




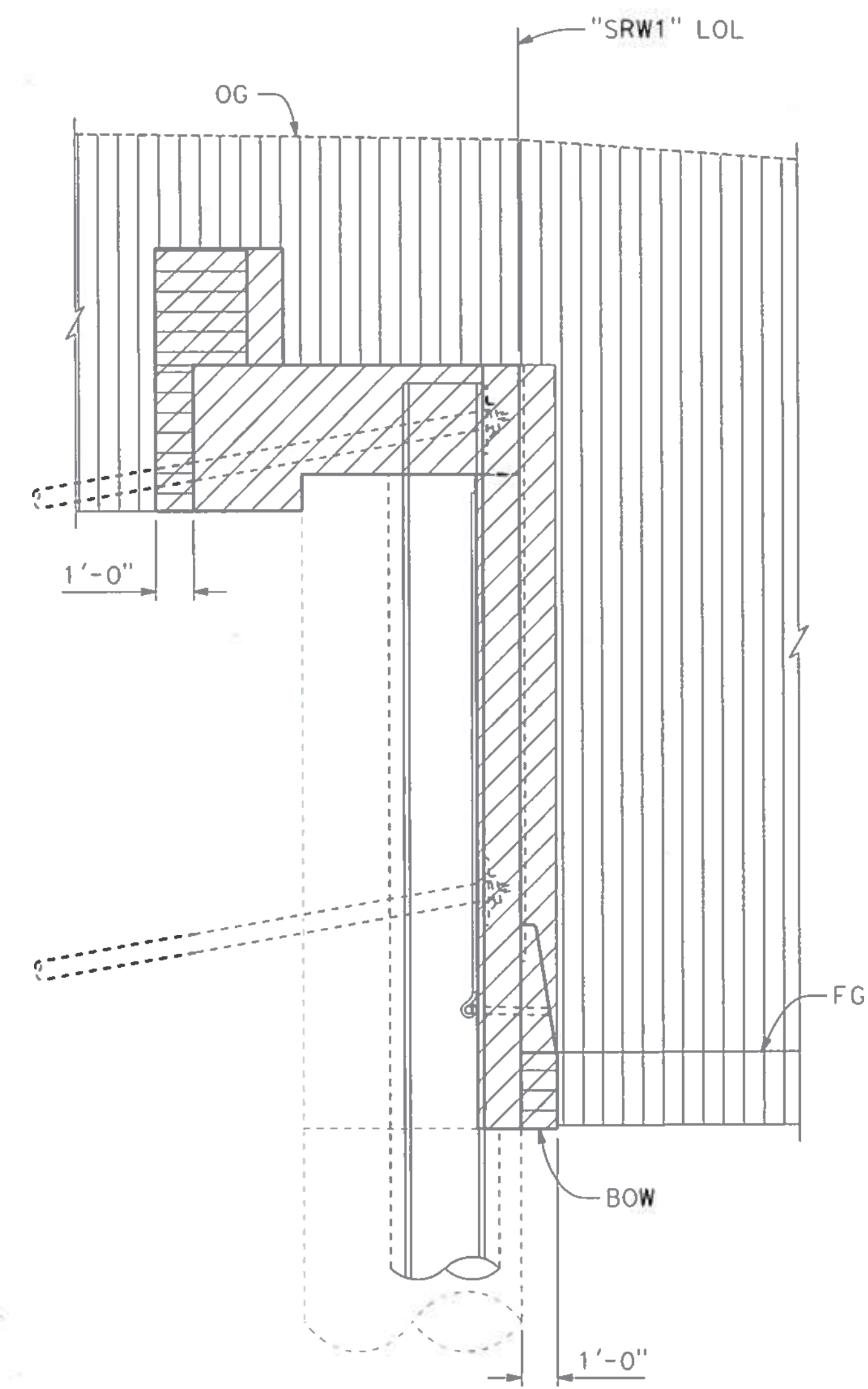
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04	SF	80	7.8/8.0	214	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

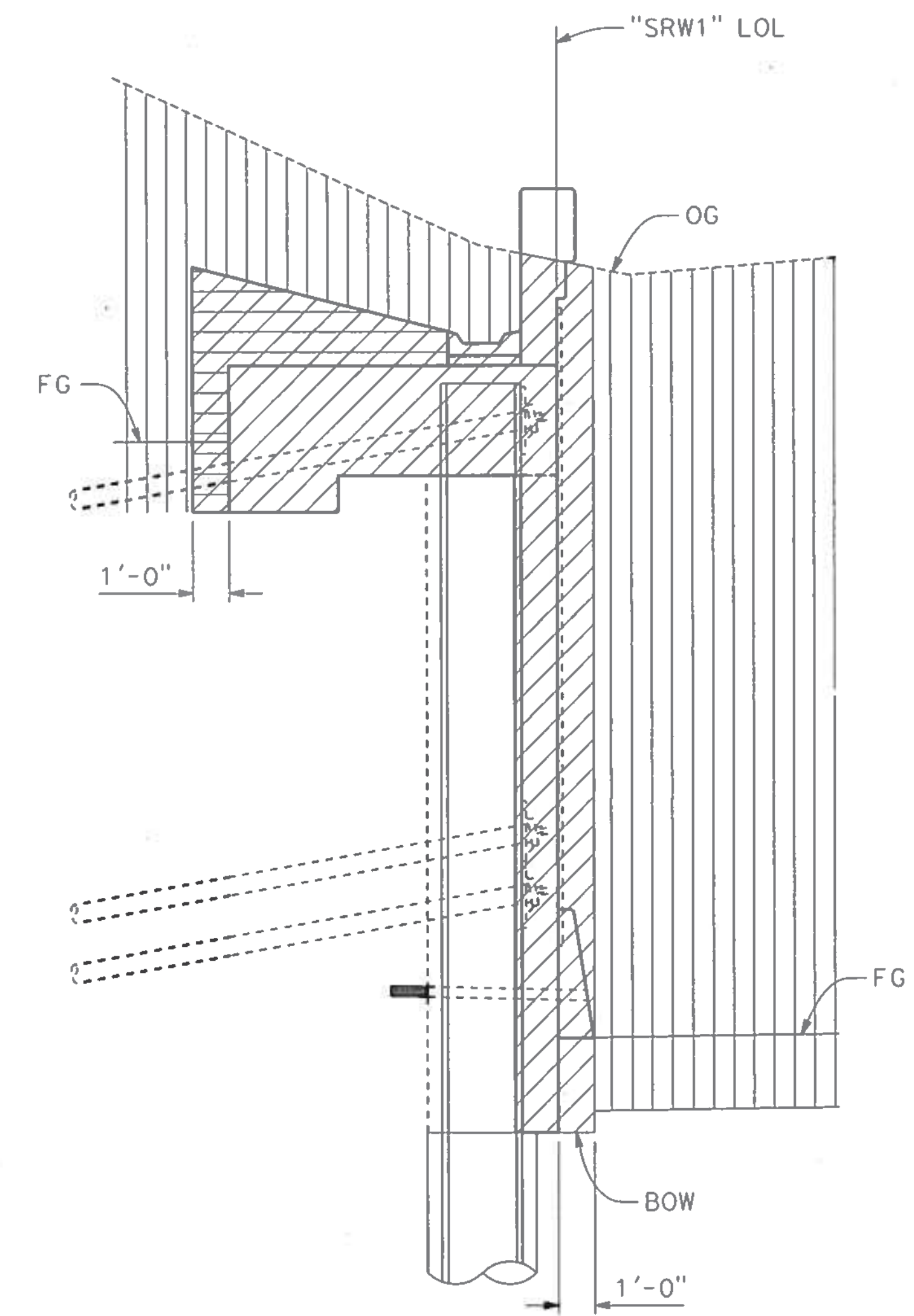
PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.
 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

LEGEND:

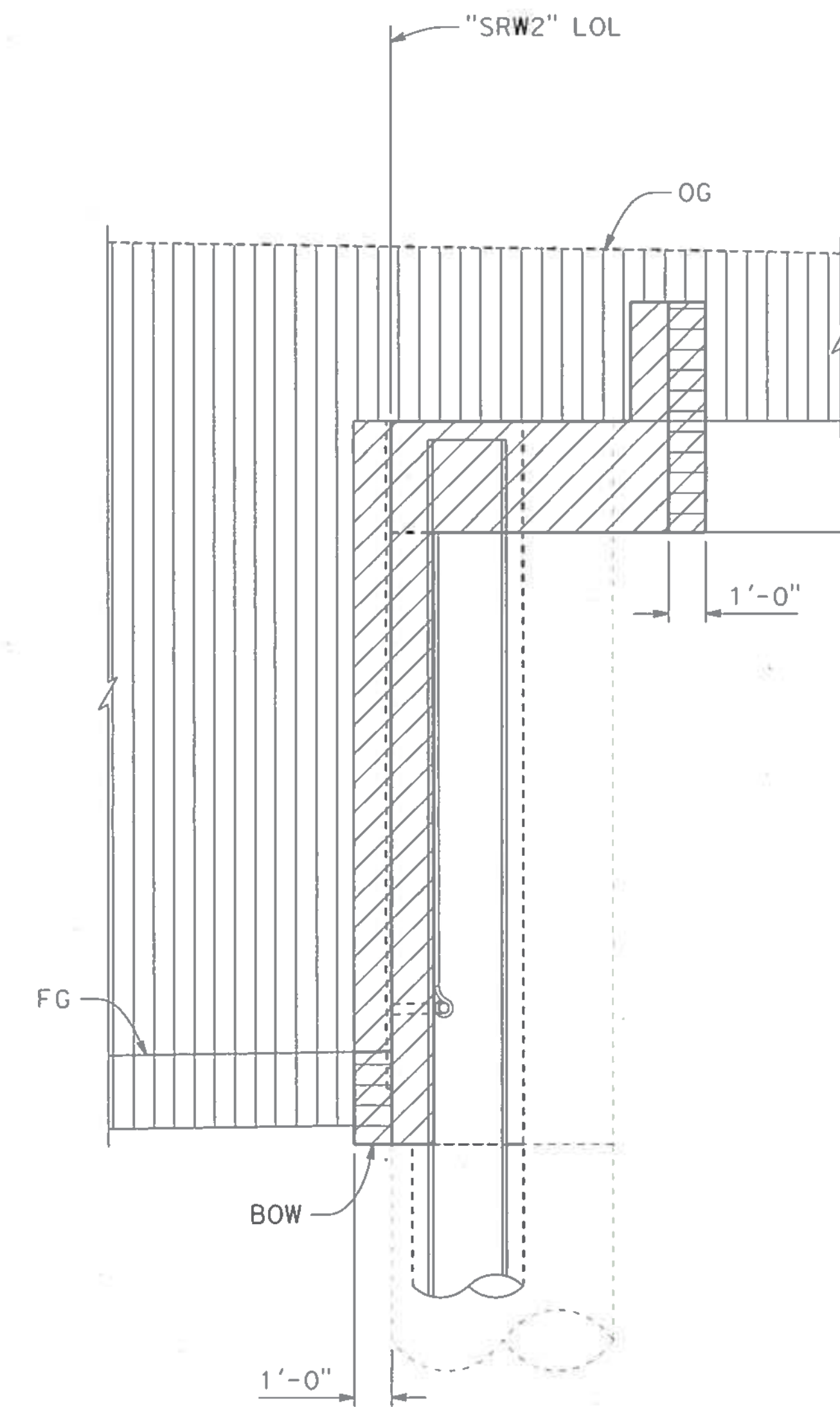
-  Roadway Excavation, see "ROADWAY PLANS"
-  Structure Excavation
-  Structure Backfill



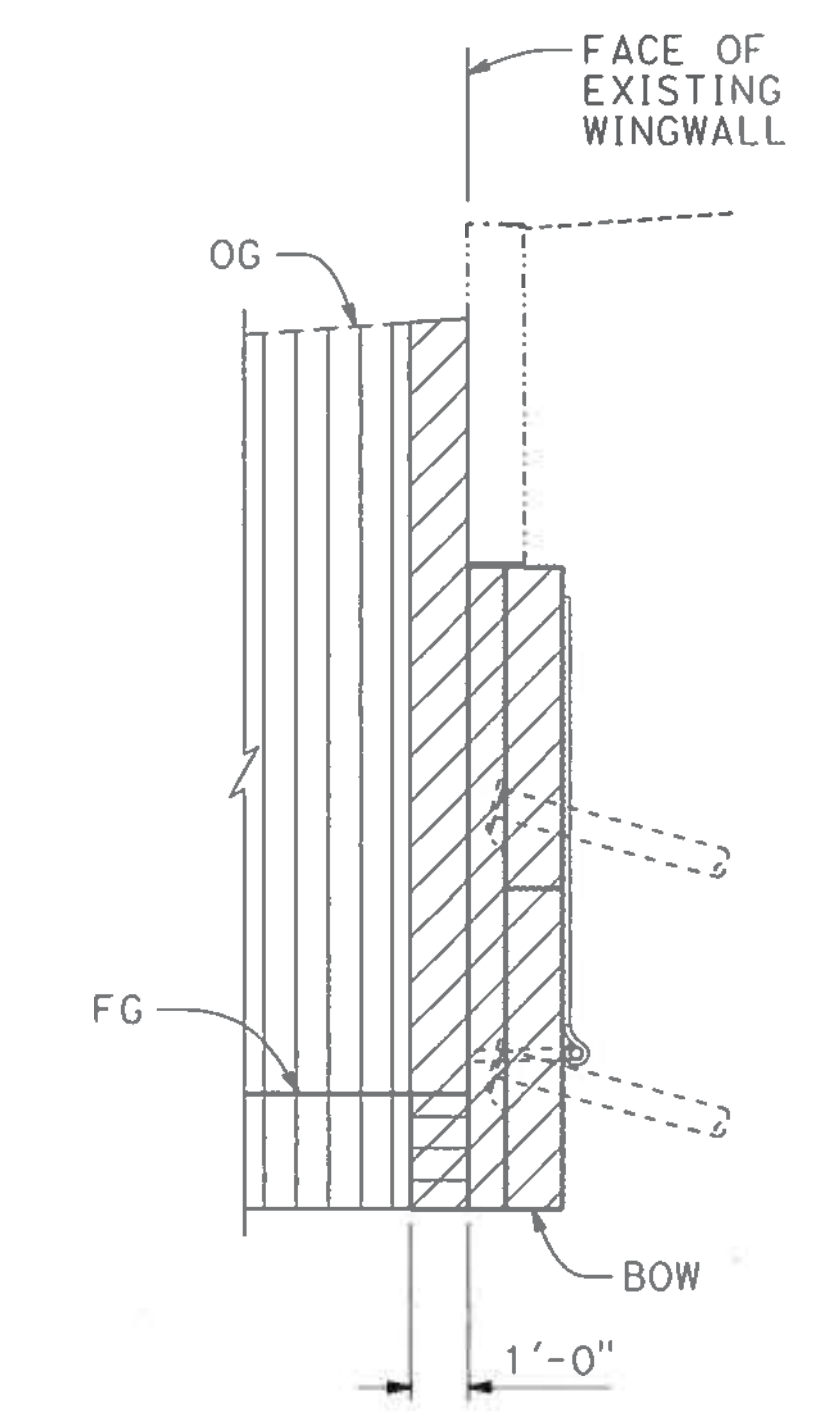
SOUTHGATE RW 1 SOLDIER PILE WALL
 "SG1" 63+01.46 TO "SG1" 63+73.41



SOUTHGATE RW 1 SOLDIER PILE WALL
 "SG1" 63+73.41 TO "SG1" 63+84.96



SOUTHGATE RW 2 SOLDIER PILE WALL
 "SRW2" 210+00.00 TO "SRW2" 210+65.21



SOUTHGATE RW 2 GROUND ANCHOR WALL
 "SRW2" 210+65.21 TO "SRW2" 210+79.90

LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL (WALLS)

NO SCALE

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

DESIGN OVERSIGHT
 SIGN OFF DATE 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
EXCAVATION AND BACKFILL LIMITS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

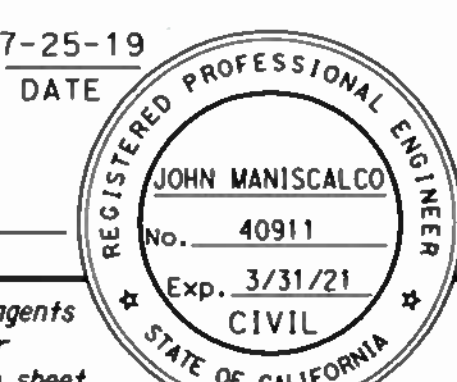


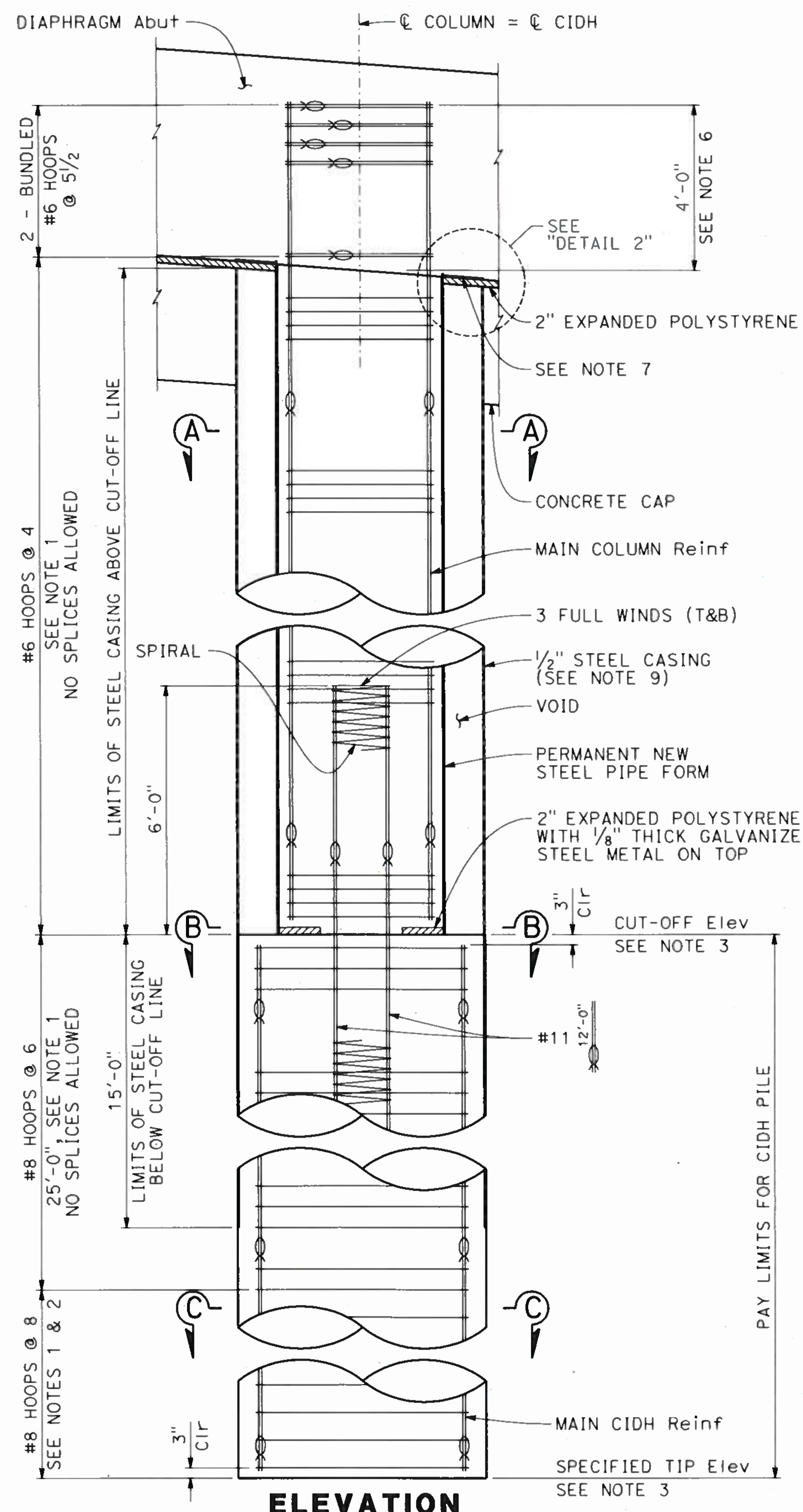
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-22-19 11-12-19 2-24-19 1-28-19	SHEET 5	OF 40
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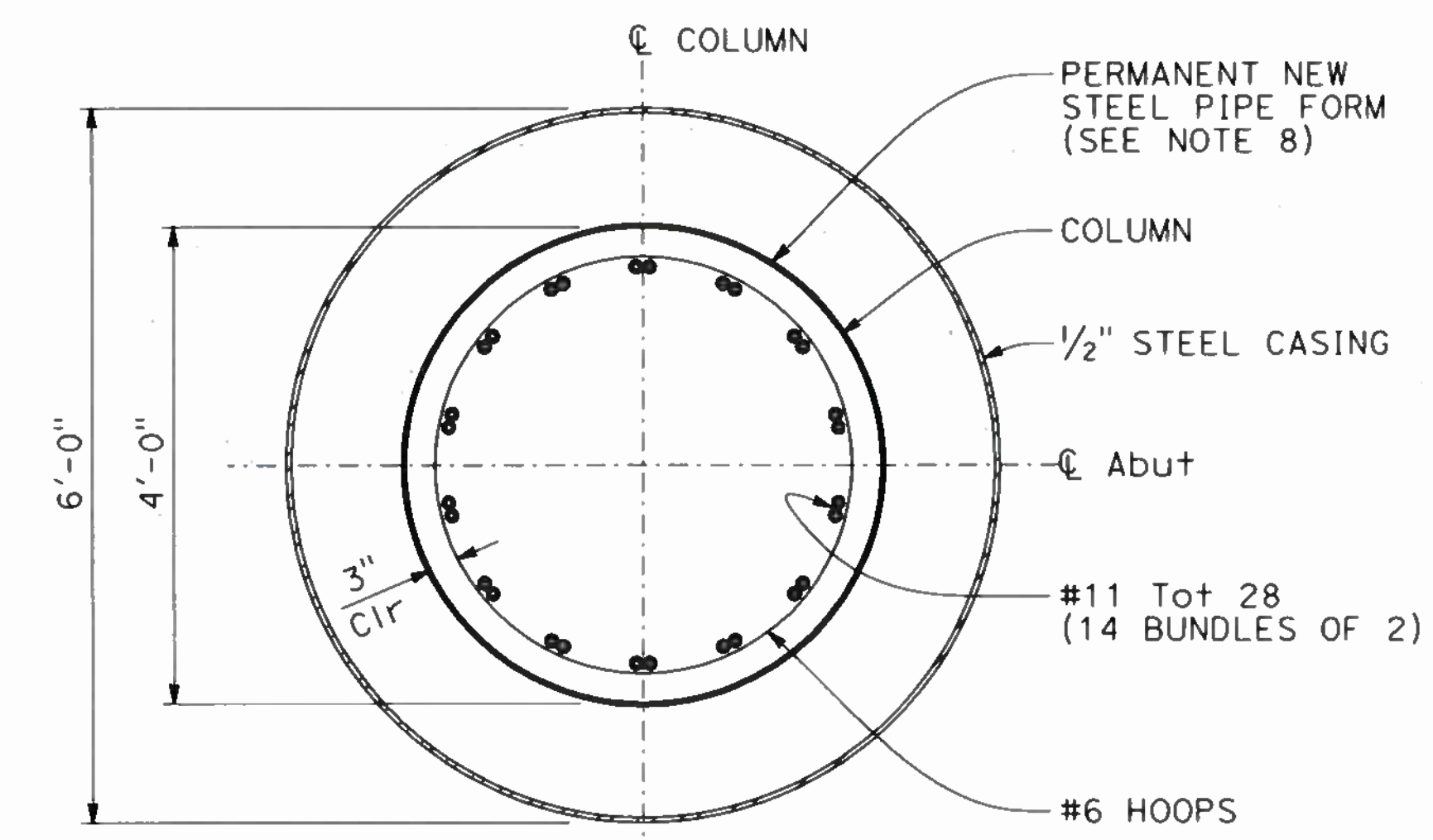
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	216	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

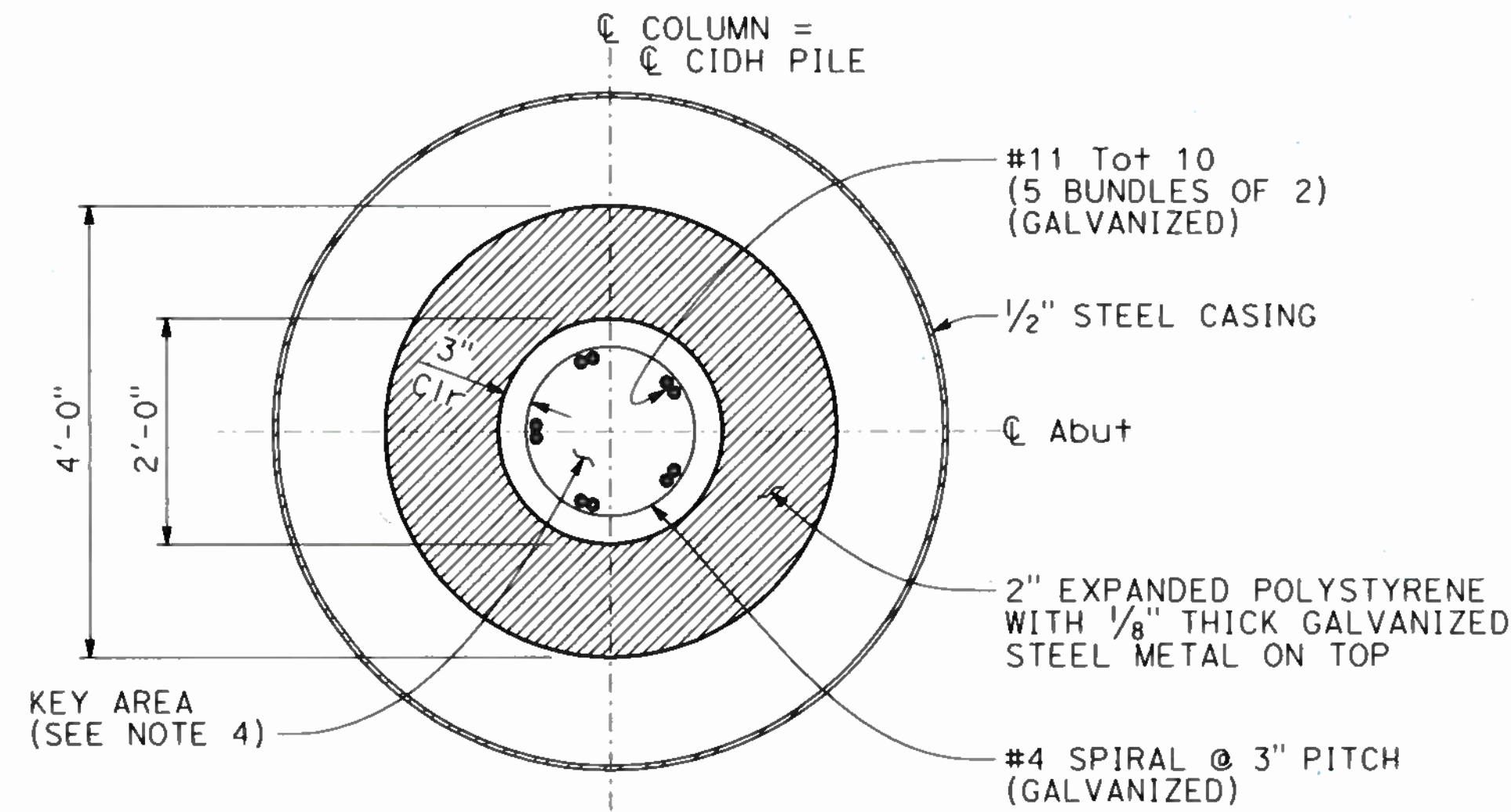


ELEVATION
1/2" = 1'-0"

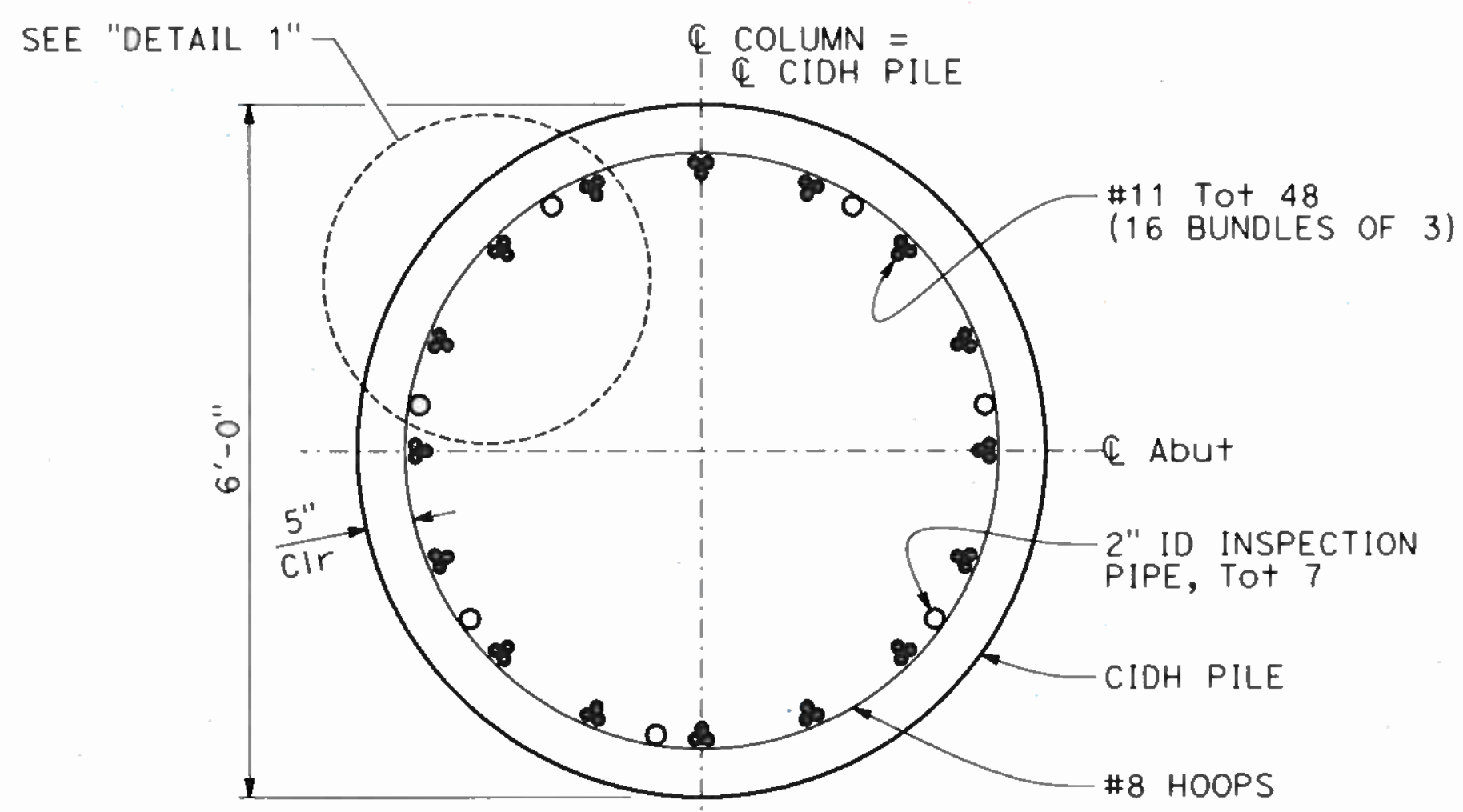
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



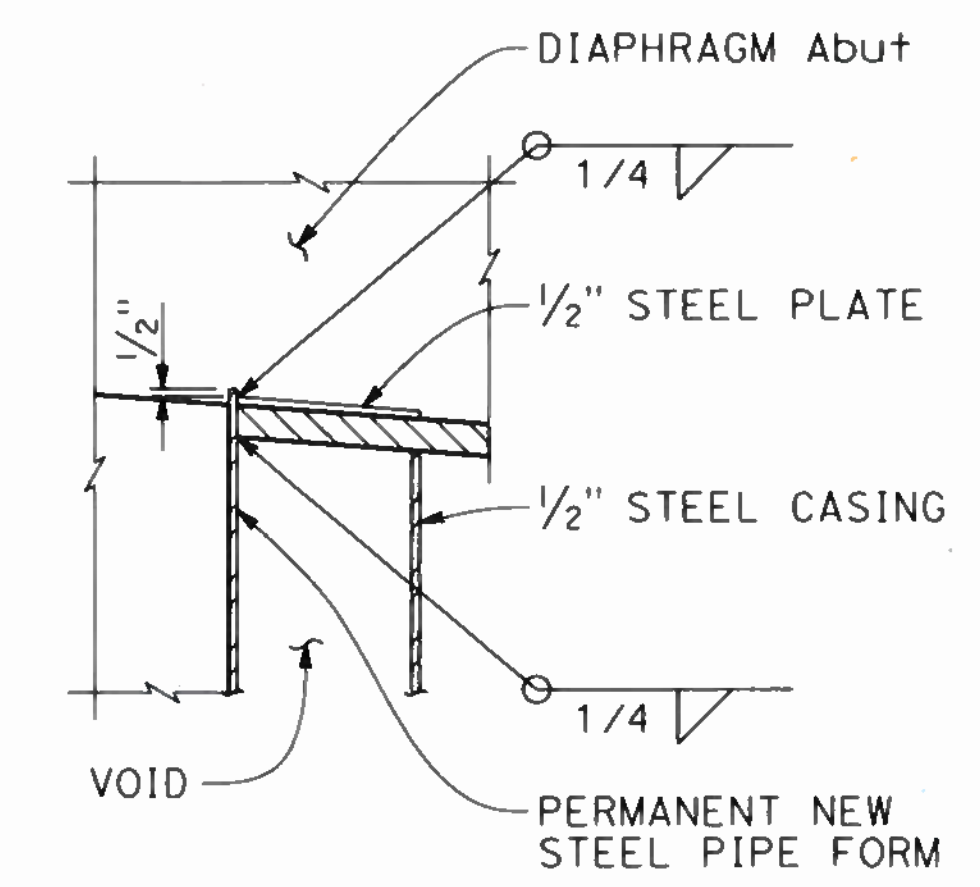
SECTION A-A
3/4" = 1'-0"



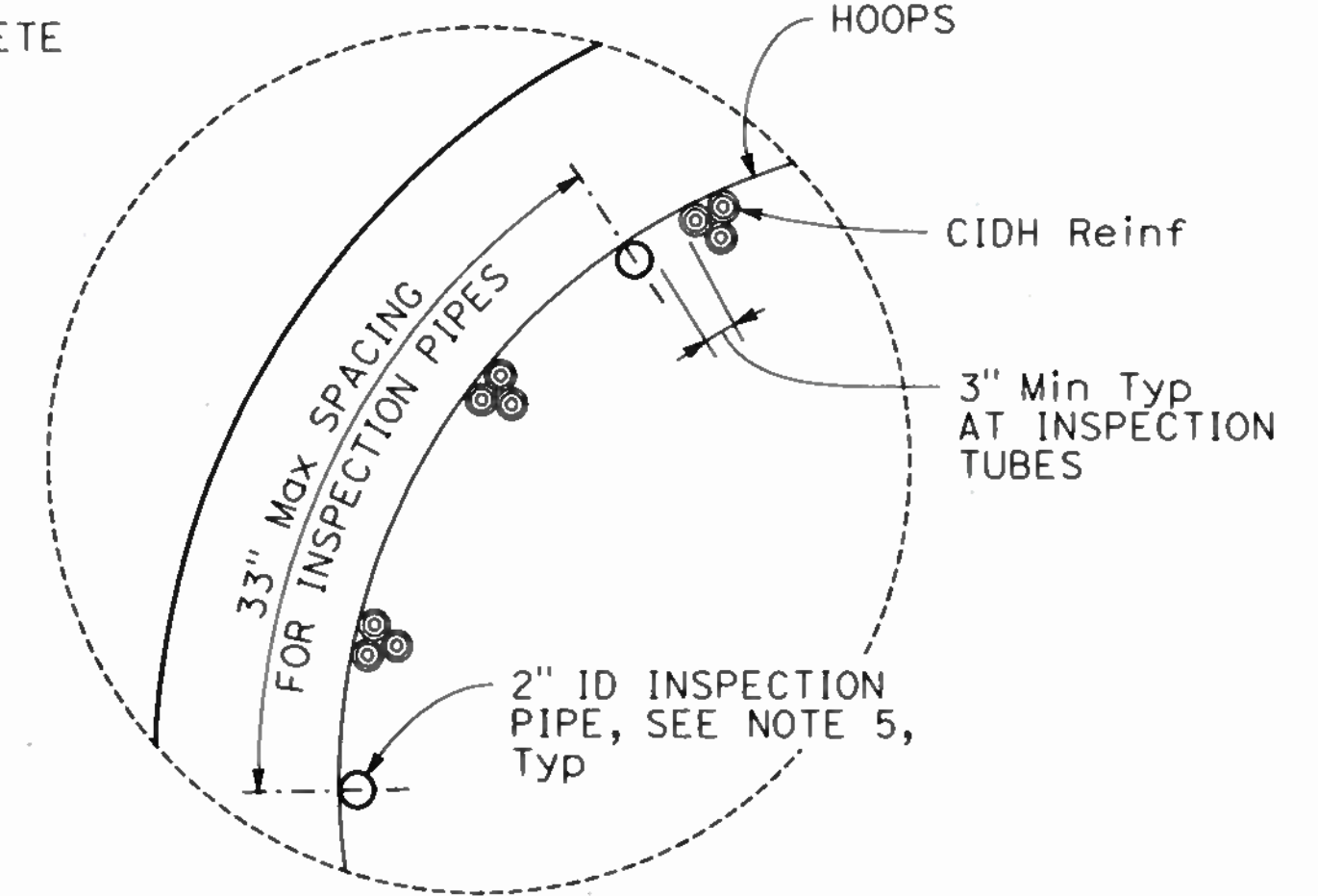
SECTION B-B
3/4" = 1'-0"



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



DETAIL 2
1" = 1'-0"



DETAIL 1
NO SCALE

LEGEND:

 Indicates Bundled Bars

NOTES:

- All hoops are "Ultimate" butt spliced continuous.
- "Ultimate" butt splices are allowed in longitudinal reinforcement in this zone.
- For Pile Data, see "FOUNDATION PLAN" sheet.
- Key area shall be mechanically roughened to 1/4" amplitude.
- For inspection pipe requirements and procedures, see project specifications.
- Hoop spacing within the cap may be varied to accommodate abutment cap reinforcement. The total number of hoops shall not be less than the equivalent of what is shown on plans.
- Contractor to install forms so as to not allow concrete to fall inside steel casing when abutment cap is poured.
- Contractor to design New Steel Pipe Form to be mortar tight. True to the dimensions, lines, and grades of the Structure. Strong enough to prevent deflection during concrete placement. Clean and paint inside and out with full number of coats before erection.
- Steel casing to stop below polystyrene to prevent binding with diaphragm abutment.

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34-01915
POST MILES	7.9

SOUTHGATE ROAD UC
COLUMN AND CIDH PILE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

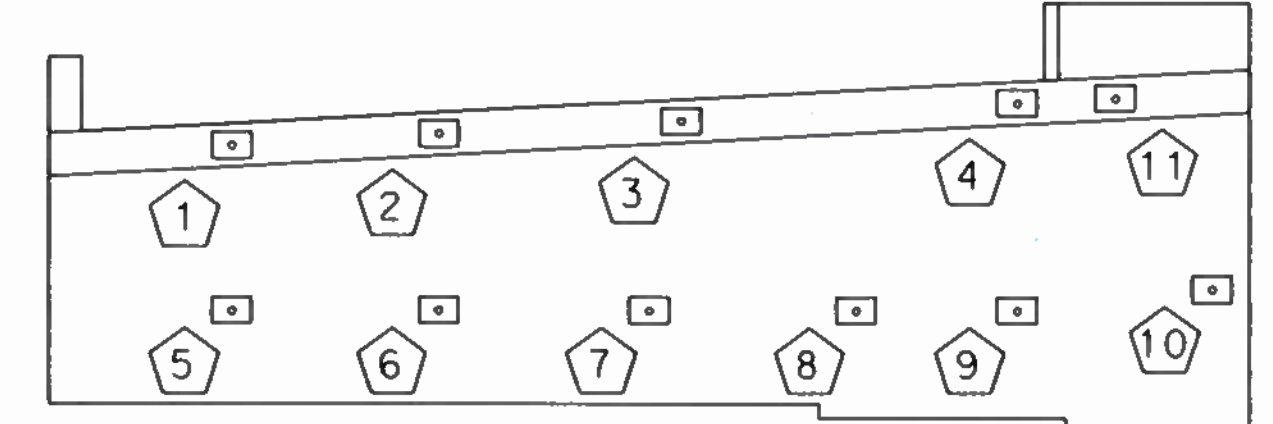
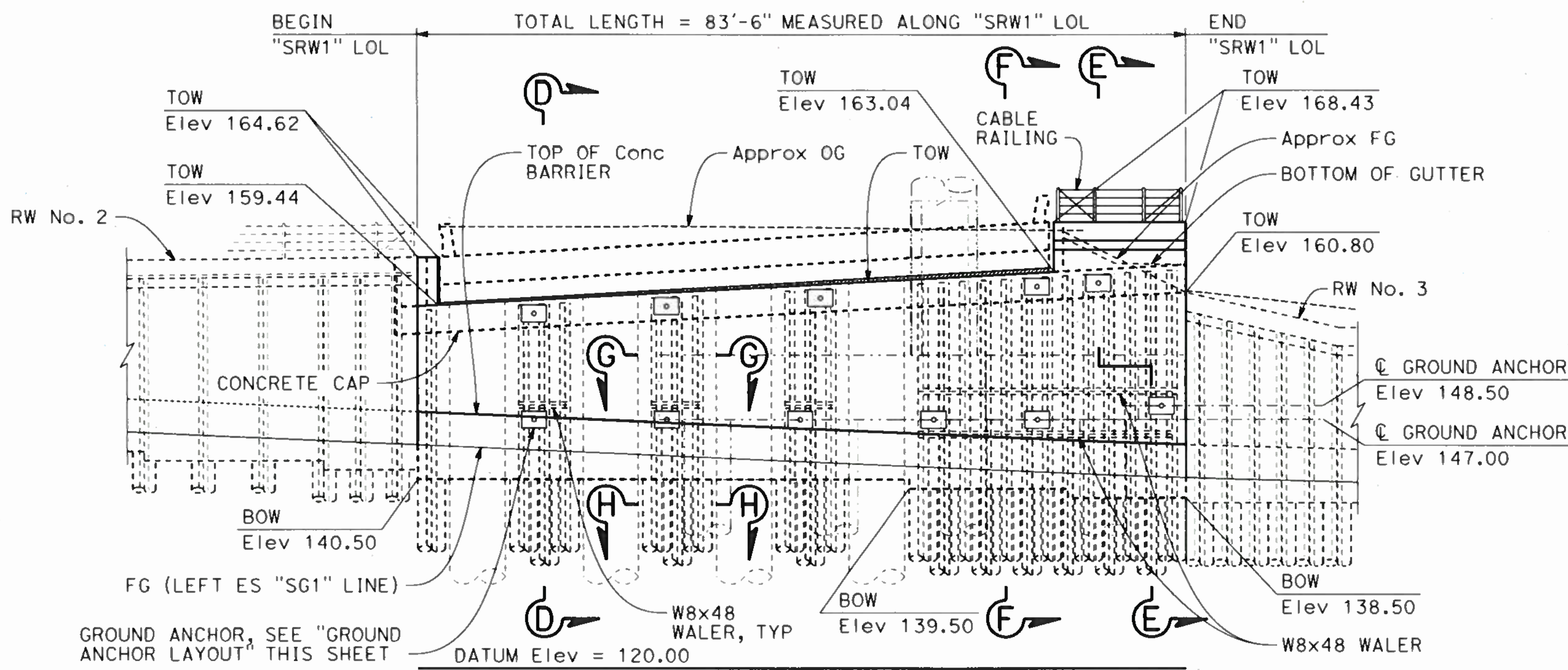
DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-15 11-17-15 2-21-16 7-28-16	7	40

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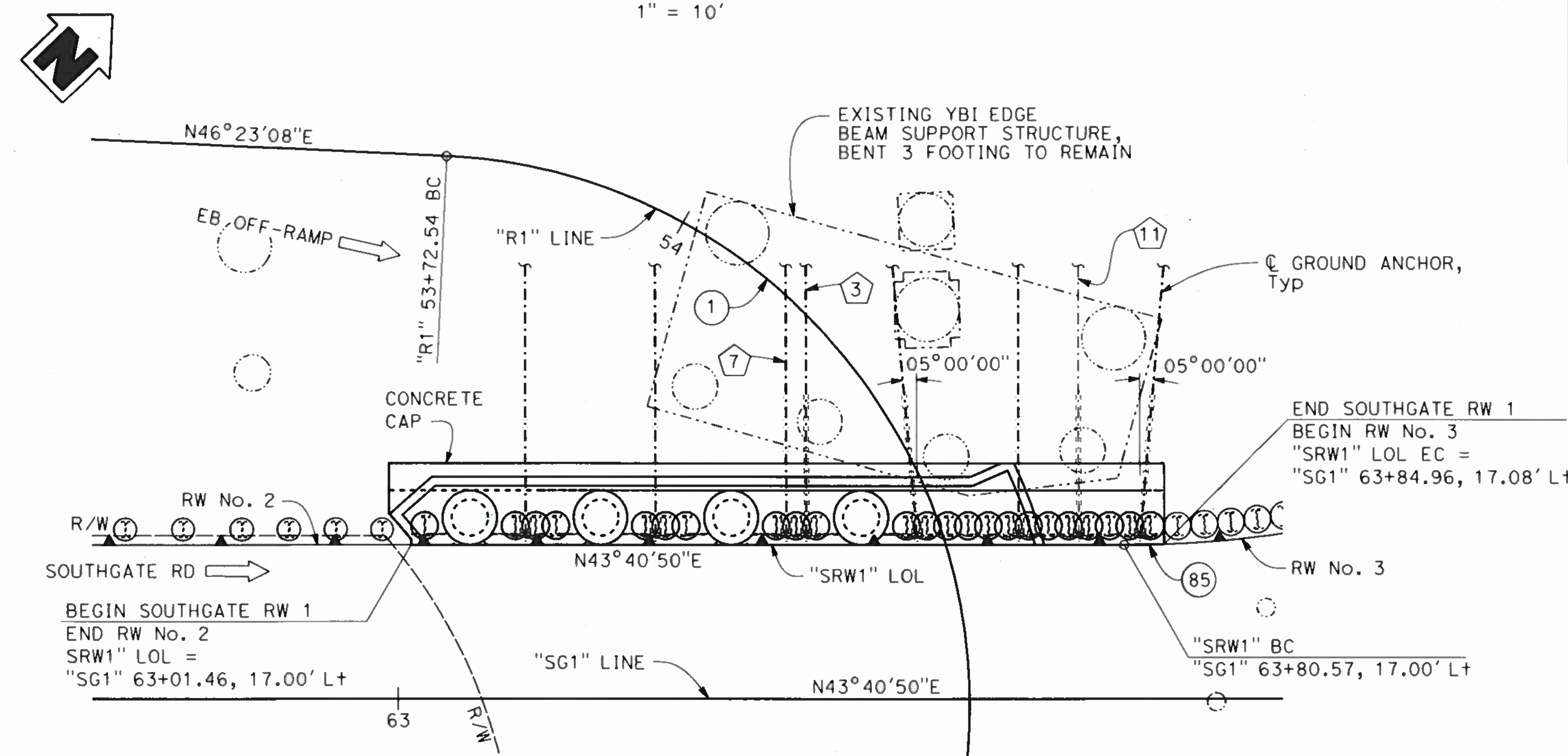
7-25-19
 REGISTERED CIVIL ENGINEER DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



GROUND ANCHOR DESIGN TABLE

GROUND ANCHOR NUMBER	GROUND ANCHOR INCLINATION ANGLE (Deg)	FACTORED DESIGN LOAD FDL (kips)	FACTORED TEST LOAD FTL (kips)	LOCK-OFF LOAD LL (kips)	UNBONDED LENGTH (ft)
1	10	300	300	320	45
2	10	400	400	275	45
3	7.5	520	520	375	45
4	10	440	440	335	45
5	15	230	230	265	45
6	15	475	475	210	45
7	15	505	505	230	45
8	15	490	490	233	45
9	15	475	475	235	45
10	15	325	325	140	45
11	15	355	355	340	45



CURVE DATA

No.	R	Δ	T	L
1	60.78'	119°32'34"	104.31'	126.81'
85	125.00'	02°00'37"	2.19'	4.39'

LEGEND:

- Indicates existing structure
- Indicates new structure
- ← Indicates direction of traffic
- ⊙ Indicates CIDH pile with steel casing
- ⊙ Indicates Steel Soldier Pile
- ⬡ Indicates ground anchor number
- BOW Bottom of Wall
- TOW Top of Wall
- ⊙ Indicates existing pile

NOTES:

1. For "SECTION D-D" and "SECTION E-E", see "SOUTHGATE RW 1 DETAILS No. 3" sheet.
2. For "PARTIAL PLAN" see "SOUTHGATE RW 1 DETAILS No. 2" sheet.
3. For "SECTION F-F", "SECTION G-G" and "SECTION H-H", see "SOUTHGATE RW 1 DETAILS No. 4" sheet.

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

DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN BY A. MALLA	CHECKED J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34-0191S	SOUTHGATE ROAD UC SOUTHGATE RW 1 LAYOUT	
	DETAILS BY J. GREEN	CHECKED A. MALLA		PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.9
	QUANTITIES BY A. MALLA	CHECKED A. CARMAZZI		UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531		CONTRACT NO.: 04-3A6414
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-22-19 11-12-19 1-22-19 7-24-19	
			FILE => 34-0191S-g-rw_101.dgn	SHEET 8	OF 40	

USERNAME => svc_in_dw@statecal DOTTED => 22-OCT-2019 TIME PLOTTED => 15:38

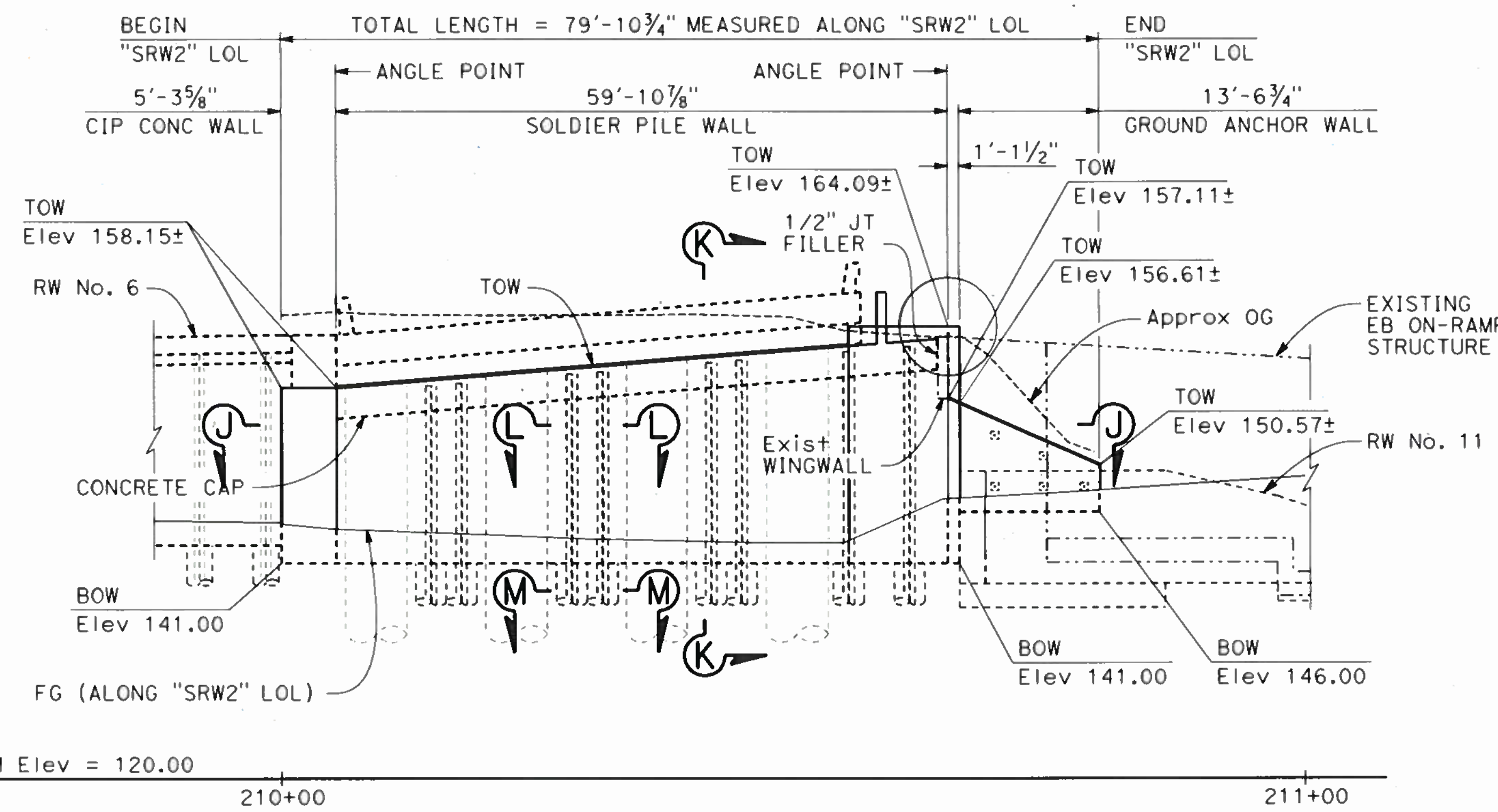
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	218	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE _____
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



MIRRORED DEVELOPED ELEVATION

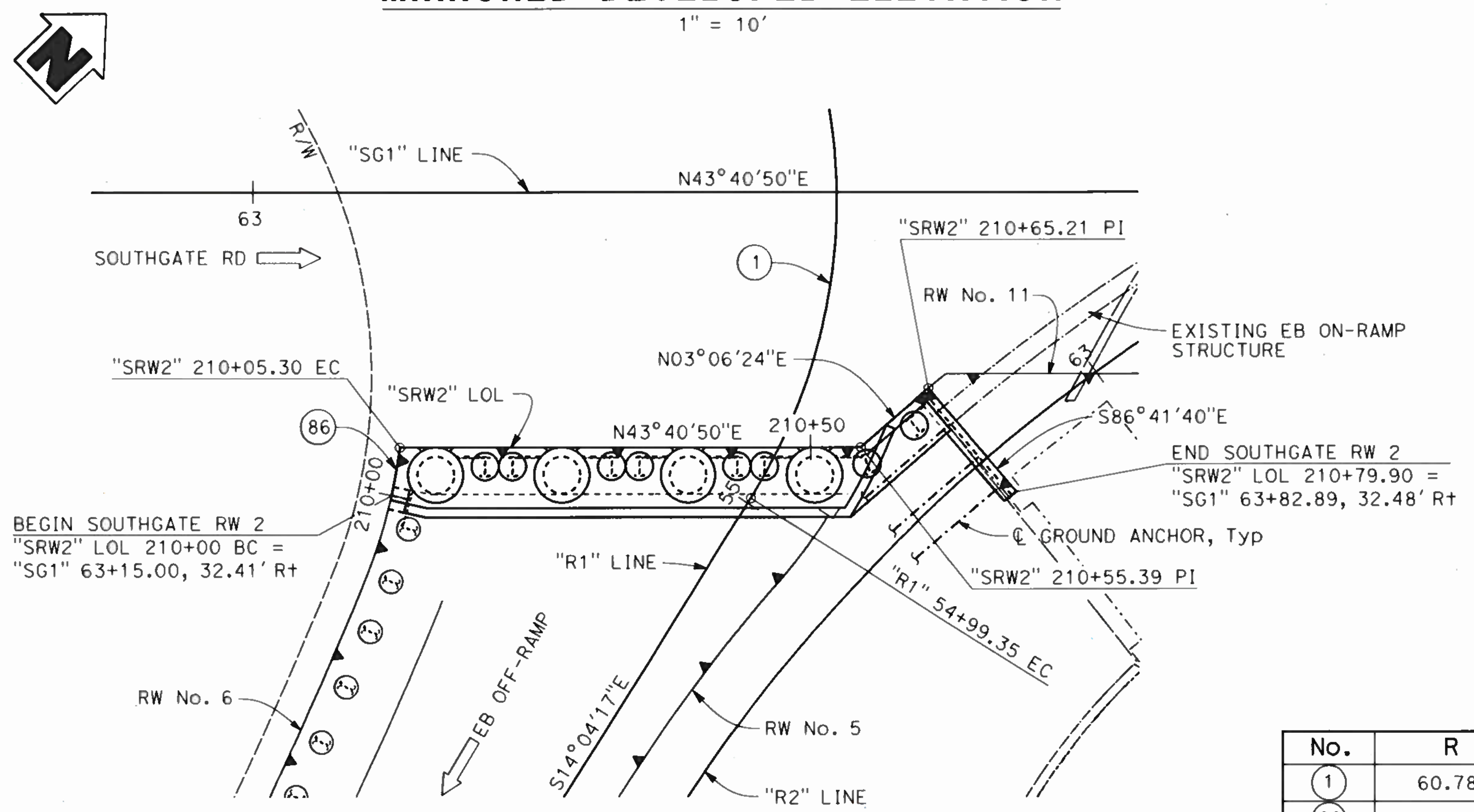
1" = 10'

LEGEND:

- Indicates existing structure
- Indicates new structure
- ← Indicates direction of traffic
- ⊙ Indicates CIDH pile with steel casing
- ⊙ Indicates Steel Soldier Pile
- BOW Bottom of Wall
- TOW Top of Wall

NOTES:

1. For "SECTION J-J", see "SOUTHGATE RW 2 DETAILS No. 1" sheet.
2. For "SECTION K-K", see "SOUTHGATE RW 2 DETAILS No. 2" sheet.
3. For "GROUND ANCHOR WALL SECTION", see "SOUTHGATE RW 2 DETAILS No. 4" sheet.
4. For "SECTION L-L" and "SECTION M-M", see "SOUTHGATE RW 2 DETAILS No. 2" sheet.



PLAN

1" = 10'

CURVE DATA

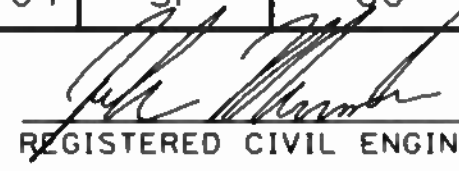
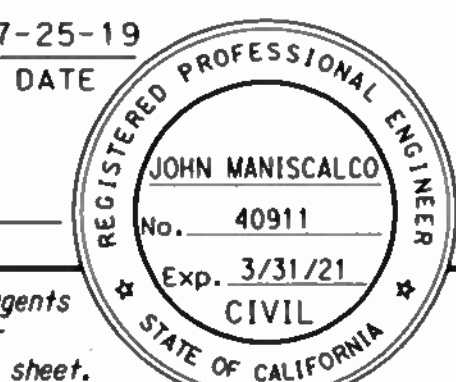
No.	R	Δ	T	L
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86	60.50'	05°01'04"	2.65'	5.30'

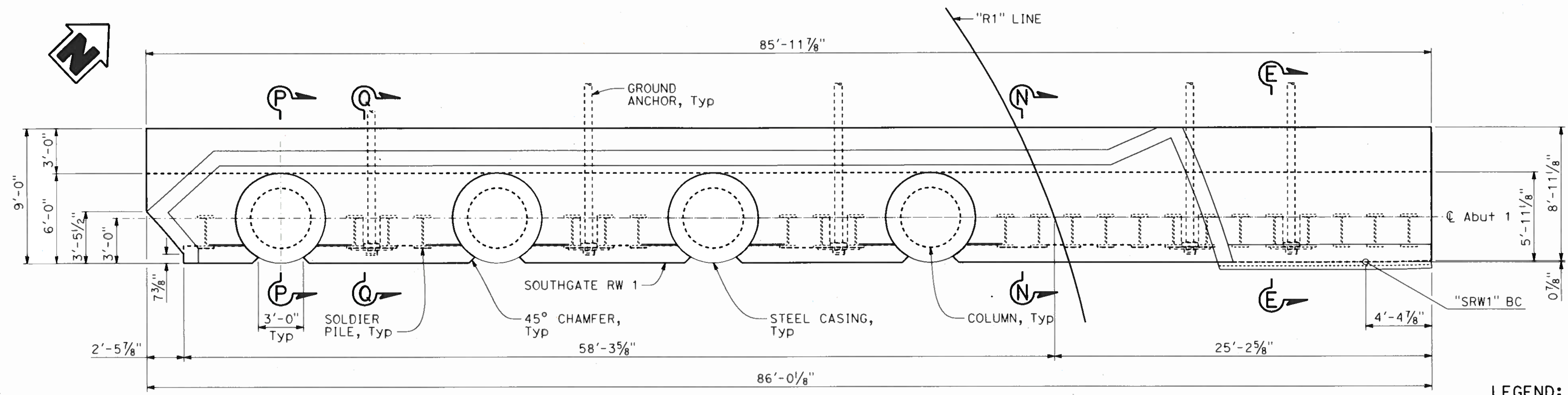
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN	BY A. MALLA	CHECKED J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34-0191S	SOUTHGATE ROAD UC SOUTHGATE RW 2 LAYOUT	
	DETAILS	BY J. GREEN	CHECKED A. MALLA		PROJECT ENGINEER	POST MILES		7.9
	QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI		JOHN MANISCALCO	UNIT: 0728		CONTRACT NO.: 04-3A6414

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 PROJECT NUMBER & PHASE: 04190001531
 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 10-22-19, 11-21-19, 2-21-19, 7-25-19
 SHEET 9 OF 40
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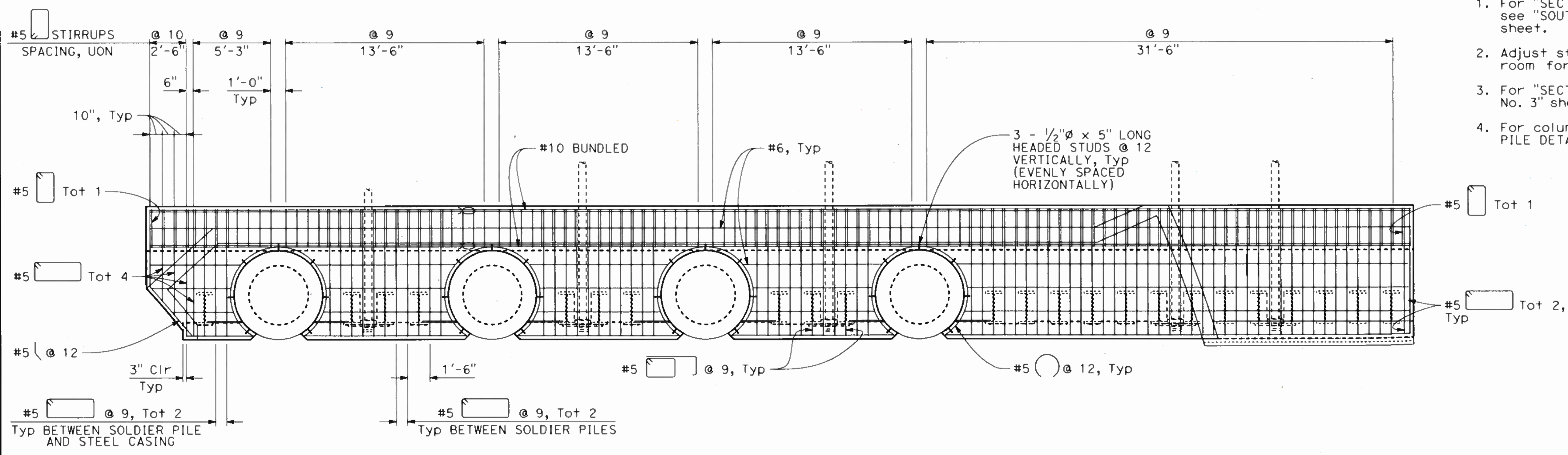
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	219	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



CONCRETE CAP PLAN
1/4" = 1'-0"

LEGEND:
 Indicates Bundled Bars


- NOTES:**
- For "SECTION N-N", "SECTION P-P", and "SECTION Q-Q" see "SOUTHGATE RW 1 CONCRETE CAP DETAILS No. 3" sheet.
 - Adjust stirrups spacing where required to allow room for Ground Anchors.
 - For "SECTION E-E" see "SOUTHGATE RW 1 DETAILS No. 3" sheet.
 - For column reinforcement, see "COLUMN AND CIDH PILE DETAILS" sheet for details.



CONCRETE CAP REINFORCEMENT PLAN
1/4" = 1'-0"

NOTE: Column rebar not shown for clarity.

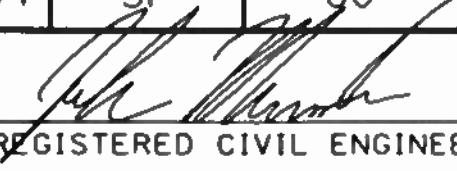
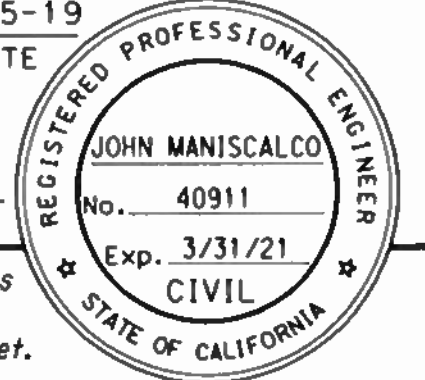
NOTE:
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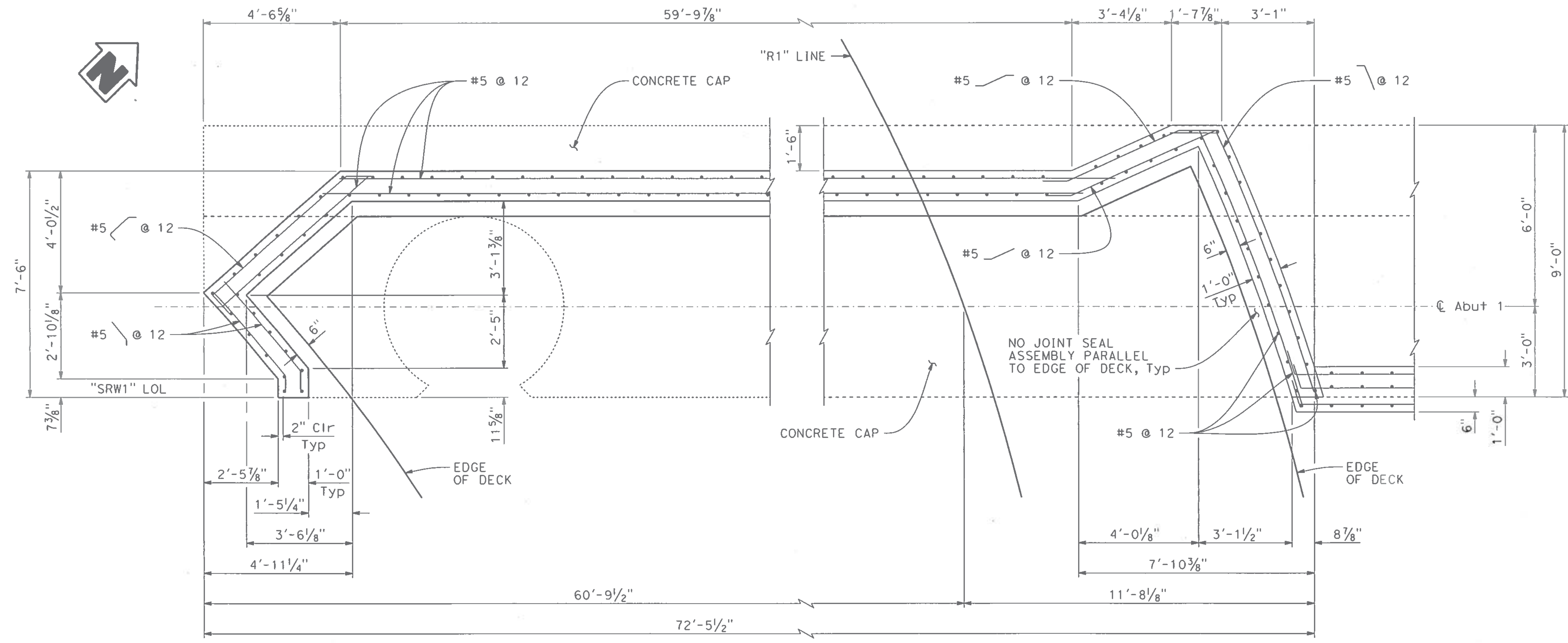
 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY: A. MALLA	CHECKED: J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34-01915	SOUTHGATE ROAD UC SOUTHGATE RW 1 CONCRETE CAP DETAILS No. 1	
	DETAILS	BY: J. GREEN	CHECKED: A. MALLA		PROJECT ENGINEER	JOHN MANISCALCO		
	QUANTITIES	BY: A. MALLA	CHECKED: A. CARMAZZI		PROJECT ENGINEER	JOHN MANISCALCO		
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)				UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414	POST MILES: 7.9	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 10-22-19, 11-12-19, 2-21-19, 7-28-19	SHEET 10 OF 40

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

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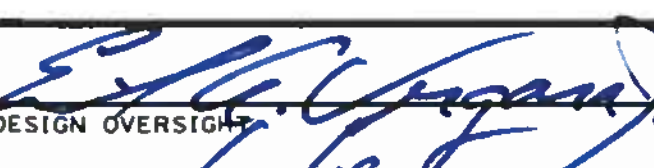
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	220	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



BACKWALL REINFORCEMENT DETAIL
 1/2" = 1'-0"

NOTE:
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DESIGN OVERSIGHT

 SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

JOHN MANISCALCO
 PROJECT ENGINEER
 BRIDGE NO. 34-0191S
 POST MILES 7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 1 CONCRETE CAP DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

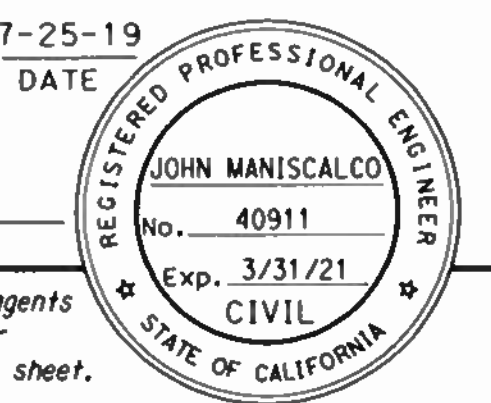
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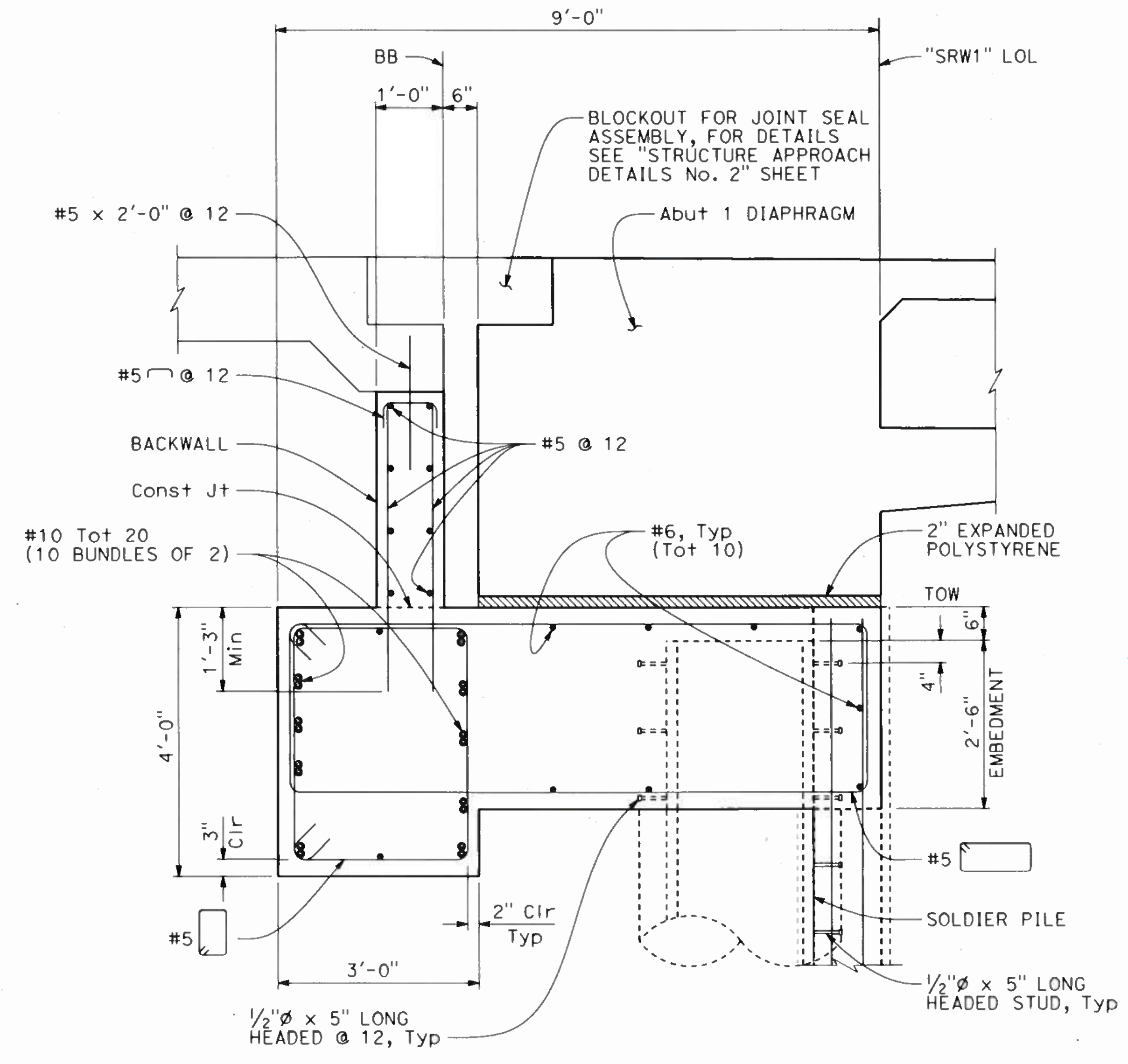
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-22-19 11-14-19 2-21-19 7-25-19	SHEET 11	OF 40
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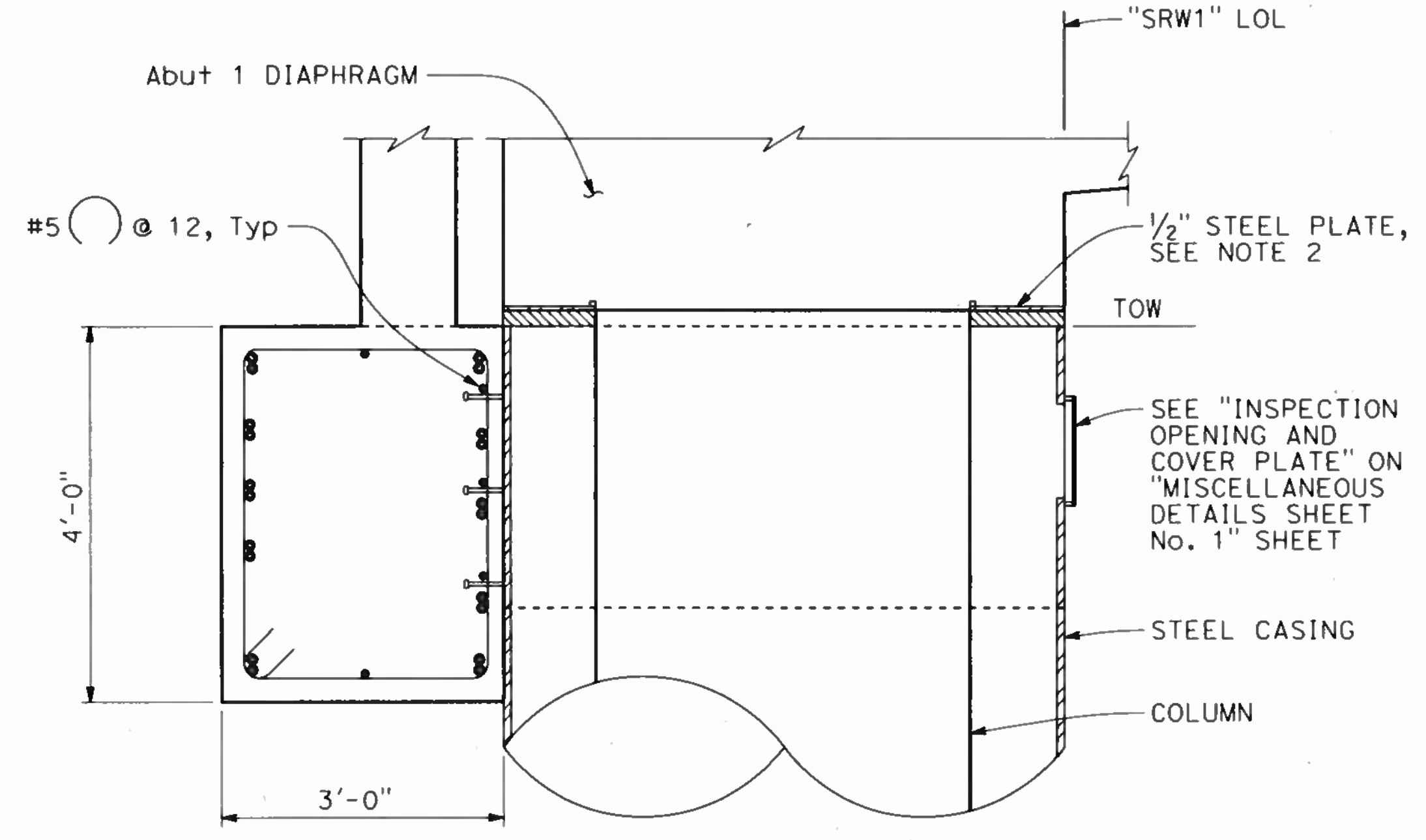
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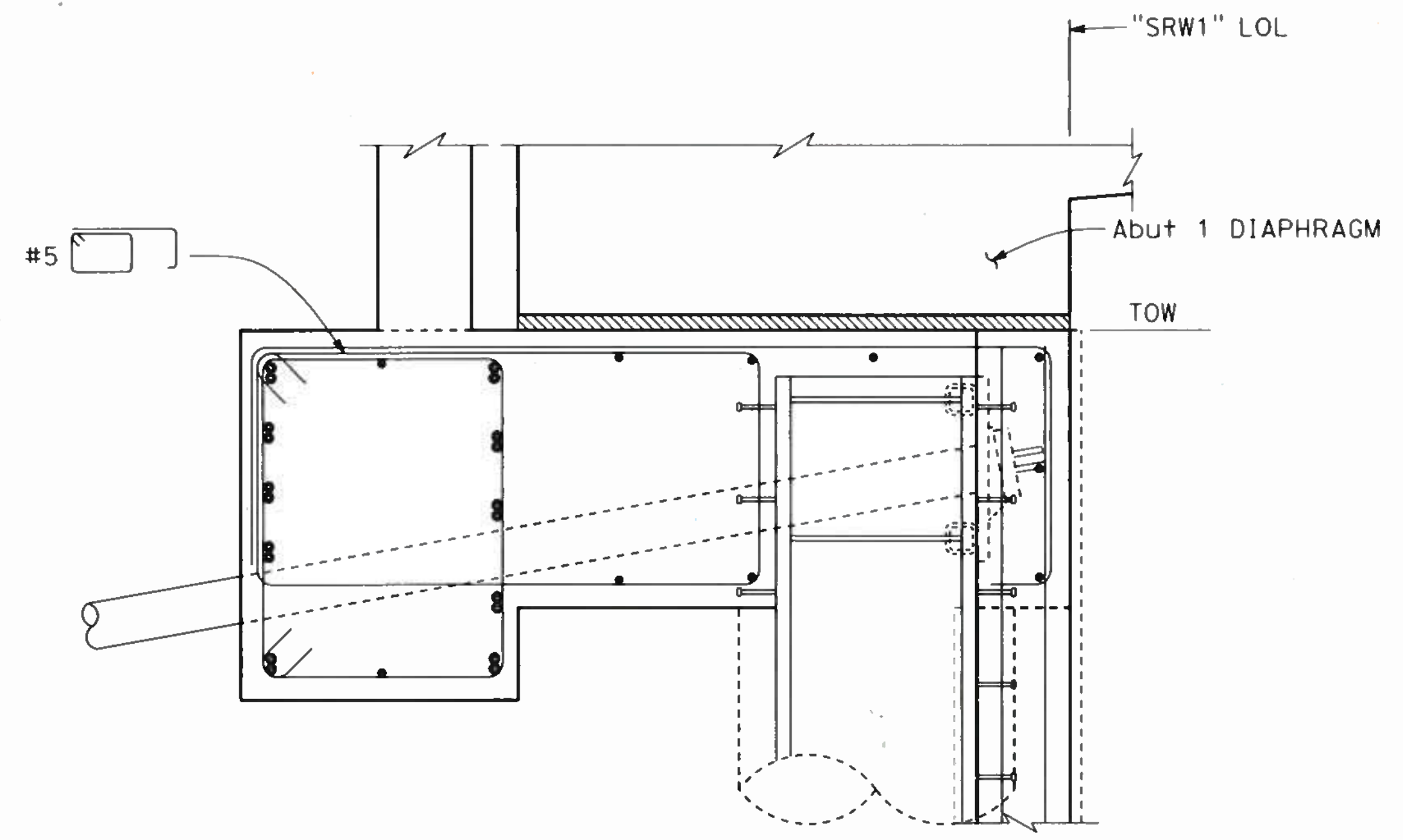
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	221	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



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



SECTION P-P
3/4" = 1'-0"
FOR DETAILS NOT SHOWN, SEE "SECTION N-N".



SECTION Q-Q
3/4" = 1'-0"
FOR DETAILS NOT SHOWN, SEE "SECTION N-N".

- NOTES:
- For stirrups spacing see "SOUTHGATE RW 1 CONCRETE CAP DETAILS No. 1" sheet.
 - Cut 1/2" Steel Plate to match outside face of Permanent New Steel Pipe Form and outside face of Steel Casing. Cut Expanded Polystyrene to match face of Steel Casing and face of Southgate RW 1. Adhesive polystyrene to Steel Plate.

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

DESIGN OVERSIGHT
SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 34-01915
PROJECT ENGINEER JOHN MANISCALCO
POST MILES 7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 1 CONCRETE CAP DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS


UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-28-19	12	40

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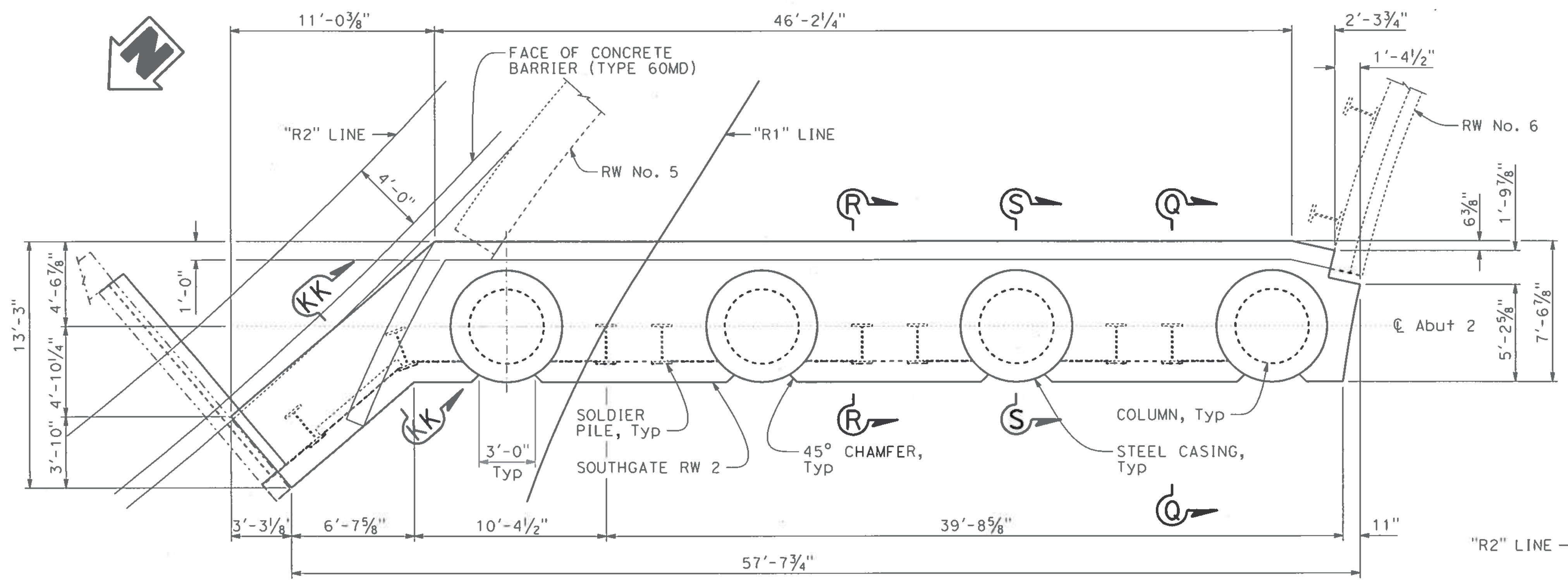
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	222	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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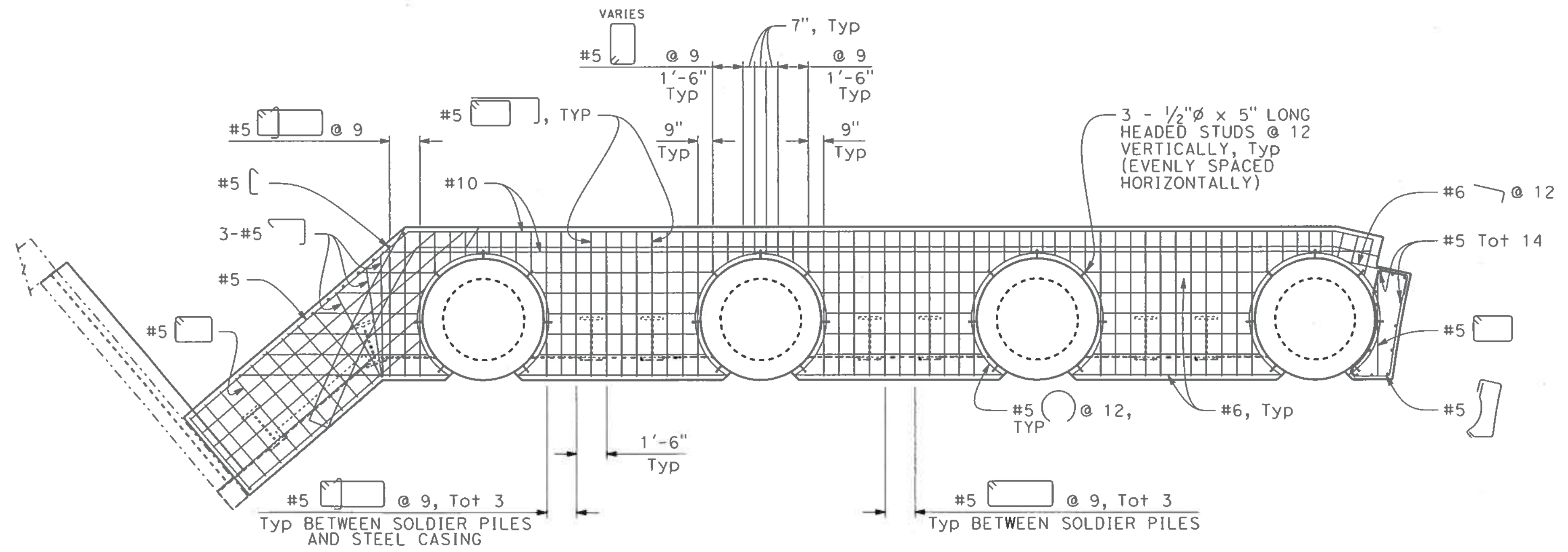
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



CONCRETE CAP PLAN

1/4" = 1'-0"

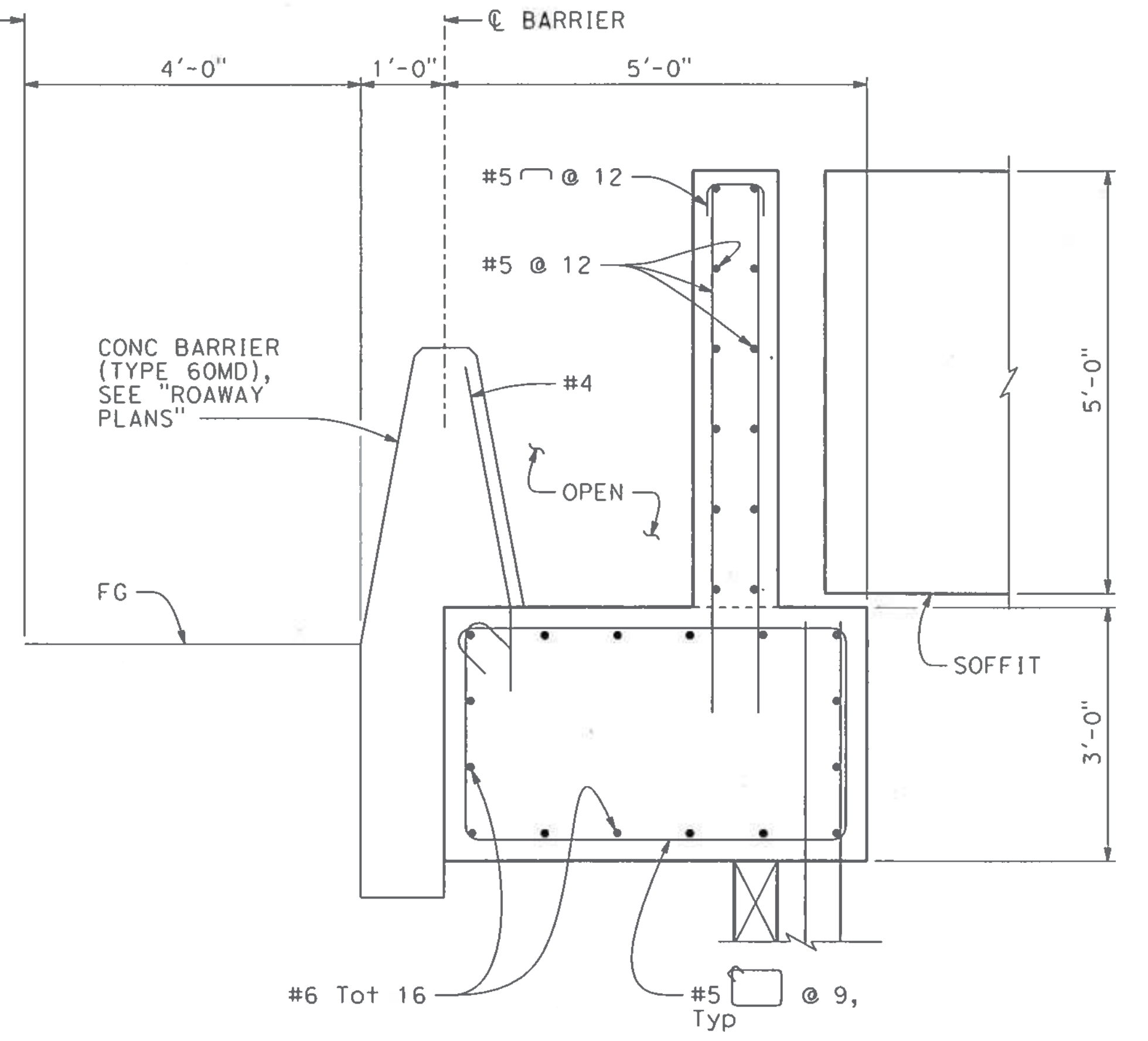


CONCRETE CAP REINFORCEMENT PLAN

1/4" = 1'-0"


NOTE: Column rebar not shown for clarity.

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



SECTION KK-KK

3/4" = 1'-0"


 DESIGN OVERSIGHT
 SIGN OFF DATE 7/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 2 CONCRETE CAP DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS




UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

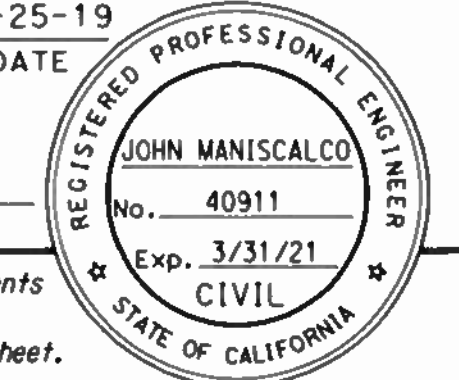
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-28-19	13	40

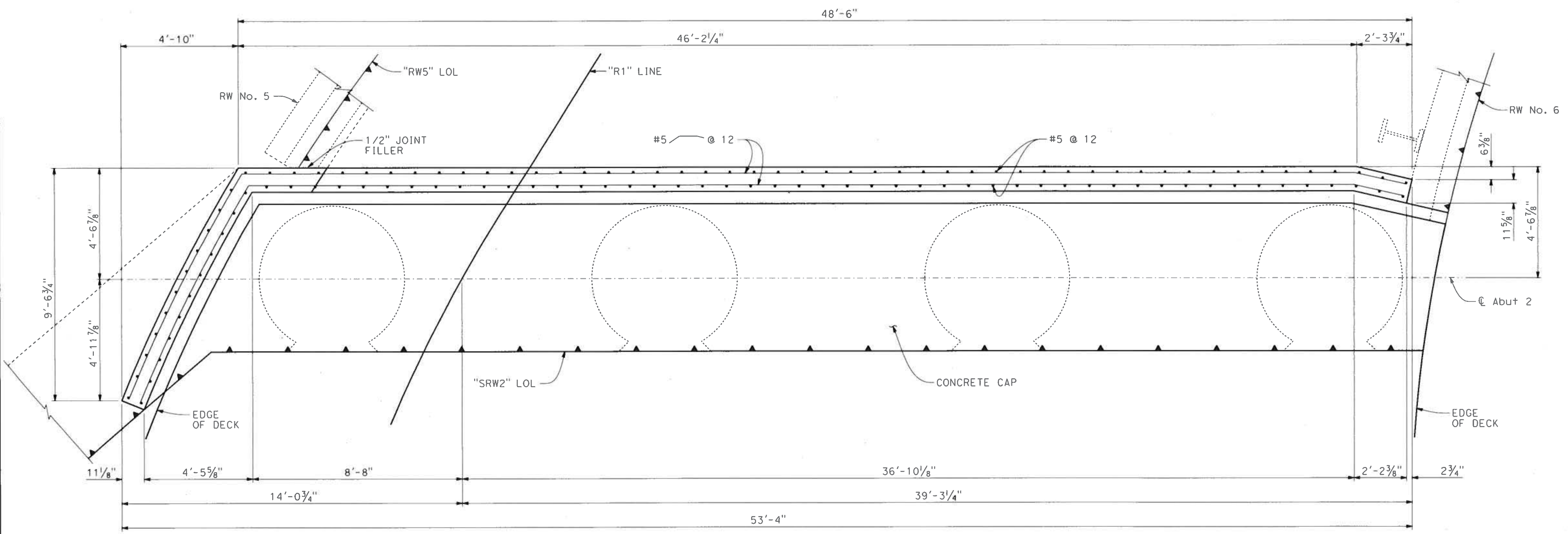
USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 12:41

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	223	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
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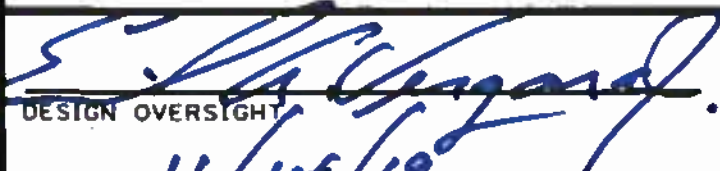


SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



BACKWALL REINFORCEMENT DETAIL
 1/2" = 1'-0"

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


 DESIGN OVERSIGHT
 SIGN OFF DATE 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

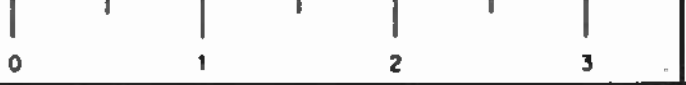
JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 2 CONCRETE CAP DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 2-21-19 1-28-19	14	40

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:04

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER DATE 7-25-19

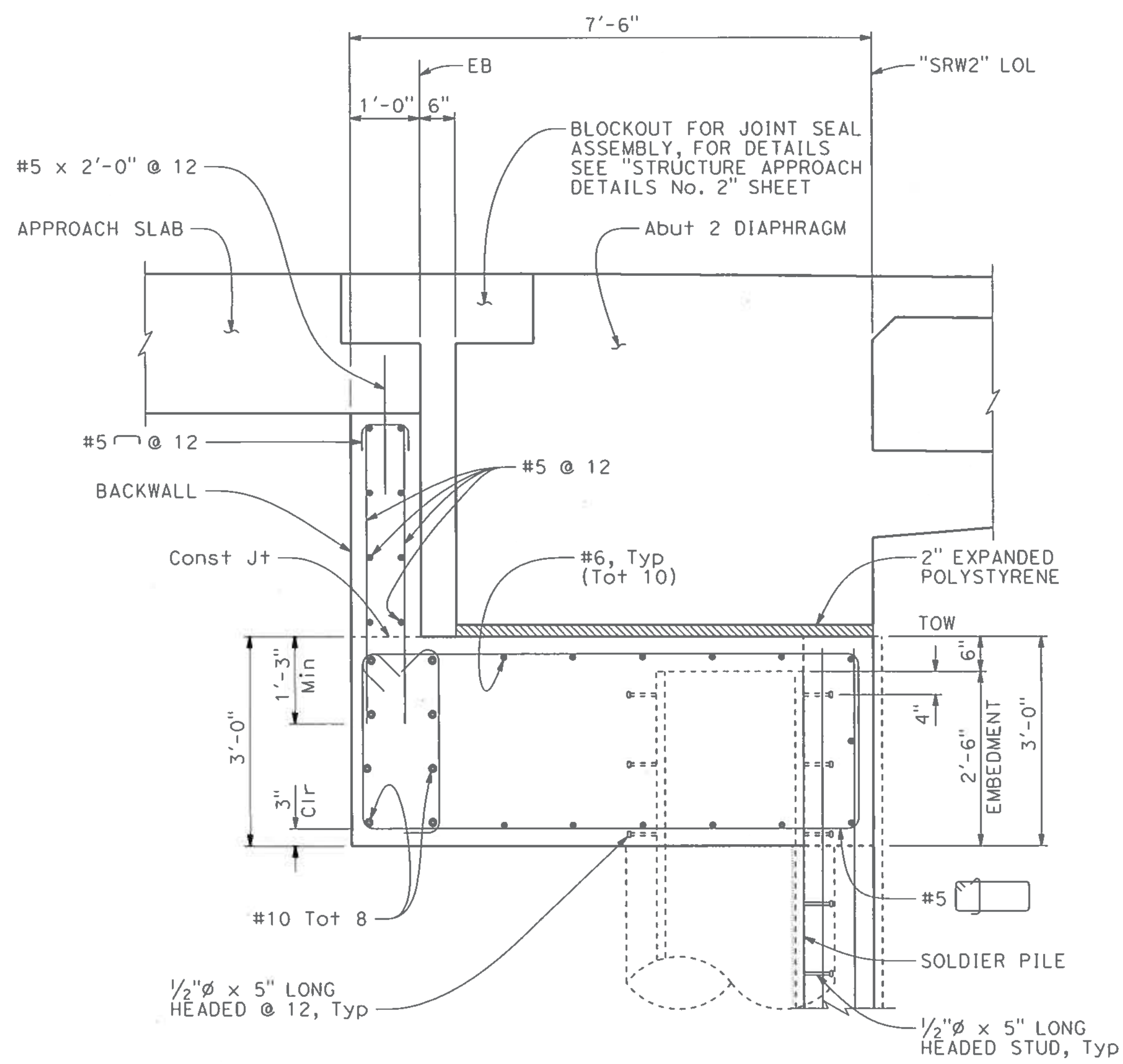
PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

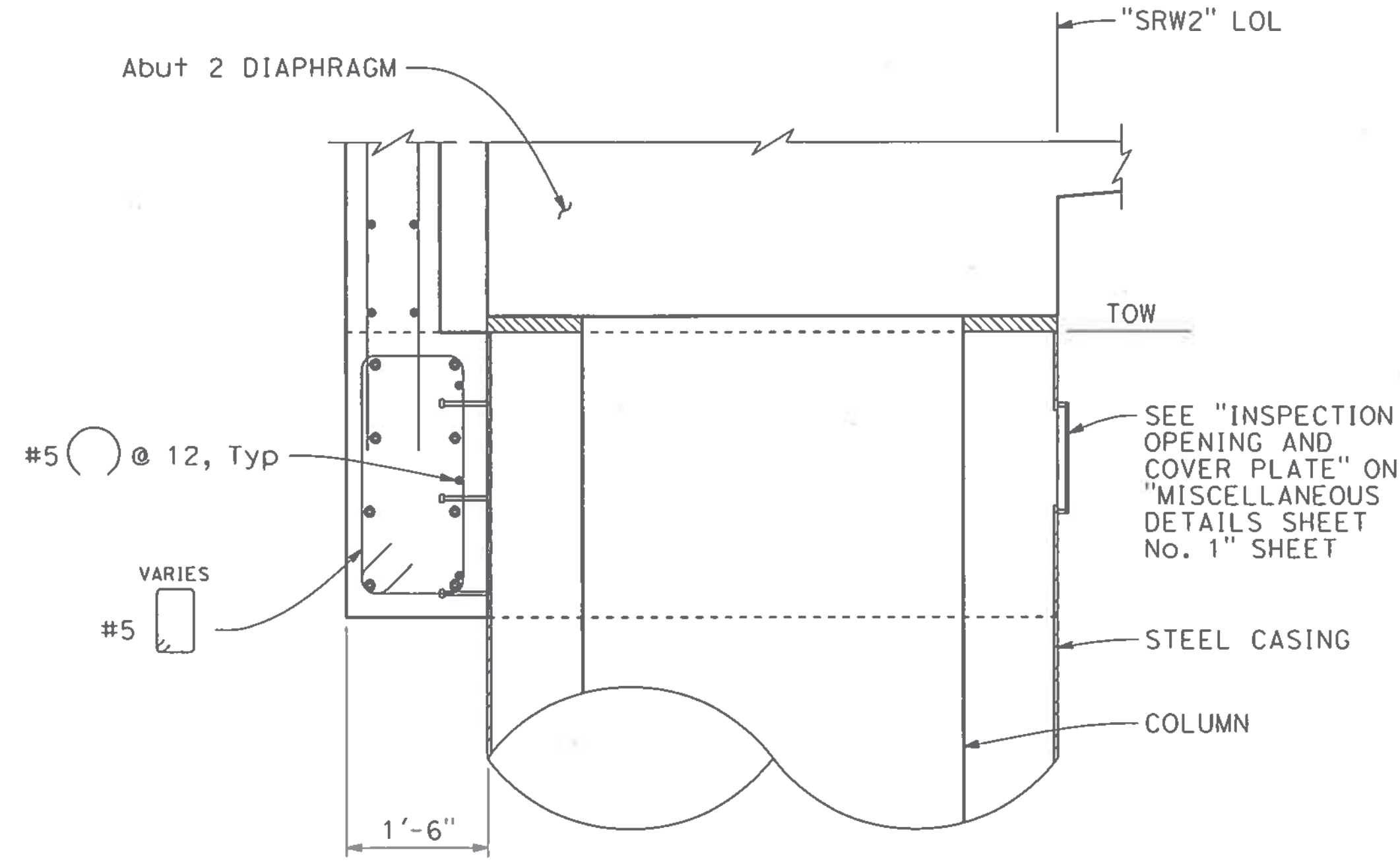
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

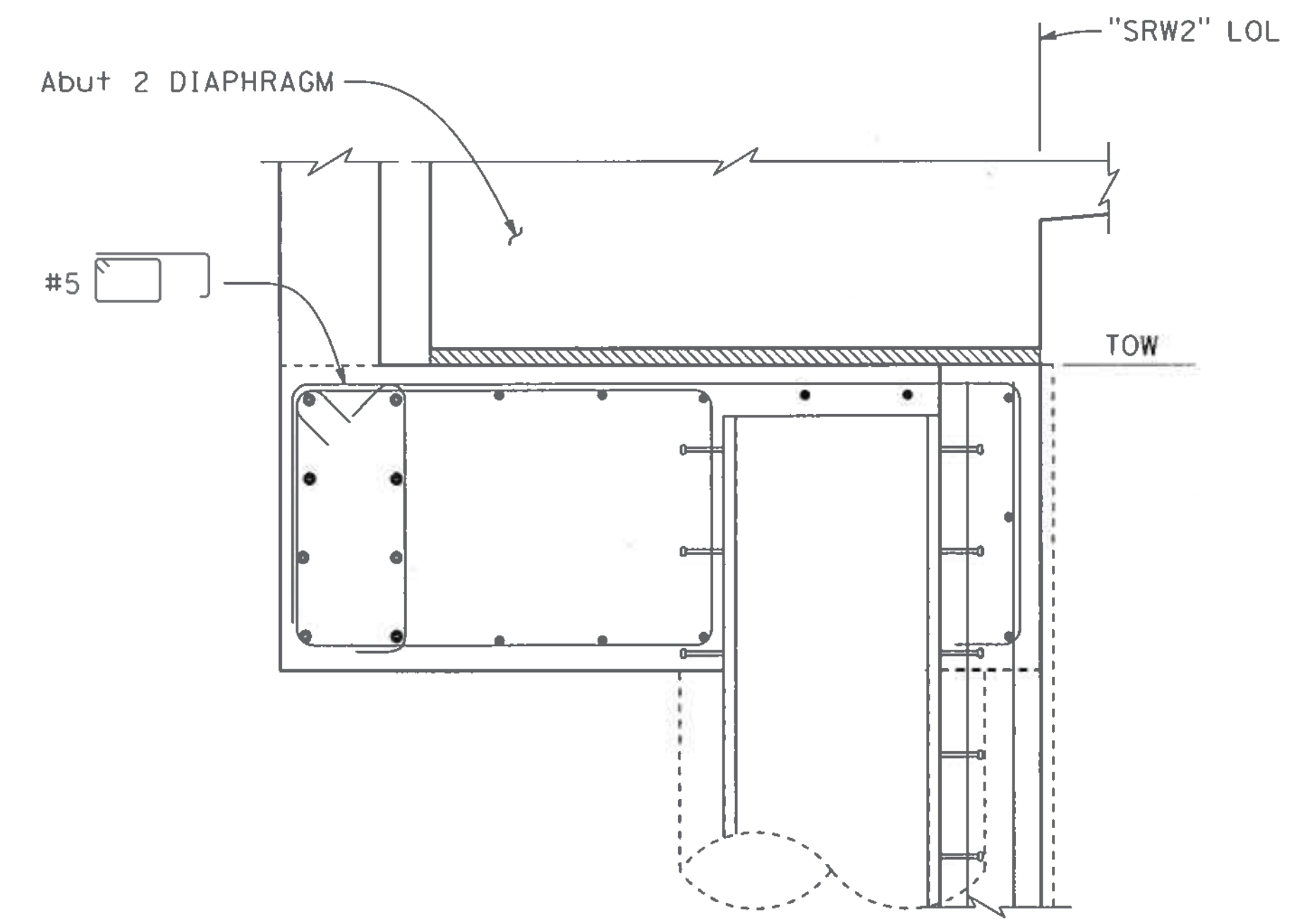
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



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



SECTION S-S
3/4" = 1'-0"
FOR DETAILS NOT SHOWN, SEE "SECTION R-R".



SECTION Q-Q
3/4" = 1'-0"
FOR DETAILS NOT SHOWN, SEE "SECTION R-R".

NOTE:
1. For stirrups spacing see "SOUTHGATE RW 2 CONCRETE CAP DETAILS No. 1" sheet.

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

DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 2 CONCRETE CAP DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

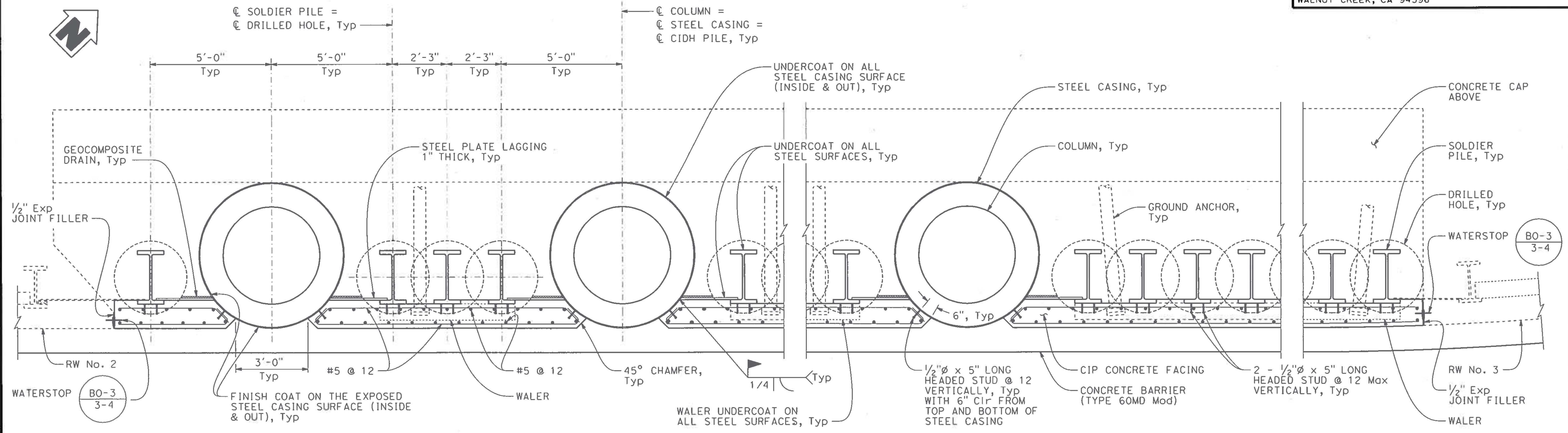
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-17-19 2-21-19 7-28-19	15	40

FILE => 34-0191S-g-rw2dt04c.dgn

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	225	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



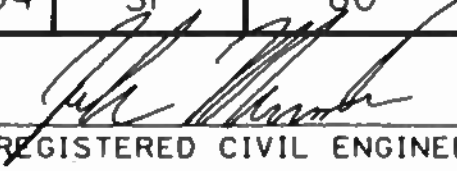
NOTE: For Column Reinforcement, see "COLUMN AND CIDH PILE DETAILS" sheet.

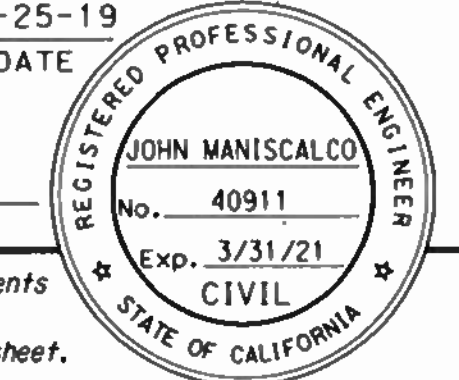
PARTIAL PLAN
1/2" = 1'-0"

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

 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY: A. MALLA	CHECKED: J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34-01915	SOUTHGATE ROAD UC SOUTHGATE RW 1 DETAILS No. 1	
	DETAILS	BY: J. GREEN	CHECKED: A. MALLA		PROJECT ENGINEER	POST MILES		7.9
	QUANTITIES	BY: A. MALLA	CHECKED: A. CARMAZZI		PROJECT ENGINEER	UNIT: 0728		CONTRACT NO.: 04-3A6414
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3				PROJECT NUMBER & PHASE: 04190001531 FILE => 34-01915-g-rw1d101.dgn	DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET OF: 16 40	

USERNAME => SVC_P1_DWGSMTE (PLOTTED => 22-OCT-2019) TIME PLOTTED => 15:38

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	226	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



DESIGN DATA - SOLDIER PILE WALL WITH GROUND ANCHORS

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th edition with the California Amendments, January 2014 Memo to Designers 5-12, Earth Retaining Systems using ground anchors

LIVE LOAD: 240 psf EQUIVALENT TO 2 FEET OF SOIL WEIGHT

REINFORCED CONCRETE:
 $f'_c = 4,000$ psi
 $f_y = 60,000$ psi
 $n = 8$

SOIL PARAMETERS:
 (For determination of Design Lateral Earth Pressures)
 Unit Weight, $\gamma = 120$ pcf
 Friction Angle, $\phi = 34^\circ$
 Active Pressure Coefficient, $K_a = 0.30$
 Passive Pressure Coefficient, $K_p = 7.2$
 Seismic Coefficient, $K_h = 0.33$
 At Rest Earth Pressure Coefficient, $K_0 = 0.50$
 (Used for Lock-off Load Calculations)

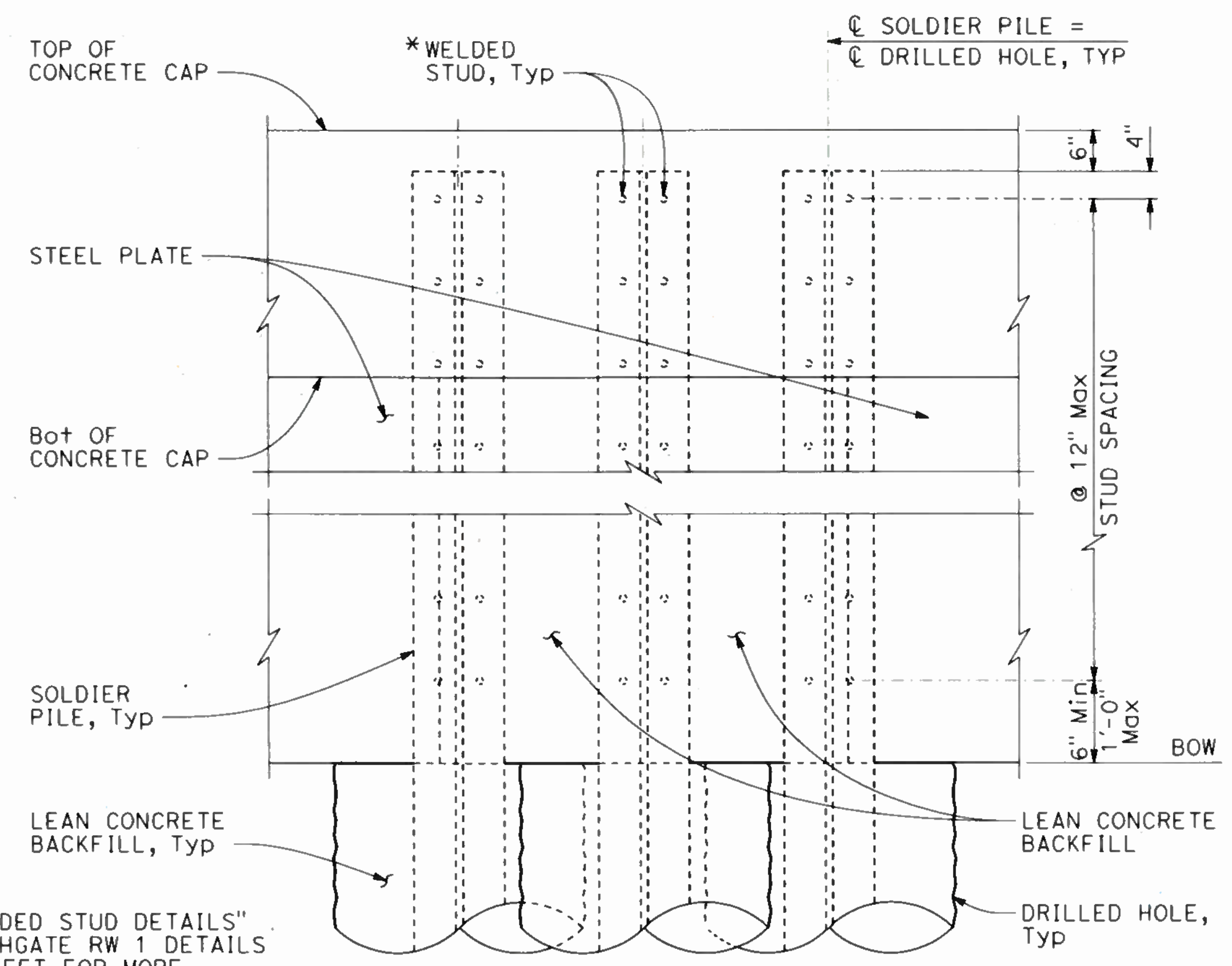
PRESTRESSING STEEL:
 See "SUB HORIZONTAL GROUND ANCHOR DETAILS" sheet.

STEEL PLATE:
 ASTM A709 GRADE 50

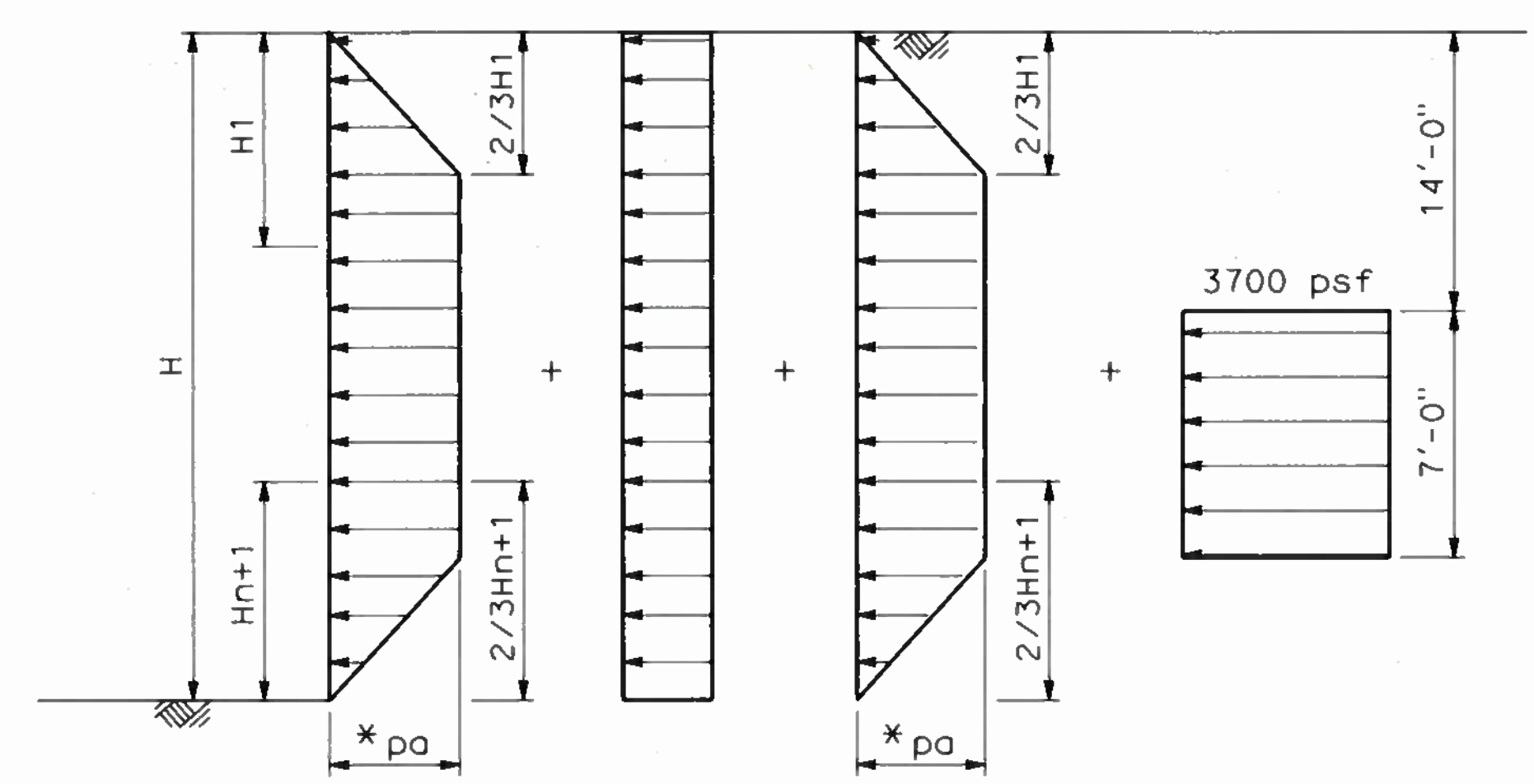
STEEL SOLDIER PILES:
 ASTM A992 ($f_y = 50,000$ psi, $f_u = 65,000$ psi)

WELDED STUD:
 ASTM A29 Type B

HSS SHAPE:
 ASTM A500 ($f_y = 50,000$ psi, $f_u = 62,000$ psi)



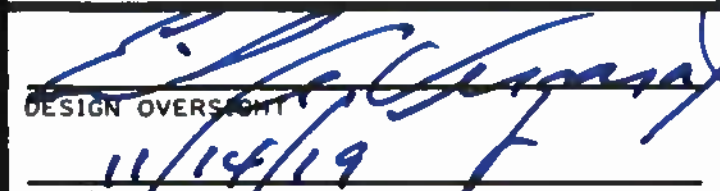
PARTIAL ELEVATION
 $3/4" = 1'-0"$



$*p_a = P_{total} / (H - 1/3H1 - 1/3Hn+1)$

SOLDIER PILE WALL LOADING DIAGRAM
 NO SCALE

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

 DESIGN OVERSIGHT SIGN OFF DATE: 11/15/19	DESIGN	BY: A. MALLA	CHECKED: J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34-0191S	SOUTHGATE ROAD UC SOUTHGATE RW 1 DETAILS No. 2	
	DETAILS	BY: J. GREEN	CHECKED: A. MALLA		PROJECT ENGINEER	POST MILES		7.9
	QUANTITIES	BY: A. MALLA	CHECKED: A. CARMAZZI		UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531		CONTRACT NO.: 04-3A6414

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

USERNAME => SVC_INL_DWGSETUP_PLOTTER => 22-OCT-2019 TIME PLOTTED => 15:38

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	227	436

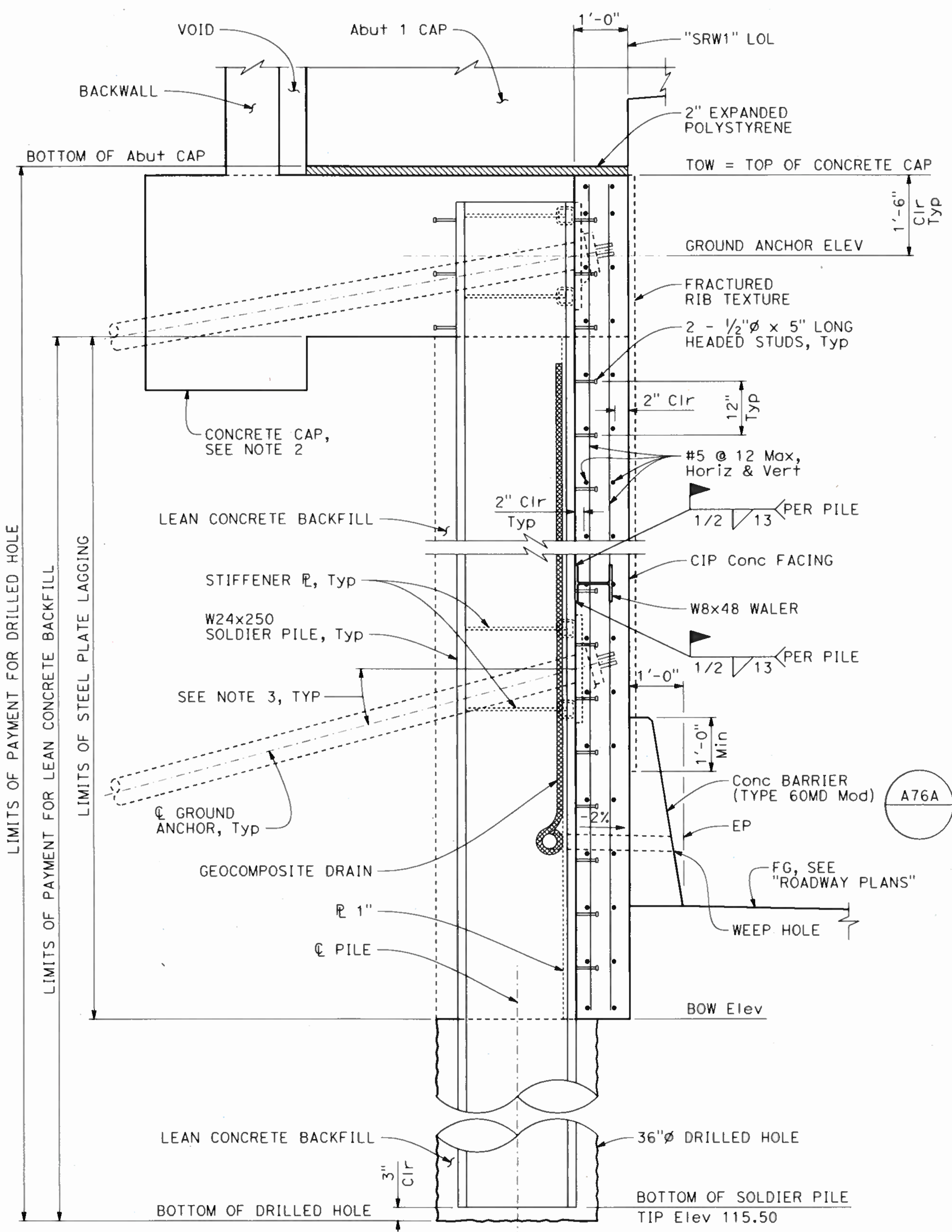
REGISTERED CIVIL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE: 7-25-19

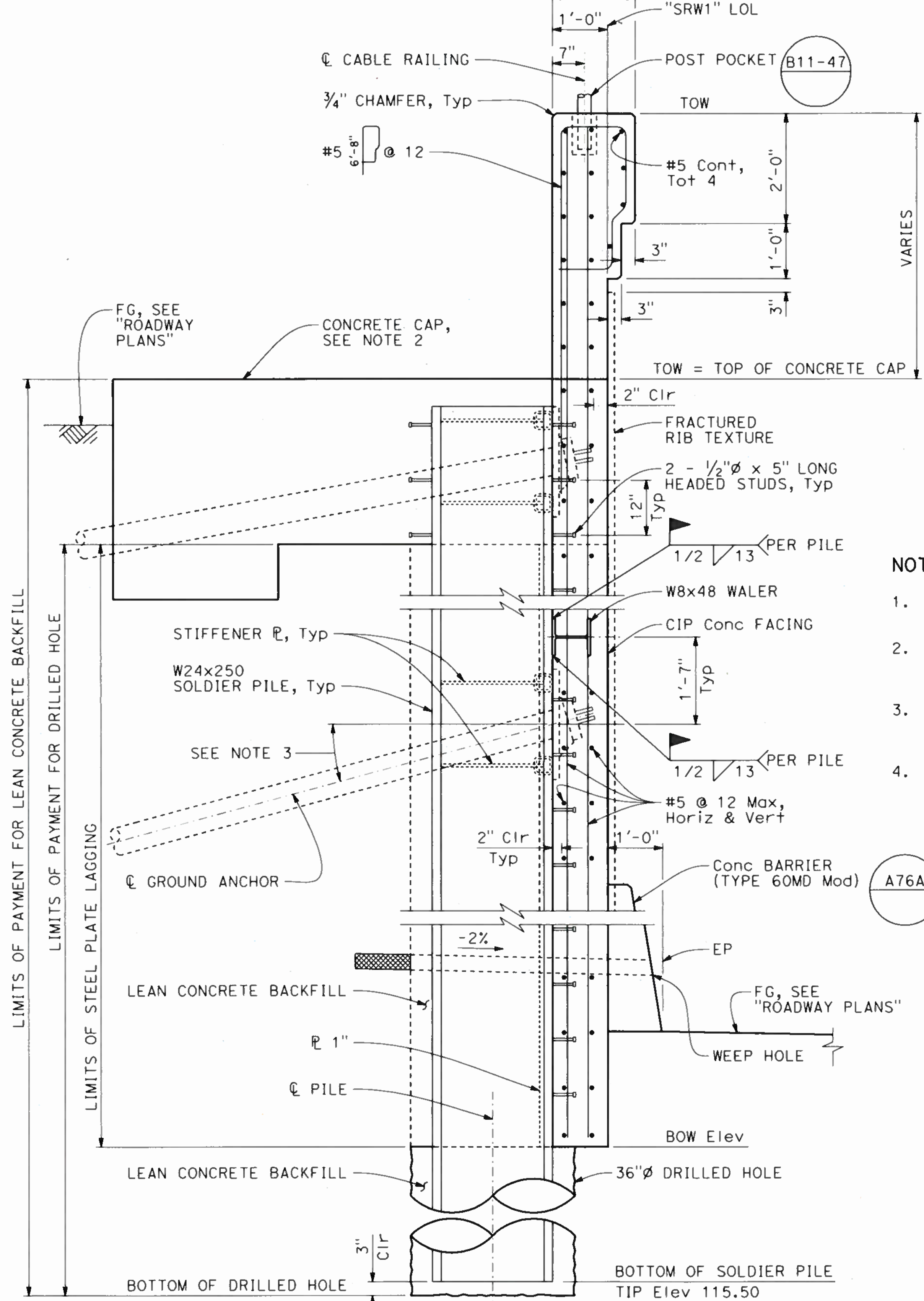
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



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



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

- NOTES:**
- For drainage details, see "MISCELLANEOUS DETAILS No. 3" sheet.
 - For concrete cap details, see "SOUTHGATE RW1 CONCRETE CAP DETAILS No. 1 THROUGH DETAILS No. 3" sheets.
 - For ground anchor inclination angle, see "GROUND ANCHOR DESIGN TABLE" on "SOUTHGATE RW1 LAYOUT" sheet.
 - For Fractured Rib Texture, see "MISCELLANEOUS DETAILS No. 3" sheet.

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

DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/19

DESIGN	BY: A. MALLA	CHECKED: J. SUK
DETAILS	BY: J. GREEN	CHECKED: A. MALLA
QUANTITIES	BY: A. MALLA	CHECKED: A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

SOUTHGATE ROAD UC
SOUTHGATE RW 1 DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

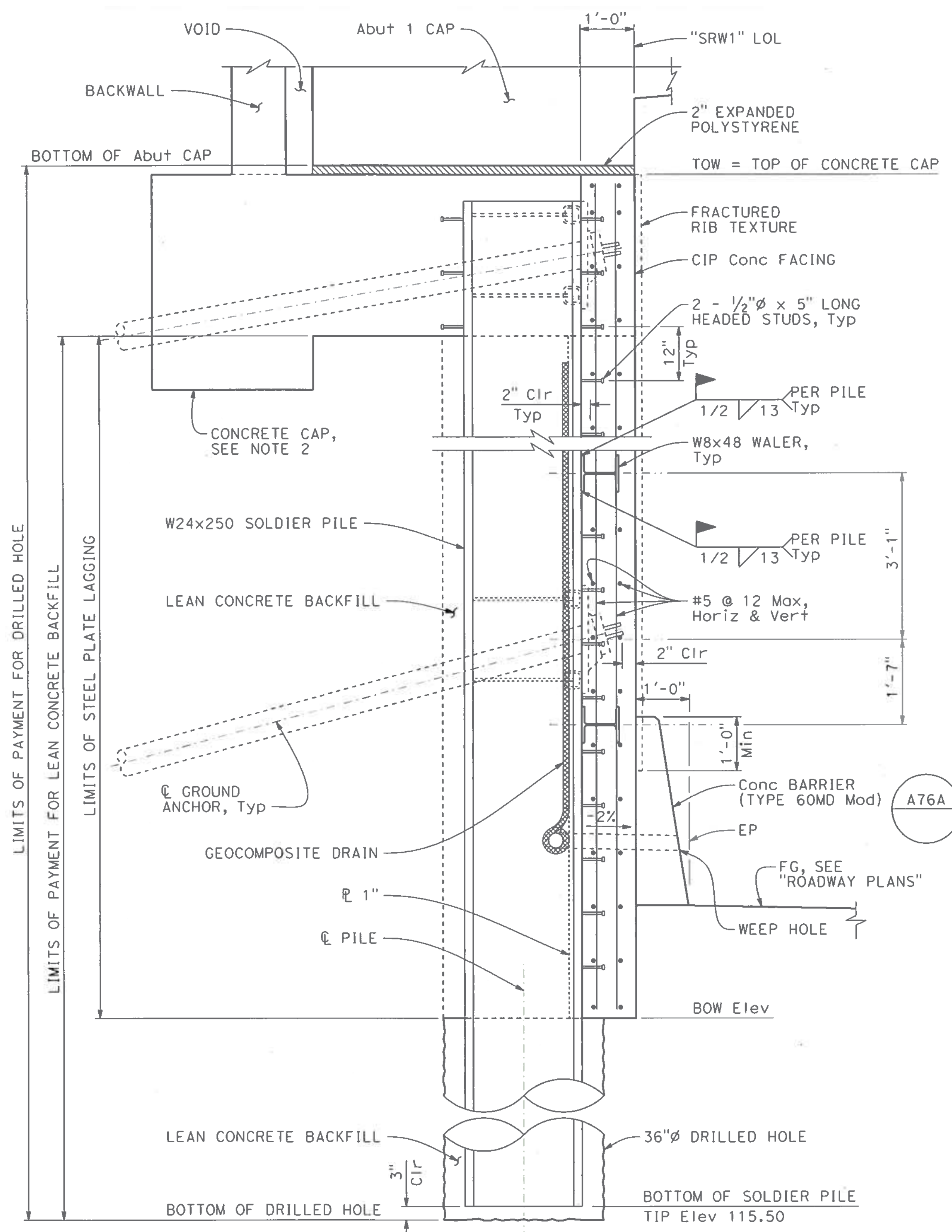
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

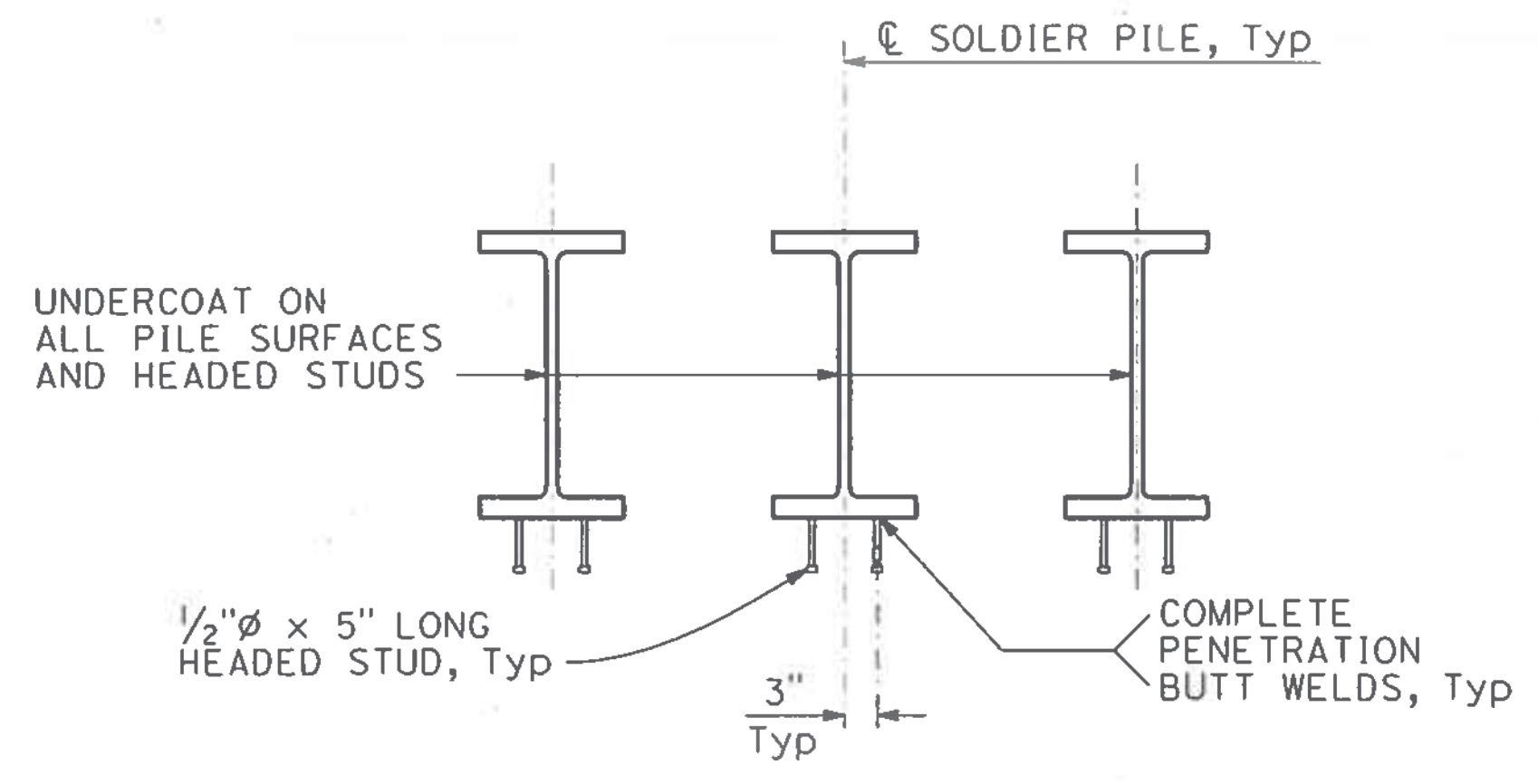
REVISION DATES	SHEET	OF
10-22-19 11-12-19 2-21-19 7-28-19	18	40

USERNAME => IKUKANEG DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:25

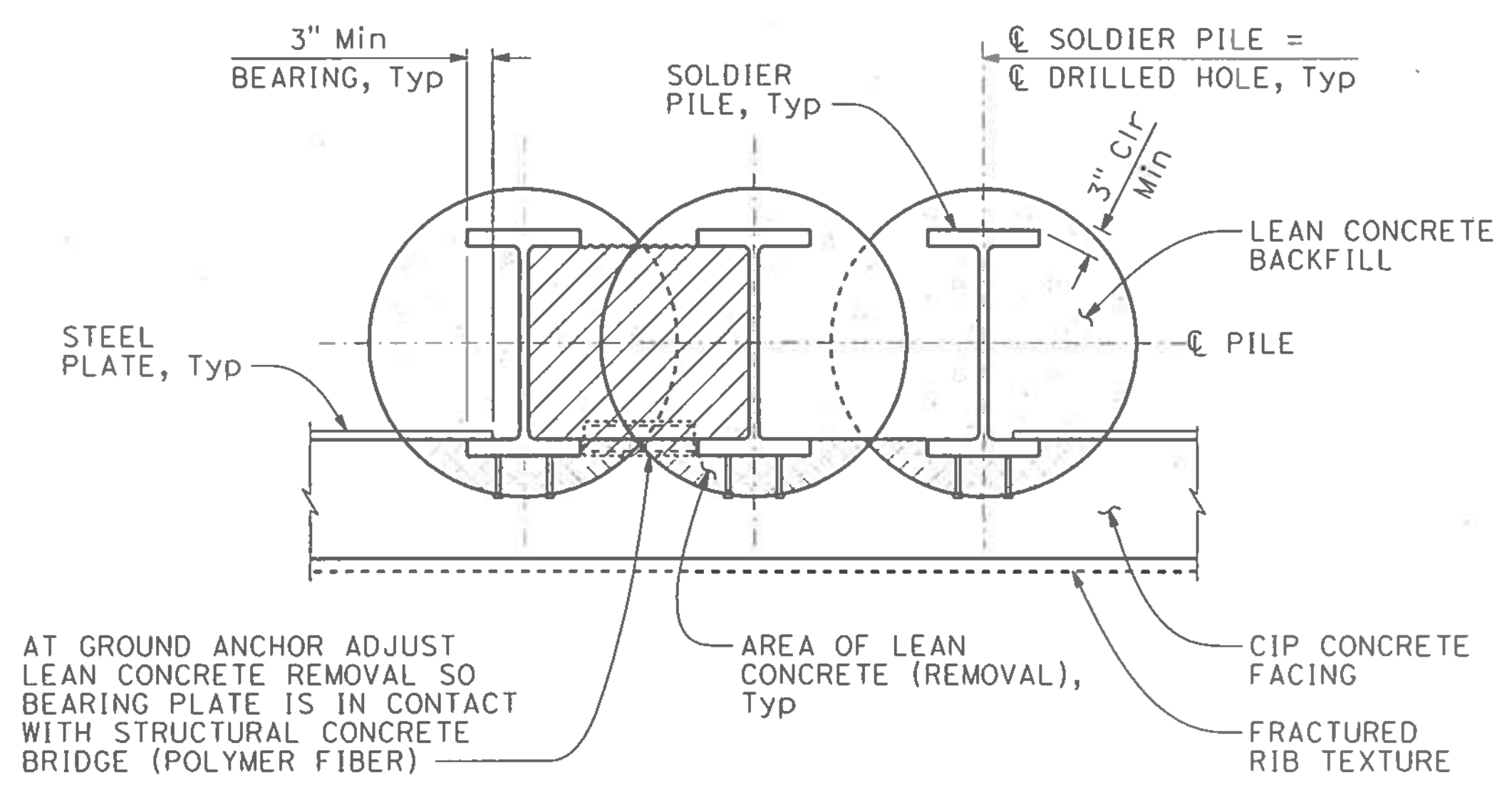
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	228	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



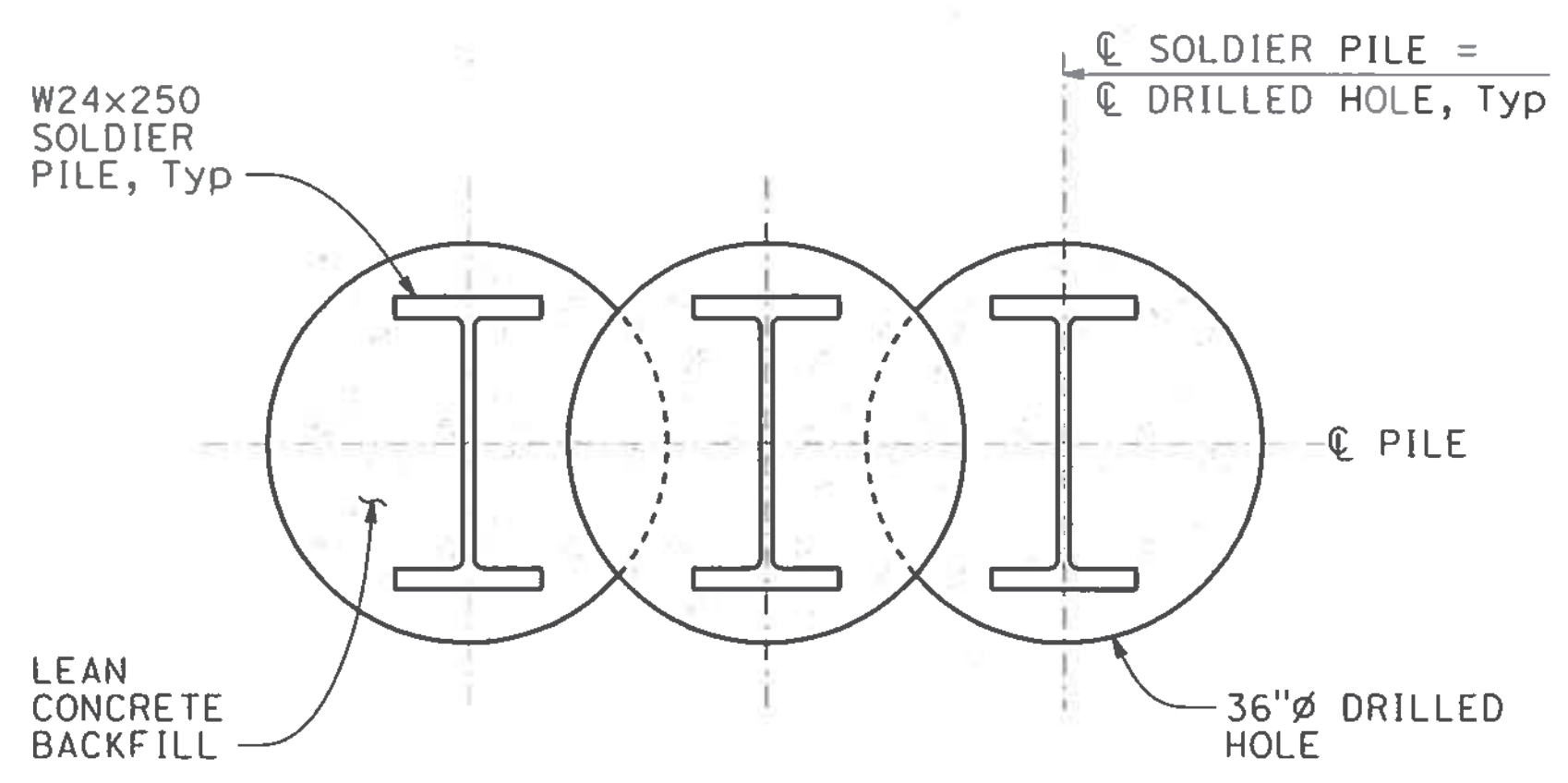
SECTION F-F
3/4" = 1'-0"



HEADED STUD DETAIL
NO SCALE



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



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

NOTE:
1. For Notes, see "SOUTHGATE RW 1 DETAILS No. 3" sheet.

