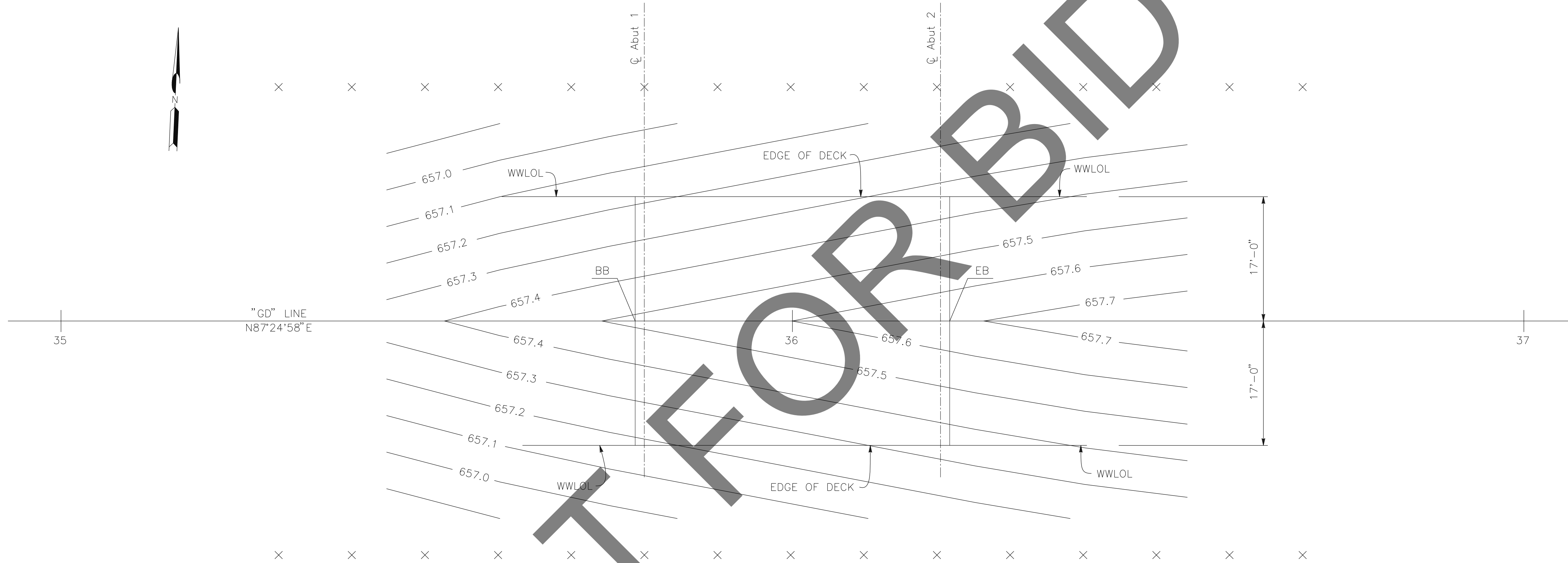
FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>[Signature]</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>[Signature]</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>[Signature]</i> 1/16/2025 MERVAT R. MIKHAL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
INDEX TO PLANS
GORDO DITCH

J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 158	TOT. SHT'S. 240
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PLAN
1/8" = 1'-0"

- NOTES:
- 0.1' CONTOUR INTERVALS SHOWN.
 - CONTOURS DO NOT INCLUDE CAMBER
 - TOP OF CONCRETE DECK SHOWN.

- LEGEND:
- × 10' INTERVALS ALONG STATION LINE.

PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
DECK CONTOURS
GORDO DITCH

J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 159	TOT. SHT'S. 240
-------------------------	--------------------	------------------------	-----------------	--------------------

MARK	REVISIONS	APPR.	DATE

SCOUR DATA TABLE		
SUPPORT LOCATION	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
Abut 1	649.6	5.7
Abut 2	649.6	4.0

HYDROLOGIC SUMMARY		
	DESIGN FLOOD	BASE FLOOD
FREQUENCY	50-YR	100-YR
DISCHARGE*	292 CFS	408 CFS
WATER SURFACE ELEVATION AT BRIDGE	651.2	651.6

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.
* BULKED DESIGN FLOWS

SPREAD FOOTING DATA TABLE			
SUPPORT LOCATION	SERVICE LIMIT STATE PERMISSIBLE NET CONTACT STRESS (KSF)	STRENGTH FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 0.45$	EXTREME EVENT FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 1.00$
Abut 1	3.9	6.5	13.0
Abut 2	3.5	6.5	13.6

NOTES:

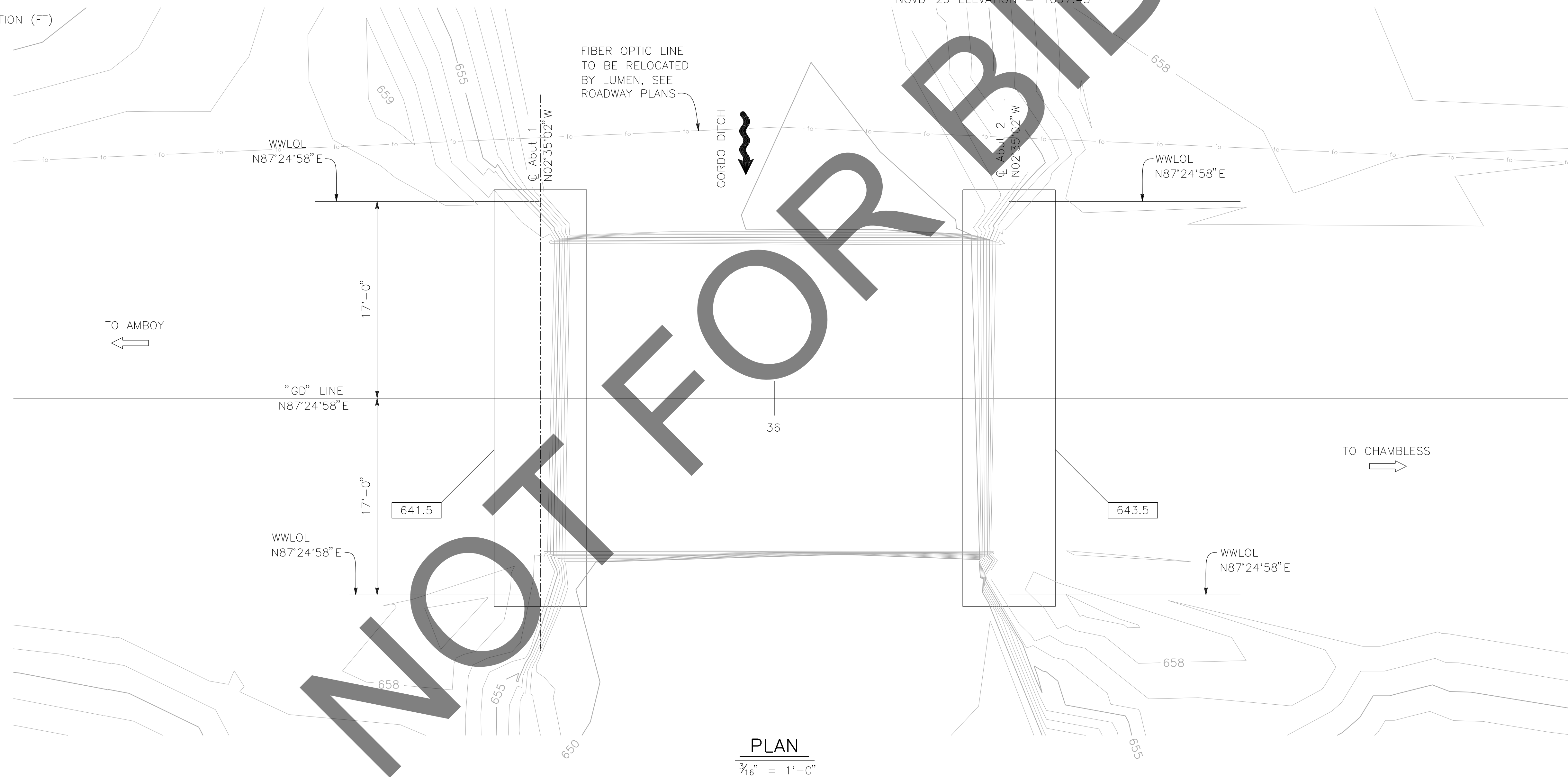
1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO NEW CONSTRUCTION.
2. PILES IN CONFLICT WITH PROPOSED BRIDGE MAY BE FULLY REMOVED OR PARTIALLY REMOVED PER SPECIFICATIONS.

LEGEND:

XX.X BOTTOM OF FOOTING ELEVATION (FT)

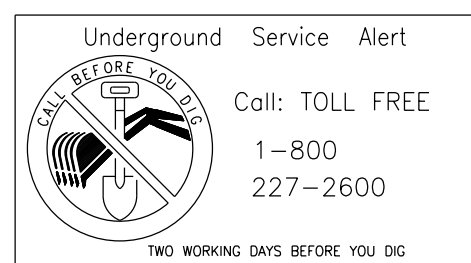
BENCHMARK

FOUND 3.5" NGS BRASS DSC IN 10"X10" CONC MNMT STAMPED "Z1308-1978 NATIONAL GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
NGVD-29 ELEVATION = 1097.43'



NOT FOR BID

PLAN
3/16" = 1'-0"

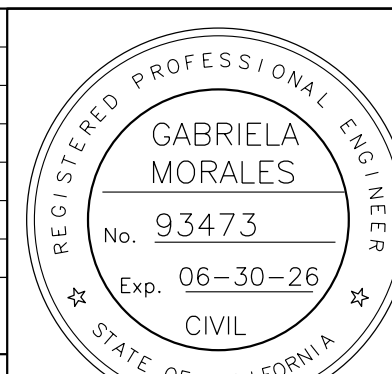


PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales, PROJECT ENGINEER
12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



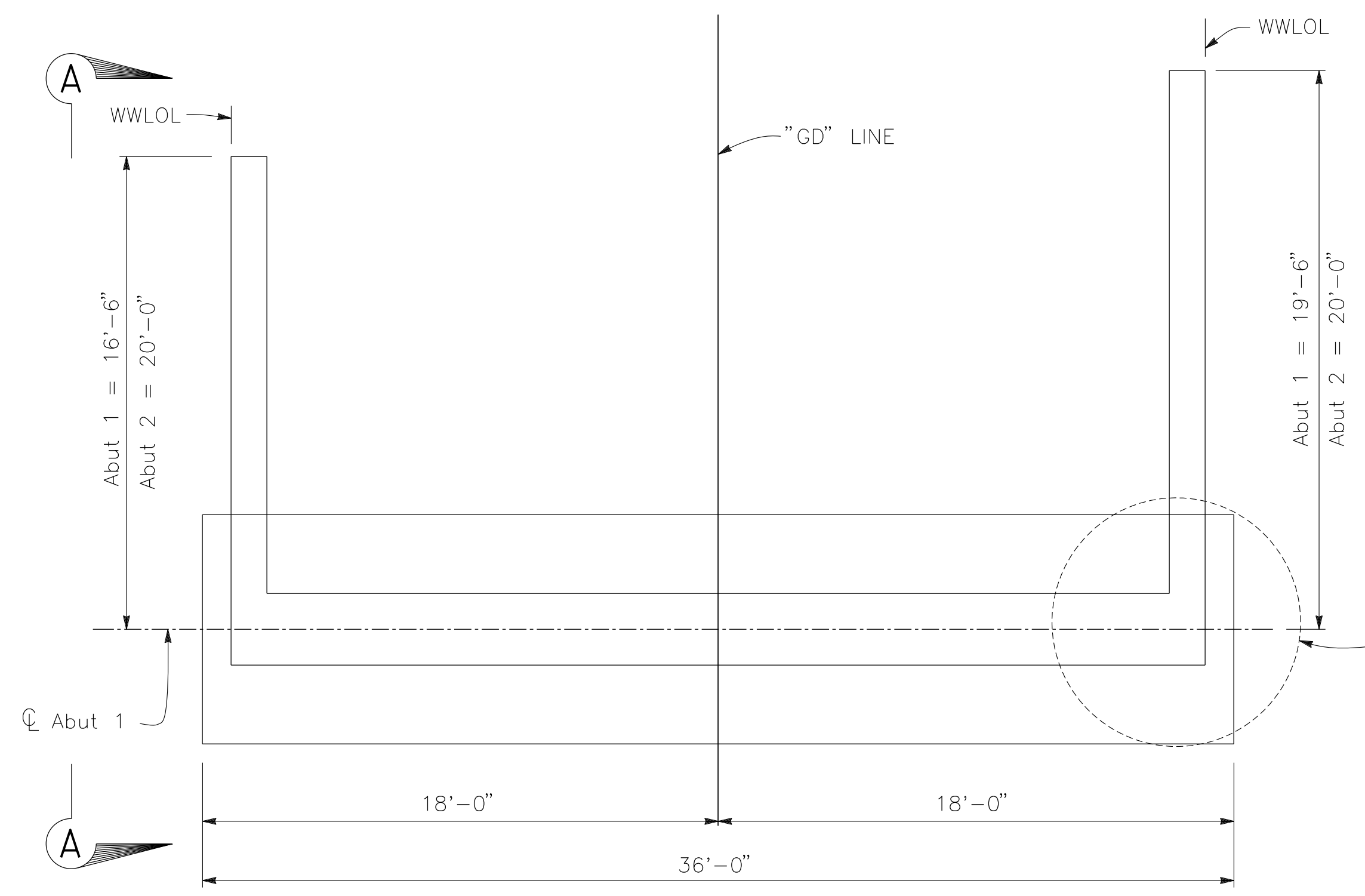
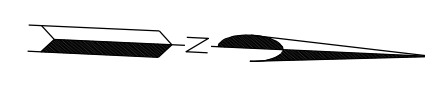
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
FOUNDATION PLAN
GORDO DITCH

J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 160	TOT. SHT'S. 240
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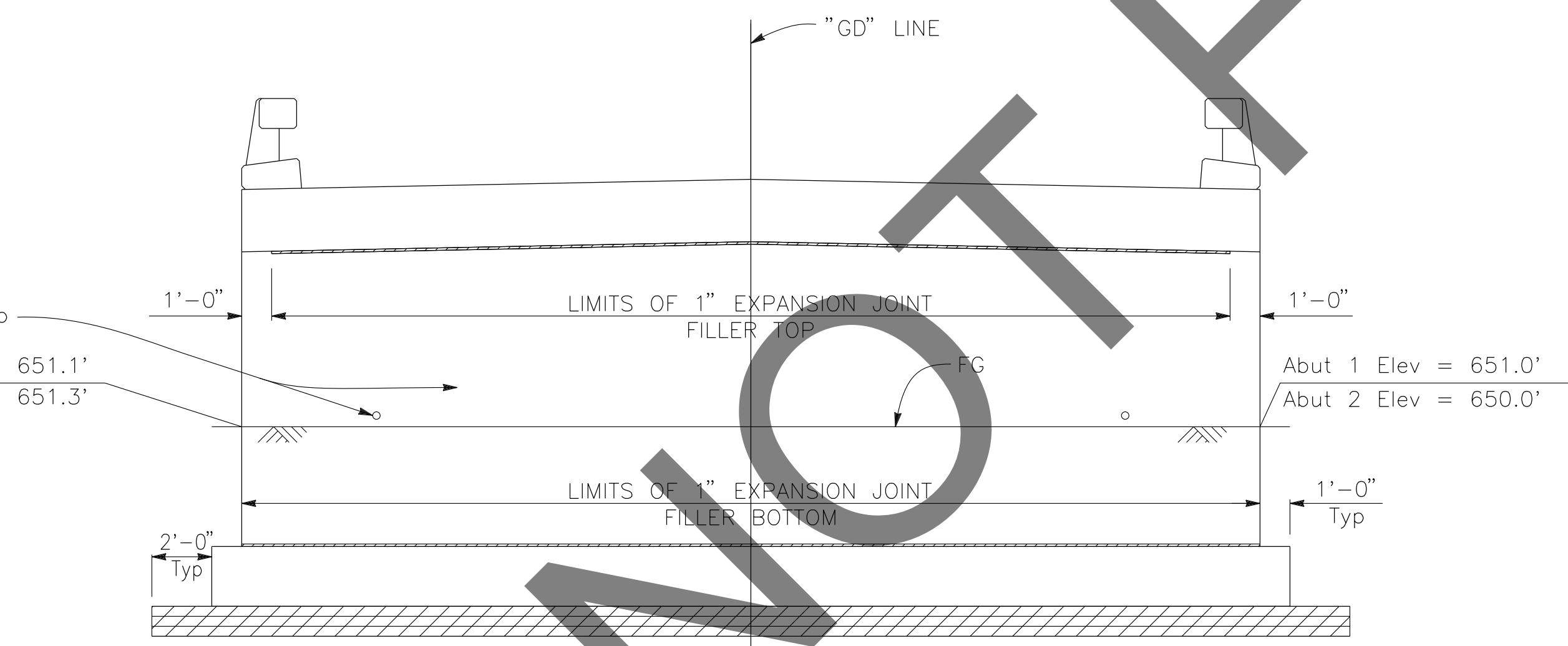
REVISIONS	DATE	APPR.



PLAN

1/4" = 1'-0"

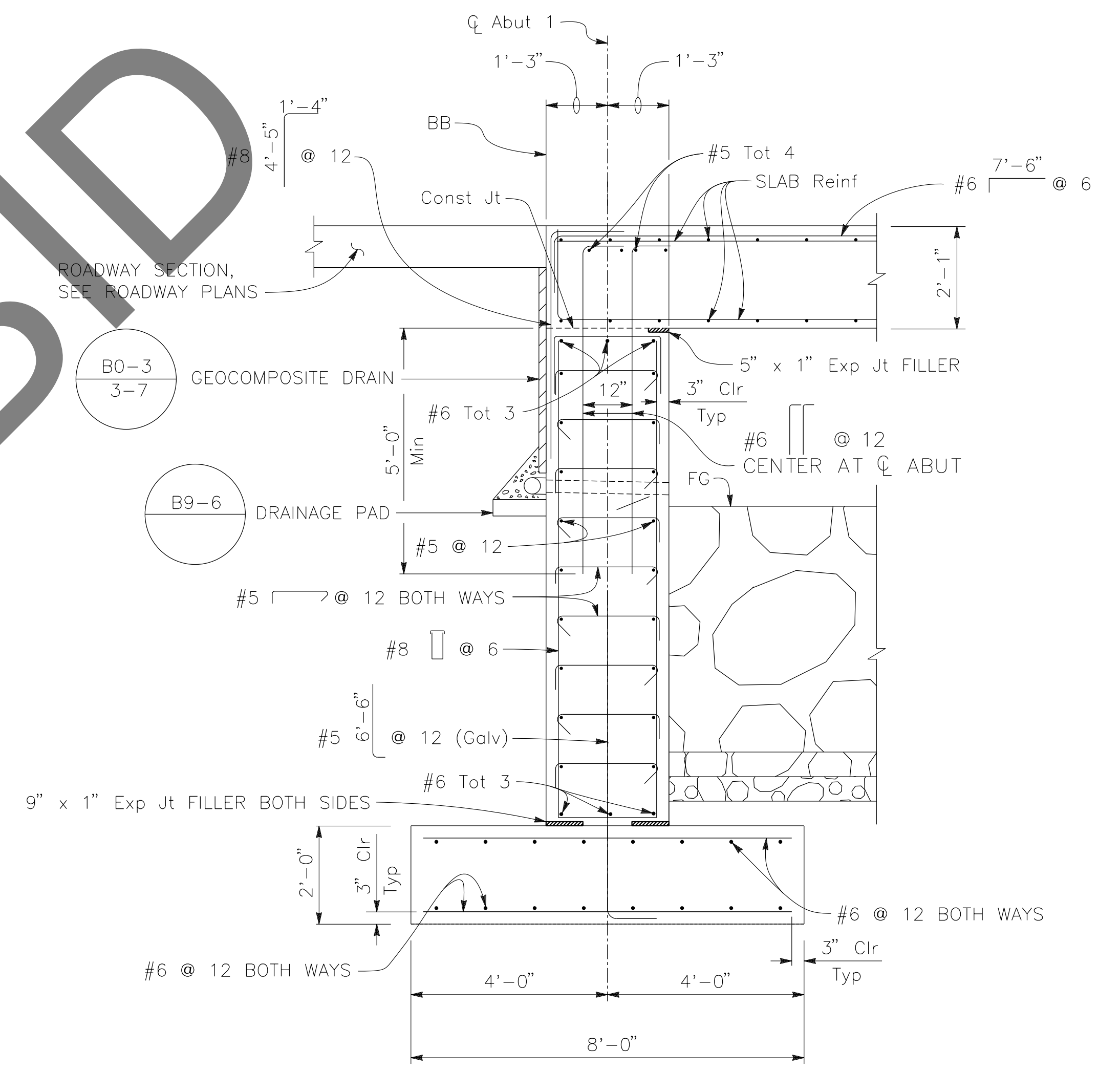
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



ELEVATION

1/2" = 1'-0"

ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



TYPICAL SECTION

1/2" = 1'-0"

ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

LEGEND:

- STRUCTURE EXCAVATION (BRIDGE)
- STRUCTURE BACKFILL (BRIDGE)

NOTES:

1. FOR "VIEW A-A," SEE "ABUTMENT DETAILS" SHEET

REVISIONS	DATE	APPR.

PREPARED BY:

110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642

Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER

12-16-24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

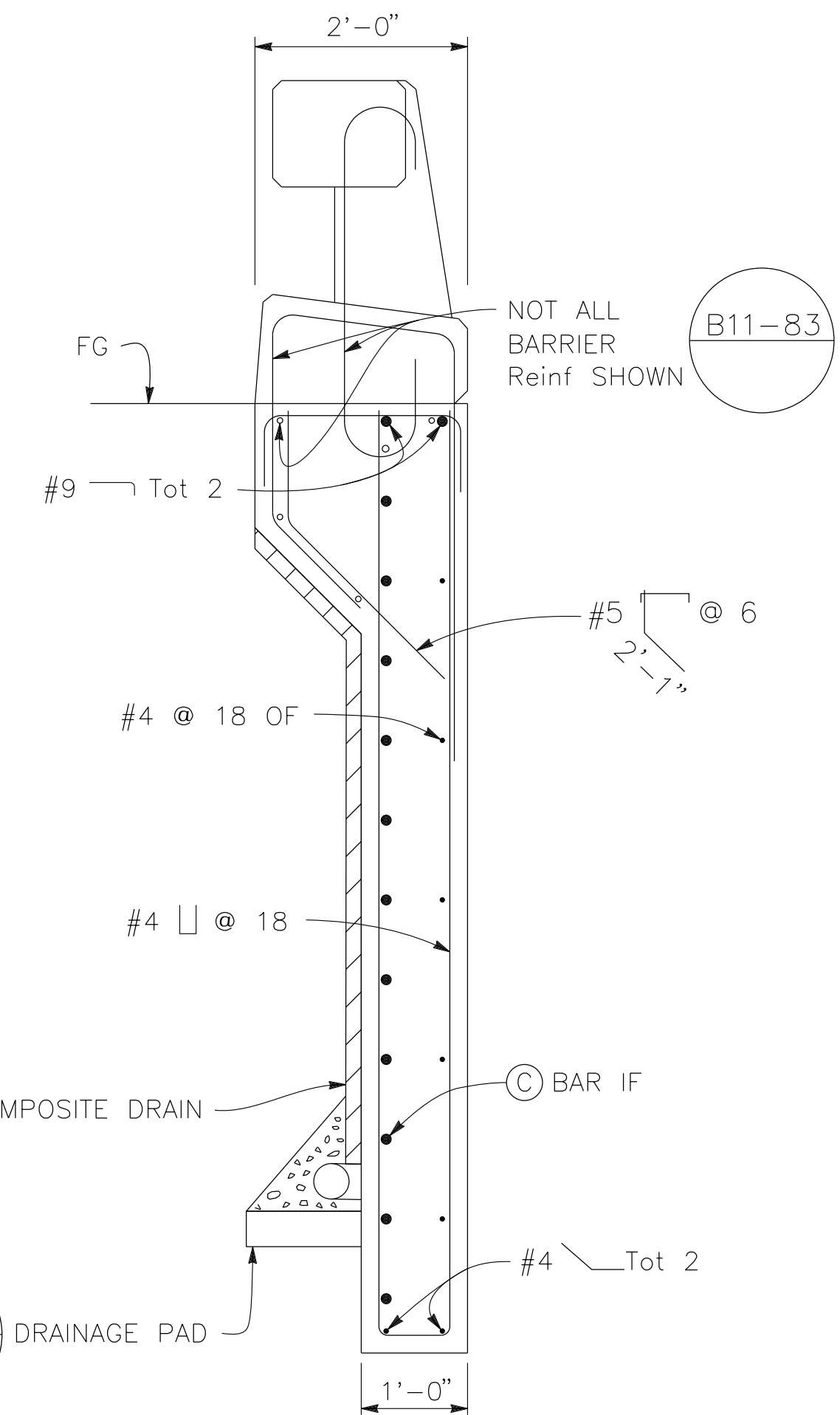
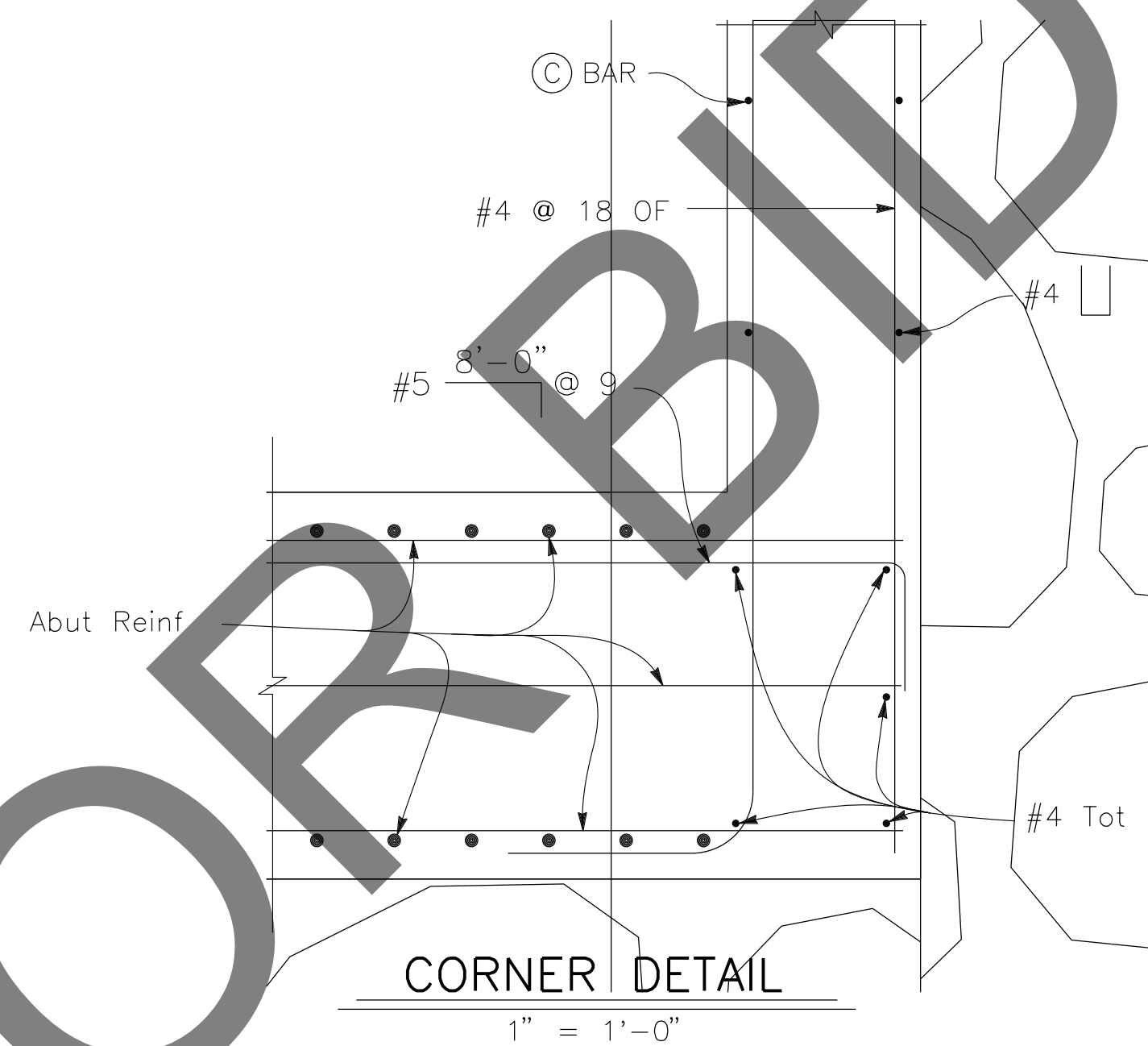
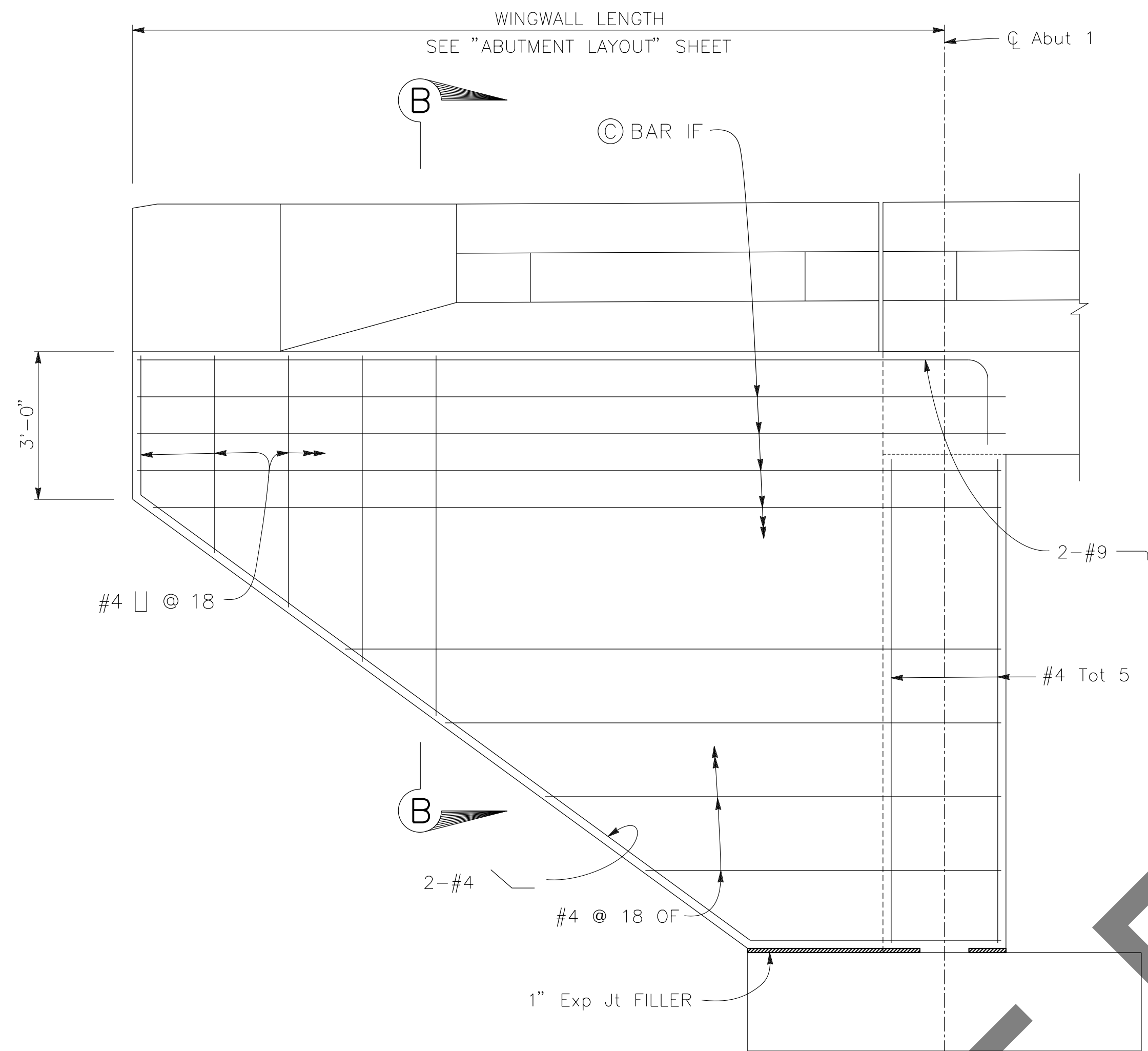
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
ABUTMENT LAYOUT
GORDO DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11805	H14917	AS NOTED	161	240

BAR	WINGWALL LENGTH		
	16'-6"	19'-6"	20'-0"
Ⓒ	#8 @ 9	#9 @ 9	#9 @ 9

NOTES:

1. FOR DETAILS NOT SHOWN, SEE B0-3



VIEW A-A
 $\frac{1}{2}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

SECTION B-B
 $\frac{1}{2}'' = 1'-0''$

NOT FOR BIDD

REVISIONS	DATE	APPR.

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER
 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

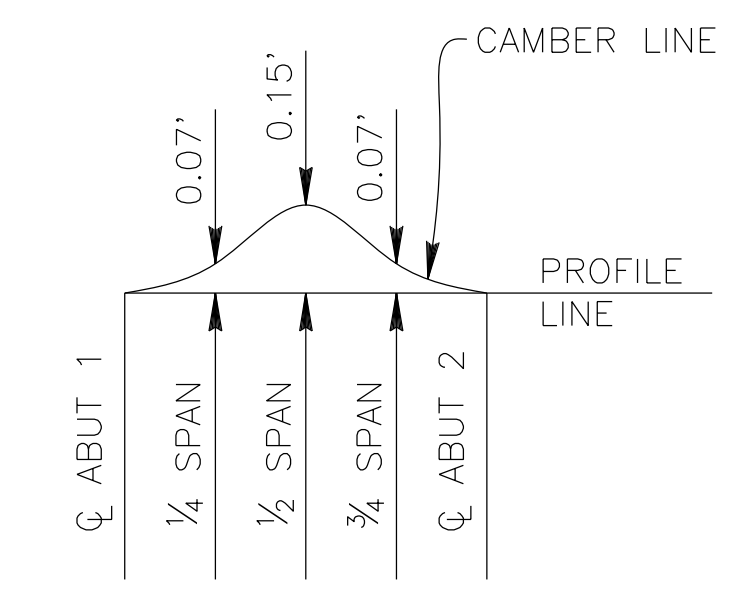
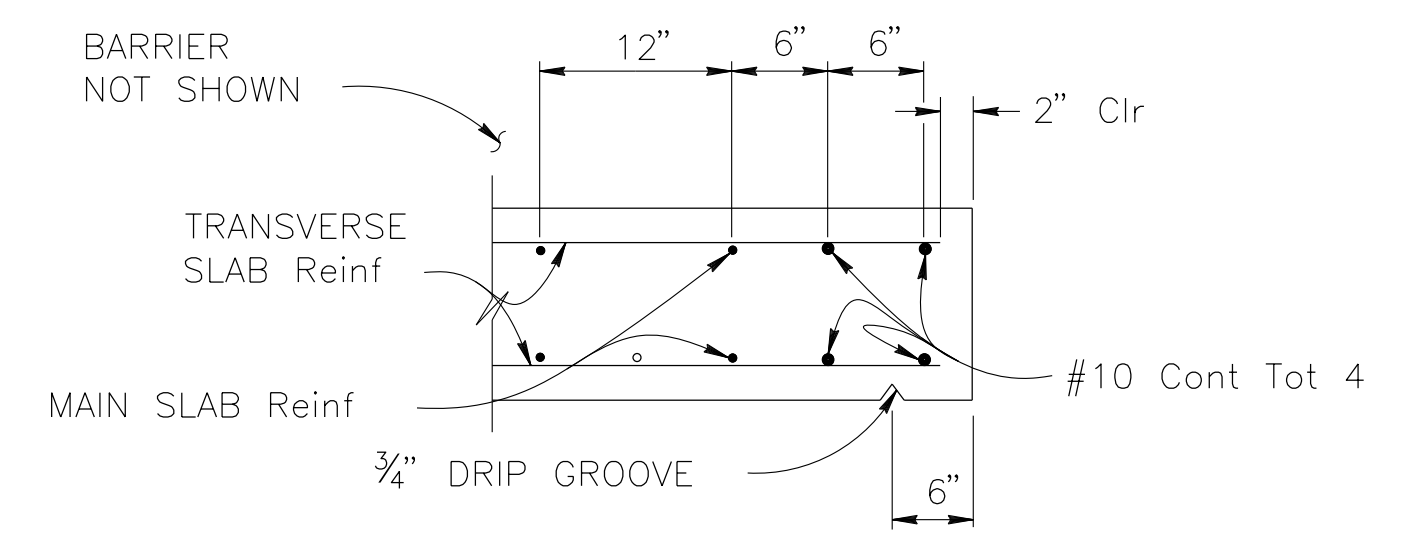
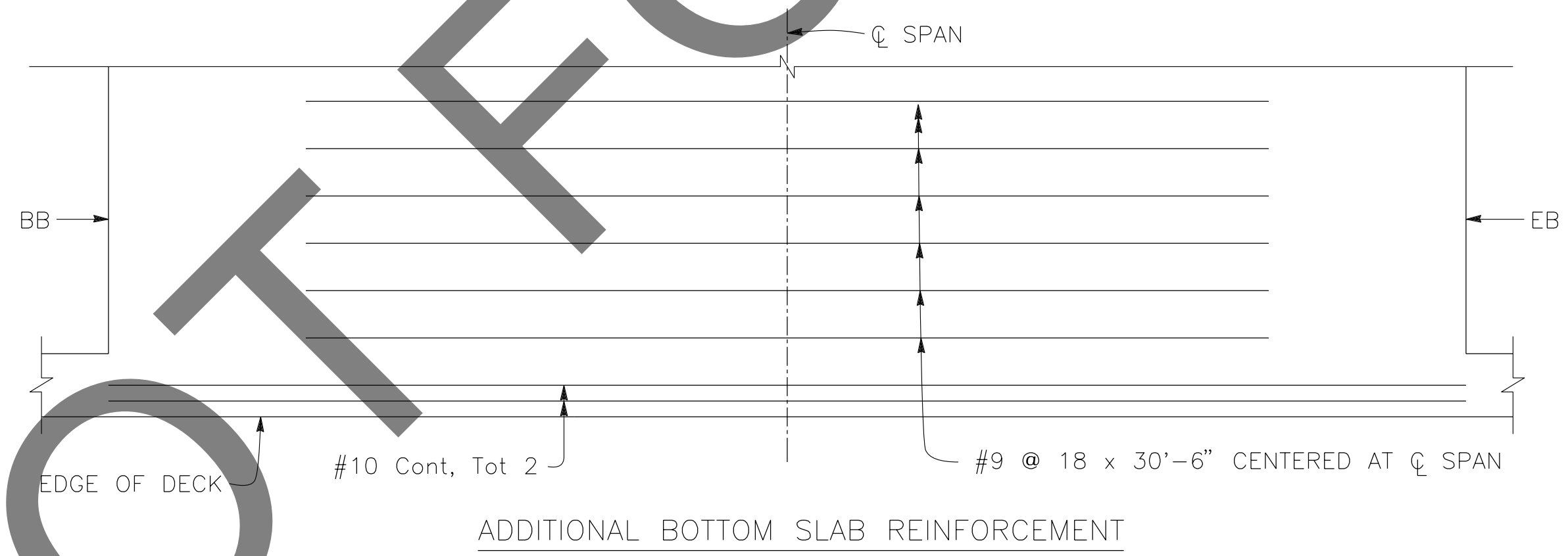
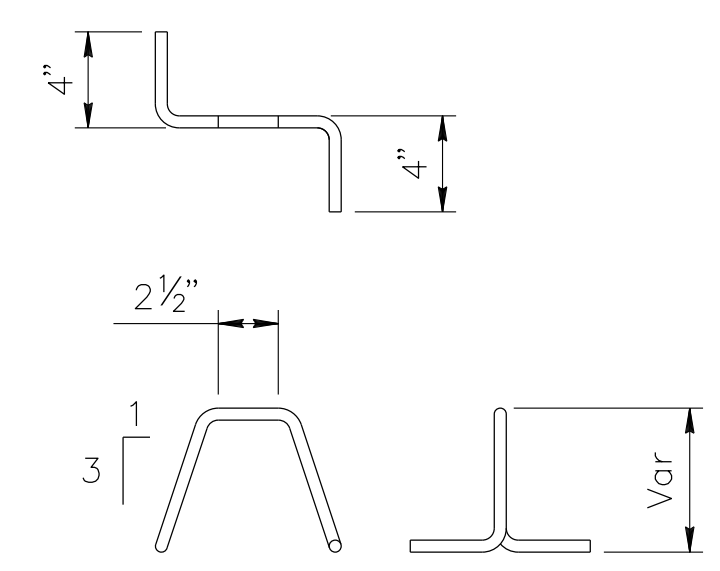
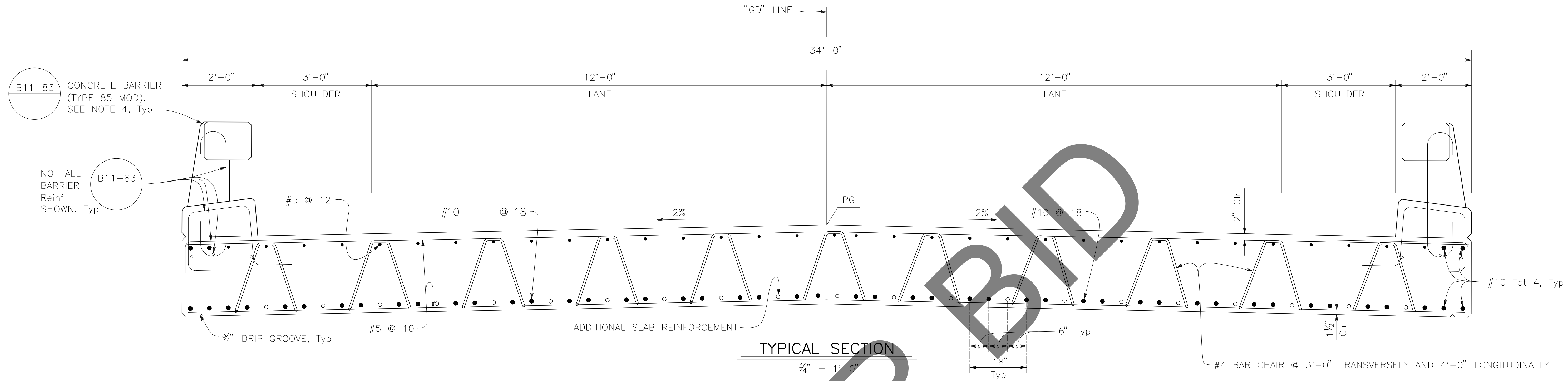
FIELD CHANGES

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR 1/16/2025 DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ABUTMENT DETAILS
 GORDO DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11805	H14917	AS NOTED	162	240



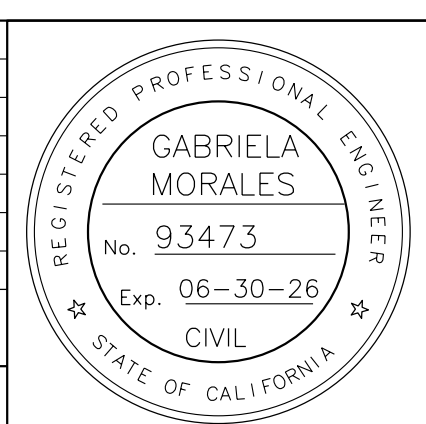
- NOTES:**
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO ϕ BRIDGE.
 2. PLACE TRANSVERSE REINFORCEMENT NORMAL TO ϕ BRIDGE.
 3. FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.
 4. ALL EXPOSED SURFACES OF THE BARRIER ABOVE THE SLAB TO BE PAINTED WHITE.

PREPARED BY:

DEDOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
<i>LEI</i> 1/15/2025 DATE LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 SLAB DETAILS
 GORDO DITCH

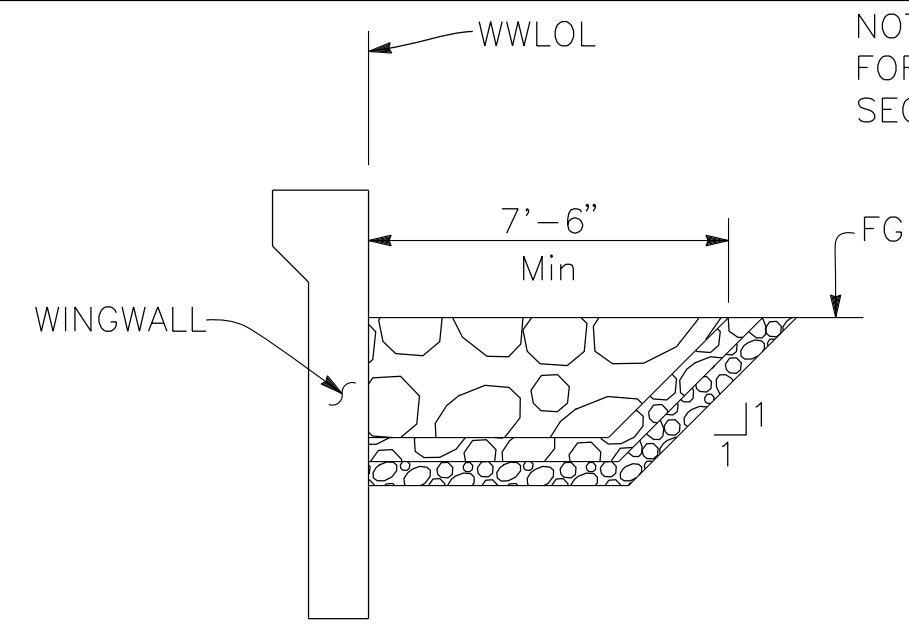
J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 163	TOT. SHT'S. 240
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MARK	REVISIONS	DATE

NOTES:

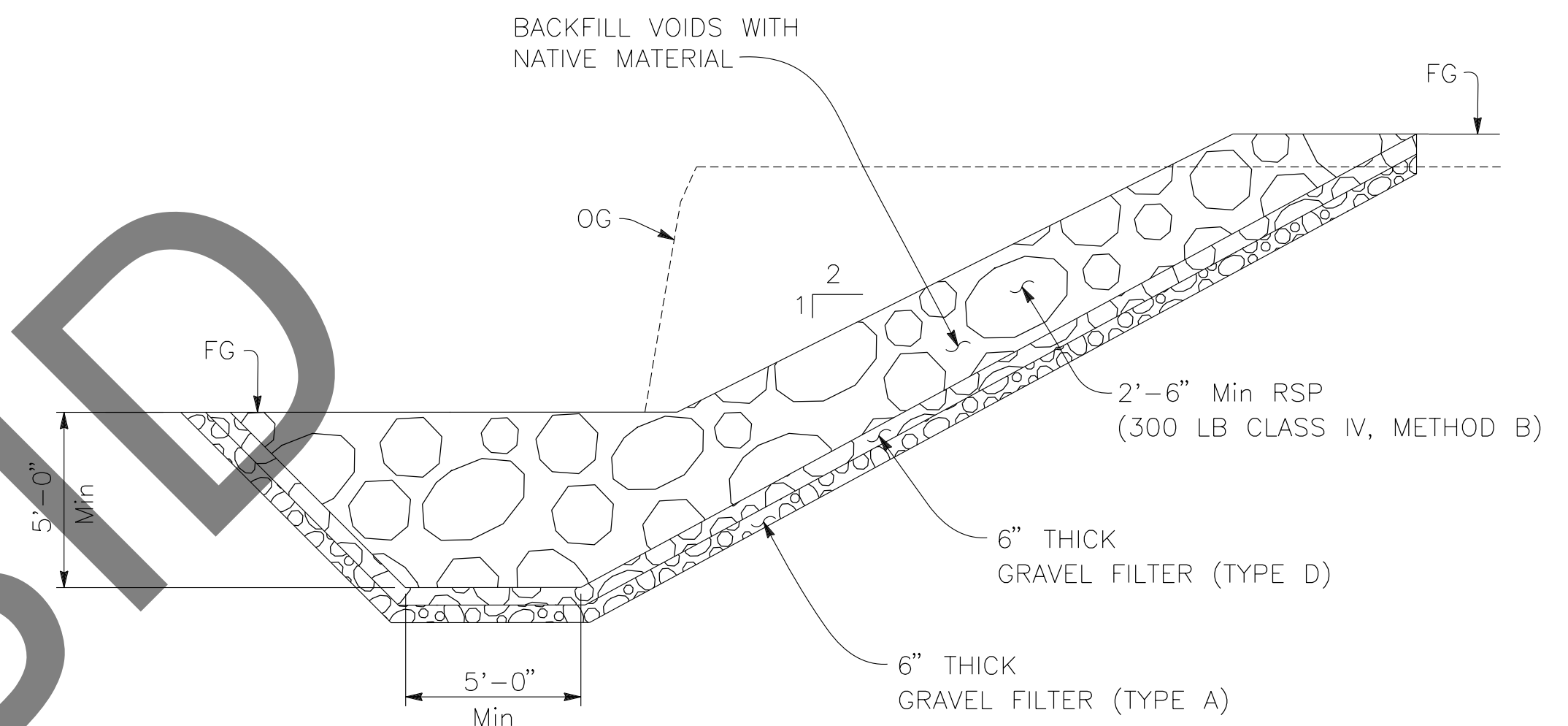
1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS

* SEE "LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET



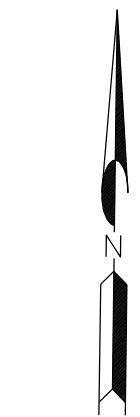
SECTION C-C
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

NOTE:
 FOR DETAILS NOT SHOWN SEE
 SECTION A-A



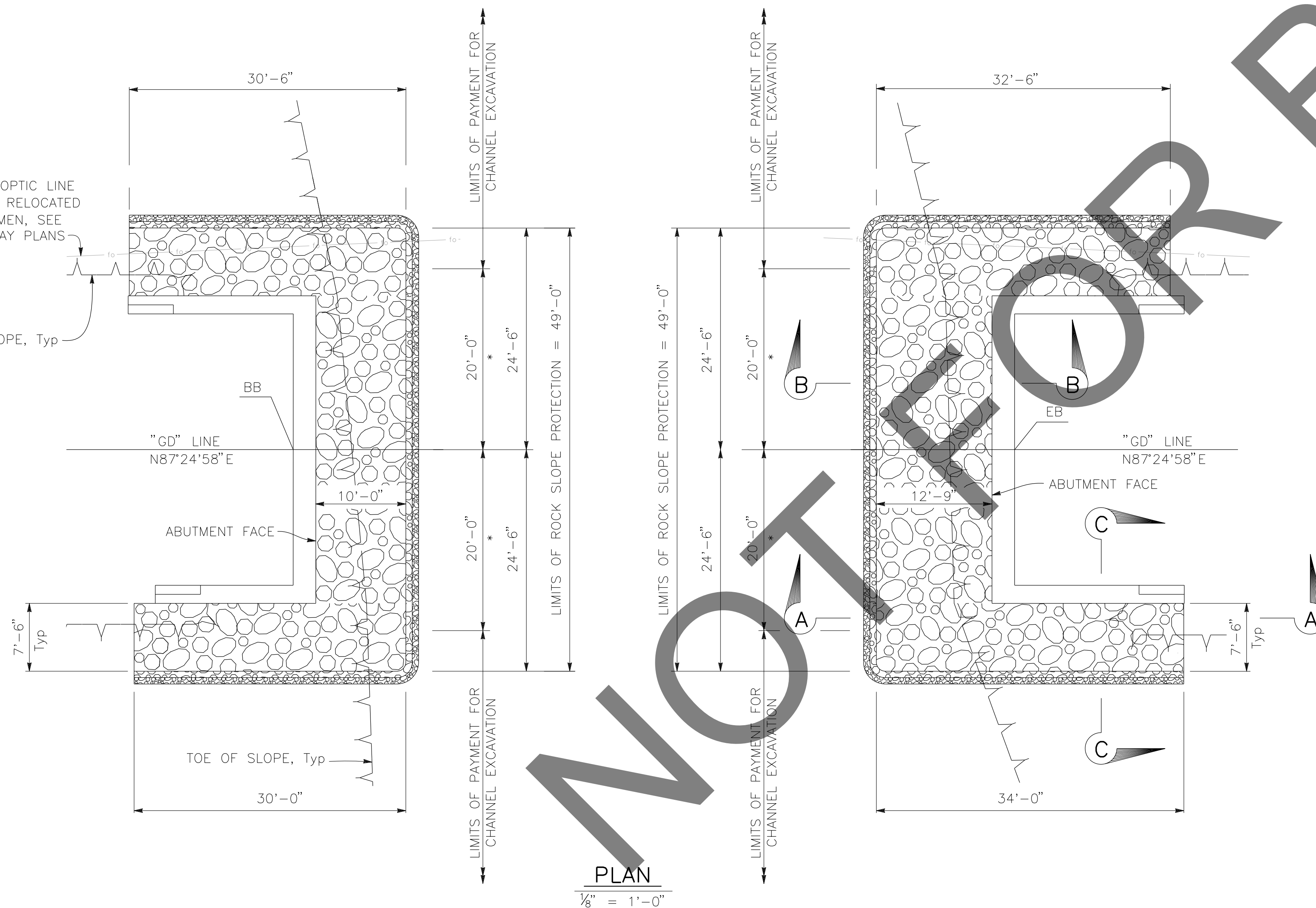
SECTION A-A
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 ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

NOTE:
 FOR DETAILS NOT SHOWN SEE
 SECTION A-A

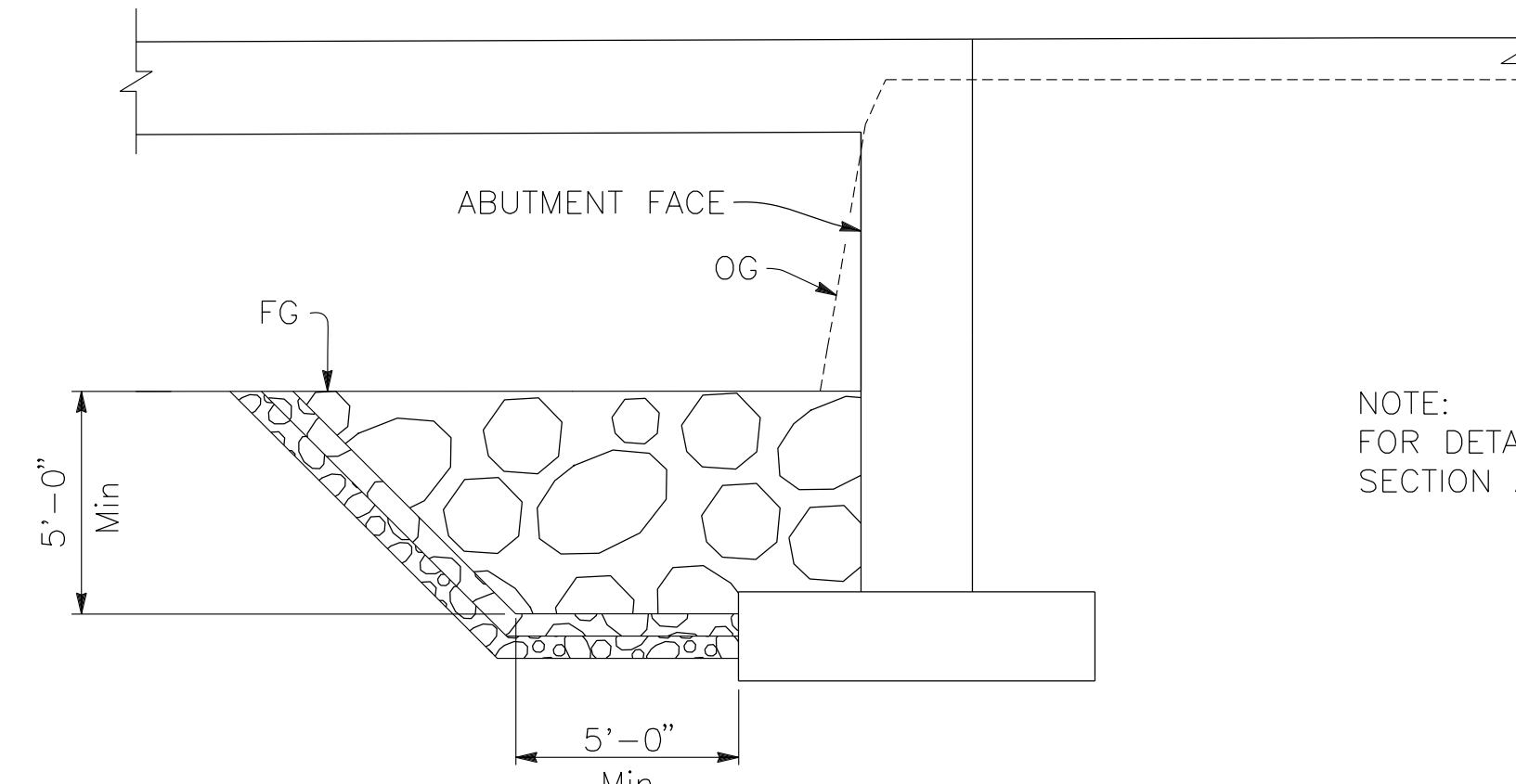


FIBER OPTIC LINE
 TO BE RELOCATED
 BY LUMEN, SEE
 ROADWAY PLANS

TOP OF SLOPE, Typ



PLAN
 $\frac{1}{8}'' = 1'-0''$



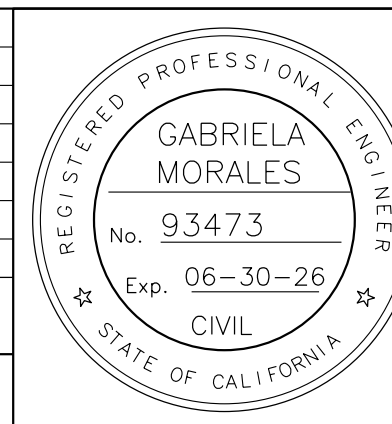
SECTION B-B
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

PREPARED BY:

DE DOKKEN
 ENGINEERING
 110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

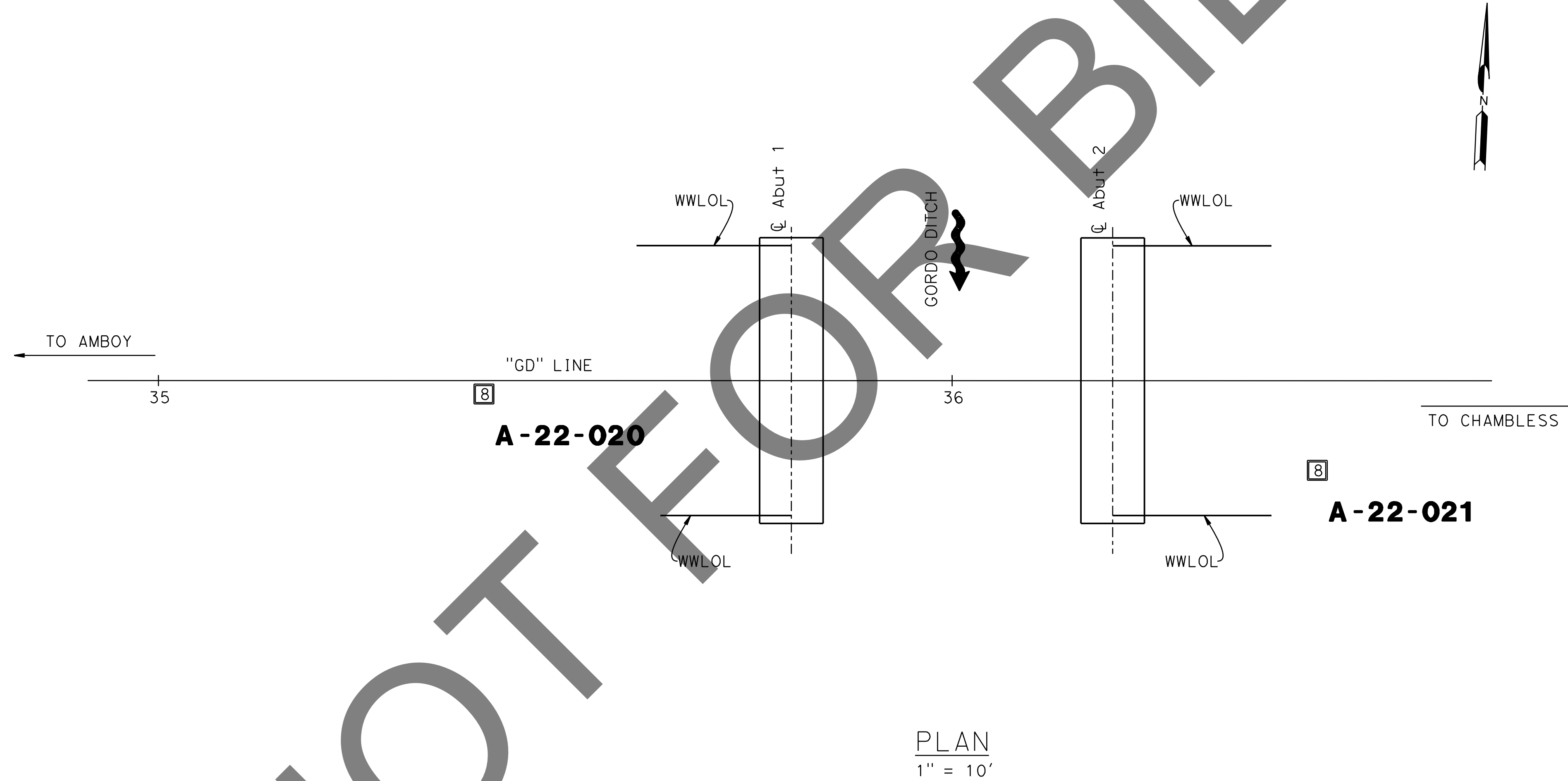
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES ROCK SLOPE PROTECTION DETAILS GORDO DITCH			
J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. TOT. SHT'S. 164 240

NOTES:

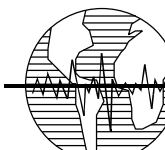
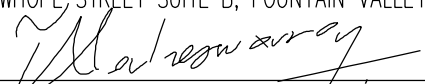
- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans **A10F** and **A10G**.

