

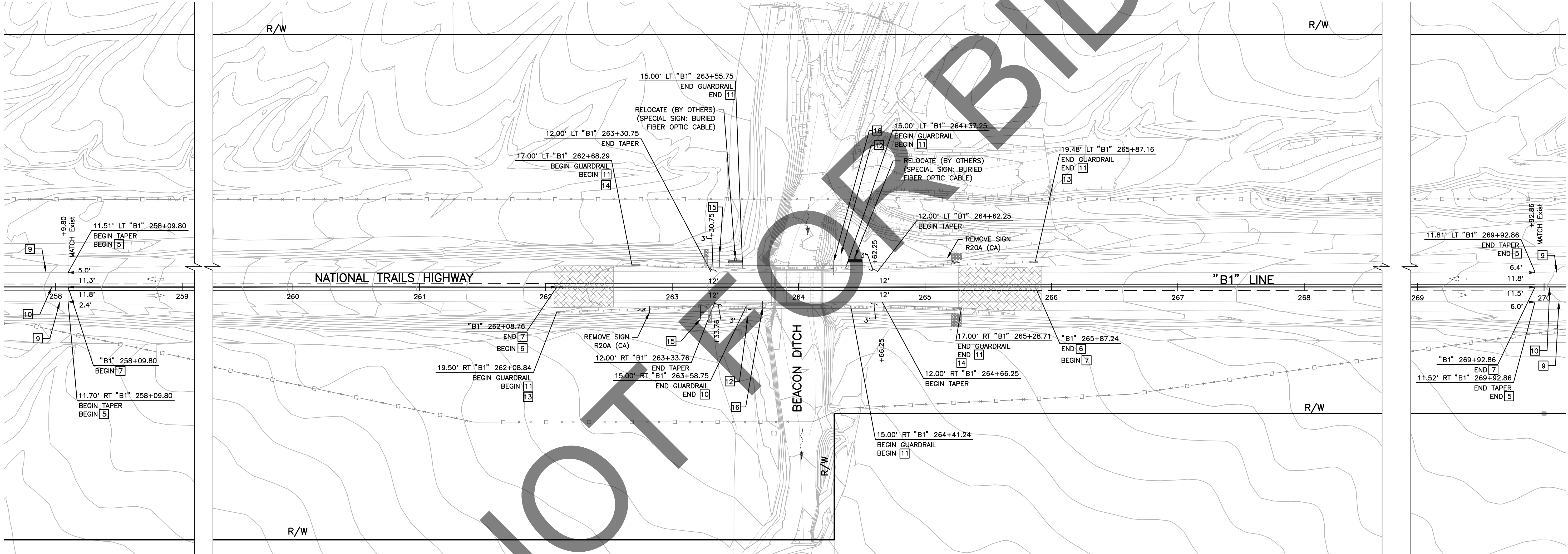
SAN BERNARDINO COUNTY TEMPORARY TRAFFIC GENERAL NOTES:

- ALL SIGNING, STRIPING, AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE CALIFORNIA MUTCD LATEST EDITION.
- ALL STRIPING AND PAVEMENT MARKINGS SHALL BE PAINTED IN CONFORMANCE WITH THE CALTRANS 2024 STANDARD PLANS.
- ALL STRIPING (LONG LINE) AND PAVEMENT MARKINGS SHALL BE RETROREFLECTIVE PAINT.
- ALL CONSTRUCTION SIGNS SHALL BE OF DIAMOND GRADE (FHWA TYPE IX) FLUORESCENT ORANGE RETROREFLECTIVE SHEETING.
- ALL REGULATORY, GUIDE, AND WARNING SIGNS SHALL BE OF HIGH INTENSITY (FHWA TYPE III/IV) RETROREFLECTIVE SHEETING EXCEPT:
 - STOP SIGNS SHALL BE DIAMOND GRADE (FHWA TYPE VII IN RURAL SETTINGS AND TYPE IX IN URBAN SETTINGS) RETROREFLECTIVE SHEETING.
 - "NO PARKING" SIGNS SHALL BE OF SUPER ENGINEERING GRADE (FHWA TYPE II) RETROREFLECTIVE SHEETING.
 - SCHOOL SIGNS SHALL BE OF DIAMOND GRADE (FHWA TYPE IX) FLUORESCENT YELLOW-GREEN (FYG) RETROREFLECTIVE SHEETING.
 - STREET NAME MARKERS SHALL BE OF DIAMOND GRADE (FHWA TYPE IX) RETROREFLECTIVE SHEETING AND CONFORM TO COUNTY STANDARD 303.
- ALL DELINEATORS, CHANNELIZERS, AND OBJECT MARKERS SHALL BE OF FHWA TYPE VII RETROREFLECTIVE SHEETING.
- SIGNS SHOULD BE MOUNTED ON METAL POSTS SIMILAR TO COUNTY STANDARD 303(a) AND 303(b). SIGNS MOUNTED ON PORTABLE BARRICADES SHALL BE AUTHORIZED AS DIRECTED BY COUNTY REPRESENTATIVE.

- ALL CONFLICTING STRIPING AND PAVEMENT MARKINGS SHALL BE REMOVED BY THE CONTRACTOR. REMOVAL OF EXISTING TRAFFIC STRIPES AND PAVEMENT MARKINGS SHALL BE BY MECHANICAL MEANS IN CONFORMANCE WITH SCAQMD RULE 1140. PAINTING OVER OR "BLACKING OUT" SHALL NOT BE ACCEPTED. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER ON THE FINAL METHOD OF REMOVAL PRIOR TO PERFORMING THE WORK.
- ALL CONFLICTING SIGNS SHALL BE REMOVED, RELOCATED, OR COVERED BY THE CONTRACTOR. RELOCATABLE SIGNS SHALL BE INSTALLED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY COUNTY REPRESENTATIVE.
- ALL UNPROTECTED LOCATIONS RESULTING IN ISOLATED ABRUPT DEPRESSIONS OR ELEVATED OBJECTS (I.E. CATCH BASINS, HEADWALLS, POWER POLES, END TREATMENT OF ASPHALT DIKES AND CONCRETE CURBS) SHALL BE PROTECTED BY DELINEATORS OR BARRIERS PER THE CALIFORNIA MUTCD LATEST EDITION.
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- ALL ROAD CLOSURE BARRICADES SHALL COMPLY WITH COUNTY STANDARDS 305C, 305D, 305E, AND 305F.

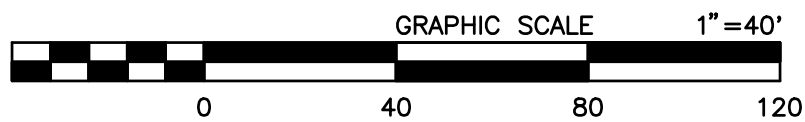
TRAFFIC CONSTRUCTION NOTES

- PLACE PAINT TRAFFIC STRIPE, DETAIL 27B PER CALTRANS STD PLAN A20B.
- PLACE PAINT TRAFFIC STRIPE, DETAIL 21 PER CALTRANS STD PLAN A20A.
- PLACE PAINT TRAFFIC STRIPE, DETAIL 18 PER CALTRANS STD PLAN A20A.
- EXISTING 6" WHITE EDGE LINE STRIPING.
- EXISTING 6" CENTERLINE STRIPE.
- INSTALL DELINEATOR (CLASS I) SPACING 25' PER CA MUTCD 2014, FIG 3F-101 (CA) TYPE E.
- INSTALL OBJECT MARKER FOR BRIDGE NUMBER, SEE SHEET C-1 FOR DETAILS.
- PLACE OBJECT MARKER TYPE P (OM-3R) WITH REFLECTIVE MATERIAL ON IMPACT HEAD.
- PLACE OBJECT MARKER TYPE P (OM-3L) WITH REFLECTIVE MATERIAL ON IMPACT HEAD.
- PLACE OBJECT MARKER TYPE L-1 (CA) PER CA MUTCD FIG 2C-13 (CA).
- REMOVE BRIDGE NUMBER OBJECT MARKER.



LEGEND:

DESERT TORTOISE FENCE



PREPARED BY:

DE DOKKEN
ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA, 916-858-0642
MATTHEW ATKINSON, PROJECT ENGINEER
12/18/24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		
FIELD CHANGES			



SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: DH	DRAWN BY: DH	CHECKED BY: MA	RECOMMENDED BY: ANTHONY PHAM, P.E. TRAFFIC DIVISION ENGINEERING MANAGER 1/15/25 DATE
LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE		APPROVED BY: GRANT MANN, P.E. DEPUTY DIRECTOR 01/21/25 DATE	

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES SIGNING AND STRIPING BEACON DITCH				
J.L. REF. J.L. 11801	W.O. NO. H14913	PLAN SCALE 1"=40'	SHT. NO. 119	TOT. SHT'S. 240

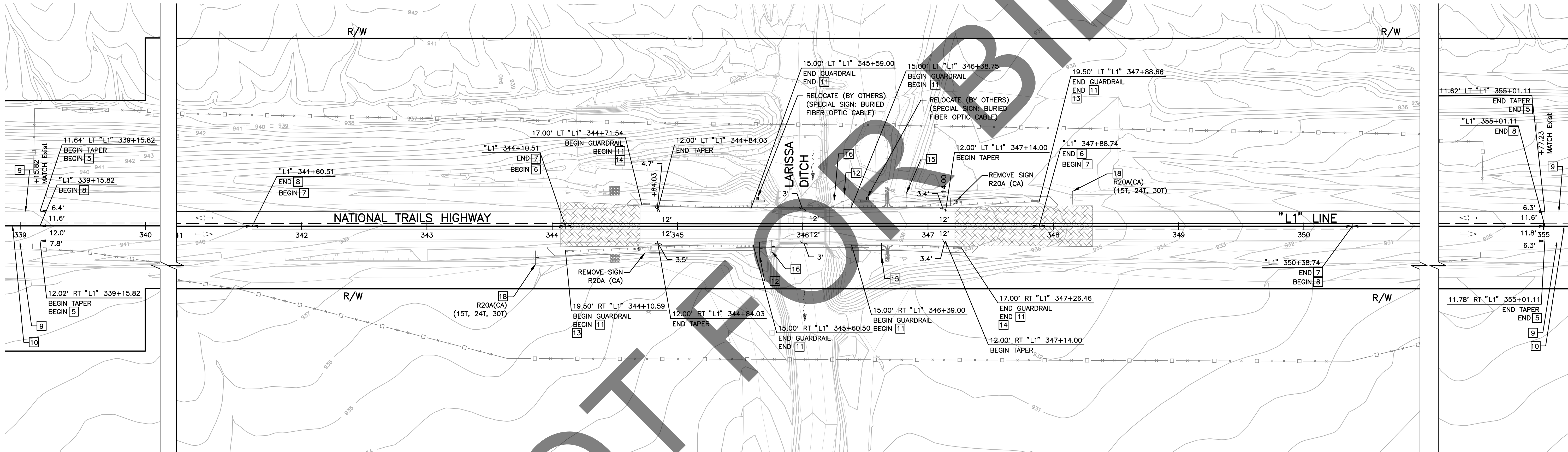
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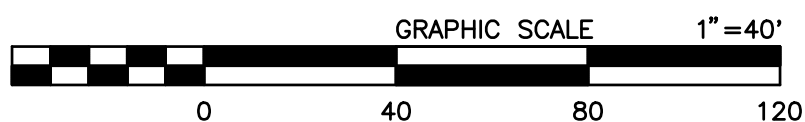
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- PLACE OBJECT MARKER TYPE P (OM-3L) WITH REFLECTIVE MATERIAL ON IMPACT HEAD.
- PLACE OBJECT MARKER TYPE L-1 (CA) PER CA MUTCD FIG 2C-13 (CA).
- REMOVE BRIDGE NUMBER OBJECT MARKER.
- RESET ROADSIDE SIGN PER CA MUTCD 2014, FIGURE 2A-2(CA).



LEGEND:

— * — * — DESERT TORTOISE FENCE



SS-11

PREPARED BY:

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

Matthew Atkinson, Project Engineer

12/18/24
DATE

MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DH	DRAWN BY: DH	CHECKED BY: MA	RECOMMENDED BY: ANTHONY PHAM, P.E. TRAFFIC DIVISION ENGINEERING MANAGER
DATE: 1/15/25			DATE: 1/15/25
APPROVED BY: GRANT MANN, P.E. DEPUTY DIRECTOR			DATE: 01/21/25

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
SIGNING AND STRIPING
LARISSA DITCH

J.L. REF. J.L. 11804	W.O. NO. H14916	PLAN SCALE 1"=40'	SHT. NO. 120	TOT. SHT'S. 240
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FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100

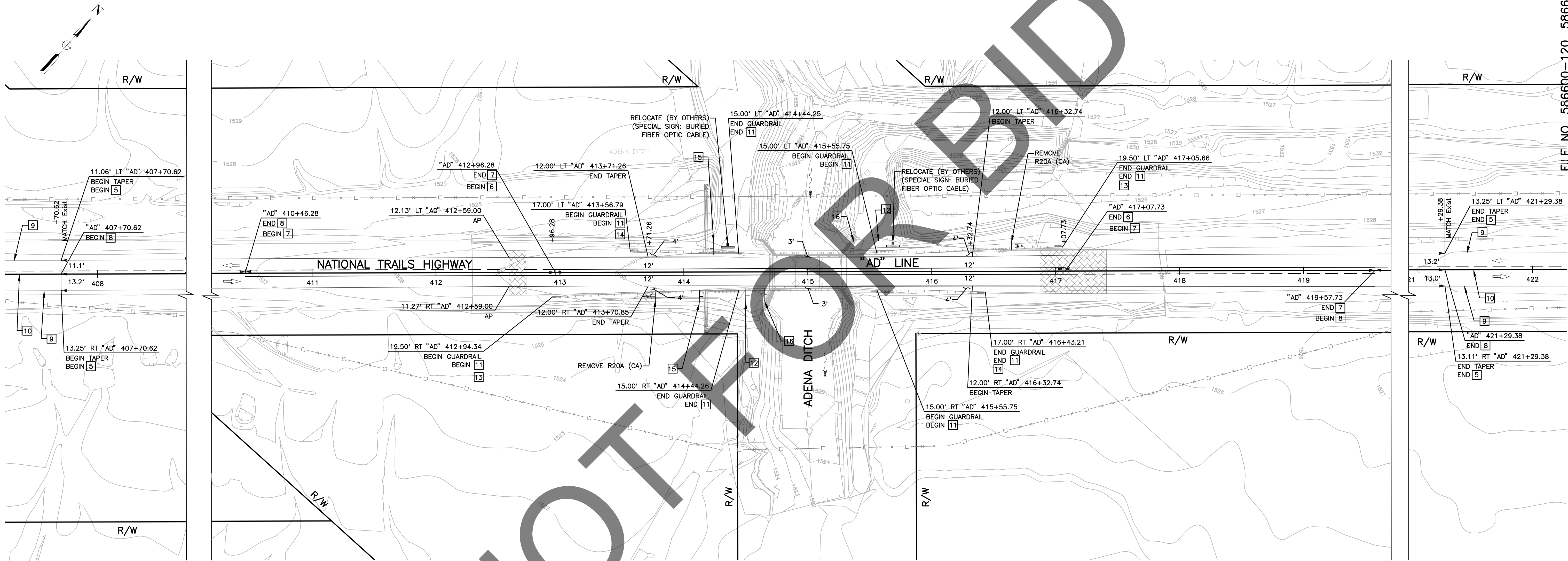
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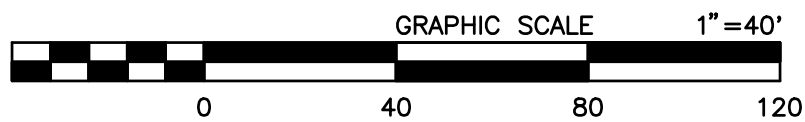
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15. PLACE OBJECT MARKER TYPE L-1 (CA) PER CA MUTCD FIG 2C-13 (CA).
16. REMOVE BRIDGE NUMBER OBJECT MARKER.



LEGEND:

—□— DESERT TORTOISE FENCE



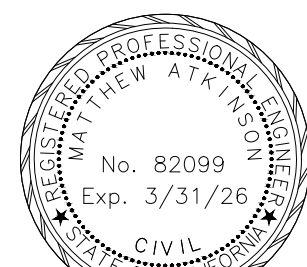
PREPARED BY:

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

MATTHEW ATKINSON, PROJECT ENGINEER
12/16/24
DATE

MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DH DRAWN BY: DH CHECKED BY: MA RECOMMENDED BY: ANTHONY PHAM, P.E. TRAFFIC DIVISION ENGINEERING MANAGER 1/15/25 DATE
LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE
GRANT MANN, P.E. DEPUTY DIRECTOR 01/21/25 DATE

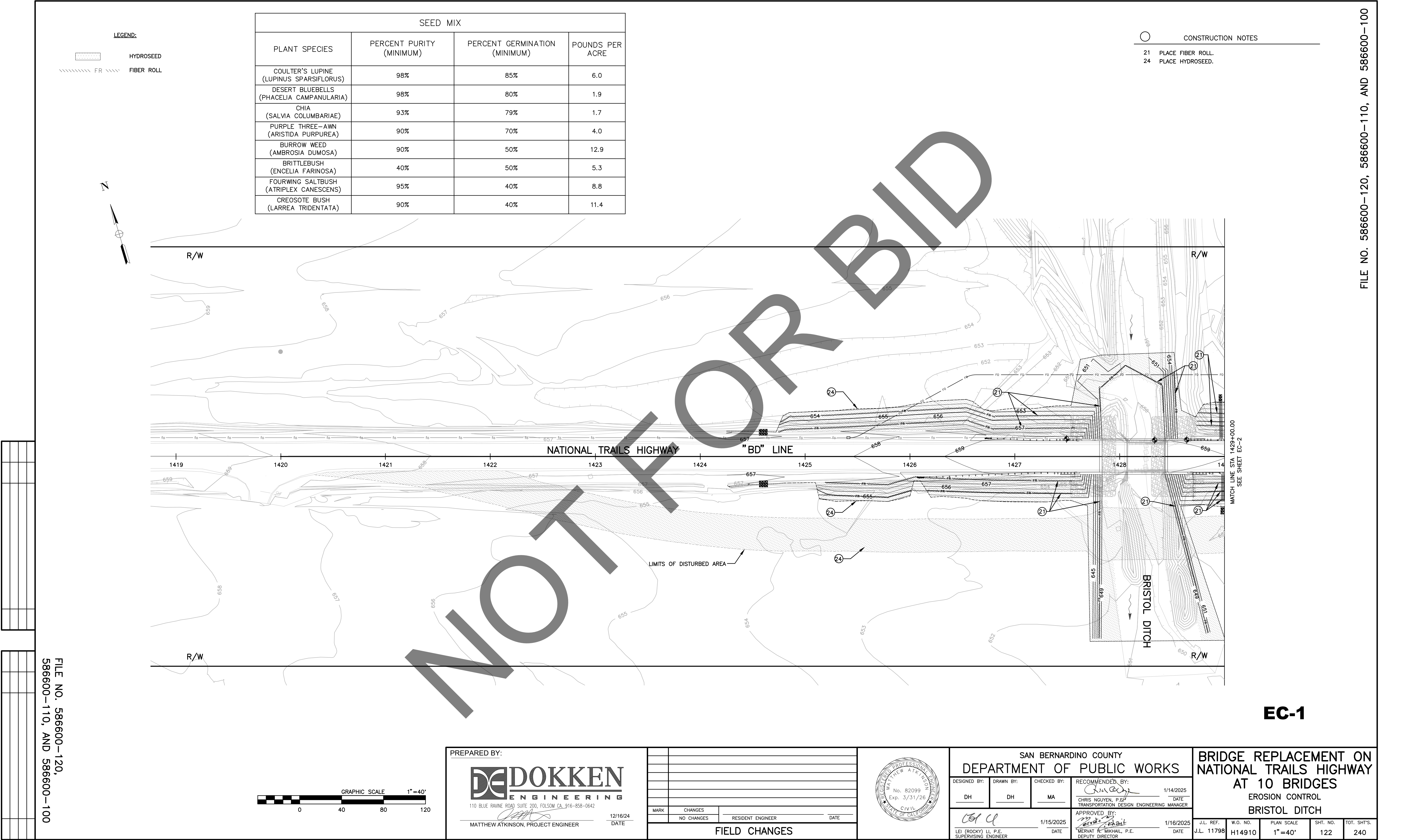
BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
SIGNING AND STRIPING
ADENA DITCH

J.L. REF. W.O. NO. PLAN SCALE SHT. NO. TOT. SHT'S.
J.L. 11797 H14853 1"=40' 121 240

FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100

SS-12



LEGEND:

- HYDROSEED
- FIBER ROLL

SEED MIX			
PLANT SPECIES	PERCENT PURITY (MINIMUM)	PERCENT GERMINATION (MINIMUM)	POUNDS PER ACRE
COULTER'S LUPINE (LUPINUS SPARSIFLORUS)	98%	85%	6.0
DESERT BLUEBELLS (PHACELIA CAMPANULARIA)	98%	80%	1.9
CHIA (SALVIA COLUMBARIAE)	93%	79%	1.7
PURPLE THREE-AWN (ARISTIDA PURPUREA)	90%	70%	4.0
BURROW WEED (AMBROSIA DUMOSA)	90%	50%	12.9
BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

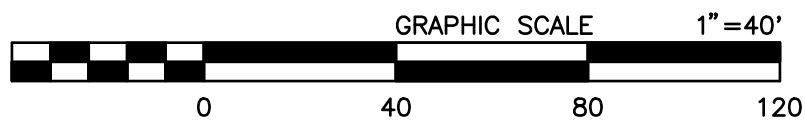
CONSTRUCTION NOTES

- 21 PLACE FIBER ROLL.
- 24 PLACE HYDROSEED.