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

DESIGN OVERSIGHT
SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.
34-01915
POST MILES
7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 1 DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-23-19	19	40

FILE => 34-01915-g-rw1dt03.dgn

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	7.8/8.0	229	436

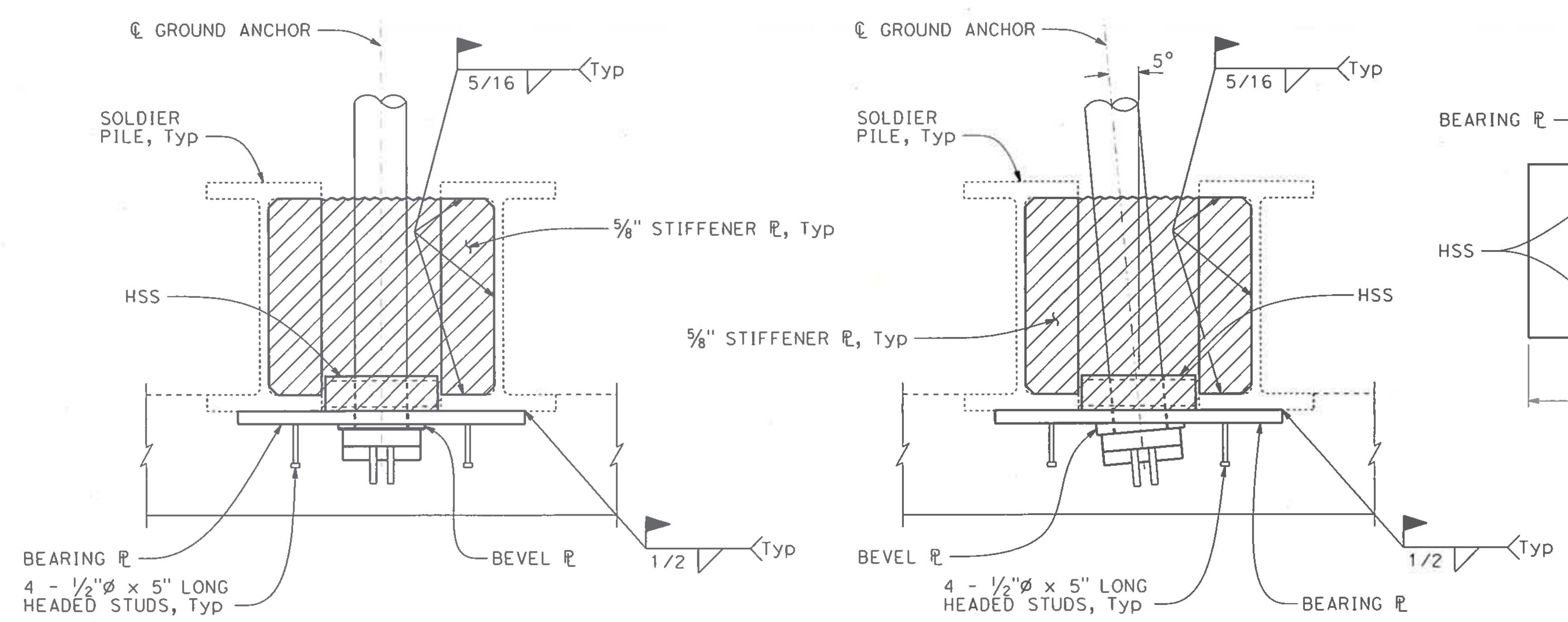
REGISTERED CIVIL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

7-25-19
 DATE
 PLANS APPROVAL DATE

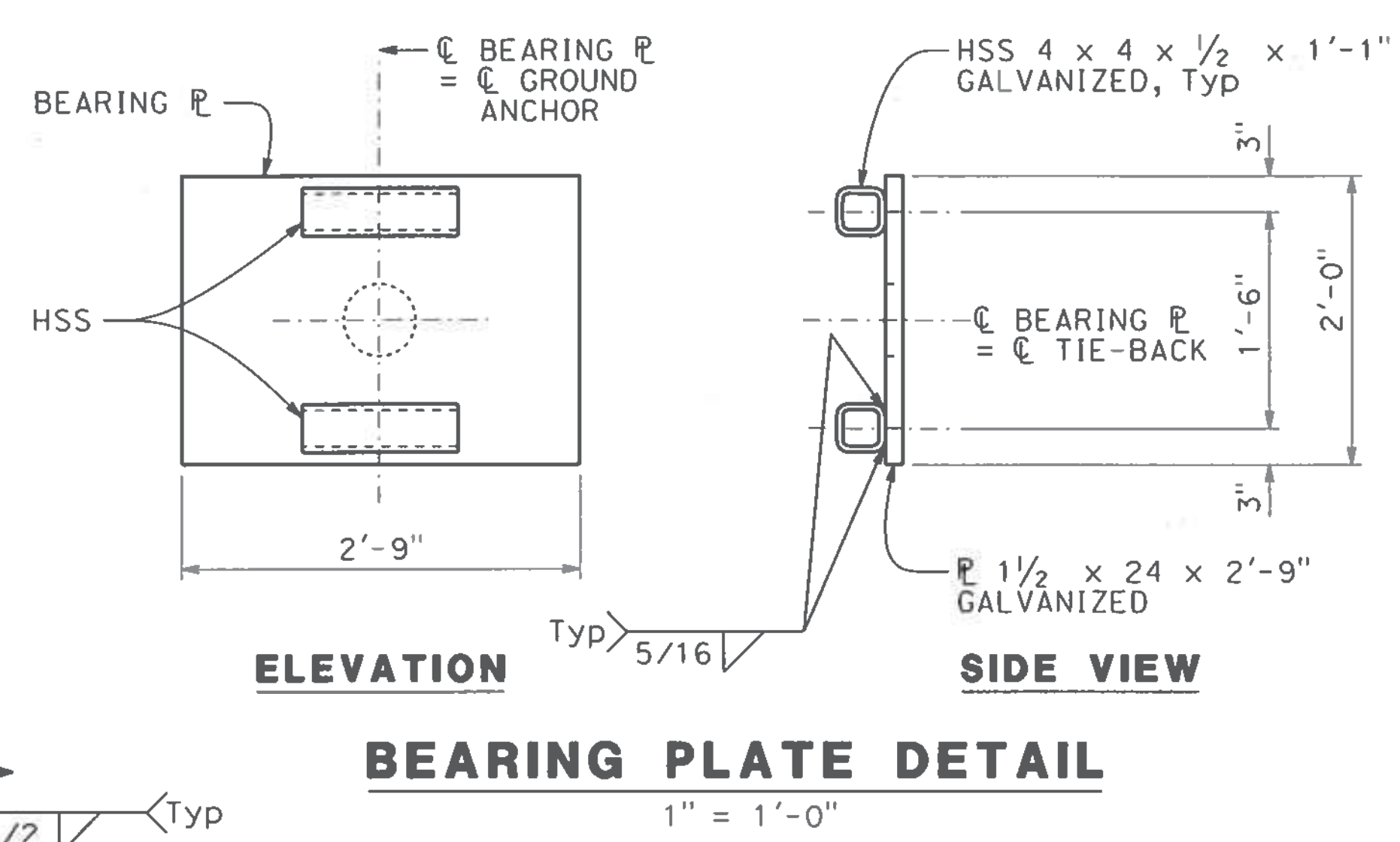
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 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



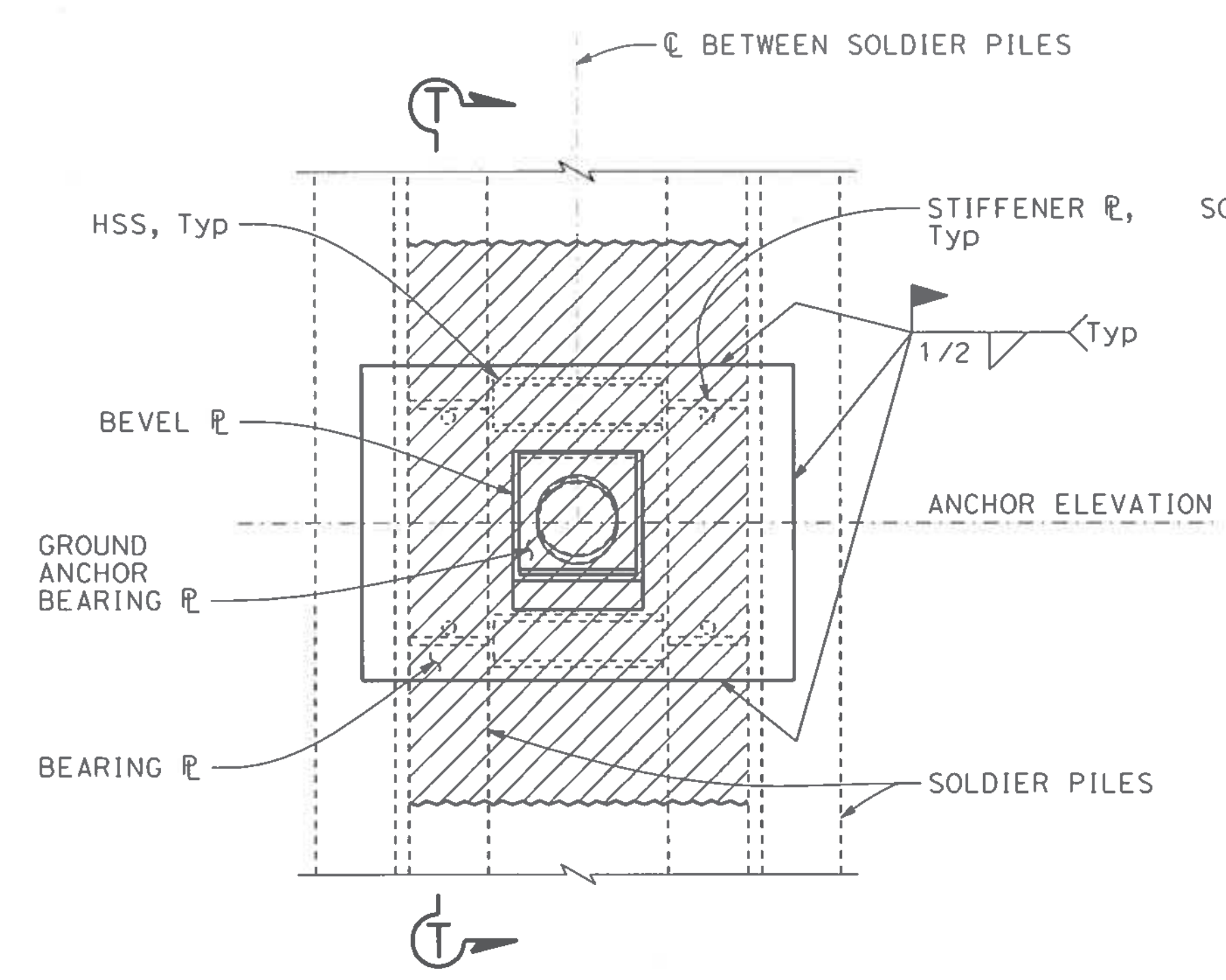
GROUND ANCHORS Nos. 1 THRU 7, 9 AND 11 **GROUND ANCHORS Nos. 8 AND 10**
 (GROUND ANCHOR No. 8 SHOWN. GROUND ANCHOR No. 10 SIMILAR)



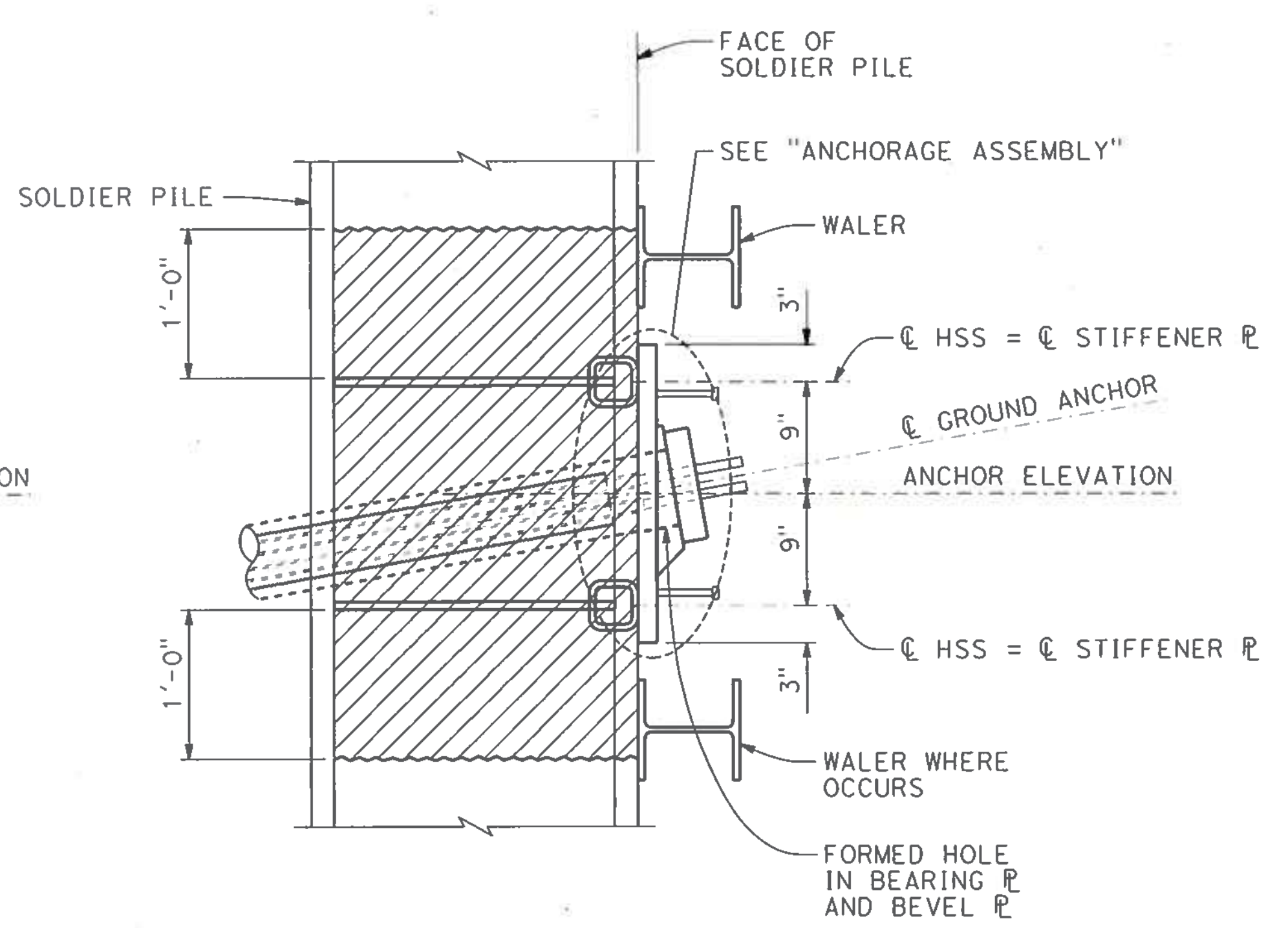
BEARING PLATE DETAIL
 1" = 1'-0"

- NOTES:**
- HSS, Stiffener Plates and Bevel Plates to receive same undercoat.
 - For ground anchors locations, see "SOUTHGATE RW1 LAYOUT" sheet.
 - Contractor shall Design and submit Shop Drawings for Bevel Plate size and thickness for Engineer's review and approval.

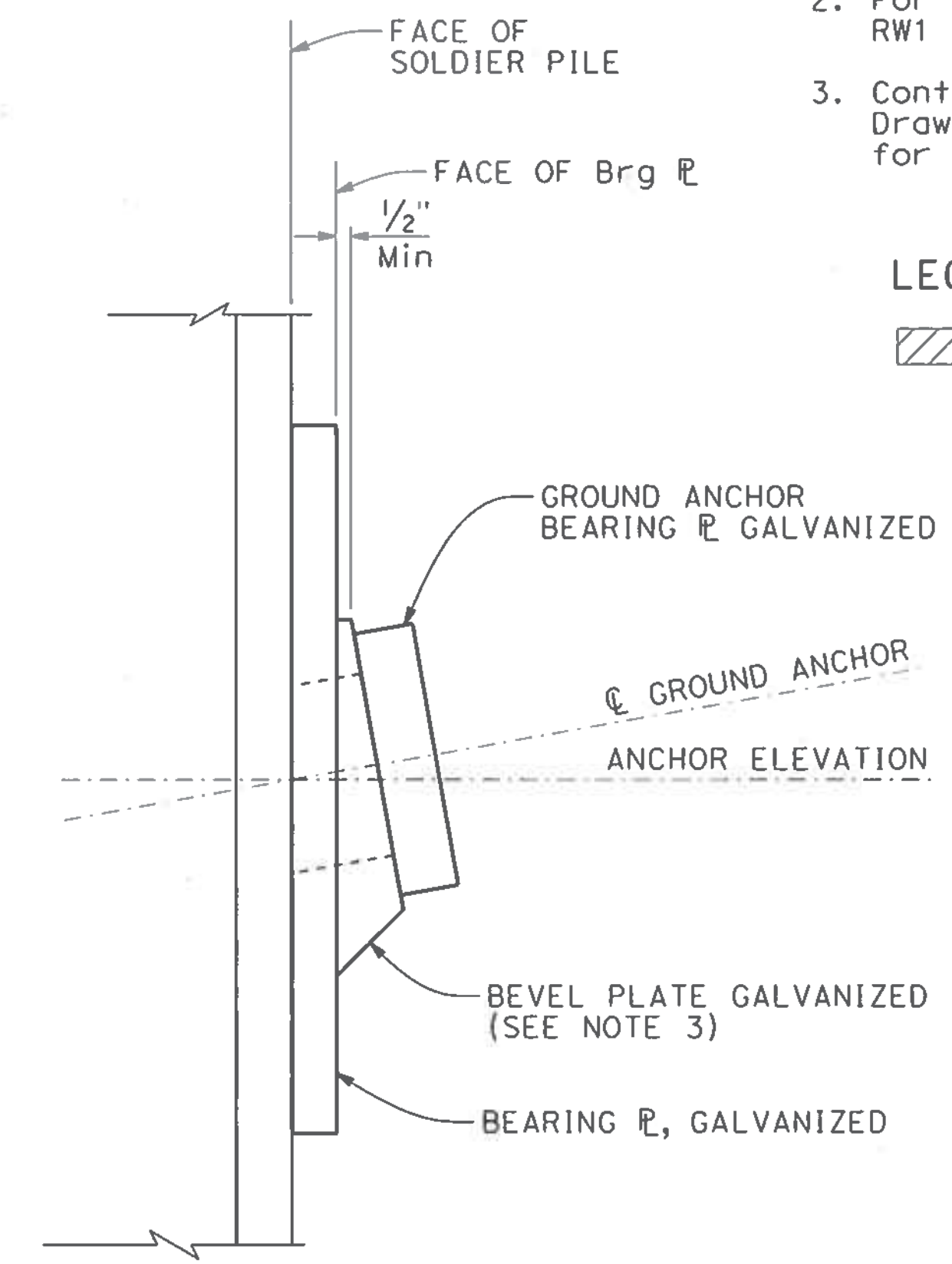
GROUND ANCHOR TYPICAL PART PLAN
 NO SCALE



GROUND ANCHOR TYPICAL PART ELEVATION
 NO SCALE



SECTION T-T
 NO SCALE



ANCHORAGE ASSEMBLY
 NO SCALE

LEGEND:
 Structural Concrete, Bridge (Polymer Fiber) (f'c = 4,000 psi @ 28 days)

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

DESIGN OVERSIGHT
 SIGN OFF DATE
 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 1 DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

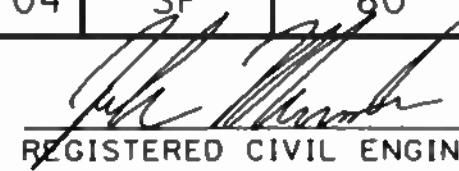
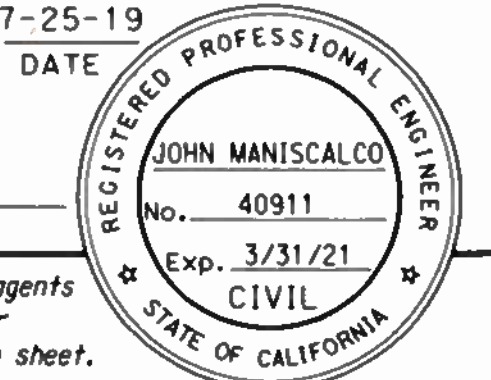
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

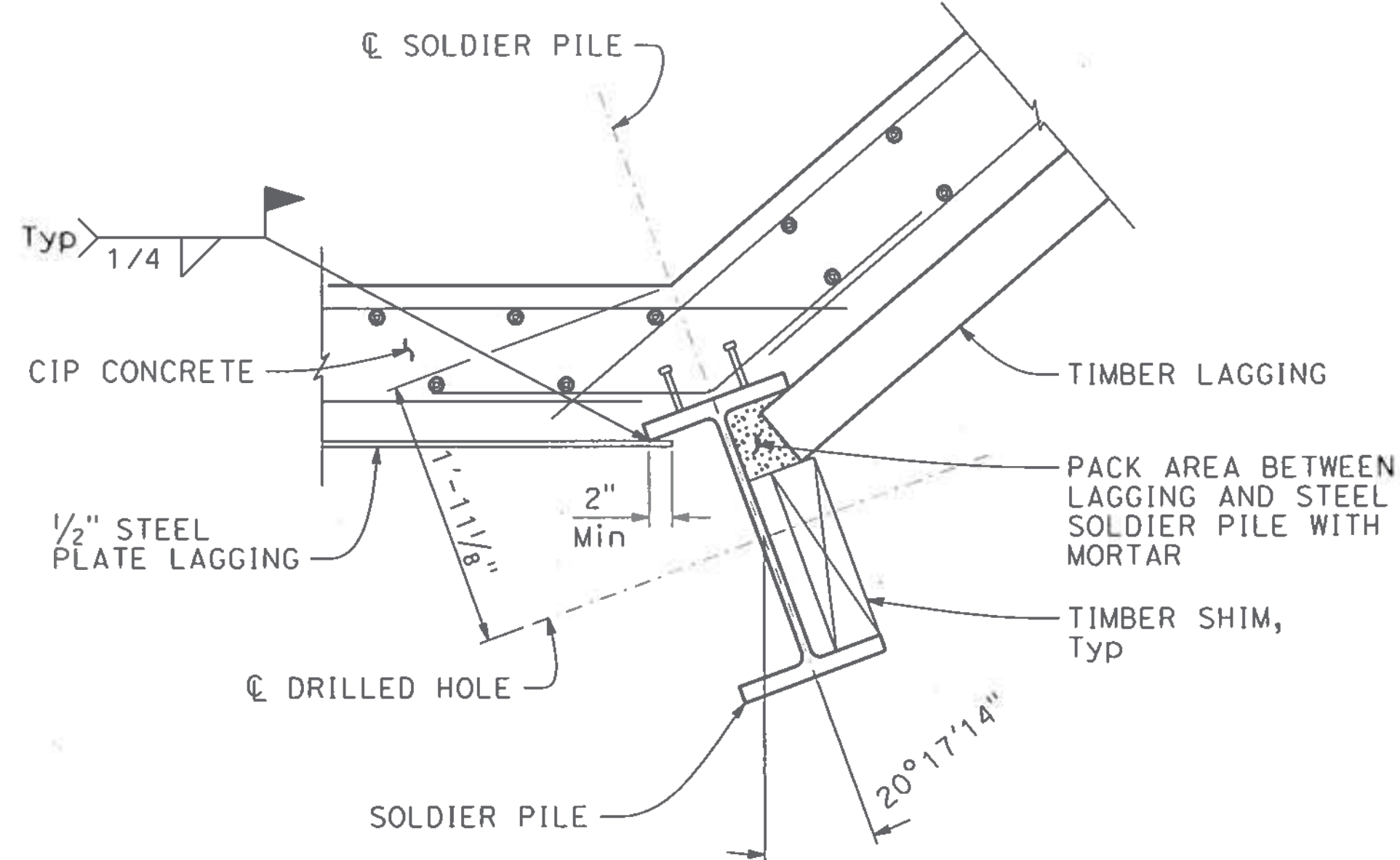
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

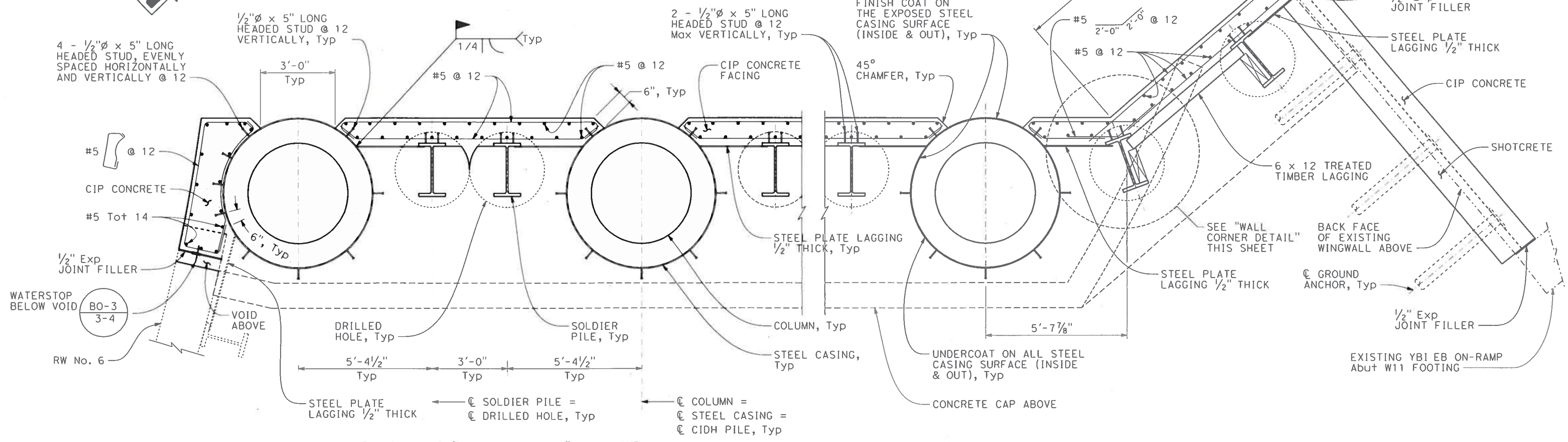
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10-22-19 11-12-19 2-22-19 7-28-19	20	40

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	230	436
 REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



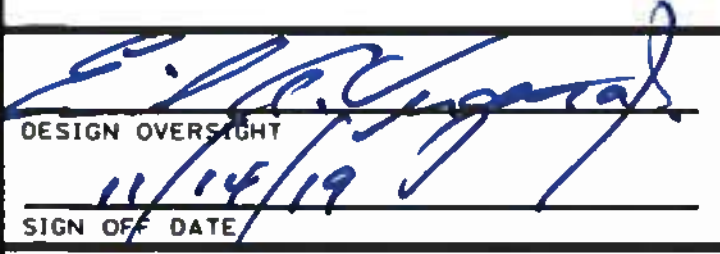
WALL CORNER DETAIL
1" = 1'-0"



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

NOTE: For Column Reinforcement, see "COLUMN AND CIDH PILE DETAILS" sheet.

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

 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY A. MALLA	CHECKED J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34-01915	SOUTHGATE ROAD UC SOUTHGATE RW 2 DETAILS No. 1	
	DETAILS	BY J. GREEN	CHECKED A. MALLA		PROJECT ENGINEER	POST MILES		7.9
	QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI		UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531		CONTRACT NO.: 04-3A6414
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3		FILE => 34-01915-g-rw2df01.dgn		

USERNAME => TKUKANEK DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	231	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

DESIGN DATA - SOLDIER PILE WALL

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th edition with the California Amendments.

LIVE LOAD: 240 psf equivalent to 2 feet soil weight

SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
 Unit Weight, $\gamma = 120$ pcf
 Friction Angle, $\phi = 34^\circ$
 Active Pressure Coefficient, $K_a = 0.28$
 Passive Pressure Coefficient, $K_p = 7.2$
 Seismic Coefficient, $K_h = 0.33$

CONCRETE: $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

STEEL SOLDIER PILES: ASTM A992 ($f_y = 50,000$ psi, $f_u = 65,000$ psi)

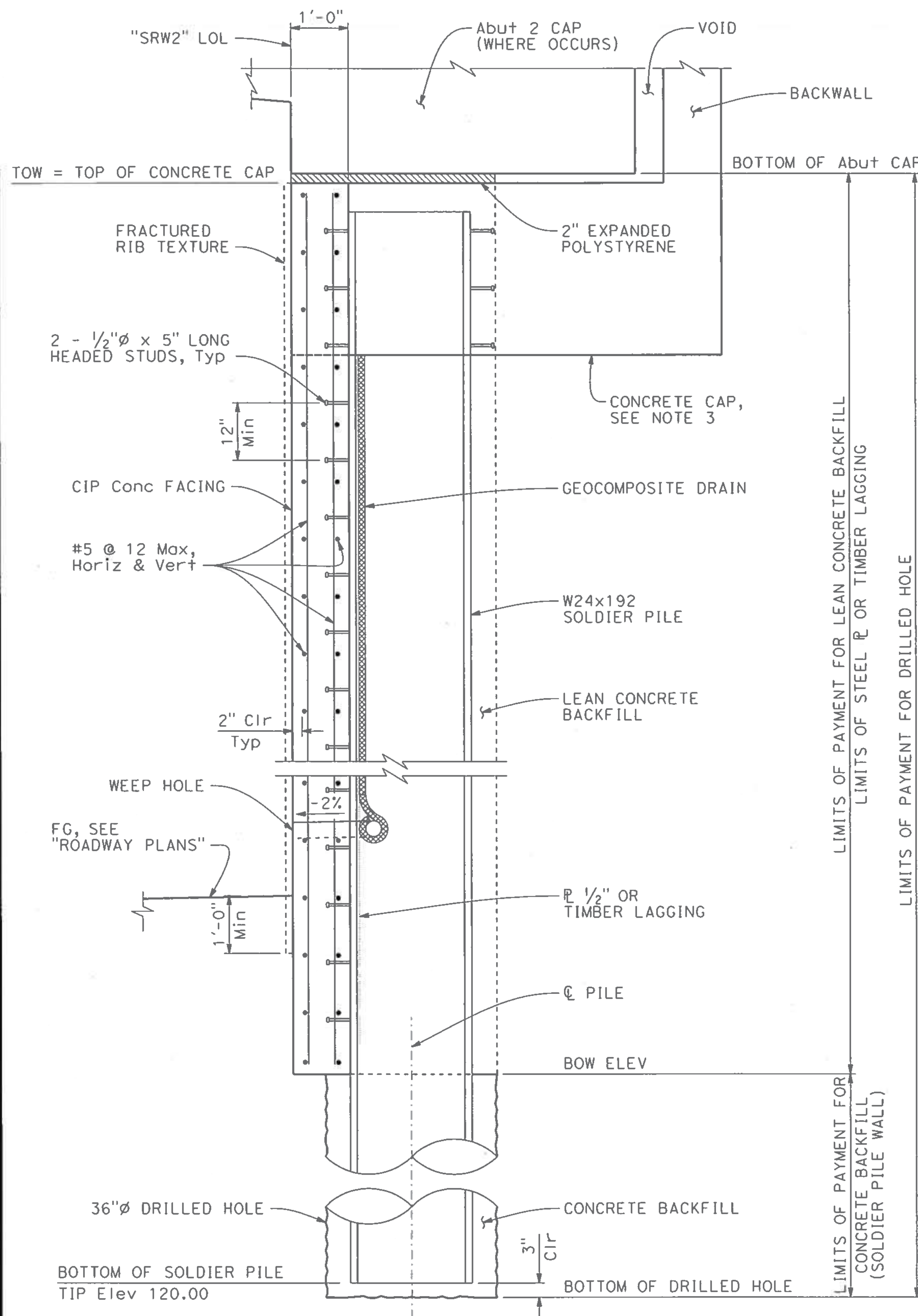
STRUCTURAL TIMBER: Treated Douglas Fir, Grade No 1 and better Timber to be full sawn

STEEL PLATES: ASTM A709 GRADE 50

WELDED STUD ASTM A29 Type B

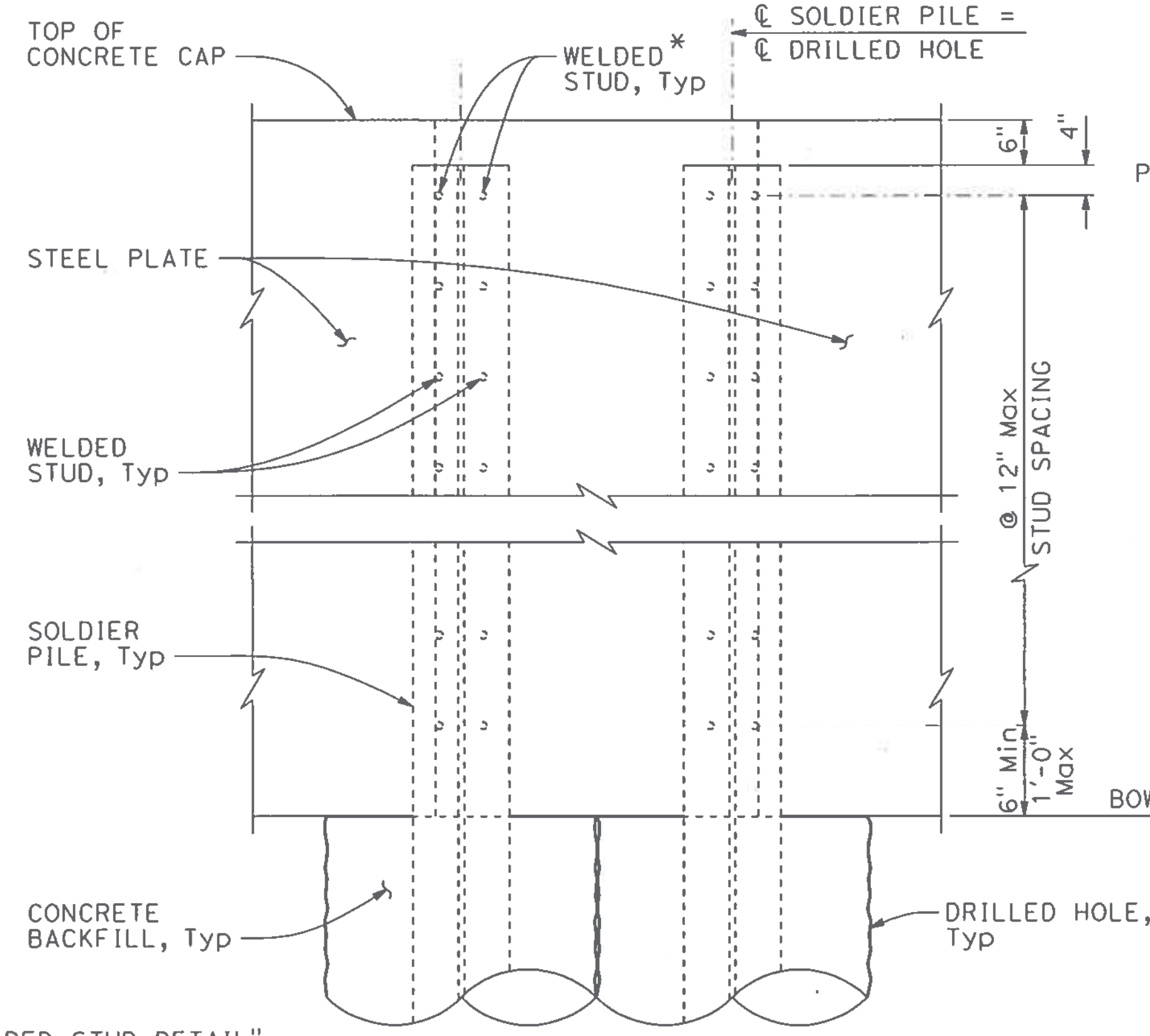
NOTES:

- For timber lagging and welded stud details, see "SOUTHGATE RW2 DETAILS No. 3" sheet.
- For drainage details, see "MISCELLANEOUS DETAILS No. 3" sheet.
- For concrete cap details, see "SOUTHGATE RW2 CONCRETE CAP DETAILS No. 1 THROUGH No. 3 SHEETS."
- For Fractured Rib Texture, see "MISCELLANEOUS DETAILS No. 3" sheet.



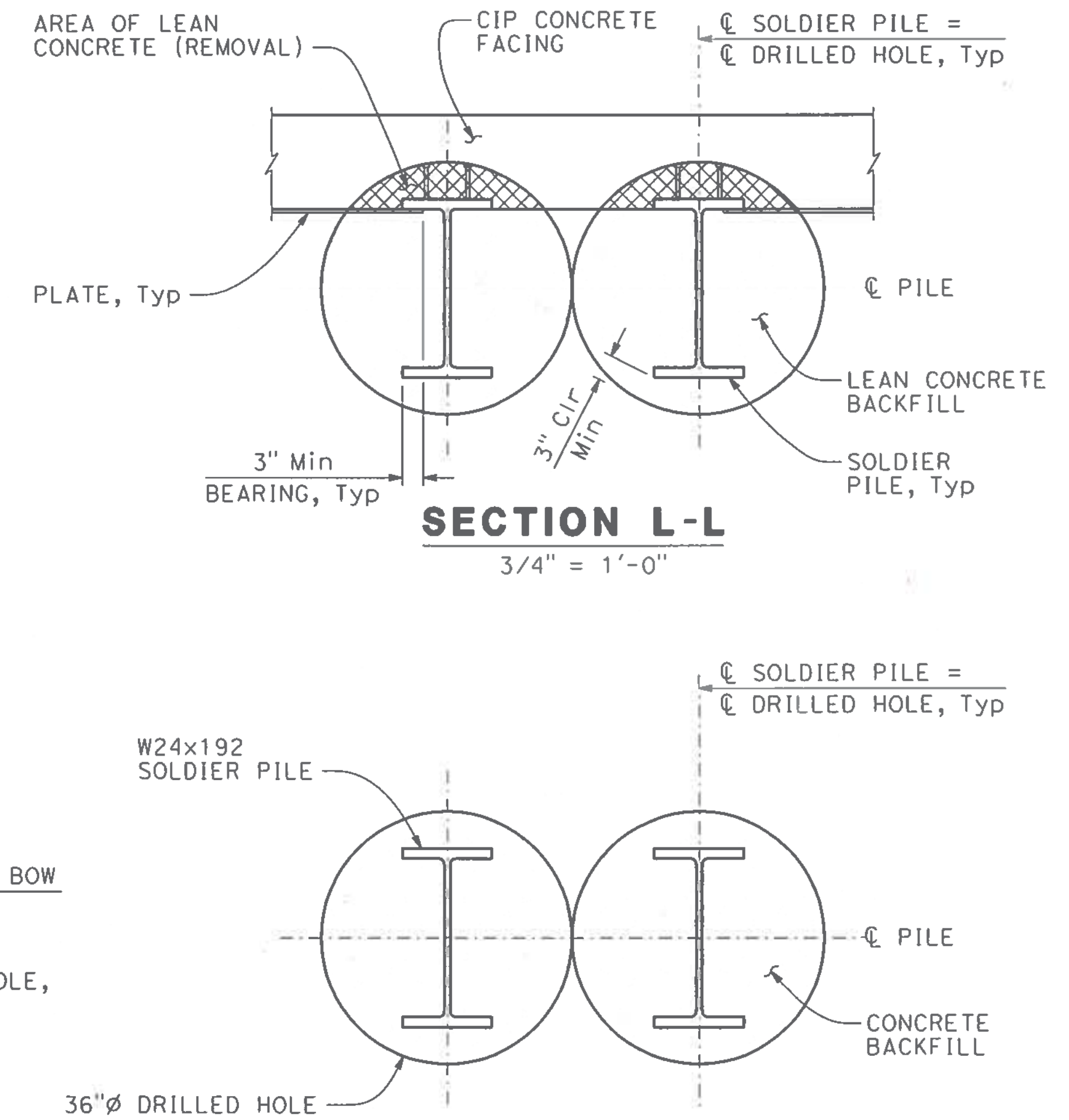
SECTION K-K
3/4" = 1'-0"

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



PARTIAL ELEVATION
3/4" = 1'-0"

* SEE "HEADED STUD DETAIL" ON "SOUTHGATE RW 2 DETAILS No. 3" SHEET FOR MORE INFORMATION.



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

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

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 2 DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)


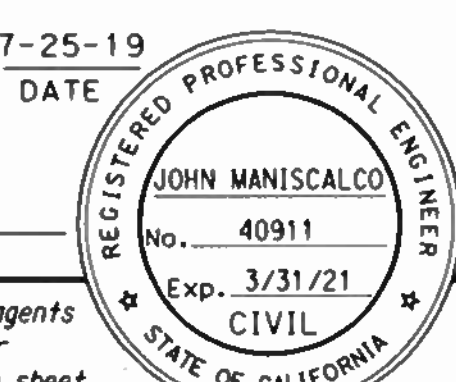
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

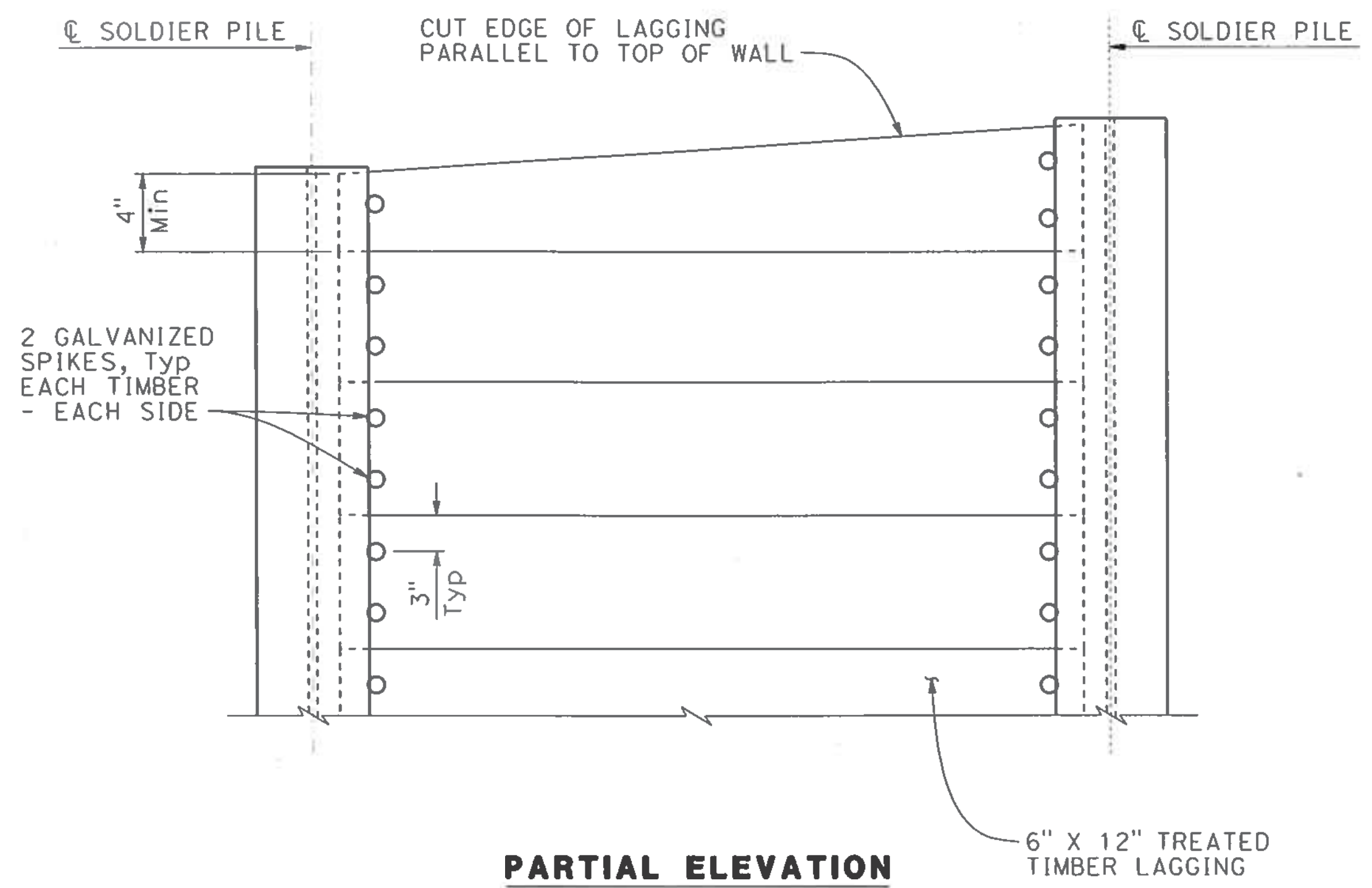
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A614

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-12-19 1-24-19	22	40

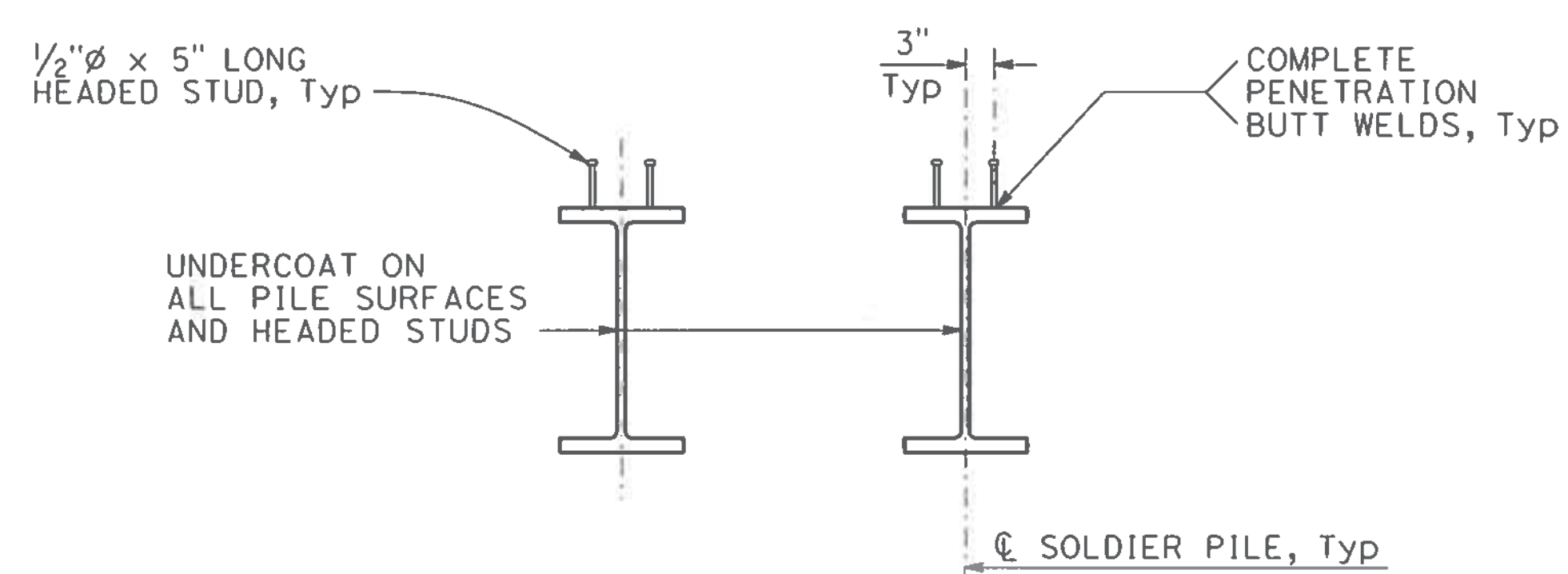
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USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:27

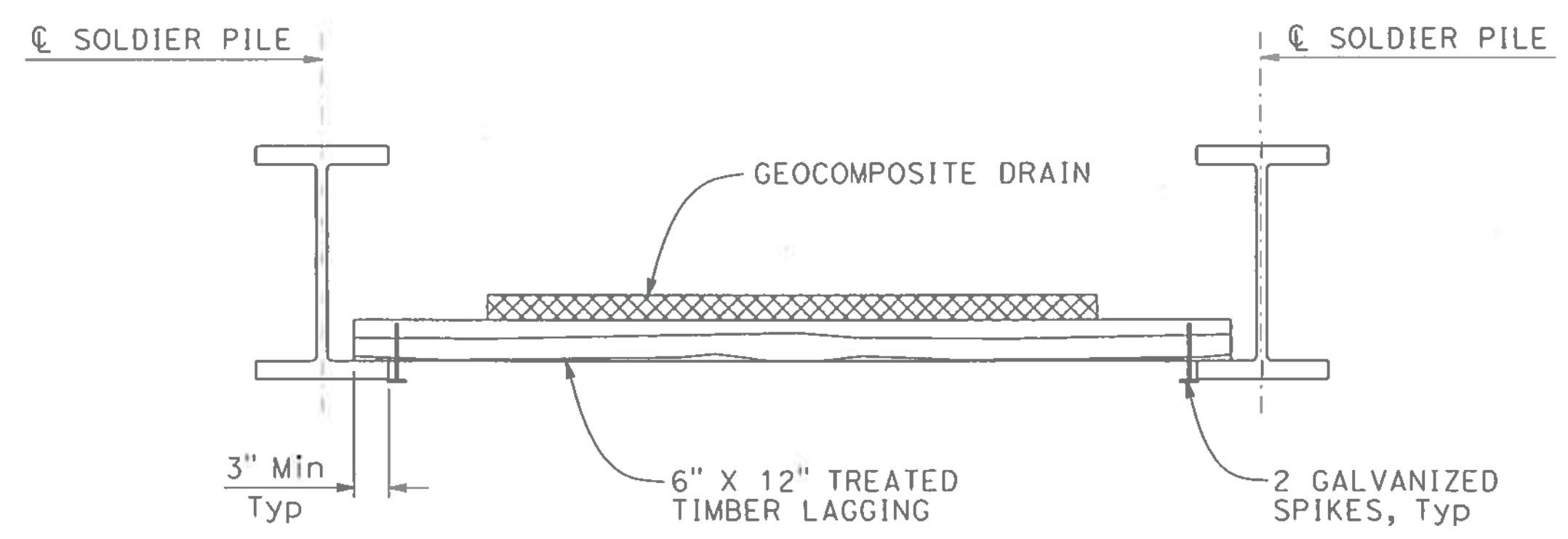
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	232	436
 REGISTERED CIVIL ENGINEER			7-25-19 DATE		
PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PARTIAL ELEVATION



HEADED STUD DETAIL
NO SCALE




PARTIAL PLAN
LAGGING DETAIL
NO SCALE

NOTES:

1. No clipping of timber lagging corners allowed.
2. Use 40d galvanized wire spikes for 6" x 12" lagging.
3. Spikes, screws and nails shall not be bent.
4. Timber lagging to be treated on all sides.
5. All timber lagging to be placed with full bearing against soldier pile flanges.

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


 DESIGN OVERSIGHT
 11/14/19
 SIGN OFF DATE

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 2 DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-27-19 1-28-19	23	40

FILE => 34-0191S-g-rw2df03.dgn

USERNAME => IKUKANEG DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 12:40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	233	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

GROUND ANCHOR DESIGN TABLE

FACTORED DESIGN LOAD FDL (kips)	FACTORED TEST LOAD FTL (kips)	LOCK-OFF LOAD LL (kips)	UNBONDED LENGTH (ft)
38	38	26	15

DESIGN DATA - GROUND ANCHOR WALL

LOAD AND RESISTANCE FACTOR DESIGN:
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION WITH CALIFORNIA AMENDMENTS.
 MEMO TO DESIGNERS 5-12, EARTH RETAINING SYSTEMS USING GROUND ANCHORS

CAST-IN-PLACE CONCRETE & SHOTCRETE:
 $f'c = 4,000$ psi
 $f_y = 60,000$ psi

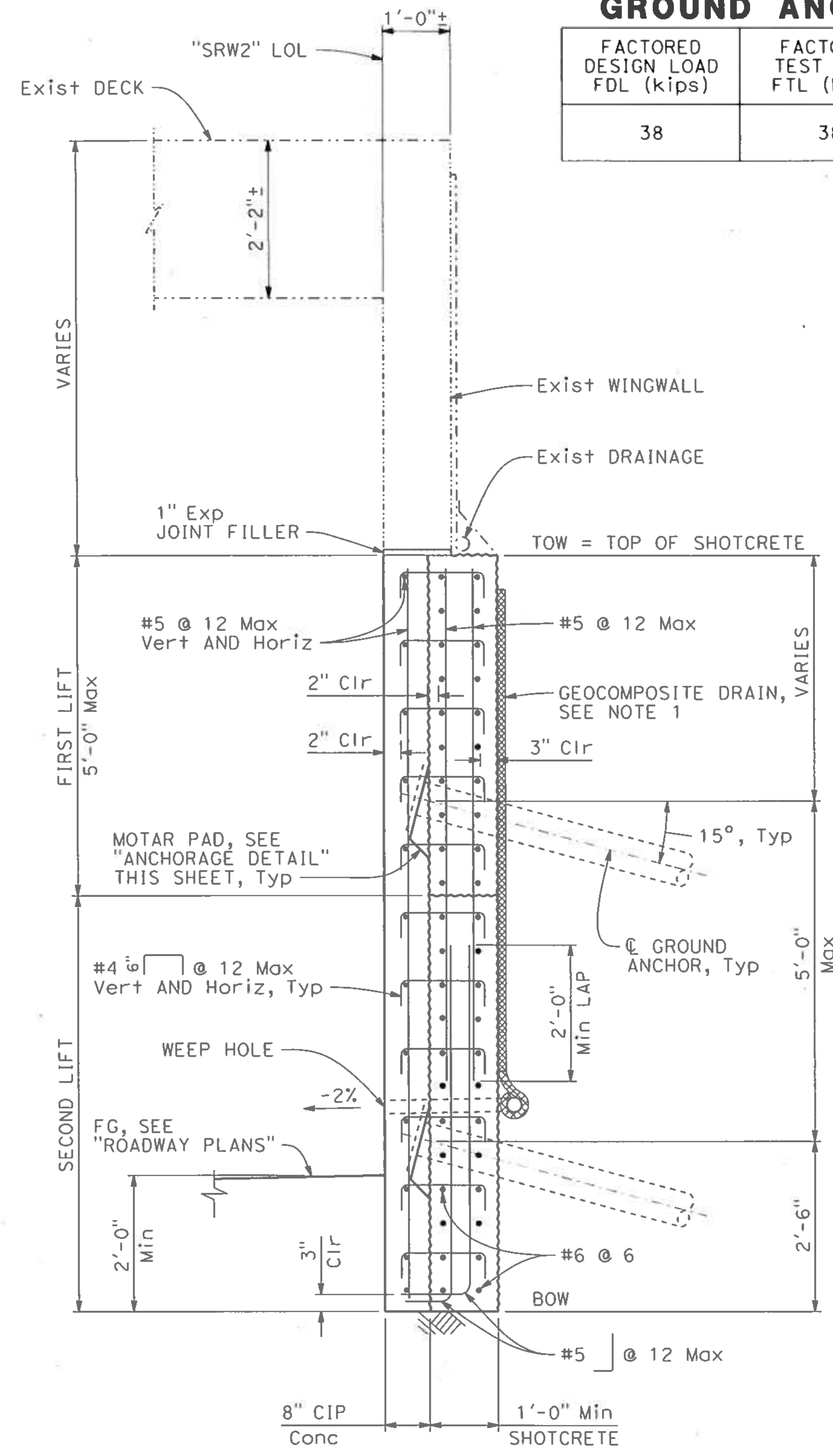
PRESTRESSING STEEL:
 SEE "SUB HORIZONTAL GROUND ANCHOR DETAILS" SHEET

STEEL PLATE:
 ASTM A709 GRADE 36

SEISMIC COEFFICIENT:
 $K_h = 0.33$

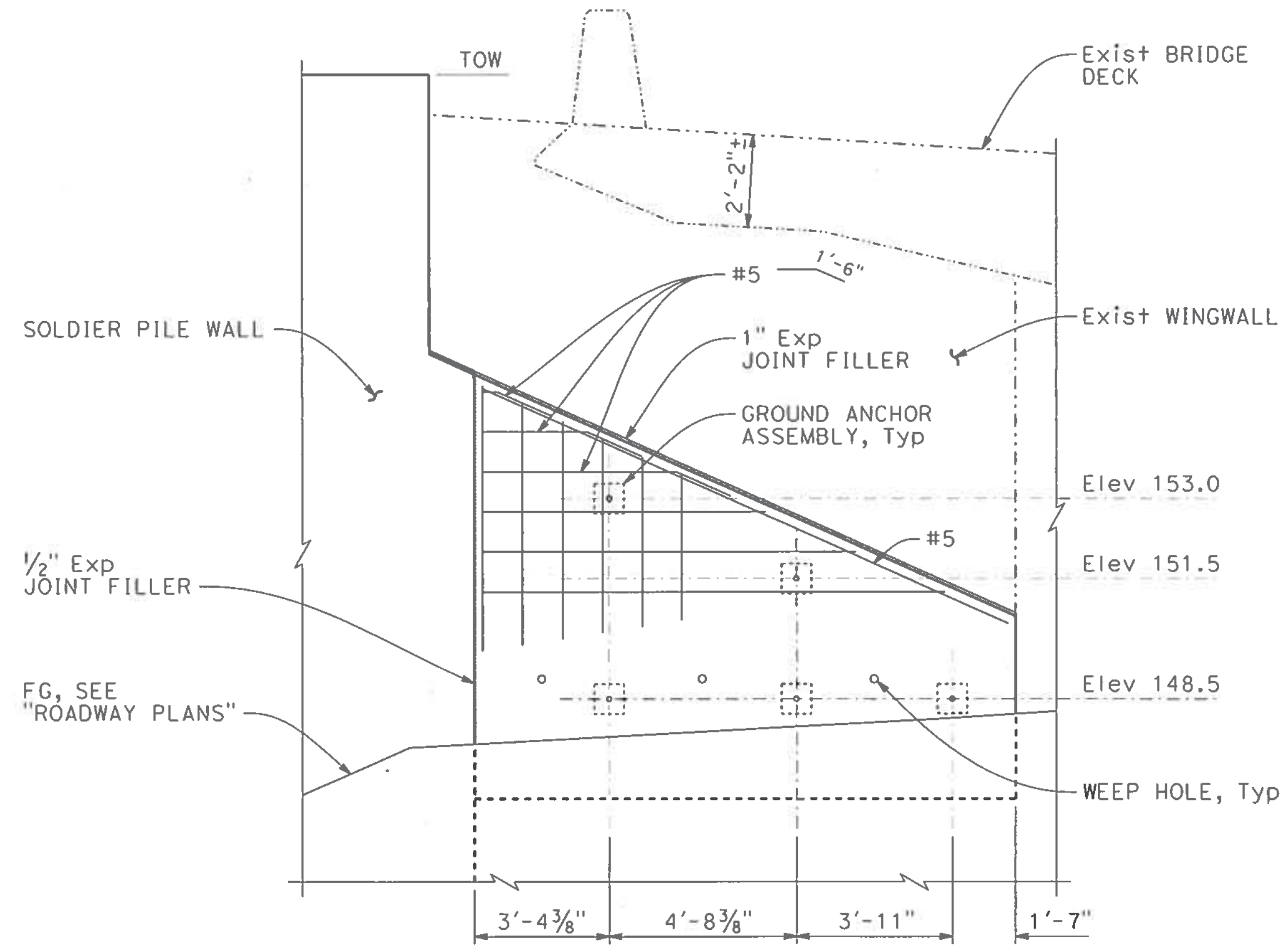
LIVE LOAD:
 240 psf EQUIVALENT TO 2 FEET OF SOIL WEIGHT

SOIL PARAMETERS:
 SOIL UNIT WEIGHT, $\delta = 120$ pcf
 INTERNAL FRICTION ANGLE OF SOIL, $\phi = 34$ DEGREES



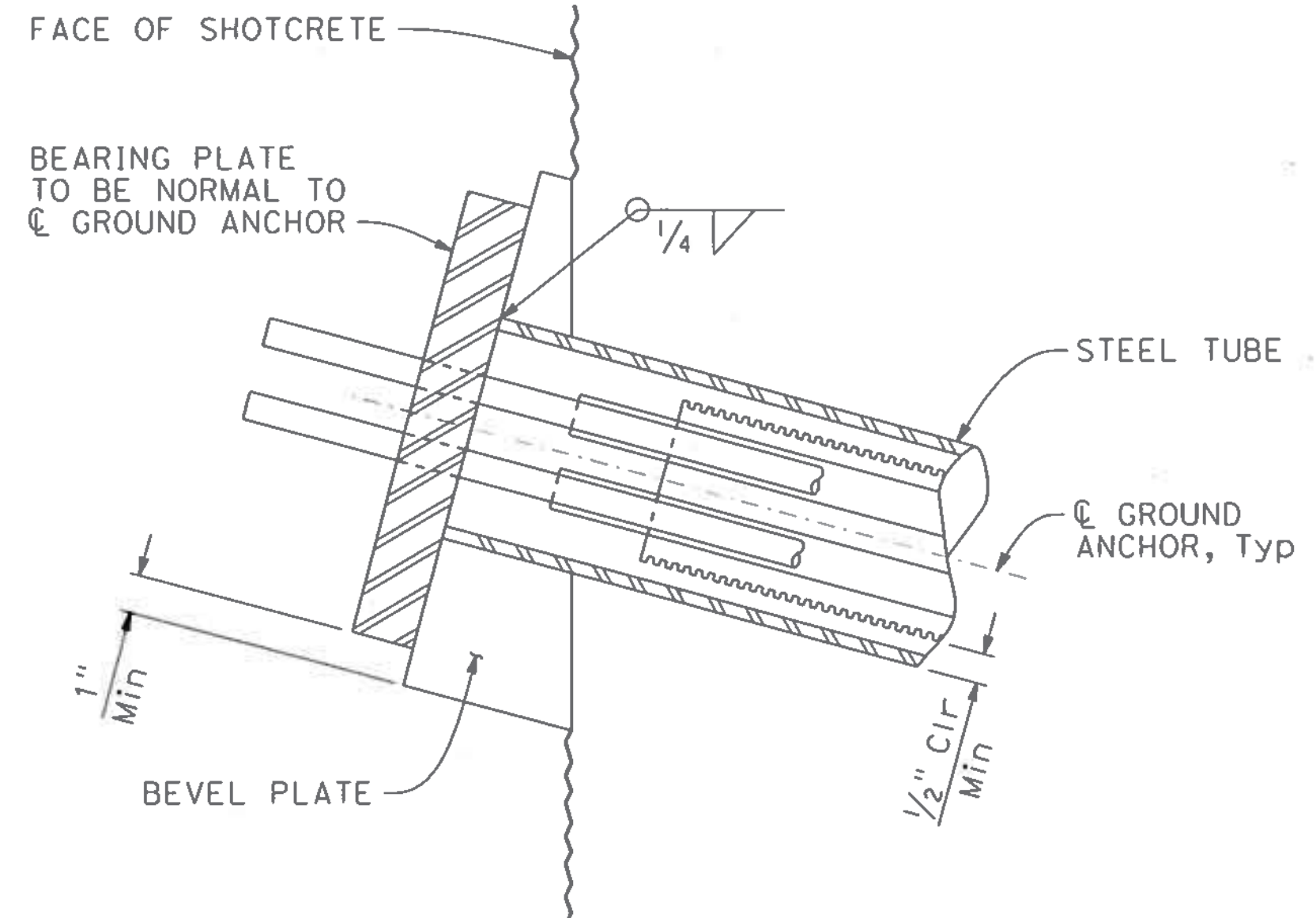
GROUND ANCHOR WALL SECTION

3/4" = 1'-0"
 "SRW2" 210+65.84 TO "SRW2" 210+79.90



DEVELOPED GROUND ANCHOR WALL ELEVATION

3/8" = 1'-0"
 (LOCATION B)



ANCHORAGE DETAIL

NO SCALE

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

DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
SOUTHGATE RW 2 DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

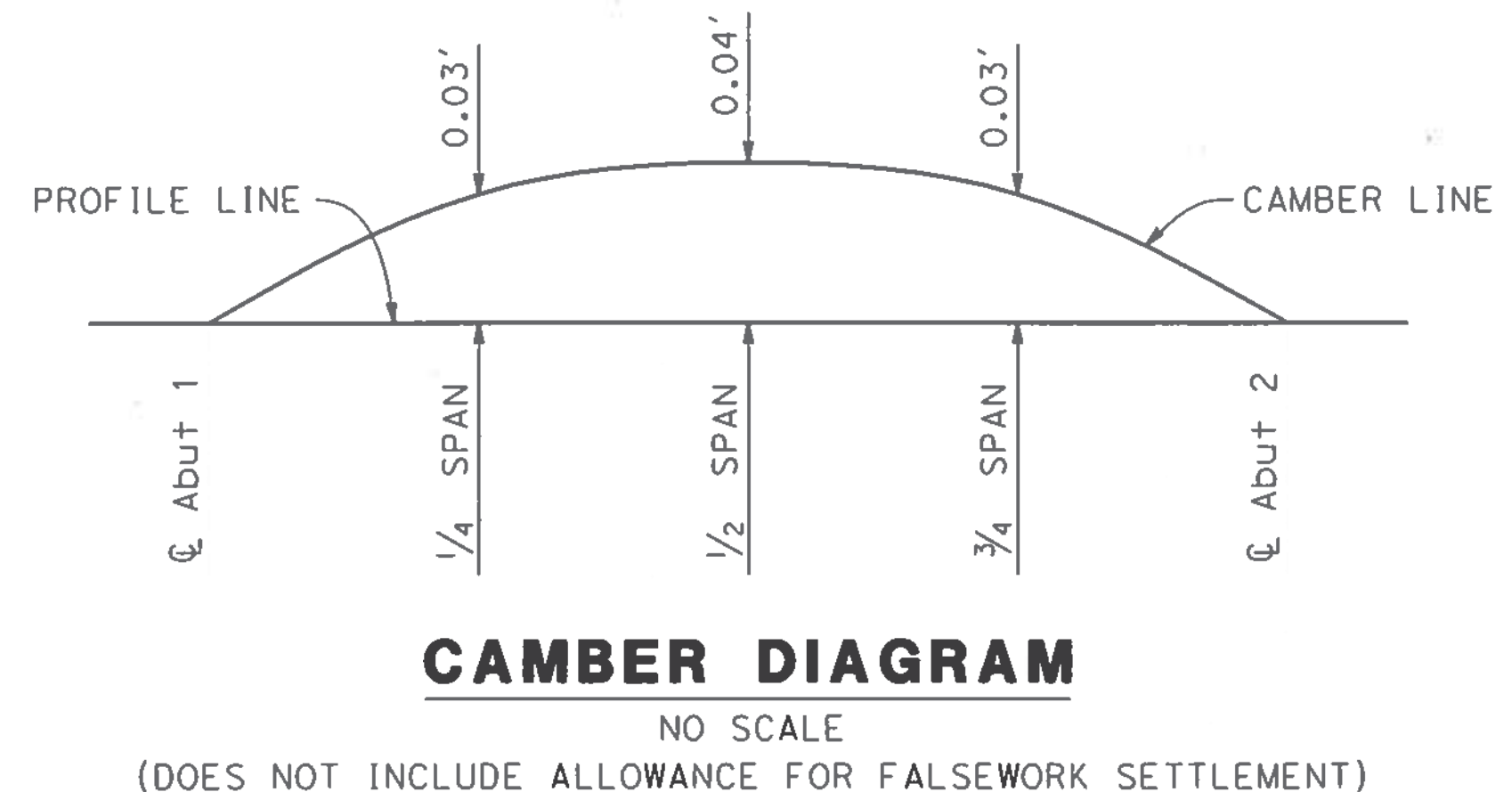
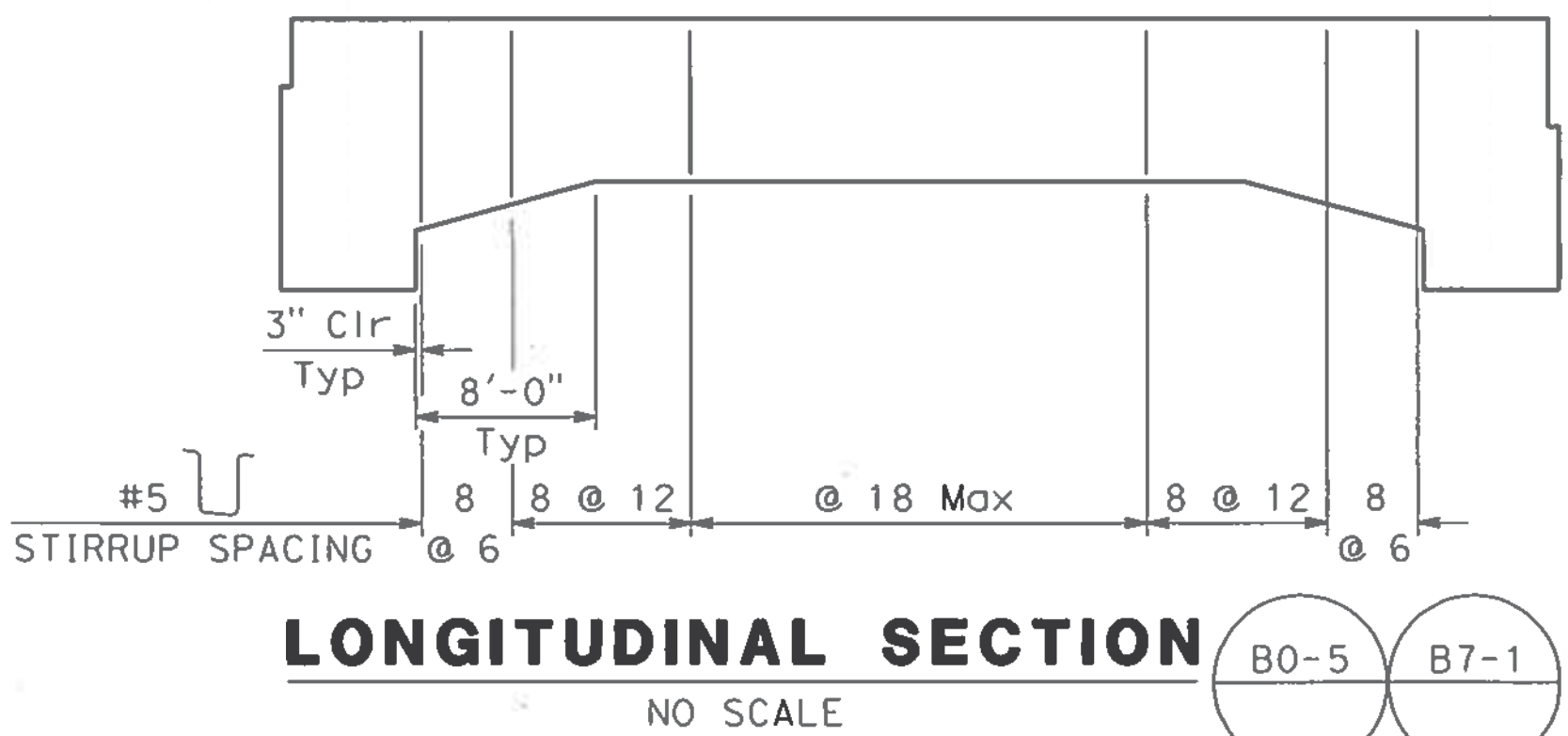
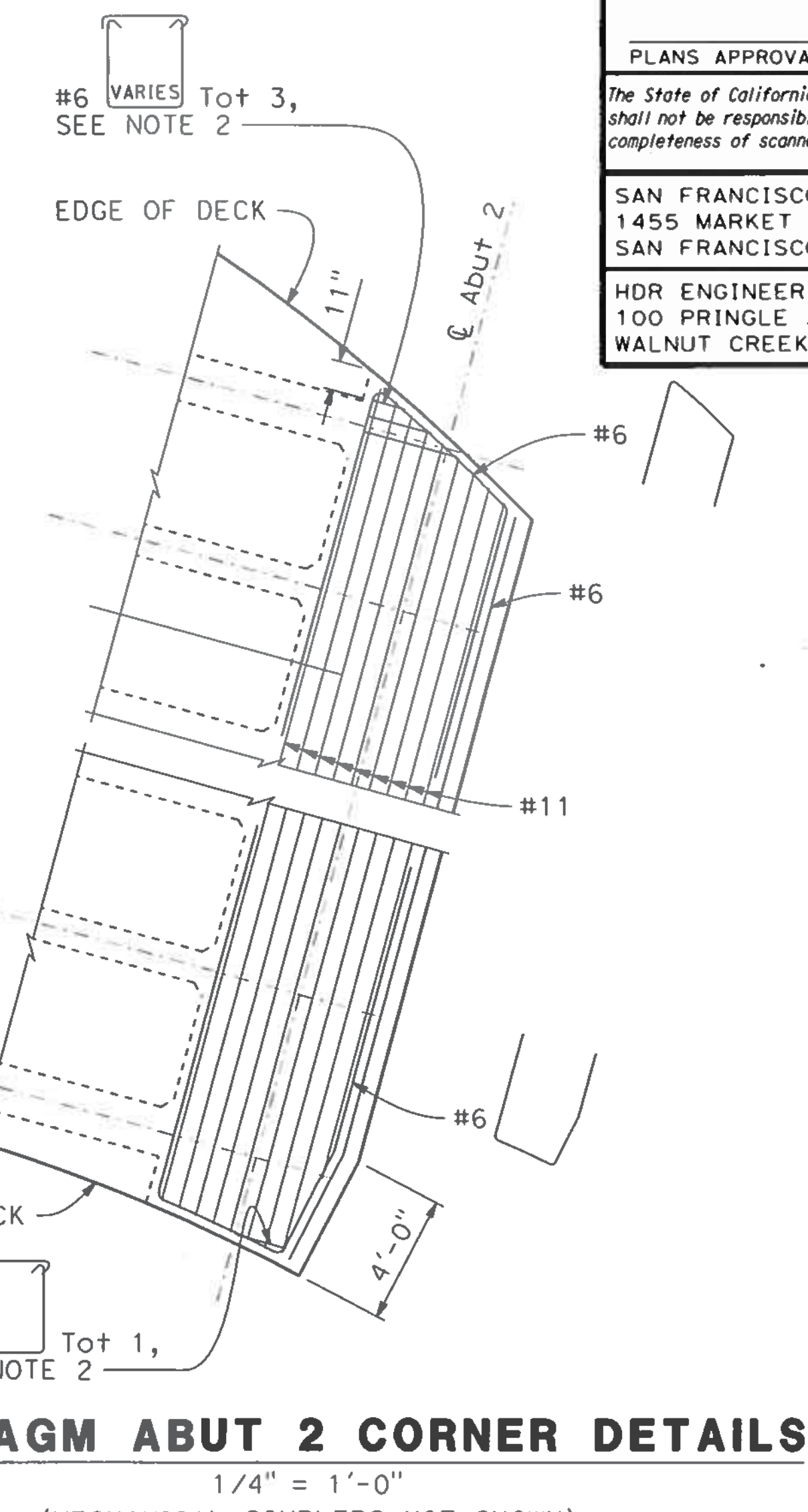
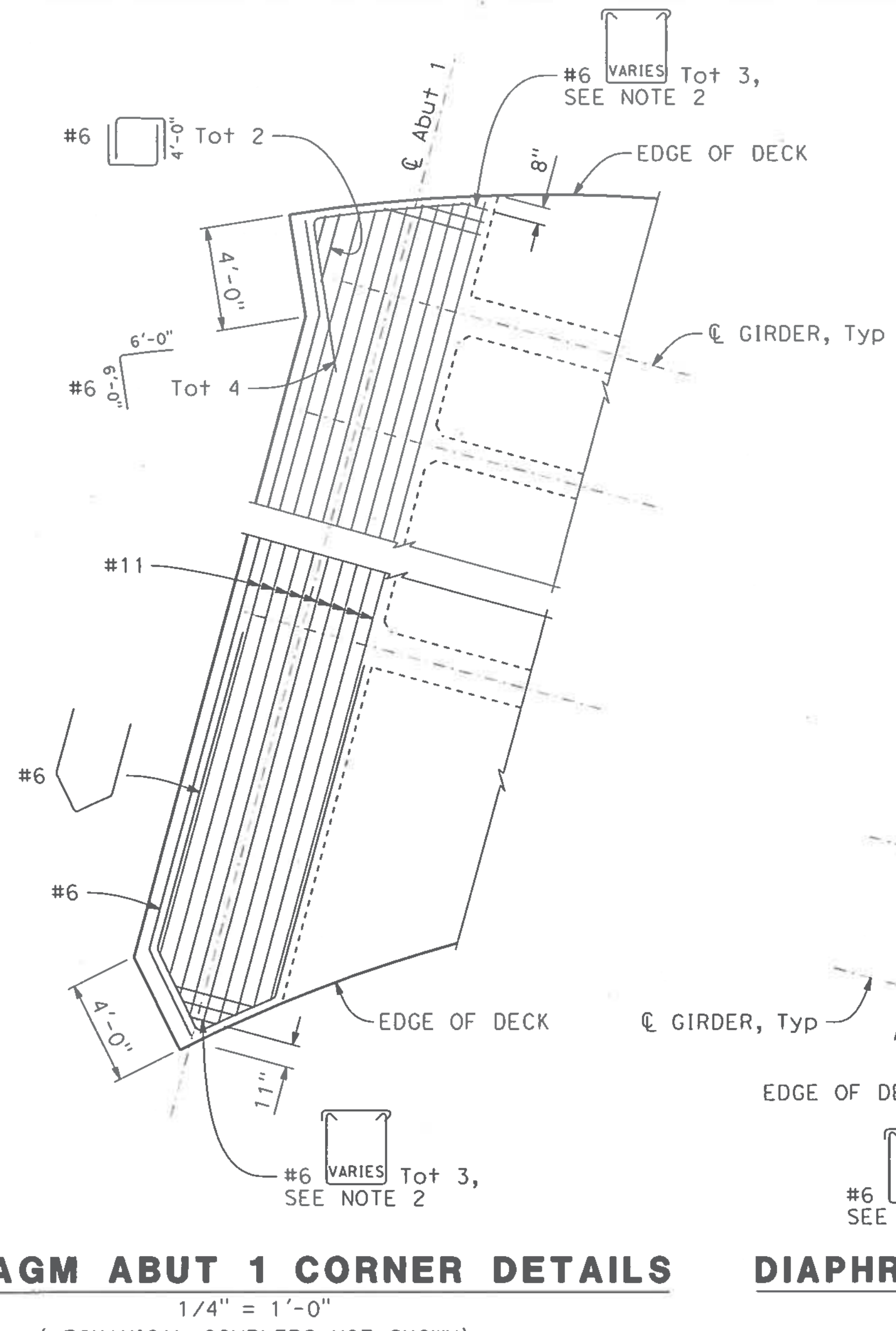
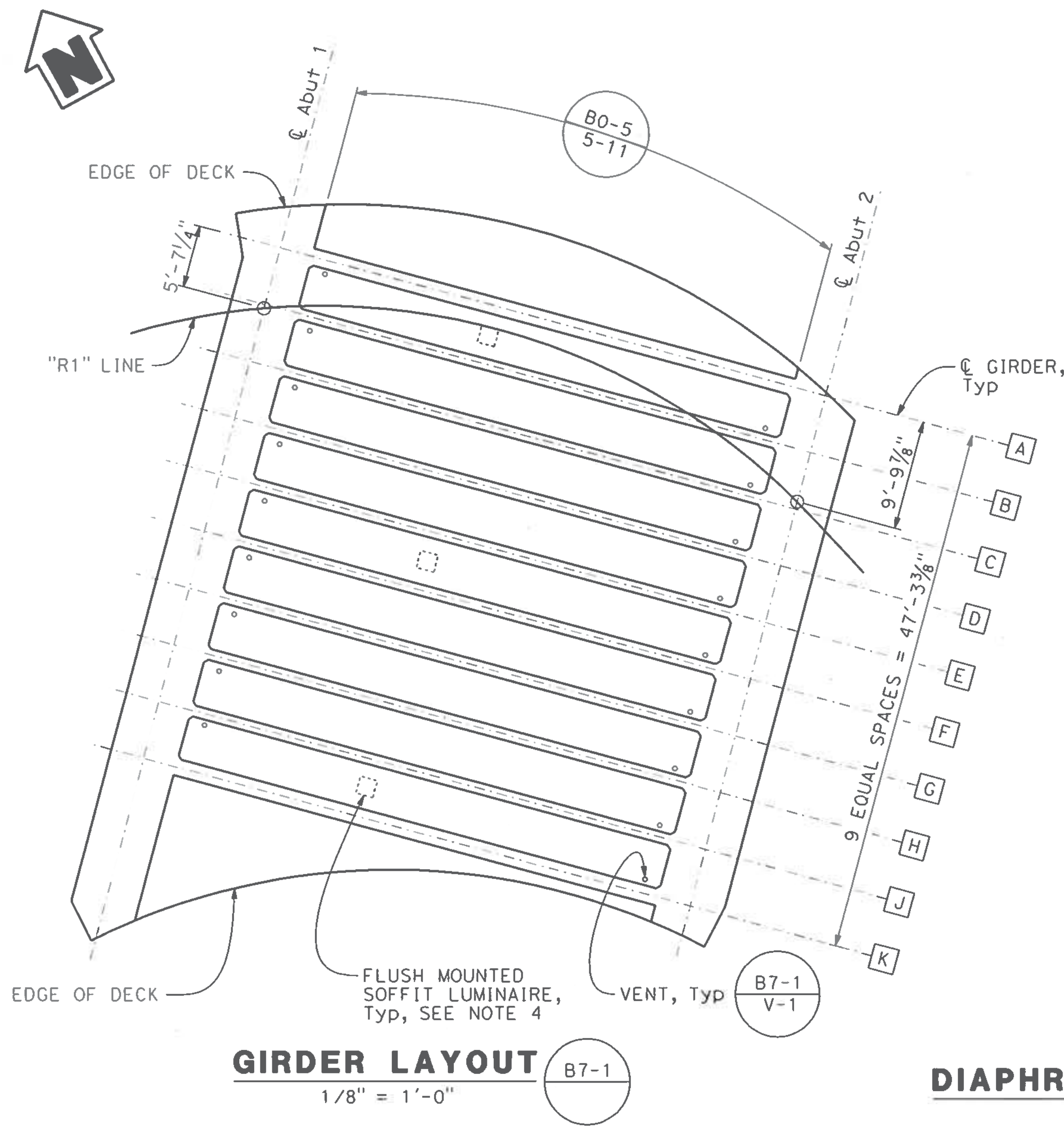
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
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FILE => 34-0191S-g-rw2df04.dgn

USERNAME => 1KUKANEK DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 12:40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	236	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE			DATE		
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



- LEGEND:**
- Indicates girder designation
 - Indicates flush soffit luminaire placed at center of bay, see "ELECTRICAL PLANS"


- NOTES:**
- Deck transverse reinforcement not shown for clarity.
 - For stirrups not shown, see "DIAPHRAGM ABUTMENT DETAILS No. 1" sheet.
 - For additional reinforcement, see "GIRDER DETAILS" sheet.
 - For Flush Mounted Luminaire details, see "MISCELLANEOUS DETAILS No. 1" sheet.

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

 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY: A. MALLA	CHECKED: J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	SOUTHGATE ROAD UC GIRDER LAYOUT	
	DETAILS	BY: J. GREEN	CHECKED: A. MALLA		PROJECT ENGINEER		
	QUANTITIES	BY: A. MALLA	CHECKED: A. CARMAZZI		POST MILES		
					7.9		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3				UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES		
					REVISION DATES: 10-22-19, 11-27-19, 1-22-19, 1-28-19		SHEET 27 OF 40

USERNAME => TKUKANEK DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 12:17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	237	436

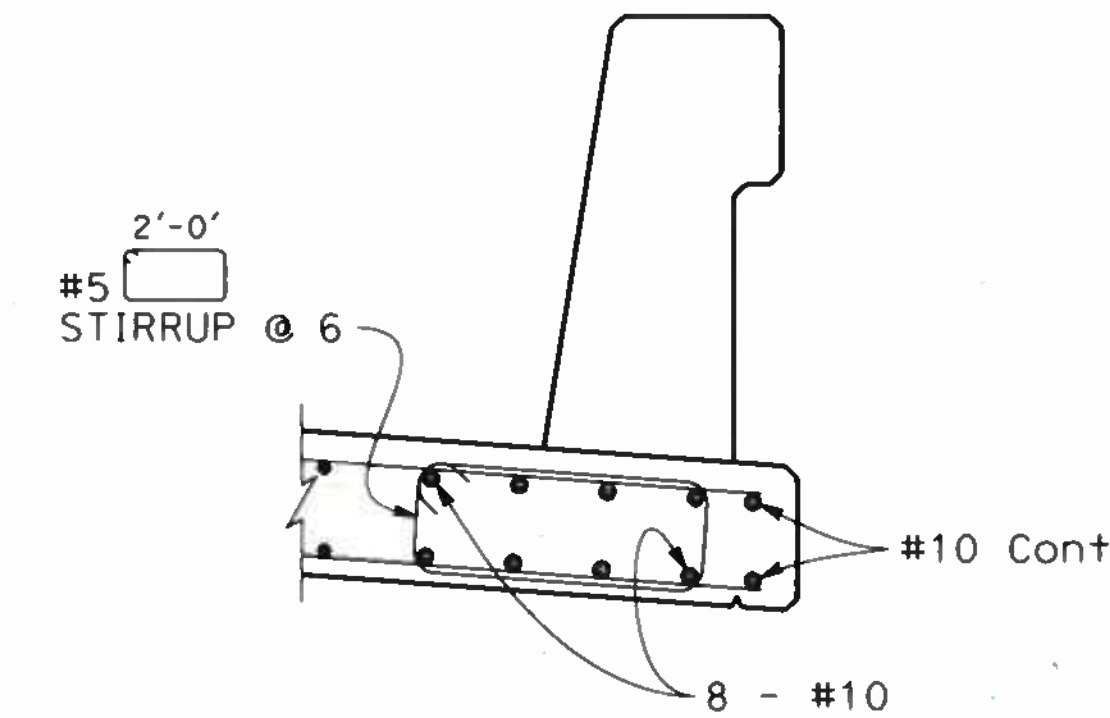
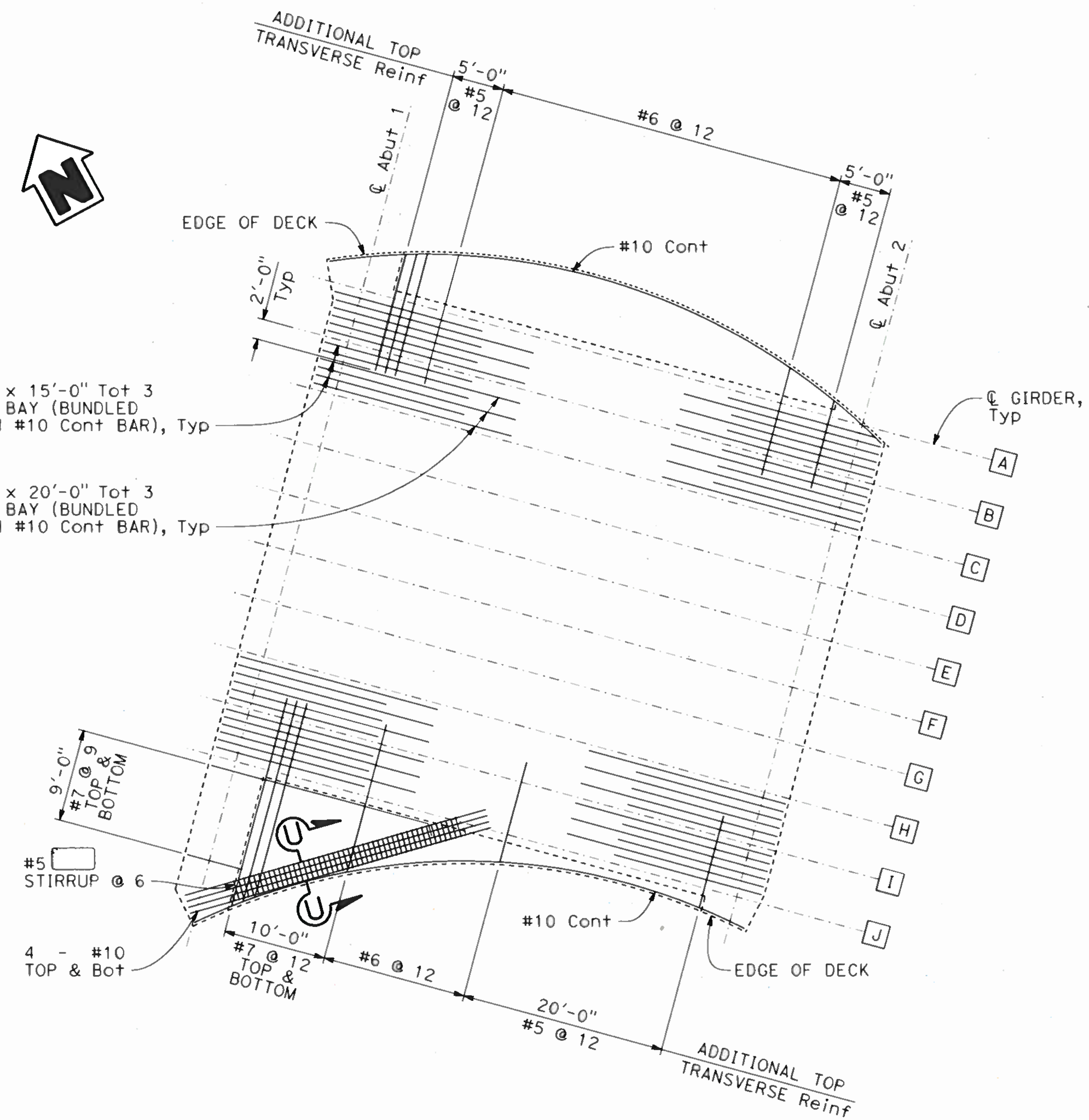

 REGISTERED CIVIL ENGINEER 7-25-19 DATE
 PLANS APPROVAL DATE

JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



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


LEGEND:

[X] Indicates girder designation

- NOTES:**
- For additional details and reinforcement, see "TYPICAL SECTION" and "GIRDER LAYOUT" sheets.
 - Additional reinforcement shall be spaced equally within bays as shown on "TYPICAL SECTION" sheet.
 - For "TOP SLAB CORNER DETAILS" and "BOTTOM SLAB CORNER DETAILS", see "GIRDER LAYOUT" sheet.

ADDITIONAL TOP SLAB REINFORCEMENT
NO SCALE

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


 DESIGN OVERSEER
 SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

**SOUTHGATE ROAD UC
GIRDER DETAILS**

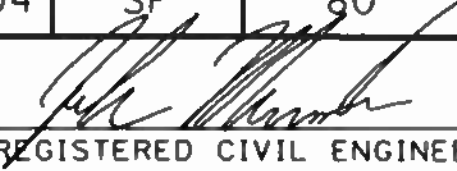
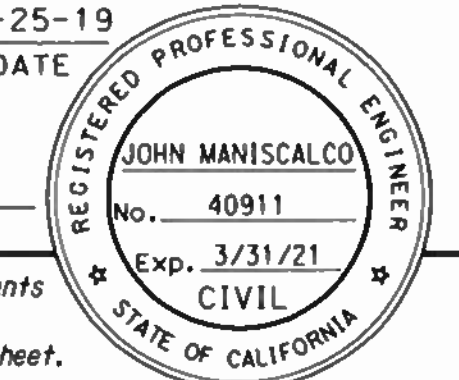
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

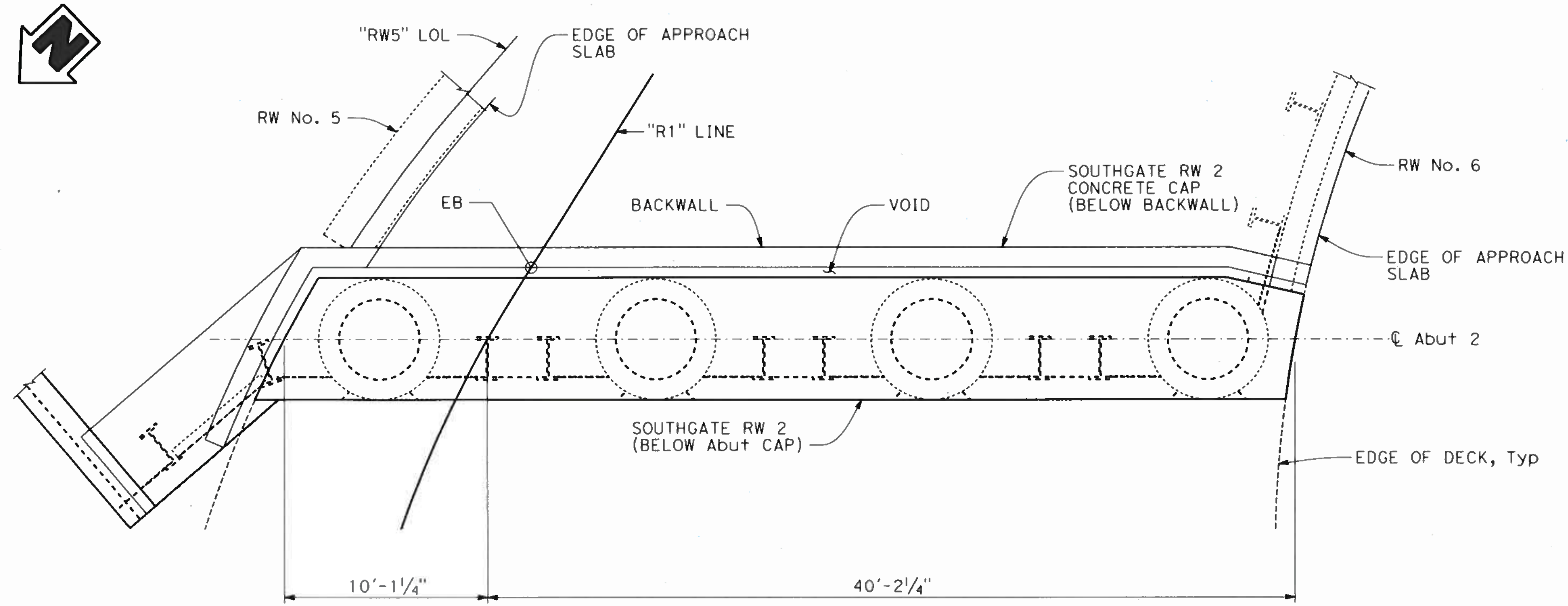


UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-22-19 11-17-19 2-27-19 7-28-19	SHEET 28	OF 40
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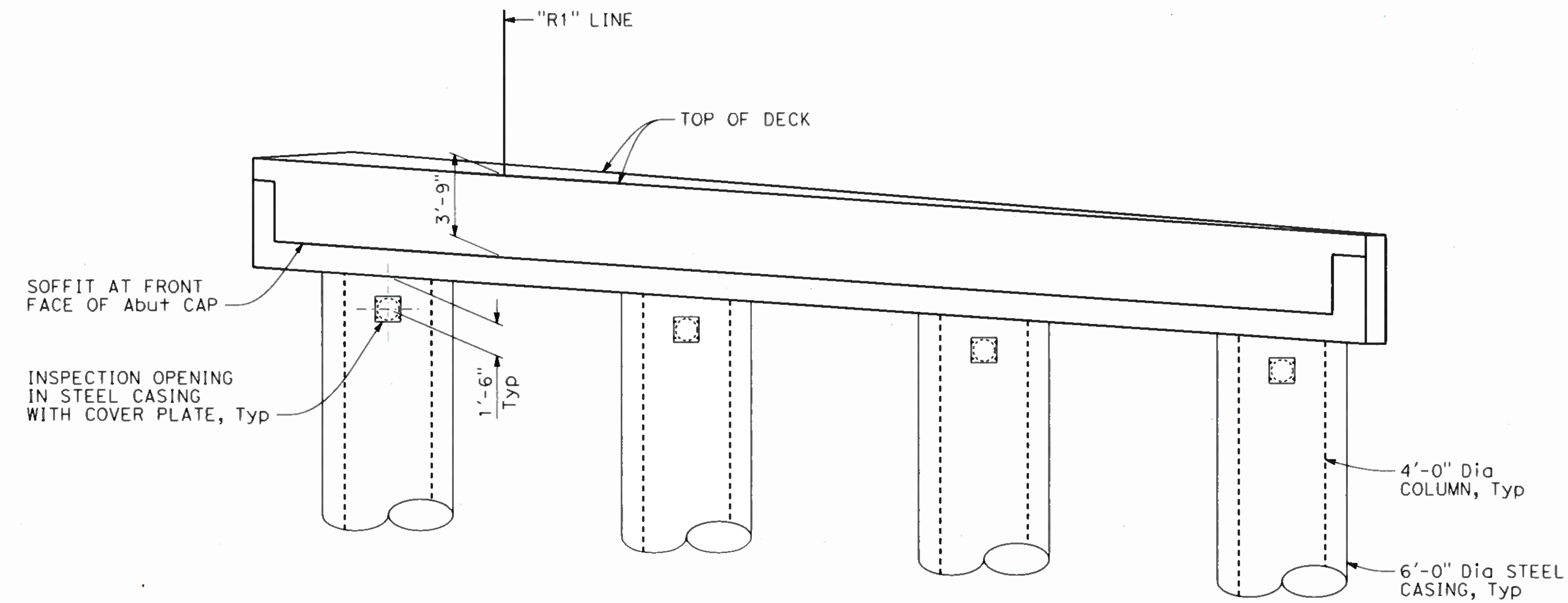
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
					
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PLAN

1/4" = 1'-0"



ELEVATION


1/4" = 1'-0"

NOTE: SOUTHGATE RW 2, Backwall and Concrete Cap not shown for clarity. See "SOUTHGATE RW2 LAYOUT" sheet.

NOTES:

1. Construction Joints shall not be allowed in the abutment cap, except top of column.
2. For column details, see "COLUMN AND CIDH PILE DETAILS" sheet.
3. For inspection opening and cover plate details, see "MISCELLANEOUS DETAILS No. 1" sheet.

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

DESIGN OVERSIGHT

 SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
DIAPHRAGM ABUTMENT 2 LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS




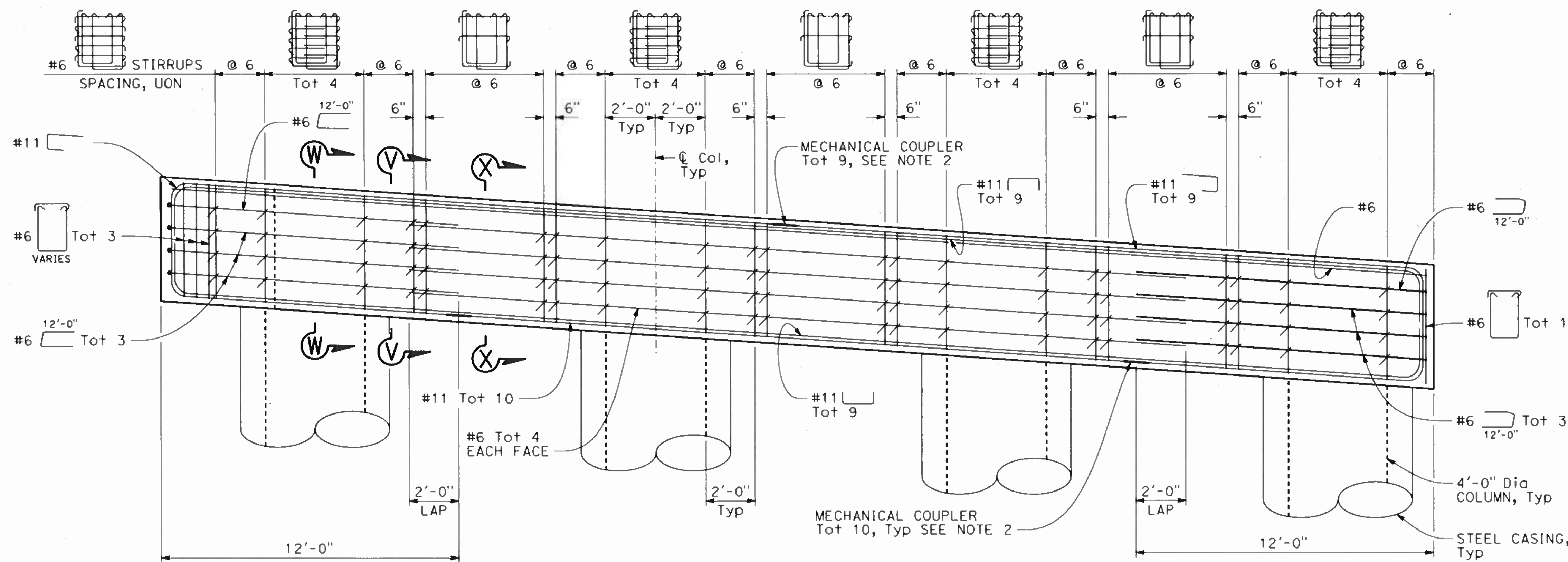
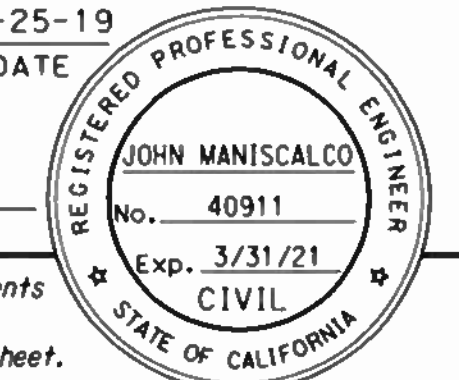
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-14-19 1-24-19	30	40

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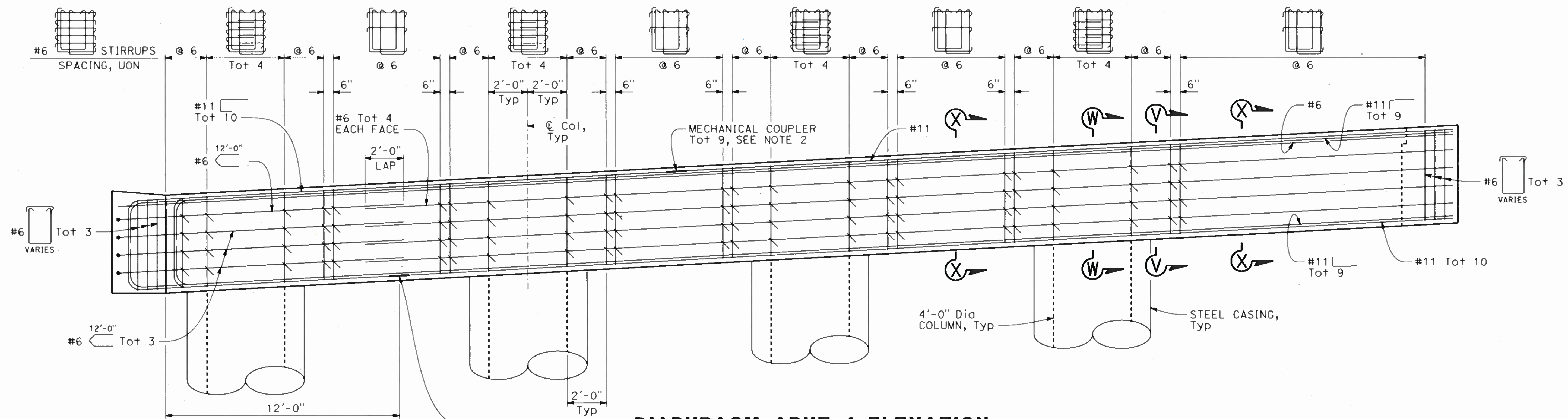
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	240	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



DIAPHRAGM ABUT 2 ELEVATION
3/8" = 1'-0"

- NOTES:**
1. For "SECTION V-V", "SECTION W-W" and "SECTION X-X", see "DIAPHRAGM ABUTMENT DETAILS No. 2" sheet.
 2. Top and bottom bars shall be coupled as shown, stagger coupler locations by 2'-0" between adjacent bars.
 3. For additional reinforcement information, see "GIRDER LAYOUT" sheet.



DIAPHRAGM ABUT 1 ELEVATION
3/8" = 1'-0"

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

DESIGN OVERSIGHT
SIGN OFF DATE
11/14/19

DESIGN BY	A. MALLA	CHECKED	J. SUK
DETAILS BY	J. GREEN	CHECKED	A. MALLA
QUANTITIES BY	A. MALLA	CHECKED	A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
DIAPHRAGM ABUTMENT DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-28-19	31	40

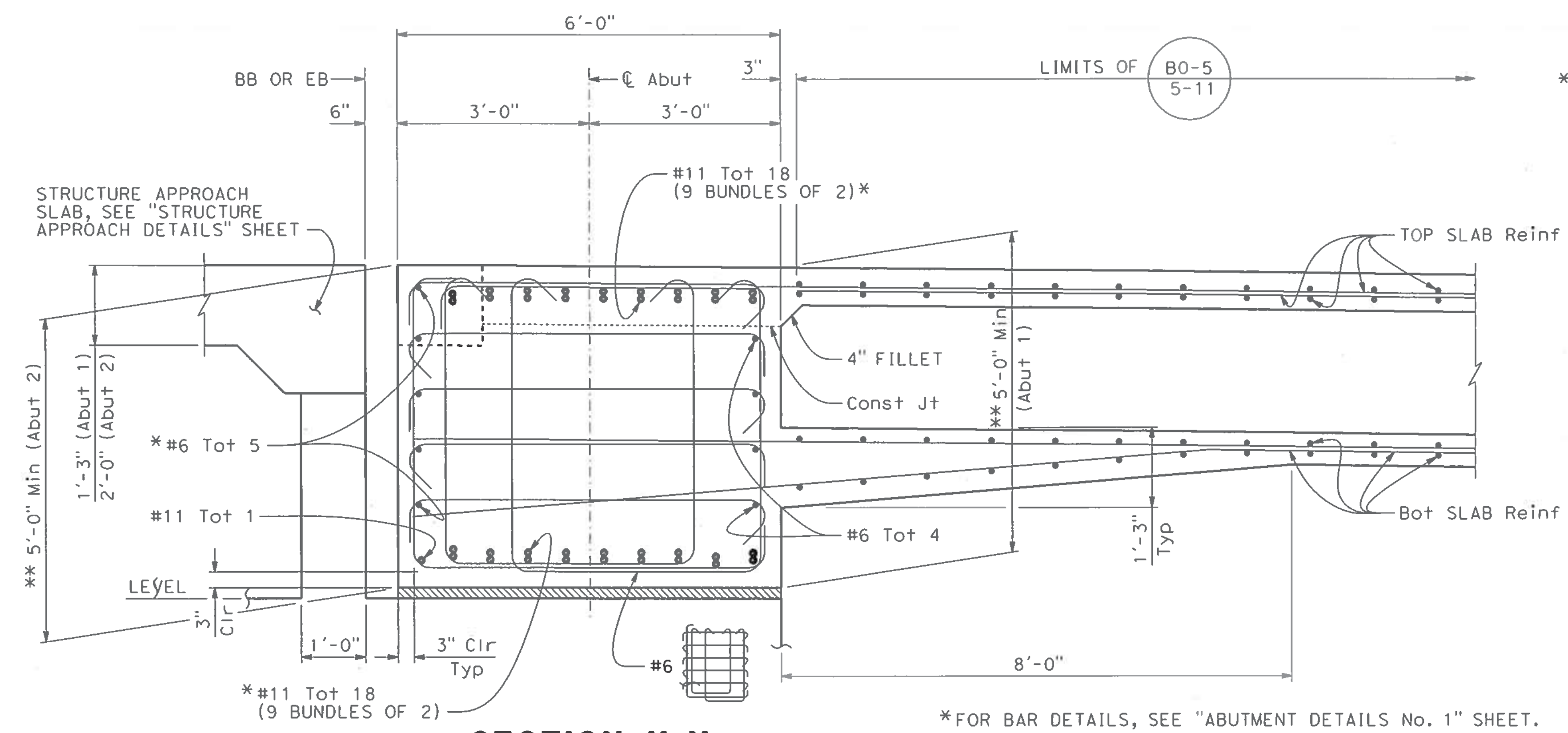
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	241	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

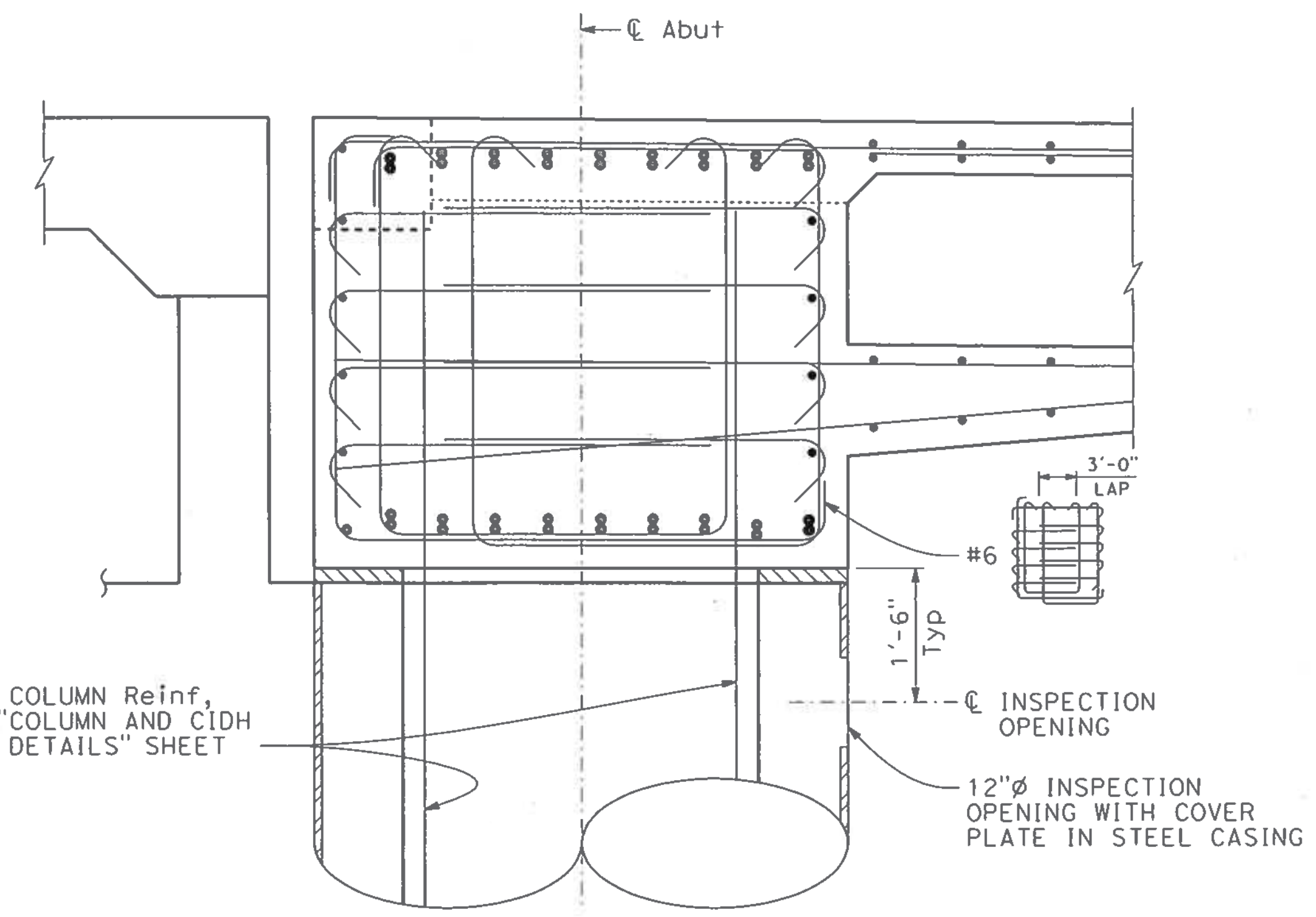
PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.
 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

**NOTE THIS DETAIL IS FOR BOTH Abut 1 AND 2. THE BACK FACE 5'-0" MINIMUM DIMENSION IS CONTROL FOR Abut 2. INSIDE FACE IS CONTROL FOR Abut 1.



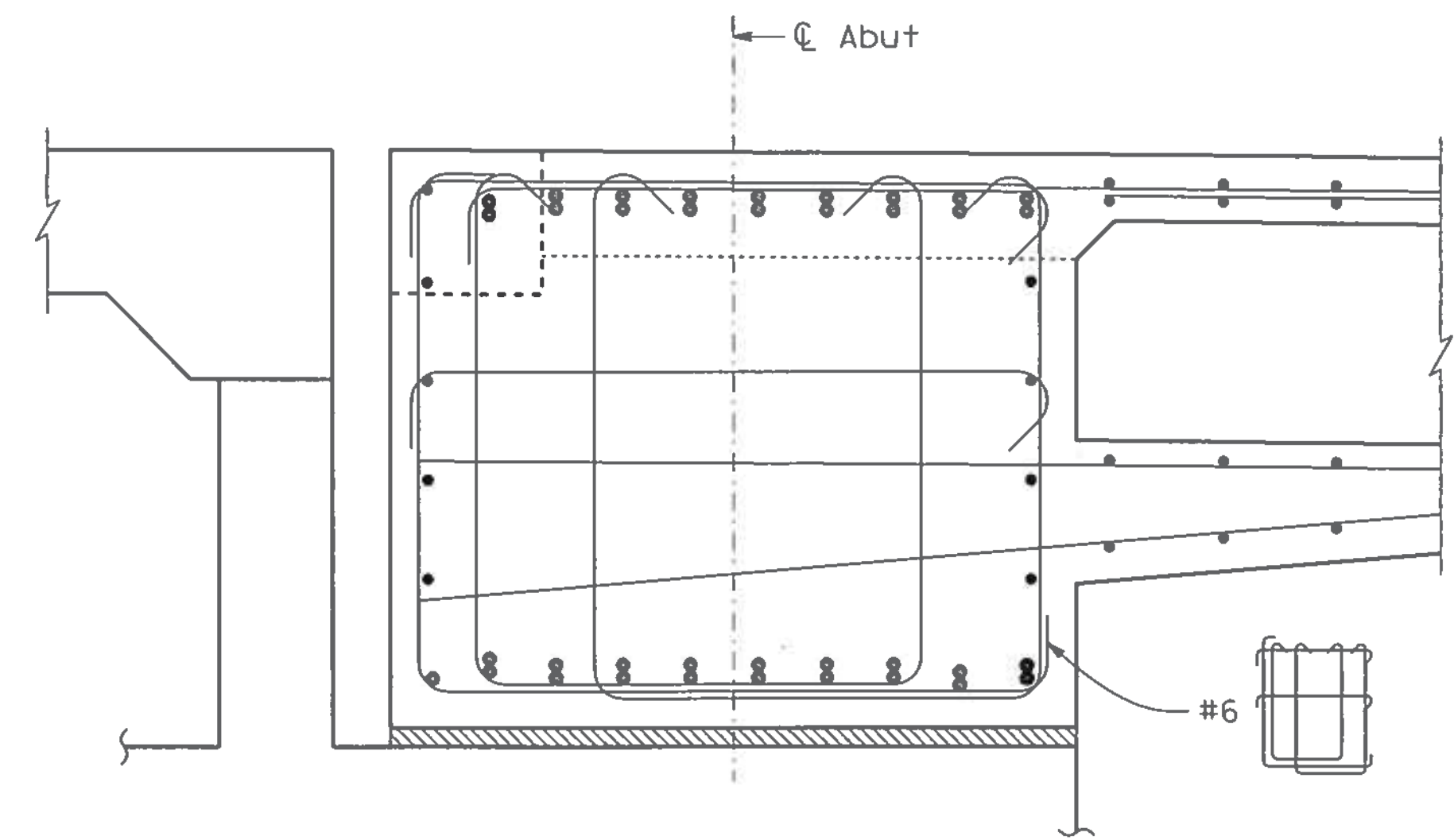
SECTION V-V
 3/4" = 1'-0"

*FOR BAR DETAILS, SEE "ABUTMENT DETAILS No. 1" SHEET.



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

FOR DETAILS NOT SHOWN, SEE "SECTION V-V".



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

FOR DETAILS NOT SHOWN, SEE "SECTION V-V".

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

DESIGN OVERSIGHT
 SIGN OFF DATE 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
DIAPHRAGM ABUTMENT DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3


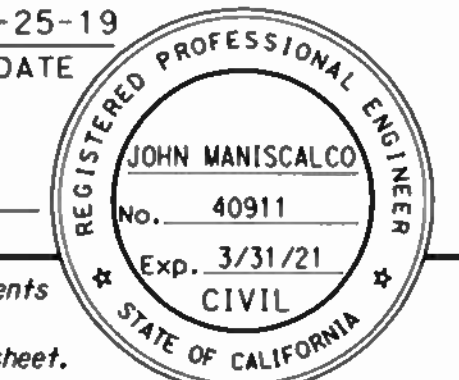
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

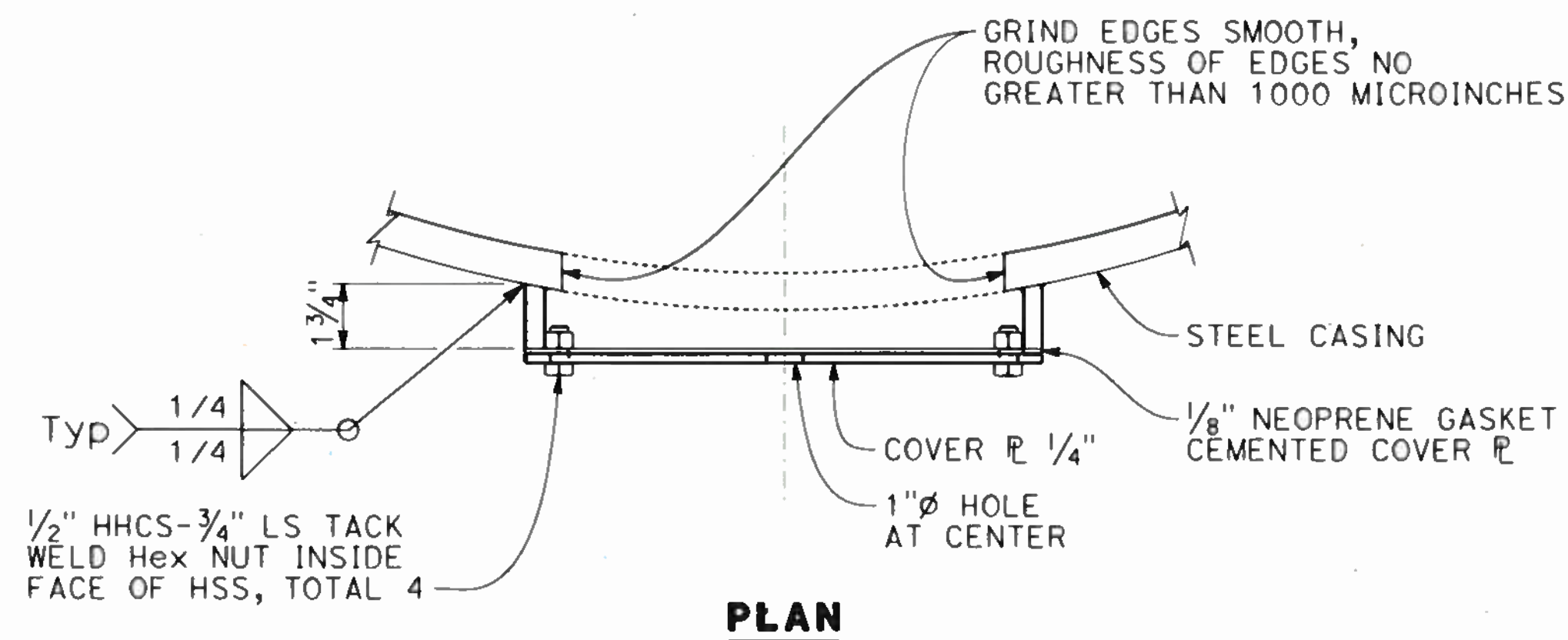
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

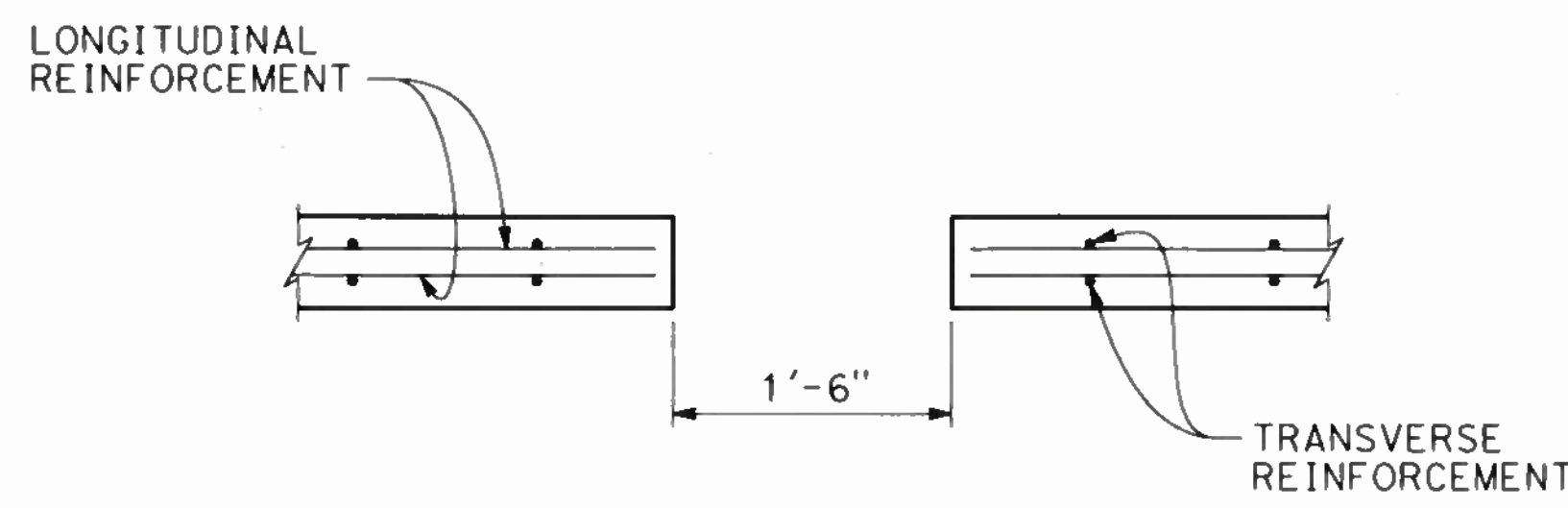
REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-24-19	32	40

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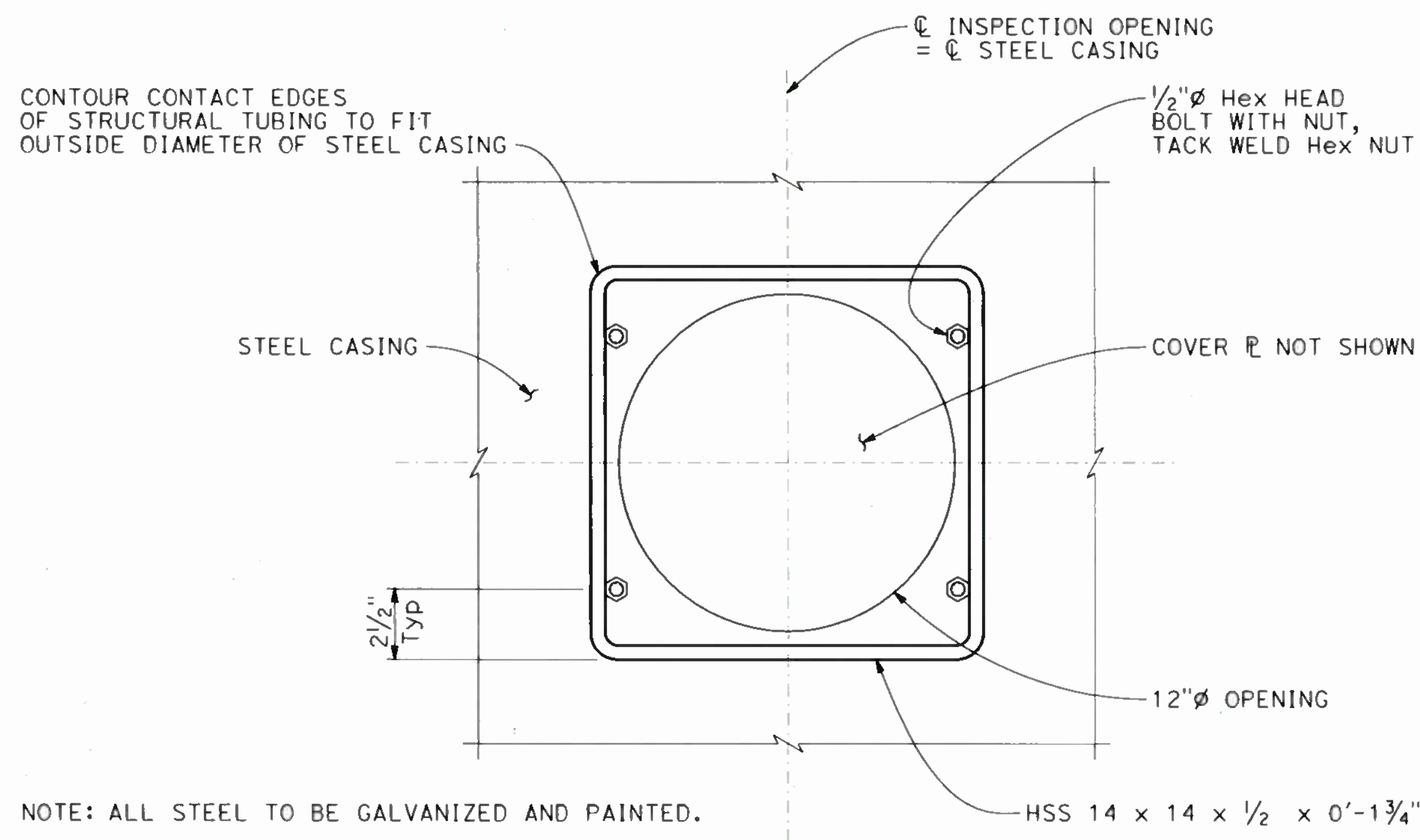
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	242	436
 REGISTERED CIVIL ENGINEER			7-25-19 DATE		
PLANS APPROVAL DATE _____					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PLAN



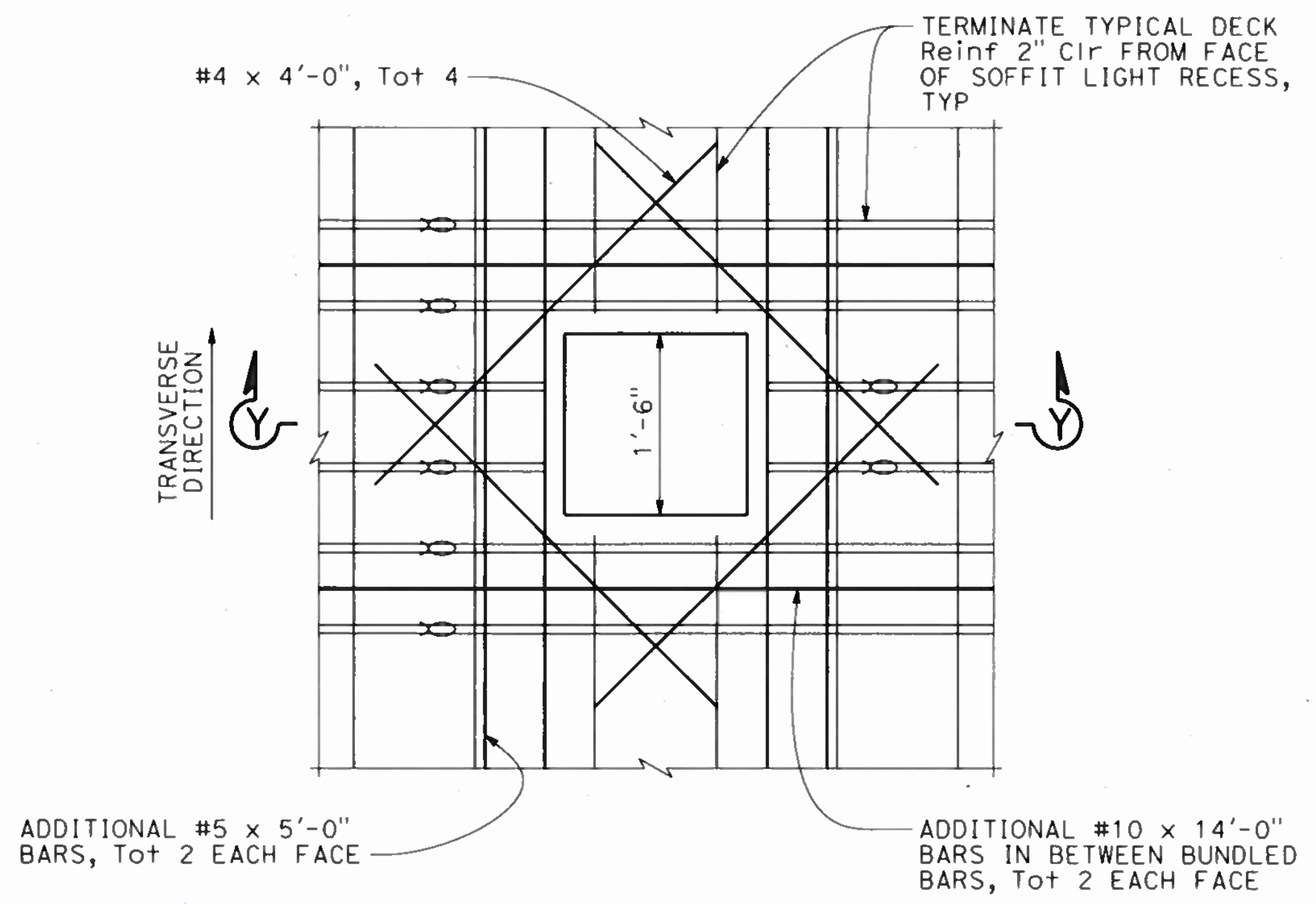
SECTION Y-Y



ELEVATION

INSPECTION OPENING AND COVER PLATE DETAIL




3" = 1'-0"



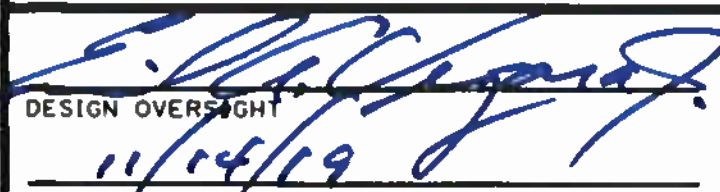
PLAN

FLUSH MOUNTED LUMINAIRE DETAILS

1" = 1'-0"

- LEGEND:**
-  Indicates Bundled Bars
 -  Indicates Additional Reinf
 -  Indicates Typical Deck Reinf, see "TYPICAL SECTION" sheet

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

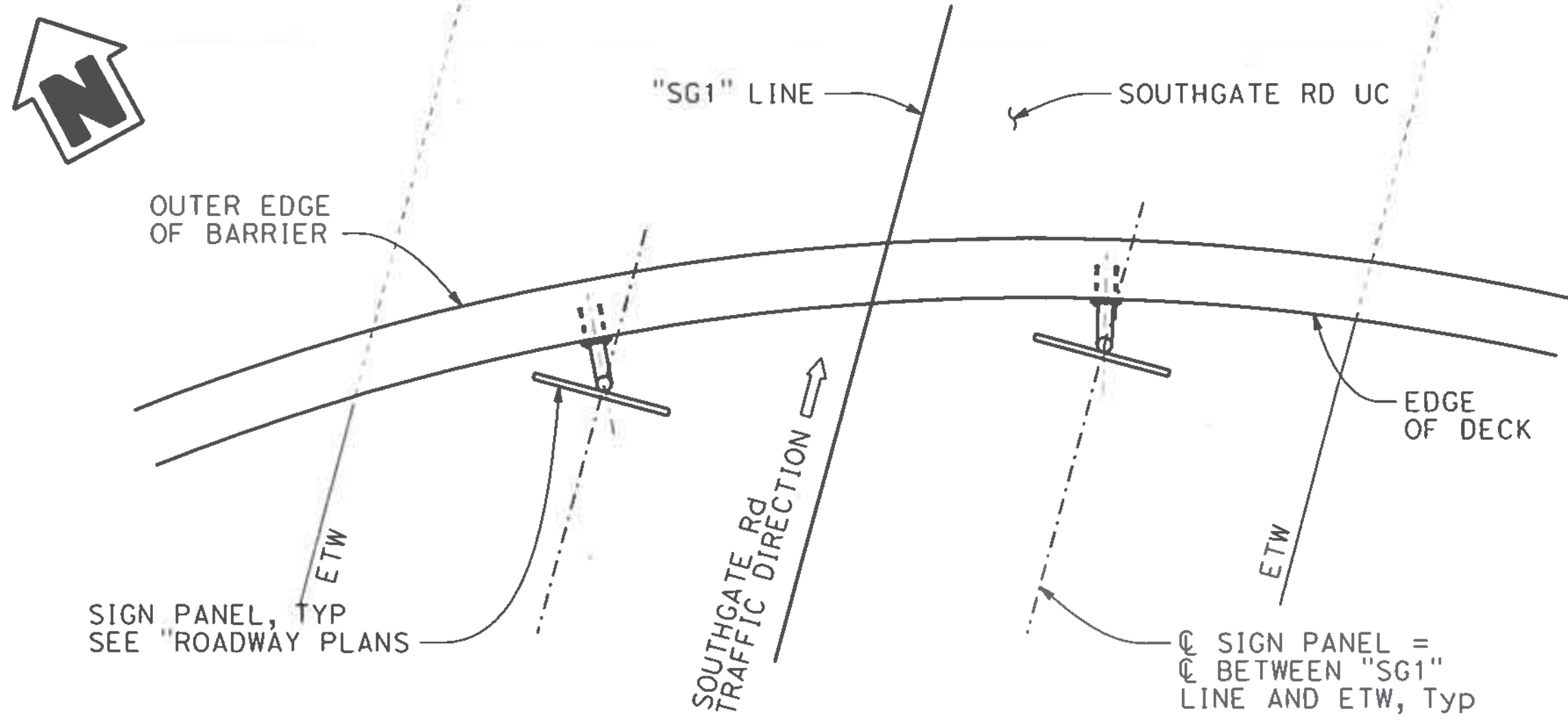
 DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN	BY A. MALLA	CHECKED J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	SOUTHGATE ROAD UC						
	DETAILS	BY J. GREEN	CHECKED A. MALLA		JOHN MANISCALCO PROJECT ENGINEER	34-0191S	MISCELLANEOUS DETAILS No. 1					
	QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI		POST MILES							
					7.9							
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-22-19 11-17-19 2-27-19 7-27-19	SHEET 33	OF 40

USERNAME => JOHNGREEN DATE PLOTTED => 31-OCT-2019 TIME PLOTTED => 11:41

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	243	436

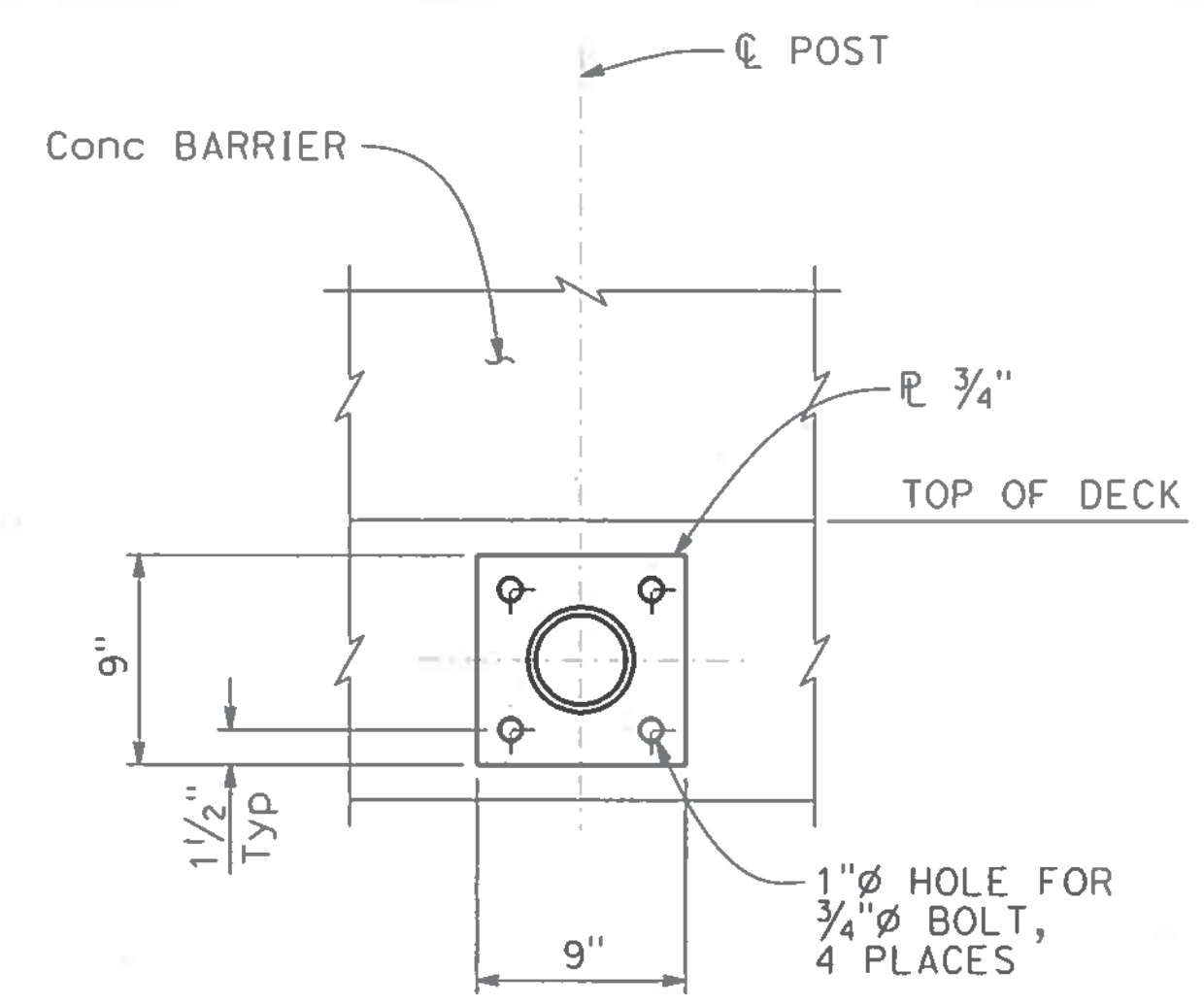
REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

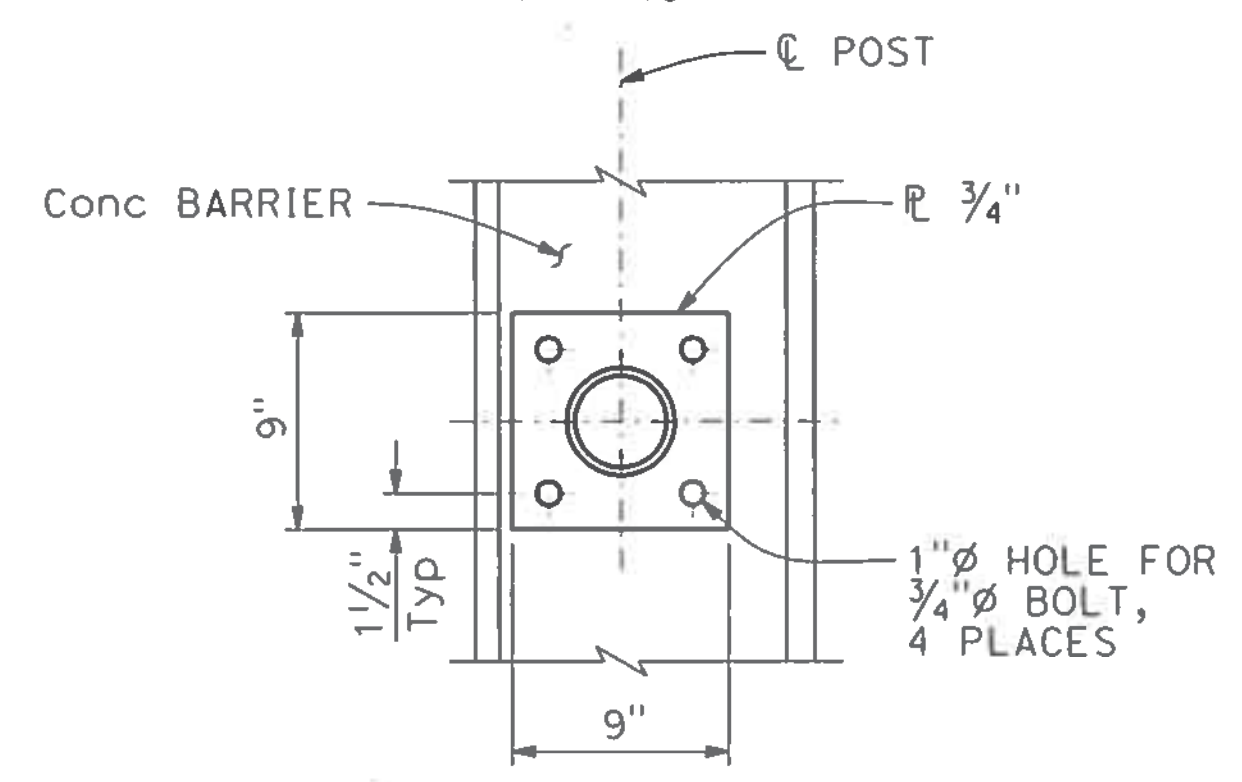


DECK MOUNTED SIGN PLAN

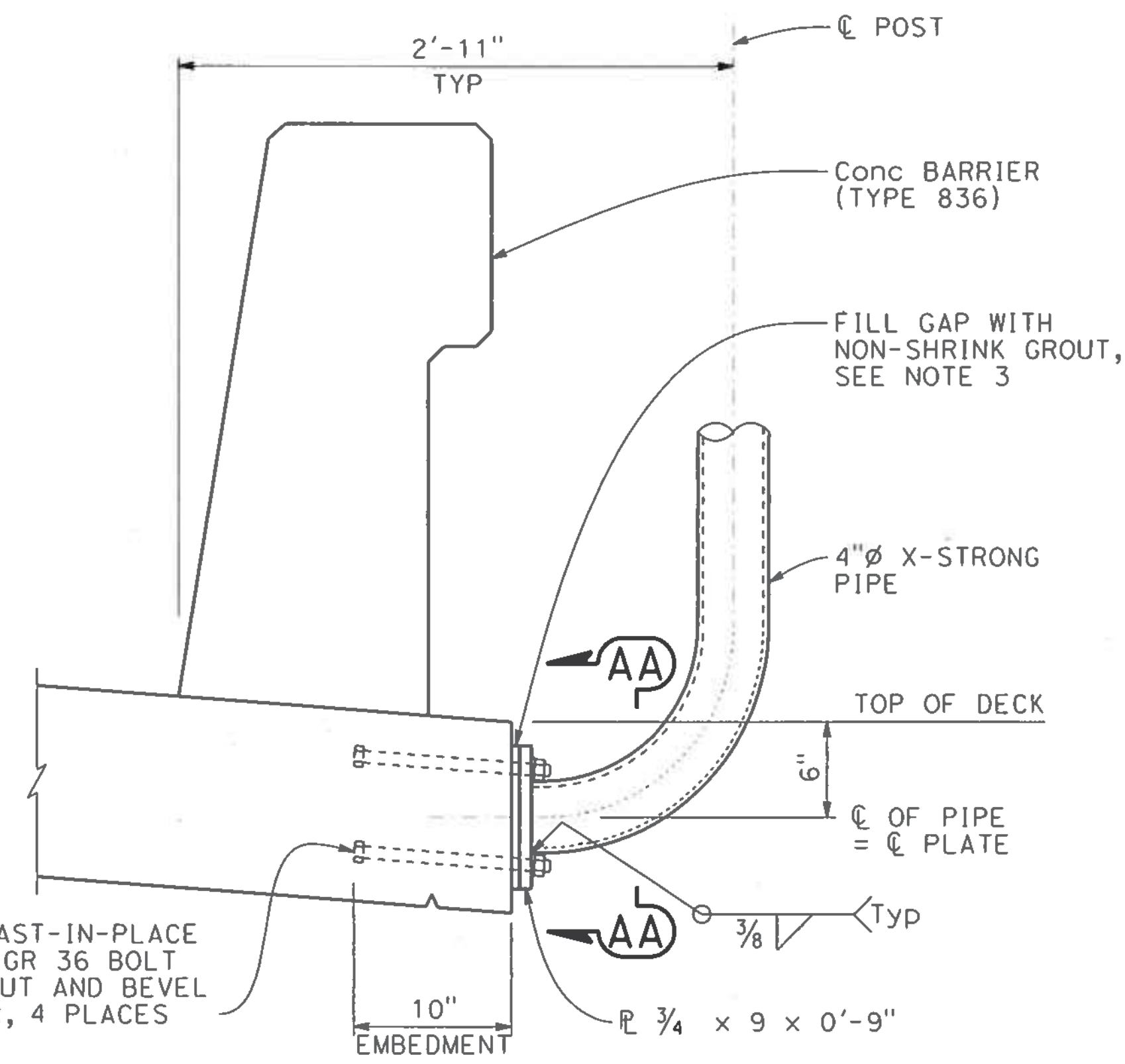
1" = 40'



SECTION AA-AA



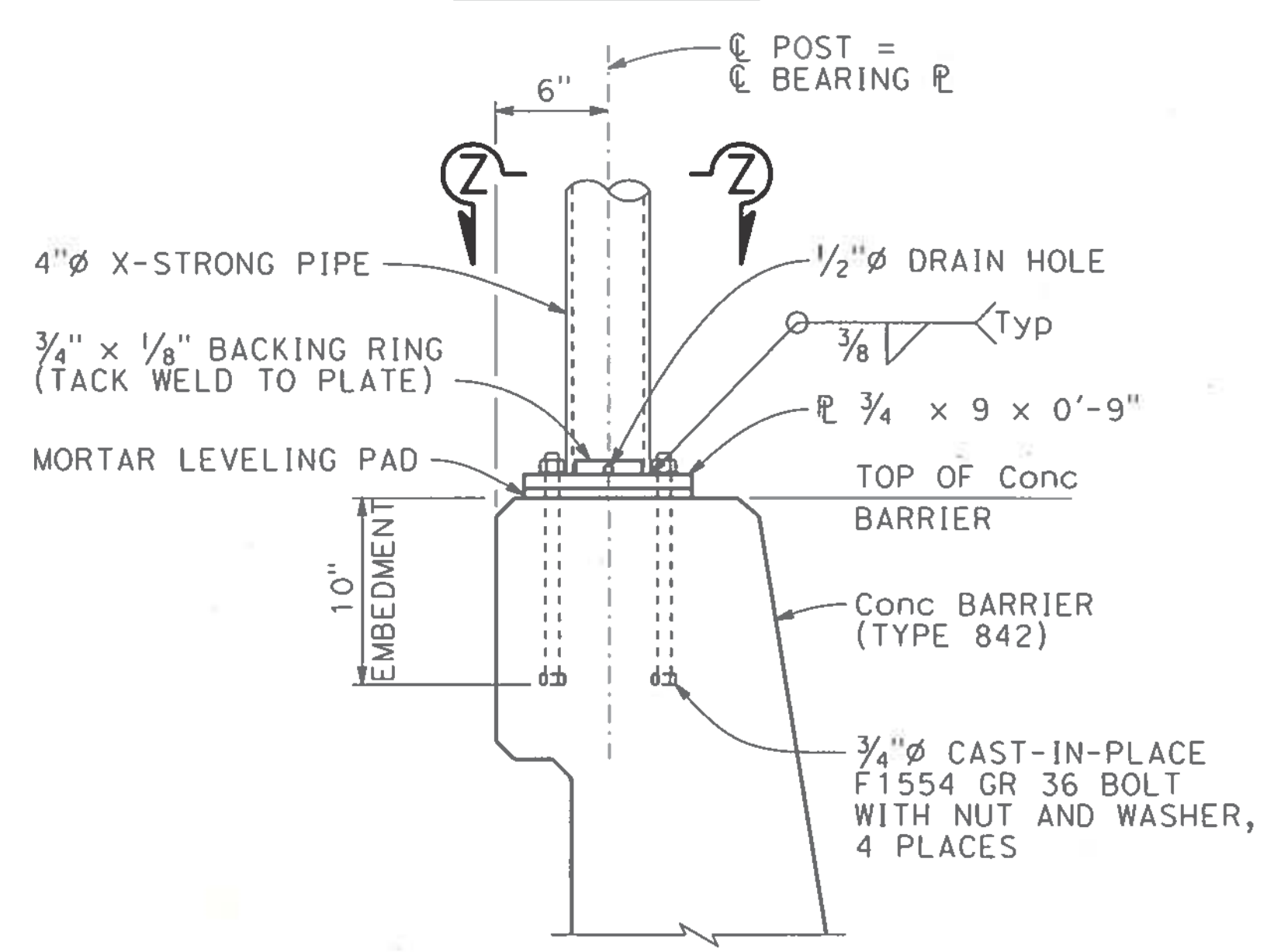
SECTION Z-Z



PARTIAL ELEVATION

DECK MOUNTED SIGN DETAIL

1 1/2" = 1'-0"



PARTIAL ELEVATION

BARRIER MOUNTED SIGN DETAIL

1 1/2" = 1'-0"

NOTES:

1. All steel to be galvanized.
2. For locations of signs, see "GENERAL PLAN" sheet and "ROADWAY PLANS".
3. Grout must be non-shrink grout complying with ASTM C1107/C1107M.