BOREHOLE LOCATION TABLE

Hole ID	Alignment Name	Station and Offset
A-22-020	"GD" Line	35+41 1.7 Rt.
A-22-021	"GD" Line	36+46 11.3 Rt.

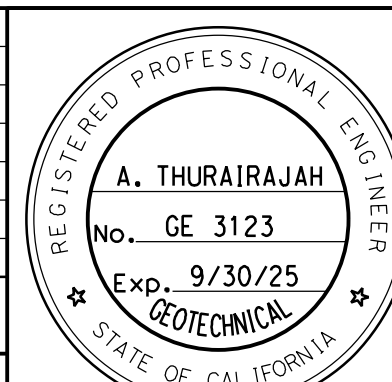


PLAN
1" = 10'

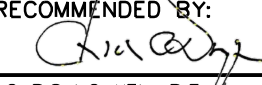
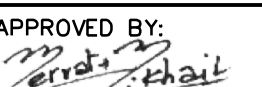
PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826

 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



**SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS**

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY:  CHRIS NGUYEN, P.E. // TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY:  MERVAT K. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025			DATE: 1/16/2025

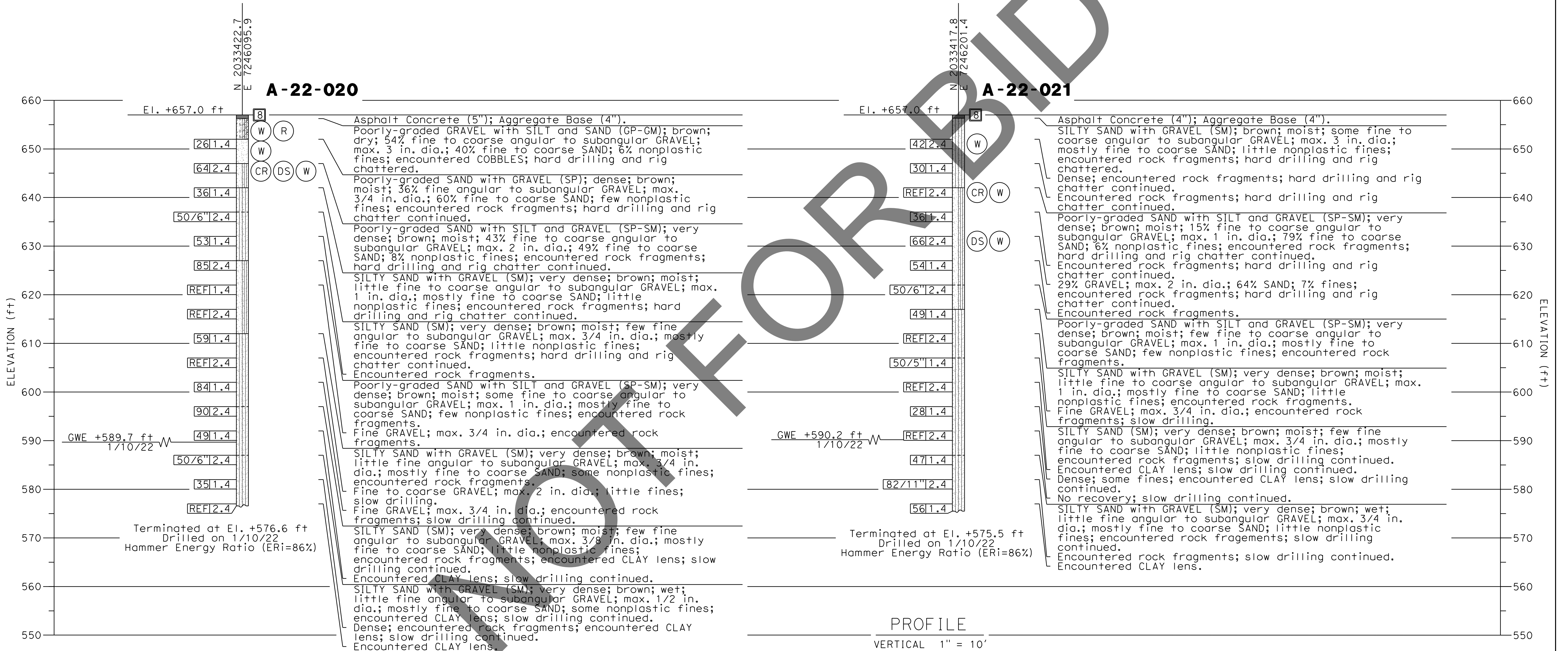
**BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
LOG OF TEST BORINGS 1 OF 2
GORDO DITCH**

J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 165	TOT. SHT'S. 240
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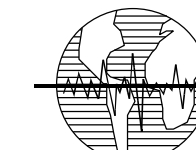
REVISIONS	DATE	APPR.

BENCH MARK:
 FOUND 3.5" NGS BRASS DISC IN 10"x10"
 Conc Mnmt STAMPED "Z1308-1978 NATIONAL
 GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'

NOTE:
 This LOTB sheet (Boring Record) was prepared in accordance with Caltrans
 Soil and Rock Logging, Classification and Presentation Manual (2022).

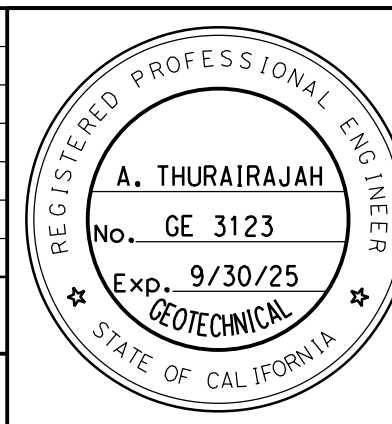


REVISIONS	DATE	APPR.

PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE, STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

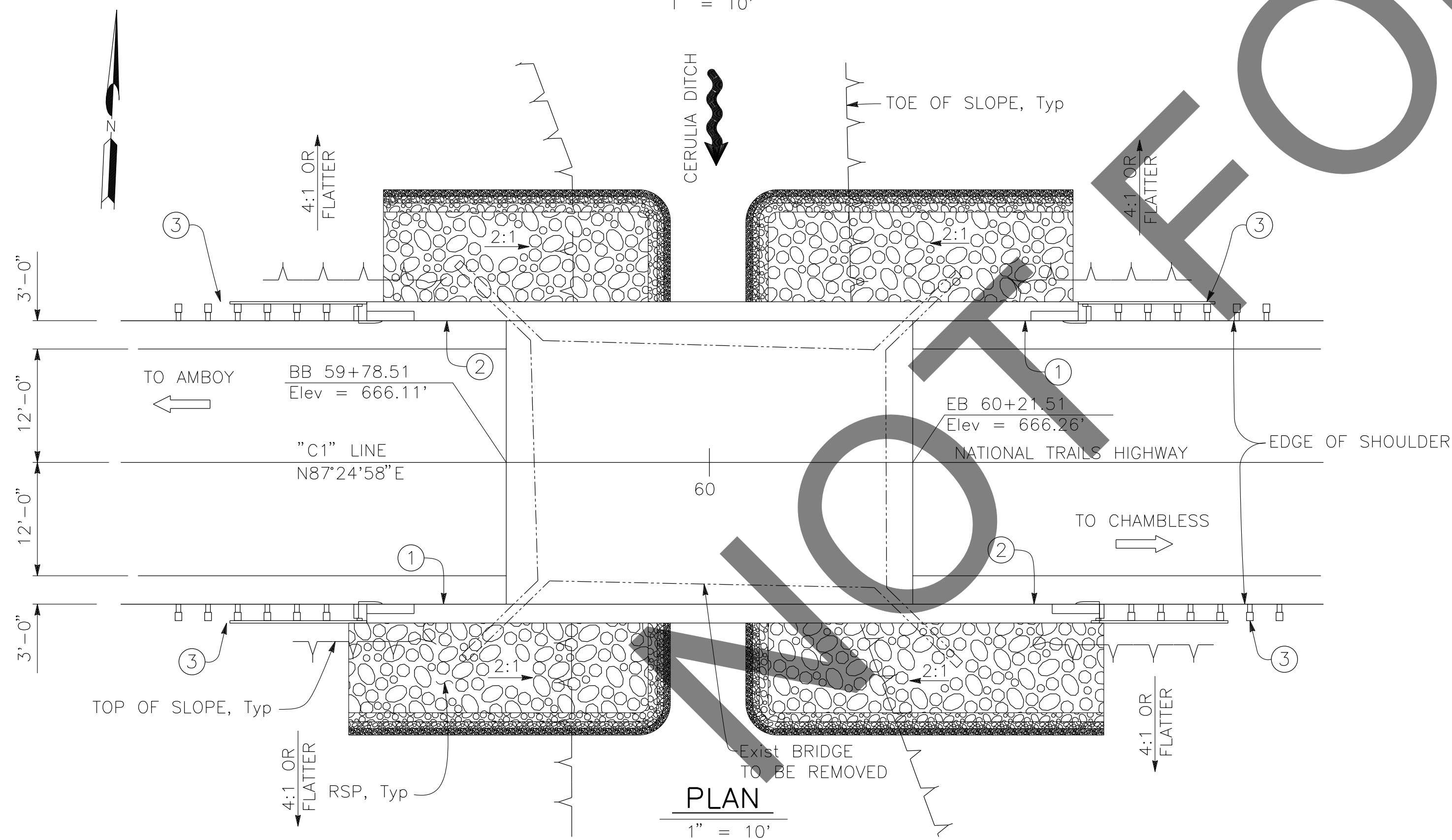
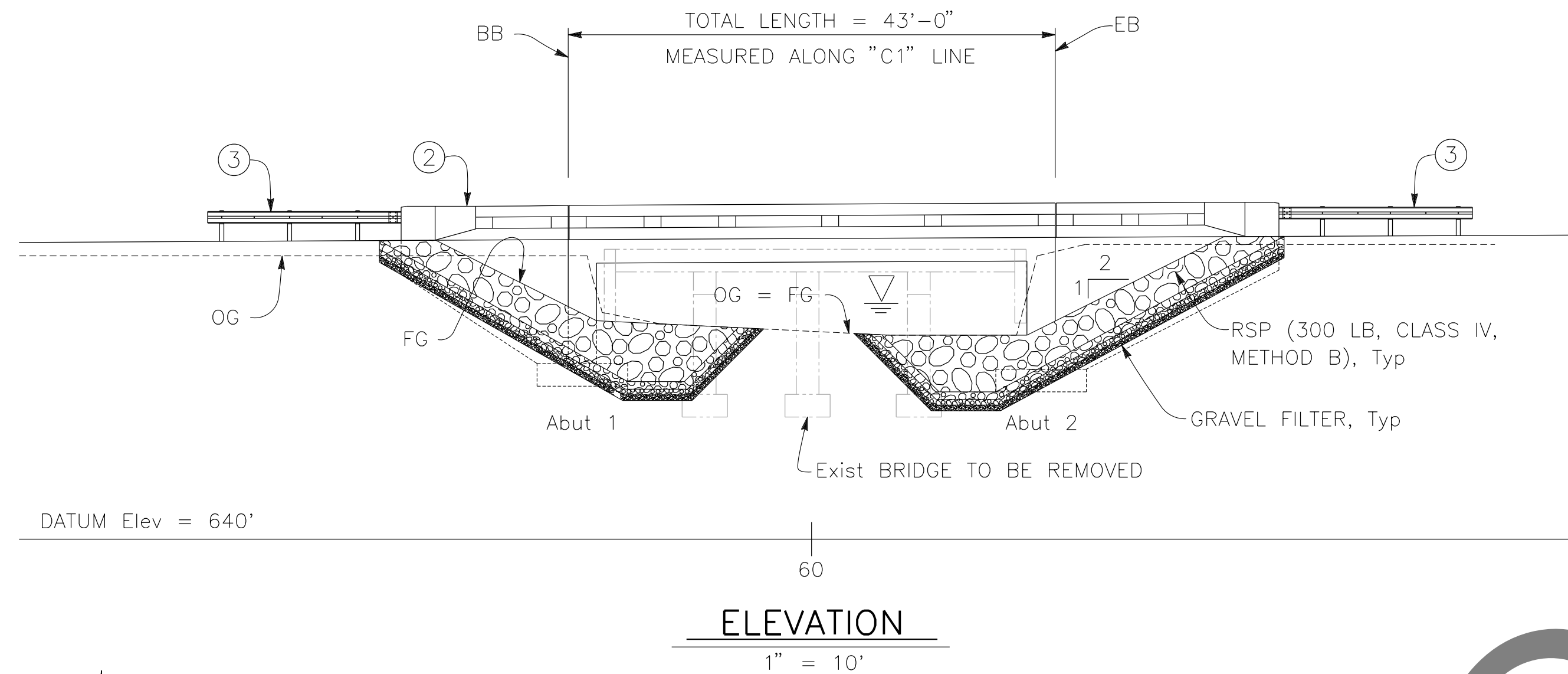
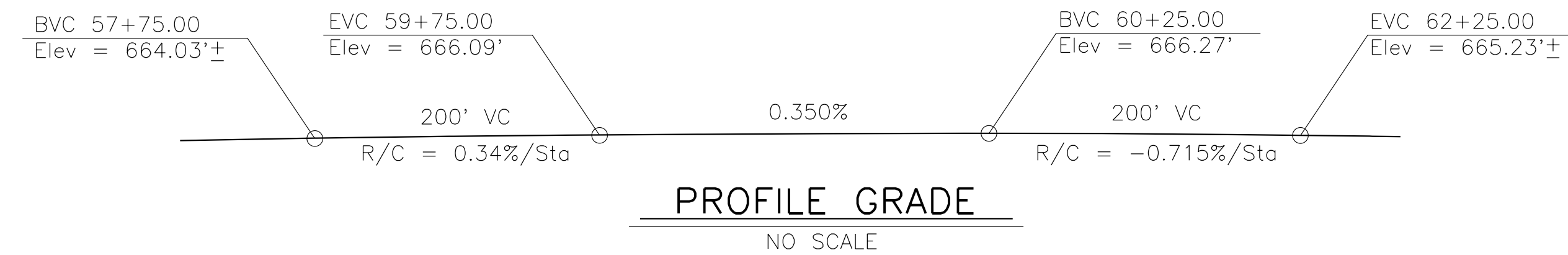
MARK	CHANGES	RESIDENT ENGINEER	DATE

FIELD CHANGES



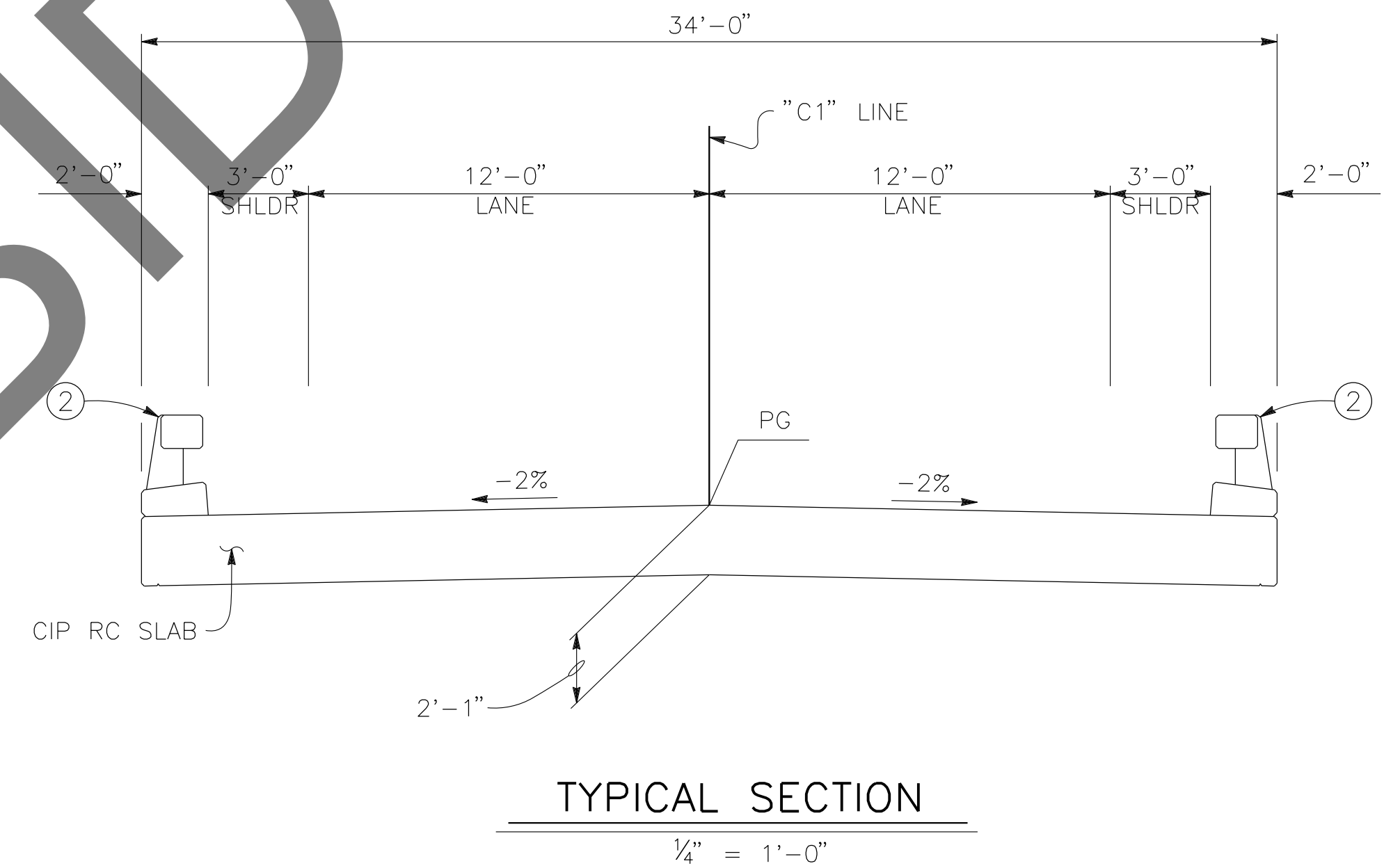
SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: 1/15/2025 LD (ROCKY) LI, P.E. SUPERVISING ENGINEER		APPROVED BY: 1/16/2025 MERVAT K. MIKHAL, P.E. DEPUTY DIRECTOR	

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES LOG OF TEST BORINGS 2 OF 2 GORDO DITCH				
J.L. REF. J.L. 11805	W.O. NO. H14917	PLAN SCALE AS NOTED	SHT. NO. 166	TOT. SH'TS. 240



NOTES:

1. FOR TEMPORARY DETOUR DURING CONSTRUCTION, SEE ROADWAY PLANS.
2. THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



LEGEND:

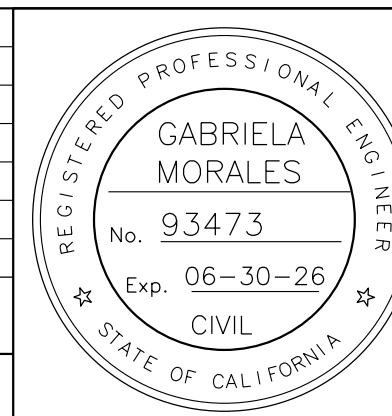
- ① PAINT "CERULIA DITCH BRIDGE" "BR NO. 54C0813" AND YEAR CONSTRUCTED
- ② CONCRETE BARRIER (TYPE 85 MOD), TO BE PAINTED WHITE.
- ③ MGS, SEE ROADWAY PLANS
- ▽ WATER SURFACE ELEVATION, FOR "HYDROLOGIC SUMMARY" TABLE, SEE "FOUNDATION PLAN" SHEET.
- EXISTING STRUCTURE, TO BE REMOVED

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Leif Rocky</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 GENERAL PLAN CERULIA DITCH

J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 167	TOT. SHT'S. 240
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**GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN**

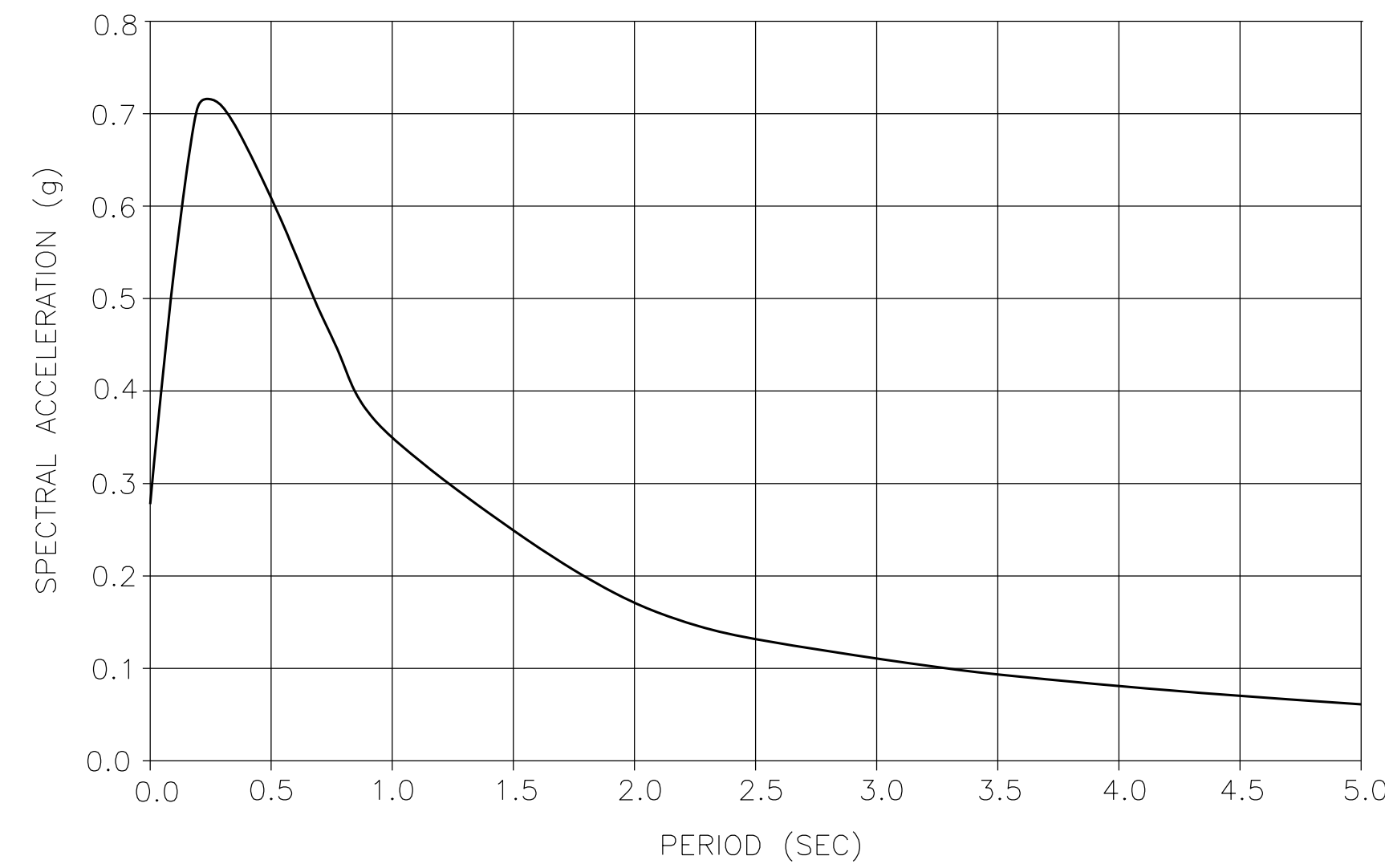
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE DATED JUNE 2024
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION WITH REVISED STANDARD PLANS, DATED OCTOBER 2024

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 2.0, APRIL 2019

DEAD LOAD: INCLUDES 0.035 KSF FOR FUTURE WEARING SURFACE

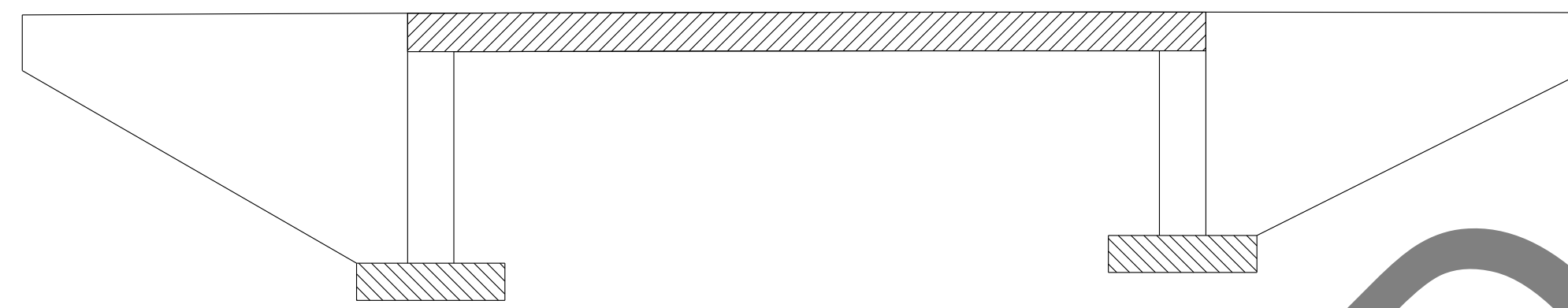
LIVE LOAD: HL-93 AND PERMIT DESIGN LOAD

SEISMIC DATA: SOIL PROFILE : $V_{S30} = 1033$ FT/S
MOMENT MAGNITUDE : 6.37
PEAK GROUND ACCELERATION = 0.28g
5% DAMPING



ARS CURVE
NO SCALE

REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See "CONCRETE STRENGTH AND TYPE LIMITS"
 $n = 8$



LEGEND:

- STRUCTURAL CONCRETE, BRIDGE ($f'_c = 3.6$ KSI @ 28 DAYS)
- STRUCTURAL CONCRETE, BRIDGE FOOTING ($f'_c = 3.6$ KSI @ 28 DAYS)
- STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER) ($f'_c = 4.0$ KSI)

CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

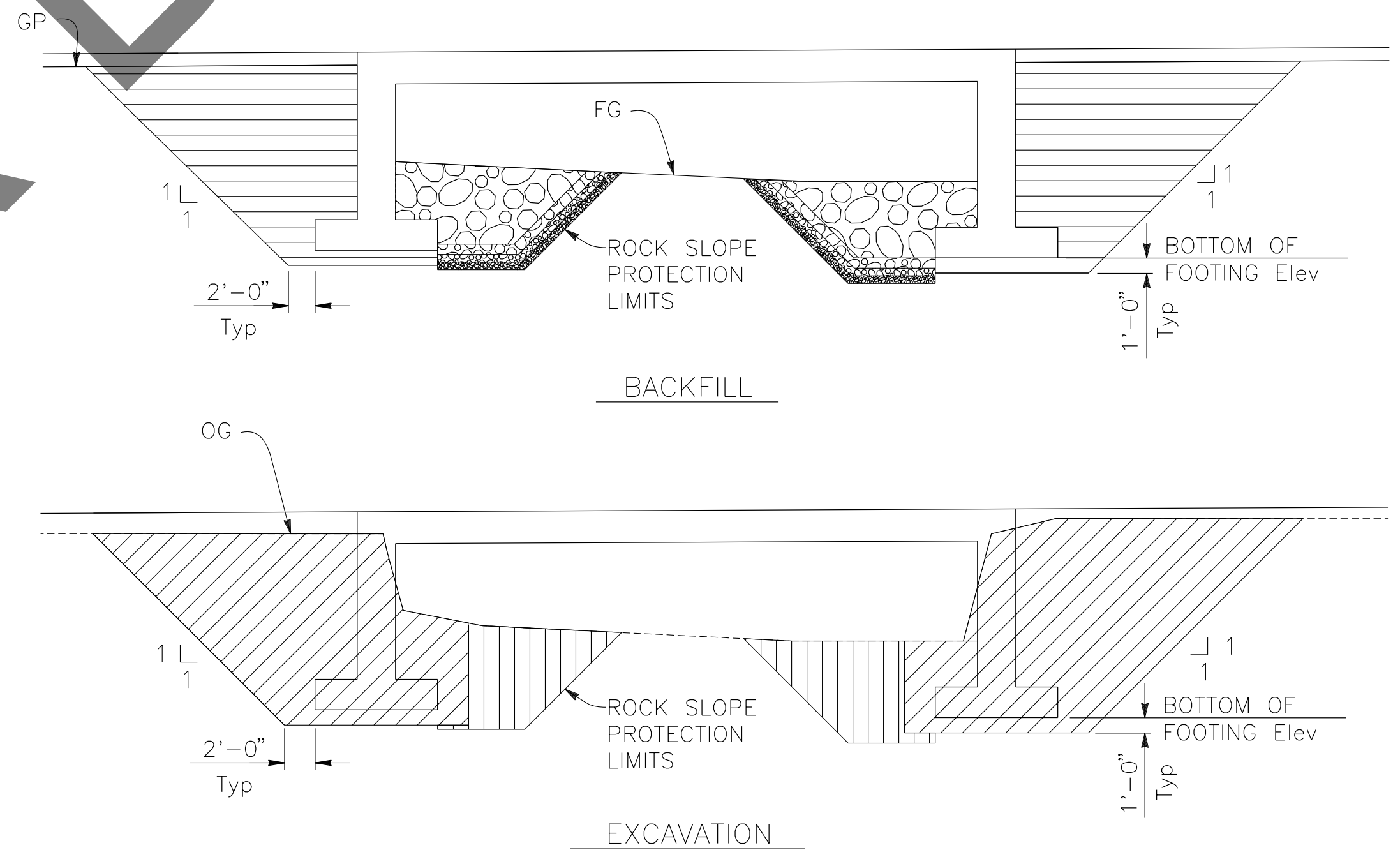
INDEX TO PLANS

SHEET No.	TITLE
167	GENERAL PLAN
168	INDEX TO PLANS
169	DECK CONTOURS
170	FOUNDATION PLAN
171	ABUTMENT LAYOUT
172	ABUTMENT DETAILS
173	SLAB DETAILS
174	ROCK SLOPE PROTECTION DETAILS
175	LOG OF TEST BORINGS 1 OF 2
176	LOG OF TEST BORINGS 2 OF 2



QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	420	CY
STRUCTURE EXCAVATION (BRIDGE)	680	CY
STRUCTURE BACKFILL (BRIDGE)	455	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	43	CY
STRUCTURAL CONCRETE, BRIDGE	79	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	113	CY
BAR REINFORCING STEEL (BRIDGE)	47790	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (300 LB, CLASS IV, METHOD B)	263	CY
GRAVEL FILTER (TYPE A)	54	CY
GRAVEL FILTER (TYPE B)	52	CY
GRAVEL FILTER (TYPE C)	64	CY
CONCRETE BARRIER (TYPE 85 MOD)	153	LF



LEGEND:

- STRUCTURE EXCAVATION (BRIDGE)
- STRUCTURE BACKFILL (BRIDGE)
- CHANNEL EXCAVATION
- ROCK SLOPE PROTECTION, SEE "ROCK SLOPE PROTECTION" SHEET.

NOTES:

FOR WINGWALL EXCAVATION & BACKFILL LIMITS
SEE STANDARD PLAN A62C.

**LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL**

NO SCALE

PREPARED BY:

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

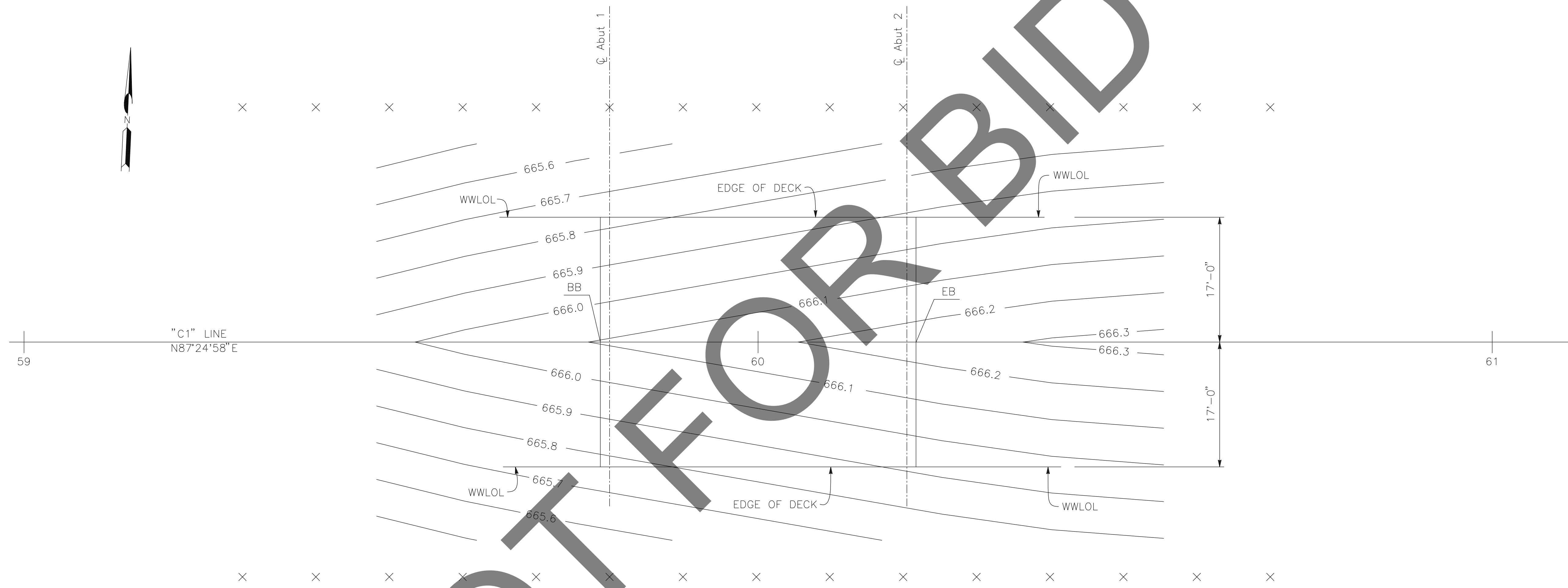
FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>[Signature]</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>[Signature]</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>[Signature]</i> 1/16/2025 MERVAT R. MIKHAL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
INDEX TO PLANS
CERULIA DITCH

J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 168	TOT. SHT'S. 240
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PLAN
 $\frac{1}{8}'' = 1'-0''$

- NOTES:**
- 0.1' CONTOUR INTERVALS SHOWN.
 - CONTOURS DO NOT INCLUDE CAMBER.
 - TOP OF CONCRETE DECK SHOWN.

- LEGEND:**
- × 10' INTERVALS ALONG STATION LINE.

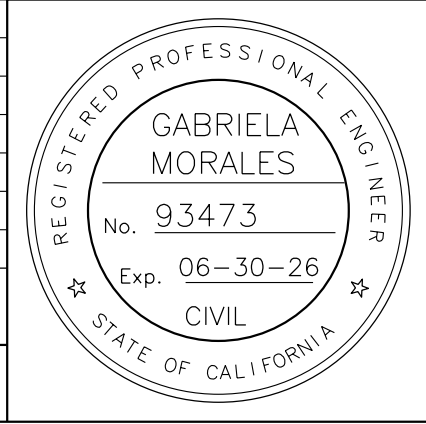
MARK	REVISIONS	APPR.	DATE
MARK	REVISIONS	APPR.	DATE

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24
 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei (Rocky) Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Michal</i> MERVAT R. MICHAL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES DECK CONTOURS CERULIA DITCH			
J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. TOT. SHT'S. 169 240

SCOUR DATA TABLE		
SUPPORT LOCATION	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
Abut 1	657.3	1.5
Abut 2	657.3	2.3

NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO NEW CONSTRUCTION.
2. PILES IN CONFLICT WITH PROPOSED BRIDGE MAY BE FULLY REMOVED OR PARTIALLY REMOVED PER SPECIFICATIONS.

LEGEND:

XX.X BOTTOM OF FOOTING ELEVATION (FT)

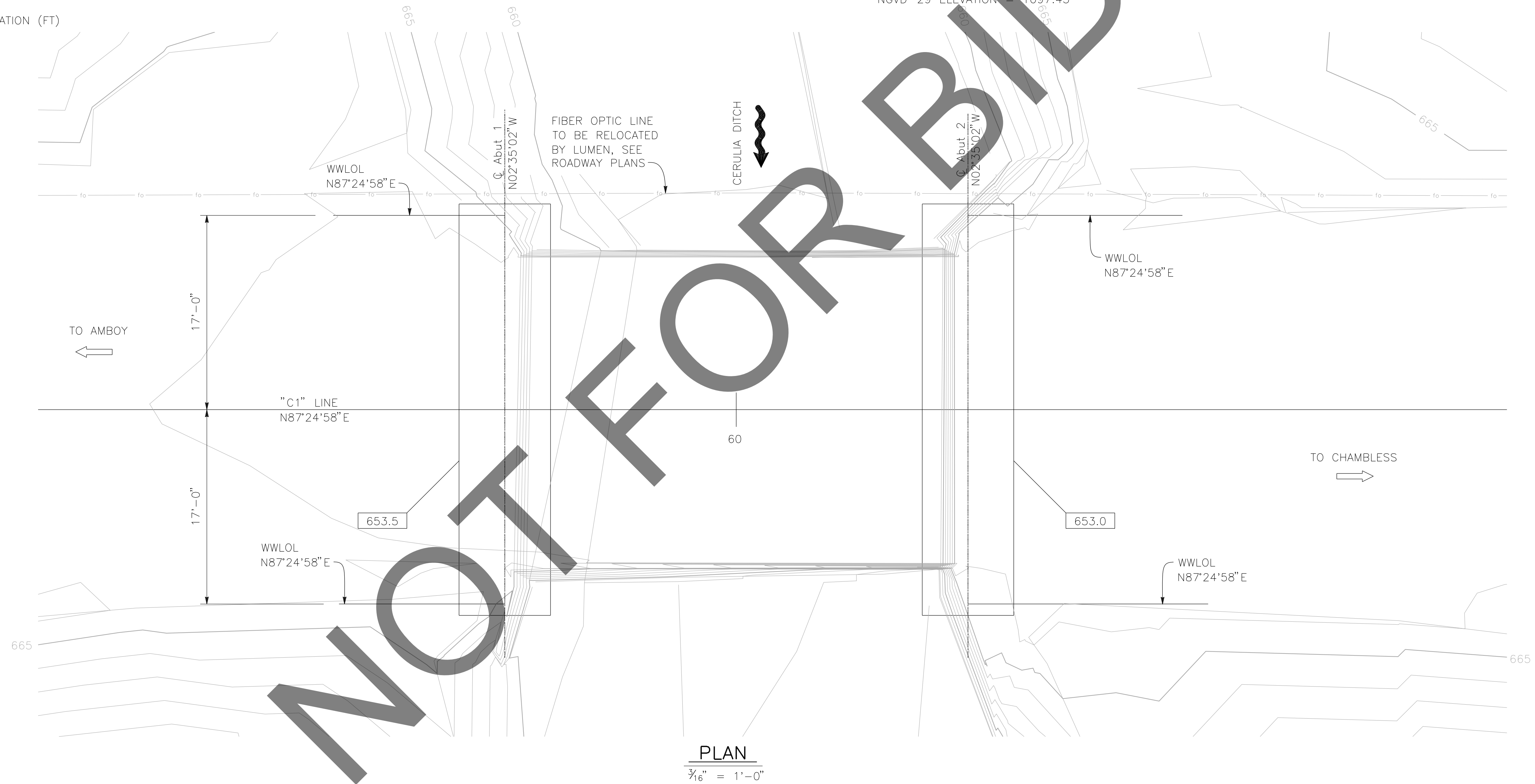
HYDROLOGIC SUMMARY		
	DESIGN FLOOD	Base Flood
FREQUENCY	50-YR	100-YR
DISCHARGE*	260 CFS	334 CFS
WATER SURFACE ELEVATION AT BRIDGE	660.7	661.0

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.
* BULKED DESIGN FLOWS

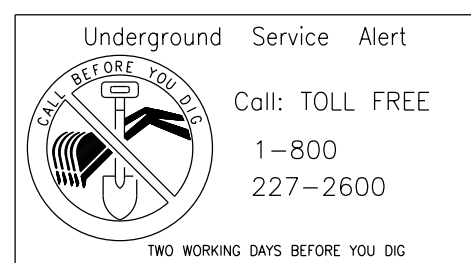
SPREAD FOOTING DATA TABLE			
SUPPORT LOCATION	SERVICE LIMIT STATE PERMISSIBLE NET CONTACT STRESS (KSF)	STRENGTH FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 0.45$	EXTREME EVENT FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 1.00$
Abut 1	3.6	5.4	11.7
Abut 2	3.6	5.5	11.7

BENCHMARK

FOUND 3.5" NGS BRASS DSC IN 10"x10" Conc Mnmt STAMPED "Z1308-1978 NATIONAL GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704. NGVD-29 ELEVATION = 1097.43'



PLAN
3/16" = 1'-0"

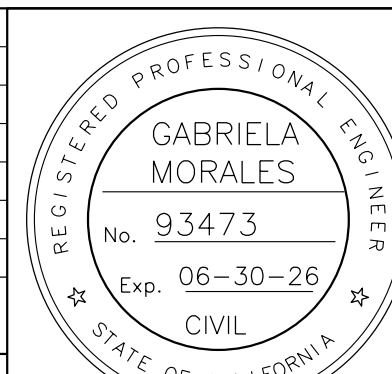


PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



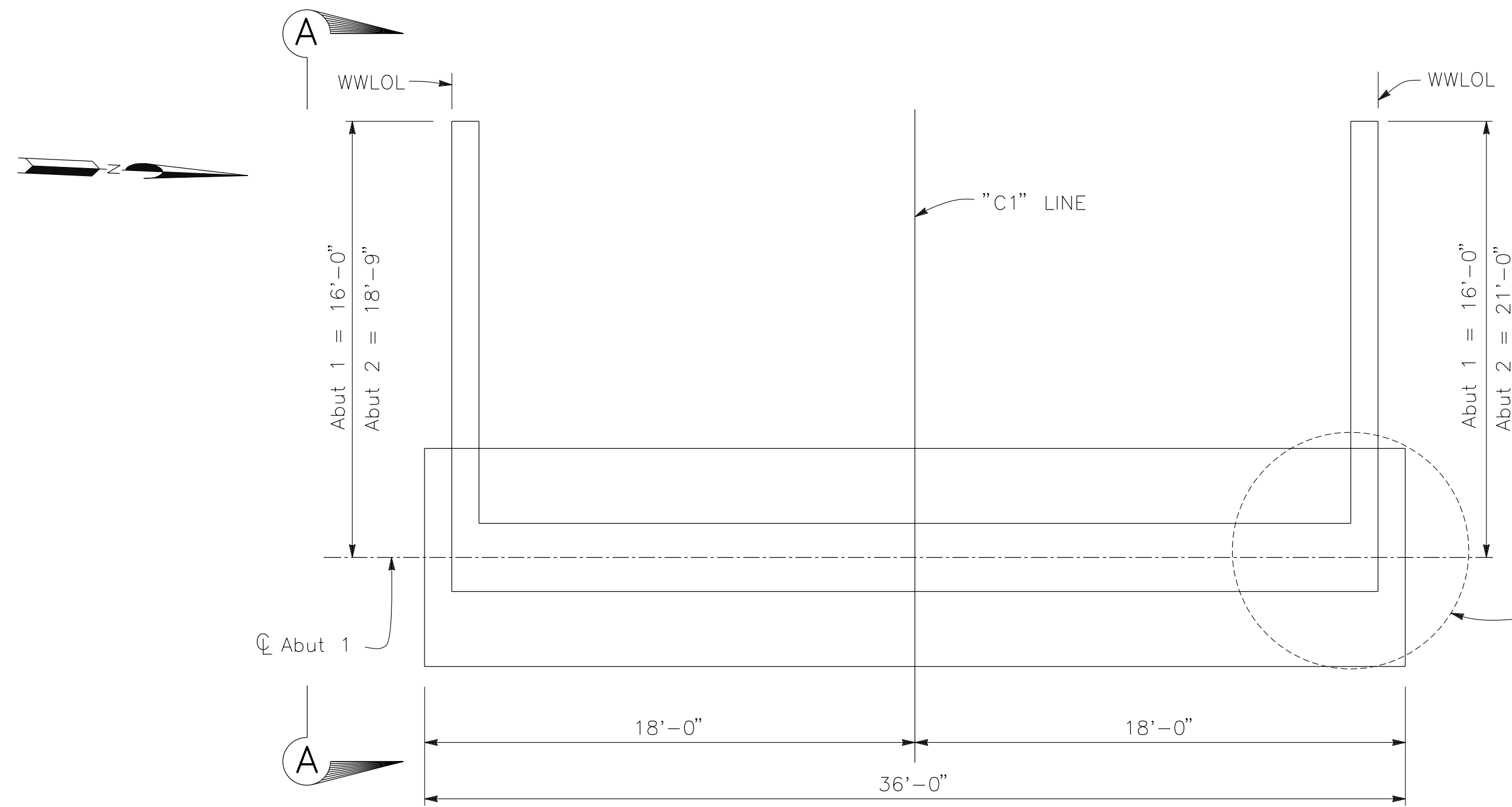
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Michal</i> 1/16/2025 MERVAT R. MICHAL, P.E. DEPUTY DIRECTOR

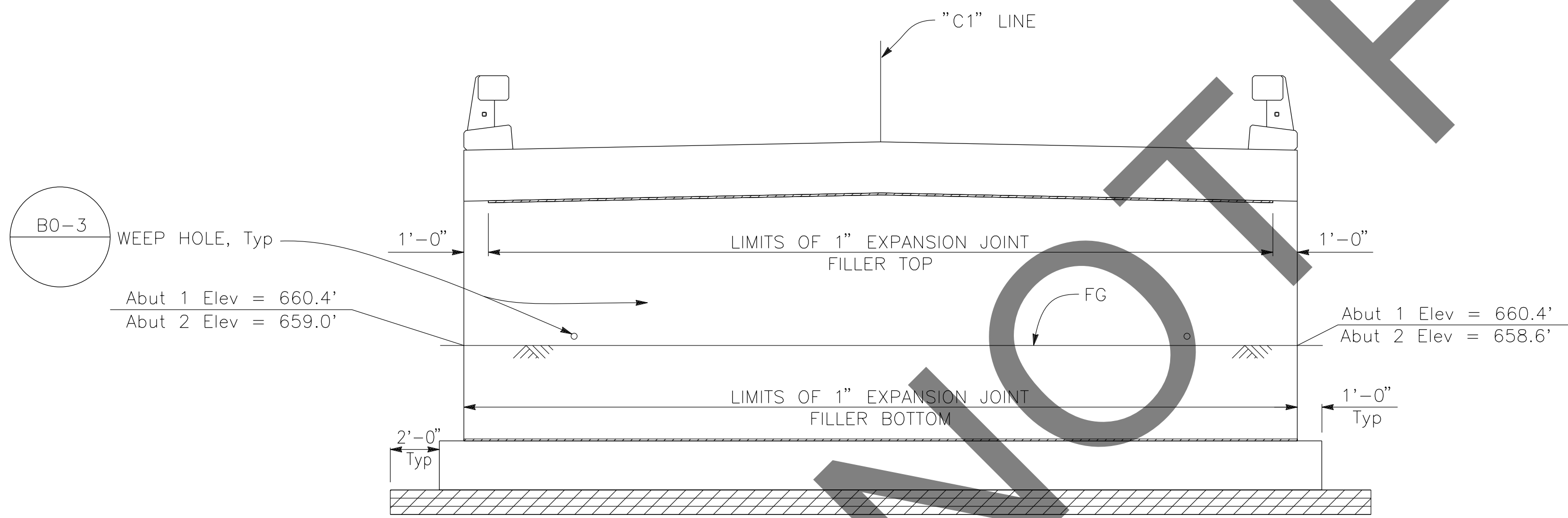
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
FOUNDATION PLAN
CERULIA DITCH

J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 170	TOT. SHT'S. 240
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MARK	REVISIONS	DATE

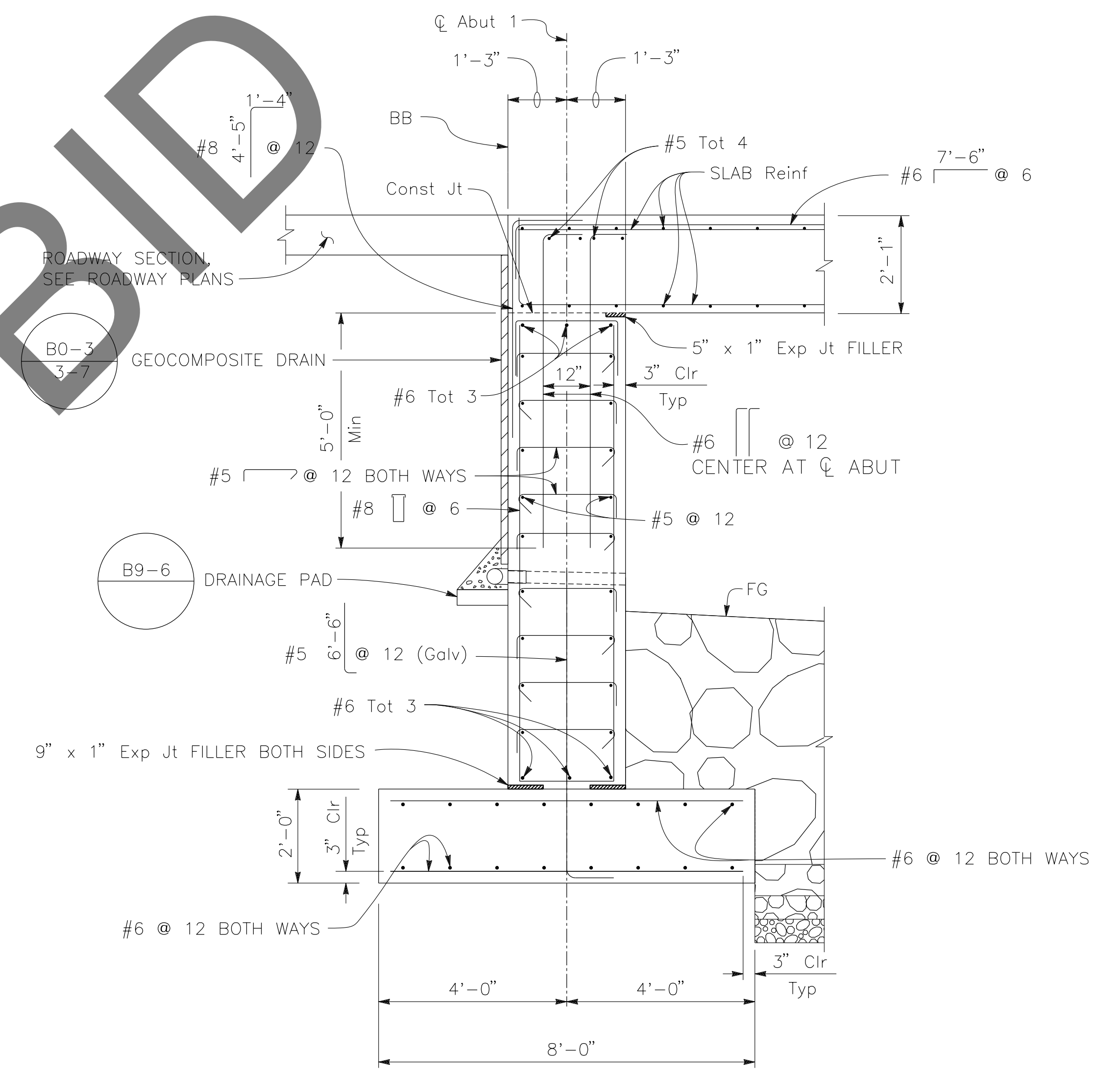


PLAN
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



ELEVATION
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

- LEGEND:**
- STRUCTURE EXCAVATION (BRIDGE)
 - STRUCTURE BACKFILL (BRIDGE)



TYPICAL SECTION
 $\frac{1}{2}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

- NOTES:**
1. FOR "VIEW A-A," SEE "ABUTMENT DETAILS" SHEET

REVISIONS	DATE	APPR.