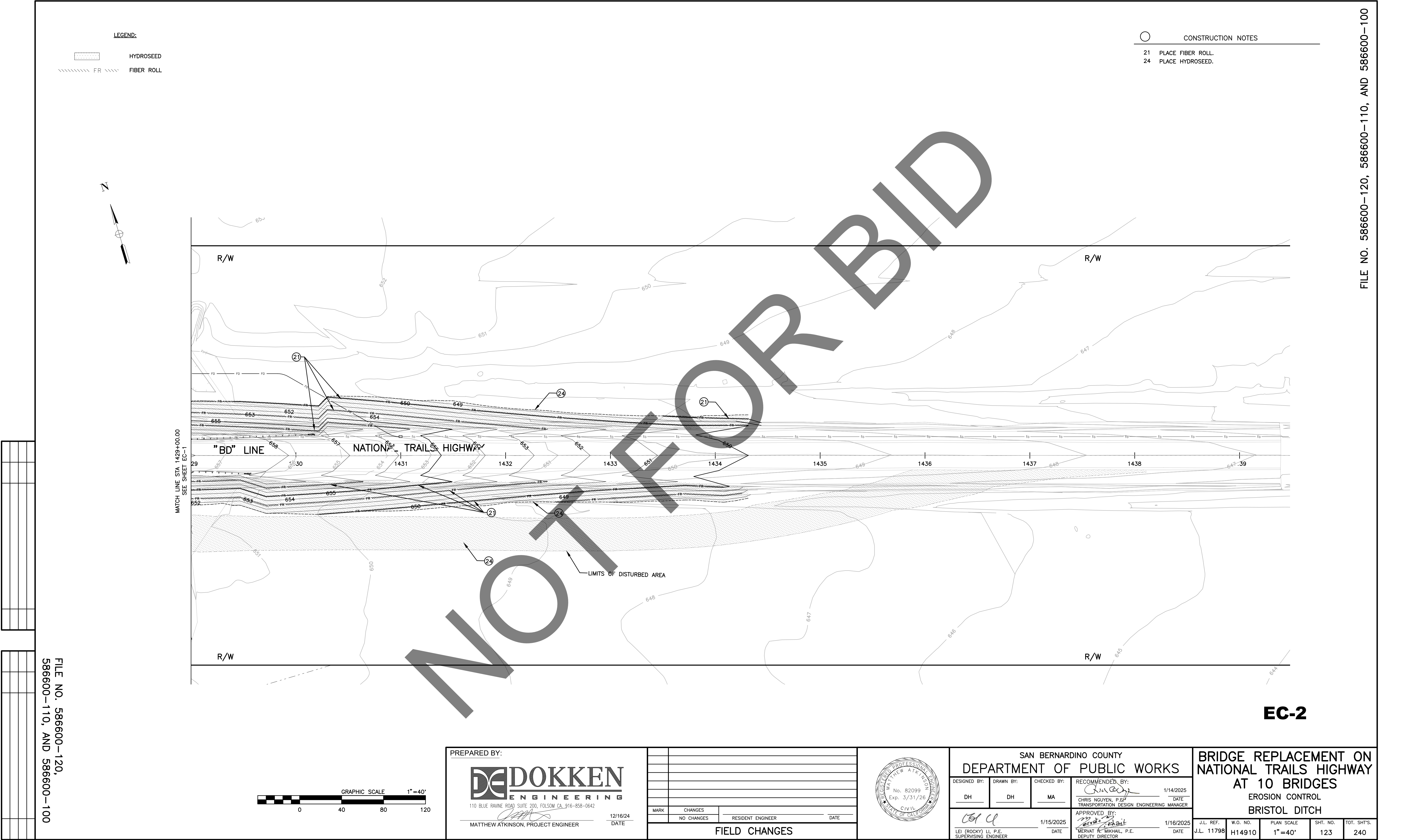
FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100

EC-1



PREPARED BY: DOKKEN ENGINEERING 110 BLUE RAINE ROAD SUITE 200, FOLSOM CA, 916-858-0642 MATTHEW ATKINSON, PROJECT ENGINEER 12/16/24 DATE		FIELD CHANGES				SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS DESIGNED BY: DH DRAWN BY: DH CHECKED BY: MA RECOMMENDED BY: CHRIS NGUYEN, P.E., TRANSPORTATION DESIGN ENGINEERING MANAGER, 1/14/2025 APPROVED BY: MERVAT R. MIKHAIL, P.E., DEPUTY DIRECTOR, 1/16/2025		BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES EROSION CONTROL BRISTOL DITCH J.L. REF. J.L. 11798 W.O. NO. H14910 PLAN SCALE 1"=40' SHT. NO. 122 TOT. SHT'S. 240			
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LEGEND:

- HYDROSEED
- FIBER ROLL



CONSTRUCTION NOTES

- 21 PLACE FIBER ROLL.
- 24 PLACE HYDROSEED.

MATCH LINE STA 1429+00.00
SEE SHEET EC-1

R/W

"BD" LINE

NATIONAL TRAILS HIGHWAY

LIMITS OF DISTURBED AREA

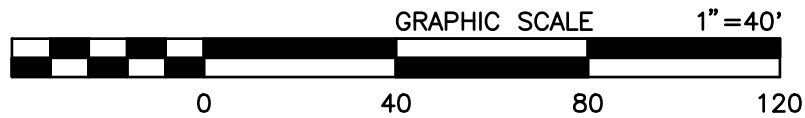
R/W

R/W

EC-2

FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100



PREPARED BY:

DOKKEN
ENGINEERING
110 BLUE RAINE ROAD SUITE 200, FOLSOM, CA 95630-0642
MATTHEW ATKINSON, PROJECT ENGINEER
12/16/24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		
FIELD CHANGES			

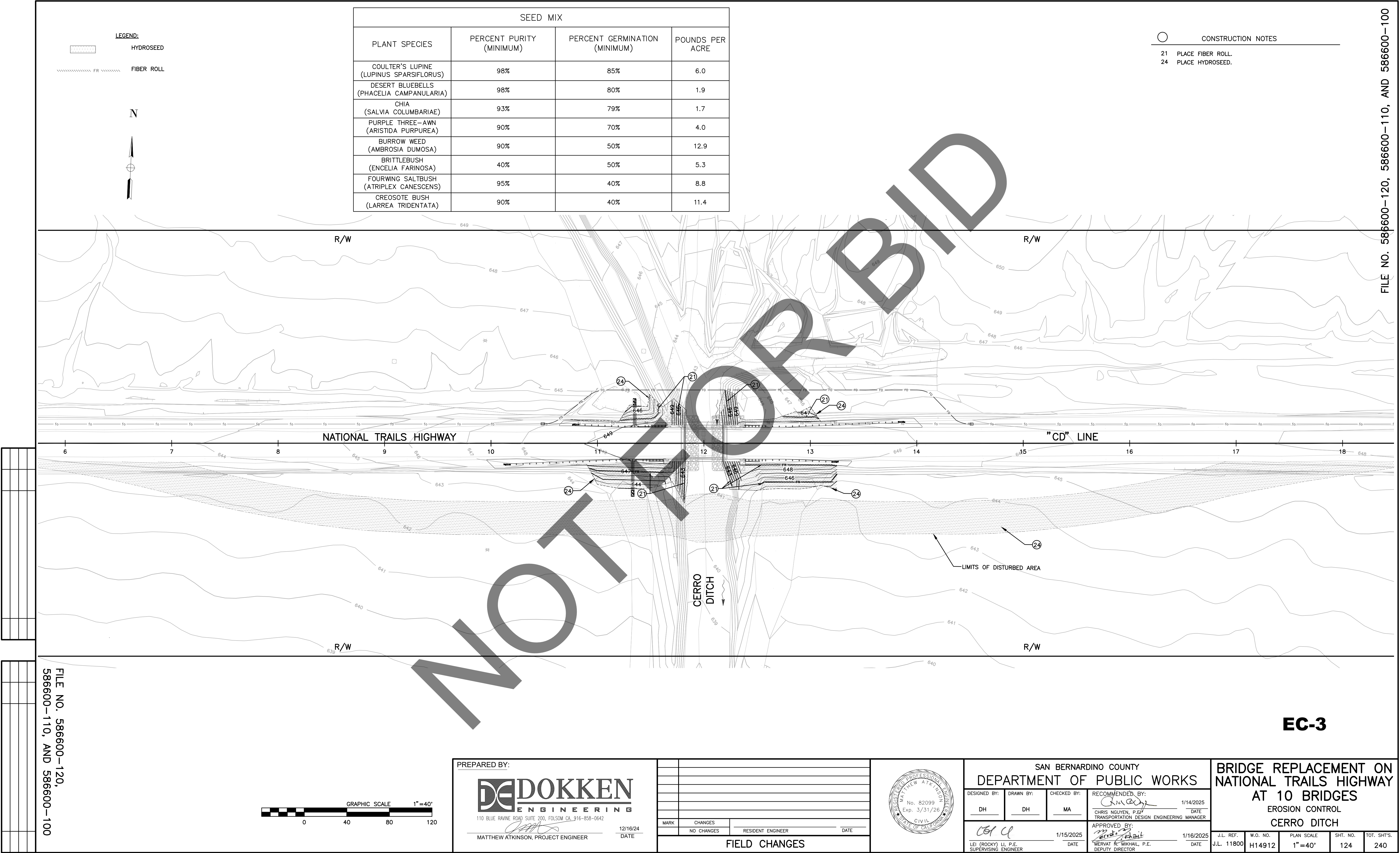


SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DH	DRAWN BY: DH	CHECKED BY: MA	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 R. MIKHAIL, P.E. DEPUTY DIRECTOR 1/16/2025 DATE

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
EROSION CONTROL
BRISTOL DITCH

J.L. REF. J.L. 11798	W.O. NO. H14910	PLAN SCALE 1"=40'	SHT. NO. 123	TOT. SHT'S. 240
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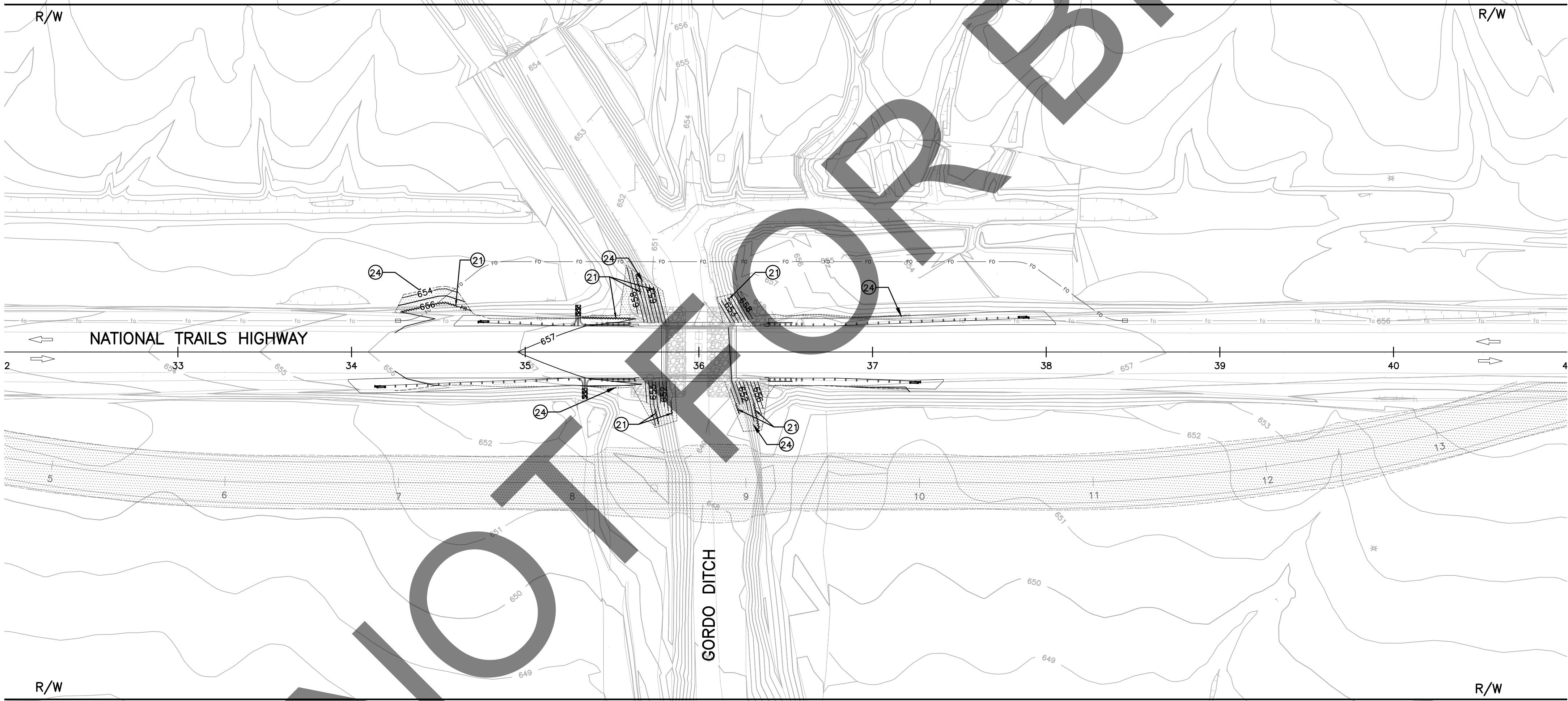


FILE NO. 586600-120,
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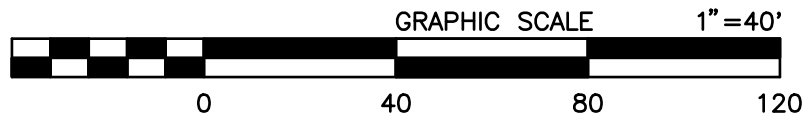
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HYDROSEED
FIBER ROLL

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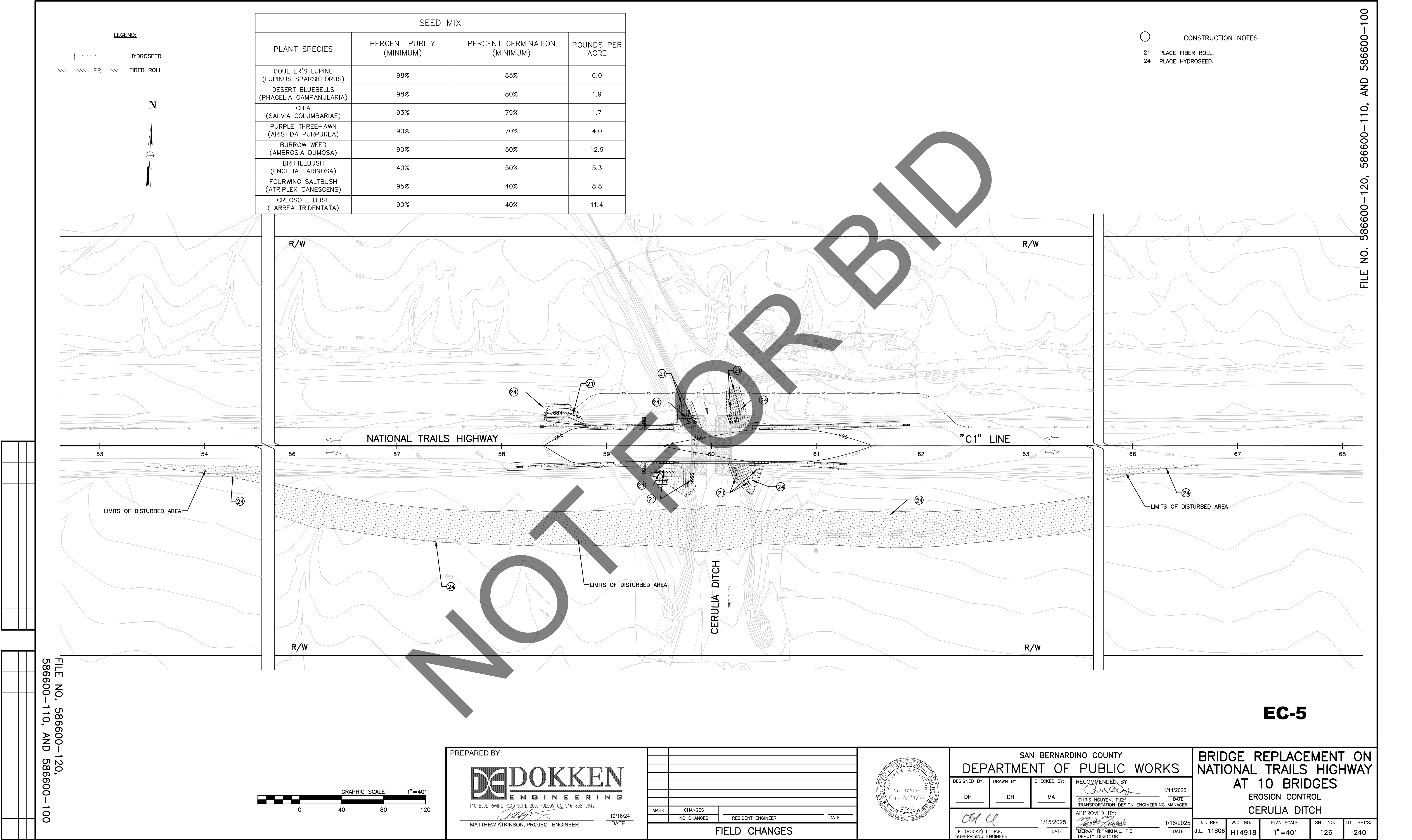
CONSTRUCTION NOTES	
21	PLACE FIBER ROLL.
24	PLACE HYDROSEED.



EC-4



PREPARED BY: DOKKEN ENGINEERING 110 BLUE RAINE ROAD SUITE 200, FOLSOM CA, 916-858-0642 MATTHEW ATKINSON, PROJECT ENGINEER 12/16/24 DATE		<table><tr><td>MARK</td><td>CHANGES</td><td>RESIDENT ENGINEER</td><td>DATE</td></tr><tr><td></td><td>NO CHANGES</td><td></td><td></td></tr></table> FIELD CHANGES		MARK	CHANGES	RESIDENT ENGINEER	DATE		NO CHANGES					SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS DESIGNED BY: DH DRAWN BY: DH CHECKED BY: MA RECOMMENDED BY: Chris Nguyen, P.E., TRANSPORTATION DESIGN ENGINEERING MANAGER, 1/14/2025 APPROVED BY: Mervat R. Mikhail, P.E., DEPUTY DIRECTOR, 1/16/2025 LEI (ROCKY) LI, P.E., SUPERVISING ENGINEER		BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES EROSION CONTROL GORDO DITCH J.L. REF. J.L. 11805 W.O. NO. H14917 PLAN SCALE 1"=40' SHT. NO. 125 TOT. SHT'S. 240		
MARK	CHANGES	RESIDENT ENGINEER	DATE															
	NO CHANGES																	



LEGEND:

- HYDROSEED
- FIBER ROLL



NOT FOR BID

NOT FOR BID

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BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

CONSTRUCTION NOTES	
21	PLACE FIBER ROLL.
24	PLACE HYDROSEED.

PREPARED BY:

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

12/16/24

MATTHEW ATKINSON, PROJECT ENGINEER

FIELD CHANGES		
MARK	CHANGES	RESIDENT ENGINEER
	NO CHANGES	DATE



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DH

DRAWN BY: DH

CHECKED BY: MA

RECOMMENDED BY: 1/14/2025
CHRIS NGUYEN, P.E.
TRANSPORTATION DESIGN ENGINEERING MANAGER

APPROVED BY: 1/16/2025
MERVAT R. MIKHAIL, P.E.
DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
EROSION CONTROL
CERULIA DITCH

J.L. REF. J.L. 11806

W.O. NO. H14918

PLAN SCALE 1"=40'

SHT. NO. 126

TOT. SHT'S. 240

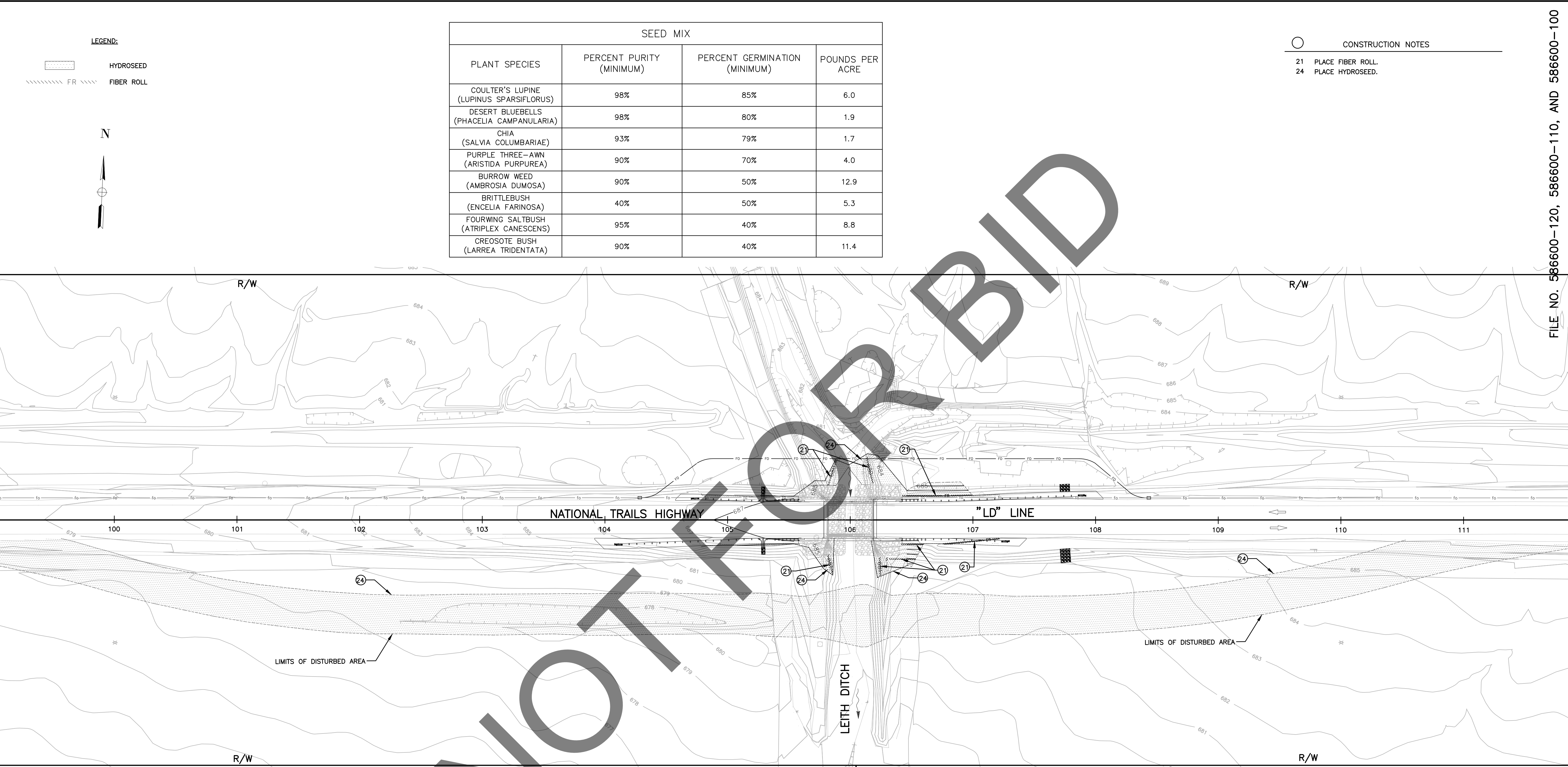
FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100

EC-5

SEED MIX			
PLANT SPECIES	PERCENT PURITY (MINIMUM)	PERCENT GERMINATION (MINIMUM)	POUNDS PER ACRE
COULTER'S LUPINE (LUPINUS SPARSIFLORUS)	98%	85%	6.0
DESERT BLUEBELLS (PHACELIA CAMPANULARIA)	98%	80%	1.9
CHIA (SALVIA COLUMBARIAE)	93%	79%	1.7
PURPLE THREE-AWN (ARISTIDA PURPUREA)	90%	70%	4.0
BURROW WEED (AMBROSIA DUMOSA)	90%	50%	12.9
BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

	CONSTRUCTION NOTES
21	PLACE FIBER ROLL.
24	PLACE HYDROSEED.



FILE NO. 586600-120,
586600-110, AND 586600-100

LEGEND:

HYDROSEED

FIBER ROLL

N

GRAPHIC SCALE

1"=40'

0 40 80 120

PREPARED BY:

DE

DOKKEN

ENGINEERING

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

MATTHEW ATKINSON, PROJECT ENGINEER

12/18/24

DATE

MARK

CHANGES

NO CHANGES

RESIDENT ENGINEER

DATE

FIELD CHANGES

SEAL

MATTHEW ATKINSON

No. 82099

Exp. 3/31/26

CIVIL

STATE OF CALIFORNIA

SAN BERNARDINO COUNTY

DEPARTMENT OF PUBLIC WORKS

DESIGNED BY:

DH

DRAWN BY:

DH

CHECKED BY:

MA

RECOMMENDED BY:

1/14/2025

DATE

CHRIS NGUYEN, P.E.

TRANSPORTATION DESIGN ENGINEERING MANAGER

APPROVED BY:

1/15/2025

DATE

LEI (ROCKY) LI, P.E.

SUPERVISING ENGINEER

APPROVED BY:

1/16/2025

DATE

MERVAT R. MIKHAIL, P.E.

DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
EROSION CONTROL
LEITH DITCH

J.L. REF.

J.L. 11803

W.O. NO.