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

DESIGN OVERSIGHT
 SIGN OFF DATE 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
MISCELLANEOUS DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

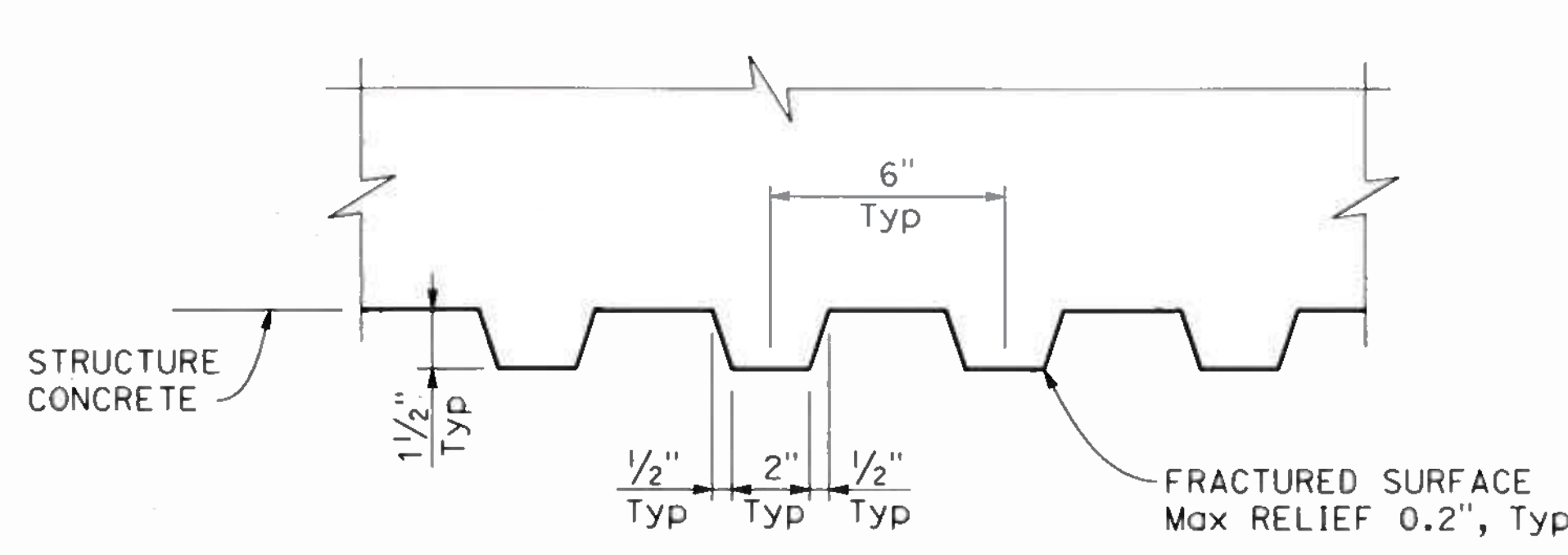
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-14-19 1-22-19 7-25-19	34	40

FILE => 34-0191S-u-miscd102.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 31-OCT-2019 TIME PLOTTED => 11:42

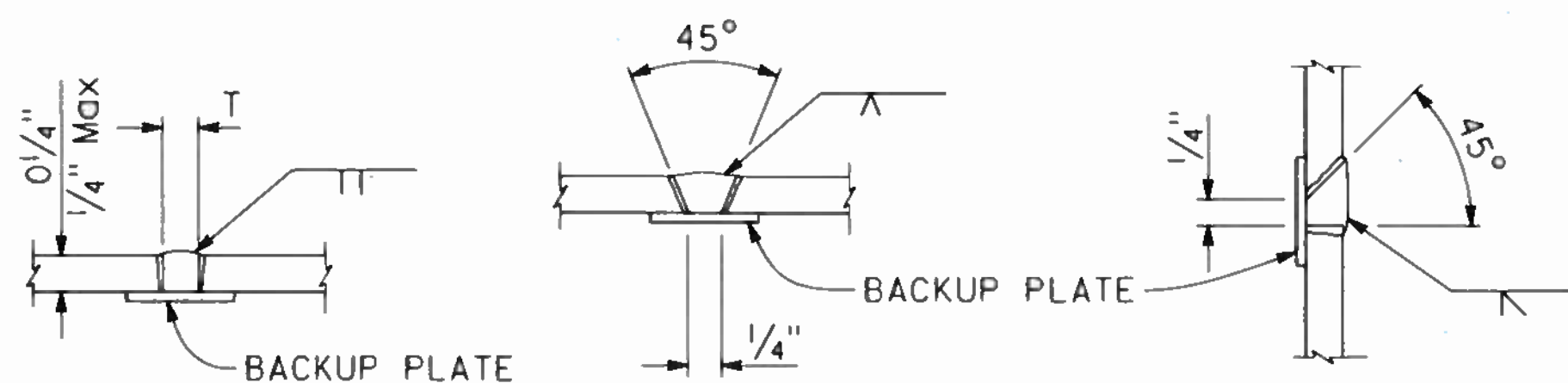
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	244	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE			DATE		
JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



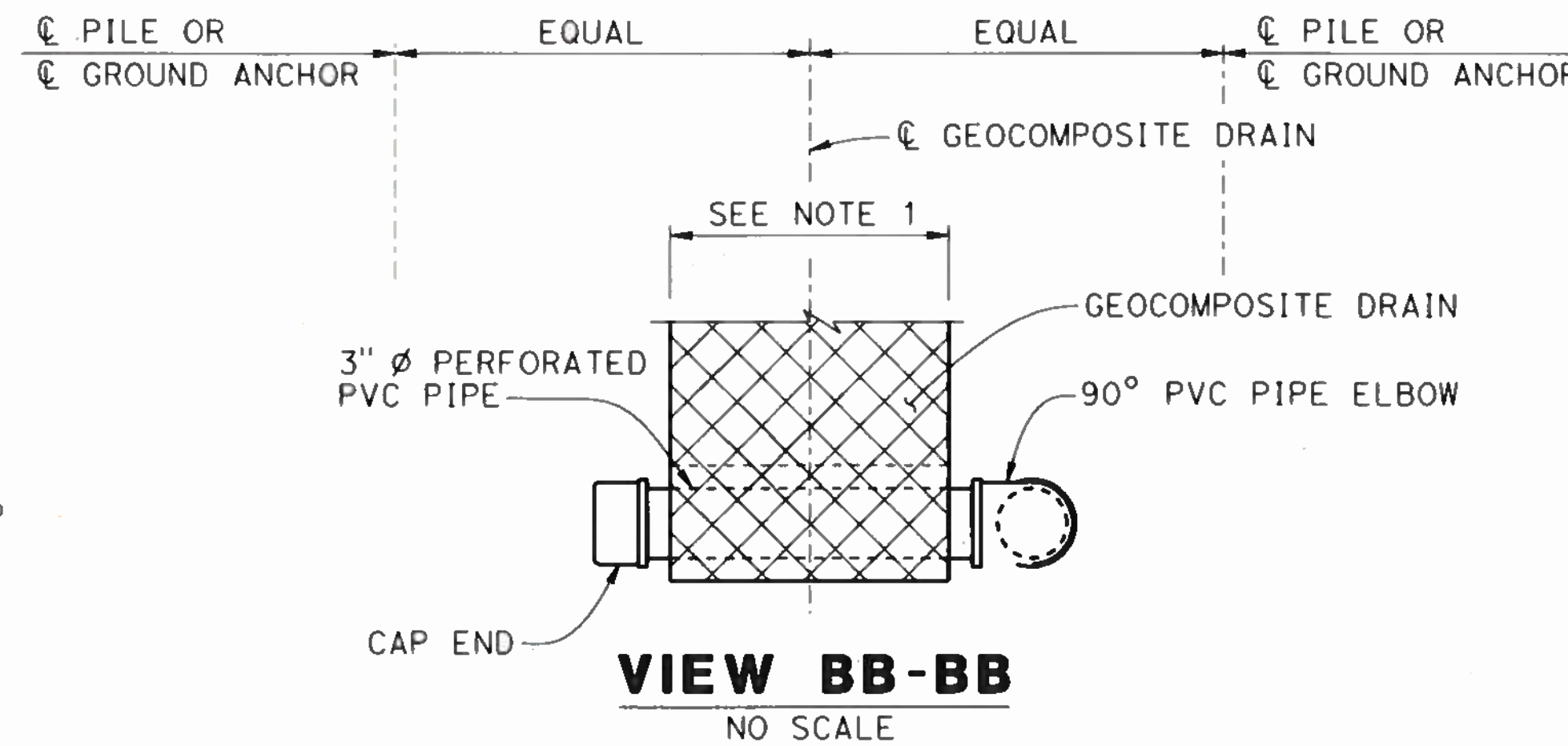
FRACTURED RIB TEXTURE DETAIL
NO SCALE

NOTES:

1. Single vee-groove and square groove permitted for all positions.
2. Single bevel-groove permitted for horizontal joints only.



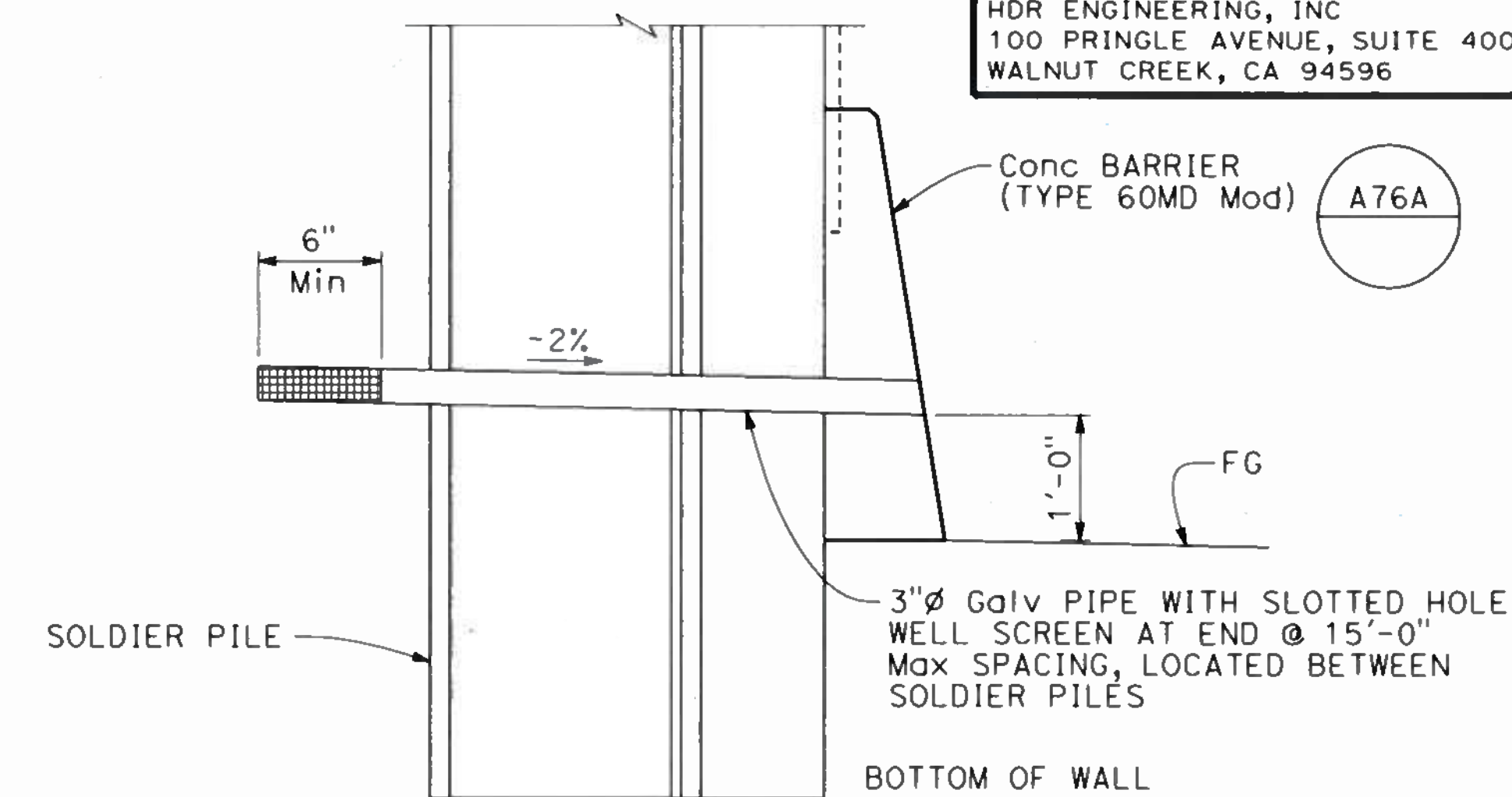
SQUARE GROOVE SINGLE VEE-GROOVE SINGLE BEVEL-GROOVE
PILE WELDING DETAIL-BUTT JOINTS
NO SCALE



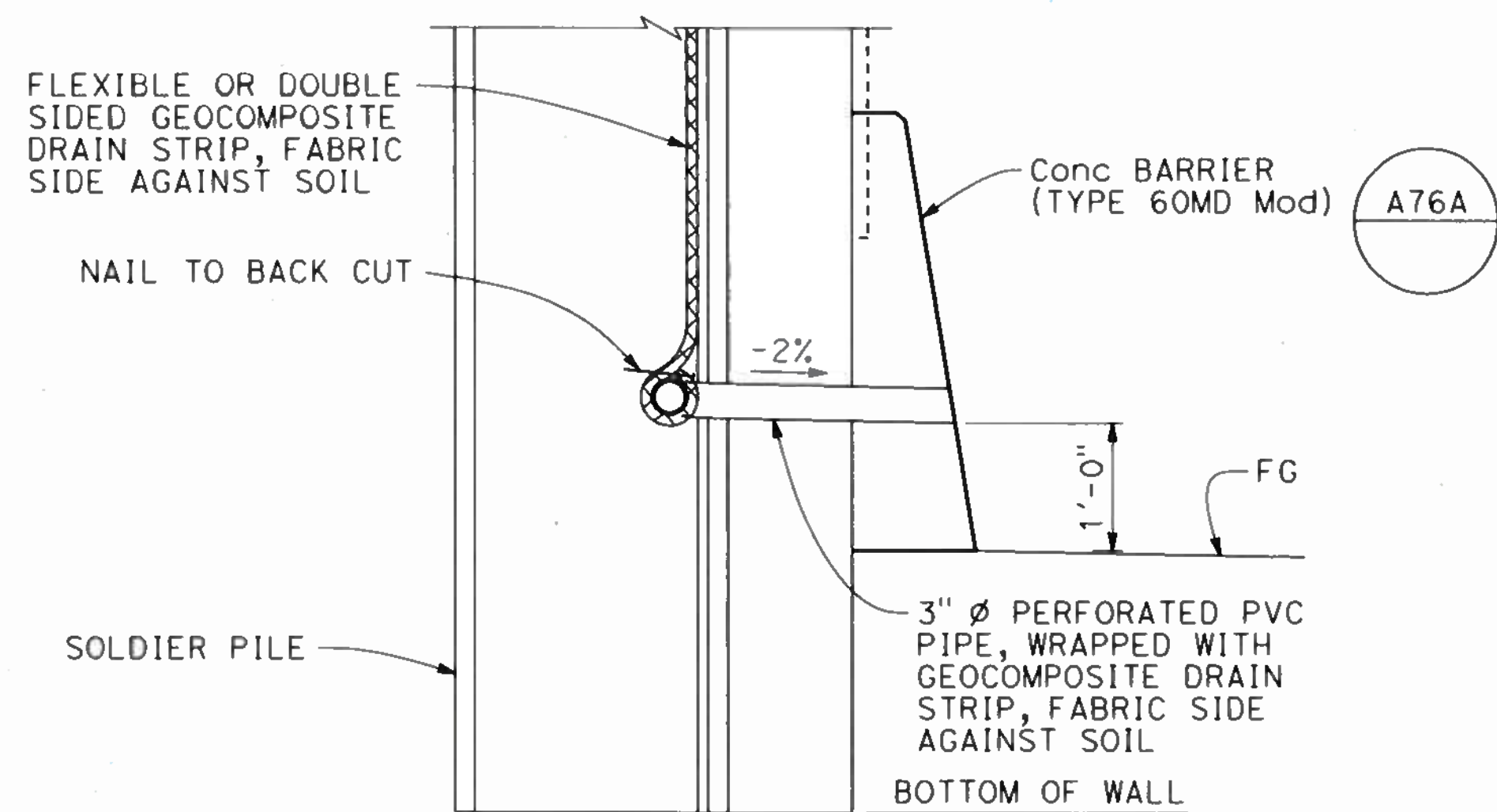
DRAIN DETAIL AT TOP OF WALL
NO SCALE

NOTE:

1. Geocomposite drain strips shall be 48" for Soldier Pile Wall and 24" for Ground Anchor Wall, UON

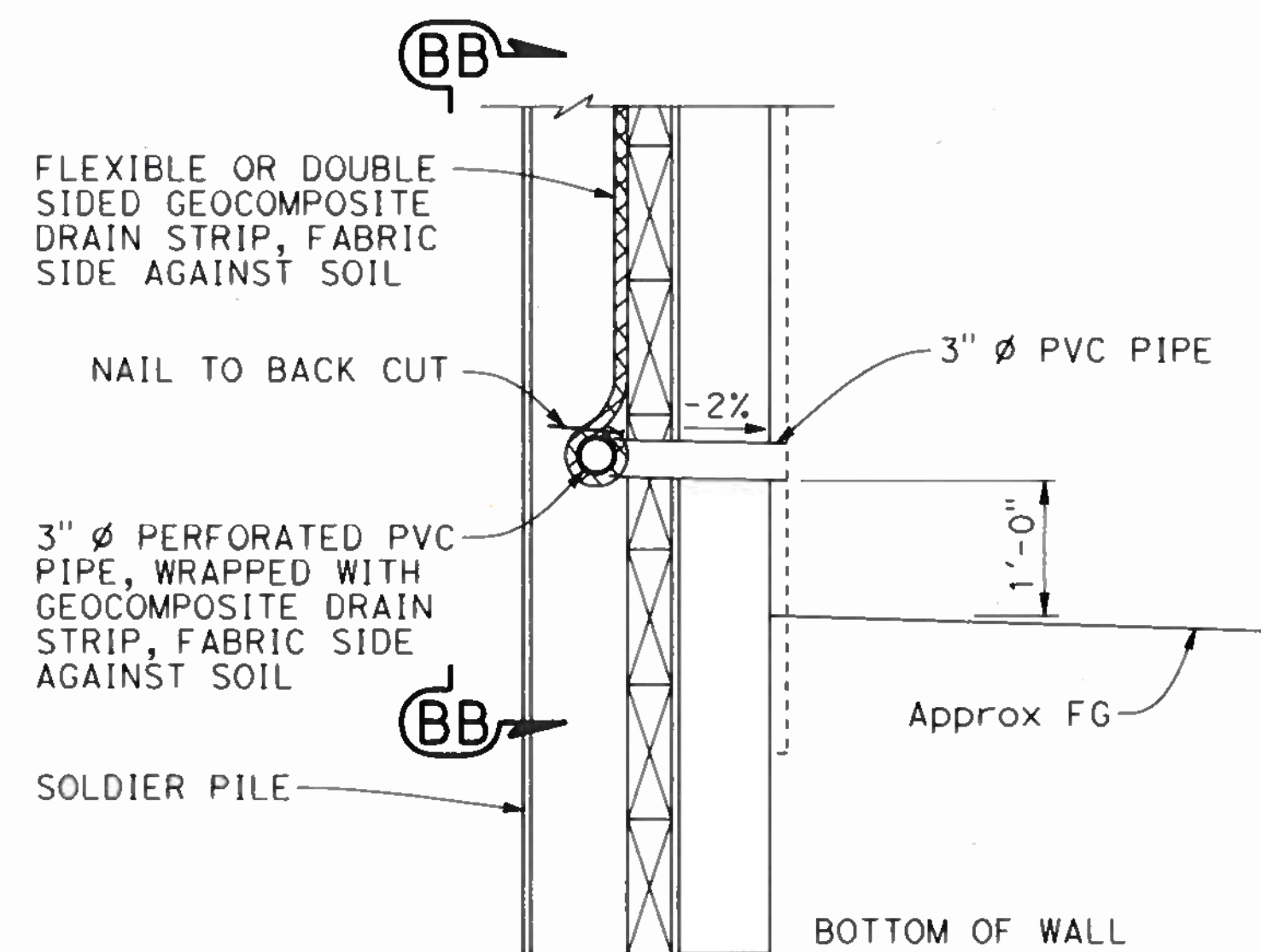


DRAIN DETAIL AT RW 1 SOLDIER PILE WALL
NO SCALE



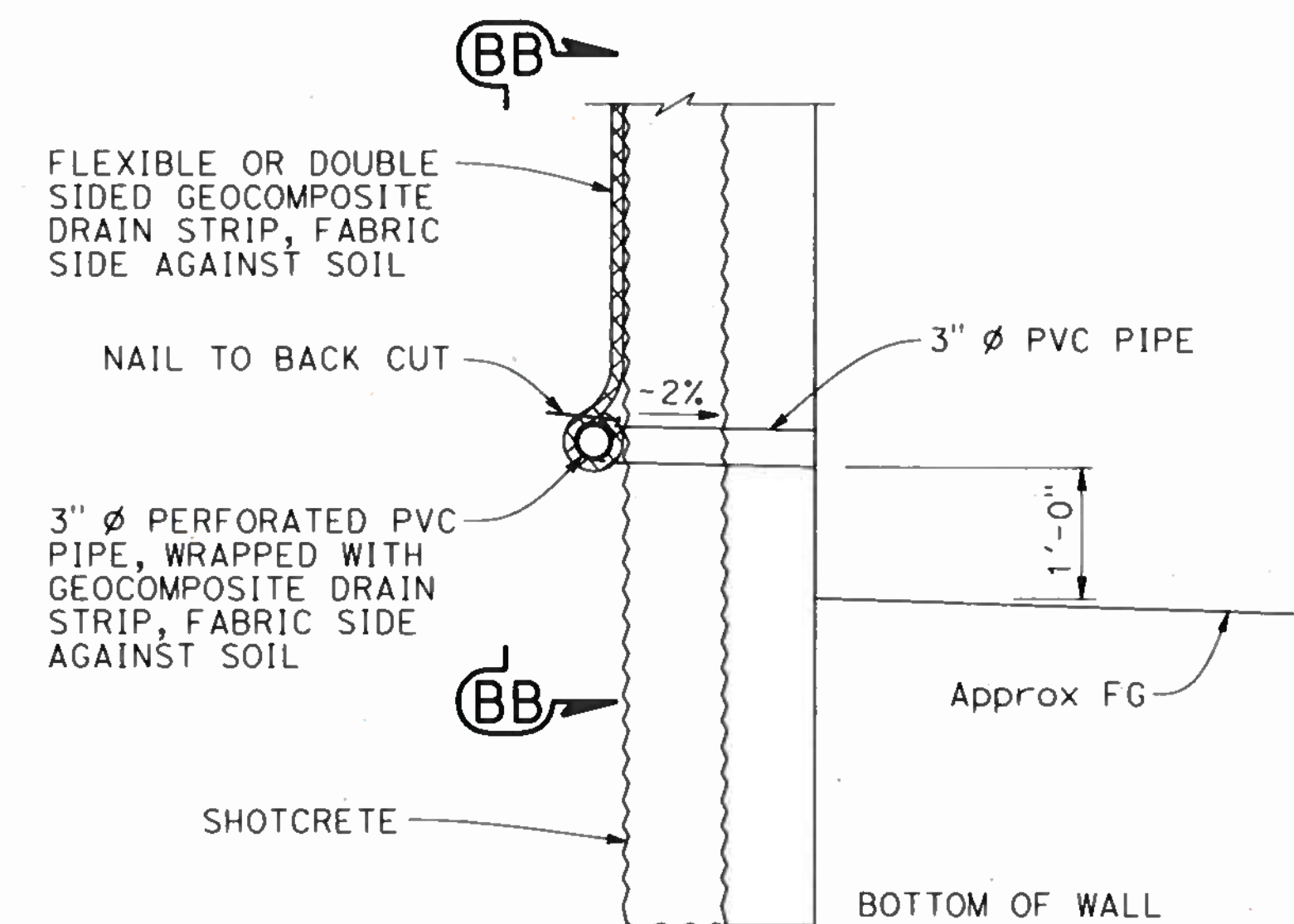
DRAIN DETAIL AT RW 1 AND RW 2 SOLDIER PILE WALL
NO SCALE

"SRW2" 210+05.30 TO "SRW2" 210+55.39



DRAIN DETAIL AT RW 2 SOLDIER PILE WALL
NO SCALE

"SRW2" 210+55.39 TO "SRW2" 210+65.21



DRAIN DETAIL AT RW 2 GROUND ANCHOR WALL
NO SCALE

NO SCALE

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

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
MISCELLANEOUS DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

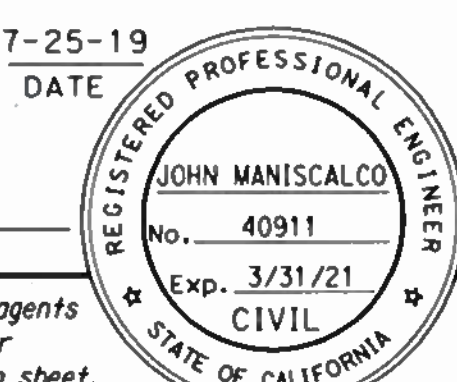
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-17-19 2-27-19 1-28-19	35	40

FILE => 34-0191S-g-rwd01.dgn

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	245	436
			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

DESIGN NOTES

DESIGN: AASHTO LRFD Bridge Design Specifications, 2012 Edition with Caltrans Amendments, preface dated January 2014

F_t : 54 kips

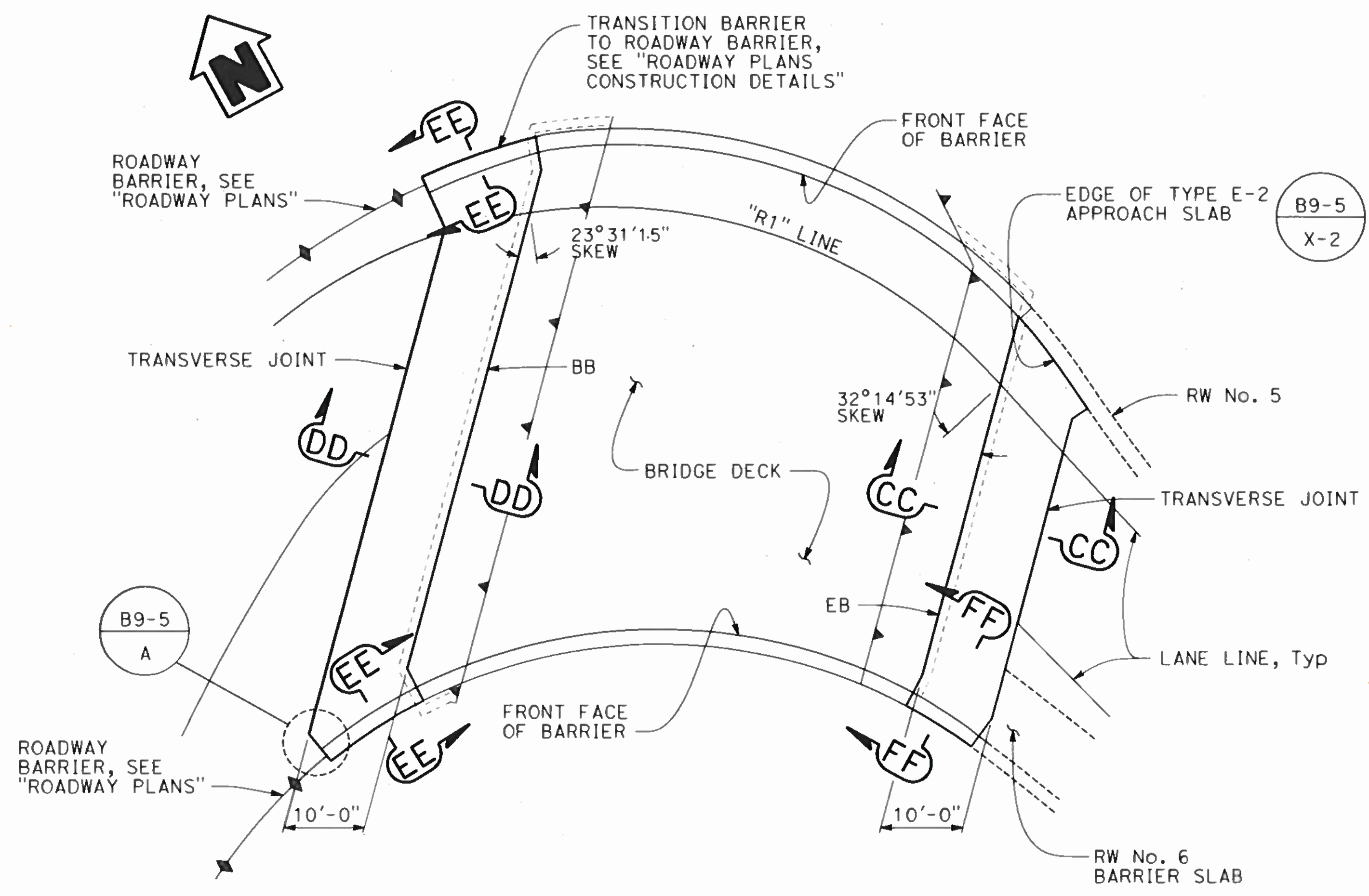
EQE: $k_h = 0.33$
 $k_v = 0.0$

LIMIT STATES: Service I, Strength I & II, Extreme II and Fatigue I ($\gamma_{FAT} = 1.0$)

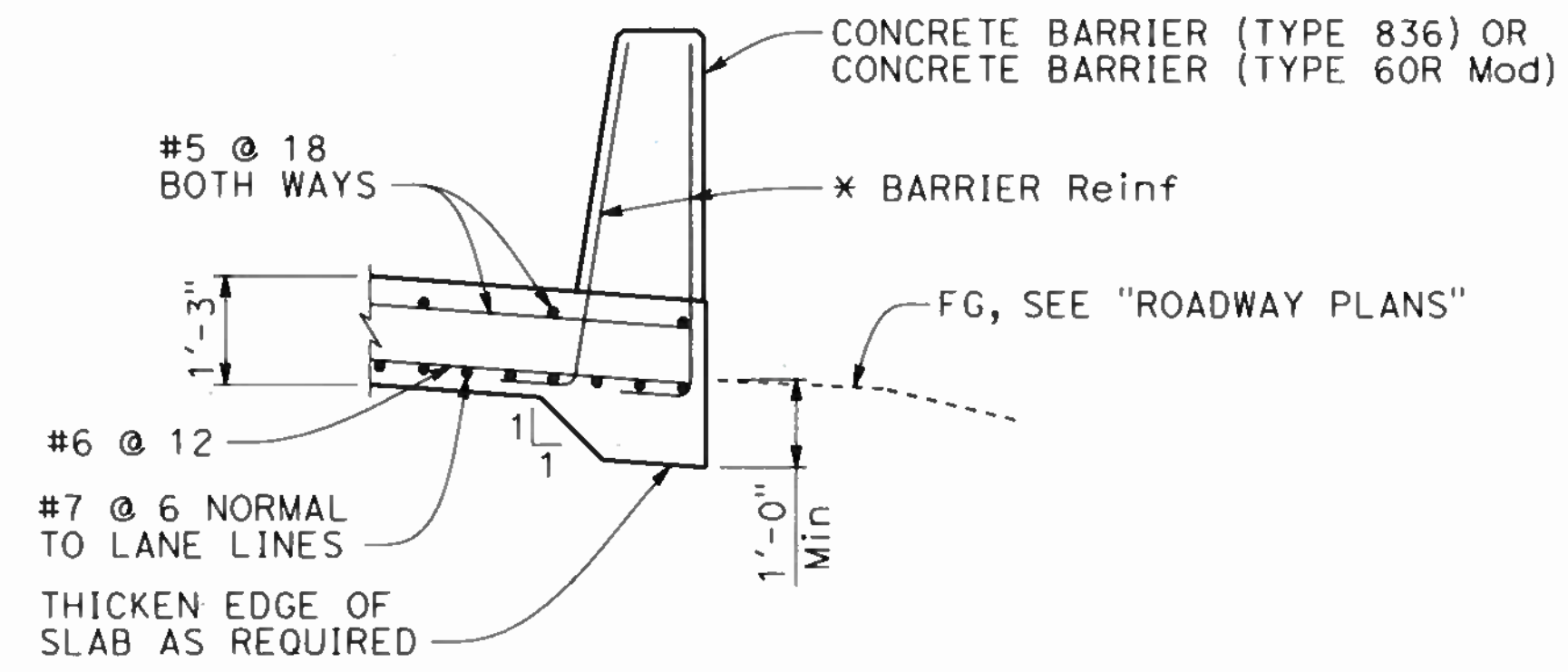
DEAD LOAD: Includes 35 psf for future wearing surface

LIVE LOAD: HL93 and permit design load

REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f'_c = 3,600$ psi
 $n = 8$




PLAN
NO SCALE



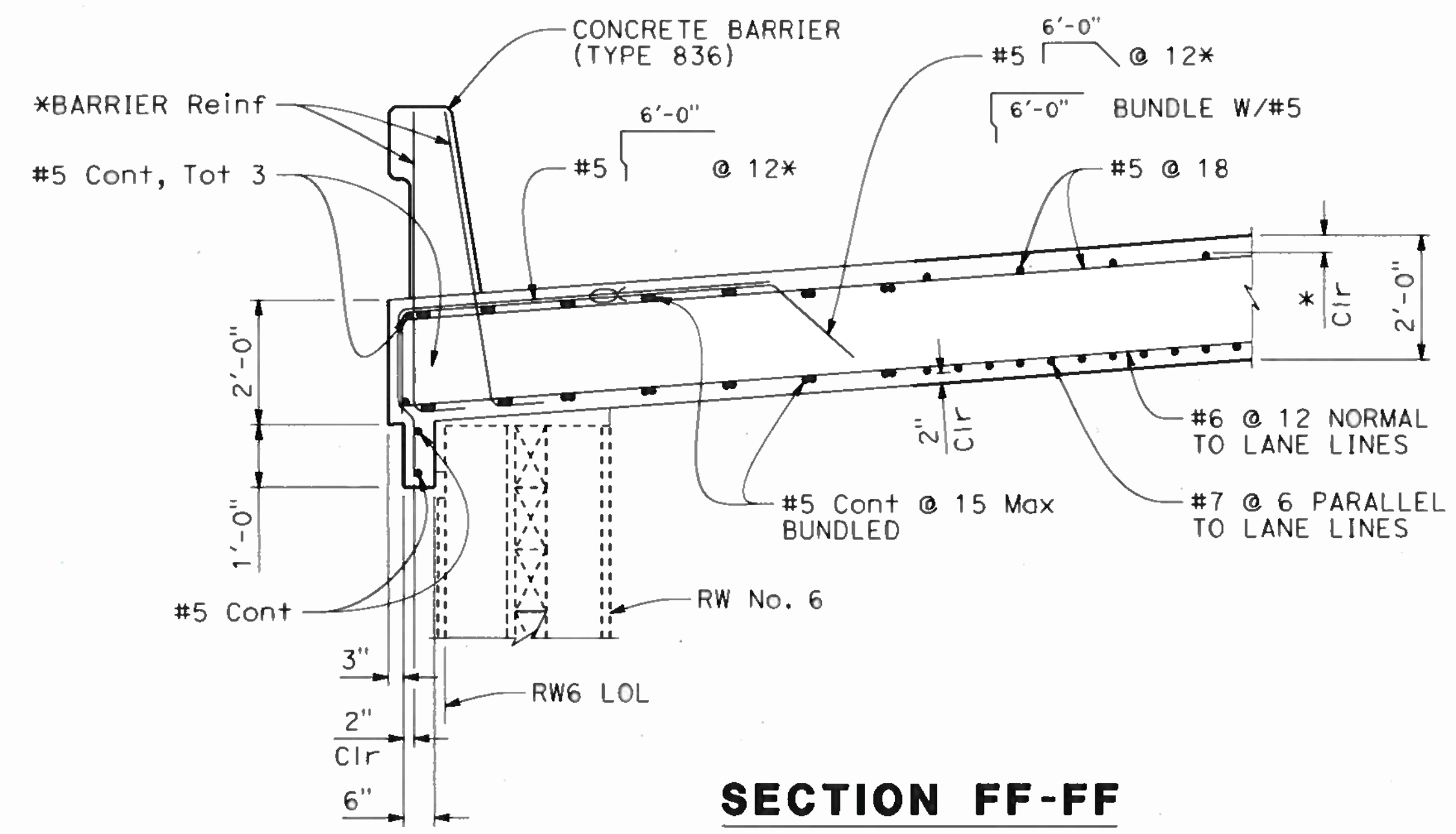
SECTION EE-EE
NO SCALE

LEGEND:

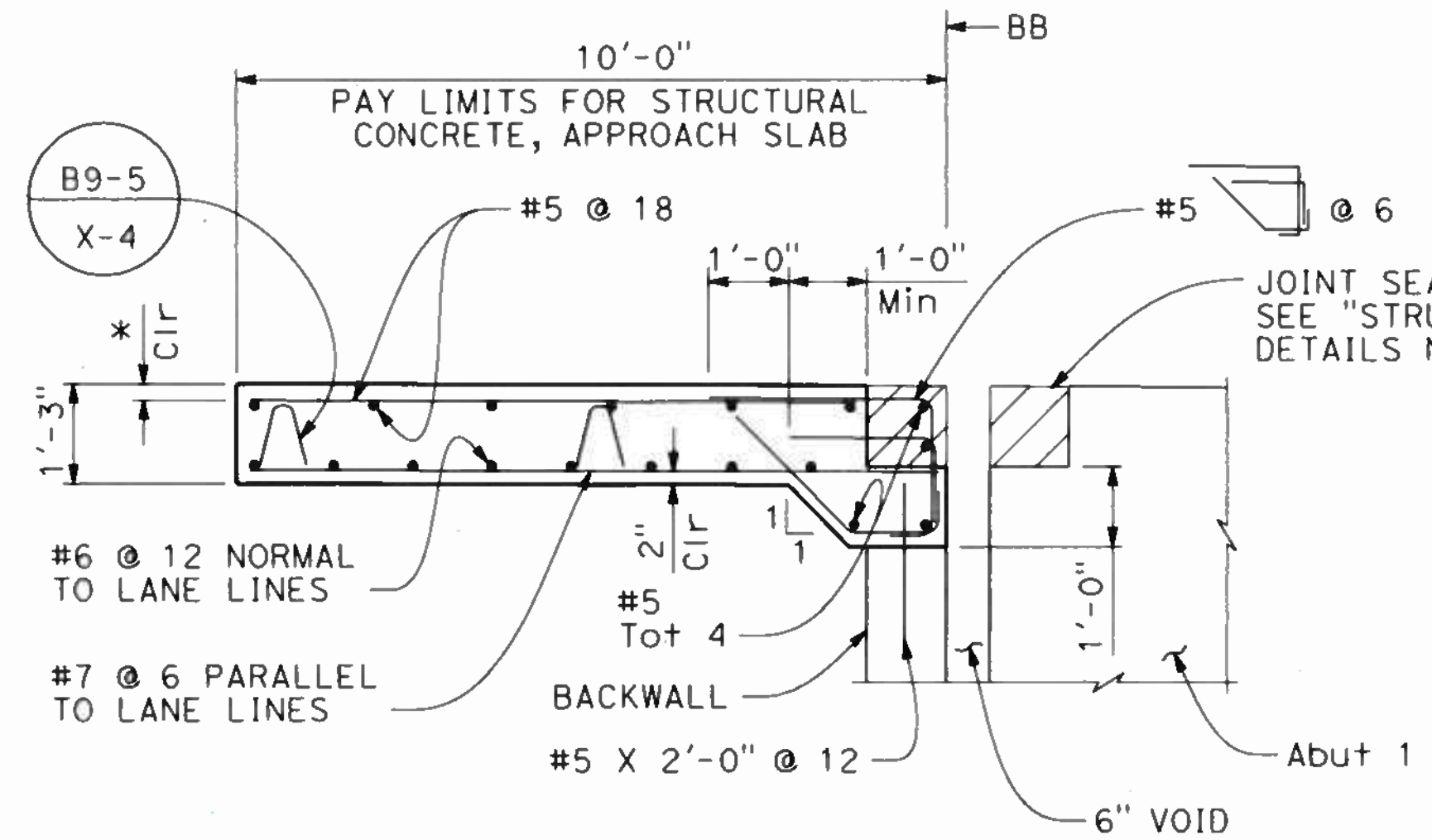
- * All approach slab reinforcement shall be epoxy coated. Top mat minimum cover 2 1/2" clr, typ.
-  Indicates bundled bars

NOTES:

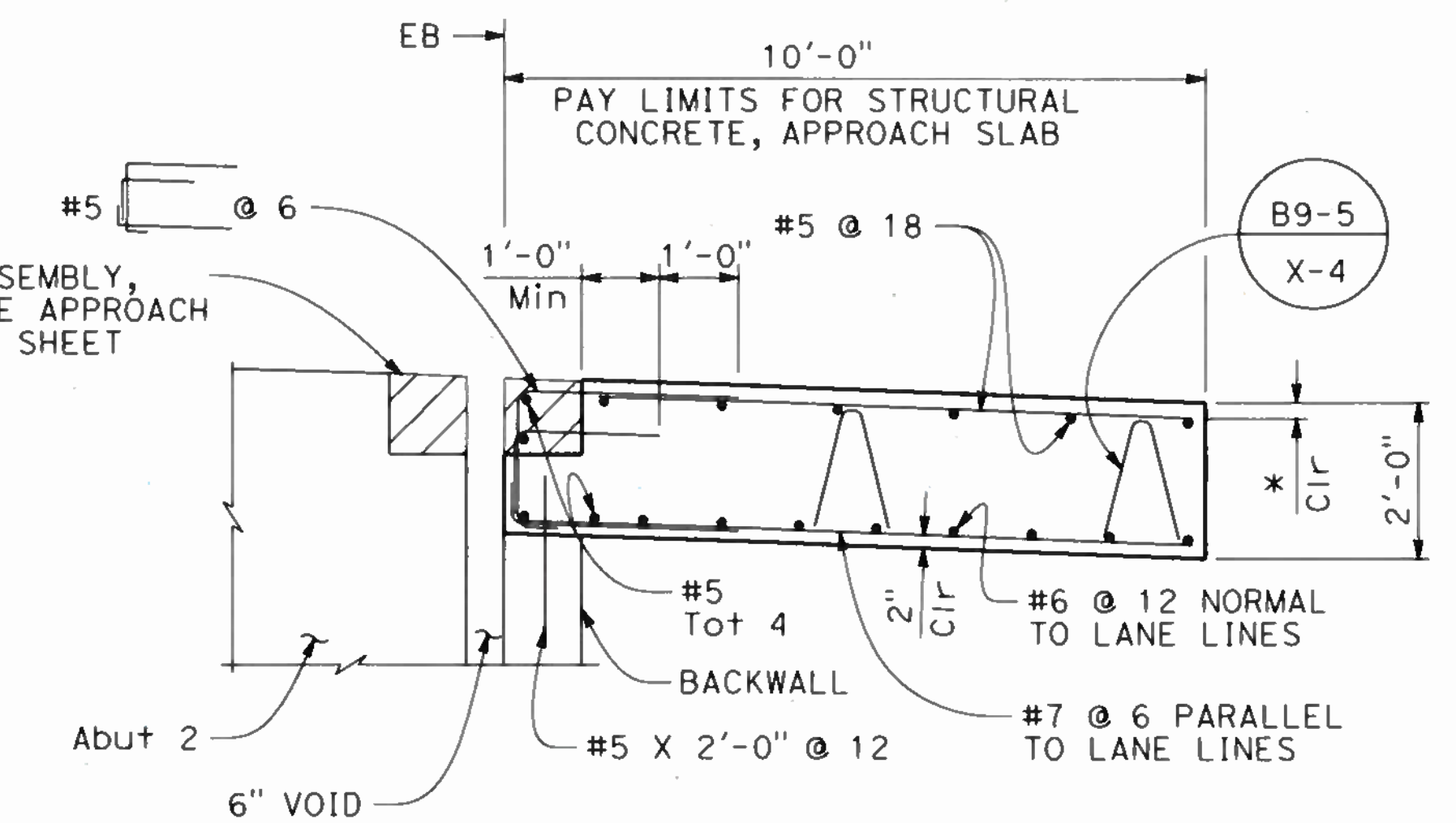
- At the Contractor's option, approach slab transverse reinforcement may be placed parallel to BB or EB. Spacing of transverse reinforcement is measured along "R1" Line.
- For details not shown, refer to Revised Standard Plans B9-4 and B9-5.



SECTION FF-FF
NO SCALE

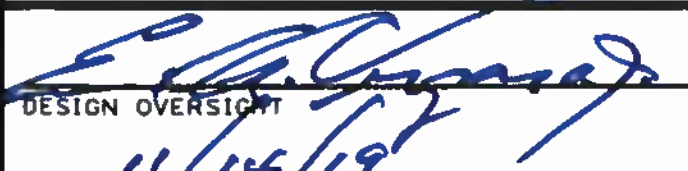


SECTION DD-DD
NO SCALE



SECTION CC-CC
NO SCALE

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

 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY: A. MALLA	CHECKED: J. SUK	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34-0191S	SOUTHGATE ROAD UC STRUCTURE APPROACH DETAILS No. 1
	DETAILS	BY: J. GREEN	CHECKED: A. MALLA		PROJECT ENGINEER	JOHN MANISCALCO	
	QUANTITIES	BY: A. MALLA	CHECKED: A. CARMAZZI		POST MILES	7.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 10-22-19, 11-16-19, 2-22-19, 1-24-19
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)							SHEET 36 OF 40

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 11:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	246	436

REGISTERED CIVIL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

7-25-19
 DATE

PLANS APPROVAL DATE

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

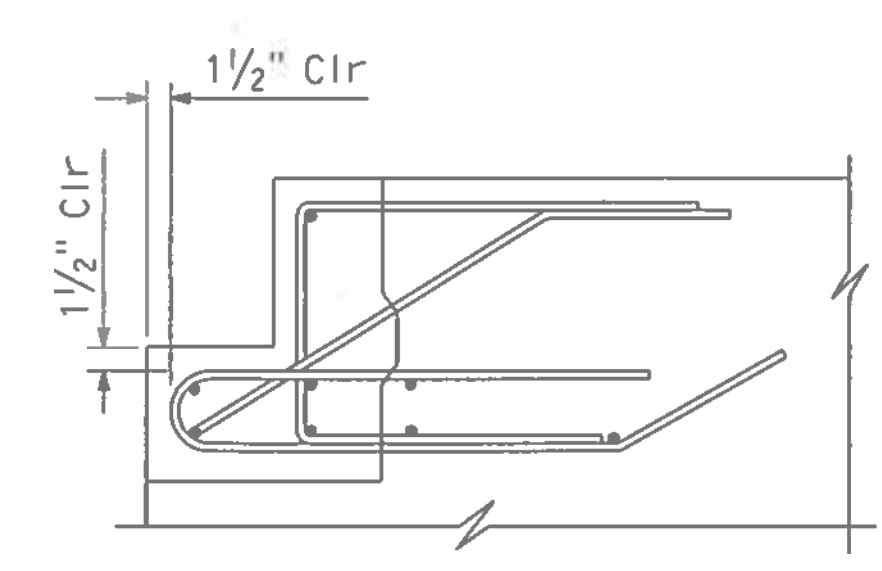
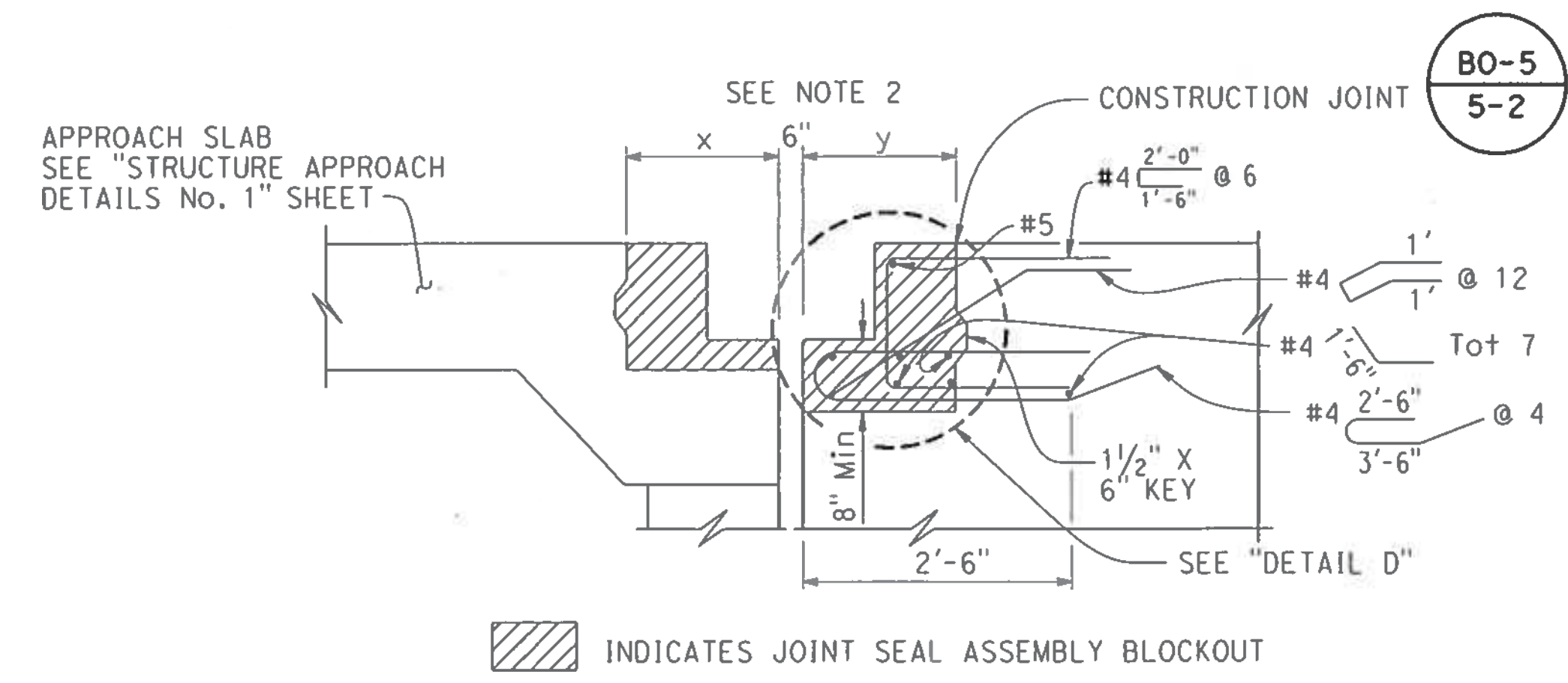
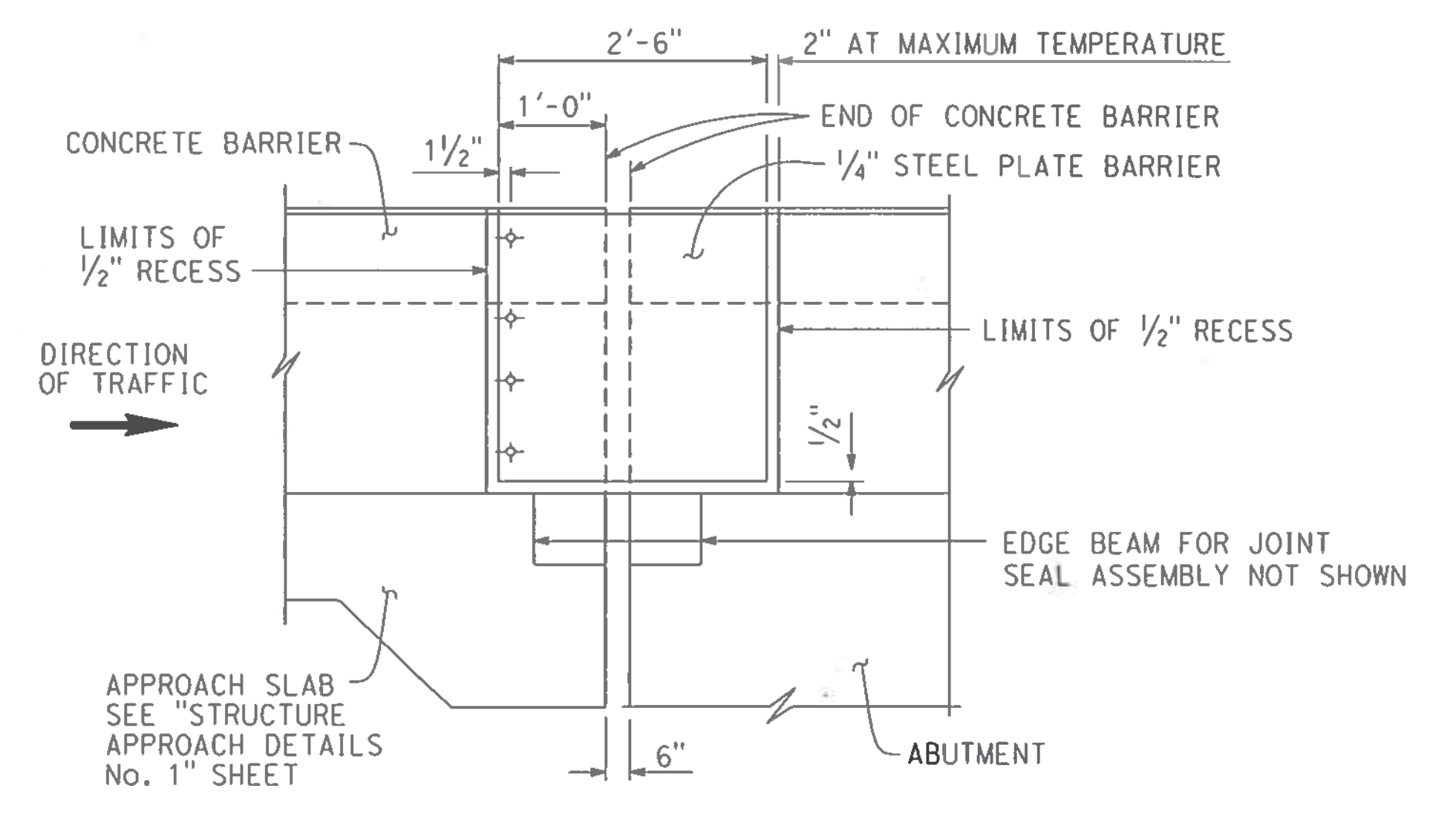
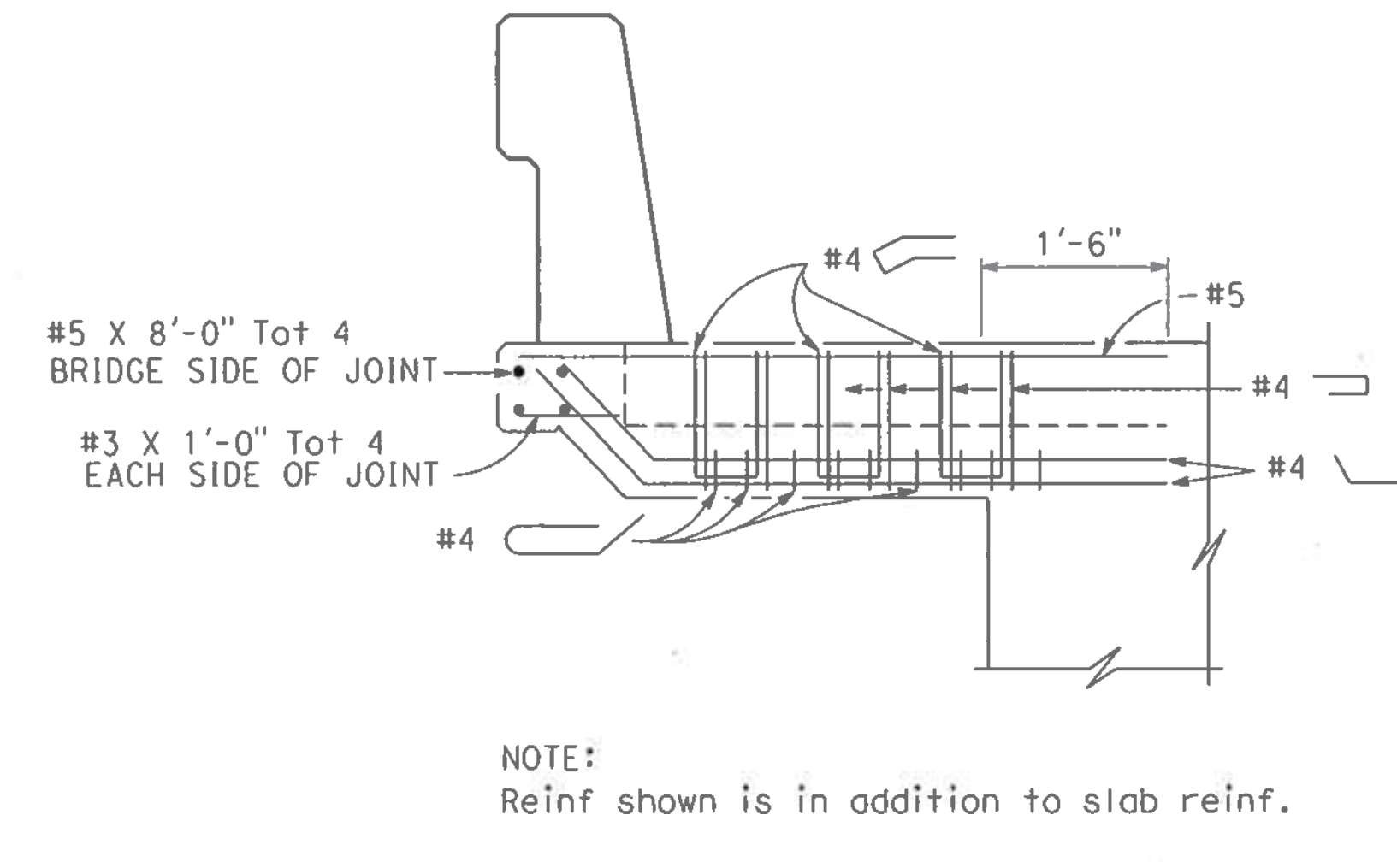
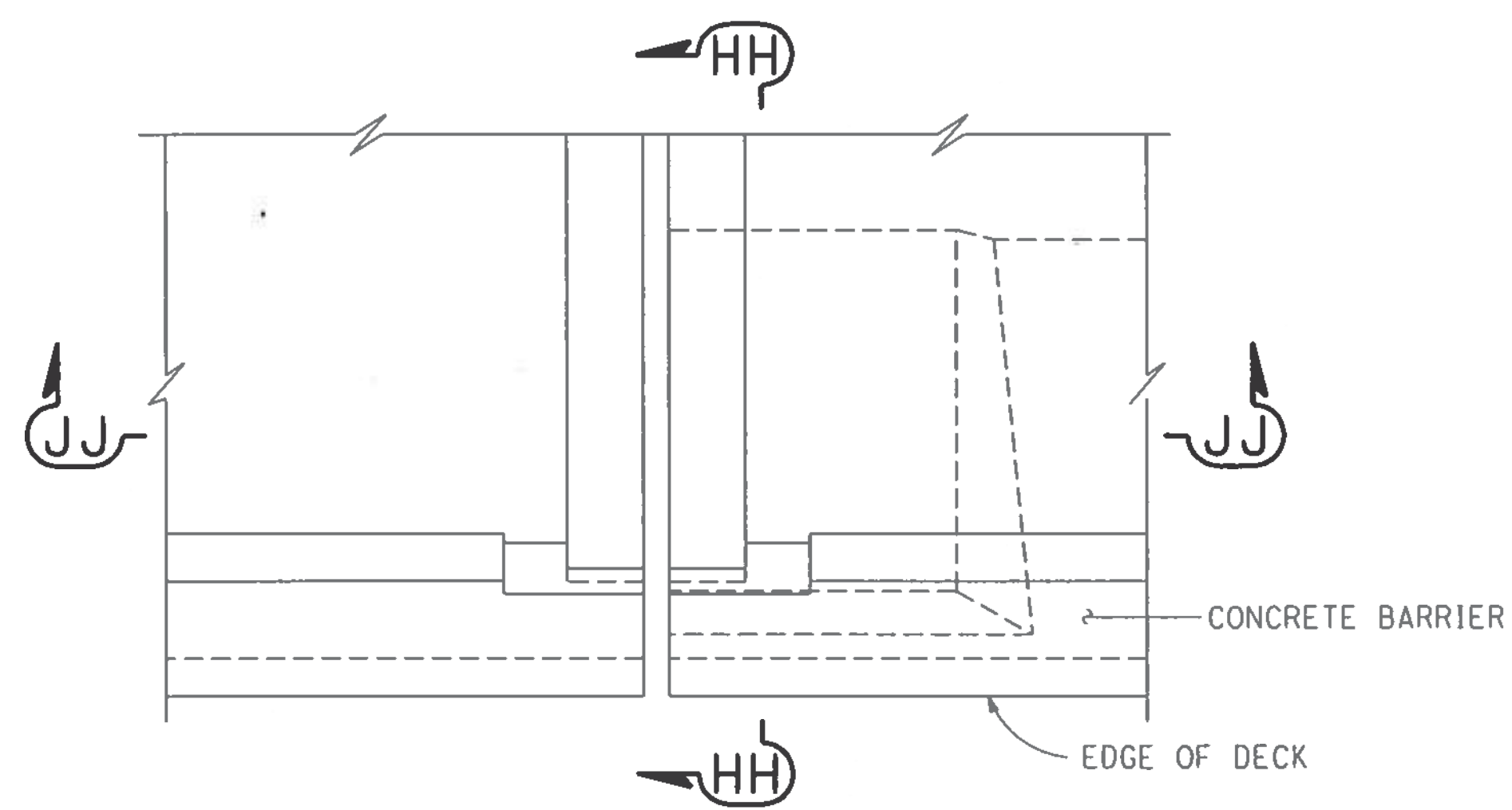
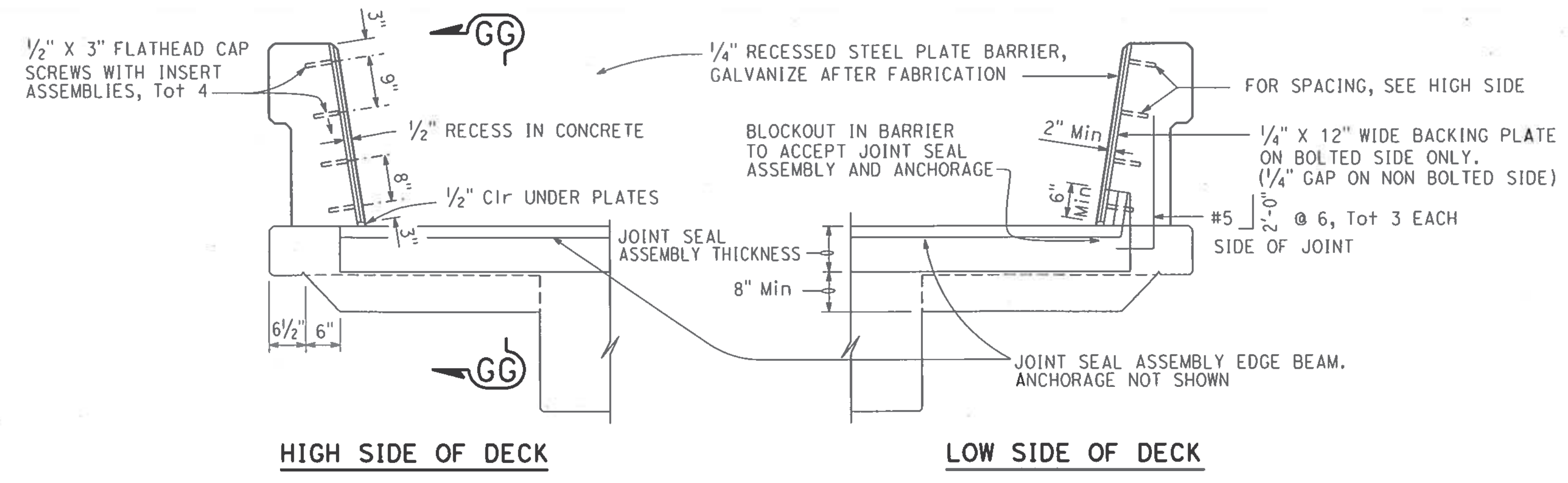
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

- For details not shown, see Project PLANS.
- x is greater than or equal to y.

JOINT INFORMATION	
LOCATION	MOVEMENT RATING (MR)
Abut 1	6"
Abut 2	6"



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

DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/19

DESIGN	BY A. MALLA	CHECKED J. SUK
DETAILS	BY J. GREEN	CHECKED A. MALLA
QUANTITIES	BY A. MALLA	CHECKED A. CARMAZZI

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0191S
POST MILES	7.9

SOUTHGATE ROAD UC
STRUCTURE APPROACH DETAILS No. 2

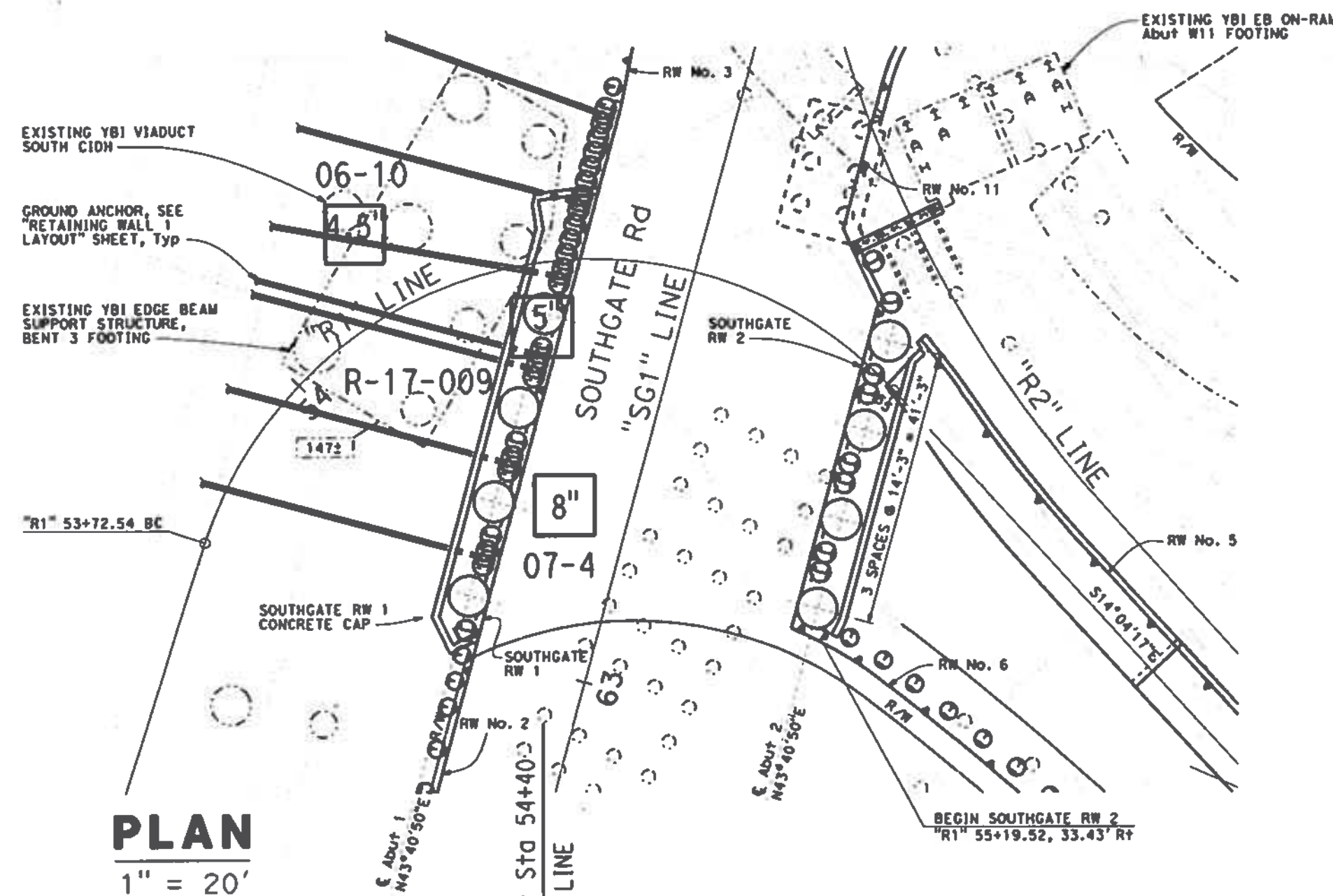
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

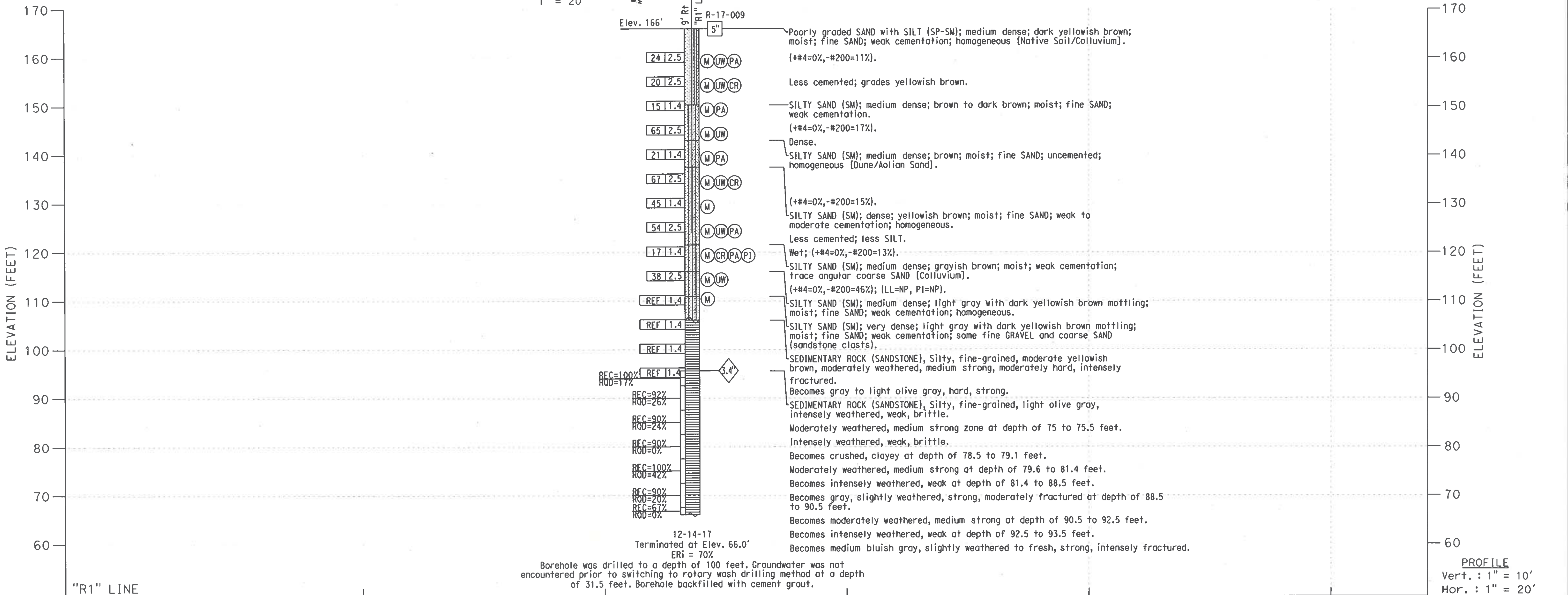
This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



PLAN
1" = 20'



PROFILE
Vert. : 1" = 10'
Hor. : 1" = 20'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	247	436

Signature: *Gary Parikh*
 GEOTECHNICAL PROFESSIONAL DATE: 5-17-19
 PLANS APPROVAL DATE: _____
 Registered Professional Engineer: GARY PARIKH
 No. 666
 Exp. 12/31/19
 STATE OF CALIFORNIA
 BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 OUME DRIVE, SUITE A
 SAN JOSE, CA 95131

DESIGN OVERSIGHT: *[Signature]*
 SIGN OFF DATE: 11/14/19

DRAWN BY: KIM OUYANG
 CHECKED BY: FRANK WANG

L.S. BHANGOO
 FIELD INVESTIGATION BY:
 DATE: DEC 2017

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

FRANK WANG
 PROJECT ENGINEER

BRIDGE NO.
 34-0191S
 POST MILES
 7.9

SOUTHGATE ROAD UC
LOG OF TEST BORINGS 1 OF 3

USERNAME -> ogothier DATE PLOTTED => 21-OCT-2019 TIME PLOTTED => 16:18



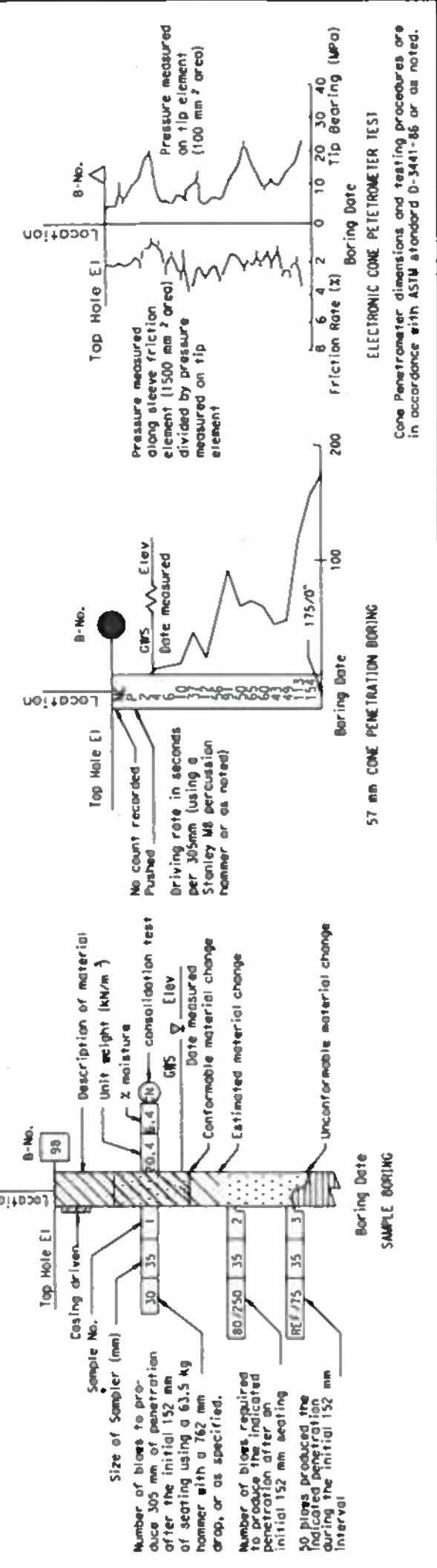
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	482	821

09/06/07
 GEOTECHNICAL PROFESSIONAL
 2-21-12
 PLANS APPROVAL DATE
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FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

LEGEND OF BORING OPERATIONS



IN-SITU, LAB & FIELD TEST DESIGNATIONS

AL	Atterberg Limits	CA	Consistency
CB	Maximum Density	CD	Consolidation
CE	Direct Shear	CF	R-Value
CG	Pocket Penetrometer	CH	Grain Size
CI	Sand Equivalent	CJ	Unconfined Compression
CK	Unconfined Triaxial	CL	Wash Analysis

TYPE OF BORINGS

1	57 MM CONE PENETRATION	10	TEST PIT
2	ROTARY WASH	11	DIAMOND CORE BORING
3	ELECTRONIC CONE PENETROMETER	12	SOIL TUBE
4	Auger Boring (Dry)	13	

LEGEND FOR EARTH MATERIALS (USCS)

CL	CLAY (CL or CH)	GM	GRAVEL (GM)
ML	SILT (ML or MH)	GC	CLAYEY GRAVEL (GC)
SM	SILT SAND (SM)	GM-GC	GRAVEL (GM-GC)
SC	SANDY SILT (SC)		
SP	POORLY GRADED SAND (SP)		
SW	WELL-GRADED SAND (SW)		
SM	MEDIUM DENSE SAND (SM)		
SC	CLAYEY SAND (SC)		
ML	SILT (ML or MH)		
SM	SILT SAND (SM)		
SC	SANDY SILT (SC)		
SP	POORLY GRADED SAND (SP)		
SW	WELL-GRADED SAND (SW)		
GM	GRAVEL (GM)		
GC	CLAYEY GRAVEL (GC)		

CONSISTENCY CLASSIFICATION FOR SOILS

N-Value (Blows/30mm)	Granular		Cohesive	
	0-4	5-10	Very Loose	Very Soft
11-30	31-50	Loose	Soft	
51-100	101-150	Medium Dense	Firm	
151-200	201-250	Dense	Very Stiff	
251-300	301-350	Very Dense	Hard	



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

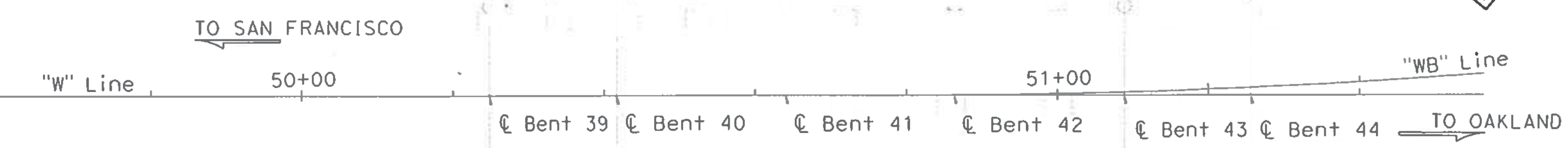
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	248	436

REGISTERED CIVIL ENGINEER
 DATE: 5-17-19

SOUTHGATE ROAD UC
LOG OF TEST BORINGS 2 OF 3

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

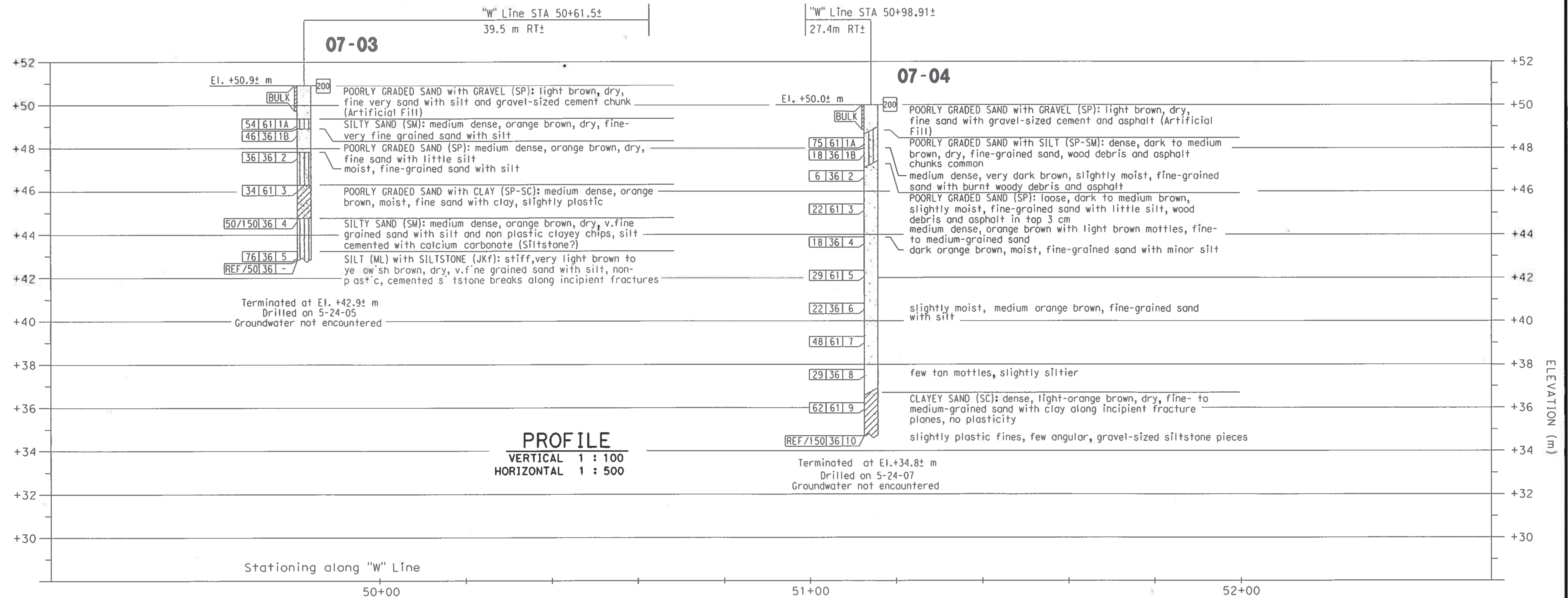
BRIDGE No.	34-0191S
Sheet of	39 of 40



PLAN 1:500

- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR, "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
07-04	54+38	36' Rt.



WEST TIE-IN PHASE 3

LOG OF TEST BORINGS NO. 6

BRIDGE NO. 34-0006
 KILOMETER POST

DESIGN OVERSIGHT

DRAWN BY: K. THANT 05/29/07
 CHECKED BY: M. KAPUSKAR 06/04/07

C.DOMROSE
 FIELD INVESTIGATION BY:
 DATE: 05/24/07

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR PROJECT ENGINEER

CU 04 EA 0120R1

LEGEND OF BORING OPERATIONS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPE OF BORINGS

LEGEND FOR EARTH MATERIALS (USCS)

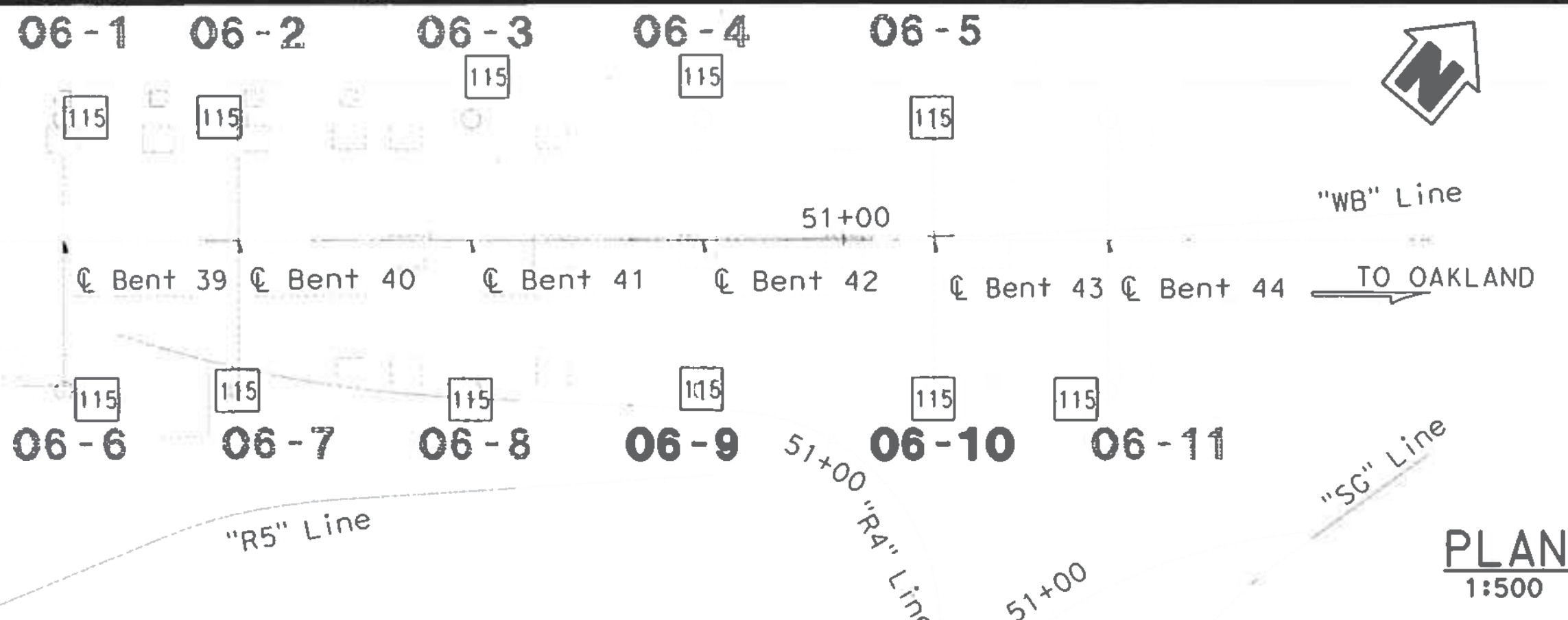
CONSISTENCY CLASSIFICATION FOR SOILS

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
06-10	54+18	13' Lt.



Caltrans Metric

DIST: 04 COUNTY: SF ROUTE: 80 KILOMETER TOTAL PROJECT: 12.6/13.9 SHEET NO: 479 TOTAL SHEETS: 821

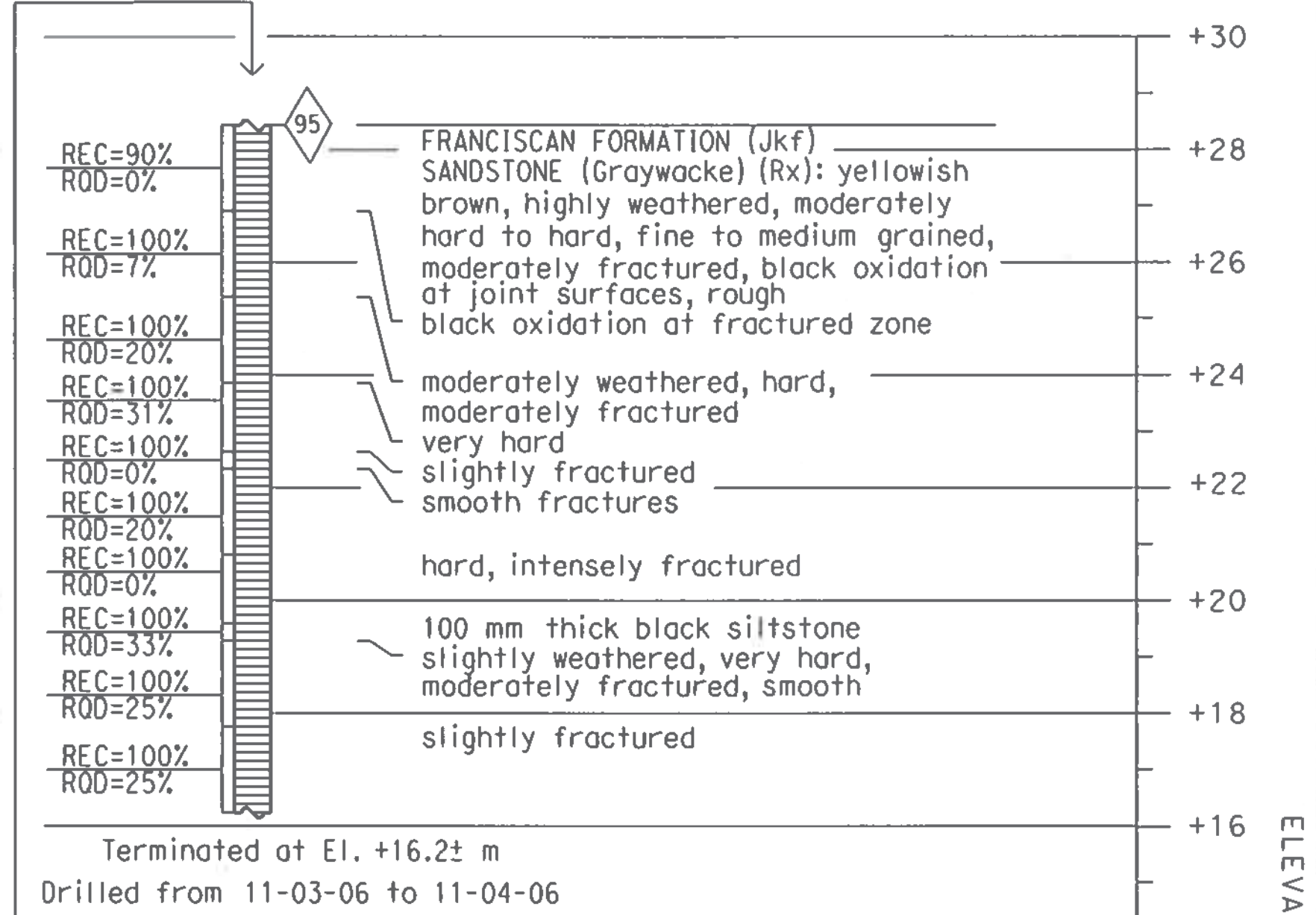
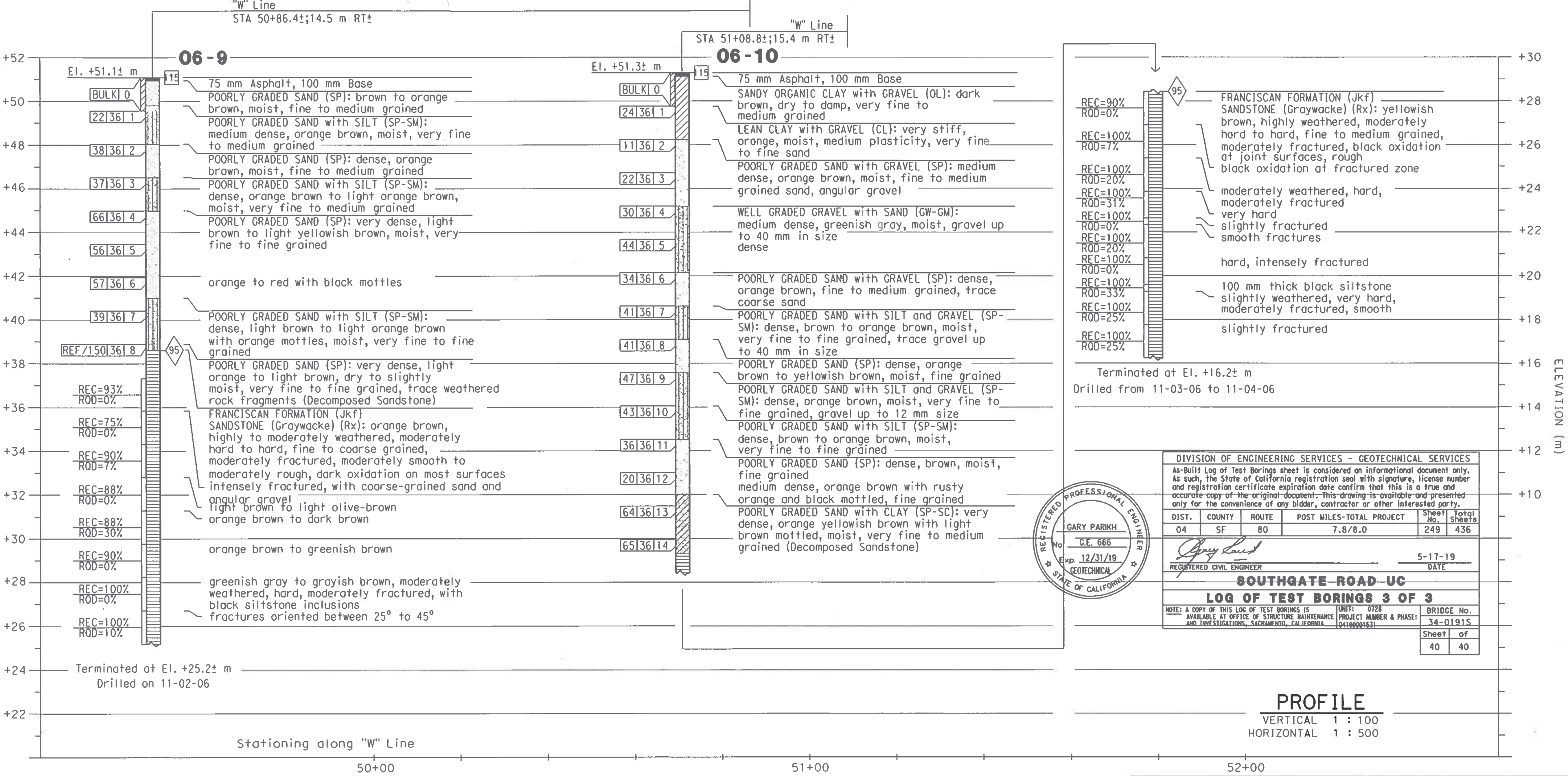
09/06/07
Michael Kydonie
 GEOTECHNICAL PROFESSIONAL

2-21-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MIKE KAPUSKAR
 NO. GE 2564
 EXP. 12-31-08
 STATE OF CALIFORNIA

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

FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	249	436

GARY PARIKH
 G.E. 656
 Exp. 12/31/19
 REGISTERED CIVIL ENGINEER
 DATE: 5-17-19

SOUTHGATE ROAD UC

LOG OF TEST BORINGS 3 OF 3

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0128	BRIDGE No.
PROJECT NUMBER & PHASE: 04180001531	34-0191S
Sheet of	of
40	40

DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/19

DRAWN BY: R. GNANAPRAGASAM 11/15/06
CHECKED BY: M. KAPUSKAR 11/28/06

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

C. DOMROSE, M. THAN
 FIELD INVESTIGATION BY:
 DATE: AS NOTED

M. KAPUSKAR
 PROJECT ENGINEER

BRIDGE NO.: 34-0006
KILOMETER POST:

CU 04
EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

WEST TIE-IN PHASE 3

YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)

LOG OF TEST BORINGS NO. 3

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET	OF
26	29

FILE => 34-0006-26-z-11t03.dgn

DATE PLOTTED => 25-FEB-2012
 USERNAME => 6114926

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	250	436

BENCHMARK

POINT	N	E	ELEVATION	DESCRIPTION
YB10	2,122,323.24	6,023,410.11	187.58	MAG NAIL WITH TOWILL TAG

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983, 1991.35 EPOCH, ZONE 3, US SURVEY FEET. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

7-25-19
 REGISTERED CIVIL ENGINEER DATE

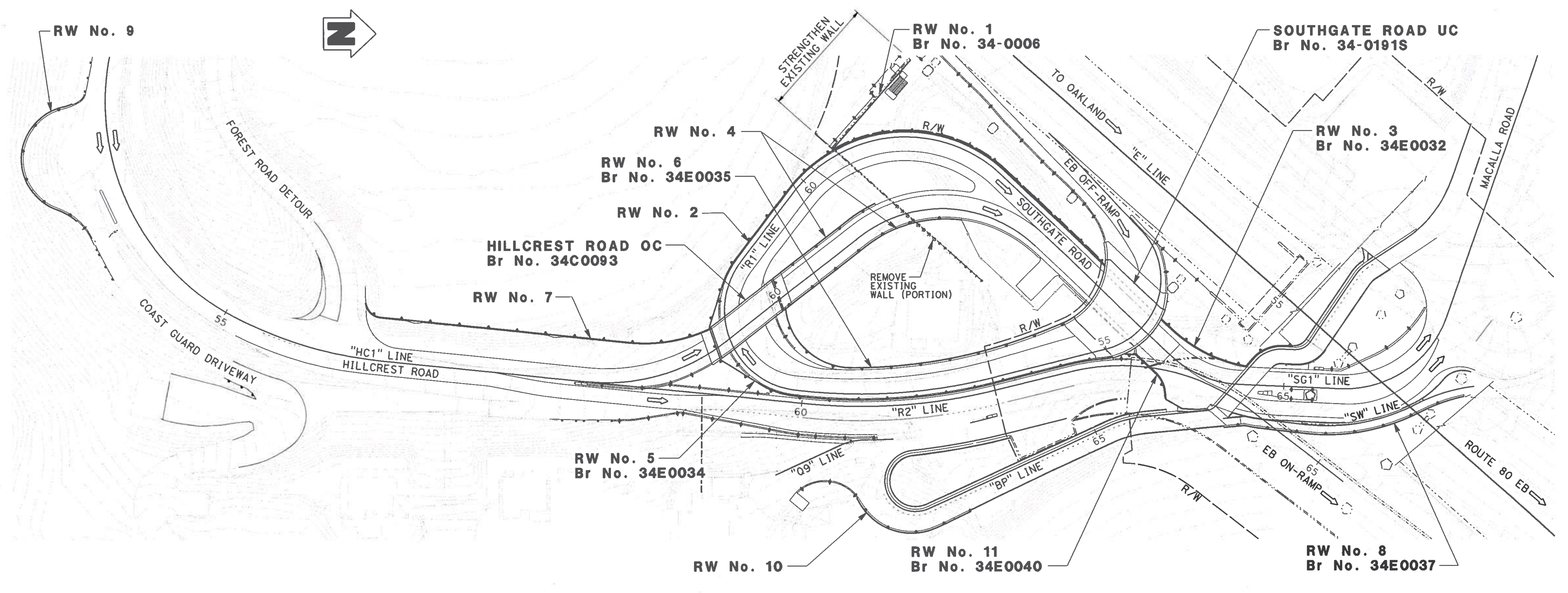
PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

REGISTERED PROFESSIONAL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA



DESIGN OVERSIGHT
 SIGN OFF DATE
 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED T. MEHTA	SPECIFICATIONS	BY T. MEHTA
				CHECKED T. MEHTA
				PLANS AND SPECS COMPARED M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO. VARIES

POST MILES VARIES

RETAINING WALL KEY MAP

GENERAL PLAN

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19	1	168

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 11:58

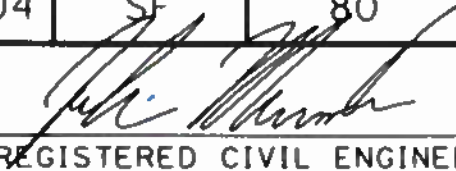
ABBREVIATIONS

TOW Top of wall
 BOW Bottom of wall



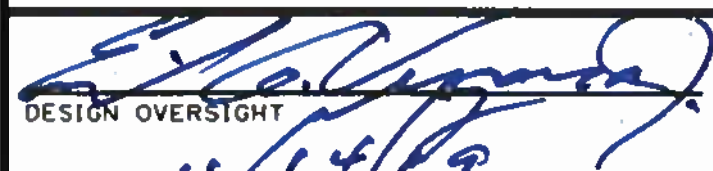
STANDARD PLANS OCTOBER 2018

A3A	ABBREVIATIONS (SHEET 1 OF 3)	RSP A85	CHAIN LINK FENCE
A3B	ABBREVIATIONS (SHEET 2 OF 3)	D72B	CIP DRAINAGE INLETS TYPES G1, G2, G3, G4, G5, AND G6
A3C	ABBREVIATIONS (SHEET 3 OF 3)	D77A	GRATE DETAILS No. 1
A10A	LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)	B0-3	BRIDGE DETAILS
A10B	LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)	B3-4A	RETAINING WALL TYPE 5 (CASE 1)
A10C	LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)	B3-5	RETAINING WALL DETAILS No. 1
A10D	LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)	B3-6	RETAINING WALL DETAILS No. 2
A10E	LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)	B11-47	CABLE RAILING
A10F	LEGEND - SOIL (SHEET 1 OF 2)	RSP B11-79	CONCRETE BARRIER TYPE 836 DETAILS No. 1
A10G	LEGEND - SOIL (SHEET 2 OF 2)	RSP B11-80	CONCRETE BARRIER TYPE 836 DETAILS No. 2
A10H	LEGEND - ROCK	RSP B11-81	CONCRETE BARRIER TYPE 842 DETAILS No. 1
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL	RSP B11-82	CONCRETE BARRIER TYPE 842 DETAILS No. 2
A76A	CONCRETE BARRIER TYPE 60M		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	251	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE _____					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

INDEX TO PLANS

SHEET No.	TITLE	SHEET No.	TITLE	SHEET No.	TITLE	SHEET No.	TITLE						
<u>RETAINING WALL KEY MAP</u>													
1	GENERAL PLAN	<u>RETAINING WALL No. 3 (CONTINUED)</u>											
2	INDEX TO PLANS	42	SOLDIER PILE WALL LAYOUT	<u>RETAINING WALL No. 5 (CONTINUED)</u>									
<u>RETAINING WALL No. 1</u>													
3	GENERAL PLAN	43	SOLDIER PILE WALL DETAILS No. 1	86	CONCRETE BARRIER SLAB DETAILS	<u>RETAINING WALL No. 7 (CONTINUED)</u>							
4	REMOVAL DETAILS	44	SOLDIER PILE WALL DETAILS No. 2	87	MISCELLANEOUS DETAILS No. 1	130	LOG OF TEST BORINGS 1 OF 3						
5	RETAINING WALL DETAILS	45	SOLDIER PILE WALL DETAILS No. 3	88	MISCELLANEOUS DETAILS No. 2	131	LOG OF TEST BORINGS 2 OF 3						
6	MISCELLANEOUS DETAILS	46	SOLDIER PILE WALL DETAILS No. 4	89	MISCELLANEOUS DETAILS No. 3	132	LOG OF TEST BORINGS 3 OF 3						
7	LOG OF TEST BORINGS 1 OF 2	47	SOLDIER PILE WALL DETAILS No. 5	90	SUB HORIZONTAL GROUND ANCHOR DETAILS	<u>RETAINING WALL No. 8</u>							
8	LOG OF TEST BORINGS 2 OF 2	48	MISCELLANEOUS DETAILS	91	LOG OF TEST BORINGS 1 OF 6	133	GENERAL PLAN No. 1						
<u>RETAINING WALL No. 2</u>													
9	GENERAL PLAN No. 1	49	LOG OF TEST BORINGS 1 OF 6	92	LOG OF TEST BORINGS 2 OF 6	134	GENERAL PLAN No. 2						
10	GENERAL PLAN No. 2	50	LOG OF TEST BORINGS 2 OF 6	93	LOG OF TEST BORINGS 3 OF 6	135	FOUNDATION PLAN						
11	GENERAL PLAN No. 3	51	LOG OF TEST BORINGS 3 OF 6	94	LOG OF TEST BORINGS 4 OF 6	136	RETAINING WALL DETAILS						
12	GENERAL PLAN No. 4	52	LOG OF TEST BORINGS 4 OF 6	95	LOG OF TEST BORINGS 5 OF 6	137	MISCELLANEOUS DETAILS No. 1						
13	GENERAL PLAN No. 5	53	LOG OF TEST BORINGS 5 OF 6	96	LOG OF TEST BORINGS 6 OF 6	138	MISCELLANEOUS DETAILS No. 2						
14	GENERAL PLAN No. 6	54	LOG OF TEST BORINGS 6 OF 6	<u>RETAINING WALL No. 6</u>									
15	FOUNDATION PLAN	<u>RETAINING WALL No. 4</u>											
16	GROUND ANCHOR WALL LAYOUT No. 1	55	GENERAL PLAN No. 1	97	GENERAL PLAN No. 1	139	LOG OF TEST BORINGS 1 OF 4						
17	GROUND ANCHOR WALL LAYOUT No. 2	56	GENERAL PLAN No. 2	98	GENERAL PLAN No. 2	140	LOG OF TEST BORINGS 2 OF 4						
18	GROUND ANCHOR WALL LAYOUT No. 3	57	GENERAL PLAN No. 3	99	GENERAL PLAN No. 3	141	LOG OF TEST BORINGS 3 OF 4						
19	SOLDIER PILE WALL LAYOUT No. 1	58	GENERAL PLAN No. 4	100	GENERAL PLAN No. 4	142	LOG OF TEST BORINGS 4 OF 4						
20	SOLDIER PILE WALL LAYOUT No. 2	59	WALL PANEL LAYOUT No. 1	101	FOUNDATION PLAN	<u>RETAINING WALL No. 9</u>							
21	GROUND ANCHOR WALL DETAILS	60	WALL PANEL LAYOUT No. 2	102	SOLDIER PILE WALL LAYOUT No. 1	143	GENERAL PLAN No. 1						
22	SOLDIER PILE WALL DETAILS No. 1	61	WALL PANEL LAYOUT No. 3	103	SOLDIER PILE WALL LAYOUT No. 2	144	GENERAL PLAN No. 2						
23	SOLDIER PILE WALL DETAILS No. 2	62	WALL PANEL LAYOUT No. 4	104	SOLDIER PILE WALL DETAILS No. 1	145	RETAINING WALL DETAILS No. 1						
24	SOLDIER PILE WALL DETAILS No. 3	63	CONCRETE BARRIER SLAB DETAILS	105	SOLDIER PILE WALL DETAILS No. 2	146	RETAINING WALL DETAILS No. 2						
25	SOLDIER PILE WALL DETAILS No. 4	64	MISCELLANEOUS DETAILS	106	SOLDIER PILE WALL DETAILS No. 3	147	MISCELLANEOUS DETAILS						
26	SOLDIER PILE WALL DETAILS No. 5	65	MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1	107	CONCRETE BARRIER SLAB DETAILS	148	LOG OF TEST BORINGS						
27	MISCELLANEOUS DETAILS No. 1	66	MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 2	108	MISCELLANEOUS DETAILS	<u>RETAINING WALL No. 10</u>							
28	MISCELLANEOUS DETAILS No. 2	67	MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 3	109	LOG OF TEST BORINGS 1 OF 6	149	GENERAL PLAN No. 1						
29	MISCELLANEOUS DETAILS No. 3	68	MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 6	110	LOG OF TEST BORINGS 2 OF 6	150	GENERAL PLAN No. 2						
30	SUB HORIZONTAL GROUND ANCHOR DETAILS	69	LOG OF TEST BORINGS 1 OF 3	111	LOG OF TEST BORINGS 3 OF 6	151	FOUNDATION PLAN						
31	LOG OF TEST BORINGS 1 OF 7	70	LOG OF TEST BORINGS 2 OF 3	112	LOG OF TEST BORINGS 4 OF 6	152	RETAINING WALL DETAILS						
32	LOG OF TEST BORINGS 2 OF 7	71	LOG OF TEST BORINGS 3 OF 3	113	LOG OF TEST BORINGS 5 OF 6	153	MISCELLANEOUS DETAILS No. 1						
33	LOG OF TEST BORINGS 3 OF 7	<u>RETAINING WALL No. 5</u>											
34	LOG OF TEST BORINGS 4 OF 7	72	GENERAL PLAN No. 1	114	LOG OF TEST BORINGS 6 OF 6	154	MISCELLANEOUS DETAILS No. 2						
35	LOG OF TEST BORINGS 5 OF 7	73	GENERAL PLAN No. 2	<u>RETAINING WALL No. 7</u>									
36	LOG OF TEST BORINGS 6 OF 7	74	GENERAL PLAN No. 3	115	GENERAL PLAN No. 1	155	LOG OF TEST BORINGS 1 OF 3						
37	LOG OF TEST BORINGS 7 OF 7	75	GENERAL PLAN No. 4	116	GENERAL PLAN No. 2	156	LOG OF TEST BORINGS 2 OF 3						
<u>RETAINING WALL No. 3</u>													
38	GENERAL PLAN No. 1	76	GENERAL PLAN No. 5	117	GENERAL PLAN No. 3	157	LOG OF TEST BORINGS 3 OF 3						
39	GENERAL PLAN No. 2	77	GENERAL PLAN No. 6	118	FOUNDATION PLAN	<u>RETAINING WALL No. 11</u>							
40	GENERAL PLAN No. 3	78	FOUNDATION PLAN	119	GROUND ANCHOR WALL LAYOUT No. 1	158	GENERAL PLAN No. 1						
41	FOUNDATION PLAN	79	SOLDIER PILE WALL LAYOUT	120	GROUND ANCHOR WALL LAYOUT No. 2	159	GENERAL PLAN No. 2						
<u>RETAINING WALL No. 4</u>													
80	RETAINING WALL DETAILS	80	RETAINING WALL DETAILS	121	SOLDIER PILE WALL LAYOUT	160	FOUNDATION PLAN						
81	SOLDIER PILE WALL DETAILS No. 1	81	SOLDIER PILE WALL DETAILS No. 1	122	GROUND ANCHOR WALL DETAILS	161	RETAINING WALL DETAILS No. 1						
82	SOLDIER PILE WALL DETAILS No. 2	82	SOLDIER PILE WALL DETAILS No. 2	123	SOLDIER PILE WALL DETAILS No. 1	162	RETAINING WALL DETAILS No. 2						
83	SOLDIER PILE WALL DETAILS No. 3	83	SOLDIER PILE WALL DETAILS No. 3	124	SOLDIER PILE WALL DETAILS No. 2	163	MISCELLANEOUS DETAILS						
84	SOLDIER PILE WALL DETAILS No. 4	84	SOLDIER PILE WALL DETAILS No. 4	125	SOLDIER PILE WALL DETAILS No. 3	164	LOG OF TEST BORINGS 1 OF 5						
85	SOLDIER PILE WALL DETAILS No. 5	85	SOLDIER PILE WALL DETAILS No. 5	126	MISCELLANEOUS DETAILS No. 1	165	LOG OF TEST BORINGS 2 OF 5						
<u>RETAINING WALL No. 5</u>													
126	MISCELLANEOUS DETAILS No. 2	<u>RETAINING WALL No. 6</u>											
127	MISCELLANEOUS DETAILS No. 3	126	MISCELLANEOUS DETAILS No. 1	127	MISCELLANEOUS DETAILS No. 2	166	LOG OF TEST BORINGS 3 OF 5						
128	MISCELLANEOUS DETAILS No. 3	128	MISCELLANEOUS DETAILS No. 3	128	MISCELLANEOUS DETAILS No. 3	167	LOG OF TEST BORINGS 4 OF 5						
129	SUB HORIZONTAL GROUND ANCHOR DETAILS	129	SUB HORIZONTAL GROUND ANCHOR DETAILS	129	SUB HORIZONTAL GROUND ANCHOR DETAILS	168	LOG OF TEST BORINGS 5 OF 5						

DESIGN OVERSIGHT

 SIGN OFF DATE 10/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED T. MEHTA

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	VARIABLES
POST MILES	VARIABLES

RETAINING WALL KEY MAP
INDEX TO PLANS

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 11:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	252	436

REGISTERED CIVIL ENGINEER
DATE 7-25-19
REGISTERED PROFESSIONAL ENGINEER
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014

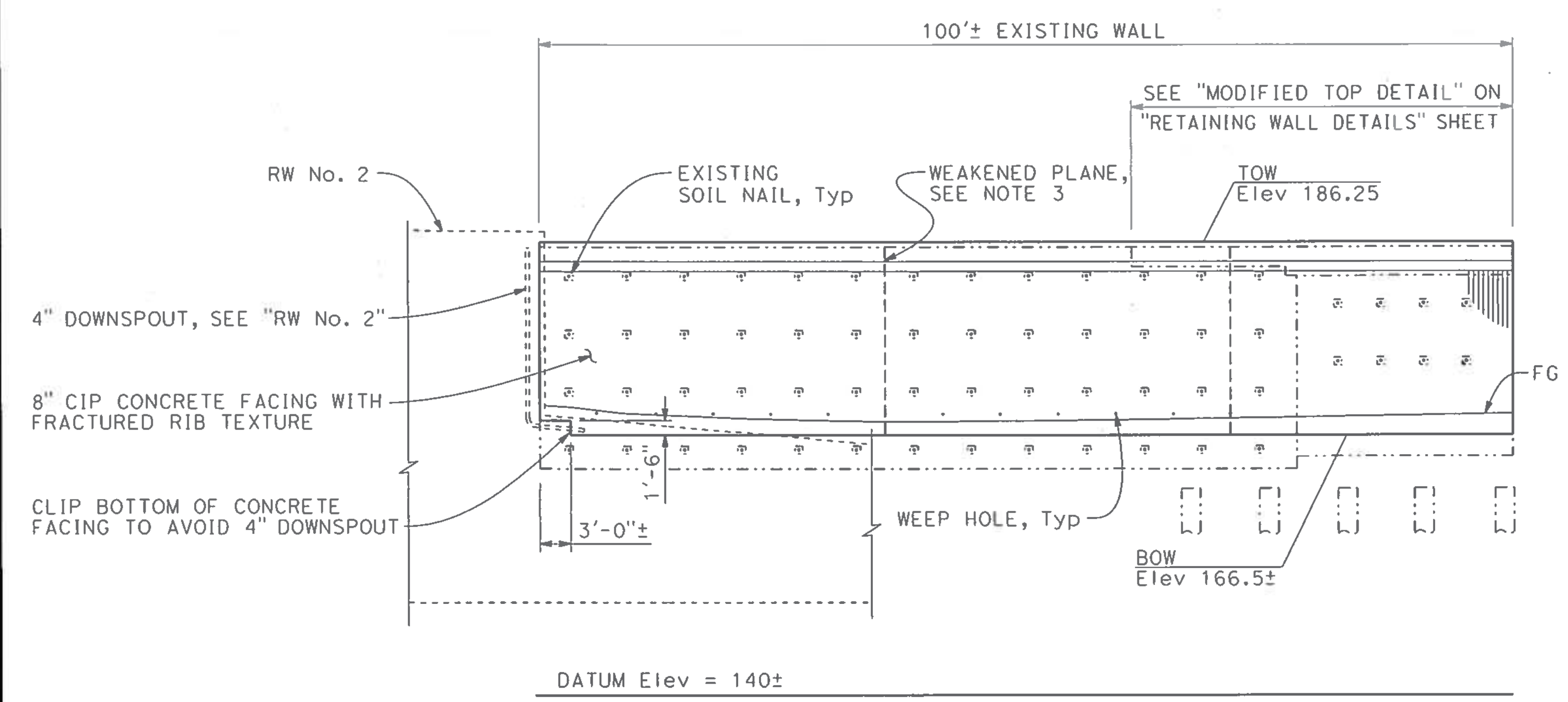
SOIL PARAMETERS:
Unit Weight, $\gamma = 125$ pcf
Friction Angle, $\phi = 34$ degrees
Ultimate Bond Stress = 1450 psf
Seismic Coefficient, $K_h = 0.33$

REINFORCED CONCRETE:
 $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

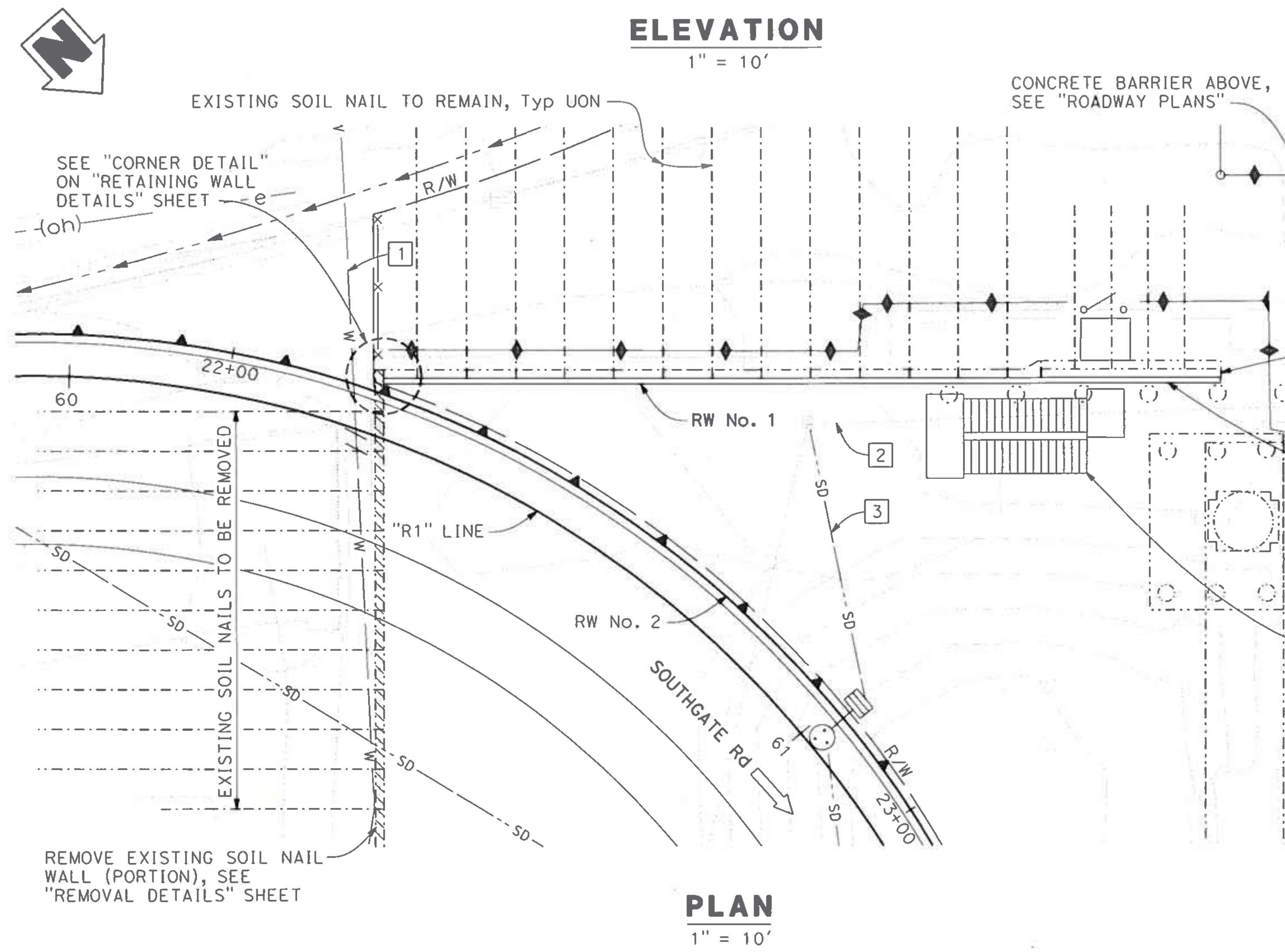
- LEGEND:
- Indicates existing structure
 - ← Indicates direction of traffic
 - ⊕ Indicates existing soil nail
 - ▨ Indicates removal (portion)

- NOTES:
- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
 - Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
 - Weakened Plane in CIP facing shall be centered between soil nails. For detail see B0-3
3-2
 - For excavation and backfill, see "MISCELLANEOUS DETAILS" sheet.
 - For drainage details, see "DRAINAGE PLANS"

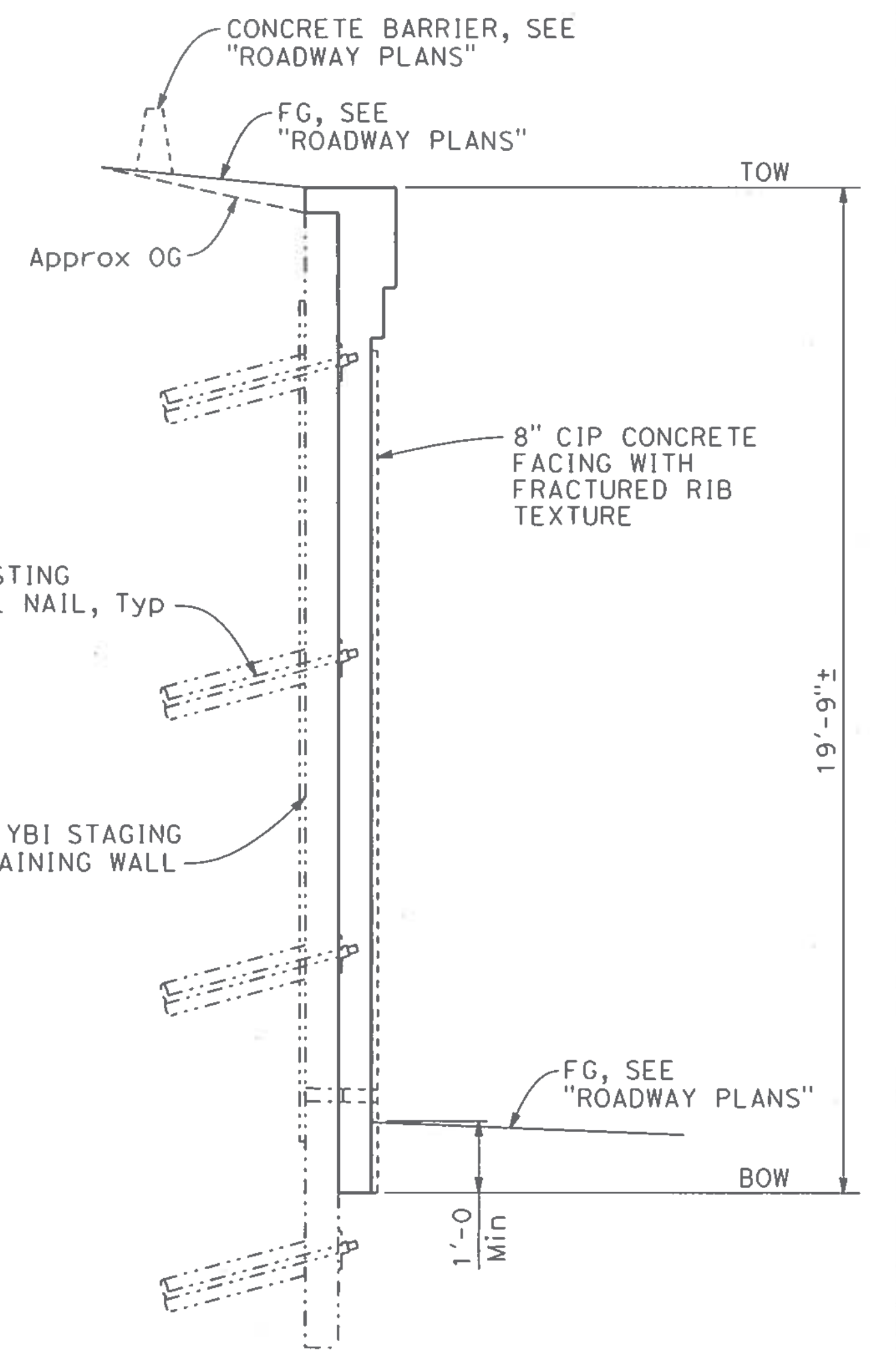
- UTILITIES:
- 1 Existing Abandoned Water
 - 2 Existing Storm Drain
 - 3 Storm Drain



ELEVATION
1" = 10'



PLAN
1" = 10'



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

QUANTITIES

STRUCTURAL CONCRETE, RETAINING WALL	62	CY
FRACTURED RIB TEXTURE	1,662	SQ FT
DRILL & BOND DOWEL	1,009	LF
BAR REINFORCING STEEL (WALL FACING)	7,017	LB
REMOVE RETAINING WALL (PORTION) (LS)	1	LS

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

DESIGN OVERSIGHT 11/14/19 SIGN OFF DATE	DESIGN BY T. MEHTA	CHECKED K. SERRANO-PAINE	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34-0006	RETAINING WALL No. 1 GENERAL PLAN
	DETAILS BY L. DAVIS	CHECKED T. MEHTA	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
	QUANTITIES BY K. SERRANO-PAINE	CHECKED T. MEHTA	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES 10-22-19 11-14-19 2-21-19 1-24-19

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414 DISREGARD PRINTS BEARING EARLIER REVISION DATES 10-22-19 11-14-19 2-21-19 1-24-19 SHEET 3 OF 168 USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 11:59 FILE => RW1-a-gp01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	253	436

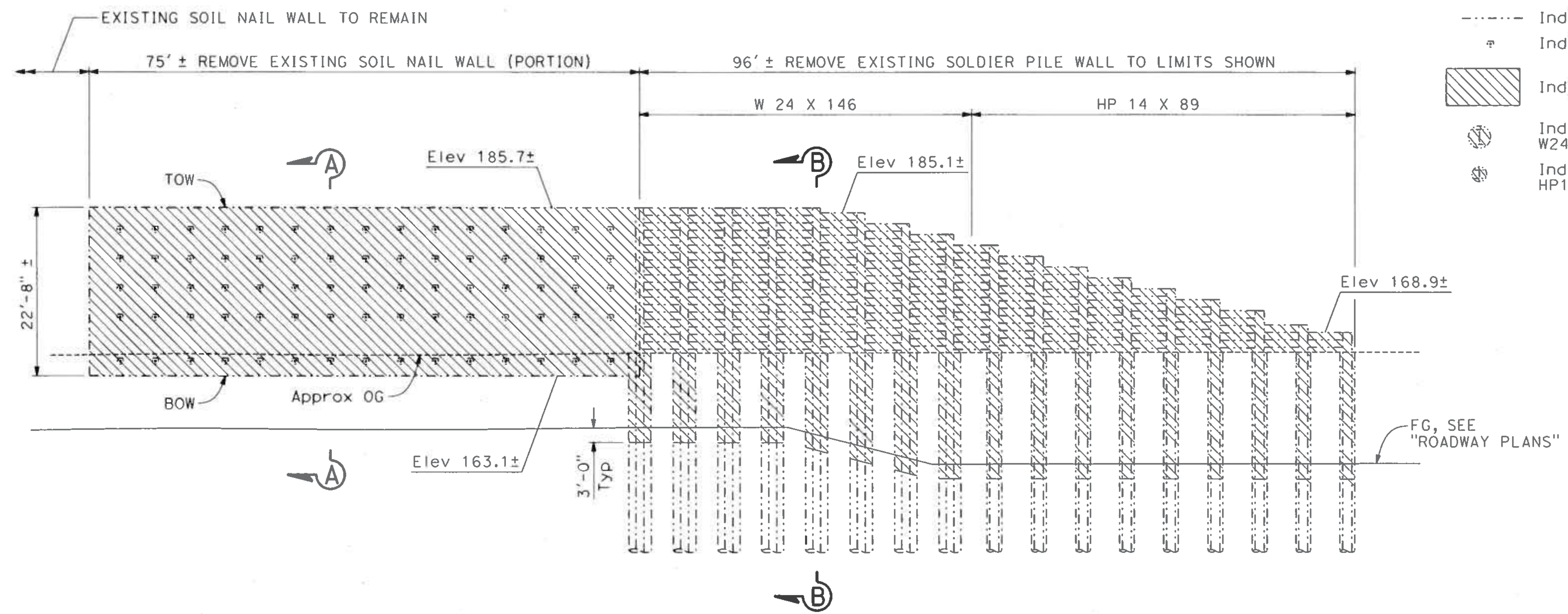
REGISTERED CIVIL ENGINEER	7-25-19	DATE
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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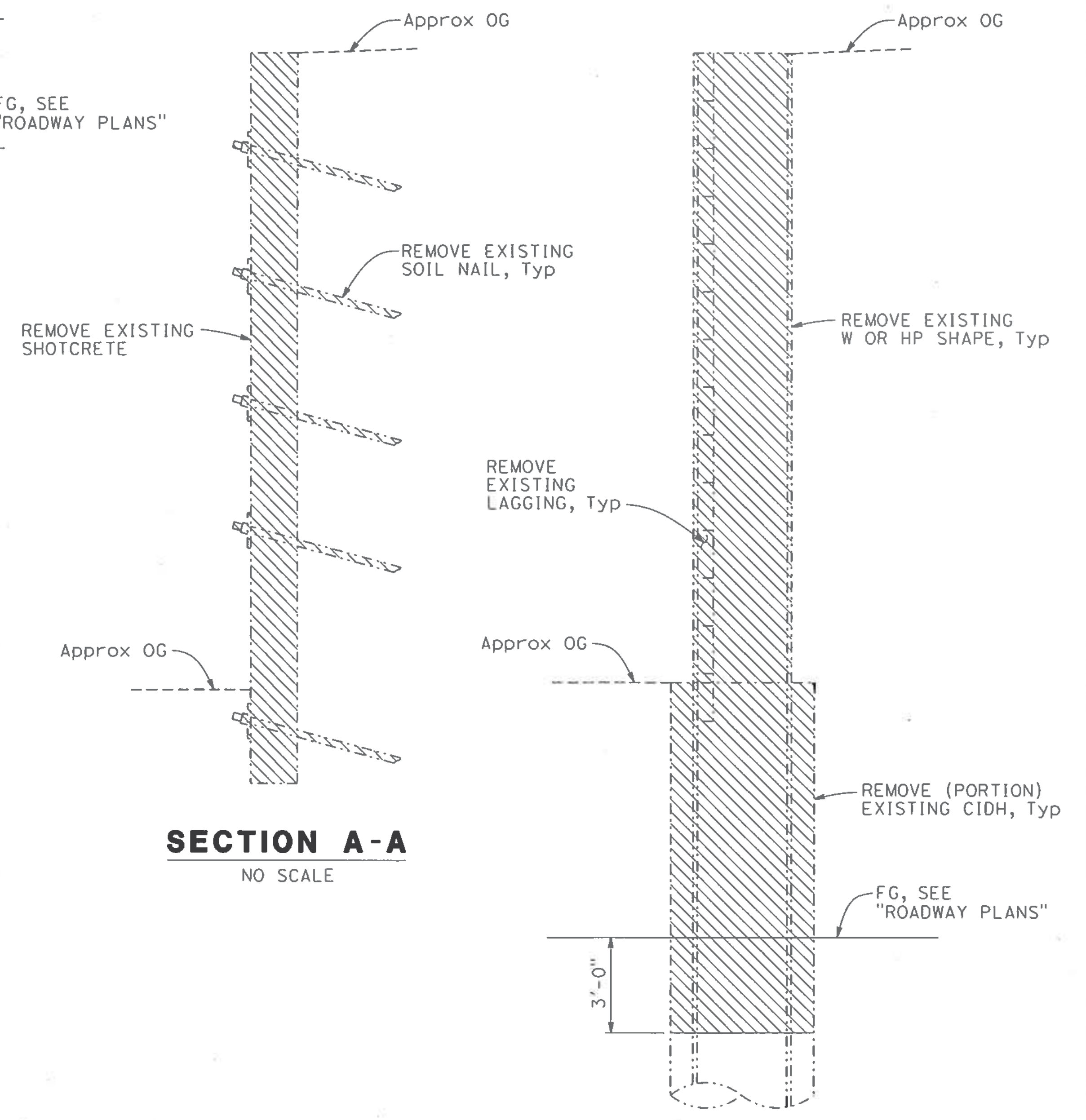
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



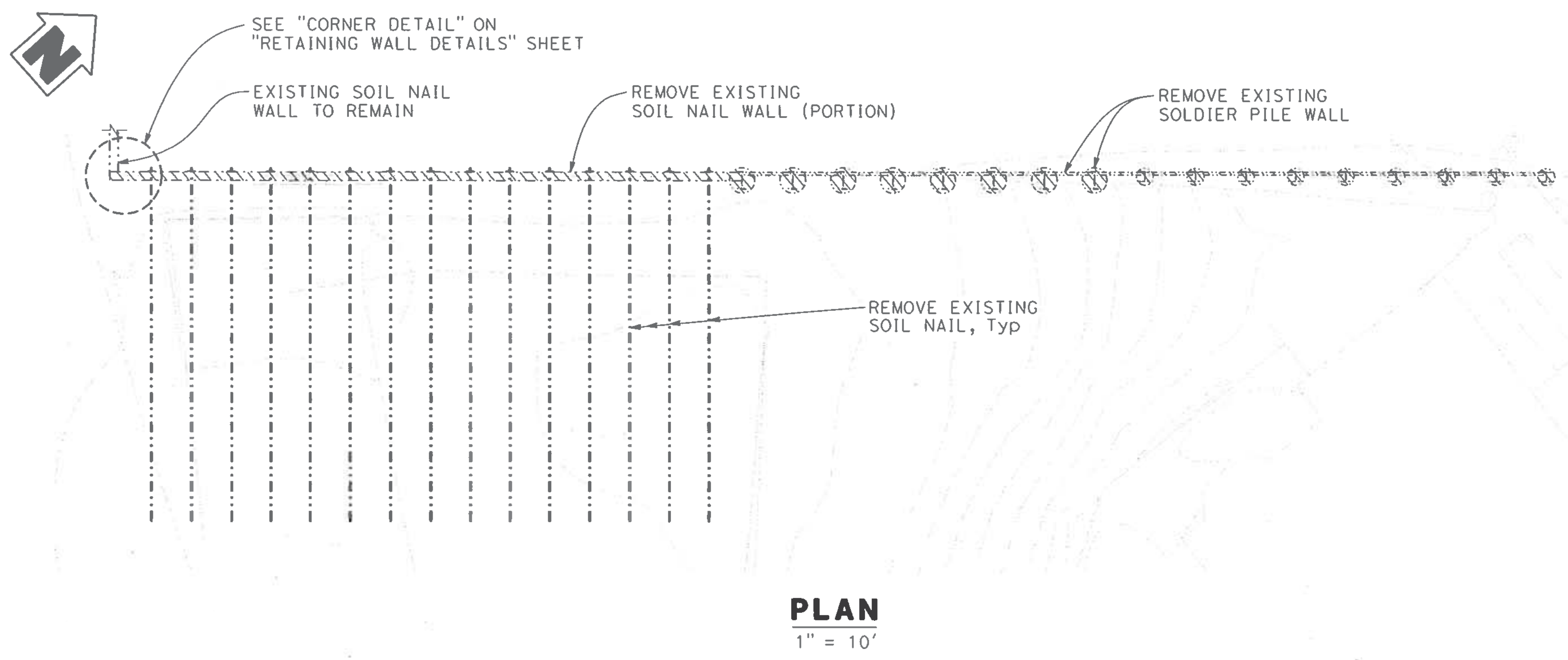
ELEVATION
1" = 10'

- LEGEND:**
- Indicates existing structure
 - ⊕ Indicates existing tieback
 - ▨ Indicates removal (portion)
 - ⊗ Indicates removal of existing W24x146 in 36" dia drilled hole
 - ⊗ Indicates removal of existing HP14x89 in 24" dia drilled hole



SECTION A-A
NO SCALE

SECTION B-B
NO SCALE



PLAN
1" = 10'

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

DESIGN OVERSIGHT
 SIGN OFF/DATE
 11/15/19

DESIGN	BY T. MEHTA	CHECKED K. SERRANO-PAINE
DETAILS	BY L. DAVIS/E. GRAY	CHECKED T. MEHTA
QUANTITIES	BY K. SERRANO-PAINE	CHECKED T. MEHTA

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0006
POST MILES	7.9

RETAINING WALL No. 1
REMOVAL DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-17-19 1-24-20 7-26-19	4	168

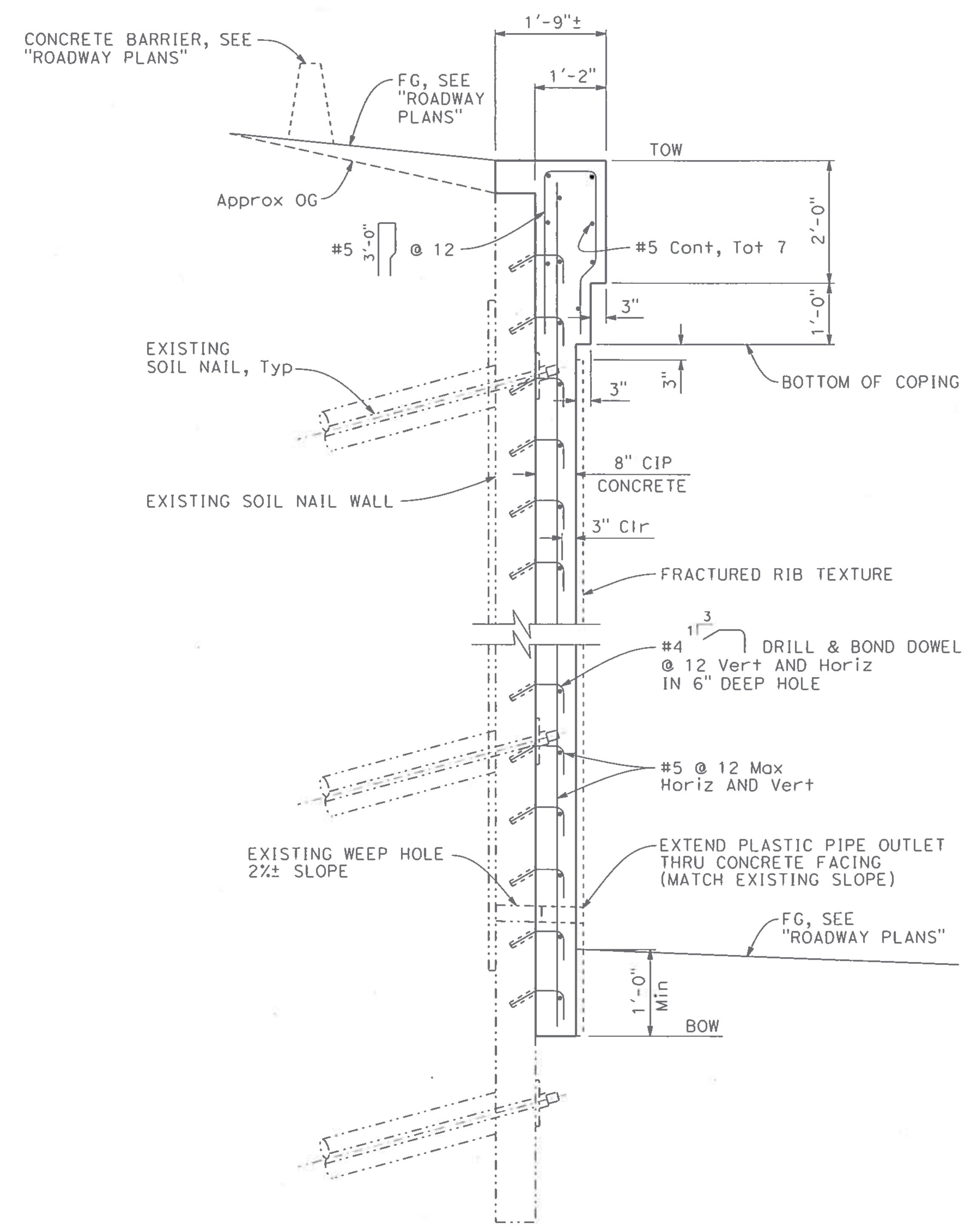
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USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 11:59

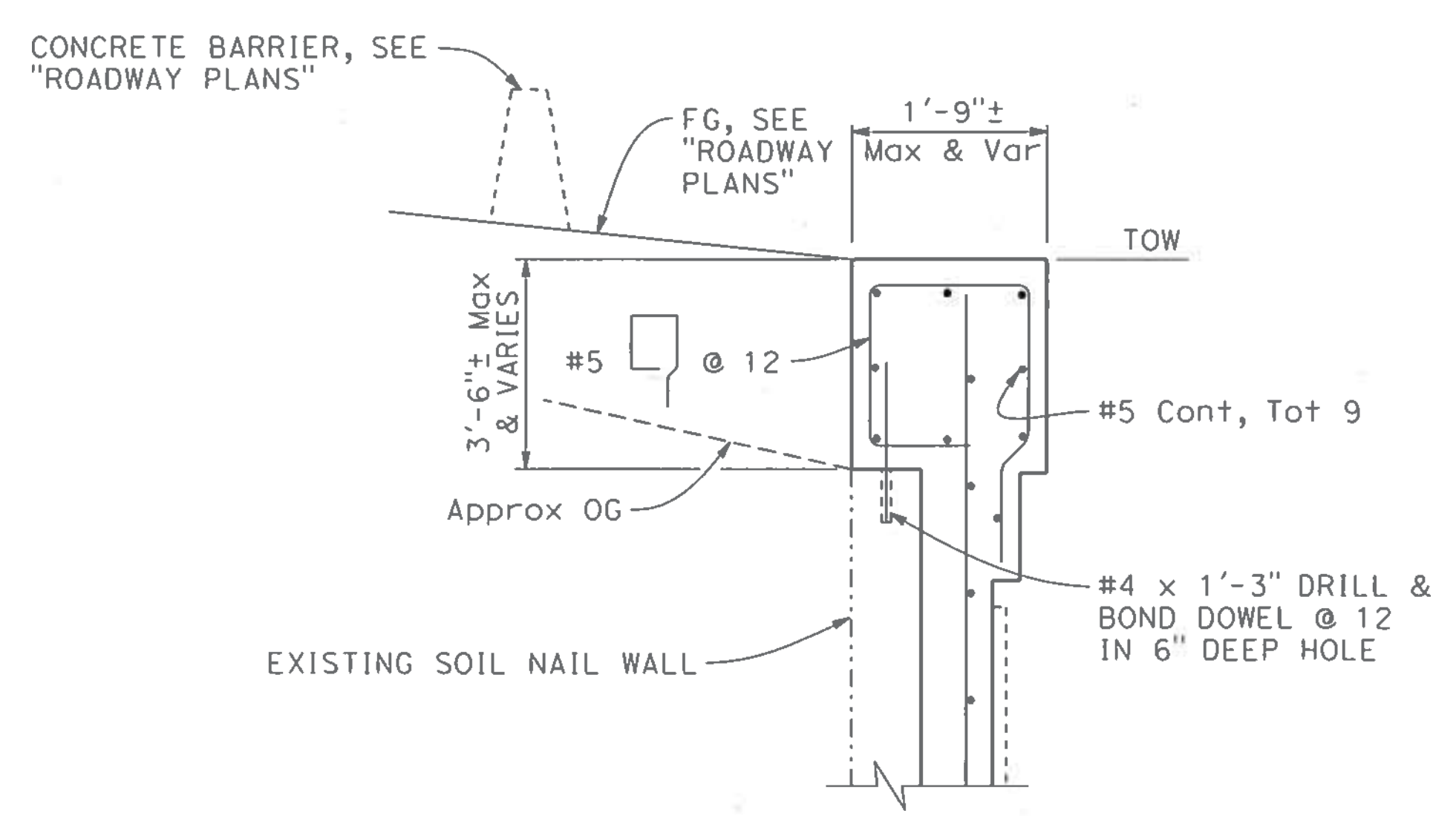
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	254	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
REGISTERED PROFESSIONAL ENGINEER					
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

LEGEND:
 - - - - - Indicates existing structure
 Indicates removal (portion)

NOTES:
 1. For details not shown, see "MISCELLANEOUS DETAILS" sheet.
 2. BOW shall be placed against undisturbed material.
 3. Roughen surface where concrete facing butts against existing wall.

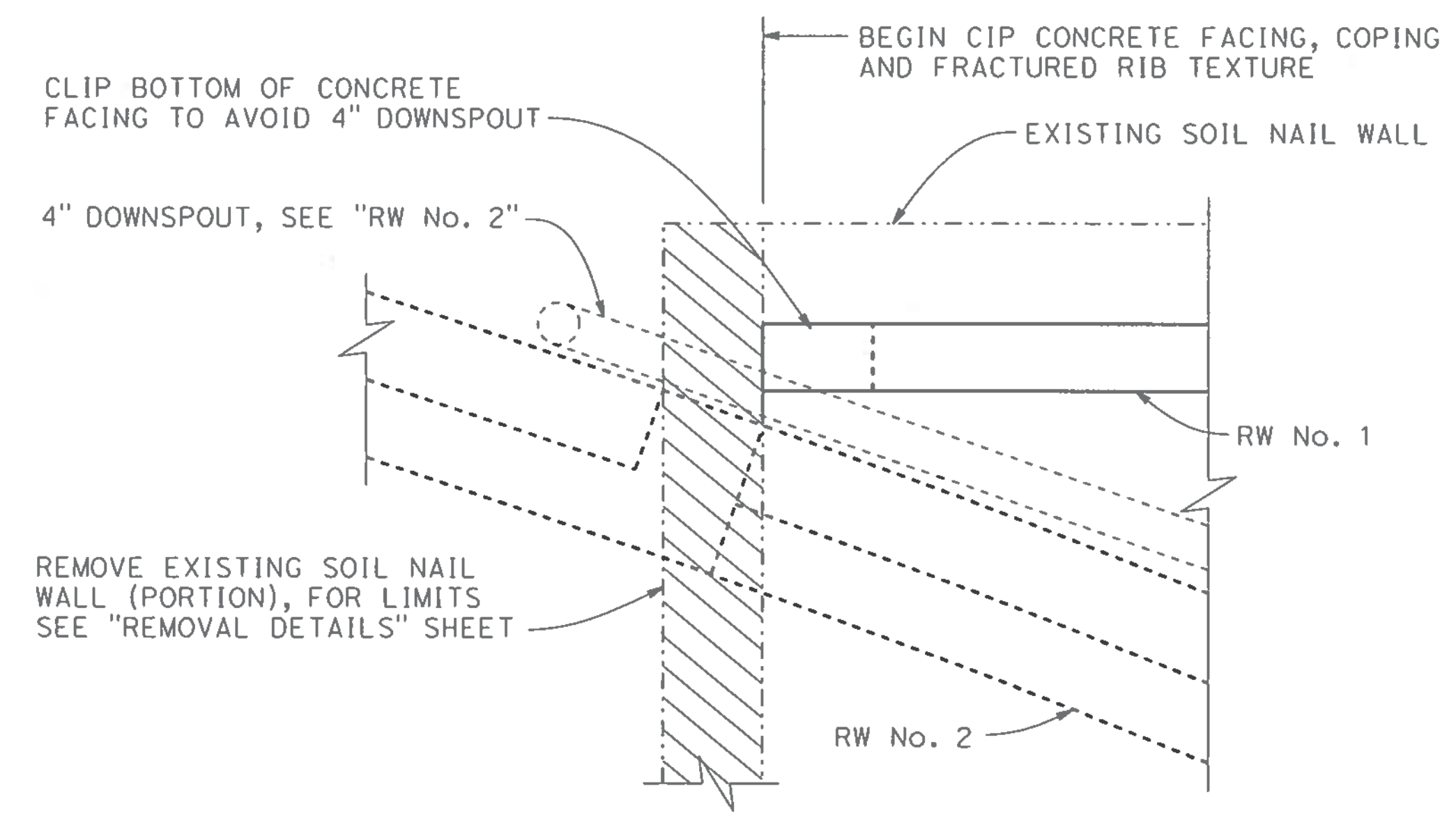


EXISTING SOIL NAIL WALL SECTION
 3/4" = 1'-0"



MODIFIED TOP DETAIL
 3/4" = 1'-0"

NOTE: SEE "EXISTING SOIL NAIL WALL SECTION" FOR INFORMATION NOT SHOWN.