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		
FIELD CHANGES			

REGISTERED PROFESSIONAL ENGINEER
 GABRIELA MORALES
 No. 93473
 Exp. 06-30-26
 CIVIL
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Michal</i> 1/16/2025 MERVAT R. MICHAL, P.E. DEPUTY DIRECTOR

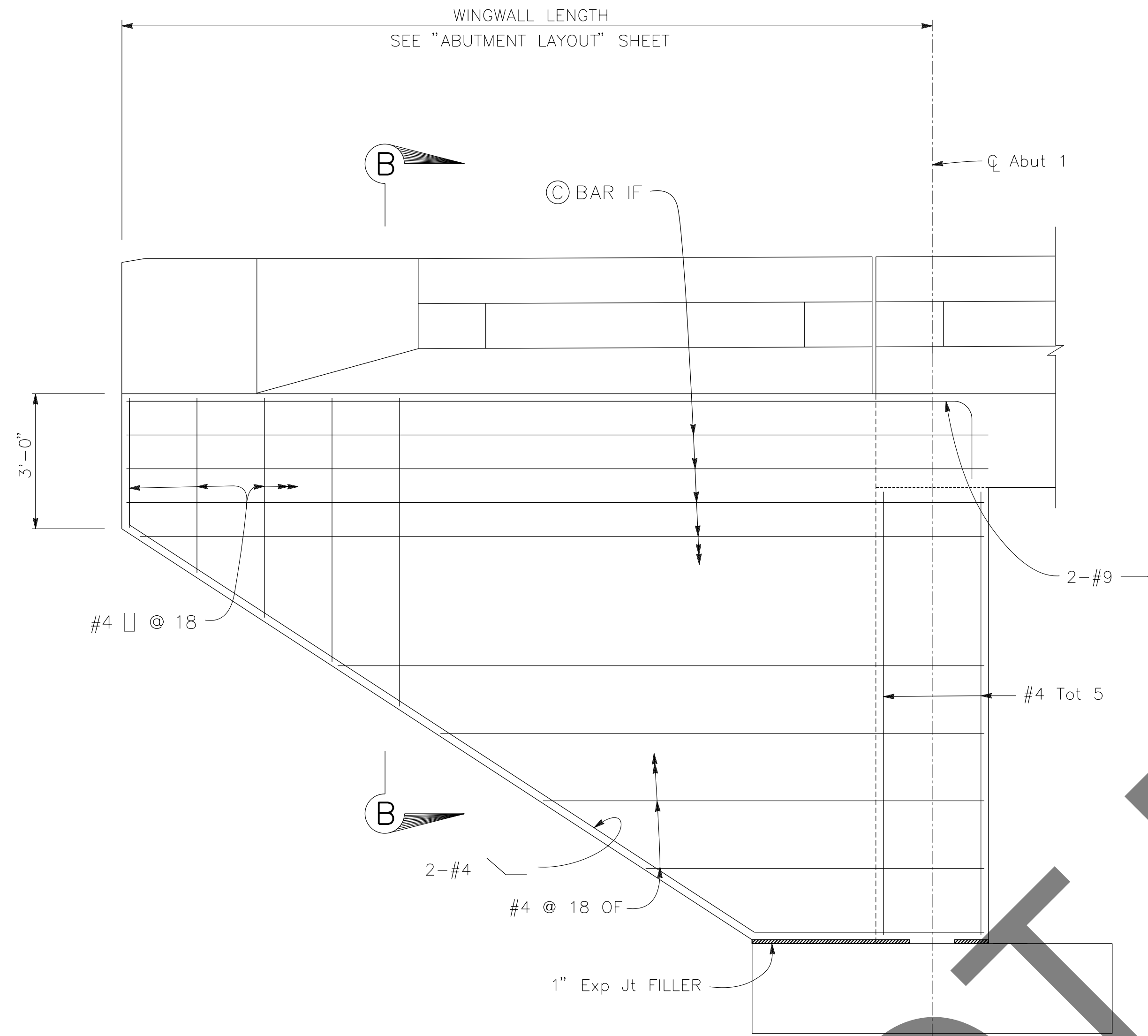
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES ABUTMENT LAYOUT CERULIA DITCH			
J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 171 TOT. SHT'S. 240

BAR	WINGWALL LENGTH		
	16'-0"	18'-9"	21'-0"
Ⓢ	#7 @ 9	#9 @ 9	#9 @ 9

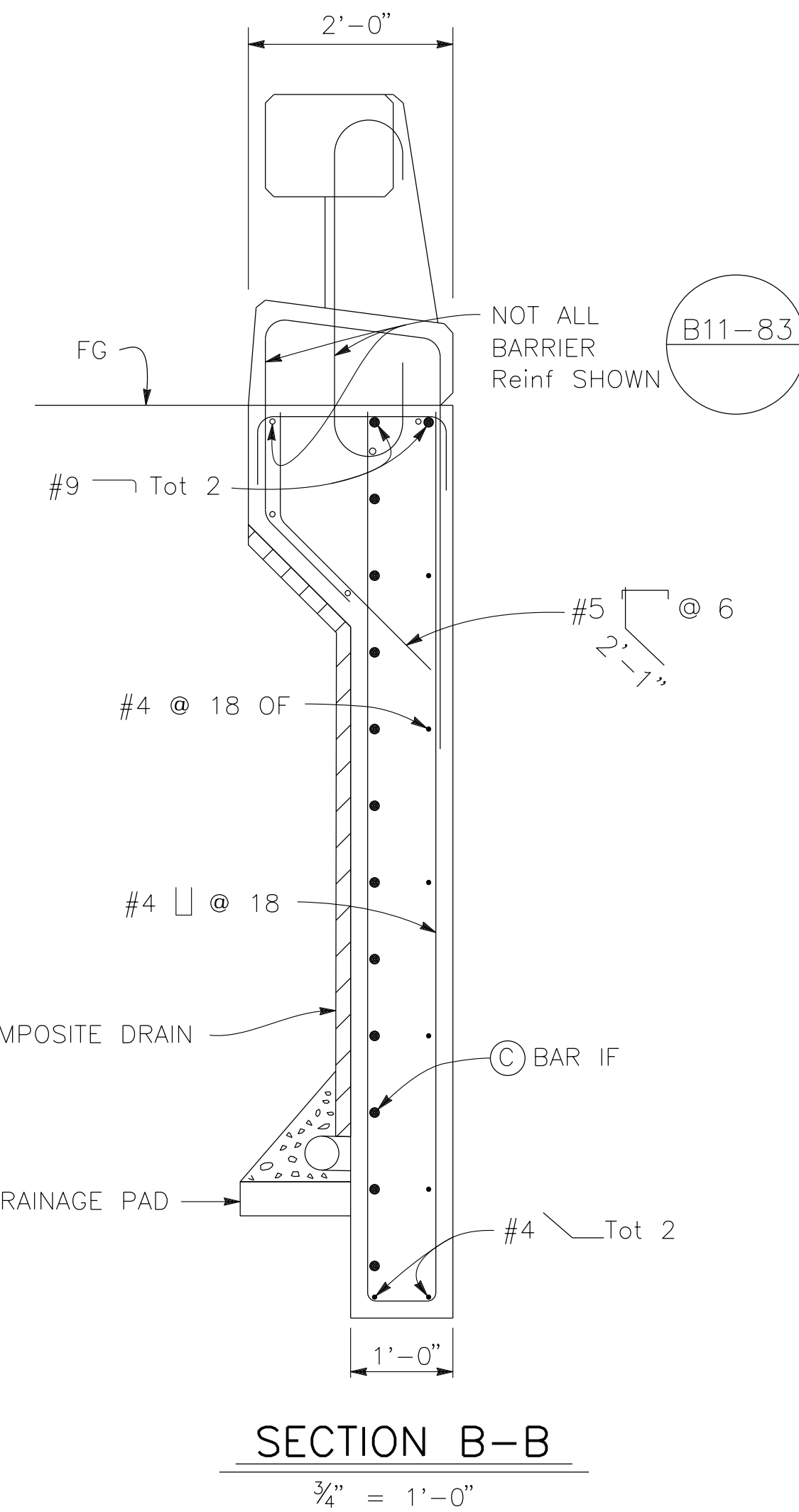
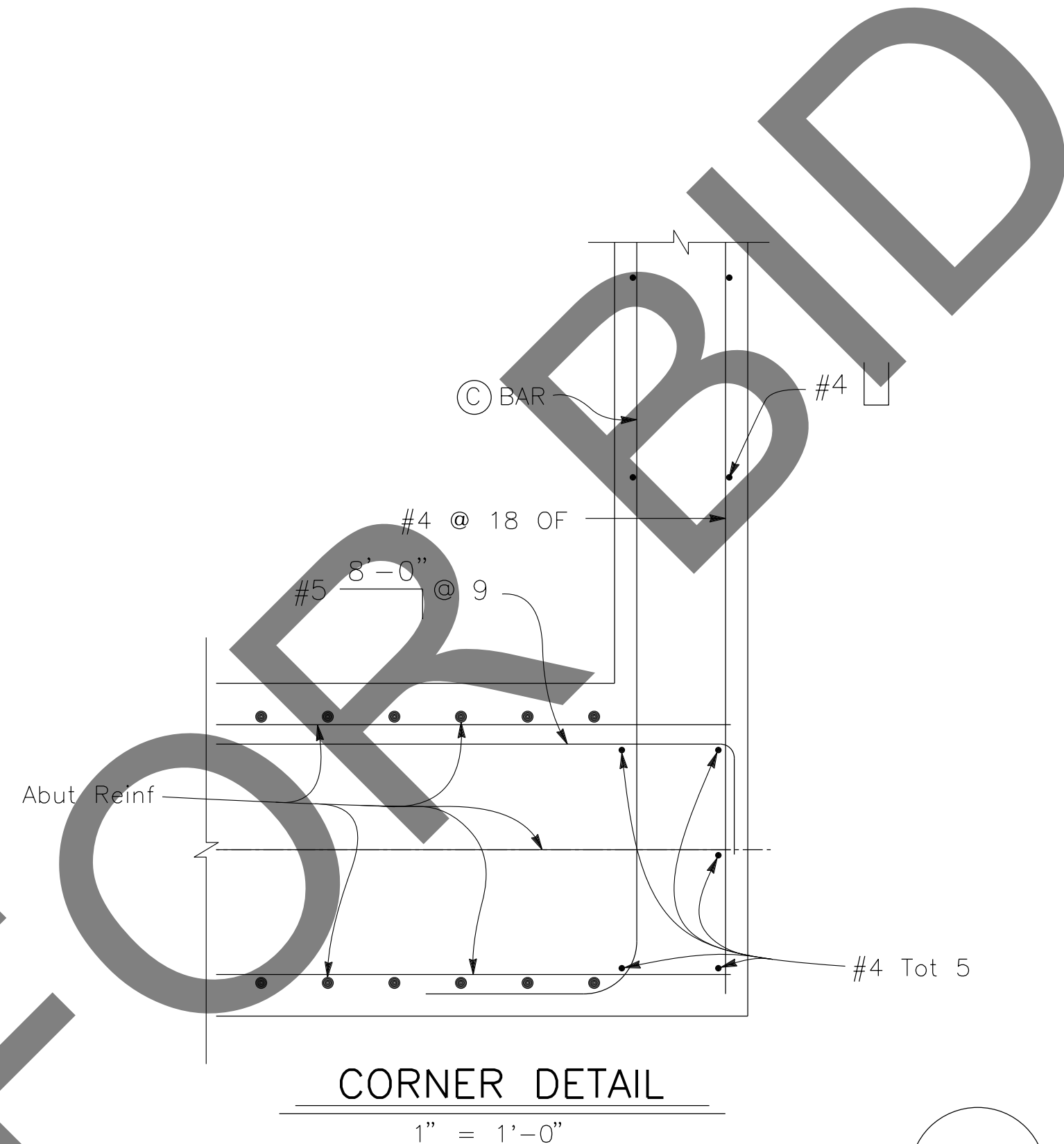
NOTES:

- FOR DETAILS NOT SHOWN, SEE

B0-3



VIEW A-A
1/2" = 1'-0"
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



B0-3
3-7
GEOCOMPOSITE DRAIN

B9-6
DRAINAGE PAD

B11-83

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER
12-16-24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

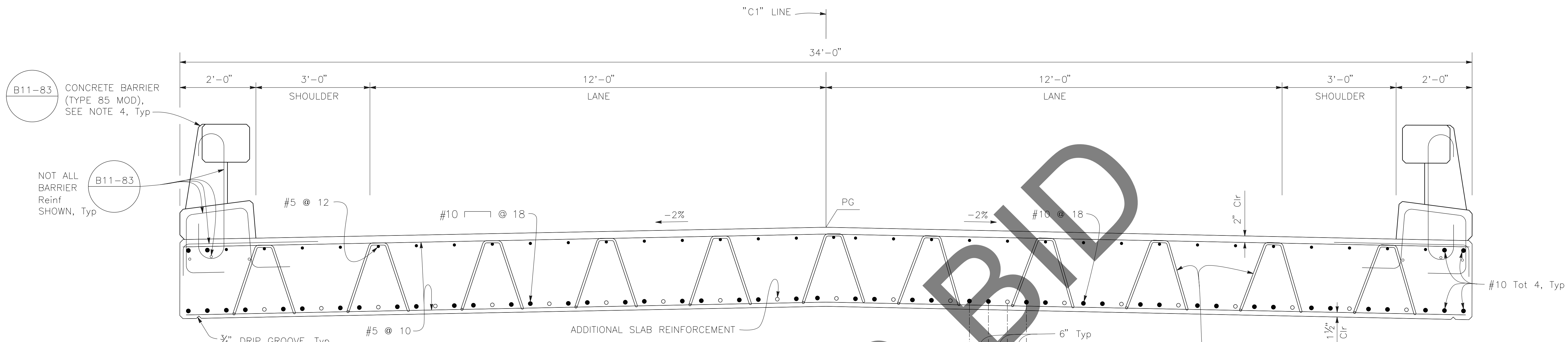
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat K. Khalil</i> MERVAT K. KHALIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

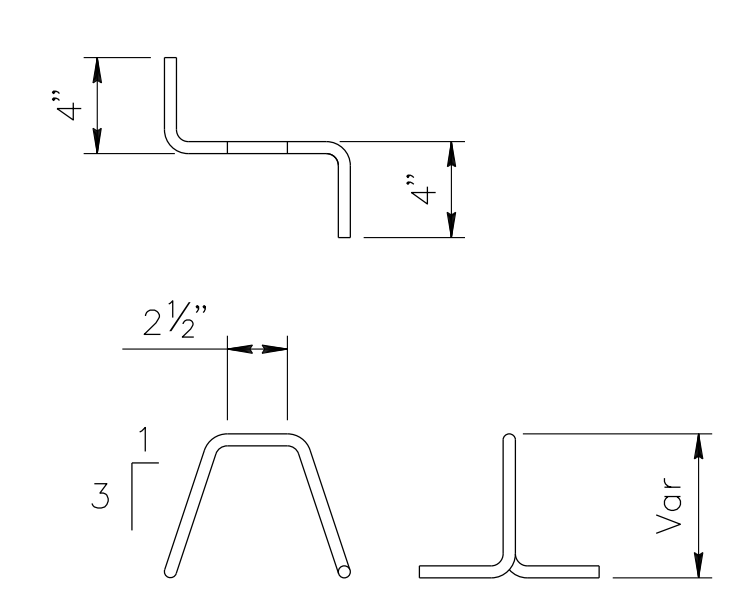
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
ABUTMENT DETAILS
CERULIA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11806	H14918	AS NOTED	172	240

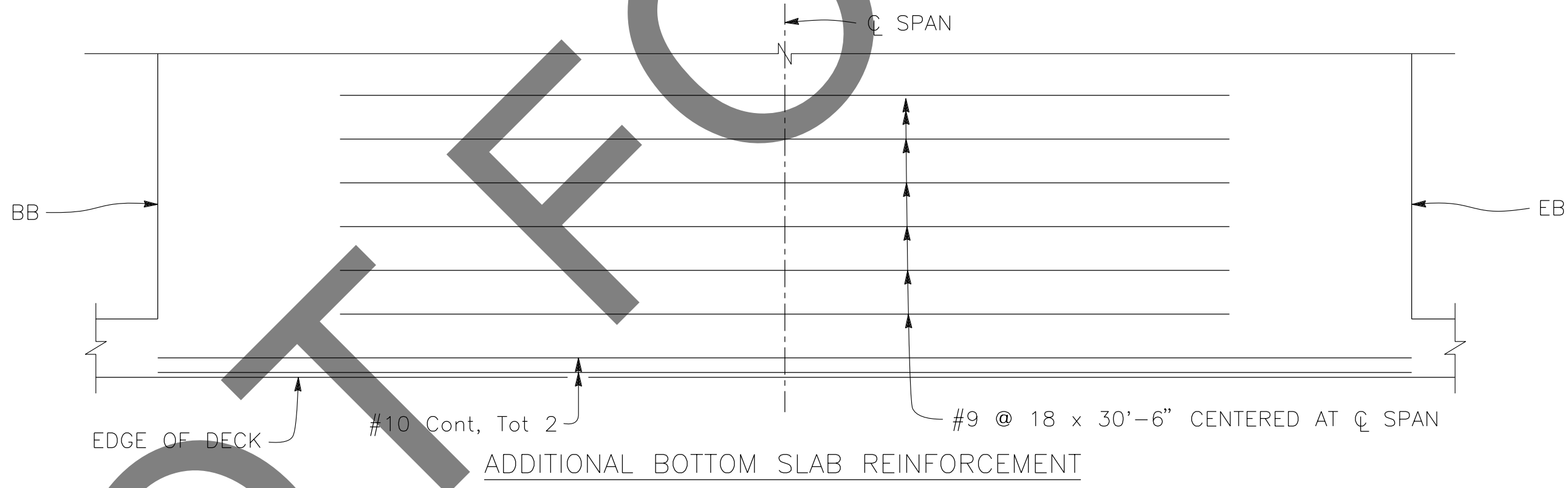
REVISIONS	DATE	APPR.



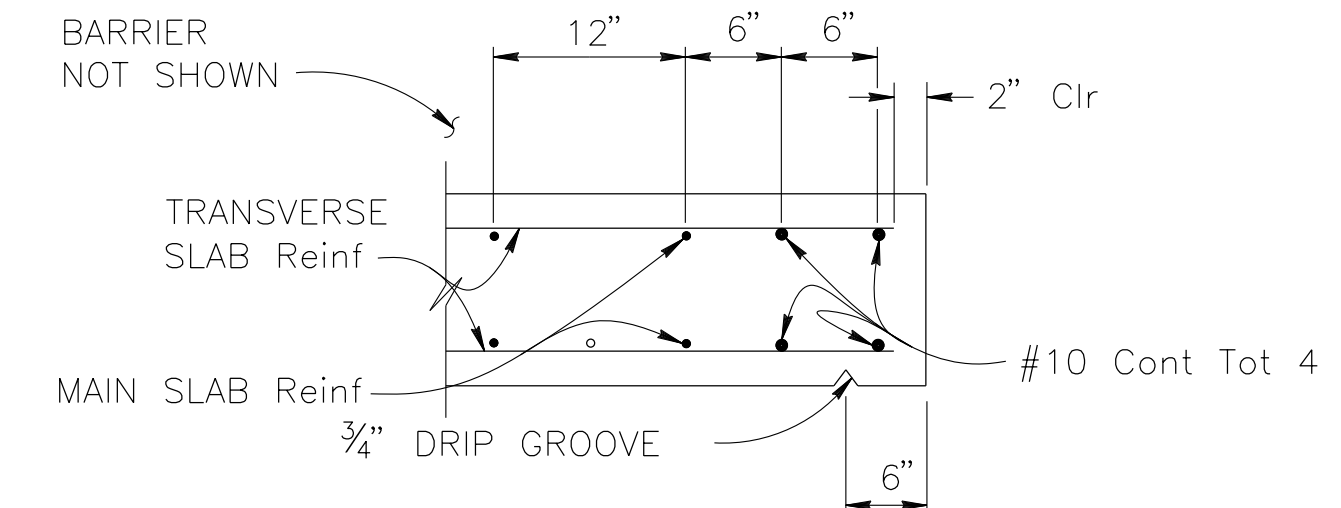
TYPICAL SECTION
3/4" = 1'-0"



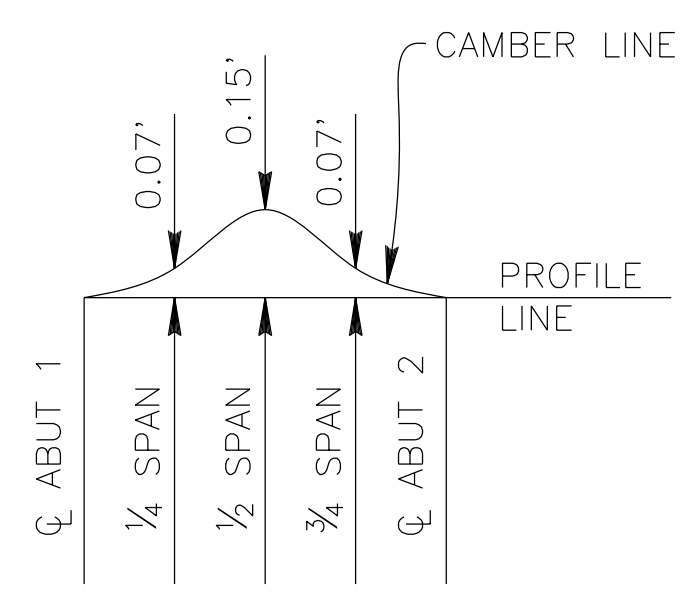
REINFORCEMENT CHAIR DETAIL
NO SCALE



PARTIAL PLAN
1/4" = 1'-0"



EDGE OF SLAB DETAILS
NO SCALE



CAMBER DIAGRAM
NO SCALE

- NOTES:
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO ϕ BRIDGE.
 2. PLACE TRANSVERSE REINFORCEMENT NORMAL TO ϕ BRIDGE.
 3. FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.
 4. ALL EXPOSED SURFACES OF THE BARRIER ABOVE THE SLAB TO BE PAINTED WHITE.

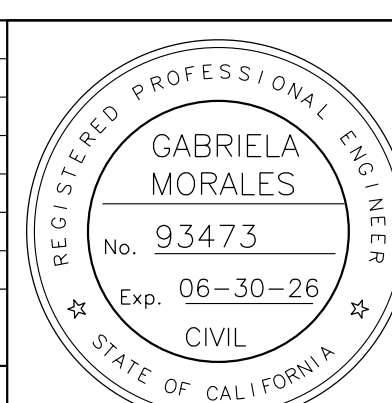
NOT FOR BIDD

PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: [Signature] 1/14/2025 DATE
APPROVED BY: [Signature] 1/15/2025 DATE			APPROVED BY: [Signature] 1/16/2025 DATE

LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES

SLAB DETAILS
CERULIA DITCH

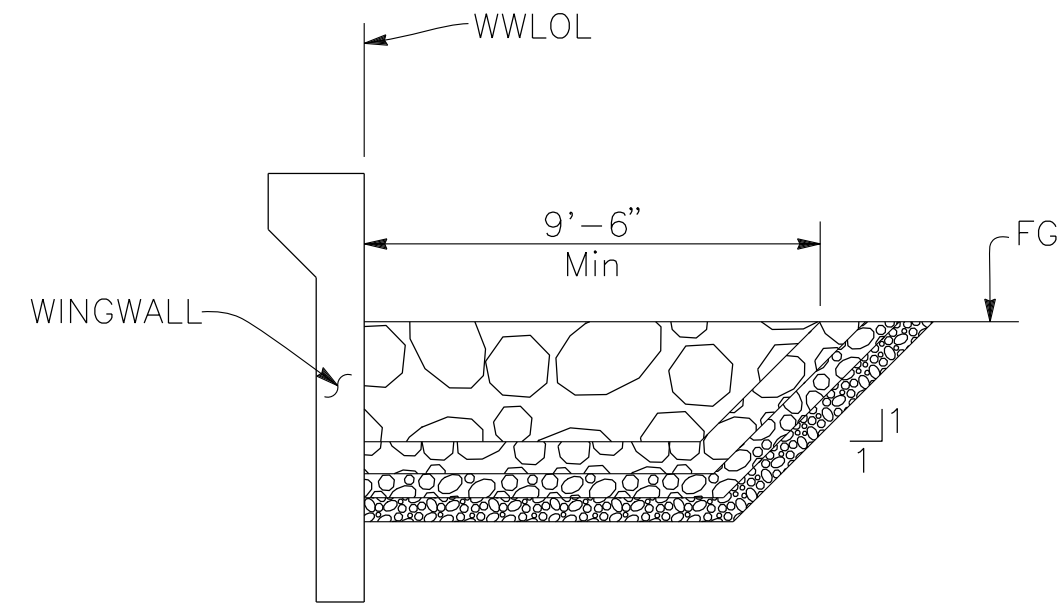
J.L. REF. J.L. 11806	W.D. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 173	TOT. SHT'S. 240
----------------------	-----------------	---------------------	--------------	-----------------

REVISIONS	DATE	APPR.

NOTES:

1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS

* SEE "LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET

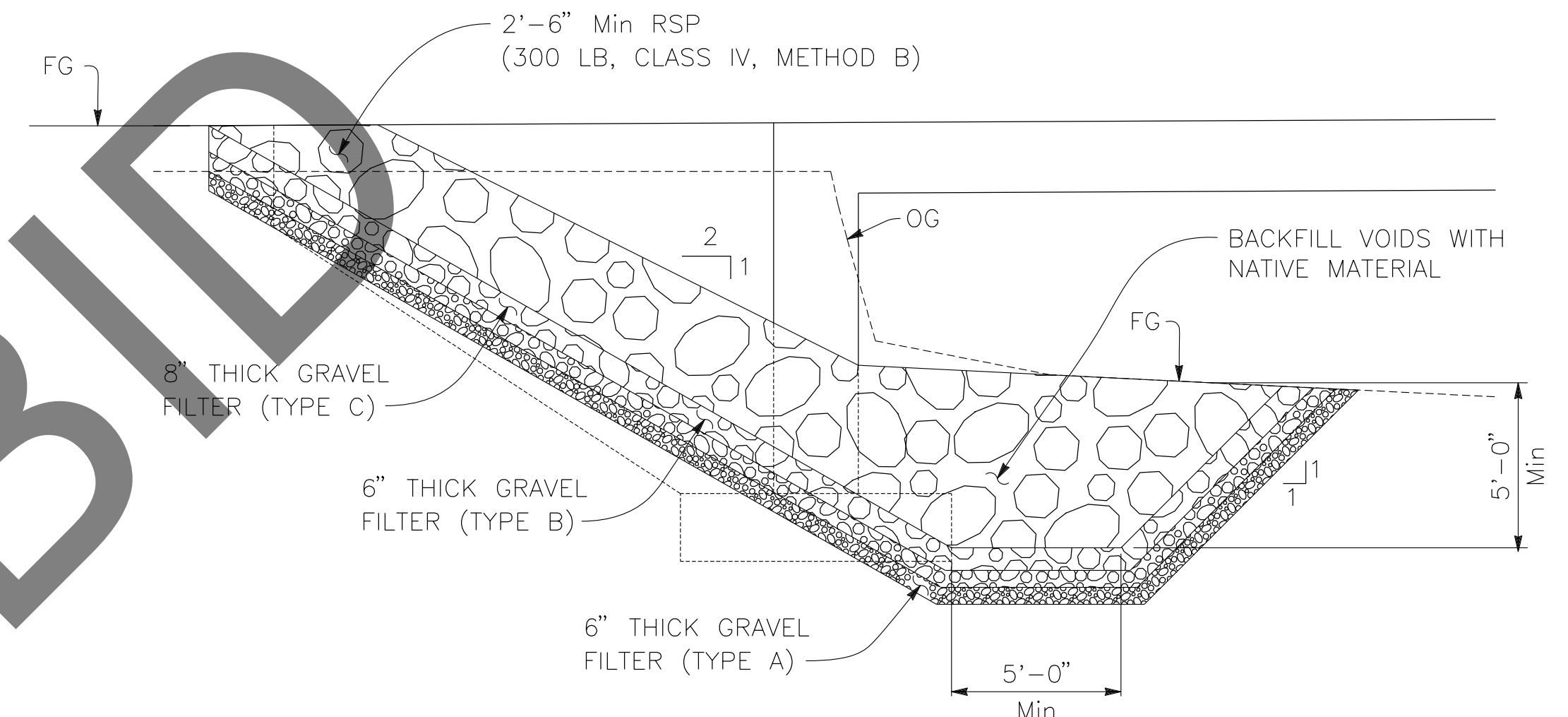


NOTE:
FOR DETAILS NOT SHOWN SEE
SECTION A-A

SECTION C-C

1/4" = 1'-0"

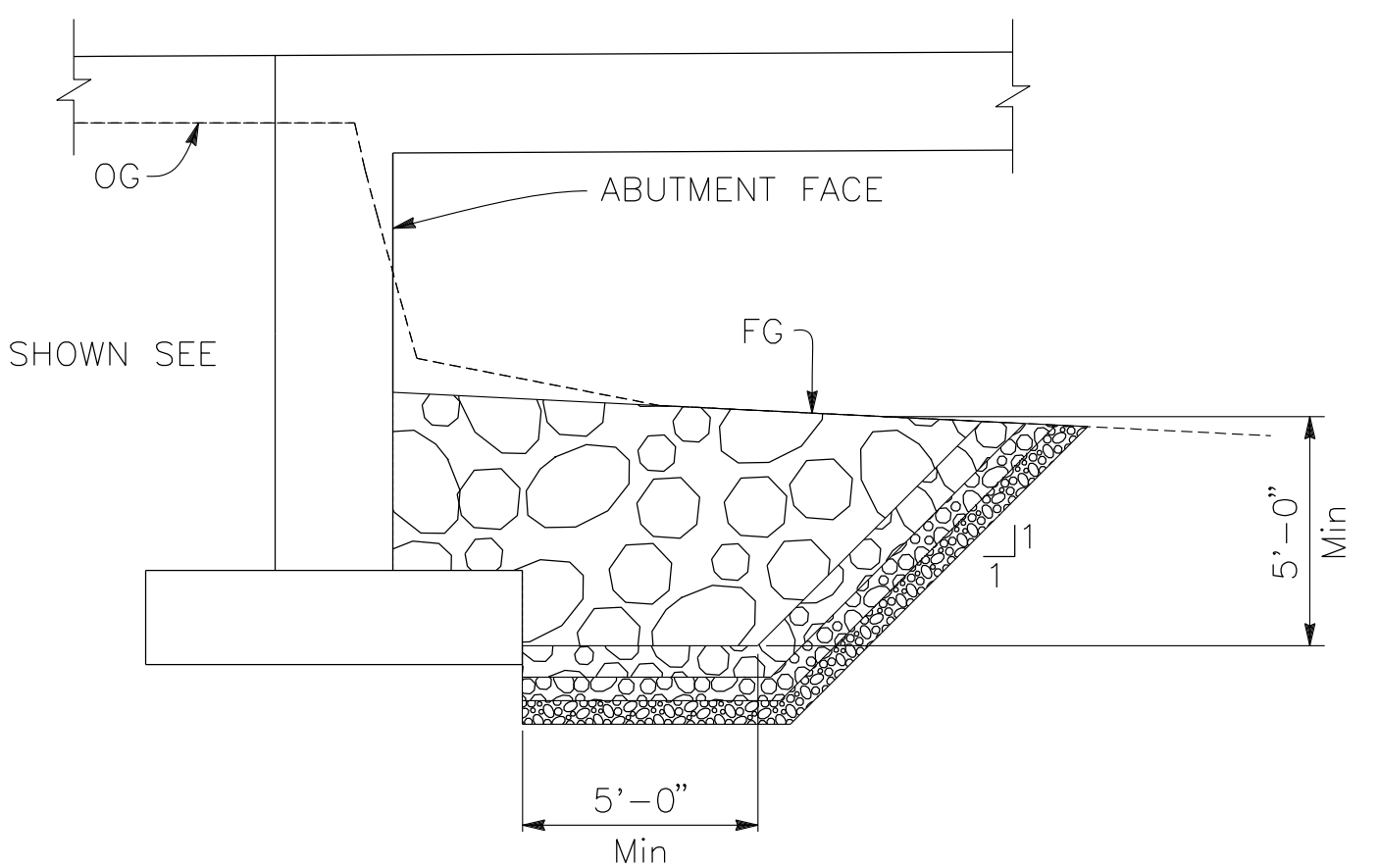
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.



SECTION A-A

1/4" = 1'-0"

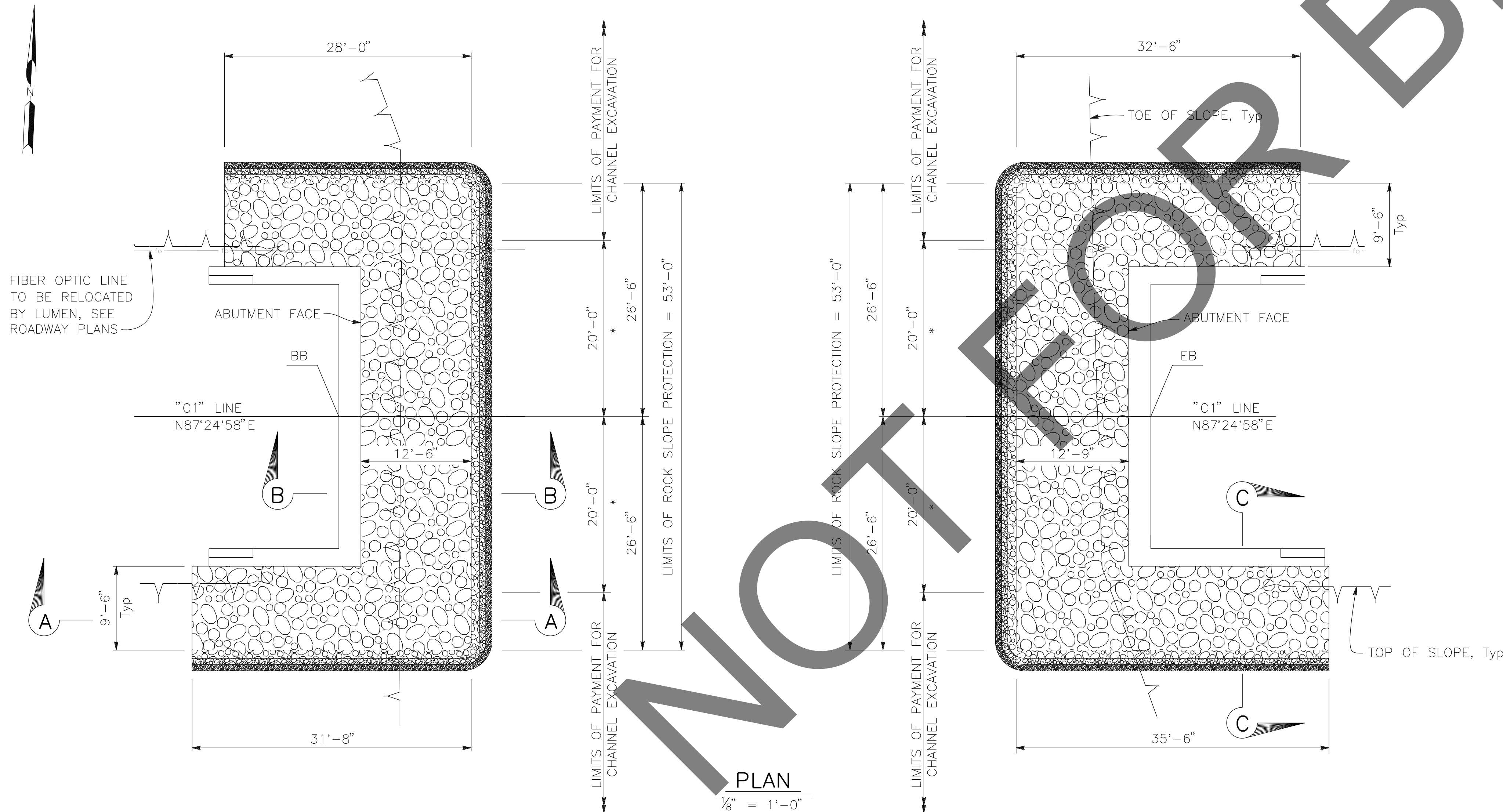
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.



SECTION B-B

1/4" = 1'-0"

ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.



PLAN

1/8" = 1'-0"

PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
GABRIELA MORALES
No. 93473
Exp. 06-30-26
CIVIL
STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: EG	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Michal</i> 1/16/2025 MERVAT R. MICHAL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
ROCK SLOPE PROTECTION DETAILS
CERULIA DITCH

J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 174	TOT. SHT'S. 240
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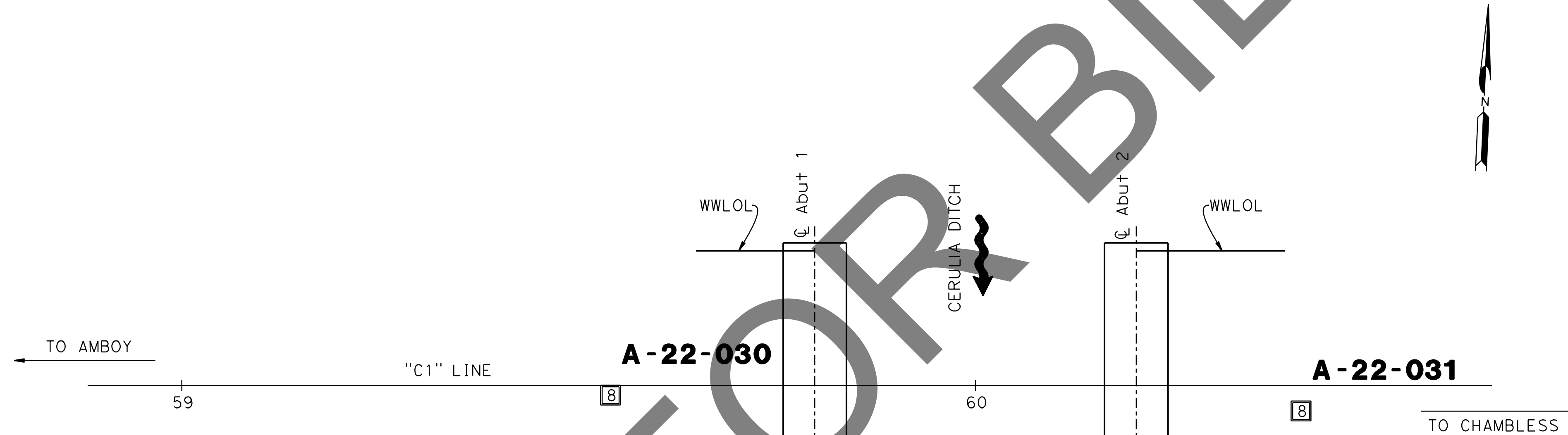
MARK	REVISIONS	DATE

NOTES:

- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans **A10F** and **A10G**.

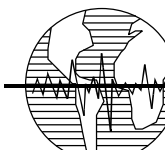
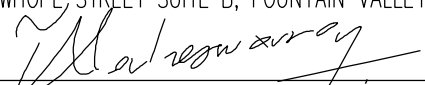
BOREHOLE LOCATION TABLE

Hole ID	Alignment Name	Station and Offset
A-22-030	"C1" Line	59+54 1.2 Rt.
A-22-031	"C1" Line	60+41 3.2 Rt.



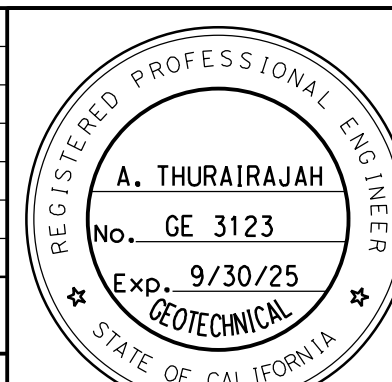
PLAN
1" = 10'

NOT FOR BID

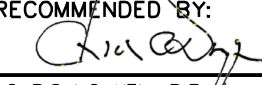
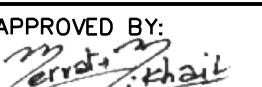
PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826

 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



**SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS**

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY:  CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY:  MERVAT K. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025			DATE: 1/16/2025

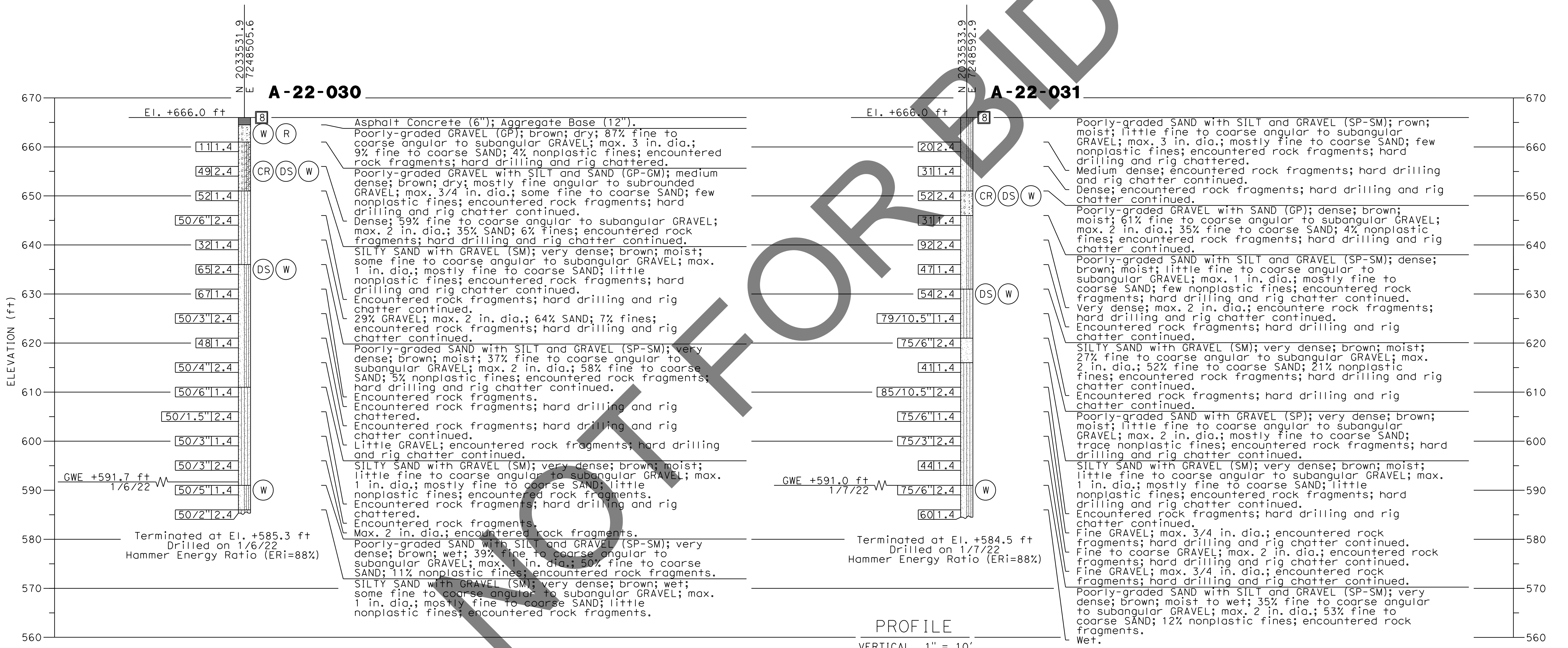
**BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
LOG OF TEST BORINGS 1 OF 2
CERULIA DITCH**

J.L. REF. J.L. 11806	W.O. NO. H14918	PLAN SCALE AS NOTED	SHT. NO. 175	TOT. SHT'S. 240
-------------------------	--------------------	------------------------	-----------------	--------------------

REVISIONS	DATE	APPR.

BENCH MARK:
 FOUND 3.5" NGS BRASS DISC IN 10"x10"
 Conc Mnmt STAMPED "Z1308-1978 NATIONAL
 GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'

NOTE:
 This LOTB sheet (Boring Record) was prepared in accordance with Caltrans
 Soil and Rock Logging, Classification and Presentation Manual (2022).



REVISIONS	DATE	APPR.

PREPARED BY:

 Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24

MARK	CHANGES	RESIDENT ENGINEER	DATE

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 A. THURAIRAJAH
 No. GE 3123
 EXP. 9/30/25
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025
			APPROVED BY: MERVAT K. MIKHAL, P.E. / DEPUTY DIRECTOR 1/16/2025

LEI (ROCKY) L. P.E. SUPERVISING ENGINEER 1/15/2025

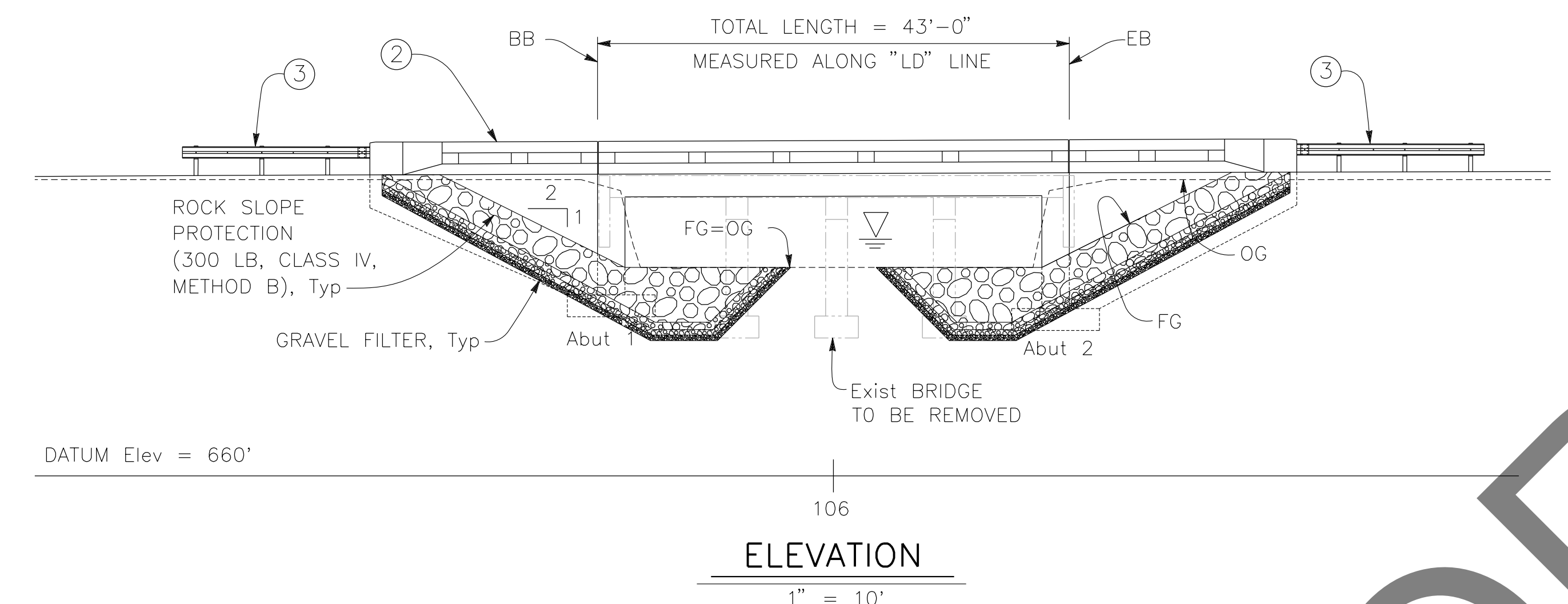
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
LOG OF TEST BORINGS 2 OF 2
CERULIA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11806	H14918	AS NOTED	176	240

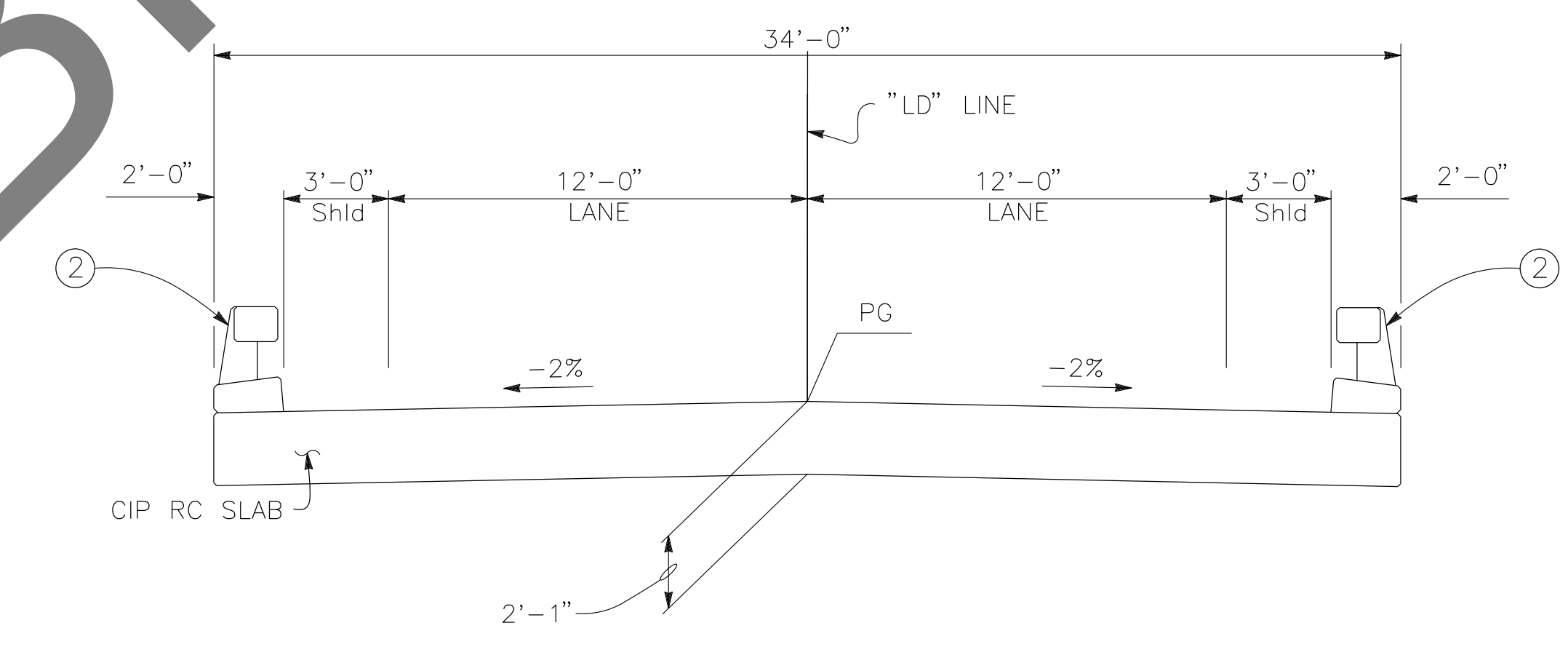


- NOTES:**
- FOR TEMPORARY DETOUR DURING CONSTRUCTION, SEE ROADWAY PLANS.
 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD OR DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

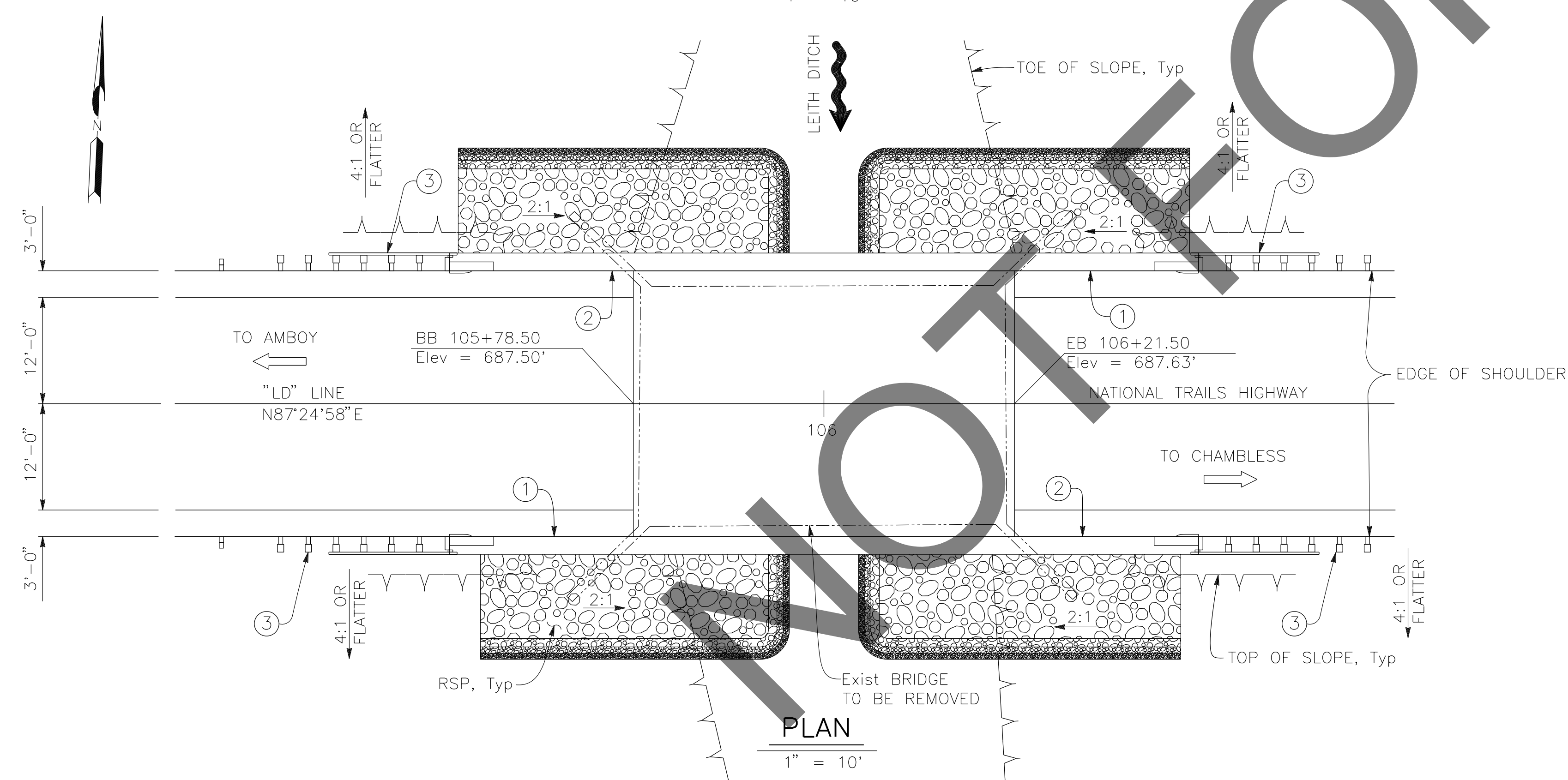
PROFILE GRADE
NO SCALE



ELEVATION
1" = 10'



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



PLAN
1" = 10'

- LEGEND:**
- ① PAINT "LEITH DITCH BRIDGE" "BR NO. 54C0814" AND YEAR CONSTRUCTED
 - ② CONCRETE BARRIER (TYPE 85 MOD), TO BE PAINTED WHITE.
 - ③ MGS, SEE ROADWAY PLANS
 - ▽ WATER SURFACE ELEVATION, FOR "HYDROLOGIC SUMMARY" TABLE, SEE "FOUNDATION PLAN" SHEET.
 - EXISTING STRUCTURE, TO BE REMOVED

REVISIONS	DATE	APPR.

PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
DONGXUAN YANG
No. 94542
Exp. 03-31-25
CIVIL
STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
GENERAL PLAN
LEITH DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11803	H14915	AS NOTED	177	240

**GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN**

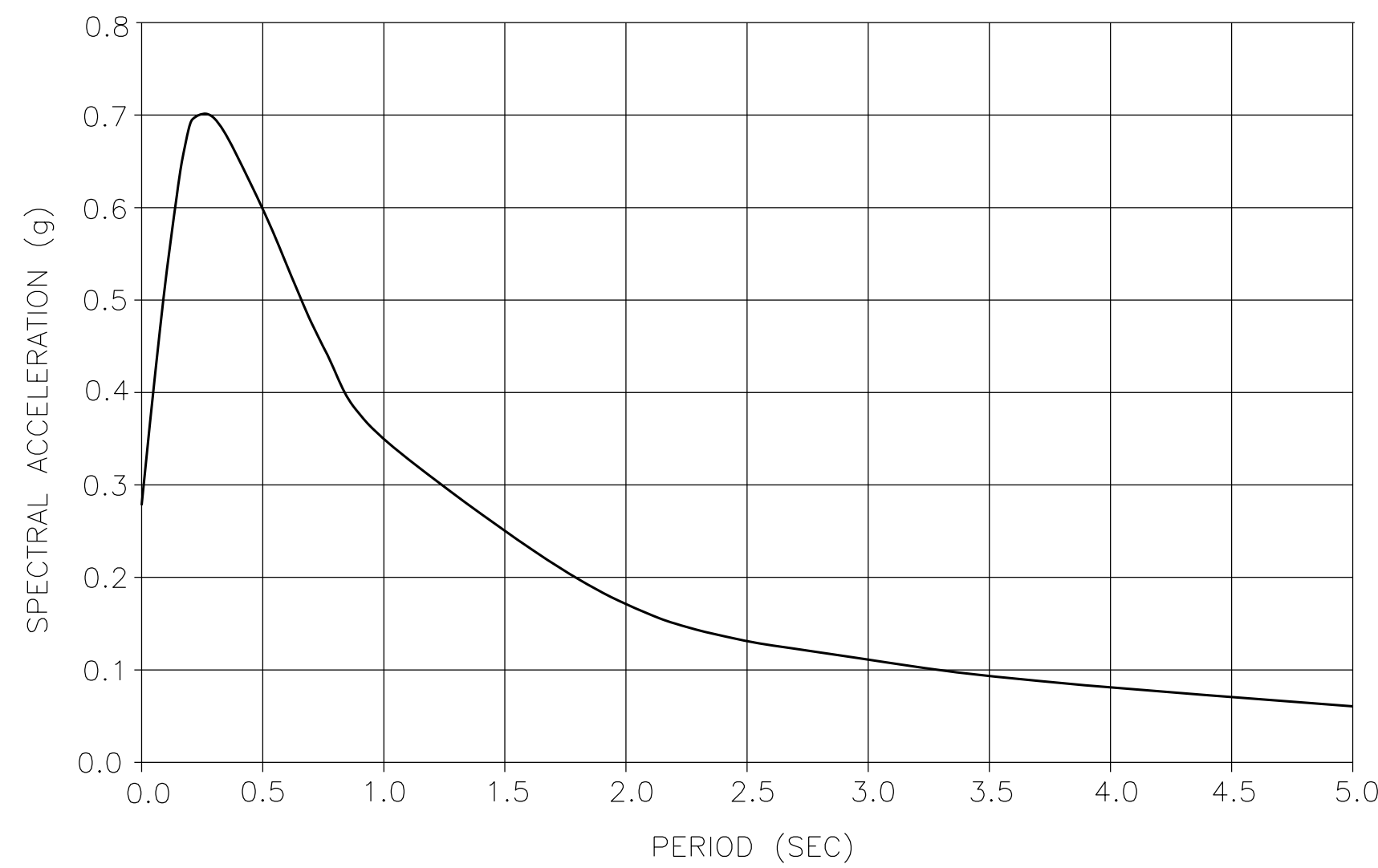
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE DATED JUNE 2024
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION WITH REVISED STANDARD PLANS, DATED OCTOBER 2024

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 2.0, APRIL 2019

DEAD LOAD: INCLUDES 0.035 KSF FOR FUTURE WEARING SURFACE

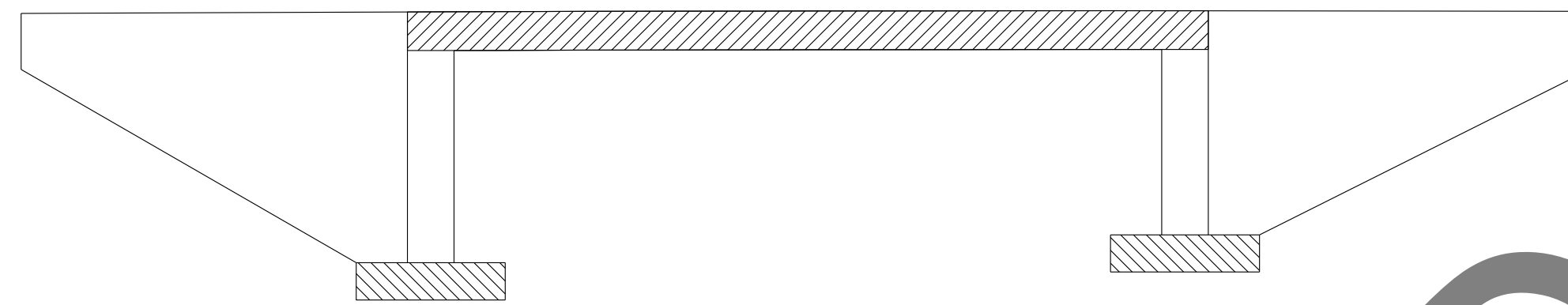
LIVE LOAD: HL-93 AND PERMIT DESIGN LOAD

SEISMIC DATA: SOIL PROFILE : $V_{S30} = 1033$ FT/S
MOMENT MAGNITUDE : 6.38
PEAK GROUND ACCELERATION = 0.28g
5% DAMPING



ARS CURVE
NO SCALE

REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See "CONCRETE STRENGTH AND TYPE LIMITS"
 $n = 8$



- LEGEND:**
- STRUCTURAL CONCRETE, BRIDGE ($f'_c = 3.6$ KSI @ 28 DAYS)
 - STRUCTURAL CONCRETE, BRIDGE FOOTING ($f'_c = 3.6$ KSI @ 28 DAYS)
 - STRUCTURAL CONCRETE, BRIDGE POLYMER FIBER ($f'_c = 4.0$ KSI)

CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

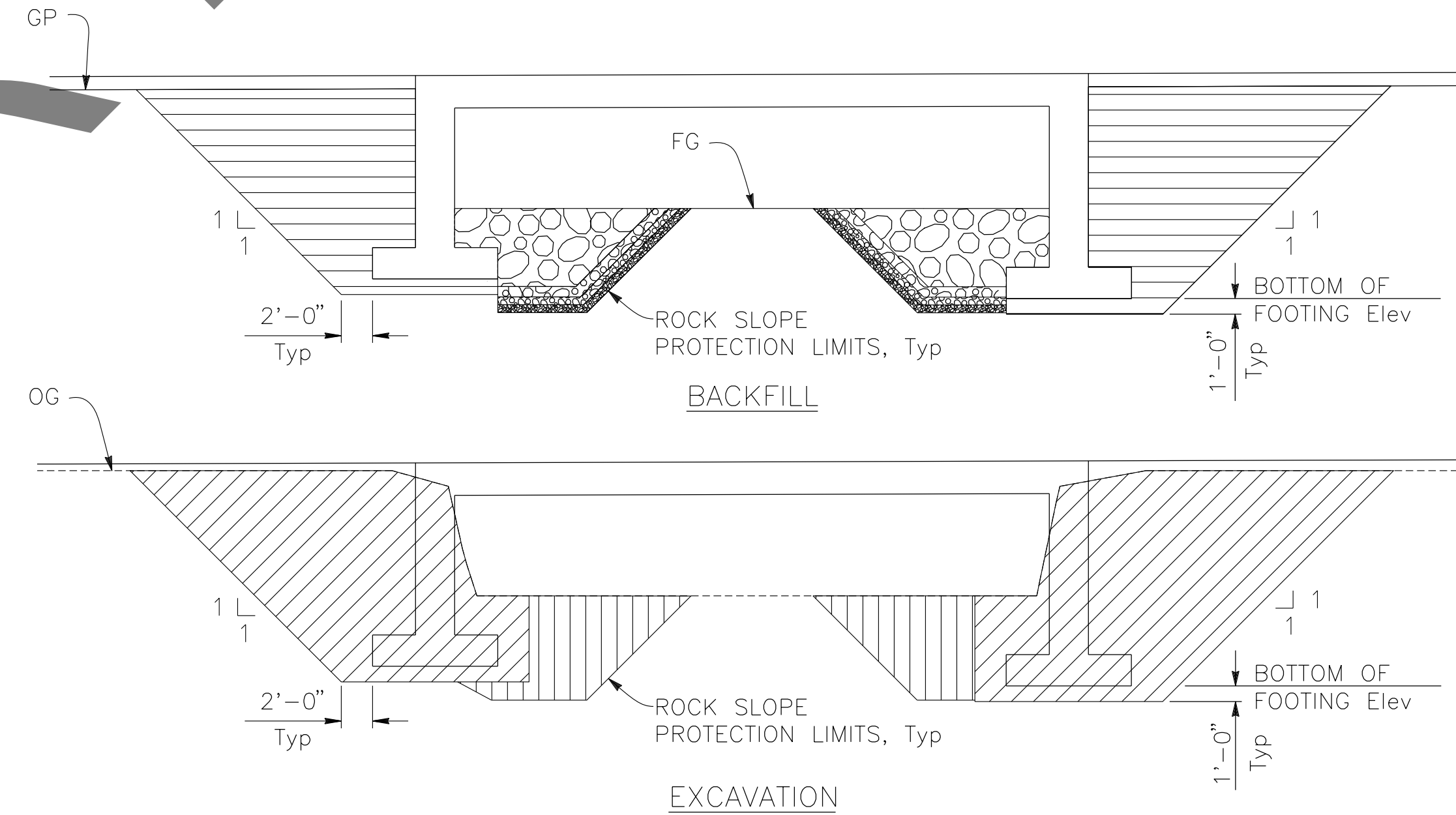
INDEX TO PLANS

SHEET No.	TITLE
177	GENERAL PLAN
178	INDEX TO PLANS
179	DECK CONTOURS
180	FOUNDATION PLAN
181	ABUTMENT LAYOUT
182	ABUTMENT DETAILS
183	SLAB DETAILS
184	ROCK SLOPE PROTECTION DETAILS
185	LOG OF TEST BORINGS 1 OF 2
186	LOG OF TEST BORINGS 2 OF 2

STANDARD PLAN SHEET No.
DETAIL No.

QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	405	CY
STRUCTURE EXCAVATION (BRIDGE)	720	CY
STRUCTURE BACKFILL (BRIDGE)	470	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	43	CY
STRUCTURAL CONCRETE, BRIDGE	89	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	113	CY
BAR REINFORCING STEEL (BRIDGE)	53110	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (300 LB, CLASS IV, METHOD B)	264	CY
GRAVEL FILTER (TYPE A)	58	CY
GRAVEL FILTER (TYPE B)	56	CY
GRAVEL FILTER (TYPE C)	68	CY
CONCRETE BARRIER (TYPE 85 MOD)	169	LF



NOTES:
FOR WINGWALL EXCAVATION & BACKFILL LIMITS
SEE STANDARD PLAN A62C.

- LEGEND:**
- STRUCTURE EXCAVATION (BRIDGE)
 - STRUCTURE BACKFILL (BRIDGE)
 - CHANNEL EXCAVATION
 - ROCK SLOPE PROTECTION, SEE "ROCK SLOPE PROTECTION DETAILS" SHEET

**LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL**

NO SCALE

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER
12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

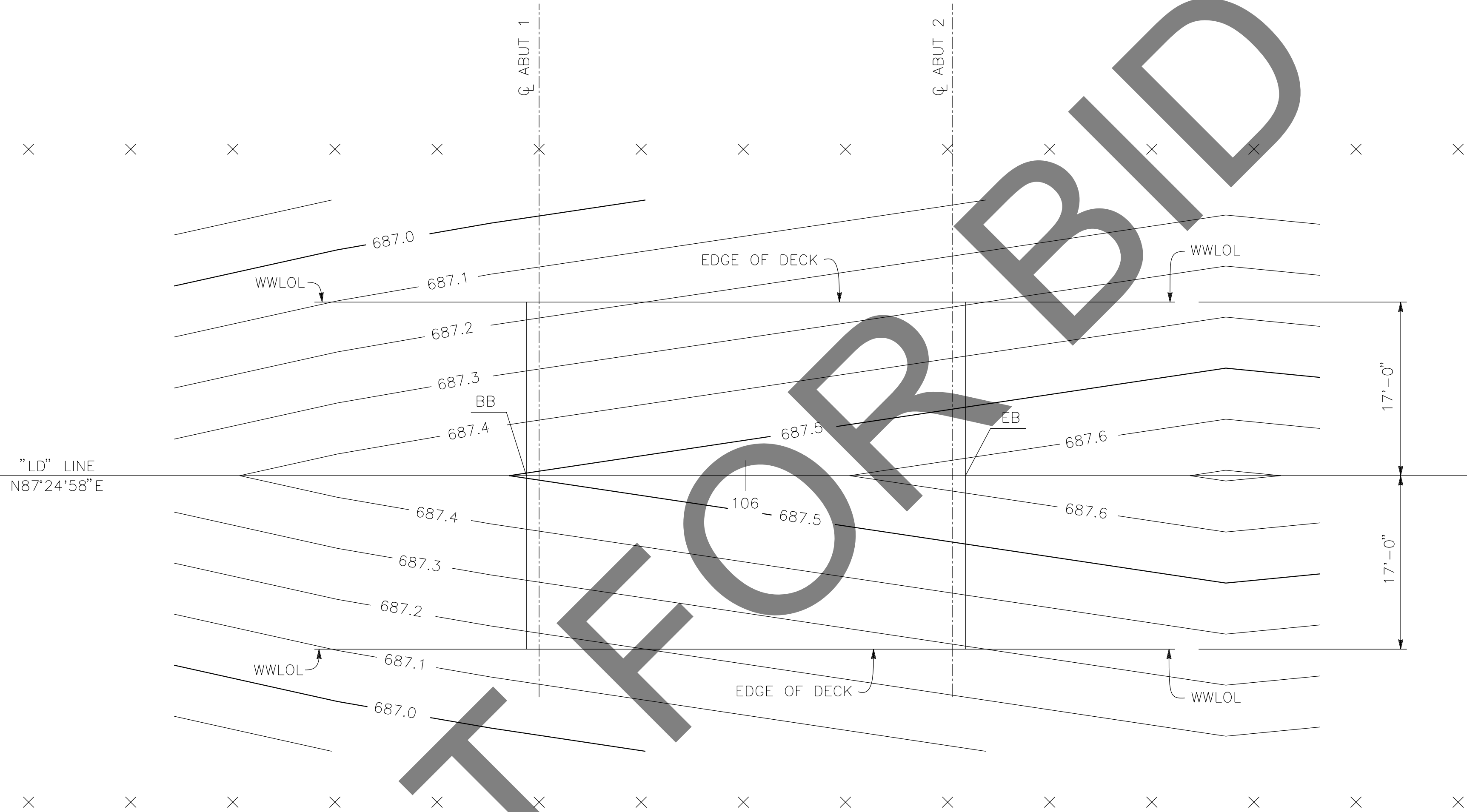
FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
INDEX TO PLANS
LEITH DITCH

J.L. REF.	W.D. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11803	H14915	AS NOTED	178	240



PLAN
1/8" = 1'-0"

- NOTES:
- 0.1' CONTOUR INTERVALS SHOWN.
 - CONTOURS DO NOT INCLUDE CAMBER.
 - TOP OF CONCRETE DECK SHOWN.

- LEGEND:
- × 10' INTERVALS ALONG STATION LINE.

NOT FOR BID

REVISIONS	DATE	APPR.

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
<i>Lei Rocky Li</i> 1/15/2025 DATE LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			TRANSPORTATION DESIGN ENGINEERING MANAGER APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES			
DECK CONTOURS			
LEITH DITCH			
J.L. REF. J.L. 11803	W.D. NO. H14915	PLAN SCALE AS NOTED	SHT. NO. 179
TOT. SHT'S. 240			

SCOUR DATA TABLE		
SUPPORT LOCATION	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
Abut 1	678.6	2.1
Abut 2	678.6	3.2

NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO NEW CONSTRUCTION.
2. PILES IN CONFLICT WITH PROPOSED BRIDGE MAY BE FULLY REMOVED OR PARTIALLY REMOVED PER SPECIFICATIONS.

LEGEND:

XX.X BOTTOM OF FOOTING ELEVATION (FT)

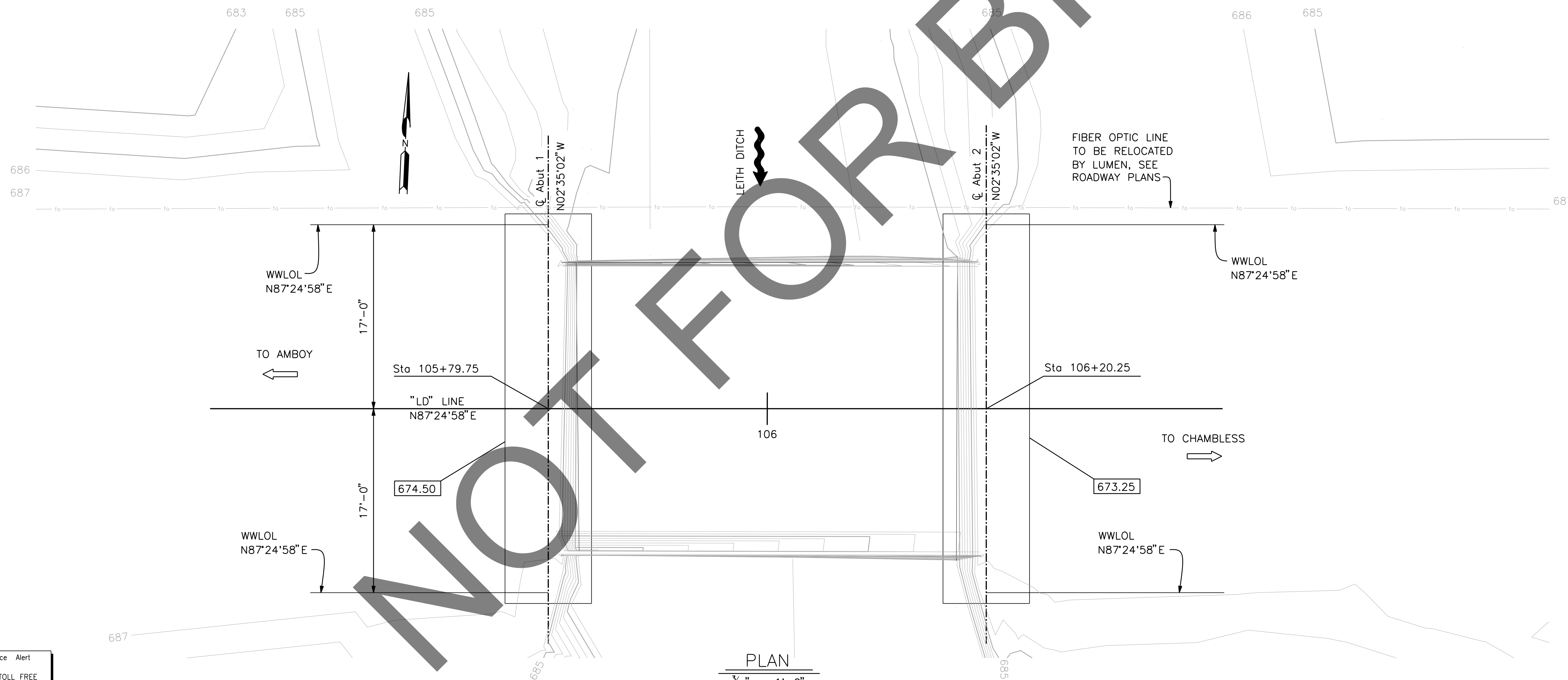
HYDROLOGIC SUMMARY		
	DESIGN FLOOD	BASE FLOOD
FREQUENCY	50-YR	100-YR
DISCHARGE*	516 CFS	714 CFS
WATER SURFACE ELEVATION AT BRIDGE	681.4 FT	681.8 FT

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.
* BULKED DESIGN FLOWS

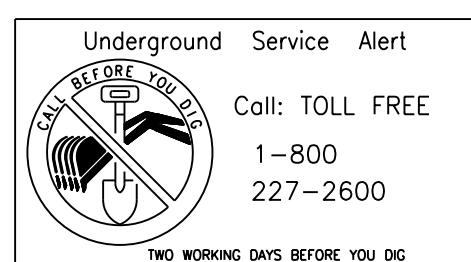
SPREAD FOOTING DATA TABLE			
SUPPORT LOCATION	SERVICE LIMIT STATE PERMISSIBLE NET CONTACT STRESS (KSF)	STRENGTH FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\phi = 0.45$	EXTREME EVENT FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\phi = 1.00$
Abut 1	3.6	5.6	12.2
Abut 2	3.9	5.9	11.8

BENCHMARK

FOUND 3.5" NGS BRASS DSG IN 10"x10" CONC MNMT STAMPED "Z1308-1978 NATIONAL GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
NGVD-29 ELEVATION = 1097.43'



PLAN
3/16" = 1'-0"



PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



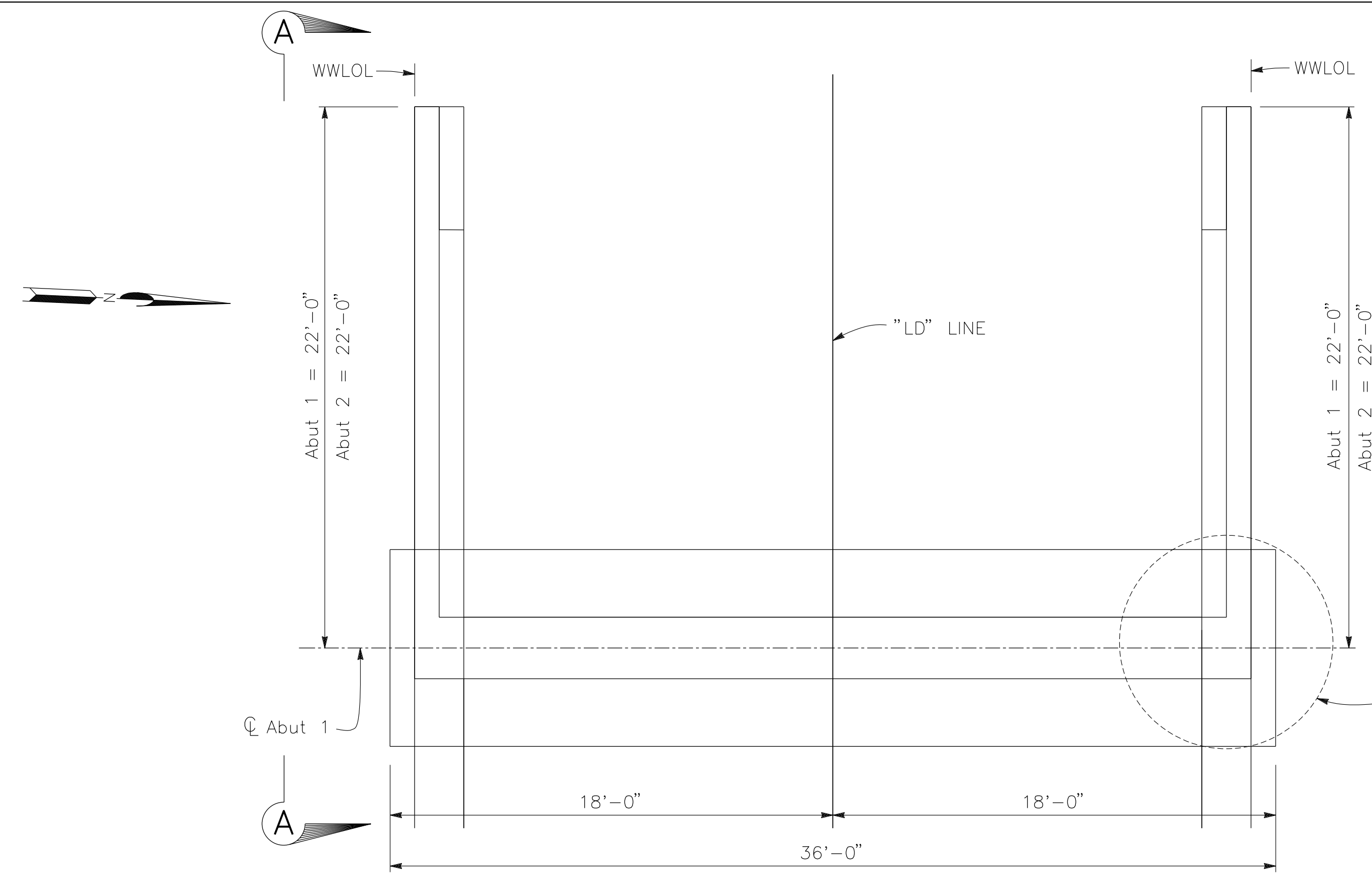
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>[Signature]</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>[Signature]</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>[Signature]</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
FOUNDATION PLAN
LEITH DITCH

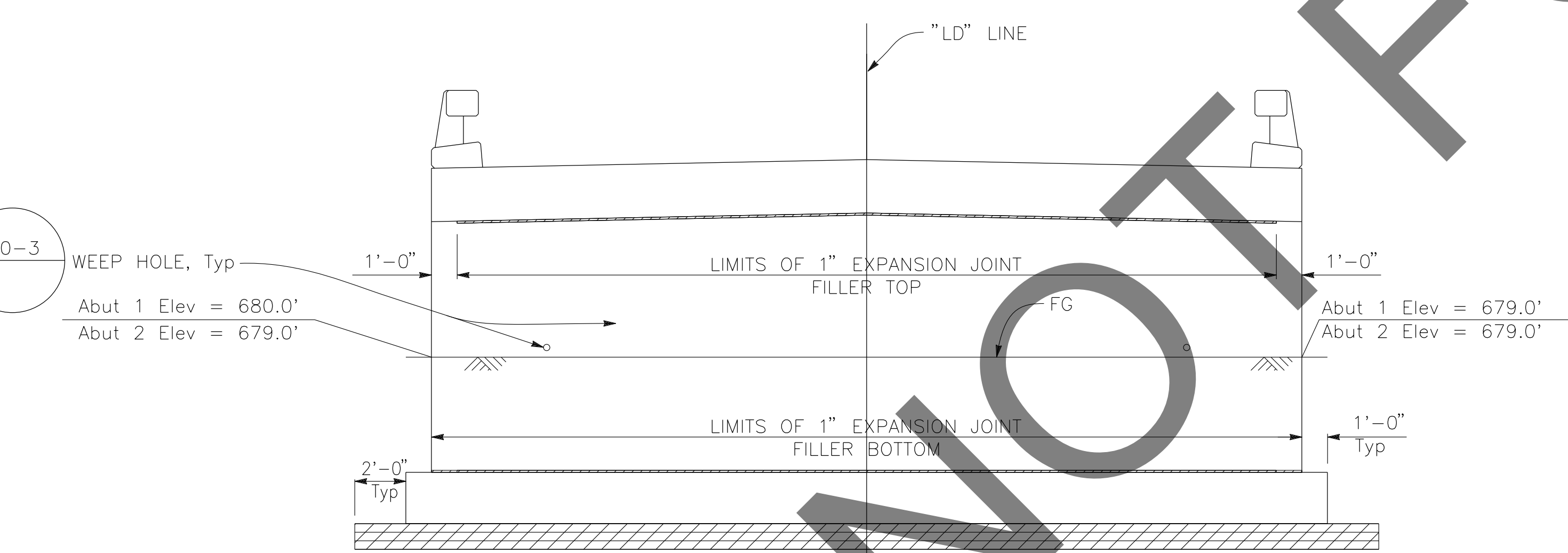
J.L. REF. J.L. 11803	W.O. NO. H14915	PLAN SCALE AS NOTED	SHT. NO. 180	TOT. SHT'S. 240
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REVISIONS	DATE	APPR.



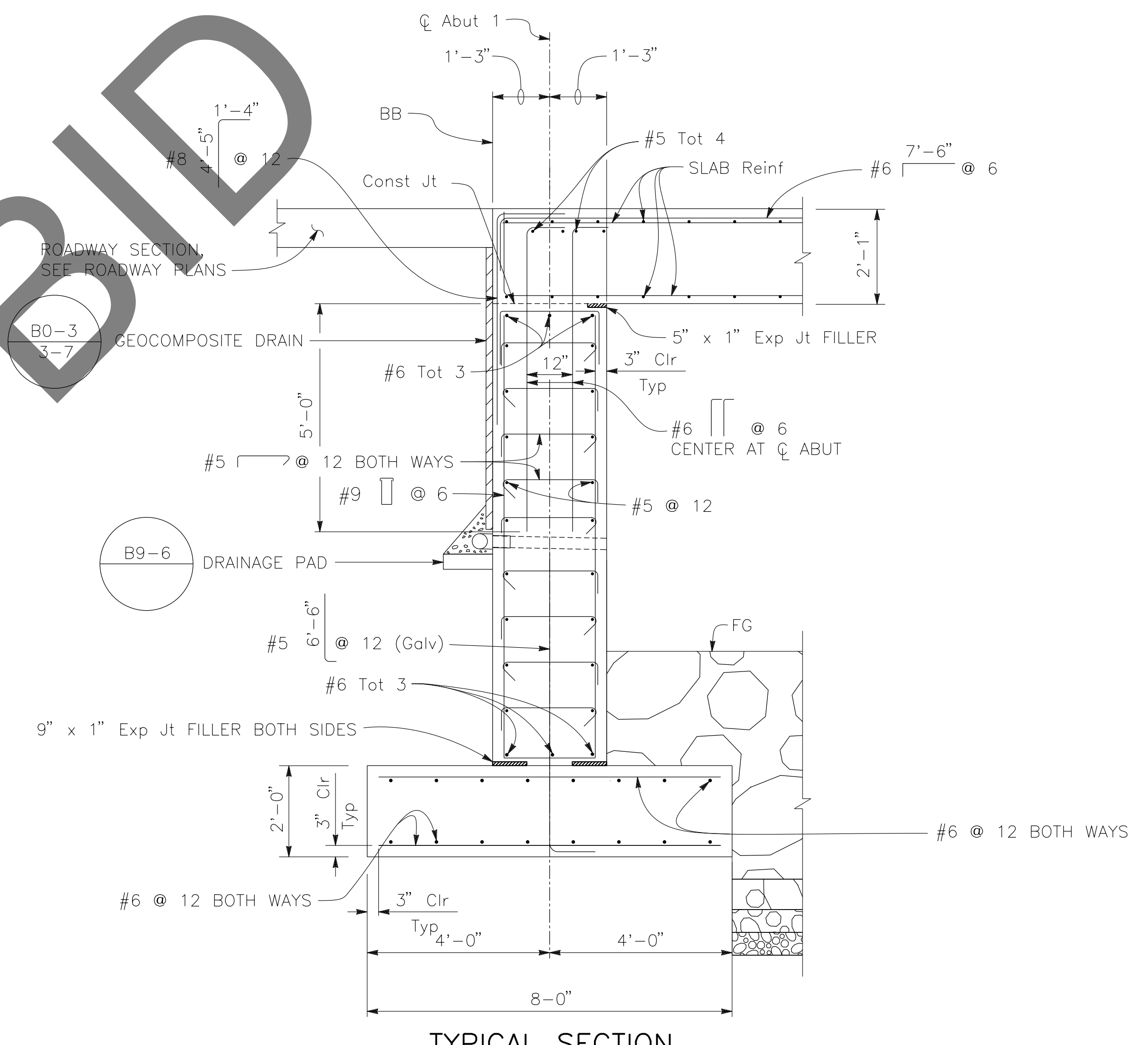
PLAN

1/4" = 1'-0"
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



ELEVATION

1/4" = 1'-0"
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



TYPICAL SECTION

1/2" = 1'-0"
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

- LEGEND:**
- STRUCTURE EXCAVATION (BRIDGE)
 - STRUCTURE BACKFILL (BRIDGE)

- NOTES:**
- FOR "VIEW A-A," SEE "ABUTMENT DETAILS" SHEET

REVISIONS	DATE	APPR.

PREPARED BY:

110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642

Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

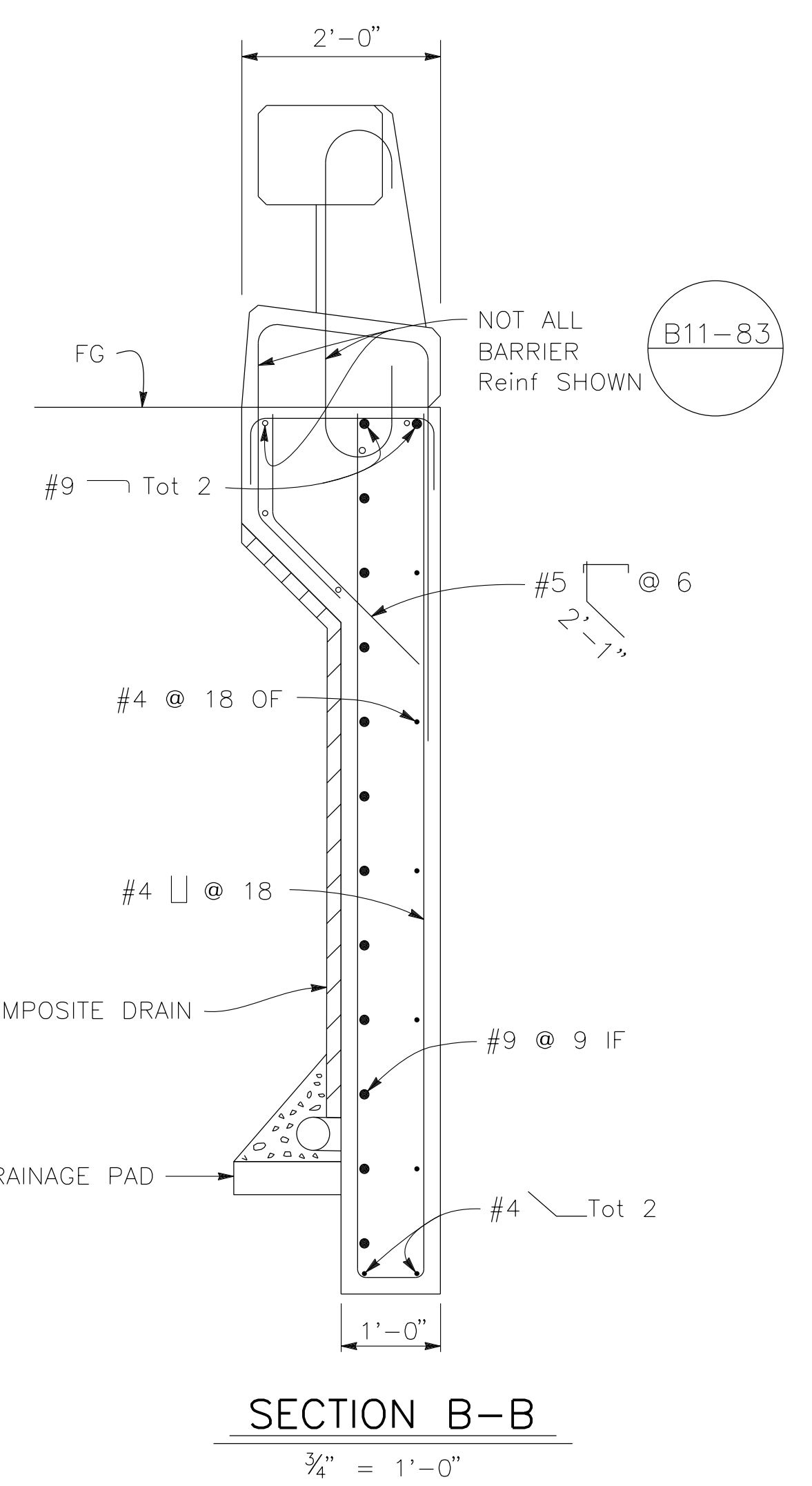
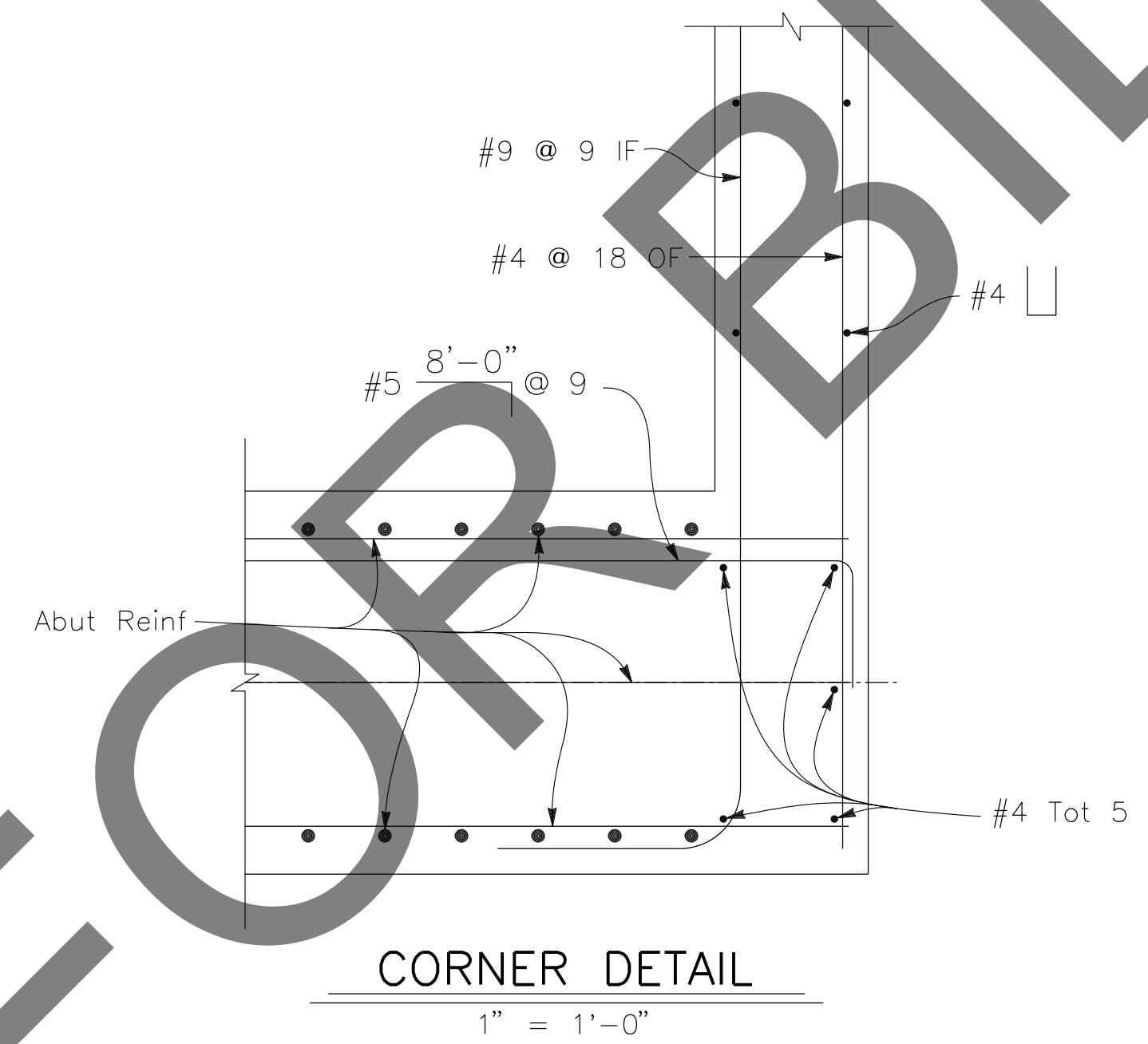
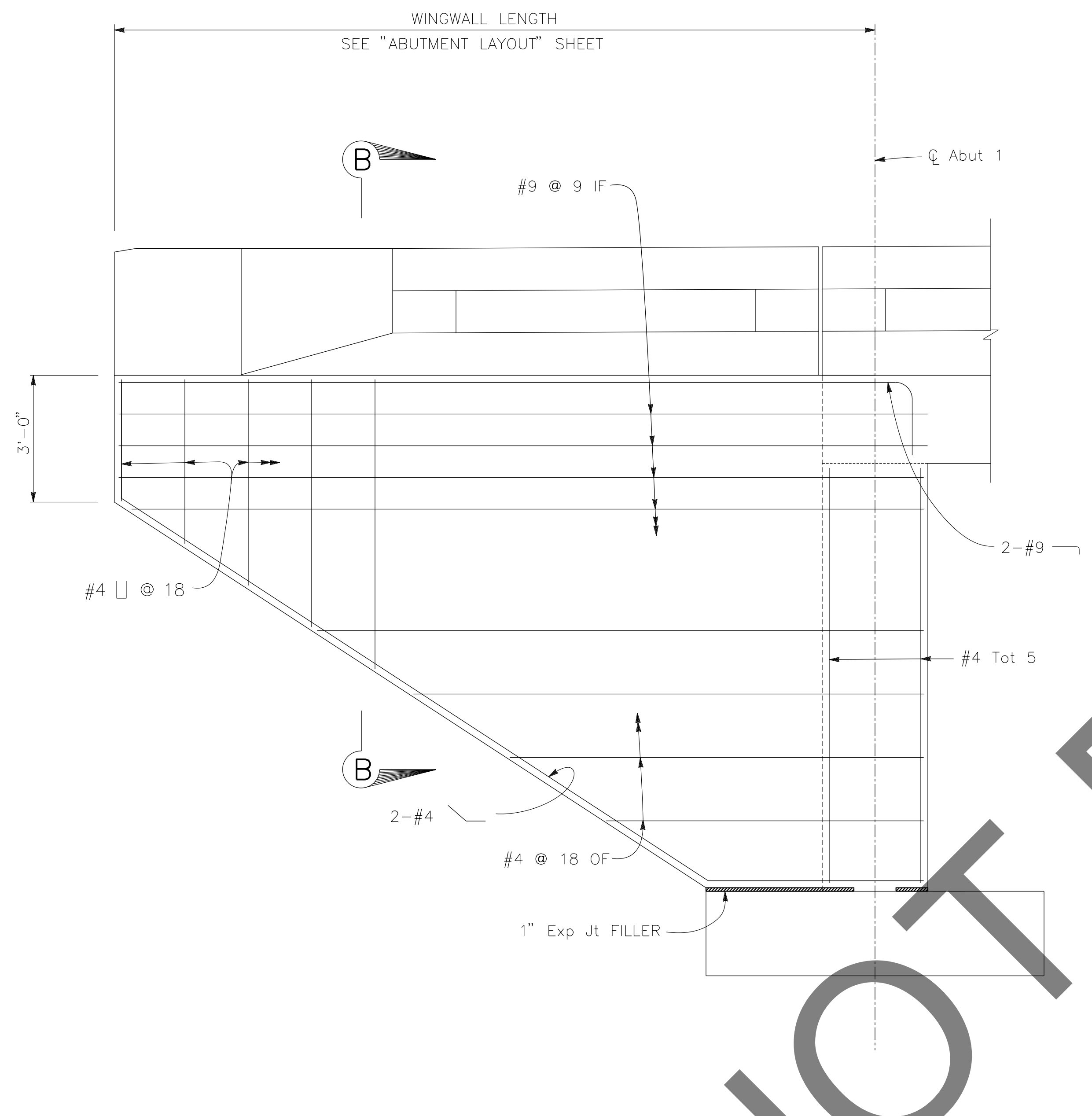
DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 DATE			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE

LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER

MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES				
LEITH DITCH				
J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11803	H14915	AS NOTED	181	240

NOTES:
 1. FOR DETAILS NOT SHOWN, SEE B0-3

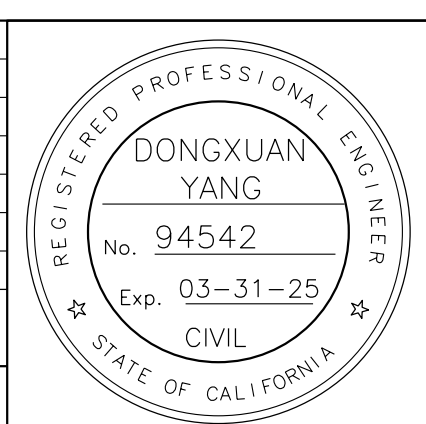


VIEW A-A
 1/2" = 1'-0"
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

PREPARED BY:
DOKKEN ENGINEERING
 110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER
 12-16-24
 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



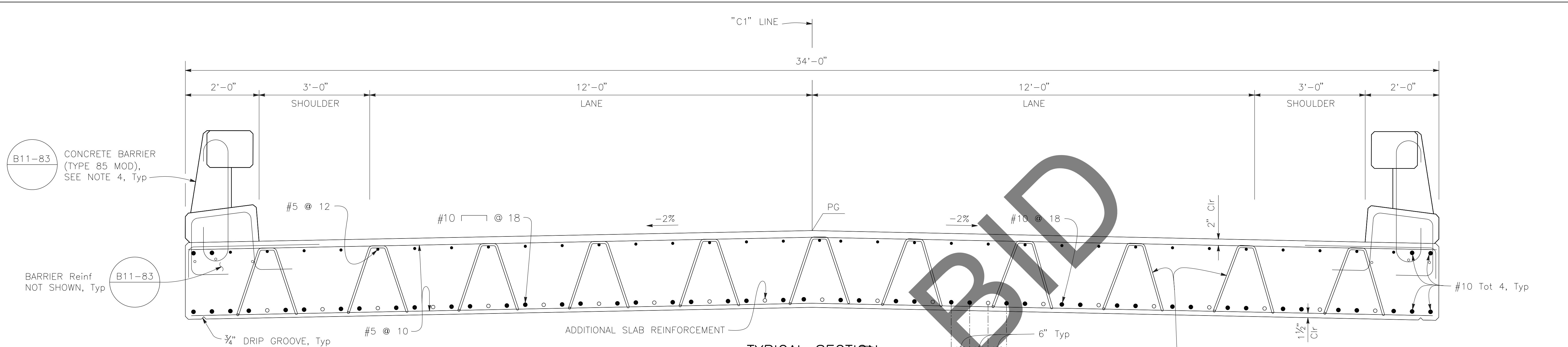
SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: <i>Lei (Rocky) Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR 1/16/2025 DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ABUTMENT DETAILS
 LEITH DITCH

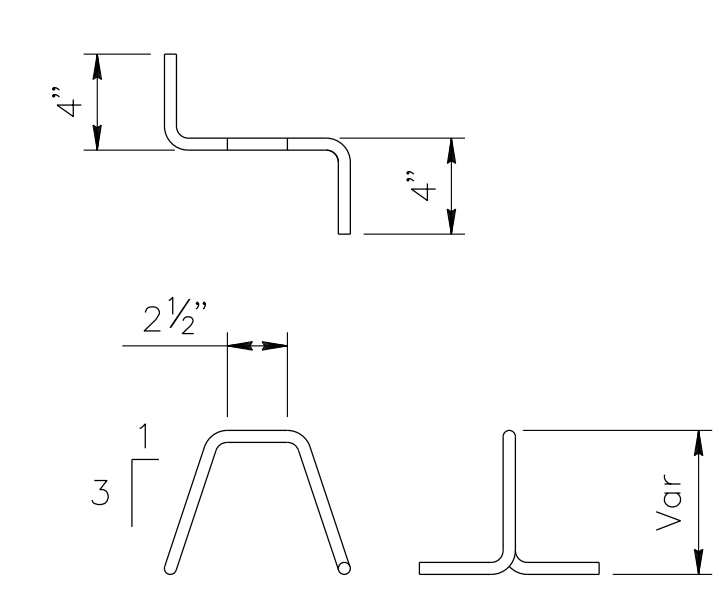
J.L. REF. J.L. 11803	W.D. NO. H14915	PLAN SCALE AS NOTED	SHT. NO. 182	TOT. SHT'S. 240
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REVISIONS	DATE	APPR.



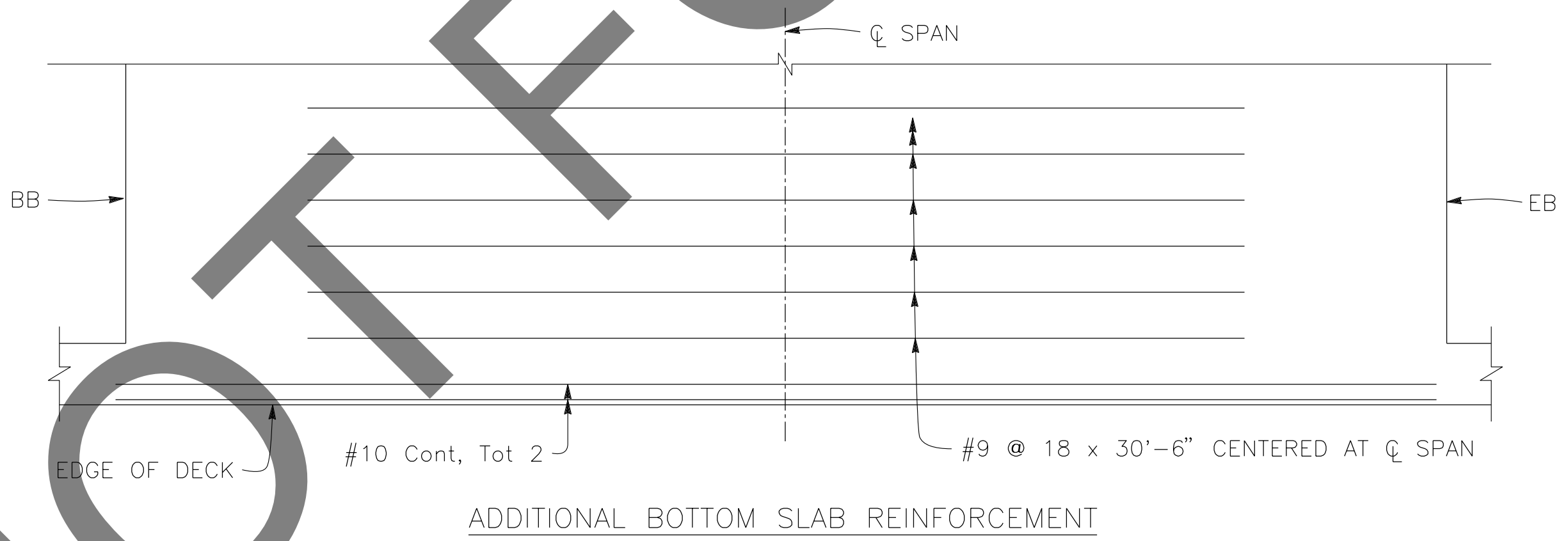
TYPICAL SECTION

3/4" = 1'-0"



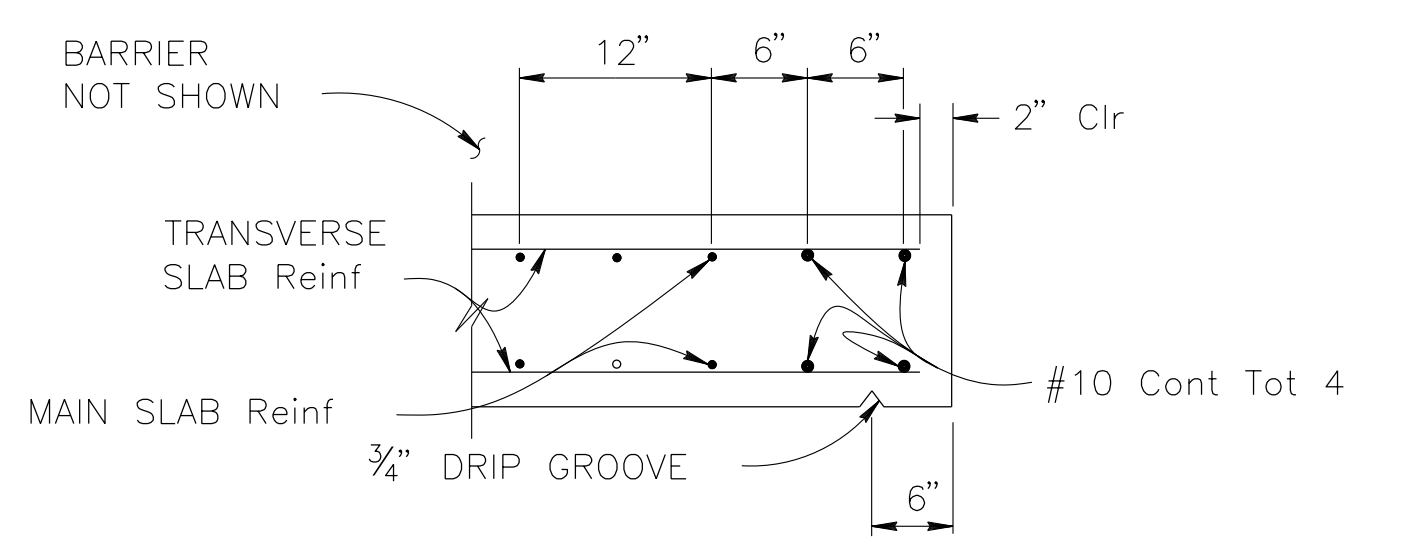
REINFORCEMENT CHAIR DETAIL

NO SCALE



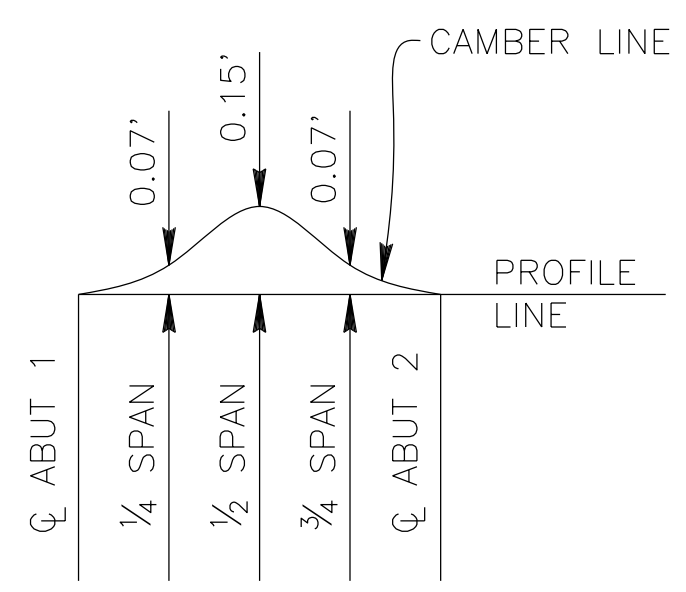
PARTIAL PLAN

1/4" = 1'-0"



EDGE OF SLAB DETAILS

NO SCALE



CAMBER DIAGRAM

NO SCALE

DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT.