H14915

PLAN SCALE

1"=40'

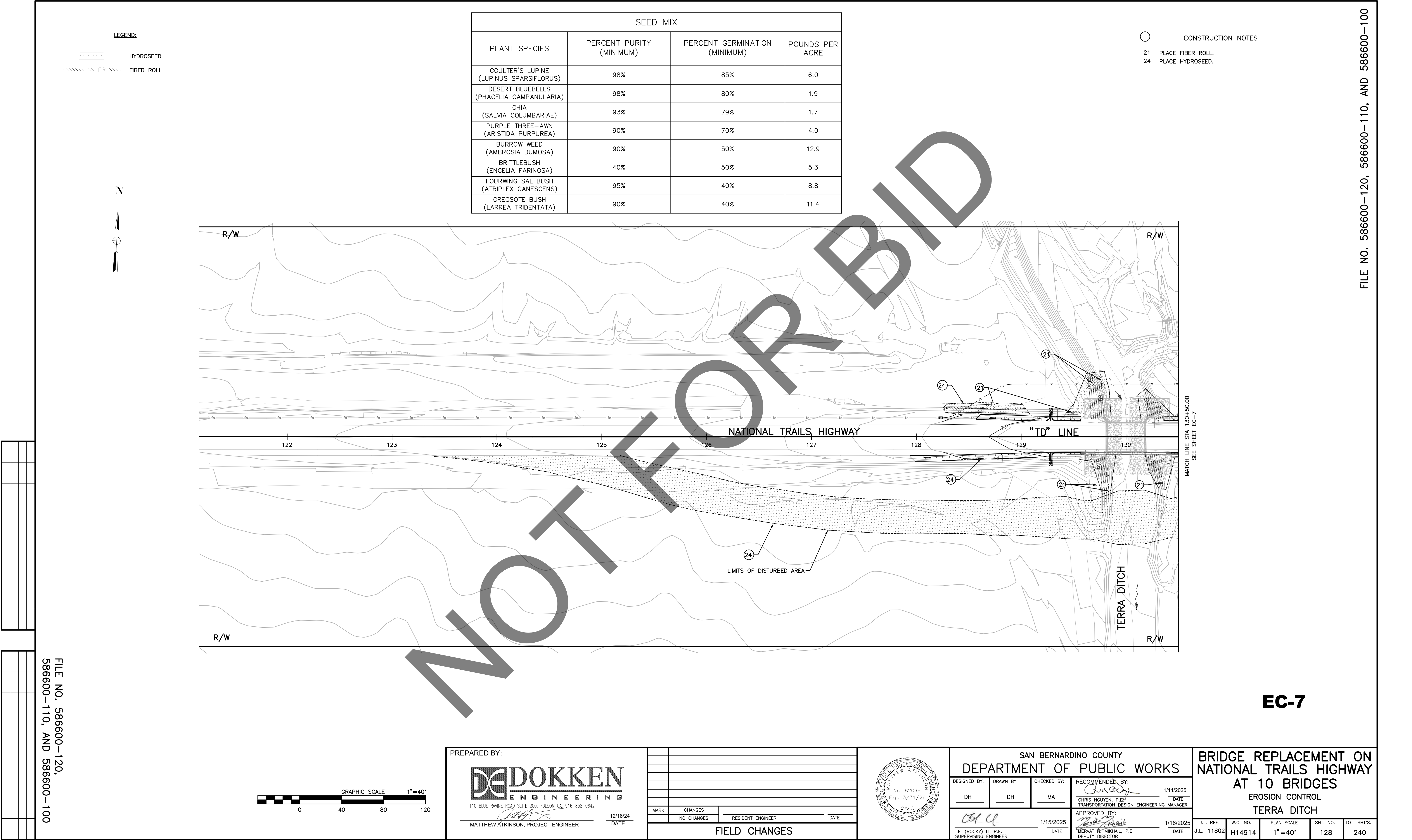
SHT. NO.

127

TOT. SHT'S.

240

FILE NO. 586600-120, 586600-110, AND 586600-100



LEGEND:

- HYDROSEED
- FIBER ROLL

SEED MIX			
PLANT SPECIES	PERCENT PURITY (MINIMUM)	PERCENT GERMINATION (MINIMUM)	POUNDS PER ACRE
COULTER'S LUPINE (LUPINUS SPARSIFLORUS)	98%	85%	6.0
DESERT BLUEBELLS (PHACELIA CAMPANULARIA)	98%	80%	1.9
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BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

CONSTRUCTION NOTES

- 21 PLACE FIBER ROLL
- 24 PLACE HYDROSEED.

PREPARED BY:

DOKKEN

ENGINEERING

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

12/16/24

DATE

MATTHEW ATKINSON, PROJECT ENGINEER

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

No. 82099

Exp. 3/31/26

CIVIL

SAN BERNARDINO COUNTY

DEPARTMENT OF PUBLIC WORKS

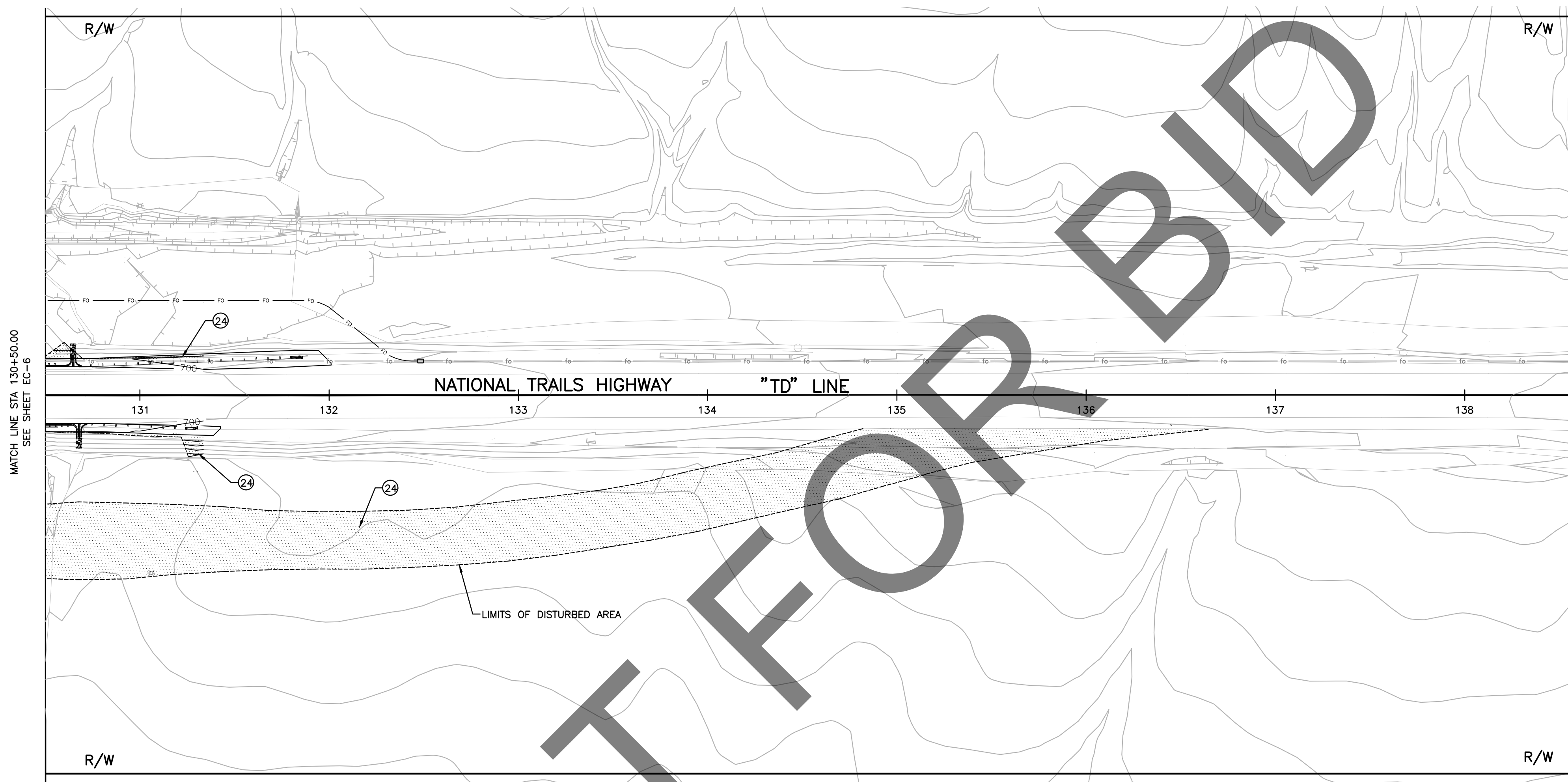
DESIGNED BY:	DRAWN BY:	CHECKED BY:	RECOMMENDED BY:
DH	DH	MA	<div><div></div><div>1/14/2025</div></div>
			CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
			APPROVED BY:
<div><div></div><div>1/15/2025</div></div>			<div><div></div><div>1/16/2025</div></div>
LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11802	H14914	1"=40'	128	240

EC-7

HYDROSEED
FR FIBER ROL

21 PLACE FIBER ROLL.
24 PLACE HYDROSEED.



EC-8

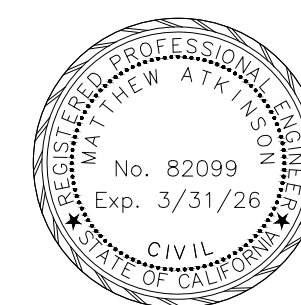
DOKKEN
ENGINEERING



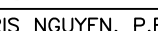
110 BLUE RAINE ROAD SUITE 200, FOLSOM CA. 916-858-0642

Matthew Atkinson

MATTHEW ATKINSON, PROJECT ENGINEER

12/16/2016
DATE

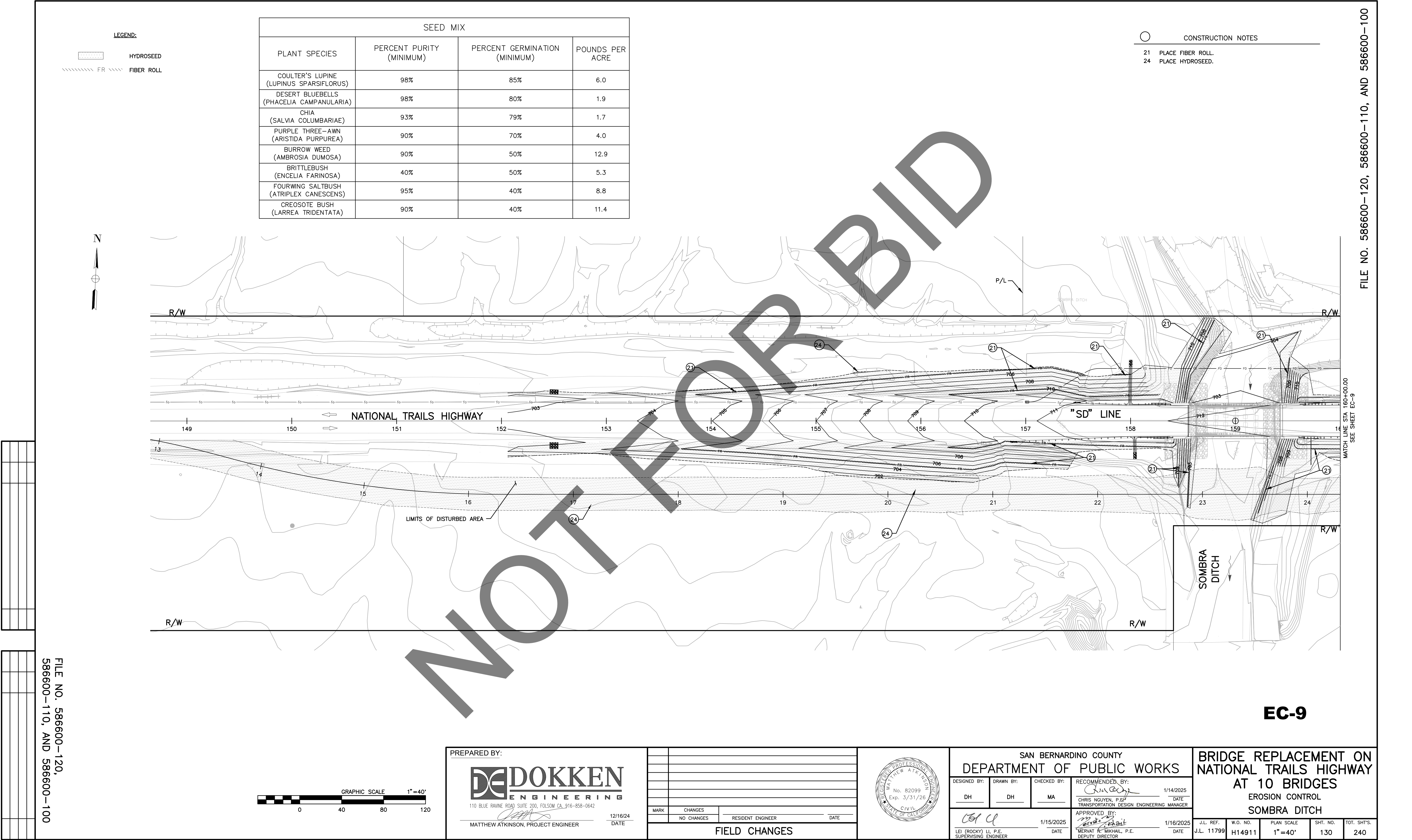
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SAN BERNARDINO COUNTY			
DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: DH	DRAWN BY: DH	CHECKED BY: MA	RECOMMENDED BY:  CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER
 LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER			APPROVED BY:  MERVAT K. MIKHAL, P.E. DEPUTY COUNTY ENGINEER
1/15/2025			1/16/2025
DATE			DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES EROSION CONTROL TERRA DITCH					
J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.	
J.L. 11802	H14914	1" = 40'	129	240	

FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100



LEGEND:

- HYDROSEED
- FR

FIBER ROLL

SEED MIX			
PLANT SPECIES	PERCENT PURITY (MINIMUM)	PERCENT GERMINATION (MINIMUM)	POUNDS PER ACRE
COULTER'S LUPINE (LUPINUS SPARSIFLORUS)	98%	85%	6.0
DESERT BLUEBELLS (PHACELIA CAMPANULARIA)	98%	80%	1.9
CHIA (SALVIA COLUMBARIAE)	93%	79%	1.7
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BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

CONSTRUCTION NOTES

- 21 PLACE FIBER ROLL.
- 24 PLACE HYDROSEED.

PREPARED BY:

DOKKEN

ENGINEERING

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

12/16/24

DATE

MATTHEW ATKINSON, PROJECT ENGINEER

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DH

DRAWN BY: DH

CHECKED BY: MA

RECOMMENDED BY: 1/14/2025
CHRIS NGUYEN, P.E.
TRANSPORTATION DESIGN ENGINEERING MANAGER

APPROVED BY: 1/16/2025
MERVAT R. MIKHAIL, P.E.
DEPUTY DIRECTOR

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

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
EROSION CONTROL
SOMBRA DITCH

J.L. REF. J.L. 11799

W.O. NO. H14911

PLAN SCALE 1"=40'

SHT. NO. 130

TOT. SHT'S. 240

FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100

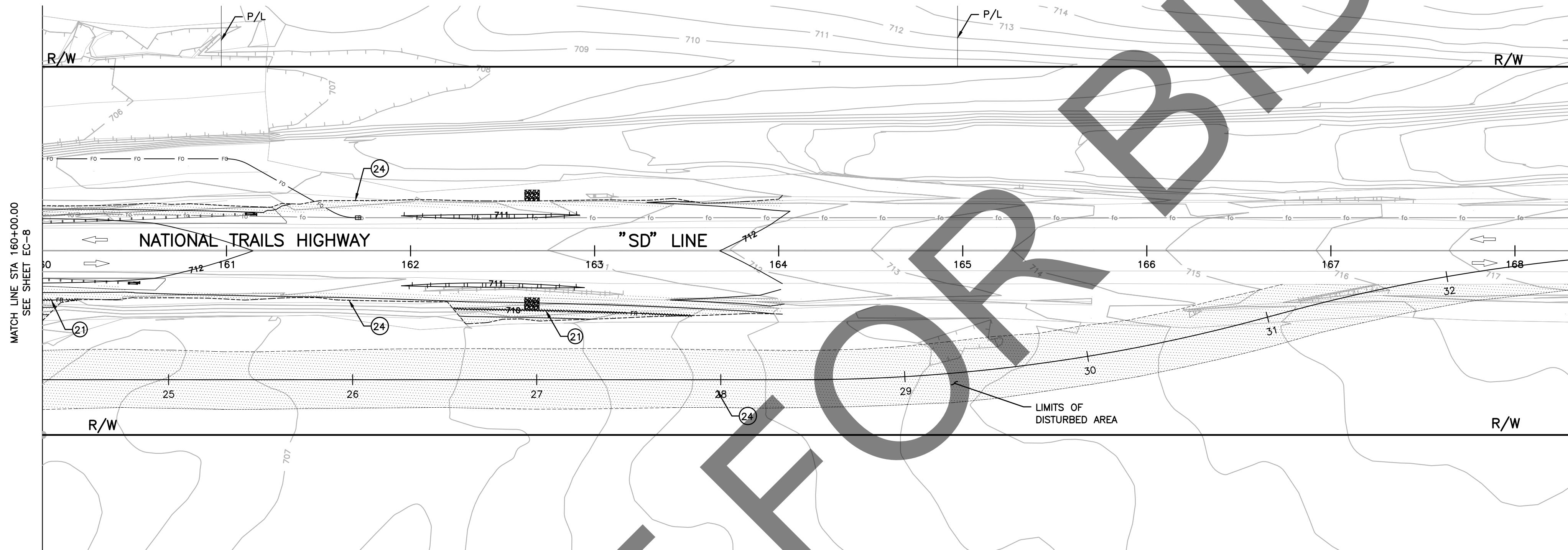
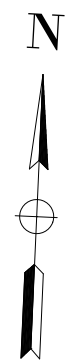
EC-9

LEGEND:

HYDROSEED
FIBER ROLL

CONSTRUCTION NOTES

- 21 PLACE FIBER ROLL.
24 PLACE HYDROSEED.



EC-10

PREPARED BY:

DOKKEN
ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM, CA 95630-0642
MATTHEW ATKINSON, PROJECT ENGINEER
12/16/24
DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

FIELD CHANGES

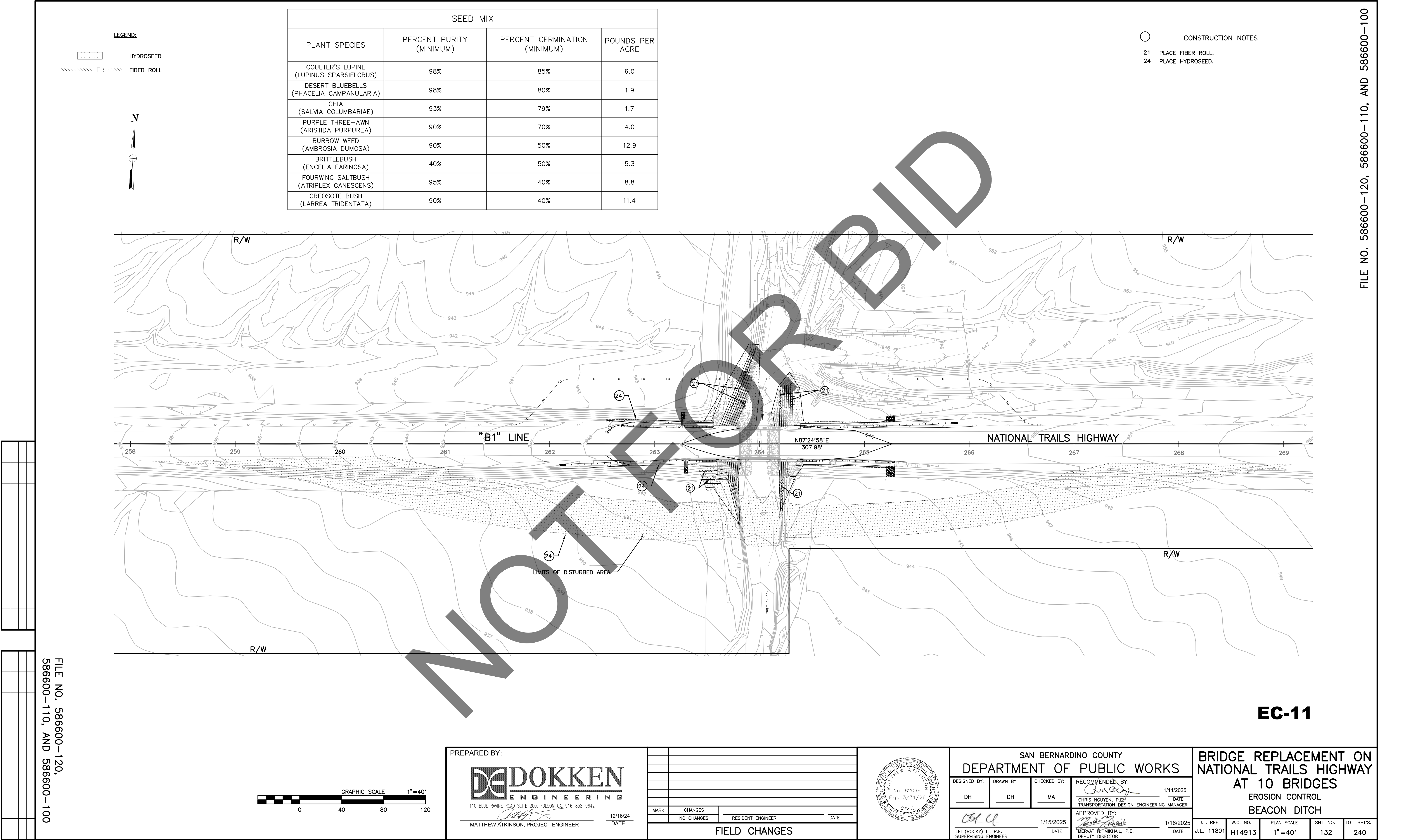


SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: DH	DRAWN BY: DH	CHECKED BY: MA	RECOMMENDED BY: CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE		APPROVED BY: MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR 1/16/2025 DATE	

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES EROSION CONTROL SOMBRA DITCH				
J.L. REF. J.L. 11799	W.O. NO. H14911	PLAN SCALE 1"=40'	SHT. NO. 131	TOT. SHT'S. 240

FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100



LEGEND:

- HYDROSEED
FIBER ROLL



SEED MIX			
PLANT SPECIES	PERCENT PURITY (MINIMUM)	PERCENT GERMINATION (MINIMUM)	POUNDS PER ACRE
COULTER'S LUPINE (LUPINUS SPARSIFLORUS)	98%	85%	6.0
DESERT BLUEBELLS (PHACELIA CAMPANULARIA)	98%	80%	1.9
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BURROW WEED (AMBROSIA DUMOSA)	90%	50%	12.9
BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

CONSTRUCTION NOTES

- 21 PLACE FIBER ROLL.
24 PLACE HYDROSEED.