CORNER DETAIL
 NO SCALE

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

DESIGN OVERSIGHT

 SIGN OFF DATE 11/14/19

DESIGN	BY T. MEHTA	CHECKED K. SERRANO-PAINE
DETAILS	BY L. DAVIS/E. GRAY	CHECKED T. MEHTA
QUANTITIES	BY K. SERRANO-PAINE	CHECKED T. MEHTA

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34-0006
POST MILES	7.9

RETAINING WALL No. 1
RETAINING WALL DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

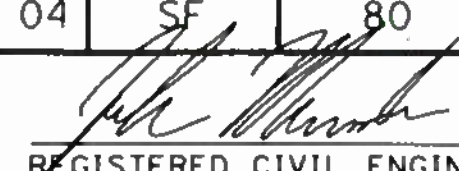
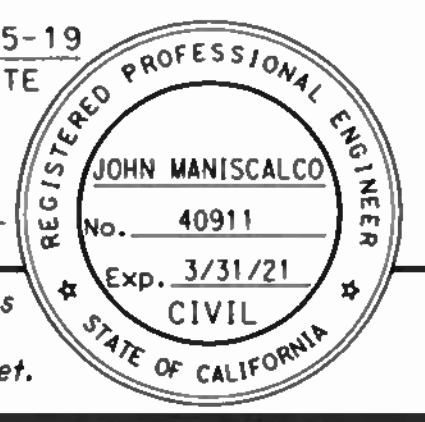
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
 0 1 2 3

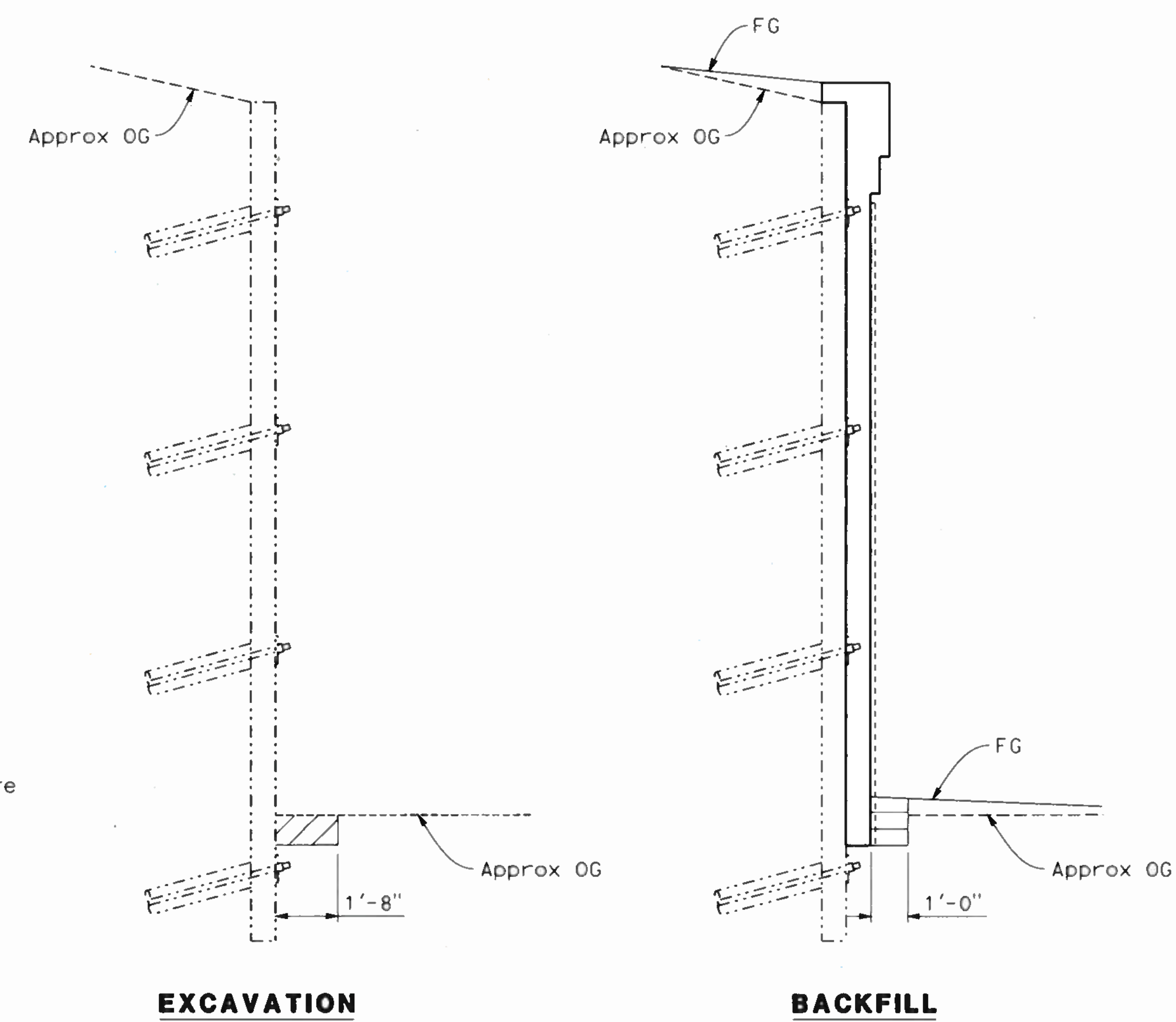
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-14-19 1-24-19 7-25-19	5	168

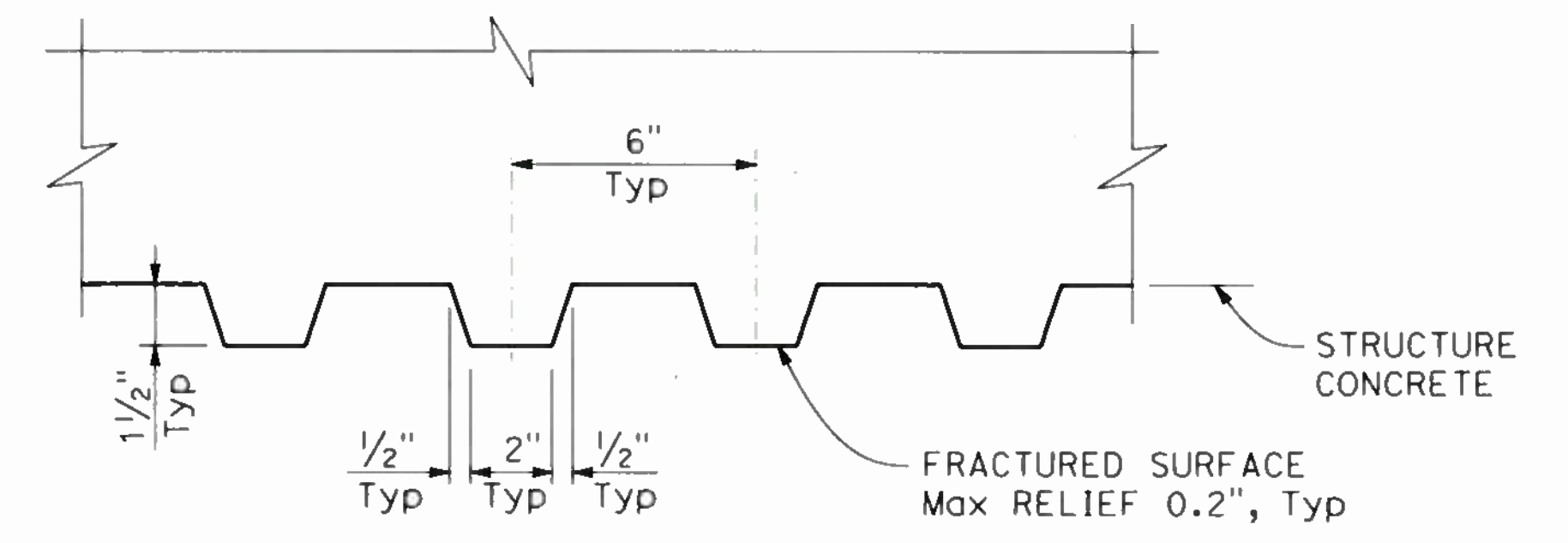
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	255	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

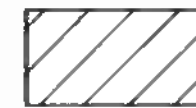



LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL
NO SCALE

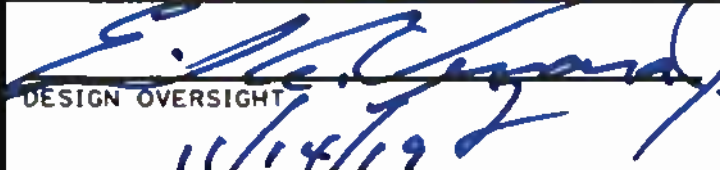


FRACTURED RIB TEXTURE DETAIL
NO SCALE

LEGEND:

-  Structure Excavation
-  Structure Backfill
- Indicates Existing Structure

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

DESIGN OVERSIGHT

SIGN OFF DATE 11/14/19

DESIGN	BY T. MEHTA	CHECKED K. SERRANO-PAINE
DETAILS	BY L. DAVIS/E. GRAY	CHECKED T. MEHTA
QUANTITIES	BY K. SERRANO-PAINE	CHECKED T. MEHTA

**PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34-0006
POST MILES	7.9

**RETAINING WALL No. 1
MISCELLANEOUS DETAILS**

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-21-19 7-24-19	6	168

FILE => RW1-u-miscd+01.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 12:01

NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

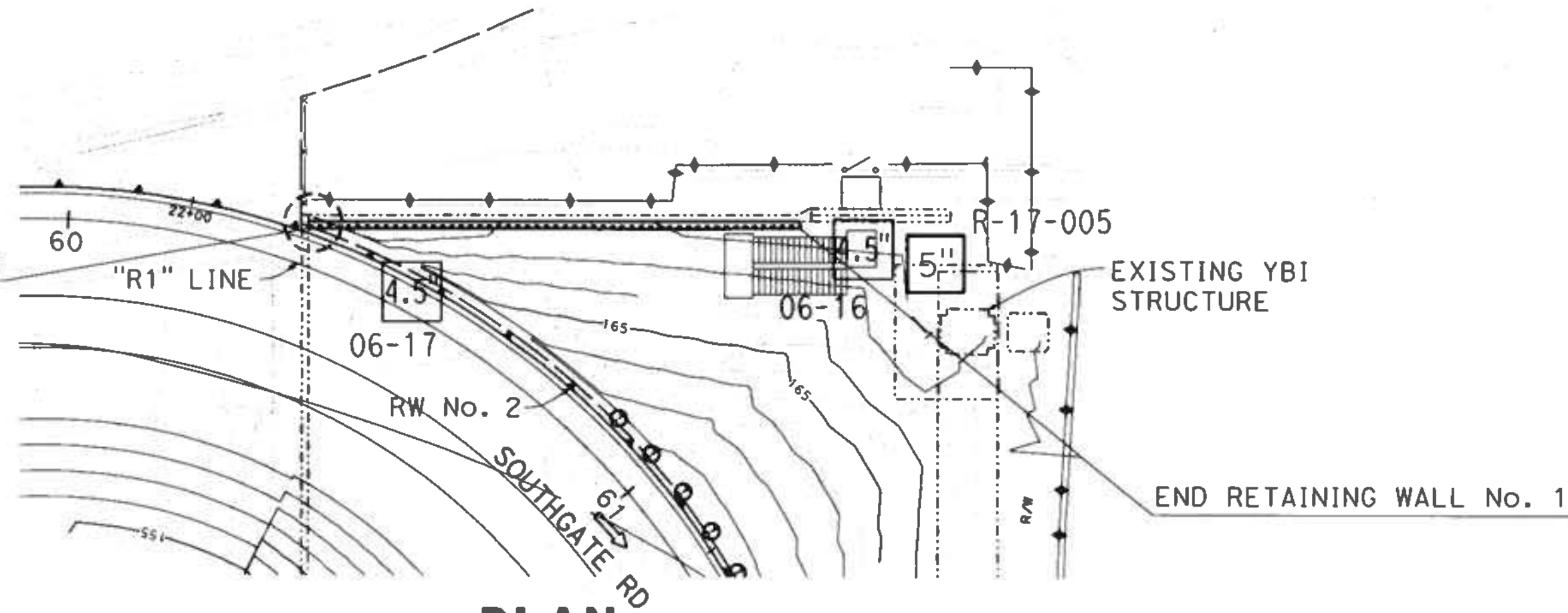
This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



BEGIN RETAINING WALL No. 1



PLAN
 1" = 20'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	256	436

5-17-19
 DATE

REGISTERED CIVIL ENGINEER

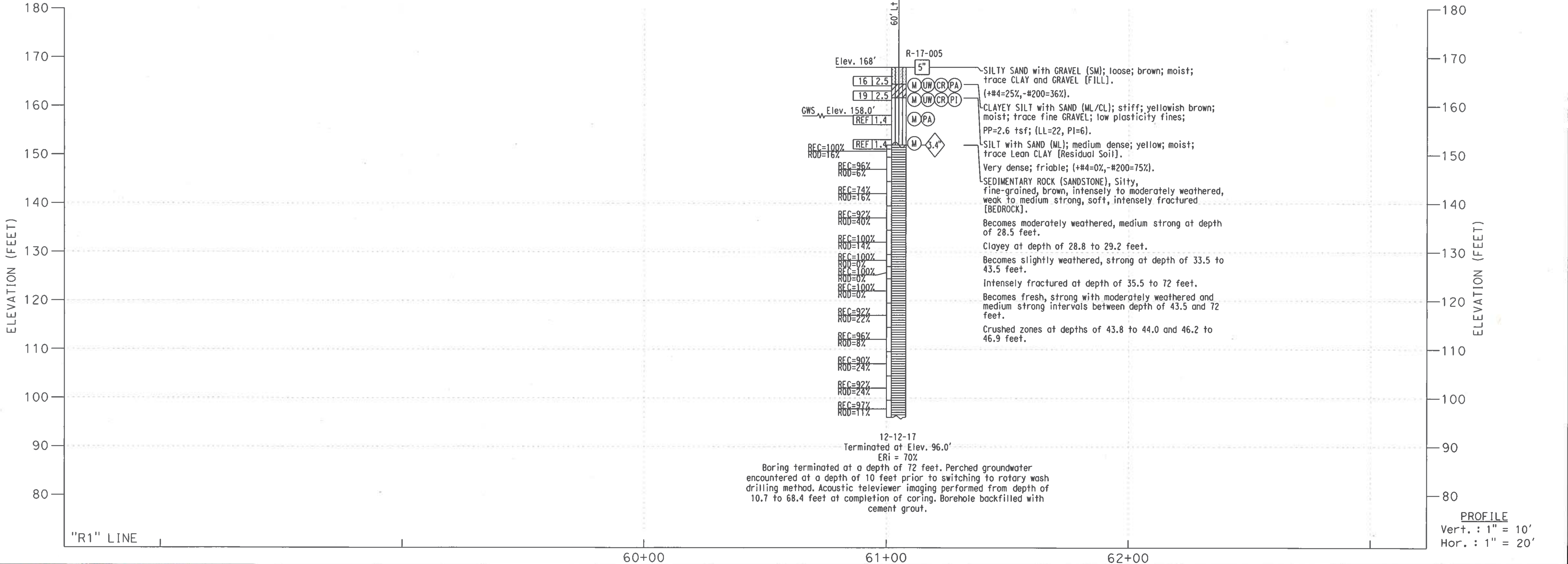
GARY PARIKH
 No. 666
 Exp. 12/31/19
 STATE OF CALIFORNIA

PLANS APPROVAL DATE

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BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105

PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/19

DRAWN BY: KIM OUYANG
 CHECKED BY: FRANK WANG

L.S. BHANGOO
 FIELD INVESTIGATION BY:
 DATE: DEC 2017

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

FRANK WANG
 PROJECT ENGINEER

BRIDGE NO.
 34-0006
 POST MILES
 7.9

RETAINING WALL No. 1
LOG OF TEST BORINGS 1 OF 2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	258	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

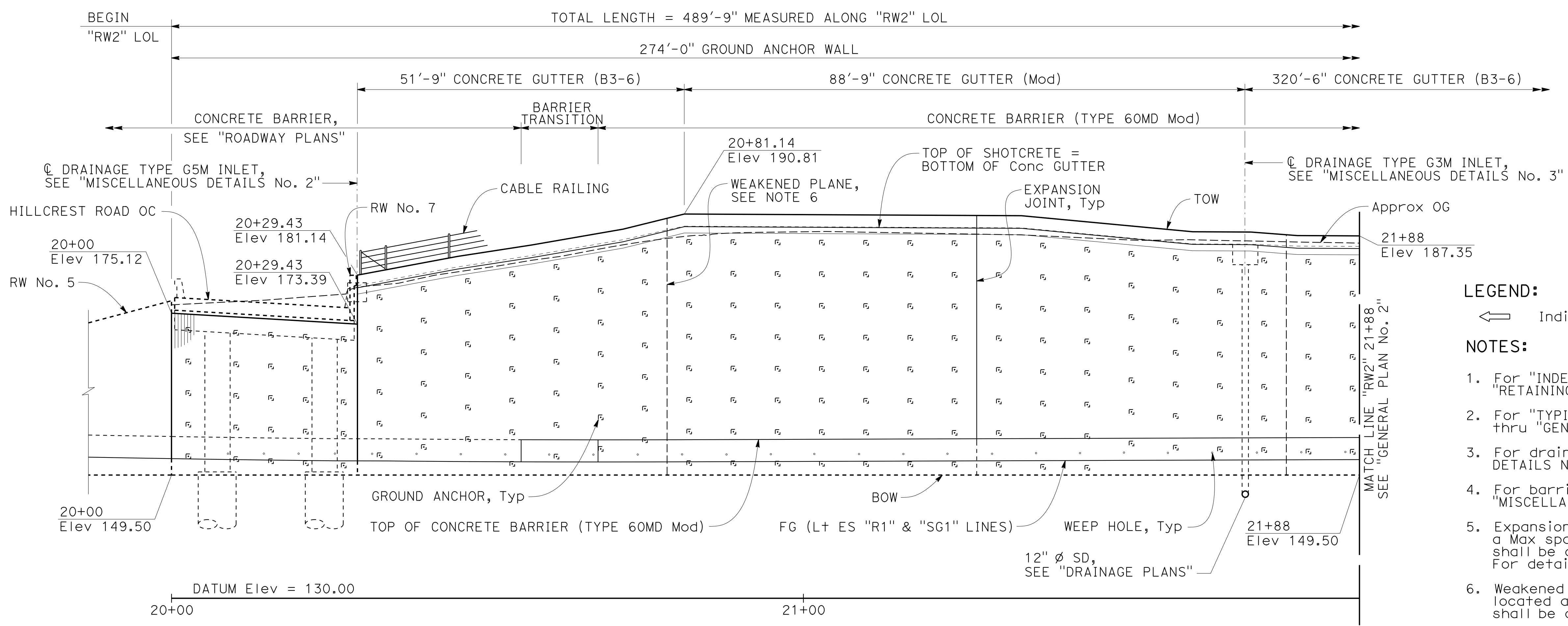
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



- LEGEND:**
← Indicates direction of traffic
- NOTES:**
- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
 - For "TYPICAL SECTION", see "GENERAL PLAN No. 4" thru "GENERAL PLAN No. 6" sheets.
 - For drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet and "DRAINAGE PLANS".
 - For barrier transition details, see "MISCELLANEOUS DETAILS No. 2" sheet.
 - Expansion joints in CIP facing shall be located at a Max spacing of 96 feet center to center and shall be centered between anchors and/or piles. For detail, see "SOLDIER PILE WALL DETAILS No. 3" sheet.
 - Weakened Planes in CIP facing shall be located at a Max spacing of 48 feet and shall be centered between piles. For detail see BO-3 3-2
 - For wall elevations, see "GROUND ANCHOR WALL LAYOUT" and "SOLDIER PILE WALL LAYOUT" sheets.

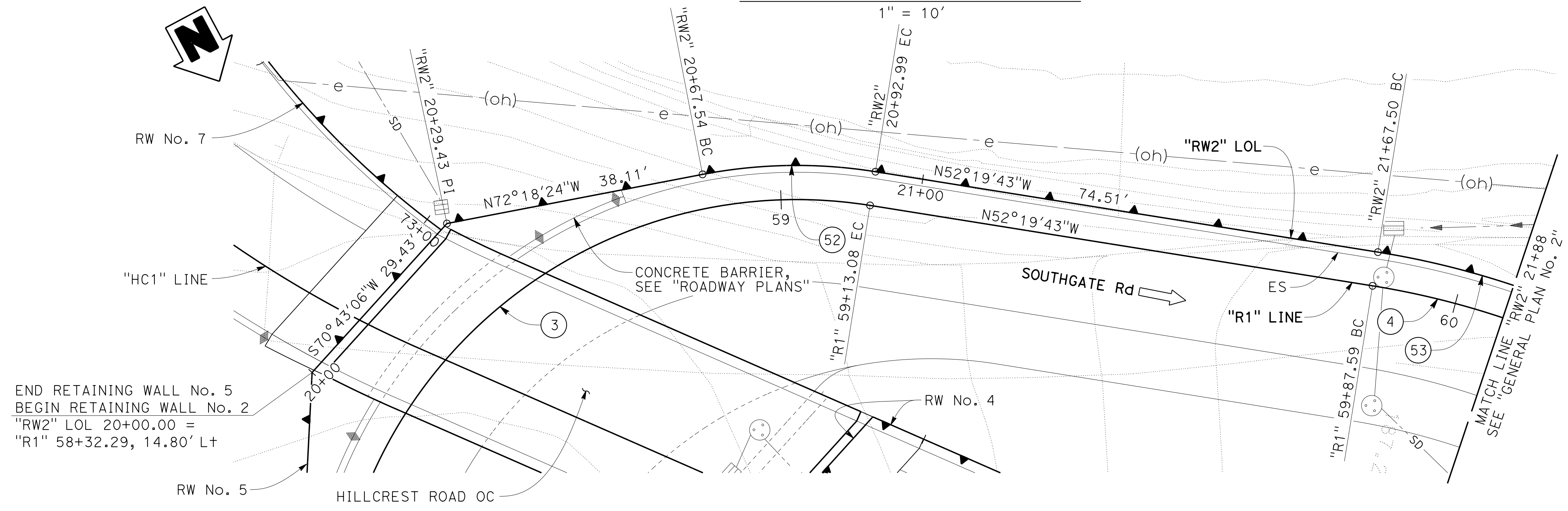
DEVELOPED ELEVATION

QUANTITIES

STRUCTURE EXCAVATION (SOLDIER PILE WALL)	283	CY
STRUCTURE EXCAVATION (GROUND ANCHOR WALL)	864	CY
STRUCTURE BACKFILL (GROUND ANCHOR WALL)	27	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	80	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	190	CY
LEAN CONCRETE BACKFILL	147	CY
GROUND ANCHOR (SUB HORIZONTAL), LOCATION C	254	EA
STEEL SOLDIER PILE (W18X130)	347	LF
STEEL SOLDIER PILE (W18X211)	235	LF
STEEL SOLDIER PILE (W24X229)	735	LF
STEEL SOLDIER PILE (W30X292)	223	LF
30" DRILLED HOLE	538	LF
36" DRILLED HOLE	654	LF
42" DRILLED HOLE	222	LF
STRUCTURAL CONCRETE, RETAINING WALL	385	CY
FRACTURED RIB TEXTURE	8,785	SQ FT
BAR REINFORCING STEEL (RETAINING WALL)	129,545	LB
STRUCTURAL SHOTCRETE	317	CY
TIMBER LAGGING	8	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	1	LS
MINOR CONCRETE (GUTTER) (CY)	18	CY
CABLE RAILING	461	LF
CONCRETE BARRIER (TYPE 60MD Mod)	423	LF
CONCRETE BARRIER TRANSITION	13	LF

CURVE DATA

No.	R	Δ	T	L
3	68.00'	120°37'22"	119.27'	143.16'
4	120.00'	96°00'33"	133.30'	201.08'
52	73.00'	19°58'41"	12.86'	25.45'
53	125.00'	96°00'33"	138.85'	209.46'



PLAN


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

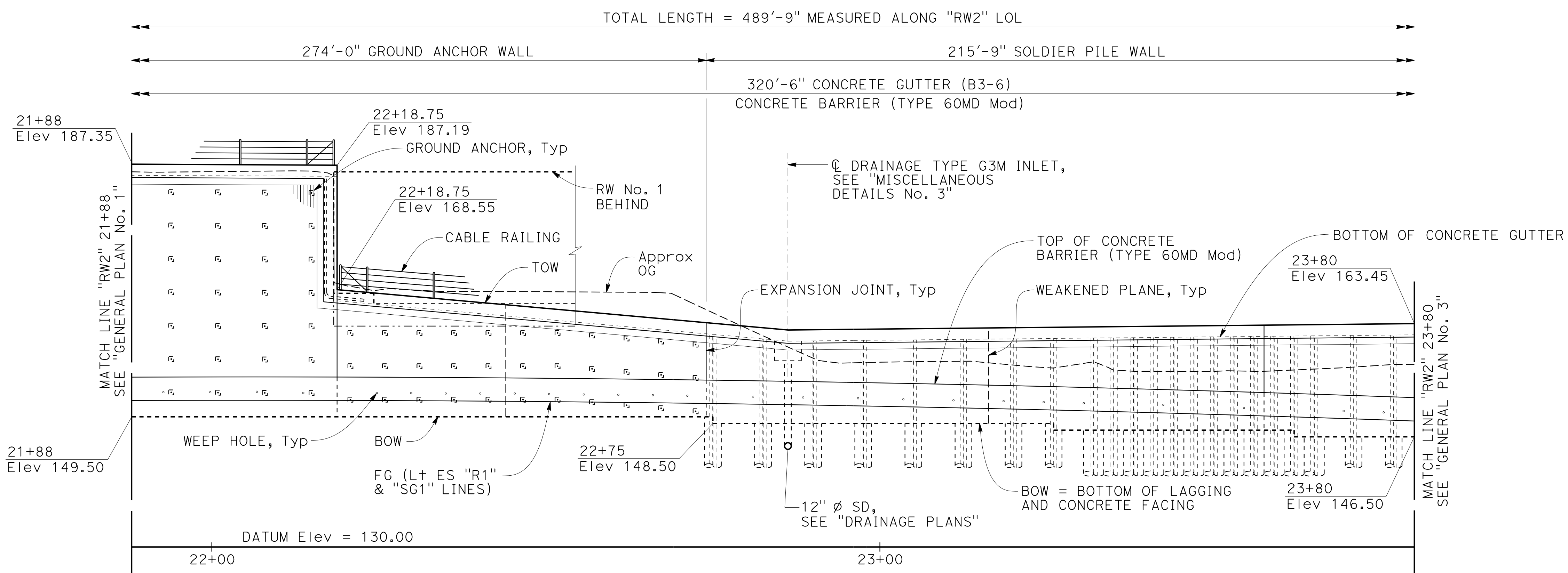
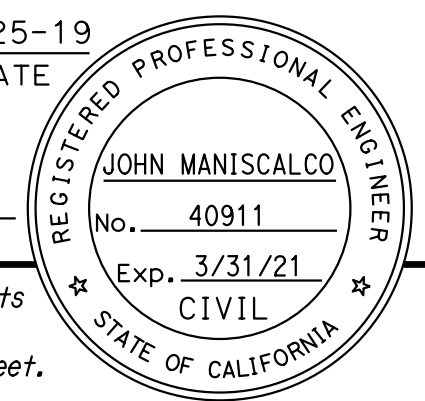
DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GENERAL PLAN No. 1
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	

REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19

SHEET 9 OF 168

FILE => RW2-a-gp01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	259	436
 REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE _____					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

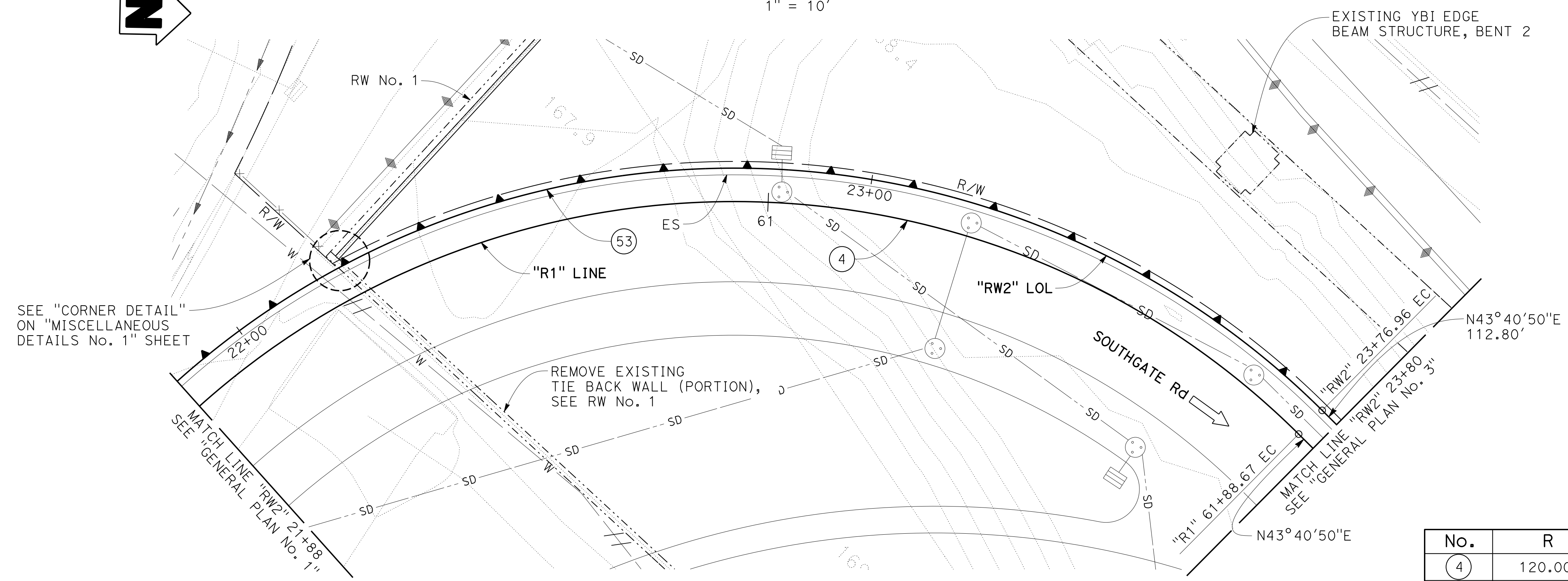
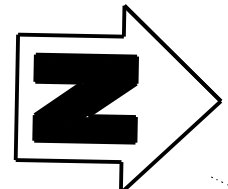


LEGEND:
 - - - - - Indicates existing structure
 ← Indicates direction of traffic

NOTE:
 1. For notes, see "GENERAL PLAN No. 1" sheet.

DEVELOPED ELEVATION

1" = 10'



PLAN

1" = 10'



CURVE DATA

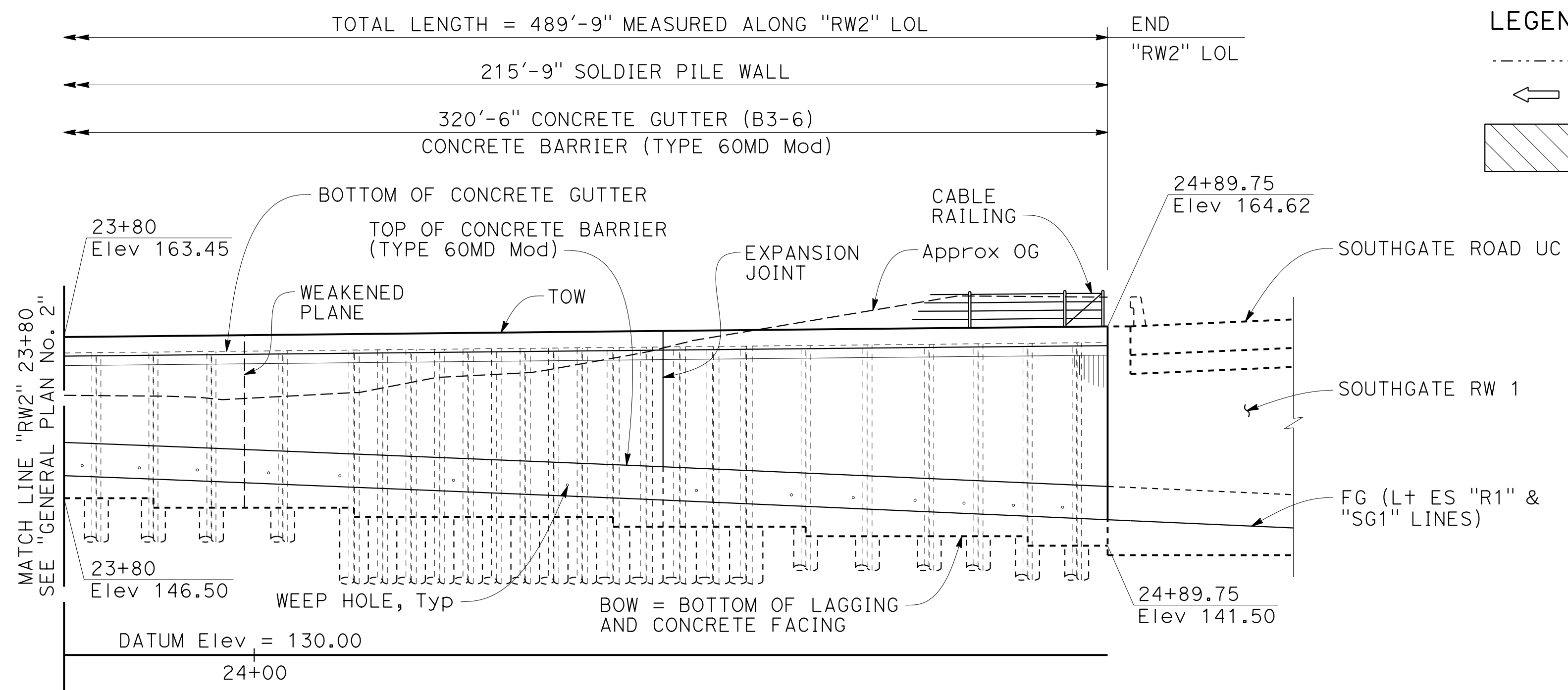
No.	R	Δ	T	L
4	120.00'	96°00'33"	133.30'	201.08'
53	125.00'	96°00'33"	138.85'	209.46'

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

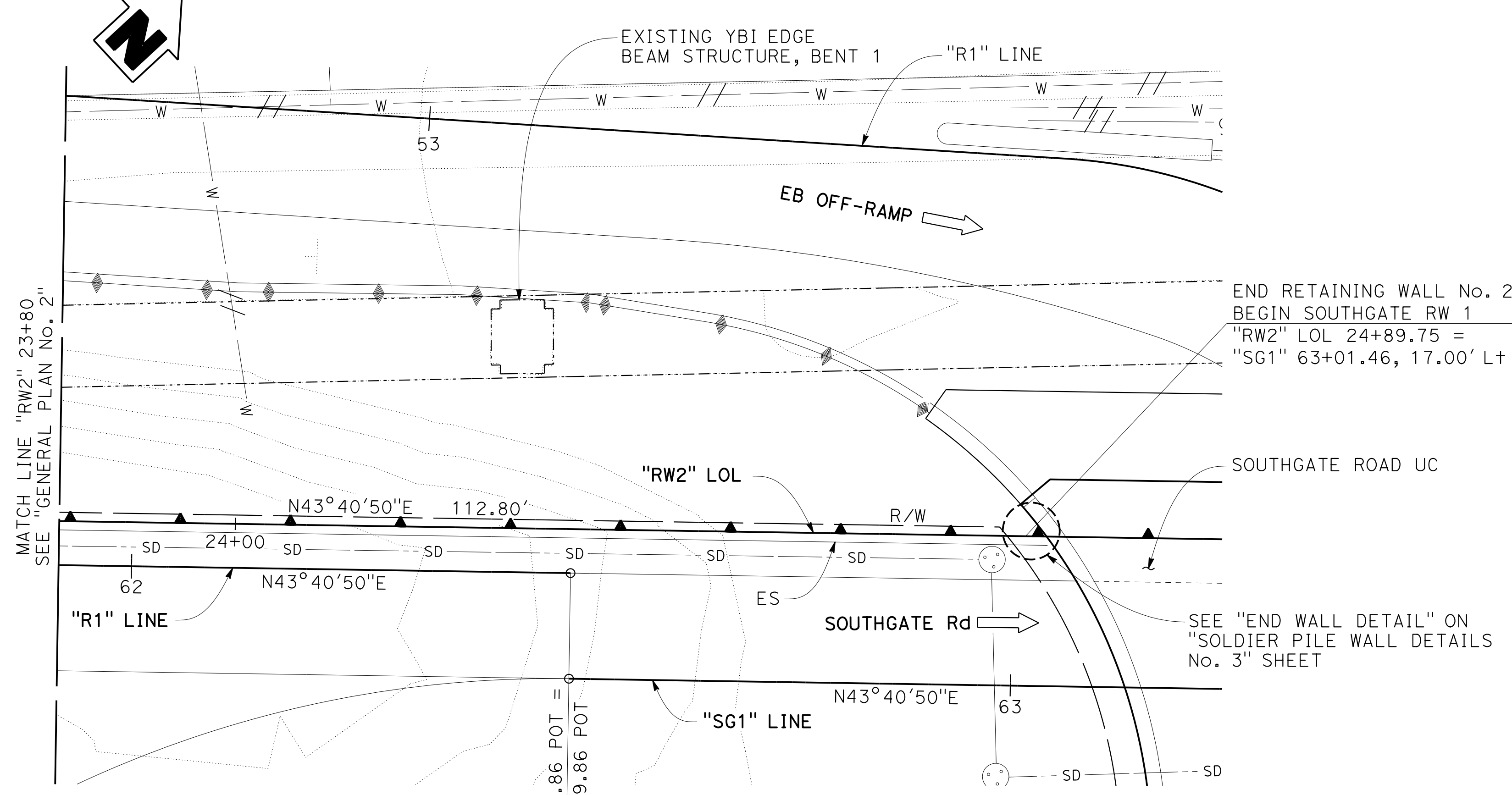
DESIGN OVERSIGHT	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION JOHN MANISCALCO PROJECT ENGINEER	BRIDGE NO.	RETAINING WALL No. 2 GENERAL PLAN No. 2			
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE		CHECKED T. MEHTA		N/A		
	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA		CHECKED M. JACKSON		PLANS AND SPECS COMPARED	POST MILES	7.9
SIGN OFF DATE		DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	SHEET 10 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	260	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					


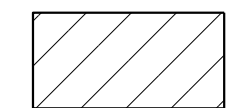
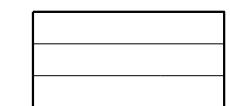


ELEVATION
1" = 10'

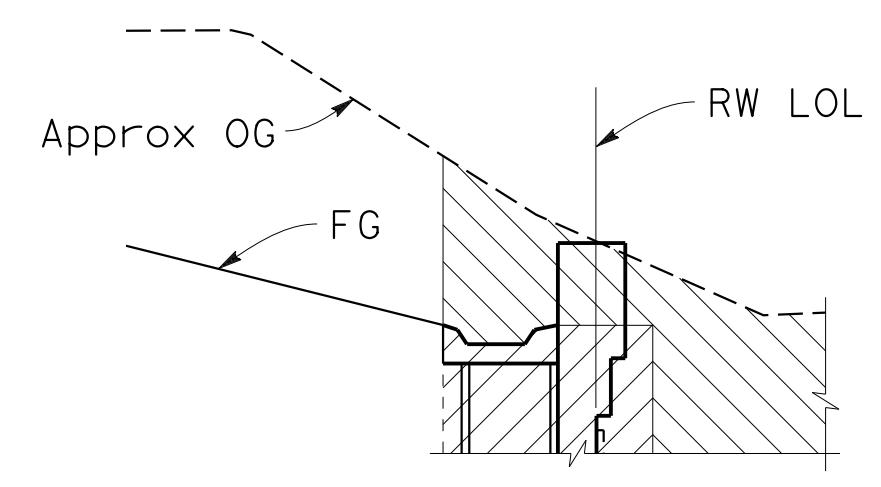


PLAN
1" = 10'

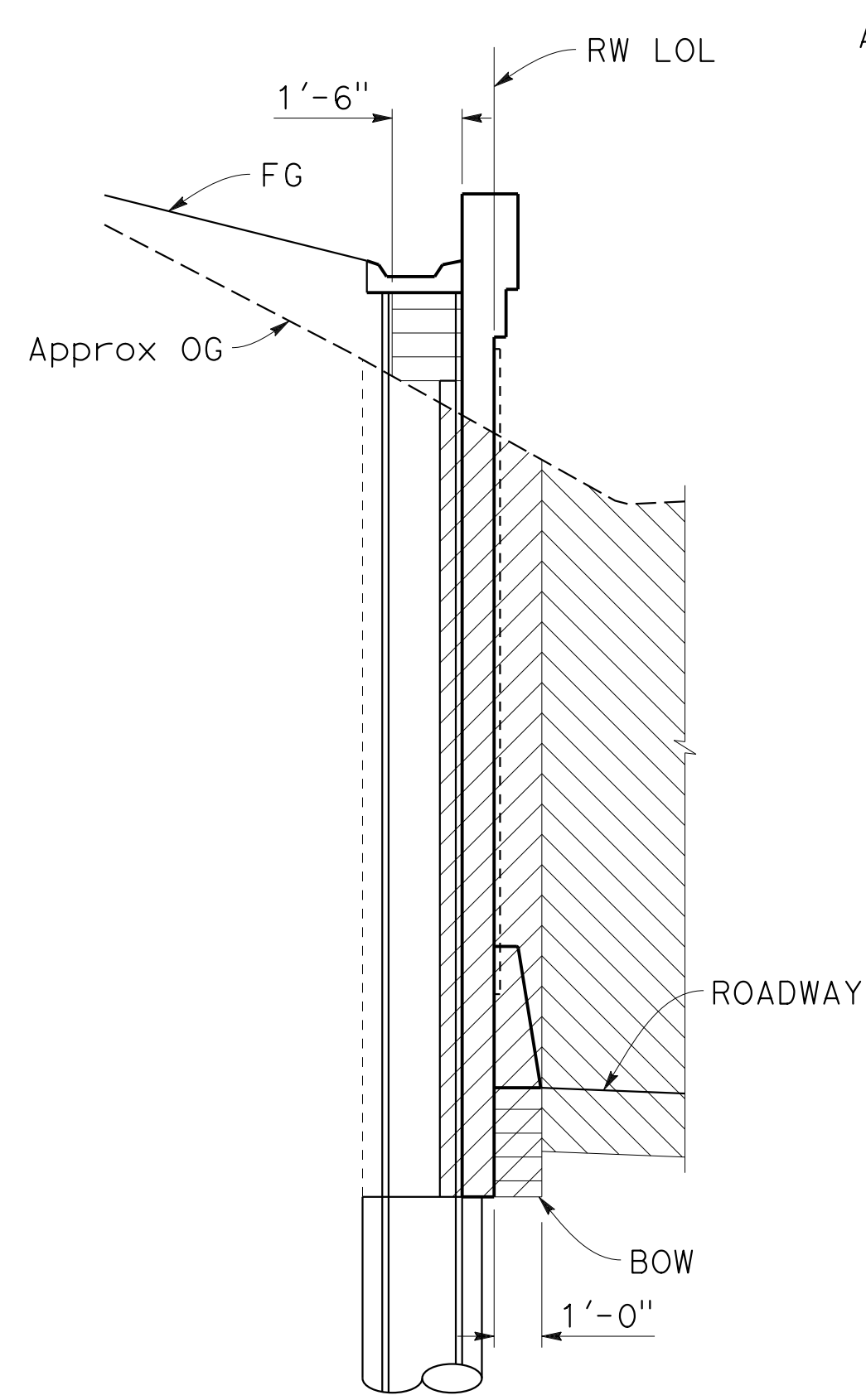
LEGEND:

- Indicates existing structure
- ← Indicates direction of traffic
-  Roadway Excavation, see "ROADWAY PLANS"
-  Structure Excavation
-  Structure Backfill

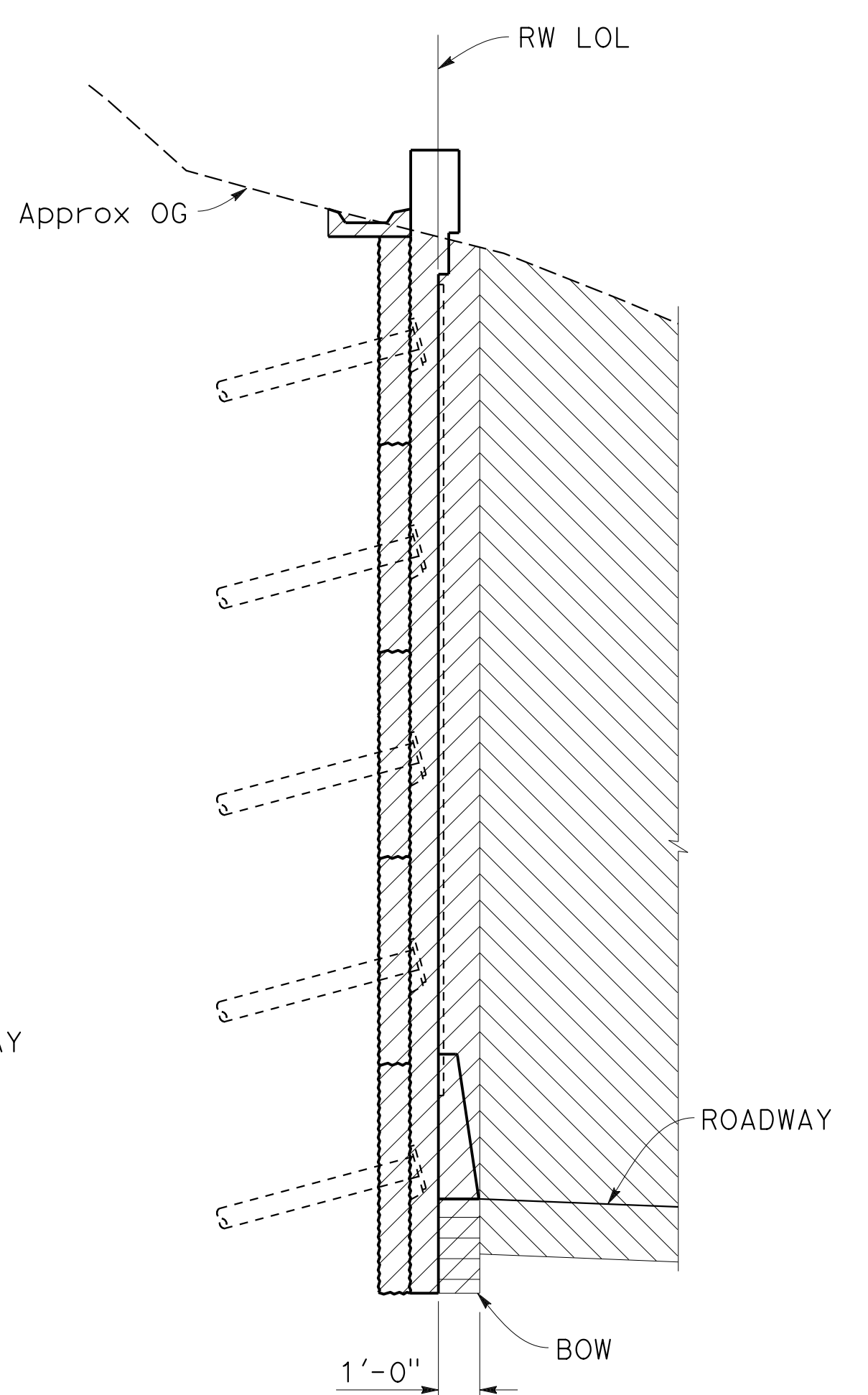
NOTE:
1. For notes, see "GENERAL PLAN No. 1" sheet.



SOLDIER PILE WALL IN CUT



SOLDIER PILE WALL IN FILL



GROUND ANCHOR WALL

LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL
NO SCALE

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
SIGN OFF DATE	DETAILS BY: L. DAVIS	CHECKED: K. SERRANO-PAINE	LAYOUT BY: K. SERRANO-PAINE	CHECKED: T. MEHTA
	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER	SPECIFICATIONS BY: T. MEHTA	PLANS AND SPECS COMPARED: M. JACKSON

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. N/A	RETAINING WALL No. 2
JOHN MANISCALCO PROJECT ENGINEER	PROJECT NUMBER & PHASE: 04000205071	POST MILES 7.9	

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th edition with the California Amendments, January 2014

LIVE LOAD: None

CONCRETE: $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

DESIGN DATA - GROUND ANCHOR WALL

FOR "RW2" 20+00 TO 22+74

DESIGN: Memo to Designers 5-12, Earth Retaining Systems using ground anchors.

SOIL PARAMETERS:
(For determination of Design Lateral Earth Pressures)
Unit Weight, $\gamma = 130$ pcf
Friction Angle, $\phi = 38$ degrees
Active Pressure Coefficient, $K_a = 0.5$
Seismic Coefficient, $K_h = 0.33$

SHOTCRETE:
 $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

PRESTRESSING STEEL:
See "SUB HORIZONTAL GROUND ANCHOR DETAILS" sheet.

STEEL PLATE:
ASTM A709 GRADE 36

DESIGN DATA - SOLDIER PILE WALL

SOIL PARAMETERS:
(For determination of Design Lateral Earth Pressures)
Seismic Coefficient, $K_h = 0.33$

FOR "RW2" 22+74 TO 24+30

Retaining Portion:
Unit Weight, $\gamma = 130$ pcf
Friction Angle, $\phi = 35$ degrees
Active Pressure Coefficient, $K_a = 0.35$

Embedded Portion:
Unit Weight, $\gamma = 130$ pcf
Friction Angle, $\phi = 40$ degrees
Active Pressure Coefficient, $K_a = 0.22$
Passive Pressure Coefficient, $K_p = 10.5$

FOR "RW2" 24+30 TO 24+89.75

Retaining Portion:
Unit Weight, $\gamma = 130$ pcf
Friction Angle, $\phi = 35$ degrees
Active Pressure Coefficient, $K_a = 0.35$

Embedded Portion:
Unit Weight, $\gamma = 120$ pcf
Friction Angle, $\phi = 36$ degrees
Active Pressure Coefficient, $K_a = 0.26$
Passive Pressure Coefficient, $K_p = 7.0$

STRUCTURAL STEEL:

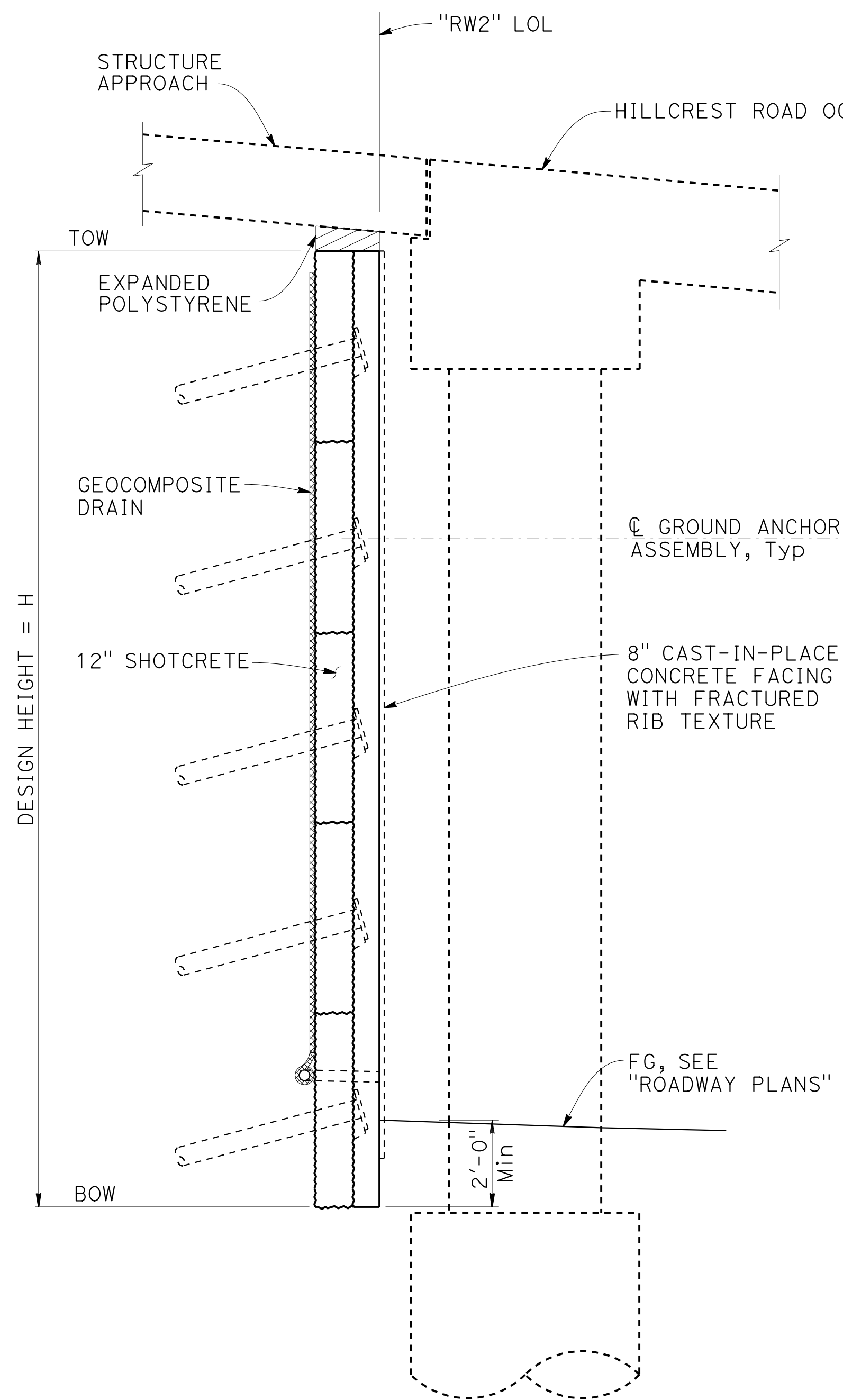
ASTM A992 ($f_y = 50$ ksi, $f_u = 65$ ksi)

WELDED STUD:

ASTM A29 Type B

STRUCTURAL TIMBER:

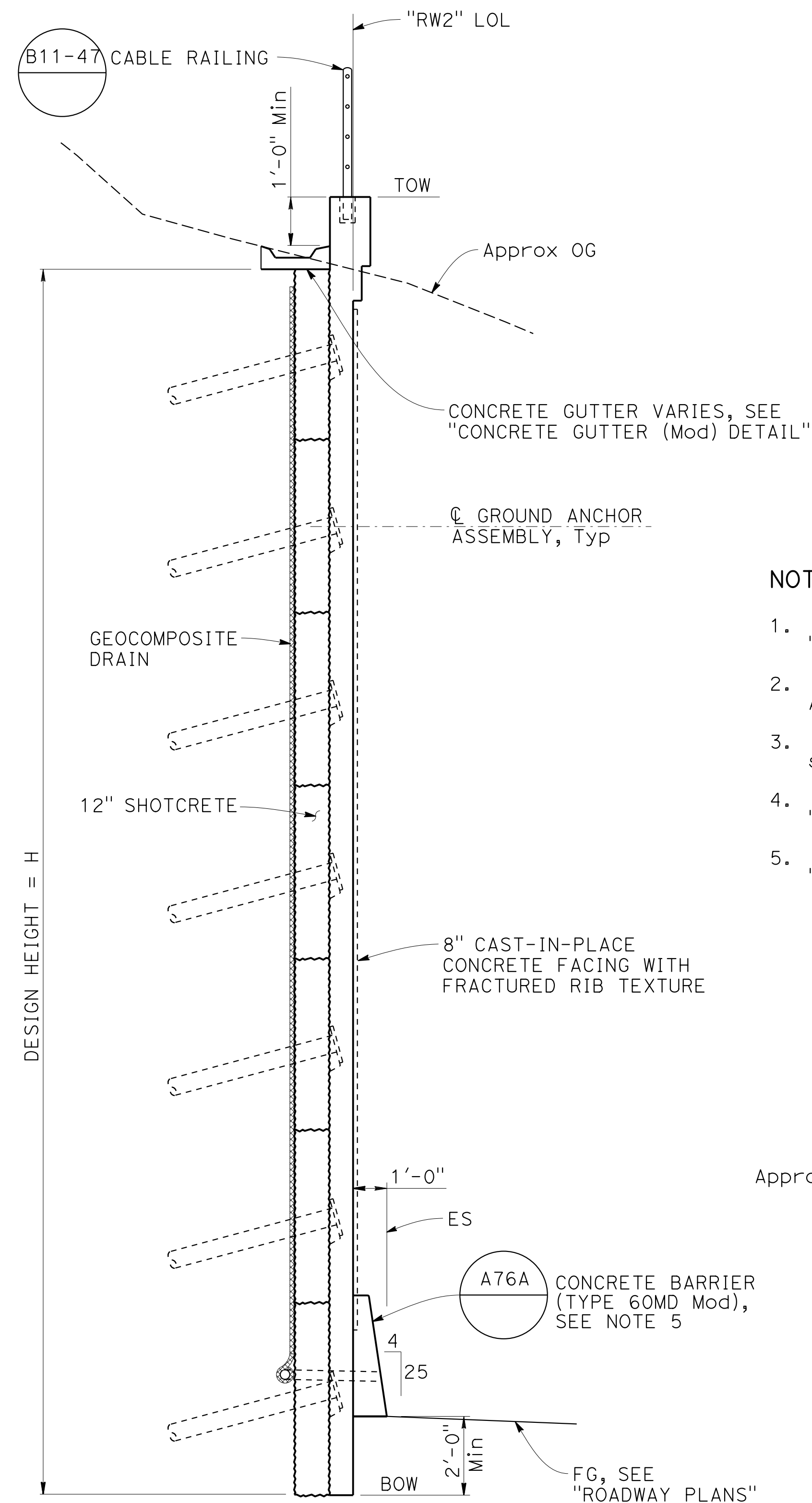
Treated Douglas Fir, Grade No. 1 or better
Timber to be full sawn



TYPICAL SECTION

3/8" = 1'-0"

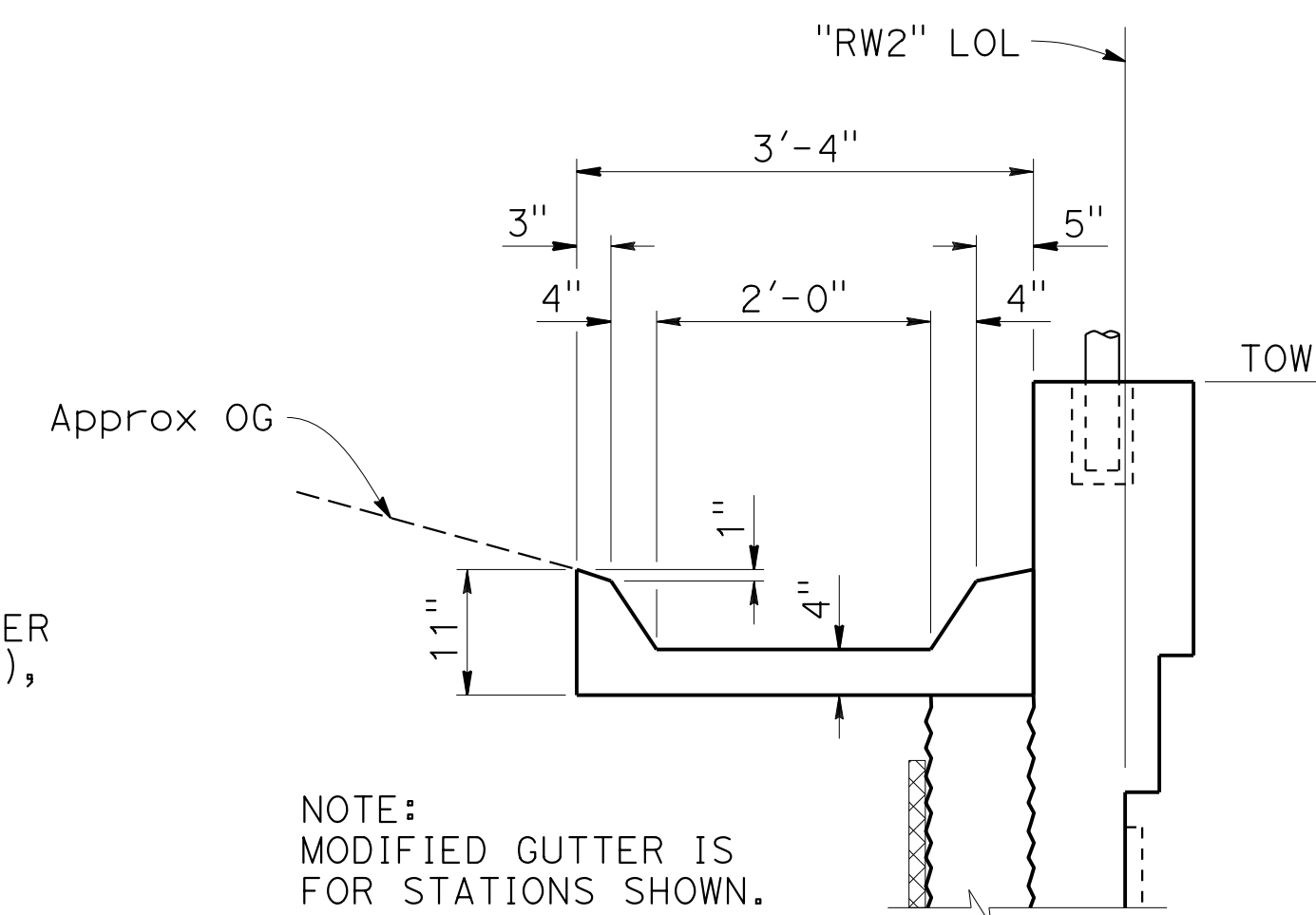
"RW2" 20+00 TO 20+29.43



TYPICAL SECTION

3/8" = 1'-0"

"RW2" 20+29.43 TO 22+18.75



CONCRETE GUTTER (Mod) DETAIL

3/4" = 1'-0"

"RW2" 20+81.14 TO 21+69.30

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	261	436

REGISTERED CIVIL ENGINEER
DATE 7-25-19

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

NOTES:

1. For limits, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
2. For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet.
3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
4. For excavation and backfill limits, see "GENERAL PLAN No. 3" sheet.
5. For barrier transition details, see "MISCELLANEOUS DETAILS No. 2" sheet.


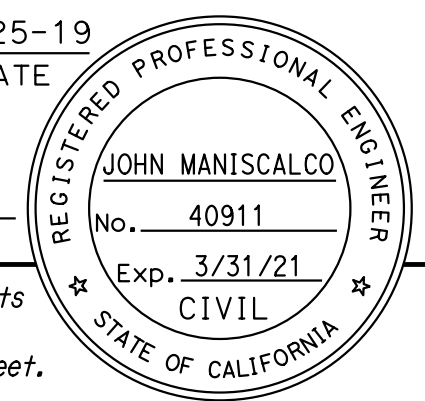
DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GENERAL PLAN No. 4
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => RW2-a-gp04.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:06

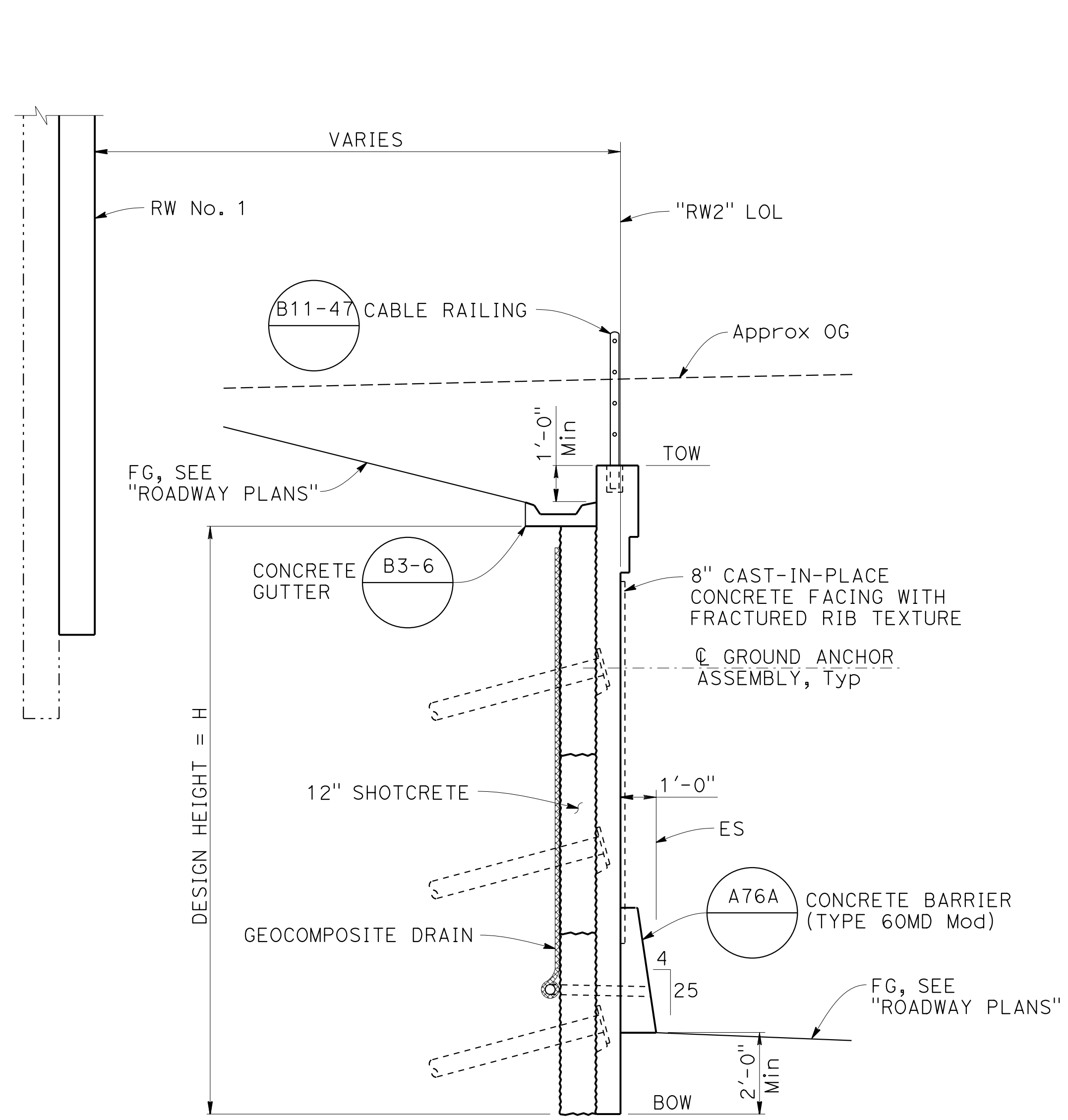
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	262	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

LEGEND:

----- Indicates existing structure

NOTES:

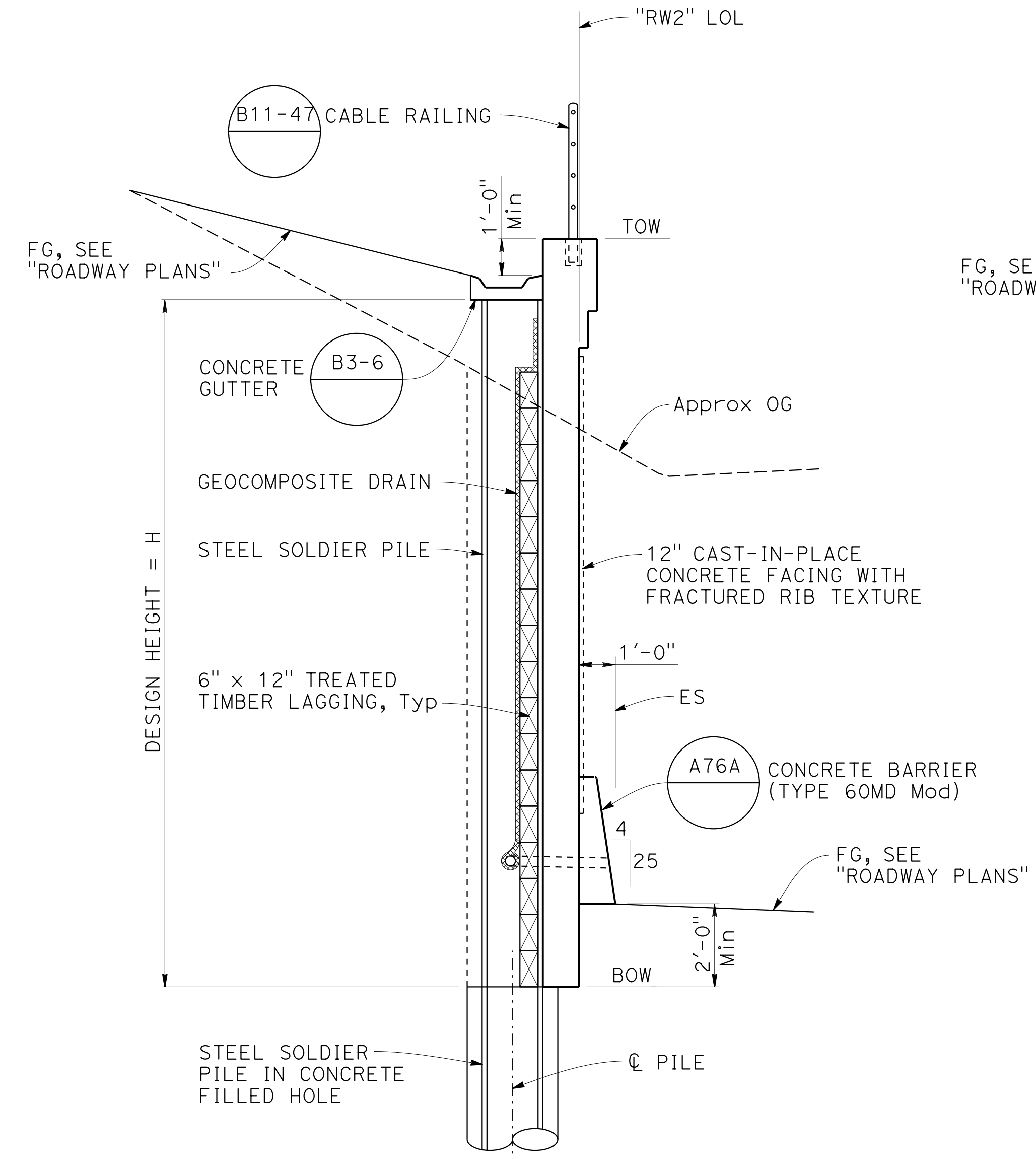
- For limits, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS No. 1" thru "SOLDIER PILE WALL DETAILS No. 3" and "GROUND ANCHOR WALL DETAILS" sheets.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- For excavation and backfill limits, see "GENERAL PLAN No. 3" sheet.



TYPICAL SECTION

3/8" = 1'-0"

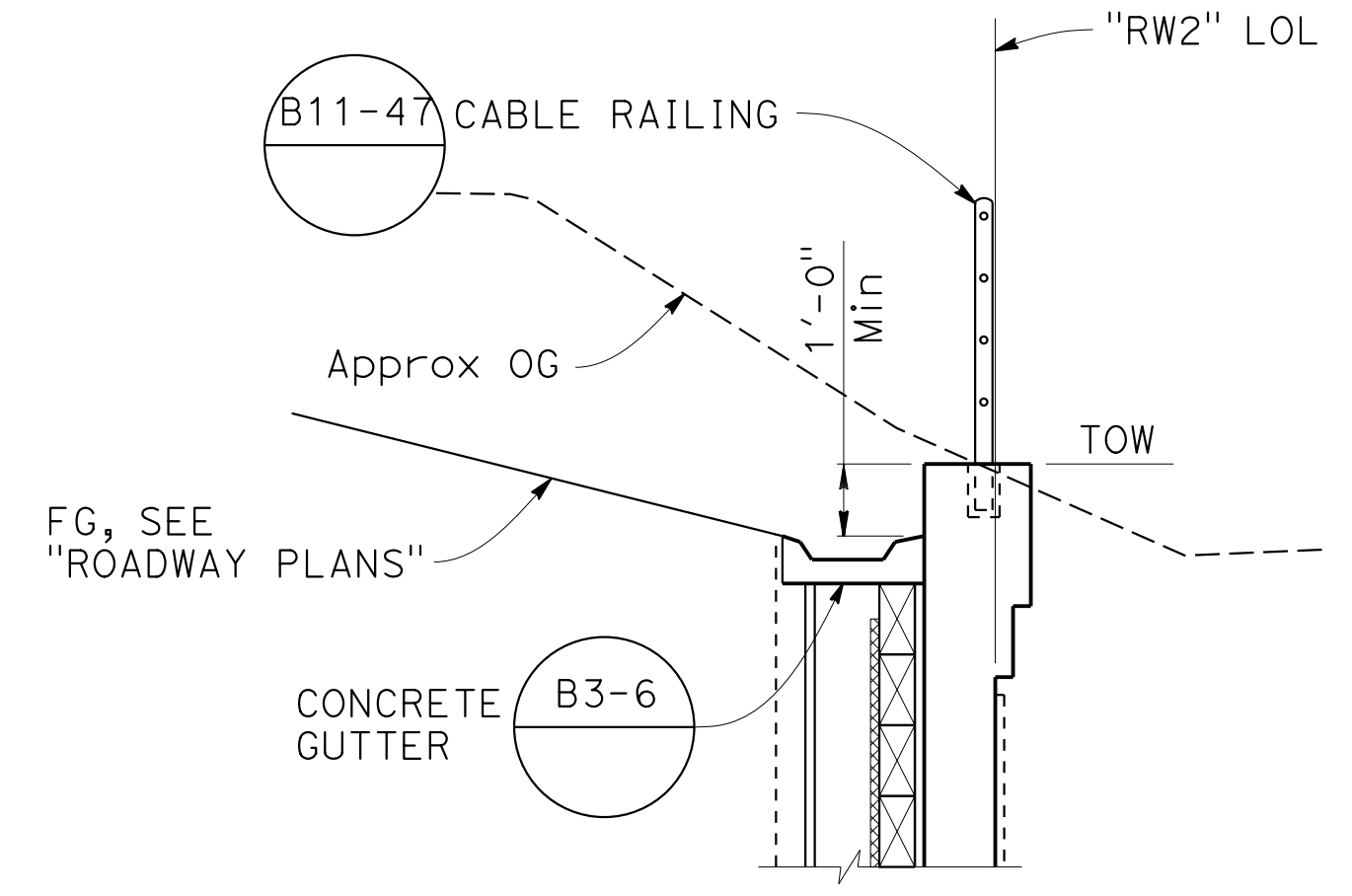
"RW2" 22+18.75 TO 22+74



TYPICAL SECTION

3/8" = 1'-0"

"RW2" 22+74 TO 23+32
"RW2" 23+65 TO 24+10.50



NOTE: FOR INFORMATION NOT SHOWN, SEE "RW2" 22+74 TO 23+30

TYPICAL SECTION

3/8" = 1'-0"

"RW2" 24+51.75 TO 24+89.75

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

DESIGN OVERSIGHT	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	RETAINING WALL No. 2 GENERAL PLAN No. 5				
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE		CHECKED T. MEHTA		N/A			
	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA		CHECKED M. JACKSON		PLANS AND SPECS COMPARED	POST MILES	7.9	
SIGN OFF DATE		DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A604	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 13	OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:06

DESIGN DATA - TANGENT SOLDIER PILE WALL

FOR "RW2" 23+32 TO 23+65
EXISTING YBI EDGE BEAM STRUCTURE, BENT 1:

Additional Surcharge = 6,300 psf (Extreme Event Only)
Bottom of load applied at elevation 138.50
Height of applied load, h = 20.50 ft

FOR "RW2" 24+10.50 TO 24+51.75
EXISTING YBI EDGE BEAM STRUCTURE, BENT 2:

Additional Surcharge = 3,850 psf (Extreme Event Only)
Bottom of load applied at elevation 134.00
Height of applied load, h = 25.00 ft

For all other Design Data, please refer to "DESIGN DATA - SOLDIER PILE WALL" on "GENERAL PLAN No. 4" sheet.

NOTES:

- For limits, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS No. 4" and "SOLDIER PILE WALL DETAILS No. 5" sheets.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- For excavation and backfill limits, see "GENERAL PLAN No. 3" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	263	436

REGISTERED CIVIL ENGINEER *John Maniscalco* DATE 7-25-19

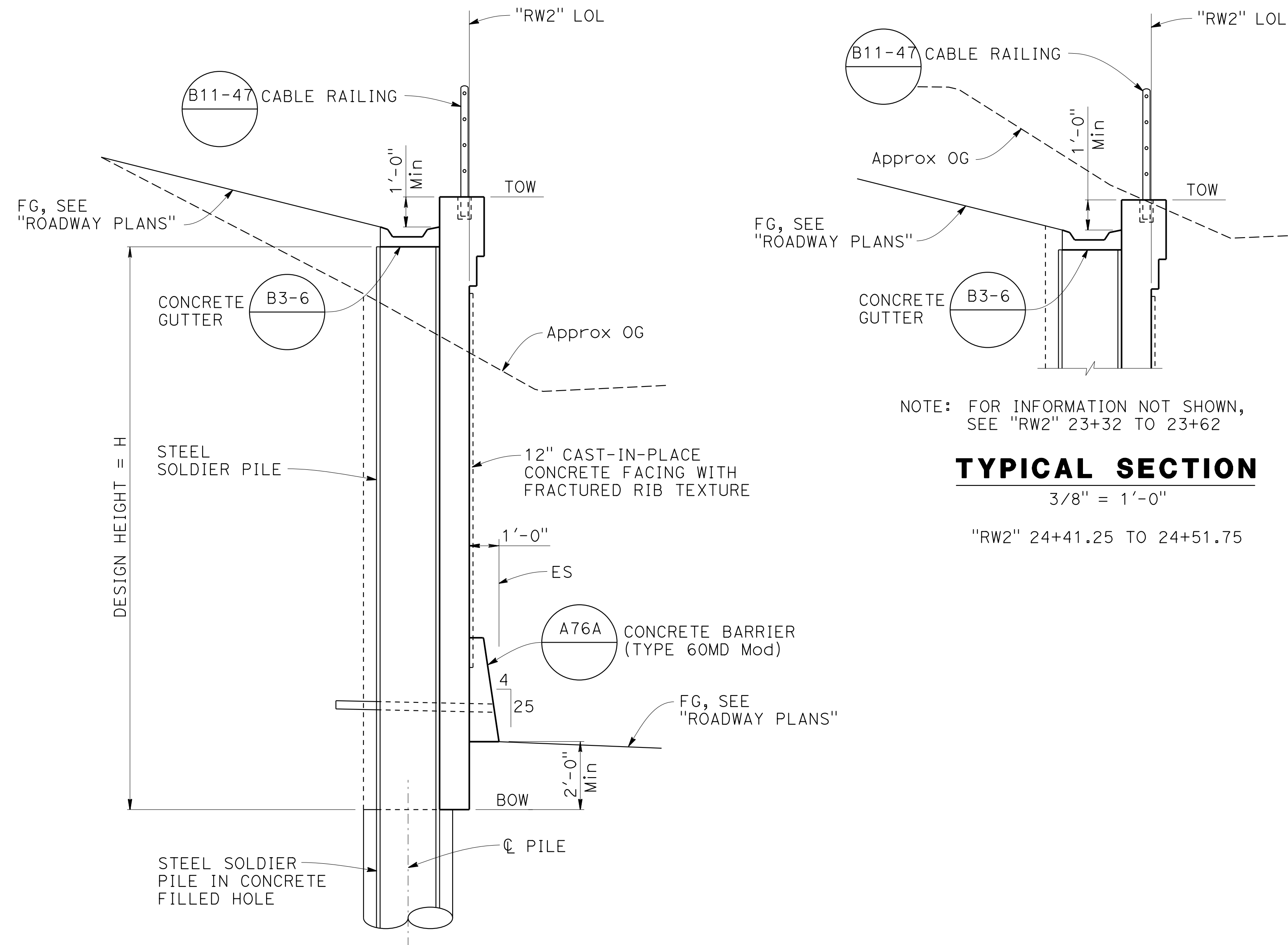
PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



NOTE: FOR INFORMATION NOT SHOWN, SEE "RW2" 23+32 TO 23+62

TYPICAL SECTION

3/8" = 1'-0"

"RW2" 24+41.25 TO 24+51.75

TYPICAL SECTION

3/8" = 1'-0"

"RW2" 23+32 TO 23+65
"RW2" 24+10.50 TO 24+41.25

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GENERAL PLAN No. 6
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 14 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	264	436

REGISTERED CIVIL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

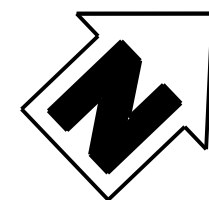
7-25-19
 DATE

PLANS APPROVAL DATE

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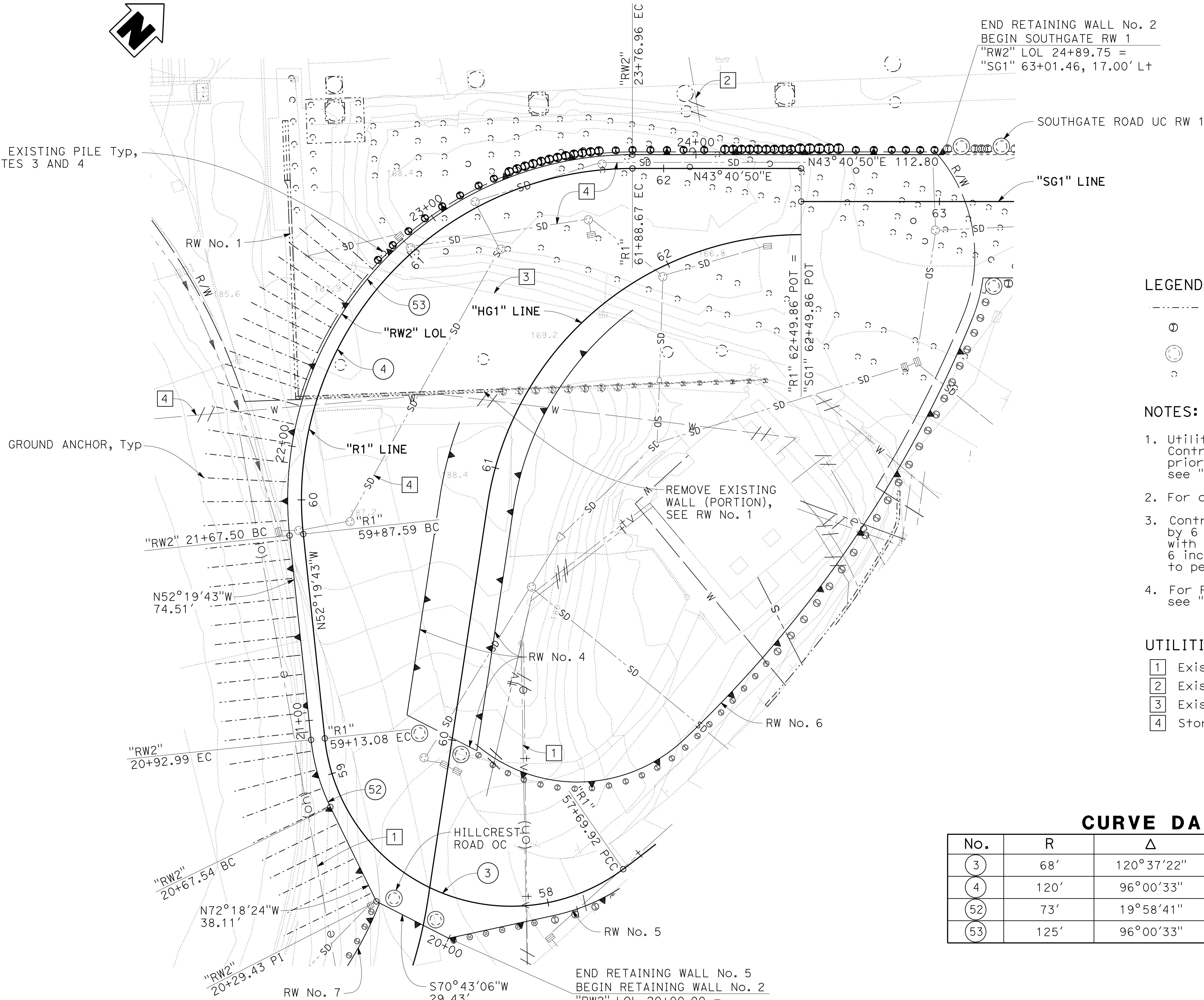
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



REMOVE EXISTING PILE Typ, SEE NOTES 3 AND 4

GROUND ANCHOR, Typ



END RETAINING WALL No. 2
 BEGIN SOUTHGATE RW 1
 "RW2" LOL 24+89.75 =
 "SG1" 63+01.46, 17.00' Lt

SOUTHGATE ROAD UC RW 1

"SG1" LINE

"HG1" LINE

"R1" LINE

REMOVE EXISTING WALL (PORTION), SEE RW No. 1

HILLCREST ROAD OC

END RETAINING WALL No. 5
 BEGIN RETAINING WALL No. 2
 "RW2" LOL 20+00.00 =
 "R1" 58+32.29, 14.80' Lt

LEGEND:

- Indicates existing structure
- ⊙ Indicates Steel Soldier Pile
- ⊙ Indicates CIDH Pile
- ⊙ Indicates existing pile

NOTES:

1. Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
2. For drainage details, see "DRAINAGE PLANS".
3. Contractor can adjust the soldier pile locations by 6 inches Max in either direction to avoid conflict with existing piles. Any adjustments greater than 6 inches will require the Engineer's approval prior to performing any work.
4. For Pile Removal and limits (Portion or Full), see "ROADWAY PLANS".

UTILITIES:

- 1 Existing Overhead Electrical to be removed
- 2 Existing Abandoned Water
- 3 Existing Storm Drain to be Abandoned
- 4 Storm Drain

CURVE DATA

No.	R	Δ	T	L
3	68'	120°37'22"	119.27'	143.16'
4	120'	96°00'33"	133.30'	201.08'
52	73'	19°58'41"	12.86'	25.45'
53	125'	96°00'33"	138.85'	209.46'

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

5-17-19 APPROVAL DATE
 JOHN MANISCALCO REGISTERED CIVIL ENGINEER

SCALE: 1" = 20'	VERT.DATUM NGVD29	HORZ.DATUM NAD83, CCS ZONE 3	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION JOHN MANISCALCO PROJECT ENGINEER	BRIDGE NO. N/A	RETAINING WALL No. 2 FOUNDATION PLAN		
PHOTOGRAMMETRY AS OF: 10-9-2015	ALIGNMENT TIES	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	POST MILES 7.9					
SURVEYED BY TOWILL Inc.	DRAFTED BY D. ORTEGA	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER						
SIGN OFF DATE	FIELD CHECKED BY D. ORTEGA	CHECKED BY A. MARTINEZ			UNIT: 0728	CONTRACT NO.: 04-3A6404	REVISION DATES	SHEET 15 OF 168	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		PROJECT NUMBER & PHASE: 04000205071		DISREGARD PRINTS BEARING EARLIER REVISION DATES	4-30-18 11-14-18 2-27-19 7-25-19

USERNAME => JOHGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	265	436

7-25-19
DATE

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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SAN FRANCISCO, CA 94103

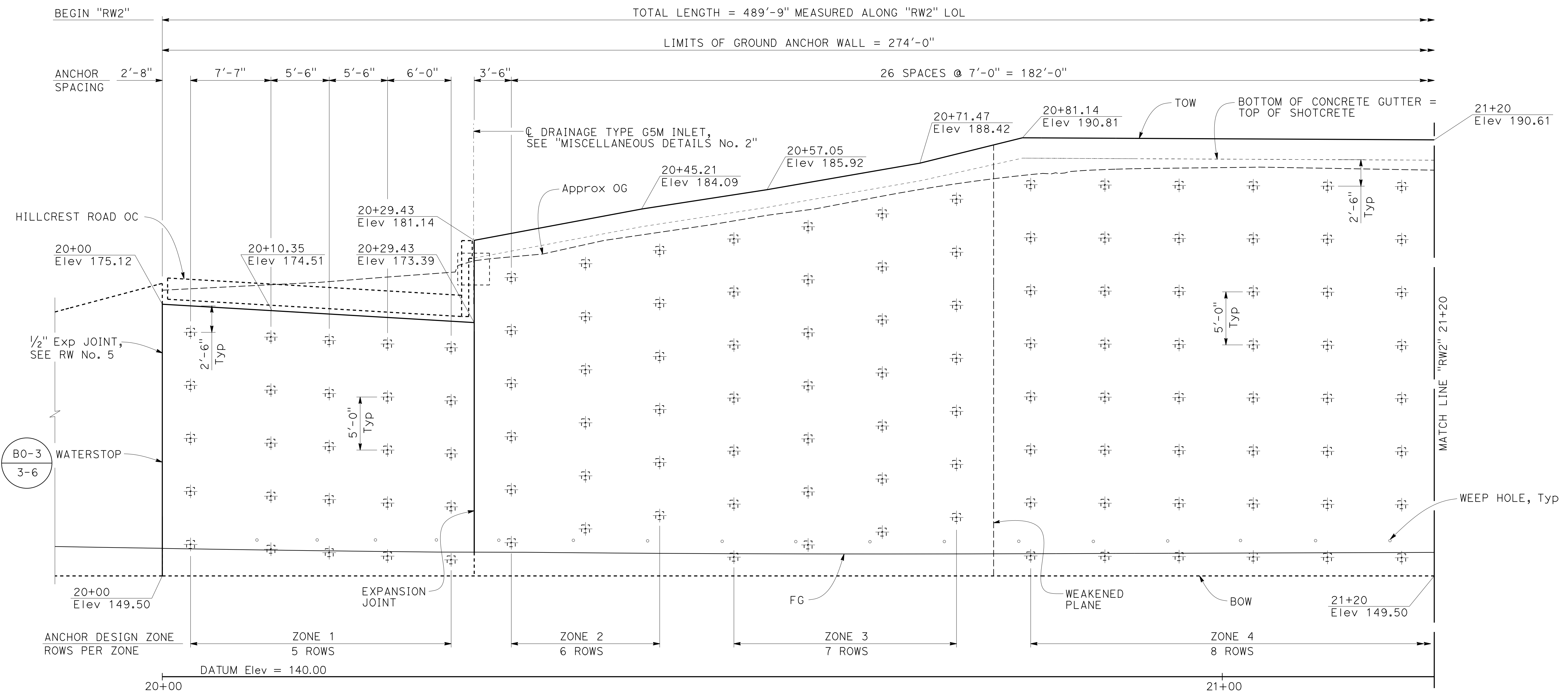
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

LEGEND:

⊕ Location of ground anchor assembly

NOTES:

1. For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
2. For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet.
3. Cable railing, coping and concrete barrier not shown for clarity.
4. Top most row of ground anchors in each design zone is considered "ROW 1". For "GROUND ANCHOR DESIGN TABLE" see "GROUND ANCHOR WALL LAYOUT No. 3" sheet.
5. For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".



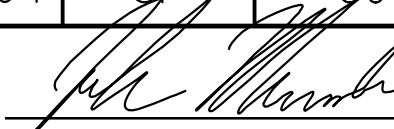
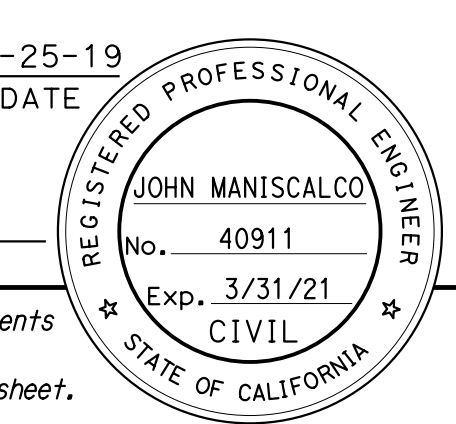
DEVELOPED ELEVATION

1" = 5'

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GROUND ANCHOR WALL LAYOUT No. 1
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		POST MILES: 7.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404
			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 16 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:07

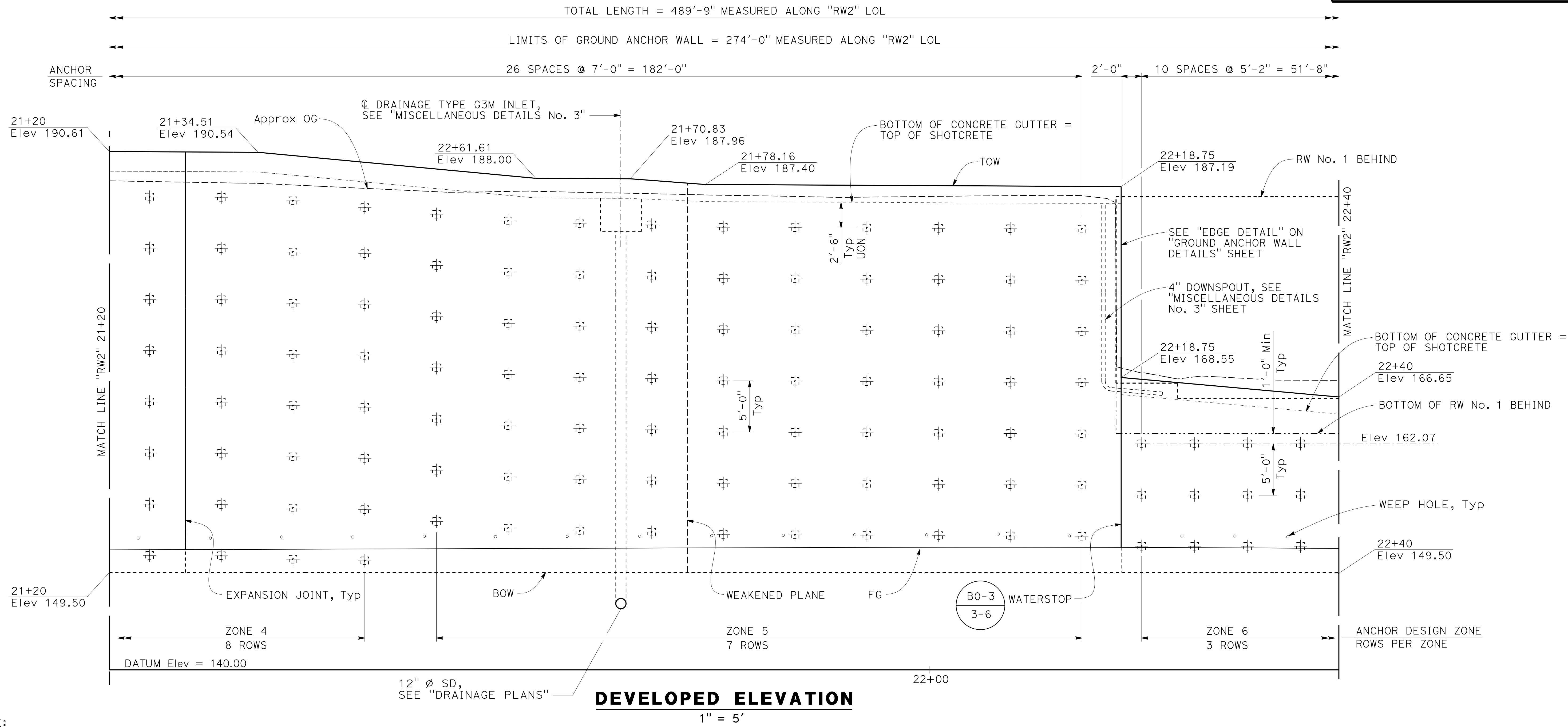
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	266	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

LEGEND:

- ⊕ Location of ground anchor assembly
- Indicates existing structure

NOTES:

1. For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
2. For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet.
3. Cable railing, coping and concrete barrier not shown for clarity.
4. Top most row of ground anchors in each design zone is considered "ROW 1". For "GROUND ANCHOR DESIGN TABLE" see "GROUND ANCHOR WALL LAYOUT No. 3" sheet.
5. For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".



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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GROUND ANCHOR WALL LAYOUT No. 2						
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		POST MILES 7.9							
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404							
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18 11-12-18 2-27-19 7-25-19</td> <td>17</td> <td>168</td> </tr> </table>	REVISION DATES	SHEET	OF	4-30-18 11-12-18 2-27-19 7-25-19	17	168
REVISION DATES	SHEET	OF									
4-30-18 11-12-18 2-27-19 7-25-19	17	168									

FILE => RW2-f-gow1o02.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	267	436

7-25-19
 REGISTERED CIVIL ENGINEER DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER

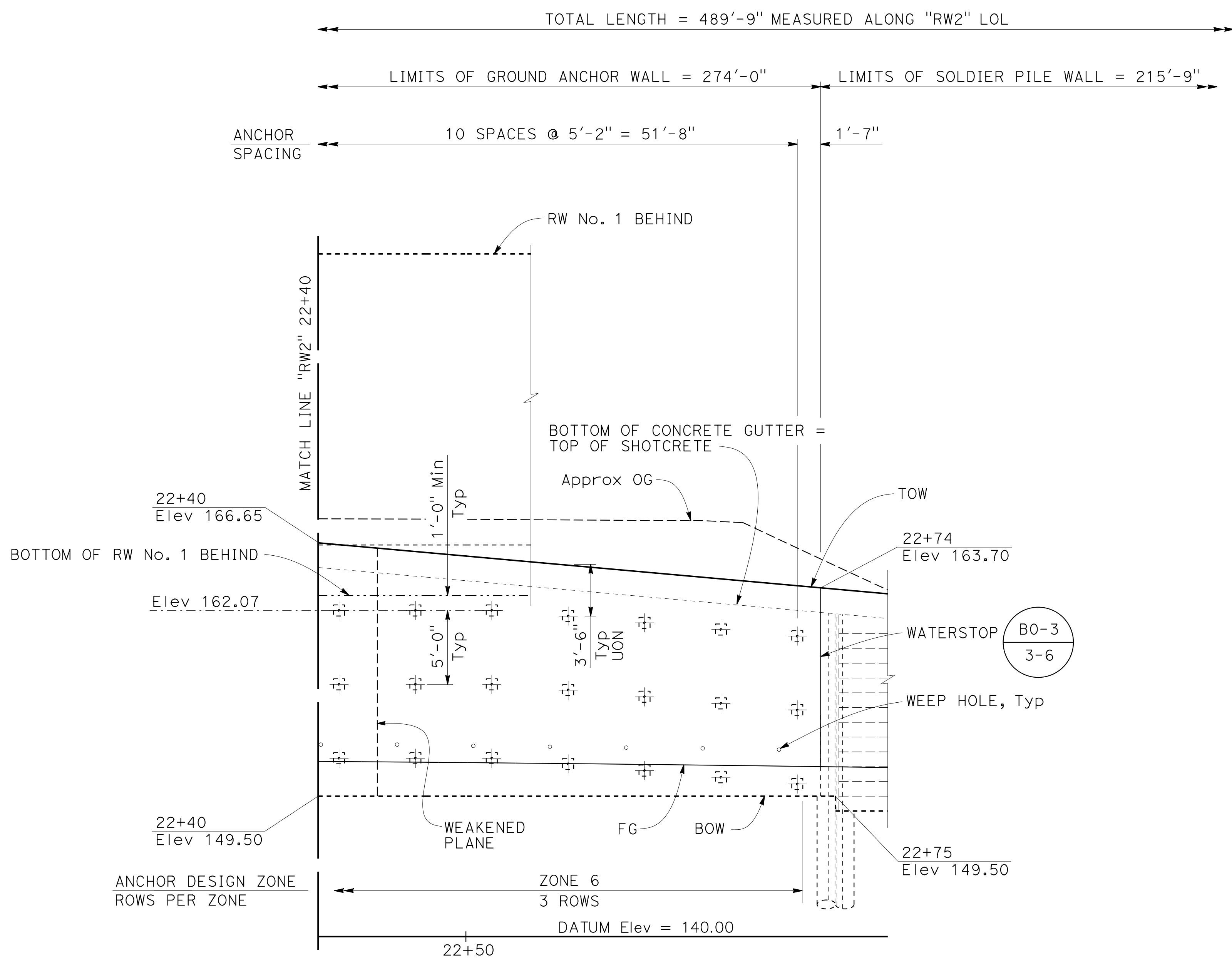
PLANS APPROVAL DATE
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 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

LEGEND:

⊕ Location of ground anchor assembly

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
- For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet.
- Cable railing, coping and concrete barrier not shown for clarity.
- For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".



DEVELOPED ELEVATION
 1" = 5'

GROUND ANCHOR DESIGN TABLE

GROUND ANCHOR ZONE	LOCATION	FACTORED DESIGN LOAD FDL (kips)	FACTORED TEST LOAD FTL (kips)	LOCK-OFF LOAD LL (kips)	UNBONDED LENGTH (FEET)
ZONE 1	ROW 1	78	81	53	25
	ROW 2	80	85	54	25
	ROW 3	86	90	58	15
	ROW 4	77	82	52	15
	ROW 5	89	92	60	15
ZONE 2	ROW 1	83	97	56	25
	ROW 2	87	101	59	25
	ROW 3	92	107	62	25
	ROW 4	92	107	62	15
	ROW 5	64	73	43	15
	ROW 6	145	170	98	15
ZONE 3	ROW 1	93	108	63	25
	ROW 2	97	113	65	25
	ROW 3	104	120	70	25
	ROW 4	104	120	70	25
	ROW 5	104	120	70	15
	ROW 6	76	88	51	15
	ROW 7	152	177	102	15
ZONE 4	ROW 1	94	109	63	30
	ROW 2	98	114	66	25
	ROW 3	105	121	71	25
	ROW 4	105	121	71	25
	ROW 5	105	121	71	25
	ROW 6	105	121	71	15
	ROW 7	101	117	68	15
	ROW 8	83	96	56	15
ZONE 5	ROW 1	92	107	62	25
	ROW 2	97	112	65	25
	ROW 3	103	119	70	25
	ROW 4	103	119	70	25
	ROW 5	103	119	70	15
	ROW 6	78	90	53	15
	ROW 7	144	169	97	15
ZONE 6	ROW 1	138	138	93	15
	ROW 2	52	52	35	15
	ROW 3	98	98	66	15

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GROUND ANCHOR WALL LAYOUT No. 3
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		POST MILES: 7.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3			UNIT: 0728	CONTRACT NO.: 04-3A6404	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19
FILE => RW2-f-gow1o03.dgn			PROJECT NUMBER & PHASE: 04000205071	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 18 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:07

SOLDIER PILE TABLE

PILE NUMBER	"RW2" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
1	22+75.00	163.56	161.89	138.50	W18x130
2	22+82.50	162.89	161.22	138.50	W18x130
3	22+90.00	162.55	160.88	138.50	W18x130
4	22+97.50	162.62	160.95	138.50	W18x130
5	23+05.00	162.70	161.03	138.50	W18x130
6	23+12.50	162.77	161.10	138.50	W18x130
7	23+20.00	162.85	161.18	138.50	W18x130
8	23+26.00	162.91	161.24	137.50	W18x130
9	23+32.00	162.97	161.30	128.50	W24x229
10	23+35.00	163.00	161.33	128.50	W24x229
11	23+38.00	163.03	161.36	128.50	W24x229
12	23+41.00	163.06	161.39	128.50	W24x229
13	23+44.00	163.09	161.42	128.50	W24x229

SOLDIER PILE TABLE

PILE NUMBER	"RW2" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
14	23+47.00	163.12	161.45	128.50	W24x229
15	23+50.00	163.15	161.48	128.50	W24x229
16	23+53.00	163.18	161.51	128.50	W24x229
17	23+56.00	163.21	161.54	128.50	W24x229
18	23+59.00	163.24	161.57	128.50	W24x229
19	23+62.00	163.27	161.60	126.50	W24x229
20	23+65.00	163.30	161.63	126.50	W24x229
21	23+71.00	163.36	161.69	135.50	W18x130
22	23+77.00	163.42	161.75	135.50	W18x130
23	23+83.50	163.49	161.82	135.50	W18x130
24	23+89.50	163.55	161.88	133.50	W18x130
25	23+95.50	163.61	161.94	133.50	W18x130

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- Cable railing, coping and concrete barrier not shown for clarity.
- For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	268	436

7-25-19 DATE

REGISTERED CIVIL ENGINEER

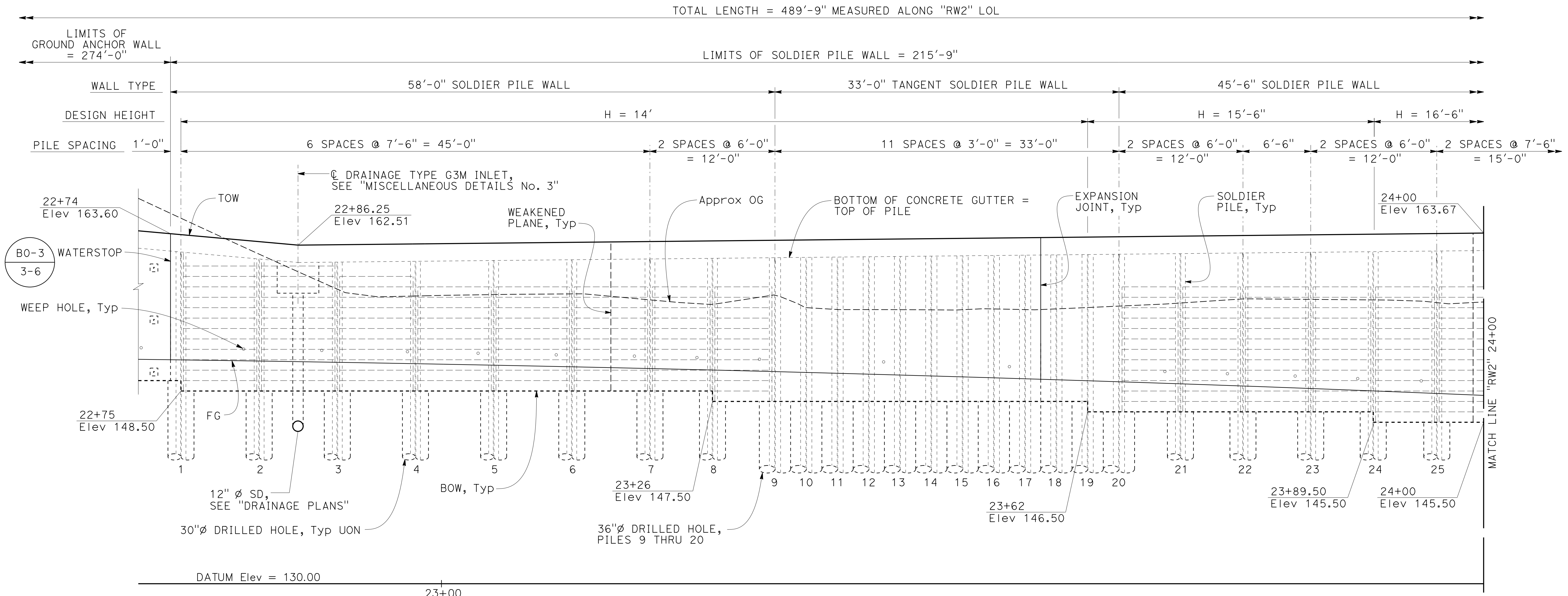
PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



DEVELOPED ELEVATION

1" = 5'

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 SOLDIER PILE WALL LAYOUT No. 1
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		POST MILES: 7.9	

UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A604

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	19	168

FILE => RW2-f-spw_1o01.dgn

SOLDIER PILE TABLE

PILE NUMBER	"RW2" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
26	24+03.00	163.68	162.01	133.50	W18x130
27	24+10.50	163.76	162.09	125.00	W24x229
28	24+13.50	163.79	162.12	125.00	W24x229
29	24+16.50	163.82	162.15	125.00	W24x229
30	24+19.50	163.85	162.18	125.00	W24x229
31	24+22.50	163.88	162.21	125.00	W24x229
32	24+25.50	163.91	162.24	125.00	W24x229
33	24+28.50	163.94	162.27	125.00	W24x229
34	24+31.50	163.97	162.30	125.00	W24x229
35	24+34.50	164.00	162.33	125.00	W24x229
36	24+37.75	164.03	162.36	118.00	W30x292

SOLDIER PILE TABLE

PILE NUMBER	"RW2" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
37	24+41.25	164.07	162.40	118.00	W30x292
38	24+44.75	164.10	162.43	118.00	W30x292
39	24+48.25	164.14	162.47	118.00	W30x292
40	24+51.75	164.17	162.50	118.00	W30x292
41	24+58.00	164.23	162.56	124.00	W18x211
42	24+64.50	164.30	162.63	124.00	W18x211
43	24+71.00	164.36	162.69	124.00	W18x211
44	24+76.17	164.42	162.75	123.00	W18x211
45	24+81.33	164.47	162.80	123.00	W18x211
46	24+86.50	164.52	162.85	123.00	W18x211

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- Cable railing, coping and concrete barrier not shown for clarity.
- For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	269	436

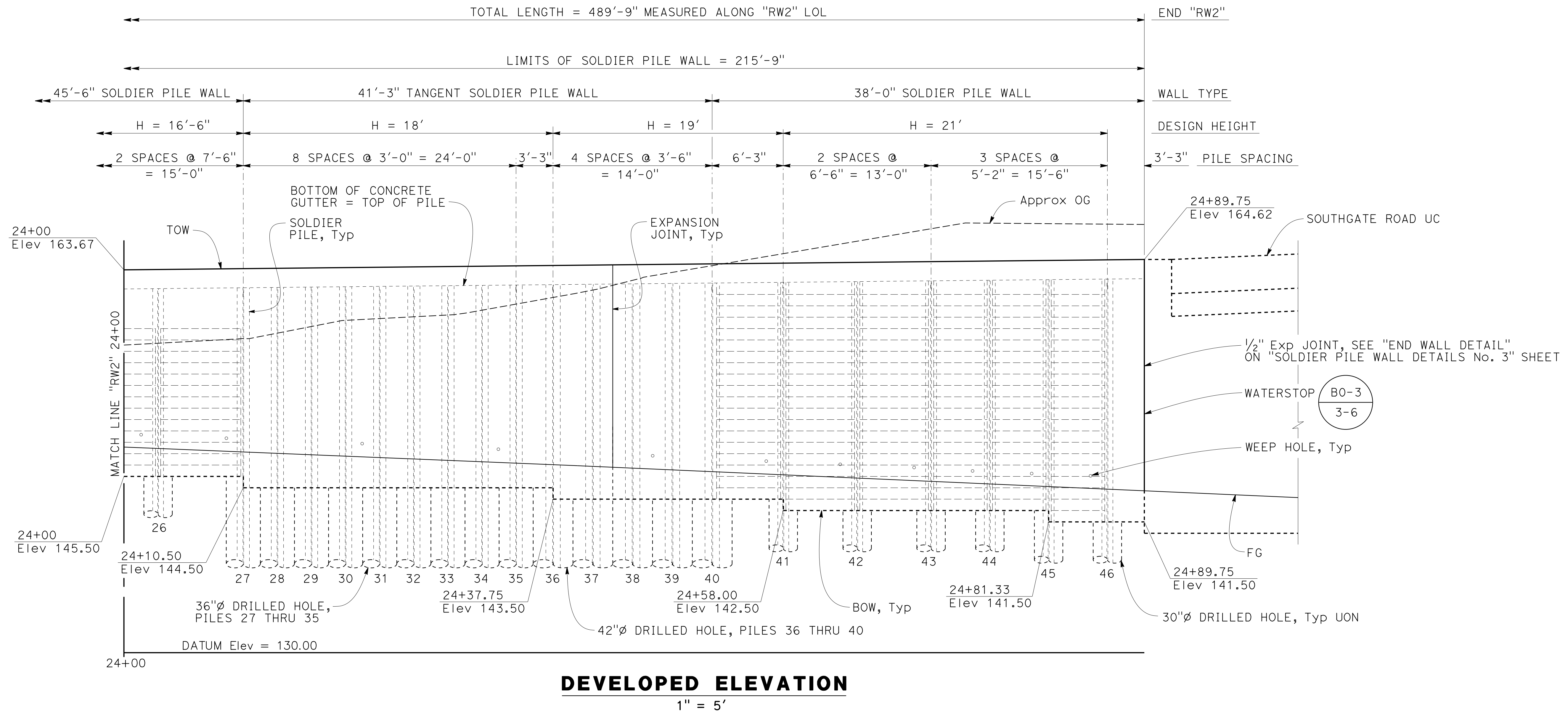
REGISTERED CIVIL ENGINEER **JOHN MANISCALCO** No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE: 7-25-19

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 SOLDIER PILE WALL LAYOUT No. 2
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY:	CHECKED:		POST MILES: 7.9	

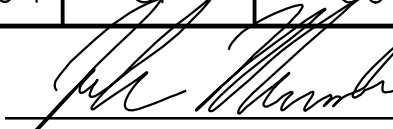
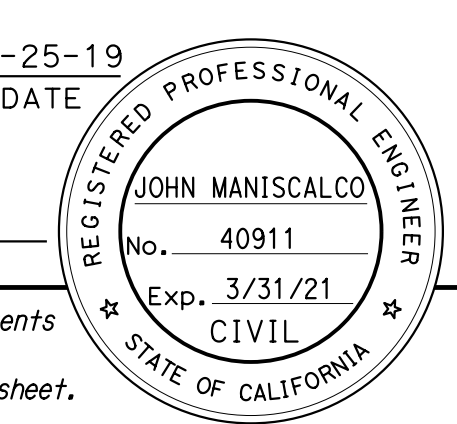
UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

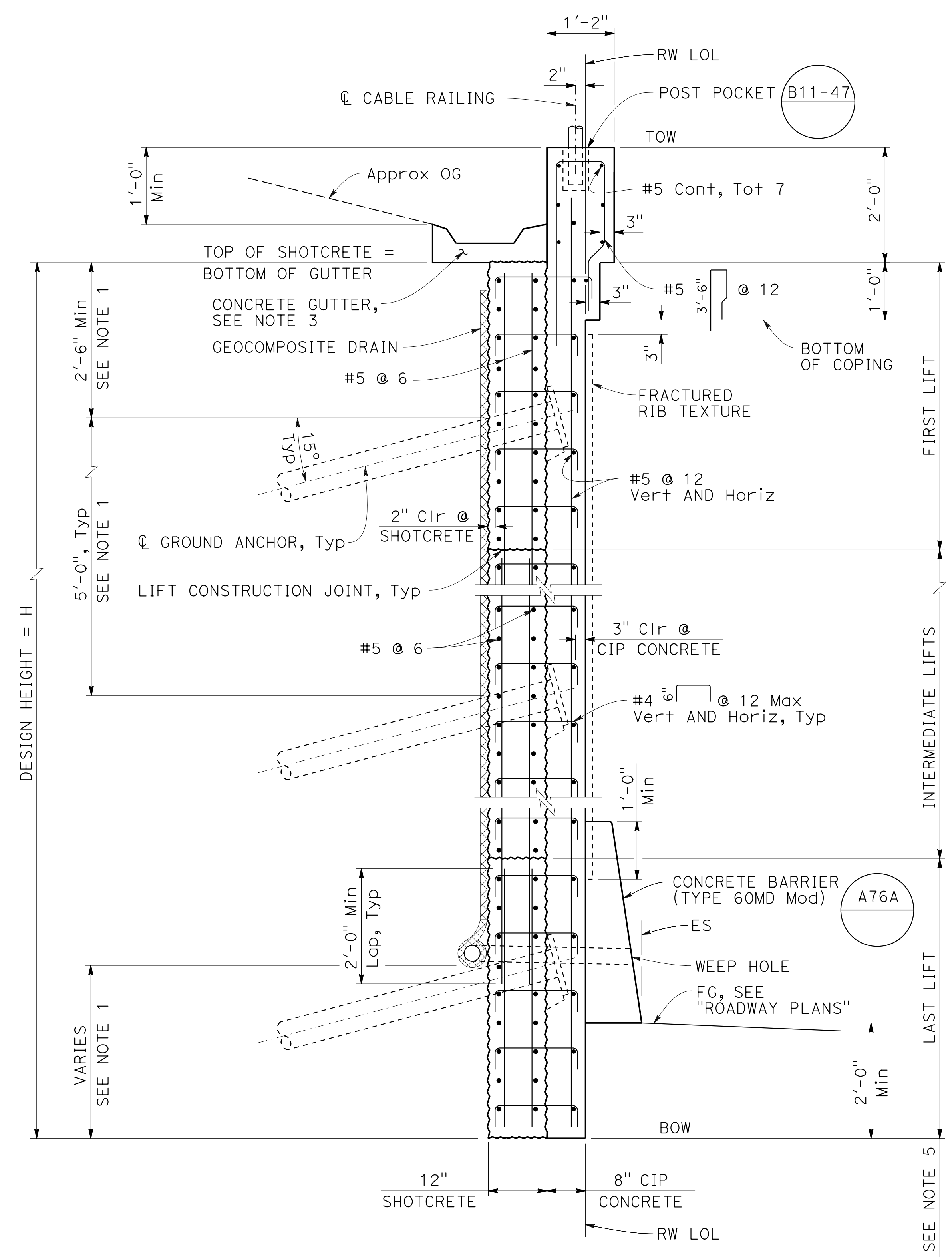
REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	20	168

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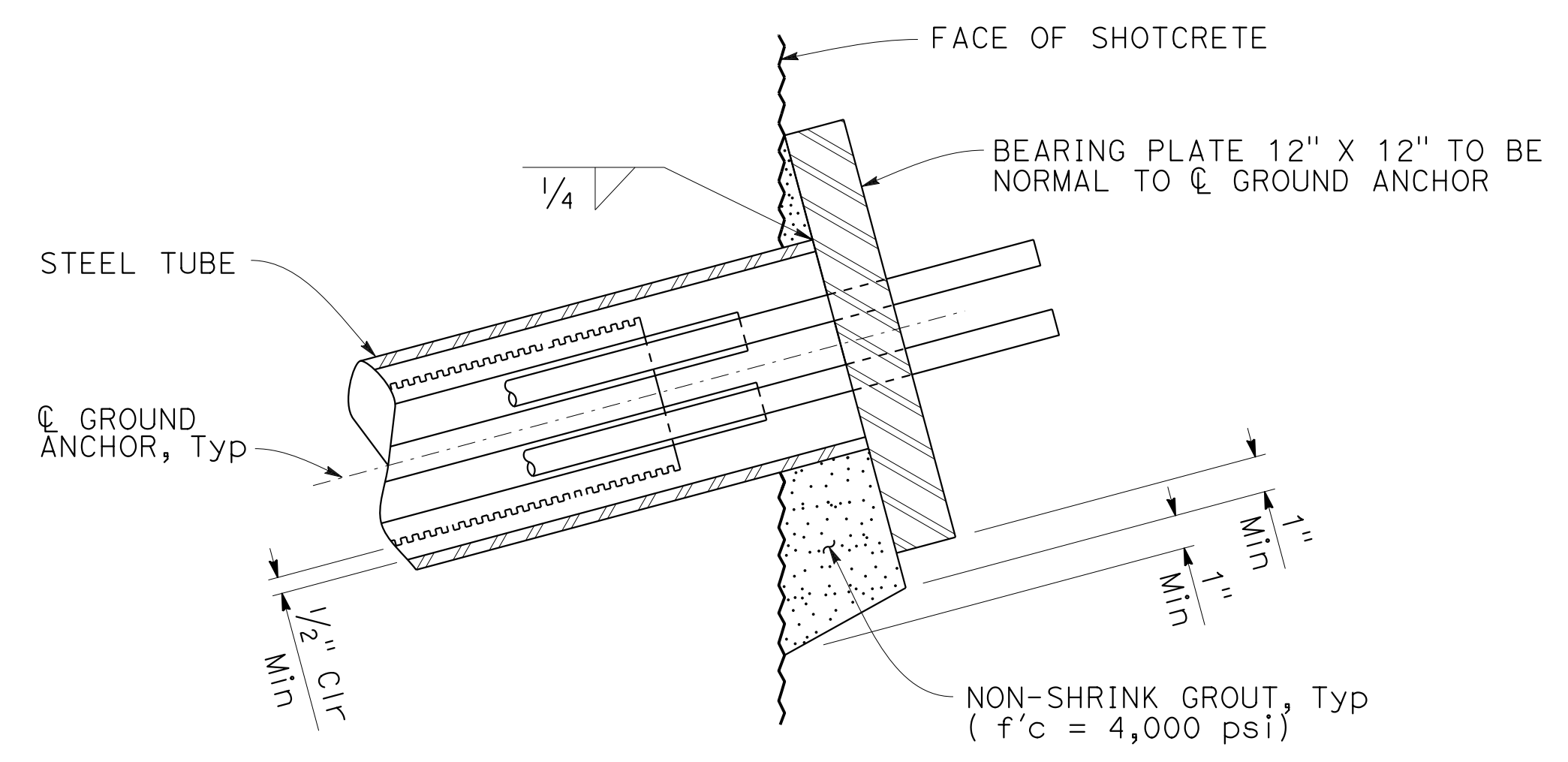
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	270	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

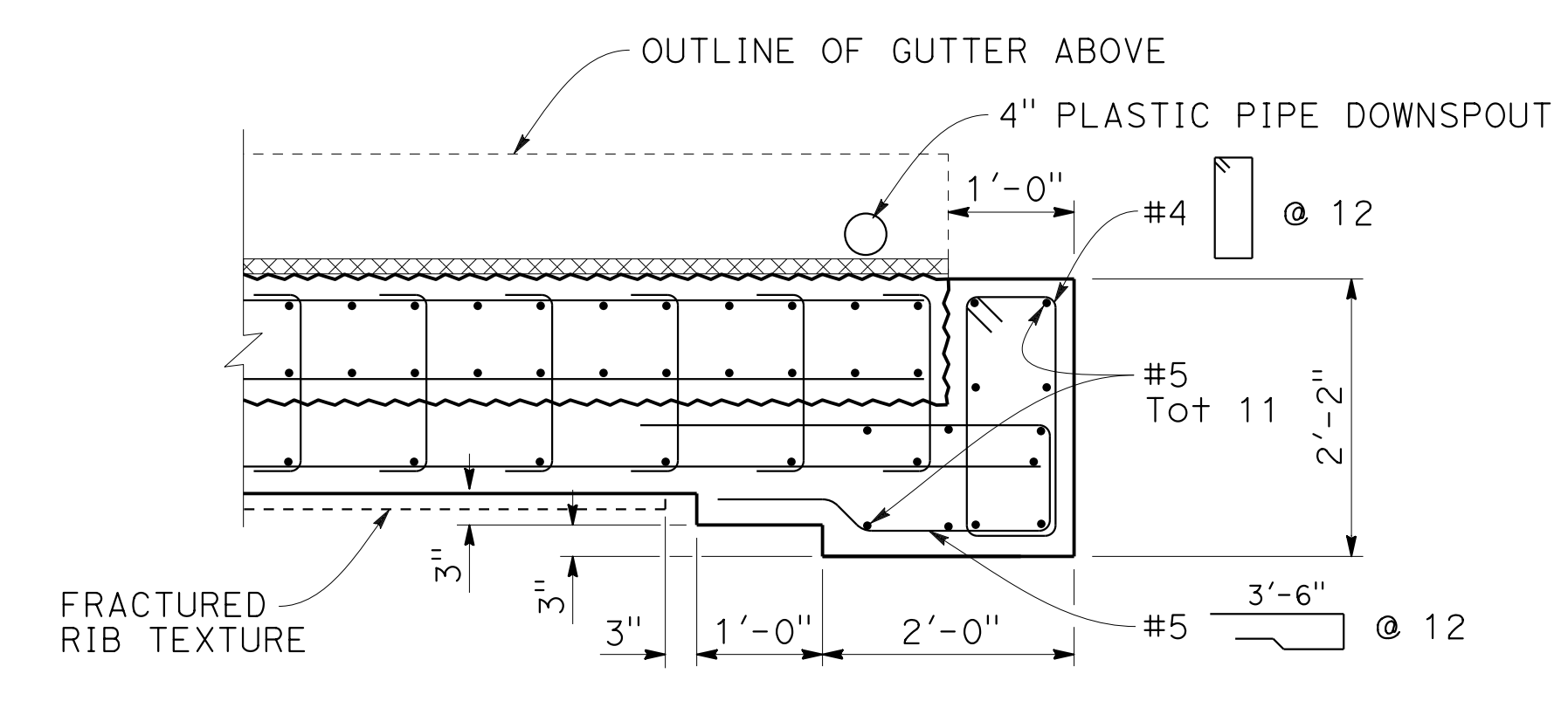
1. For wall layout and ground anchor spacing, see "GROUND ANCHOR WALL LAYOUT" sheets.
2. BOW shall be placed against undisturbed material.
3. For gutter type and location, see typical sections on "GENERAL PLAN No. 4" and "GENERAL PLAN No. 5" sheets.
4. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" thru "MISCELLANEOUS DETAILS No. 3" sheets.
5. All ground anchor wall lifts shall not exceed 5'-0".



GROUND ANCHOR WALL SECTION
3/4" = 1'-0"




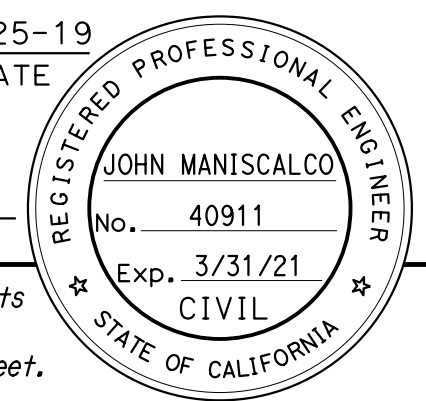
GROUND ANCHOR ANCHORAGE DETAIL
NO SCALE

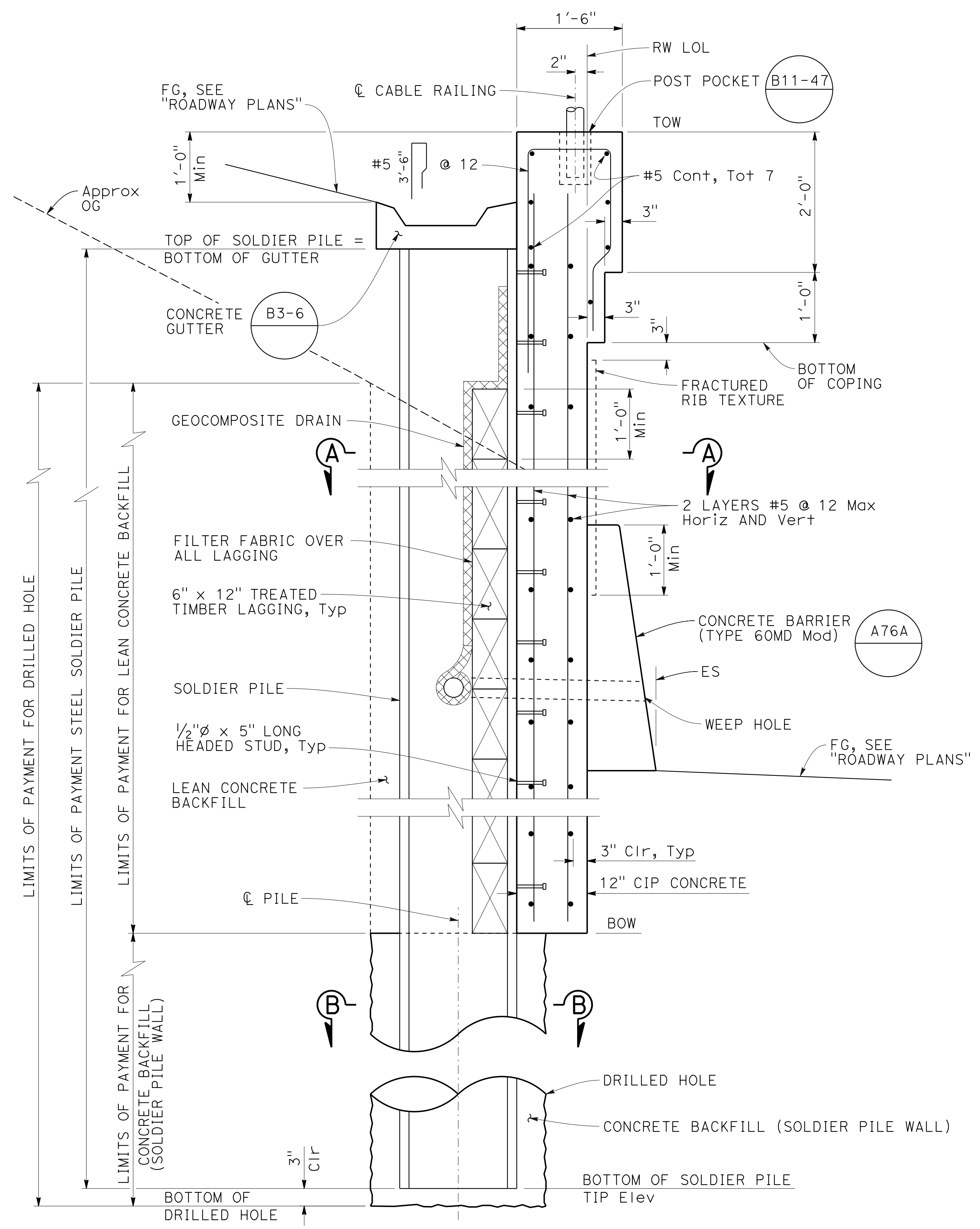


EDGE DETAIL
3/4" = 1'-0"

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 GROUND ANCHOR WALL DETAILS
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY	CHECKED		POST MILES 7.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	CONTRACT NO.: 04-3A604	REVISION DATES
0 1 2 3			PROJECT NUMBER & PHASE: 04000205071	DISREGARD PRINTS BEARING EARLIER REVISION DATES	4-30-18 11-12-18 2-27-19 7-25-19
FILE => RW2-g-gowd+01.dgn			SHEET 21	OF 168	USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:08

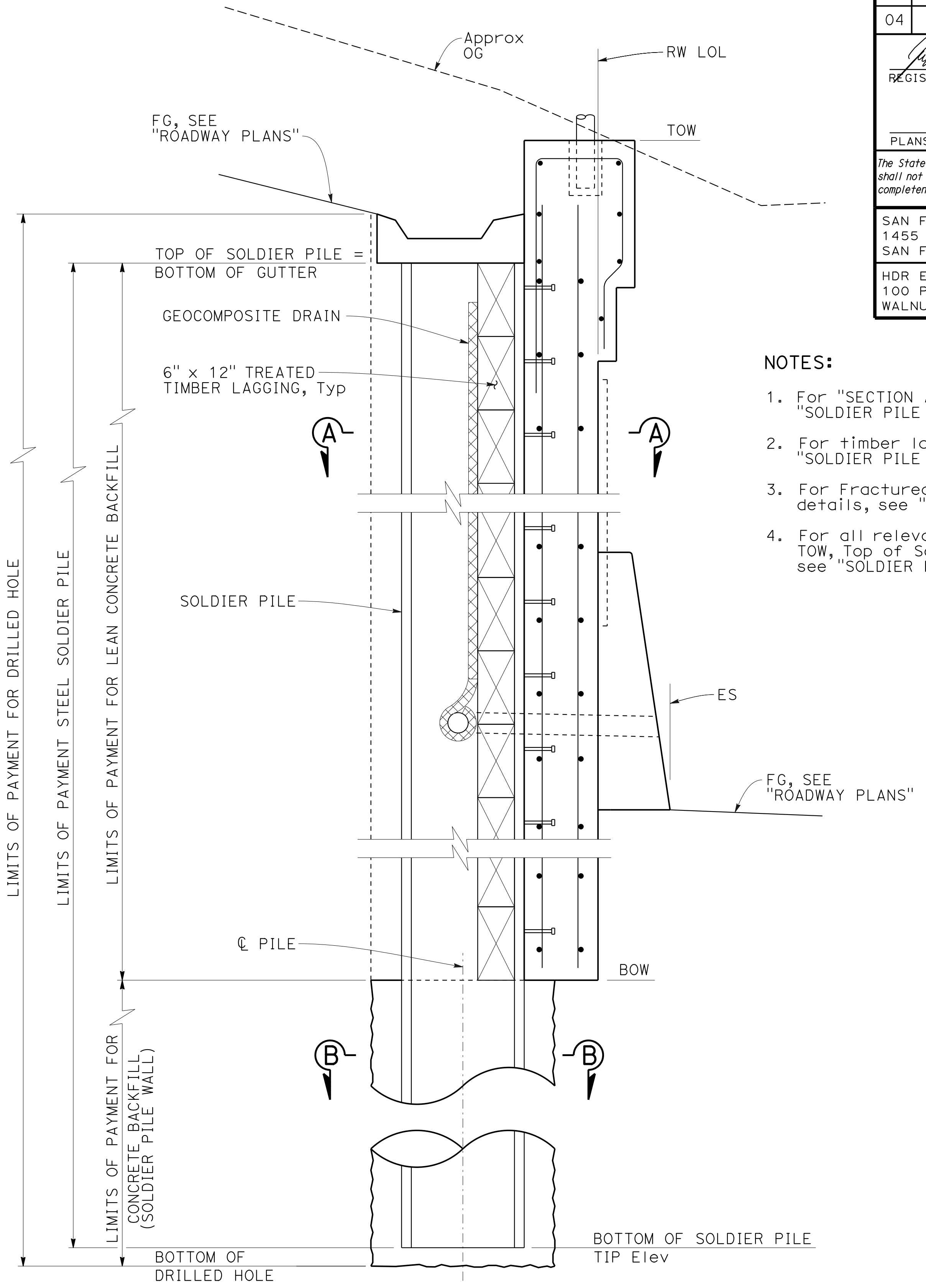
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	271	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



SOLDIER PILE WALL SECTION IN FILL

1" = 1'-0"

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



SOLDIER PILE WALL SECTION IN CUT

1" = 1'-0"

NOTE: FOR INFORMATION NOT SHOWN, SEE "SOLDIER PILE WALL SECTION IN FILL"

NOTES:

1. For "SECTION A-A" and "SECTION B-B", see "SOLDIER PILE WALL DETAILS No. 2" sheet.
2. For timber lagging details, see "SOLDIER PILE WALL DETAILS No. 3" sheet.
3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
4. For all relevant elevation information, including TOW, Top of Soldier Pile, BOW, and Tip Elevations, see "SOLDIER PILE WALL LAYOUT" sheets.

DESIGN OVERSIGHT	
SIGN OFF DATE	

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

**PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

BRIDGE NO.	N/A
POST MILES	7.9

**RETAINING WALL No. 2
SOLDIER PILE WALL DETAILS No. 1**

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	4-30-18 11-12-18 2-27-19 7-25-19	22	168

FILE => RW2-g-spwd+01.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	272	436

REGISTERED CIVIL ENGINEER **JOHN MANISCALCO** No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA

DATE: 7-25-19

PLANS APPROVAL DATE

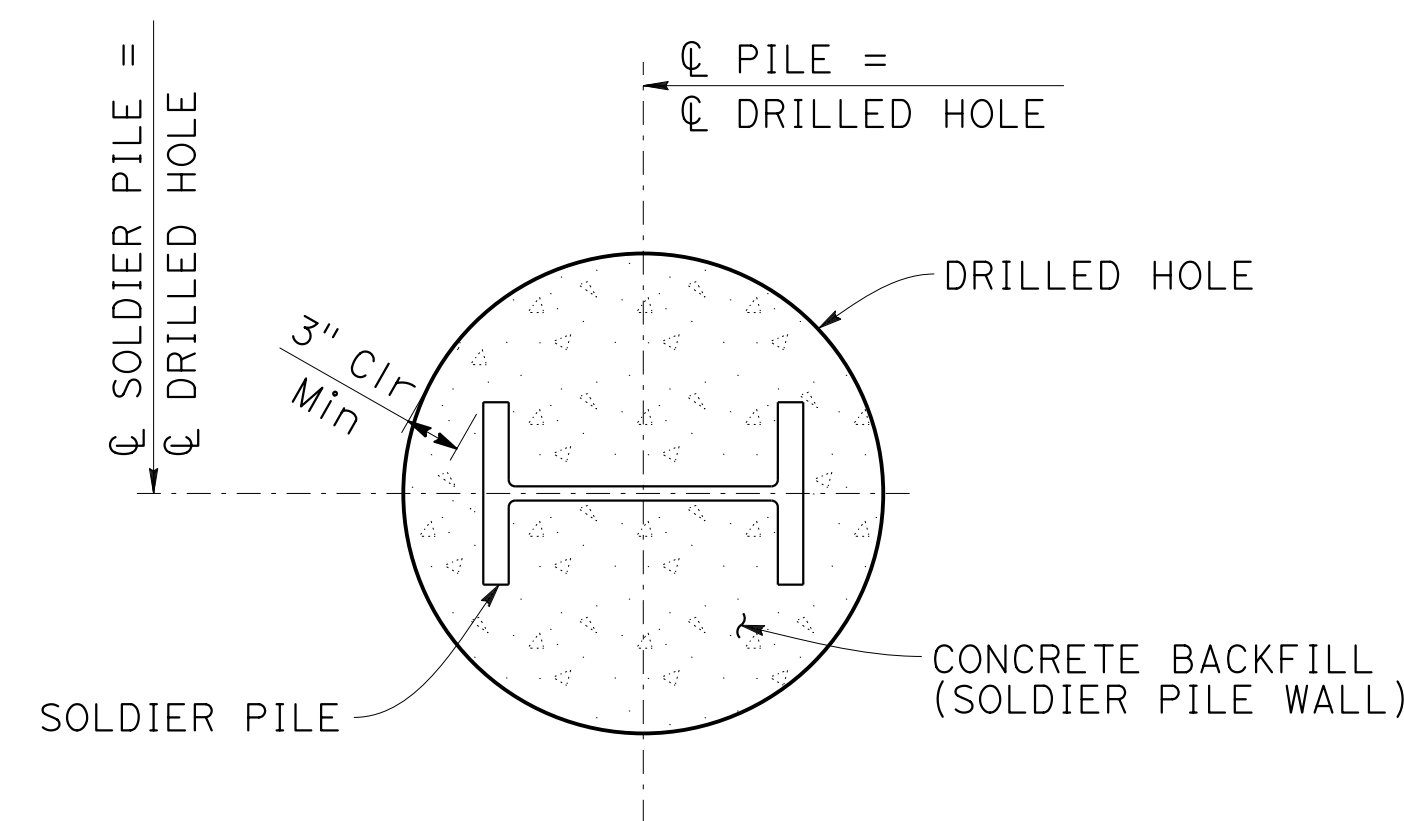
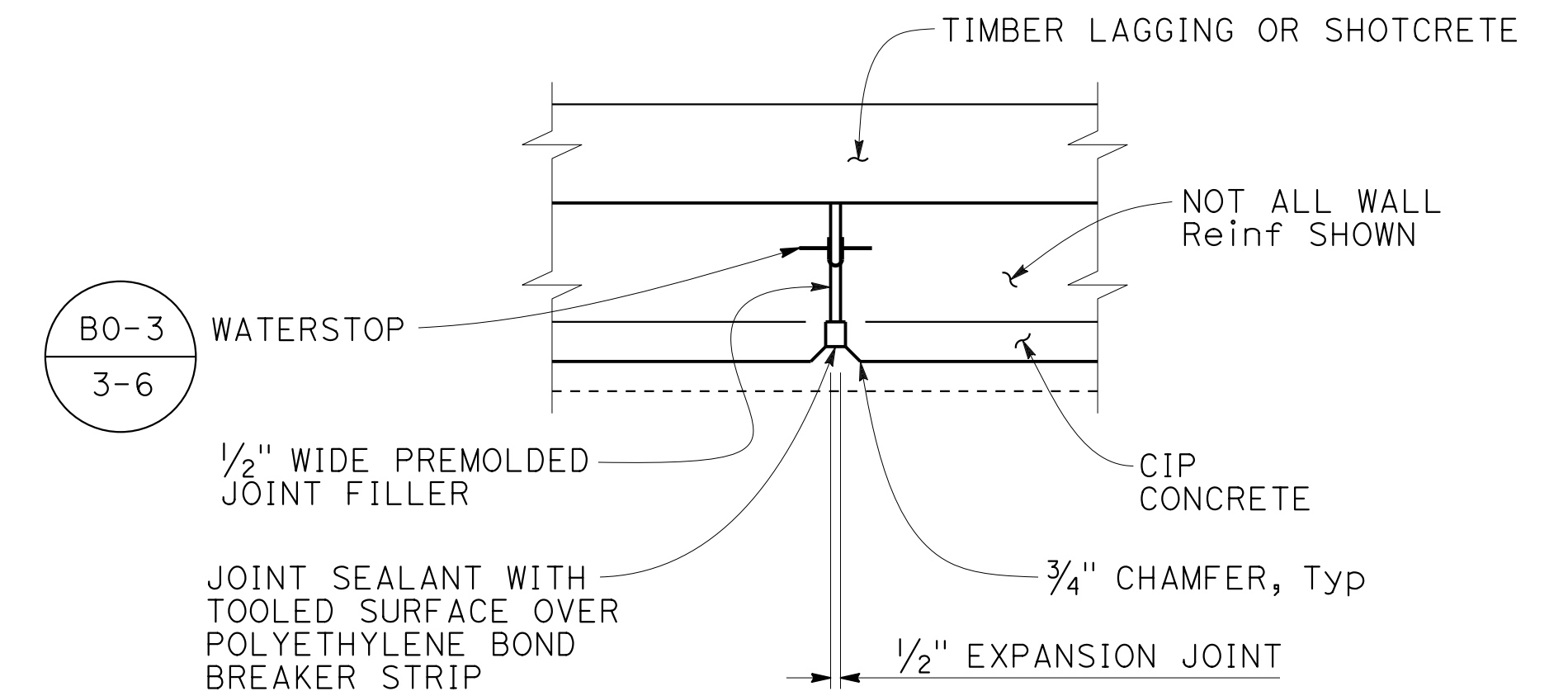
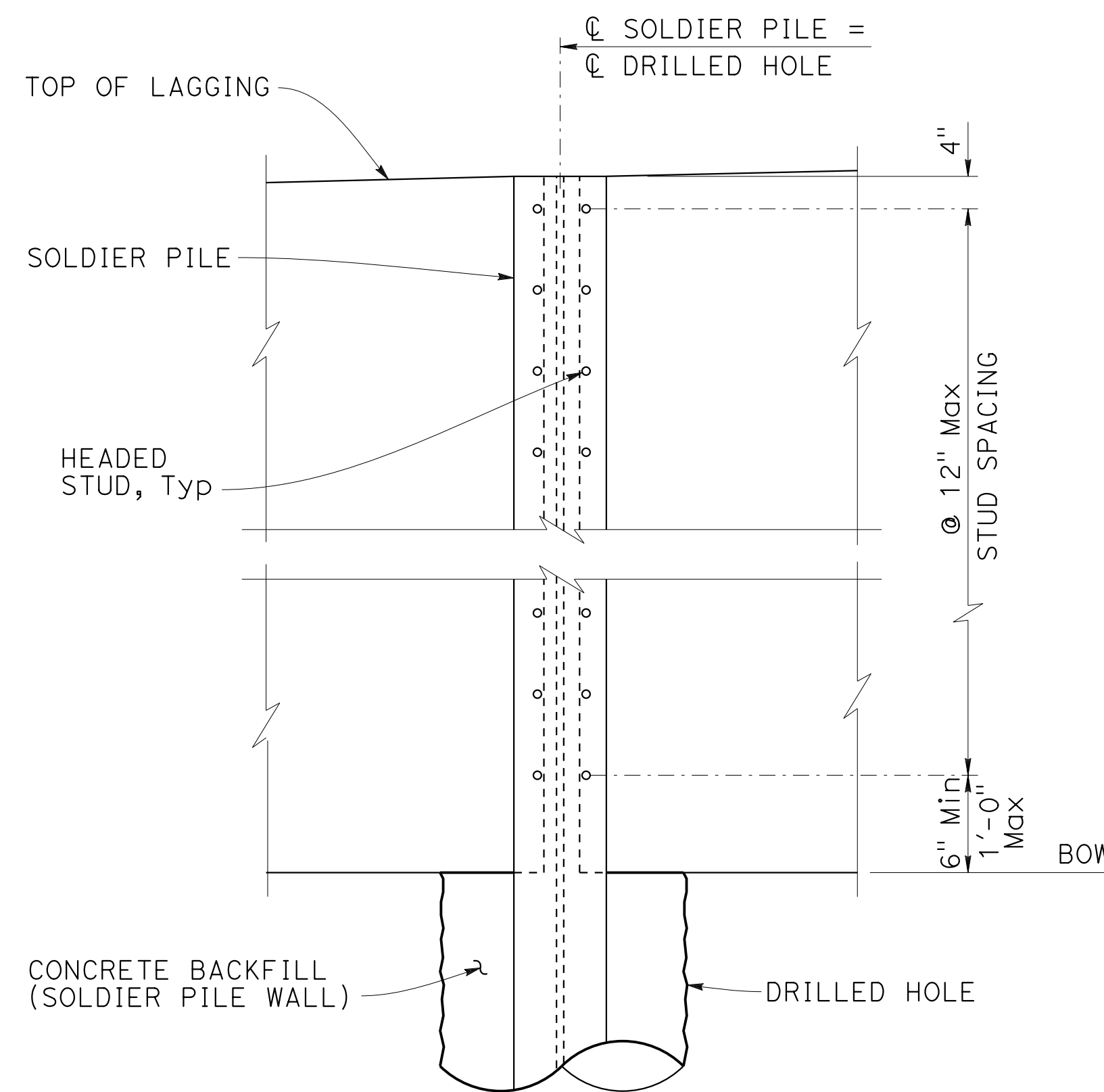
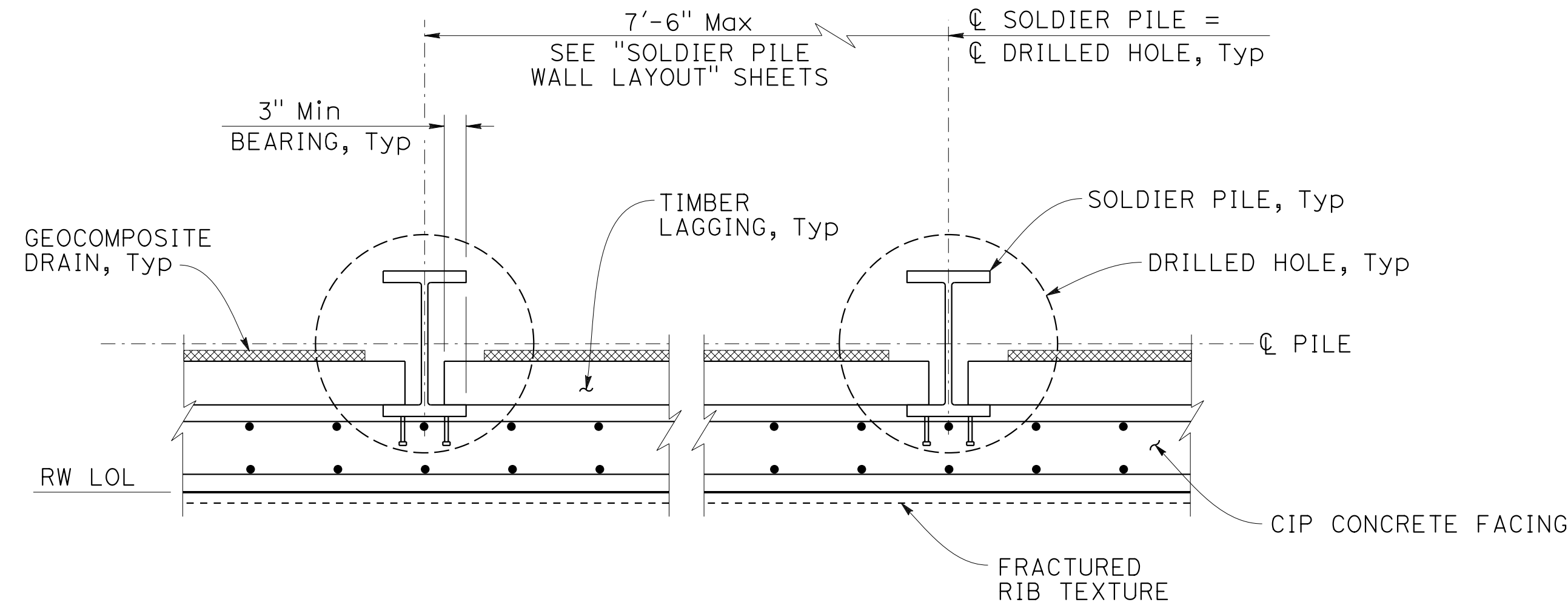
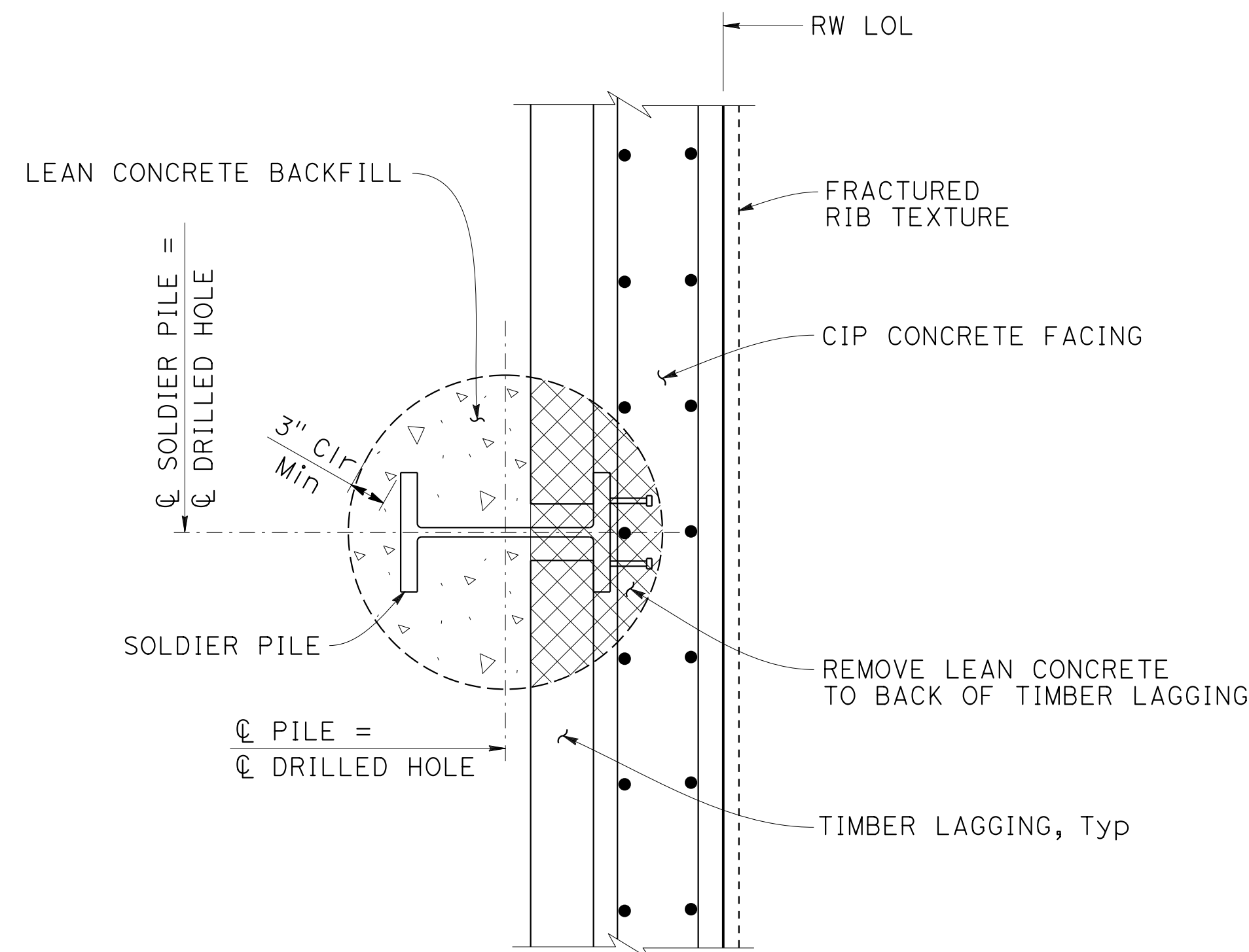
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

1. Single vee-groove and square groove permitted for all positions.
2. Single bevel-groove permitted for horizontal joints only.
3. Repair damage areas of paint after anchor installation.