- NOTES:
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO C BRIDGE.
 2. PLACE TRANSVERSE REINFORCEMENT NORMAL TO C BRIDGE.
 3. FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.
 4. ALL EXPOSED SURFACES OF THE BARRIER ABOVE THE SLAB TO BE PAINTED WHITE.

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 SLAB DETAILS
 LEITH DITCH

J.L. REF.	W.D. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11803	H14915	AS NOTED	183	240

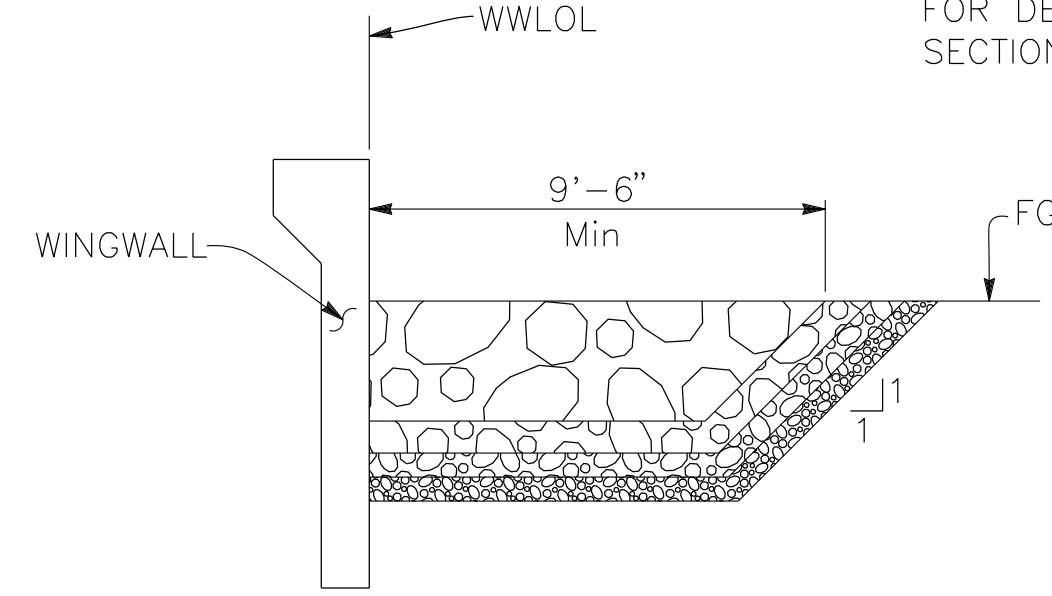
MARK	REVISIONS	DATE	APPR.

NOTES:

1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS

* SEE "LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET

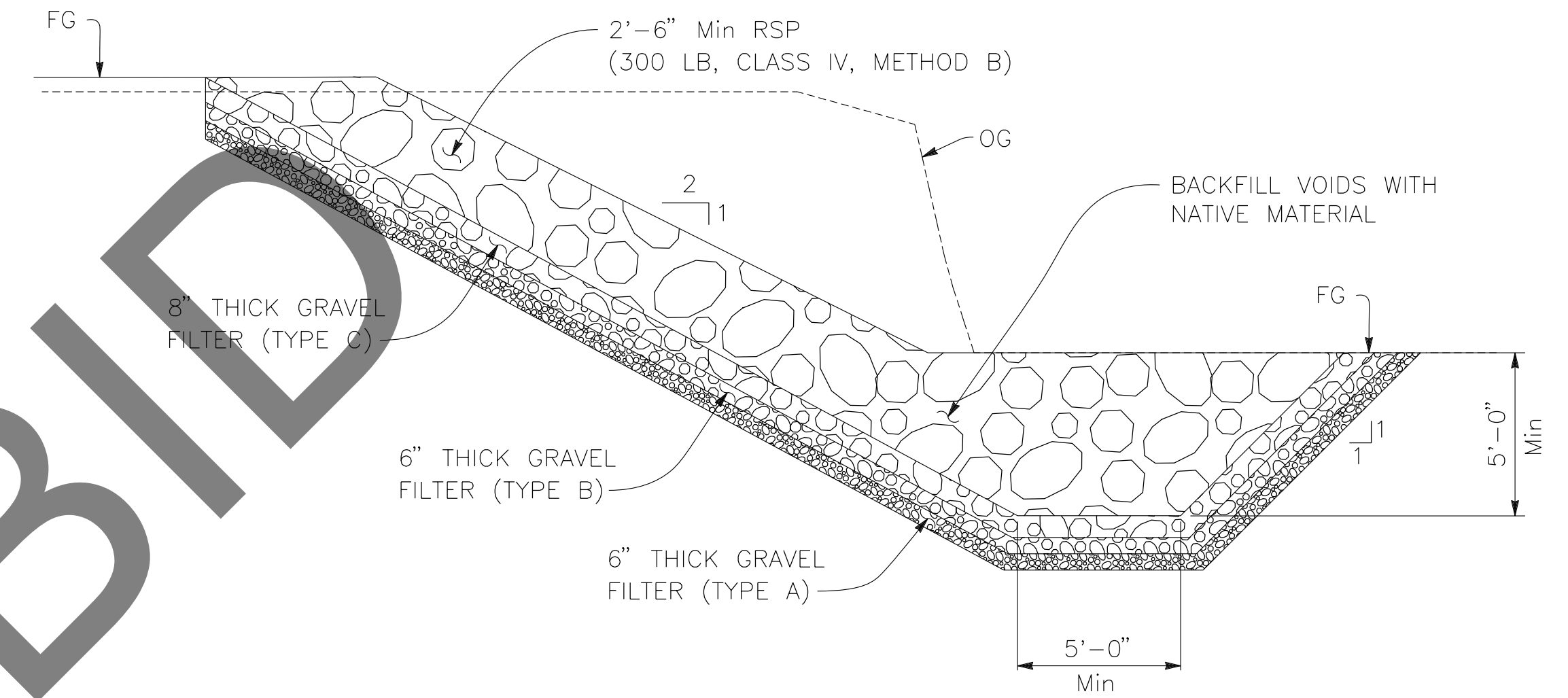
NOTE:
FOR DETAILS NOT SHOWN SEE
SECTION A-A



SECTION C-C

1/4" = 1'-0"

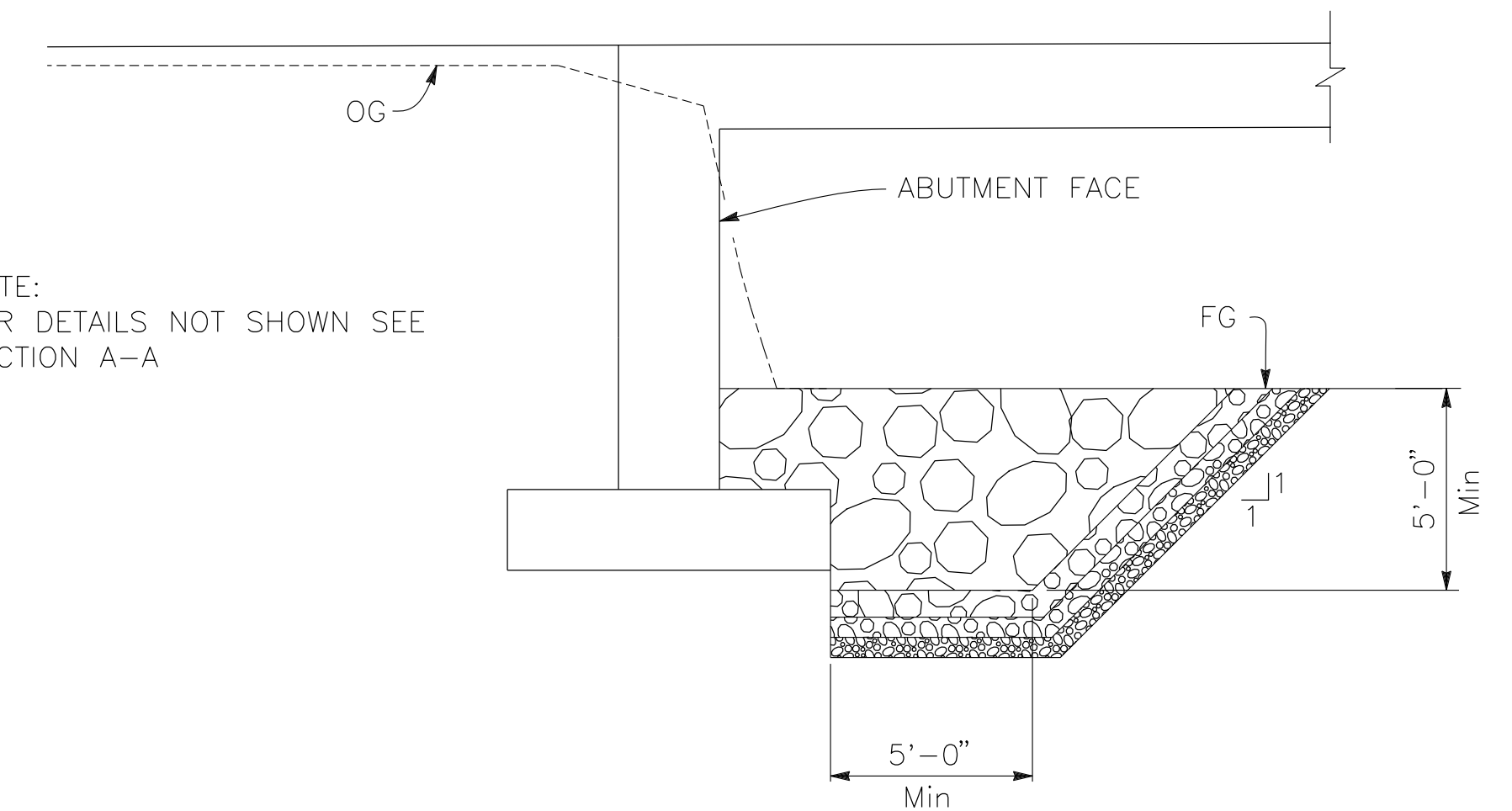
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.



SECTION A-A

1/4" = 1'-0"

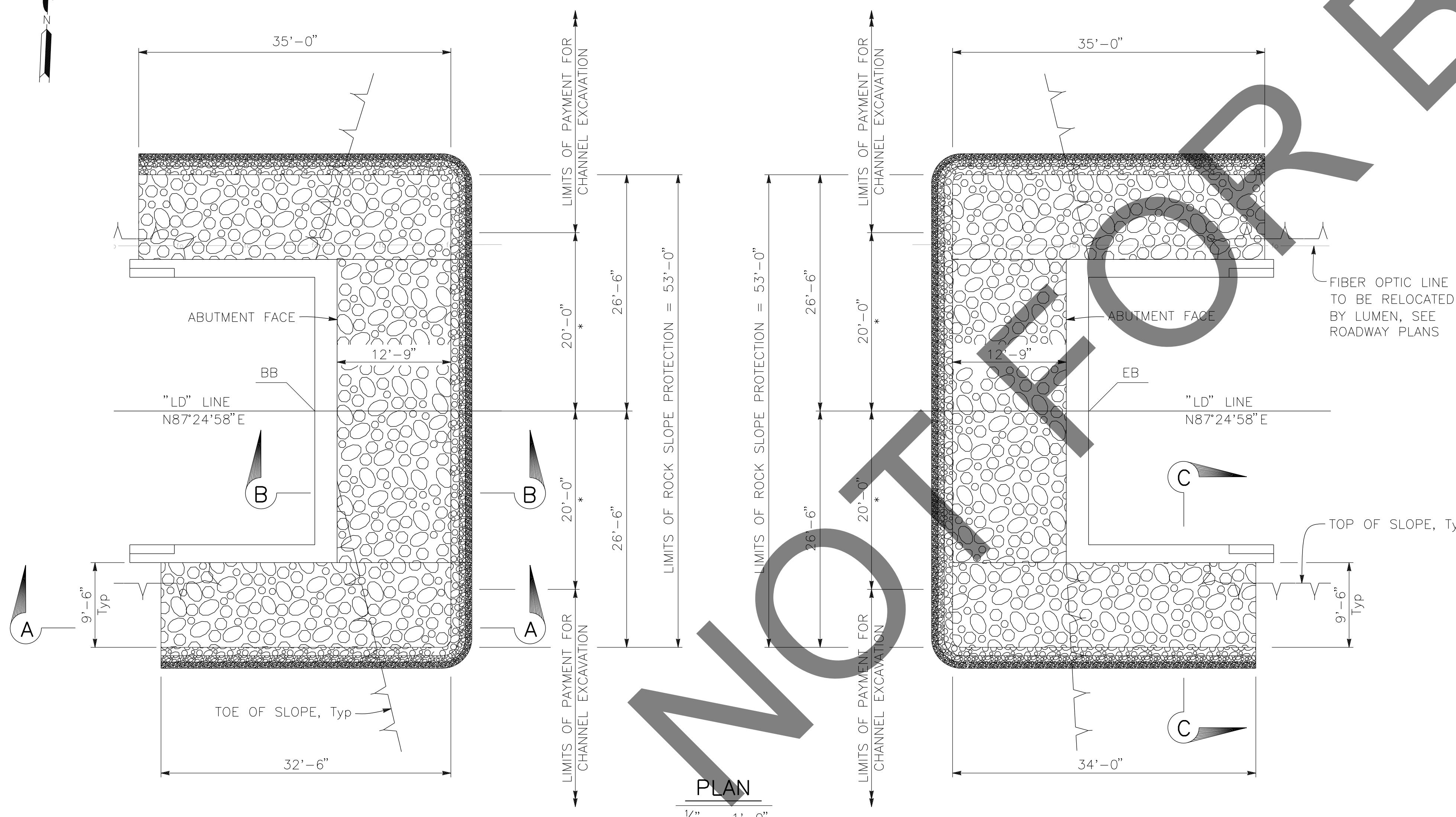
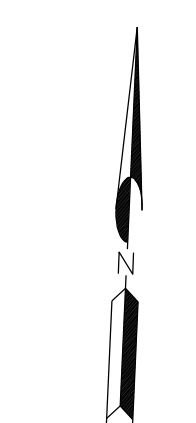
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.



SECTION B-B

1/4" = 1'-0"

ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.



PLAN

1/8" = 1'-0"

PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
DONGXUAN YANG
No. 94542
Exp. 03-31-25
CIVIL
STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
ROCK SLOPE PROTECTION DETAILS
LEITH DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11803	H14915	AS NOTED	184	240

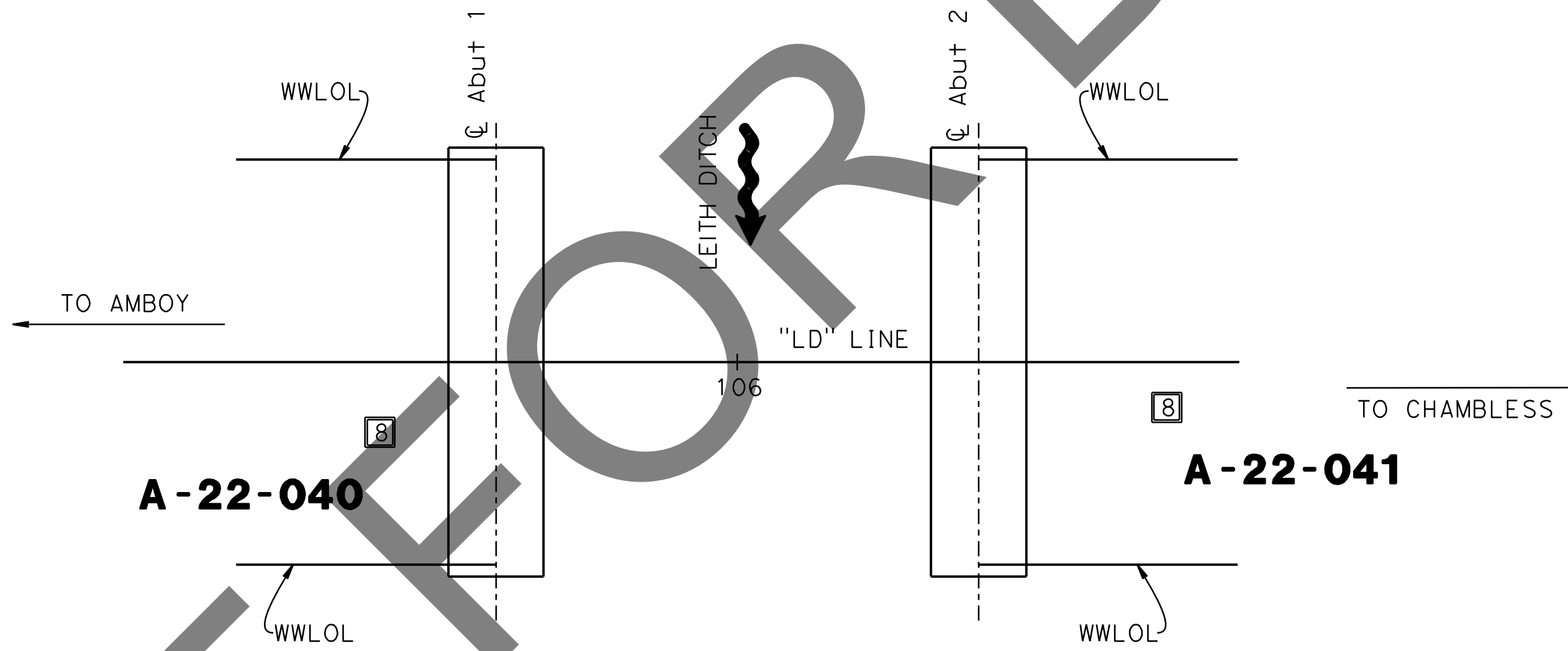
MARK	REVISIONS	DATE

NOTES:

- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans **A10F** and **A10G**.

BOREHOLE LOCATION TABLE

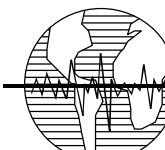
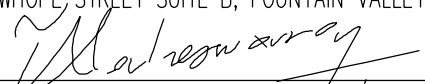
Hole ID	Alignment Name	Station and Offset
A-22-040	"LD" Line	105+70 5.9 Rt.
A-22-041	"LD" Line	106+36 3.8 Rt.



PLAN
1" = 10'

NOT FOR BID

REVISIONS	DATE	APPR.

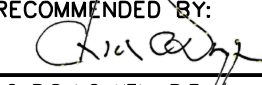
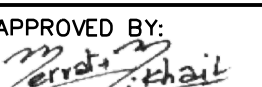
PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826

 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 A. THURAIRAJAH
 No. GE 3123
 EXP. 9/30/25
 GEOTECHNICAL
 STATE OF CALIFORNIA

**SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS**

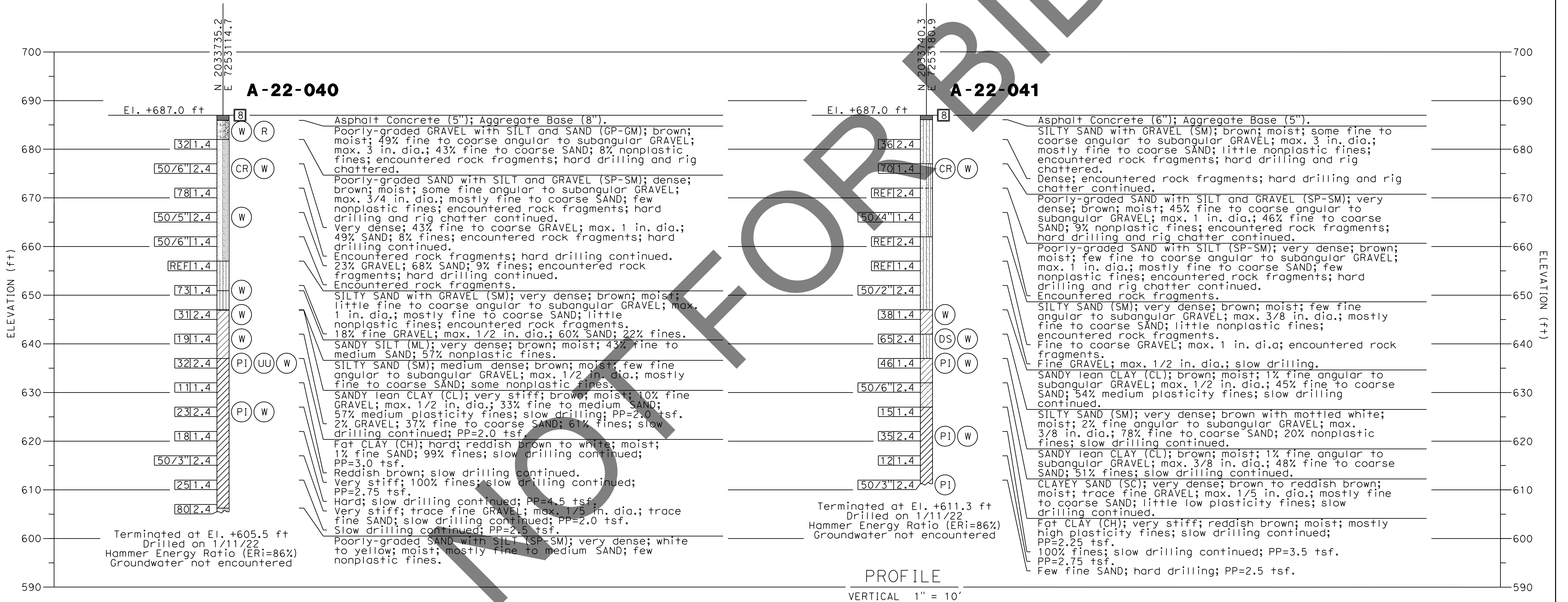
DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY:  1/14/2025 CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY:  1/15/2025 LD (ROCKY) L. P.E. SUPERVISING ENGINEER			DATE: 1/16/2025 MERVAT K. MIKHAIL, P.E. DEPUTY DIRECTOR

**BRIDGE REPLACEMENT ON
 NATIONAL TRAILS HIGHWAY
 AT 10 BRIDGES
 LOG OF TEST BORINGS 1 OF 2
 LEITH DITCH**

J.L. REF. J.L. 11803	W.O. NO. H14915	PLAN SCALE AS NOTED	SHT. NO. 185	TOT. SHT'S. 240
----------------------	-----------------	---------------------	--------------	-----------------

BENCH MARK:
 FOUND 3.5" NGS BRASS DISC IN 10"x10"
 Conc Mnmt STAMPED "Z1308-1978 NATIONAL
 GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'

NOTE:
 This LOTB sheet (Boring Record) was prepared in accordance with Caltrans
 Soil and Rock Logging, Classification and Presentation Manual (2022).

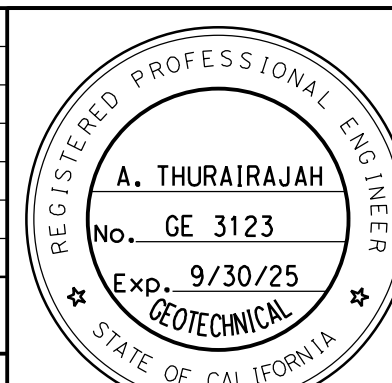


PREPARED BY:

 Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

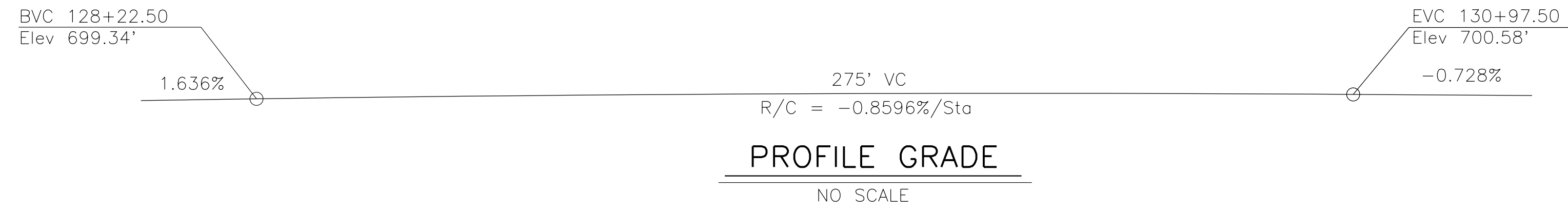


SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

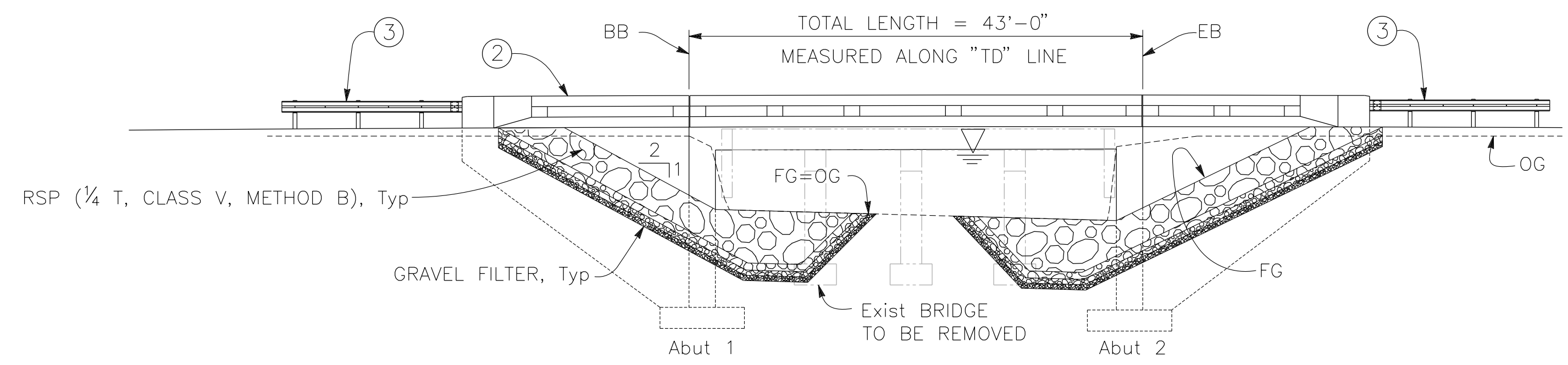
DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: LEI (ROCKY) LI, P.E. / SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED BY: MERWAT K. MIKHAL, P.E. / DEPUTY DIRECTOR 1/16/2025 DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
LOG OF TEST BORINGS 2 OF 2
LEITH DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11803	H14915	AS NOTED	186	240

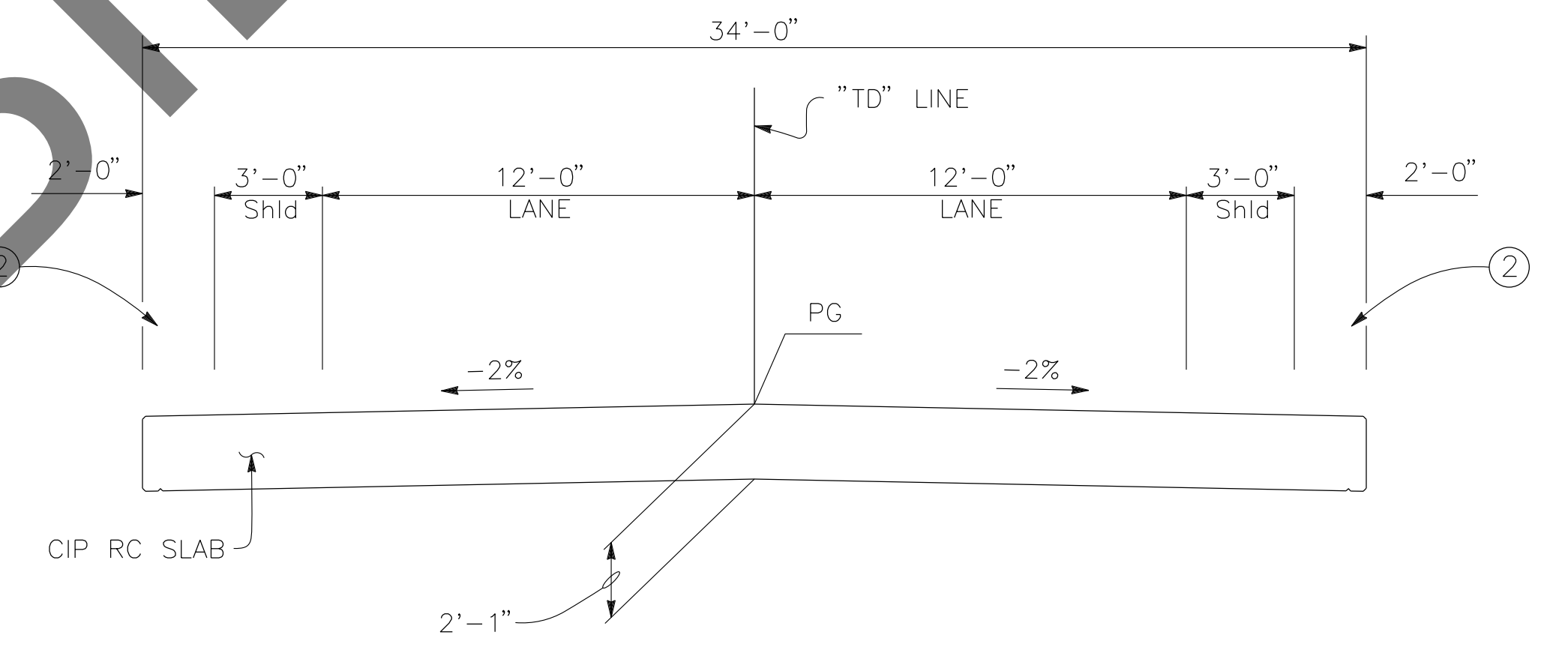


- NOTES:
- FOR TEMPORARY DETOUR DURING CONSTRUCTION, SEE ROADWAY PLANS.
 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

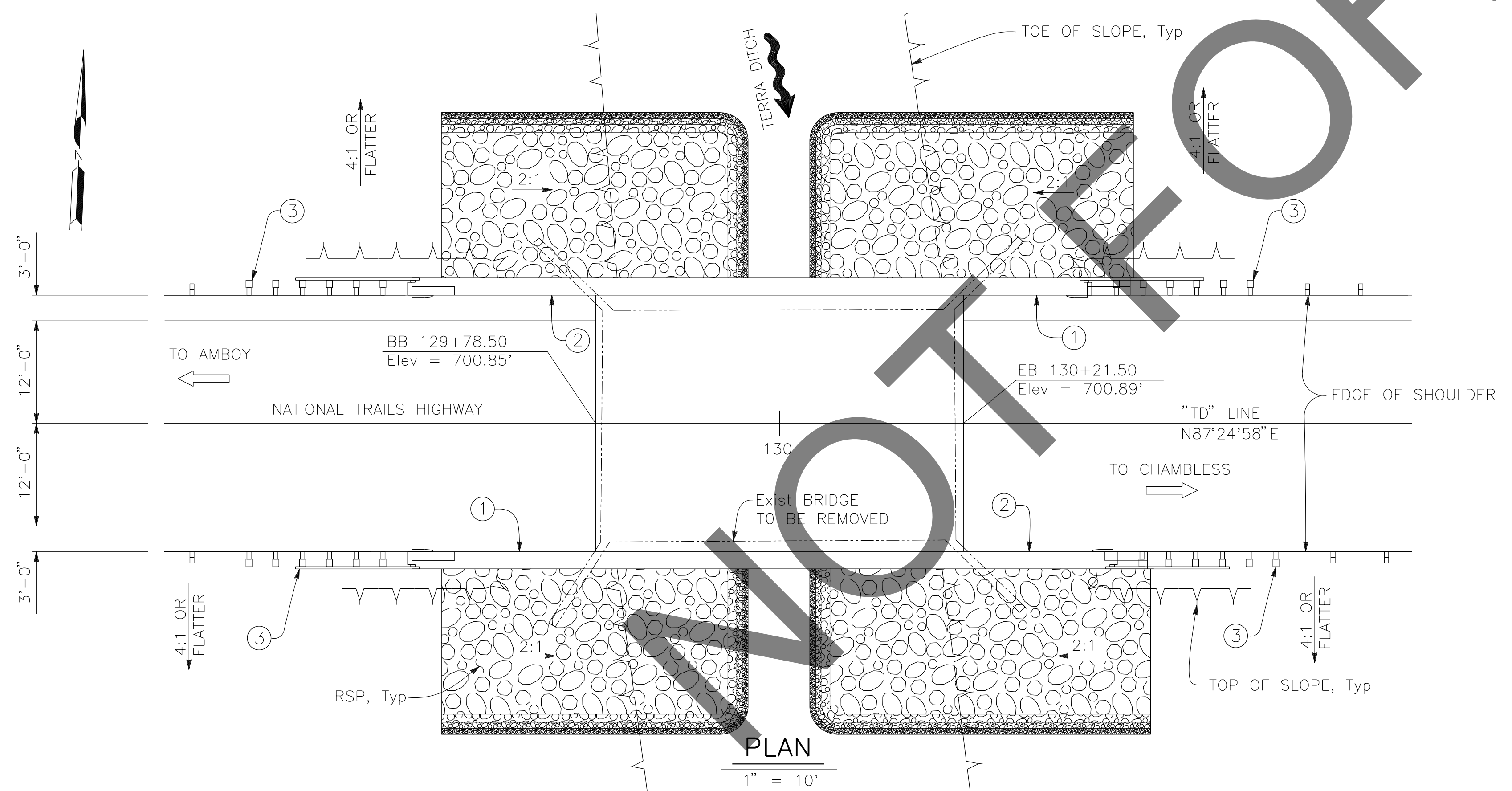


DATUM ELEV = 670'

130
ELEVATION
1" = 10'



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



- LEGEND:
- ① PAINT "TERRA DITCH BRIDGE" "BR NO. 54C0815" AND YEAR CONSTRUCTED
 - ② CONCRETE BARRIER (TYPE 85 MOD), TO BE PAINTED WHITE.
 - ③ MGS, SEE ROADWAY PLANS
 - ▽ WATER SURFACE ELEVATION. FOR "HYDROLOGIC SUMMARY" TABLE, SEE "FOUNDATION PLAN" SHEET.
 - EXISTING STRUCTURE, TO BE REMOVED

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER
12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
GENERAL PLAN
TERRA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	AS NOTED	187	240

MARK	REVISIONS	DATE

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

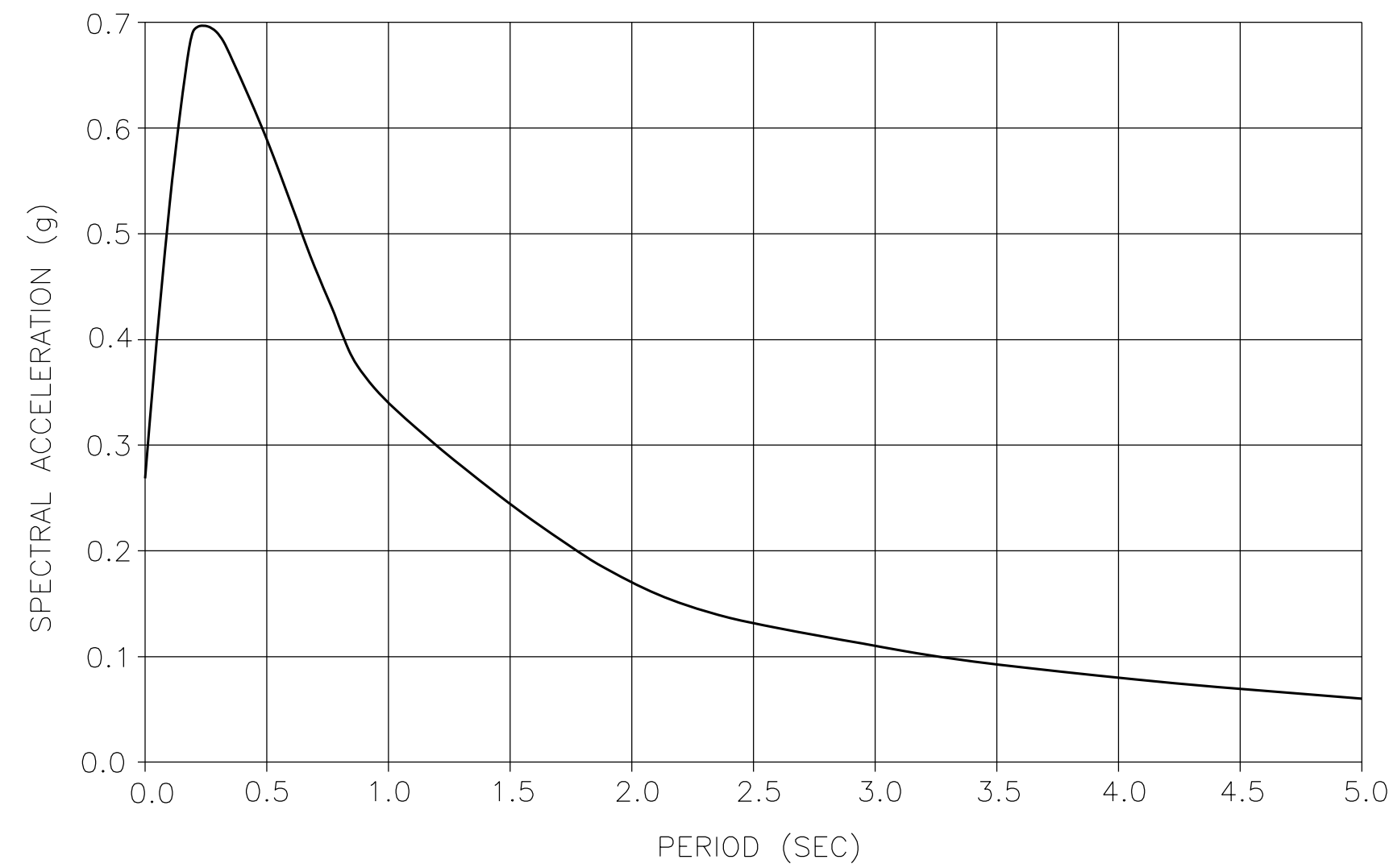
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE DATED JUNE 2024.
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION WITH REVISED STANDARD PLANS, DATED OCTOBER 2024.

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 2.0, APRIL 2019

DEAD LOAD: INCLUDES 0.035 KSF FOR FUTURE WEARING SURFACE

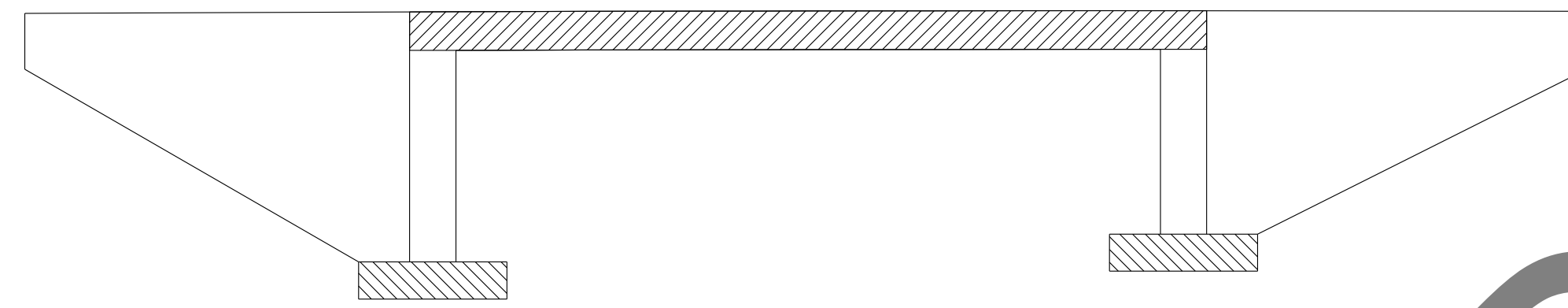
LIVE LOAD: HL-93 AND PERMIT DESIGN LOAD

SEISMIC DATA: SOIL PROFILE : $V_{S30} = 1050$ FT/S
MOMENT MAGNITUDE : 6.37
PEAK GROUND ACCELERATION = 0.27g
5% DAMPING



ARS CURVE
NO SCALE

REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See "CONCRETE STRENGTH AND TYPE LIMITS"
 $n = 8$



- LEGEND:**
- STRUCTURAL CONCRETE, BRIDGE ($f'_c = 3.6$ KSI @ 28 DAYS)
 - STRUCTURAL CONCRETE, BRIDGE FOOTING ($f'_c = 3.6$ KSI @ 28 DAYS)
 - STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER) ($f'_c = 4.0$ KSI)

CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

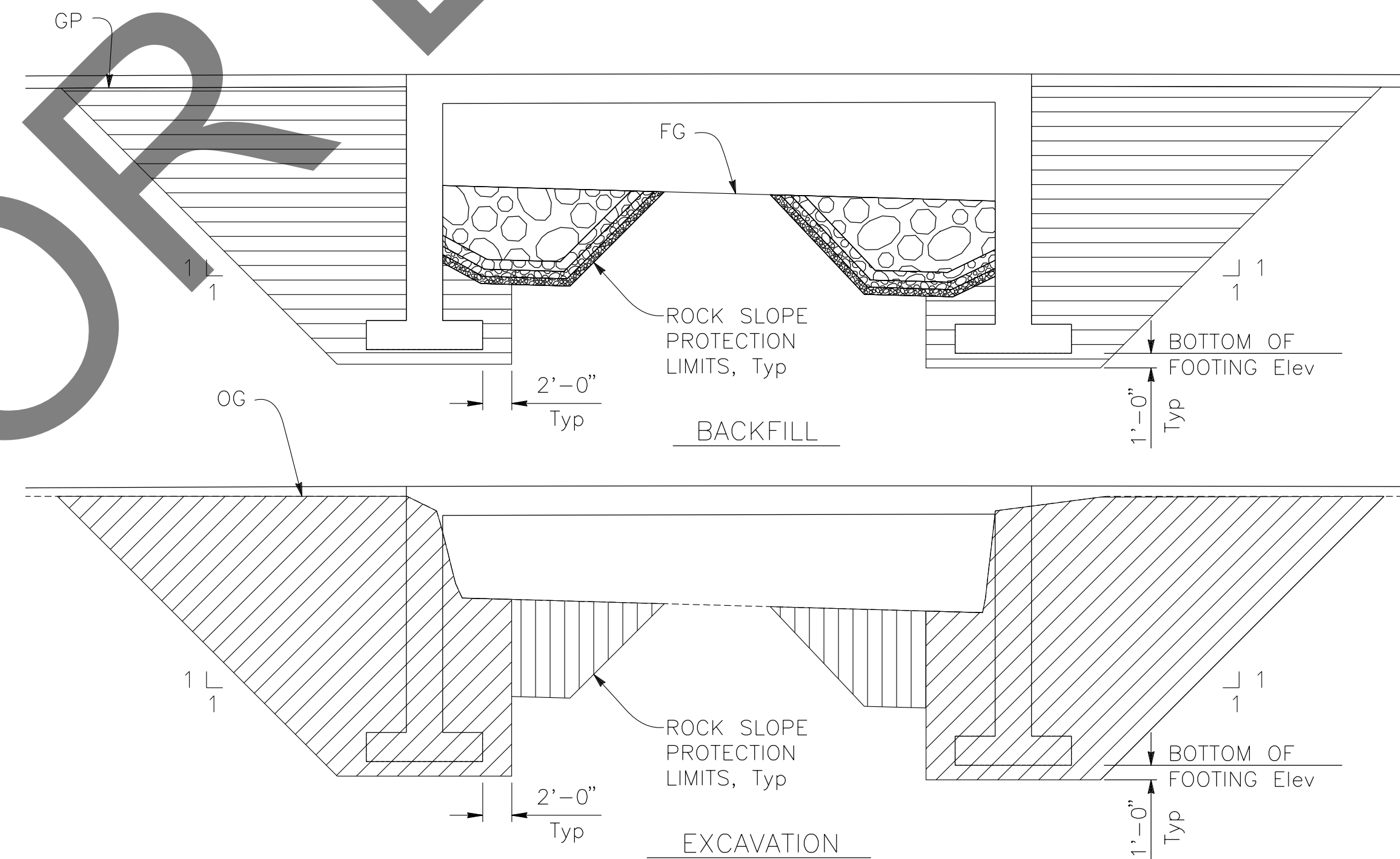
INDEX TO PLANS

SHEET No.	TITLE
187	GENERAL PLAN
188	INDEX TO PLANS
189	DECK CONTOURS
190	FOUNDATION PLAN
191	ABUTMENT LAYOUT
192	ABUTMENT DETAILS
193	SLAB DETAILS
194	ROCK SLOPE PROTECTION DETAILS
195	LOG OF TEST BORINGS 1 OF 2
196	LOG OF TEST BORINGS 2 OF 2



QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	870	CY
STRUCTURE EXCAVATION (BRIDGE)	1200	CY
STRUCTURE BACKFILL (BRIDGE)	850	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	43	CY
STRUCTURAL CONCRETE, BRIDGE	126	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	113	CY
BAR REINFORCING STEEL (BRIDGE)	56130	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (1/4 T, CLASS V, METHOD B)	423	CY
GRAVEL FILTER (TYPE A)	93	CY
GRAVEL FILTER (TYPE B)	87	CY
GRAVEL FILTER (TYPE C)	108	CY
CONCRETE BARRIER (TYPE 85 MOD)	170	LF



NOTES:
FOR WINGWALL EXCAVATION & BACKFILL LIMITS
SEE STANDARD PLAN A62C.

LEGEND:

- STRUCTURE EXCAVATION (BRIDGE)
- STRUCTURE BACKFILL (BRIDGE)
- CHANNEL EXCAVATION
- ROCK SLOPE PROTECTION, SEE "ROCK SLOPE PROTECTION" SHEET

**LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL**

NO SCALE

PREPARED BY:

DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

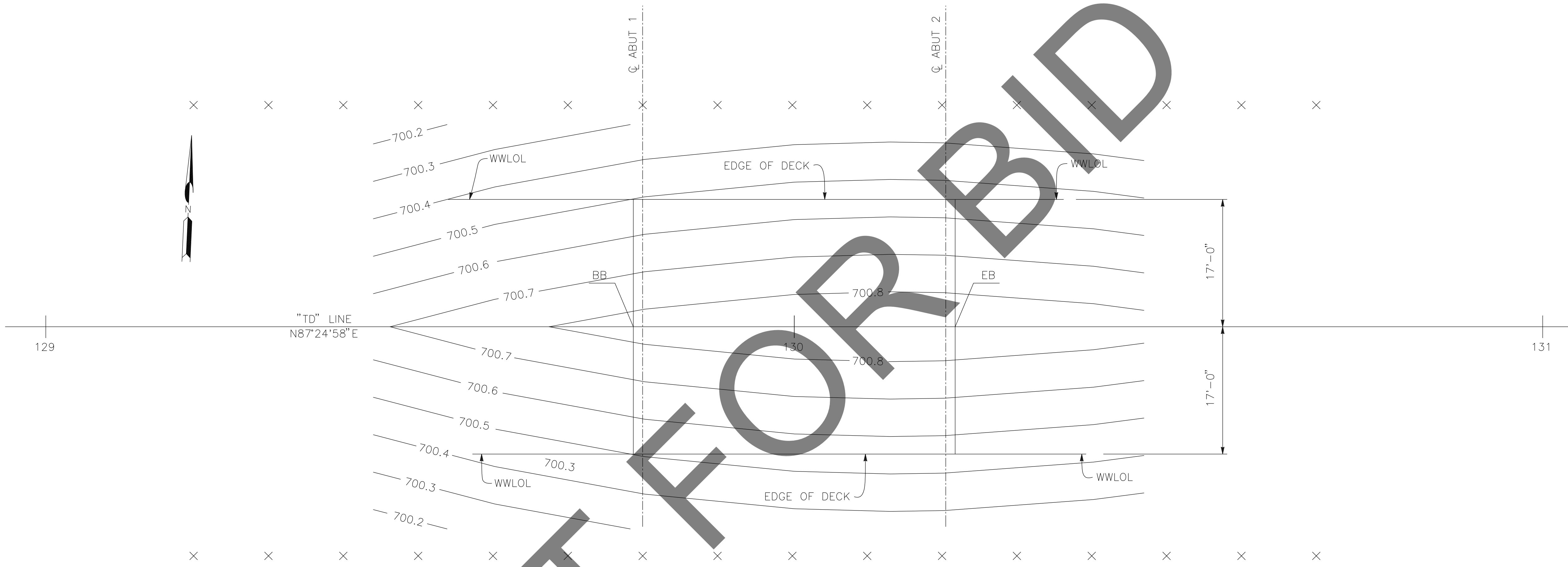
REGISTERED PROFESSIONAL ENGINEER
GABRIELA MORALES
No. 93473
Exp. 06-30-26
CIVIL
STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei (Rocky) Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
INDEX TO PLANS
TERRA DITCH

J.L. REF.	W.D. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	AS NOTED	188	240



PLAN
1/8" = 1'-0"

- NOTES:
- 0.1' CONTOUR INTERVALS SHOWN.
 - CONTOURS DO NOT INCLUDE CAMBER.
 - TOP OF CONCRETE DECK SHOWN.

LEGEND:
X 10' INTERVALS ALONG STATION LINE.

MARK	REVISIONS	APPR.	DATE

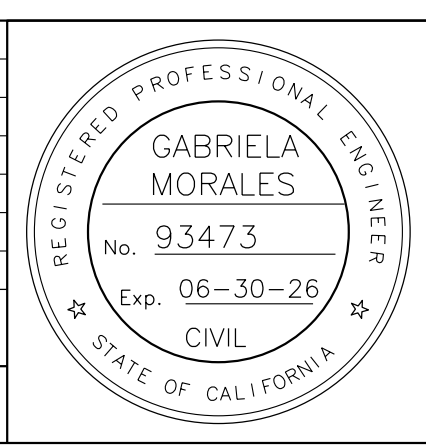
MARK	REVISIONS	APPR.	DATE

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhal</i> MERVAT R. MIKHAL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
DECK CONTOURS
TERRA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	AS NOTED	189	240

SCOUR DATA TABLE		
SUPPORT LOCATION	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
Abut 1	691.1	7.3
Abut 2	691.1	7.5

NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO NEW CONSTRUCTION.
2. PILES IN CONFLICT WITH PROPOSED BRIDGE MAY BE FULLY REMOVED OR PARTIALLY REMOVED PER SPECIFICATIONS.

LEGEND:

XX.X BOTTOM OF FOOTING ELEVATION (FT)

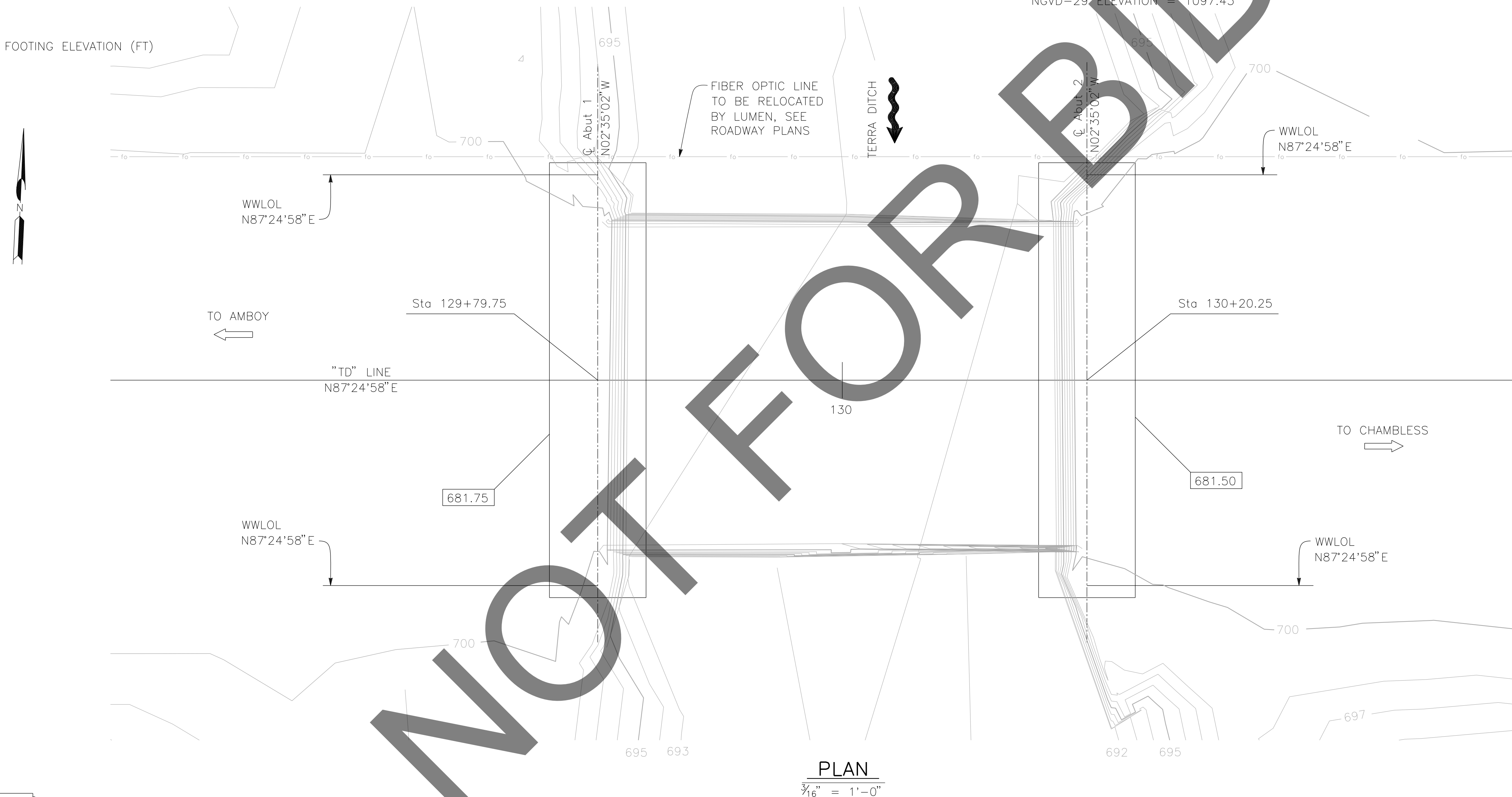
HYDROLOGIC SUMMARY		
	DESIGN FLOOD	BASE FLOOD
FREQUENCY	50-YR	100-YR
DISCHARGE*	992 CFS	1276 CFS
WATER SURFACE ELEVATION AT BRIDGE	696.7	698.4

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.
 * BULKED DESIGN FLOWS

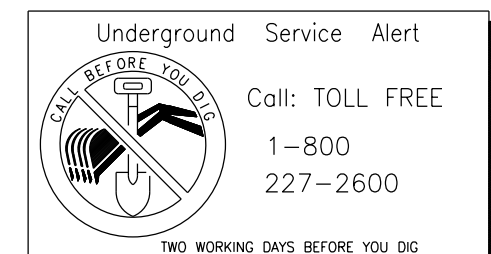
SPREAD FOOTING DATA TABLE			
SUPPORT LOCATION	SERVICE LIMIT STATE PERMISSIBLE NET CONTACT STRESS (KSF)	STRENGTH FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 0.45$	EXTREME EVENT FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 1.00$
Abut 1	4.3	6.5	11.4
Abut 2	4.3	6.5	11.8

BENCHMARK

FOUND 3.5" NGS BRASS DISC IN 10"X10" CONC MNMT STAMPED "Z1308-1978 NATIONAL GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'



PLAN
 $\frac{3}{16}'' = 1'-0''$



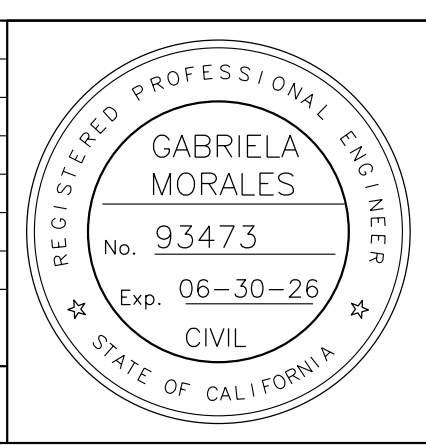
REVISIONS	DATE	APPR.