"B1" LINE

NATIONAL TRAILS HIGHWAY

LIMITS OF DISTURBED AREA

EC-11

PREPARED BY:

DOKKEN
ENGINEERING
110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA, 916-858-0642
MATTHEW ATKINSON, PROJECT ENGINEER
12/16/24
DATE

MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

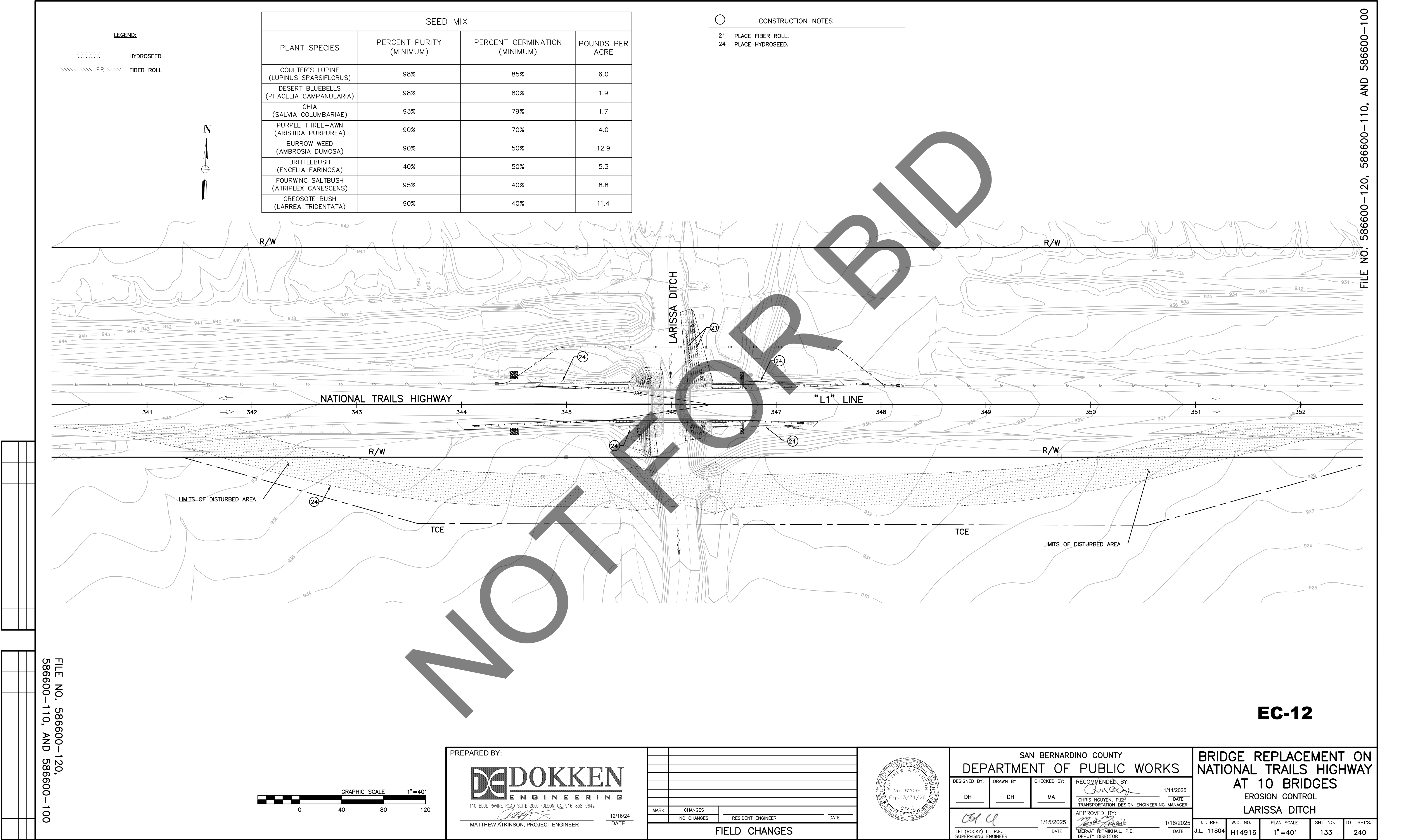
DESIGNED BY: DH DRAWN BY: DH CHECKED BY: MA RECOMMENDED BY: 1/14/2025
CHRIS NGUYEN, P.E. DATE
TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: 1/15/2025 1/16/2025
LEI (ROCKY) LI, P.E. DATE
SUPERVISING ENGINEER
MERVAT R. MIKHAIL, P.E. DATE
DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
EROSION CONTROL
BEACON DITCH

J.L. REF. W.O. NO. PLAN SCALE SHT. NO. TOT. SHT'S.
J.L. 11801 H14913 1"=40' 132 240

FILE NO. 586600-120,
586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100



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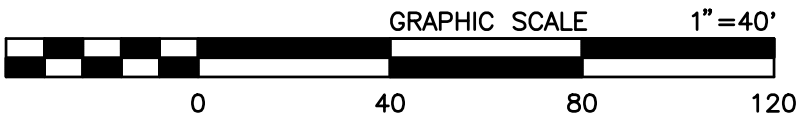
- HYDROSEED
- FIBER ROLL

SEED MIX			
PLANT SPECIES	PERCENT PURITY (MINIMUM)	PERCENT GERMINATION (MINIMUM)	POUNDS PER ACRE
COULTER'S LUPINE (LUPINUS SPARSIFLORUS)	98%	85%	6.0
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BURROW WEED (AMBROSIA DUMOSA)	90%	50%	12.9
BRITTLEBUSH (ENCELIA FARINOSA)	40%	50%	5.3
FOURWING SALTBUSH (ATRIPLEX CANESCENS)	95%	40%	8.8
CREOSOTE BUSH (LARREA TRIDENTATA)	90%	40%	11.4

- CONSTRUCTION NOTES
- 21 PLACE FIBER ROLL.
 - 24 PLACE HYDROSEED.

FILE NO. 586600-120, 586600-110, AND 586600-100

FILE NO. 586600-120, 586600-110, AND 586600-100



PREPARED BY:

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

MATTHEW ATKINSON, PROJECT ENGINEER

12/16/24 DATE

MARK		
CHANGES		
NO CHANGES		
RESIDENT ENGINEER		
DATE		
FIELD CHANGES		



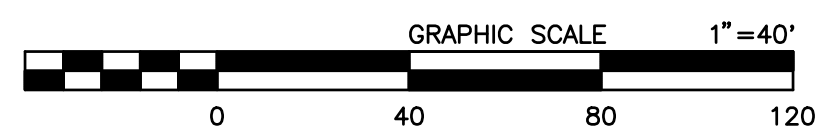
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

DESIGNED BY: DH	DRAWN BY: DH	CHECKED BY: MA	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			

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
EROSION CONTROL
LARISSA DITCH

J.L. REF. J.L. 11804	W.O. NO. H14916	PLAN SCALE 1"=40'	SHT. NO. 133	TOT. SHT'S. 240
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CONSTRUCTION NOTES



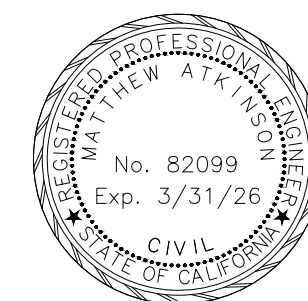
PREPARED BY:

DOKKEN
ENGINEERING

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

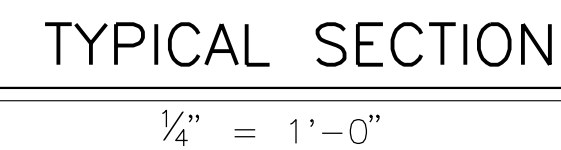
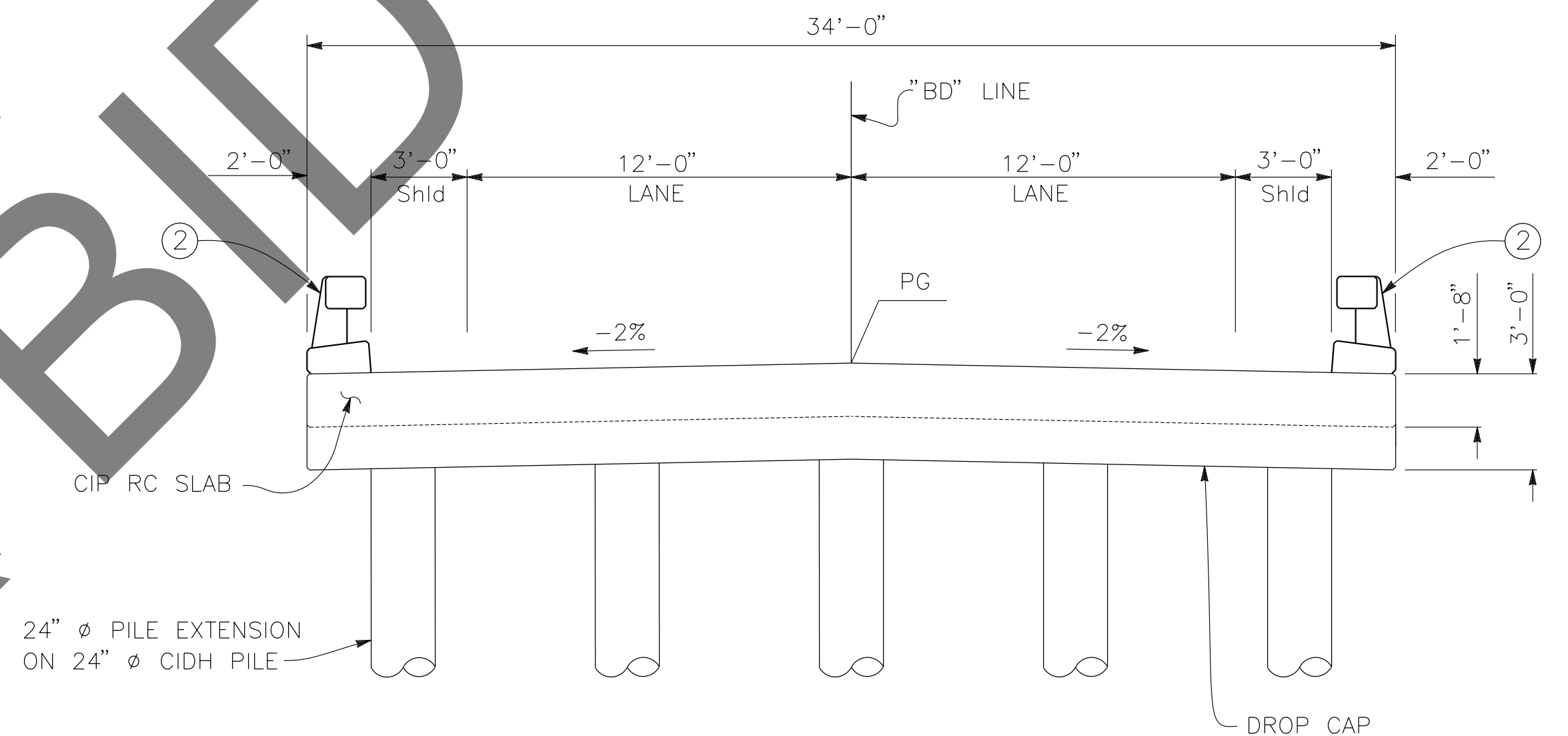
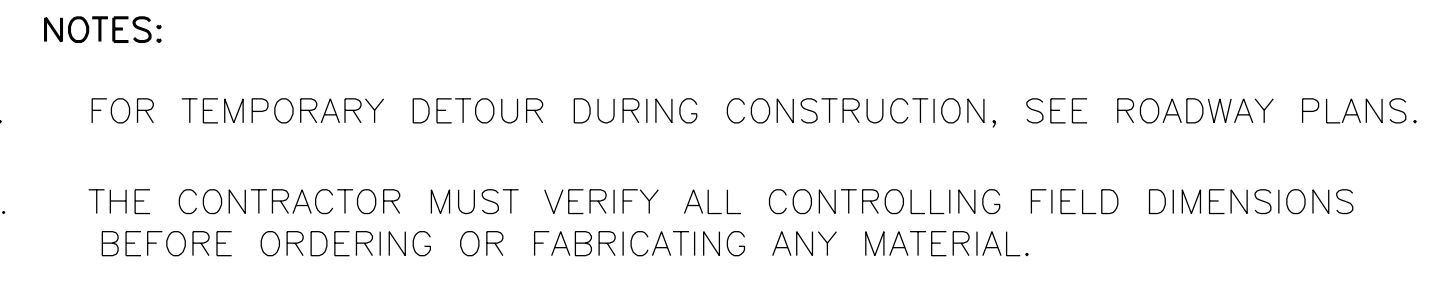
Matthew Atkinson
MATTHEW ATKINSON, PROJECT ENGINEER


12/16/24
DATE

[illegible]

SAN BERNARDINO COUNTY				
DEPARTMENT OF PUBLIC WORKS				
DESIGNED BY:	DRAWN BY:	CHECKED BY:	RECOMMENDED BY:	1/14/2025
DH	DH	MA	<i>Chris Nguyen</i>	DATE
			CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN	ENGINEERING MANAGER
<i>CEL</i>		1/15/2025	APPROVED BY:	1/16/2025
LEI (ROCKY) LI, P.E. SUPERVISING FINDER		DATE	<i>Michael Mervat</i> Mervat M. Mikhail, P.E. SUPERVISOR	DATE

<p align="center">BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES EROSION CONTROL ADENA DITCH</p>					
J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.	
J.L. 11797	H14853	1" = 40'	134	240	



- LEGEND:**
- ① PAINT "BRISTOL DITCH BRIDGE"
"BR NO. 54C0810" 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:

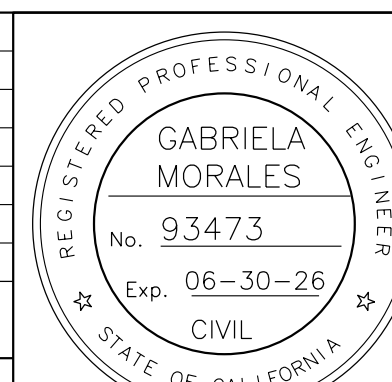
DE DOKKEN
ENGINEERING

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

Gabriela Morales

GABRIELA MORALES, PROJECT ENGINEER

12-16-24
DATE

[illegible]

SAN BERNARDINO COUNTY				
DEPARTMENT OF PUBLIC WORKS				
DESIGNED BY:	DRAWN BY:	CHECKED BY:	RECOMMENDED BY:	1/14/2025
JR	EF	DY	CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER	DATE
LEI (ROCKY) LI, P.E. PUBLIC WORKS	1/15/2025	DATE	APPROVED BY: MERVAT N. MIKHAIL, P.E.	1/16/2025
				DATE

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

J.L. REF.	W.O. NO.	PLAN SCALE	SHT. NO.	TOT. SHT'S.
J.L. 11798	H14910	AS NOTED	135	240

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION
WITH CALIFORNIA AMENDMENTS, PREFACE DATED JUNE 2024

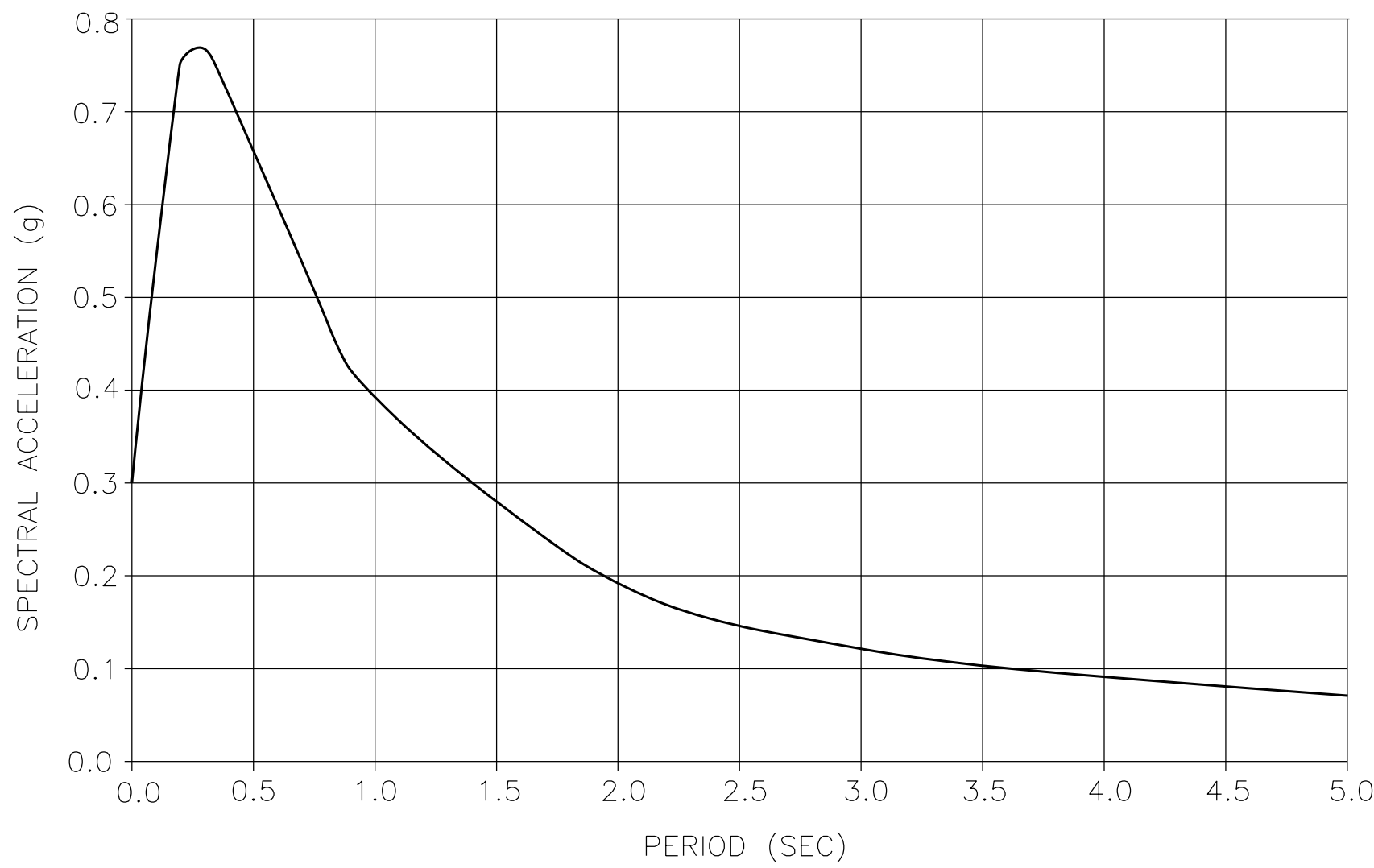
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION
WITH REVISED STANDARD PLANS, DATED OCTOBER 2024

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 : $V_{S30} = 968$ FT/S
MOMENT MAGNITUDE : 6.38
PEAK GROUND ACCELERATION = 0.30g
5% DAMPING



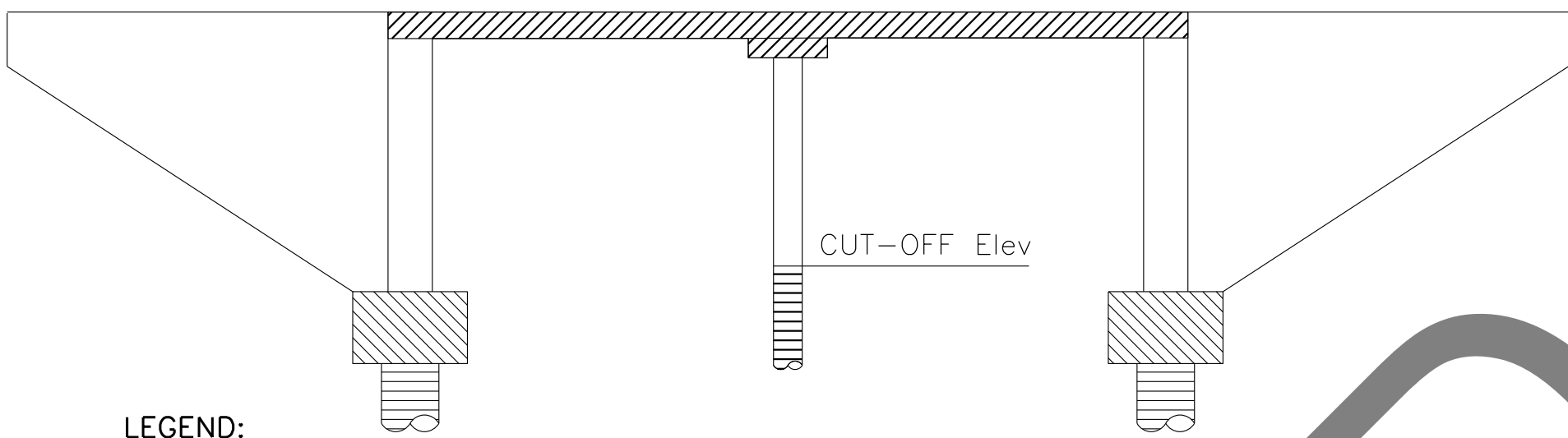
ARS CURVE

NO SCALE

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

INDEX TO PLANS

SHEET No.	TITLE
135	GENERAL PLAN
136	INDEX TO PLANS
137	DECK CONTOURS
138	FOUNDATION PLAN
139	ABUTMENT LAYOUT
140	ABUTMENT DETAILS
141	PIER LAYOUT
142	SLAB DETAILS
143	ROCK SLOPE PROTECTION DETAILS
144	LOG OF TEST BORINGS 1 OF 3
145	LOG OF TEST BORINGS 2 OF 3
146	LOG OF TEST BORINGS 3 OF 3

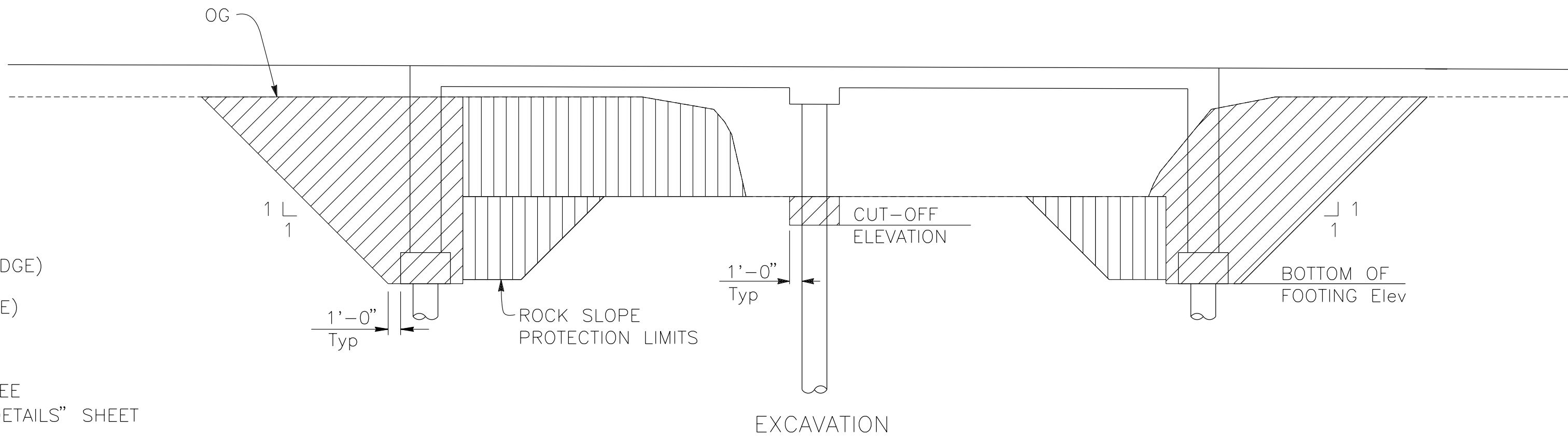
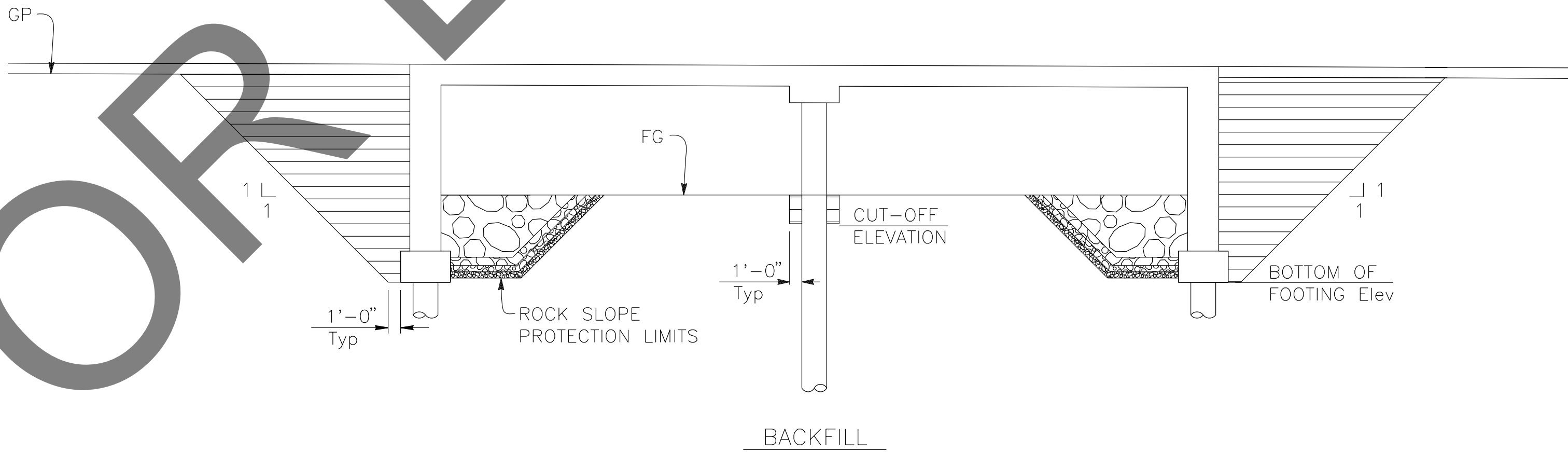


LEGEND:

- 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



LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL

NO SCALE

QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	2150	CY
STRUCTURE EXCAVATION (BRIDGE)	750	CY
STRUCTURE BACKFILL (BRIDGE)	670	CY
24" CAST IN-DRILLED-HOLE CONCRETE PILING	830	LF
STRUCTURAL CONCRETE, BRIDGE FOOTING	27	CY
STRUCTURAL CONCRETE, BRIDGE	136	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	144	CY
BAR REINFORCING STEEL (BRIDGE)	107820	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (1/2 T, CLASS VII, METHOD B)	595	CY
GRAVEL FILTER (TYPE A)	94	CY
GRAVEL FILTER (TYPE B)	88	CY
GRAVEL FILTER (TYPE C)	111	CY
CONCRETE BARRIER (TYPE 85 MOD)	222	LF

LEGEND:

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

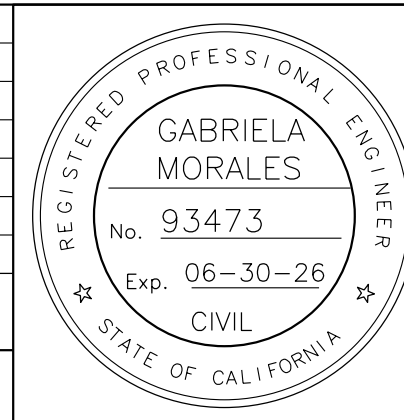
NOTES:

FOR WINGWALL EXCAVATION & BACKFILL LIMITS
SEE STANDARD PLAN A62C.