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

DESIGN OVERSIGHT	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	N/A	RETAINING WALL No. 2	
	DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER			POST MILES
SIGN OFF DATE	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	JOHN MANISCALCO	CONTRACT NO.:	04-3A6404	REVISION DATES	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.:	04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	4-30-18 11-12-18 2-27-19 7-25-19	SHEET 23 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:09

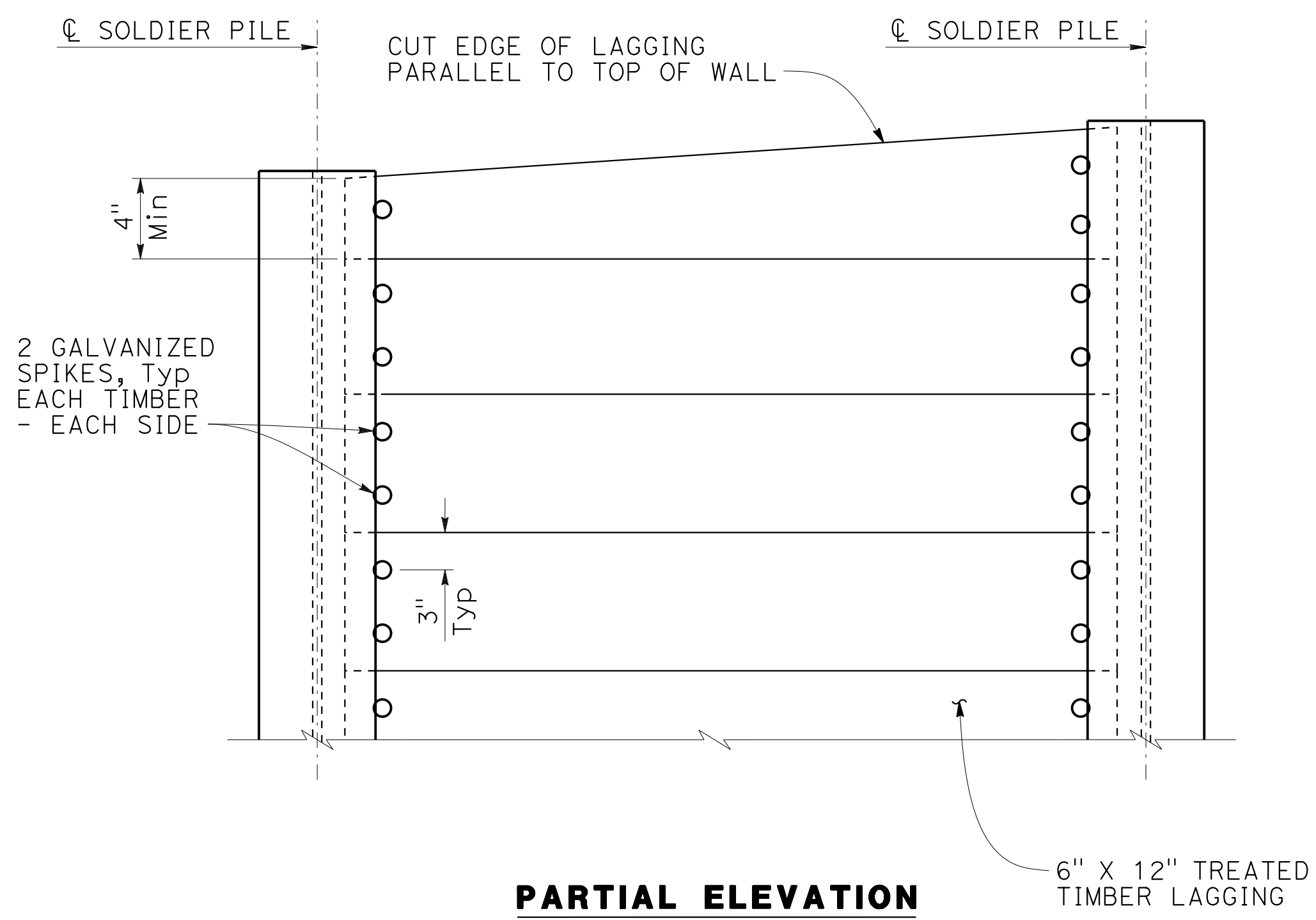
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	273	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

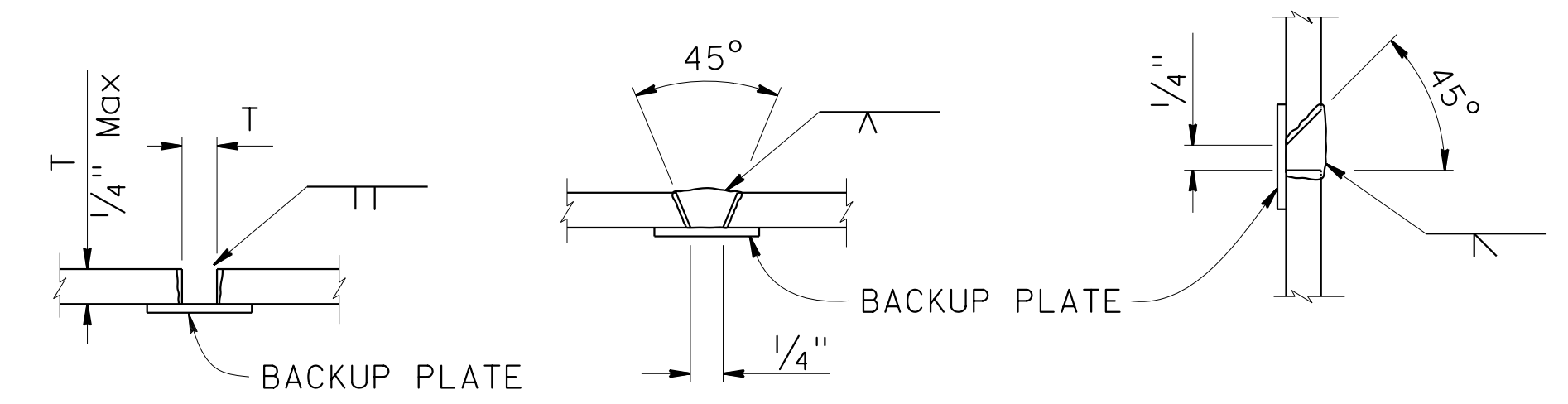
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

1. No clipping of timber lagging corners allowed.
2. Use 40d galvanized wire spikes for lagging.
3. Spikes, screws and nails shall not be bent.
4. Timber lagging to be treated on all sides.
5. All timber lagging to be placed with full bearing against soldier pile flanges.



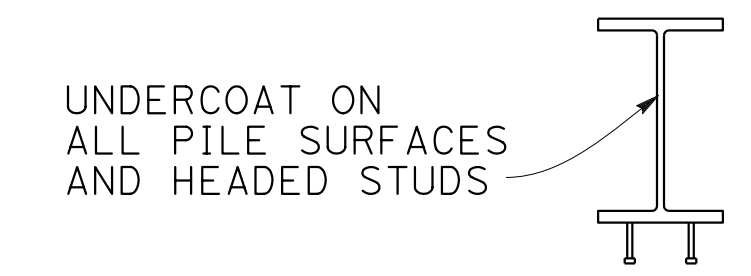
PARTIAL ELEVATION



SQUARE GROOVE SINGLE VEE-GROOVE SINGLE BEVEL-GROOVE

PILE WELDING DETAIL-BUTT JOINTS

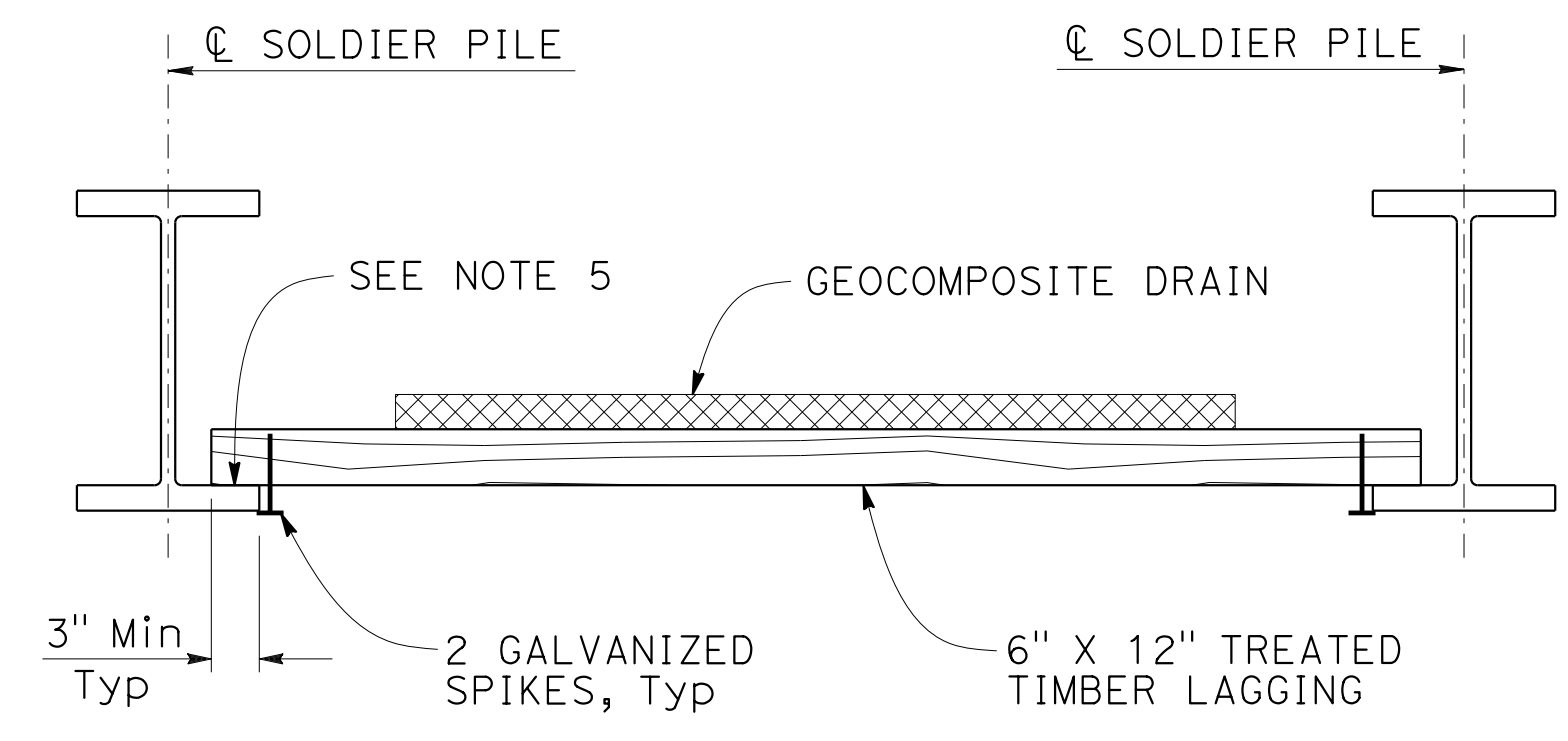
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NOTE: CLEAN AND PAINT STEEL SOLDIER PILE FROM TOP OF PILE TO 5'-0" BELOW BOTTOM OF TIMBER LAGGING.

LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE

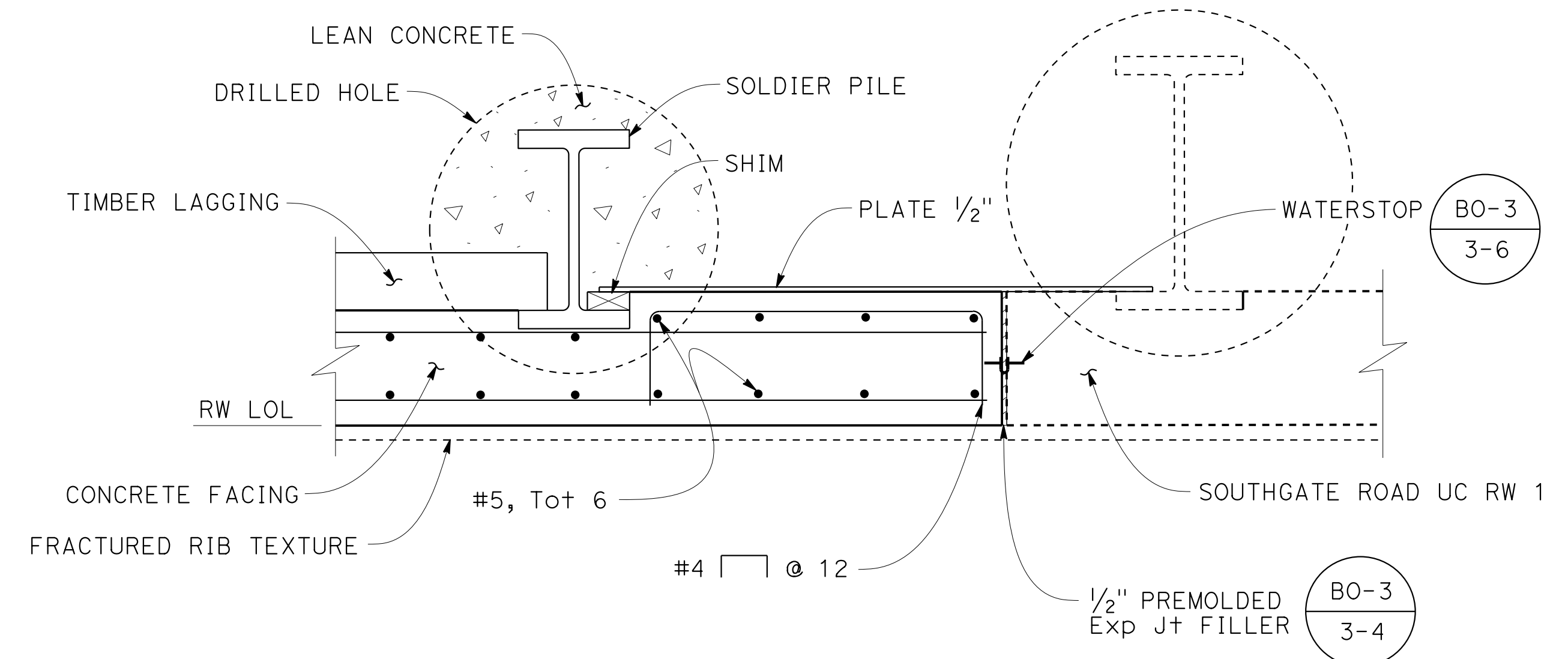
NO SCALE



PARTIAL PLAN

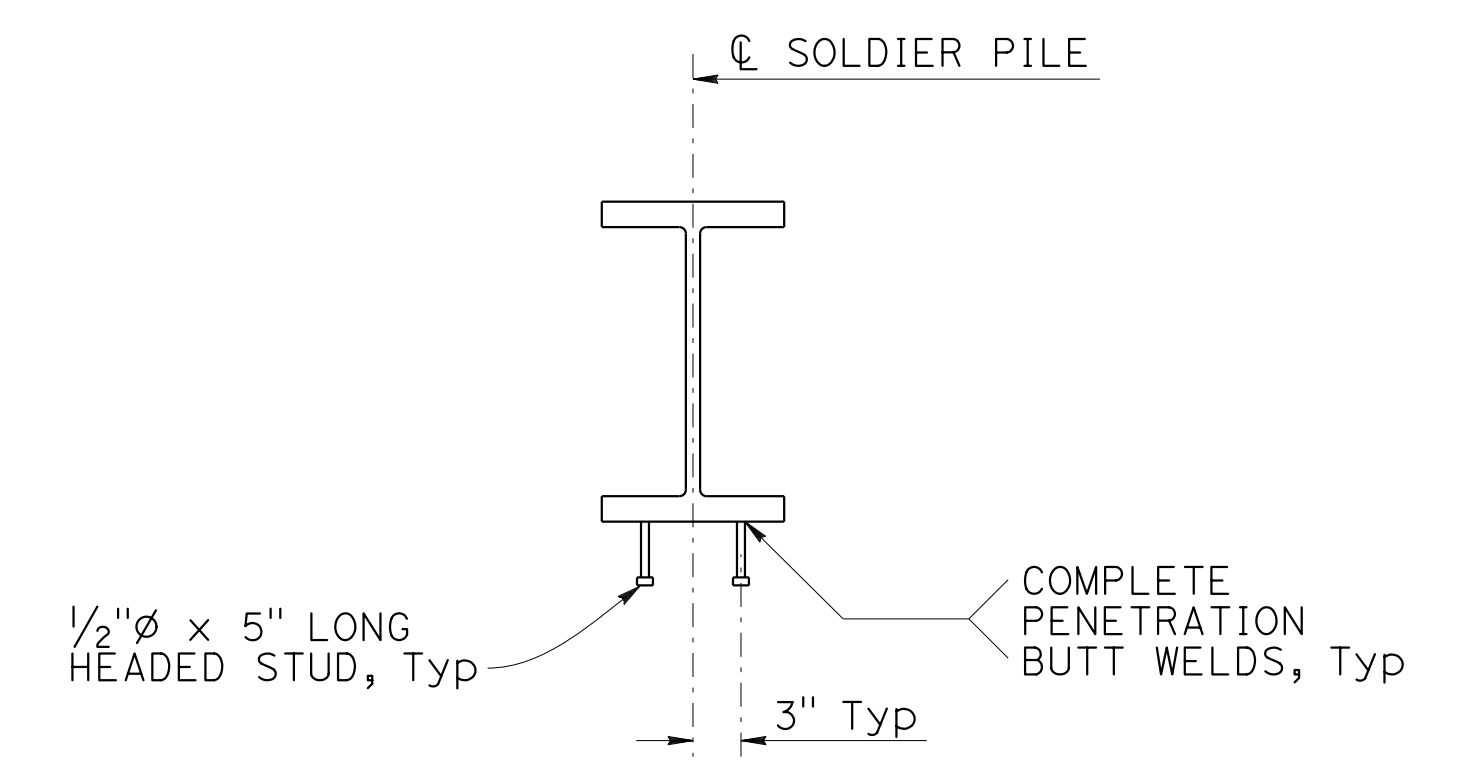
LAGGING DETAIL

NO SCALE



END WALL DETAIL

1" = 1'-0"



HEADED STUD DETAIL

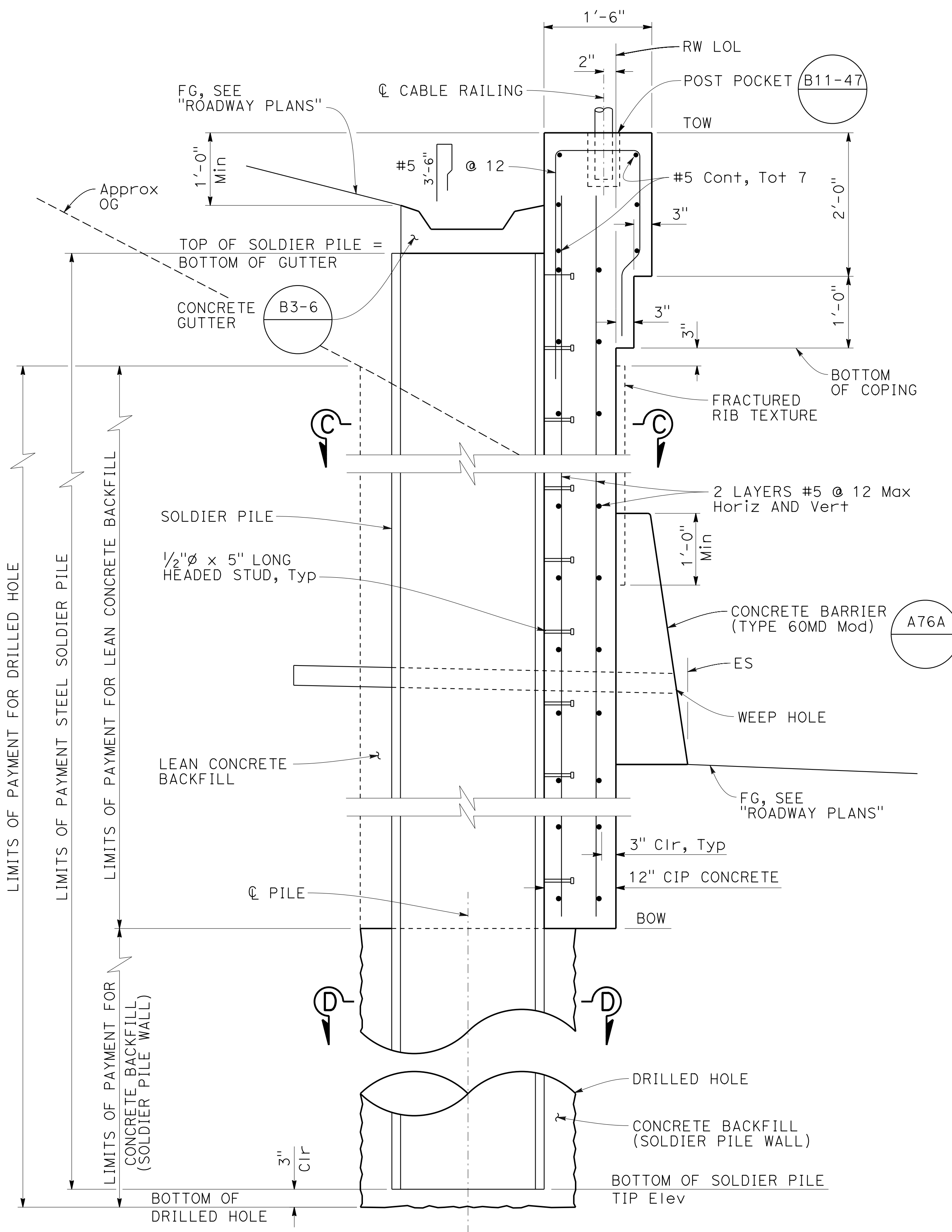
NO SCALE

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 SOLDIER PILE WALL DETAILS No. 3	
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO		POST MILES: 7.9
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A604
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	UNIT: 0728	REVISION DATES	
				PROJECT NUMBER & PHASE: 04000205071	4-30-18 11-12-18 2-27-19 7-25-19	
				CONTRACT NO.: 04-3A604	SHEET 24 OF 168	
				DISREGARD PRINTS BEARING EARLIER REVISION DATES		

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:09

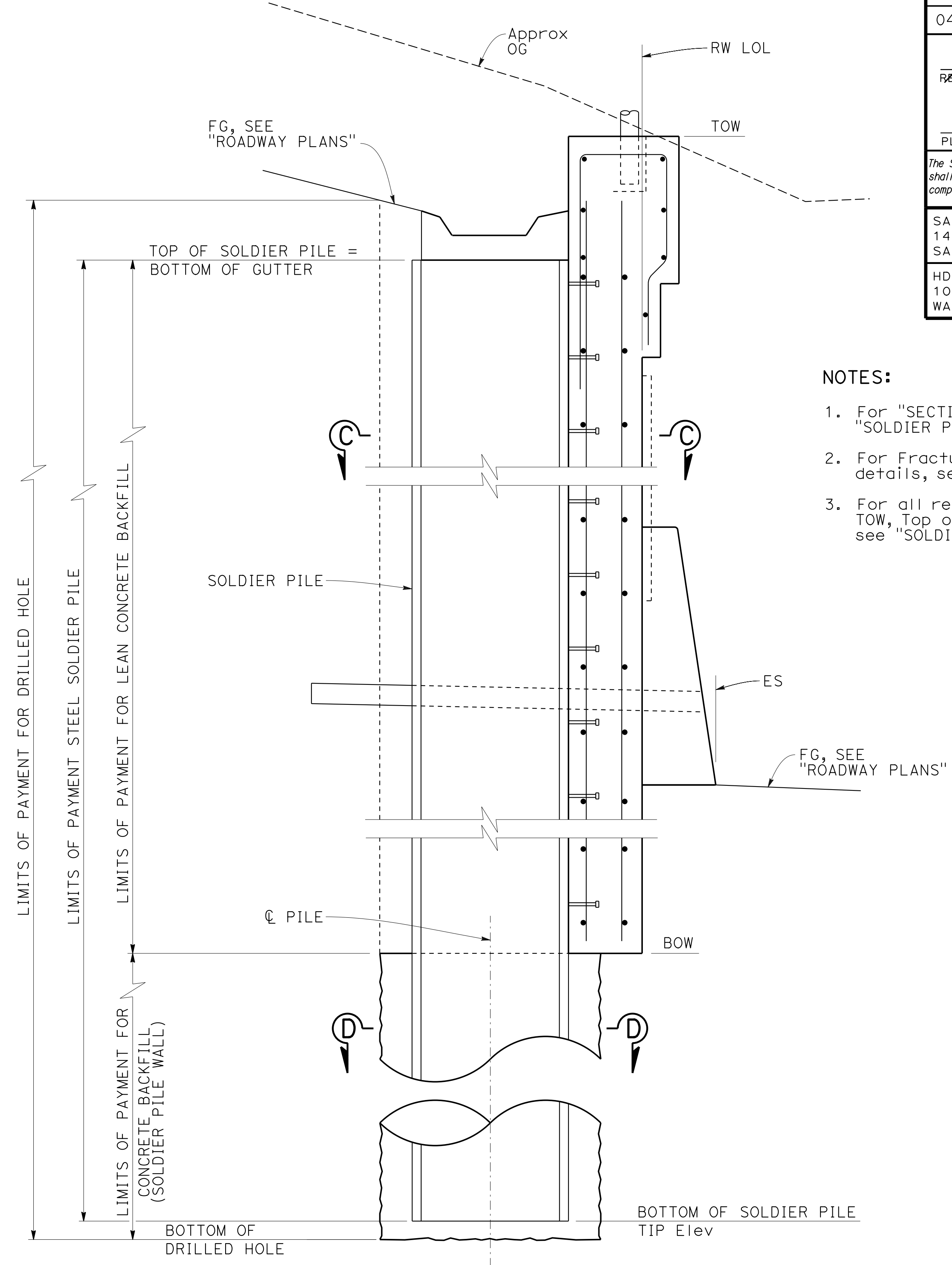
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	274	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE			DATE		
JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



TANGENT PILE WALL SECTION IN FILL

1" = 1'-0"

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



TANGENT PILE WALL SECTION IN CUT

1" = 1'-0"

NOTE: FOR INFORMATION NOT SHOWN, SEE "TANGENT PILE WALL SECTION IN FILL"


NOTES:

1. For "SECTION C-C" and "SECTION D-D", see "SOLDIER PILE WALL DETAILS No. 5" sheet.
2. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
3. For all relevant elevation information, including TOW, Top of Soldier Pile, BOW, and Tip Elevations, see "SOLDIER PILE WALL LAYOUT" sheets.

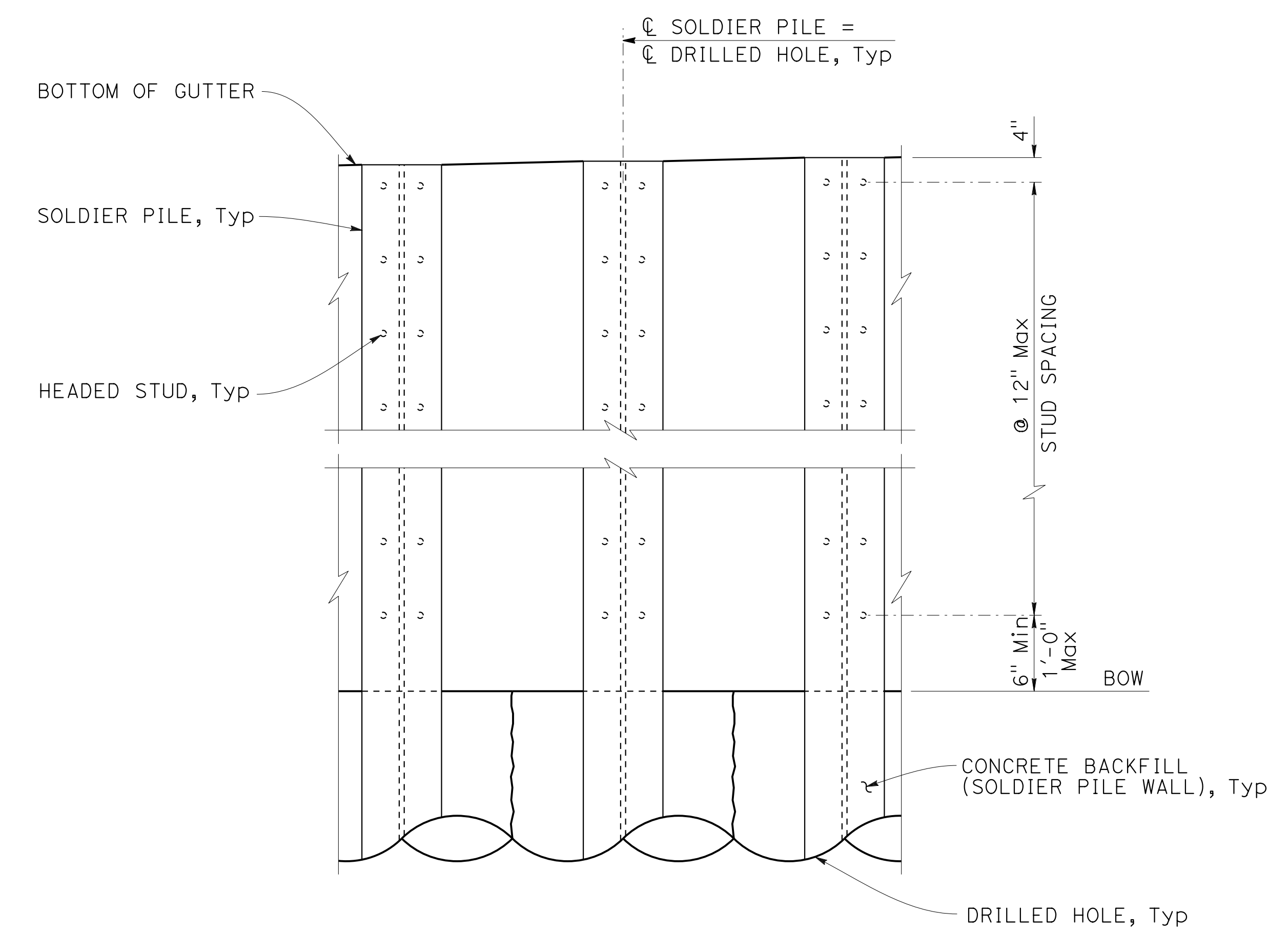
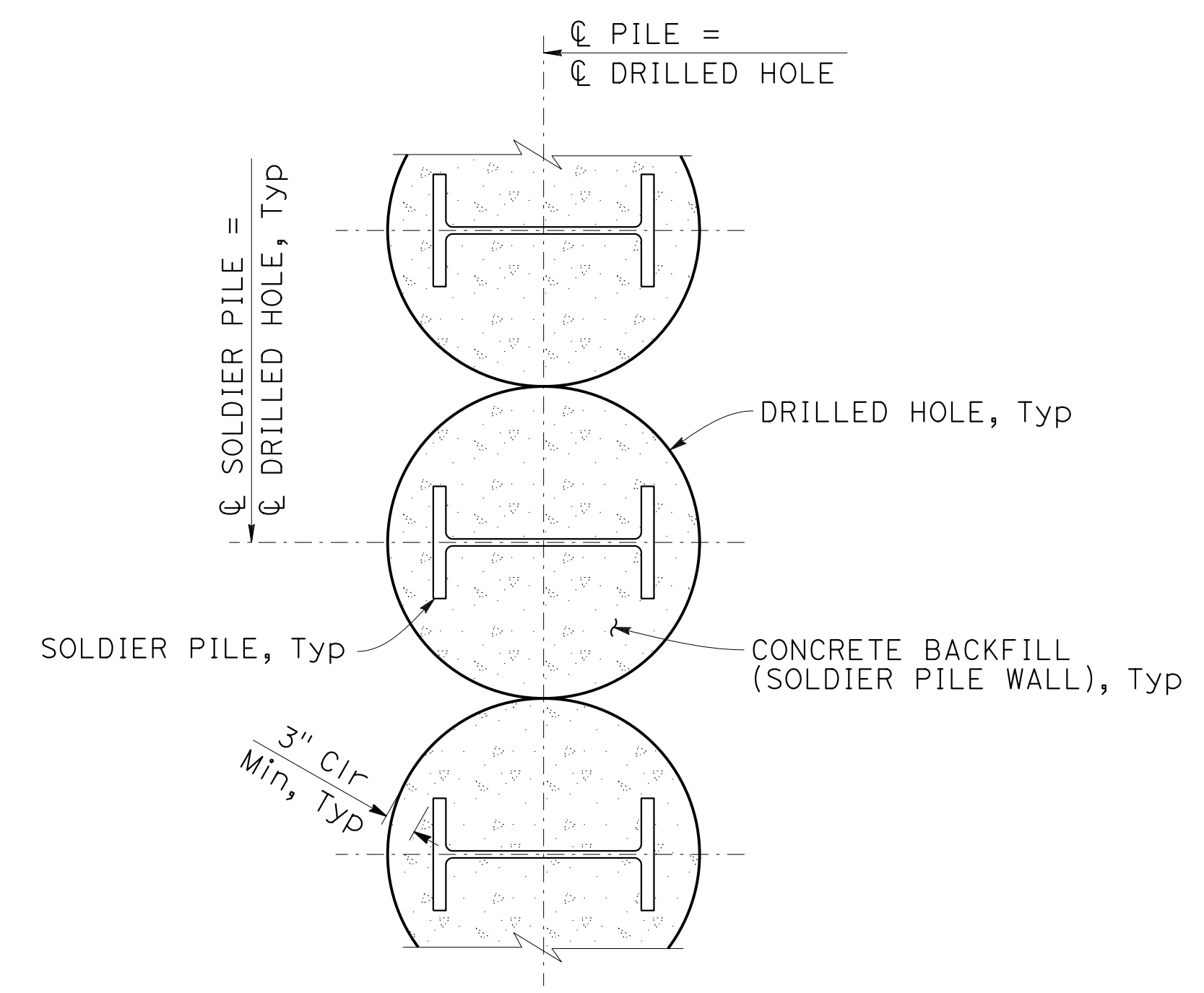
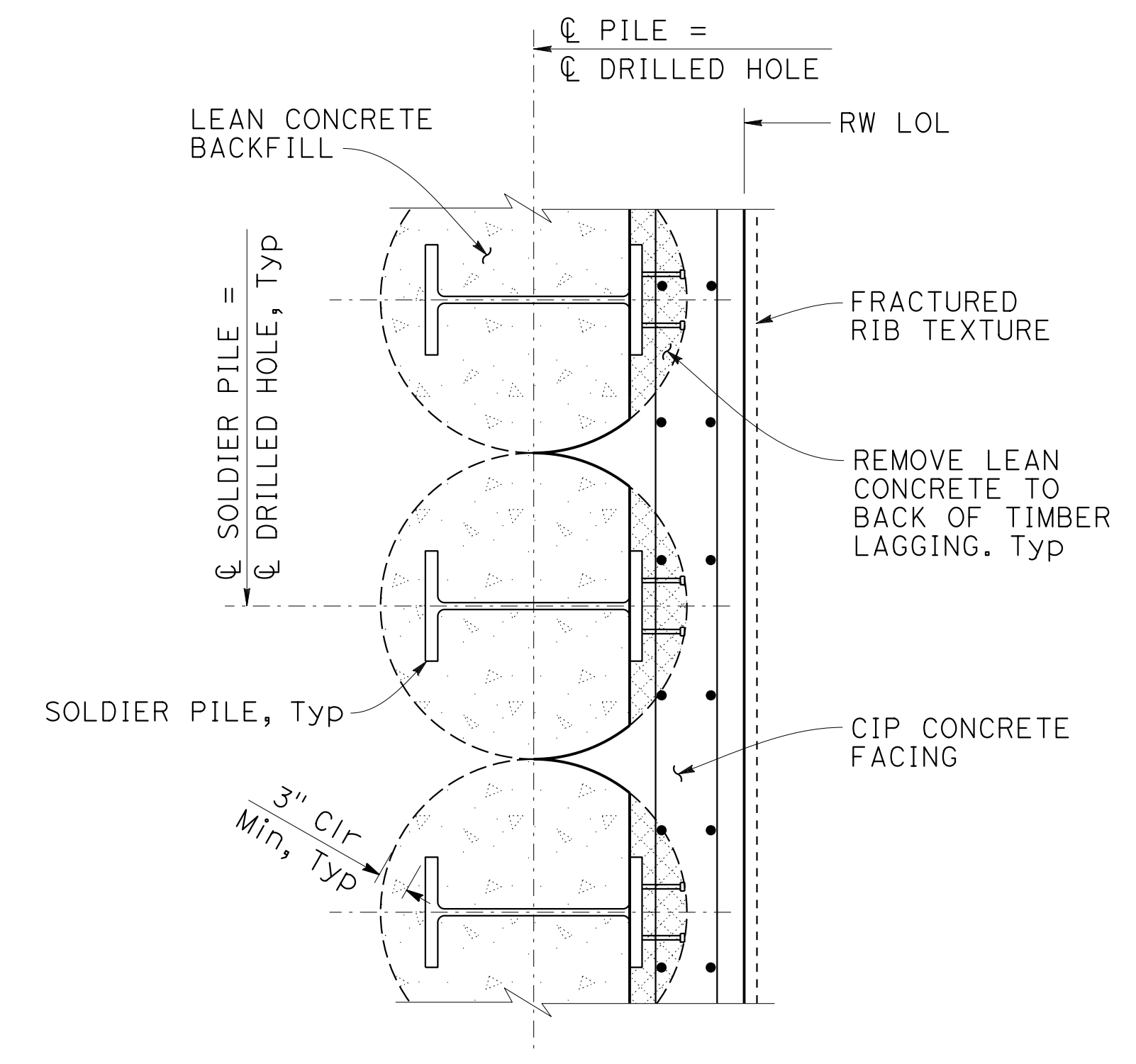
DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 SOLDIER PILE WALL DETAILS No. 4	
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT NUMBER & PHASE: 04000205071		POST MILES 7.9
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER		CONTRACT NO.: 04-3A6404		REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 25 OF 168	
			PROJECT NUMBER & PHASE: 04000205071	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19		
			FILE => RW2-g-spwd+04.dgn			

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	275	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

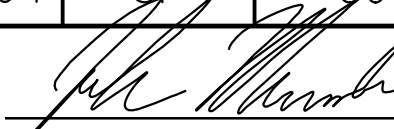
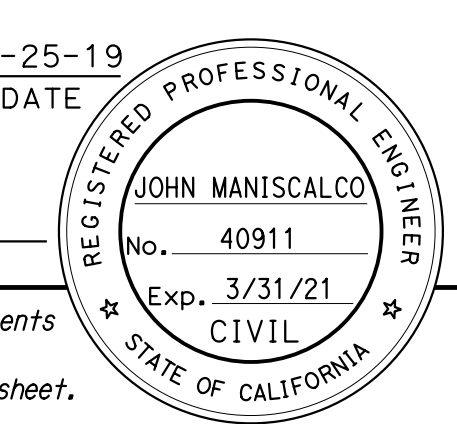
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

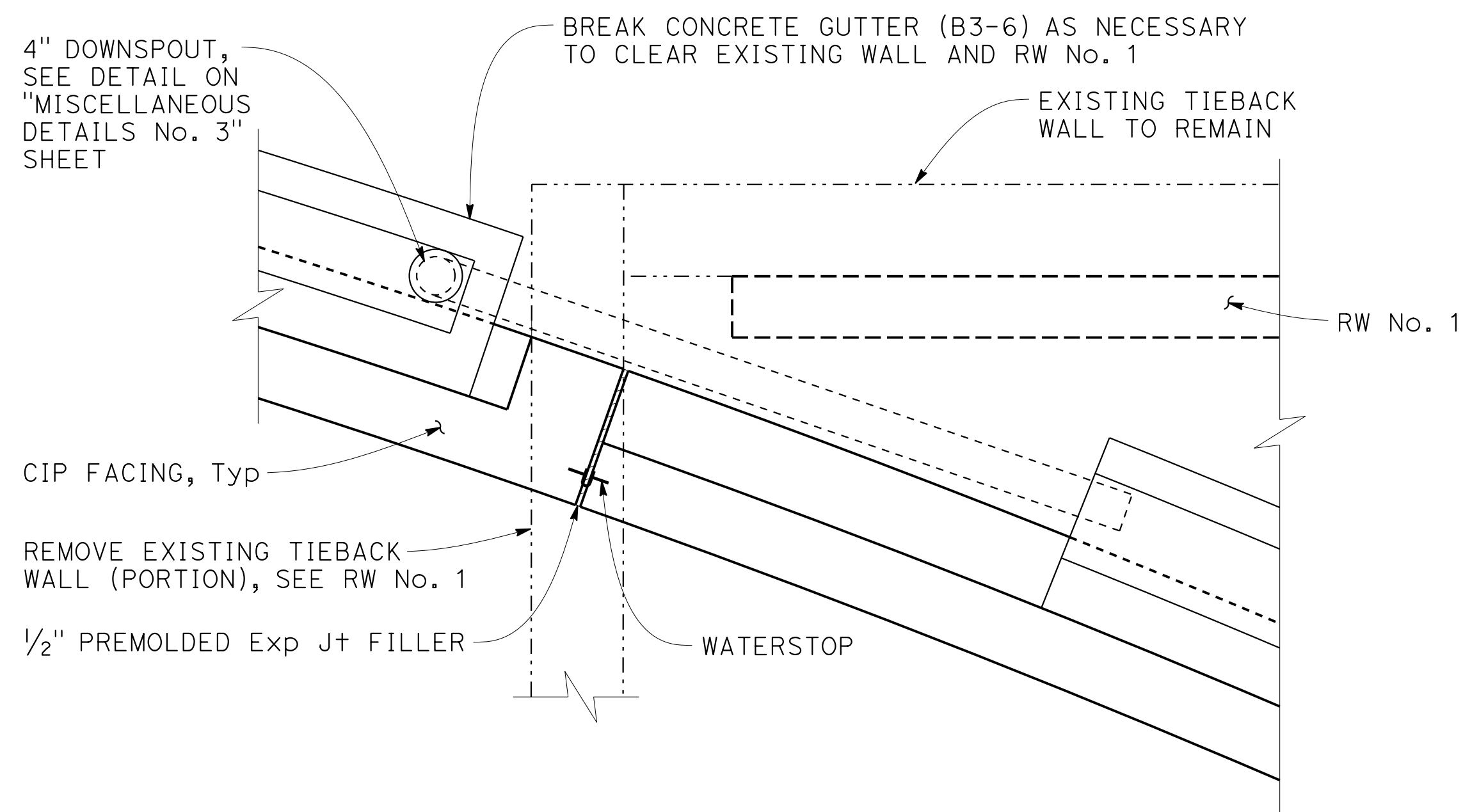


NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

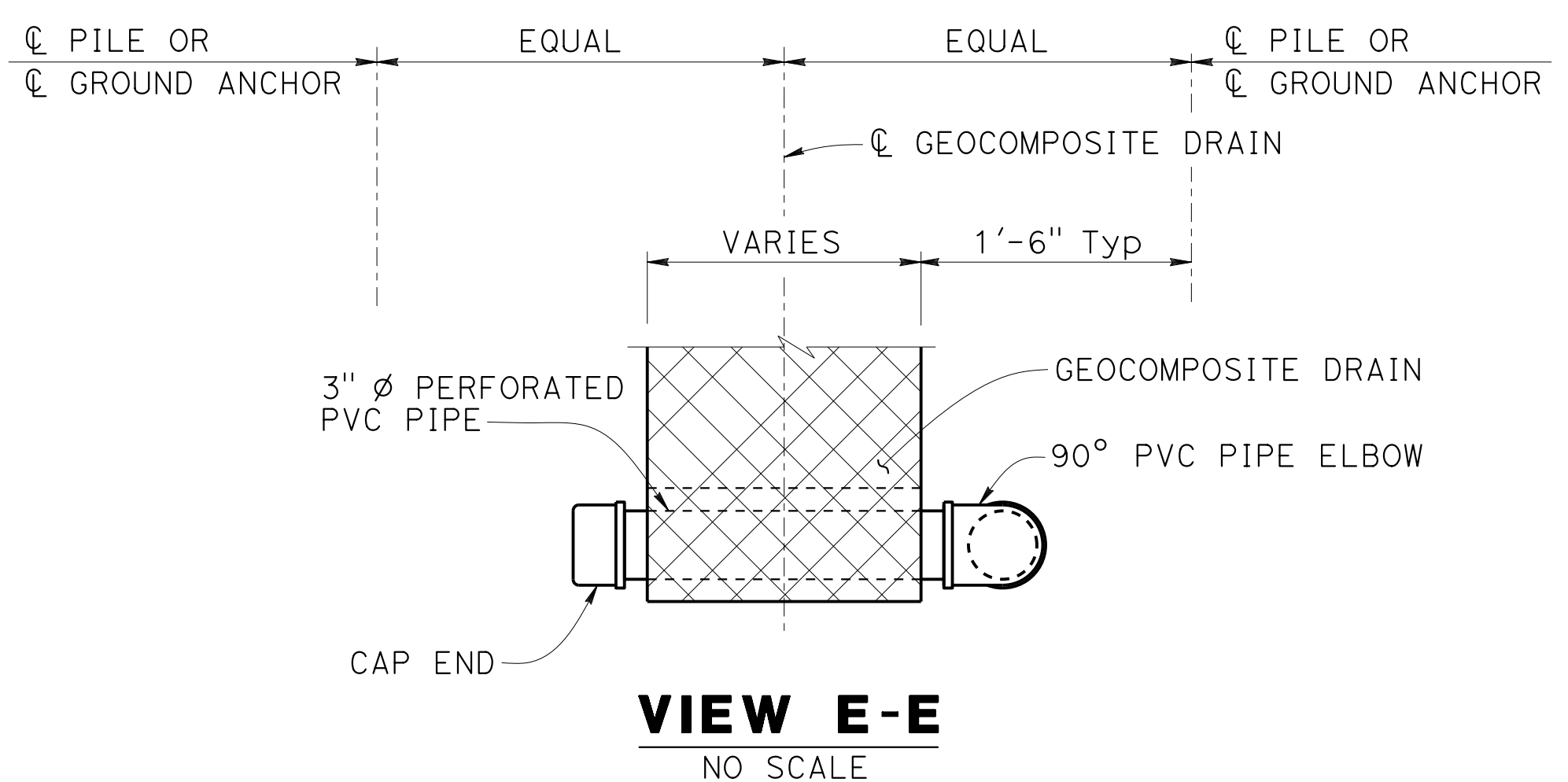
DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 SOLDIER PILE WALL DETAILS No. 5												
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO													
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		POST MILES: 7.9													
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	CONTRACT NO.: 04-3A604	REVISION DATES												
0 1 2 3			PROJECT NUMBER & PHASE: 04000205071	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISED</th> <th>DATE</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18</td> <td>11-12-18</td> <td>2-27-19</td> <td>7-25-19</td> </tr> <tr> <td></td> <td></td> <td>26</td> <td>168</td> </tr> </table>	REVISED	DATE	SHEET	OF	4-30-18	11-12-18	2-27-19	7-25-19			26	168
REVISED	DATE	SHEET	OF														
4-30-18	11-12-18	2-27-19	7-25-19														
		26	168														

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:09

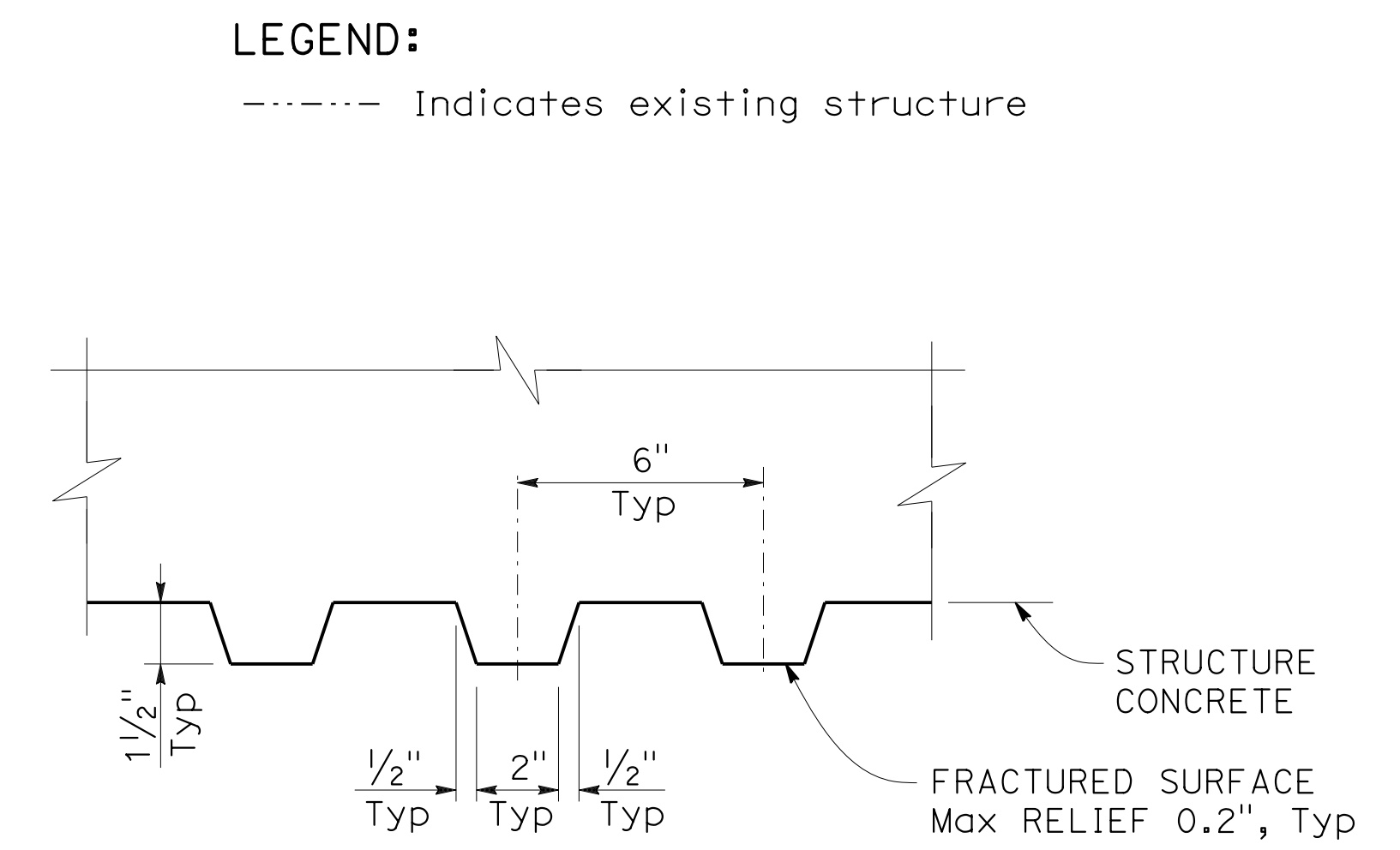
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	276	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



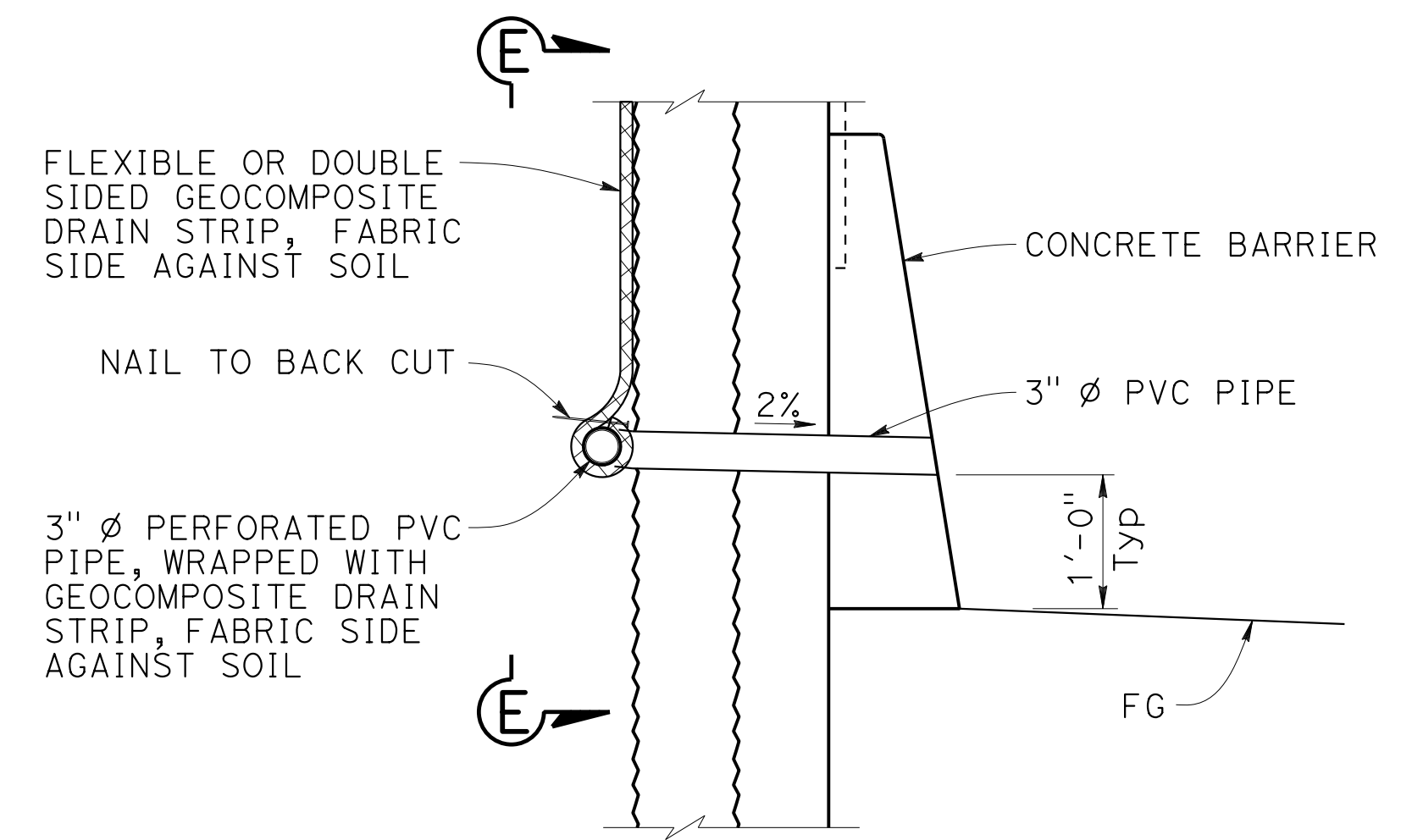
CORNER DETAIL
NO SCALE



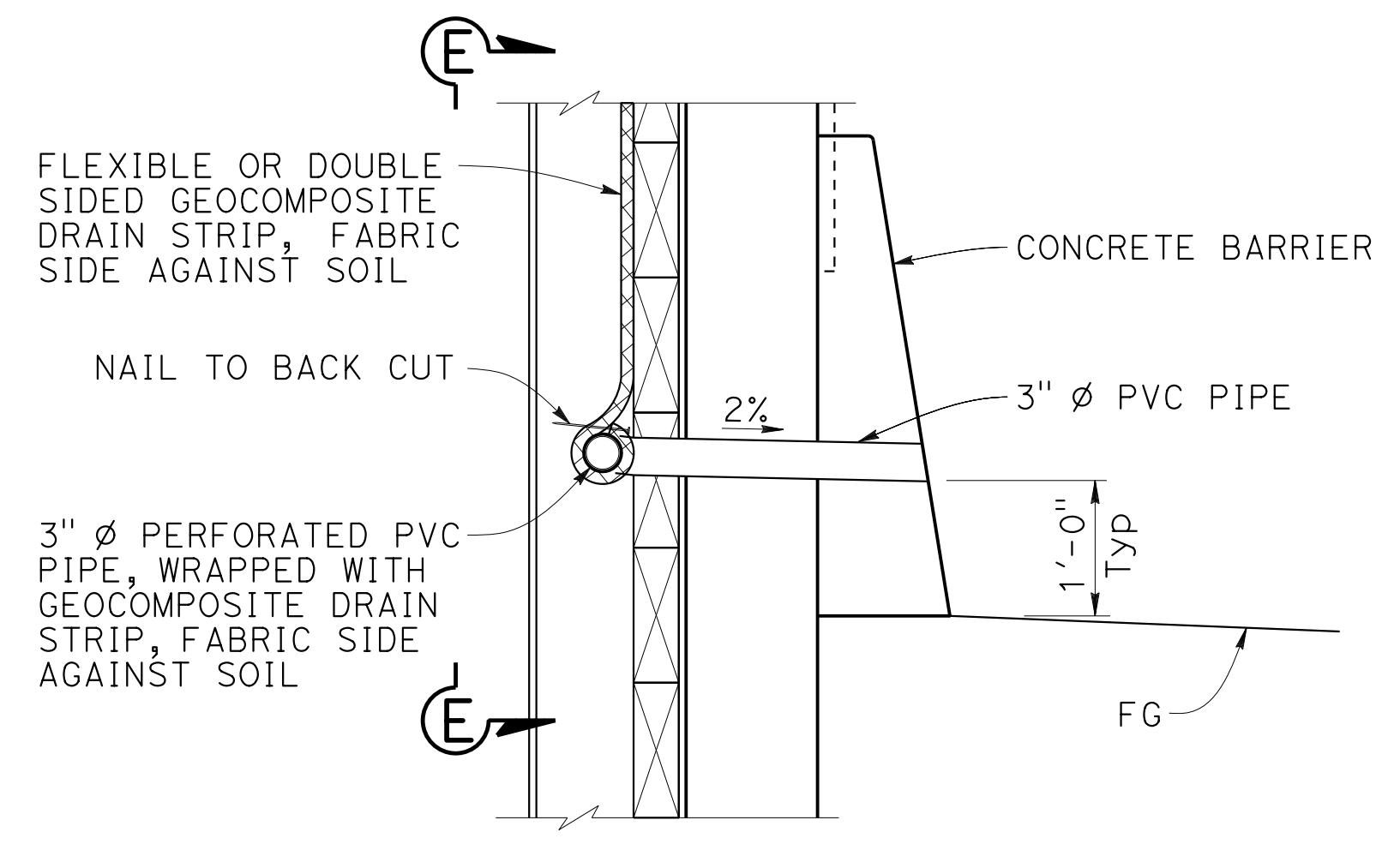
DRAIN DETAIL AT TOP OF WALL
NO SCALE



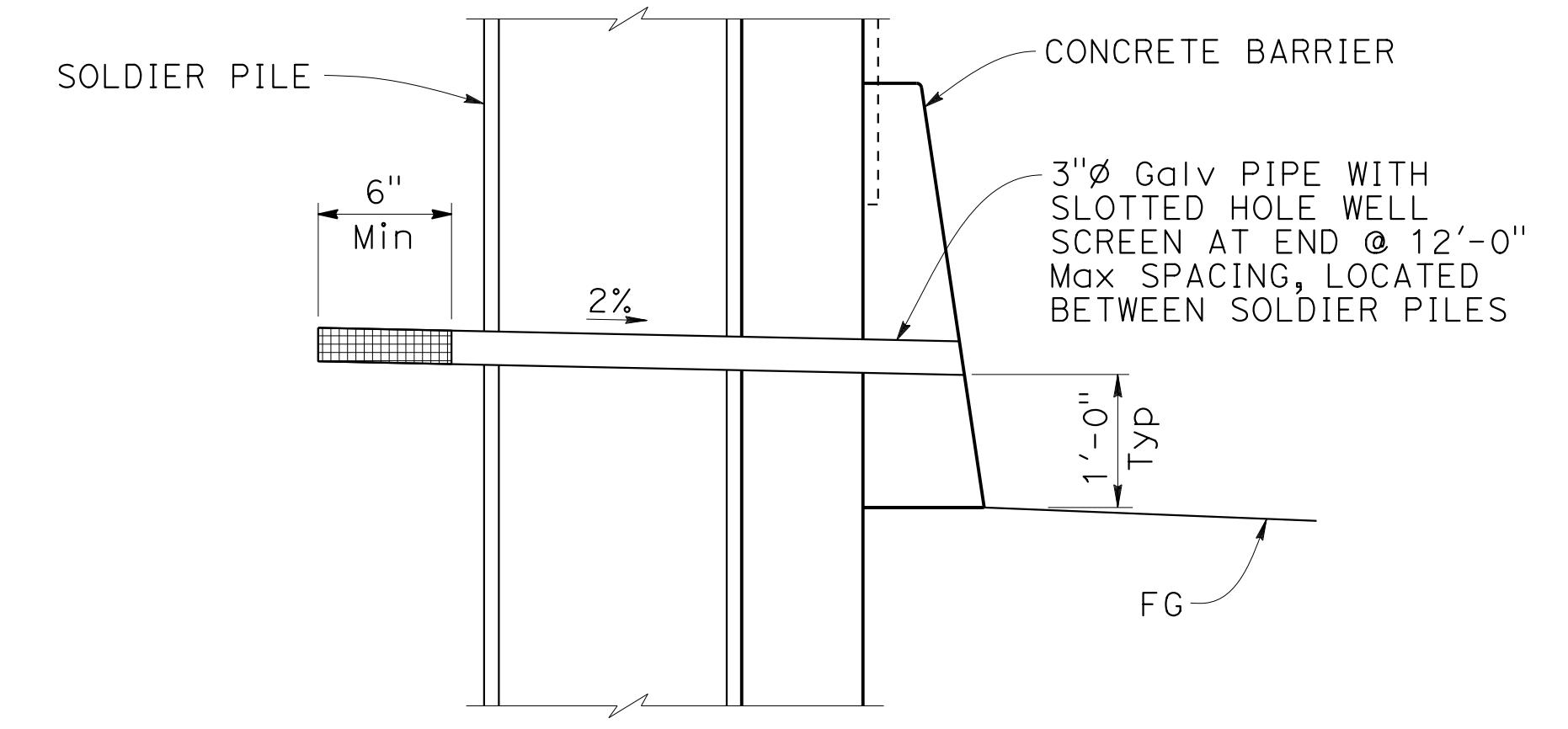
FRACTURED RIB TEXTURE DETAIL
NO SCALE



DRAIN DETAIL AT GROUND ANCHOR WALL
NO SCALE



DRAIN DETAIL AT SOLDIER PILE WALL
NO SCALE



DRAIN DETAIL AT TANGENT SOLDIER PILE WALL
NO SCALE

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 2 MISCELLANEOUS DETAILS No. 1	
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT NUMBER & PHASE: 04000205071		POST MILES 7.9
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CHUNG	CHECKED: A. ROMINGER		CONTRACT NO.: 04-3A6404		REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	UNIT: 0728	SHEET 27 OF 168	
			FILE => RW2-u-miscd#01.dgn	DISREGARD PRINTS BEARING EARLIER REVISION DATES		

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:10

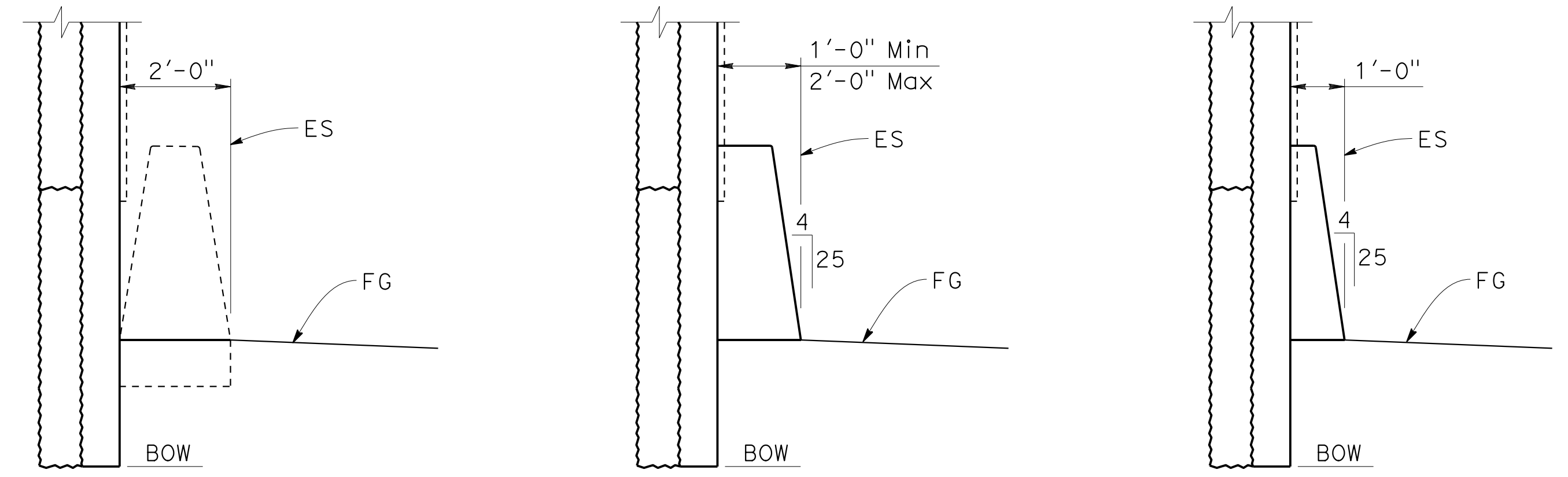
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	277	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

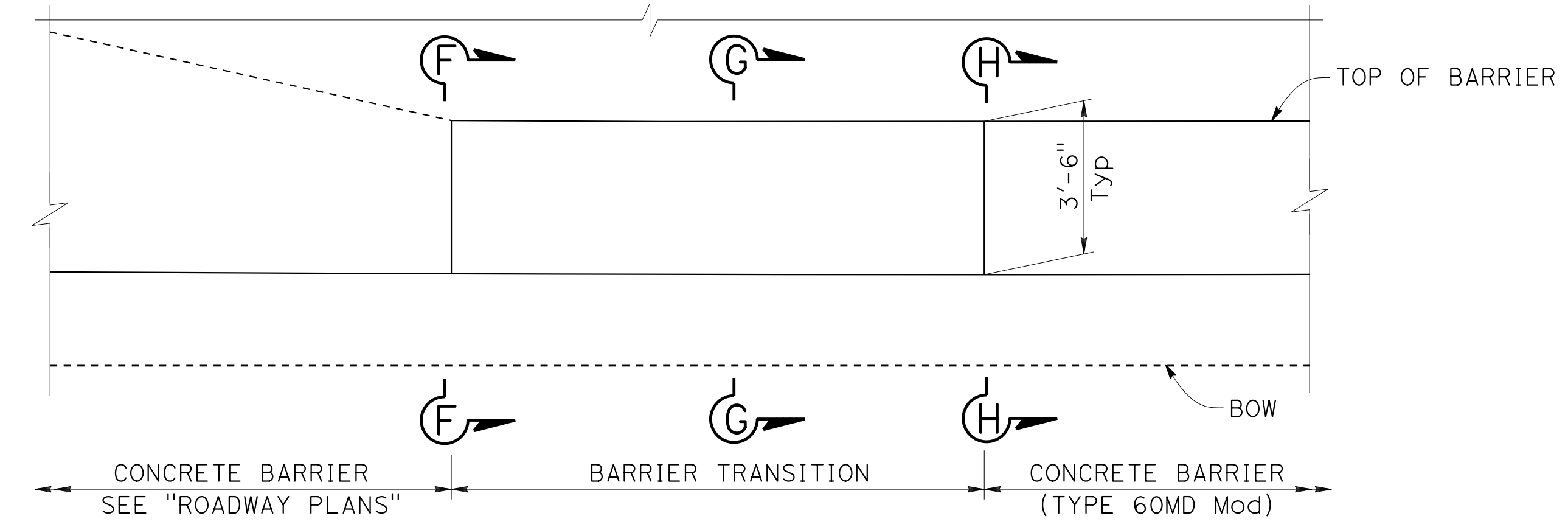
1. Drainage inlet and pipe shall be located between soldier piles and and/or ground anchors.
2. For inlet and pipe elevations, see profiles on "DRAINAGE PLANS".



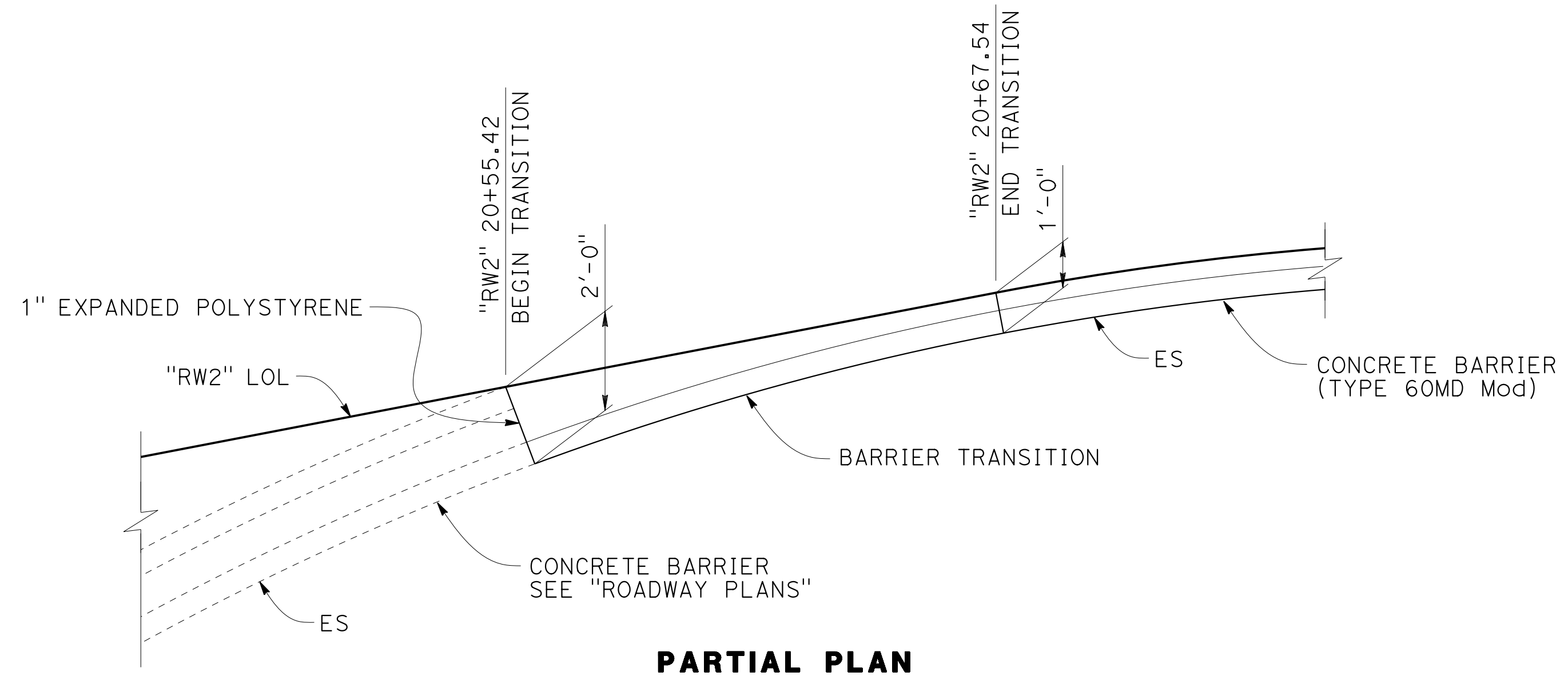
SECTION F-F
1/2" = 1'-0"

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

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



PARTIAL ELEVATION



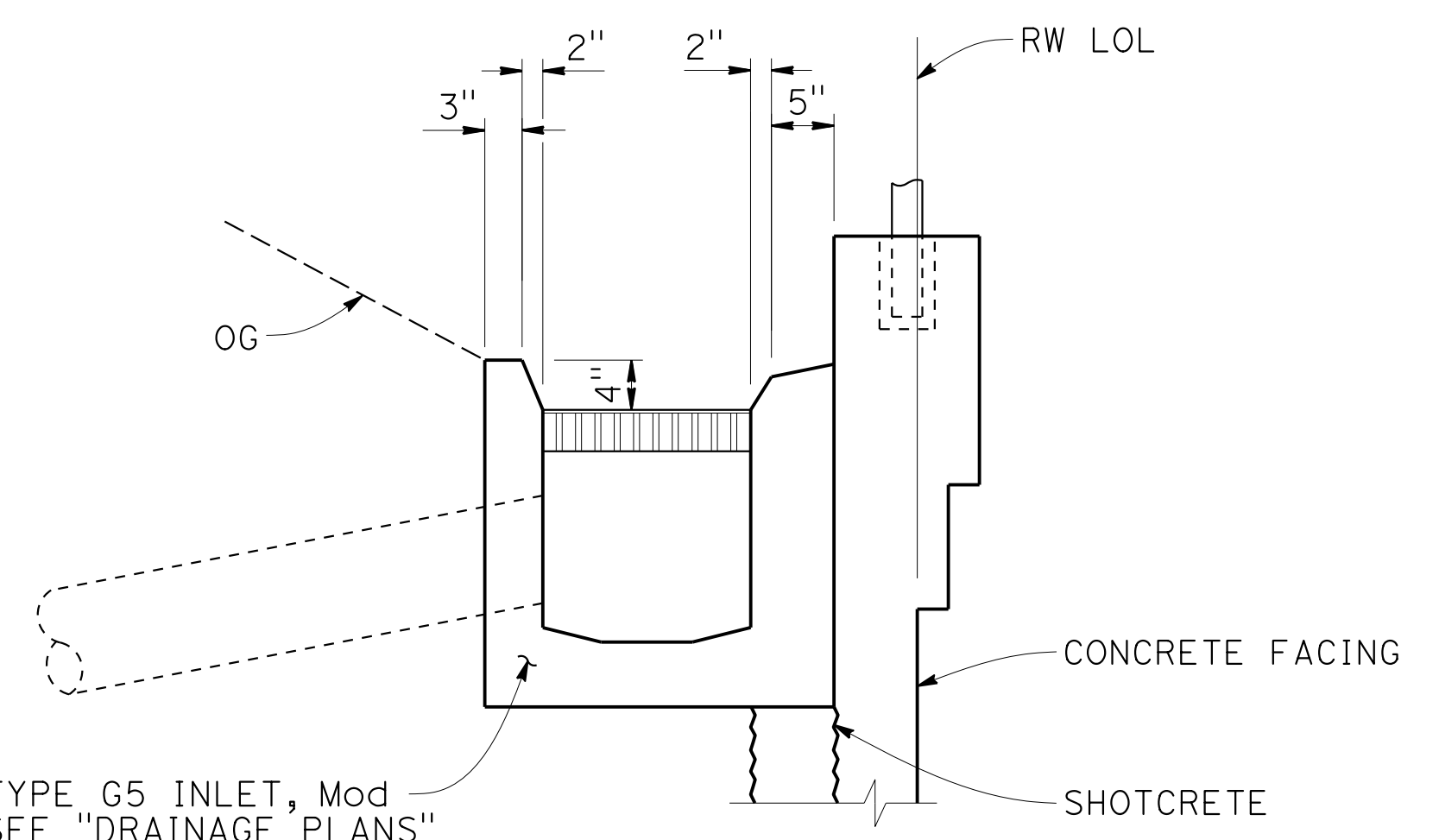
PARTIAL PLAN

BARRIER TRANSITION DETAIL

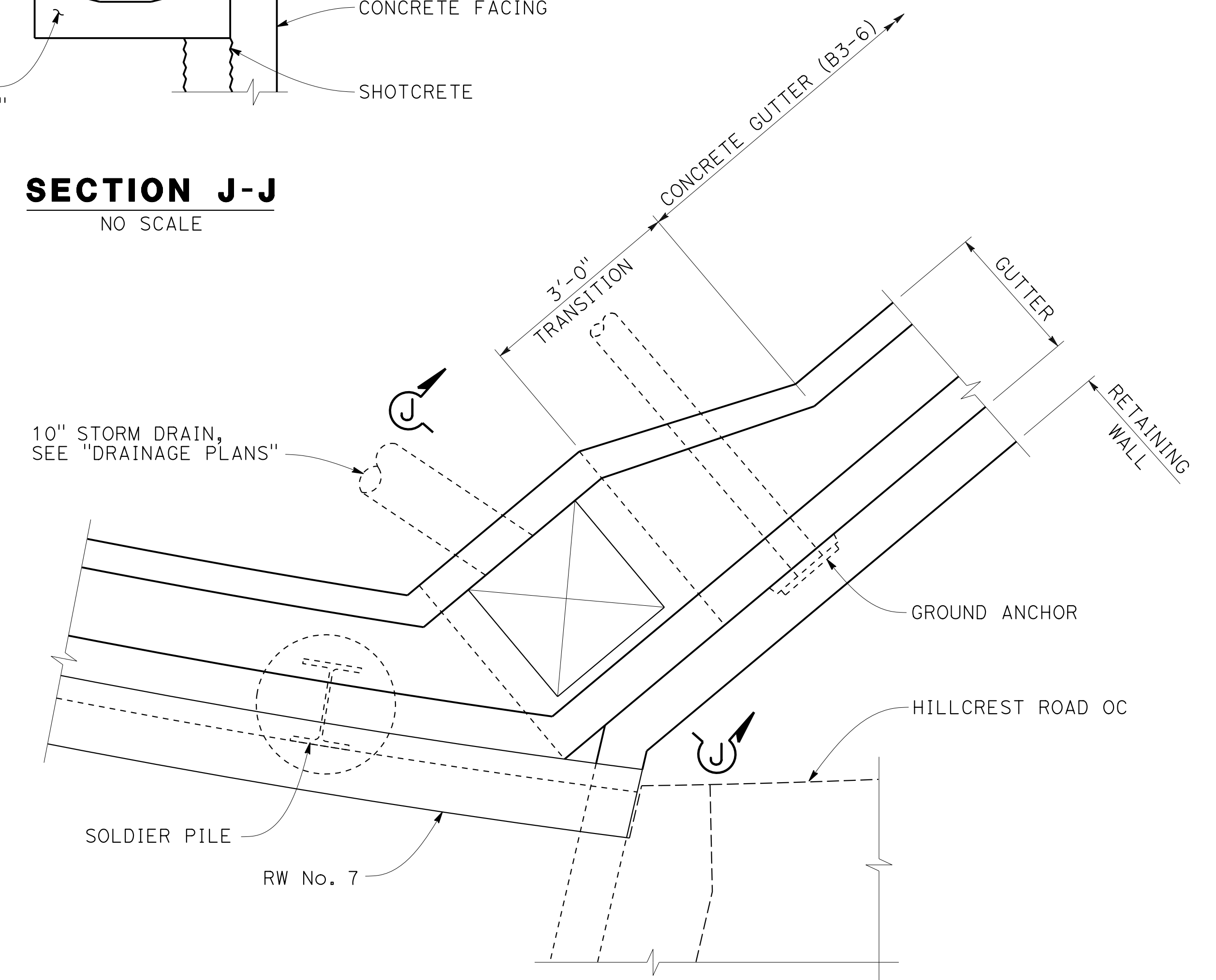
3/8" = 1'-0"

FOR INFORMATION NOT SHOWN, SEE STANDARD PLAN A76A

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



SECTION J-J
NO SCALE



G5M DRAIN INLET PLAN

NO SCALE

"RW2" 20+29±

DESIGN OVERSIGHT	
SIGN OFF DATE	

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	7.9

RETAINING WALL No. 2
MISCELLANEOUS DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	28	168

FILE => RW2-u-miscd02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:10

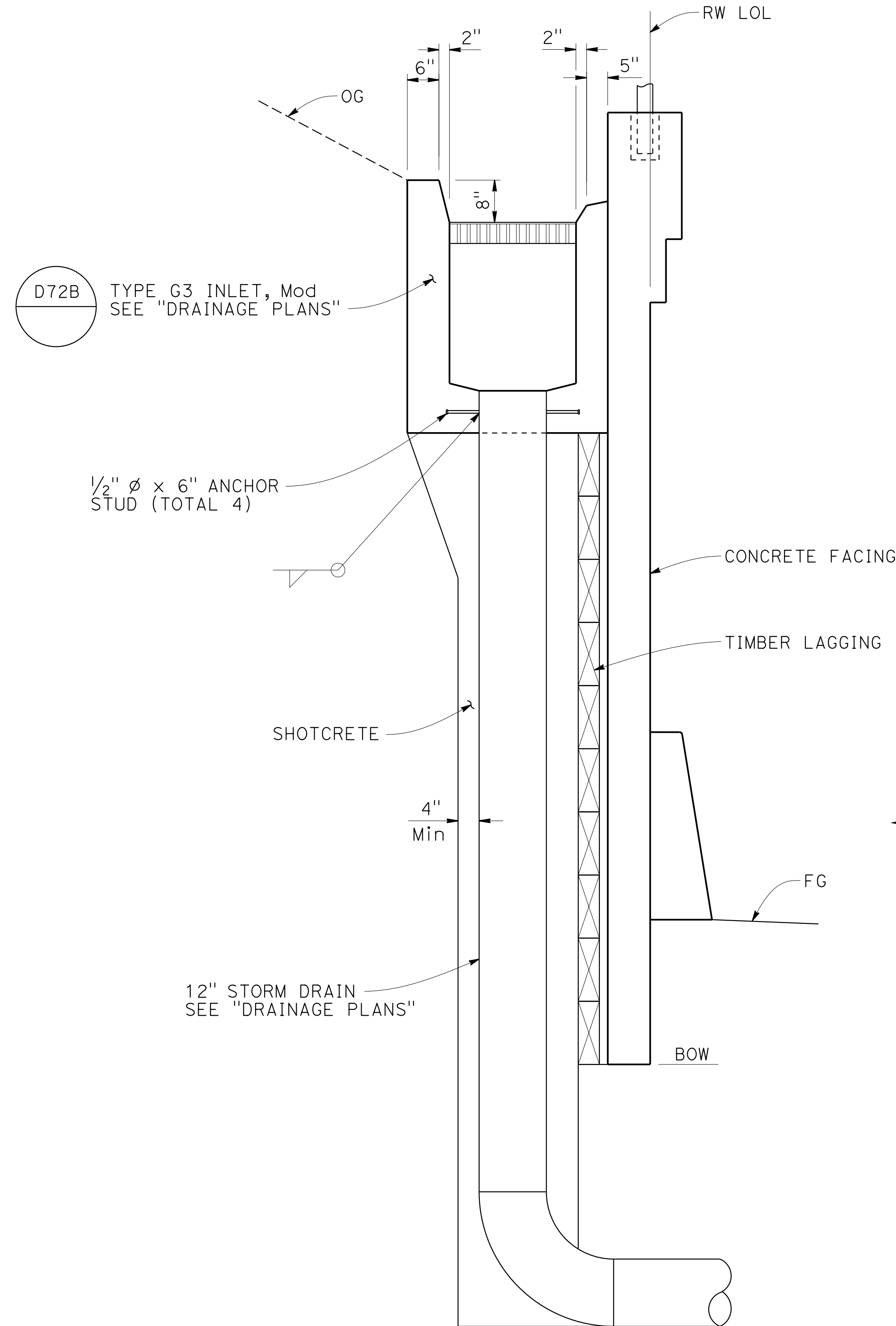
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	278	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

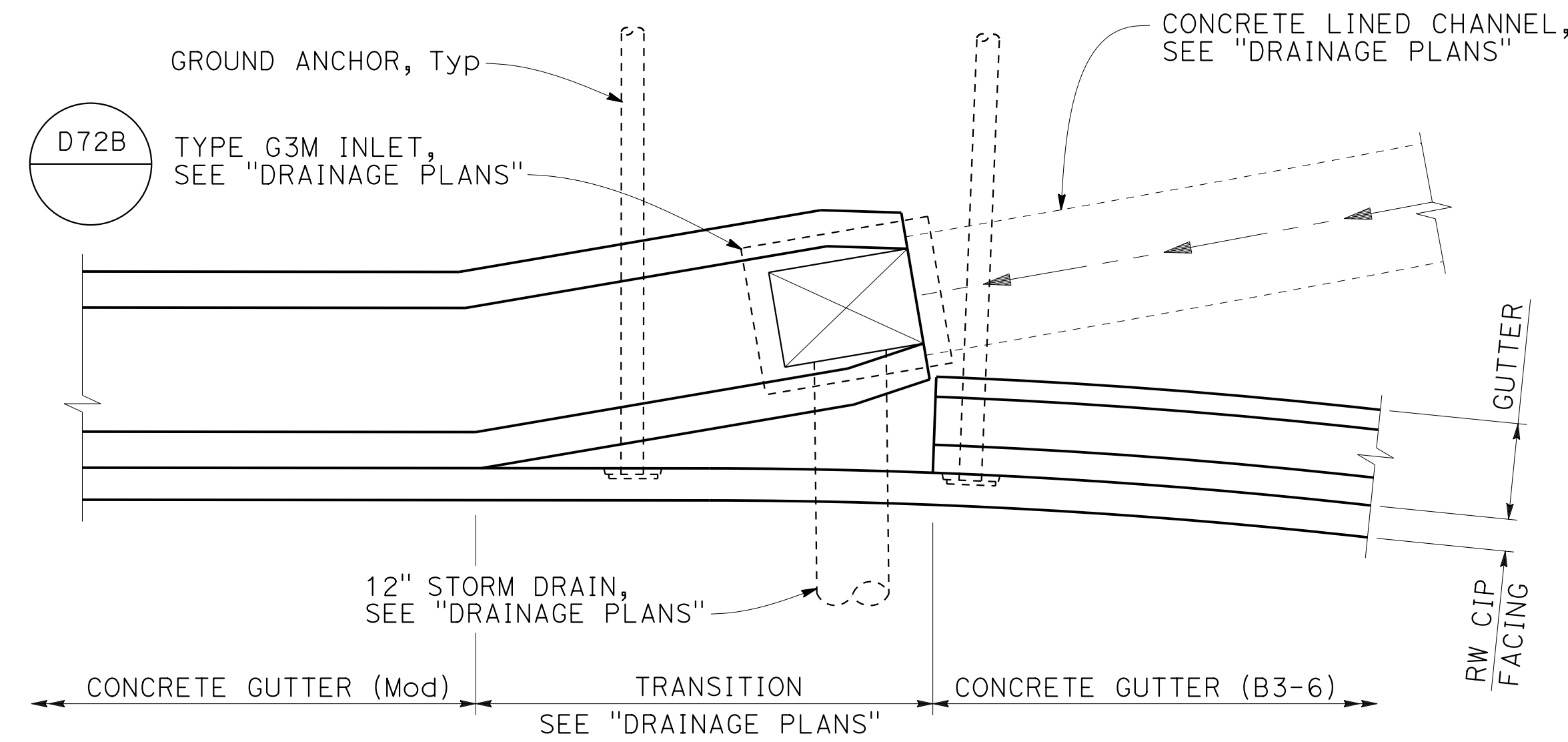
1. Drainage inlet and pipe shall be located between soldier piles and/or ground anchors.
2. For inlet and pipe elevations, see Profiles on "DRAINAGE PLANS".
3. Construct 12" storm drain with shotcrete portion of wall after placing ground anchors and prior to constructing concrete facing portion of wall.



SECTION K-K

NO SCALE

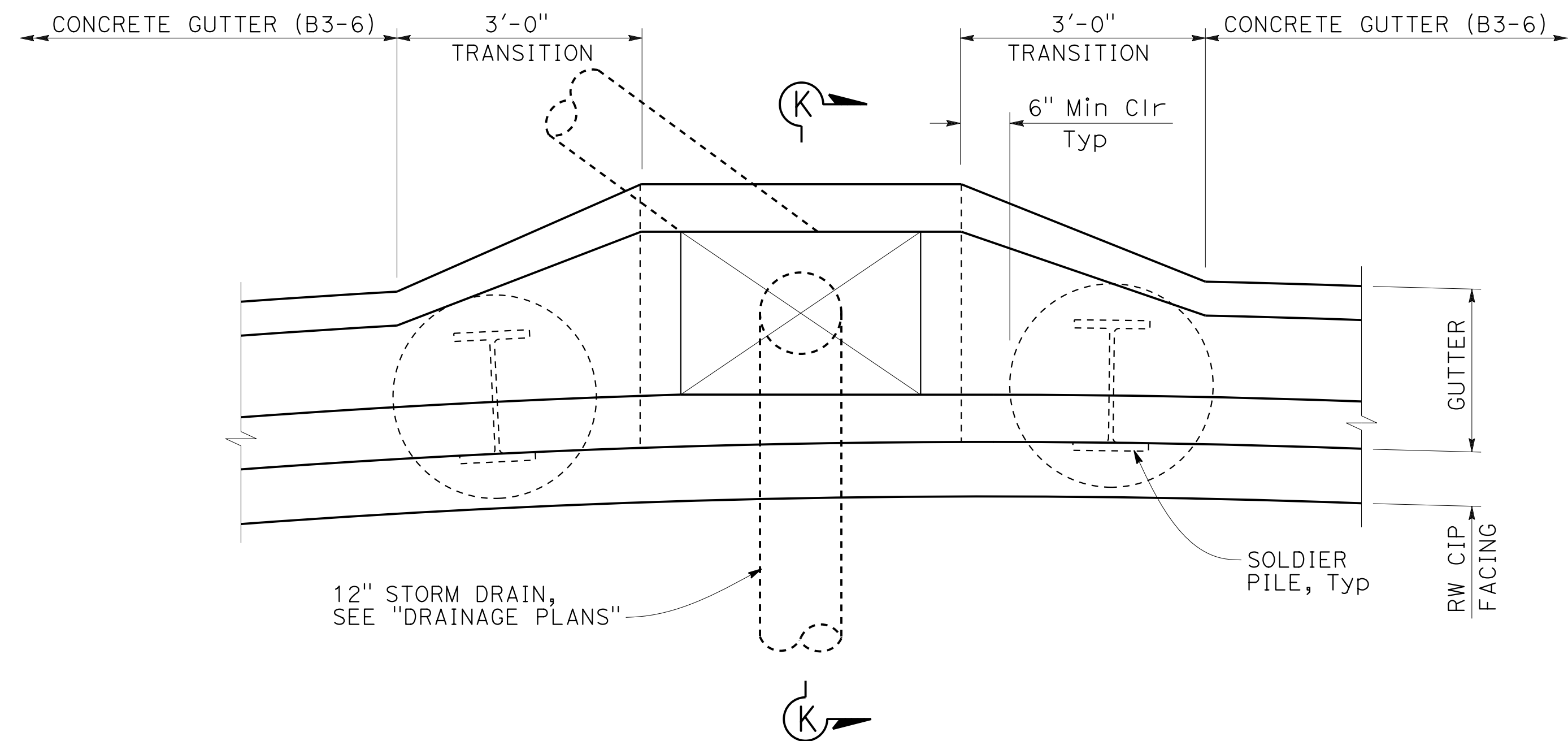
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



G3M DRAIN INLET PLAN AND GUTTER TRANSITION

NO SCALE

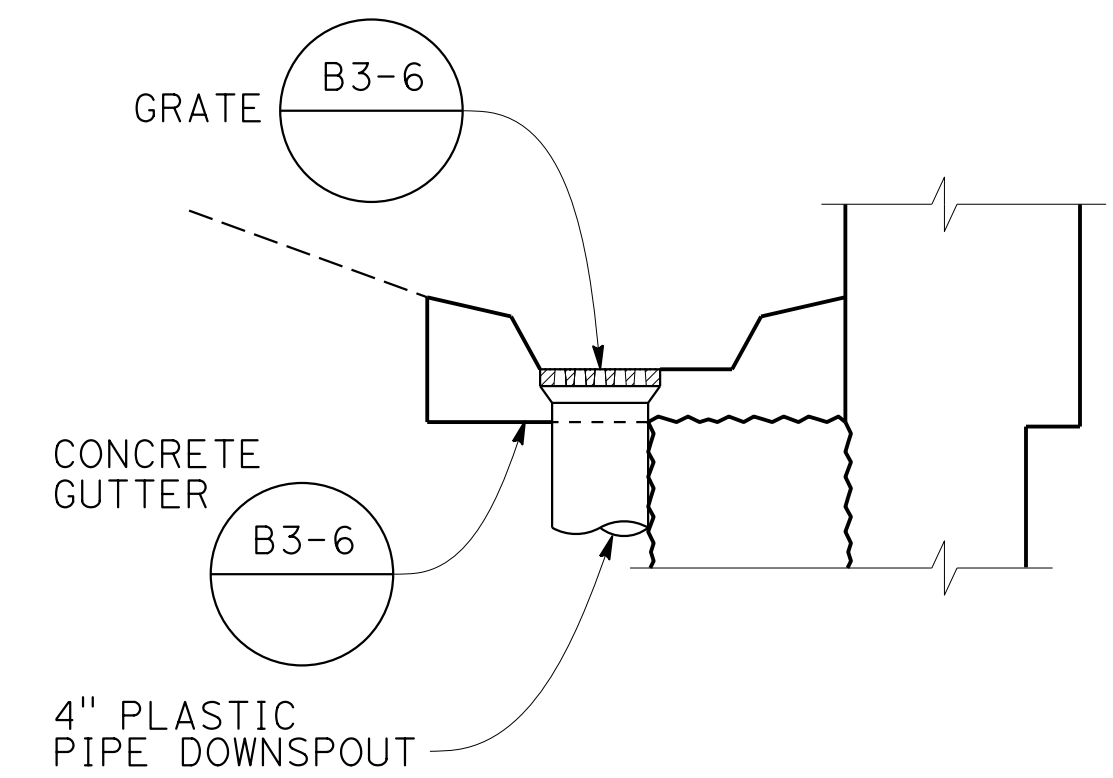
"RW2" 21+71±



G3M DRAIN INLET PLAN

NO SCALE

"RW2" 22+86±



DOWNSPOUT DETAIL

NO SCALE

DESIGN OVERSIGHT
 SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	7.9

RETAINING WALL No. 2
MISCELLANEOUS DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A604

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	29	168

FILE => RW2-u-miscd+03.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:10

GENERAL NOTES

DESIGN:
AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments, 2

PRESTRESSING STEEL:
Bars - ASTM Designation: A722 Type II (150 ksi)
Strand Tendons-ASTM Designation: A416 (270 Ksi Low Relaxation steel)
FTL = Factored Test Load per anchor (Kips)
fpu = Minimum tensile strength of prestressing steel
As = Minimum cross sectional area of prestressing steel in ground anchor (square inch)

$As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.75 \text{ fpu}}$ (Strands)
 $As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.80 \text{ fpu}}$ (Bars)

- NOTES:
- (A) Level of initial grouting for drilled hole 6" in diameter or smaller
 - (B) Level of secondary grouting
 - (C) Level of initial grouting inside corrugated sheathing
 - (D) Bonded length shall be determined by the contractor
 - (E) For unbonded length, see PROJECT PLANS
 - (F) For inclination, see PROJECT PLANS
 - (G) Face of Wall Excavation

- NOTES:
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
 2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
 3. Silicone sealant to cover full width of flange.
 4. Steel tube (Min thickness = 1/4") welded to bearing plate. Galvanize assembly after fabrication
 5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = 1/4") to be 1" greater than outside diameter of smooth sheathing.
 6. Galvanize assembly after fabrication.
 7. For other wall details, see PROJECT PLANS.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	279	436

7-25-19
REGISTERED CIVIL ENGINEER DATE

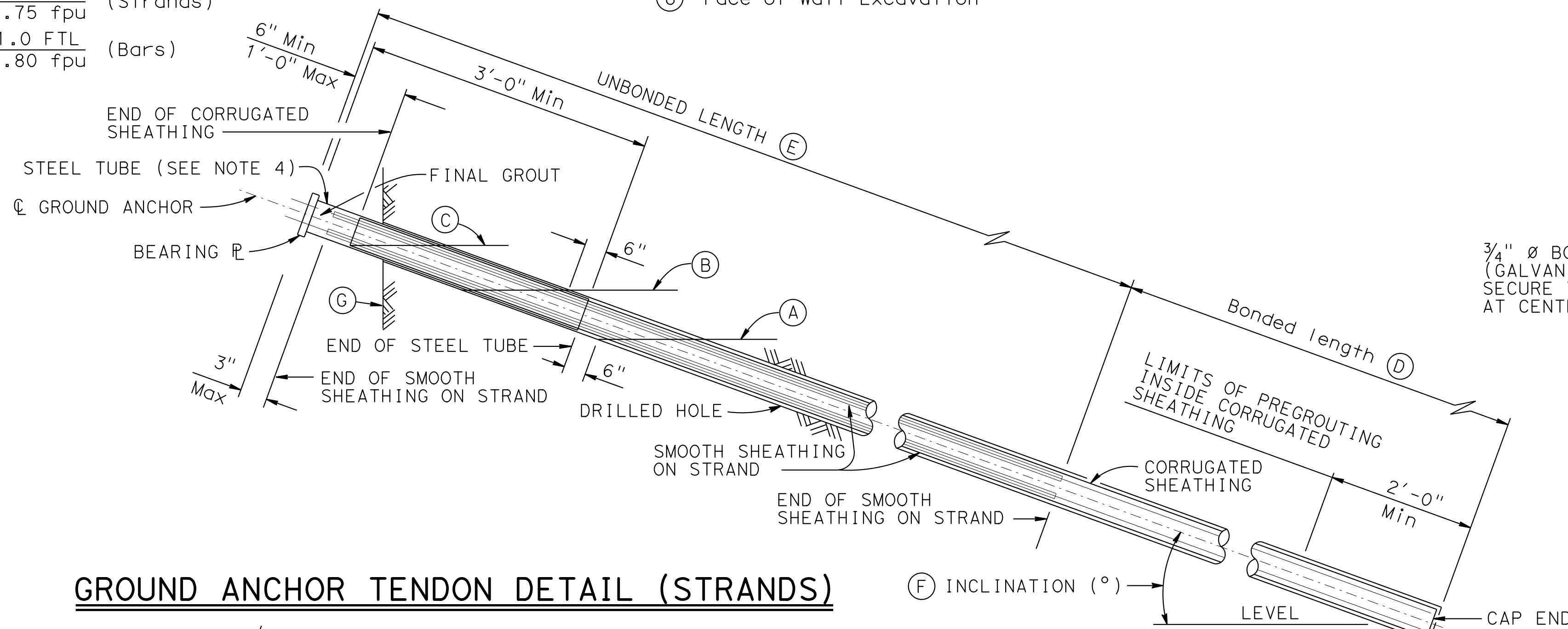
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

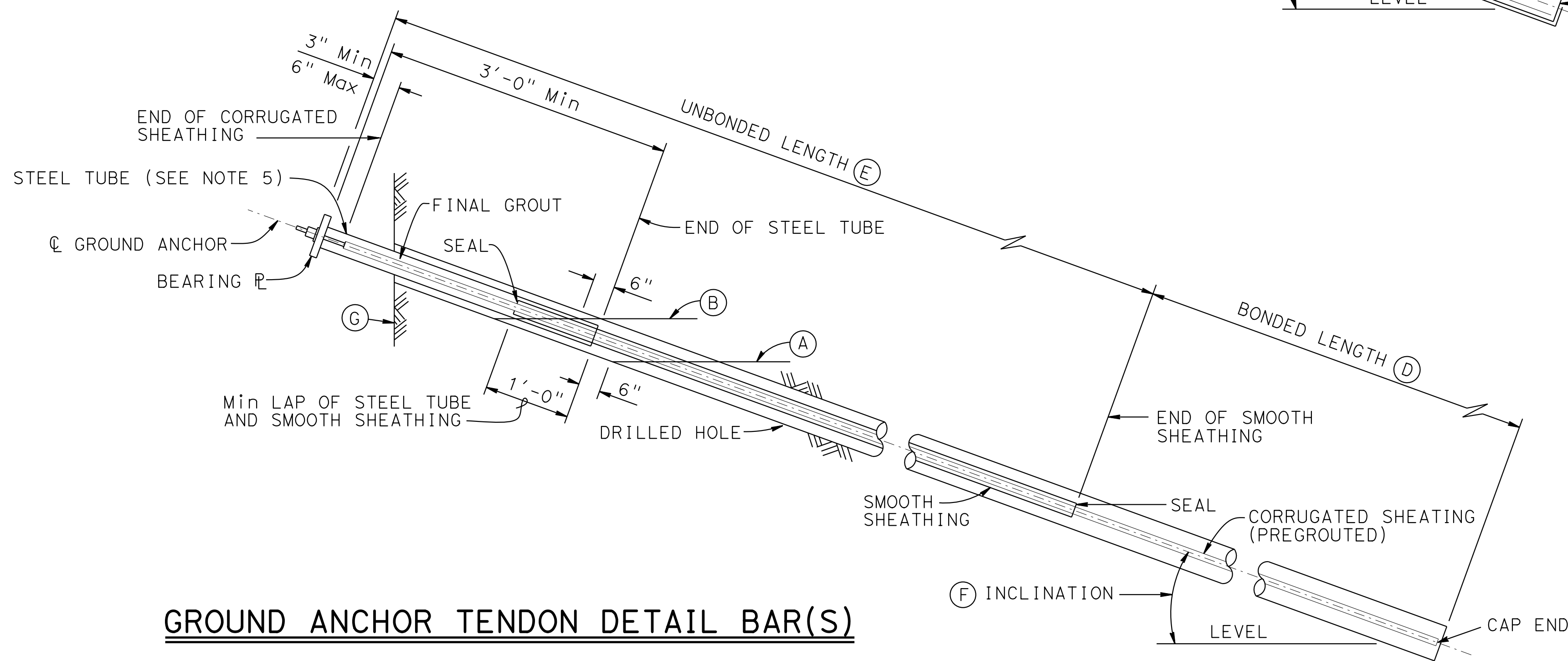
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

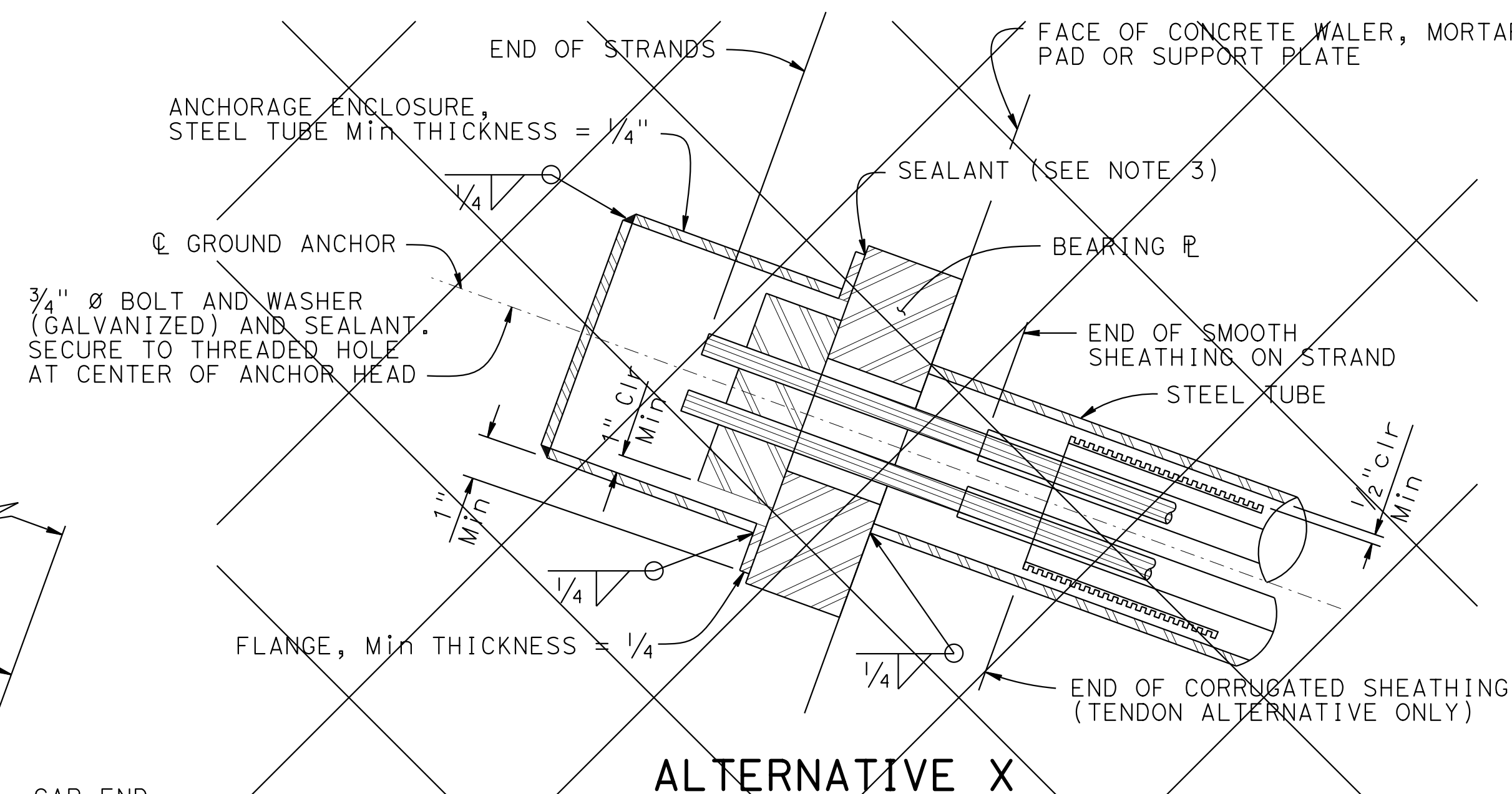
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



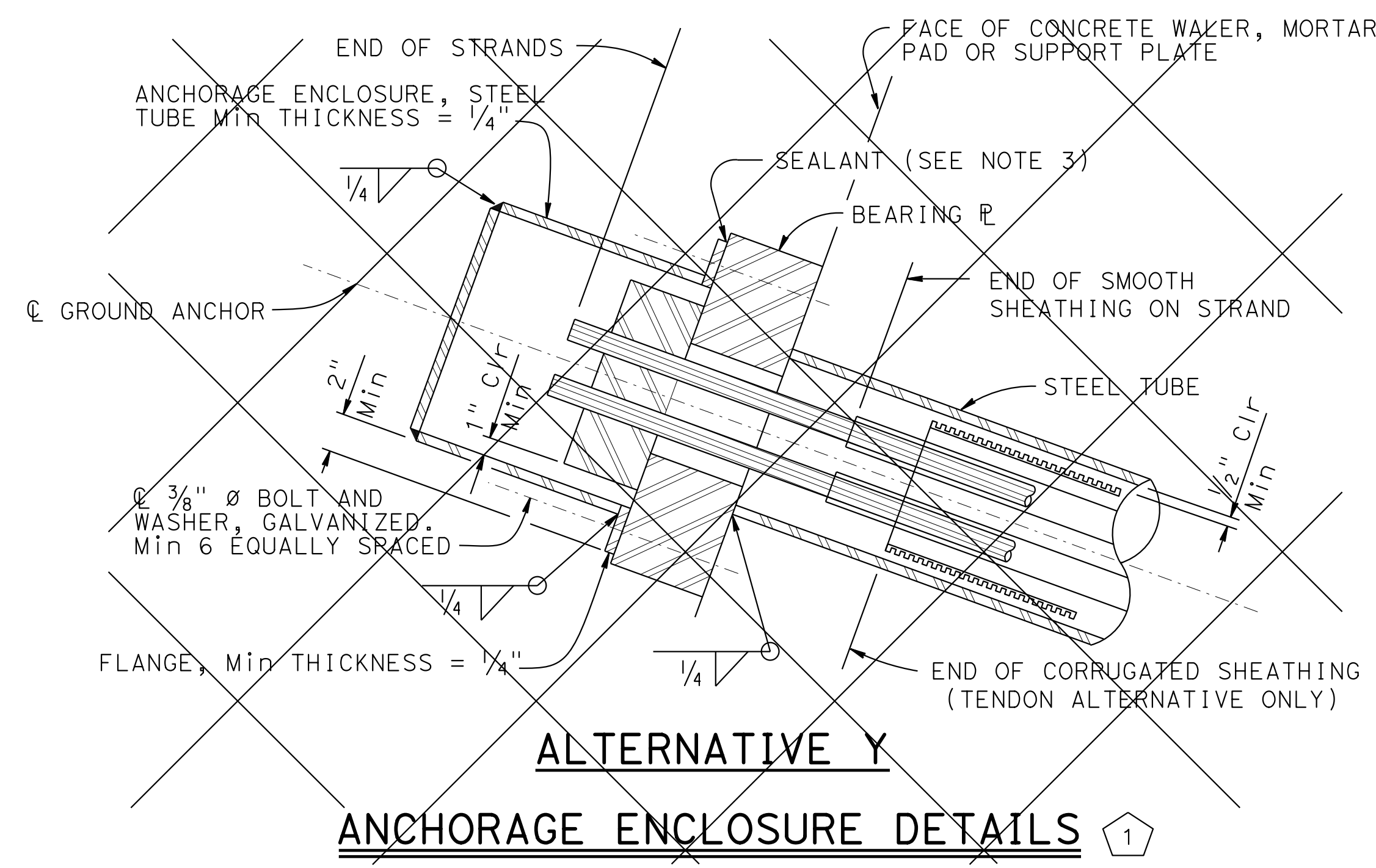
GROUND ANCHOR TENDON DETAIL (STRANDS)



GROUND ANCHOR TENDON DETAIL BAR(S)



ALTERNATIVE X



ANCHORAGE ENCLOSURE DETAILS

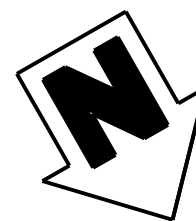
- 1 DETAIL NOT USED
- 2 NOTE REVISED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

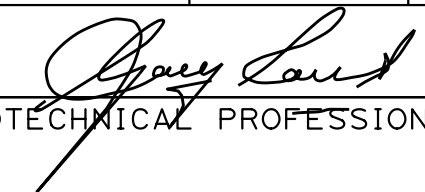
DIVISION OF ENGINEERING SERVICES

BRIDGE NO. N/A
POST MILES 7.9

RETAINING WALL No. 2
SUB HORIZONTAL GROUND ANCHOR DETAILS

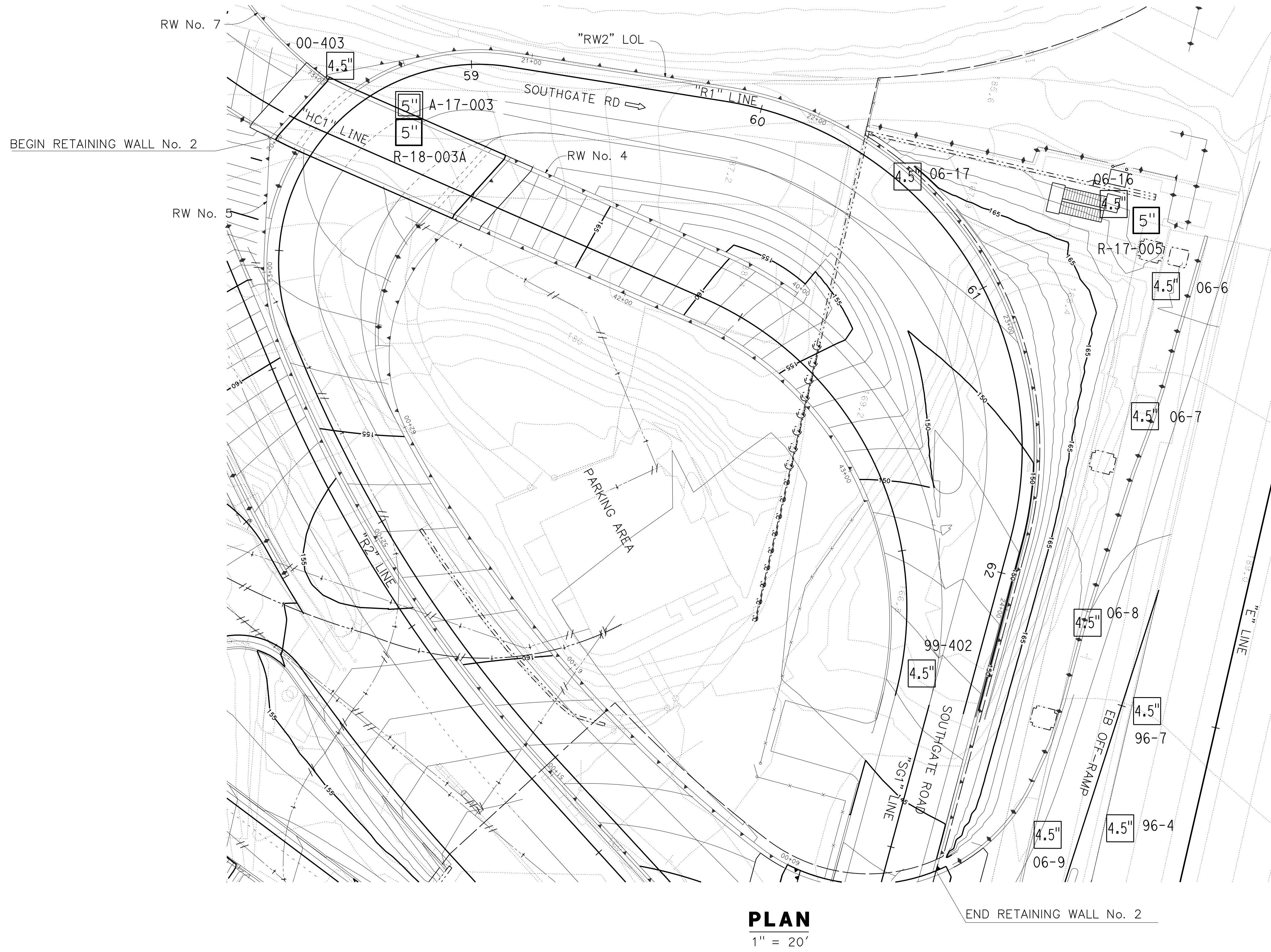


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	280	436

 7-25-19
 GEOTECHNICAL PROFESSIONAL DATE
 PLANS APPROVAL DATE
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BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



DESIGN OVERSIGHT	DRAWN BY	KIM OUYANG	L.S. BHANGOO	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	FRANK WANG	BRIDGE NO.	RETAINING WALL No. 2 LOG OF TEST BORINGS 1 OF 7
	SIGN OFF DATE	CHECKED BY	FRANK WANG		FIELD INVESTIGATION BY:	PROJECT ENGINEER	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			DATE: DEC 2017 THROUGH JAN 2018	UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	POST MILES	7.9
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					CONTRACT NO.: 04-3A6401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
0 1 2 3					REVISION DATES	SHEET	OF
FILE => RW2-z-1o+b01.dgn					4-28-18	31	168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 08:45

NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	281	436

7-25-19
 DATE
 GEOTECHNICAL PROFESSIONAL

REGISTERED PROFESSIONAL ENGINEER

GARY PARIKH

No. 666
Exp. 12/31/19

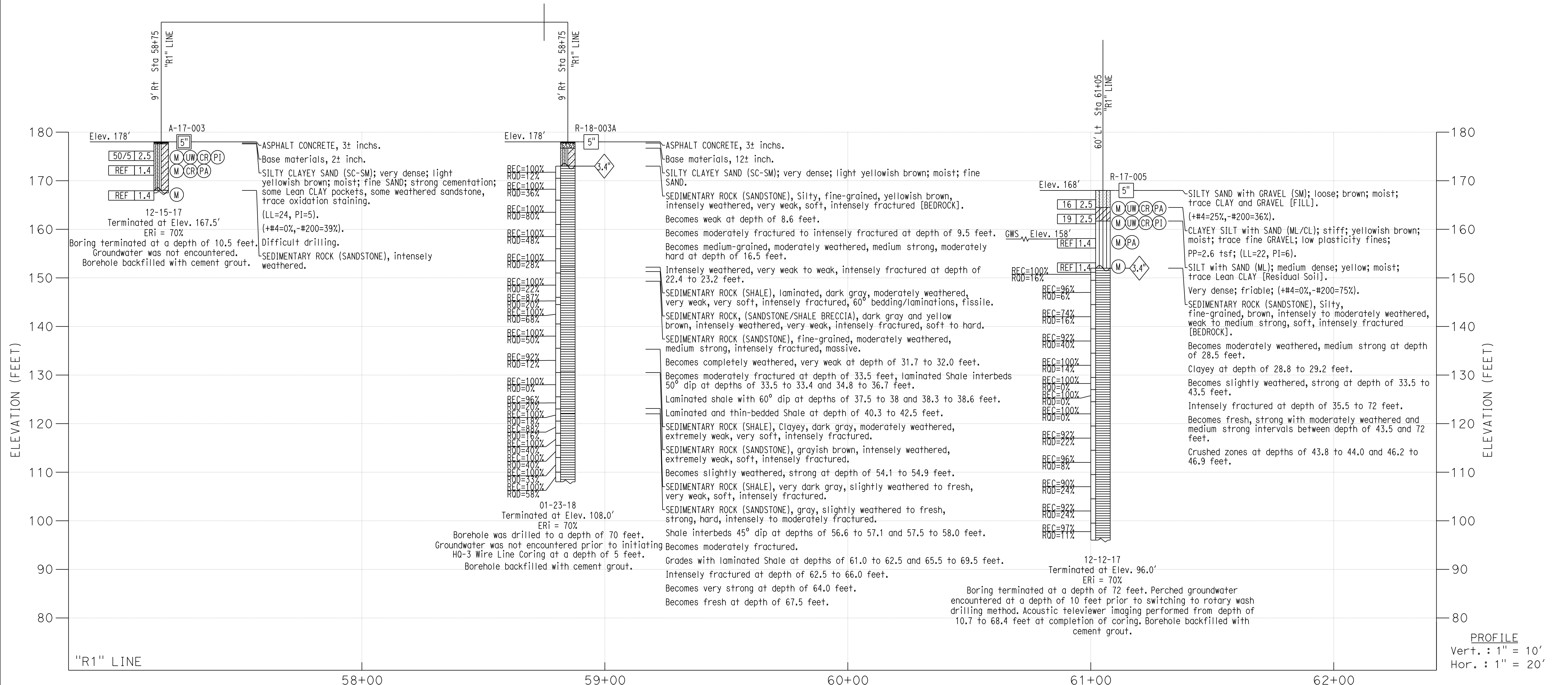
STATE OF CALIFORNIA

PLANS APPROVAL DATE _____

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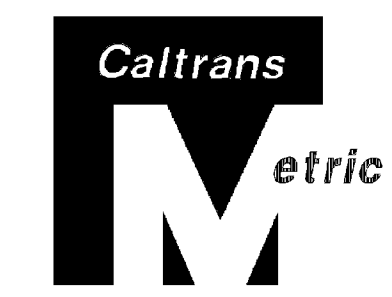
BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105

PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



DESIGN OVERSIGHT SIGN OFF DATE	DRAWN BY KIM OUYANG CHECKED BY FRANK WANG	L.S. BHANGOO FIELD INVESTIGATION BY: DATE: DEC 2017 THROUGH JAN 2018	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	FRANK WANG PROJECT ENGINEER	BRIDGE NO. N/A POST MILES 7.9	RETAINING WALL No. 2 LOG OF TEST BORINGS 2 OF 7	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
						REVISION DATES 4-28-18 11-12-18 2-14-19 7-25-19	SHEET 32 OF 168

FILE => RW2-z-1o+b02.dgn



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILES	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9		481	821

Mike Kydel 09/06/07
 GEOTECHNICAL PROFESSIONAL

2-21-12
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 MIKE KAPUSKAR
 NO. GE 2564
 EXP. 12-31-08
 STATE OF CALIFORNIA

FUGRO-EARTH MECHANICS
 7700 EDGEWATER DRIVE, SUITE 846
 OAKLAND, CA 94621

LEGEND OF BORING OPERATIONS

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

CONSISTENCY CLASSIFICATION FOR SOILS (According to the Standard Penetration Test (ASTM D1586))

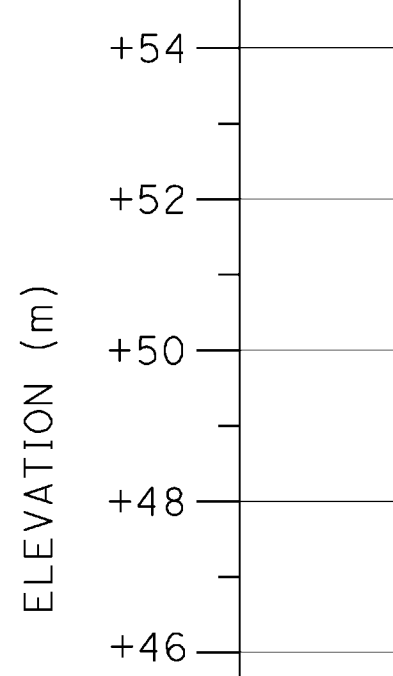
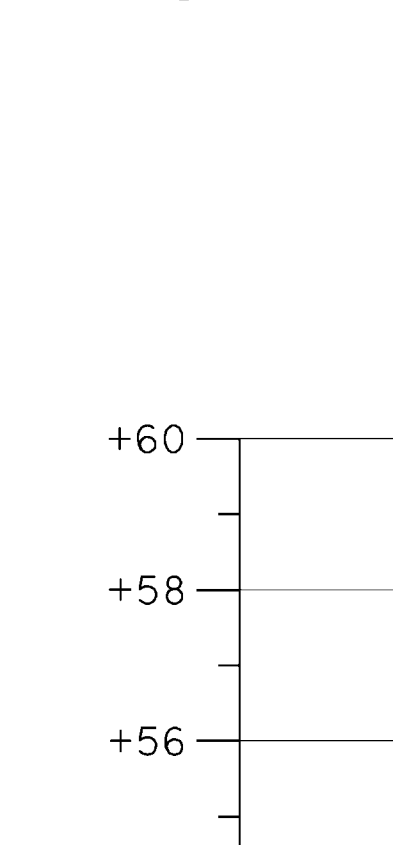
TYPE OF BORINGS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

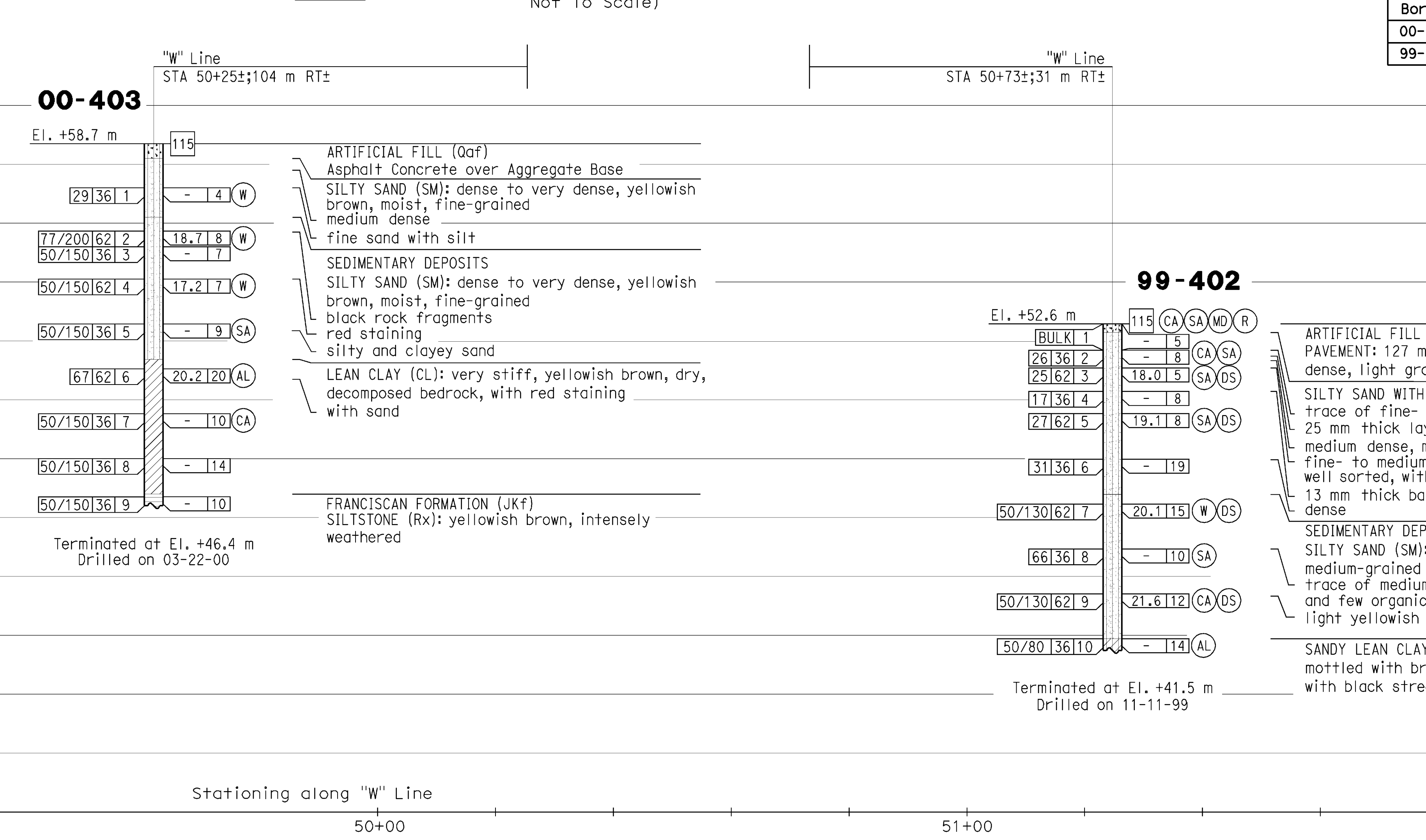
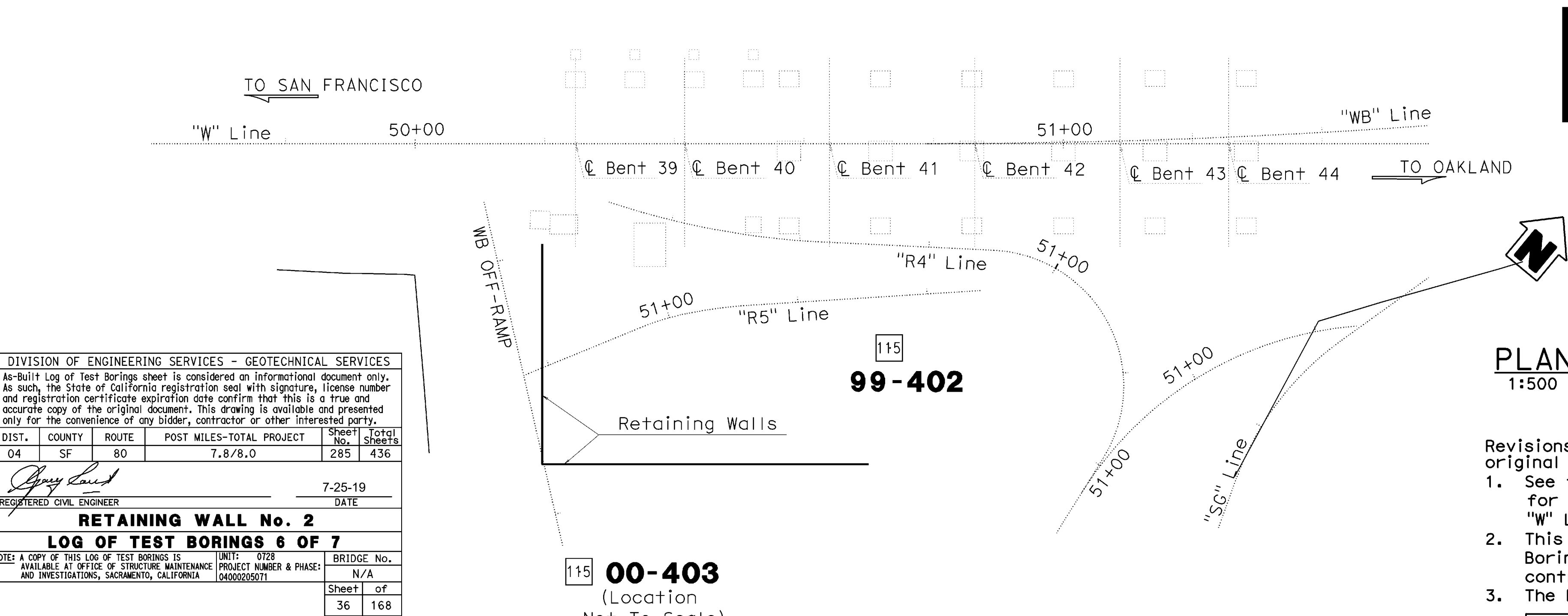
LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

CONSISTENCY CLASSIFICATION FOR SOILS (According to the Standard Penetration Test (ASTM D1586))

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



SPT N-Value (Blows/30mm)	Consistency
0-4	Very Loose
5-10	Loose
11-20	Medium Dense
21-30	Dense
31-50	Very Dense
>50	Hard



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	285	436

Gary Parikh
 No. G.E. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA

Greg Lant
 7-25-19
 REGISTERED CIVIL ENGINEER
 DATE

RETAINING WALL No. 2

LOG OF TEST BORINGS 6 OF 7

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

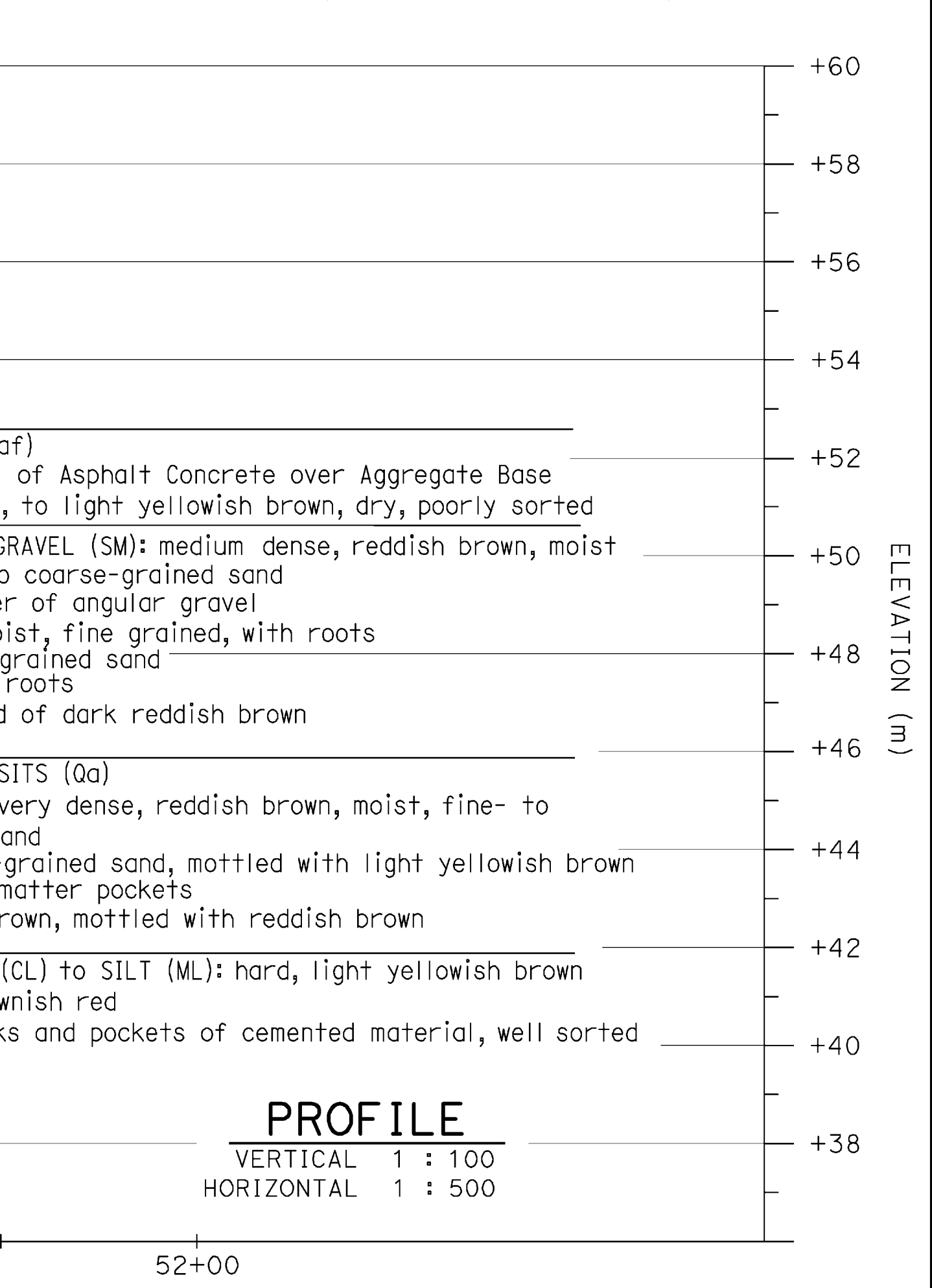
UNIT:	BRIDGE No.
0728	N/A
PROJECT NUMBER & PHASE:	Sheet of
0400205071	36 of 168

PLAN 1:500

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

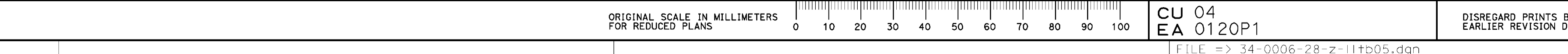
- See the "Log of Test Borings 1 of 7" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
00-403	58+60	14' Lt.
99-402	62+40	17' Rt.



ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DESIGN OVERSIGHT	DRAWN BY: G. J. GUNARANJAN 01/03/07	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34-0006	WEST TIE-IN PHASE 3 YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS) LOG OF TEST BORINGS NO. 5
SIGN OFF DATE	CHECKED BY: M. KAPUSKAR 01/05/07	FIELD INVESTIGATION BY: S. SICILIANO, L. FLUKE DATE: AS NOTED	KILOMETER POST 12.8	



REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
	28	29

FILENAME => s128843 DATE PLOTTED => 25-FEB-2012 TIME PLOTTED => 12:15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80			

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013
 FOR PLAN VIEW SEE "LOG OF TEST BORINGS 1 OF 13"

DIVISION OF ENGINEERING SERVICES - OFFICE OF GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	KILOMETER POST - TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	12.7/13.2	740	806

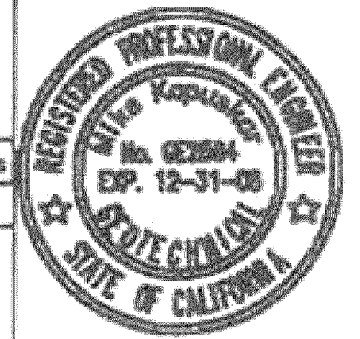
REGISTERED ENGINEER - CIVIL *Mohan Ayadurai* 2/18/08
 DATE

YBI TRANSITION STRUCTURES

AS-BUILT LOG OF TEST BORINGS NO. 2

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 04251	BRIDGE No.
EA: 0120S1	34-0006 LR



Revisions made to this Log of Test Borings from the original Log of Test Borings are the addition of the following notes:

- Refer to Boring Location Plan 1 of 13 for borahole locations and elevation datum.
- Stations, dimensions and elevations shown on this plan are in English units.

To accompany plans dated 6-23-08

- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 7" dated February 18, 2019, for stationing. Based on the drawings provided by HDR, "C/L" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
96-4	62+74	74' Lt.
96-7	62+33	72' Lt.

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	286	436

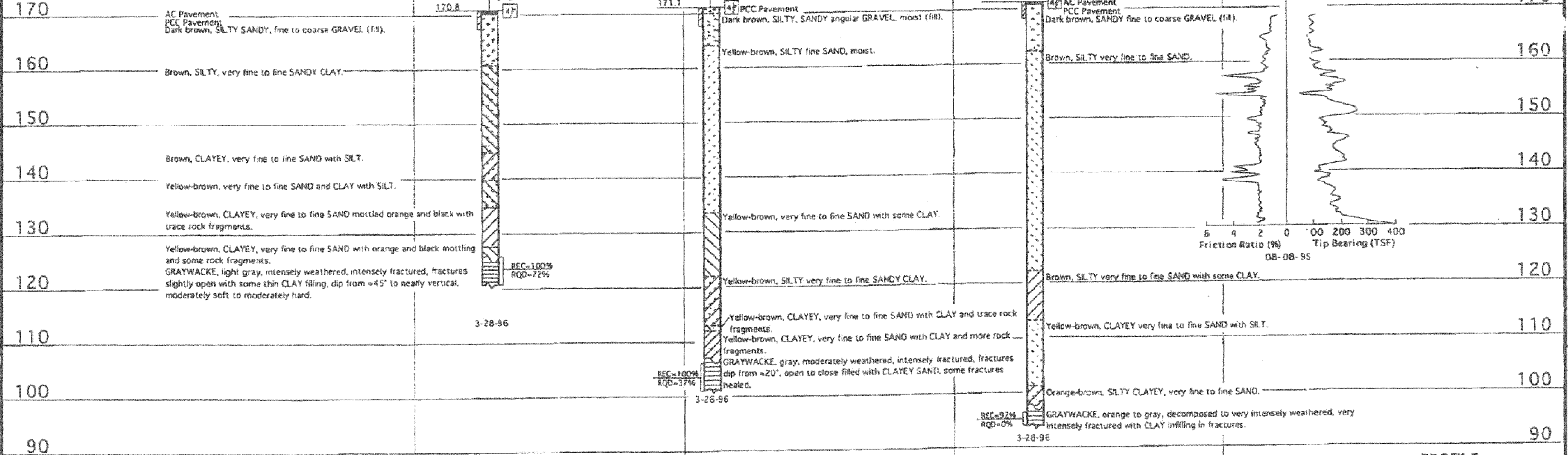
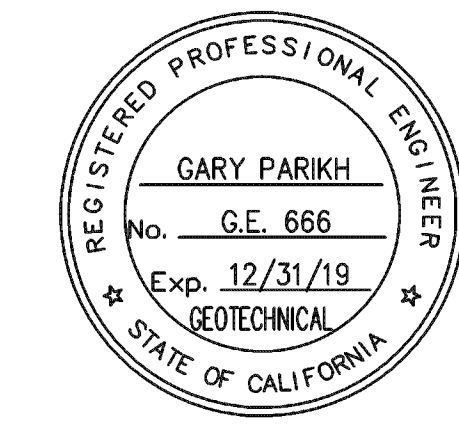
REGISTERED CIVIL ENGINEER *Gary Parikh* 7-25-19
 DATE

RETAINING WALL No. 2

LOG OF TEST BORINGS 7 OF 7

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0128	BRIDGE No.
PROJECT NUMBER & PHASE: 0400020501	N/A
Sheet	of
37	168



ENGINEERING SERVICE CENTER	STRUCTURE FOUNDATIONS	FIELD INVESTIGATION BY: T. CROSBY	State of CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF STRUCTURES STRUCTURE DESIGN	BRIDGE NO. 34-0004	EARTHQUAKE RETROFIT PROJECT NO. 19
DRAWN BY J. W. M.	4-96				POST MILE 7.6/8.0	LOG OF TEST BORINGS 2 OF 13
CHECKED BY					DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS → 0 1 2 3

SHEET OF

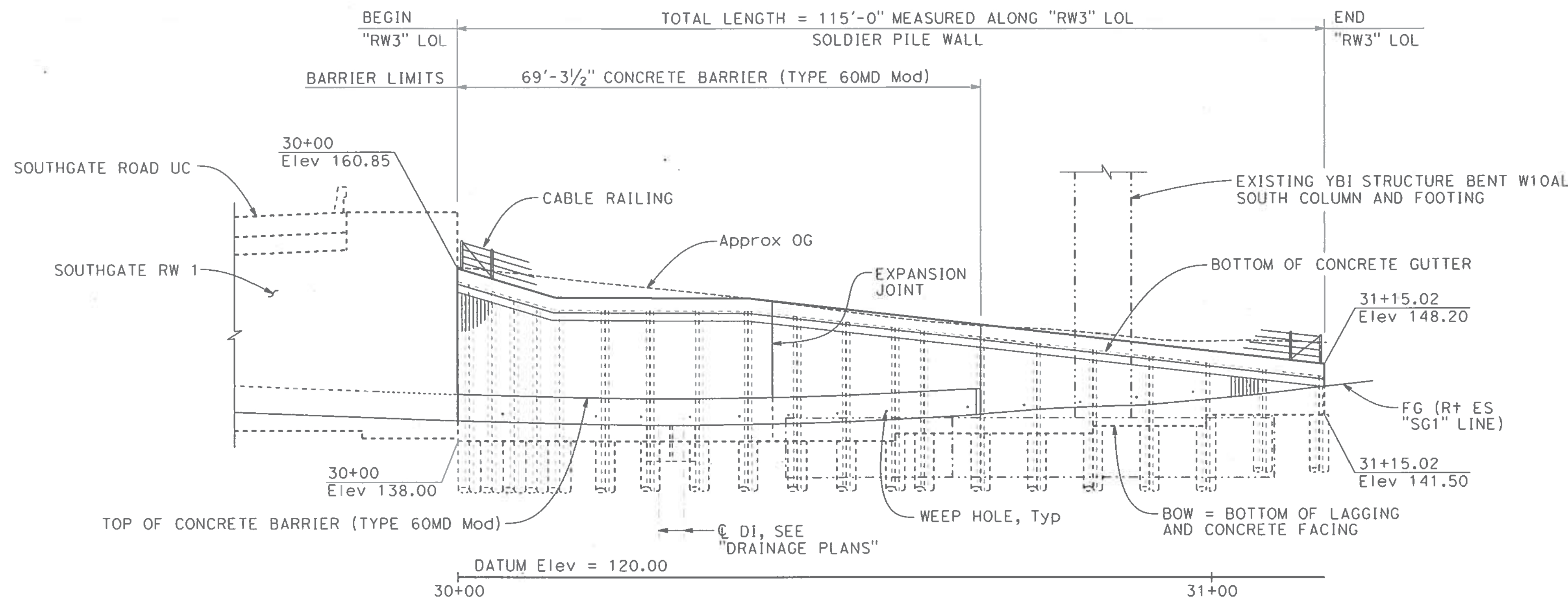
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	287	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

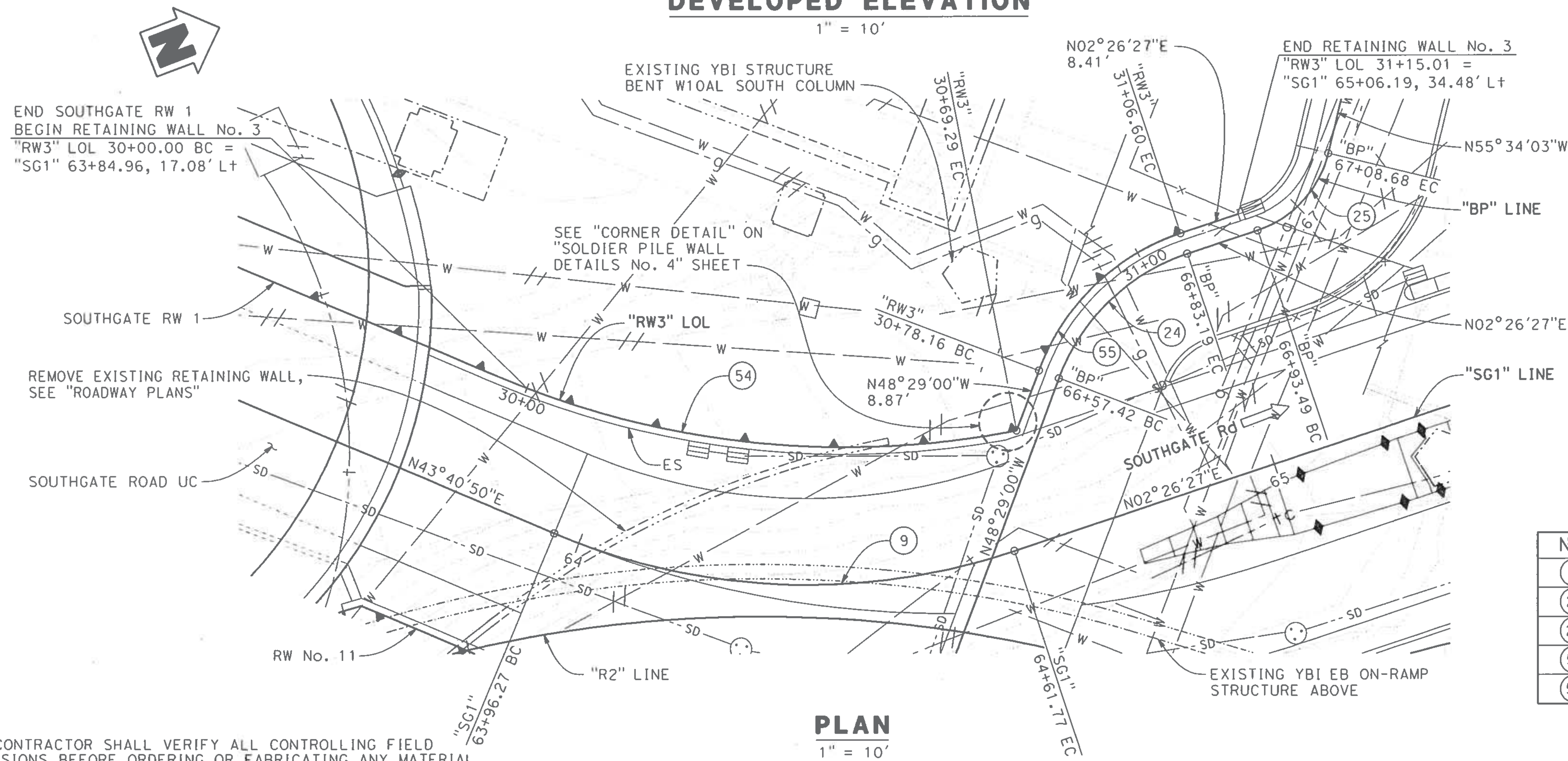
PLANS APPROVAL DATE
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



DEVELOPED ELEVATION
1" = 10'



PLAN
1" = 10'

LEGEND:

- Indicates existing structure
- ← Indicates direction of traffic

NOTES:

- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 2" and "GENERAL PLAN No. 3" sheets.
- For drainage details, see "MISCELLANEOUS DETAILS" sheet and "DRAINAGE PLANS".
- Expansion joint in CIP wall shall be located as shown centered between piles. For detail, see "MISCELLANEOUS DETAILS" sheet.
- For wall elevations, see "SOLDIER PILE WALL LAYOUT" sheet.