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

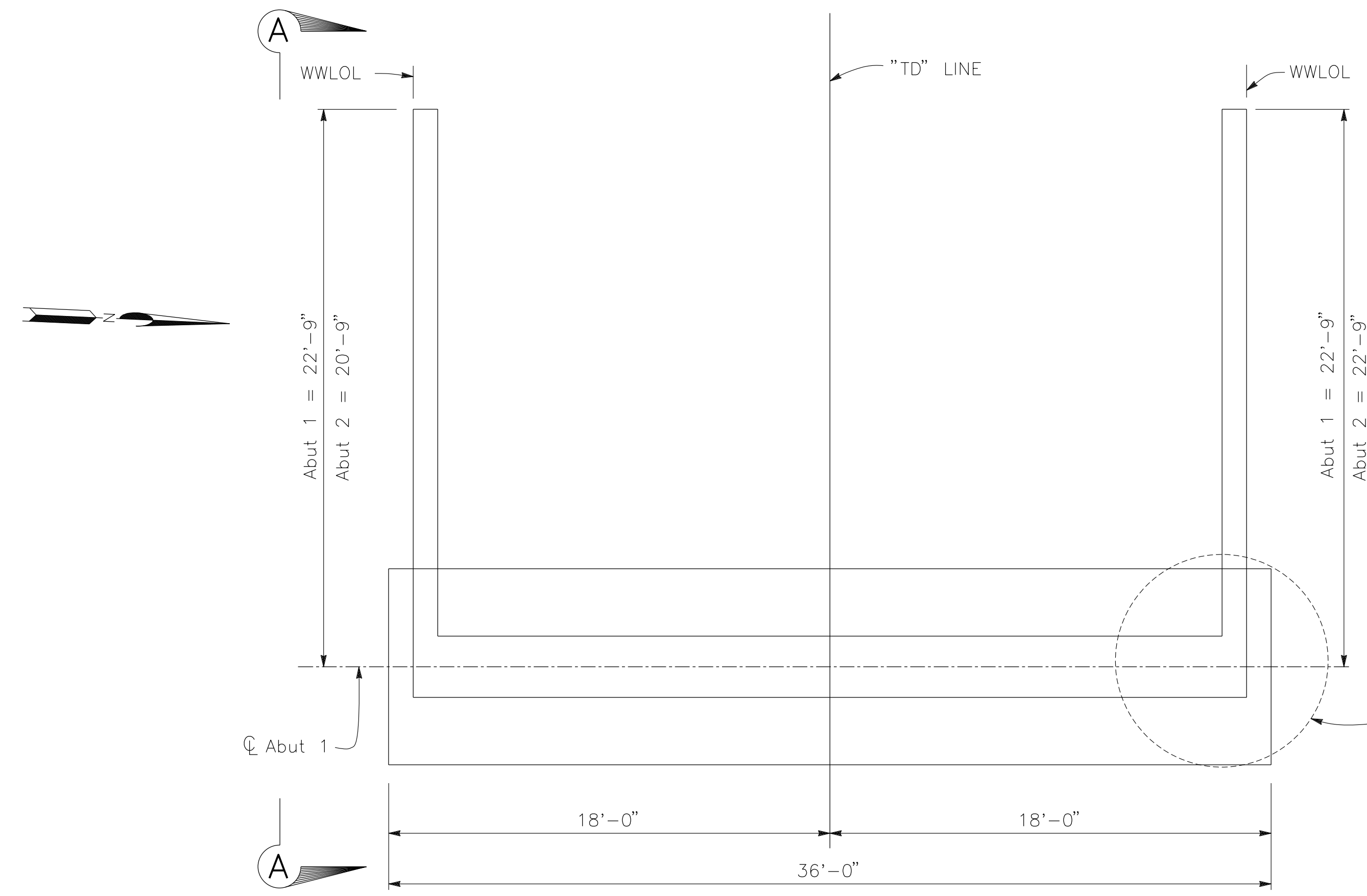


SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

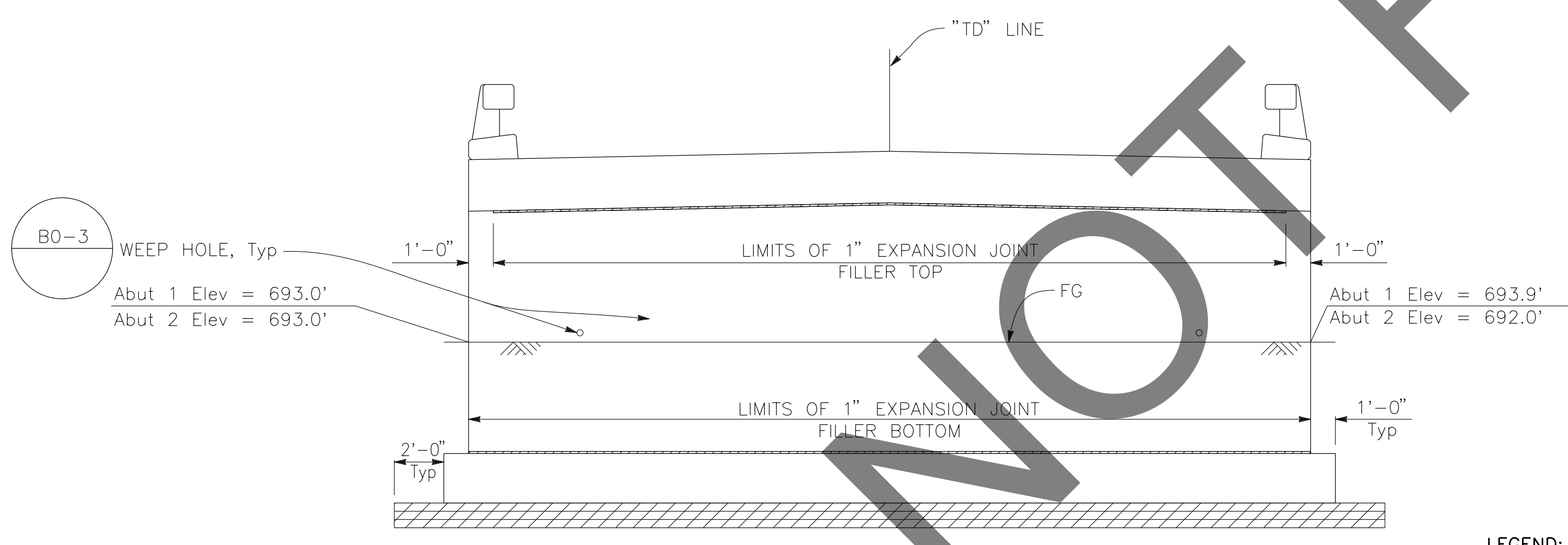
DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 FOUNDATION PLAN
 TERRA DITCH

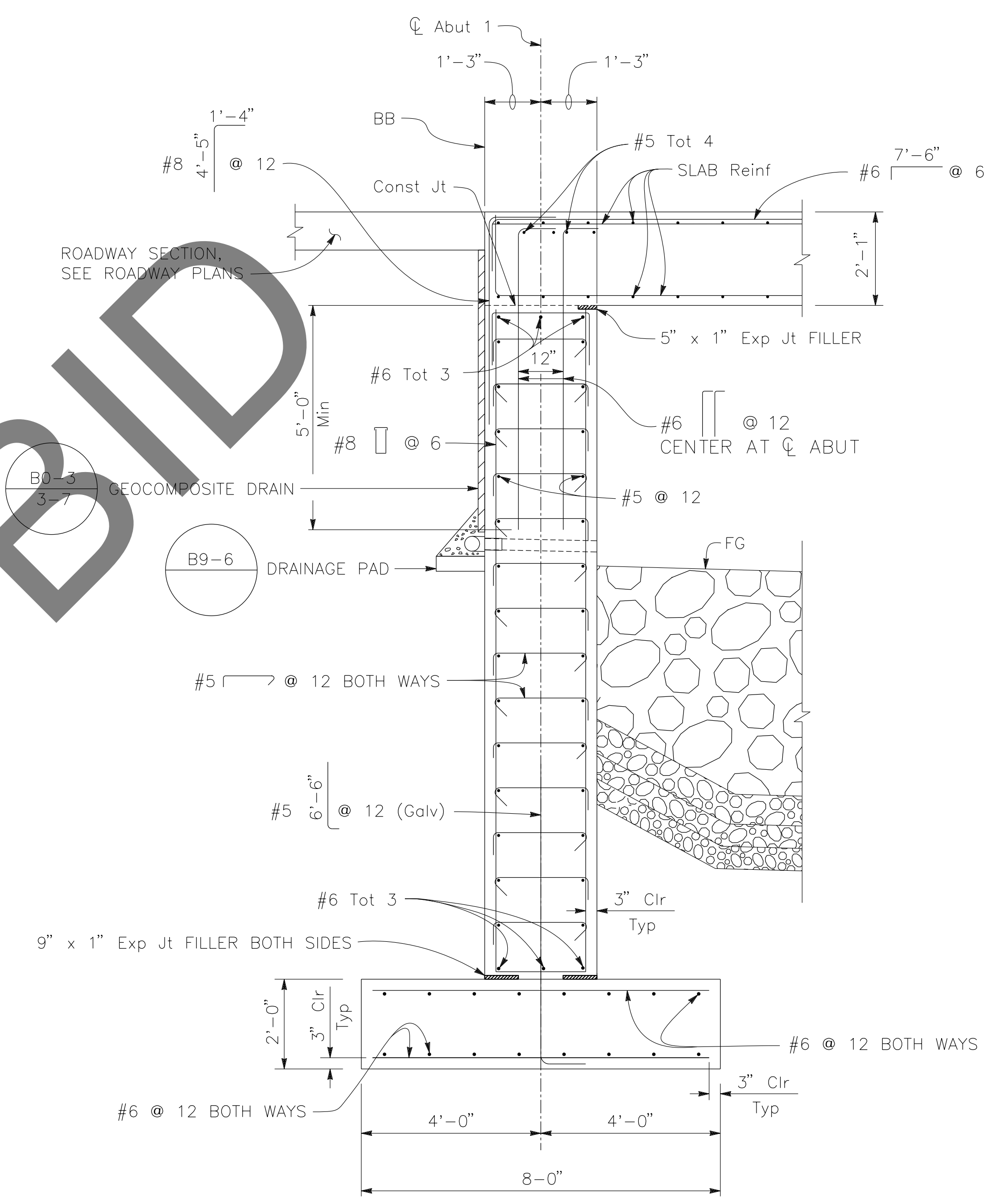
J.L. REF. J.L. 11802	W.O. NO. H14914	PLAN SCALE AS NOTED	SHT. NO. 190	TOT. SHT'S. 240
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PLAN
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



ELEVATION
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR



TYPICAL SECTION
 $\frac{1}{2}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

- LEGEND:**
- STRUCTURE EXCAVATION (BRIDGE)
 - STRUCTURE BACKFILL (BRIDGE)

- NOTES:**
1. FOR "VIEW A-A," SEE "ABUTMENT DETAILS" SHEET

REVISIONS	DATE	APPR.

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 GABRIELA MORALES
 No. 93473
 Exp. 06-30-26
 CIVIL
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

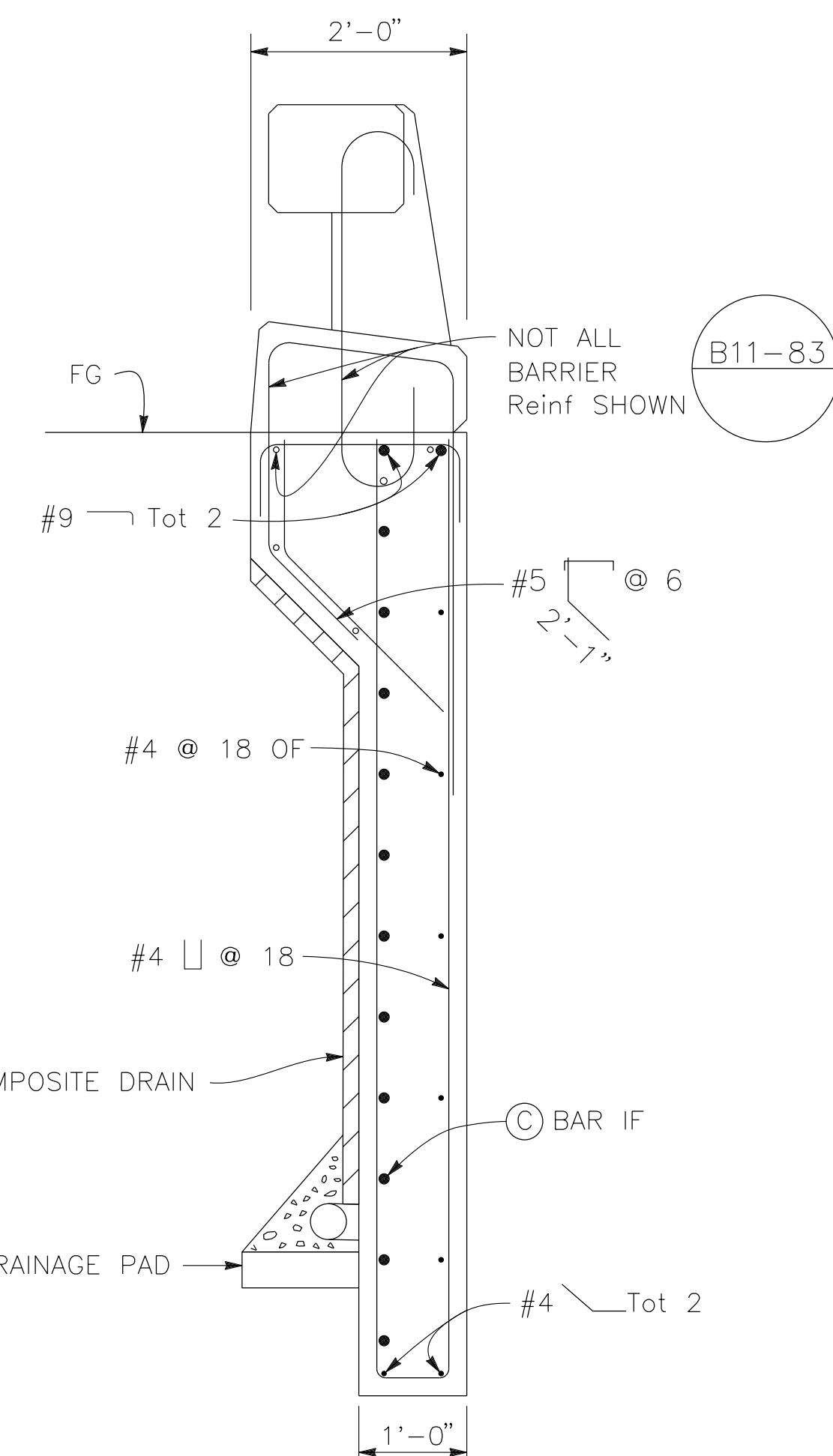
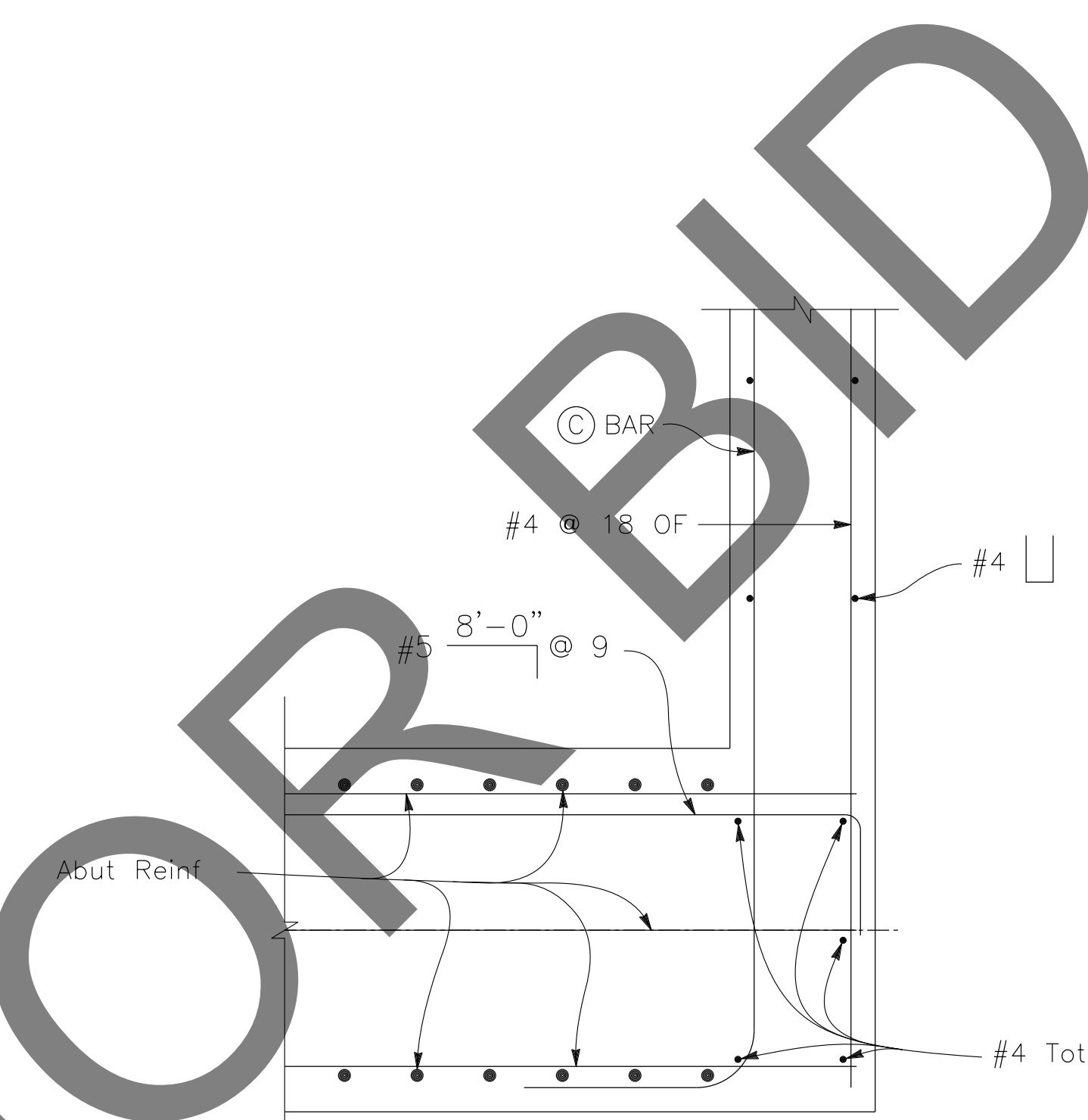
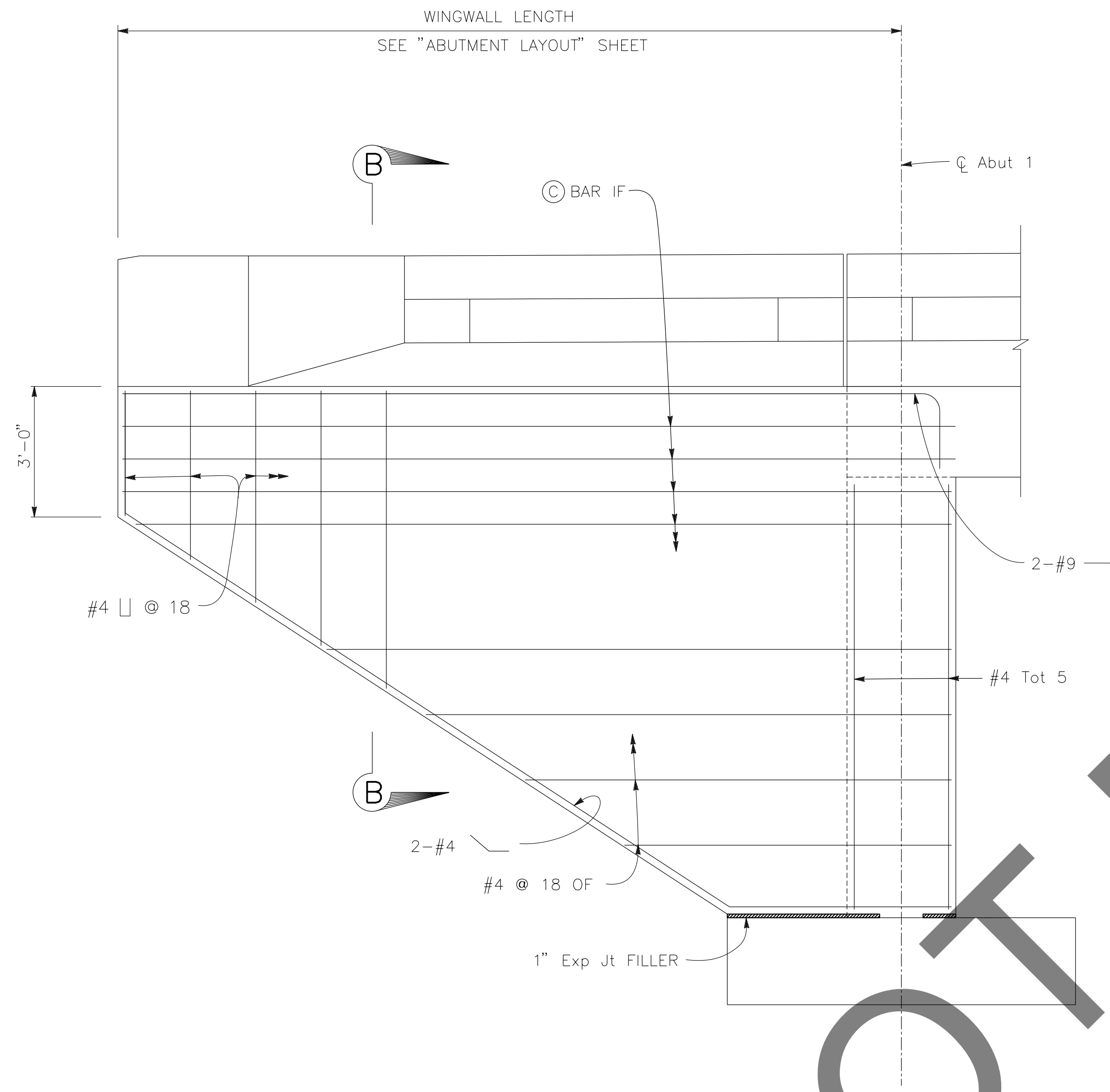
DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 TERRA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	AS NOTED	191	240

BAR	WINGWALL LENGTH	
	20'-9"	22'-9"
Ⓢ	#8 @ 9	#9 @ 6

NOTES:
1. FOR DETAILS NOT SHOWN, SEE B0-3



VIEW A-A
1/2" = 1'-0"
ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

CORNER DETAIL
1" = 1'-0"

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

REVISIONS	DATE	APPR.

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

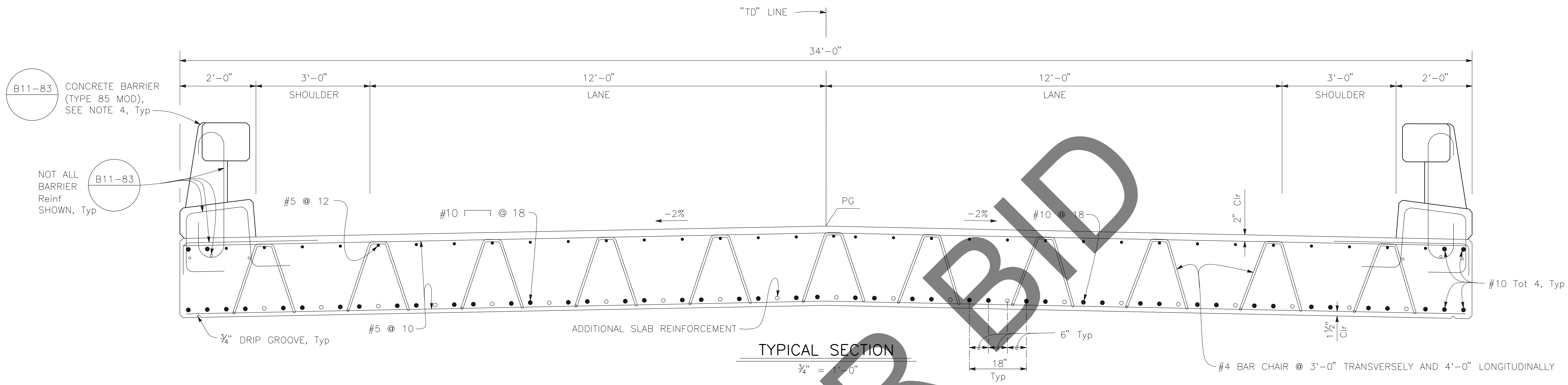
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 DATE			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE

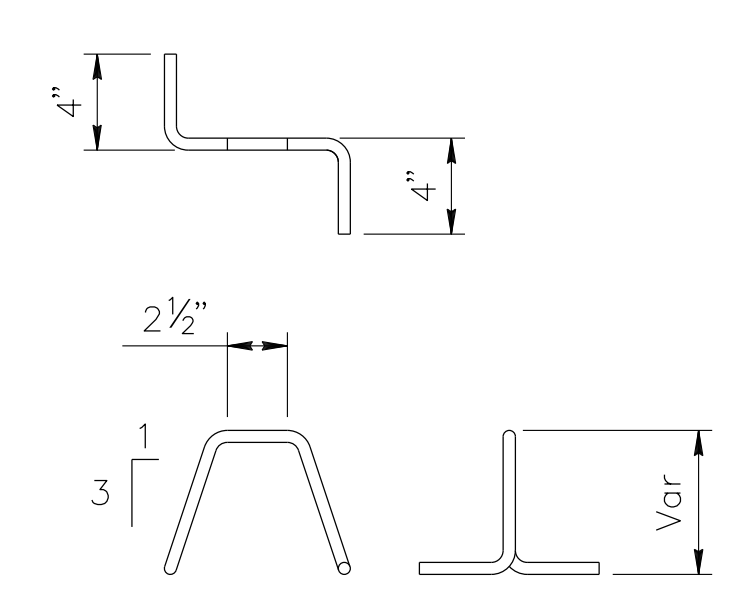
LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER
 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ABUTMENT DETAILS
 TERRA DITCH

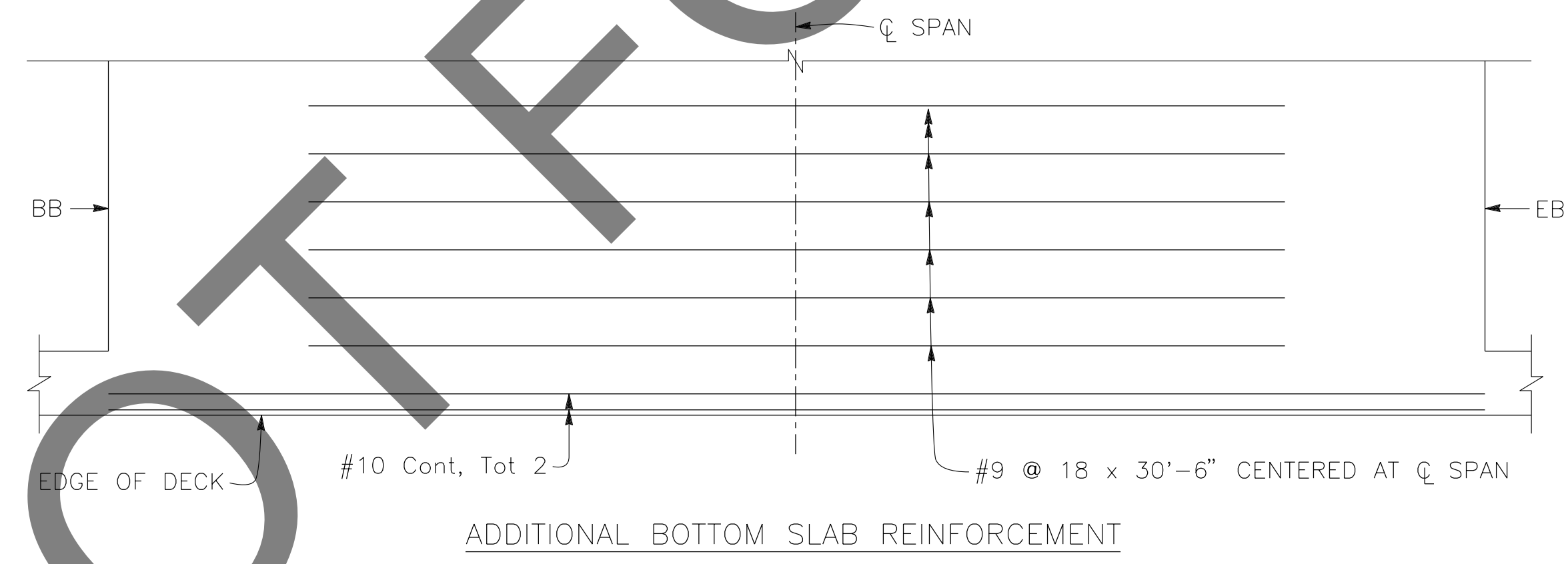
J.L. REF.	W.D. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	AS NOTED	192	240



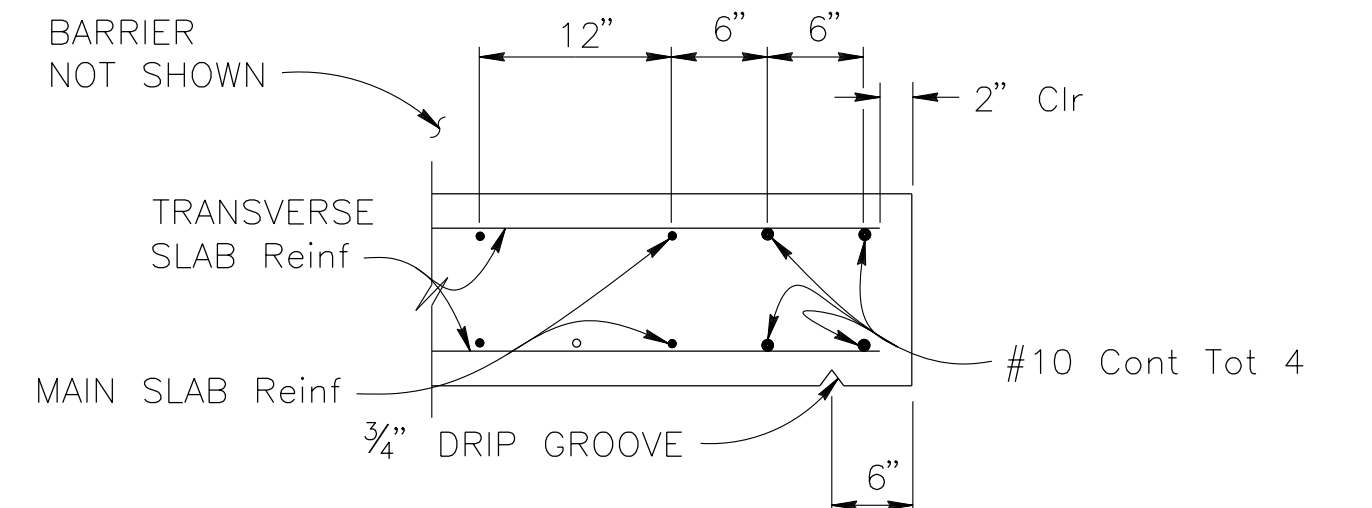
TYPICAL SECTION
3/4" = 1'-0"



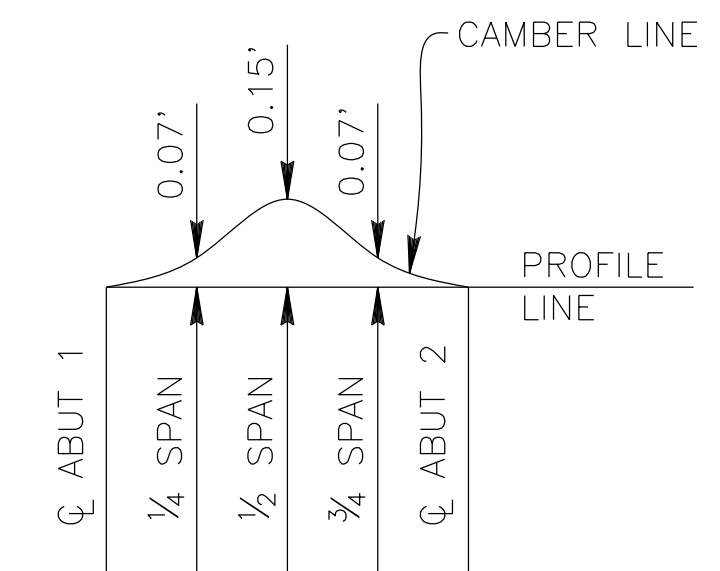
REINFORCEMENT CHAIR DETAIL
NO SCALE



PARTIAL PLAN
1/4" = 1'-0"



EDGE OF SLAB DETAILS
NO SCALE



CAMBER DIAGRAM
NO SCALE

DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT.

- NOTES:
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO CL BRIDGE.
 2. PLACE TRANSVERE REINFORCEMENT NORMAL TO CL BRIDGE.
 3. FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.
 4. ALL EXPOSED SURFACES OF THE BARRIER ABOVE THE SLAB TO BE PAINTED WHITE.

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER
 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>[Signature]</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>[Signature]</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>[Signature]</i> 1/16/2025 MERVAT R. MIKHAL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
SLAB DETAILS
TERRA DITCH

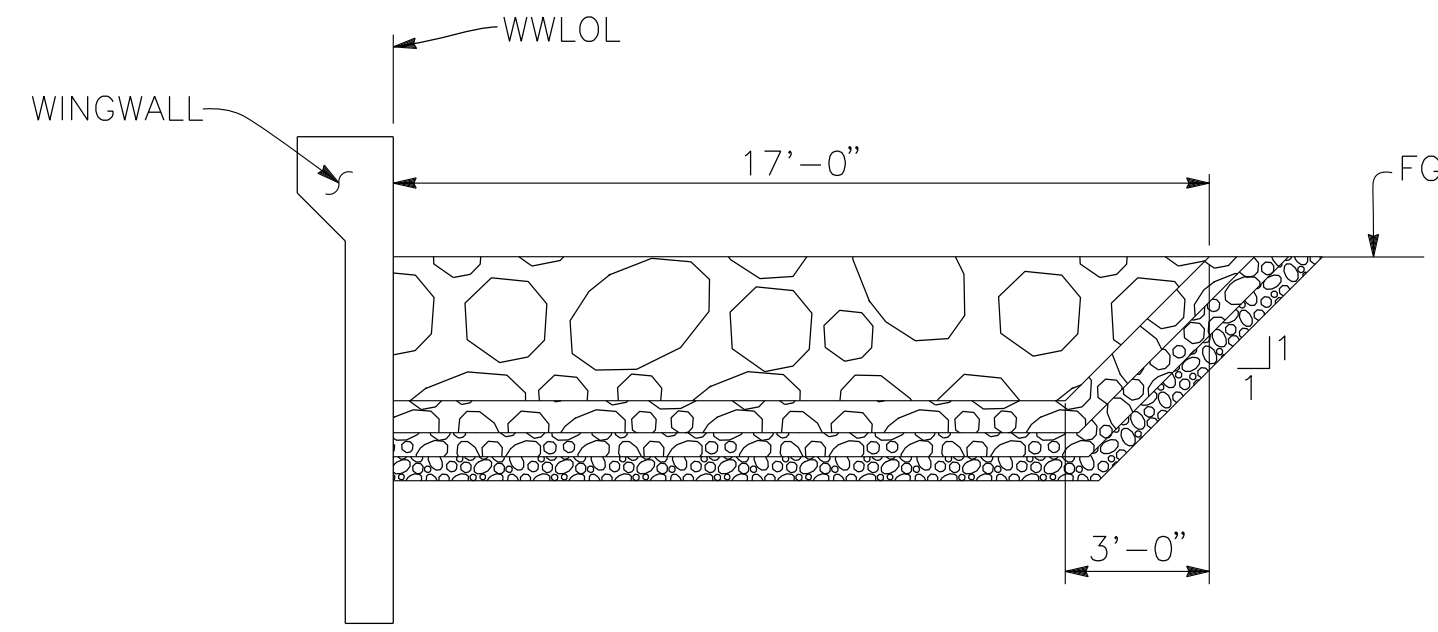
J.L. REF. J.L. 11802	W.D. NO. H14914	PLAN SCALE AS NOTED	SHT. NO. 193	TOT. SHT'S. 240
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MARK	REVISIONS	DATE

NOTES:

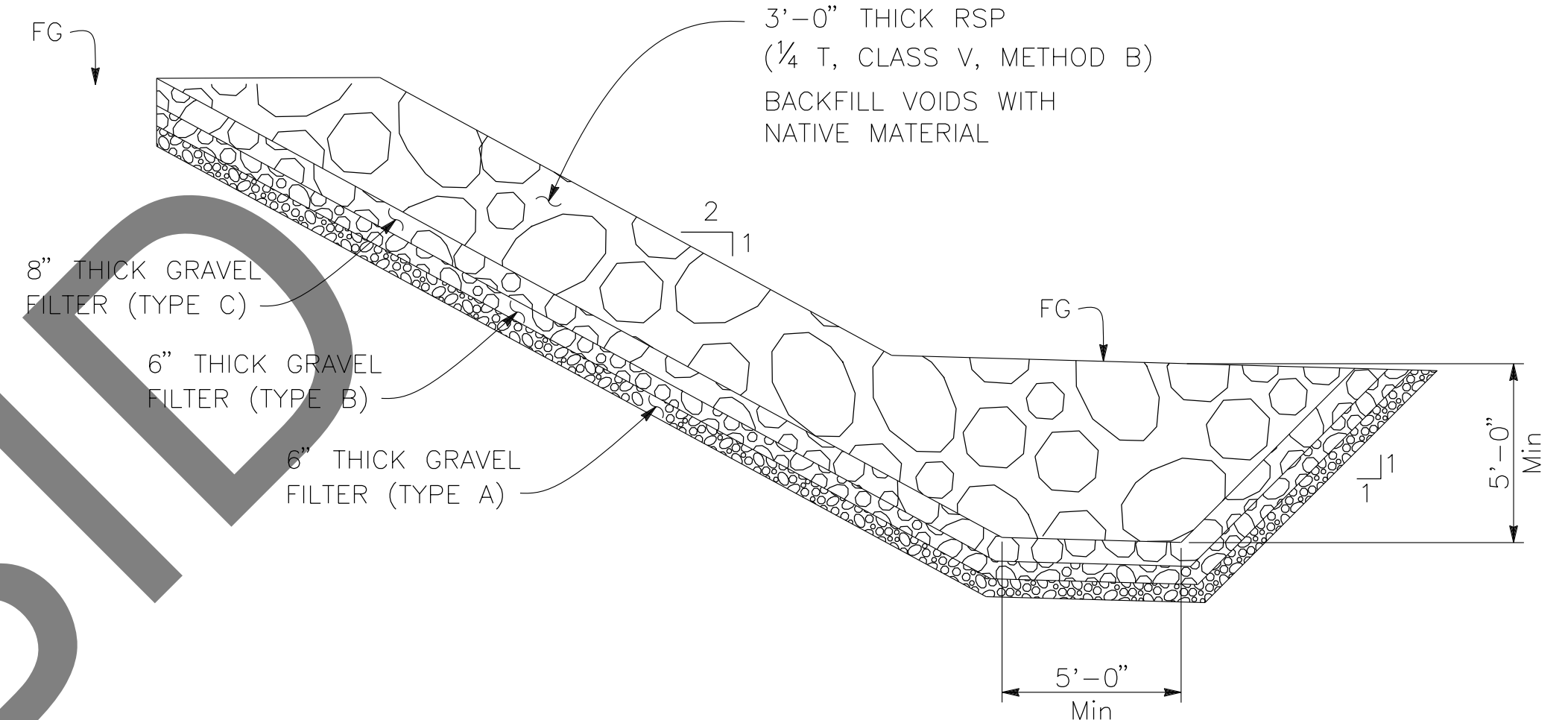
1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS

* SEE LIMITS OF PAYMENT FOR "STRUCTURE EXCAVATION AND STRUCTURE BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET

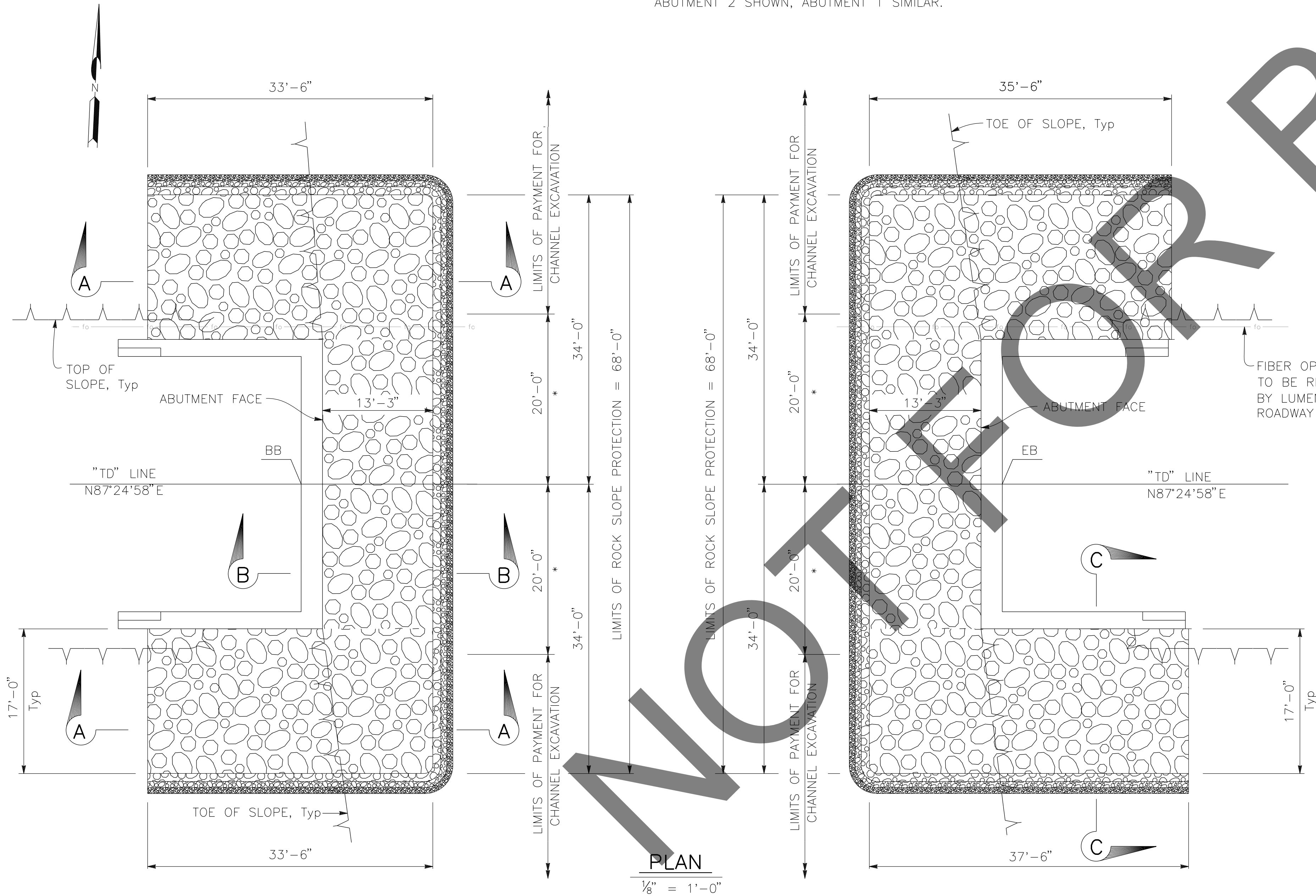


SECTION C-C
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

NOTE:
 FOR DETAILS NOT SHOWN
 SEE SECTION A-A



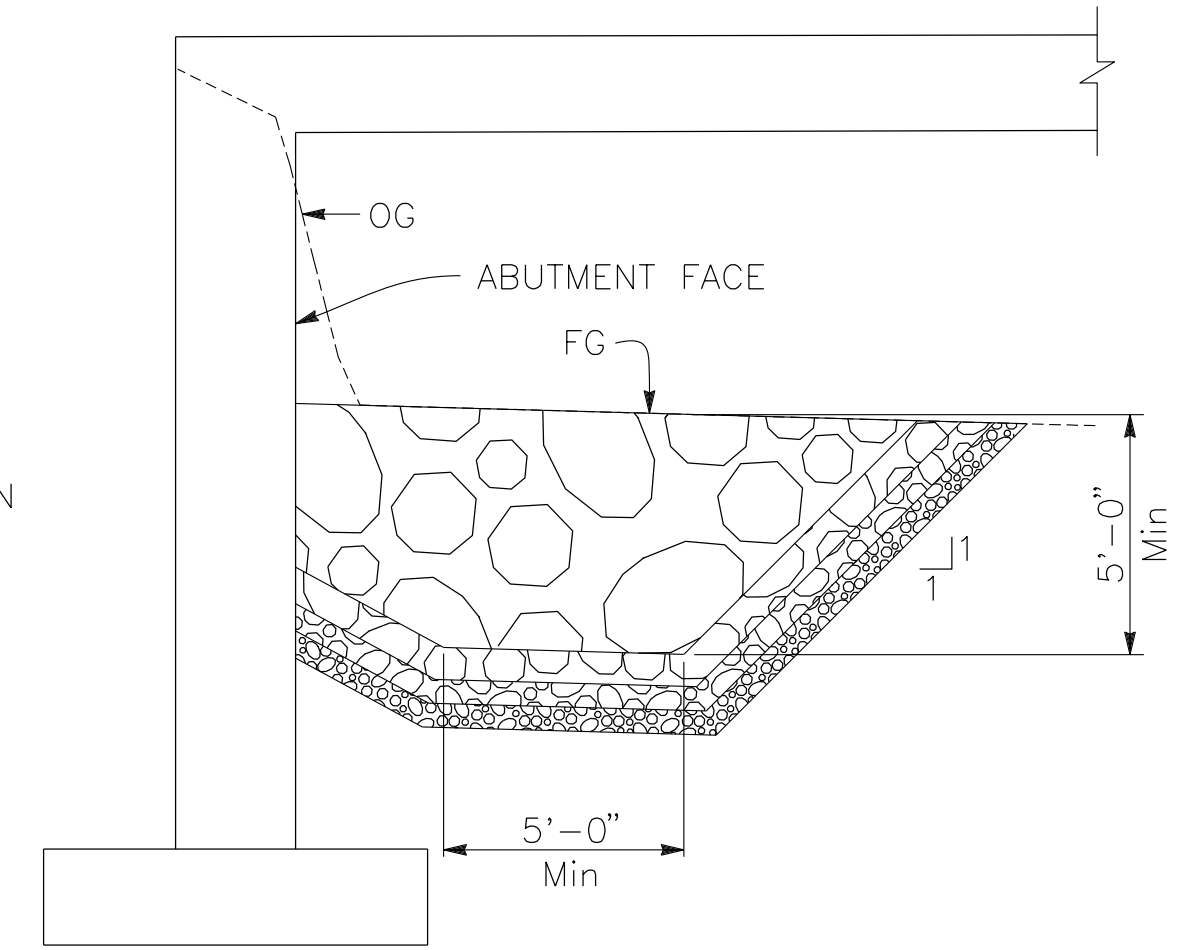
SECTION A-A
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.



PLAN
 $\frac{1}{8}'' = 1'-0''$

NOT FOR BIDD

NOTE:
 FOR DETAILS NOT SHOWN
 SEE SECTION A-A



SECTION B-B
 $\frac{1}{4}'' = 1'-0''$
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.

PREPARED BY:

DE DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 GABRIELA MORALES
 No. 93473
 Exp. 06-30-26
 CIVIL
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei Rocky Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ROCK SLOPE PROTECTION DETAILS
 TERRA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	AS NOTED	194	240

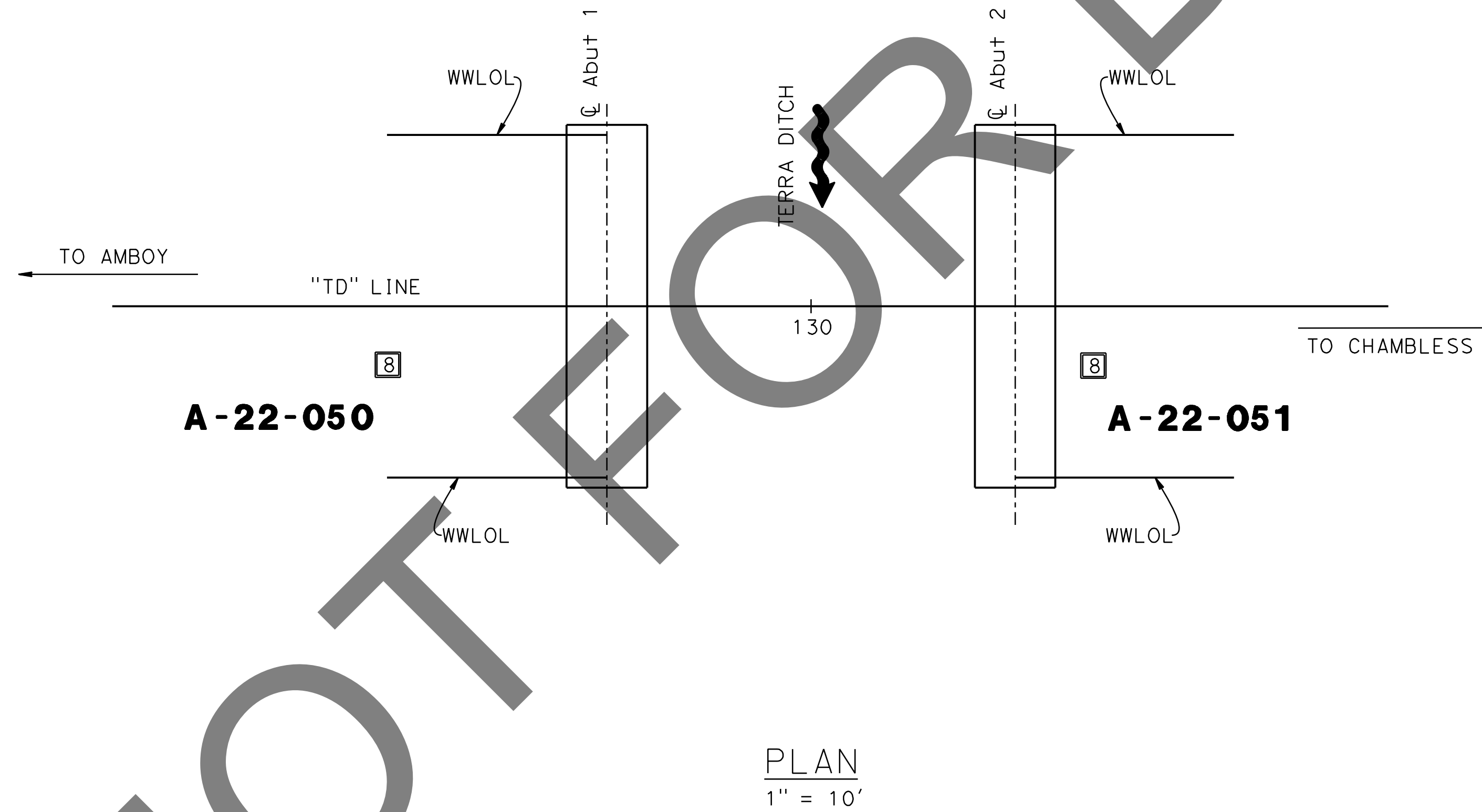
MARK	REVISIONS	DATE

NOTES:

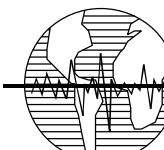
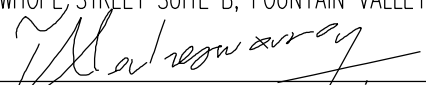
- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans **A10F** and **A10G**.

BOREHOLE LOCATION TABLE

Hole ID	Alignment Name	Station and Offset
A-22-050	"TD" Line	129+58 5.8 Rt.
A-22-051	"TD" Line	130+28 5.9 Rt.




PLAN
1" = 10'

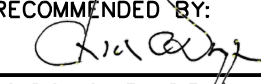
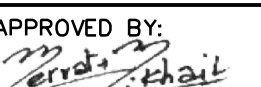
PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826

 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



**SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS**

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY:  CHRIS NGUYEN, P.E. // TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY:  MERVAT K. MIKHAIL, P.E. DEPUTY DIRECTOR 1/16/2025 DATE			LD (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE

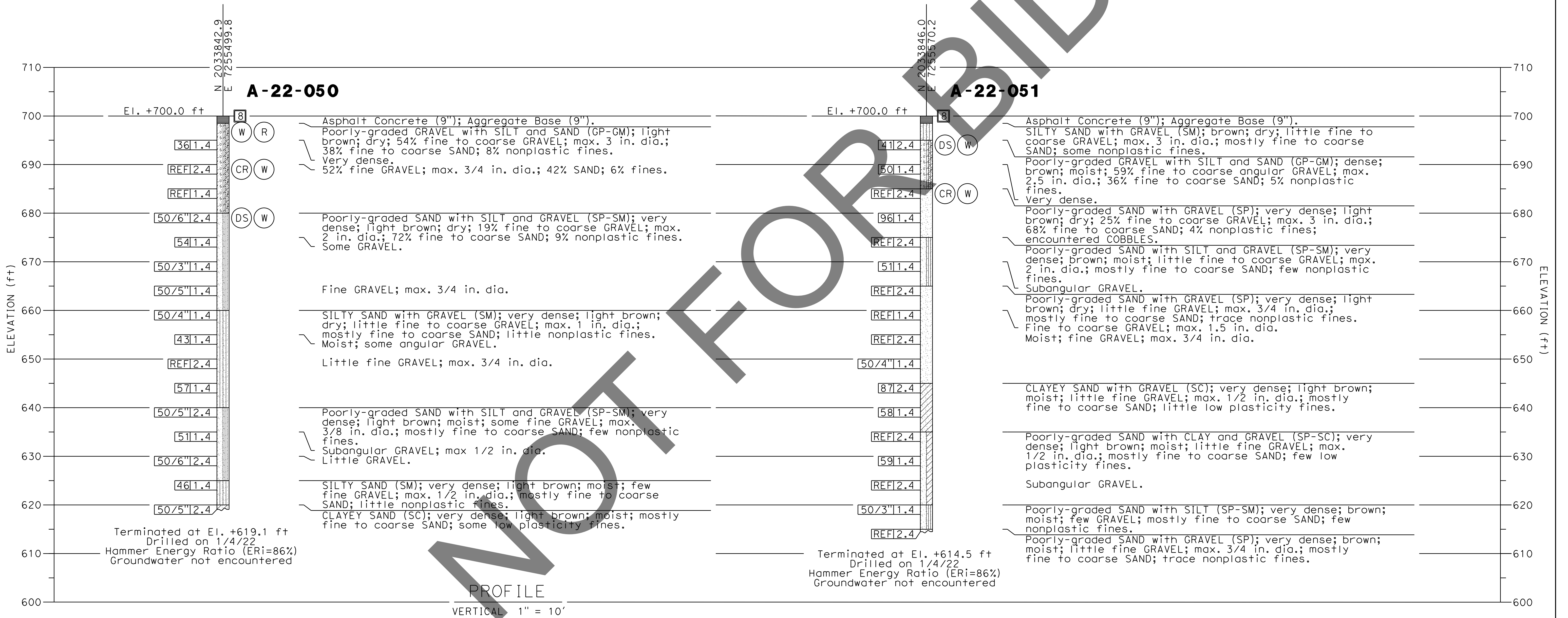
**BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
LOG OF TEST BORINGS 1 OF 2
TERRA DITCH**

J.L. REF. J.L. 11802	W.O. NO. H14914	PLAN SCALE AS NOTED	SHT. NO. 195	TOT. SHT'S. 240
-------------------------	--------------------	------------------------	-----------------	--------------------

REVISIONS	DATE	APPR.	DATE

BENCH MARK:
 FOUND 3.5" NGS BRASS DISC IN 10"x10"
 Conc Mnmt STAMPED "Z1308-1978 NATIONAL
 GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'

NOTE:
 This LOTB sheet (Boring Record) was prepared in accordance with Caltrans
 Soil and Rock Logging, Classification and Presentation Manual (2022).



REVISIONS	DATE	APPR.