PREPARED BY:



MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		

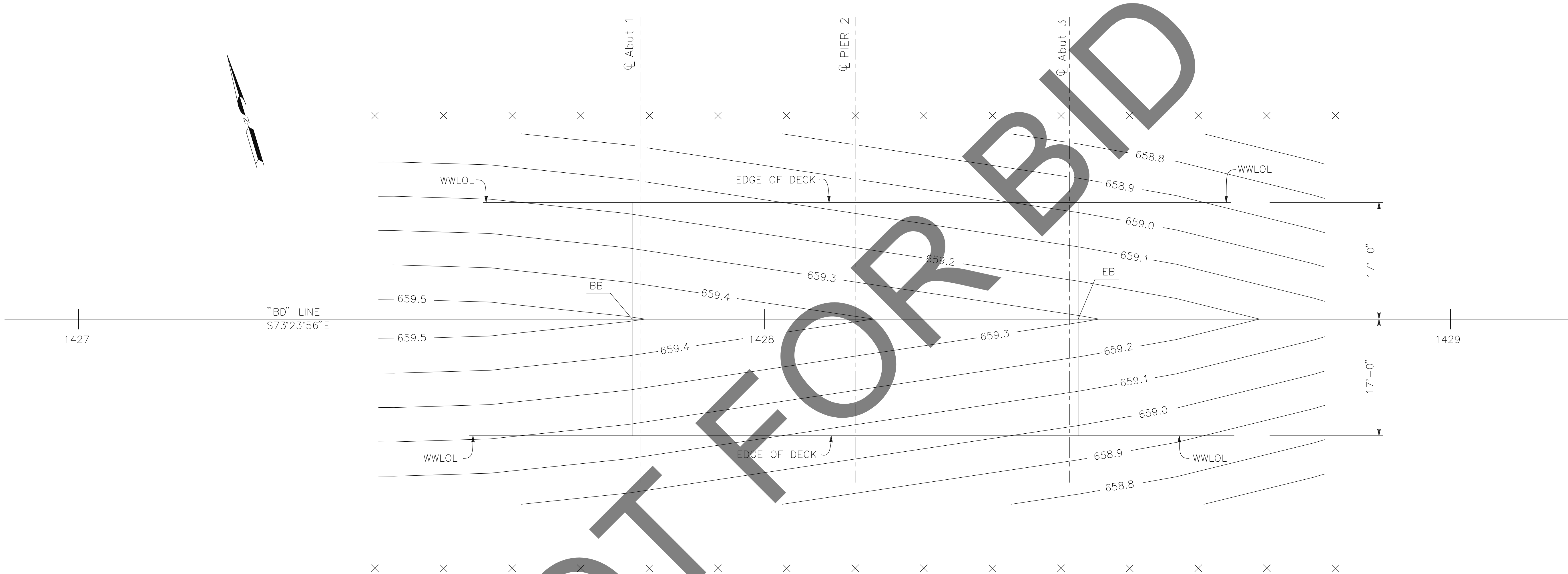


SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: Chris Nguyen, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED BY: Mervat A. Mikhail, P.E. DEPUTY DIRECTOR 1/16/2025 DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES INDEX TO PLANS BRISTOL DITCH			
J.L. REF. J.L. 11798	W.O. NO. H14910	PLAN SCALE AS NOTED	SHT. NO. 136 TOT. SHT'S. 240

MARK	REVISIONS	APPR.	DATE

MARK	REVISIONS	APPR.	DATE



PLAN
1/8" = 1'-0"

- NOTES:
- 1. 0.1' CONTOUR INTERVALS SHOWN.
 - 2. CONTOURS DO NOT INCLUDE CAMBER.
 - 3. TOP OF CONCRETE DECK SHOWN.

- LEGEND:
- × 10' INTERVALS ALONG STATION LINE

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: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
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

DECK CONTOURS
BRISTOL DITCH

J.L. REF. J.L. 11798	W.O. NO. H14910	PLAN SCALE AS NOTED	SHT. NO. 137	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	646.2	8.7
PIER 2	646.2	5.3
Abut 3	646.2	8.7

- 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)

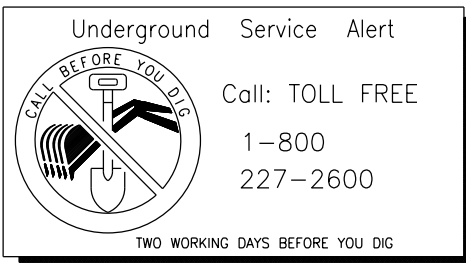
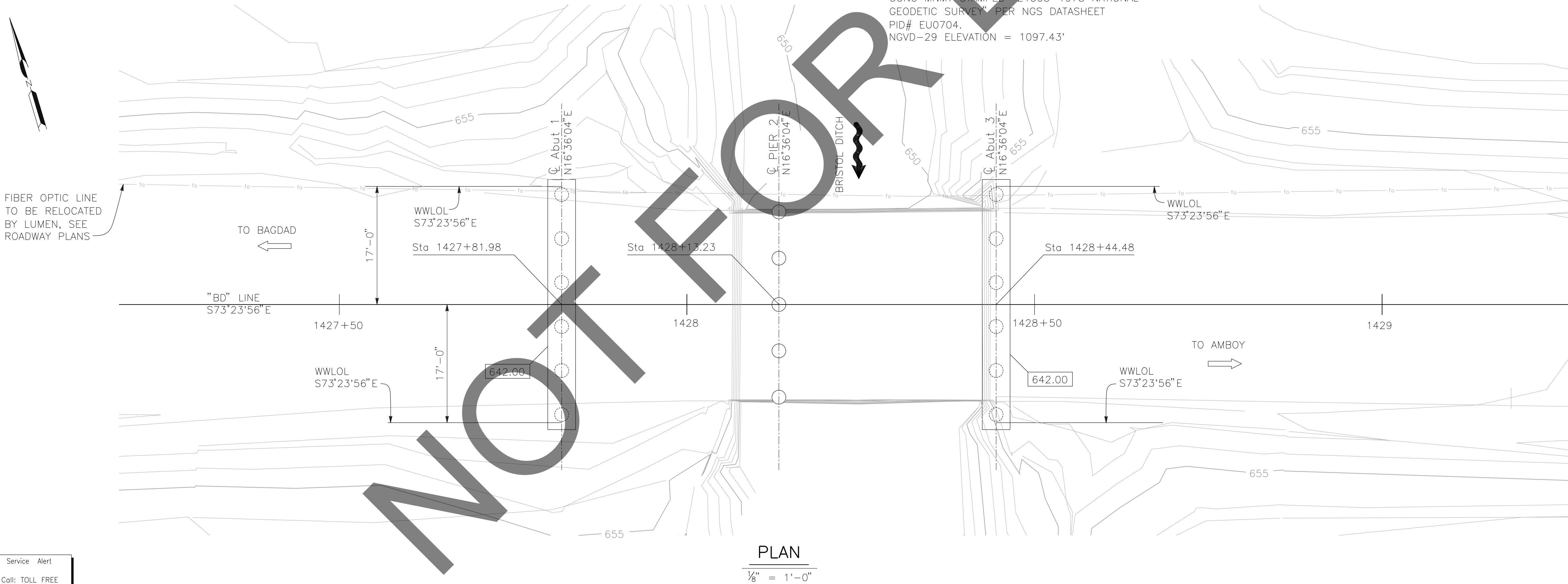
24" Ø CIDH PILE

HYDROLOGIC SUMMARY		
	DESIGN FLOOD	BASE FLOOD
FREQUENCY	50-YR	100-YR
DISCHARGE *	3914 CFS	5984 CFS
WATER SURFACE ELEVATION AT BRIDGE	655.8 FT	656.8 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 DESGIN FLOWS		

SUPPORT LOCATION	PILE TYPE	NOMINAL RESISTANCE (KIPS)		DESIGN TIP ELEVATION (FT)	SPECIFIED TIP ELEVATION (FT)
		COMPRESSION	TENSION		
Abut 1	24" CIDH	290	N/A	+608(A) +617(B) +589(C)	+589
PIER 2	24" CIDH	320	N/A	+608(A) +611(B) +624(C)	+609
Abut 3	24" CIDH	290	N/A	+607(A) +617(B) +589(C)	+589

- NOTES:
- DESIGN TIP ELEVATIONS FOR ABUTMENTS ARE CONTROLLED BY: (A) COMPRESSION, (B) SETTLEMENT AND (C) LATERAL LOAD.
 - THE CIDH SPECIFIED TIP ELEVATION SHALL NOT BE RAISED.

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'



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			

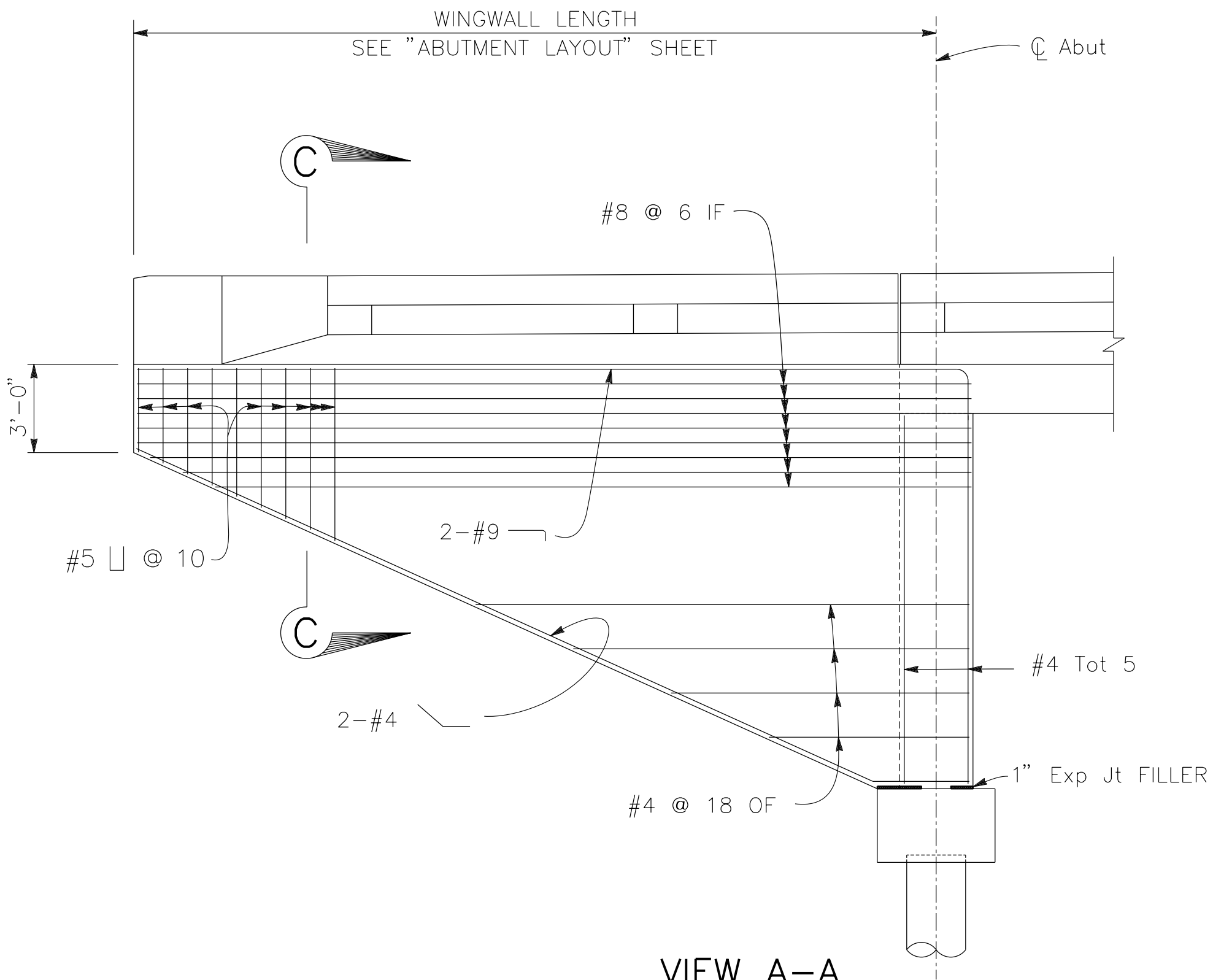


SAN BERNARDINO COUNTY DEPARTMENT OF PUBLIC WORKS			
DESIGNED BY: JR	DRAWN BY: EF	CHECKED BY: DY	RECOMMENDED BY: <i>Chris Nguyen</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: <i>Lei Rocky Li</i> LEI (ROCKY) LI, P.E. SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED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

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES FOUNDATION PLAN BRISTOL DITCH				
J.L. REF. J.L. 11798	W.O. NO. H14910	PLAN SCALE AS NOTED	SHT. NO. 138	TOT. SHT'S. 240

NOTES:

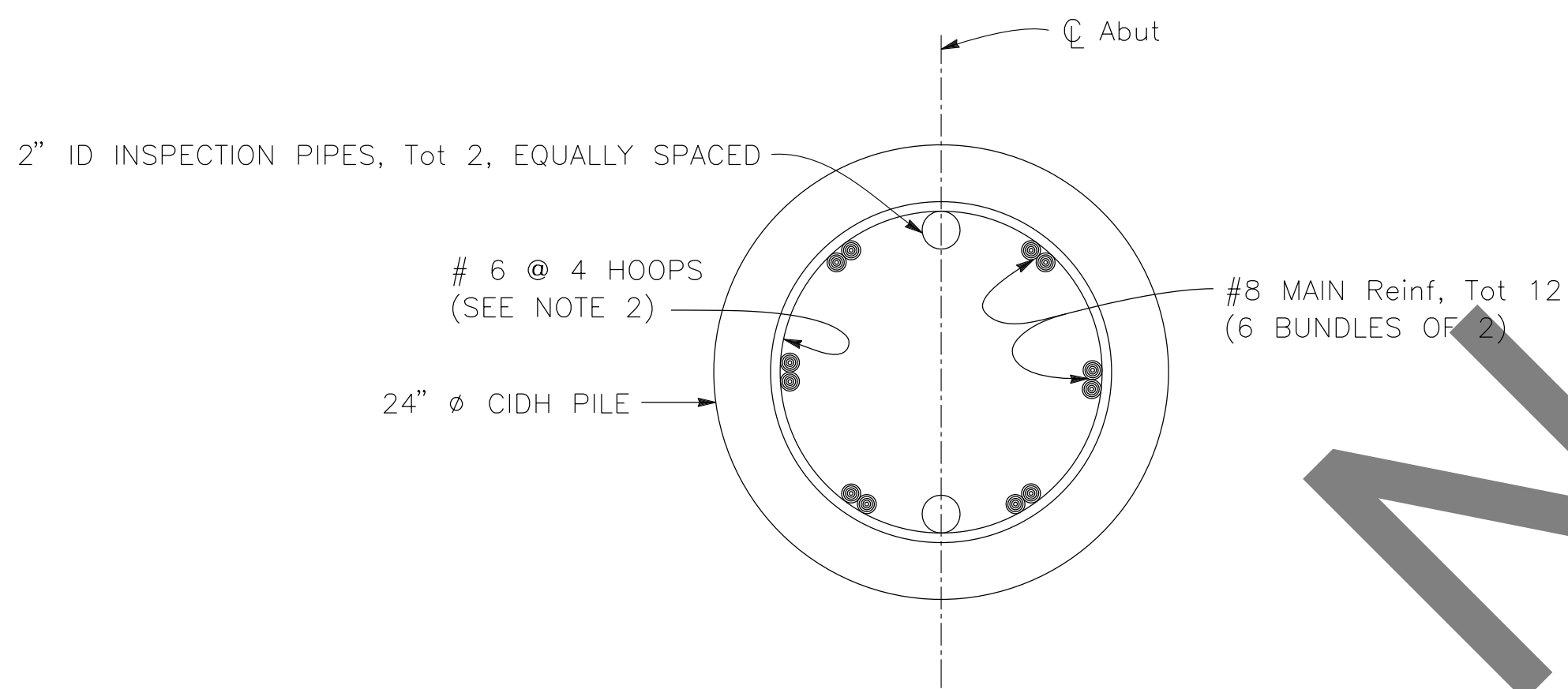
1. FOR DETAILS NOT SHOWN, SEE B0-3
2. ALL HOOPS SHALL BE "ULTIMATE" BUTT WELD SPLICE CONTINUOUS.