QUANTITIES

STRUCTURE EXCAVATION (SOLDIER PILE WALL)	167	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	11	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	79	CY
LEAN CONCRETE BACKFILL	42	CY
STEEL SOLDIER PILE (W18X175)	367	LF
STEEL SOLDIER PILE (W18X211)	117	LF
STEEL SOLDIER PILE (W24X229)	213	LF
30" DRILLED HOLE	487	LF
36" DRILLED HOLE	214	LF
STRUCTURAL CONCRETE, RETAINING WALL	71	CY
FRACTURED RIB TEXTURE	914	SO FT
BAR REINFORCING STEEL (RETAINING WALL)	15,130	LB
TIMBER LAGGING	6	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	1	LS
MINOR CONCRETE (GUTTER) (CY)	4	CY
MISCELLANEOUS METAL (RETAINING WALL)	6,800	LB
CONCRETE BARRIER (TYPE 60MD Mod)	70	LF
CABLE RAILING	115	LF

CURVE DATA

No.	R	Δ	T	L
9	91.00'	41°14'23"	34.24'	65.50'
24	29.00'	50°55'27"	13.81'	25.78'
25	15.00'	58°00'30"	8.32'	15.19'
54	125.00'	31°45'29"	35.56'	69.29'
55	32.00'	50°55'27"	15.24'	28.44'

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

DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY" PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34E0032	RETAINING WALL No. 3 GENERAL PLAN No. 1	
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE		CHECKED T. MEHTA	PROJECT ENGINEER		JOHN MANISCALCO
	QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA		CHECKED M. JACKSON	PLANS AND SPECS COMPARED		POST MILES

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)
 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
 UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414
 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 10-22-19, 11-14-19, 2-21-19, 7-25-19
 SHEET 38 OF 168
 USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:17
 FILE => RW3-a-gp01.dgn

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th edition with the California Amendments, January 2014

LIVE LOAD: None

ADDITIONAL SURCHARGE: FOR "RW3" 30+38.50 TO 31+15.01
EXISTING YBI EDGE BEAM, BENT W10AL SOUTH FOOTING:
Additional Surcharge = 963 pcf (Extreme Event only)
Load applied from elevation 141.08± TO 133.20±

SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
Seismic Coefficient, $K_h = 0.33$

Retaining Portion:
Unit Weight, $\gamma = 120$ pcf
Friction Angle, $\phi = 34$ degrees
Active Pressure Coefficient, $K_a = 0.42$

Embedded Portion:
Unit Weight, $\gamma = 120$ pcf
Friction Angle, $\phi = 34$ degrees
Active Pressure Coefficient, $K_a = 0.28$
Passive Pressure Coefficient, $K_p = 6.2$

CONCRETE: $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

STEEL SOLDIER PILE: ASTM A992 ($f_y = 50$ ksi, $f_u = 65$ ksi)

WELDED STUD: ASTM A29 Type B

STRUCTURAL TIMBER: Treated Douglas Fir, Grade No. 1 or better
Timber to be full sawn

HOLLOW STRUCTURAL SECTION (HSS) TUBE: ASTM A500 ($f_y = 46$ ksi, $f_u = 58$ ksi)

NOTES:

- For limits, see "GENERAL PLAN No. 1" sheet.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- For excavation and backfill limits, see "GENERAL PLAN No. 3" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	288	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

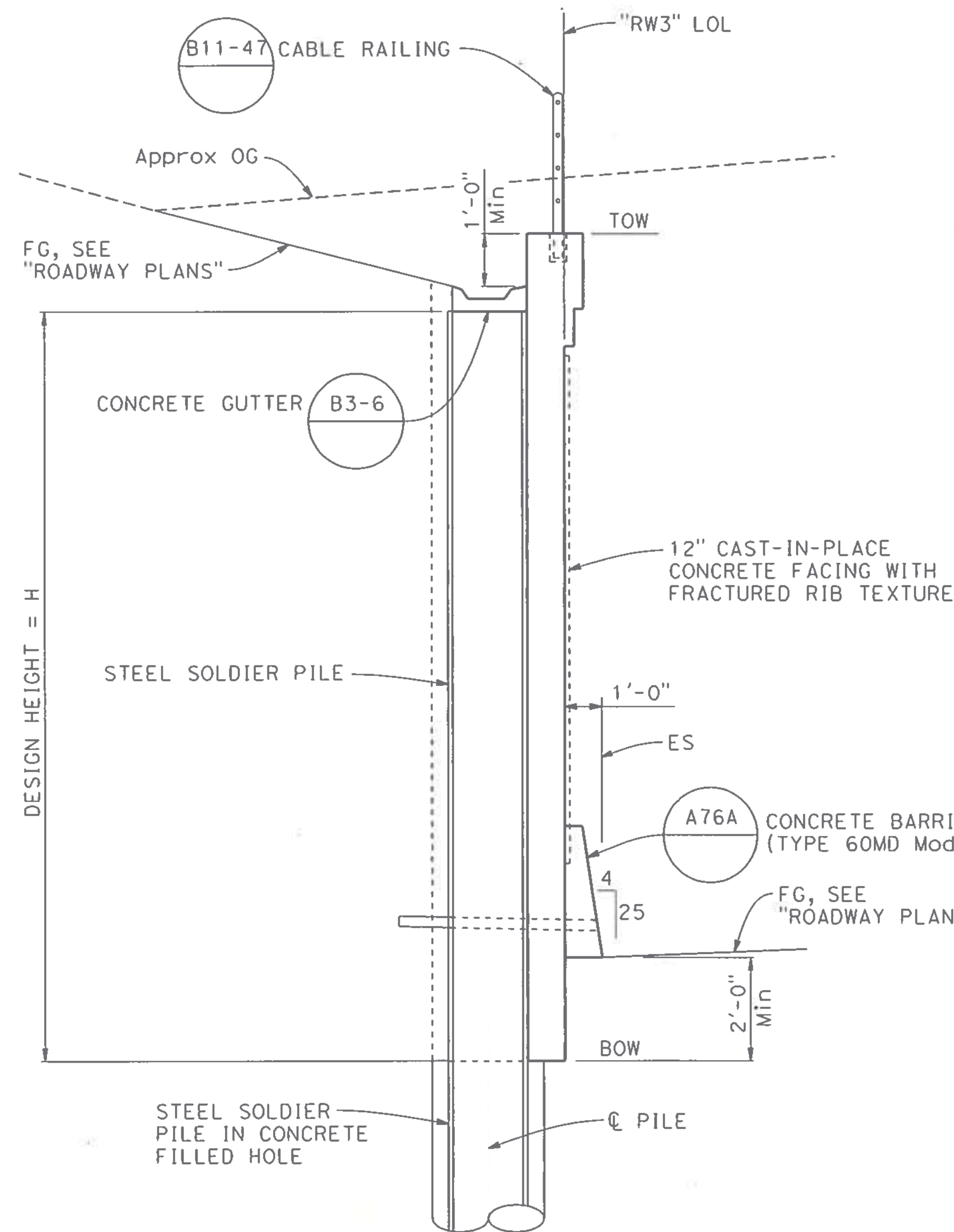
PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

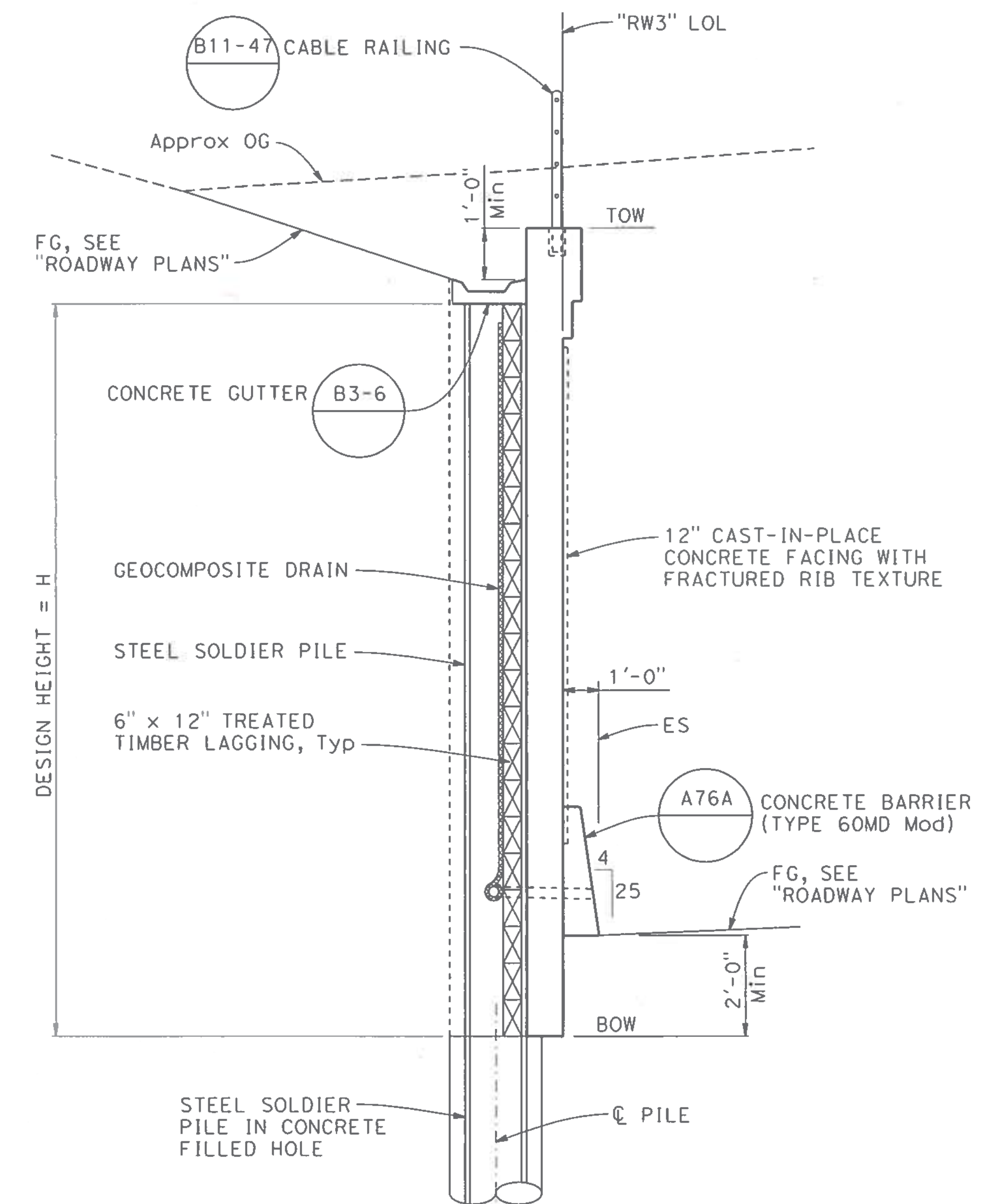
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



TYPICAL SECTION

3/8" = 1'-0"

"RW3" 30+00 TO 30+13.58



TYPICAL SECTION

3/8" = 1'-0"

"RW3" 30+13.58 TO 30+38.50

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

DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0032	RETAINING WALL No. 3 GENERAL PLAN No. 2
	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA		PROJECT ENGINEER JOHN MANISCALCO	
	QUANTITIES BY K. SERRANO-PAINE	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON			

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-27-18 2-21-19 1-28-19	39	168

FILE => RW3-a-gp02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:18

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	289	436

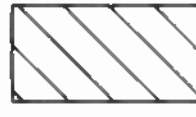
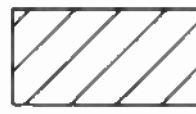


7-25-19
 REGISTERED CIVIL ENGINEER DATE
 REGISTERED PROFESSIONAL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

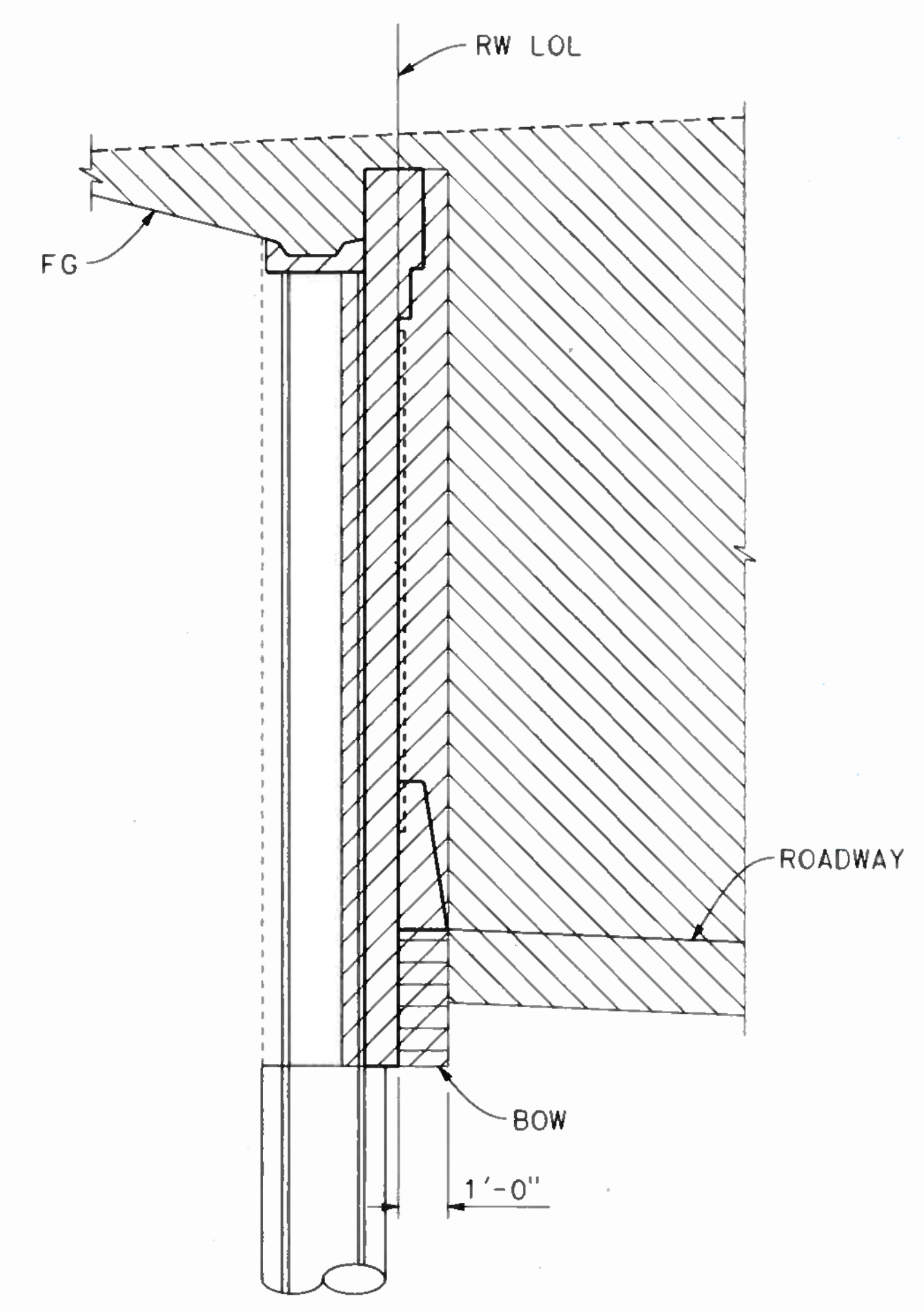
PLANS APPROVAL DATE
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 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

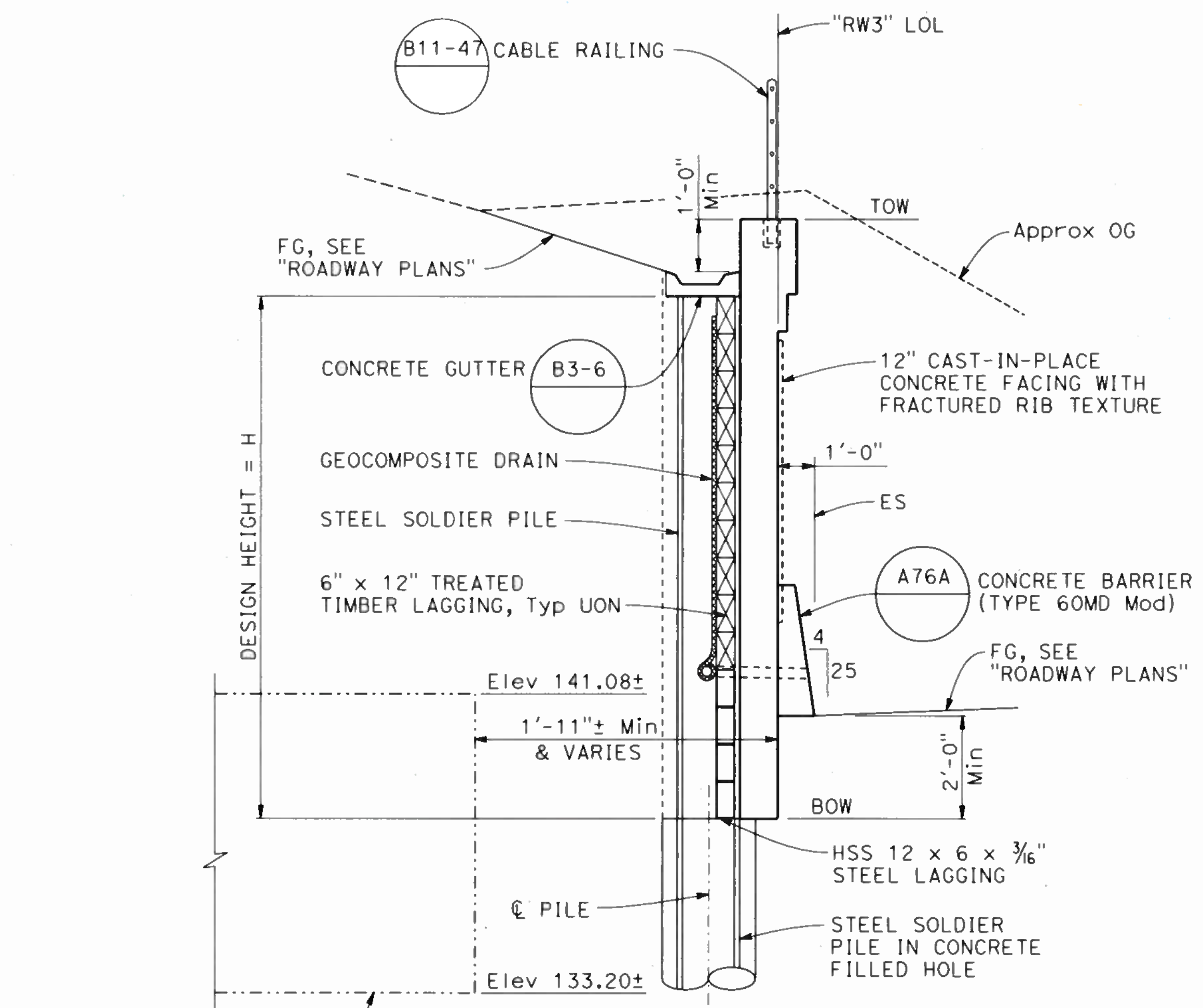
1. For limits, see "GENERAL PLAN No. 1" sheet.
2. For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.

LEGEND:

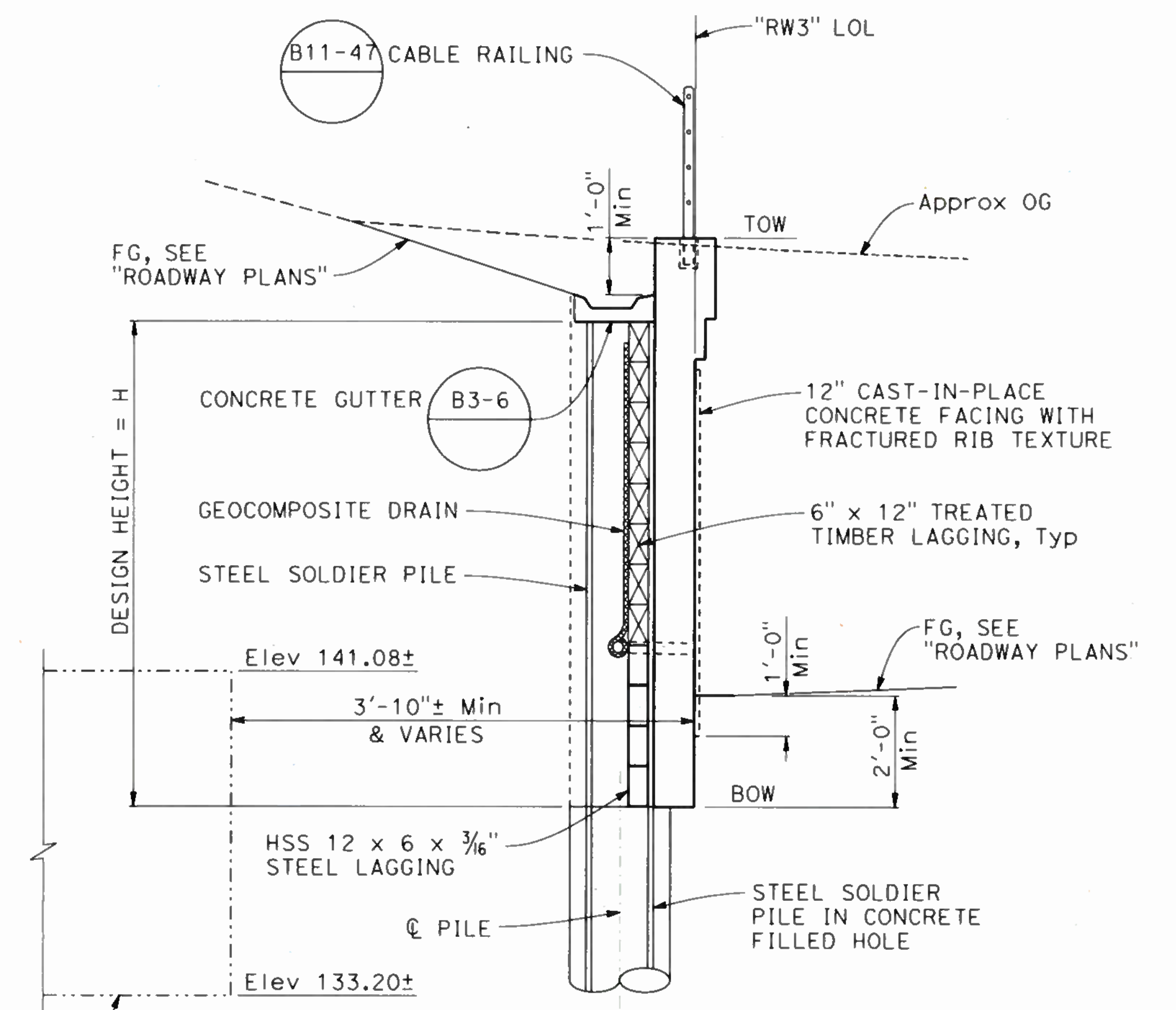
-  Roadway Excavation, see "ROADWAY PLANS"
-  Structure Excavation
-  Structure Backfill
-  Indicates existing structure



LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL
 NO SCALE



EXISTING YBI STRUCTURE BENT W10AL SOUTH FOOTING
TYPICAL SECTION
 3/8" = 1'-0"
 "RW3" 30+38.50 TO 30+69.29



EXISTING YBI STRUCTURE BENT W10AL SOUTH FOOTING
TYPICAL SECTION
 3/8" = 1'-0"
 "RW3" 30+69.29 TO 31+15.01

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

DESIGN OVERSIGHT	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA
				CHECKED T. MEHTA
				PLANS AND SPECS COMPARED M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	34E0032
POST MILES	7.9

RETAINING WALL No. 3
GENERAL PLAN No. 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	290	436

REGISTERED CIVIL ENGINEER
DATE 7-25-19

PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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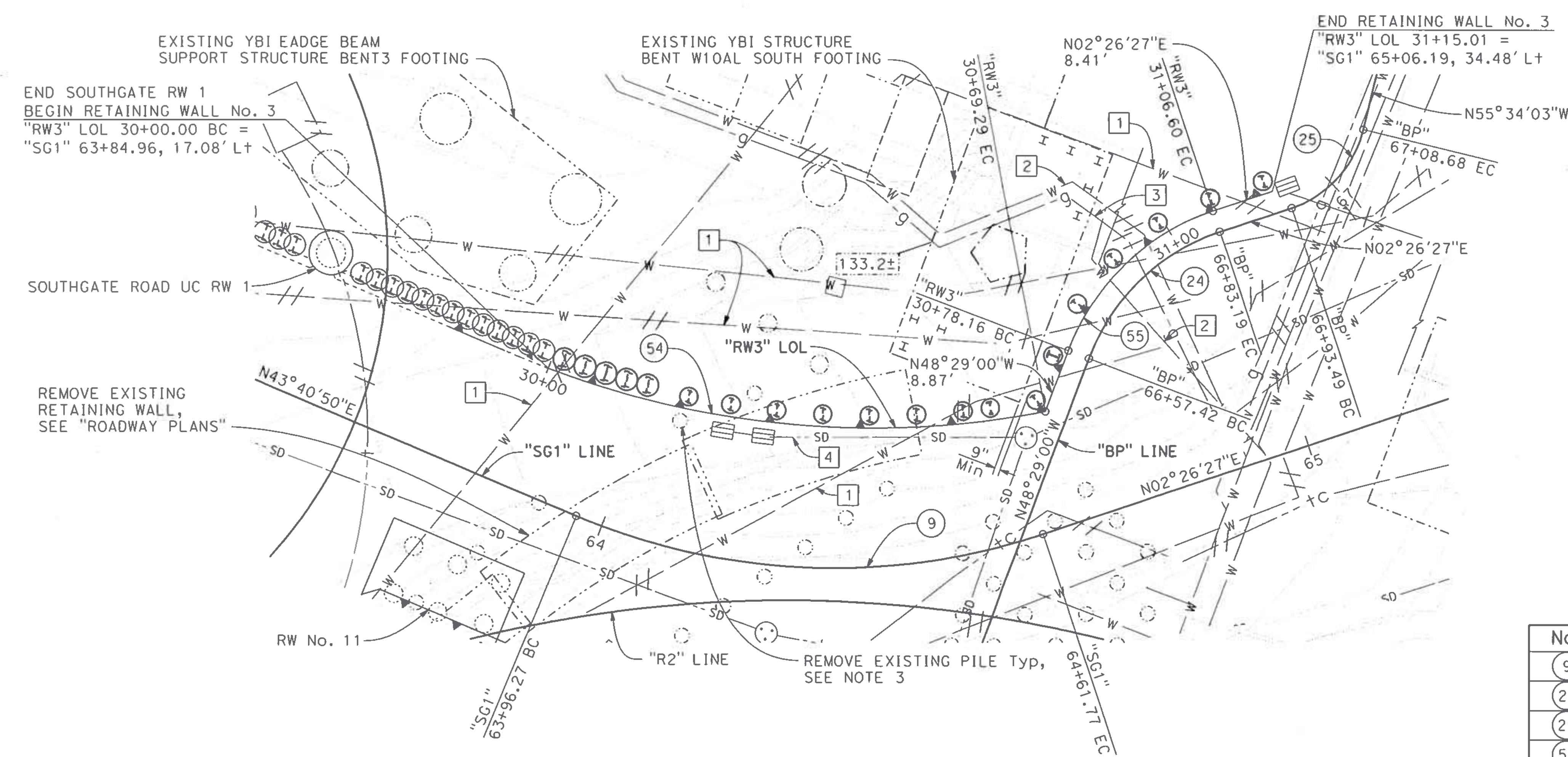
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

- LEGEND:**
- Indicates existing structure
 - ⊙ Indicates Steel Soldier Pile
 - Indicates CIDH Pile
 - ⊙ Indicates existing pile
 - ⊠ Indicates bottom of existing footing elevation

- NOTES:**
- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
 - For drainage details, see "DRAINAGE PLANS".
 - For Pile Removal and limits (Portion or Full), see "ROADWAY PLANS".

- UTILITIES:**
- 1 Existing Abandoned Water
 - 2 Existing Water to be Abandoned
 - 3 Existing Gas to be Abandoned
 - 4 Storm Drain



CURVE DATA

No.	R	Δ	T	L
9	91.00'	41°14'23"	34.24'	65.50'
24	29.00'	50°55'27"	13.81'	25.78'
25	15.00'	58°00'30"	8.32'	15.19'
54	125.00'	31°45'29"	35.56'	69.29'
55	32.00'	50°55'27"	15.24'	28.44'

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

5-17-19 APPROVAL DATE
GEO TECHNICAL PROFESSIONAL

DESIGN OVERSIGHT <i>[Signature]</i> 11/14/19	SCALE: 1" = 10'	VERT. DATUM NGVD29	HORZ. DATUM NAD83, CCS ZONE 3	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0032	RETAINING WALL No. 3 FOUNDATION PLAN
SURVEYED BY TOWILL Inc.	DRAFTED BY D. ORTEGA	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	PROJECT ENGINEER JOHN MANISCALCO	POST MILES 7.9			
FIELD CHECKED BY D. ORTEGA	CHECKED BY A. MARTINEZ	QUANTITIES BY K. SERRANO-PAINE	CHECKED A. ROMINGER	UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531			
FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
						REVISION DATES	SHEET 41	OF 168

TIME PLOTTED => 13:19
USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	291	436

7-25-19
DATE

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

SOLDIER PILE TABLE

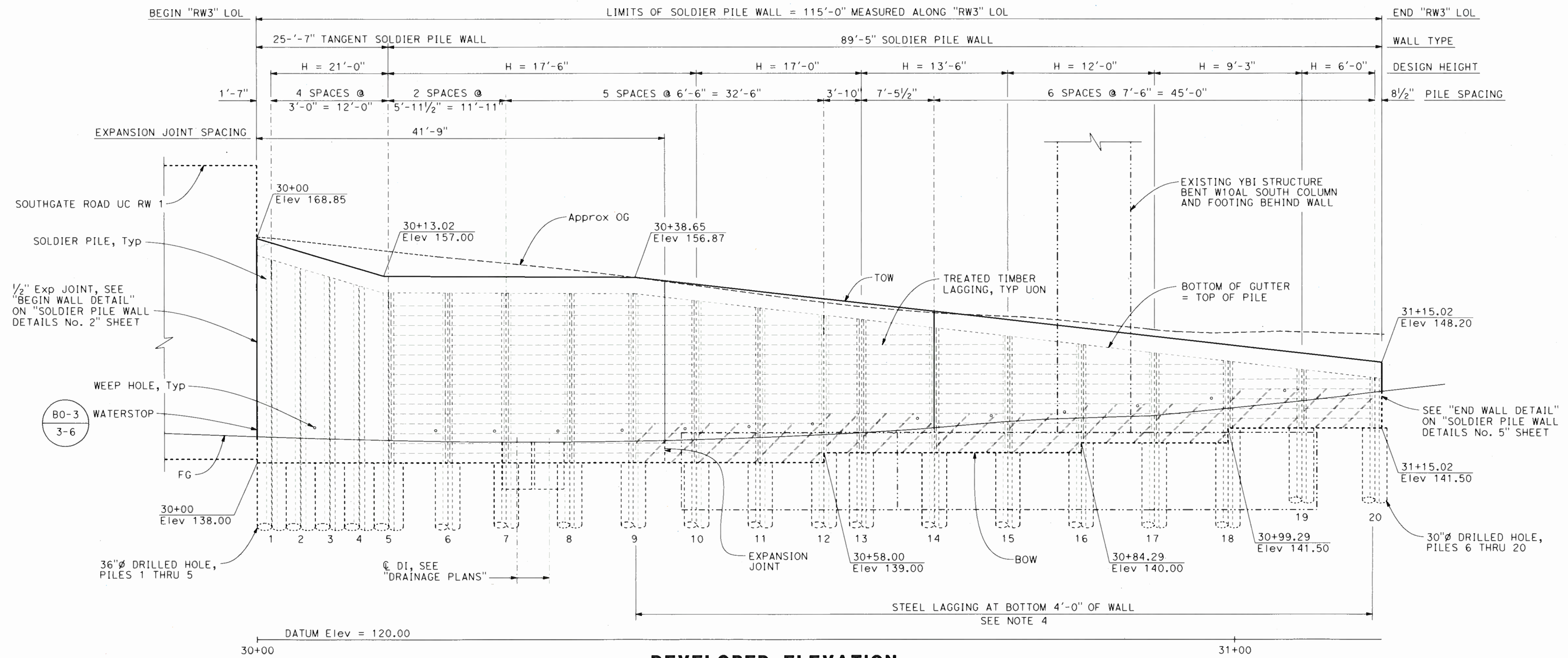
PILE NUMBER	"RW3" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
1	30+01.58	160.38	158.67	114.50	W24x229
2	30+04.58	159.49	157.80	114.50	W24x229
3	30+07.58	158.61	156.92	114.50	W24x229
4	30+10.58	157.72	156.05	114.50	W24x229
5	30+13.58	157.00	155.33	114.50	W24x229
6	30+19.54	156.97	155.30	120.50	W18x175
7	30+25.50	156.94	155.27	120.50	W18x175
8	30+32.00	156.90	155.24	120.50	W18x175
9	30+38.50	156.87	155.20	120.50	W18x175
10	30+45.00	156.15	154.48	115.00	W18x211

SOLDIER PILE TABLE

PILE NUMBER	"RW3" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
11	30+51.50	155.41	153.75	115.00	W18x211
12	30+58.00	154.68	153.01	115.00	W18x211
13	30+61.83	154.25	152.57	118.50	W18x175
14	30+69.29	153.40	151.73	118.50	W18x175
15	30+76.79	152.55	150.88	119.50	W18x175
16	30+84.29	151.70	150.02	119.50	W18x175
17	30+91.79	150.85	149.17	122.00	W18x175
18	30+99.29	150.00	148.32	122.00	W18x175
19	31+06.79	149.14	147.47	124.50	W18x175
20	31+14.29	148.29	146.62	124.50	W18x175

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- Concrete barrier and coping not shown for clarity.
- See "ADDITIONAL REINFORCEMENT SECTION" on "SOLDIER PILE WALL DETAILS No. 4" sheet.



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

DESIGN OVERSIGHT
SIGN OFF DATE: 7/25/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	34E0032
PROJECT ENGINEER	JOHN MANISCALCO
POST MILES	7.9

RETAINING WALL No. 3
SOLDIER PILE WALL LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-15 11-14-15 1-22-19	42	168

FILE => RW3-f-spw_1001.dgn

TIME PLOTTED => 22-OCT-2019 USERNAME => JOHNGREEN DATE PLOTTED => 13:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	292	436

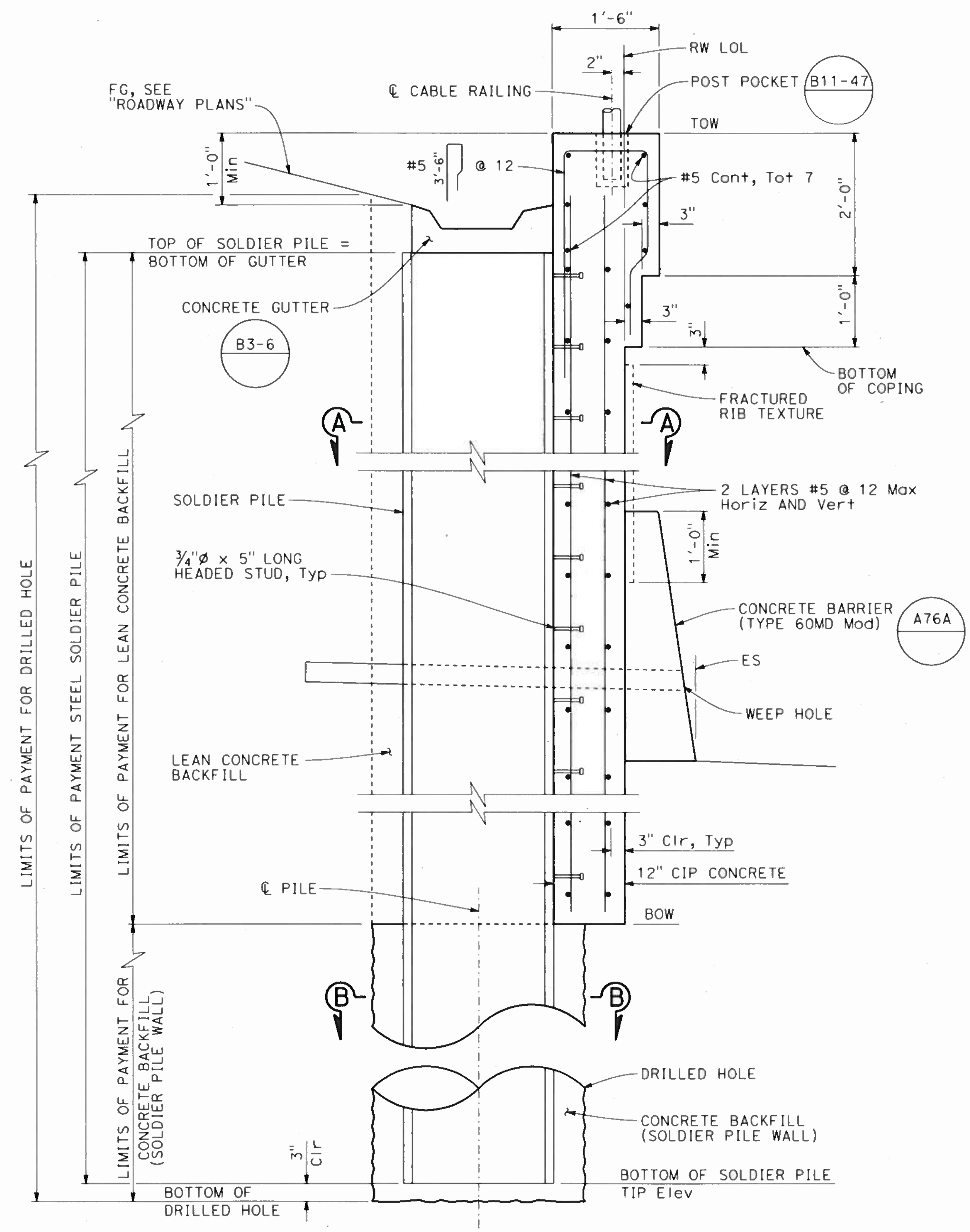
REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

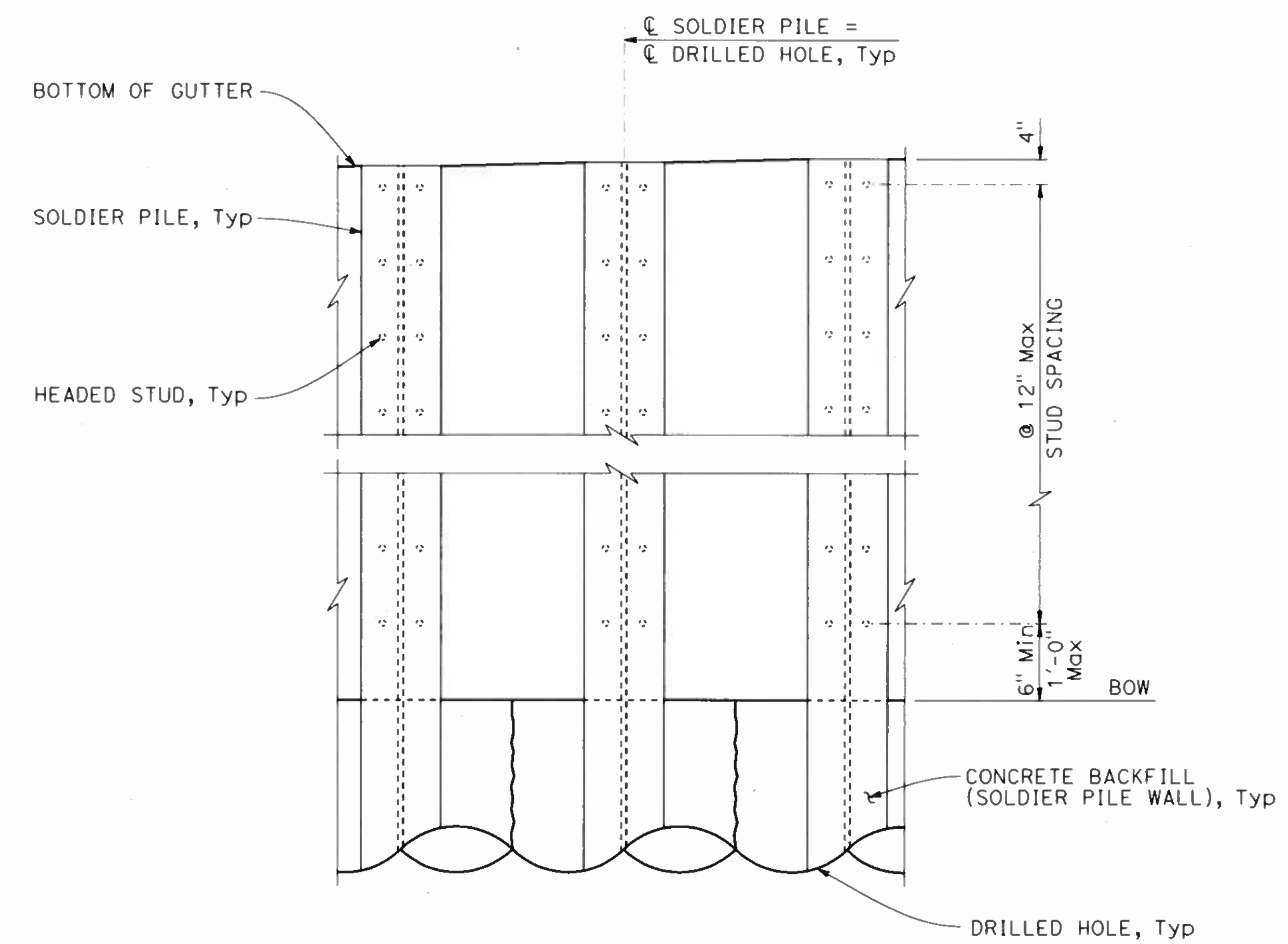
NOTES:

1. For "SECTION A-A" and "SECTION B-B", see "SOLDIER PILE WALL DETAILS No. 5" sheet.
2. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.
3. For all relevant elevation information, including TOW, Top of Soldier Pile, BOW, and Tip Elevations, see "SOLDIER PILE WALL LAYOUT" sheet.



TANGENT PILE WALL SECTION

1" = 1'-0"



PARTIAL ELEVATION

3/4" = 1'-0"

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

DESIGN OVERSIGHT
 SIGN OFF DATE 11/15/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0032
POST MILES	7.9

RETAINING WALL No. 3
SOLDIER PILE WALL DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

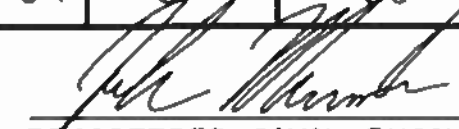
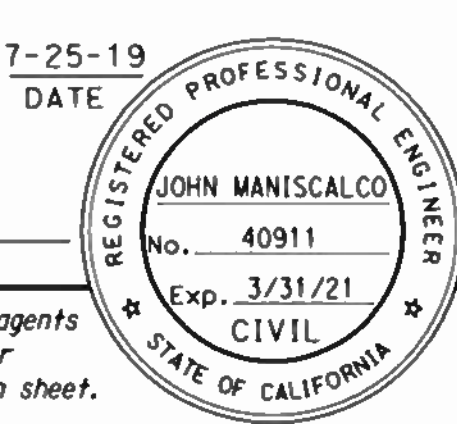


UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-14-19 2-24-20 1-28-21	43	168

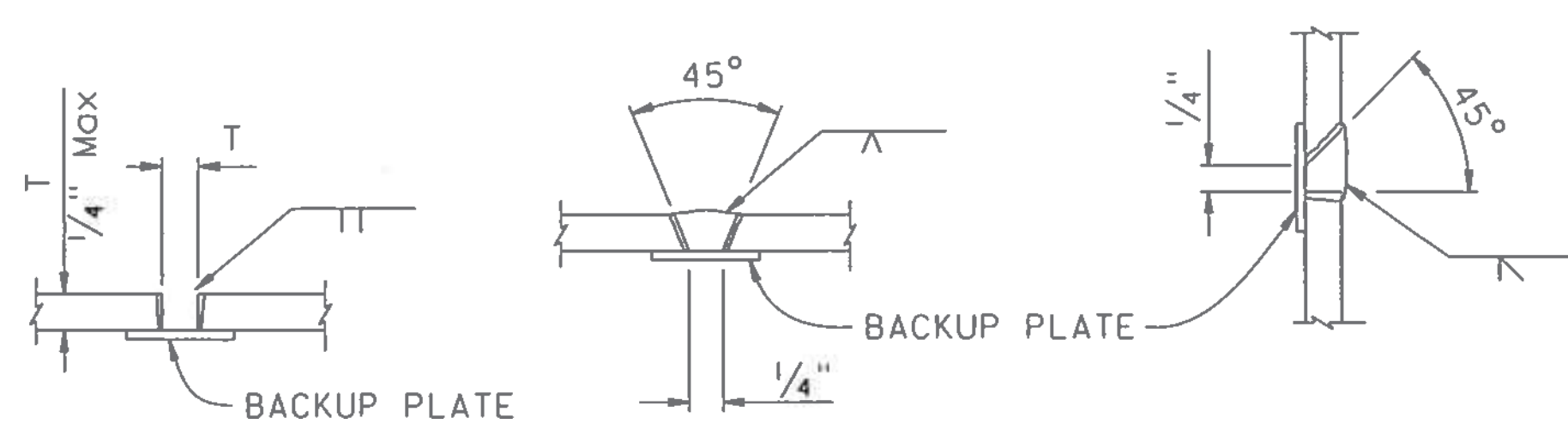
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USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	293	436
 REGISTERED CIVIL ENGINEER			7-25-19 DATE		
PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

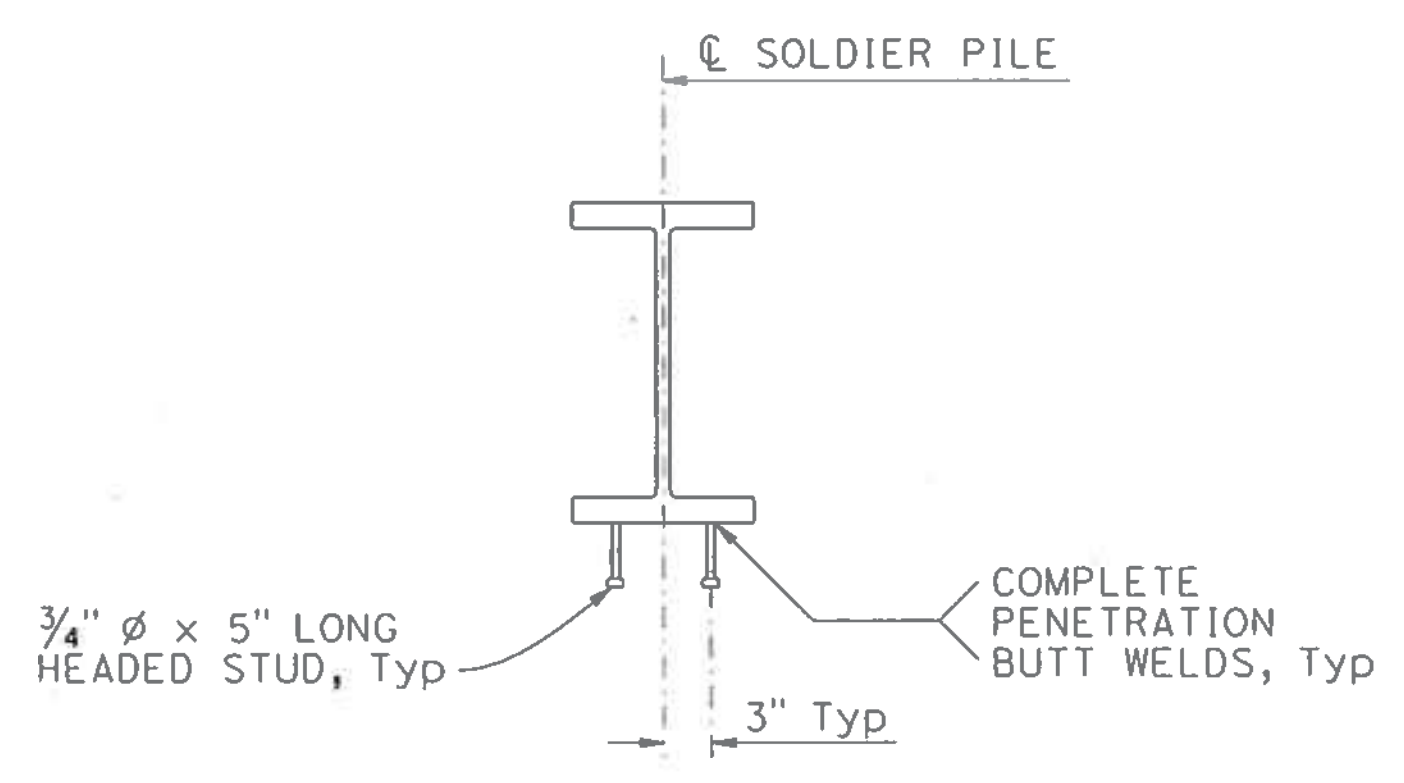
1. Single vee-groove and square groove permitted for all positions.
2. Single bevel-groove permitted for horizontal joints only.
3. Repair damage areas of paint after anchor installation.



SQUARE GROOVE SINGLE VEE-GROOVE SINGLE BEVEL-GROOVE

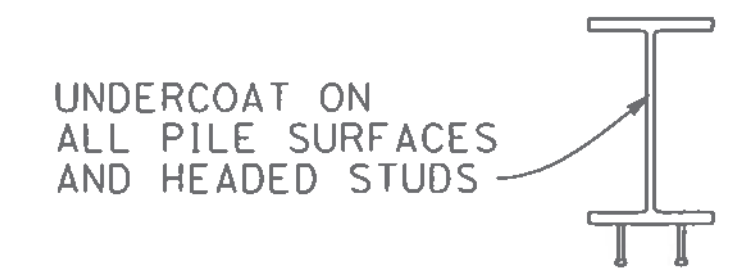
PILE WELDING DETAIL-BUTT JOINTS

NO SCALE



HEADED STUD DETAIL

NO SCALE

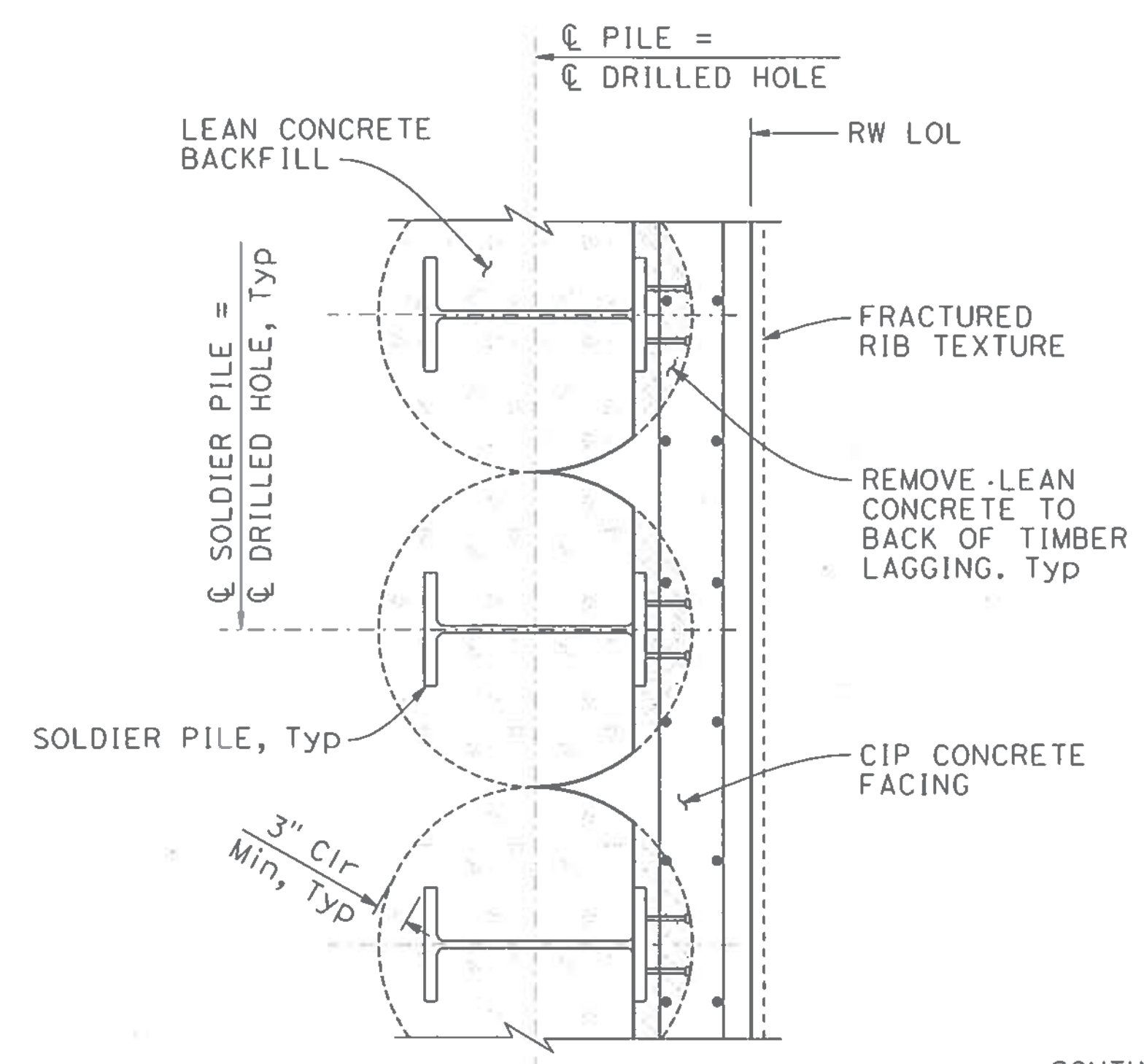


NOTE: CLEAN AND PAINT STEEL SOLDIER PILE FROM TOP OF PILE TO 5'-0" BELOW BOTTOM OF TIMBER LAGGING.

LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE

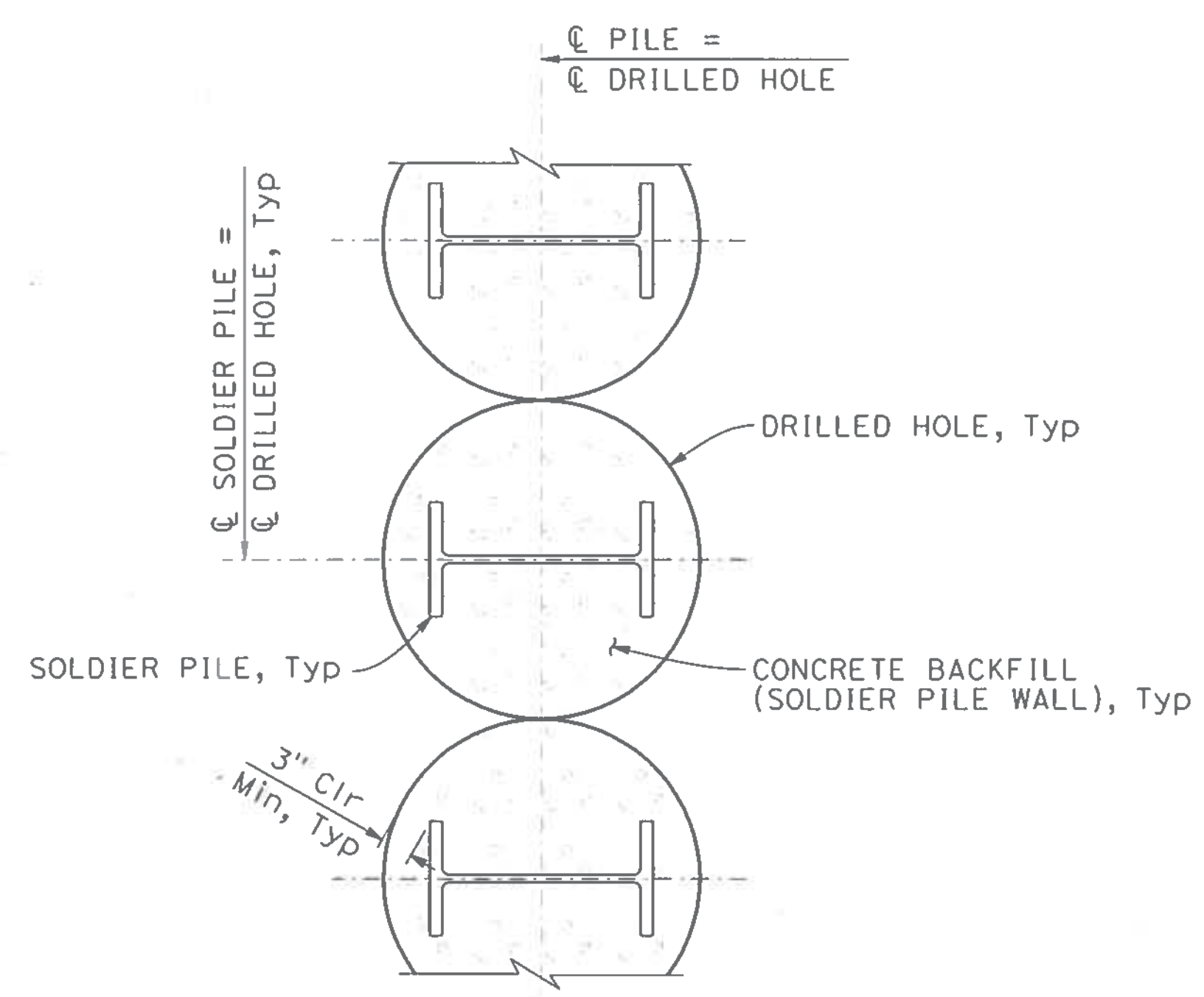
NO SCALE

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



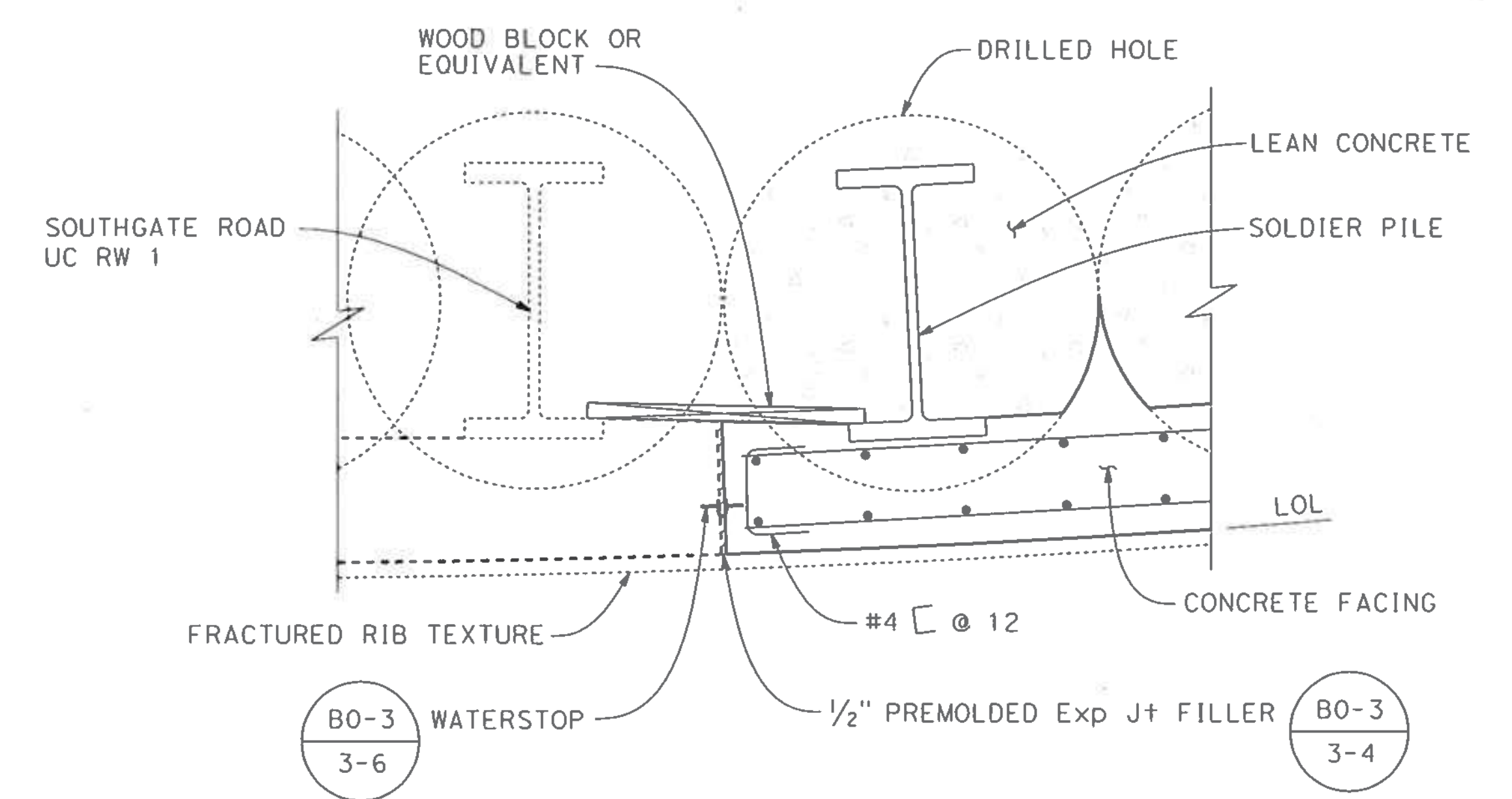
SECTION A-A

3/4" = 1'-0"




SECTION B-B

3/4" = 1'-0"



BEGIN WALL DETAIL

1" = 1'-0"

DESIGN OVERSTORY

 SIGN OFF DATE: 11/15/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0032
POST MILES	7.9

RETAINING WALL No. 3
SOLDIER PILE WALL DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

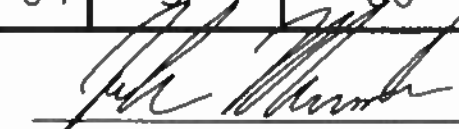
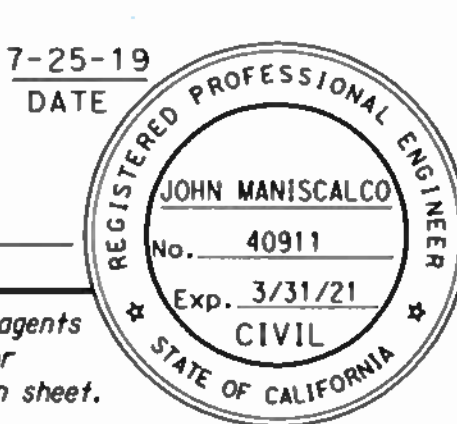
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-27-19 1-22-19 1-28-19	44	168

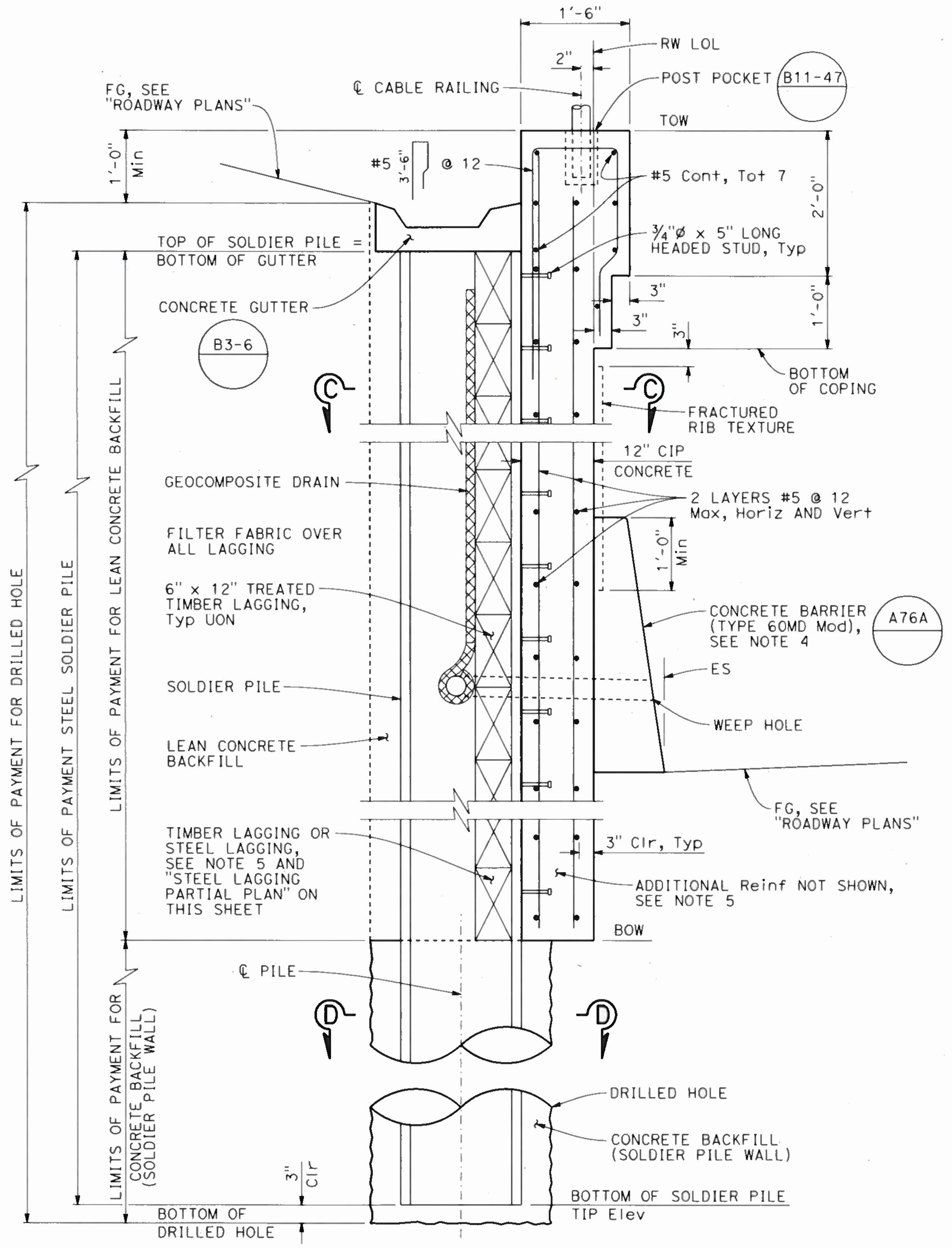
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USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	294	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

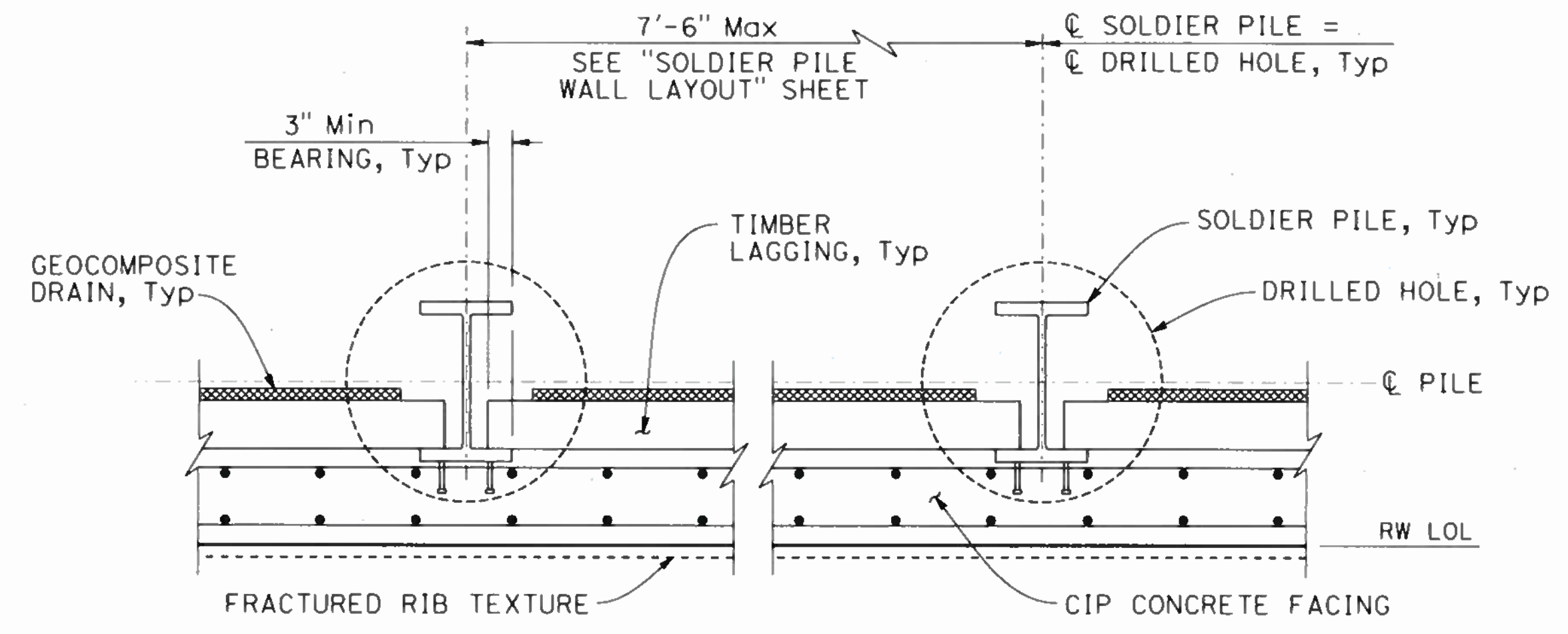
NOTES:

- For "SECTION C-C" and "SECTION D-D", see "SOLDIER PILE WALL DETAILS No. 2" sheet.
- For lagging details, see "SOLDIER PILE WALL DETAILS No. 5" sheet.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.
- For barrier limits, see "GENERAL PLAN No. 1" sheet.
- Additional reinforcement and steel lagging required for portion of wall at bottom 4'-0", see "ADDITIONAL REINFORCEMENT SECTION" on "SOLDIER PILE WALL DETAILS No. 4" sheet.



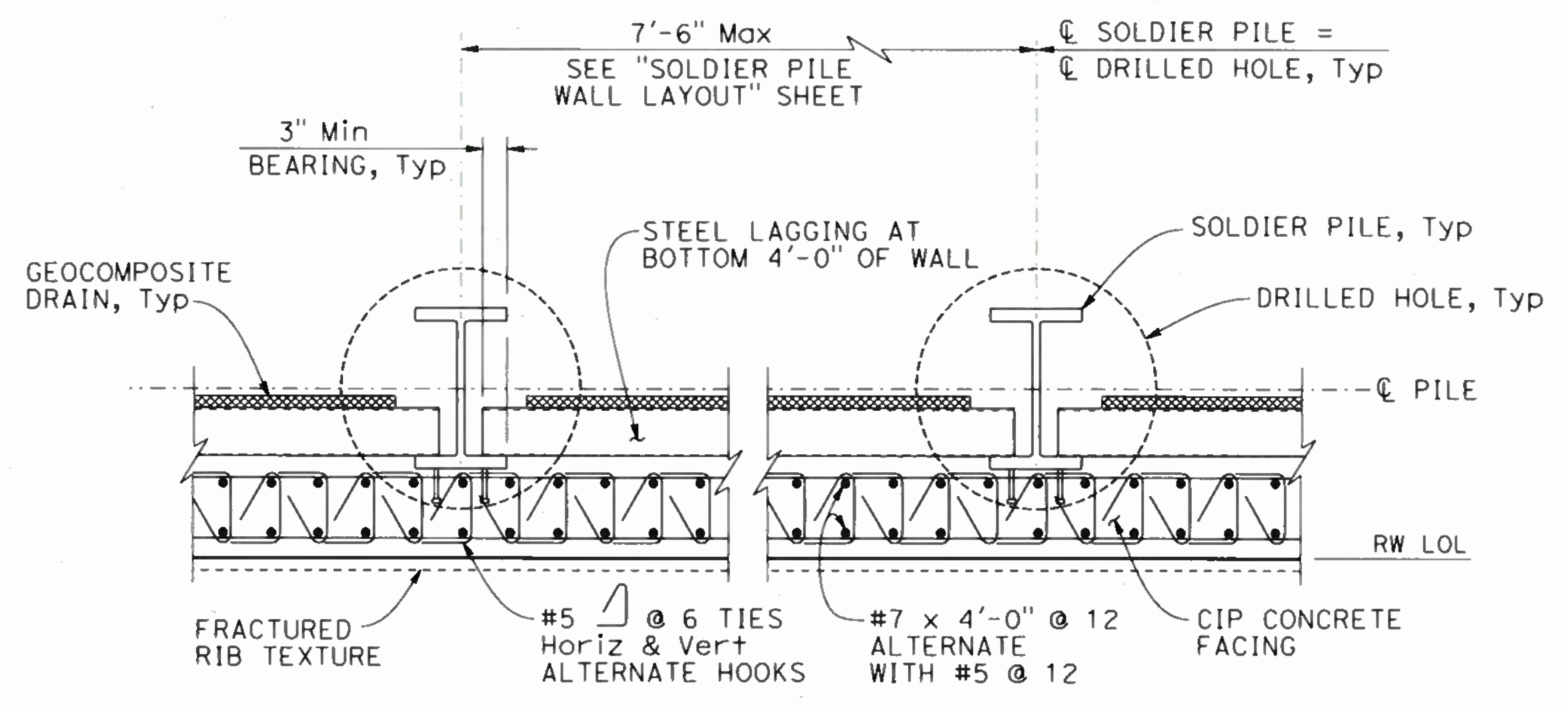
SOLDIER PILE WALL SECTION

1" = 1'-0"



TIMBER LAGGING PARTIAL PLAN


3/4" = 1'-0"



STEEL LAGGING PARTIAL PLAN

3/4" = 1'-0"

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

DESIGN OVERSTAMP

 SIGN OFF/DATE 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	JOHN MANISCALCO PROJECT ENGINEER
BRIDGE NO. 34E0032	RETAINING WALL No. 3 SOLDIER PILE WALL DETAILS No. 3
POST MILES 7.9	

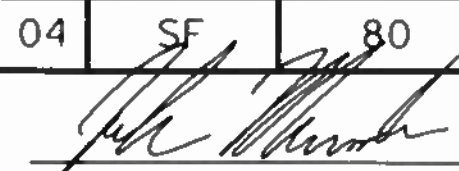
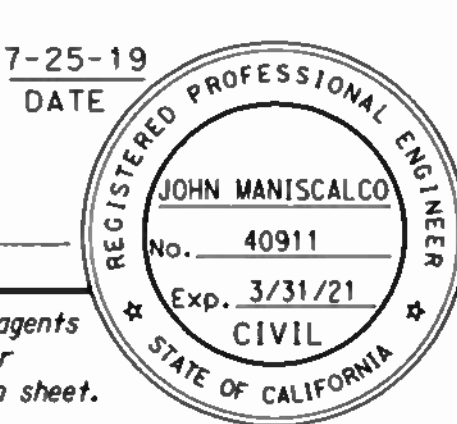
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

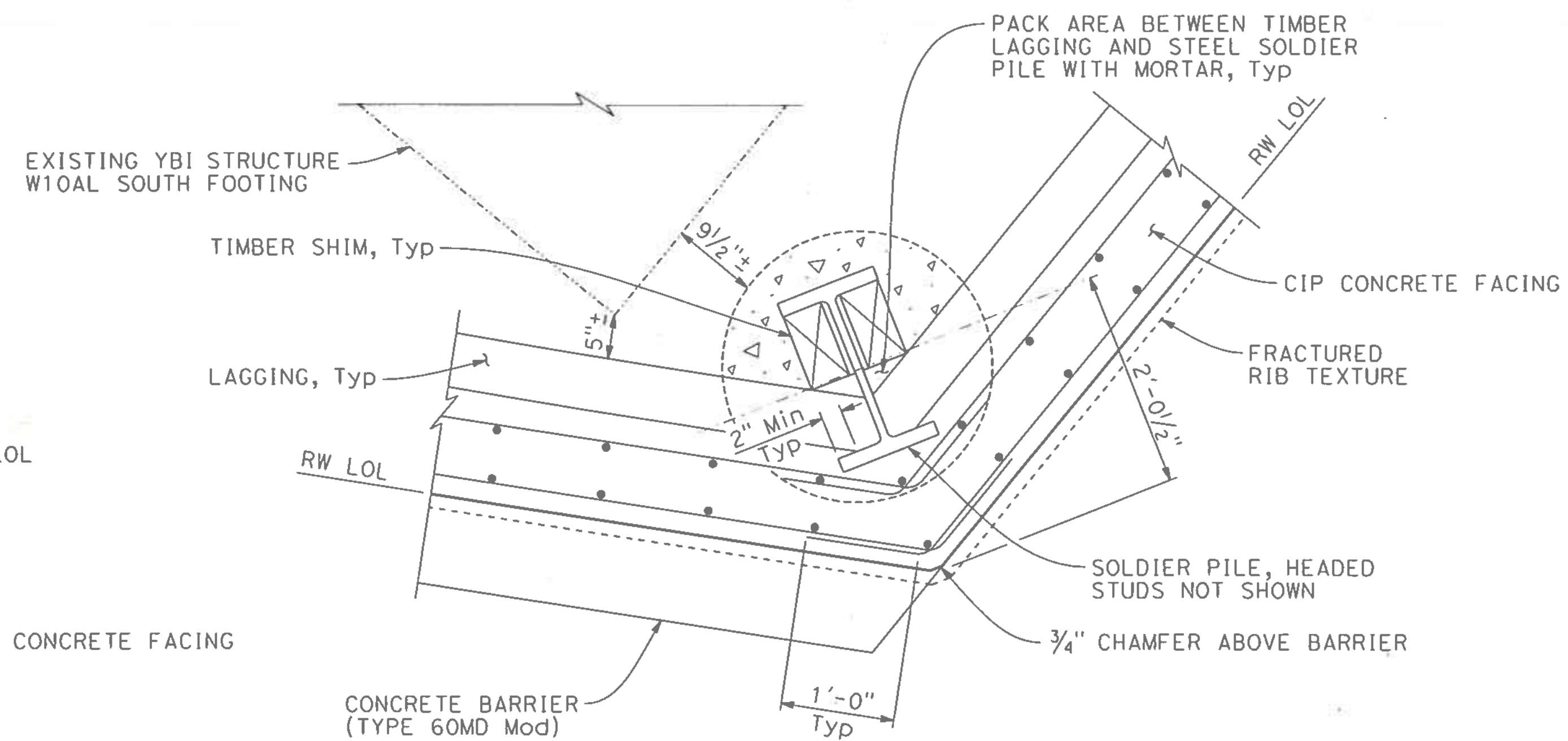
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

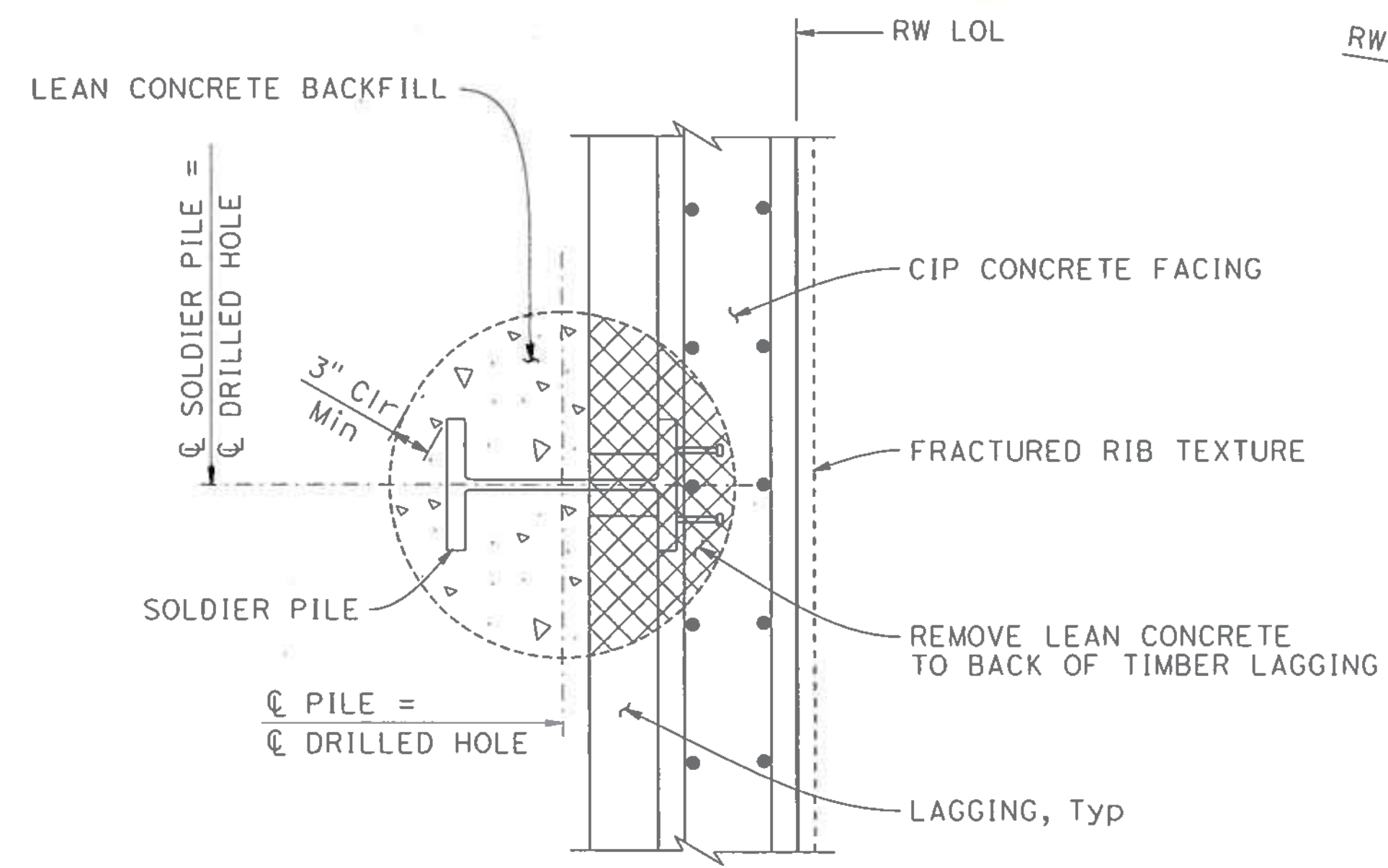
DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-22-19 11-14-19 2-21-19 7-24-19	SHEET 45	OF 168
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USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:28

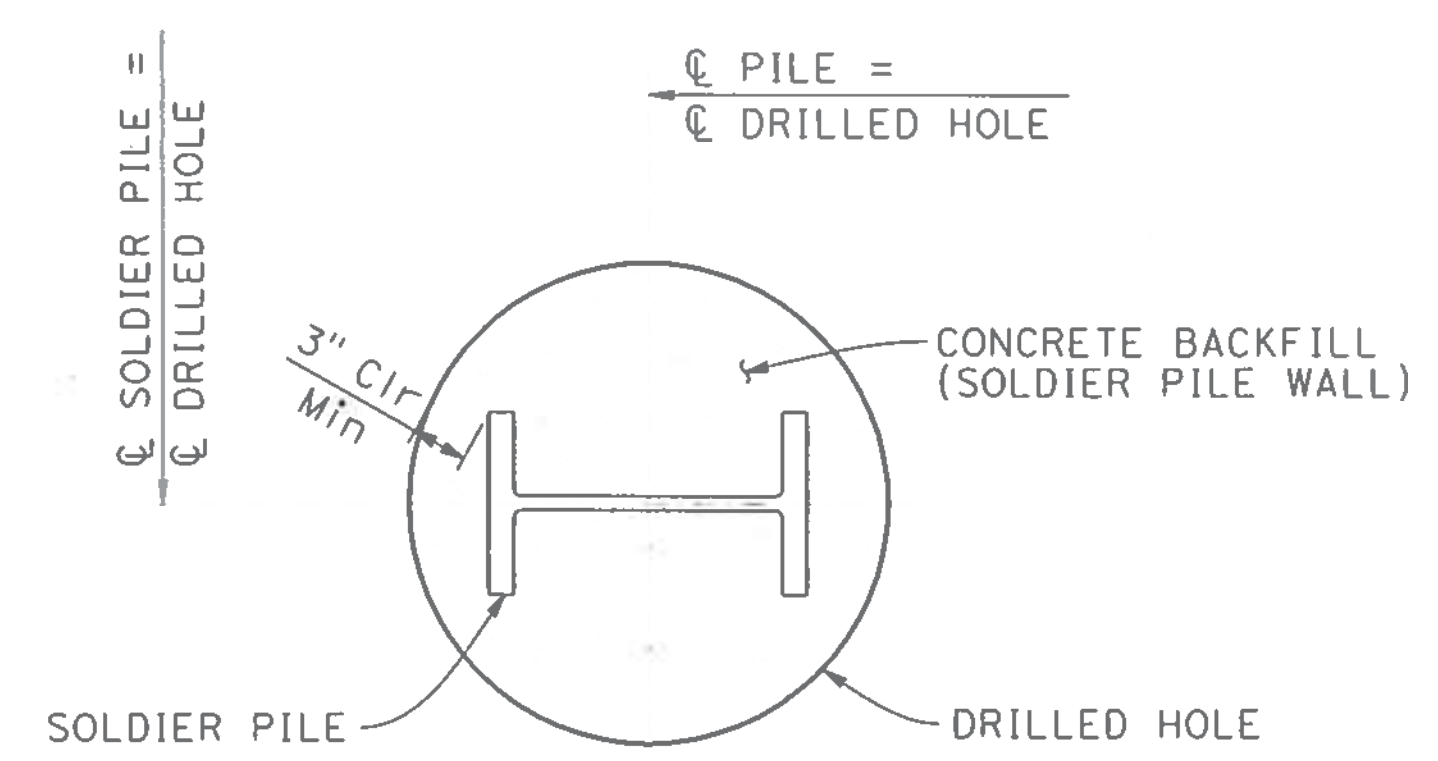
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	295	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



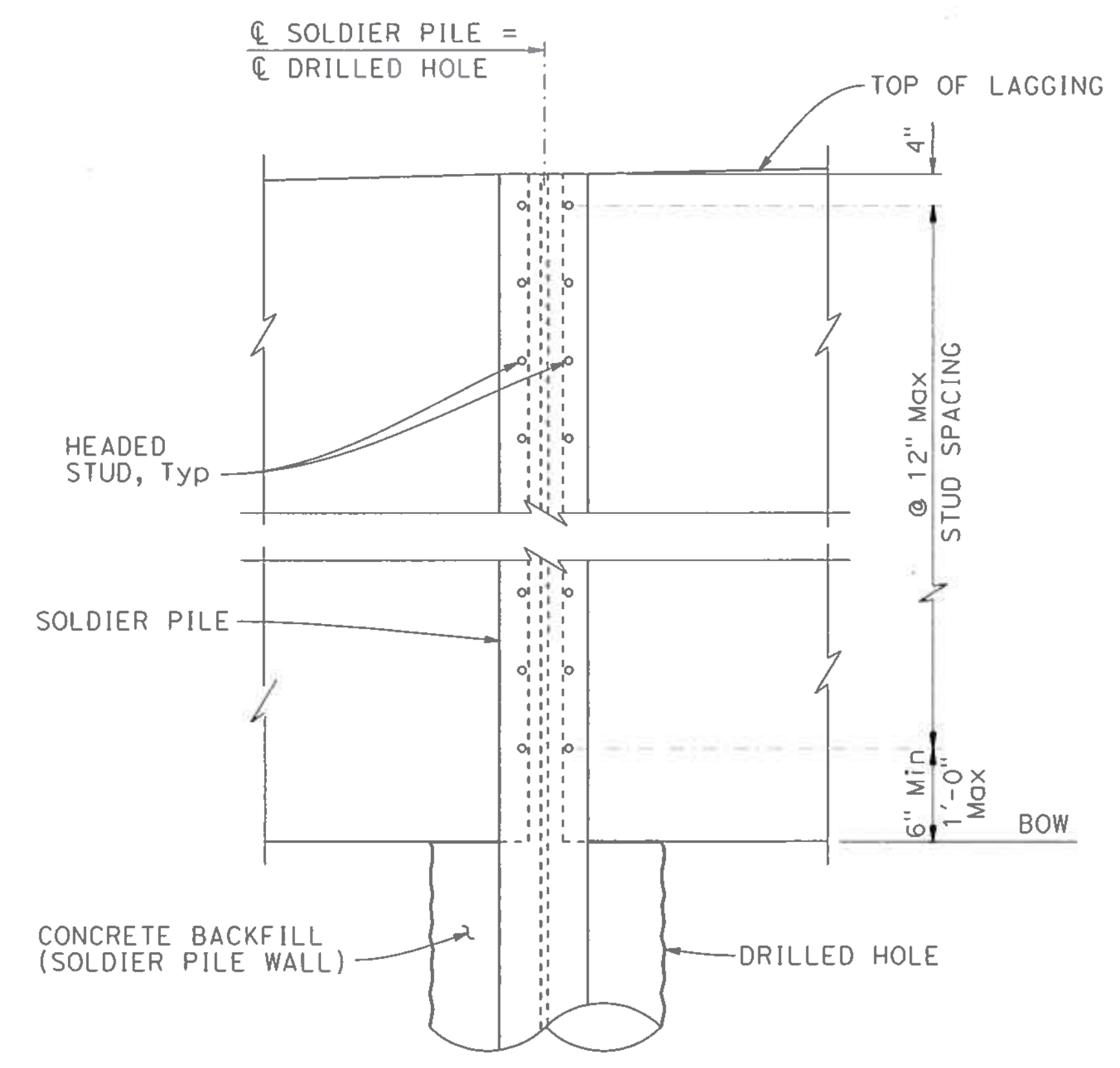
CORNER DETAIL
1" = 1'-0"



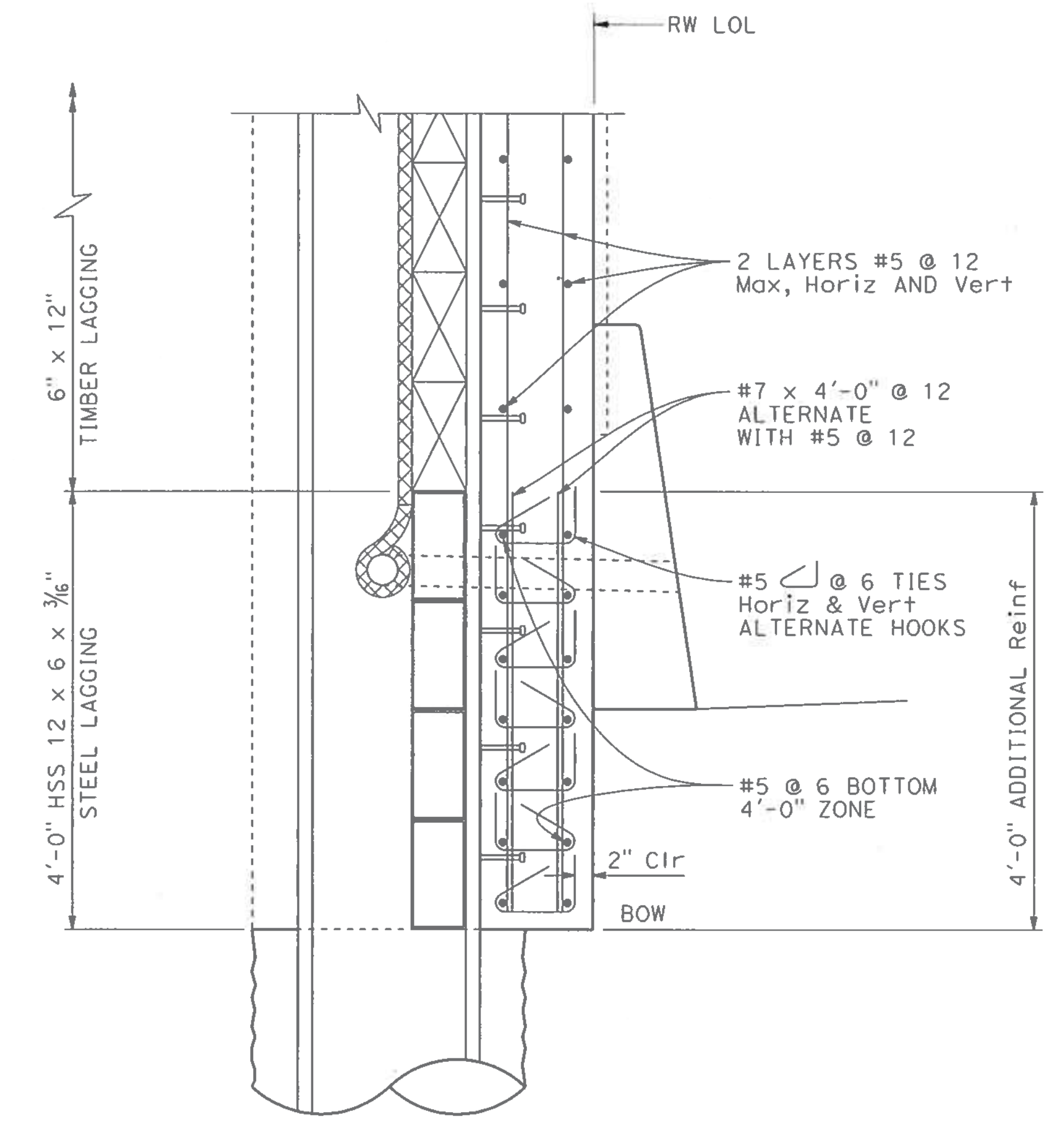
SECTION C-C
1" = 1'-0"



SECTION D-D
1" = 1'-0"




PARTIAL ELEVATION
3/4" = 1'-0"



ADDITIONAL REINFORCEMENT SECTION
1" = 1'-0"

NOTE: FOR INFORMATION NOT SHOWN, SEE "SOLDIER PILE WALL DETAILS No. 3" SHEET

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

DESIGN OVERSIGHT

 SIGN OFF DATE: 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0032
POST MILES	7.9

RETAINING WALL No. 3
SOLDIER PILE WALL DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 2-21-19 7-24-19	46	168

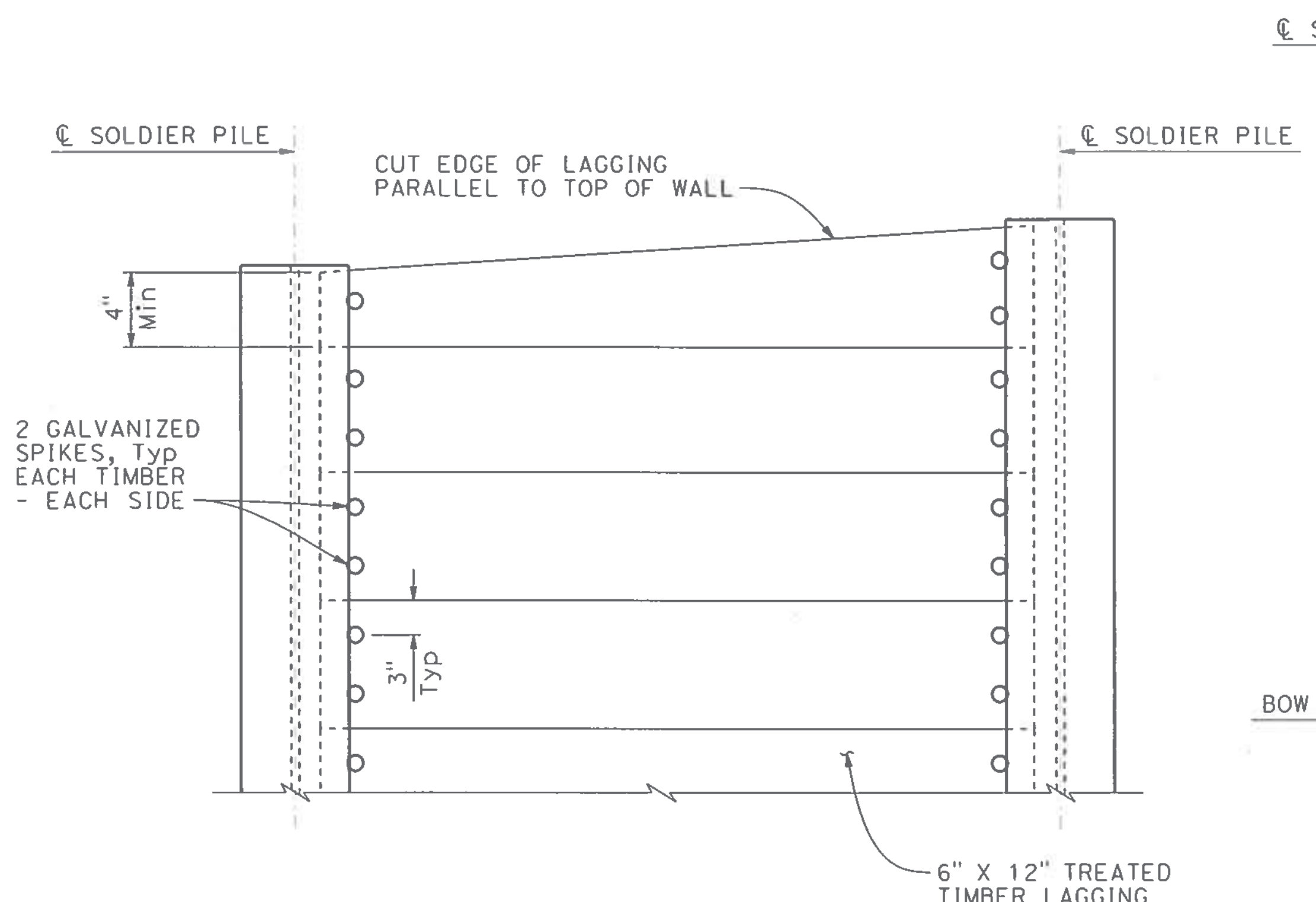
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USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:28

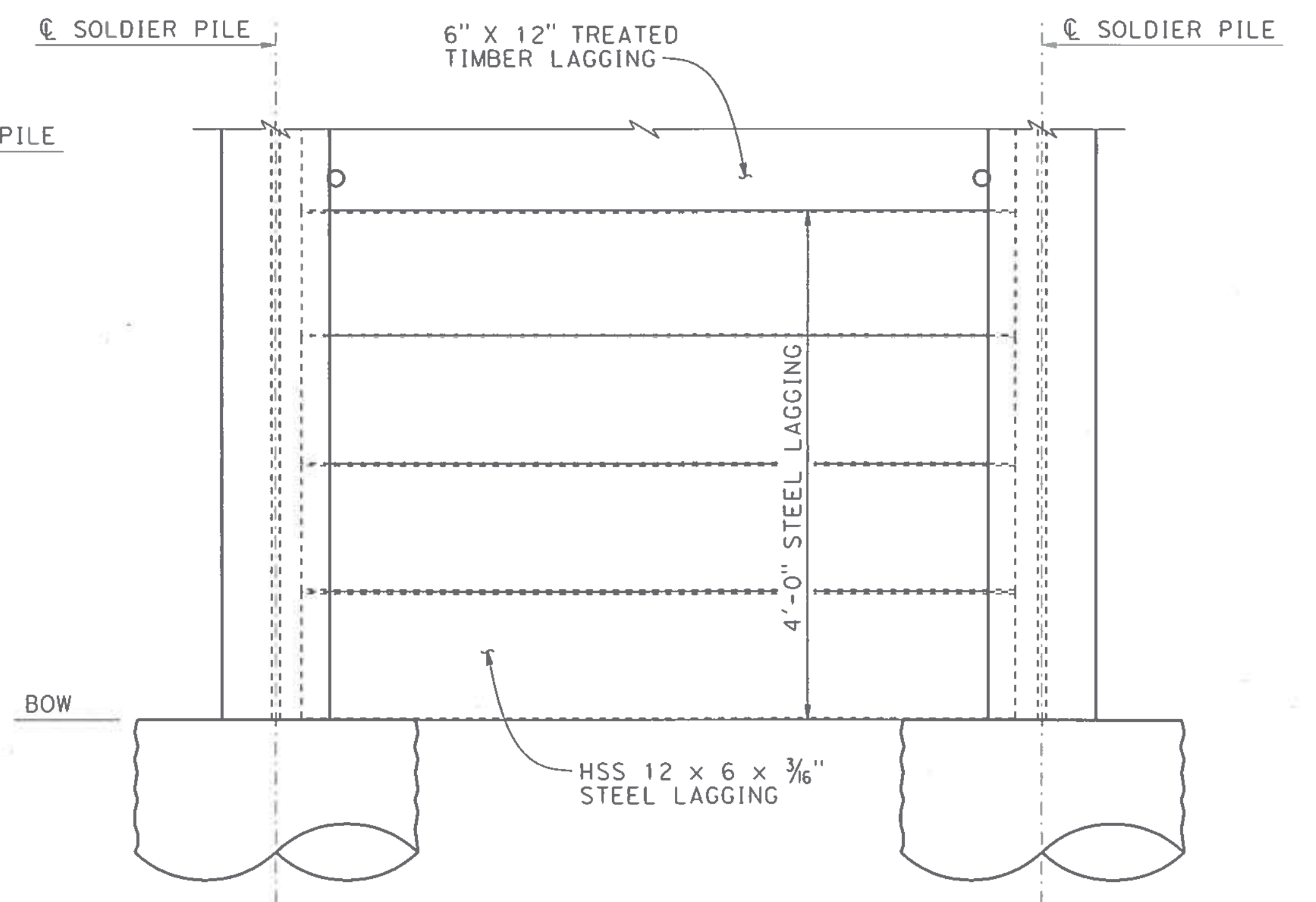
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	296	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



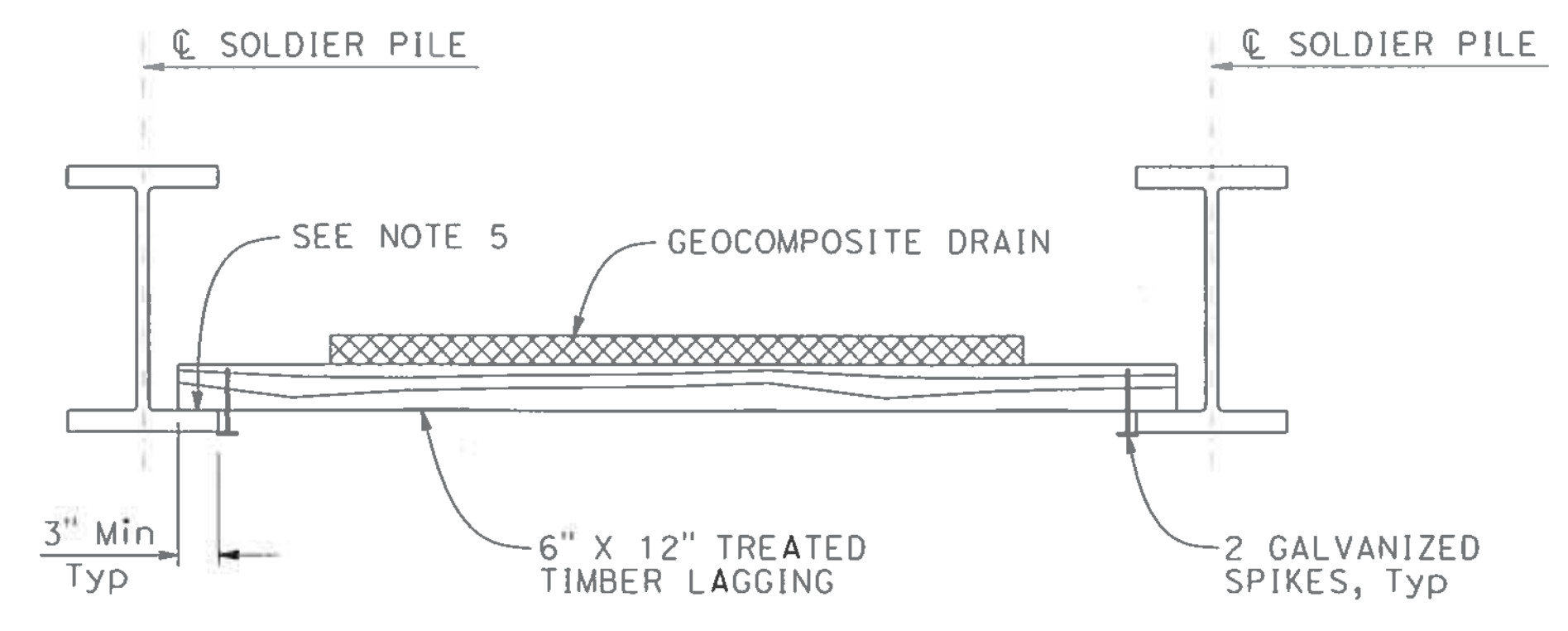
PARTIAL ELEVATION



PARTIAL ELEVATION

NOTES:

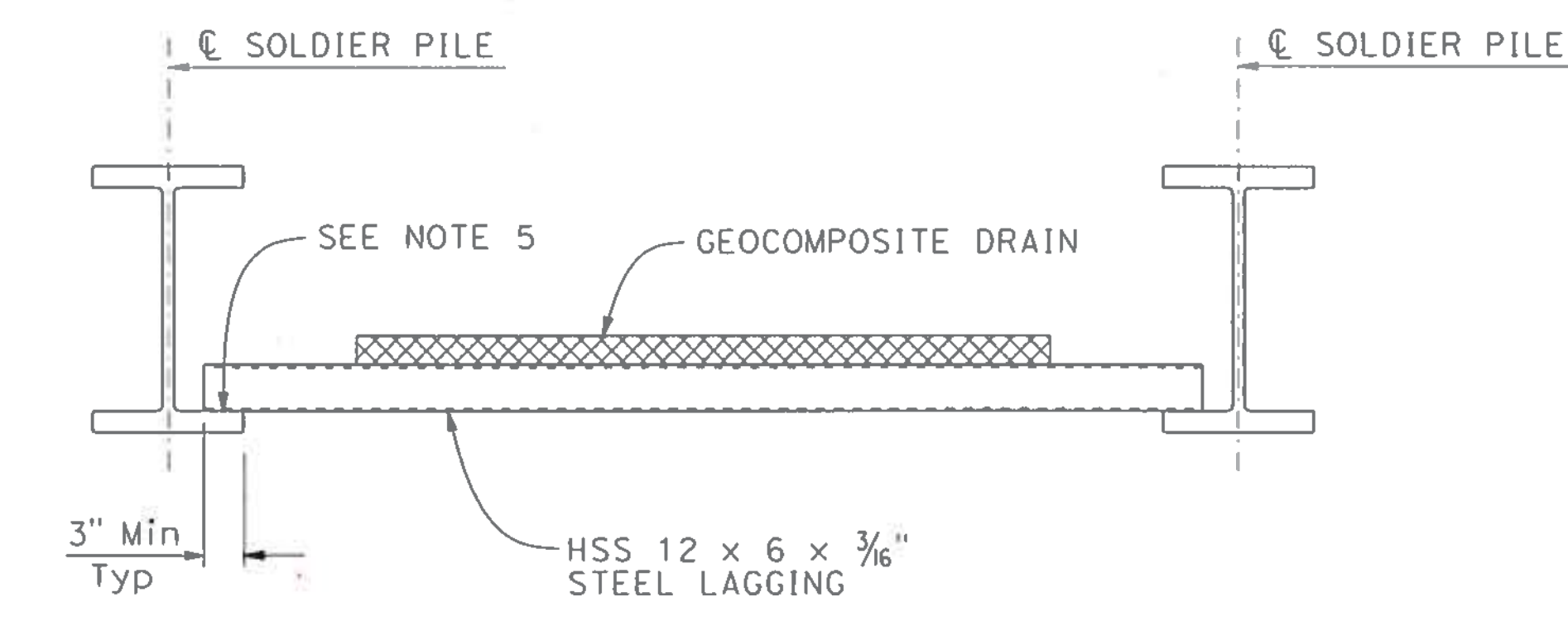
1. No clipping of timber lagging corners allowed.
2. Use 40d galvanized wire spikes for lagging.
3. Spikes, screws and nails shall not be bent.
4. Timber lagging to be treated on all sides.
5. Contractor to ensure that all lagging to be placed with full bearing against soldier pile flanges.



PARTIAL PLAN

TIMBER LAGGING DETAIL

NO SCALE

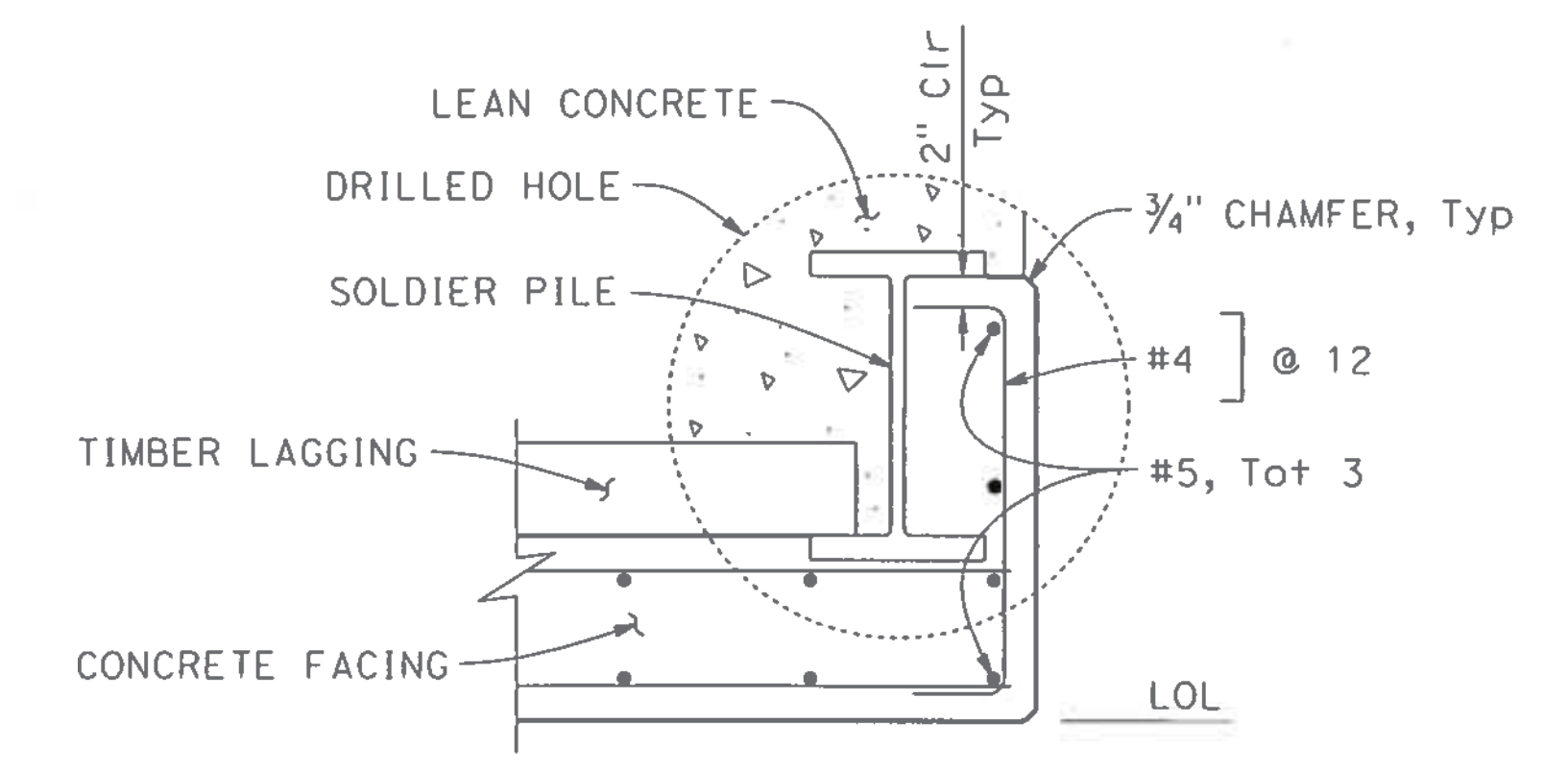


PARTIAL PLAN

STEEL LAGGING DETAIL

NO SCALE

"RW3" 30+38.50 TO 31+15.01



END WALL DETAIL

1" = 1'-0"

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

DESIGN OVERSIGHT
 SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0032
POST MILES	7.9

RETAINING WALL No. 3
SOLDIER PILE WALL DETAILS No. 5

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

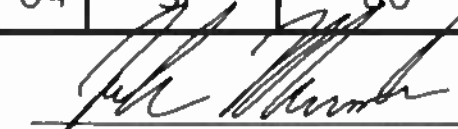
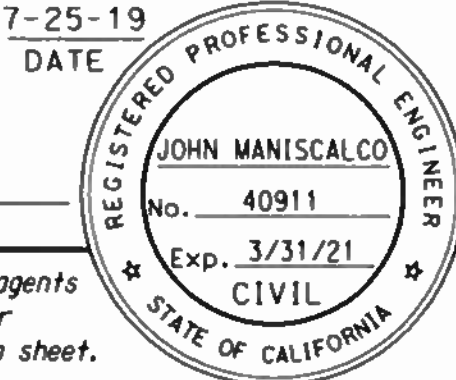
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

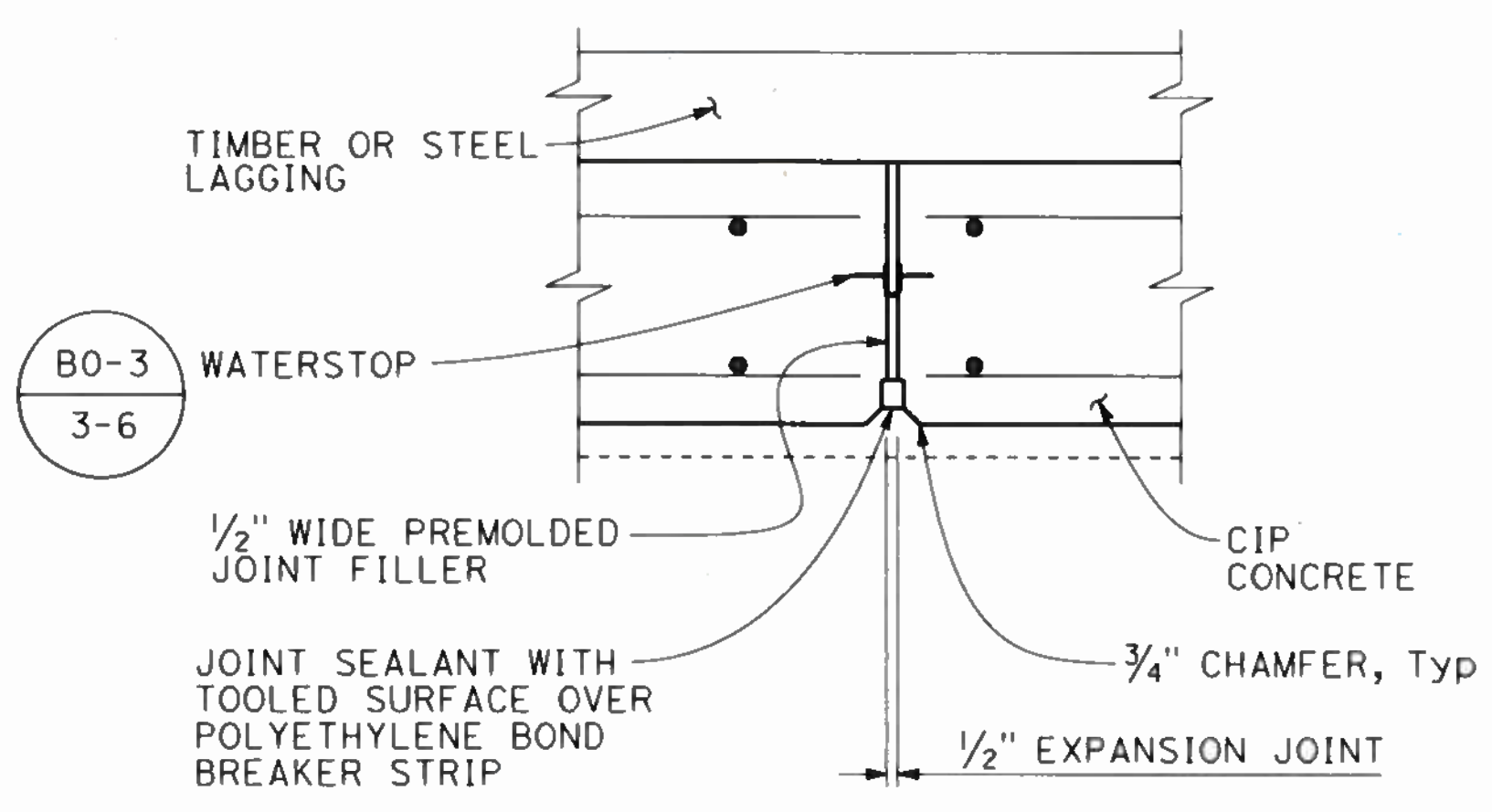
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

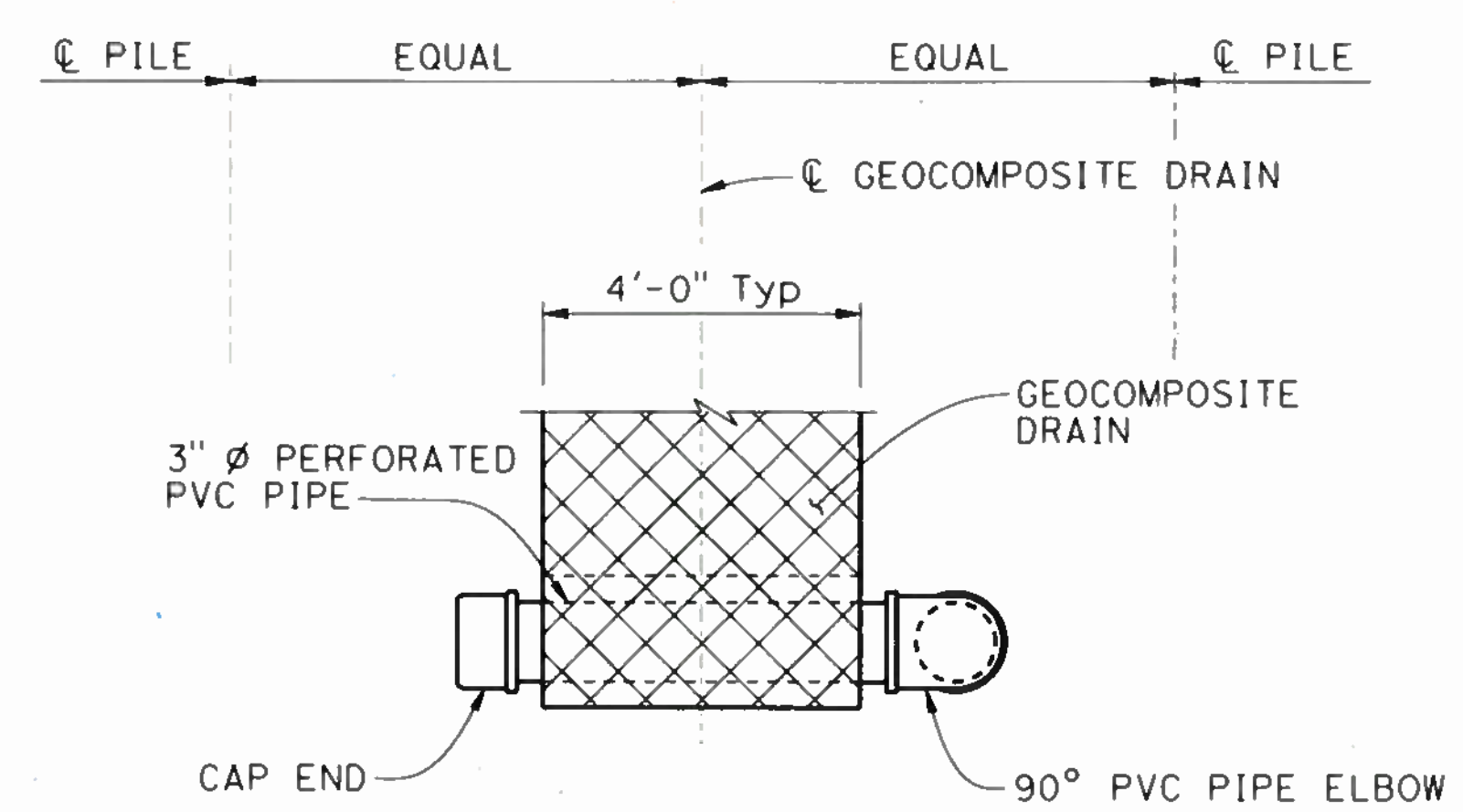
REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-22-19 1-24-19	47	168

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:29

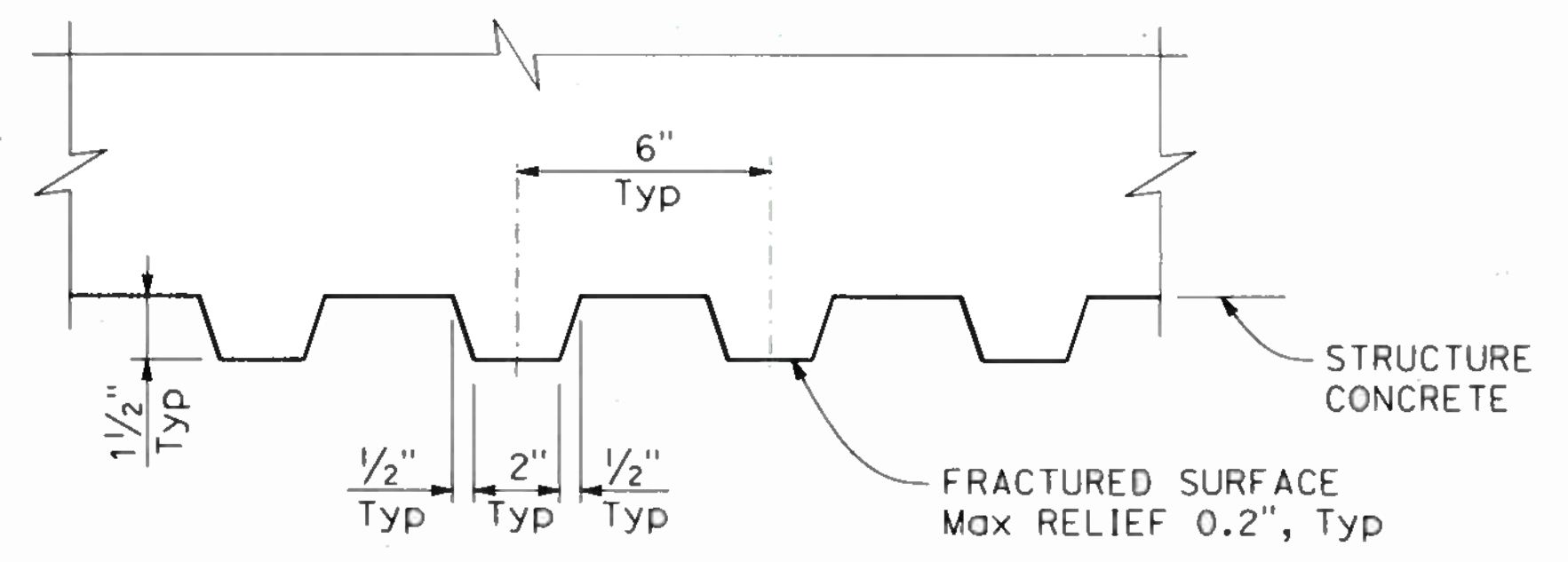
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	297	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



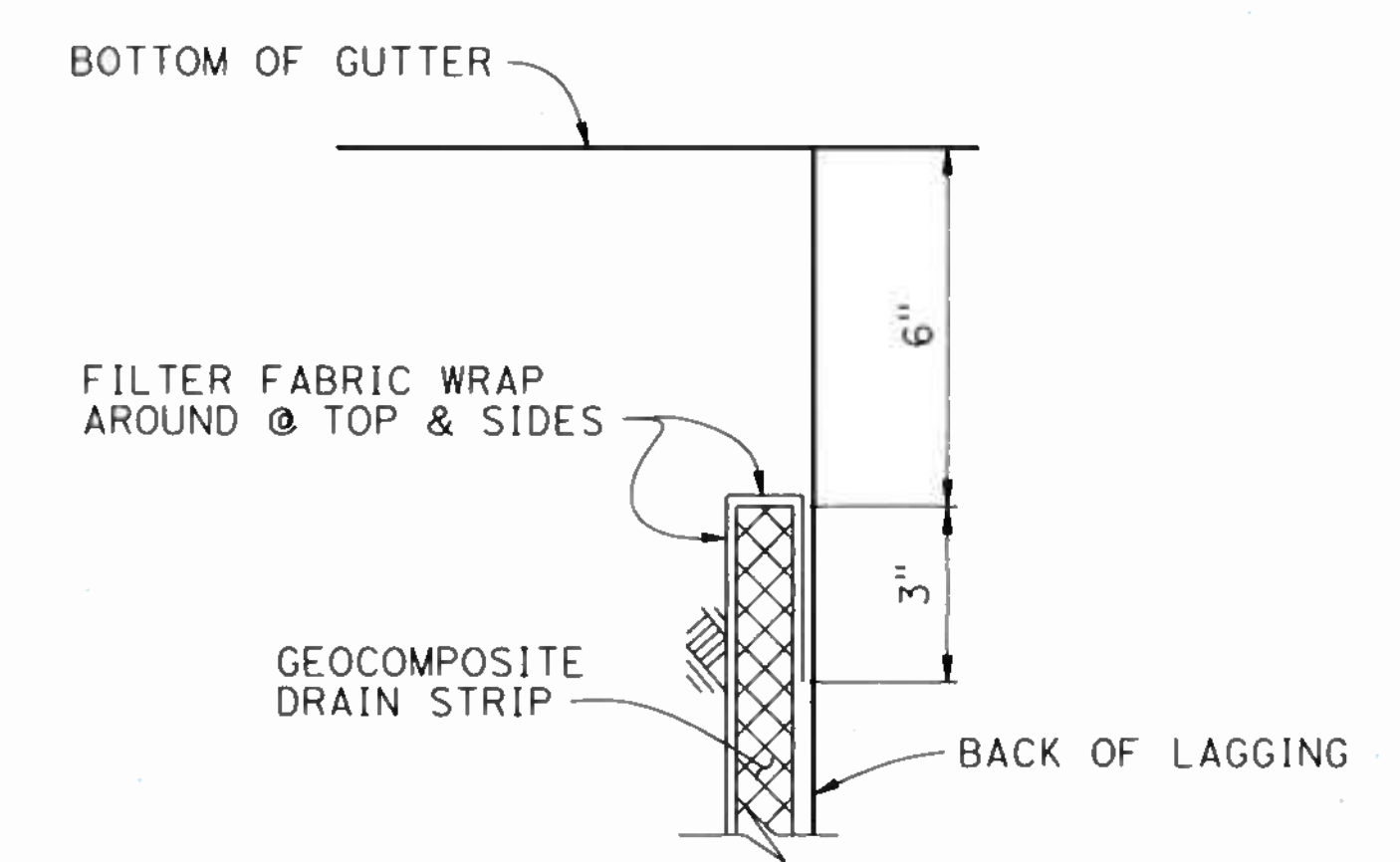
EXPANSION JOINT DETAIL
1 1/2" = 1'-0"



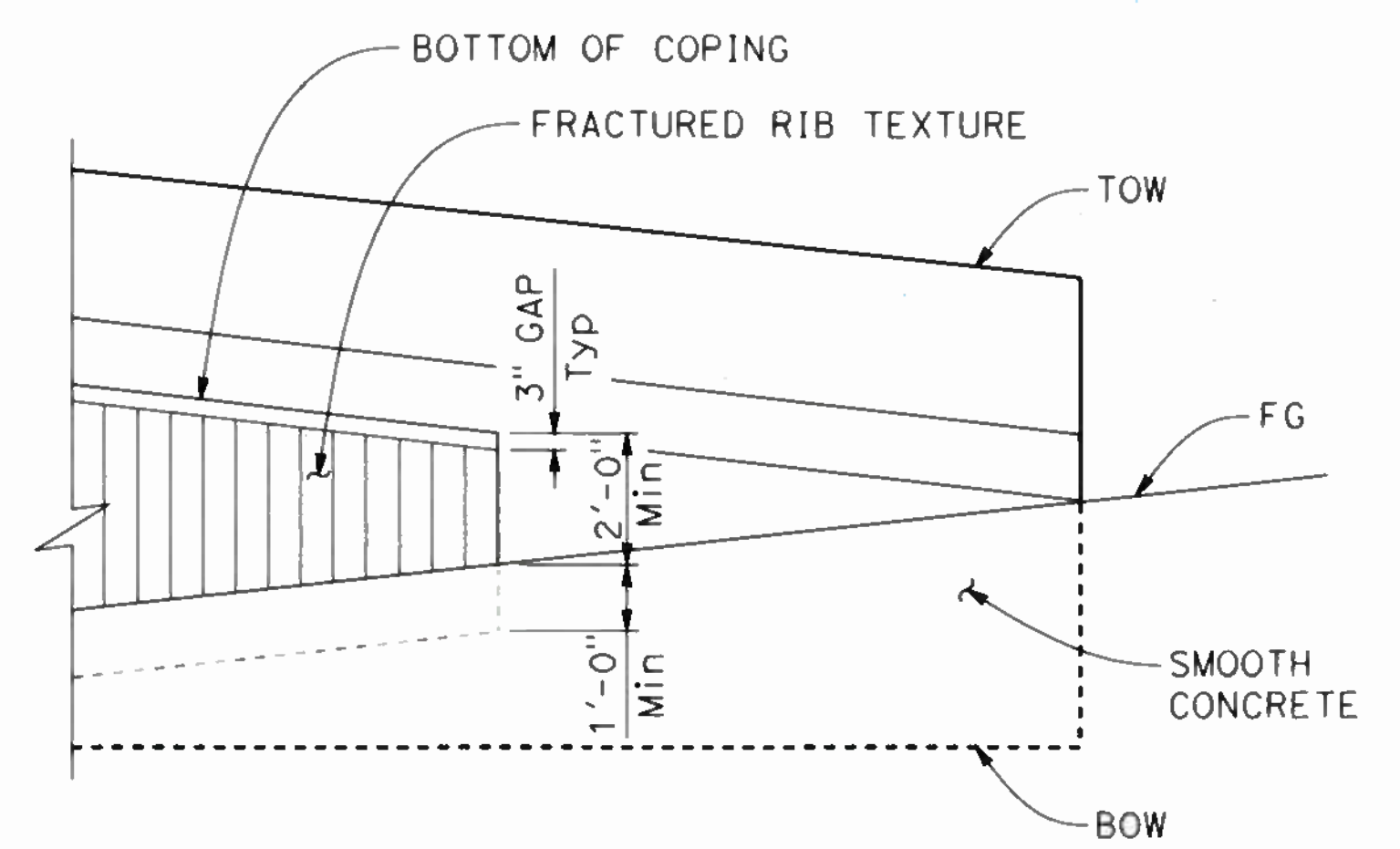
VIEW E-E
NO SCALE



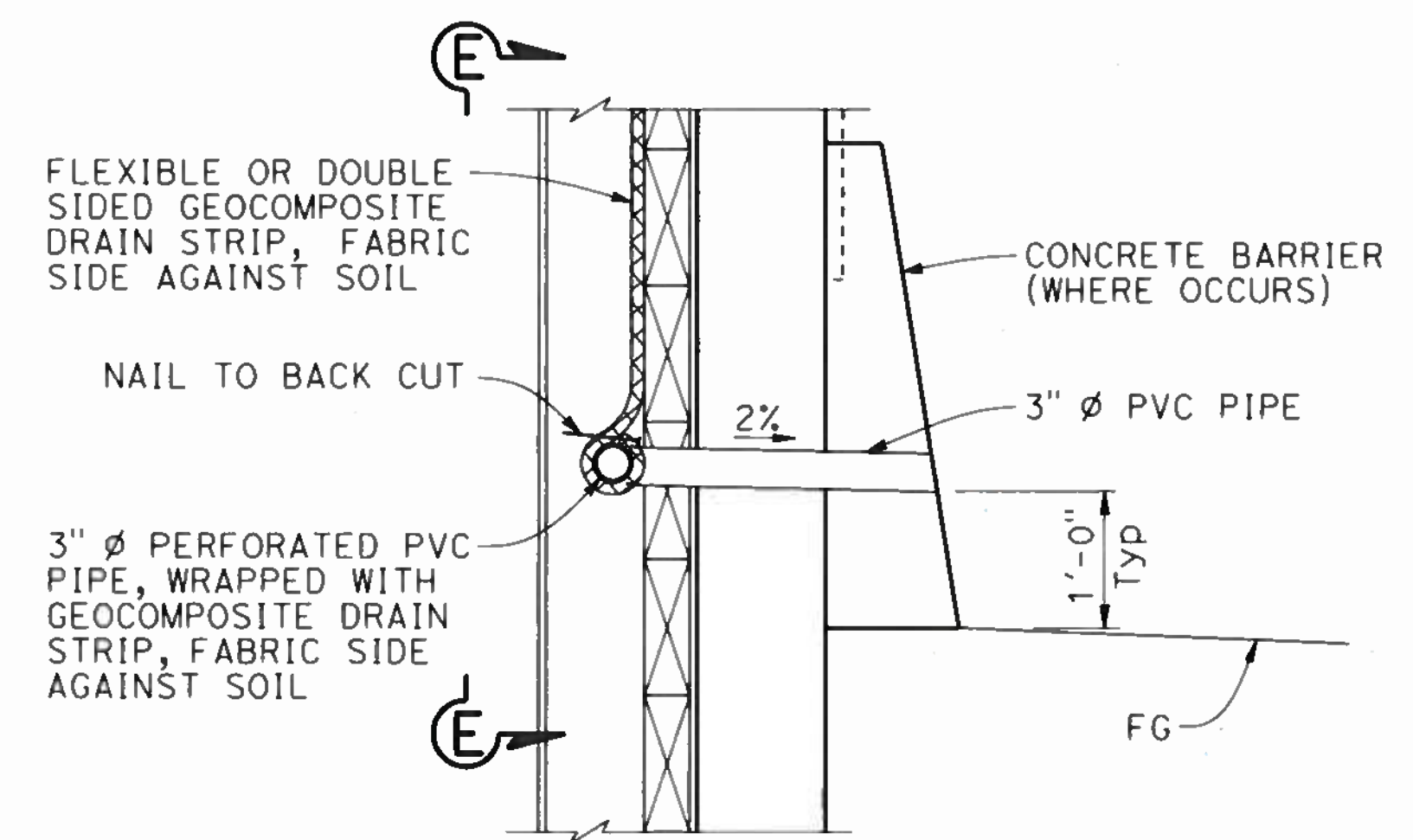
PARTIAL SECTION



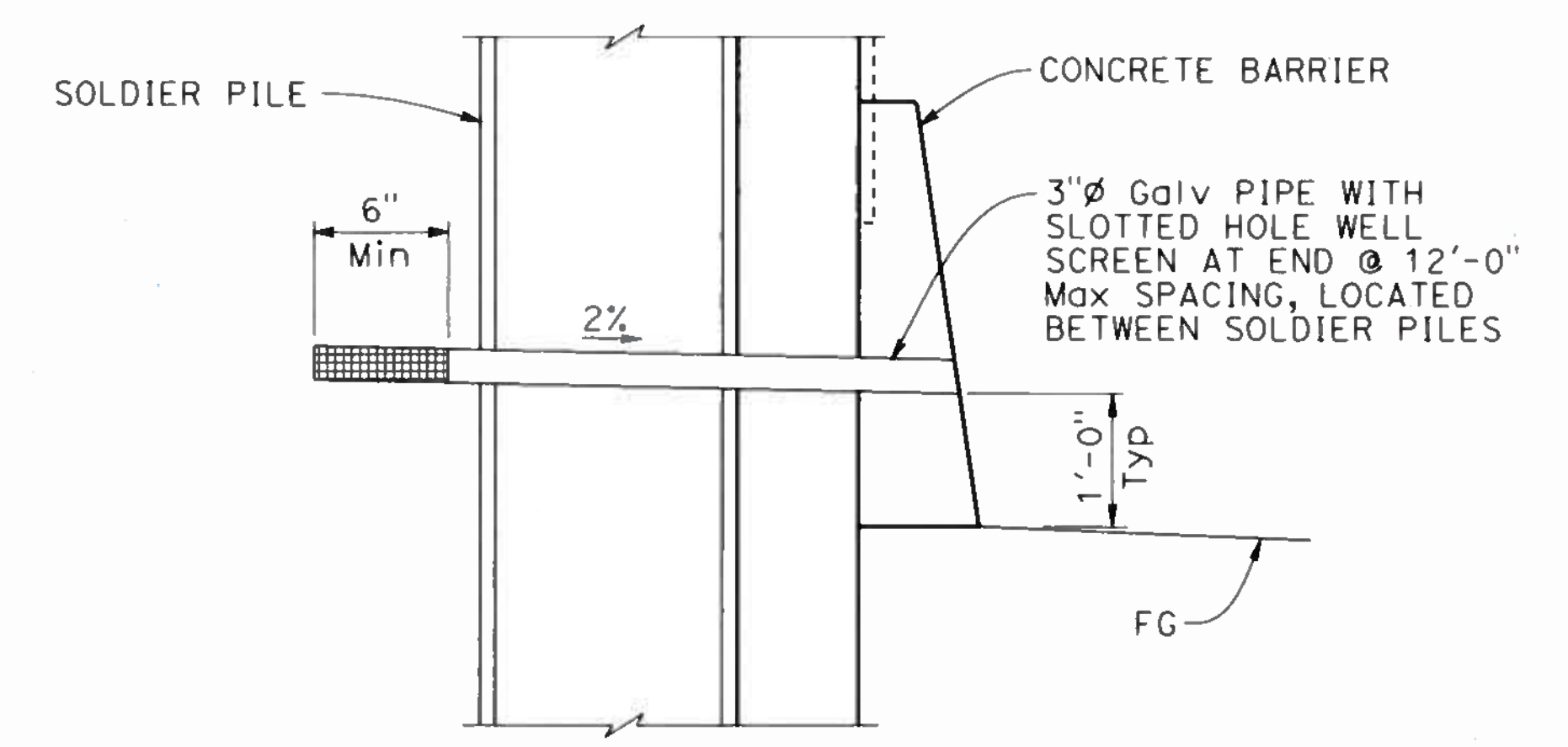
DRAIN DETAIL AT TOP OF WALL
NO SCALE



PARTIAL ELEVATION AT END OF WALL
FRACTURED RIB TEXTURE DETAIL
NO SCALE




DRAIN DETAIL AT BOTTOM OF WALL
NO SCALE



DRAIN DETAIL AT TANGENT SOLDIER PILE WALL
NO SCALE

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


DESIGN OVERSIGHT
11/18/19
SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0032
POST MILES	7.9

RETAINING WALL No. 3
MISCELLANEOUS DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-24-19	48	168

FILE => RW3-u-miscd101.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:29

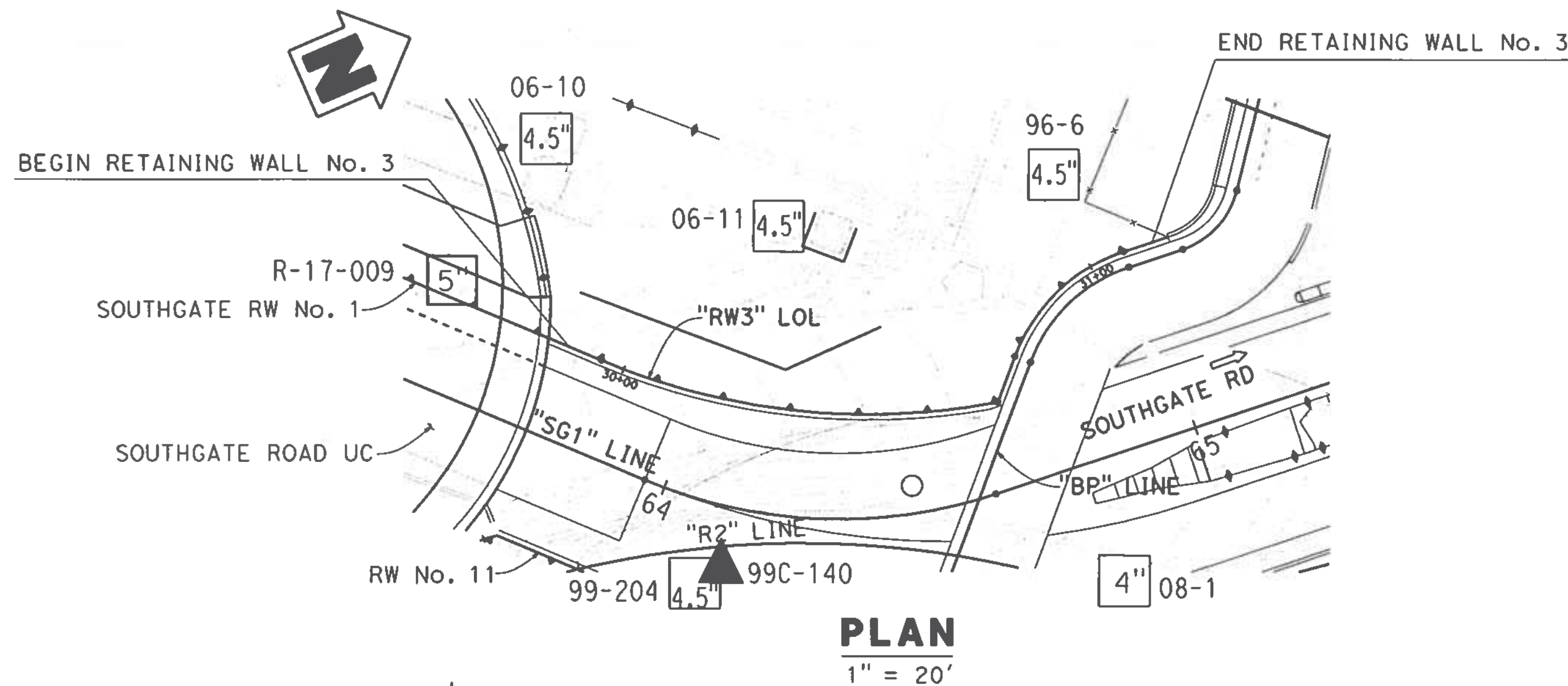
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



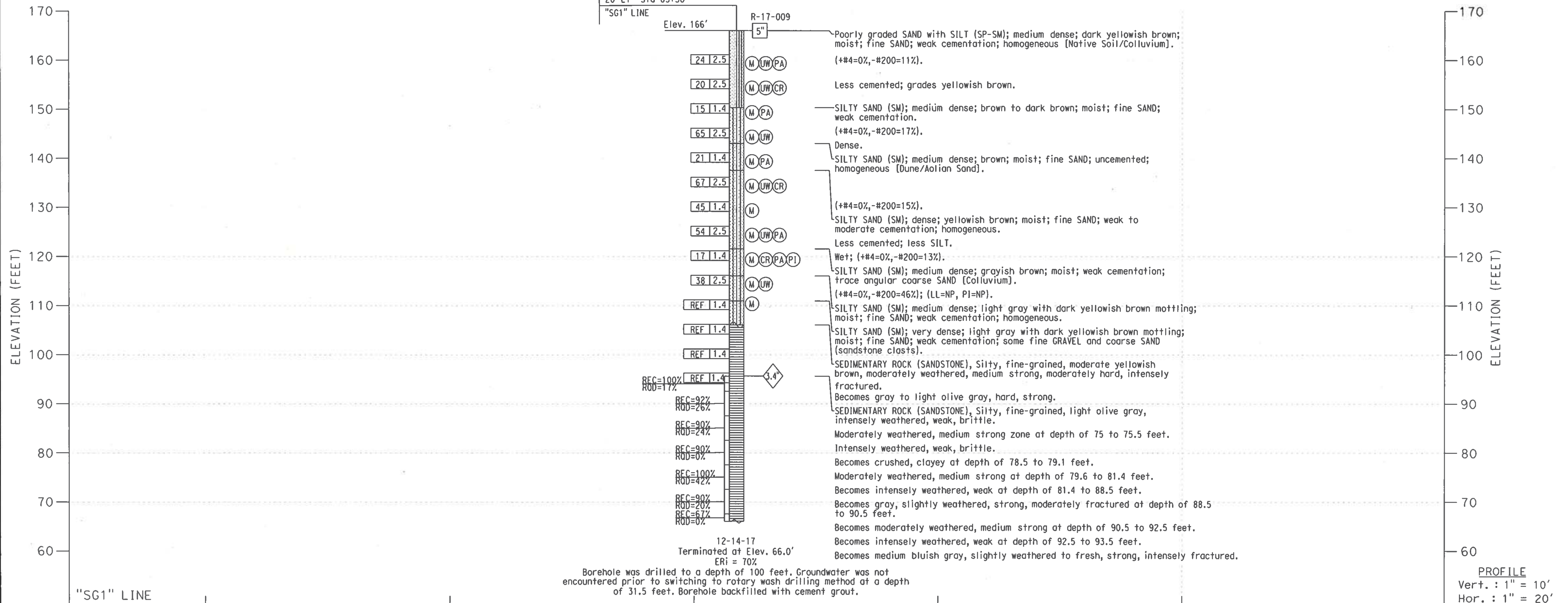
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	298	436

5-17-19
 GEOTECHNICAL PROFESSIONAL DATE
 GARY PARIKH
 No. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 GEOTECHNICAL
 PLANS APPROVAL DATE

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BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105

PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



DESIGN OVERSIGHT	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	FRANK WANG PROJECT ENGINEER	BRIDGE NO. 34E0032	RETAINING WALL No. 3	
SIGN OFF DATE 11/14/19	CHECKED BY FRANK WANG	DATE: DEC 2017 THROUGH JAN 2018	DEPARTMENT OF TRANSPORTATION	POST MILES 7.9	LOG OF TEST BORINGS 1 OF 6	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES	SHEET 49 OF 168

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
 0 1 2 3
 FILE => RW3-z-10t001.dgn

SOIL AND ROCK TYPES	
Well graded GRAVEL (GW)	Stiff lean CLAY (CL)
Poorly graded GRAVEL (GP)	Lean CLAY (CL)
GRAVEL with sand (GP or GW)	Stiff clay CLAY (CL-ML)
GRAVEL with clay (GP or GW)	CLAY CLAY (CL-ML)
Clayey GRAVEL (GC)	CLAY SILT (ML)
GRAVEL with silt (GP or GW)	SILT (ML)
Silty GRAVEL (GM)	Stiff SILT (ML)
Well graded SAND (SW)	CLAY SILT (ML)
Poorly graded SAND (SP)	CLAY SILT (ML)
GRAVEL with silt and clay (GP or GW)	CLAY SILT (ML)
SAND with silt (SP or SW)	CLAY SILT (ML)
SAND with clay (SC)	CLAY SILT (ML)
Sandy SILT (SM)	CLAY SILT (ML)
SILT with sand (SM)	CLAY SILT (ML)
SILT with silt and clay (SM)	CLAY SILT (ML)
SILT with clay (SC)	CLAY SILT (ML)
CLAY (CL)	CLAY SILT (ML)
CLAY with silt (CM)	CLAY SILT (ML)
CLAY with clay (CC)	CLAY SILT (ML)

SAMPLERS	
75mm O.D., 75mm I.D. Thin Wall Tube	75mm O.D., 75mm I.D. Modified Osterberg Line
57mm O.D., 40mm I.D. Thin Wall Tube	57mm O.D., 40mm I.D. Modified Osterberg Line
57mm O.D., 40mm I.D. Standard Penetration Test (SPT) AND MODIFIED CALIFORNIA (MC) LIQUID SAMPLERS	

STANDARD PENETRATION TEST (SPT) AND MODIFIED CALIFORNIA (MC) LIQUID SAMPLERS

Samplers were driven with a 65 kg hammer dropped approximately 760 mm.