PREPARED BY:

 Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE, STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 A. THURAIRAJAH
 No. GE 3123
 Exp. 9/30/25
 GEOTECHNICAL
 STATE OF CALIFORNIA

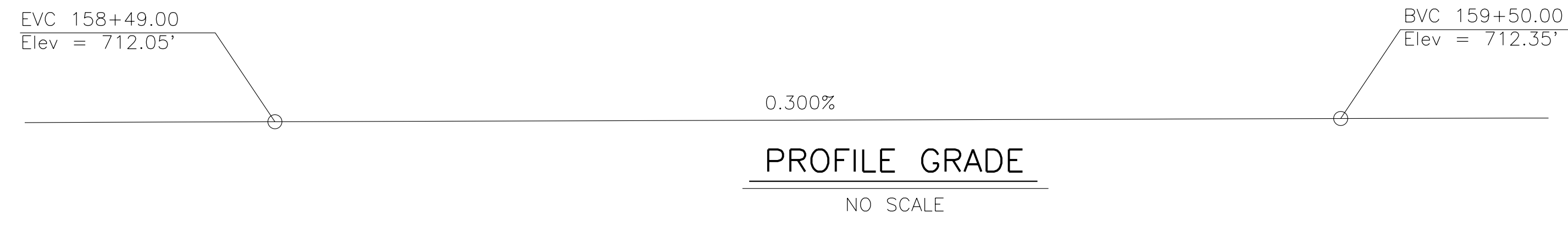
SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025
			APPROVED BY: MERWAT K. MIKHAL, P.E. / DEPUTY DIRECTOR 1/16/2025

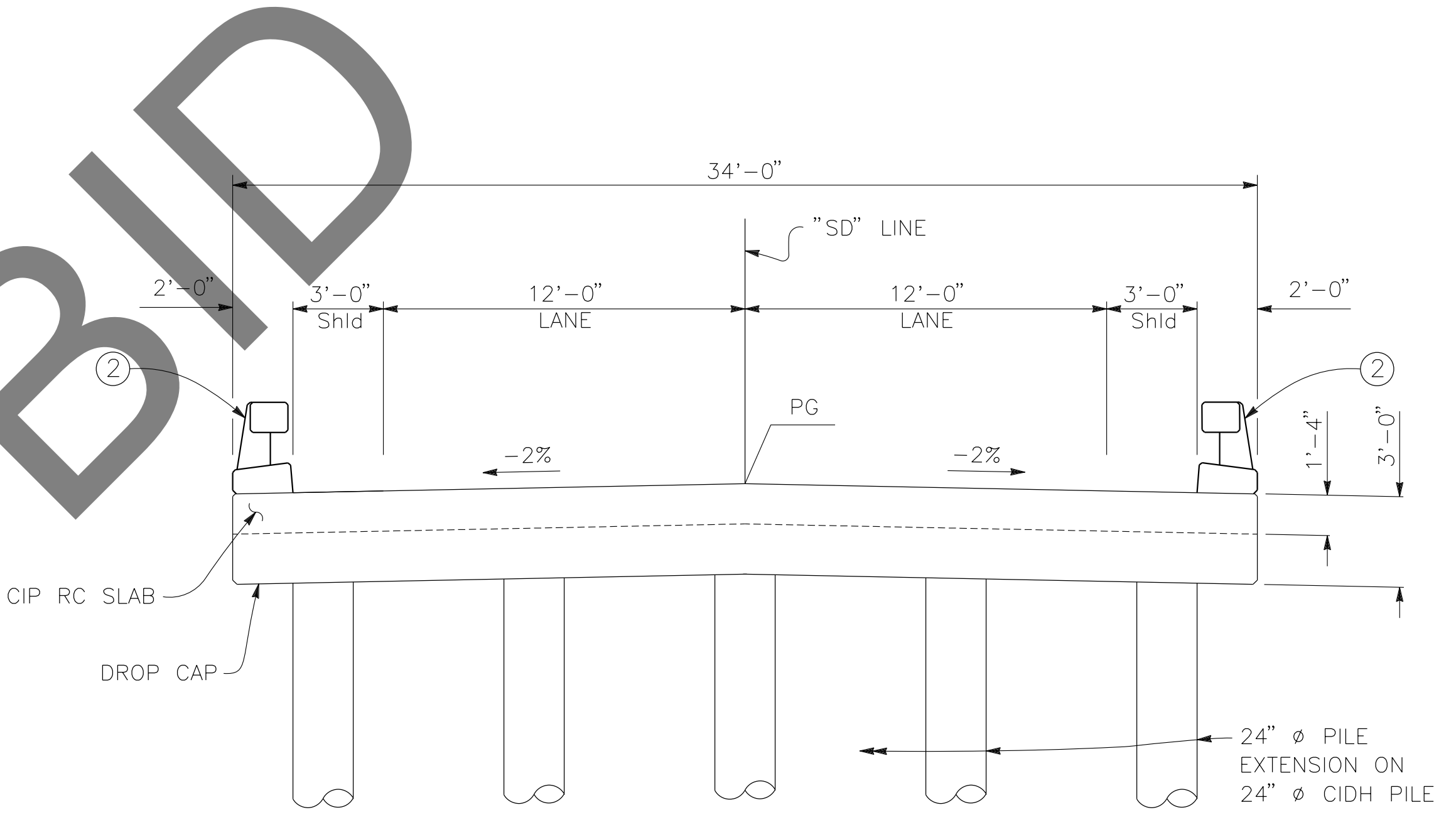
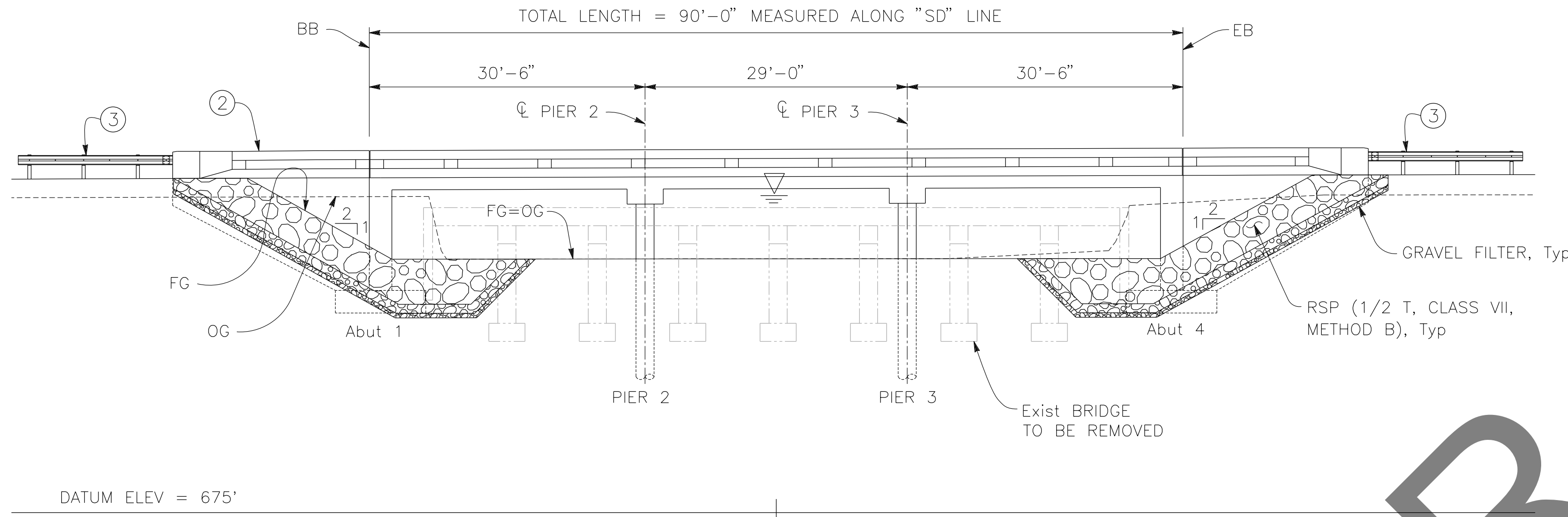
LEI (ROCKY) L. P.E. SUPERVISING ENGINEER 1/15/2025

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 LOG OF TEST BORINGS 2 OF 2
 TERRA DITCH

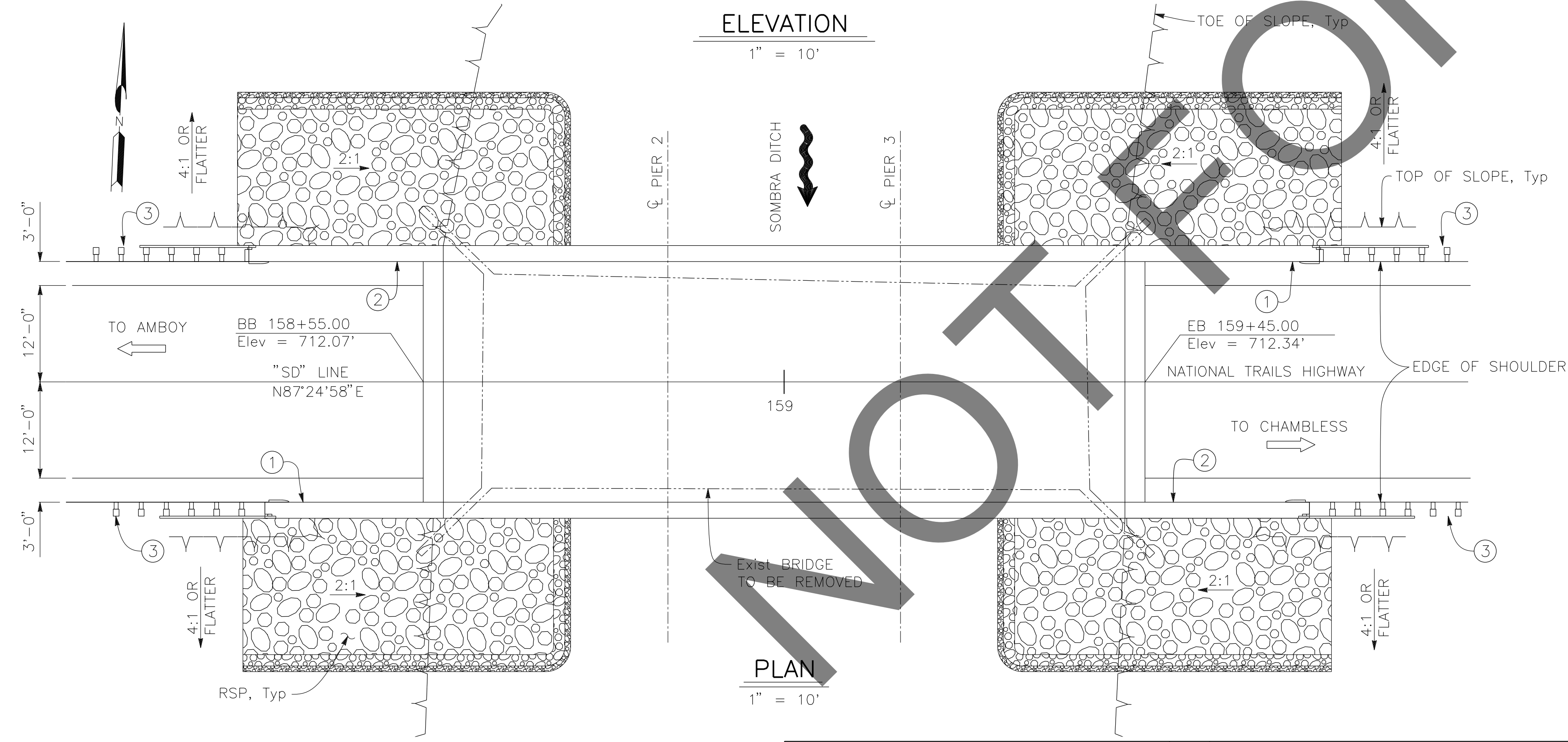
J.L. REF. J.L. 11802	W.O. NO. H14914	PLAN SCALE AS NOTED	SHT. NO. 196	TOT. SHT'S. 240
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- NOTES:**
- FOR TEMPORARY DETOUR DURING CONSTRUCTION, SEE ROADWAY PLANS.
 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



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



- LEGEND:**
- ① PAINT "SOMBRA DITCH BRIDGE" "BR NO. 54C0816" AND YEAR CONSTRUCTED
 - ② CONCRETE BARRIER (TYPE 85 MOD), TO BE PAINTED WHITE.
 - ③ MGS, SEE ROADWAY PLANS
 - ▽ WATER SURFACE ELEVATION. FOR "HYDROLOGIC SUMMARY" TABLE, SEE "FOUNDATION PLAN" SHEET.
 - EXISTING STRUCTURE, TO BE REMOVED

PREPARED BY:

DE DOKKEN ENGINEERING

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642

Gabriela Morales
GABRIELA MORALES, PROJECT ENGINEER

12-16-24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER

DONGXUAN YANG

No. 94542

Exp. 03-31-25

CIVIL

STATE OF CALIFORNIA

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: [Signature] 1/14/2025
LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: [Signature] 1/16/2025
DATE			DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES

GENERAL PLAN
SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 197	TOT. SHT'S. 240
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**GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN**

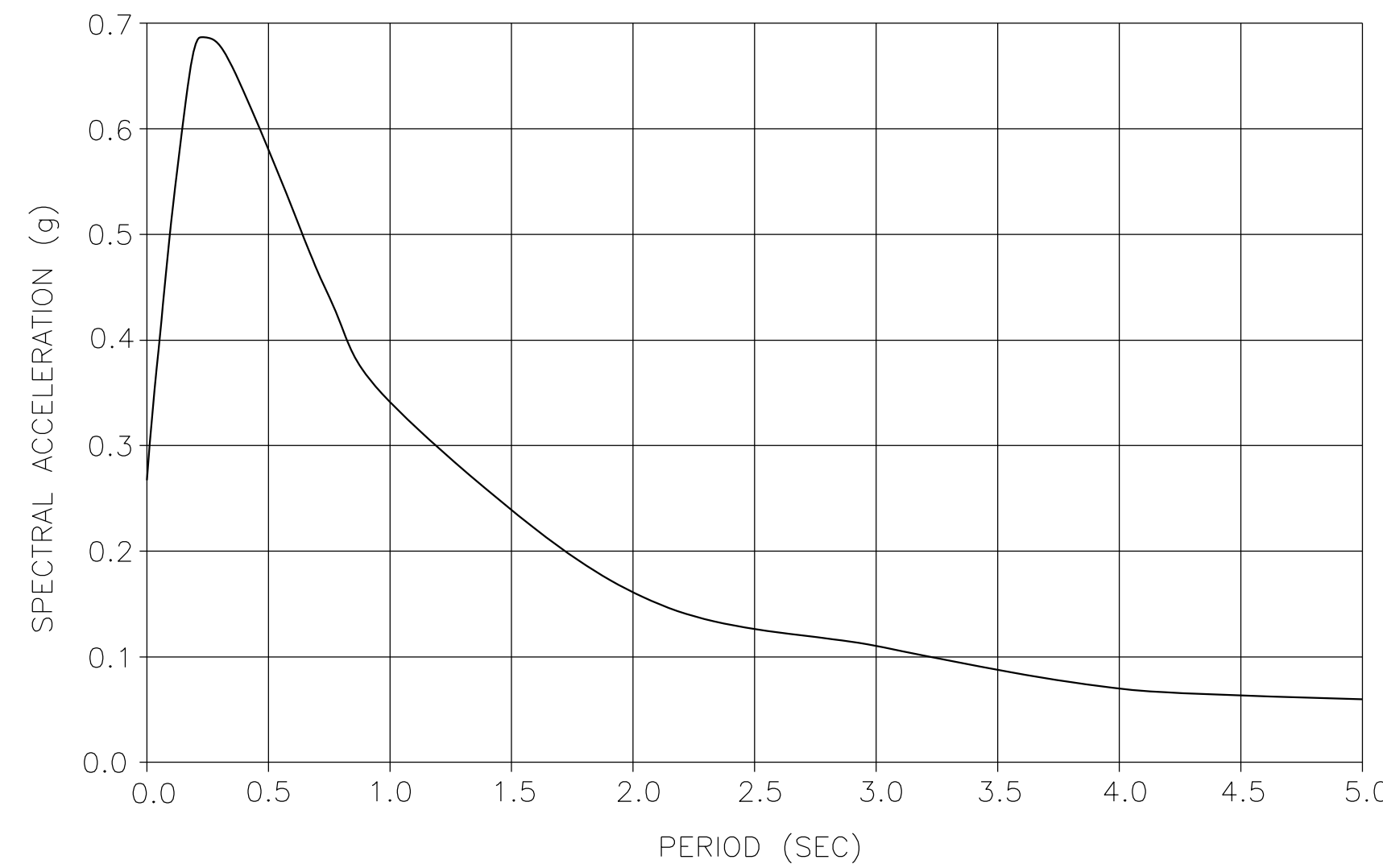
DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE DATED JUNE 2024
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION WITH REVISED STANDARD PLANS, DATED OCTOBER 2024.

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) VERSION 2.0, APRIL 2019

DEAD LOAD: INCLUDES 0.035 KSF FOR FUTURE WEARING SURFACE

LIVE LOAD: HL-93 AND PERMIT DESIGN LOAD

SEISMIC DATA: SOIL PROFILE : $V_{s30} = 1050$ FT/S
MOMENT MAGNITUDE : 6.38
PEAK GROUND ACCELERATION = 0.27g
5% DAMPING

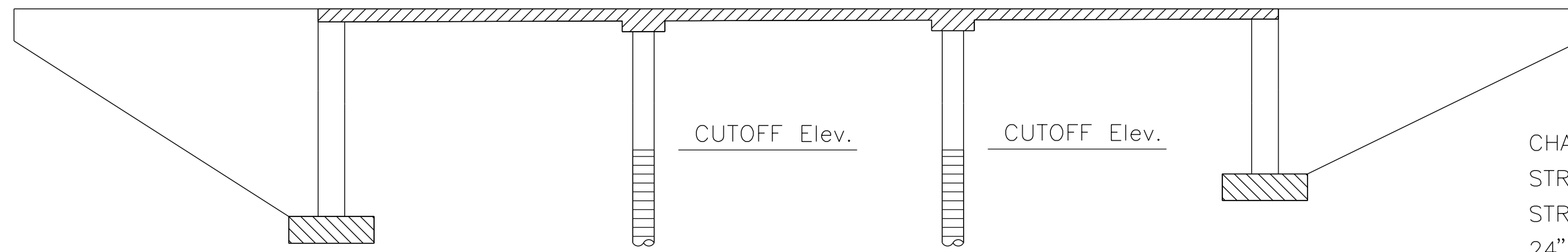
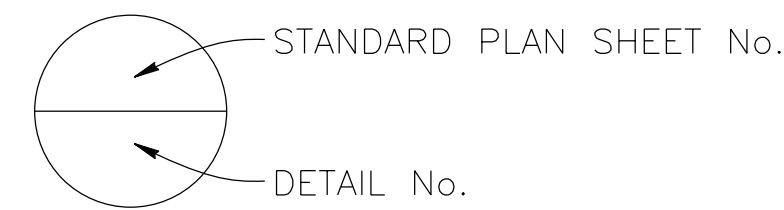


ARS CURVE
NO SCALE

REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See "CONCRETE STRENGTH AND TYPE LIMITS"
 $n = 8$

INDEX TO PLANS

SHEET No.	TITLE
197	GENERAL PLAN
198	INDEX TO PLANS
199	DECK CONTOURS
200	FOUNDATION PLAN
201	ABUTMENT LAYOUT
202	ABUTMENT DETAILS
203	PIER LAYOUT
204	SLAB DETAILS
205	ROCK SLOPE PROTECTION DETAILS
206	LOG OF TEST BORINGS 1 OF 3
207	LOG OF TEST BORINGS 2 OF 3
208	LOG OF TEST BORINGS 3 OF 3

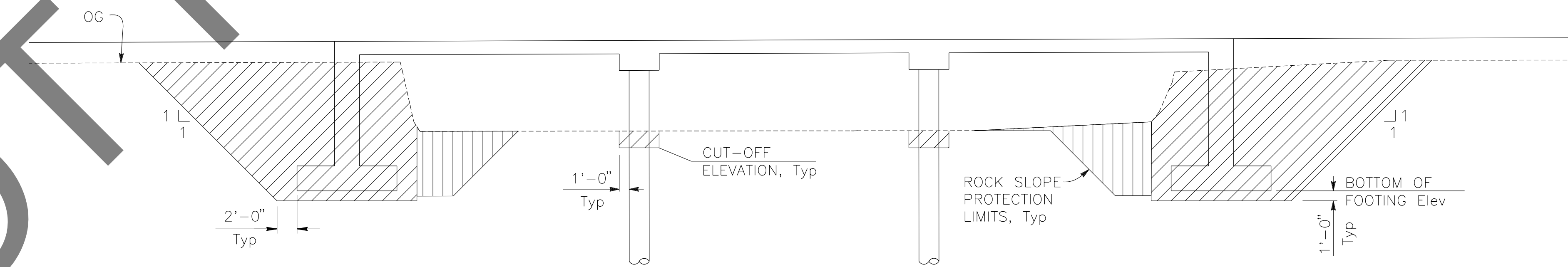
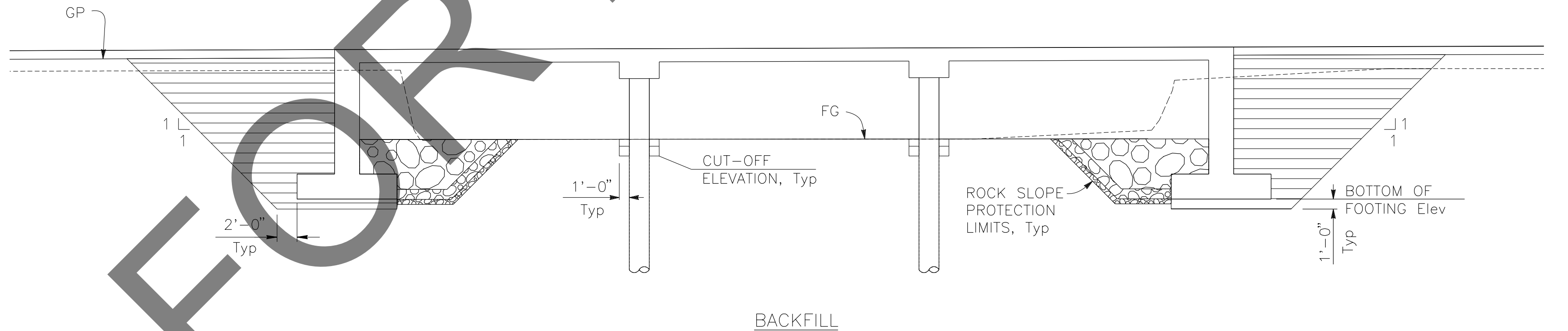


LEGEND:

- STRUCTURAL CONCRETE, BRIDGE ($f'_c = 3.6$ KSI @ 28 DAYS)
- STRUCTURAL CONCRETE, BRIDGE FOOTING ($f'_c = 3.6$ KSI @ 28 DAYS)
- STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER) ($f'_c = 4.0$ KSI)
- 24" CAST-IN-DRILLED-HOLE CONCRETE PILING ($f'_c = 3.6$ KSI @ 28 DAYS)

CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE



LEGEND:

- STRUCTURE EXCAVATION (BRIDGE)
- STRUCTURE BACKFILL (BRIDGE)
- CHANNEL EXCAVATION
- ROCK SLOPE PROTECTION, SEE "ROCK SLOPE PROTECTION DETAILS" SHEET

**LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL**

NO SCALE

QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	760	CY
STRUCTURE EXCAVATION (BRIDGE)	930	CY
STRUCTURE BACKFILL (BRIDGE)	610	CY
24" CAST-IN-DRILLED-HOLE CONCRETE PILING	362	LF
STRUCTURAL CONCRETE, BRIDGE FOOTING	67	CY
STRUCTURAL CONCRETE, BRIDGE	117	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	168	CY
BAR REINFORCING STEEL (BRIDGE)	93,720	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (1/2 T, CLASS VIII, METHOD B)	511	CY
GRAVEL FILTER (TYPE B)	91	CY
GRAVEL FILTER (TYPE C)	159	CY
CONCRETE BARRIER (TYPE 85 MOD)	264	LF

NOT FOR BID

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

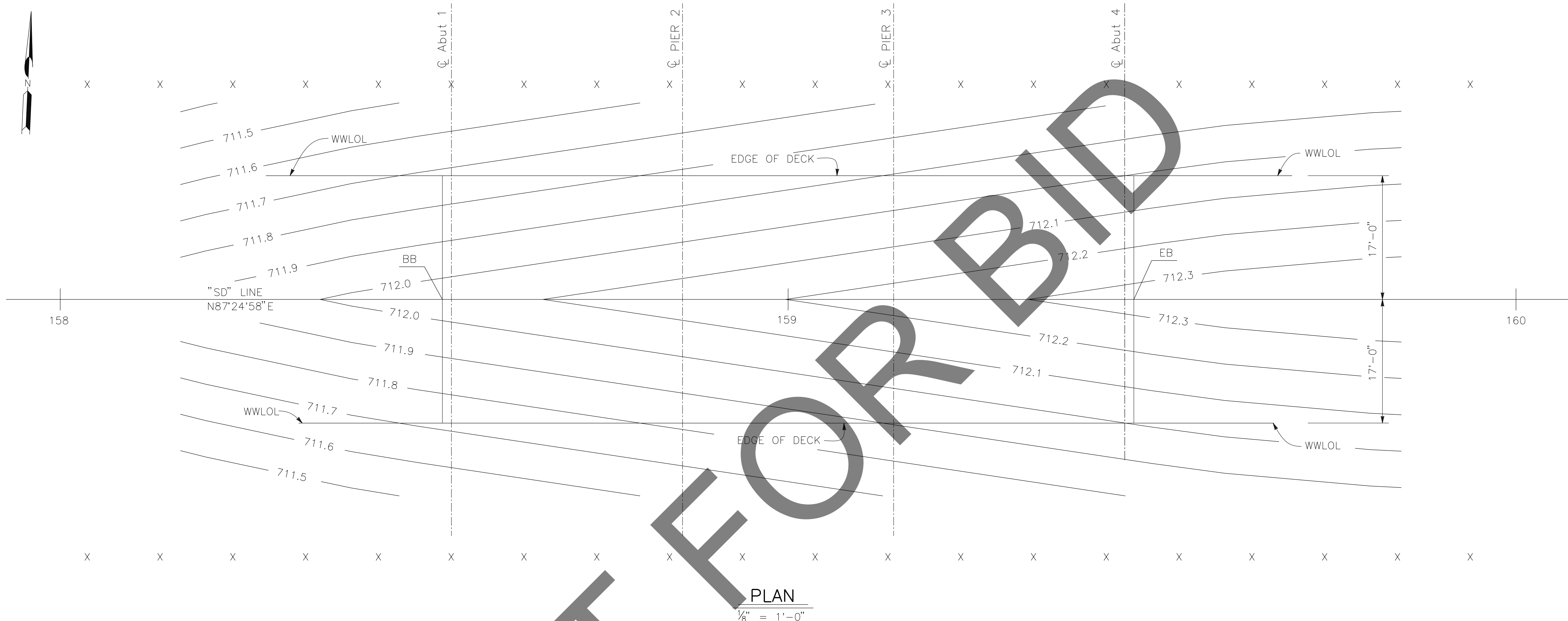
FIELD CHANGES

SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: [Signature] 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: [Signature] 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: [Signature] 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
INDEX TO PLANS
SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 198	TOT. SHT'S. 240
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NOT FOR BID

PLAN
1/8" = 1'-0"

NOTES:

1. 0.1' CONTOUR INTERVALS SHOWN.
2. CONTOURS DO NOT INCLUDE CAMBER, FALSEWORK SETTLEMENT, OR ALLOWENCE FOR DECK GRINDING AND GROOVING.
3. TOP OF CONCRETE DECK SHOWN.

LEGEND:

× 10' INTERVALS ALONG STATION LINE.

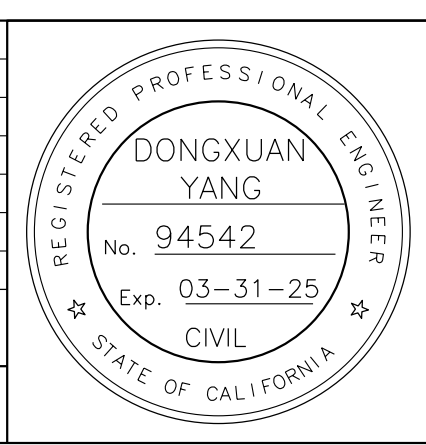
MARK	REVISIONS	DATE

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales 12-16-24
 GABRIELA MORALES, PROJECT ENGINEER DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
DECK CONTOURS
SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 199	TOT. SHT'S. 240
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SCOUR DATA TABLE		
SUPPORT LOCATION	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (FT)	SHORT TERM (LOCAL) SCOUR DEPTH (FT)
Abut 1	702.2	2.6
PIER 2	702.2	6.1
PIER 3	702.2	6.1
Abut 4	702.2	2.6

HYDROLOGIC SUMMARY		
	DESIGN FLOOD	Base Flood
FREQUENCY	50-YR	100-YR
DISCHARGE*	3070 CFS	4038 CFS
WATER SURFACE ELEVATION AT BRIDGE	708.3 FT	709.3 FT

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.
* BULKED DESIGN FLOWS

PILE DATA TABLE					
SUPPORT LOCATION	PILE TYPE	NOMINAL RESISTANCE (KIPS)		DESIGN TIP ELEVATION (FT)	SPECIFIED TIP ELEVATION (FT)
		COMPRESSION	TENSION		
PIER 2	24" CIDH	290	10	+666(A) +691(B) +681(C) +672(D)	+666
PIER 3	24" CIDH	290	10	+666(A) +691(B) +681(C) +670(D)	+666

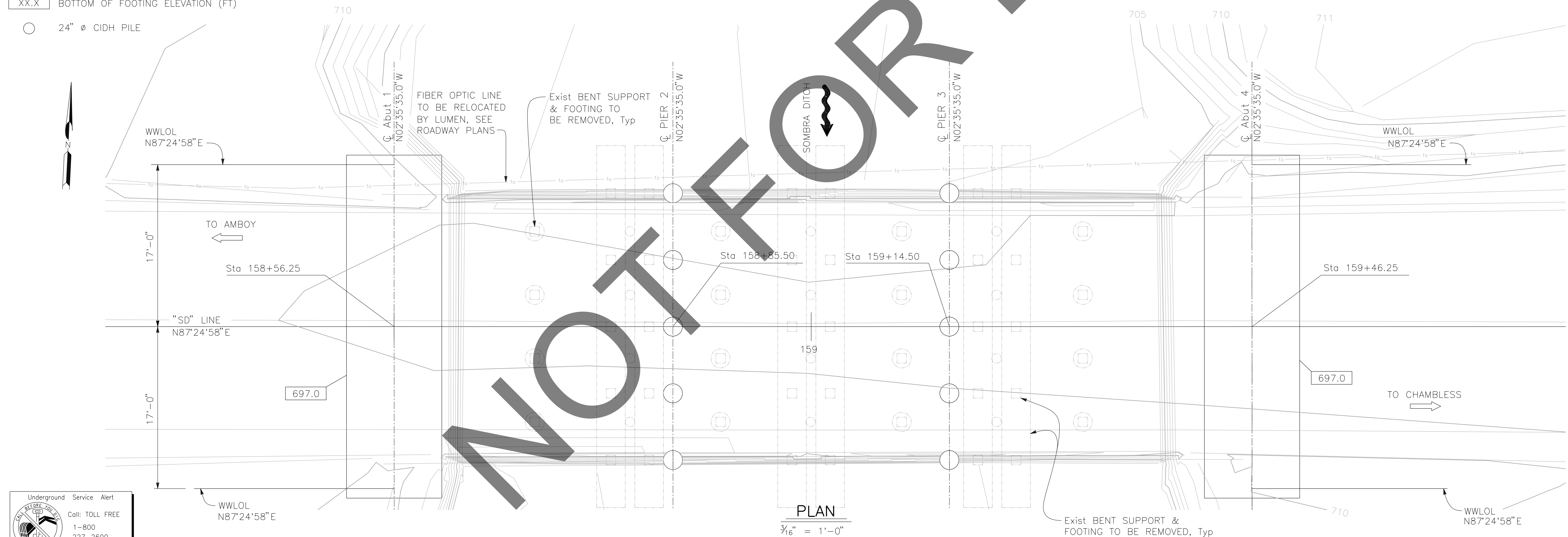
BENCHMARK
FOUND 3.5" NGS BRASS DSC IN 10"X10"
CONC MNMT STAMPED "Z1308-1978 NATIONAL
GEODETIC SURVEY" PER NGS DATASHEET
PID# EU0704.
NGVD-29 ELEVATION = 1097.43'

- NOTES:**
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO NEW CONSTRUCTION.
 - PILES IN CONFLICT WITH PROPOSED BRIDGE MAY BE FULLY REMOVED OR PARTIALLY REMOVED PER SPECIFICATIONS.

- LEGEND:**
- XX.X BOTTOM OF FOOTING ELEVATION (FT)
 - 24" Ø CIDH PILE

SPREAD FOOTING DATA TABLE			
SUPPORT LOCATION	SERVICE LIMIT STATE PERMISSIBLE NET CONTACT STRESS (KSF)	STRENGTH FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 0.45$	EXTREME EVENT FACTORED GROSS NOMINAL BEARING RESISTANCE FOR CONTROLLING LOAD CASE (KSF) $\Phi = 1.00$
Abut 1	2.9	6.9	11.0
Abut 4	2.9	6.9	10.9

- NOTES:**
- DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (A) COMPRESSION, (B) TENSION, (C) SETTLEMENT, AND (D) LATERAL LOADS.
 - DESIGN TIP ELEVATIONS FOR LATERAL LOADS WILL BE DETERMINED BY THE STRUCTURAL DESIGNERS.
 - THE SPECIFIED TIP ELEVATION SHALL NOT BE RAISED

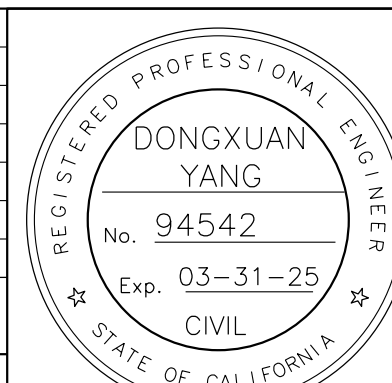


PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY DRAWN BY: EF CHECKED BY: JR RECOMMENDED BY: Chris Nguyen, P.E., TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE

APPROVED BY: Mervat R. Mikhail, P.E., DEPUTY DIRECTOR 1/16/2025 DATE

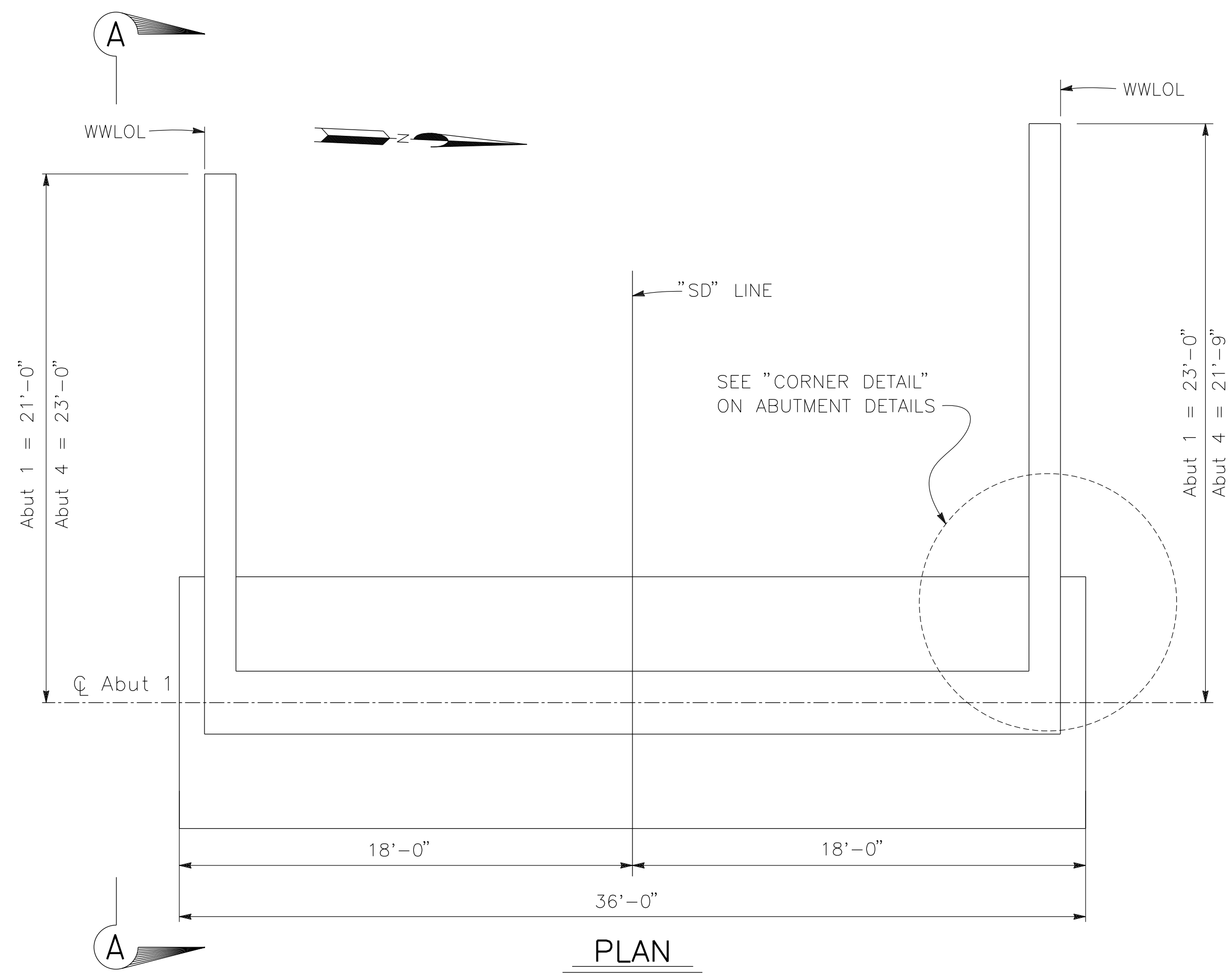
LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES

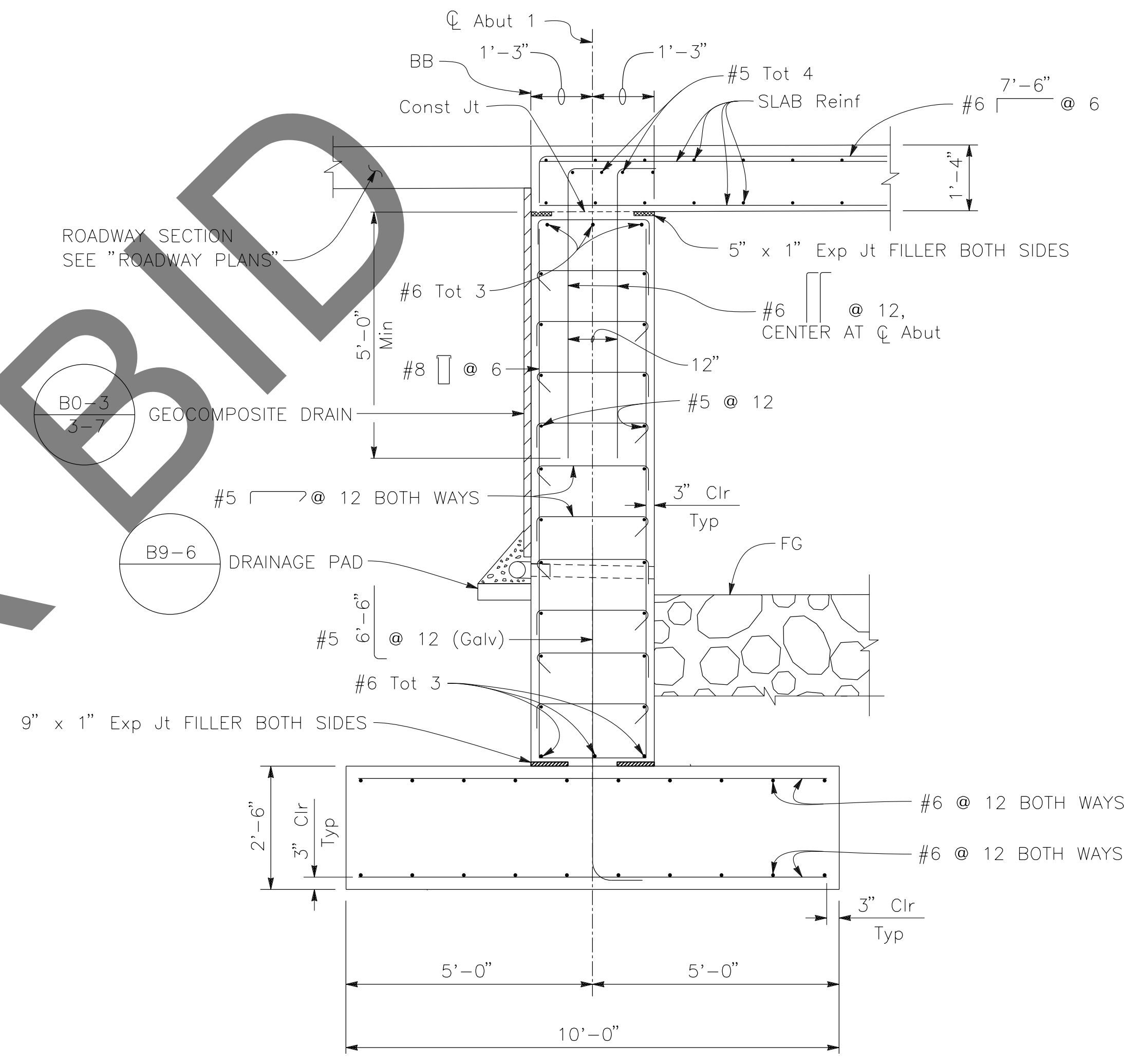
FOUNDATION PLAN

SOMBRA DITCH

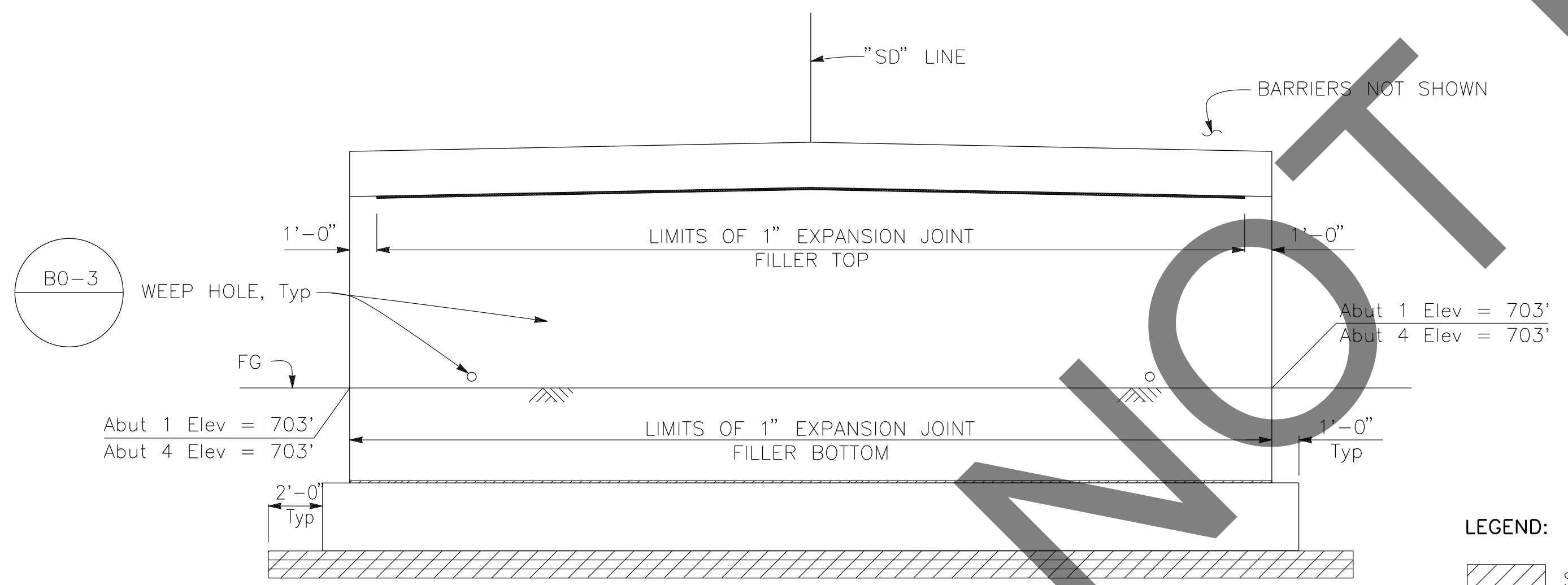
J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 200	TOT. SHT'S. 240
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PLAN
 1/4" = 1'-0"
 ABUTMENT 1 SHOWN, ABUTMENT 4 SIMILAR



TYPICAL SECTION
 1/2" = 1'-0"
 ABUTMENT 1 SHOWN, ABUTMENT 4 SIMILAR



ELEVATION
 1/4" = 1'-0"
 ABUTMENT 1 SHOWN, ABUTMENT 4 SIMILAR

- LEGEND:**
- STRUCTURE EXCAVATION (BRIDGE)
 - STRUCTURE BACKFILL (BRIDGE)

NOTES:
 1. FOR "VIEW A-A," SEE "ABUTMENT DETAILS" SHEET

PREPARED BY:

DE DOKKEN ENGINEERIN
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

REGISTERED PROFESSIONAL ENGINEER
 DONGXUAN YANG
 No. 94542
 Exp. 03-31-25
 CIVIL
 STATE OF CALIFORNIA

SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS

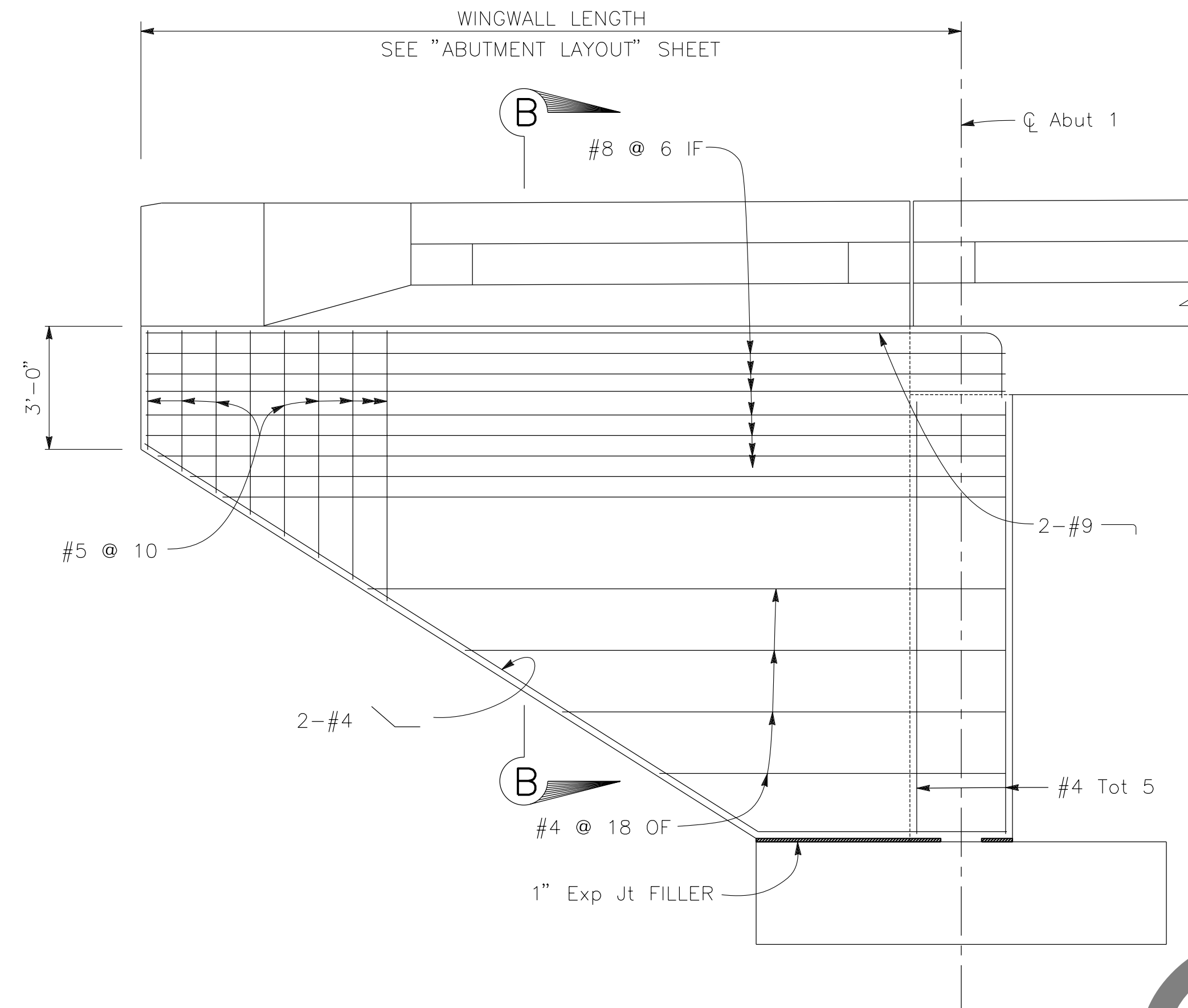
DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei (Rocky) Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
ABUTMENT LAYOUT
SOMBRA DITCH

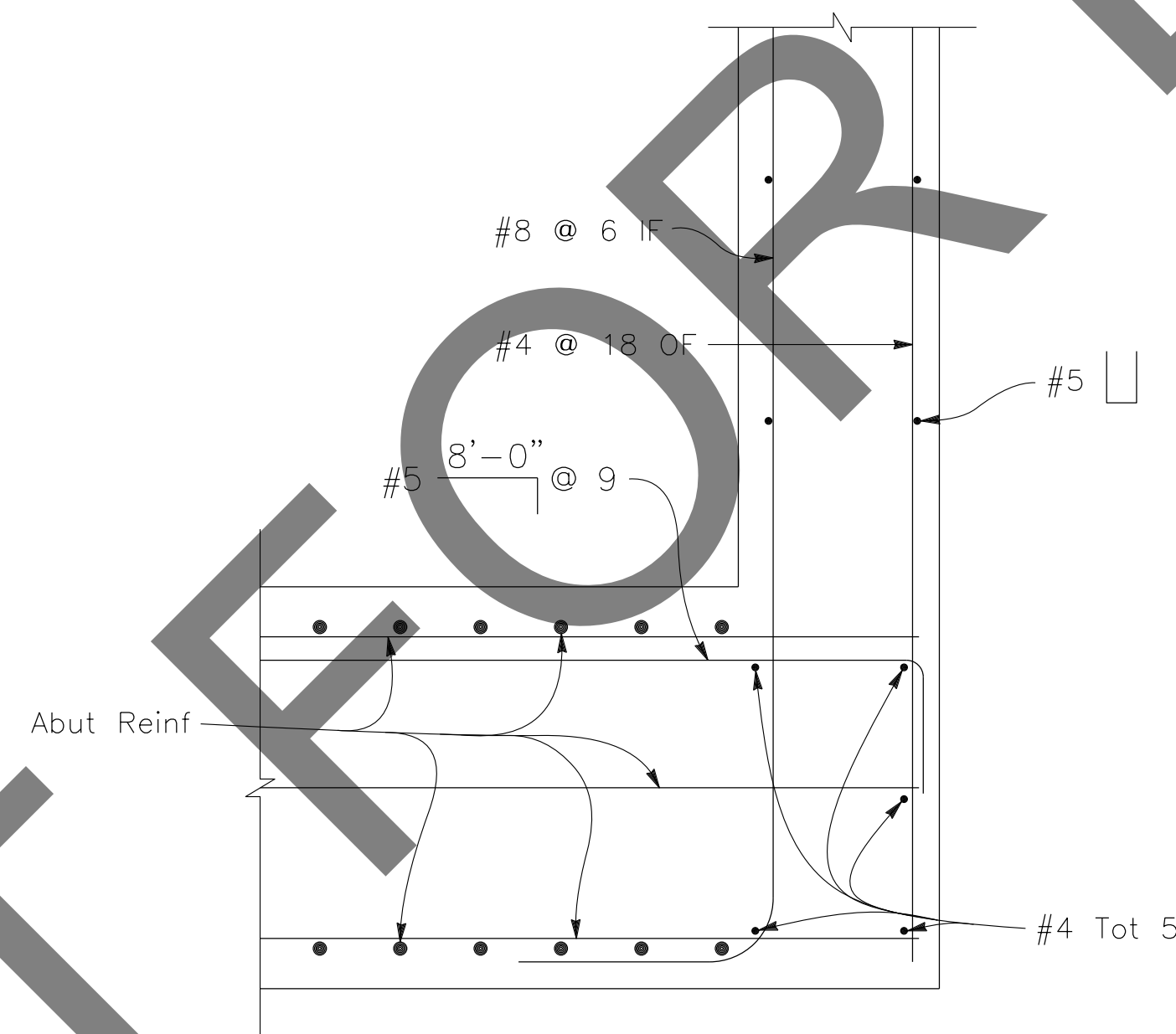
J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 201	TOT. SHT'S. 240
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MARK	REVISIONS	DATE

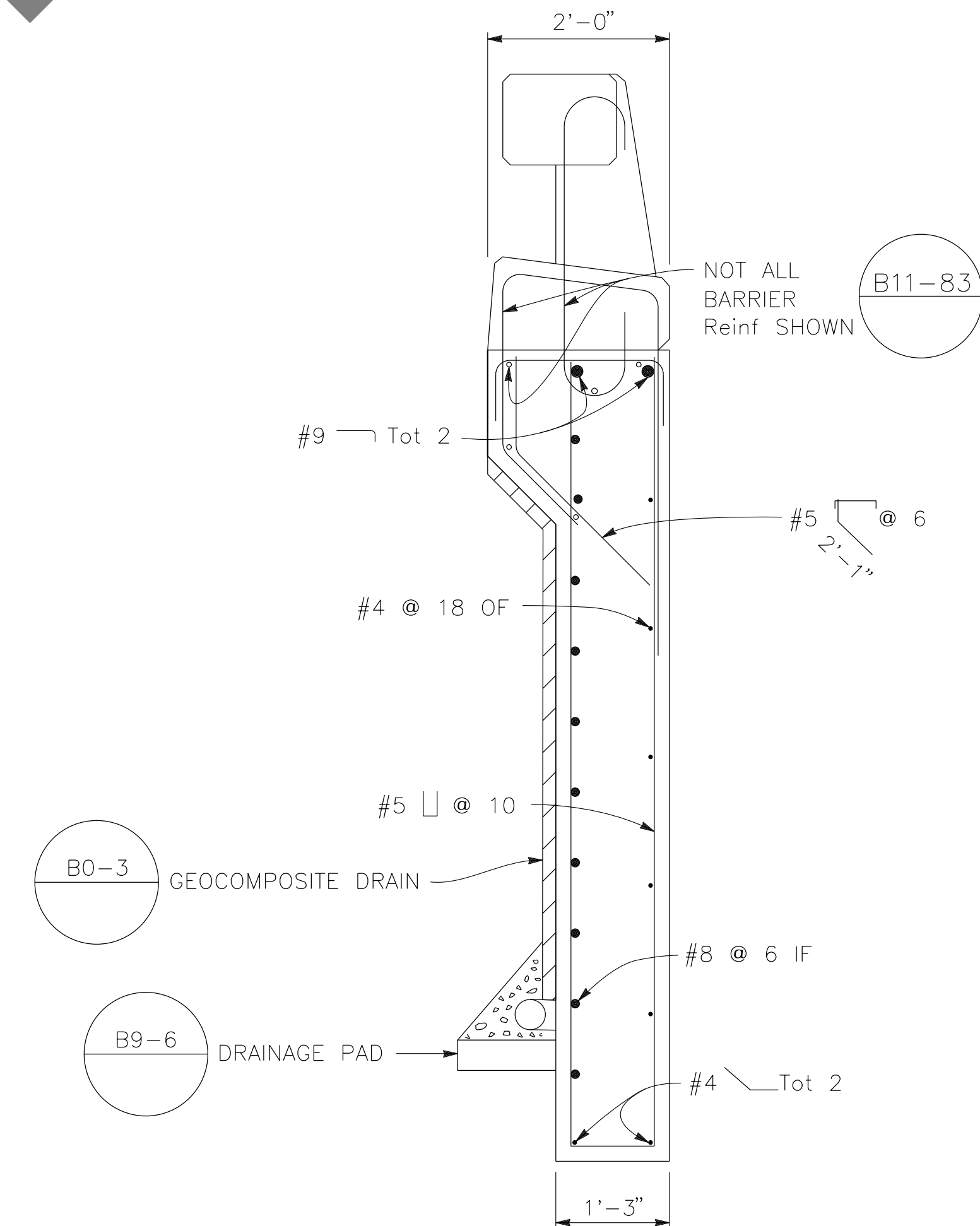
NOTES:
 1. FOR DETAILS NOT SHOWN, SEE



VIEW A-A
 $\frac{3}{8}" = 1'-0"$
 ABUTMENT 1 SHOWN, ABUTMENT 4 SIMILAR



CORNER DETAIL
 $1" = 1'-0"$



SECTION B-B
 $\frac{3}{4}" = 1'-0"$

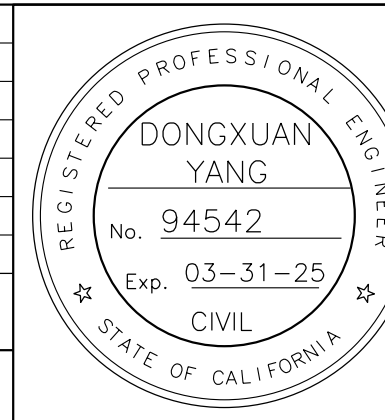
NOT FOR BID

PREPARED BY:

DOKKEN ENGINEERING
 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
Gabriela Morales
 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



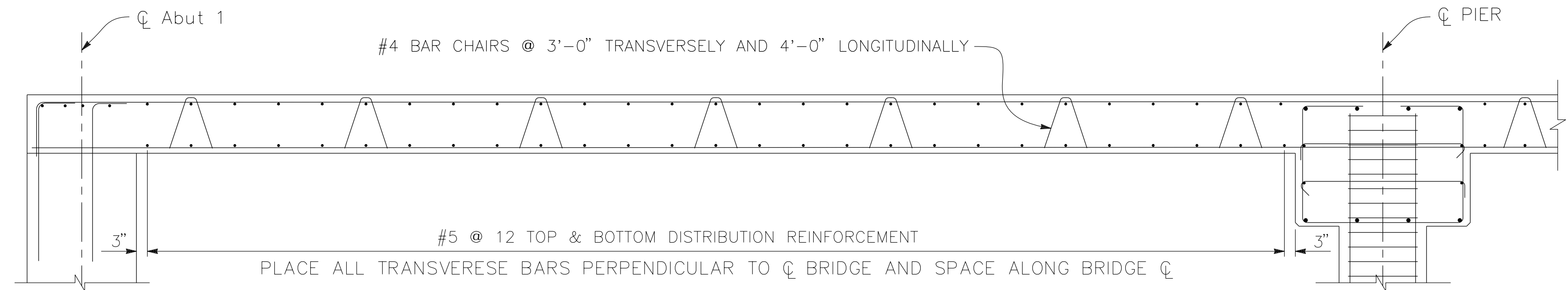
SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER DATE: 1/14/2025
APPROVED BY: <i>Lei (Rocky) Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER DATE: 1/15/2025			APPROVED BY: <i>Mervat R. Mikhail</i> MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR DATE: 1/16/2025

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
 ABUTMENT DETAILS
 SOMBRA DITCH

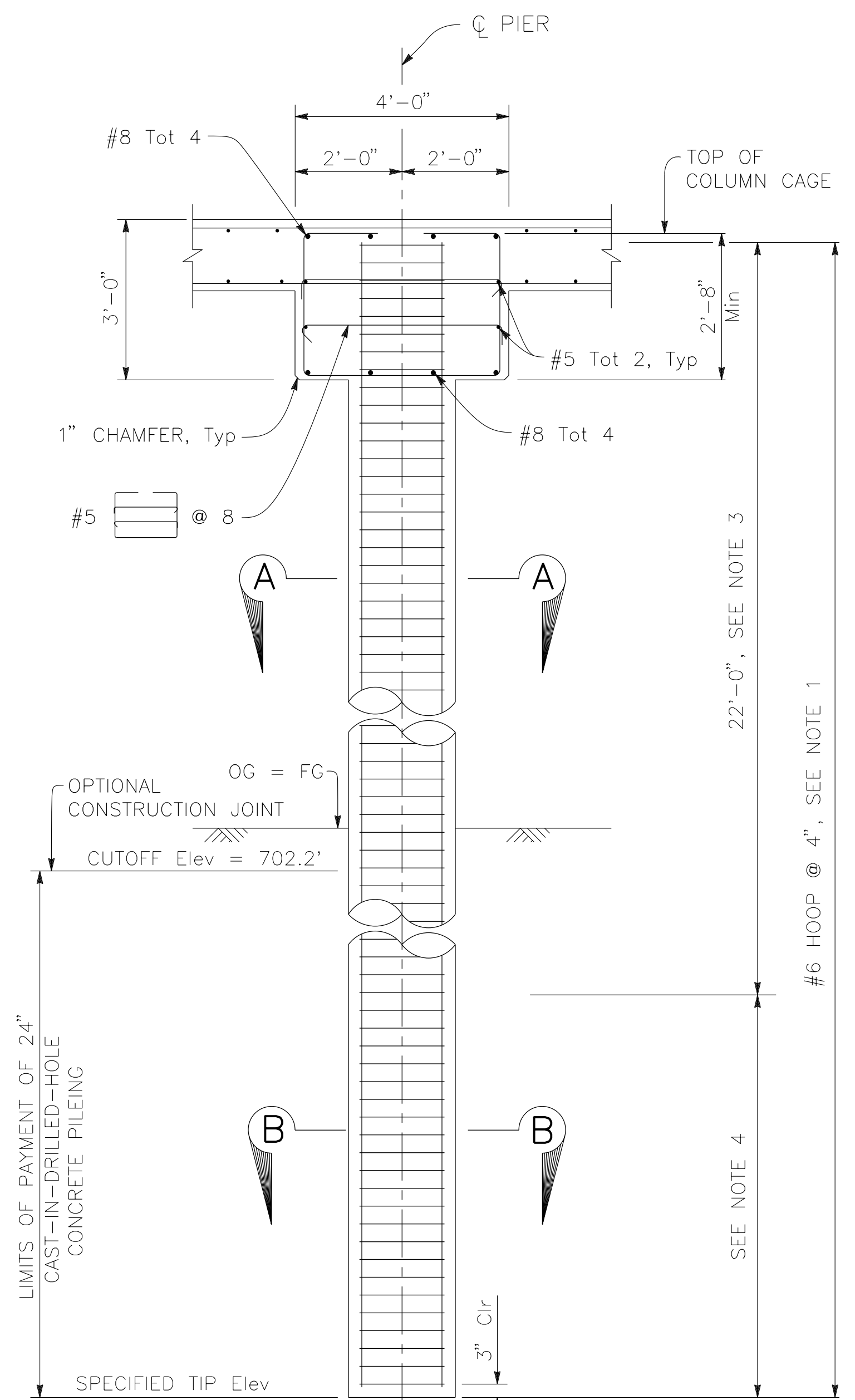
J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 202	TOT. SHT'S. 240
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MARK	REVISIONS	DATE



LONGITUDINAL SECTION

1/2" = 1'-0"

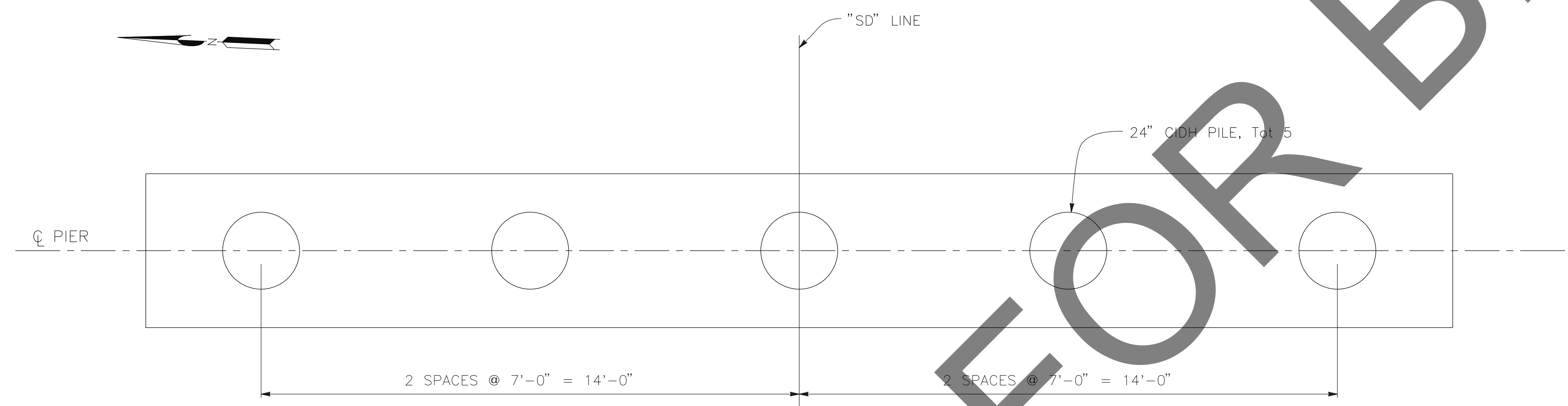


TYPICAL SECTION

1/2" = 1'-0"

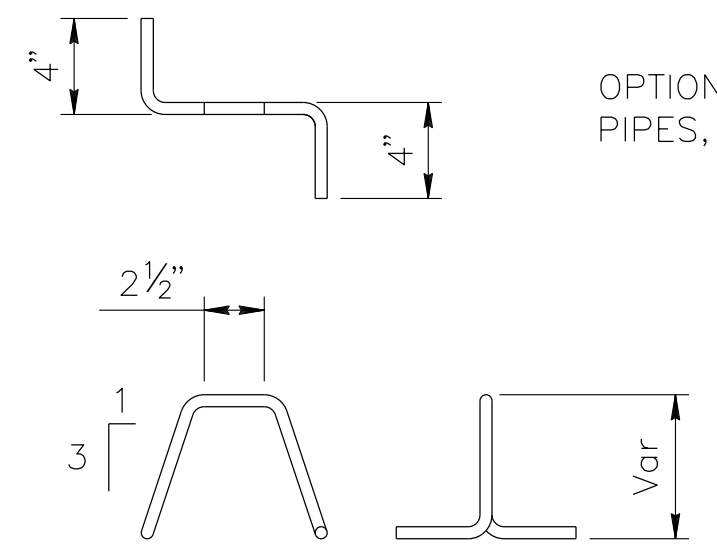
NOTES:

1. ALL HOOPS SHALL BE ULTIMATE BUTT WELD SPLICE CONTINUOUS.
2. NO SPLICE IN MAIN CAP REINFORCEMENT ALLOWED.
3. NO SPLICE IN MAIN COLUMN REINFORCEMENT WITHIN THIS ZONE.
4. ONLY ULTIMATE BUTT SPLICE ALLOWED IN MAIN COLUMN REINFORCEMENT WITHIN THIS ZONE.



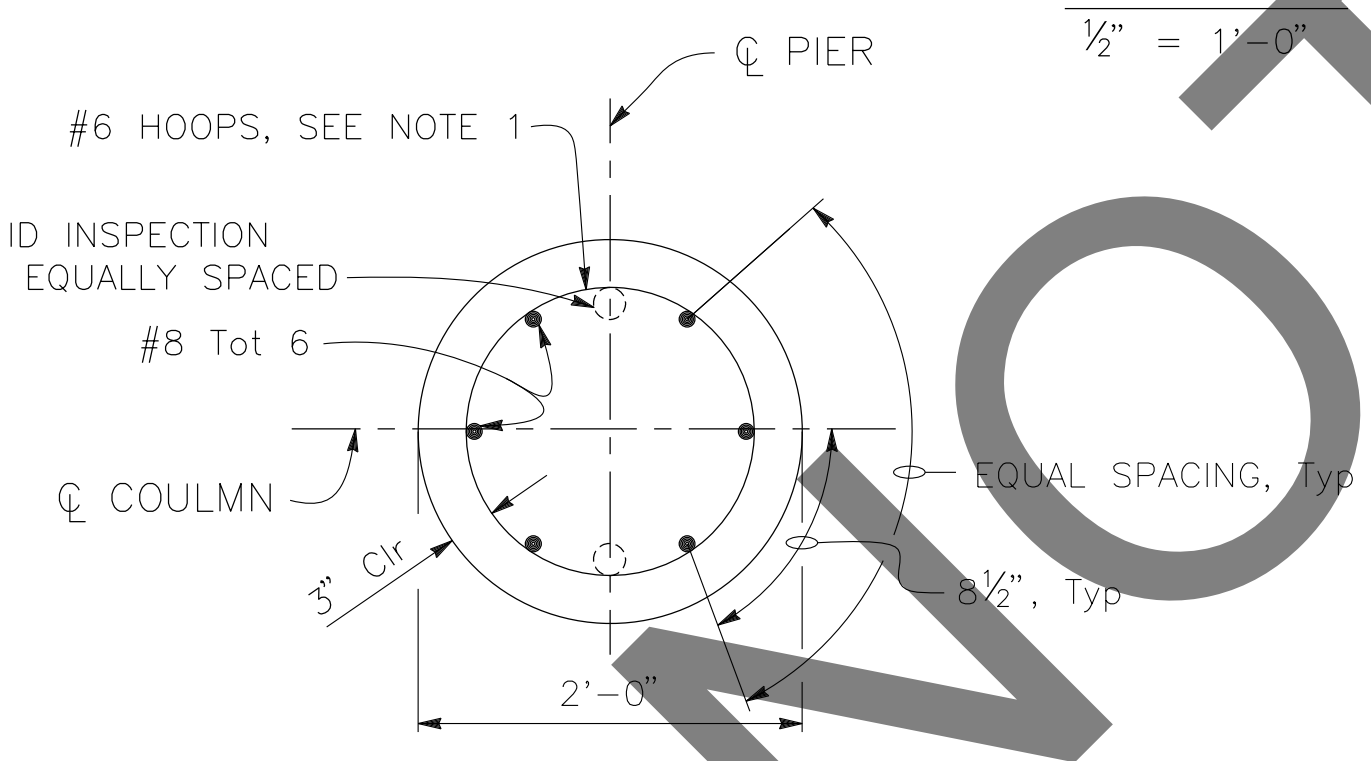
PLAN

1/2" = 1'-0"



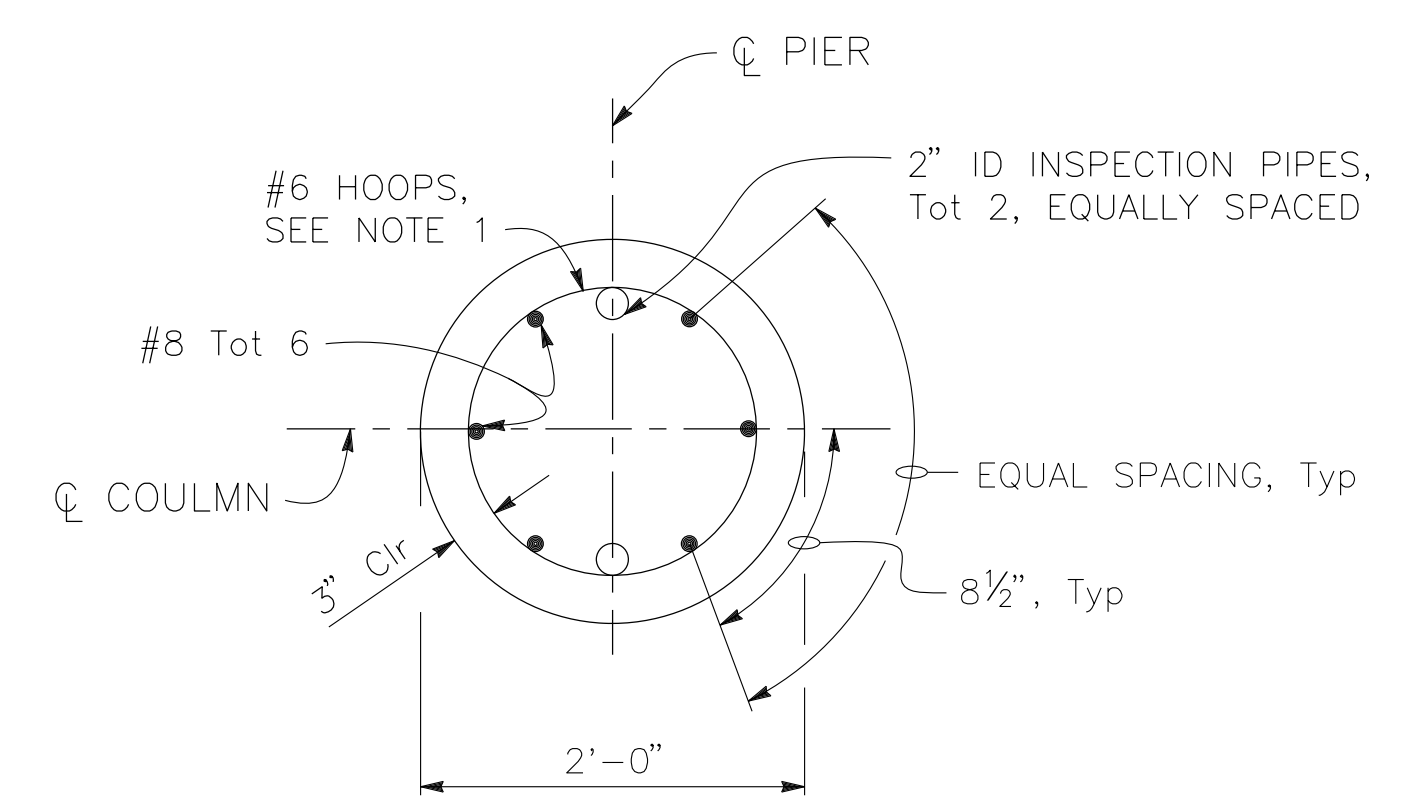
REINFORCEMENT CHAIR DETAIL

NO SCALE



SECTION A-A

1" = 1'-0"



SECTION B-B

1" = 1'-0"

PREPARED BY:

110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
 Gabriela Morales, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

SAN BERNARDINO COUNTY
 DEPARTMENT OF PUBLIC WORKS

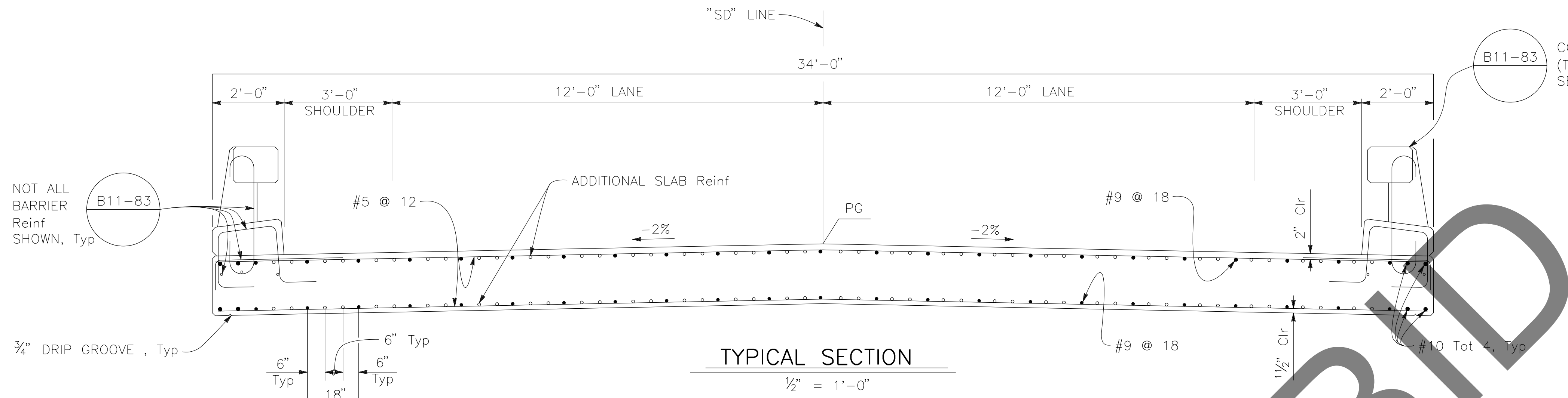
DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 <small>CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER</small>
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 <small>LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER</small>			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 <small>MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR</small>

BRIDGE REPLACEMENT ON
 NATIONAL TRAILS HIGHWAY
 AT 10 PIER BRIDGES

PIER LAYOUT
 SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 203	TOT. SHT'S. 240
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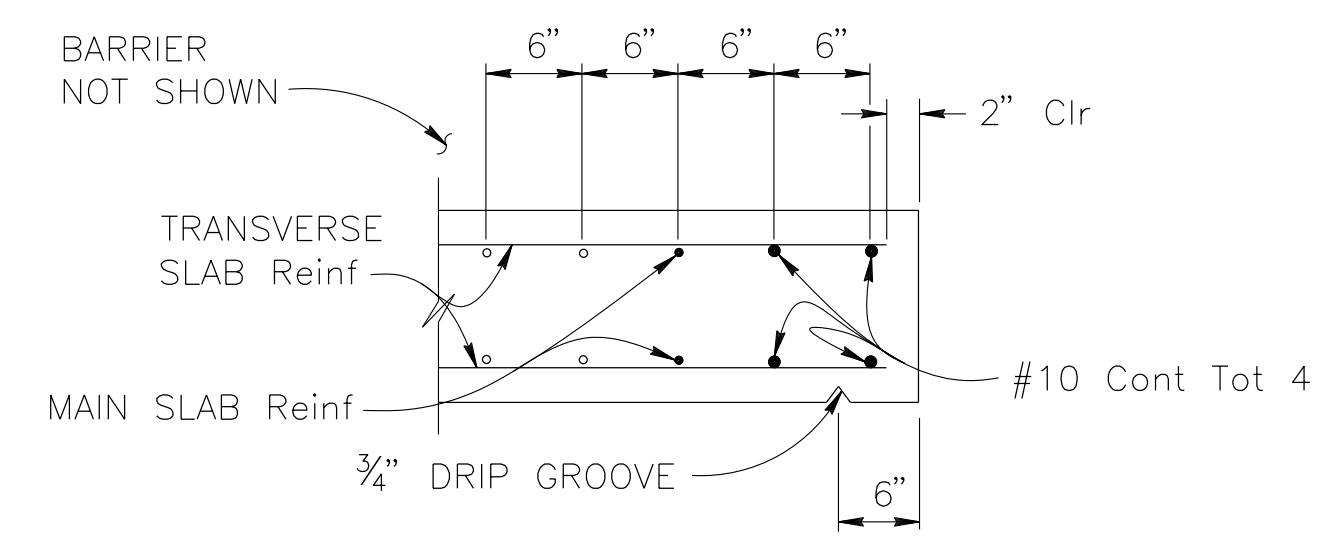
MARK	REVISIONS	DATE



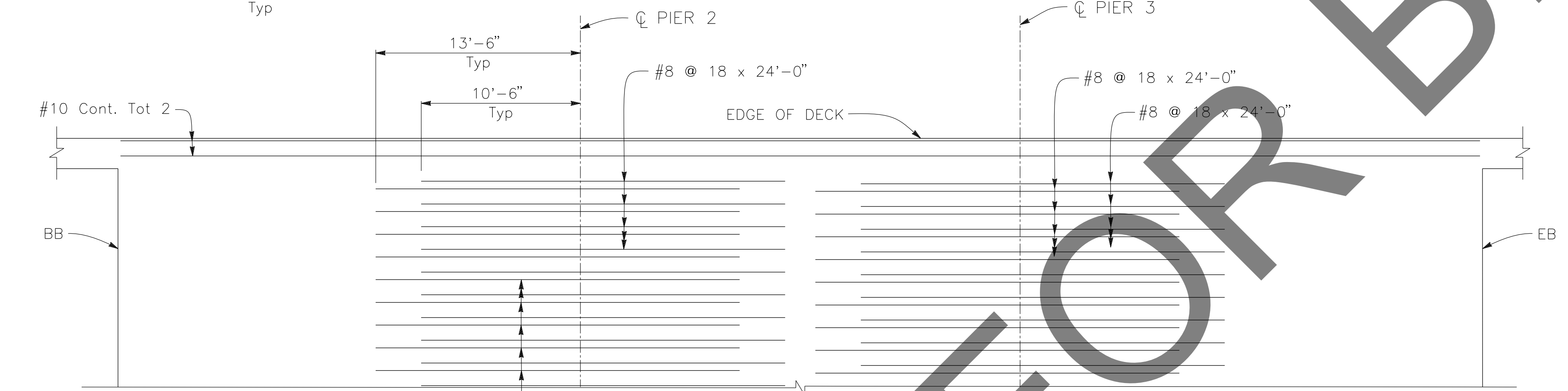
B11-83 CONCRETE BARRIER (TYPE 85 MOD), SEE NOTE 4, Typ

- NOTES:**
1. PLACE LONGITUDINAL REINFORCEMENT PARALLEL TO ϕ BRIDGE.
 2. PLACE TRANSVERSE REINFORCEMENT NORMAL TO ϕ BRIDGE.
 3. FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.
 4. ALL EXPOSED SURFACES OF THE BARRIER ABOVE THE SLAB TO BE PAINTED WHITE.
 5. SPLICES IN TOP MAIN REINFORCEMENT MUST BE LOCATED NEAR CENTER OF SPAN.
 6. SPLICES IN BOTTOM MAIN REINFORCEMENT MUST BE LOCATED NEAR BENT.

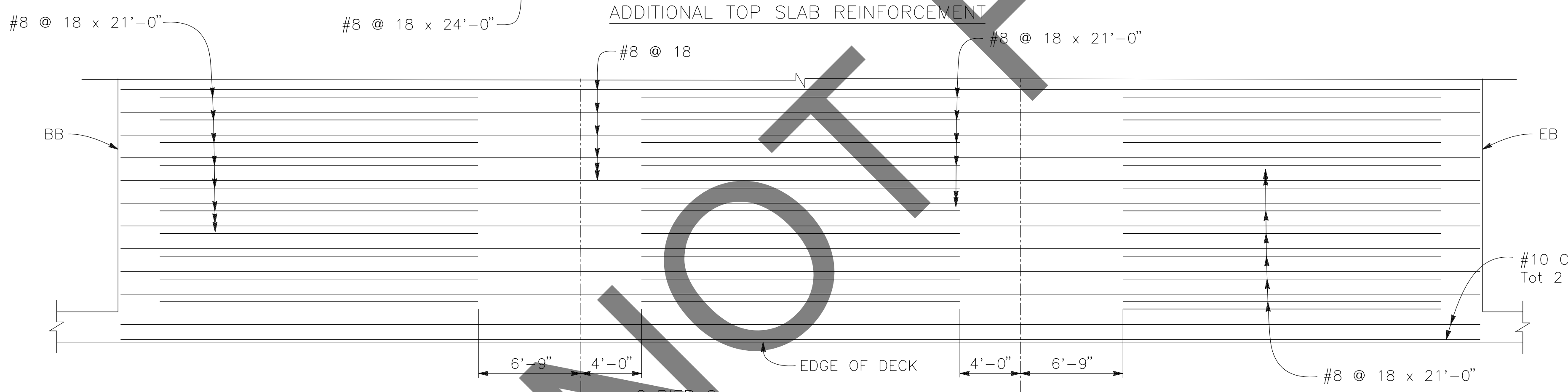
TYPICAL SECTION
1/2" = 1'-0"



EDGE OF SLAB DETAILS
NO SCALE

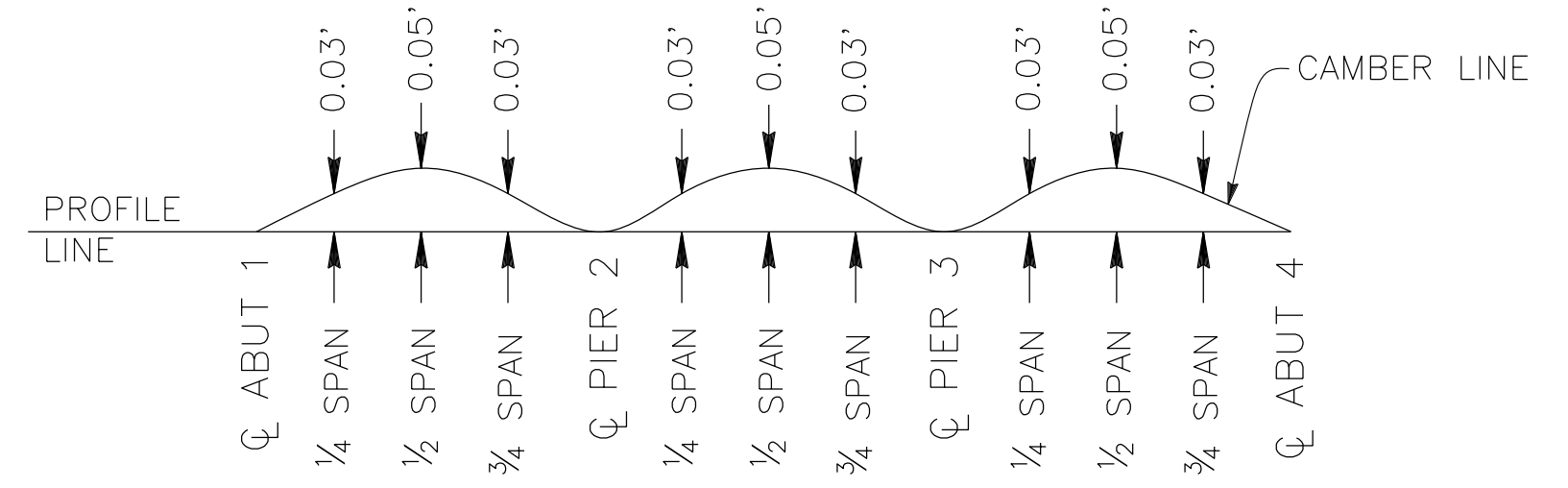


ADDITIONAL TOP SLAB REINFORCEMENT



ADDITIONAL BOTTOM SLAB REINFORCEMENT

PARTIAL PLAN
3/16" = 1'-0"



CAMBER DIAGRAM
NO SCALE

DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT.

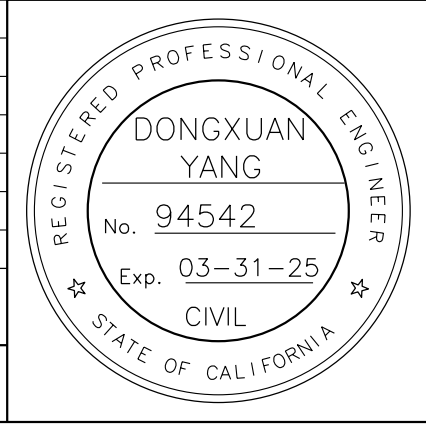
REVISIONS	DATE	APPR.

PREPARED BY:

DE DOKKEN ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: <i>Chris Nguyen</i> 1/14/2025 DATE
APPROVED BY: <i>Lei (Rocky) Li</i> 1/15/2025 DATE			APPROVED BY: <i>Mervat R. Mikhail</i> 1/16/2025 DATE

LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER

MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

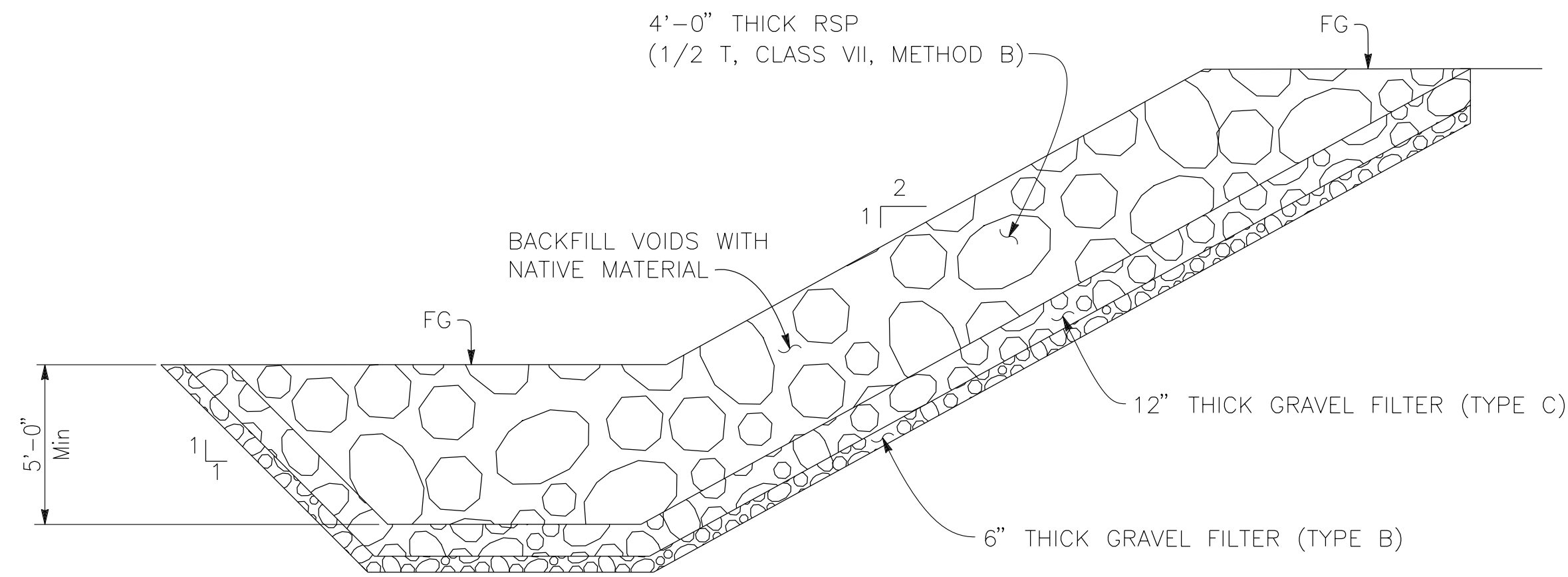
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES

SLAB DETAILS SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 204	TOT. SHT'S. 240
----------------------	-----------------	---------------------	--------------	-----------------

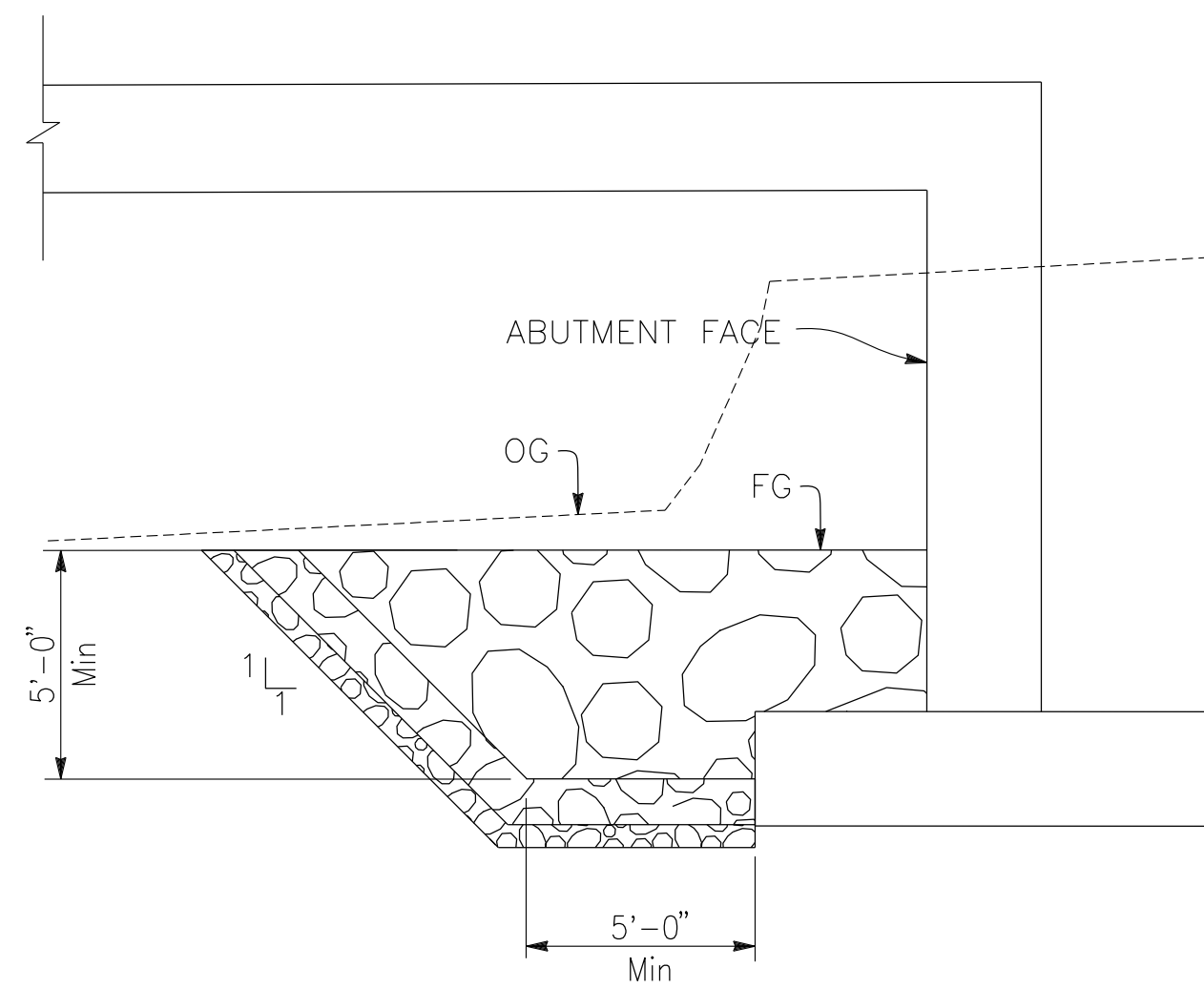
NOTES:

- 1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS
- * SEE "LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND STRUCTURE BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET



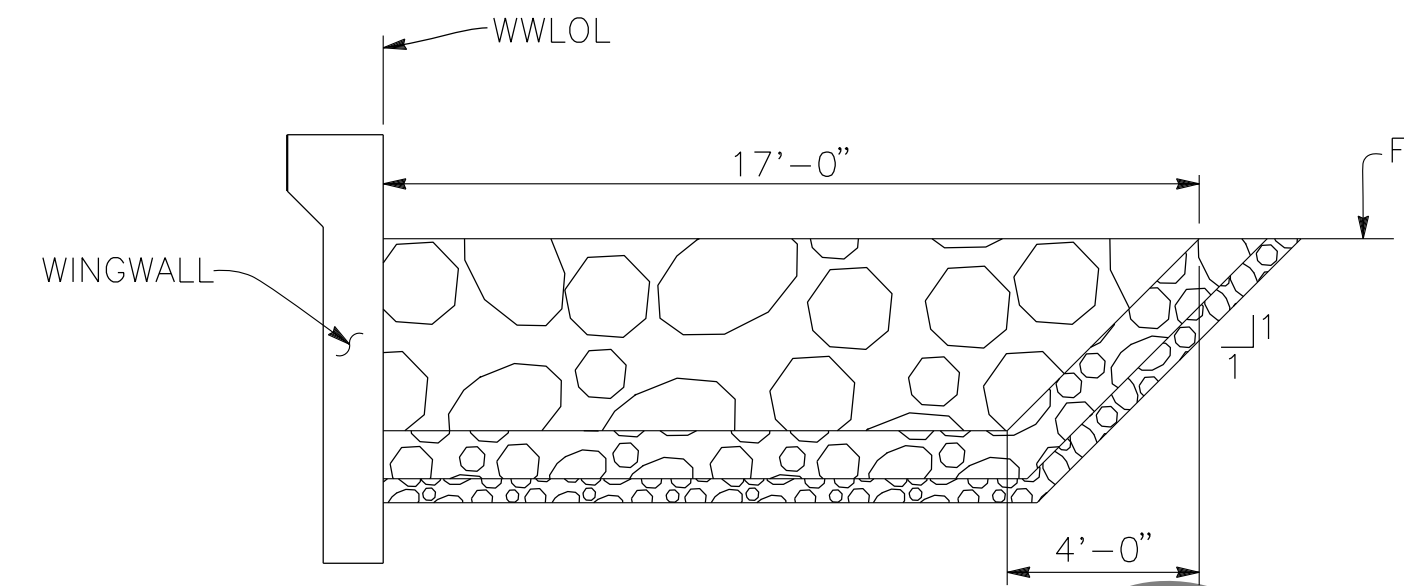
SECTION A-A

1/4" = 1'-0"
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.



SECTION B-B

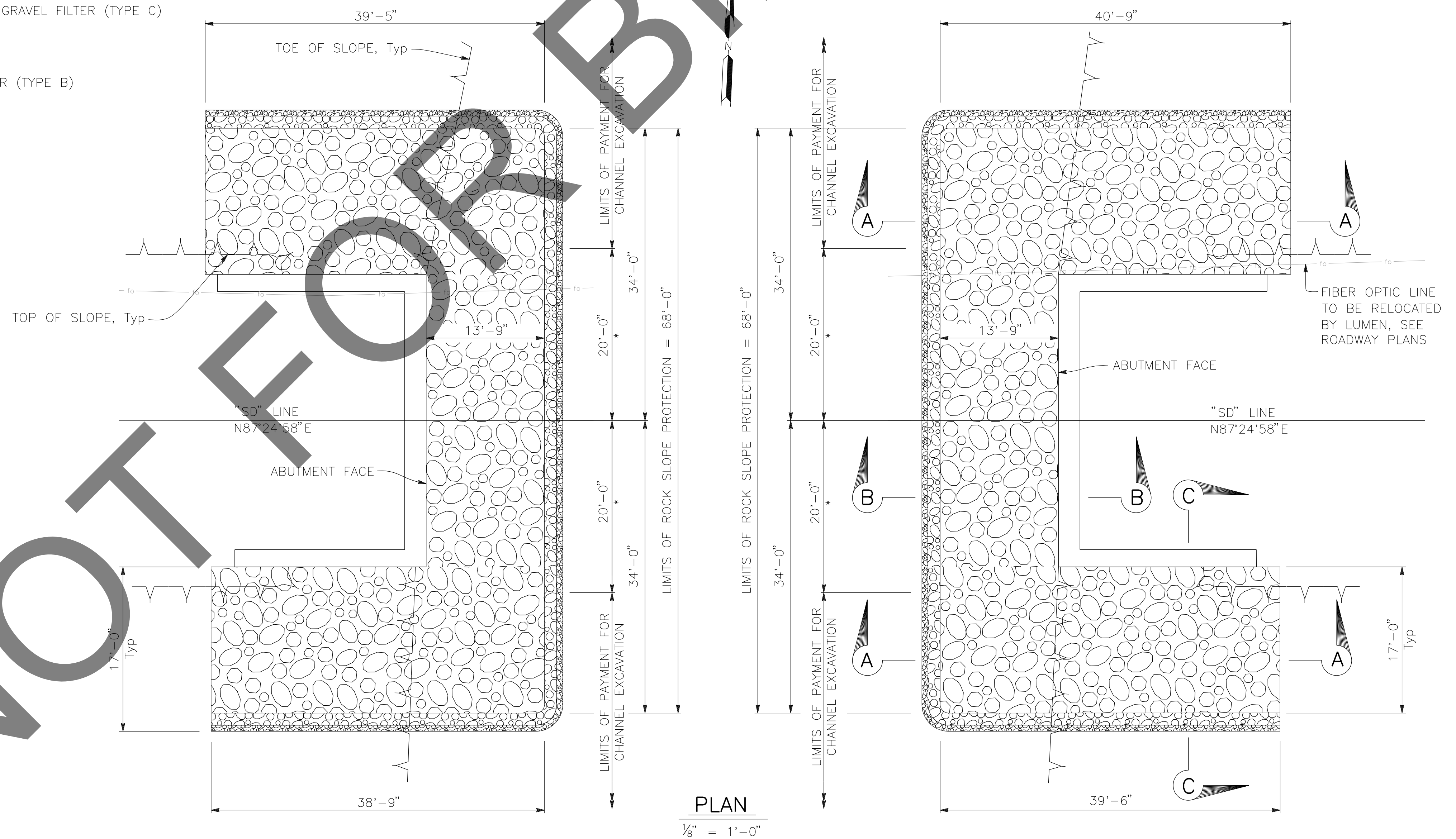
1/4" = 1'-0"
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.



SECTION C-C

1/4" = 1'-0"
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

NOTE:
FOR DETAILS NOT SHOWN
SEE SECTION A-A



PLAN

1/8" = 1'-0"

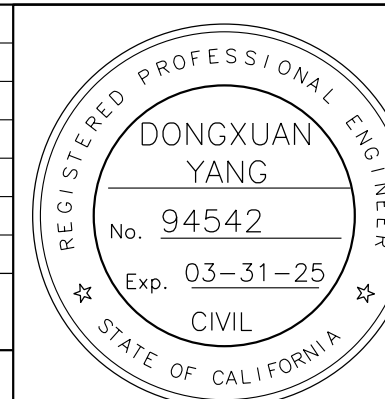
NOT FOR BIDD

PREPARED BY:

DOKKEN ENGINEERIN
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642
GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DY	DRAWN BY: EF	CHECKED BY: JR	RECOMMENDED BY: [Signature] 1/14/2025
APPROVED BY: [Signature] 1/15/2025			DATE: 1/16/2025

LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
ROCK SLOPE PROTECTION DETAILS
SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 205	TOT. SHT'S. 240
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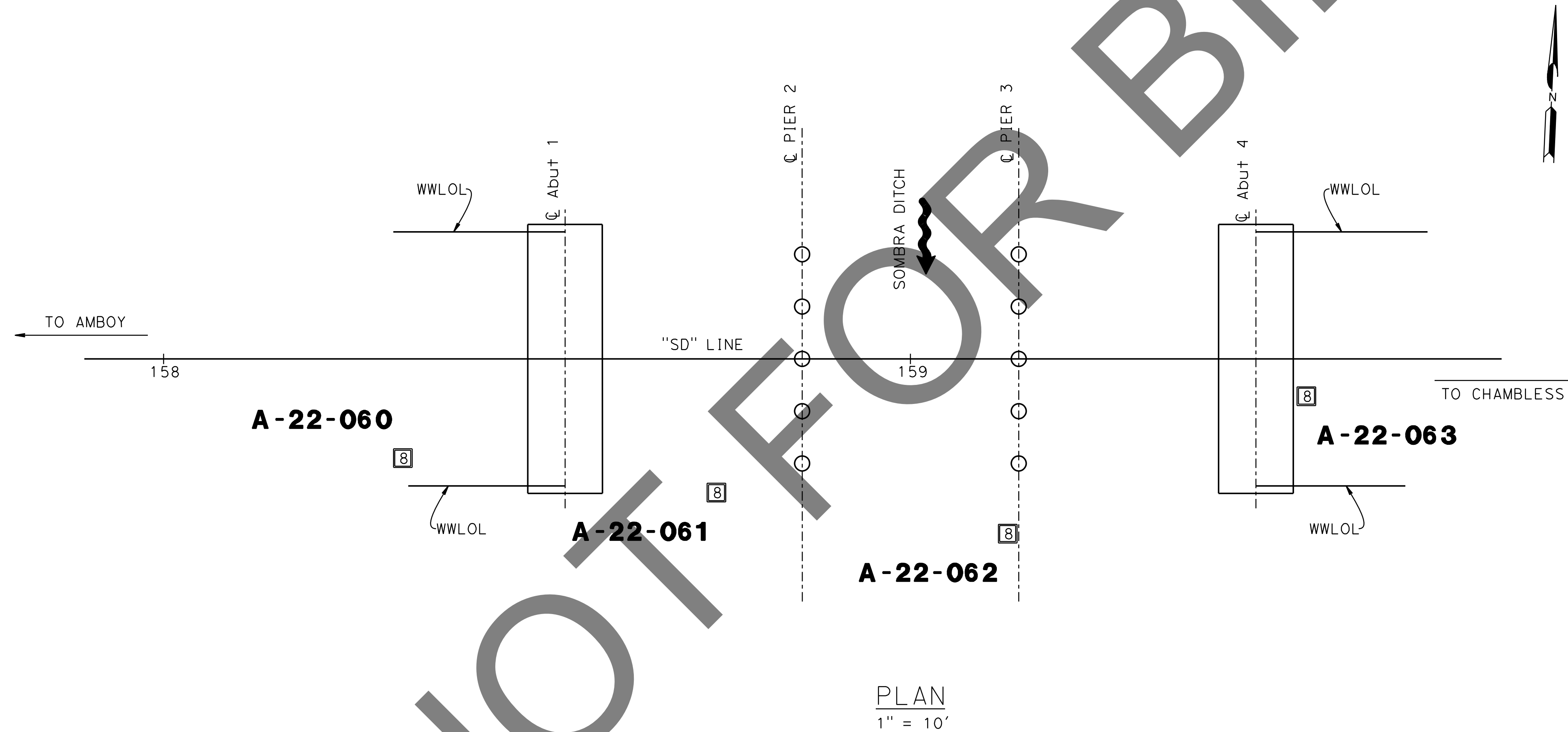
MARK	REVISIONS	DATE

NOTES:

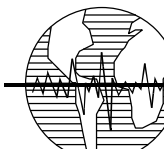
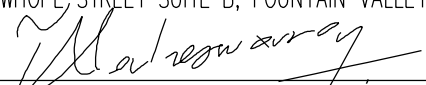
- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California Modified Sampler blowcounts by 0.65 to convert to equivalent SPT blowcounts.
- (3) An automatic trip hammer system consisting of a hammer weight of 140 lbs falling a distance of 30" was used to advance the samplers.
- (4) For Soil Legend, see Caltrans Standard Plans **A10F** and **A10G**.

BOREHOLE LOCATION TABLE

Hole ID	Alignment Name	Station and Offset
A-22-060	"SD" Line	158+32 13.3 Rt.
A-22-061	"SD" Line	158+74 17.9 Rt.
A-22-062	"SD" Line	159+13 23.4 Rt.
A-22-063	"SD" Line	159+53 5.0 Rt.

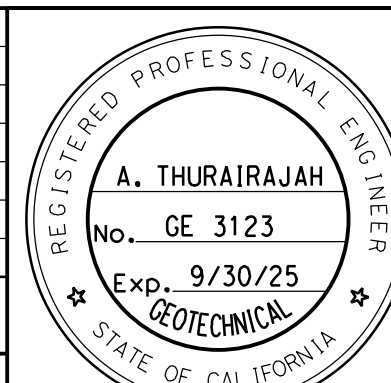


PLAN
1" = 10'

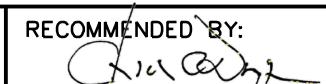
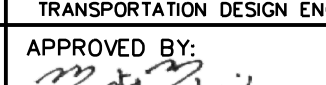
PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826

 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY:  DATE: 1/14/2025
APPROVED BY:  DATE: 1/16/2025			DATE: 1/16/2025

LD (ROCKY) LI, P.E. SUPERVISING ENGINEER
 MERVAT K. MIKHAL, P.E. DEPUTY DIRECTOR

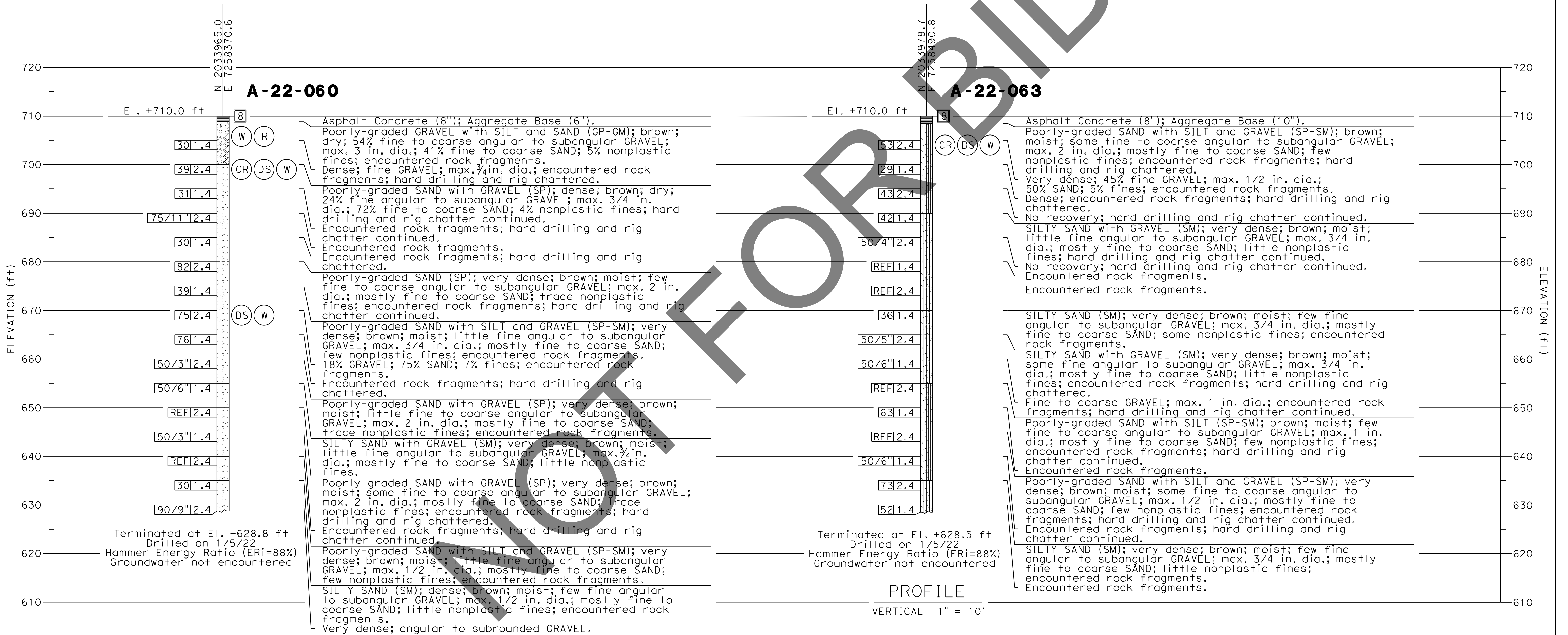
BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
LOG OF TEST BORINGS 1 OF 3
SOMBRA DITCH

J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE AS NOTED	SHT. NO. 206	TOT. SHT'S. 240
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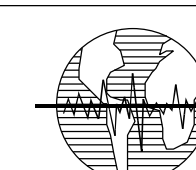
REVISIONS	DATE	APPR.

BENCH MARK:
 FOUND 3.5" NGS BRASS DISC IN 10"x10"
 Conc Mnmt STAMPED "Z1308-1978 NATIONAL
 GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
 NGVD-29 ELEVATION = 1097.43'

NOTE:
 This LOTB sheet (Boring Record) was prepared in accordance with Caltrans
 Soil and Rock Logging, Classification and Presentation Manual (2022).

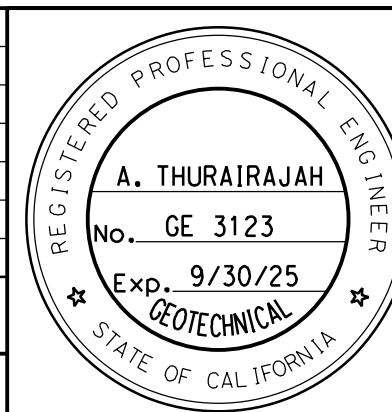


REVISIONS	DATE	APPR.

PREPARED BY:

Earth Mechanics, Inc.
 Geotechnical & Earthquake Engineering
 17800 NEWHOPE, STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826
 (ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER 10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: CHRIS NGUYEN, P.E. / TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED BY: MERVAT K. MIKHAIL, P.E. DEPUTY DIRECTOR 1/16/2025 DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES
LOG OF TEST BORINGS 2 OF 3
SOMBRA DITCH

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11799	H14911	AS NOTED	207	240