VIEW A-A

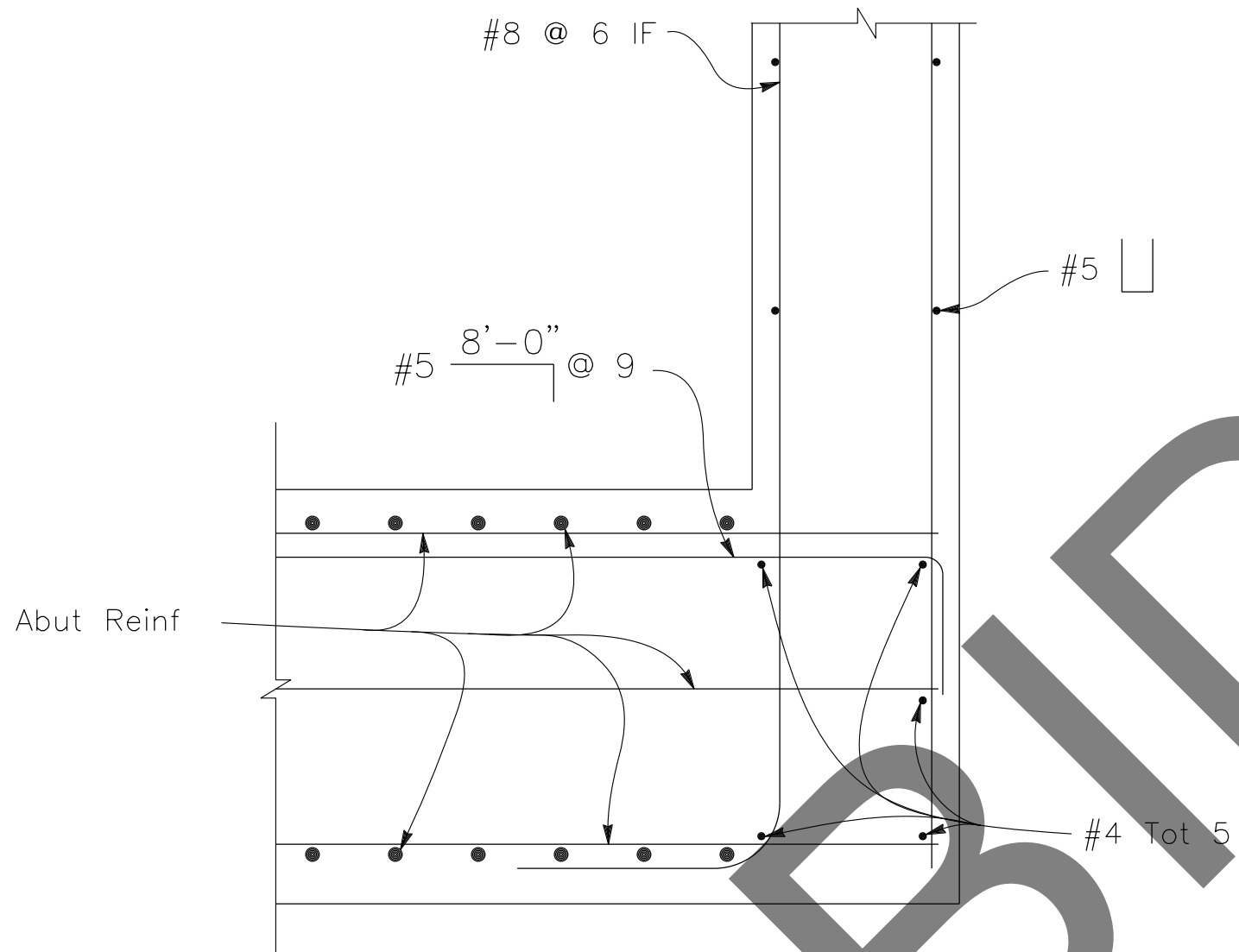
$\frac{1}{4}" = 1'-0"$

ABUTMETNT 1 SHOWN, ABUTMENT 3 SIMILAR



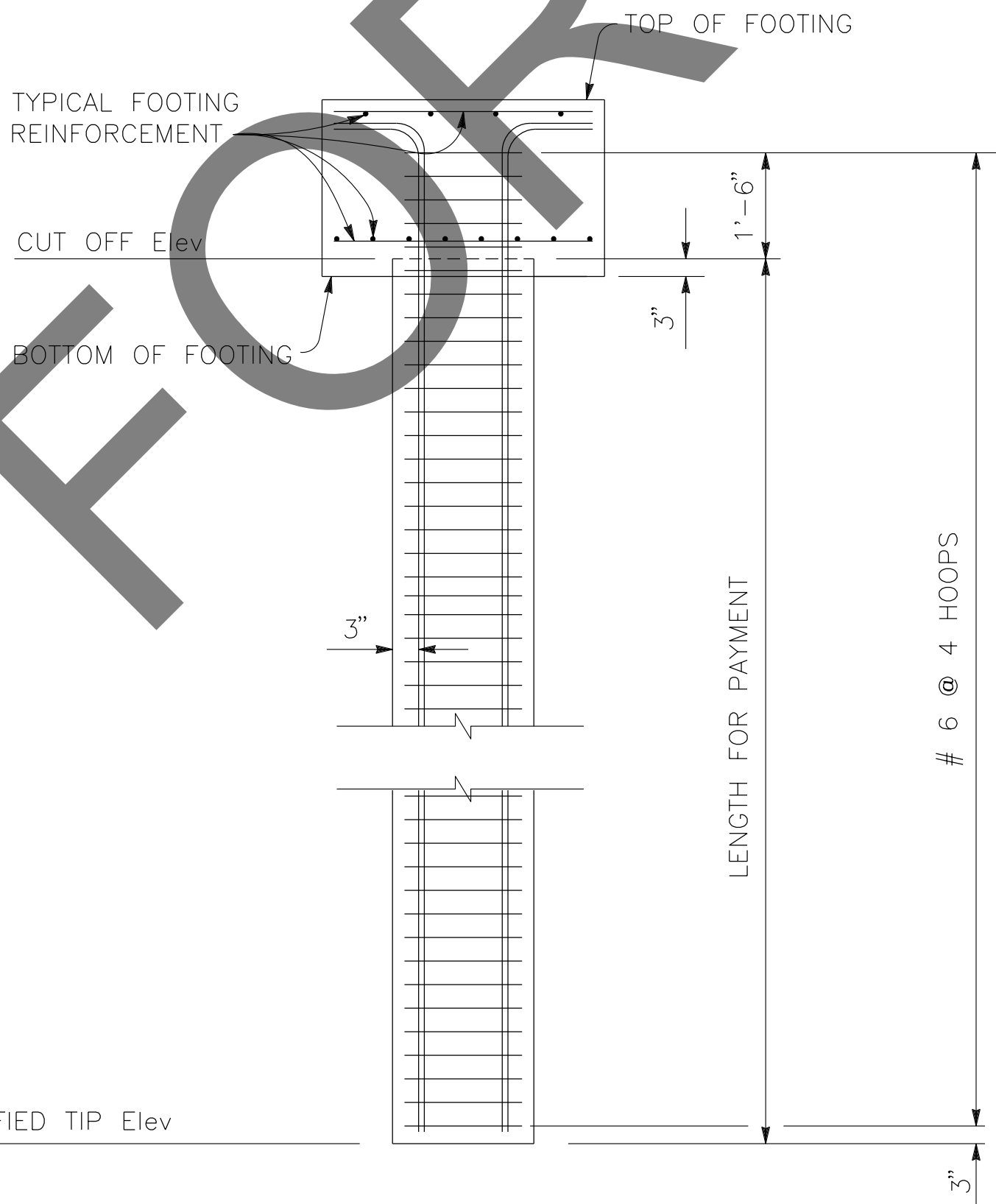
SECTION B-B

$1\frac{1}{2}" = 1'-0"$



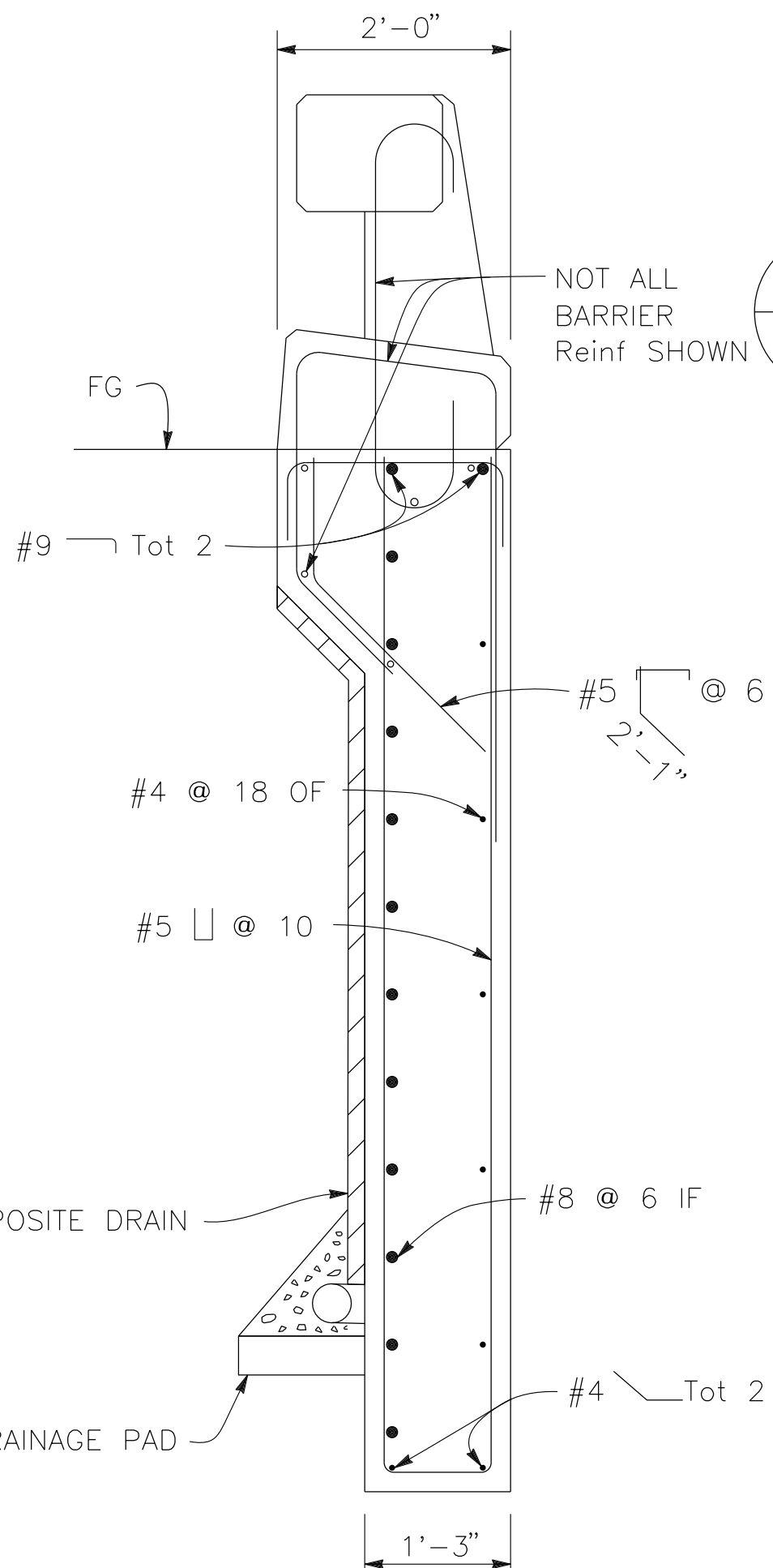
CORNER DETAIL

$1" = 1'-0"$



24" CIDH PILE

$\frac{1}{2}" = 1'-0"$



SECTION C-C

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

B0-3
3-7

GEOCOMPOSITE DRAIN

B9-6

DRAINAGE PAD

B11-83

NOT ALL
BARRIER
Reinf SHOWN

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 NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



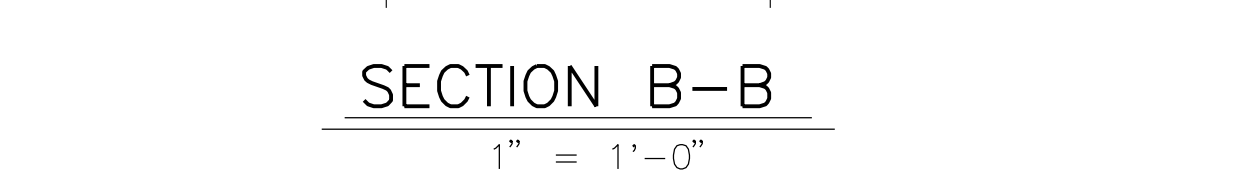
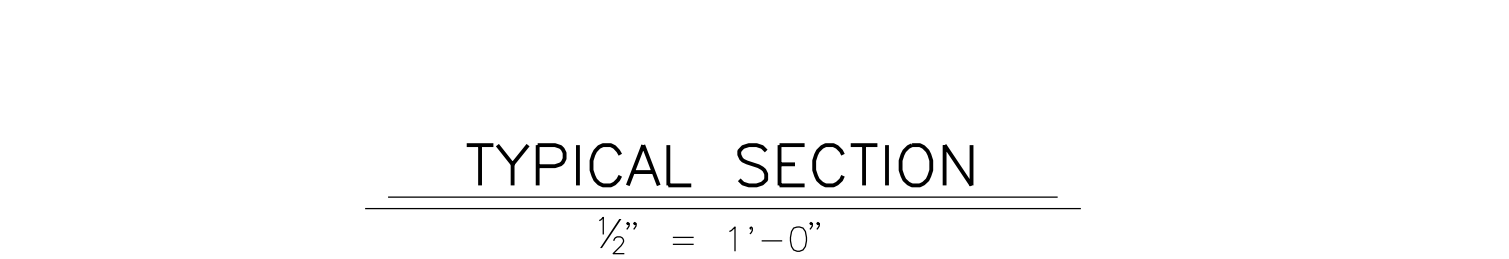
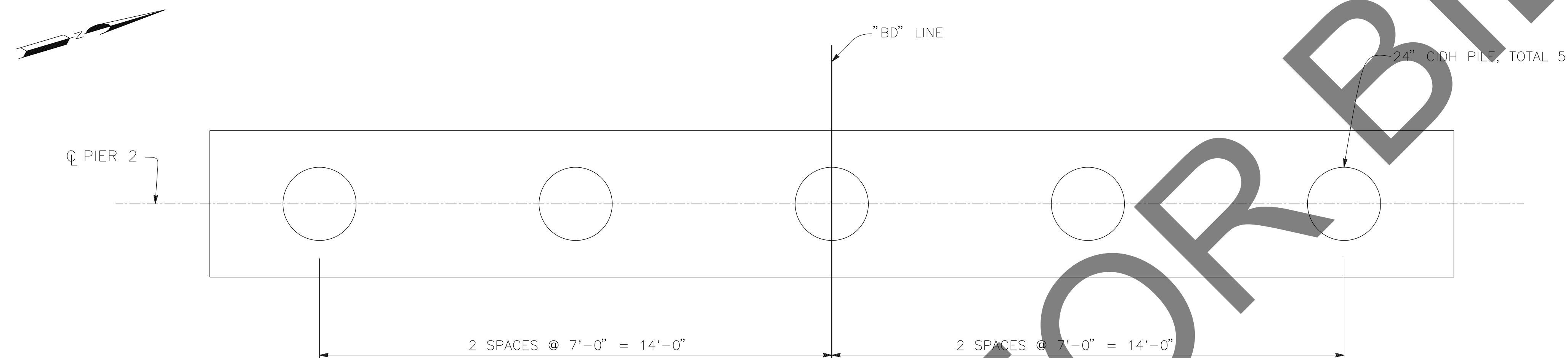
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

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

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES

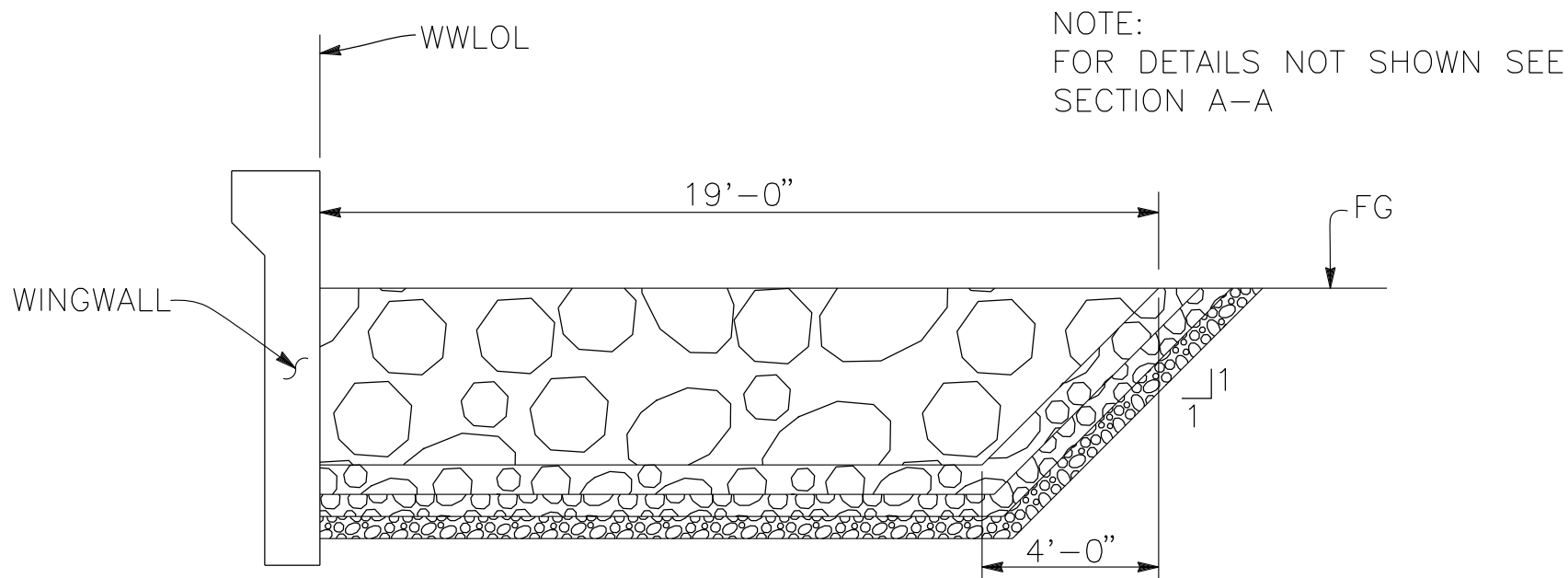
ABUTMENT DETAILS
BRISTOL DITCH

J.L. REF. W.O. NO. PLAN SCALE SHT. NO. TOT. SHT'S.
J.L. 11798 H14910 AS NOTED 140 240

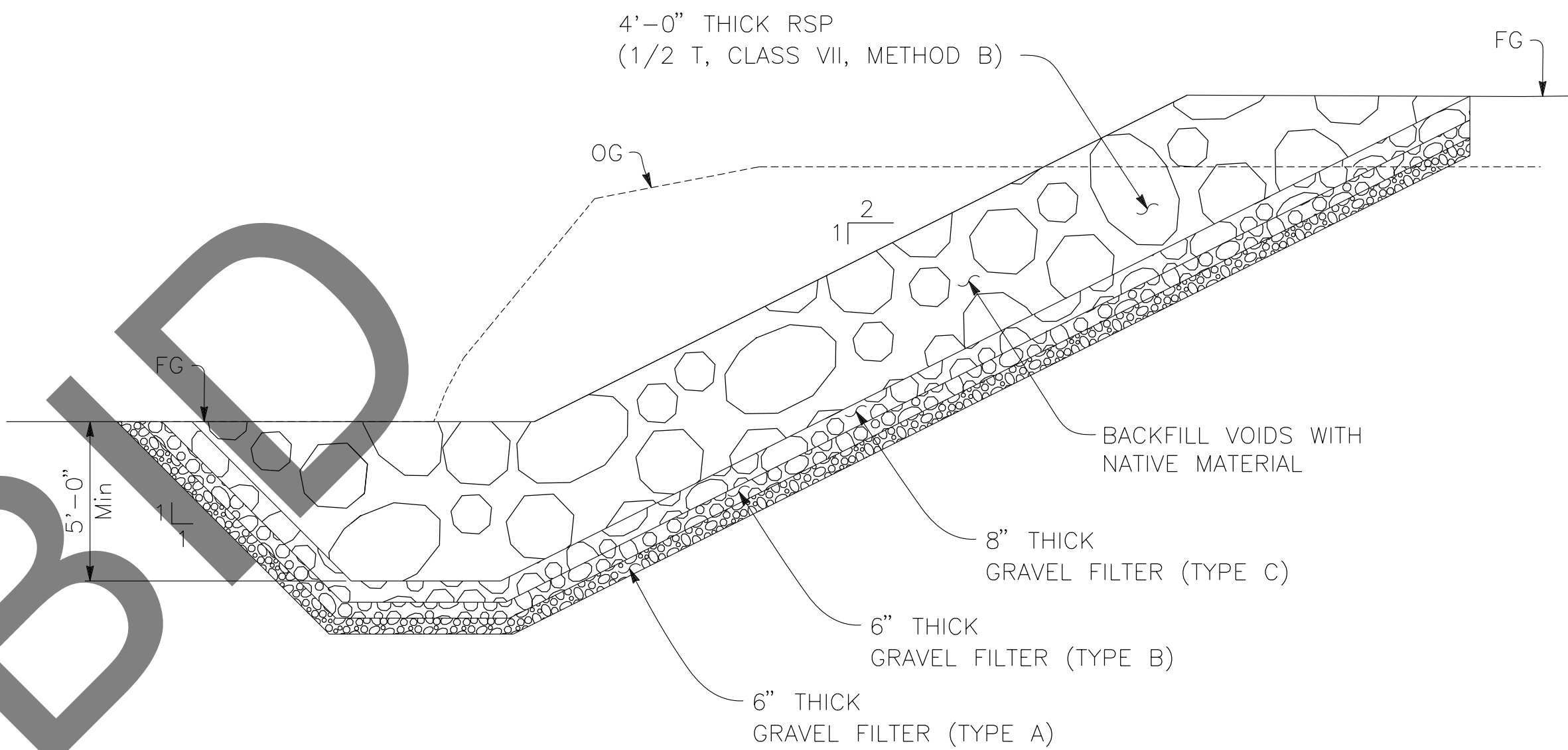
[illegible]

NOTES:
1. FOR CHANNEL GRADING CONTOURS, SEE ROADWAY PLANS

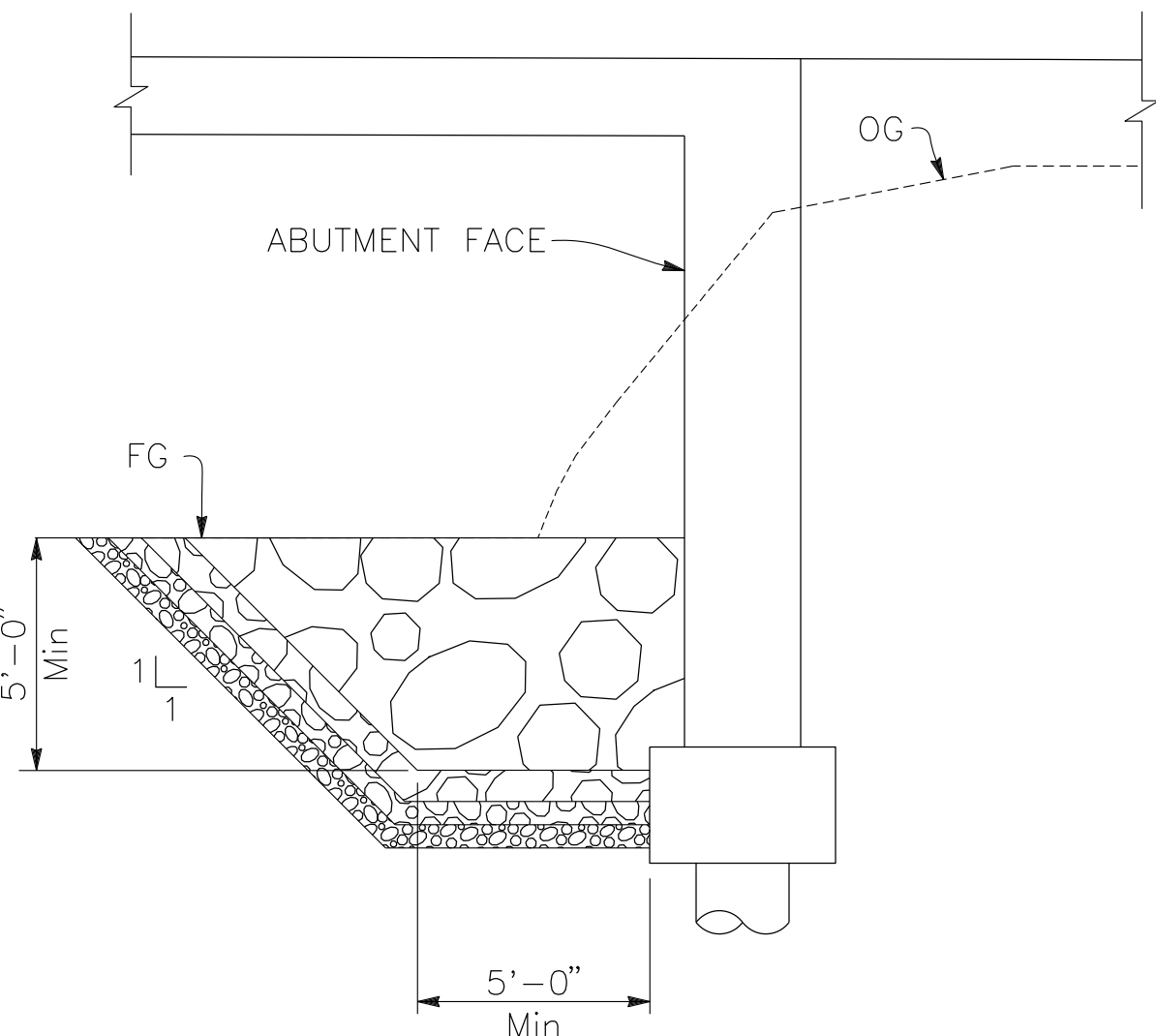
* SEE "LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION AND BACKFILL" DETAIL ON "INDEX TO PLANS" SHEET



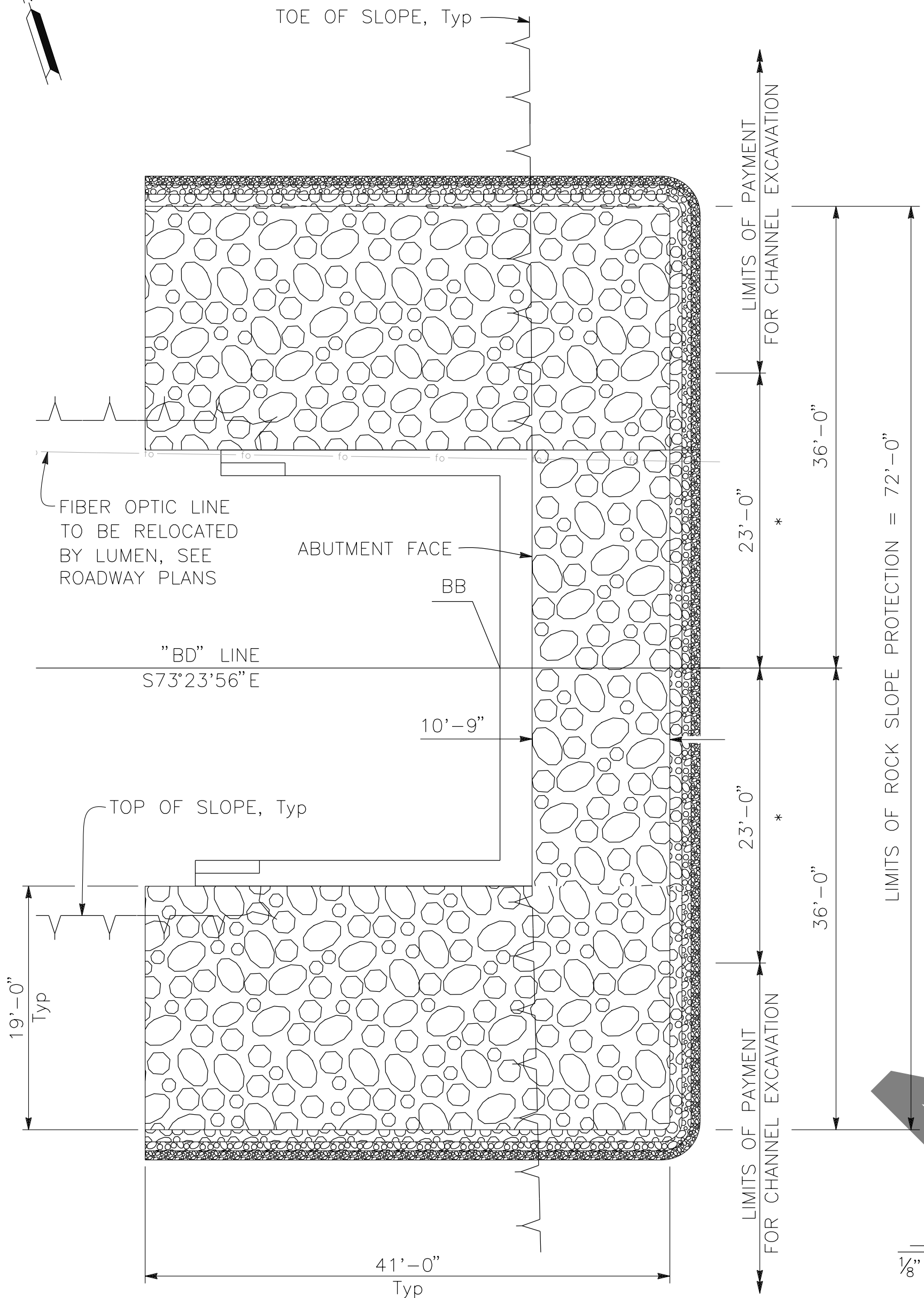
SECTION C-C
 $\frac{1}{4}'' = 1'-0''$
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.