30 Number of blows to produce 30 cm of penetration after the initial 15 cm of seating.

60/25cm Number of blows required to produce the indicated penetration after an initial 15 cm seating.

60/30cm 60 blows produced the indicated penetration during the final 14 cm interval.

Note: In each entry interval recovery (R)-RSD are shown in the final column entries.

TUBE AND OFFSHORE LIQUID SAMPLERS

WCH Obtain Liquid sample returned with the weight of 80 g or heavier.

FUSH or BACV Fused thin-walled 75mm O.D. tube.

180/6cm Number of blows required to produce the indicated penetration using a 60mm O.D. tube sampler. The sampler was driven with an 80 kg concrete hammer dropped approximately 9 m.

CLASSIFICATION TESTS BLOW COUNTS AND ROCK QUALITY

- PERCENT PASSING 600 SIEVE
- WATER CONTENT (%)
- TOTAL UNIT WEIGHT (pcf)
- THEORETICAL TOTAL UNIT WEIGHT (pcf)
- PLASTIC LIMIT LIQUID LIMIT
- EQUVALENT SPT BLOW COUNT OR SPT BLOWCOUNT
- ROCK QUALITY DESIGNATION (RQD)
- ROCK RECOVERY PERCENT
- ROCK CORING RATE

STRENGTH TESTS

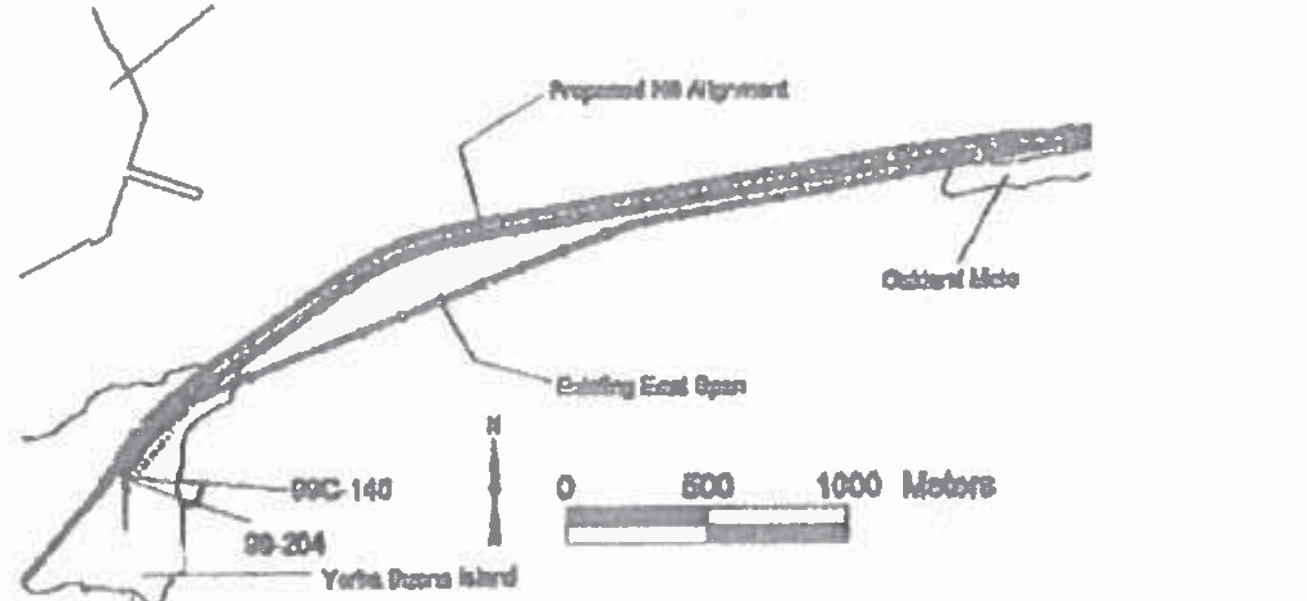
- POCKET PENETROMETER
- TORVANE
- REMOTE VANE
- MINI-TREND VANE @ RESIDUAL VANE @ UNCONSOLIDATED UNDRAINED TRIAXIAL SWEDISH BALL COMP.
- UNCONSOLIDATED COMPRESSION (UC)
- UC (Open spreader include residual load)
- Shear Strength Indicated from CPT to Resistance (at = 12-18)

POINT LOAD TEST (ROCK-INTACT SPECIMEN)

- POINT LOAD TEST (ROCK-ALONG WITH PLANE)
- UNCONSOLIDATED COMPRESSION (UC)
- Ball Strength Indicated from Monitoring Device
- Rock Sample tested along discontinuity
- Rock sample tested along discontinuity
- Rock sample tested along discontinuity
- Rock sample tested along discontinuity
- FRACTURE DENSITY (ROCK)

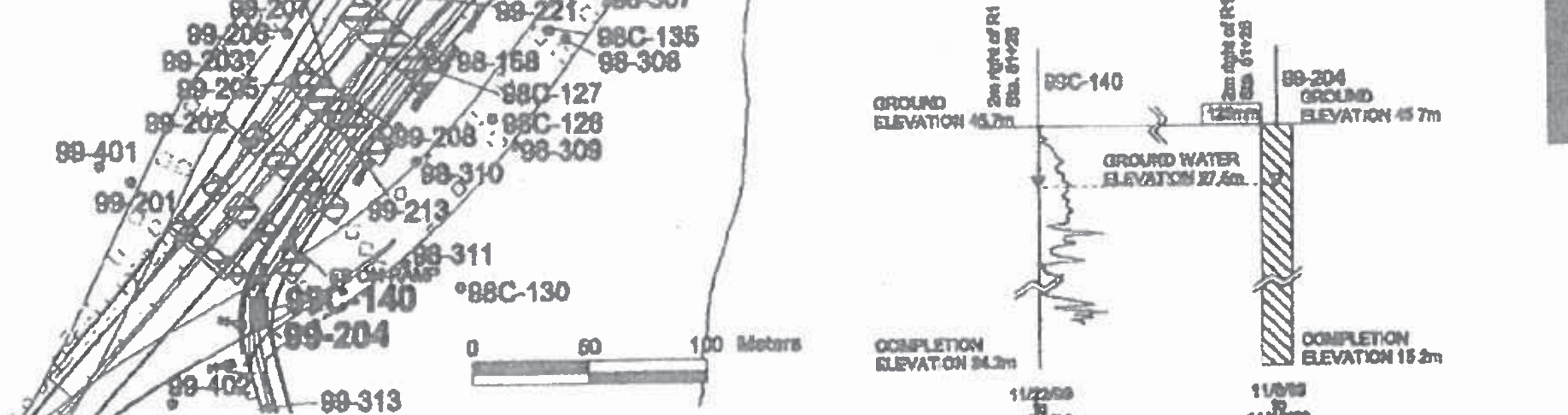
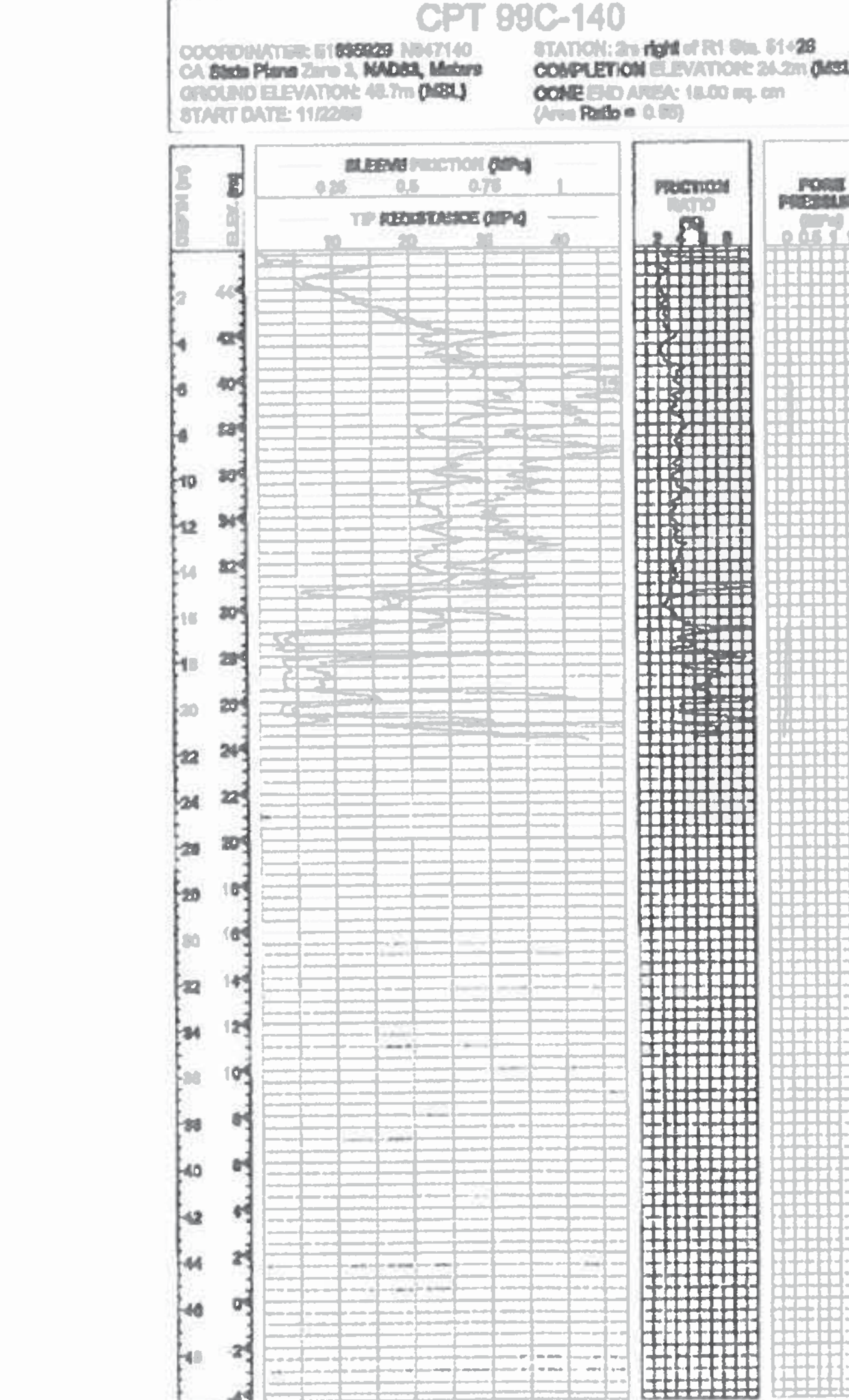
STRENGTH OF COHESIVE SOILS	
Occurrence	Undrained Shear Strength
Very Soft	less than 13
Soft	13 to 25
Stiff	25 to 50
Medium Dense	50 to 100
Dense	100 to 200
Very Dense	greater than 200

DENSITY OF GRANULAR SOILS	
Relative Density	Relative Density (%)
Very Loose	less than 15
Loose	15 to 30
Medium Dense	30 to 65
Dense	65 to 85
Very Dense	greater than 85
* Estimated from sampler data and CPT to resistance	



- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 5" dated February 18, 2019, for stationing. Based on the drawings provided by HDR, "EB Line: Sta. 50+00 (Metric) = "E Line: Sta. 50+64.9 (English)"
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "Scl" Line	Offset from "Scl" Line
99C-140	64+13	11' Rt.
99-204	64+10	15' Rt.



COORDINATES: E183923 N47110
 CA State Plane Zone 3, NAD83, Meters
 GROUND ELEVATION: 48.7m (MSL)
 START DATE: 11/23/08

STATION: 2m right of R1 Sta. 61+20
 COMPLETION ELEVATION: 16.2m (MSL)
 END DATE: 11/10/08

DEPTH (m)	ELEVATION (m)	SAMPLER	BLOW COUNT	WATERIAL DESCRIPTION	ESTIMATED NO.	CORRO RATE (mm/yr)		FRACTURE DENSITY (mm/m)	
						TESTED/PROBABLE (%)	ES. BLOW COUNTS	ROCK UNCONFINED COMPRESSIVE STRENGTH (MPa)	SOIL UNCONFINED SHEAR STRENGTH (kPa)
0.0	48.7	ARTIFICIAL FILL (AF)		PAVEMENT, Asphalt Concrete, 100mm thick, over aggregate base					
0.5	48.2			Silty Medium to Coarse SAND with gravel (SM), loose, light yellowish brown					
1.0	47.7			Silty FINE SAND (SF), medium dense, reddish brown					
1.5	47.2			BEDIMENTARY DEPOSITS (BD)					
2.0	46.7			Silty FINE SAND (SF), dense to very dense, light yellowish brown					
2.5	46.2			yellowish brown, below 7.2m					
3.0	45.7								
3.5	45.2								
4.0	44.7								
4.5	44.2								
4.8	43.9								

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER: M. KAPUSKAR

BRIDGE NO. 34-0172 8

RM POST

POST MILE

CU 04251 EA 0120S1



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	12.7/13.2	779	806

6-23-08
 PLANS APPROVAL DATE

FLURO-EARTH MECHANICS, A JOINT VENTURE
 7780 Paradise Lane, Suite 120
 Oakland, CA 94621
 (510) 682-8833, FAX (510) 682-2858

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

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	299	436

5-17-19
 DATE

RETAINING WALL No. 3

LOG OF TEST BORINGS 2 OF 8

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA 95834-0011

PROJECT NUMBER & PHASE: 04190001511

SHEET No. 34E0032

Sheet of 50 168

SAN FRANCISCO OAKLAND BAY BRIDGE EAST SPAN SEISMIC SAFETY PROJECT

YBI EB ON-RAMP STRUCTURE

LOG OF TEST BORINGS NO. 2

REVISION DATES (PRELIMINARY STAGE ONLY)

DISREGARD PRINTS BEARING EARLIER REVISION DATES

ROBERT PRICE / SABA MOHAN
 GEOTECHNICAL ENGINEER

DRAWN BY J. PALMER
 FIELD ENGINEER

8. SICILIANO
 FIELD ENGINEER

CHECKED BY M. KAPUSKAR, S. VARATHARAJ
 DATE: SEE ABOVE

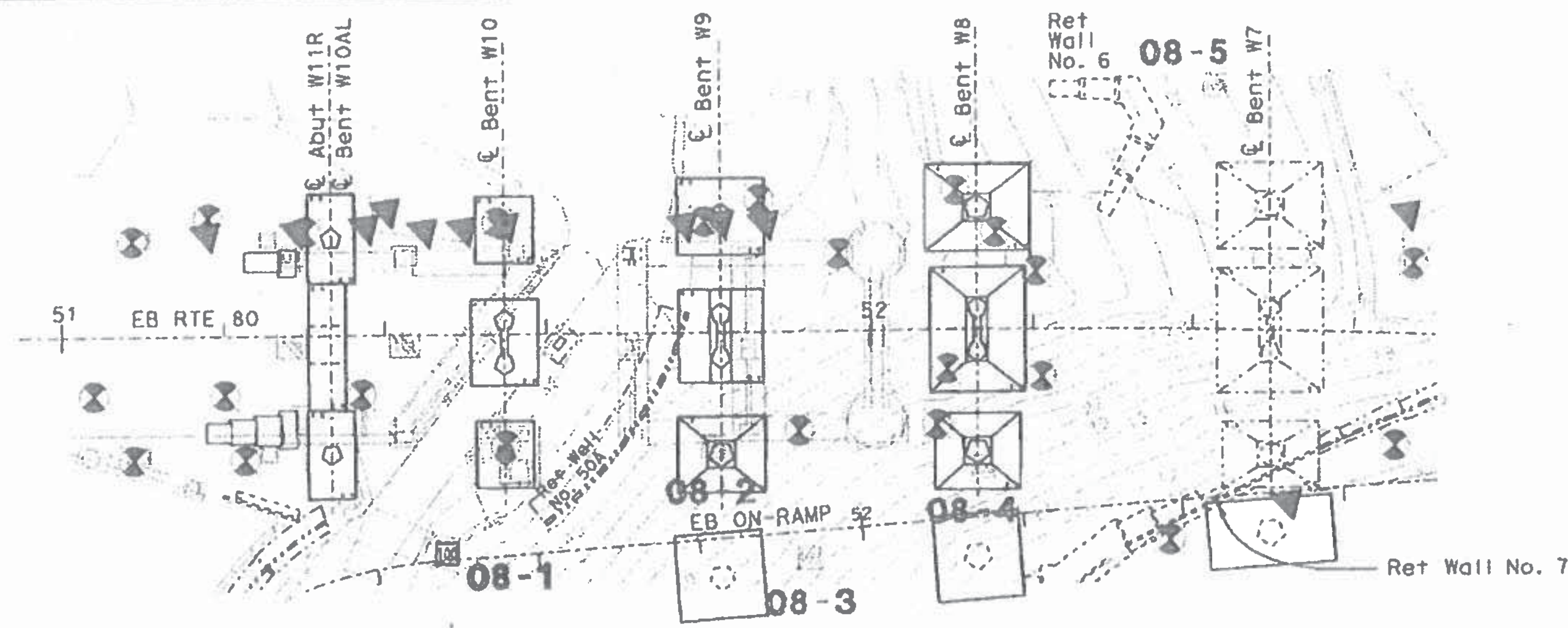
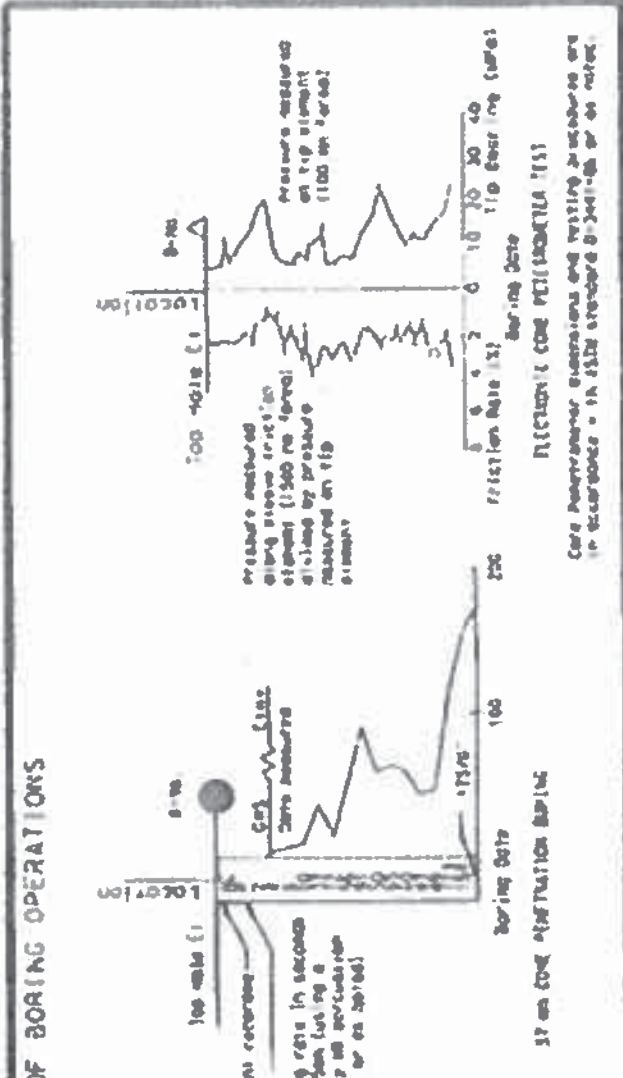
CRONIAL SCALE (IN CENTIMETERS FOR REDUCED PLANS)

0 1 2 3 4 5 6 7 8 9 10



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.7/13.2	783A	806

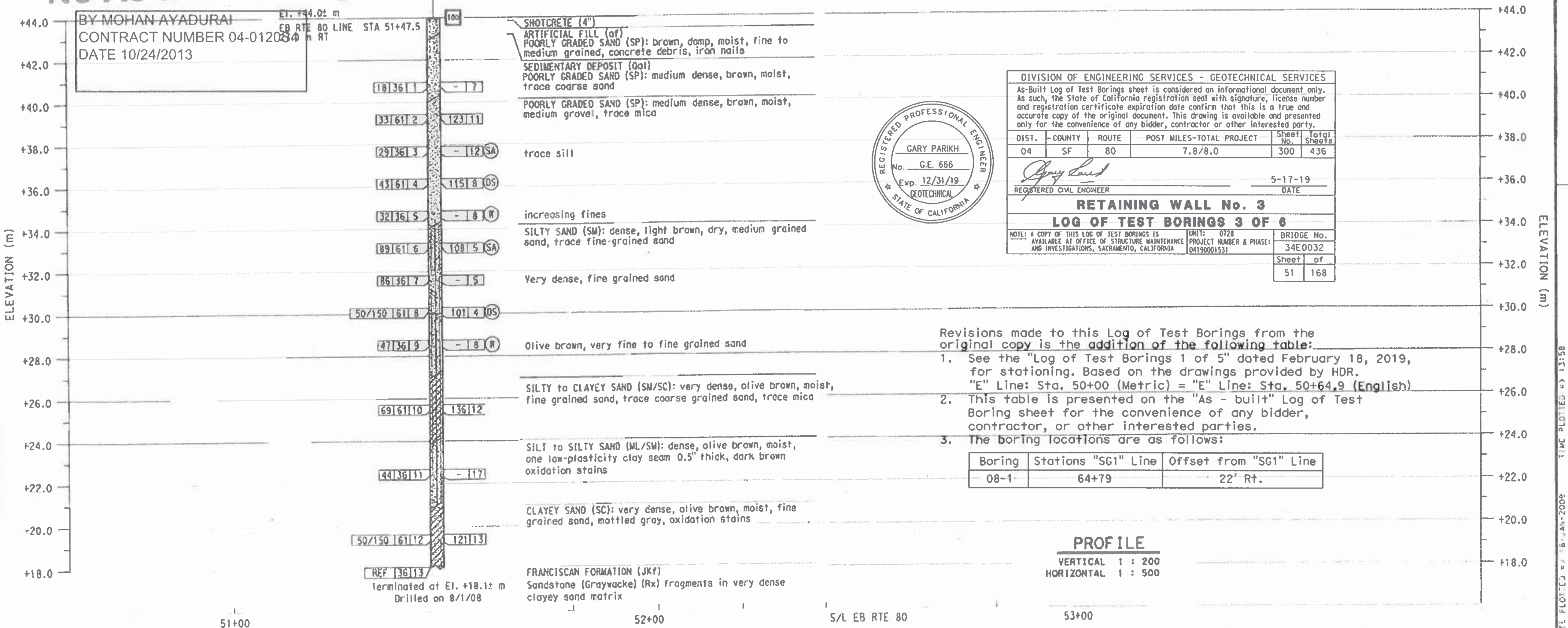
09/25/08
 GEOTECHNICAL PROFESSIONAL
 6-23-08
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.
 FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621



PLAN
1:500

NOTES:
 61 mm samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 61 mm and an outside diameter (O.D.) of 75 mm.
 A rope and cathead hammer system consisting of a hammer weight of 62.5 kg falling a distance of 762 mm was used to advance the drive samplers.

No As-Built Changes



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES				
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested parties.				
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet of
04	SF	80	7.8/8.0	300 / 436
 REGISTERED CIVIL ENGINEER				5-17-19 DATE
RETAINING WALL No. 3				
LOG OF TEST BORINGS 3 OF 6				
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA			UNIT: 0728	BRIDGE No. 34E0032
			PROJECT NUMBER & PHASE: 04190001531	Sheet of 51 / 168

- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 5" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "E" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
08-1	64+79	22' Rt.

PROFILE
 VERTICAL 1 : 200
 HORIZONTAL 1 : 500

2 ADDED PER ADDENDUM No. 2 DATED JANUARY 22, 2009

CONSISTENCY CLASSIFICATION FOR SOILS
 ACCORDING TO THE STANDARD PENETRATION TEST (ASTM D-1586)

SP	CLAY	SILT	SAND
1-2	3-4	5-6	7-8
9-10	11-12	13-14	15-16
17-18	19-20	21-22	23-24

SABA MOHAN DESIGN OVERSIGHT	DRAWN BY K. THANT 08/11/08	CHECKED BY M. KAPUSKAR 09/02/08	K. THANT FIELD INVESTIGATION BY: DATE: 8/1/08
--------------------------------	----------------------------------	---------------------------------------	---

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	M. KAPUSKAR PROJECT ENGINEER	BRIDGE NO. 34-0006	KILOMETER POST 12.8	YBI EB ON-RAMP STRUCTURE (INITIAL)
CU 04251 EA 0120S1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (DATE, REVISION, SHEET NO.)		SHEET 12A OF 17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	12.7/13.2	785	806

APPROVED: *[Signature]*
 REGISTERED GEOLOGIST
 R. W. FOX
 No. 83-37
 Exp. 03-31-97
 CERTIFIED ENGINEERING GEOLOGIST
 STATE OF CALIFORNIA
 6-23-08
 PLANS APPROVAL DATE

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

No As-Built Changes
 BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013

DIVISION OF ENGINEERING SERVICES - OFFICE OF GEOTECHNICAL SERVICES
 As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	KILOMETER POST - TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80		14	17

REGISTERED ENGINEER - CIVIL
 DATE: 2/1/08
YBI EB ON-RAMP STRUCTURE (INITIAL)
AS-BUILT LOG OF TEST BORINGS NO. 2
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA
 CU: 04351
 EA: 0120S1
 BRIDGE No. 34-01729



FOR PLAN VIEW SEE "LOG OF TEST BORINGS 1 OF 13"

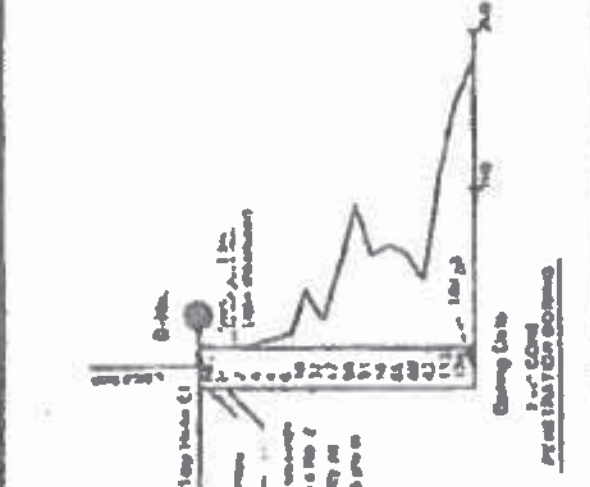
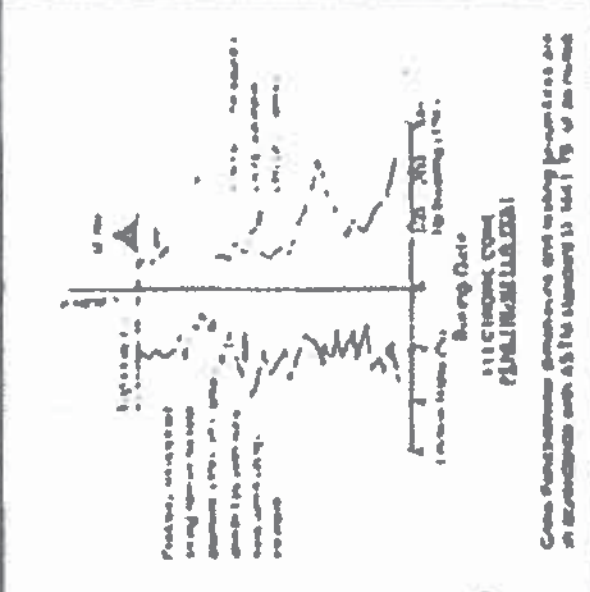


DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES
 As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	301	436

REGISTERED CIVIL ENGINEER
 DATE: 5-17-19
RETAINING WALL No. 3
LOG OF TEST BORINGS 4 OF 6
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA
 UNIT: 0728
 PROJECT NUMBER & PHASE: 34E0032
 BRIDGE No. 34E0032
 Sheet of 52 168

Revisions made to this Log of Test Borings from the original Log of Test Borings are the addition of the following notes:
 1. Refer to Boring Location Plan 1 of 13 for borings locations and elevation datum.
 2. Stations, dimensions and elevations shown on this plan are in English units.



LEGEND OF BORING OPERATIONS

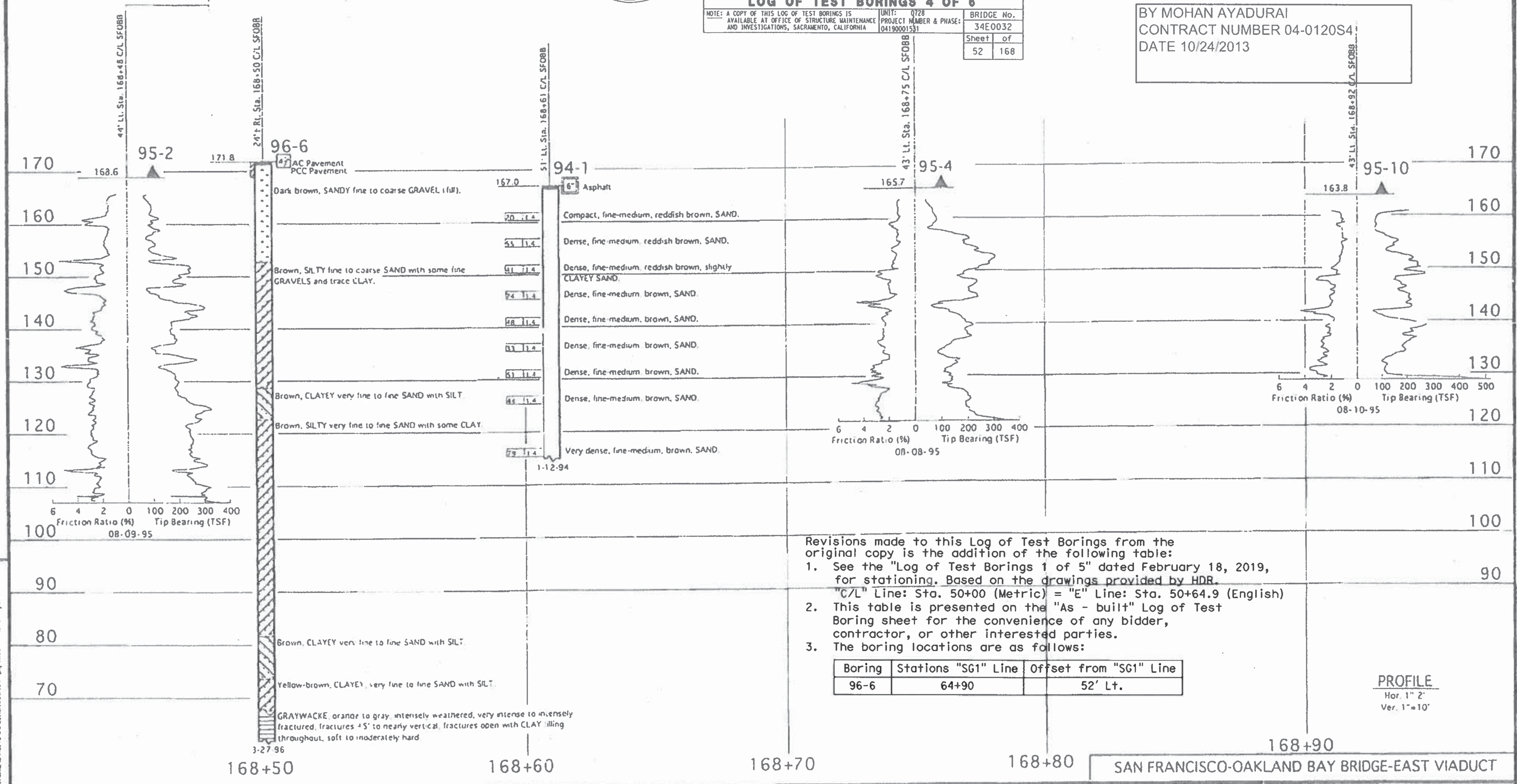
LEGEND OF EARTH MATERIALS

CONSISTENCY CLASSIFICATION FOR SOILS

According to the Standard Penetration Test

Penetration (blows/ft)	Consistency
0-4	Very Soft
5-9	Soft
10-19	Medium
20-29	Stiff
30-59	Very Stiff
> 60	Very Hard

NOTE: Classification of earth materials as shown on this sheet is based upon field inspection and is not to be considered as a final geotechnical analysis.



Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
 1. See the "Log of Test Borings 1 of 5" dated February 18, 2019, for stationing. Based on the drawings provided by HDR.
 "C/L" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 2. This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 3. The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
96-6	64+90	52' Lt.

PROFILE
 Hor. 1" = 2'
 Ver. 1" = 10'

ENGINEERING SERVICE CENTER	STRUCTURE FOUNDATIONS	FIELD INVESTIGATION BY: T. CROSBY	State of CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF STRUCTURES STRUCTURE DESIGN	BRIDGE NO. 34 0004 POST MILE 7.678 0	SAN FRANCISCO-OAKLAND BAY BRIDGE-EAST VIADUCT EARTHQUAKE RETROFIT PROJECT NO. 19	LOG OF TEST BORINGS 4 OF 13
DRAWN BY: <i>[Signature]</i> 4 96	CHECKED BY:		CU: 043471 EA:		DISREGARD PRINT'S BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET OF

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS → 0 1 2 3



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.7/13.2	768	806

Paul Kye 02/25/08
 GEOTECHNICAL PROFESSIONAL

6-23-08
 PLANS APPROVAL DATE

WILL KAPUSKAR
 REGISTERED PROFESSIONAL ENGINEER
 NO. GE 2564
 EXP. 12-31-08
 STATE OF CALIFORNIA

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FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SF	80	7.8/8.0	302	436

Gary Parikh
 REGISTERED CIVIL ENGINEER
 No. C.E. 686
 Exp. 12/31/19
 STATE OF CALIFORNIA

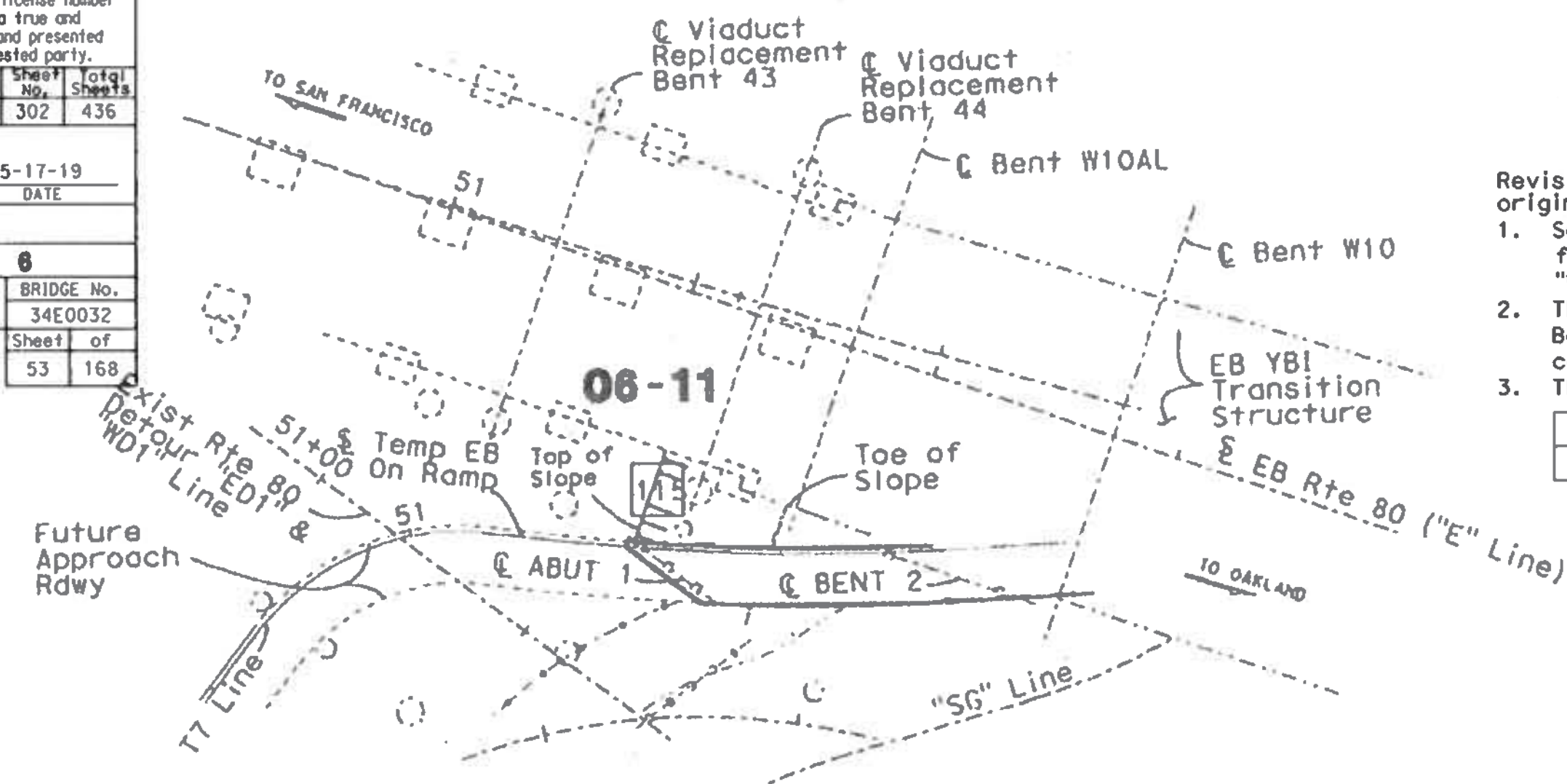
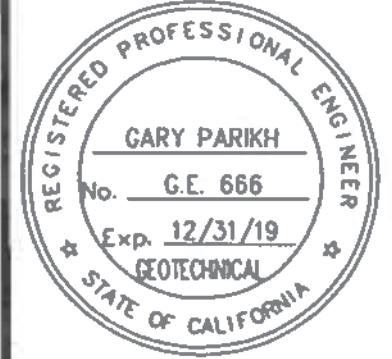
5-17-19 DATE

RETAINING WALL No. 3
LOG OF TEST BORINGS 5 OF 6

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA (916)900-1531

BRIDGE No.	PROJECT NUMBER & PHASE
34E0032	0410001531

Sheet of 53 168



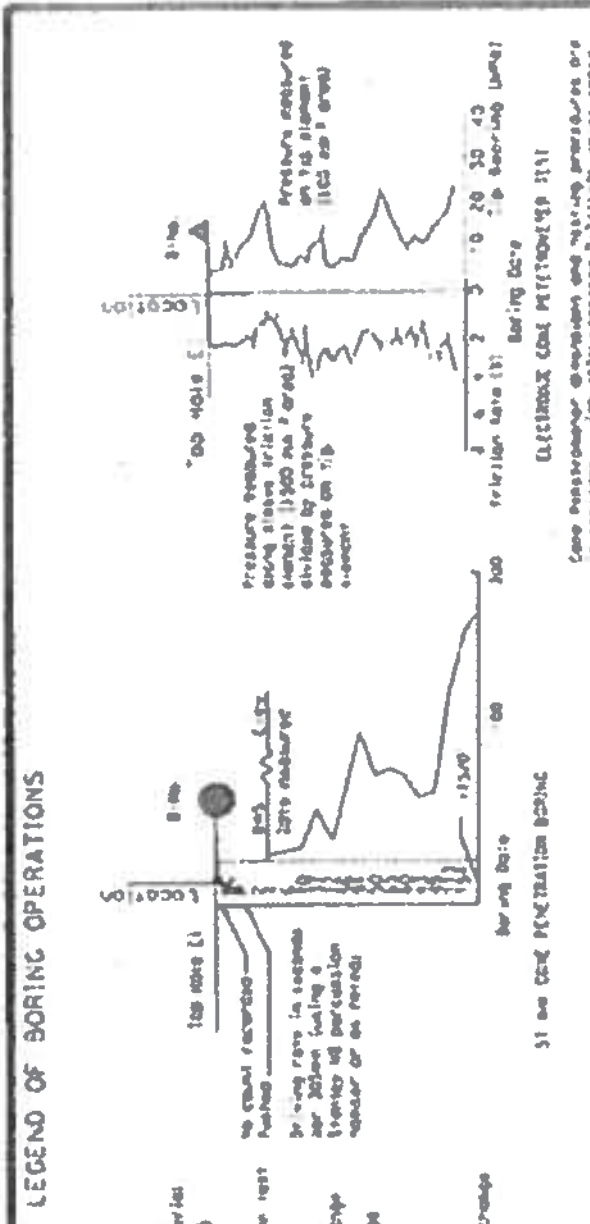
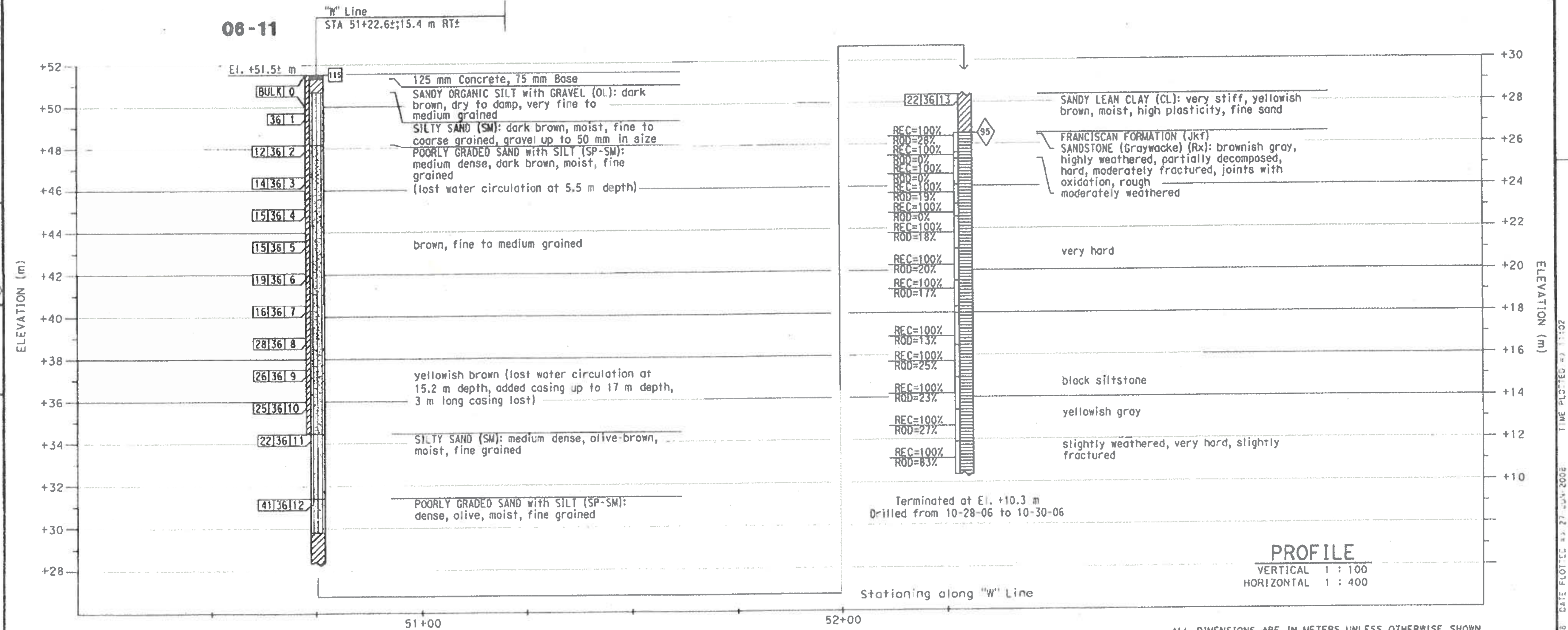
- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 5" dated February 18, 2019, for stationing. Based on the drawings provided by HDR, "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "SG" Line	Offset from "SG" Line
06-11	64+04	52' Lt.

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013

PLAN
 1:400



TYPE OF BORINGS

LEGEND FOR EARTH MATERIALS (USCS)

CONSISTENCY CLASSIFICATION

NOTE: Visual classification of earth materials are based on field inspection and any laboratory test results as necessary.

M. Than
 DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/06

DRAWN BY: M. THAN 11/15/06
 CHECKED BY: M. KAPUSKAR 11/28/06

M. THAN
 FIELD INVESTIGATION BY:
 DATE: AS NOTED

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR
 PROJECT ENGINEER

BRIDGE NO. 34-0171 S
 KILOMETER POST 12.8

CU 04251
 EA 0120S1

TEMPORARY EB ON-RAMP STRUCTURE
 LOG OF TEST BORINGS NO. 2

REVISION DATES (TIME, MONDAY, STAGE 04.71)

NO.	DATE	DESCRIPTION
1	6/2/06	

SHEET 10 OF 13



LEGEND OF BORING OPERATIONS

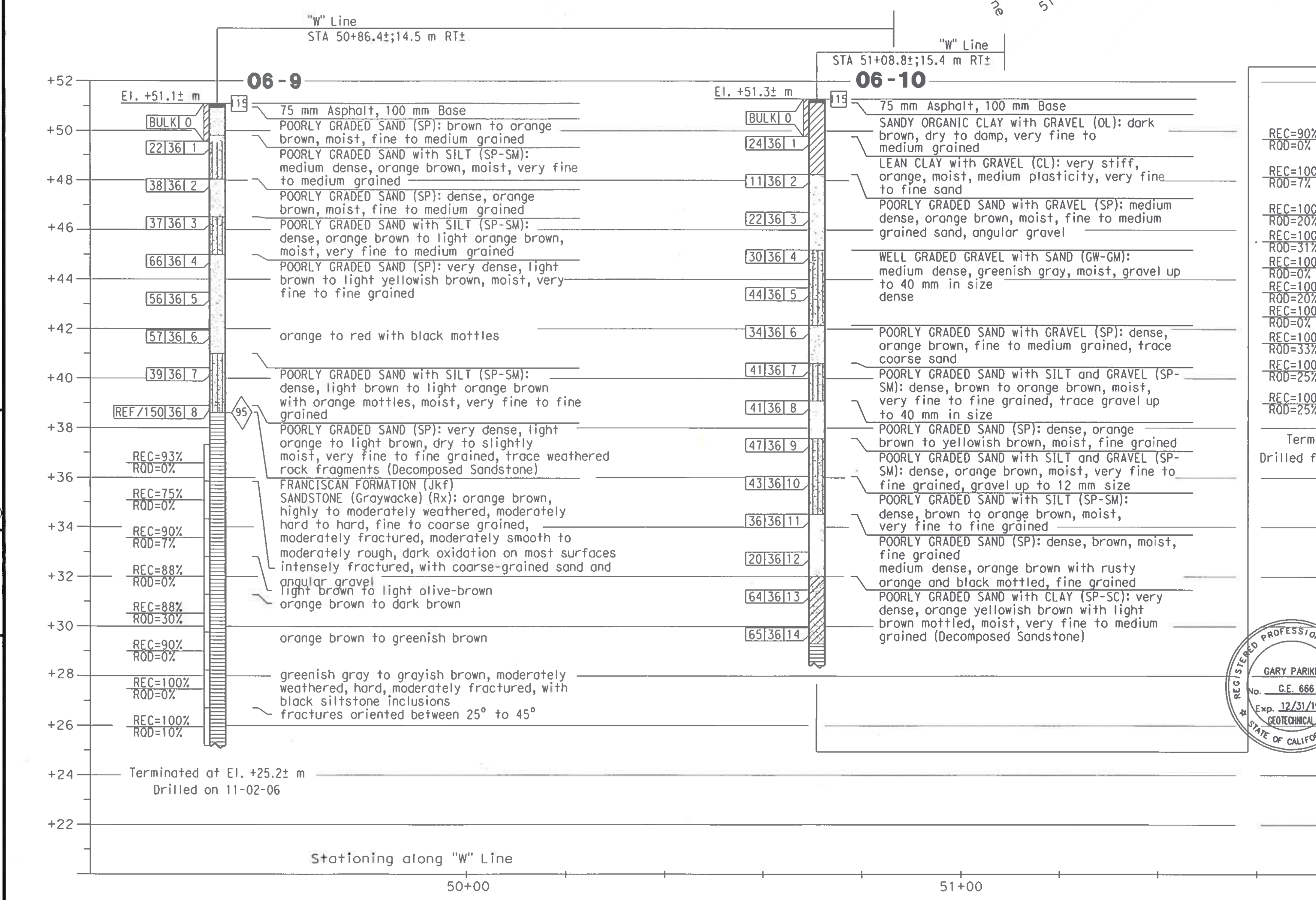
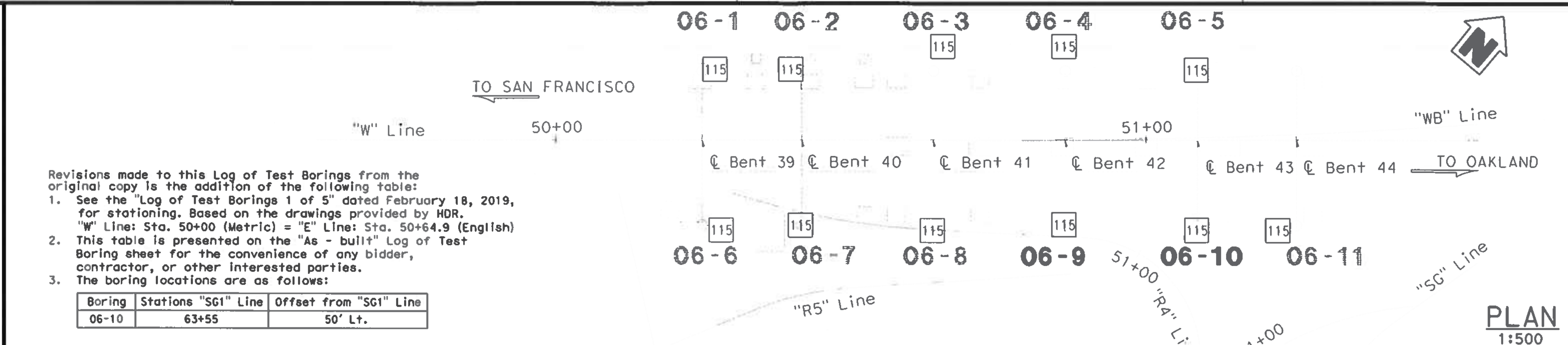
IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPE OF BORINGS

LEGEND FOR EARTH MATERIALS (USCS) BASED ON ASTM D2487, D2488

CONSISTENCY CLASSIFICATION FOR SOILS According to the Standard Penetration Test (ASTM D-1586)

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



Caltrans Metric

DIST: 04 COUNTY: SF ROUTE: 80 KILOMETER POST TOTAL PROJECT: 12.6/13.9 SHEET No: 479 TOTAL SHEETS: 821

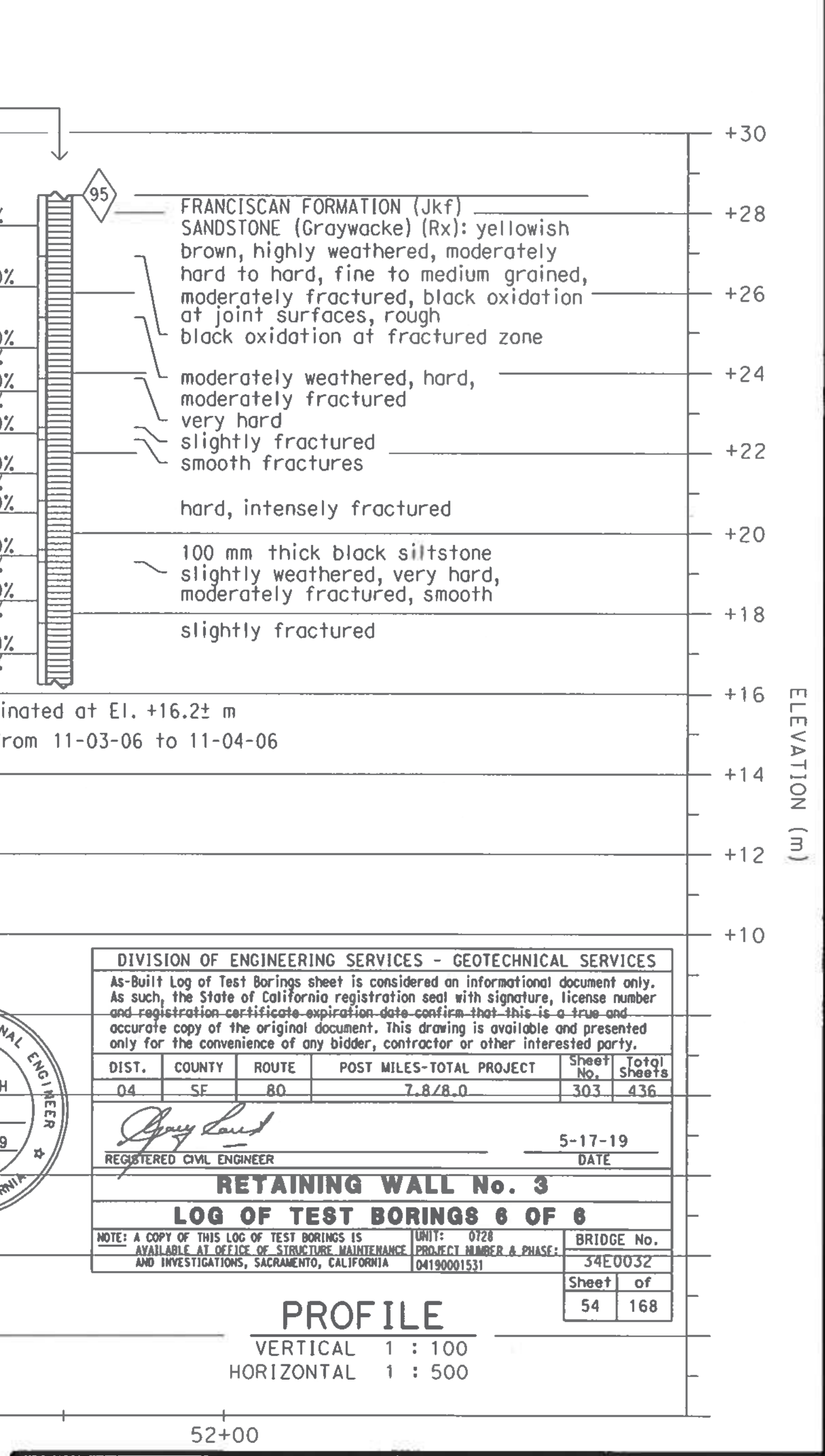
09/06/07
GEO TECHNICAL PROFESSIONAL

2-21-12
PLANS APPROVAL DATE

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FUGRO-EARTH MECHANICS, J.V.
7750 Pardee Lane, Suite 120
Oakland, CA 94621

REGISTERED PROFESSIONAL ENGINEER
NO. GE 2564
EXP. 12-31-08
STATE OF CALIFORNIA



STATIONING ALONG "W" LINE: 50+00, 51+00, 52+00

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

WEST TIE-IN PHASE 3
YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)
LOG OF TEST BORINGS NO. 3

BRIDGE NO. 34-0006
KILOMETER POST

DESIGNED BY: R. GNANAPRAGASAM 11/15/06
CHECKED BY: M. KAPUSKAR 11/28/06

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
PROJECT ENGINEER: M. KAPUSKAR

DATE: AS NOTED

CU 04 EA 0120R1

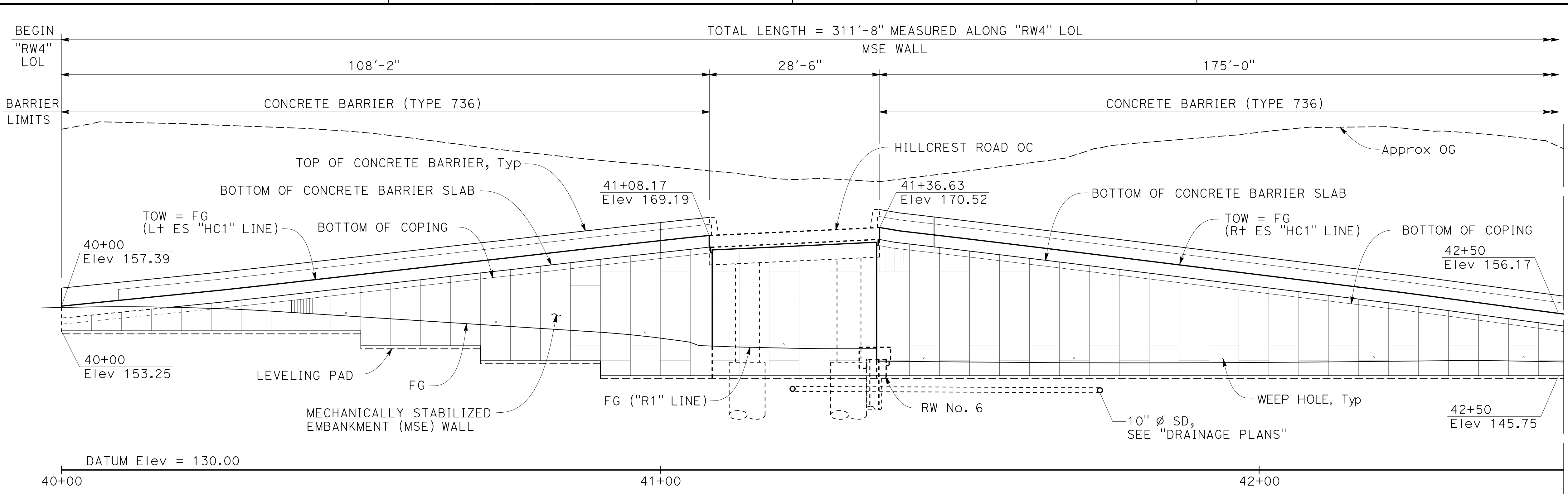
BRIDGE NO. 34-0006
KILOMETER POST

DATE: 5-17-19

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET 26 OF 29



DEVELOPED ELEVATION
1" = 10'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	304	436

REGISTERED CIVIL ENGINEER
DATE: 7-25-19
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

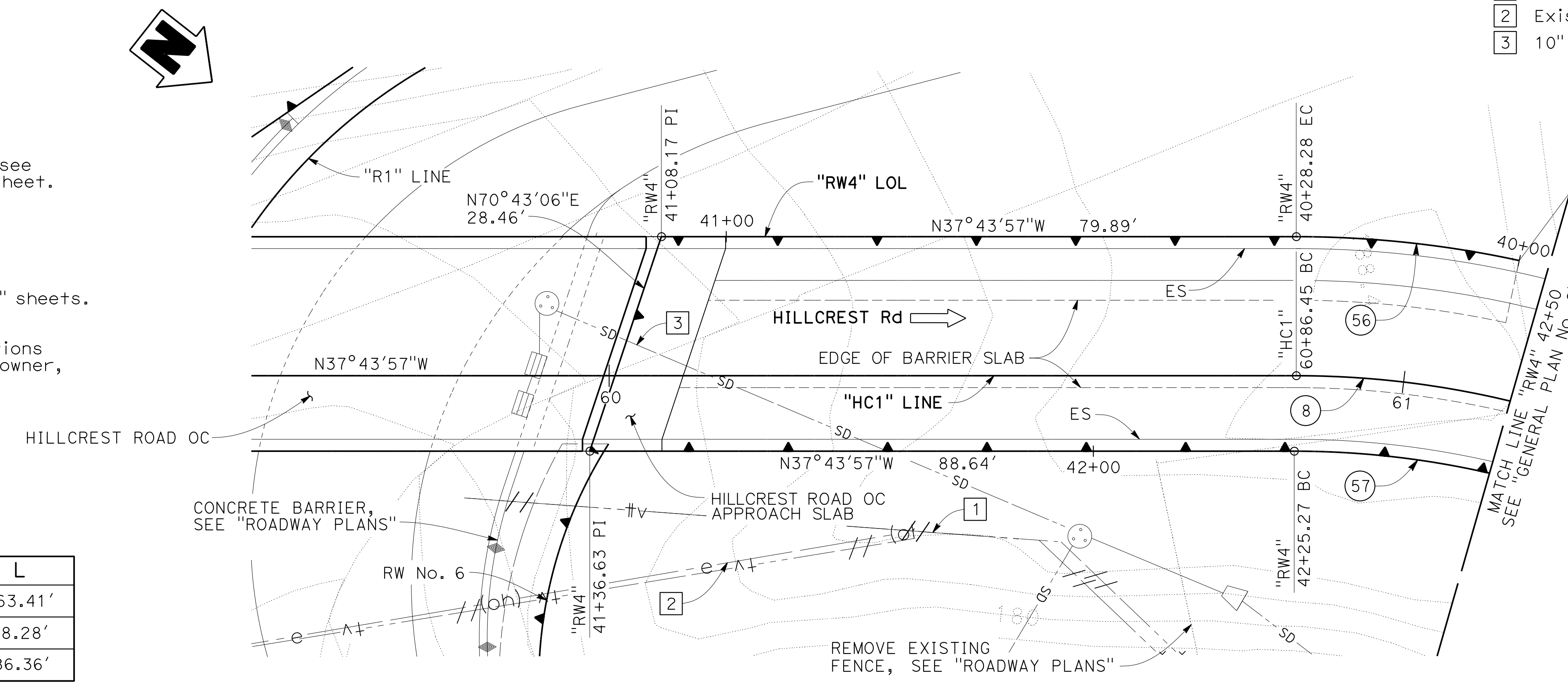
- LEGEND:**
- Indicates existing structure
 - ⇨ Indicates direction of traffic

- NOTES:**
- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
 - For "TYPICAL SECTION", see "GENERAL PLAN No. 3" and "GENERAL PLAN No. 4" sheets.
 - For drainage details, see "DRAINAGE PLANS".
 - For wall elevations, see "WALL PANEL LAYOUT" sheets.
 - Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".

- UTILITIES:**
- 1 Existing Abandoned Fiber Optic
 - 2 Existing Overhead Electrical to be removed
 - 3 10" Storm Drain

CURVE DATA

No.	R	Δ	T	L
8	115.00'	81°24'47"	98.94'	163.41'
56	132.50'	12°13'46"	14.19'	28.28'
57	110.50'	44°46'49"	45.52'	86.36'



PLAN
1" = 10'

QUANTITIES

MECHANICALLY STABILIZED EMBANKMENT, LOCATION A	4,397	SQ FT
STRUCTURAL CONCRETE, BARRIER SLAB	169	CY
CONCRETE BARRIER (TYPE 736)	283	LF


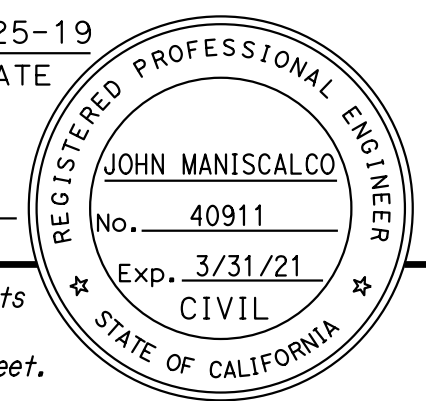
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

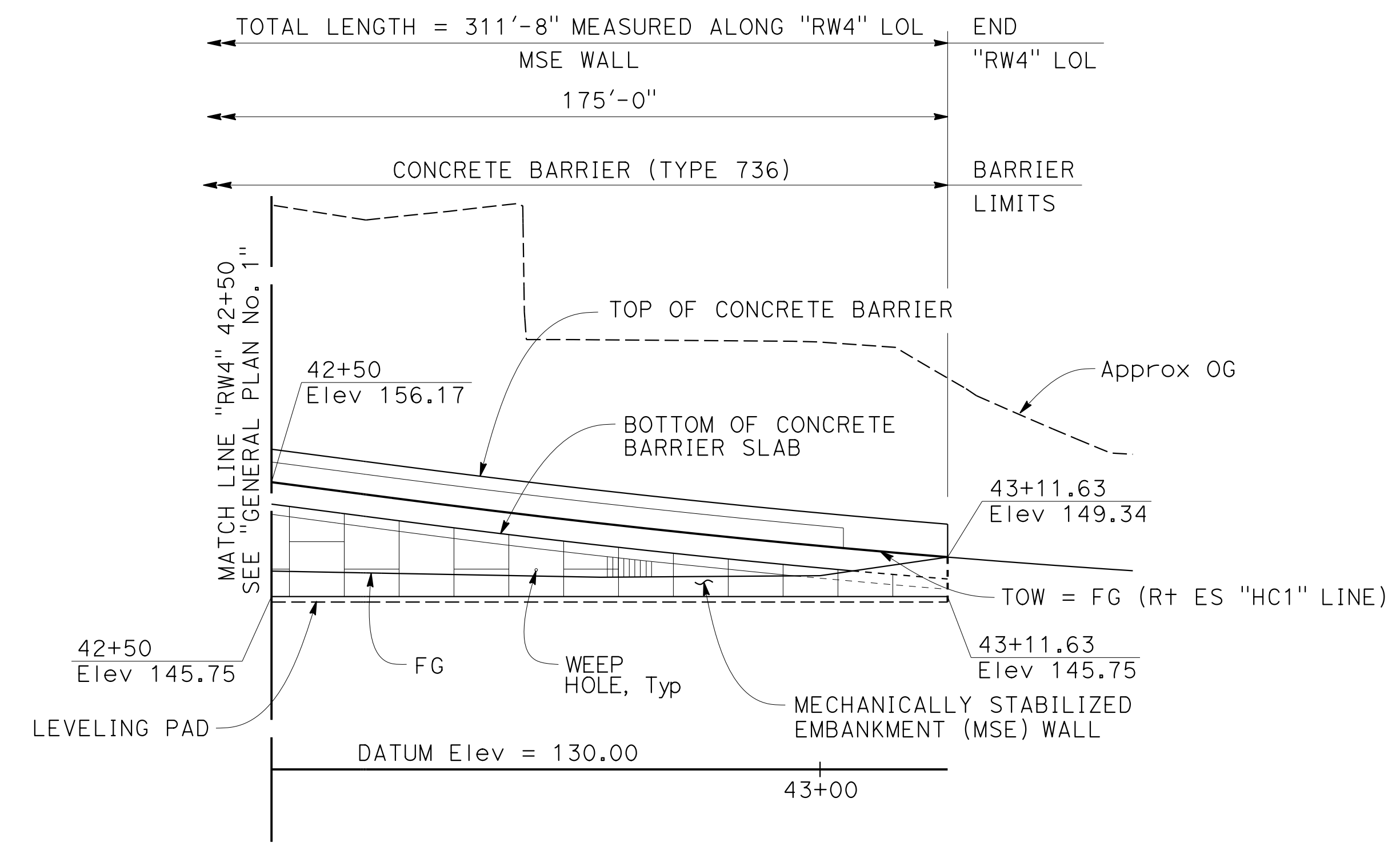
DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE CHECKED: A. CARMAZZI	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 4 GENERAL PLAN No. 1
SIGN OFF DATE	DETAILS BY: L. DAVIS CHECKED: K. SERRANO-PAINE	LAYOUT BY: K. SERRANO-PAINE CHECKED: T. MEHTA	PLANS AND SPECS COMPARED: M. JACKSON	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. ROMINGER CHECKED: A. CHUNG	SPECIFICATIONS BY: T. MEHTA	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	

DISREGARD PRINTS BEARING EARLIER REVISION DATES

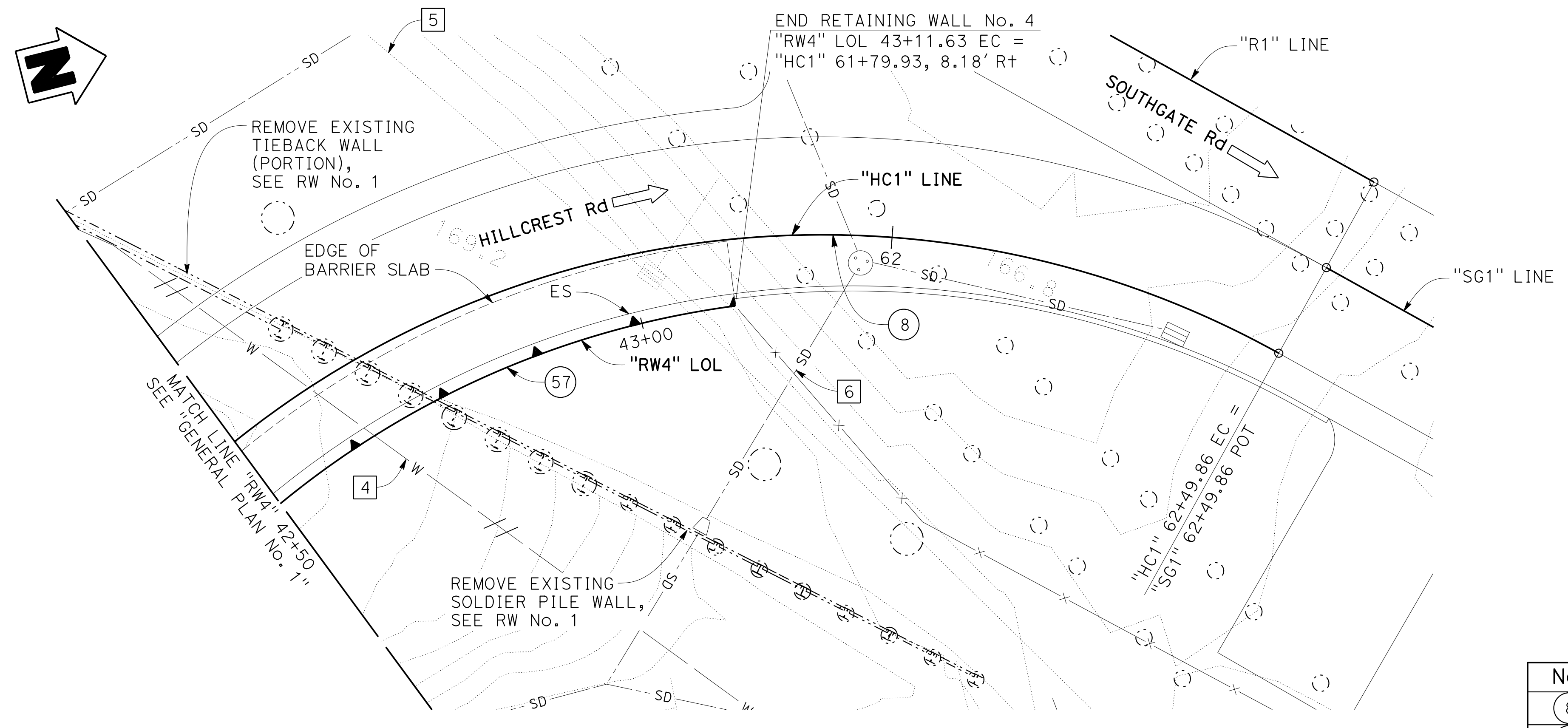
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USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	305	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



DEVELOPED ELEVATION
1" = 10'



PLAN
1" = 10'

LEGEND:
 - - - - - Indicates existing structure
 ← Indicates direction of traffic

NOTE:
 1. For notes, see "GENERAL PLAN No. 1" sheet.

UTILITIES:
 4 Existing Abandoned Water
 5 Existing Storm Drain to be Abandoned
 6 12" Storm Drain


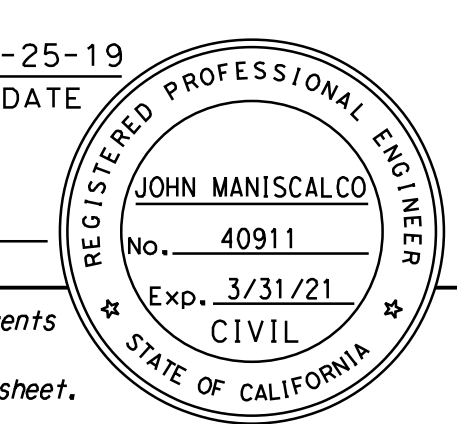
CURVE DATA

No.	R	Δ	T	L
8	115.00'	81°24'47"	98.94'	163.41'
57	110.5'	44°46'49"	45.52'	86.36'

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. CARMAZZI	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 4 GENERAL PLAN No. 2							
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9								
	QUANTITIES BY A. ROMINGER	CHECKED A. CHUNG	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON										
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18 11-12-18 2-27-19 7-25-19</td> <td>56</td> <td>168</td> </tr> </table>	REVISION DATES	SHEET	OF	4-30-18 11-12-18 2-27-19 7-25-19	56	168
REVISION DATES	SHEET	OF												
4-30-18 11-12-18 2-27-19 7-25-19	56	168												

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	306	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
			PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
 AASHTO LRFD Bridge Design Specifications 2012,
 6th edition with the California Amendments, January 2014

DESIGN LOAD:
 Soil Pressure: Equivalent Fluid Pressure for
 Horizontal Backfill Active = 36 pcf
 Live Load: Surcharge = 240 psf

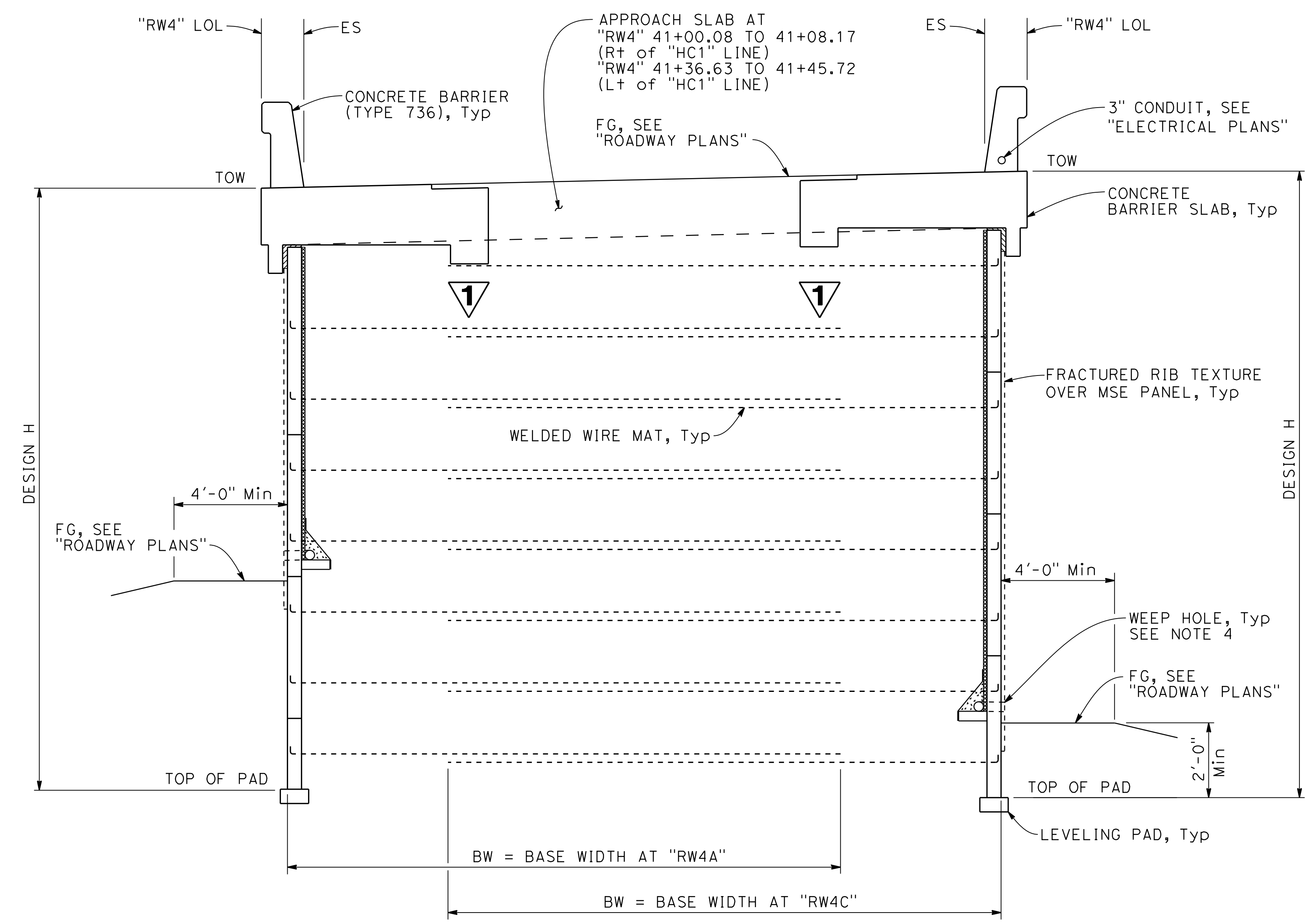
SOIL PARAMETERS:
 Internal Design: $\phi = 34^\circ$, $\gamma = 120$ pcf
 External Design: ϕ (Retained Backfill) = 34° , $\gamma = 120$ pcf
 ϕ (Foundation) = 38°
 $K_H = 0.22$, $K_V = 0.0$
 Coefficient of Friction, $\mu = 0.58$

PRECAST CONCRETE PANELS:
 $f'_c = 4,000$ psi (Concrete compressive strength at 28 days)
 $f_y = 60,000$ psi (Yield strength of reinforcement)

SOIL REINFORCEMENT:
 Welded Wire Mats: $f_y = 65,000$ psi (Yield strength)
 Coupler: $f_y = 36,000$ psi (Yield strength)
 Corrosion rate = 1.1 mils/year

REINFORCED CONCRETE:
 $f'_c = 3,600$ psi, except as noted
 (Concrete compressive strength at 28 days)
 $f_y = 60,000$ psi (Yield strength of reinforcement)

- NOTES:
- For limits, see "GENERAL PLAN No. 1" sheet.
 - For MSE panel details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1" sheet.
 - For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
 - For drainage details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 6" sheet.
 - For barrier and Fractured Rib Texture details, see "MISCELLANEOUS DETAILS" sheet.
 - For "WELDED WIRE SCHEDULE AND BEARING STRESS TABLE", see "WALL PANEL LAYOUT No. 4" sheet.



TYPICAL SECTION

3/8" = 1'-0"

"RW4" 40+00 TO 41+08.17 (Rt of "HC1" LINE)
 "RW4" 41+36.63 TO 42+48.30 (Lt of "HC1" LINE)

1 REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

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

DESIGN OVERSIGHT	DESIGN	BY K. SERRANO-PAINE	CHECKED A. CARMAZZI	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION JOHN MANISCALCO PROJECT ENGINEER	BRIDGE NO.	RETAINING WALL No. 4 GENERAL PLAN No. 3				
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE		CHECKED T. MEHTA		N/A			
	QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG	SPECIFICATIONS	BY T. MEHTA		PLANS AND SPECS COMPARED		M. JACKSON	POST MILES	7.9	
SIGN OFF DATE		DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 57	OF 168

USERNAME => TMARASIG DATE PLOTTED => 12/17/2019 TIME PLOTTED => 12:55:44 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	307	436

REGISTERED CIVIL ENGINEER *[Signature]* DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

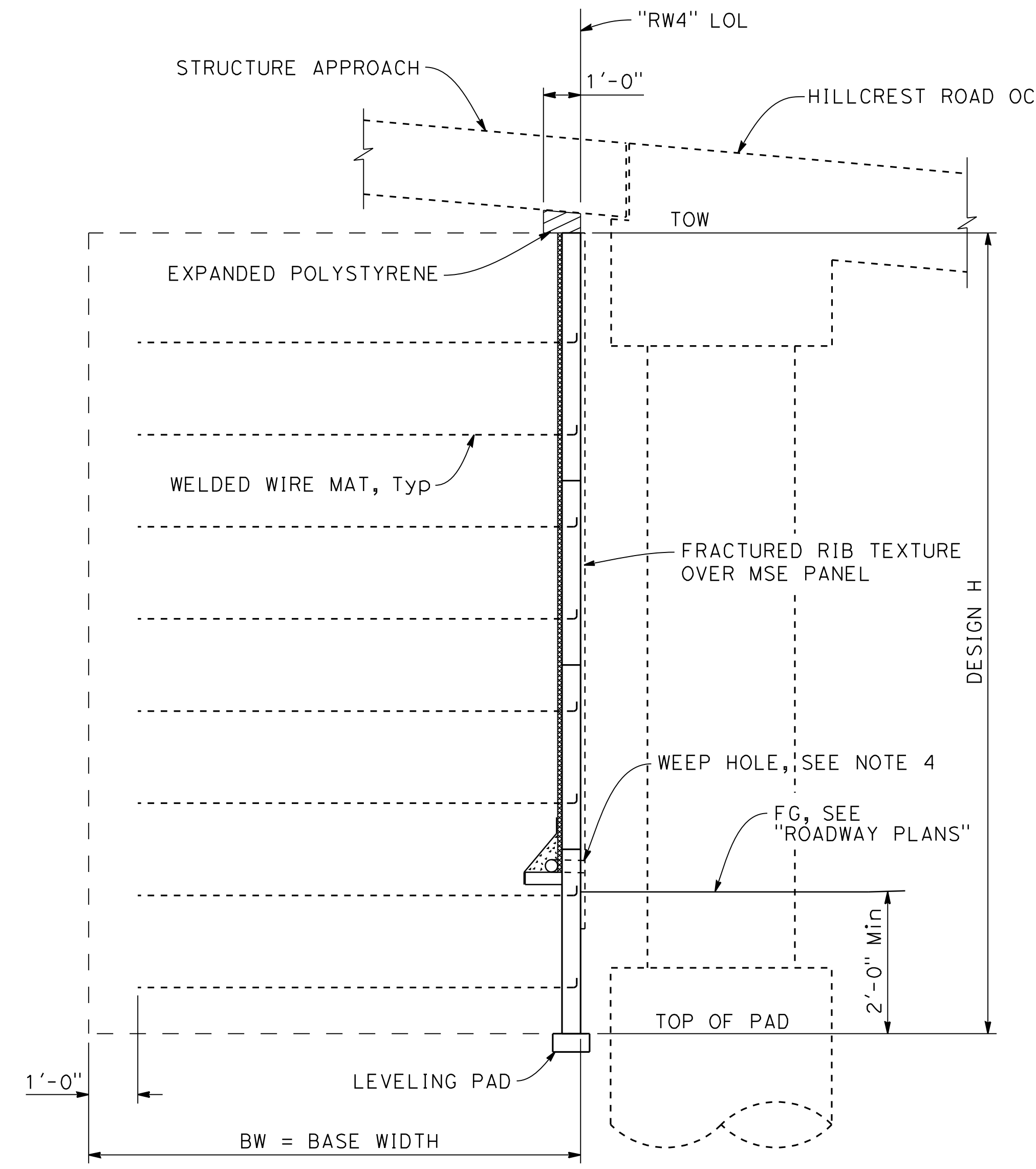
PLANS APPROVAL DATE _____
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

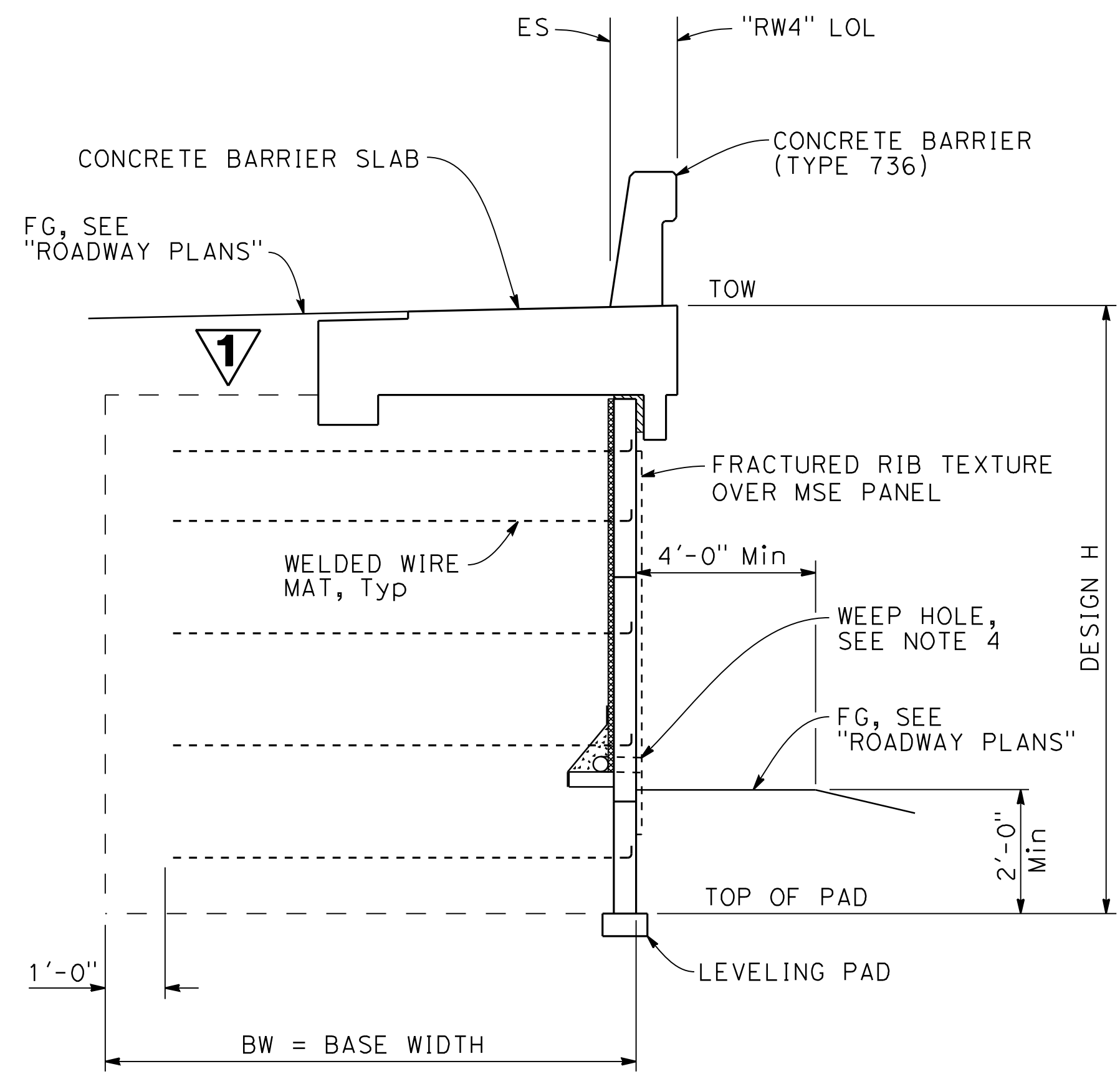
NOTES:

1. For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
2. For MSE panel details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1" sheet.
3. For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
4. For drainage details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 6" sheet.
5. For barrier and Fractured Rib Texture details, see "MISCELLANEOUS DETAILS" sheet.
6. For "WELDED WIRE SCHEDULE AND BEARING STRESS TABLE", see "WALL PANEL LAYOUT No. 4" sheet.



TYPICAL SECTION

3/8" = 1'-0"
 "RW4" 41+08.17 TO 41+36.63



TYPICAL SECTION

3/8" = 1'-0"
 "RW4" 42+48.30 TO 43+11.63

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



REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. CARMAZZI	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA
	QUANTITIES BY A. ROMINGER	CHECKED A. CHUNG	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON


PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	7.9

RETAINING WALL No. 4
GENERAL PLAN No. 4

USERNAME => TMARASIG DATE PLOTTED => 12/17/2019 TIME PLOTTED => 1:02:26 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	308	436

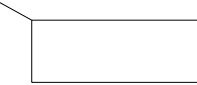

 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

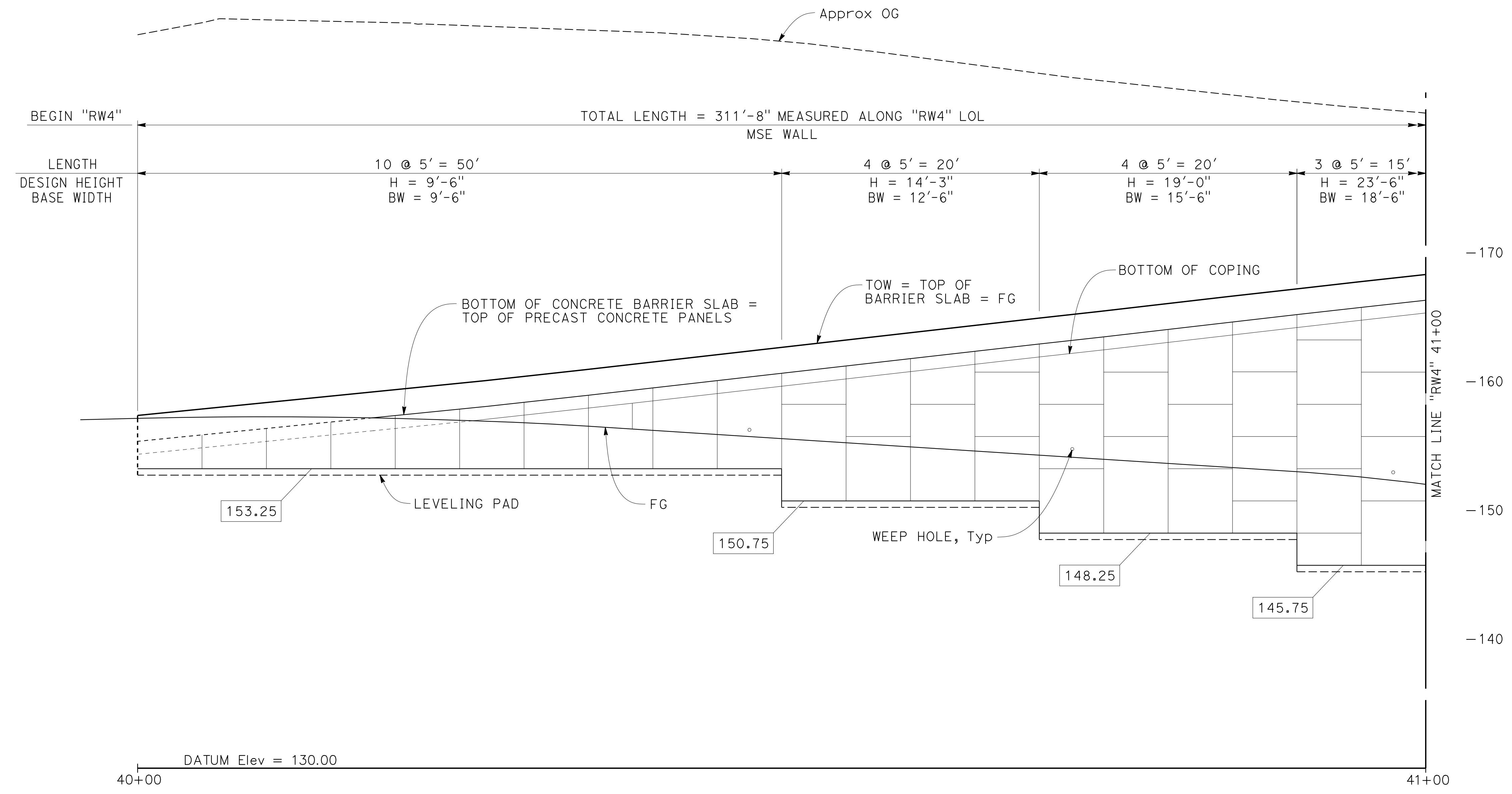
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

- Concrete barrier not shown for clarity.
- For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
- For wall panel details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1" sheet.
- For "WELDED WIRE SCHEDULE AND BEARING STRESS TABLE", see "WALL PANEL LAYOUT No. 4" sheet.

LEGEND:

-  Indicates elevation at top of leveling pad
- H = Design Height
- BW = Base Width



TOP OF WALL ELEVATION TABLE

"RW4" LOL STATION	ELEVATION (FEET)
40+00	157.39
40+20	159.39
40+40	161.54
40+60	163.81
40+80	166.08
41+00	168.33

DEVELOPED ELEVATION
1" = 5'

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. CARMAZZI	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 4 WALL PANEL LAYOUT No. 1						
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER JOHN MANISCALCO							
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. ROMINGER	CHECKED A. CHUNG		POST MILES 7.9							
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A604	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18 11-12-18 2-27-19 7-25-19</td> <td>59</td> <td>168</td> </tr> </table>	REVISION DATES	SHEET	OF	4-30-18 11-12-18 2-27-19 7-25-19	59	168
REVISION DATES	SHEET	OF									
4-30-18 11-12-18 2-27-19 7-25-19	59	168									

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	309	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

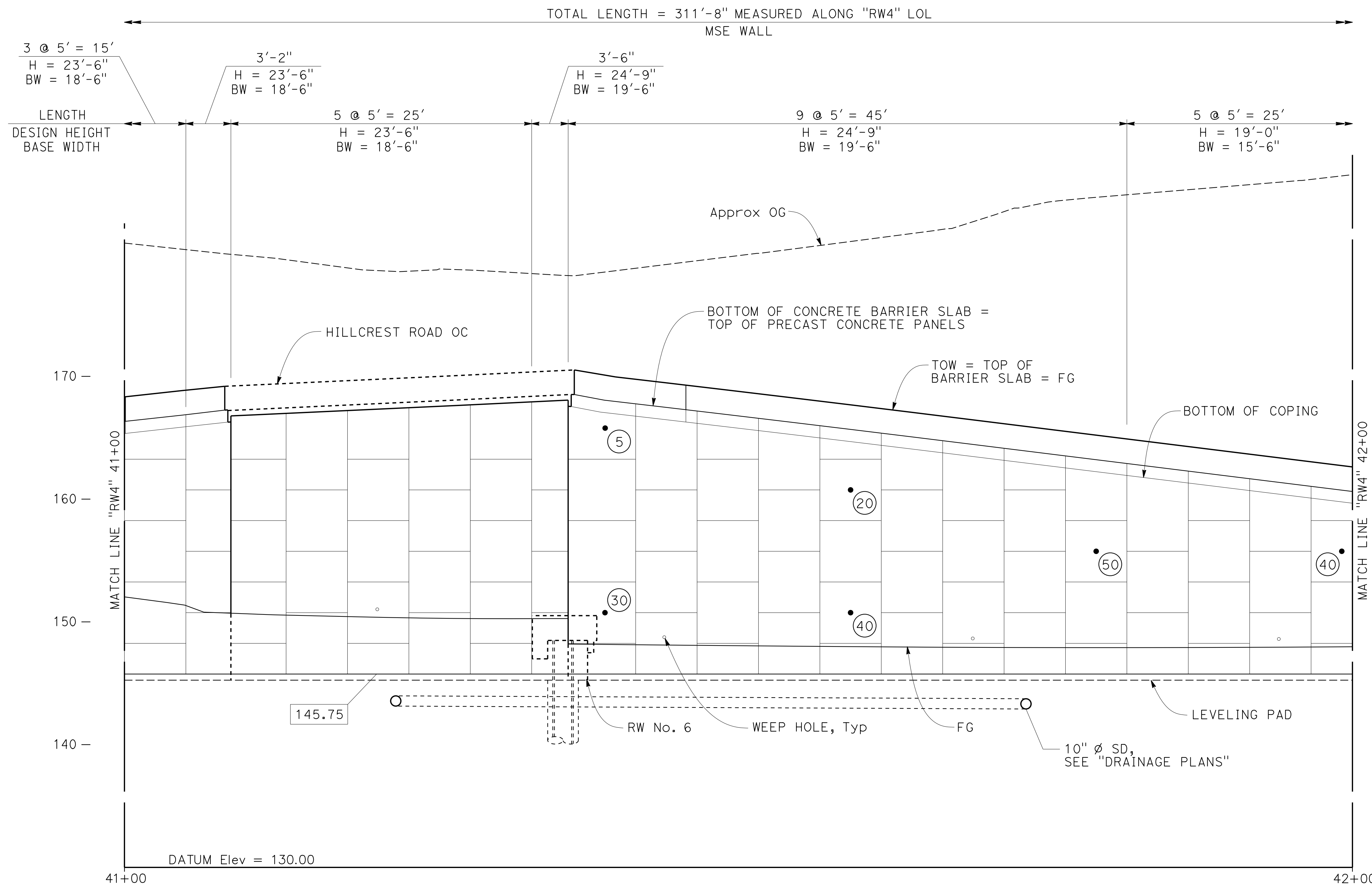
PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



NOTES:

- Concrete barrier not shown for clarity.
- For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
- For wall panel details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1" sheet.
- For "WELDED WIRE SCHEDULE AND BEARING STRESS TABLE", see "WALL PANEL LAYOUT No. 4" sheet.
- For pipe details, see "FORMED HOLE DETAIL" and "CLEAN OUT PIPE DETAIL" on "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 6" sheet.

LEGEND:

- Indicates elevation at top of leveling pad
- H = Design Height
- BW = Base Width
- Indicates location of inspection wire, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 3" sheet
- ## Indicates interval in years from time of construction to time of inspection of wire

TOP OF WALL ELEVATION TABLE

"RW4" LOL STATION	ELEVATION (FEET)
41+00	168.33
41+20	167.19
41+40	169.95
41+60	167.57
41+80	165.10
42+00	162.62

DEVELOPED ELEVATION
1" = 5'

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. CARMAZZI	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 4 WALL PANEL LAYOUT No. 2
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. ROMINGER	CHECKED A. CHUNG		POST MILES 7.9	

UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-30-18	60	168
11-12-18		
2-27-19		
7-25-19		

FILE => RW4-f-msew1o02.dgn

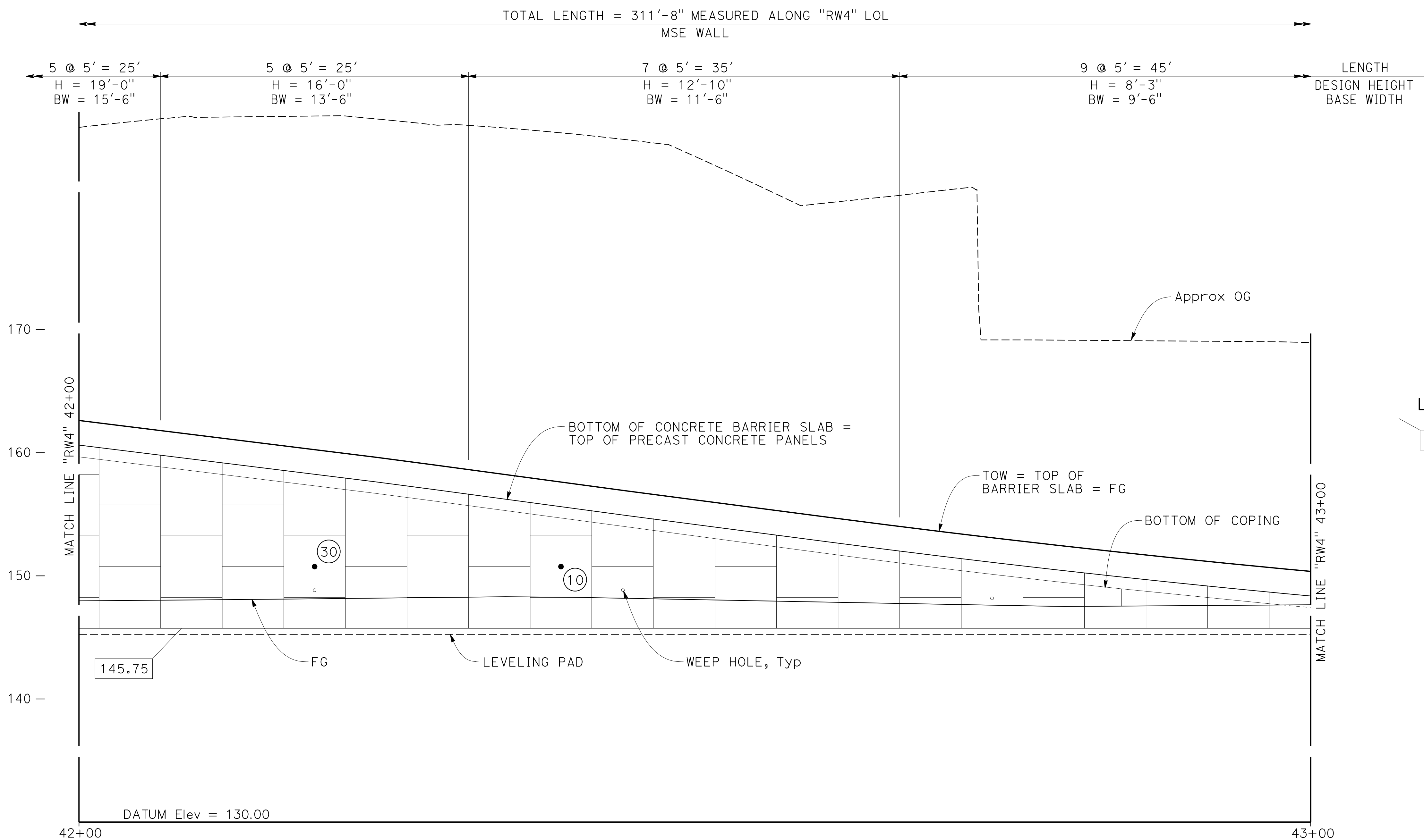
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	310	436

REGISTERED CIVIL ENGINEER: *[Signature]* DATE: 7-25-19
 PLANS APPROVAL DATE: _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



- NOTES:**
- Concrete barrier not shown for clarity.
 - For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
 - For wall panel details, see "MECHANICALLY STABILIZED EMBANKMENT" DETAILS No. 1" sheet.
 - For "WELDED WIRE SCHEDULE AND BEARING STRESS TABLE", see "WALL PANEL LAYOUT No. 4" sheet.
 - For pipe details, see "FORMED HOLE DETAIL" and "CLEAN OUT PIPE DETAIL" on "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 6" sheet.

- LEGEND:**
- Indicates elevation at top of leveling pad
 - H = Design Height
 - BW = Base Width
 - Indicates location of inspection wire, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 3" sheet
 - ⊕# Indicates interval in years from time of construction to time of inspection of wire

TOP OF WALL ELEVATION TABLE

"RW4" LOL STATION	ELEVATION (FEET)
42+00	162.62
42+20	160.14
42+40	157.50
42+60	154.87
42+80	152.42
43+00	150.36

DEVELOPED ELEVATION
1" = 5'

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

DESIGN OVERSIGHT SIGN OFF DATE	DESIGN BY: K. SERRANO-PAINE DETAILS BY: L. DAVIS/E. GRAY QUANTITIES BY: A. ROMINGER	CHECKED A. CARMAZZI CHECKED K. SERRANO-PAINE CHECKED A. CHUNG	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	JOHN MANISCALCO PROJECT ENGINEER	BRIDGE NO. N/A POST MILES 7.9	RETAINING WALL No. 4 WALL PANEL LAYOUT No. 3
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A604		DISREGARD PRINTS BEARING EARLIER REVISION DATES
					REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	SHEET 61 OF 168

FILE => RW4-f-msew1o03.dgn

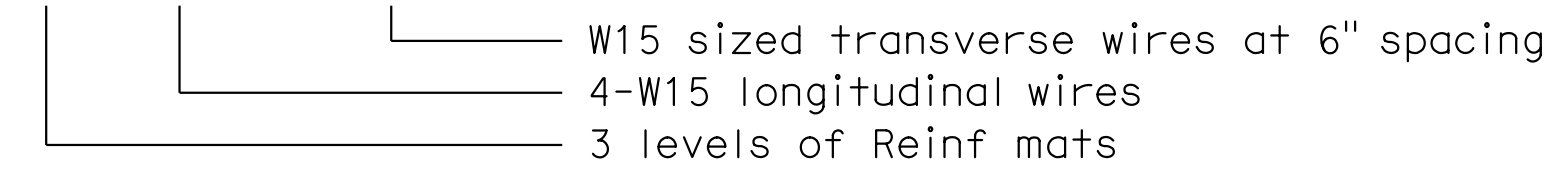
USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:15

WELDED WIRE SCHEDULE AND BEARING STRESS TABLE

WALL DESIGN HEIGHT: H (FEET)	8.25	9.50	12.83	14.25	16.00	19.00	23.50	24.75
WELDED WIRE MATS PER LAYER STARTING AT TOP LAYER OF TOP PANEL	TOP 4-W15xW15 @ 6 1 OF 4-W15xW15 @ 6 Bot 4-W15xW15 @ 6	TOP 4-W15xW15 @ 6 1 OF 4-W15xW15 @ 6 Bot 4-W15xW15 @ 6	TOP 4-W15xW15 @ 6 2 OF 4-W15xW15 @ 6 Bot 4-W15xW15 @ 6	TOP 4-W15xW15 @ 6 3 OF 4-W15xW15 @ 6 Bot 4-W20xW15 @ 9	TOP 4-W15xW15 @ 6 3 OF 4-W15xW15 @ 6 2 OF 4-W20xW15 @ 9 Bot 4-W20xW15 @ 9	TOP 4-W15xW15 @ 6 3 OF 4-W15xW15 @ 6 2 OF 4-W20xW15 @ 9 Bot 4-W20xW15 @ 9	TOP 4-W15xW15 @ 6 3 OF 4-W15xW15 @ 18 4 OF 4-W20xW15 @ 24 Bot 4-W20xW15 @ 24	TOP 4-W15xW15 @ 6 3 OF 4-W15xW15 @ 18 4 OF 4-W20xW15 @ 24 Bot 4-W20xW15 @ 24
SER: B' (FEET), q'o (ksf)	7.46, 1.40	7.15, 1.64	8.61, 2.18	9.41, 2.39	10.12, 2.68	11.68, 3.14	14.03, 3.83	14.91, 3.99
STR: B' (FEET), qo (ksf)	7.13, 1.66	6.68, 1.96	7.88, 2.60	8.57, 2.84	9.14, 3.19	10.49, 3.73	12.52, 4.53	13.33, 4.69
Ext 1: B' (FEET), qo (ksf)	5.94, 1.43	5.16, 1.77	5.76, 2.50	6.09, 2.79	6.26, 3.20	6.96, 3.84	8.00, 4.81	8.61, 4.99

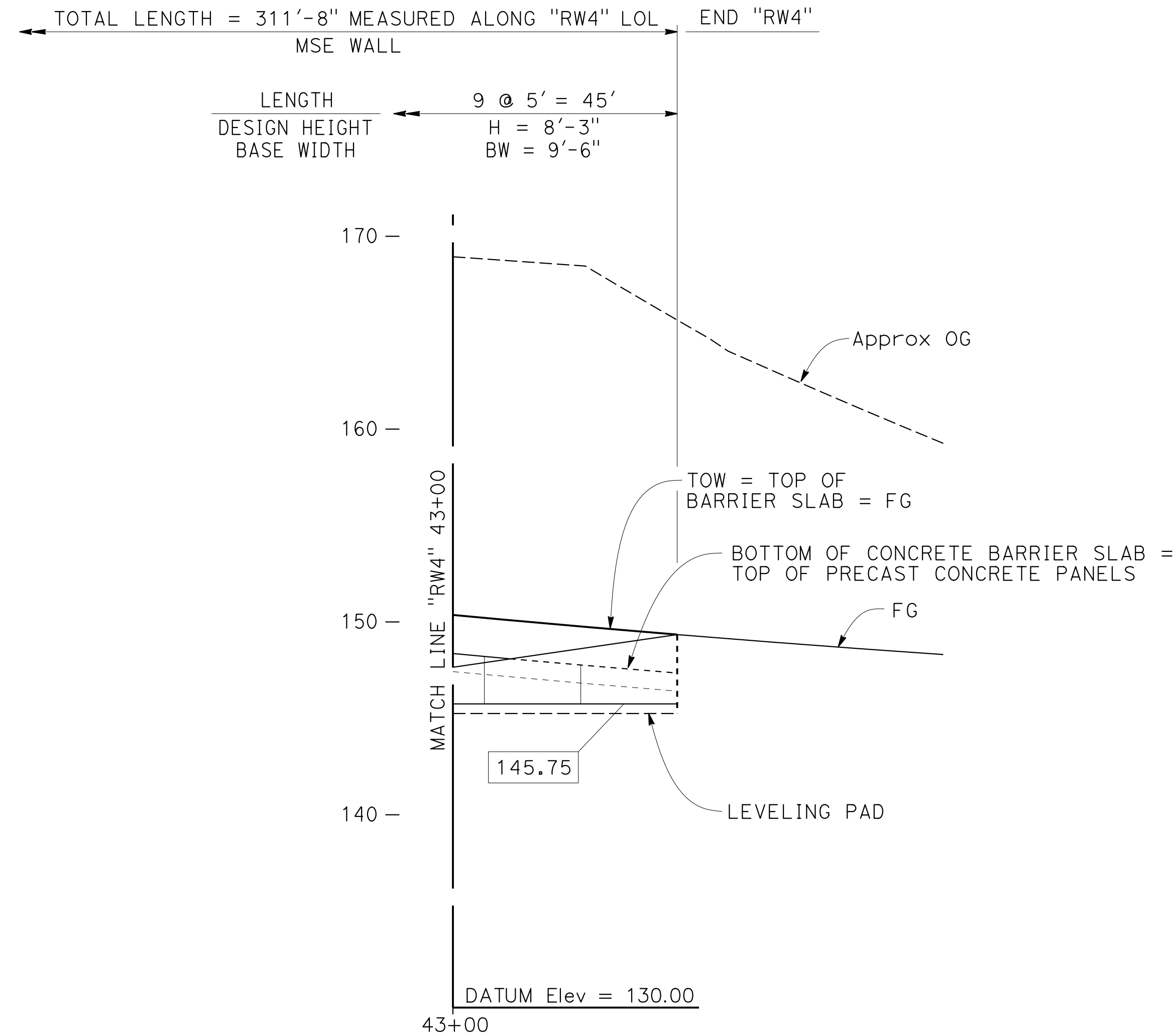
EXAMPLE SOIL REINF CONFIGURATION:

3 OF 4-W15 x W15 @ 6



LEGEND:

- B' = Effective width of foundation (ft)
- SER = Service limit state
- STR = Strength limit state
- Ext = Extreme event limit state
- q'o = net bearing stress (ksf)
- qo = gross uniform bearing stress (ksf)



DEVELOPED ELEVATION

1" = 5'

NOTES:

1. Concrete barrier not shown for clarity.
2. For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
3. For wall panel details, see "MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1" sheet.

LEGEND:


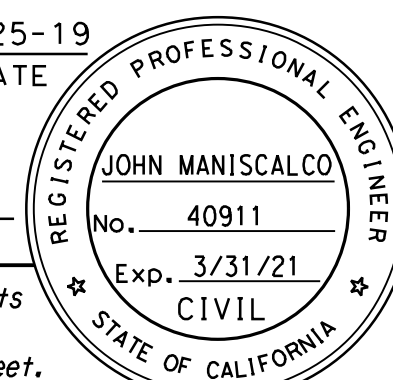
- Indicates elevation at top of leveling pad
- H = Design Height
- BW = Base Width

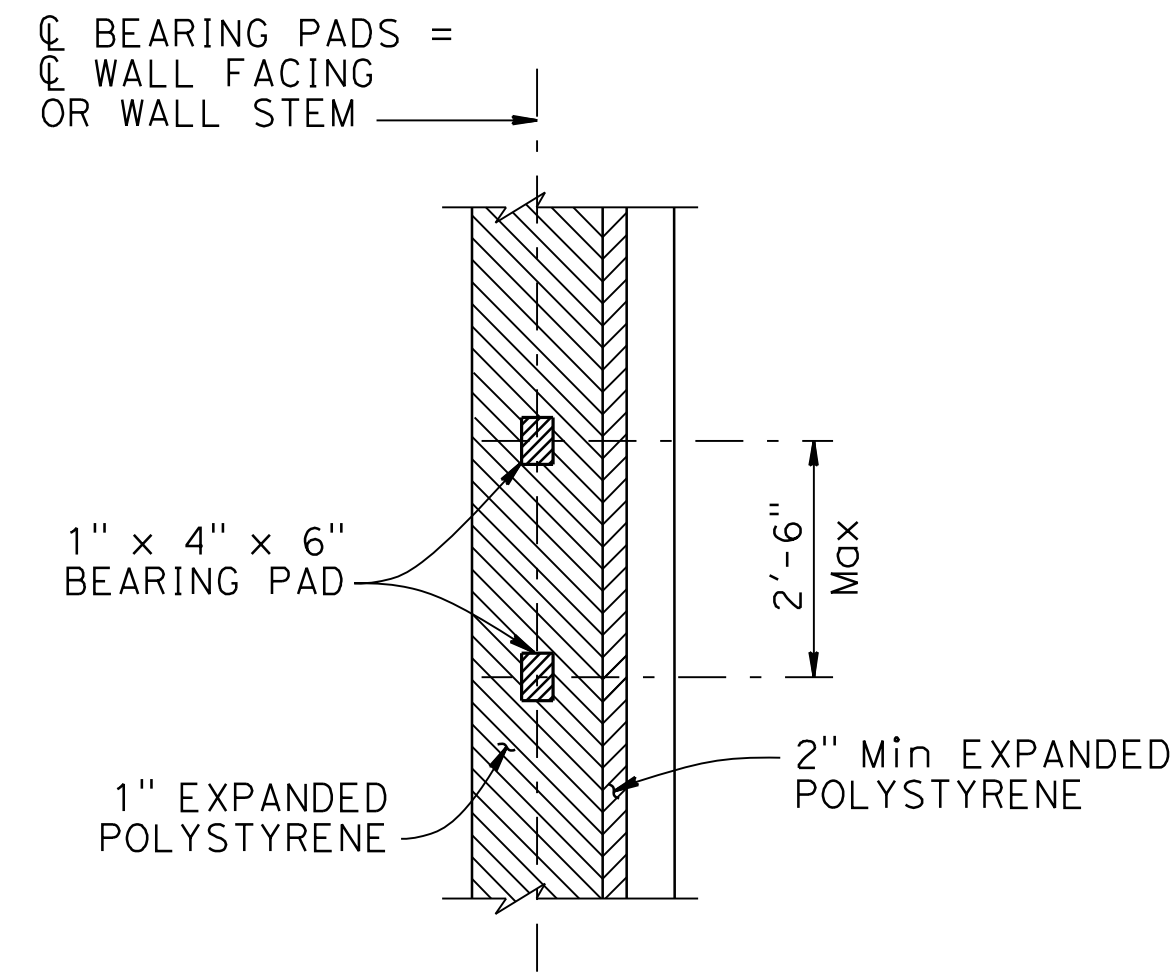
TOP OF WALL ELEVATION TABLE

"RW4" LOL STATION	ELEVATION (FEET)
43+00	150.36
43+11.63	149.34

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. CARMAZZI	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER: JOHN MANISCALCO	BRIDGE NO.: N/A	RETAINING WALL No. 4 WALL PANEL LAYOUT No. 4
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT NUMBER & PHASE: 04000205071	POST MILES: 7.9	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. ROMINGER	CHECKED: A. CHUNG		CONTRACT NO.: 04-3A6404	REVISION DATES	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 62 OF 168

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	312	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
			PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



SECTION A-A
NO SCALE

NOTES:

1. Clearance to reinforcing steel in concrete barrier to be 1". All barrier reinforcement shall be epoxy coated UON.
2. No expansion joints in concrete barrier or barrier slab within wall limits.
3. For barrier details, see "MISCELLANEOUS DETAILS" sheet.
4. For limits of approach slab, see "GENERAL PLAN No. 1" sheet.

DESIGN DATA - BARRIER SLAB

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014

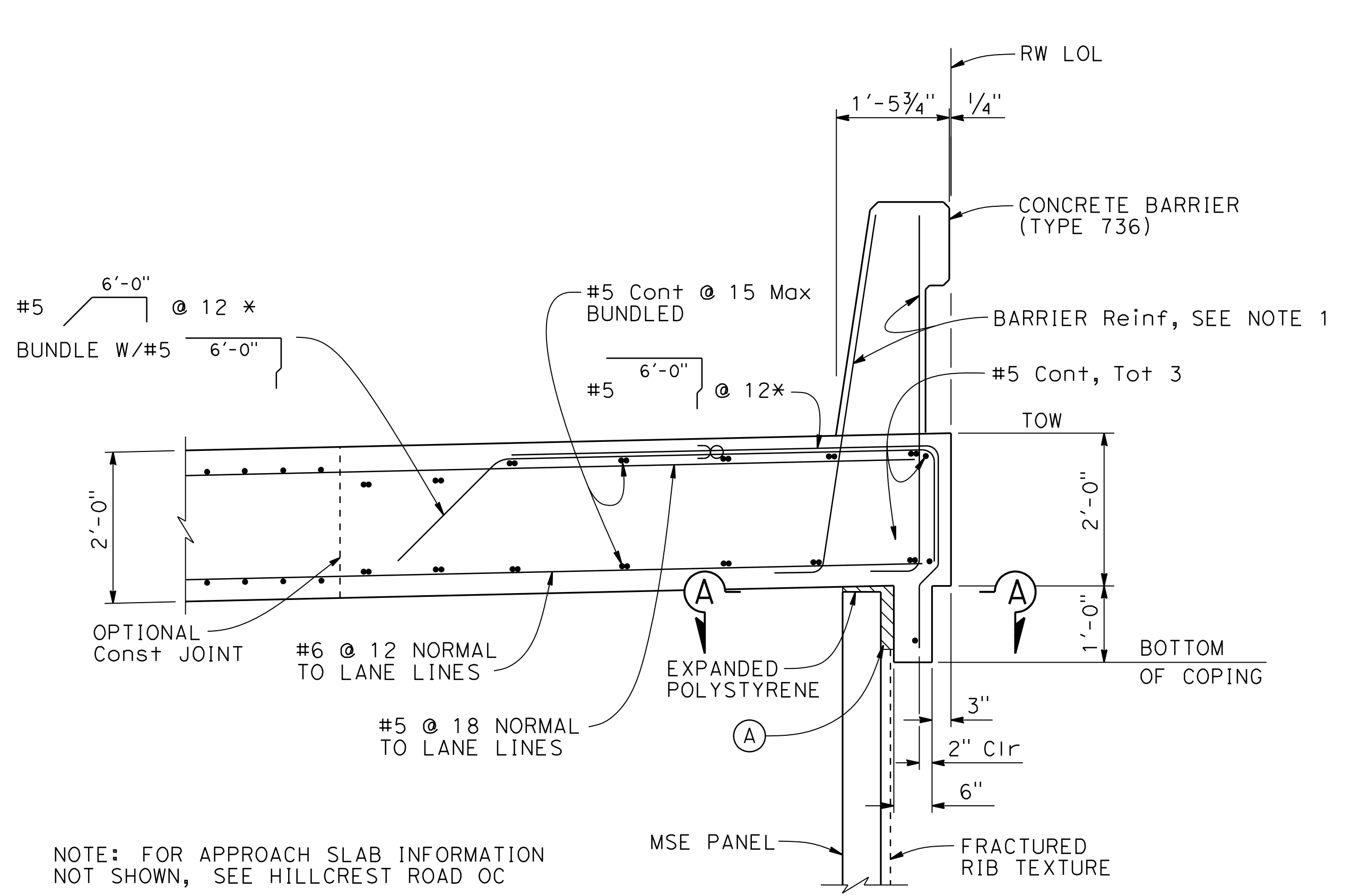
F_t : 54 kips

EQE: $k_h = 0.2$
 $k_v = 0.0$

REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
 $n = 8$

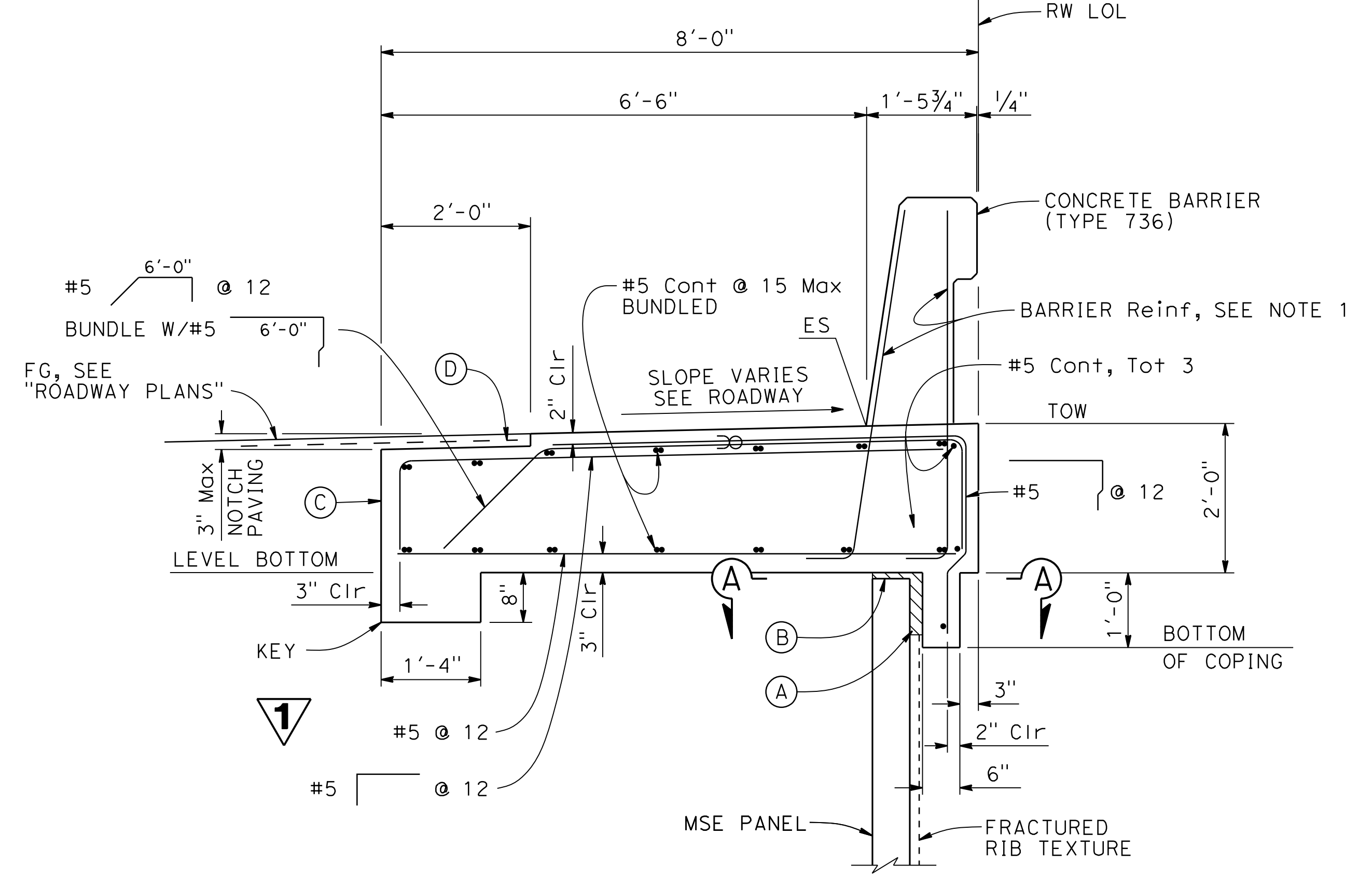
KEY NOTES:

- (A) 2" Expanded polystyrene recessed 2" into barrier slab at front face
- (B) 1" Expanded Polystyrene
- (C) Contact joint
- (D) 4'-0" wide pavement reinforcing fabric
- ⊗ Indicates bundled bars



CONCRETE BARRIER SLAB SECTION AT APPROACH SLAB
3/4" = 1'-0"

"RW4" 41+00.08 TO 41+08.17 (Rt of "HC1" LINE)
"RW4" 41+36.63 TO 41+45.72 (Lt of "HC1" LINE)



CONCRETE BARRIER SLAB SECTION
3/4" = 1'-0"

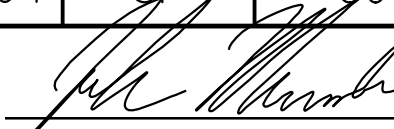
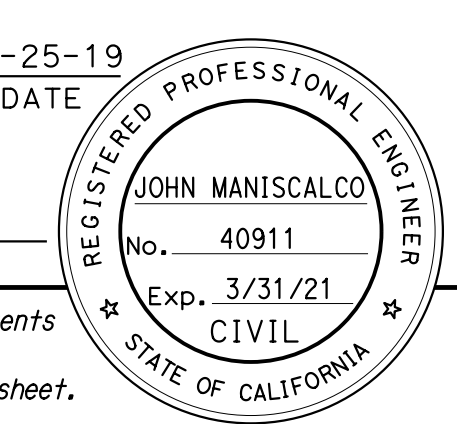
"RW4" 40+00 TO 41+00.08 (Rt of "HC1" LINE)
"RW4" 41+45.72 TO 42+48.30 (Lt of "HC1" LINE)
AND "RW4" 42+48.30 TO 43+11.63

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

1 REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

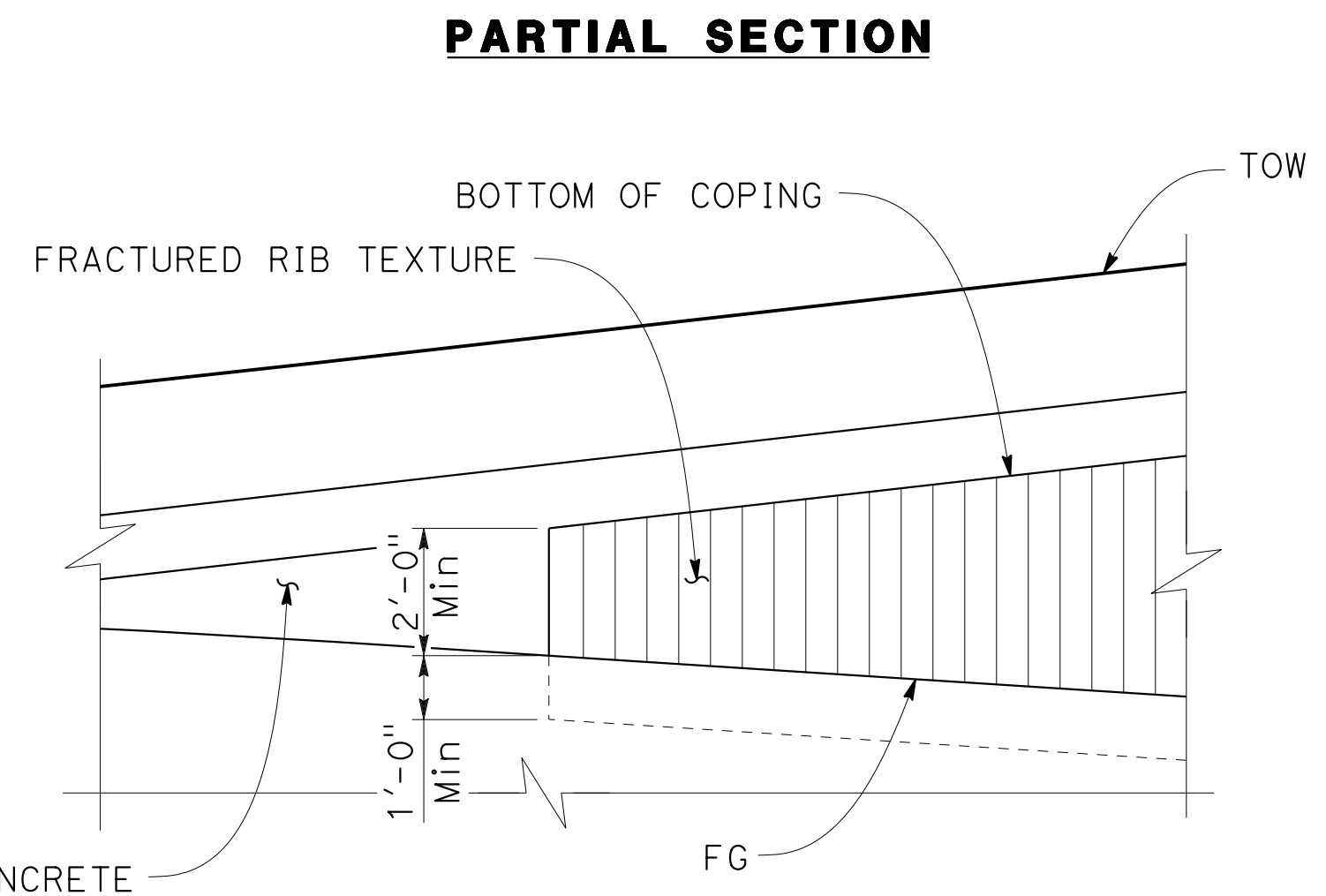
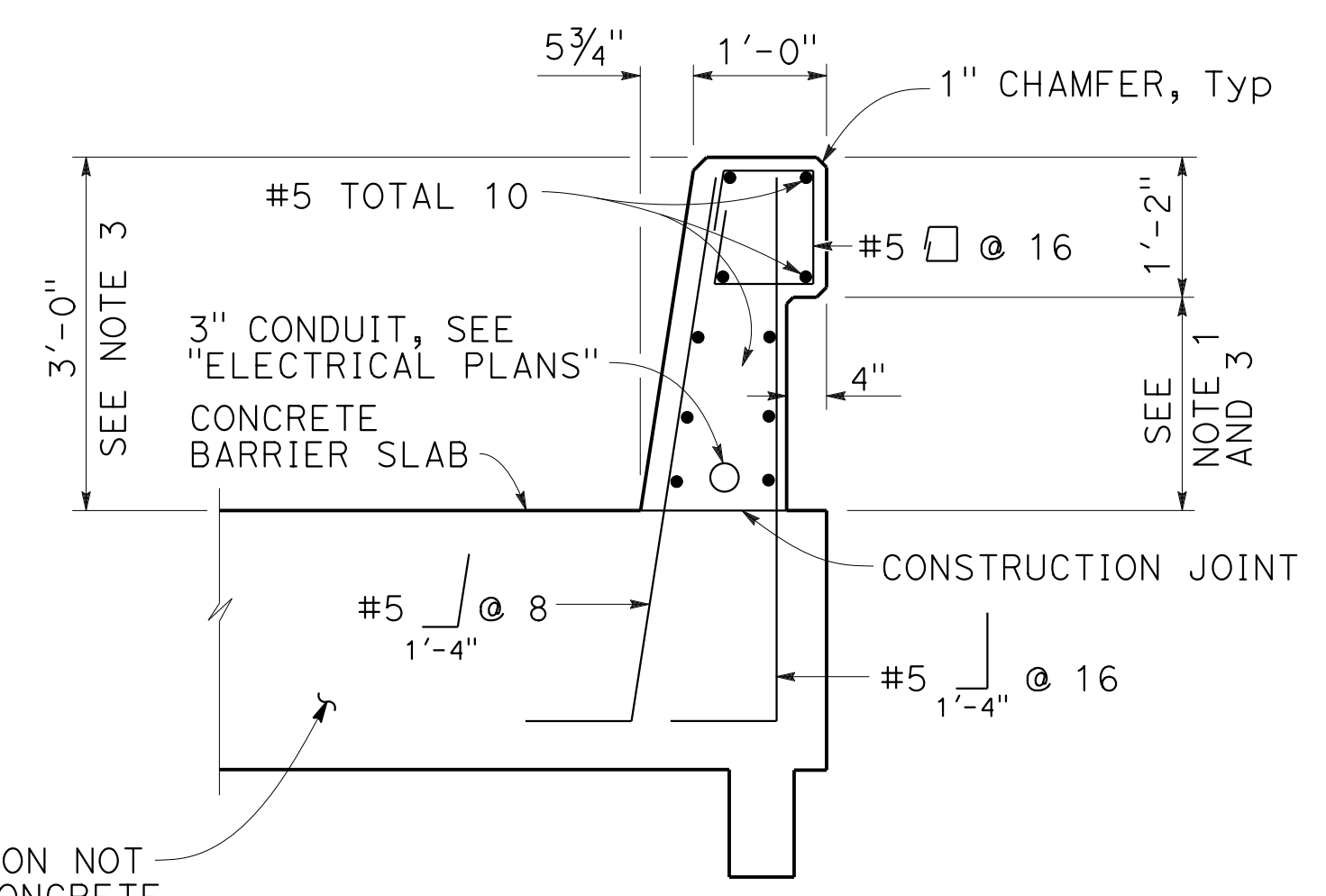
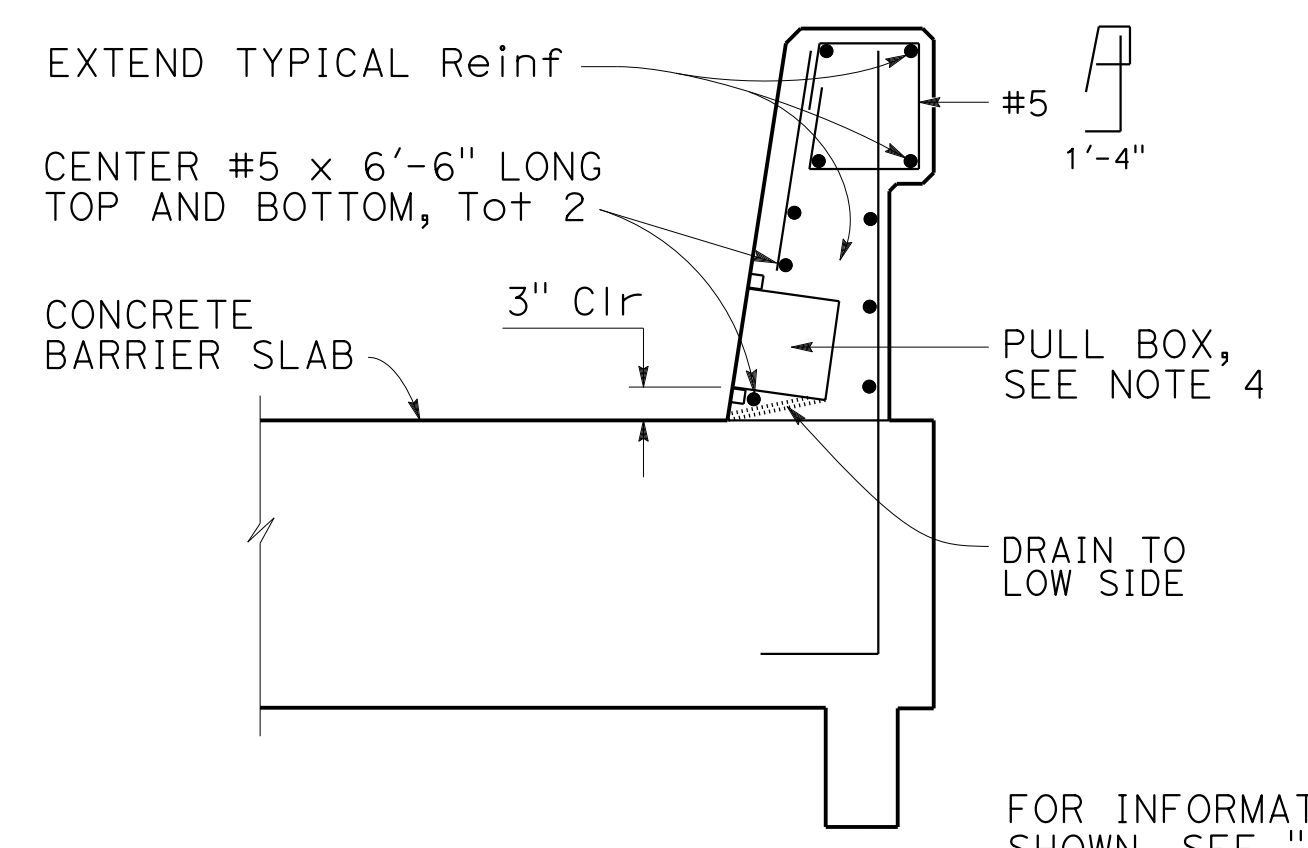
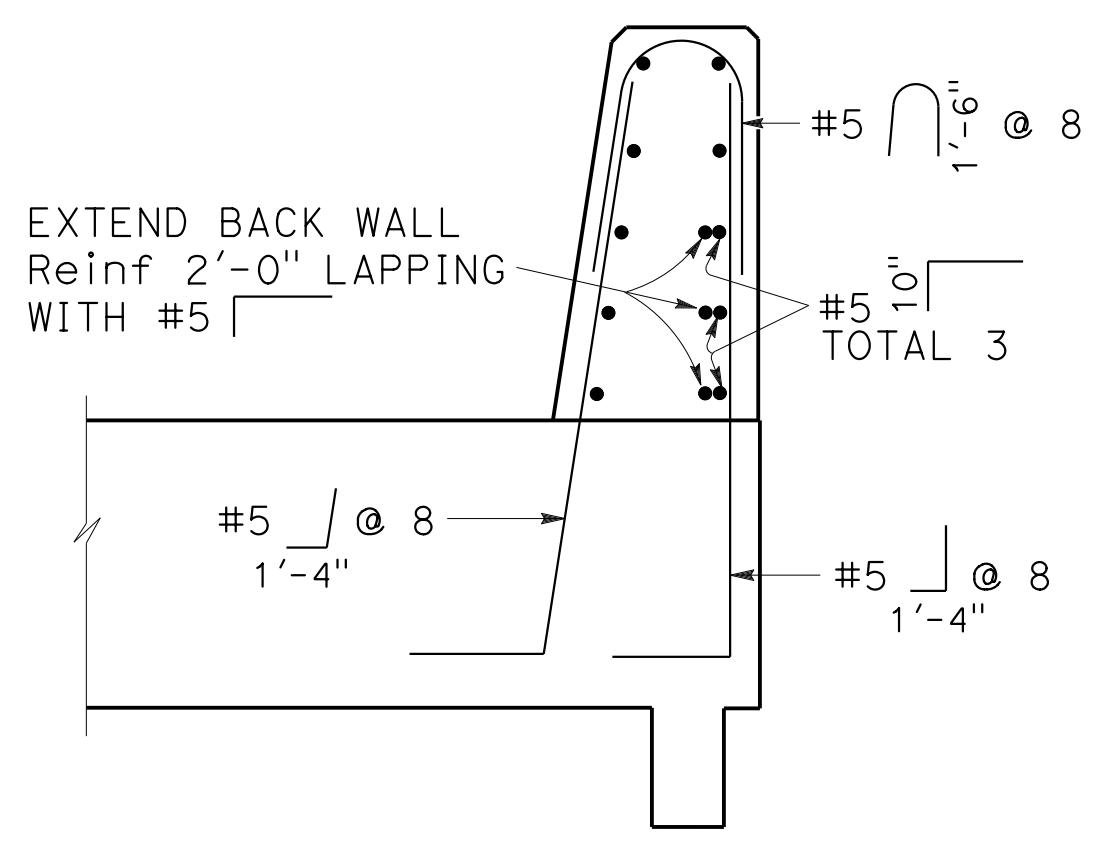
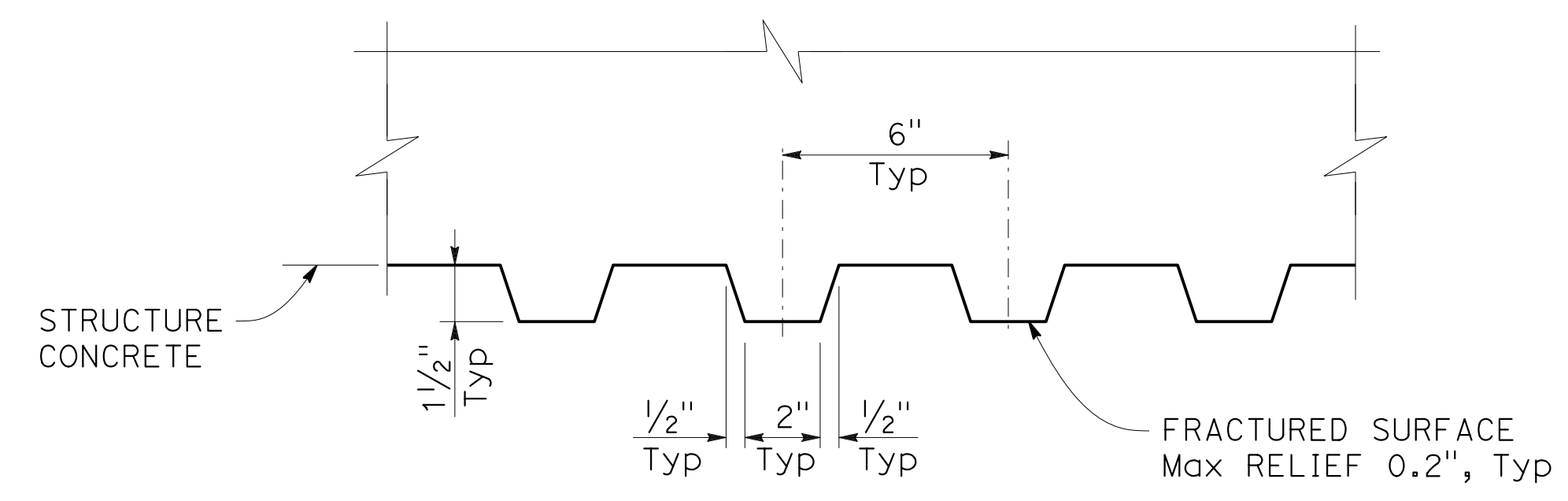
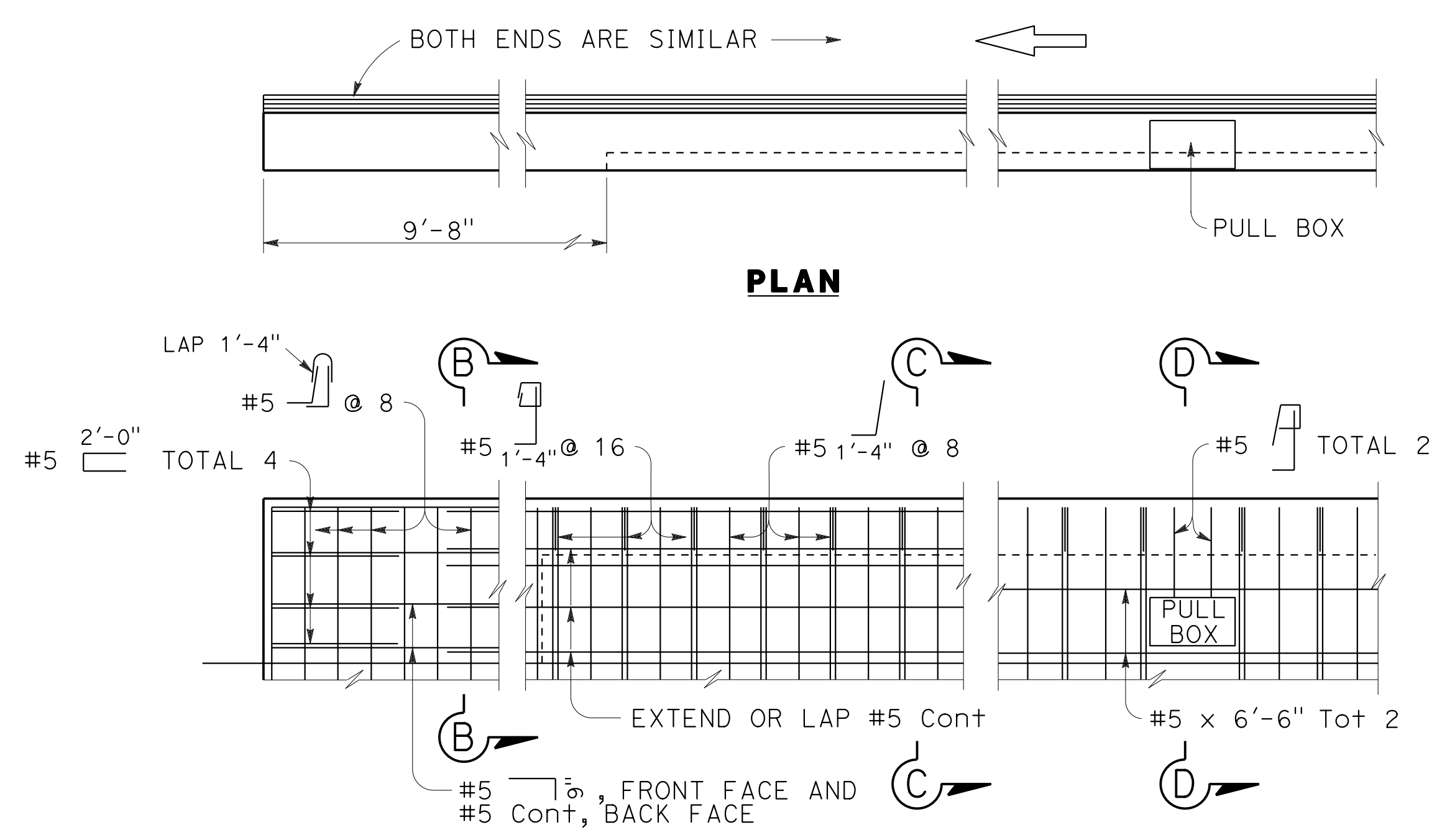
DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. CARMAZZI	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 4 CONCRETE BARRIER SLAB DETAILS
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. ROMINGER	CHECKED: A. CHUNG		POST MILES: 7.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414
			DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 10-22-19, 11-12-19, 2-27-19, 7-28-19
			FILE => RW4-u-cbsd+01.dgn		SHEET 63 OF 168

USERNAME => TMAPASIG DATE PLOTTED => 12/17/2019 TIME PLOTTED => 12:37:45 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	313	436
 REGISTERED CIVIL ENGINEER			7-25-19 DATE		
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

1. Clearance to reinforcing steel in concrete barrier to be 1". All barrier reinforcement shall be epoxy coated UON.
2. No expansion joints in concrete barrier or barrier slab within wall limits.
3. Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.
4. See Standard Plans ES-9A thru ES-9E and "ELECTRICAL PLANS" for electrical details not shown.