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



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



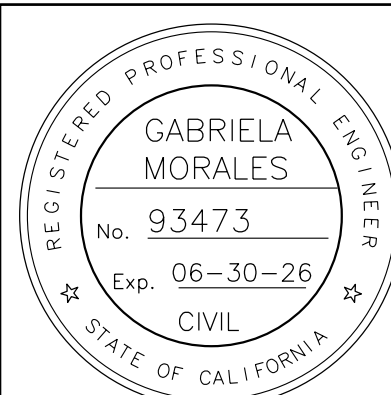
PLAN
 $\frac{1}{8}'' = 1'-0''$

PREPARED BY:

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

MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



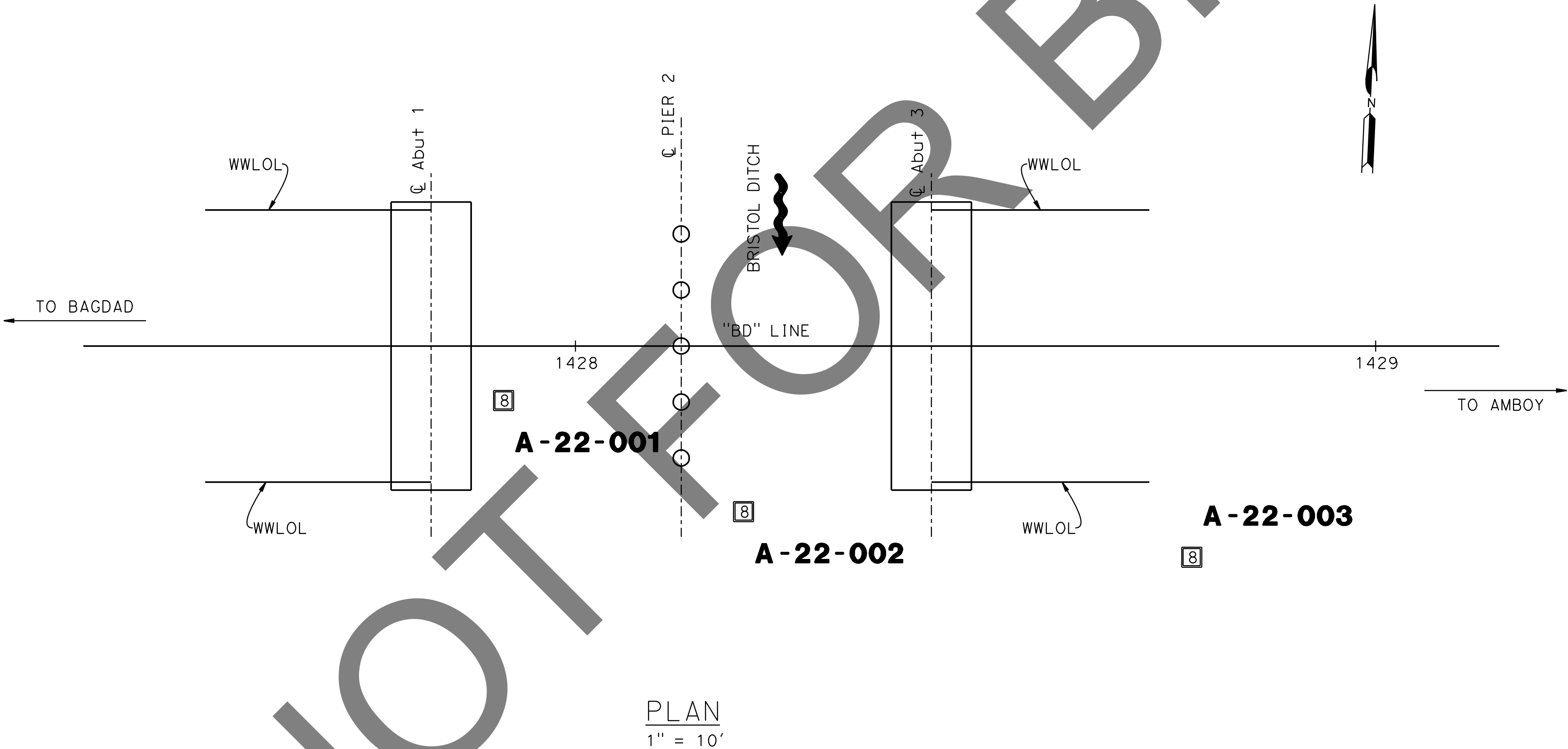
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGNED BY: JR DRAWN BY: EF CHECKED BY: DY
RECOMMENDED BY: 1/14/2025
CHRIS NGUYEN, P.E.
TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: 1/15/2025
LEI (ROCKY) LI, P.E.
SUPERVISING ENGINEER
1/16/2025
Mervat A. Mikhail, P.E.
DEPUTY DIRECTOR

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES
ROCK SLOPE PROTECTION DETAILS
BRISTOL DITCH
J.L. REF. W.O. NO. PLAN SCALE SHT. NO. TOT. SHT'S.
J.L. 11798 H14910 AS NOTED 143 240

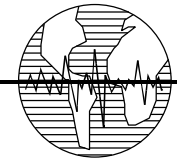
- NOTES:
- (1) This Test Boring Layout sheet was prepared in accordance with Caltrans Soil and Rock Logging, Classification and Presentation Manual (2022).
- (2) 1.4" samples were taken using a Standard Penetration Sampler and 2.4" samples were taken using a California Modified Sampler; multiply California 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

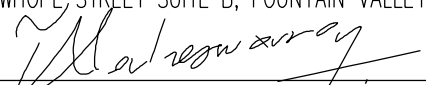
Hole ID	Alignment Name	Station and Offset
A-22-001	"BD" Line	1427+91 6.8 Rt.
A-22-002	"BD" Line	1428+21 20.7 Rt.
A-22-003	"BD" Line	1428+77 26.4 Rt.



PREPARED BY:

 Earth Mechanics, Inc.
Geotechnical & Earthquake Engineering

17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 92708-3826

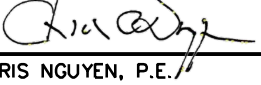
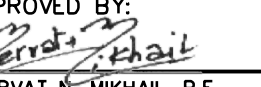

(ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER

10-30-24 DATE

MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		
FIELD CHANGES			



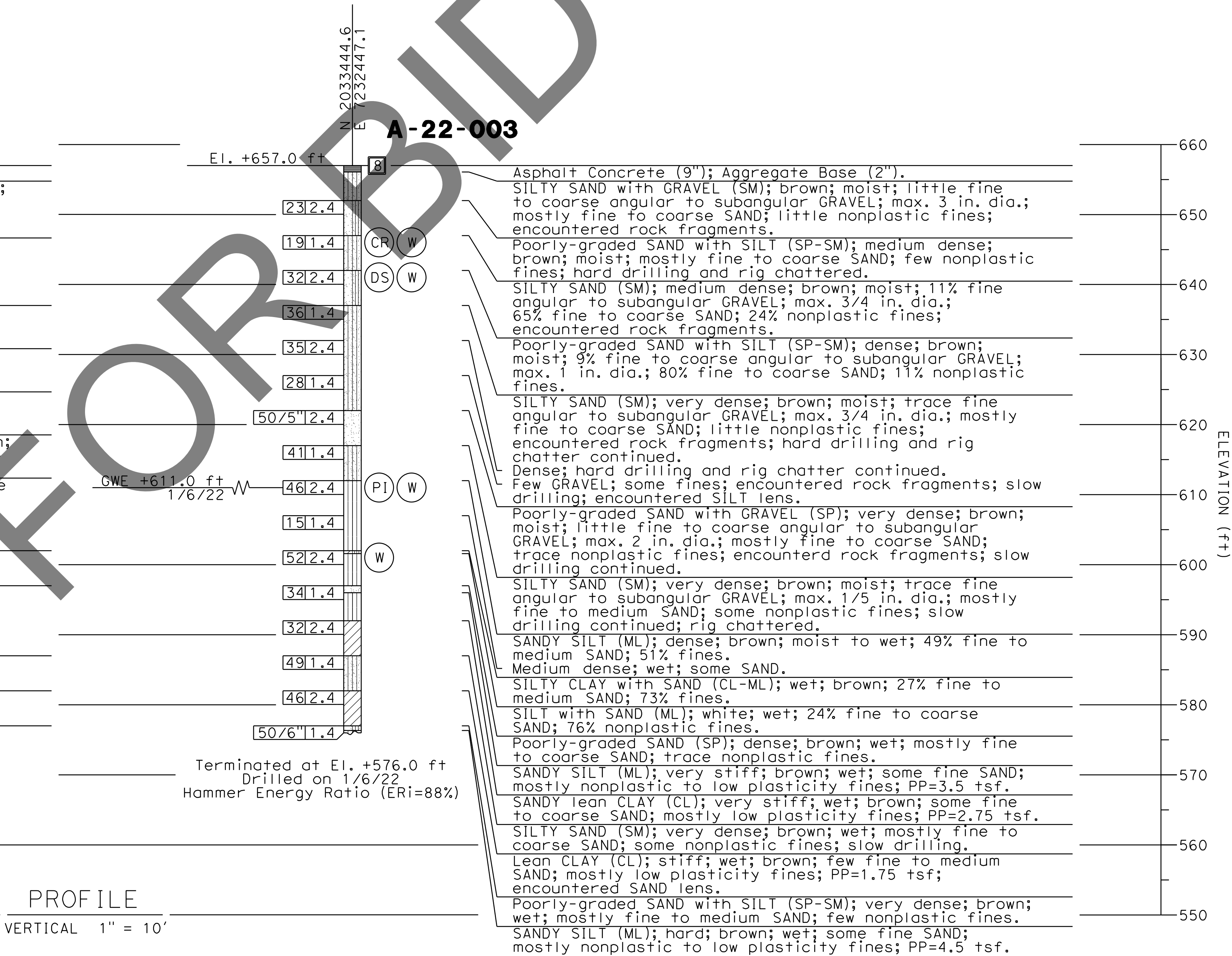
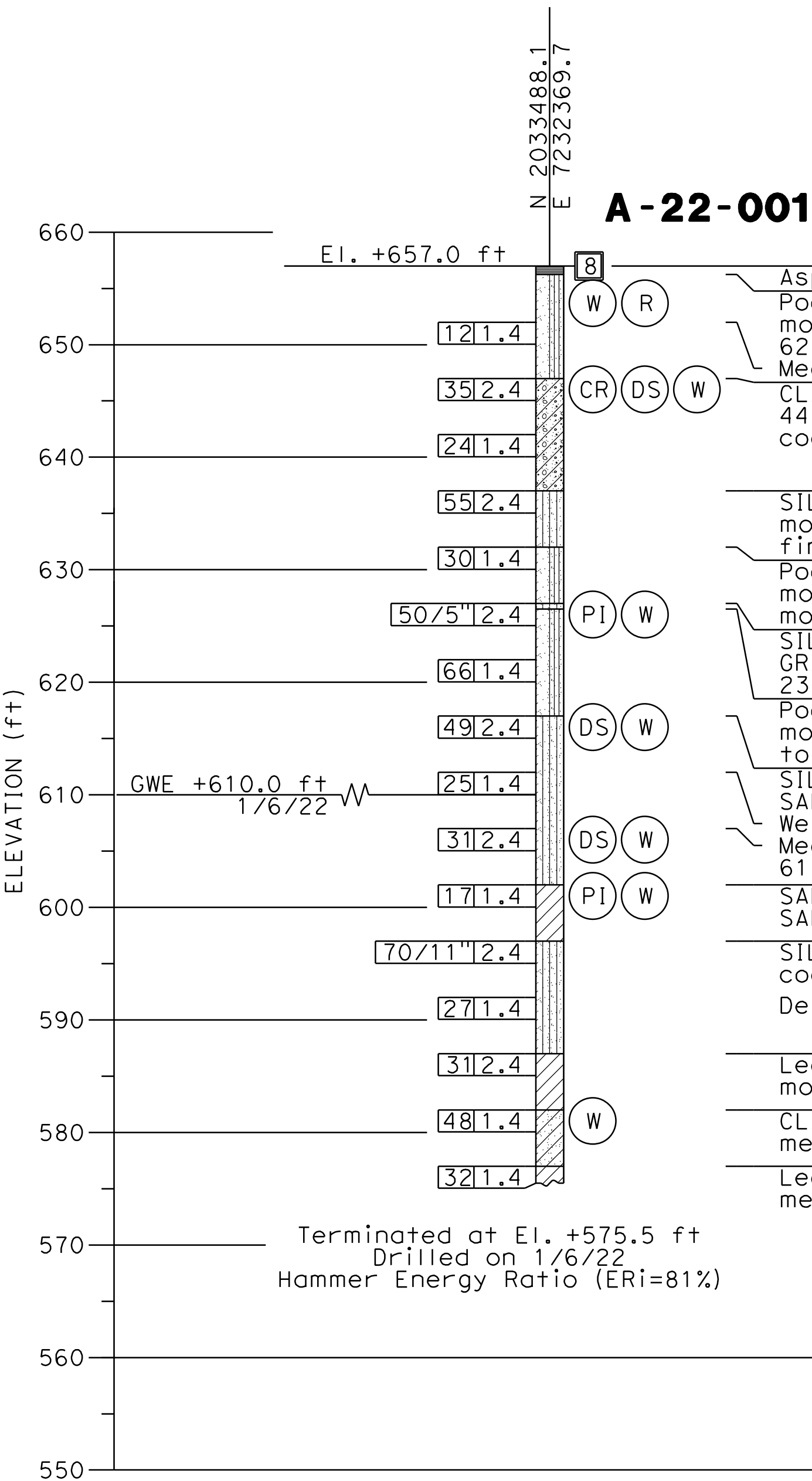
SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

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 1/15/2025 DATE			1/16/2025 DATE

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES LOG OF TEST BORINGS 1 OF 3 BRISTOL DITCH			
J.L. REF. J.L. 11798	W.O. NO. H14910	PLAN SCALE AS NOTED	SHT. NO. 144
TOT. SHT'S. 240			

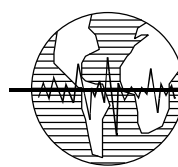
BENCH MARK:
FOUND 3.5" NGS BRASS DISC IN 10"x10"
Conc Mnmt STAMPED "Z1308-1978 NATIONAL
GEODETIC SURVEY" PER NGS DATASHEET PID# EU0704.
NGVD-29 ELEVATION = 1097.43'

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



PROFILE
VERTICAL 1" = 10'

PREPARED BY:



Earth Mechanics, Inc.
Geotechnical & Earthquake Engineering

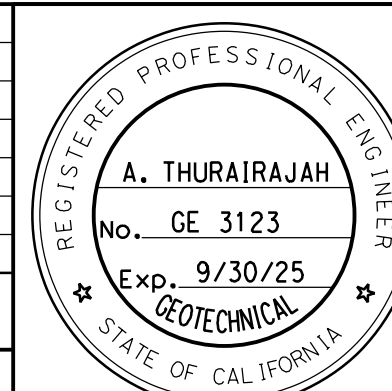
17800 NEWHOPE STREET SUITE B, FOUNTAIN VALLEY CA. 714-751-3826

(ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER

10-30-24
DATE

MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

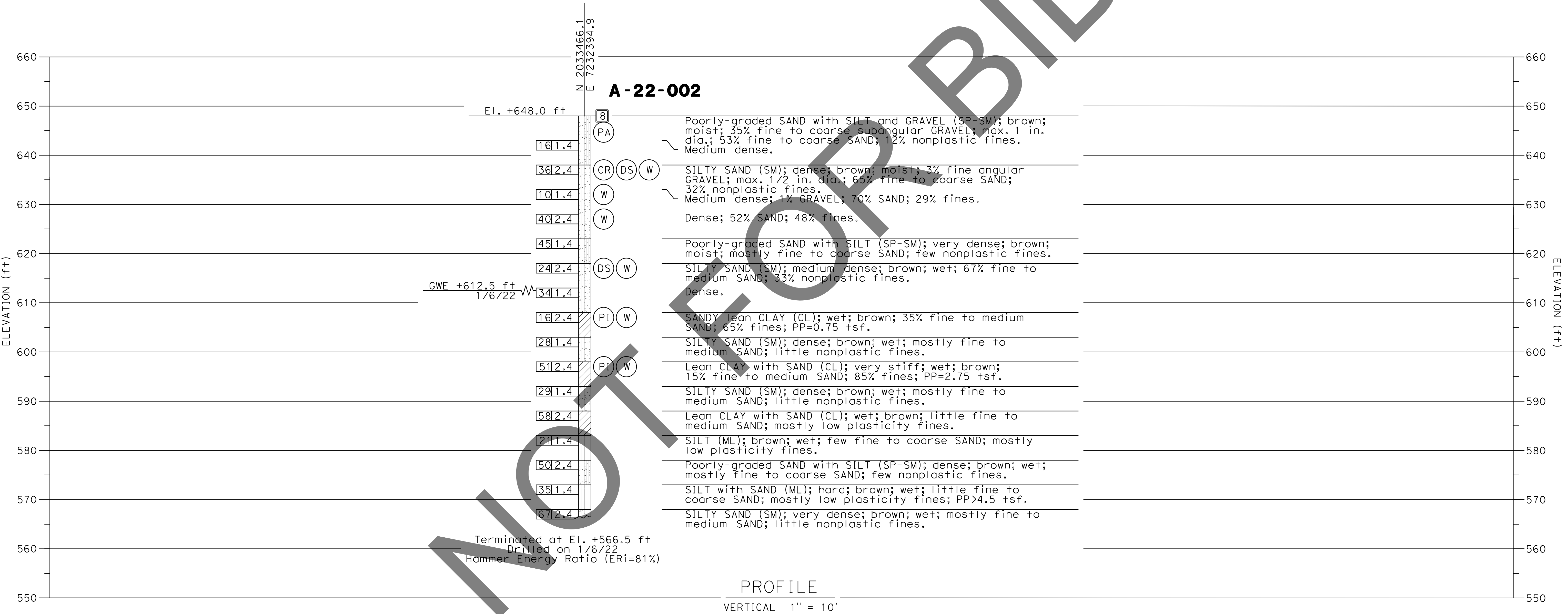
DESIGNED BY: MJ DRAWN BY: TN CHECKED BY: PR RECOMMENDED BY: CHRIS NGUYEN, P.E. 1/14/2025
TRANSPORTATION DESIGN ENGINEERING MANAGER
APPROVED BY: MERVAT K. MIKHAL, P.E. 1/16/2025
DEPUTY DIRECTOR

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

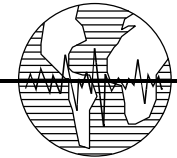
J.L. REF. J.L. 11798 W.O. NO. H14910 PLAN SCALE AS NOTED SHT. NO. 145 TOT. SHT'S. 240

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. 91741-3826

(Signature)
(ALAHESH) A. THURAIRAJAH, PROJECT ENGINEER

10-30-24 DATE

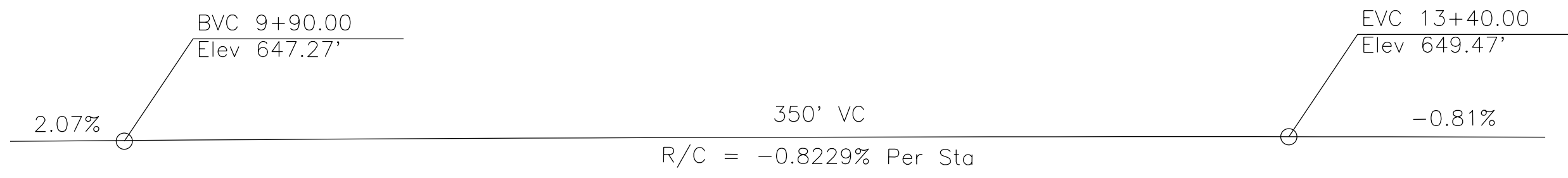
MARK	CHANGES	RESIDENT ENGINEER	DATE
	NO CHANGES		
FIELD CHANGES			



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

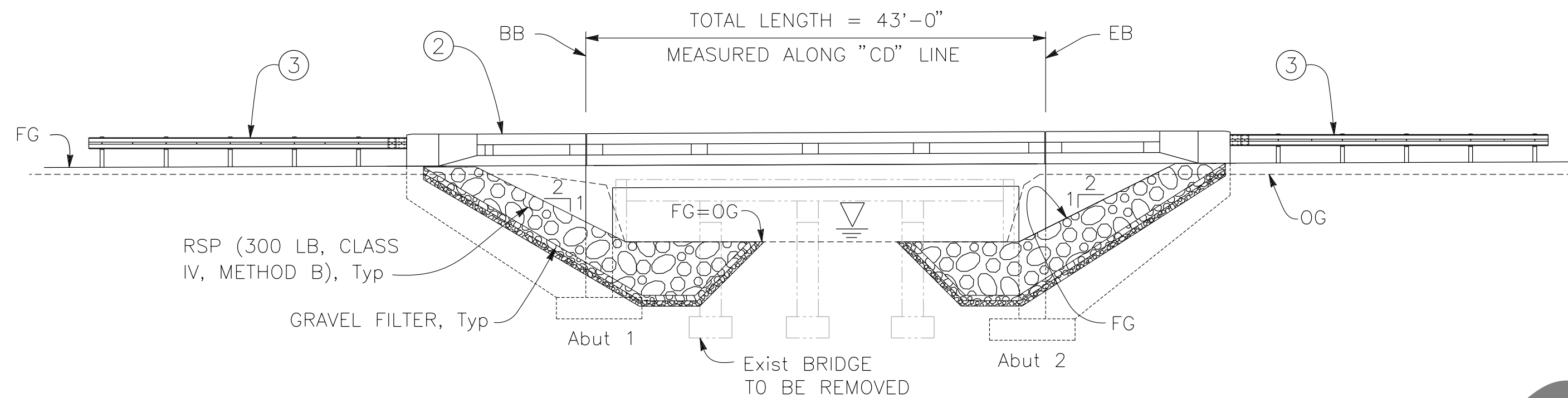
DESIGNED BY: MJ	DRAWN BY: TN	CHECKED BY: PR	RECOMMENDED BY: <i>(Signature)</i> CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER 1/14/2025 DATE
APPROVED BY: <i>(Signature)</i> LEI (ROCKY) U. P.E. SUPERVISING ENGINEER 1/15/2025 DATE			APPROVED BY: <i>(Signature)</i> MERVAT K. MIKHAIL, P.E.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

BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES LOG OF TEST BORINGS 3 OF 3 BRISTOL DITCH				
J.L. REF. J.L. 11798	W.O. NO. H14910	PLAN SCALE AS NOTED	SHT. NO. 146	TOT. SHT'S. 240



PROFILE GRADE

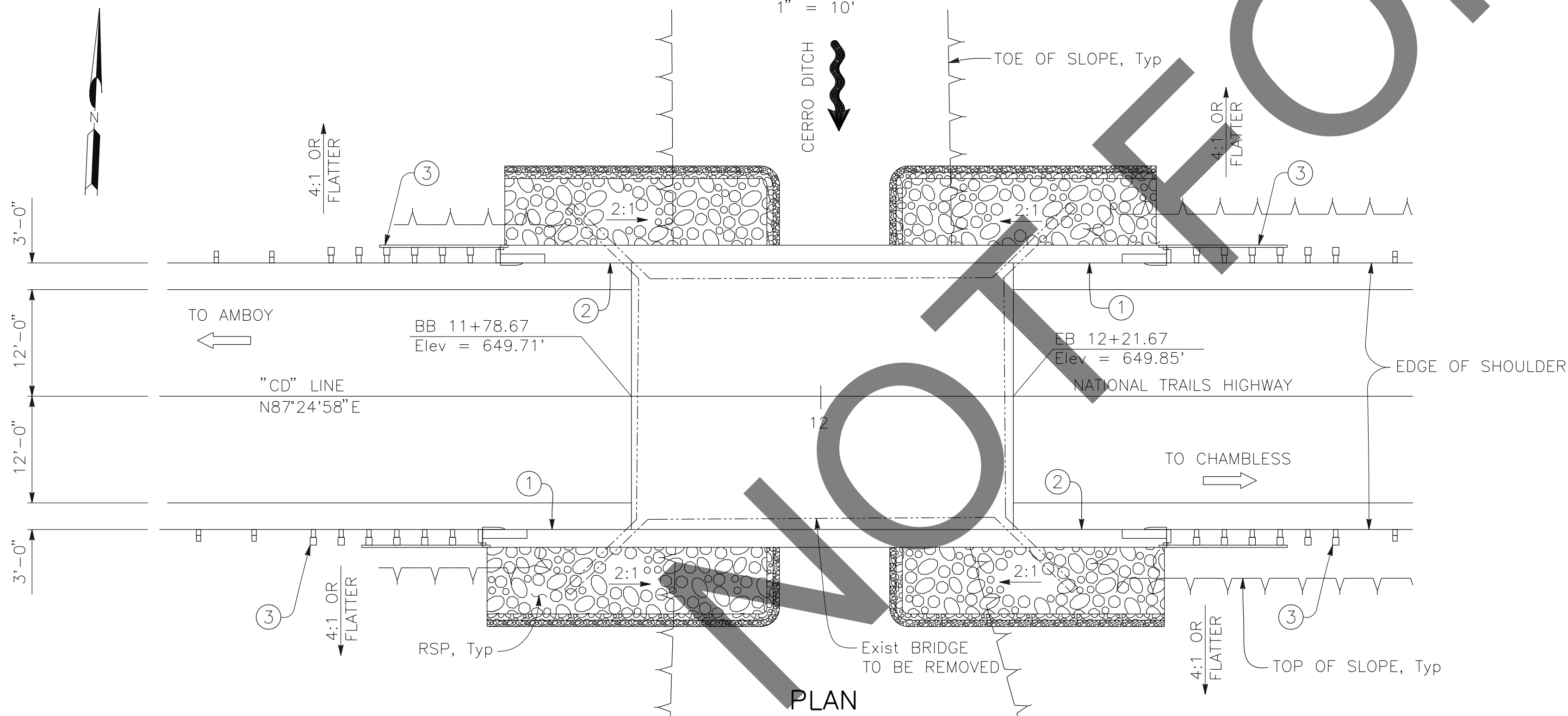
NO SCALE



DATUM Elev = 620'

ELEVATION

1" = 10'

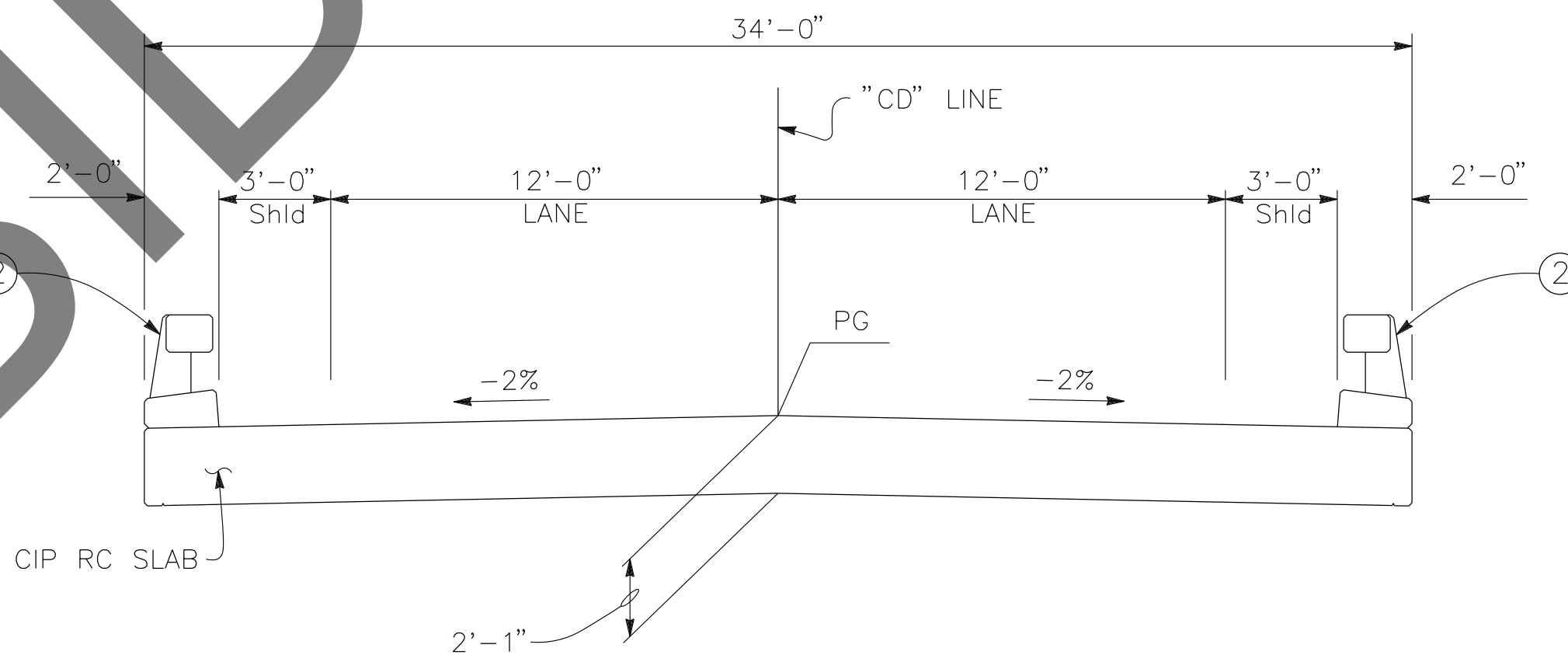


PLAN

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.



TYPICAL SECTION

1/4" = 1'-0"

LEGEND:

- PAINT "CERRO DITCH BRIDGE"
"BR NO. 54C0811" AND
YEAR CONSTRUCTED
 - CONCRETE BARRIER (TYPE 85 MOD), TO BE PAINTED WHITE.
 - MGS, SEE ROADWAY PLANS
- ▽ WATER SURFACE ELEVATION, FOR "HYDORLOGIC 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
GABRIELA MORALES, PROJECT ENGINEER

12-16-24
DATE

MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE

FIELD CHANGES



SAN BERNARDINO COUNTY
DEPARTMENT OF PUBLIC WORKS

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

BRIDGE REPLACEMENT ON
NATIONAL TRAILS HIGHWAY
AT 10 BRIDGES

GENERAL PLAN
CERRO DITCH

J.L. REF. W.O. NO. PLAN SCALE SHT. NO. TOT. SHT'S.
J.L. 11800 H14912 AS NOTED 147 240

MARK	REVISIONS	DATE
MARK	REVISIONS	DATE
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

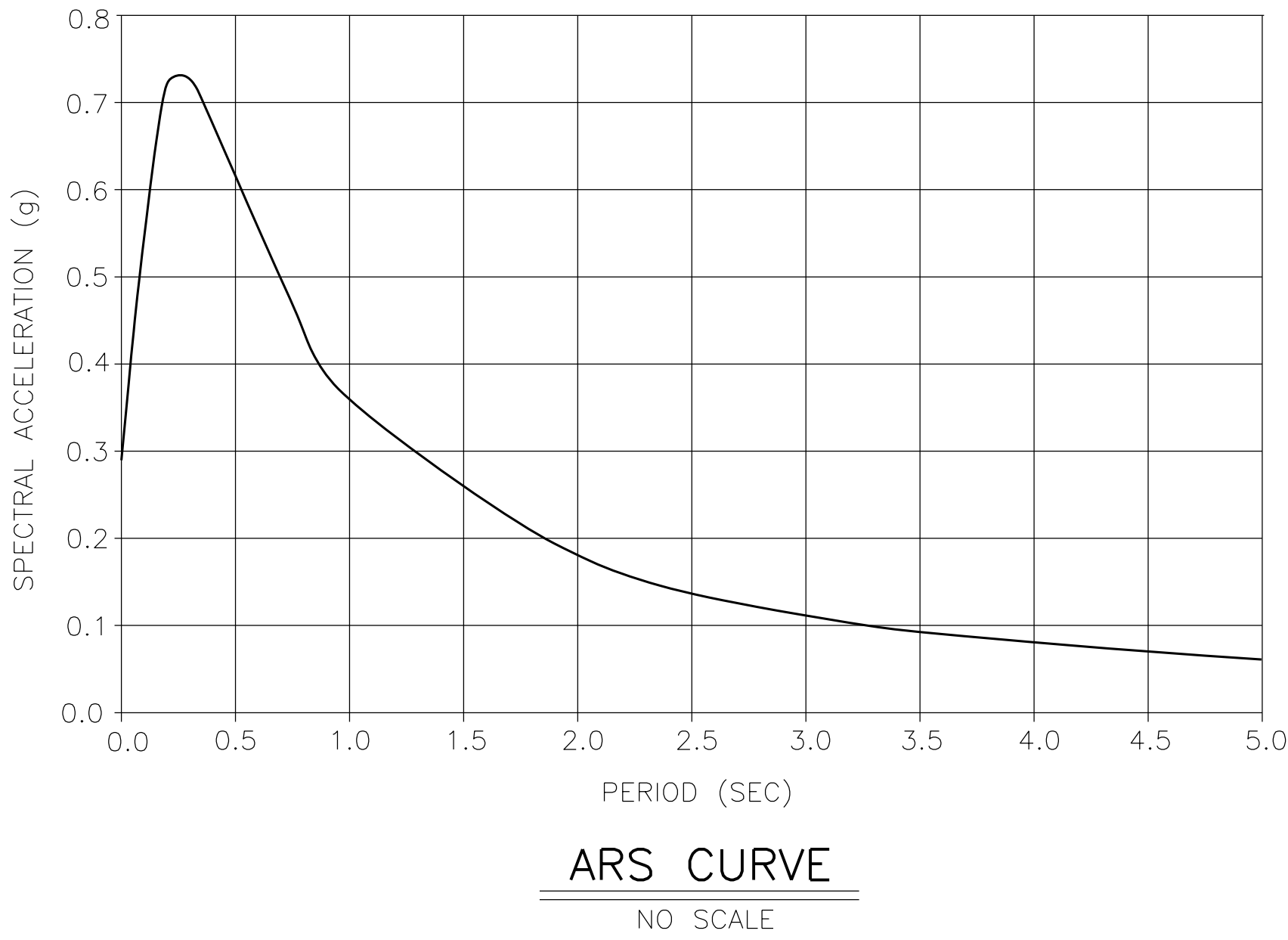
STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION
WITH REVISED STANDARD PLANS, DATED OCTOBER 2024

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

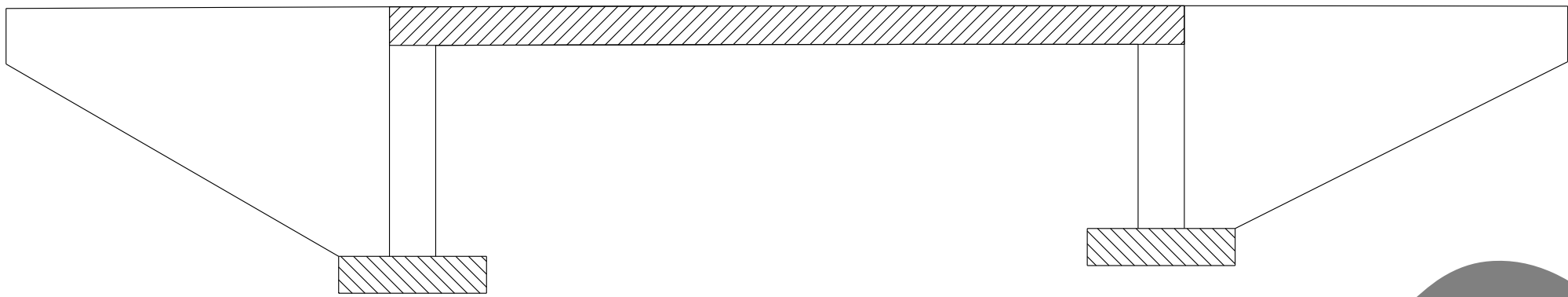
DEAD LOAD: INCLUDES 0.035 KSF FOR FUTURE WEARING SURFACE

LIVE LOAD: HL-93 AND PERMIT DESIGN LOAD

SEISMIC DATA: SOIL PROFILE : $V_{S30} = 1017$ FT/S
MOMENT MAGNITUDE : 6.38
PEAK GROUND ACCELERATION = 0.29g
5% DAMPING



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)

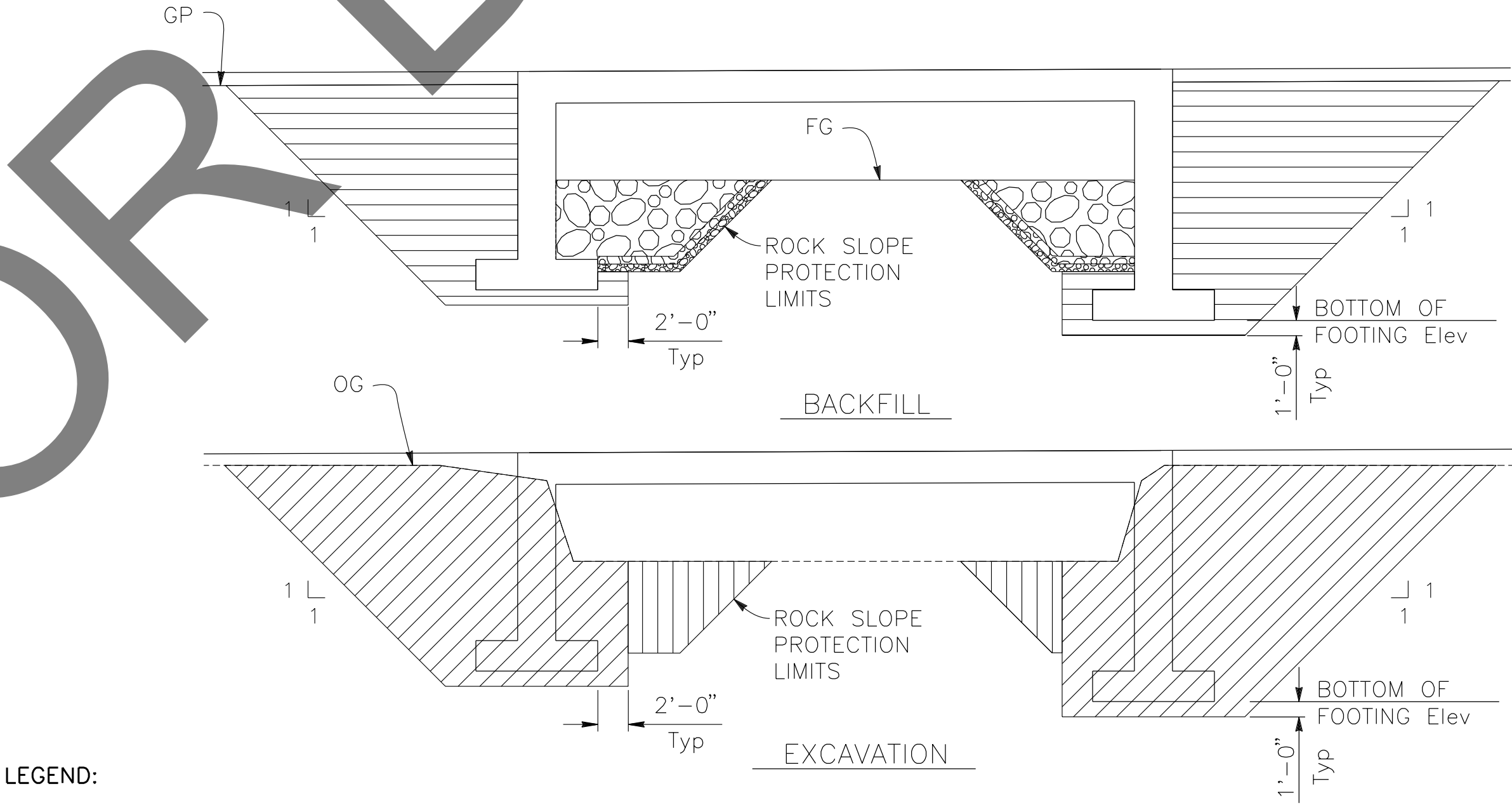
CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

INDEX TO PLANS

SHEET No.	TITLE
147	GENERAL PLAN
148	INDEX TO PLANS
149	DECK CONTOURS
150	FOUNDATION PLAN
151	ABUTMENT LAYOUT
152	ABUTMENT DETAILS
153	SLAB DETAILS
154	ROCK SLOPE PROTECTION DETAILS
155	LOG OF TEST BORINGS 1 OF 2
156	LOG OF TEST BORINGS 1 OF 2

STANDARD PLAN SHEET No.
DETAIL No.



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

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

LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AND BACKFILL

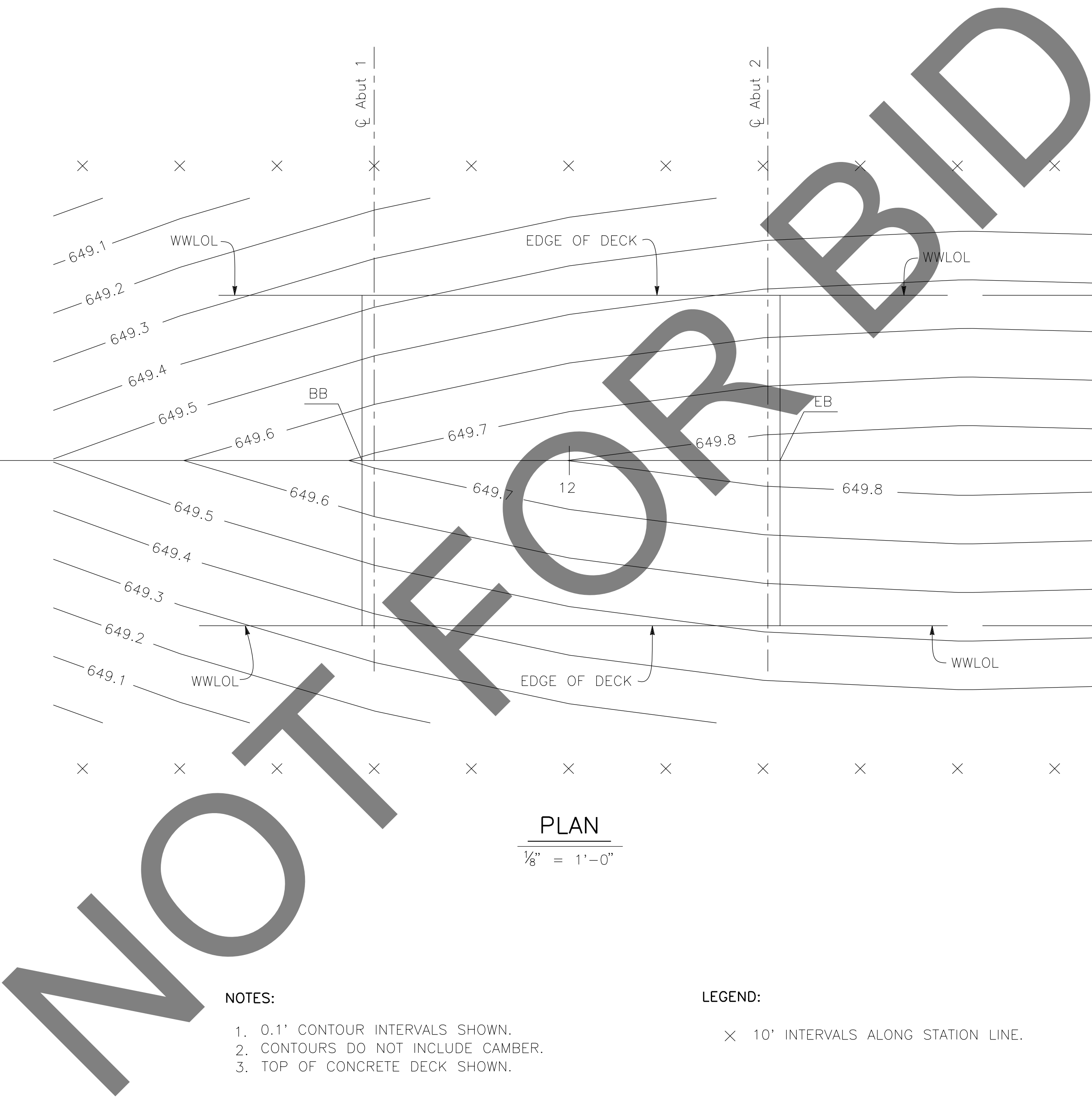
NO SCALE

QUANTITIES

ITEM	QUANTITY	UNIT
CHANNEL EXCAVATION	300	CY
STRUCTURE EXCAVATION (BRIDGE)	860	CY
STRUCTURE BACKFILL (BRIDGE)	630	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	43	CY
STRUCTURAL CONCRETE, BRIDGE	93	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	113	CY
BAR REINFORCING STEEL (BRIDGE)	48010	LB
BAR REINFORCING STEEL (GALVANIZED)	550	LB
BRIDGE REMOVAL	1	LS
ROCK SLOPE PROTECTION (300 LB, CLASS IV, METHOD B)	212	CY
GRAVEL FILTER (TYPE A)	47	CY
GRAVEL FILTER (TYPE D)	44	CY
CONCRETE BARRIER (TYPE 85 MOD)	152	LF

PREPARED BY: DOKKEN ENGINEERING 110 BLUE RAVINE ROAD SUITE 200, FOLSOM CA. 916-858-0642 GABRIELA MORALES, PROJECT ENGINEER 12-16-24 DATE	MARK CHANGES NO CHANGES RESIDENT ENGINEER DATE	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: 1/14/2025 CHRIS NGUYEN, P.E. TRANSPORTATION DESIGN ENGINEERING MANAGER APPROVED BY: 1/16/2025 MERVAT R. MIKHAIL, P.E. DEPUTY DIRECTOR	BRIDGE REPLACEMENT ON NATIONAL TRAILS HIGHWAY AT 10 BRIDGES INDEX TO PLANS CERRO DITCH J.L. REF. J.L. 11800 W.O. NO. H14912 PLAN SCALE AS NOTED SHT. NO. 148 TOT. SHT'S. 240
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MARK	REVISIONS	APPR.	DATE

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