SECTION B-B
NOTE: FOR INFORMATION NOT SHOWN, SEE "SECTION D-D"

SECTION C-C
NOTE: FOR INFORMATION NOT SHOWN, SEE "SECTION D-D"

SECTION D-D

PARTIAL ELEVATION
NOTE: BEGIN OF WALL SHOWN, END OF WALL SIMILAR

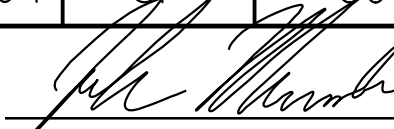
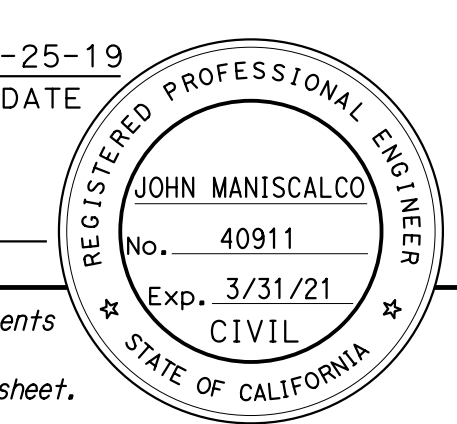
CONCRETE BARRIER (TYPE 736)
NO SCALE

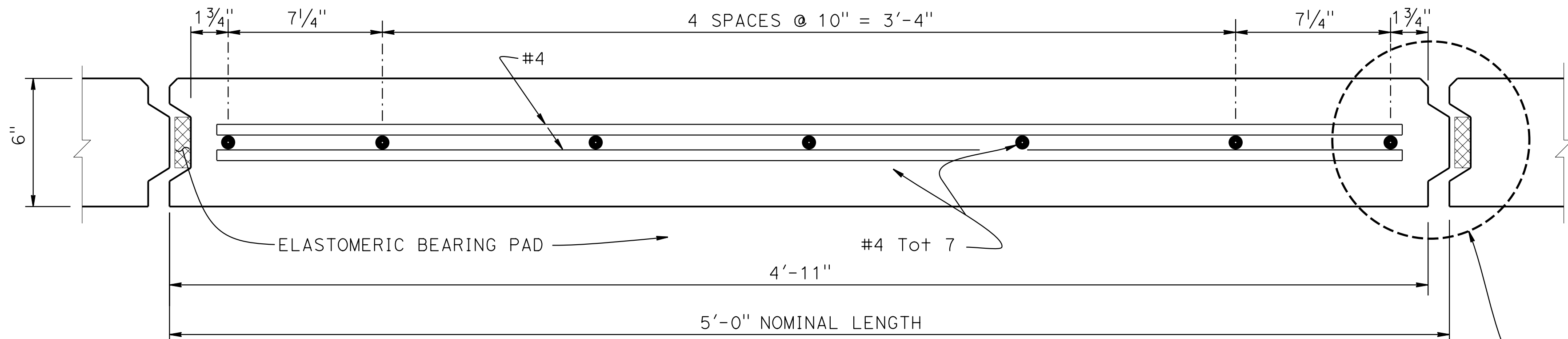
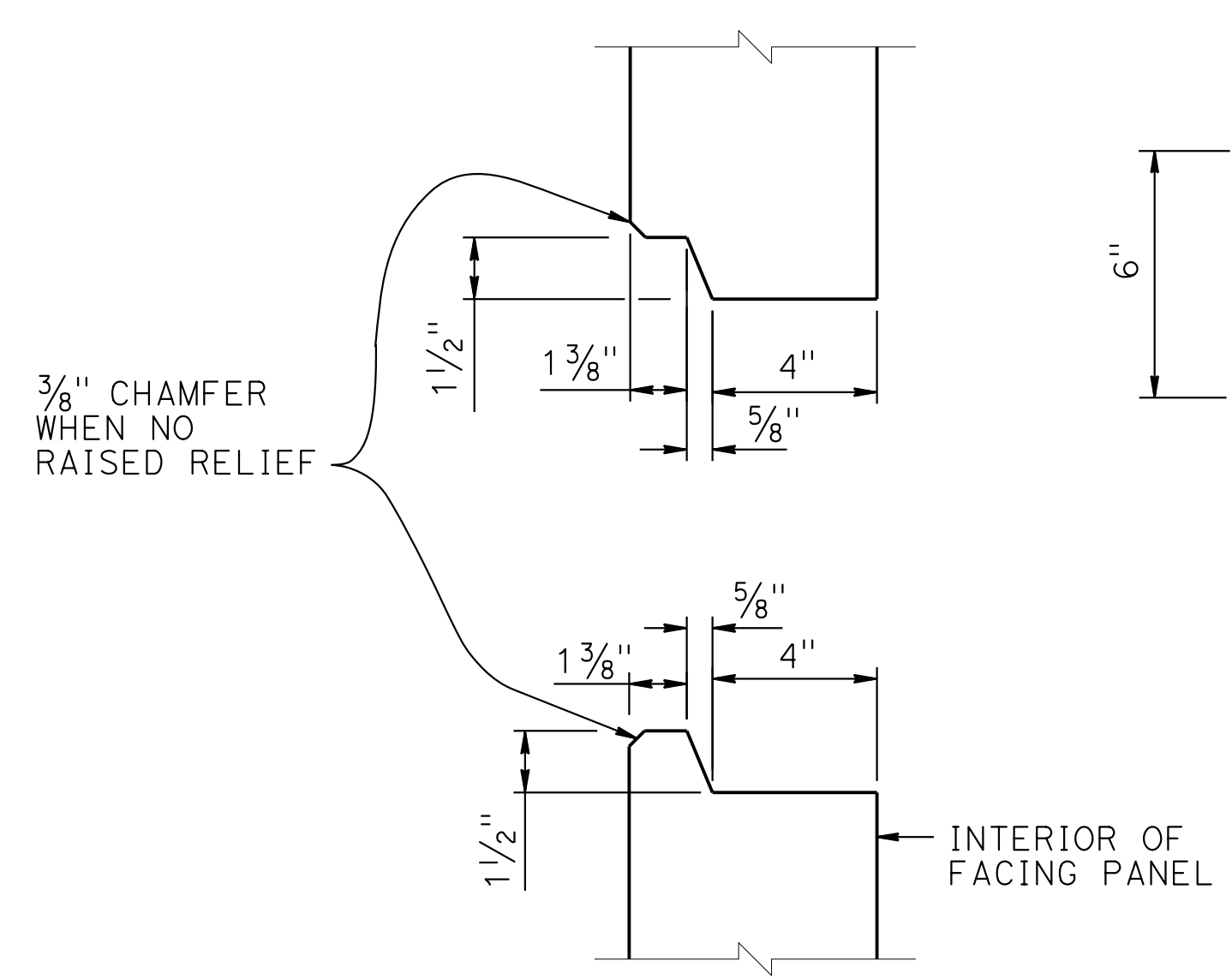
FRACTURED RIB TEXTURE DETAIL
NO SCALE

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

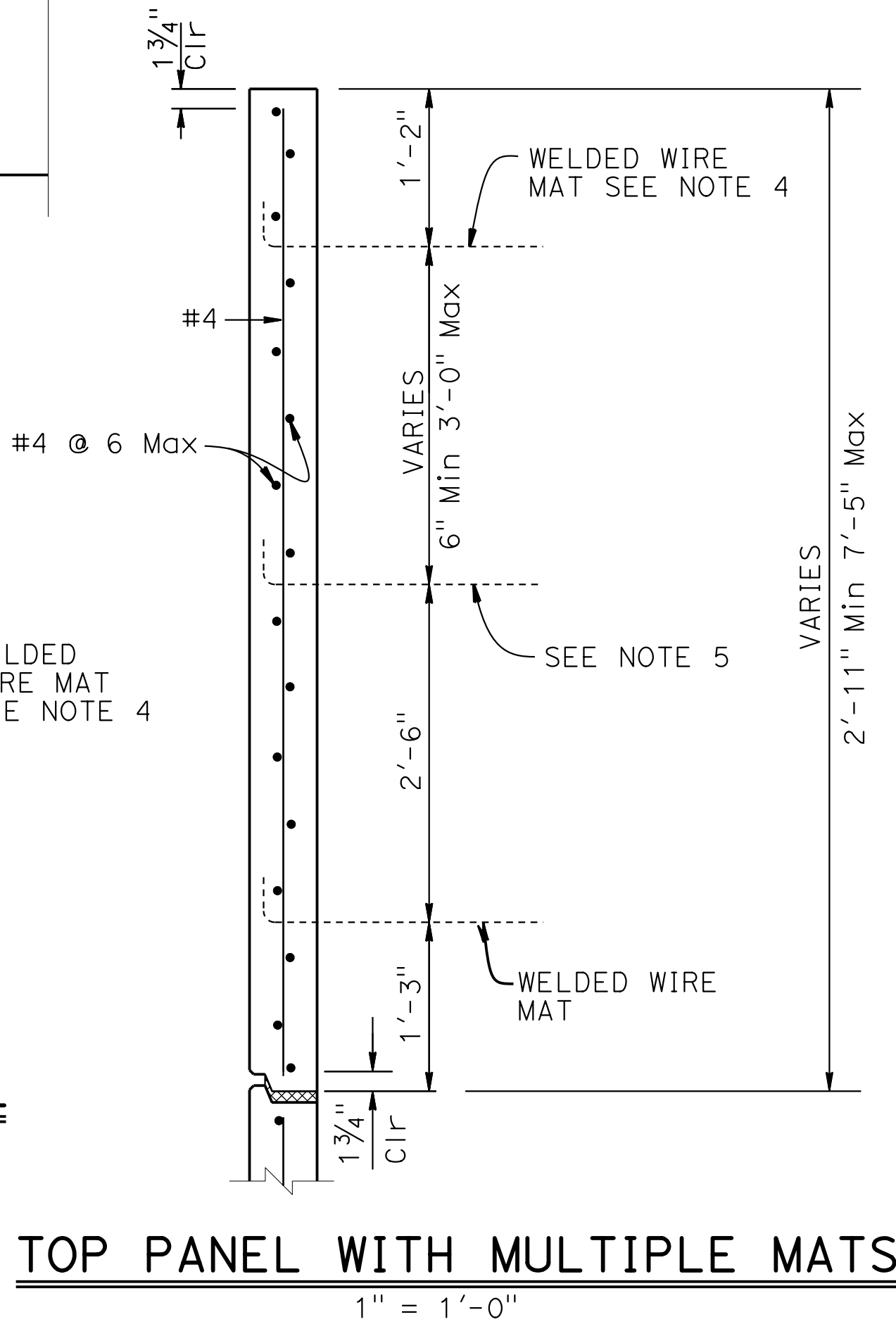
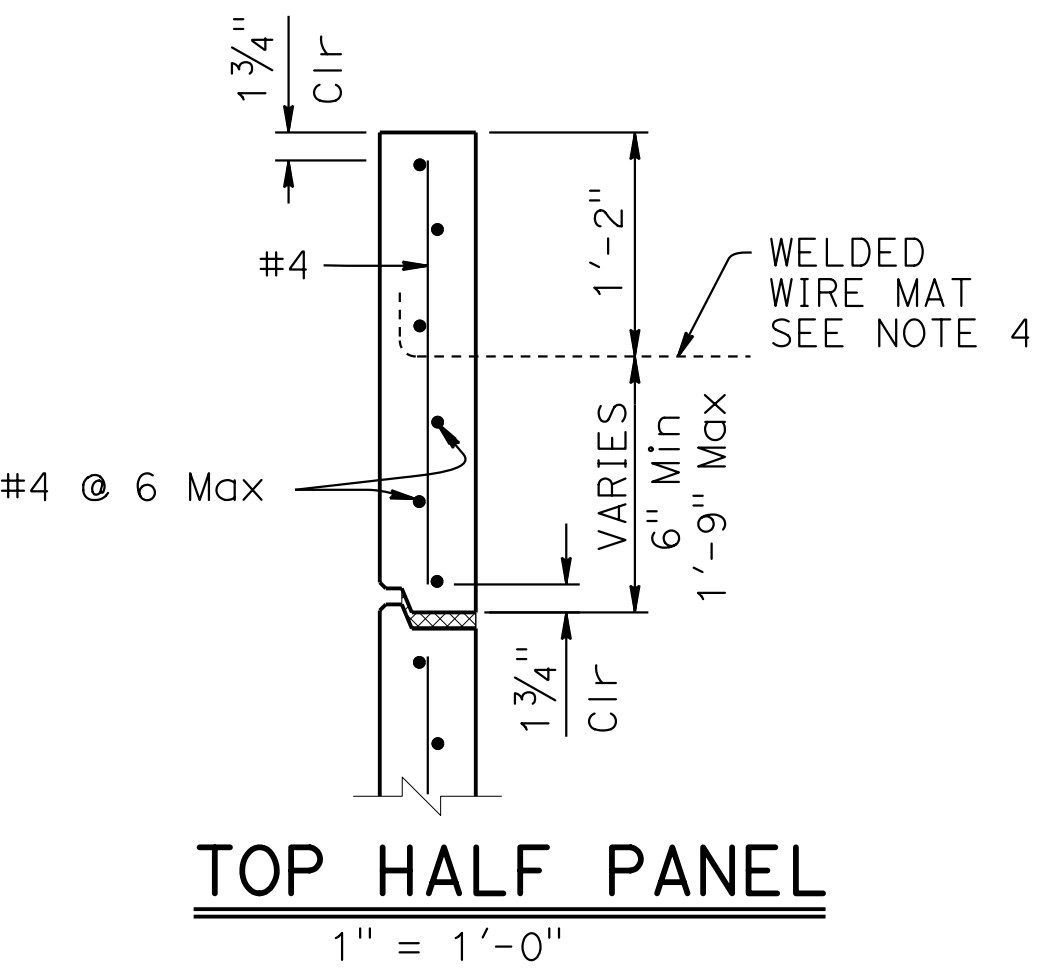
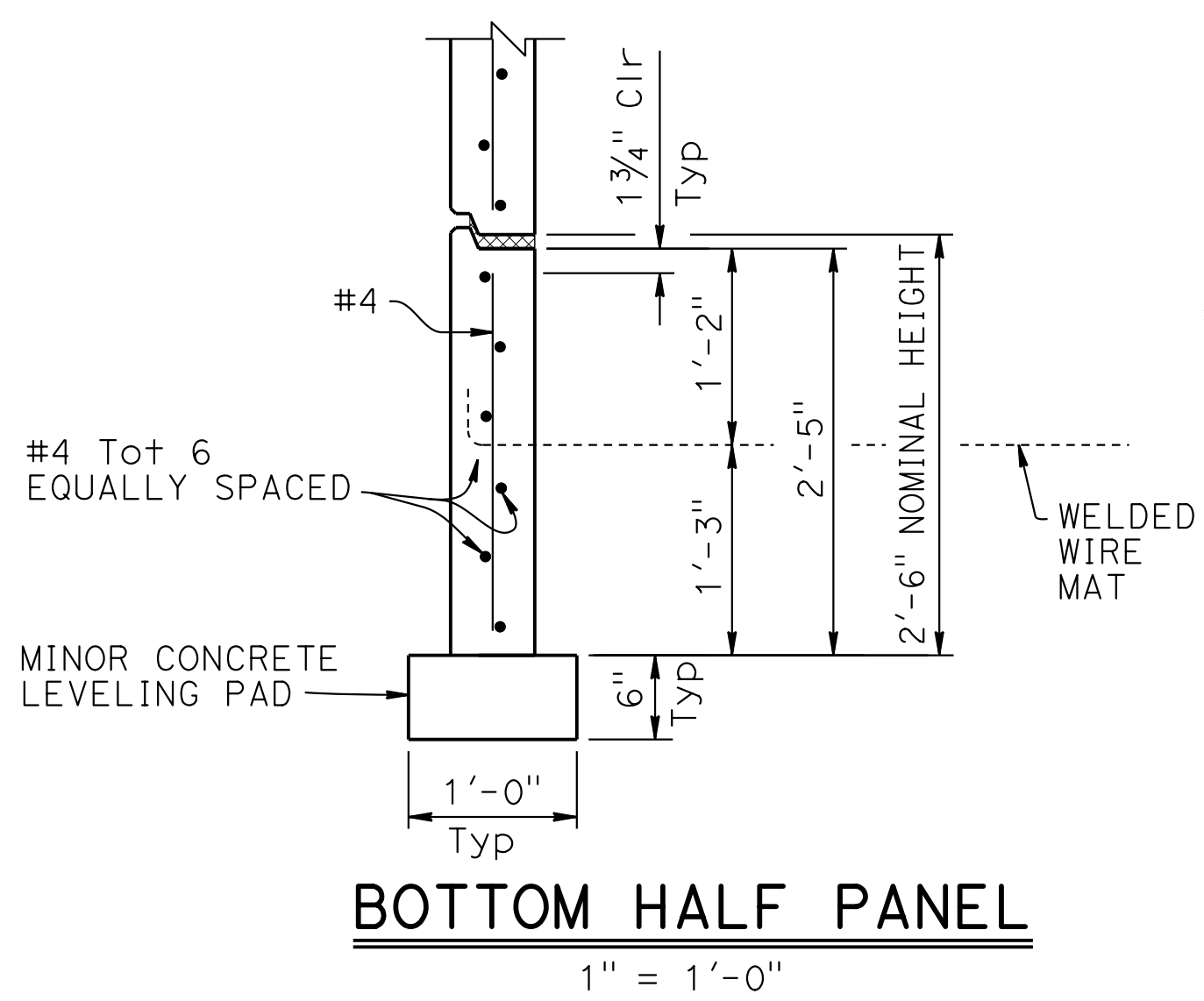
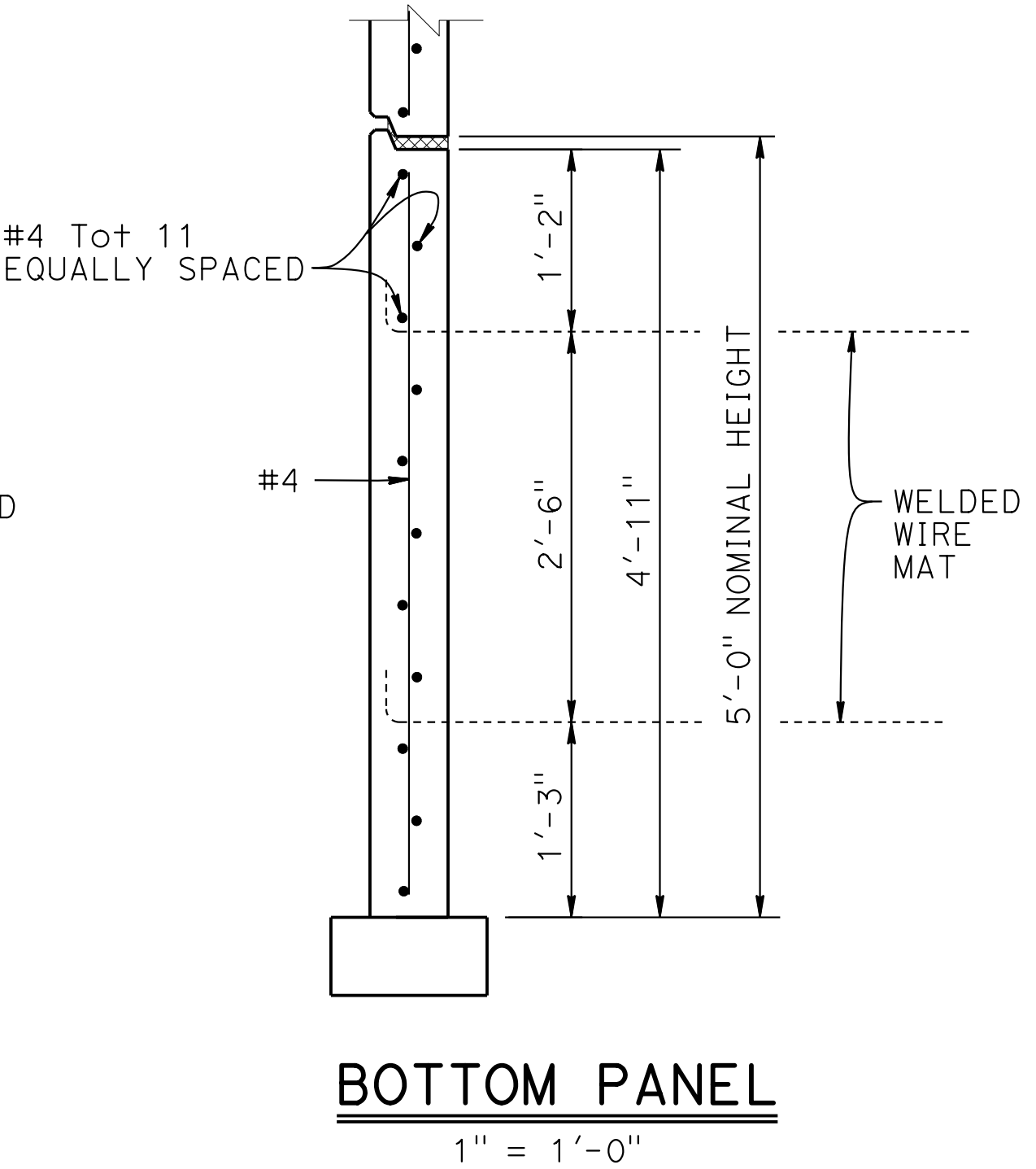
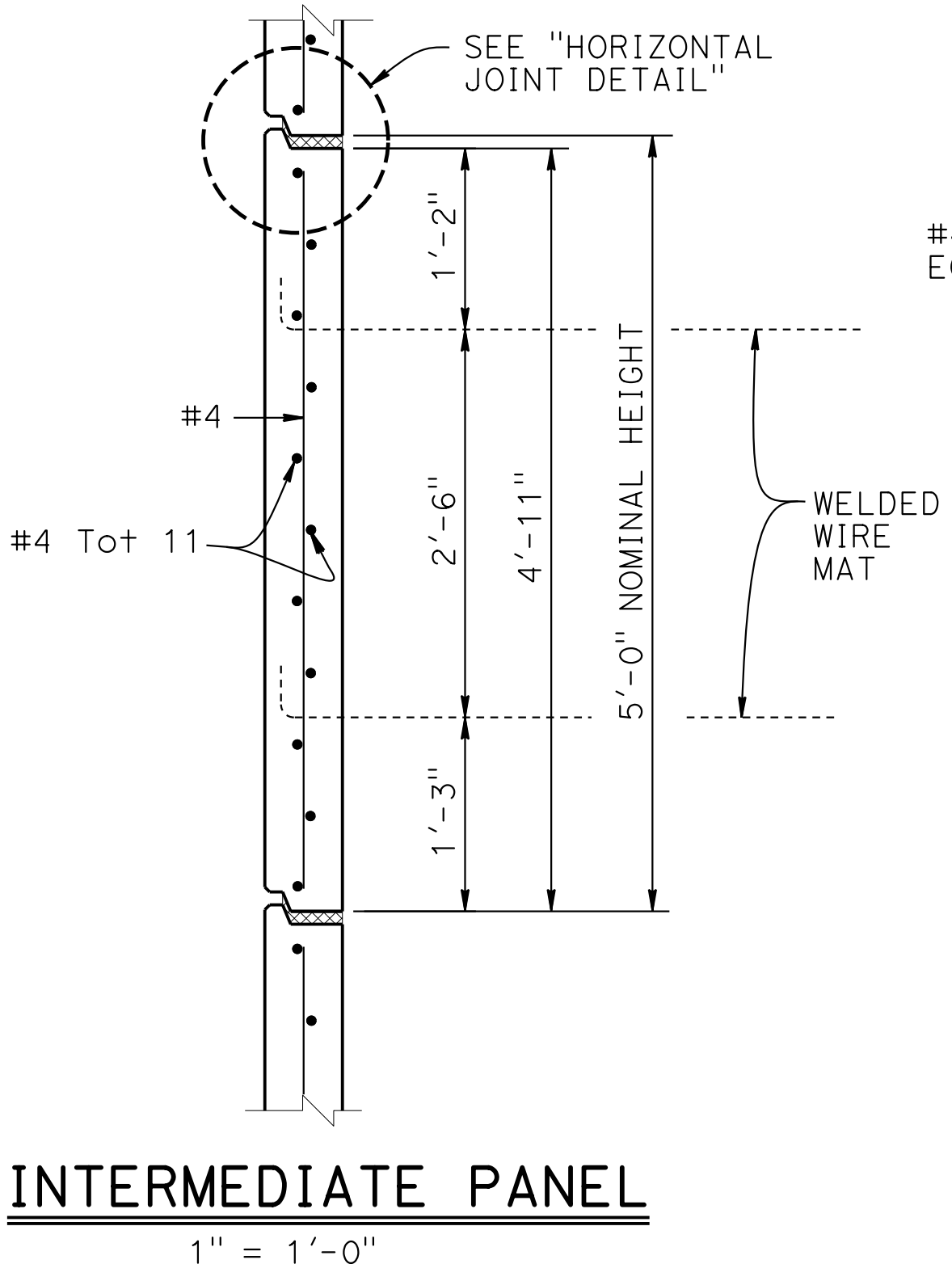
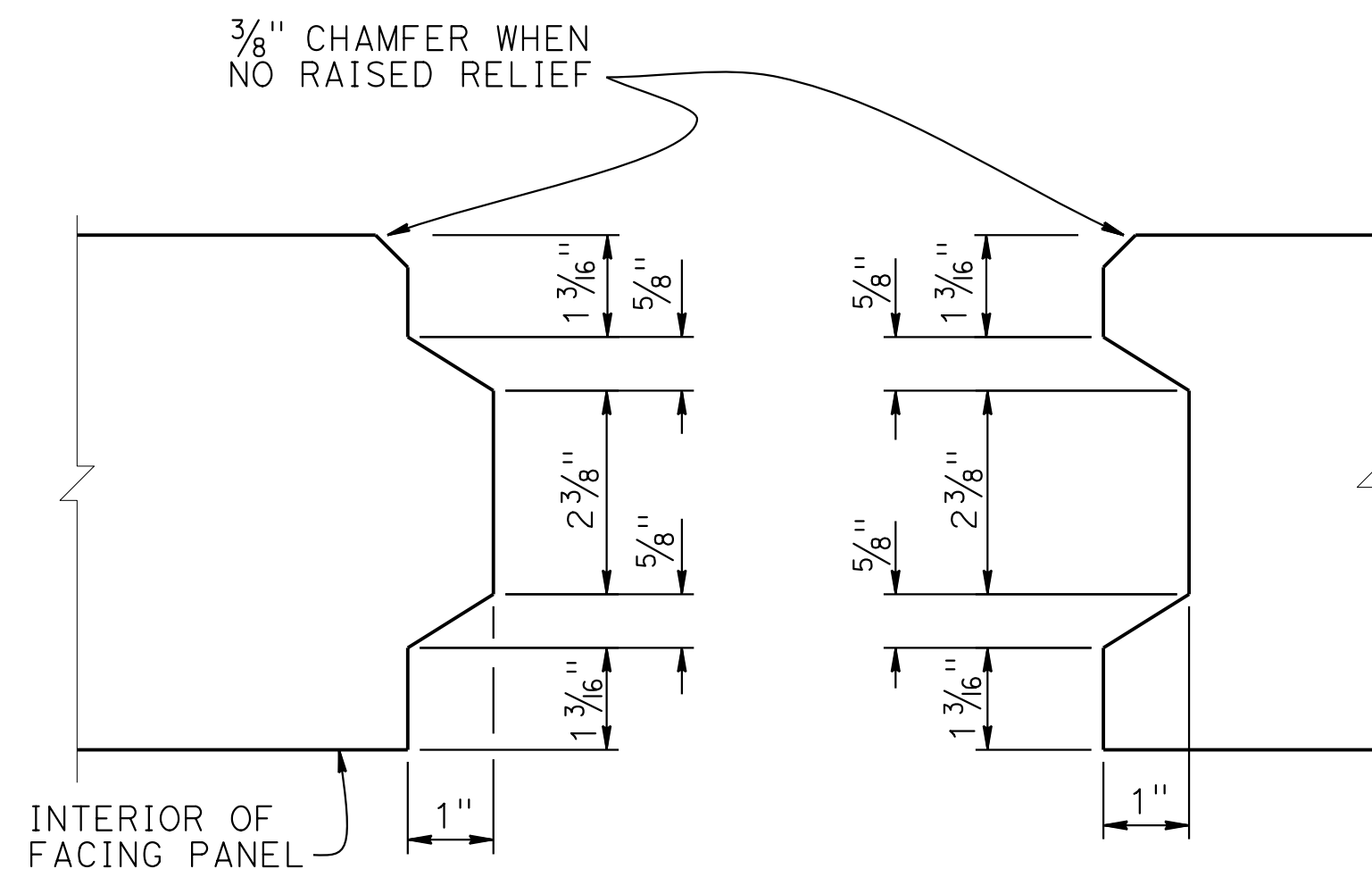
DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. CARMAZZI	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 4 MISCELLANEOUS DETAILS
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		POST MILES 7.9	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. ROMINGER	CHECKED: A. CHUNG		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19 SHEET 64 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	314	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



- NOTES:
1. Architectural treatment not shown
 2. Place reinforced elastomeric bearing pads in all of the panel joints between the panels. Place one in each vertical joint where the horizontal joints intersect. Place two per panel in each horizontal joint:
 $\frac{3}{4}$ " x $2\frac{3}{8}$ " x 6" for vertical joints
 $\frac{3}{4}$ " x 4" x 6" for horizontal joints
 3. Bond a strip of filter fabric, 1'-0" wide, over the full length of all panel joints
 4. Top layer of welded wire mats attached parallel to top of panel when top of wall is angled or curved as shown elsewhere in "STRUCTURE PLANS"
 5. Eliminate mid level mat when closer than 6" to top mat, continue variable dimension between remaining mats



BRIDGE STANDARD DETAILS	
xs13-020-1	July 2014
FILE NO.	APPROVAL DATE
SIGN OFF DATE	

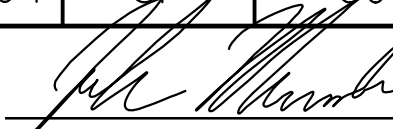
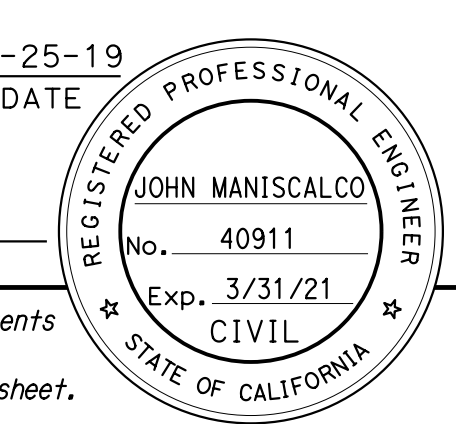
The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California.

FILE => RW4-u-xmsed101-.dgn
 USERNAME => JOHGREEN
 TIME PLOTTED =>

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	N/A	RETAINING WALL No. 4
POST MILES	7.9	
PROJECT NUMBER & PHASE: 04000205071		MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	315	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

GENERAL NOTES LOAD & RESISTANCE FACTOR DESIGN 1

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments

LIVE LOAD: Surcharge = 240 lb/ft²

SOIL PARAMETERS:
 Internal design $\phi = 34^\circ$, $\gamma = 120$ lb/ft³
 External design ϕ (Retained Backfill) = 30° , $\gamma = 120$ lb/ft³
 ϕ (Foundation) = 30°
 $k_h = 0.2$

PRECAST CONCRETE PANELS:
 $f'_c = 4,000$ psi (Concrete compressive strength at 28 days)
 $f_y = 60,000$ psi (Yield strength of reinforcement)

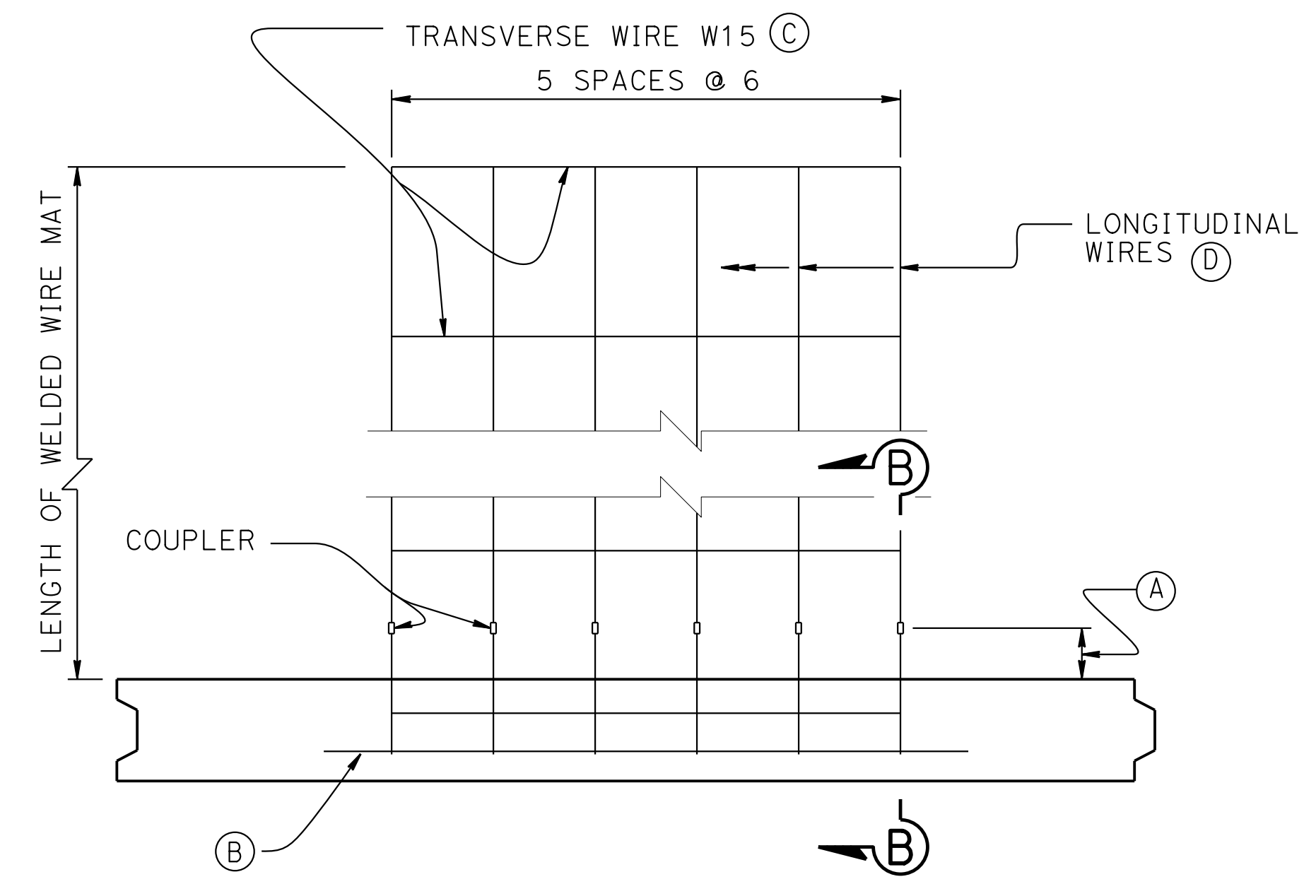
SOIL REINFORCEMENT:
 Welded wire mats: $f_y = 65,000$ psi (Yield strength)
 Coupler: $f_y = 36,000$ psi (Yield strength)
 Corrosion rate = 1.1 mils/year

REINFORCED CONCRETE:
 $f'_c = 3,600$ psi, except as noted
 (Concrete compressive strength at 28 days)
 $f_y = 60,000$ psi (Yield strength of reinforcement)

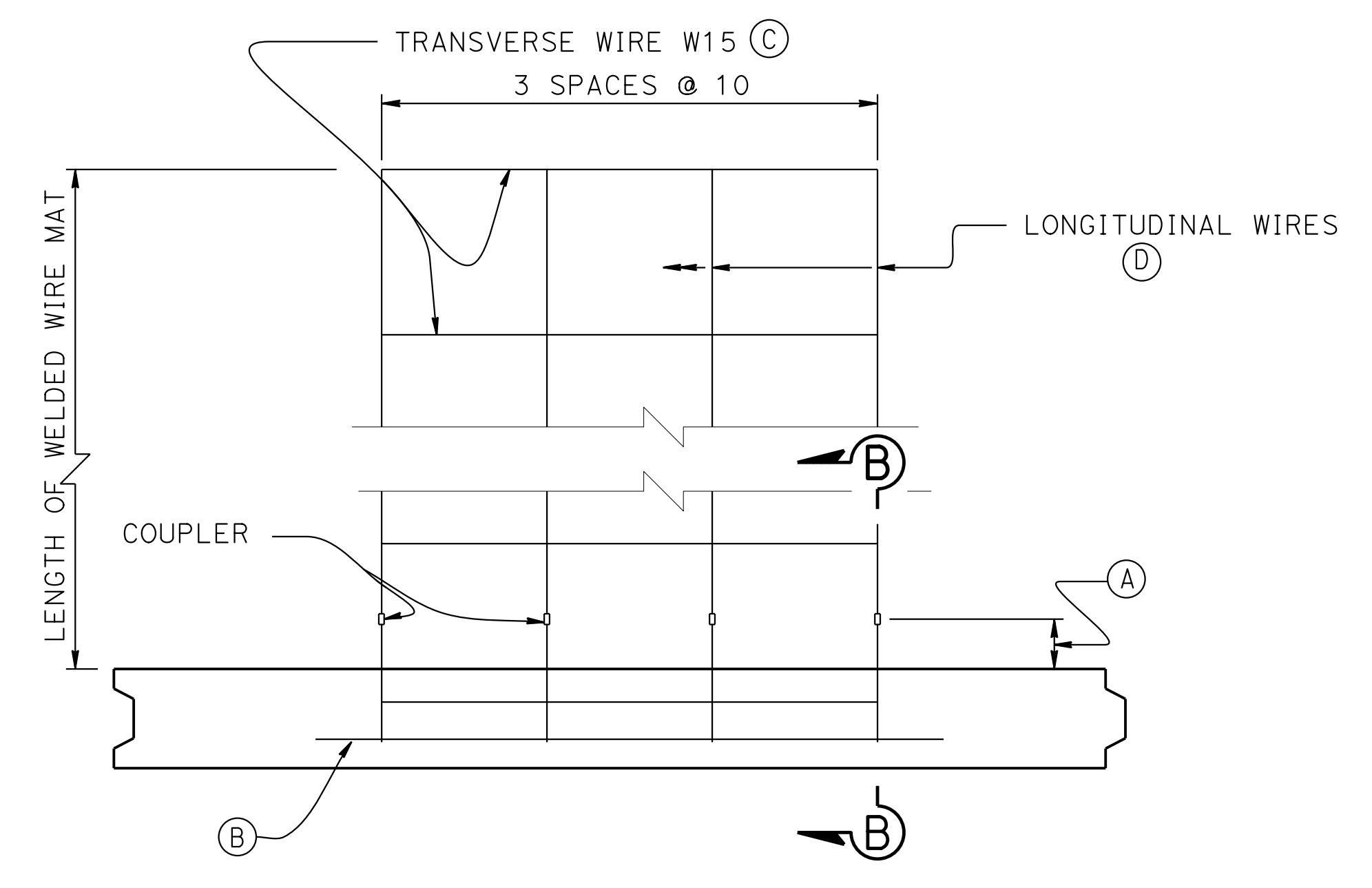
MSE = Mechanically Stabilized Embankment

NOTES:

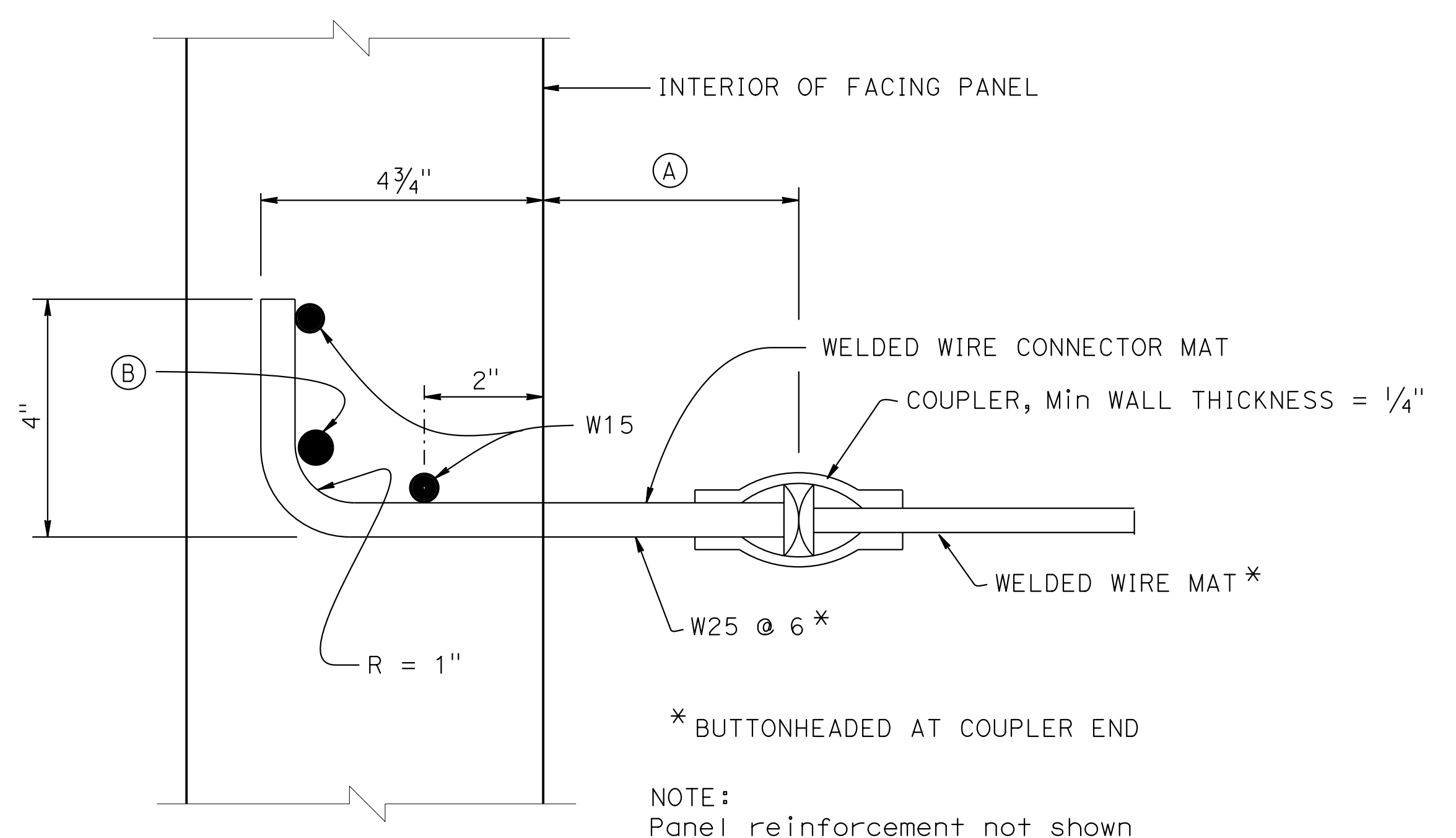
- (A) Distance as required to permit coupler to be swaged
- (B) Place #4 x 3'-2", centered on connector mat, but not welded to it
- (C) All transverse wires, size W15 at various spacing as shown elsewhere in plans
- (D) Size of longitudinal wires shown elsewhere in plans



PLAN OF PANEL WITH SIX WIRE MAT
1/2" = 1'-0"



PLAN OF PANEL WITH FOUR WIRE MAT
1/2" = 1'-0"



SECTION B-B
6" = 1'-0"

* BUTTONHEADED AT COUPLER END
 NOTE: Panel reinforcement not shown

BRIDGE STANDARD DETAILS		
xs13-020-2 FILE NO.	July 2014 APPROVAL DATE	The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California

1 NOTES NOT USED

Refer to: <http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html>
 FILE => RW4-u-xmsed102-.dgn
 USERNAME => JOHGREEN TIME PLOTTED =>

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
 DATE PLOTTED => 25-JUL-2019


STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 BRIDGE NO. N/A
 POST MILES 7.9
 UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071
 CONTRACT NO.: 04-3A6404

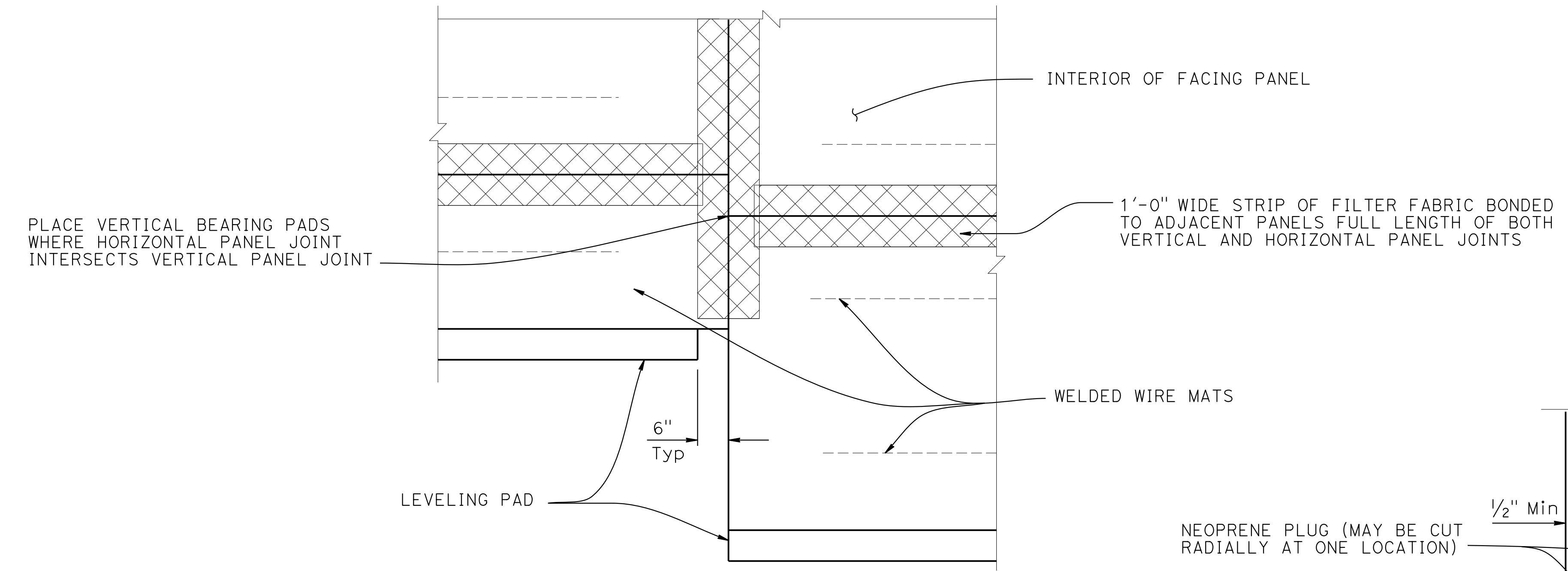
RETAINING WALL No. 4		MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 2	
REVISION DATES	SHEET	OF	
4-30-18 11-12-18 2-27-19 7-25-19	66	168	

USERNAME => JOHGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:16

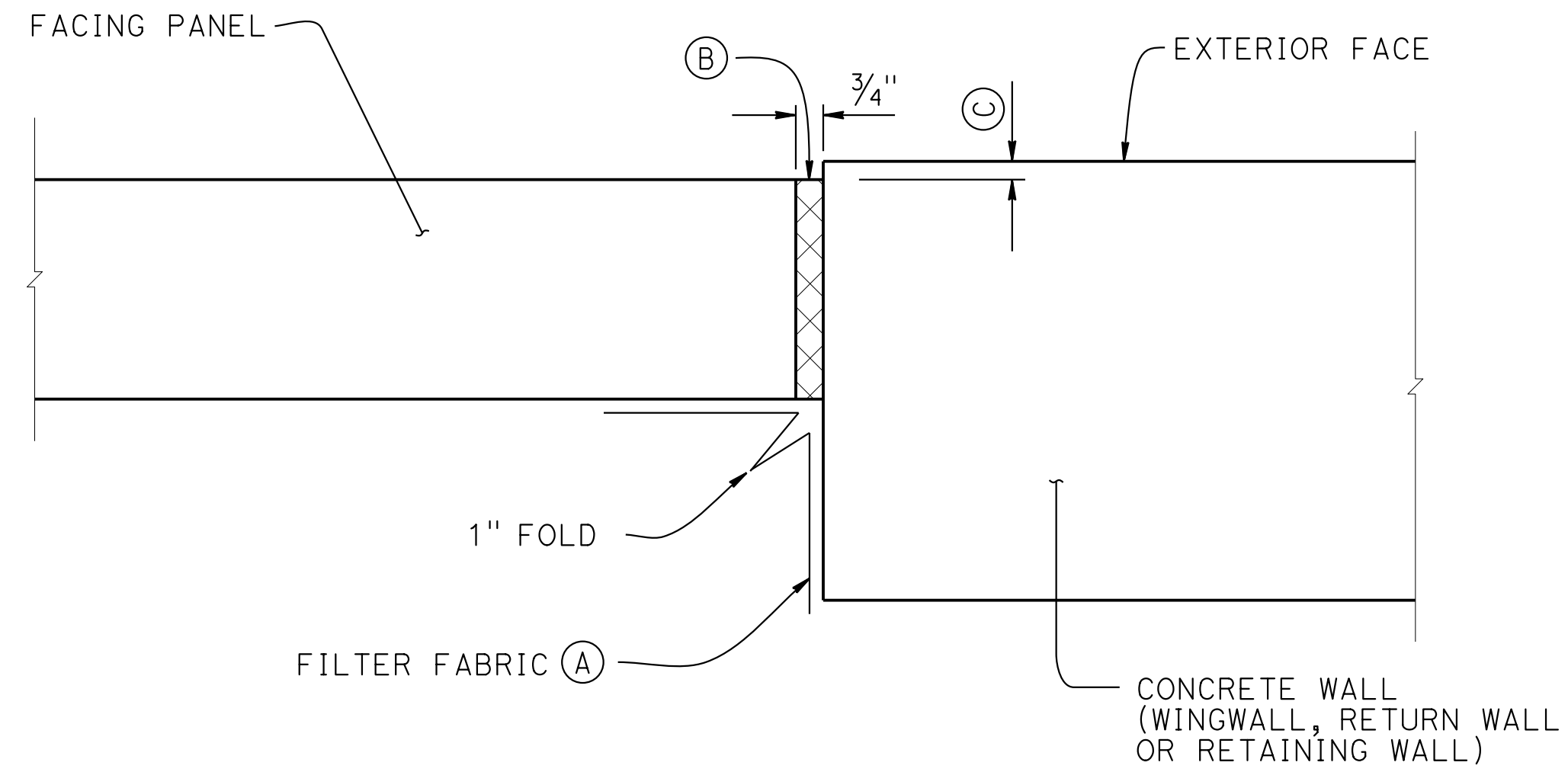
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	316	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

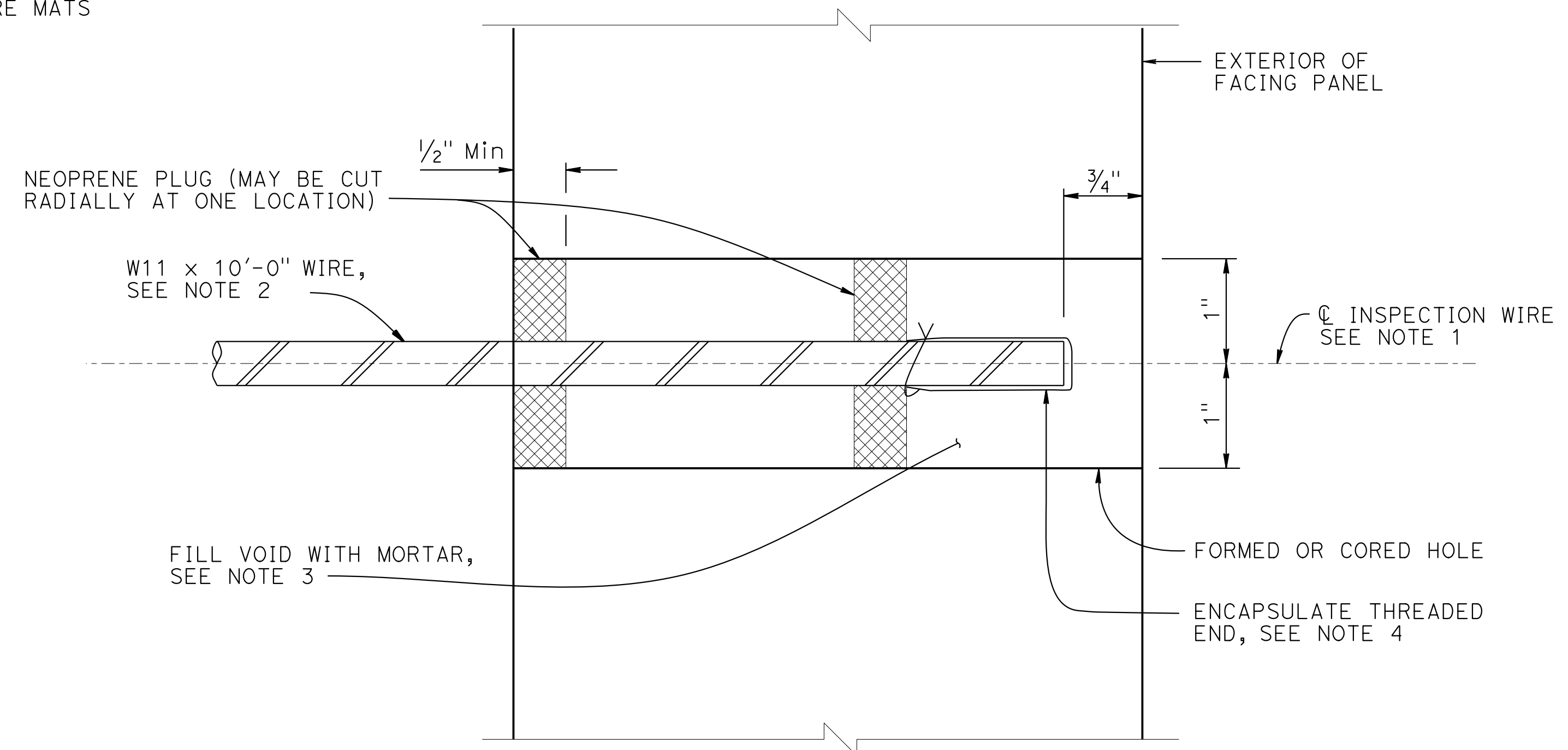


PART ELEVATION
3/4" = 1'-0"



MSE FACING PANEL-TO-CONCRETE WALL JOINT DETAIL
3" = 1'-0"

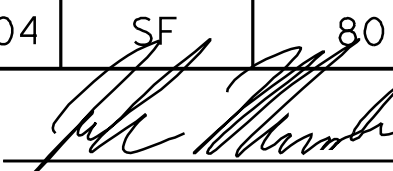
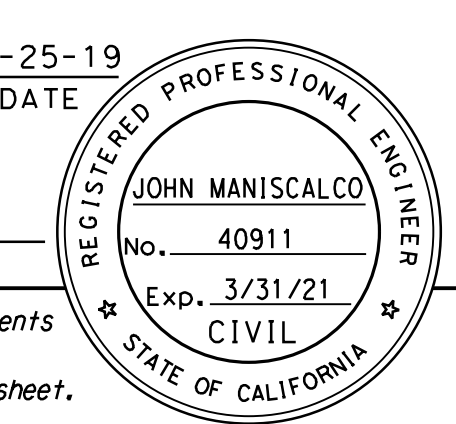
- NOTES:
- (A) Bond a strip of filter fabric, 1'-6" wide, to back of MSE panels and the adjacent concrete wall for entire length of vertical joint
 - (B) Bond expansion joint material to the concrete wall
 - (C) Offset between face of MSE facing panel and face of the concrete wall as dictated by location of layout lines shown elsewhere in "STRUCTURE PLANS"

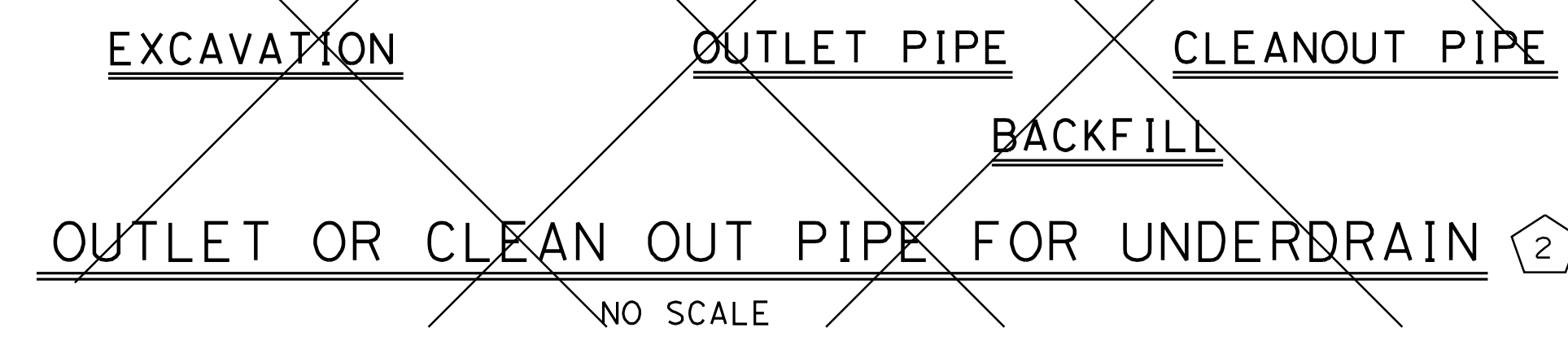
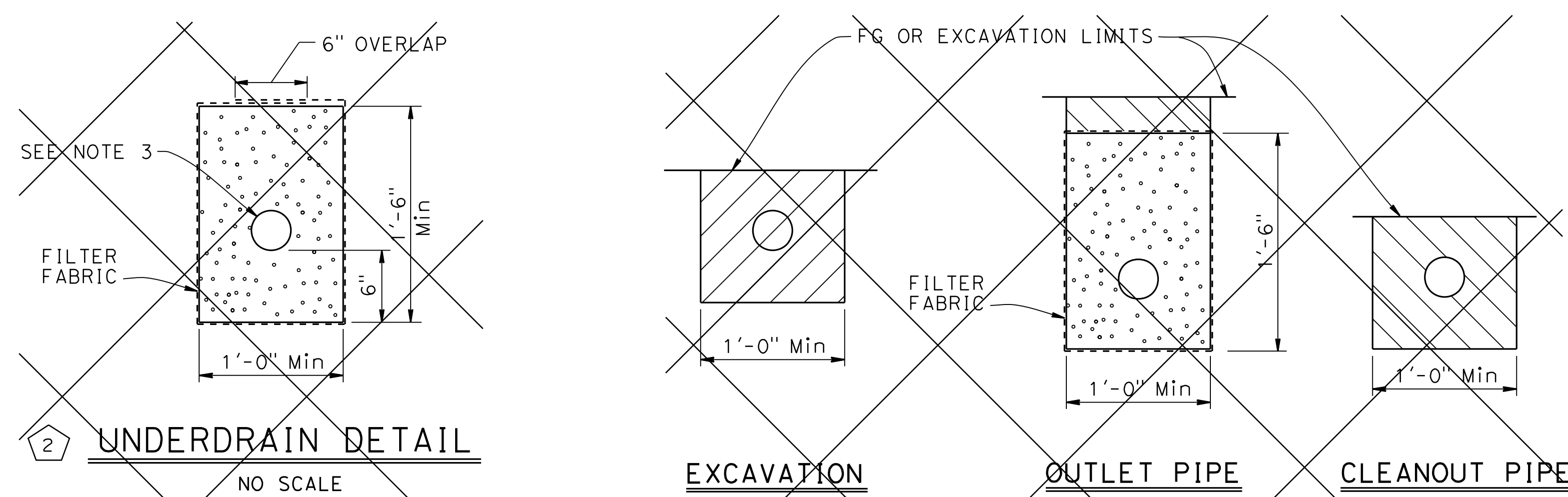


SECTION THRU INSPECTION WIRE
NO SCALE

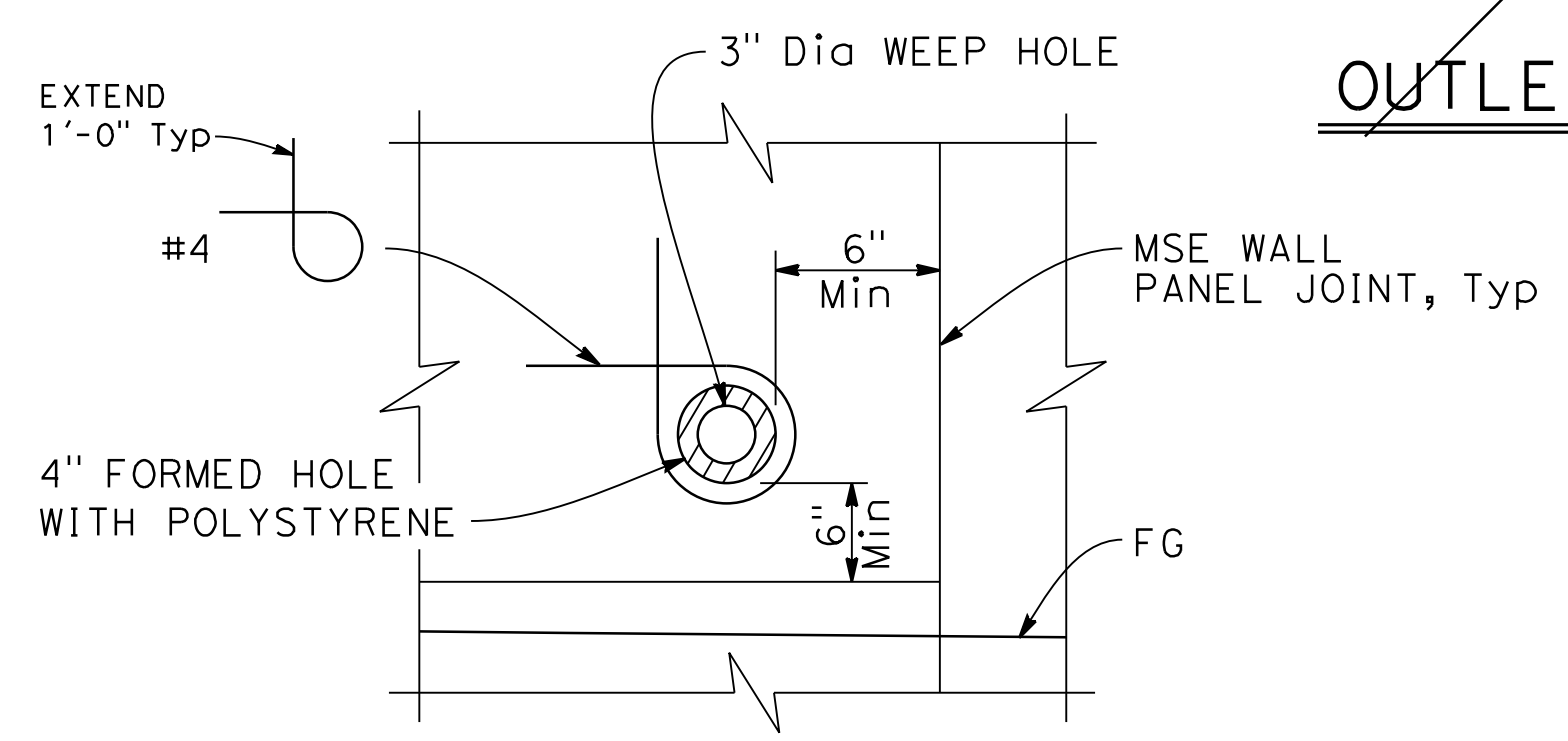
- NOTES:
1. Center inspection wire in facing panel.
 2. Fabricated inspection wire from W11 wire representative of the welded wire mats, with 3/8" Ø 16 UNC threads for at least 1 1/2" of one end.
 3. Place inspection wire horizontal and perpendicular to the wall panel prior to backfilling.
 4. Encapsulate threaded end with corrosion inhibiting mastic, vinyl covering, and secure with plastic tie.
- UNC = Unified Coarse Threads

USERNAME => JOHGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:16

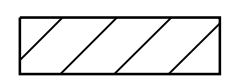
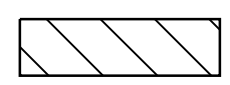
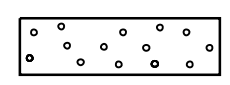
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	317	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

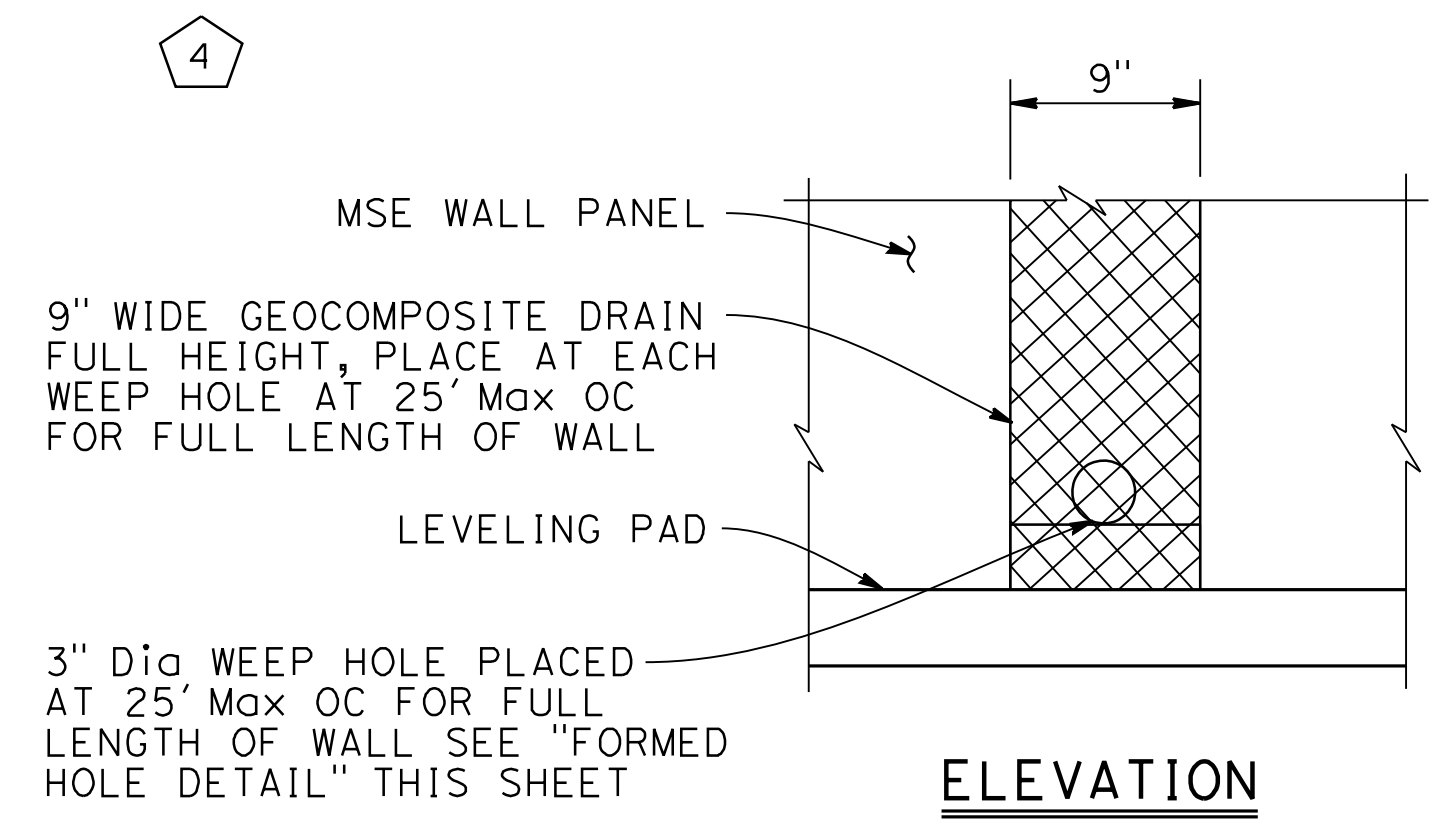


OUTLET OR CLEAN OUT PIPE FOR UNDERDRAIN (2) NO SCALE

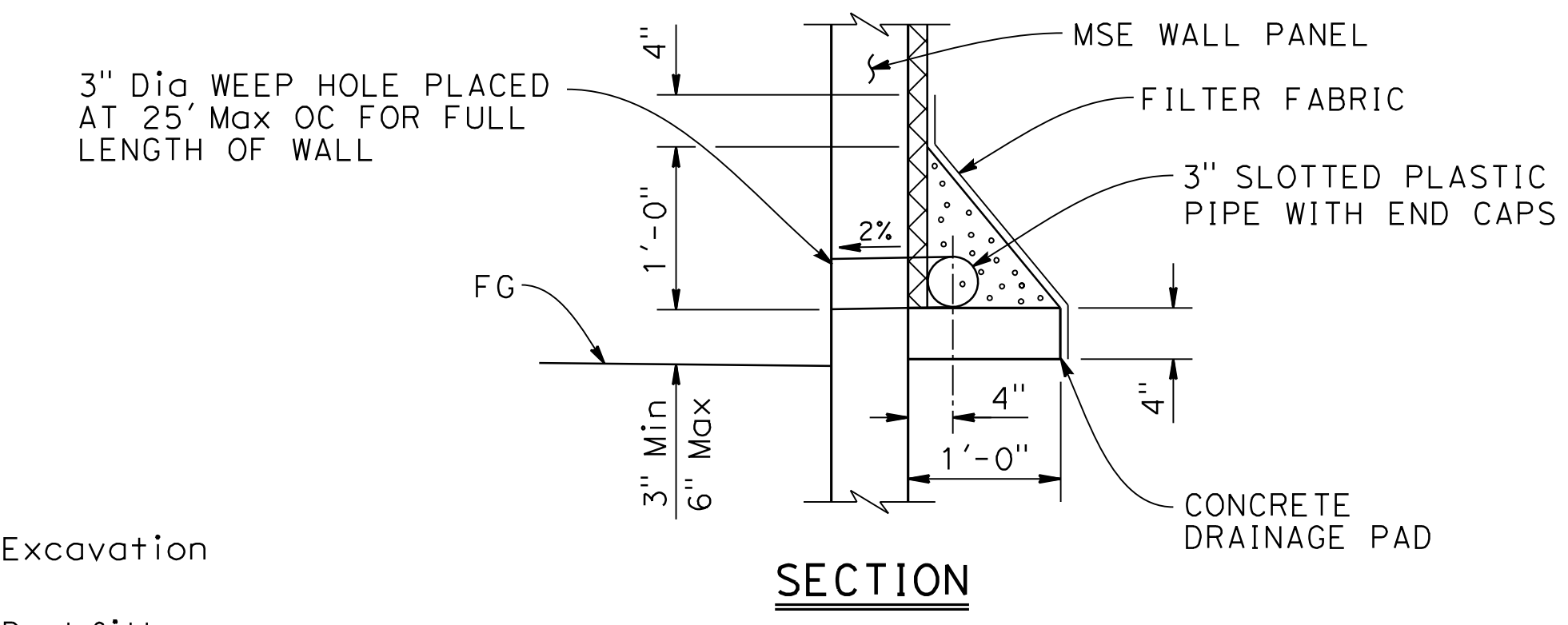


FORMED HOLE DETAIL (3) NO SCALE

- LEGEND:
-  Limits of Structure Excavation
 -  Limits of Structure Backfill
 -  Limits of Permeable Material

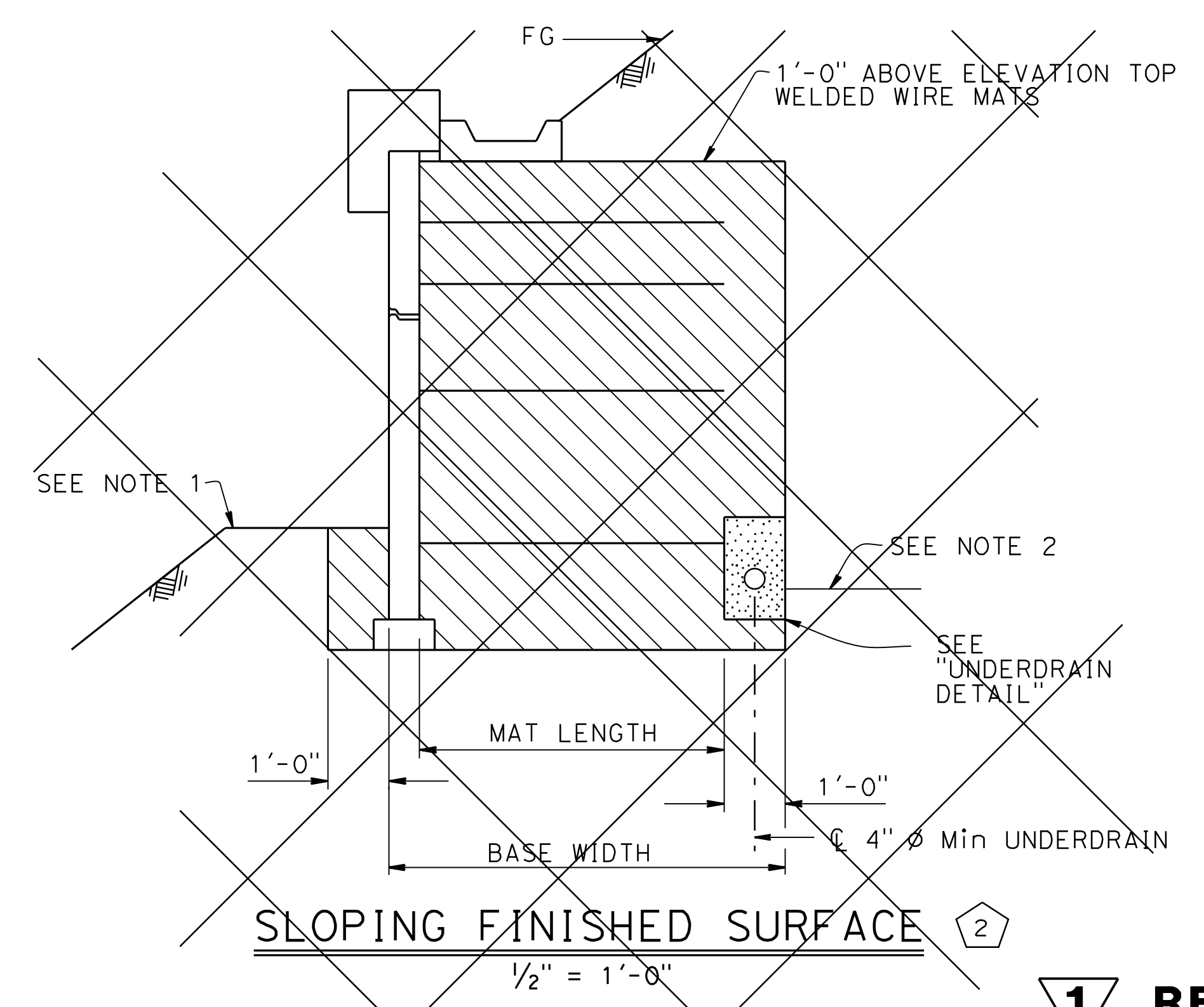


ELEVATION

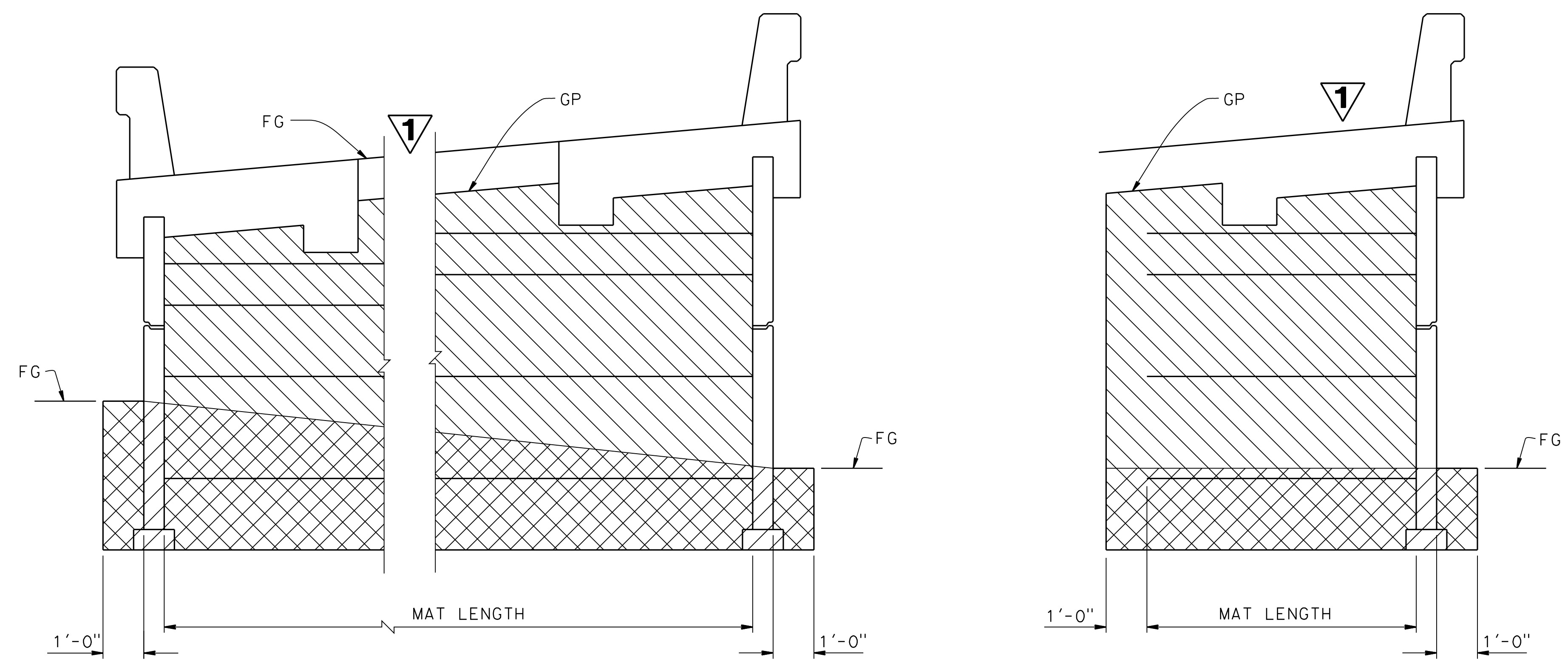


SECTION

DRAINAGE DETAIL (3) NO SCALE



SLOPING FINISHED SURFACE (2) 1/2" = 1'-0"



LIMITS OF EXCAVATION AND BACKFILL (1) NO SCALE

1 REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

BRIDGE STANDARD DETAILS		
xs13-020-6	July 2014	The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California.
FILE NO.	APPROVAL DATE	

(1) DETAIL REVISED	(3) DETAIL ADDED
(2) DETAIL NOT USED	(4) REMOVED NOTES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	N/A
POST MILES	7.9

RETAINING WALL No. 4
MECHANICALLY STABILIZED EMBANKMENT DETAILS No. 6

Refer to: <http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html>

FILE => RW4-u-xmsed106-.dgn
USERNAME => TMARASIG TIME PLOTTED => DATE PLOTTED => 12/17/2019

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET OF
	10-22-19 11-12-19 2-27-19 7-28-19	68 168

USERNAME => TMARASIG DATE PLOTTED => 12/17/2019 TIME PLOTTED => 1:09:54 PM

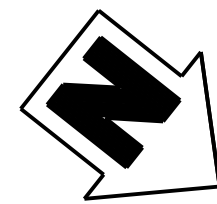
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown

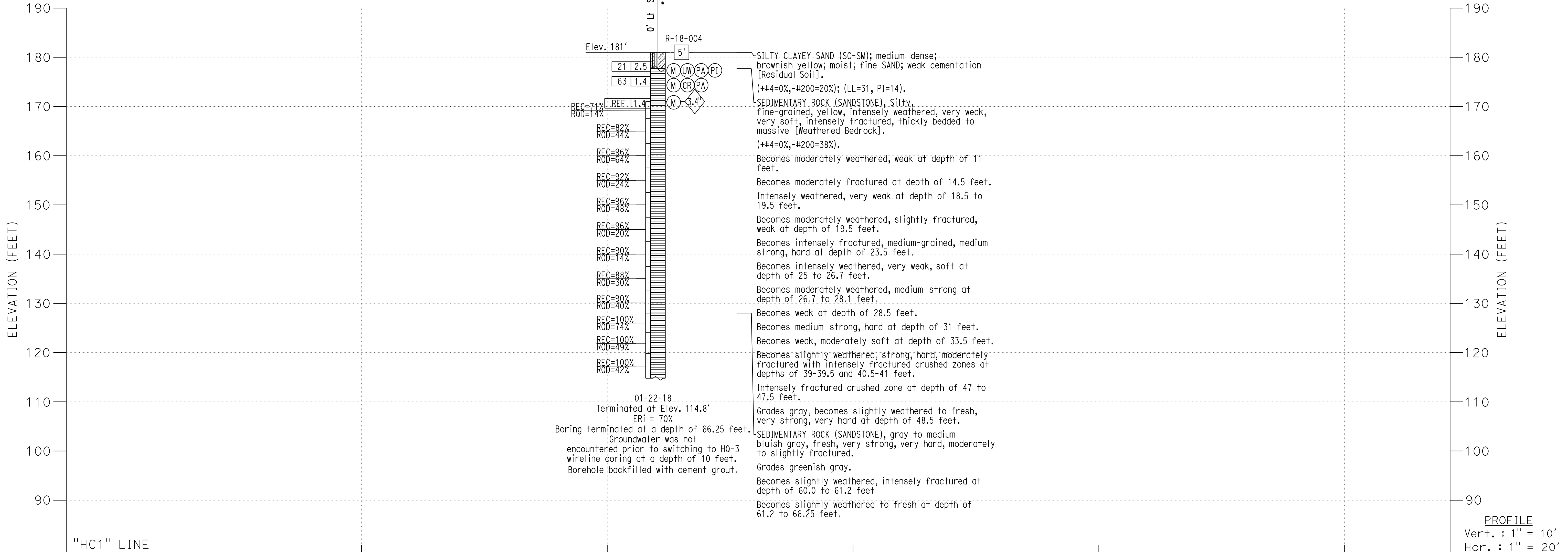


HILLCREST ROAD OC



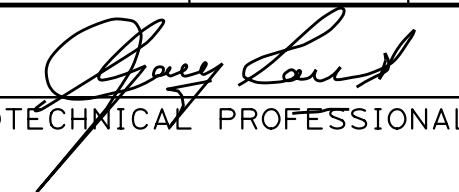
PLAN

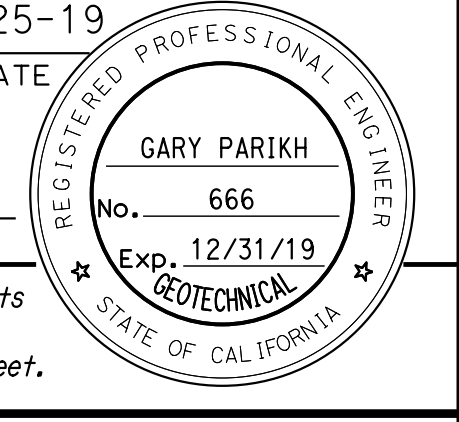
1" = 20'



PROFILE
 Vert. : 1" = 10'
 Hor. : 1" = 20'

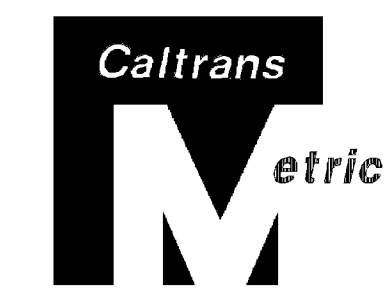
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	318	436


 GEOTECHNICAL PROFESSIONAL DATE: 7-25-19
 PLANS APPROVAL DATE: _____
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

DESIGN OVERSIGHT	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	FRANK WANG PROJECT ENGINEER	BRIDGE NO. N/A	RETAINING WALL No. 4 LOG OF TEST BORING 1 OF 3
SIGN OFF DATE	CHECKED BY FRANK WANG	DATE: JAN 2018	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	POST MILES 7.9	CONTRACT NO.: 04-3A6401	



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILES	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	481	481	281

Mike Kydel 09/06/07
 GEOTECHNICAL PROFESSIONAL

2-21-12
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 MIKE KAPUSKAR
 NO. GE 2564
 EXP. 12-31-08
 STATE OF CALIFORNIA

FUGRO-EARTH MECHANICS
 7700 EDGEWATER DRIVE, SUITE 846
 OAKLAND, CA 94621

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

LEGEND FOR SOILS
 According to the Standard Penetration Test (ASTM D1586)

SPT N-Value (blows/30cm)	Soil Description
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
>50	Very Dense

LEGEND FOR TEST BORINGS

TYPE OF BORINGS

TEST DESIGNATIONS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

CONSISTENCY CLASSIFICATION

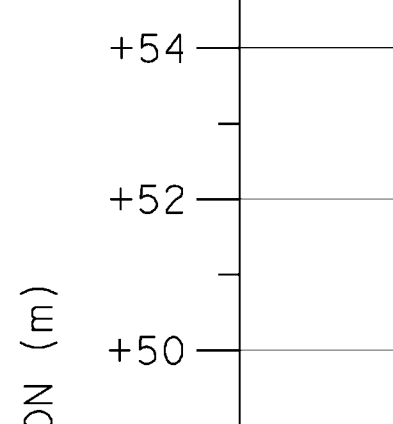
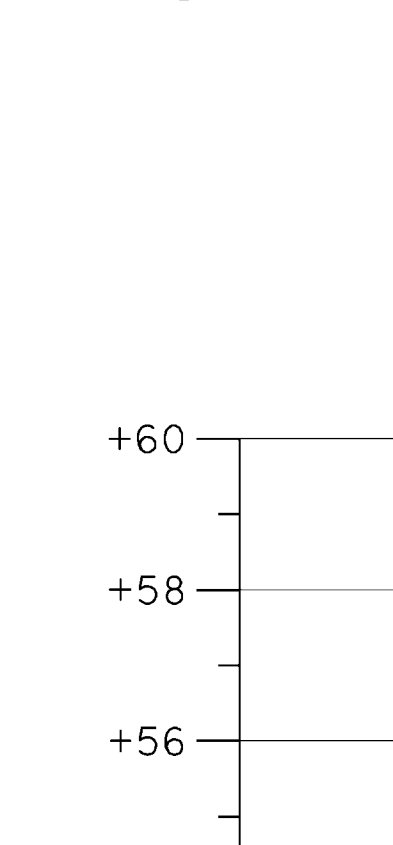
LEGEND FOR MATERIALS (BASED ON ASTM D2487, D2488)

LEGEND FOR SOILS

LEGEND FOR TEST BORINGS

TEST DESIGNATIONS

IN-SITU, LAB & FIELD TEST DESIGNATIONS



REGISTRATION INFORMATION

GARY PARIKH
 No. G.E. 666
 Exp. 12/31/19
 GEOTECHNICAL
 STATE OF CALIFORNIA

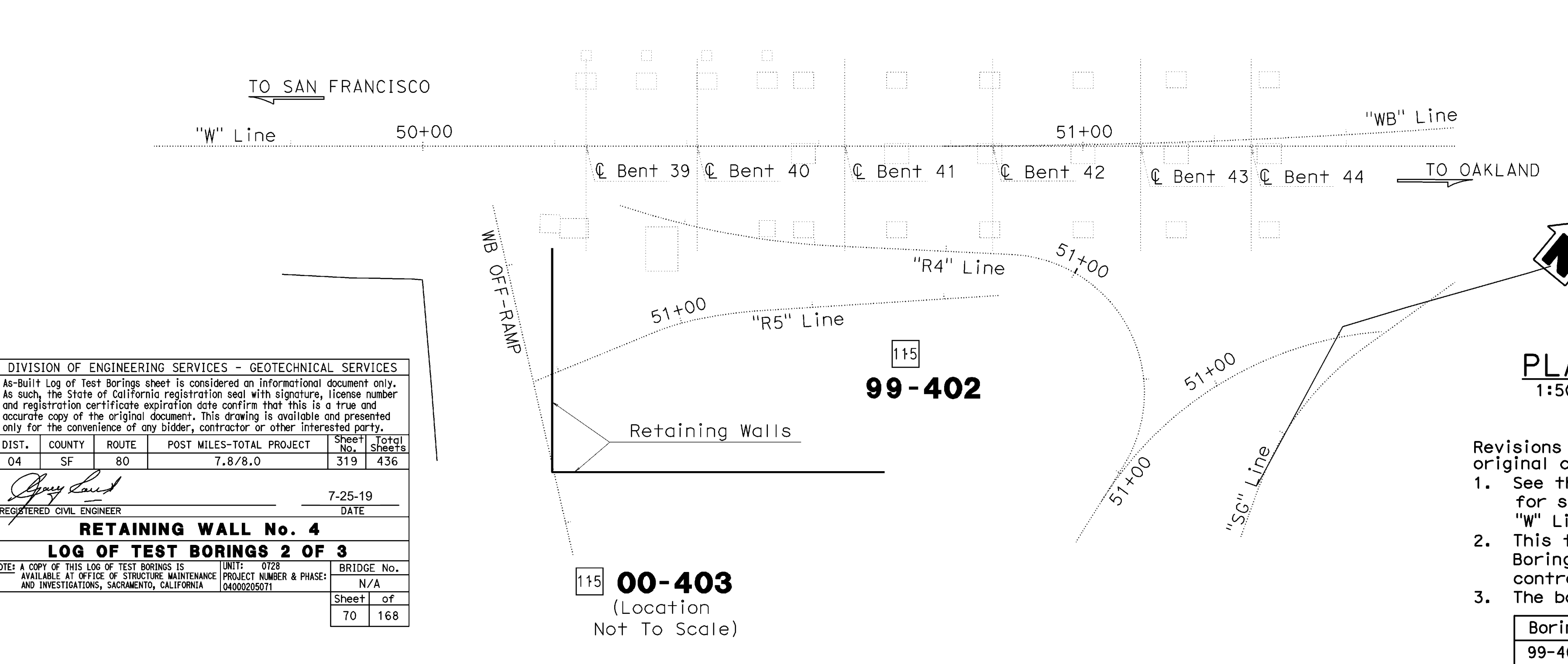
REGISTERED CIVIL ENGINEER
 DATE: 7-25-19

RETAINING WALL No. 4
LOG OF TEST BORINGS 2 OF 3

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0728
 PROJECT NUMBER & PHASE: N/A
 BRIDGE No. N/A

Sheet of 70 168

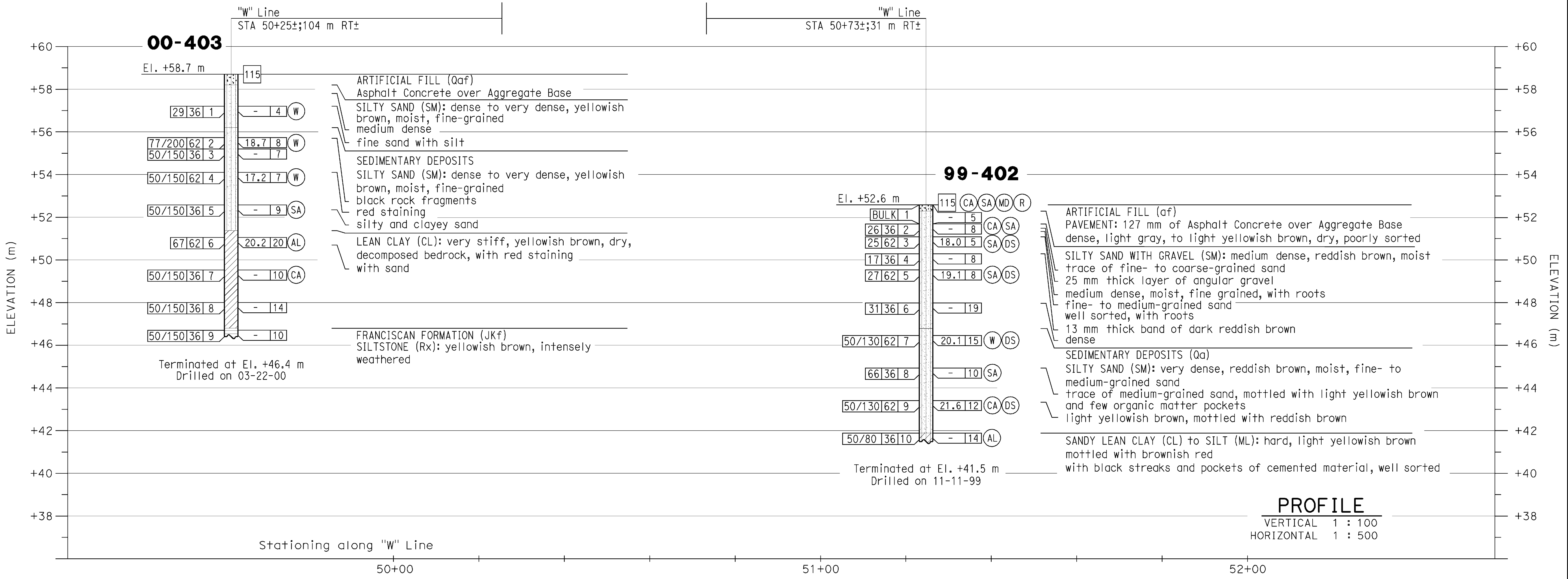


PLAN
 1:500

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "HCl" Line	Offset from "HCl" Line
99-402	62+40	7' Lt.



PROFILE
 VERTICAL 1:100
 HORIZONTAL 1:500

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

WEST TIE-IN PHASE 3
YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)
LOG OF TEST BORINGS NO. 5

DESIGN OVERSIGHT: G. J. GUNARANJAN 01/03/07
 CHECKED BY: M. KAPUSKAR 01/05/07

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 PROJECT ENGINEER: M. KAPUSKAR

BRIDGE NO. 34-0006
 KILOMETER POST 12.8

DATE: AS NOTED

CU 04
 EA 0120P1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET 28 OF 29



LEGEND OF BORING OPERATIONS

LEGEND FOR EARTH MATERIALS (USCS)

LEGEND FOR SOILS

LEGEND FOR EARTH MATERIALS (ASTM)

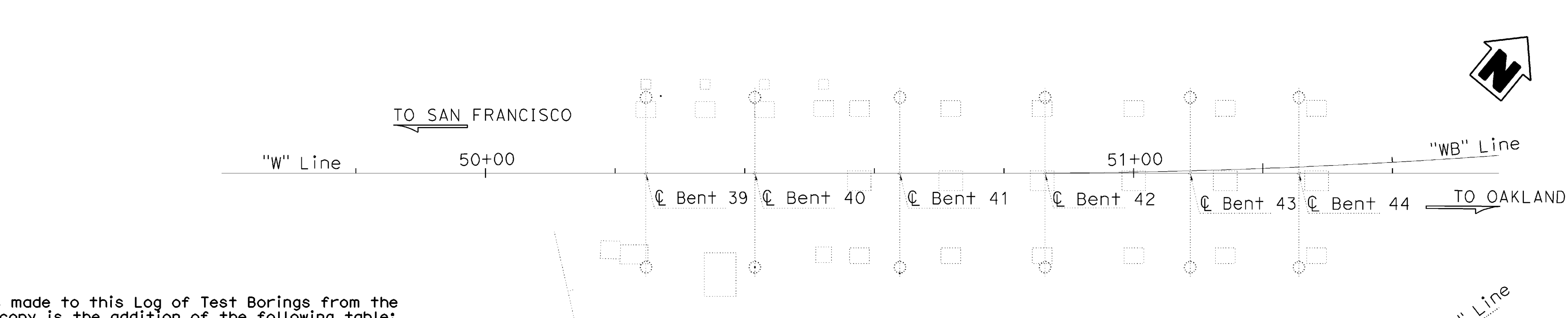
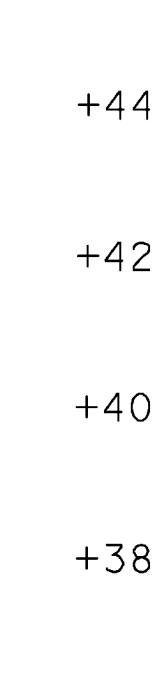
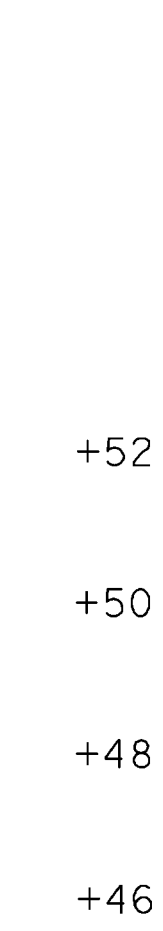
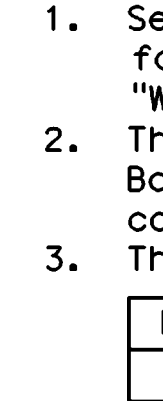
TYPE OF BORINGS

TEST DESIGNATIONS

CONSISTENCY CLASSIFICATION

PERMEATION TEST (ASTM D1586)

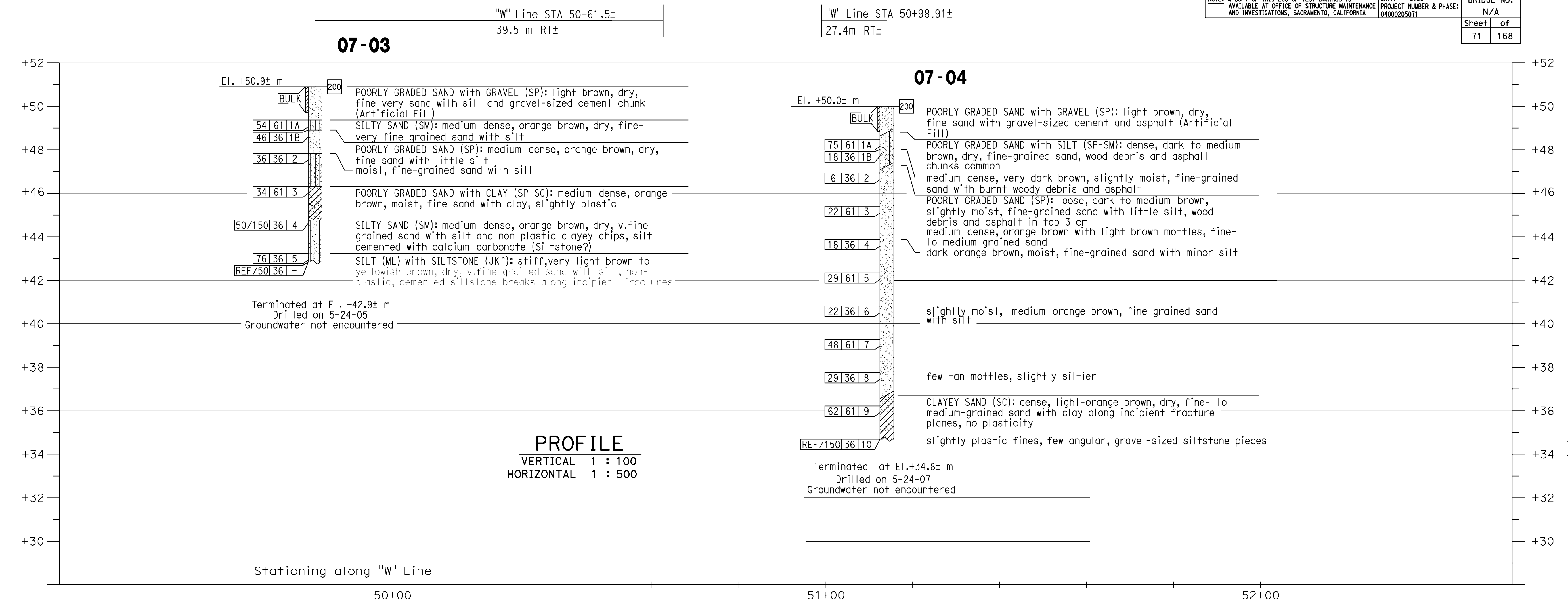
NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "HC1" Line	Offset from "HC1" Line
07-03	61+96	12' Rt.



PROFILE
VERTICAL 1 : 100
HORIZONTAL 1 : 500

DESIGN OVERSIGHT	DRAWN BY K. THANT	05/29/07	C.DOMROSE
SIGN OFF DATE	CHECKED BY M. KAPUSKAR	06/04/07	FIELD INVESTIGATION BY: DATE: 05/24/07

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 34-0006 KILOMETER POST
M. KAPUSKAR PROJECT ENGINEER		

WEST TIE-IN PHASE 3 LOG OF TEST BORINGS NO. 6		SHEET OF 29 29
--	--	-------------------



CU 04
EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET OF
---	---	----------



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	482	821

09/06/07
 GEOTECHNICAL PROFESSIONAL
 2-21-12
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

PLAN
1:500

REGISTERED PROFESSIONAL ENGINEER
 GARY PARIKH
 No. G.E. 666
 Exp. 12/31/19
 GEOTECHNICAL
 STATE OF CALIFORNIA

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	320	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
RETAINING WALL No. 4
LOG OF TEST BORINGS 3 OF 3
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0728	BRIDGE No.
PROJECT NUMBER & PHASE: 04000205071	N/A
Sheet	of
71	168

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	321	436

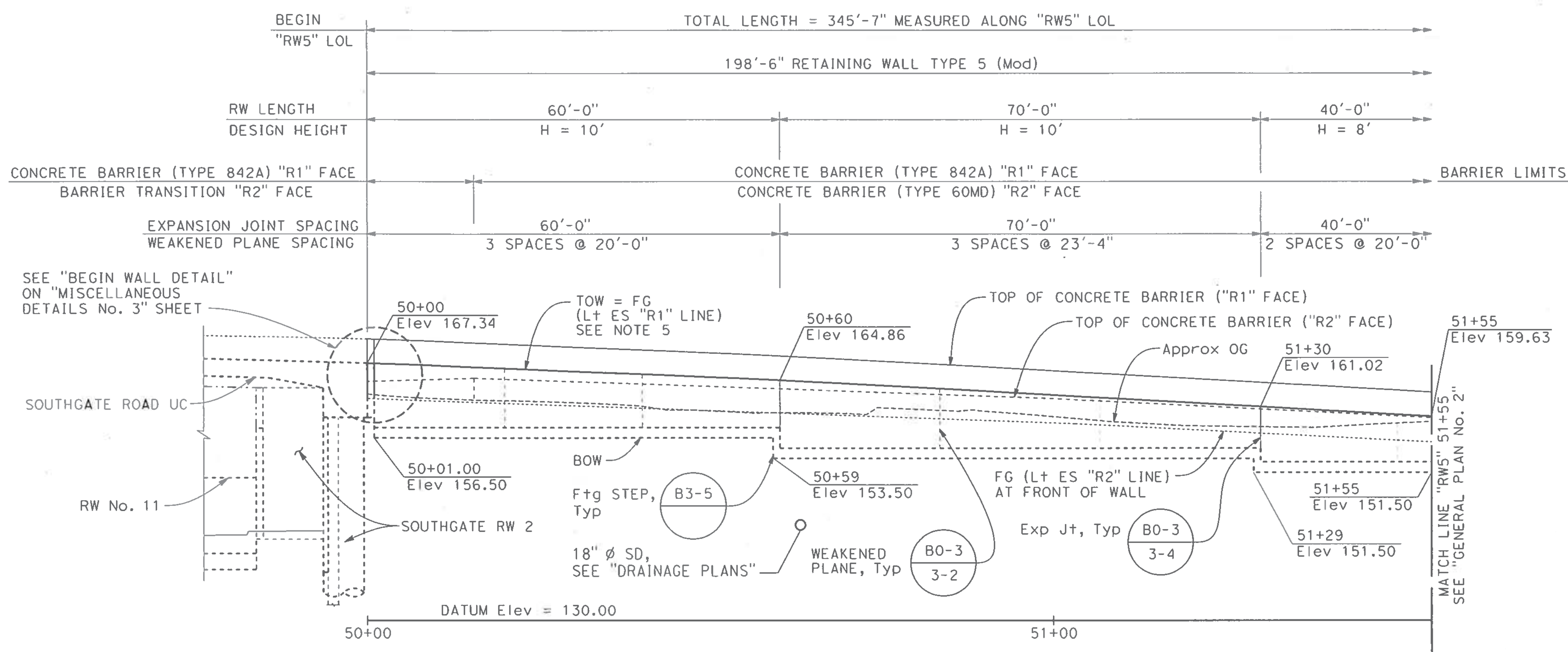
REGISTERED CIVIL ENGINEER
DATE 7-25-19
PROFESSIONAL ENGINEER
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



MIRRORED DEVELOPED ELEVATION
1" = 10'

LEGEND:

- Indicates existing structure
- ⇐ Indicates direction of traffic

NOTES:

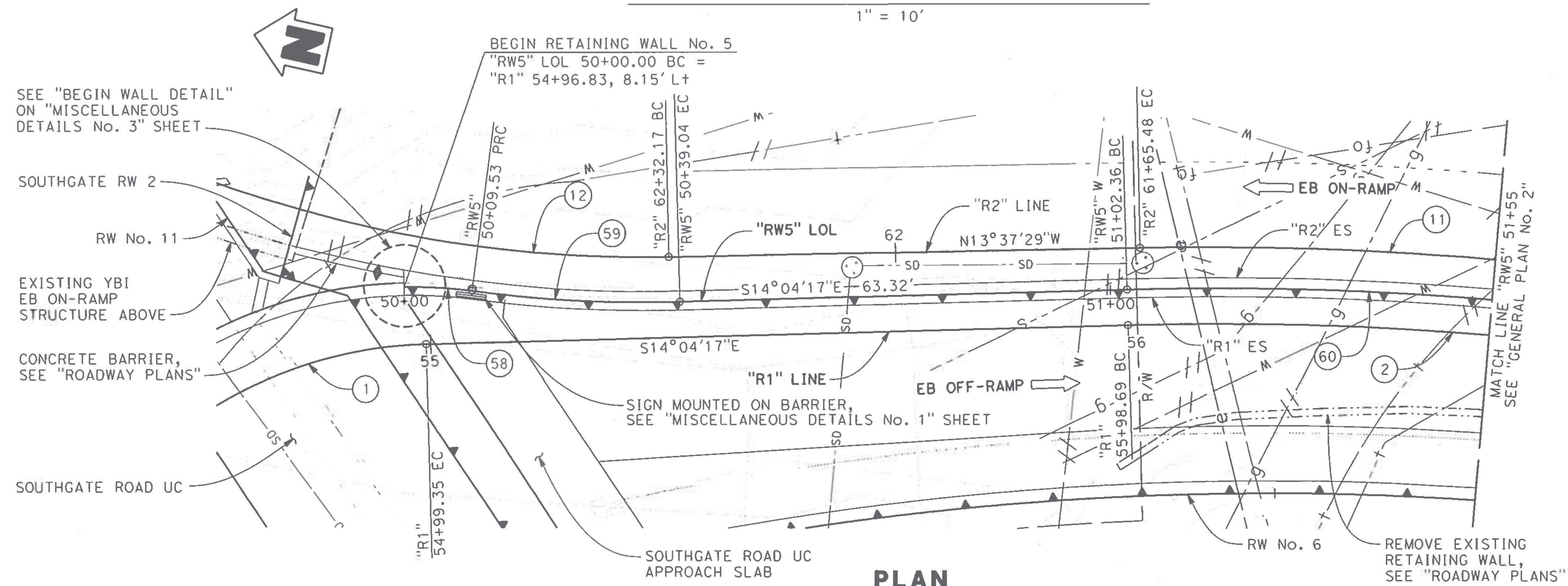
- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 3" thru "GENERAL PLAN No. 6" sheets.
- For barrier transition details, see "MISCELLANEOUS DETAILS No. 2" sheet.
- For drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet and "DRAINAGE PLANS".
- For TOW vertical curve profiles, see "ROADWAY PLANS".

QUANTITIES

STRUCTURE EXCAVATION (RETAINING WALL)	580	CY
STRUCTURE EXCAVATION (SOLDIER PILE WALL)	177	CY
STRUCTURE BACKFILL (RETAINING WALL)	491	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	20	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	22	CY
LEAN CONCRETE BACKFILL	29	CY
GROUND ANCHOR (SUB HORIZONTAL), LOCATION D	25	EA
STEEL SOLDIER PILE (W8X21)	321	LF
STEEL SOLDIER PILE (W18X130)	113	LF
STEEL SOLDIER PILE (W18X175)	58	LF
24" DRILLED HOLE	174	LF
30" DRILLED HOLE	188	LF
STRUCTURAL CONCRETE, RETAINING WALL	216	CY
STRUCTURAL CONCRETE, BARRIER SLAB	54	CY
FRACTURED RIB TEXTURE	718	SQ FT
BAR REINFORCING STEEL (RETAINING WALL)	27,443	LB
TIMBER LAGGING	8	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	1	LS
CABLE RAILING	50	LF
CONCRETE BARRIER (TYPE 60MD)	183	LF
CONCRETE BARRIER (TYPE 60MC Mod)	55	LF
CONCRETE BARRIER (TYPE 60MD Mod)	53	LF
CONCRETE BARRIER (TYPE 742 Mod)	43	LF
CONCRETE BARRIER (TYPE 842A)	199	LF
CONCRETE BARRIER TRANSITION	27	LF

CURVE DATA

No.	R	Δ	T	L
(1)	60.78'	119°32'34"	104.31'	126.81'
(2)	464.54'	21°07'12"	86.60'	171.23'
(11)	480.00'	19°28'36"	82.38'	163.17'
(12)	181.00'	51°11'33"	86.71'	161.72'
(58)	62.78'	08°41'55"	4.77'	9.53'
(59)	187.33'	09°01'30"	14.78'	29.51'
(60)	469.54'	21°07'12"	87.53'	173.08'



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

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA
			PLANS AND SPECS COMPARED	M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO. 34E0034
POST MILES 7.9

RETAINING WALL No. 5
GENERAL PLAN No. 1

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:03

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	322	436

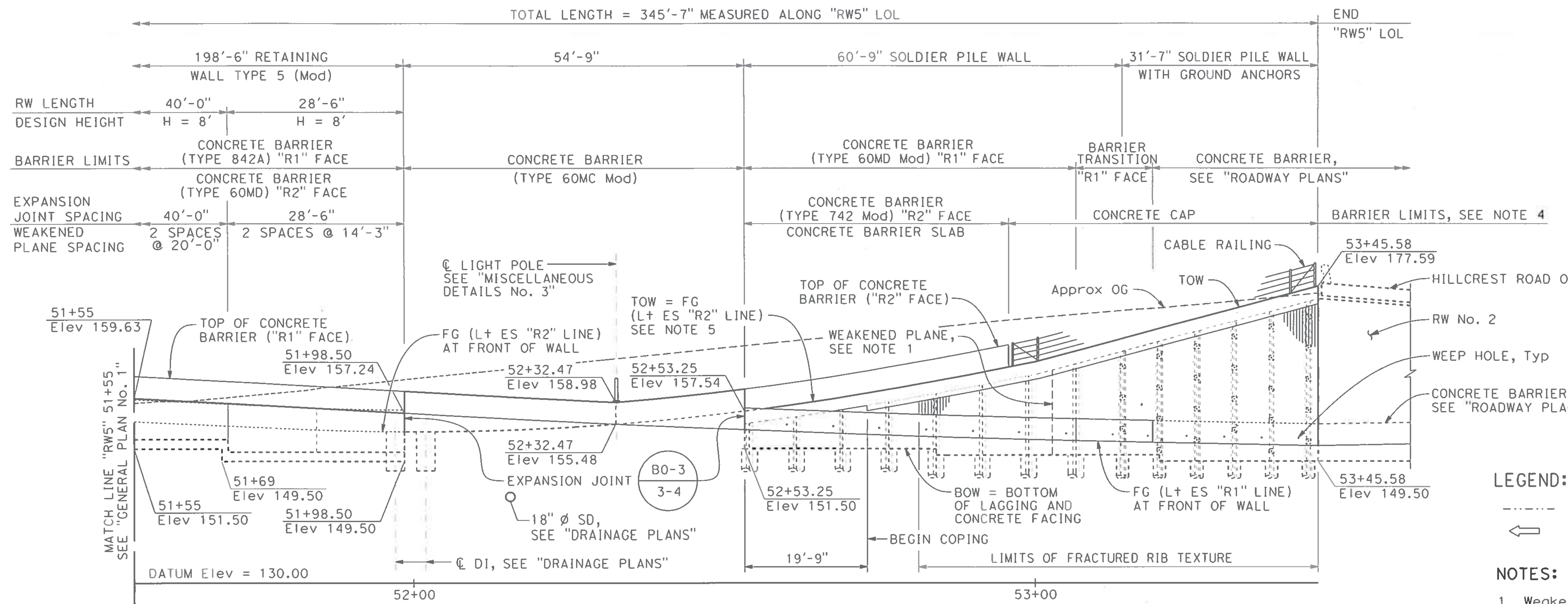
REGISTERED CIVIL ENGINEER
DATE 7-25-19
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

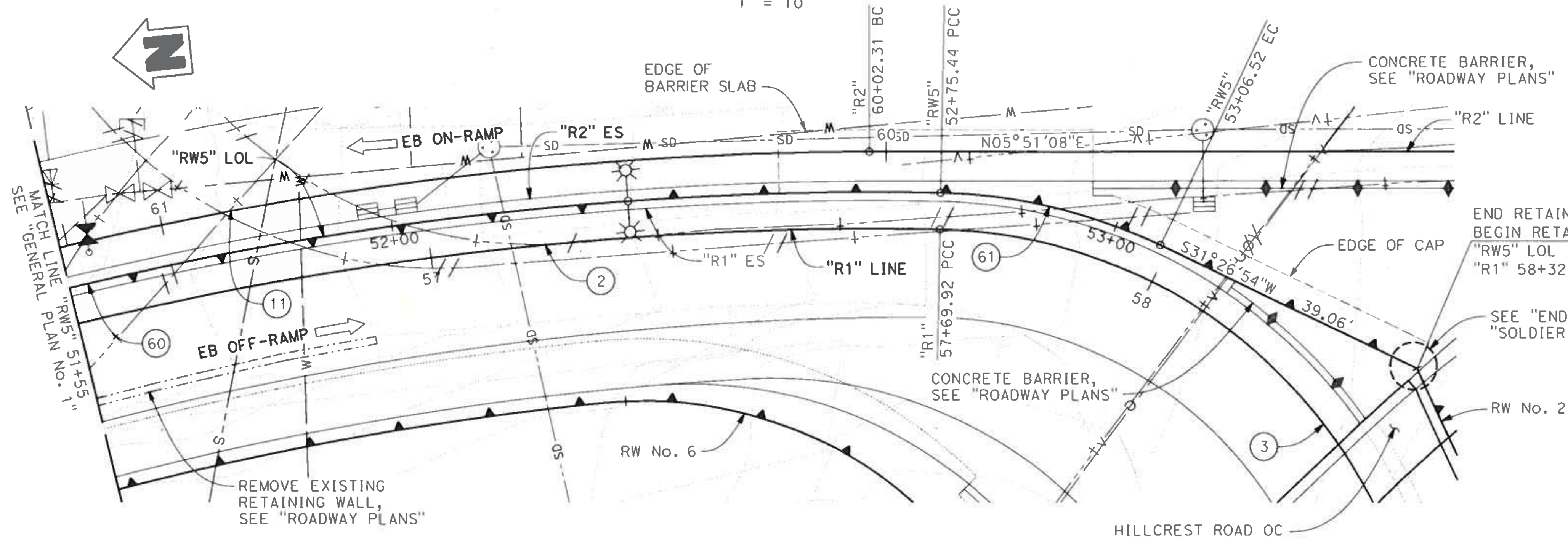
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



MIRRORED DEVELOPED ELEVATION

LEGEND:
 - - - - - Indicates existing structure
 ← Indicates direction of traffic

- NOTES:**
1. Weakened Planes in CIP facing shall be located at a Max spacing of 48 feet and shall be centered between piles. For detail see B0-3
 2. For Soldier pile wall elevations, see "SOLDIER PILE WALL LAYOUT" sheet.
 3. For barrier slab and concrete cap details, see "GENERAL PLAN No. 5" and "GENERAL PLAN No. 6" sheets.
 4. For additional notes, see "GENERAL PLAN No. 1" sheet.



PLAN
1" = 10'

CURVE DATA

No.	R	Δ	T	L
2	464.54'	21°07'12"	86.60'	171.23'
3	68.00'	120°37'22"	119.27'	143.16'
11	480.00'	19°28'36"	82.38'	163.17'
60	469.54'	21°07'12"	87.53'	173.08'
61	73.00'	24°24'00"	15.78'	31.08'

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

DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN BY: K. SERRANO-PAINE CHECKED: J. ZHU	LOAD & RESISTANCE FACTOR DESIGN BY: K. SERRANO-PAINE CHECKED: T. MEHTA	LIVE LOADING: HL93 W/"LOW-BOY"? PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	JOHN MANISCALCO PROJECT ENGINEER	BRIDGE NO. 34E0034 POST MILES 7.9	RETAINING WALL No. 5 GENERAL PLAN No. 2
QUANTITIES BY: A. CHUNG CHECKED: A. ROMINGER	LAYOUT BY: K. SERRANO-PAINE CHECKED: T. MEHTA	SPECIFICATIONS BY: T. MEHTA CHECKED: M. JACKSON	PLANS AND SPECS COMPARED	UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES 10-22-19 11-14-19 1-14-20 1-14-20	SHEET 73 OF 168

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => RW5-a-gp02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:04

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	323	436
REGISTERED CIVIL ENGINEER DATE 7-25-19			REGISTERED PROFESSIONAL ENGINEER JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA		
PLANS APPROVAL DATE _____					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

DESIGN: AASHTO LRFD Bridge Design Specifications, 2012, 6th edition with the California Amendments, January 2014.

LIVE LOAD: None

DESIGN DATA - RETAINING WALL

LS: 240 psf

CT: 54 kip transverse force applied at $H_e = 32"$, distributed over 10 feet at the top of wall and 1 : 1 distribution down and outward.

SEISMIC: $k_h = 0.33, k_v = 0.0$

SOIL: $\phi = 34^\circ$ for backfill soil
 $\phi = 36^\circ$ for foundation soil
 $\gamma = 120$ pcf
 coefficient of friction = 0.55

REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi

LOAD COMBINATIONS AND LIMIT STATES:

Service I $Q = 1.00DC+1.00EV+1.00EH+1.00LS$
 Strength I $Q = aDC+bEV+cEH+1.75LS$
 Extreme I $Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE$
 Extreme II $Q = 1.00DC+1.00EV+1.00EH+0.05LS+1.00CT$

Where:
 Q: Force Effects
 a: 1.25 or 0.90, Whichever Controls Design
 b: 1.35 or 1.00, Whichever Controls Design
 c: 1.50 or 0.90, Whichever Controls Design
 DC: Dead Load of Structure Components
 EH: Horizontal Earth Fill Pressure
 EV: Vert Earth Pressure from Earth Fill Weight
 LS: Live Load Surcharge
 EQE: Seismic Earth Pressure
 EQD: Soil and Structural and Nonstructural Components Inertia
 CT: Vehicular Collision Force

DESIGN DATA - SOLDIER PILE WALL

SOIL PARAMETERS:

(For determination of Design Lateral Earth Pressures)
 Unit Weight, $\gamma = 120$ pcf
 Friction Angle, $\phi = 34$ degrees
 Active Pressure Coefficient, $K_a = 0.28$
 Passive Pressure Coefficient, $K_p = 7.3$
 Seismic Coefficient, $K_h = 0.33$

CONCRETE:

$f'_c = 4,000$ psi
 $f_y = 60,000$ psi

STRUCTURAL STEEL:

ASTM A992 ($f_y = 50$ ksi, $f_u = 65$ ksi)

WELDED STUD:

ASTM A29 Type B

STRUCTURAL TIMBER:

Treated Douglas Fir, Grade No. 1 or better
 Timber to be full sawn

DESIGN DATA - GROUND ANCHORS

PRESTRESSING STEEL (GROUND ANCHORS):

FDL = Factored Design Load on ground anchor (kips)
 FTL = Factored Test Load (kips)
 LL = Lock-Off Load (kips)

f_{pu} = Minimum ultimate tensile strength of ground anchor steel (ksi)

A_s (Min) = Minimum cross sectional area of steel in ground anchor. (square inch)

Steel = ASTM designation: A416 (HS Strands)

$$A_s \text{ (Min)} = \frac{1.0 \text{ FTL}}{0.75 f_{pu}}$$

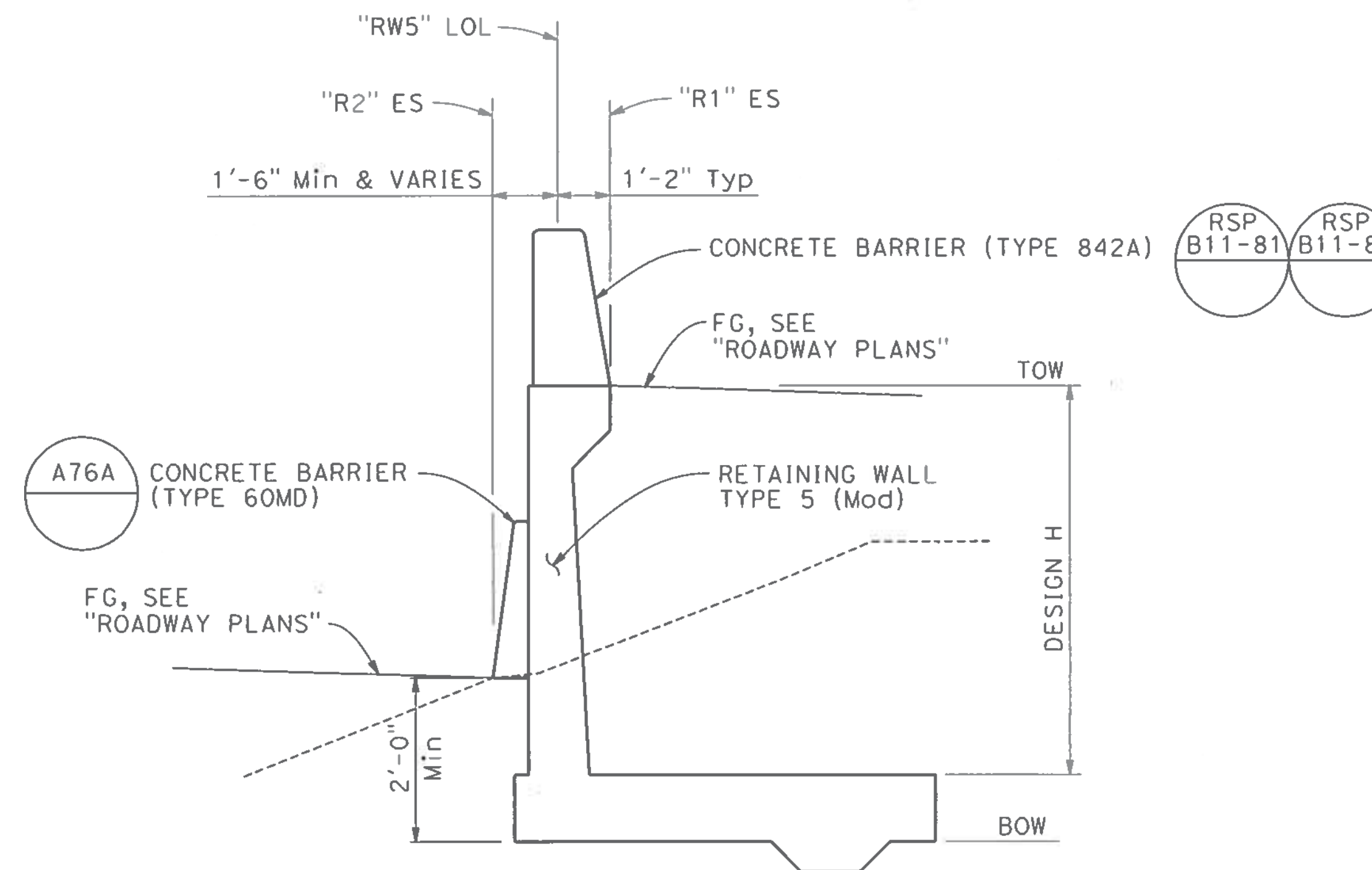
Steel = ASTM designation: A722 (HS Bars)

$$A_s \text{ (Min)} = \frac{1.0 \text{ FTL}}{0.80 f_{pu}}$$

Unbonded Length, $L_e = 25$ feet

NOTES:

- For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
- For wall details and excavation and backfill, see "RETAINING WALL DETAILS" sheet.



TYPICAL SECTION

3/8" = 1'-0"

"RW5" 50+00 TO 51+98.50

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

DESIGN OVERSIGN SIGN OFF DATE: 11/18/19	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0034	RETAINING WALL No. 5 GENERAL PLAN No. 3				
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE	CHECKED T. MEHTA	POST MILES 7.9					
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 74	OF 168

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

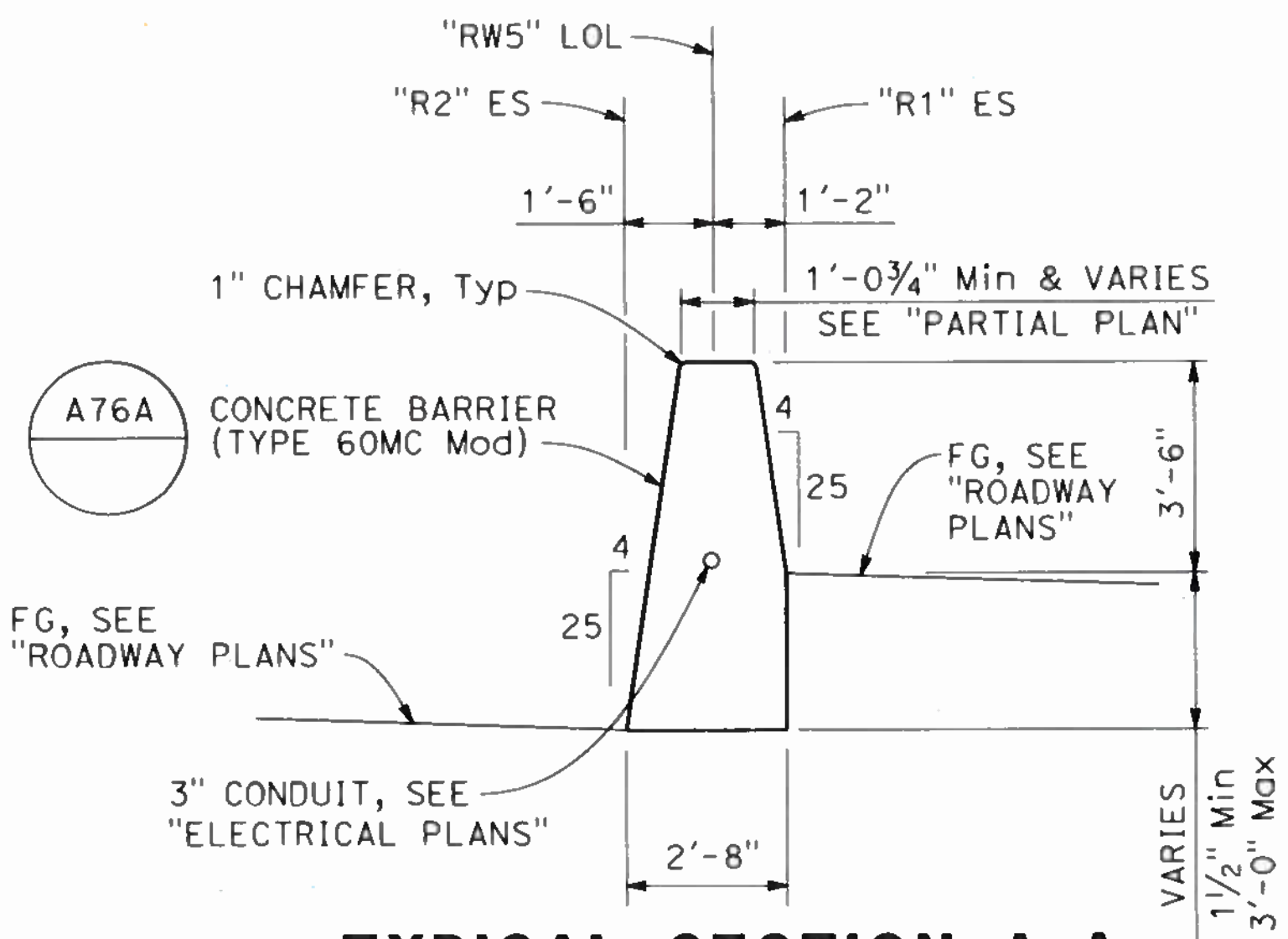
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FILE => RW5-a-gp03.dgn

10-22-19 11-17-19 1-22-19 7-26-19

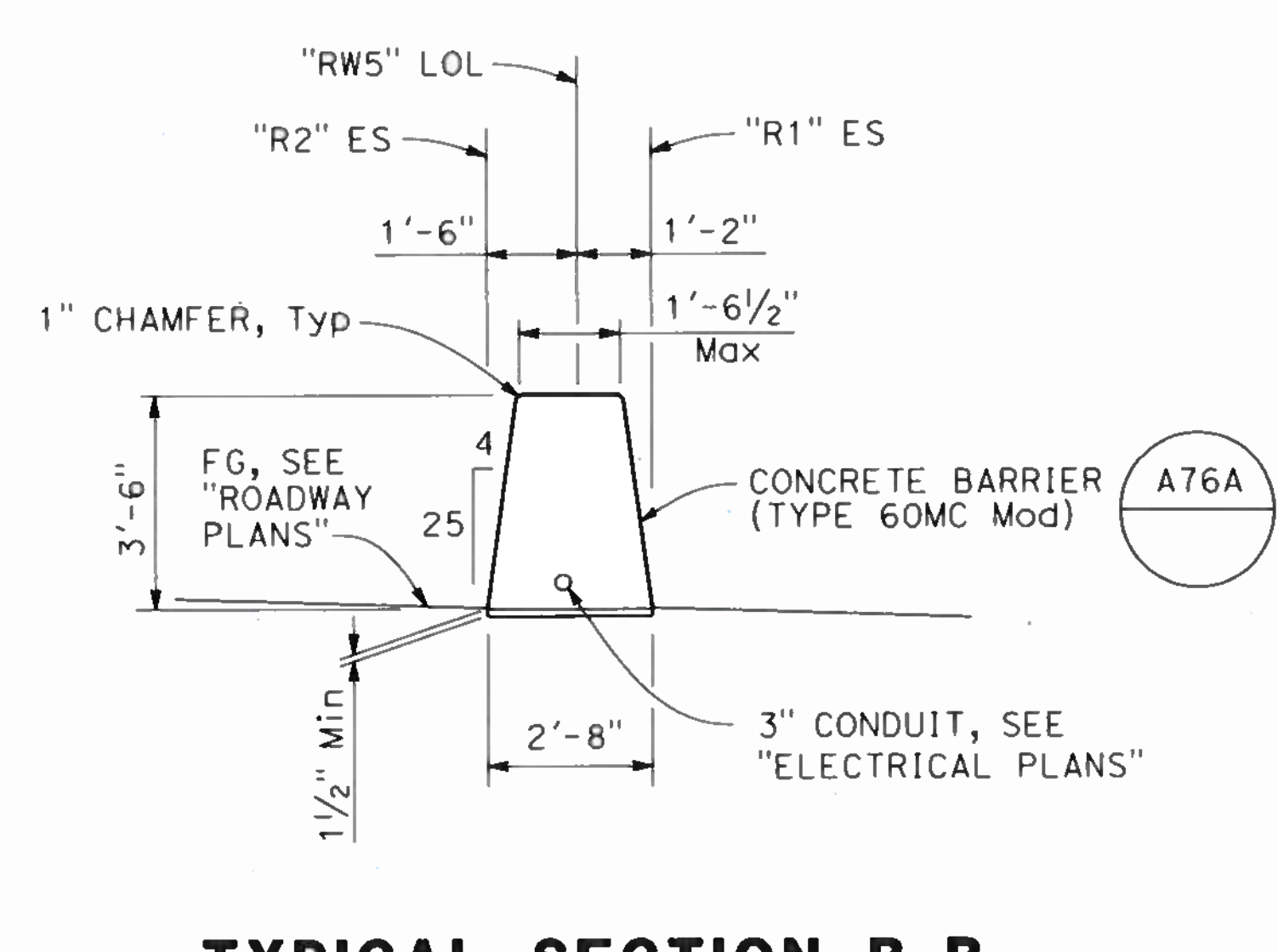
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	324	436
			REGISTERED CIVIL ENGINEER DATE 7-25-19 PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.		
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



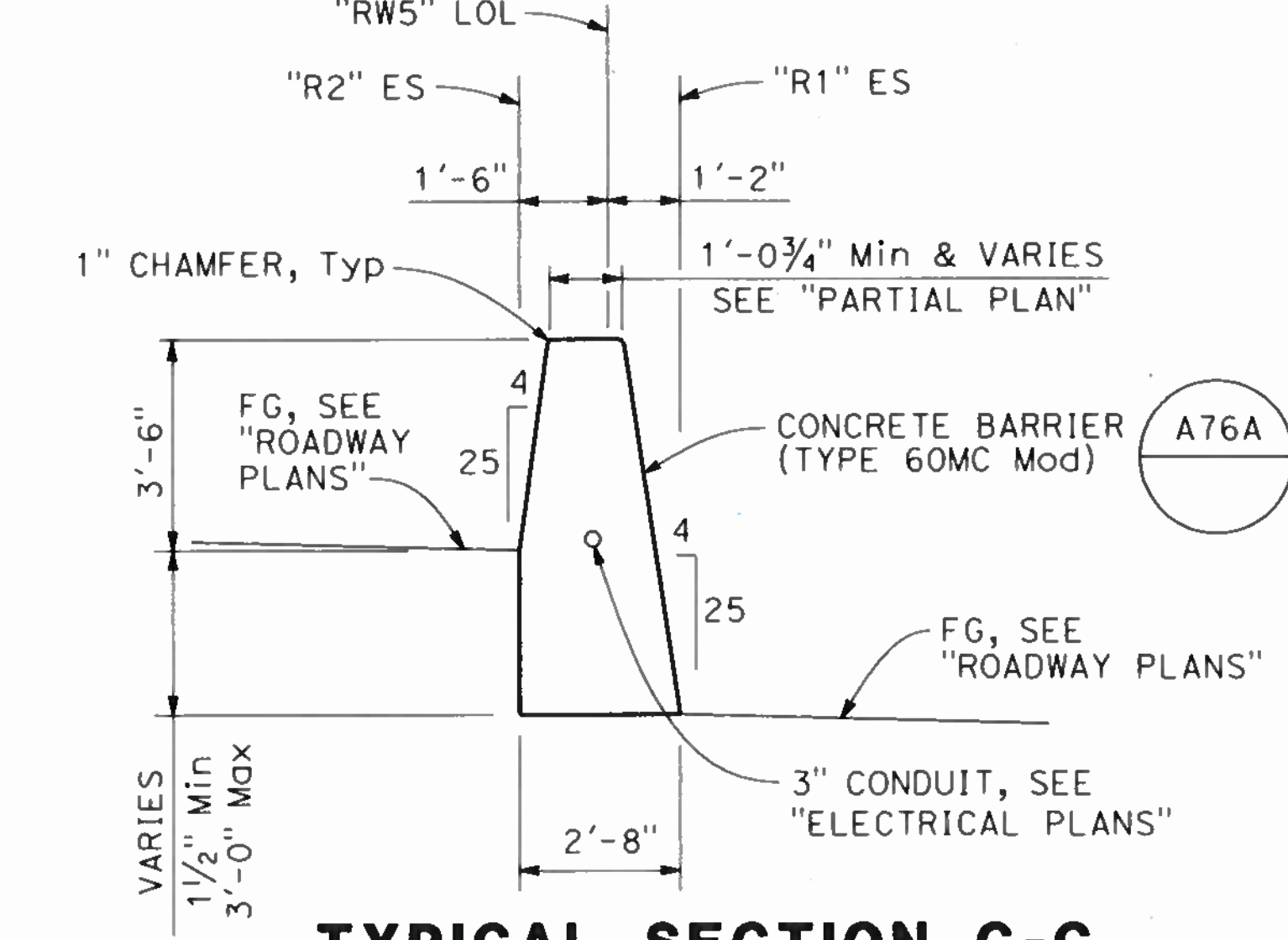
TYPICAL SECTION A-A

3/8" = 1'-0"
"RW5" 51+98.50 TO 52+32.47



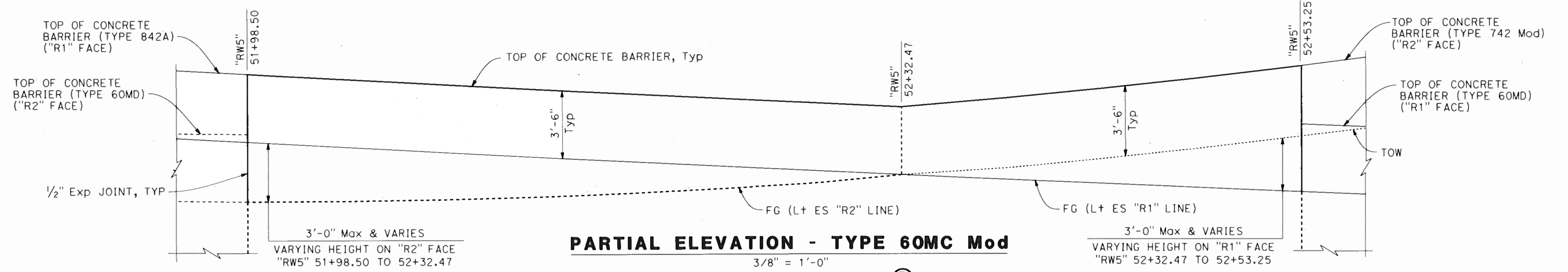
TYPICAL SECTION B-B

3/8" = 1'-0"
"RW5" 52+32.47



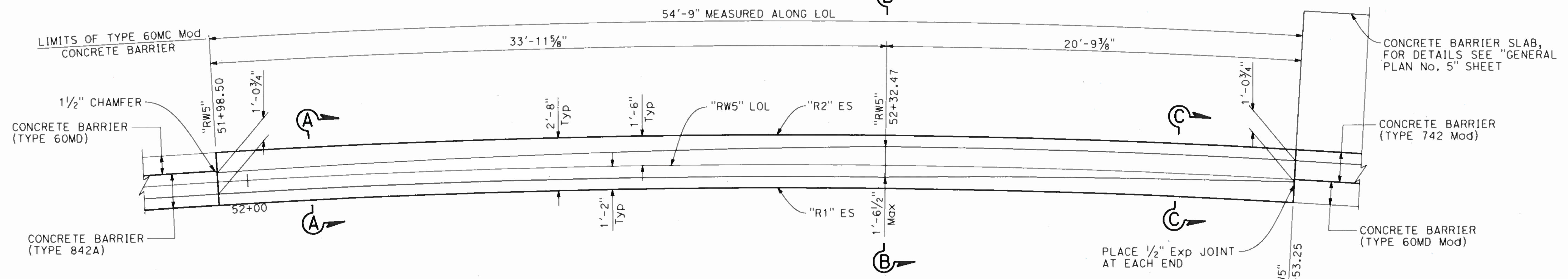
TYPICAL SECTION C-C

3/8" = 1'-0"
"RW5" 52+32.47 TO 52+53.25



PARTIAL ELEVATION - TYPE 60MC Mod

3/8" = 1'-0"



PARTIAL PLAN - TYPE 60MC Mod


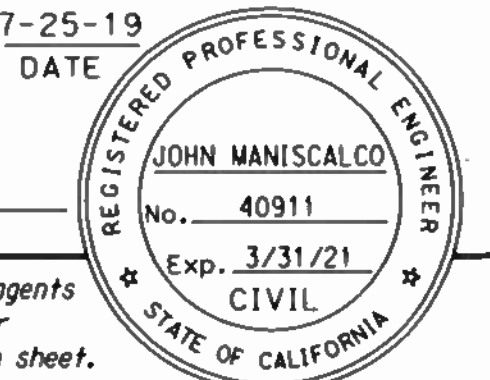
3/8" = 1'-0"

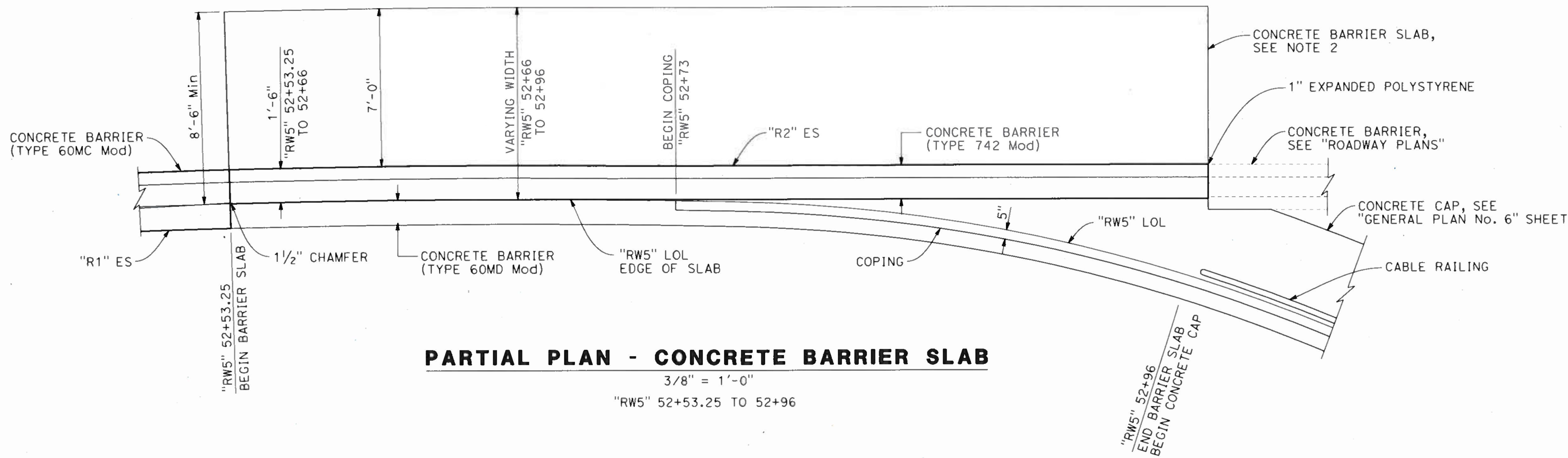
"RW5" 51+98.50 TO 52+53.25

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

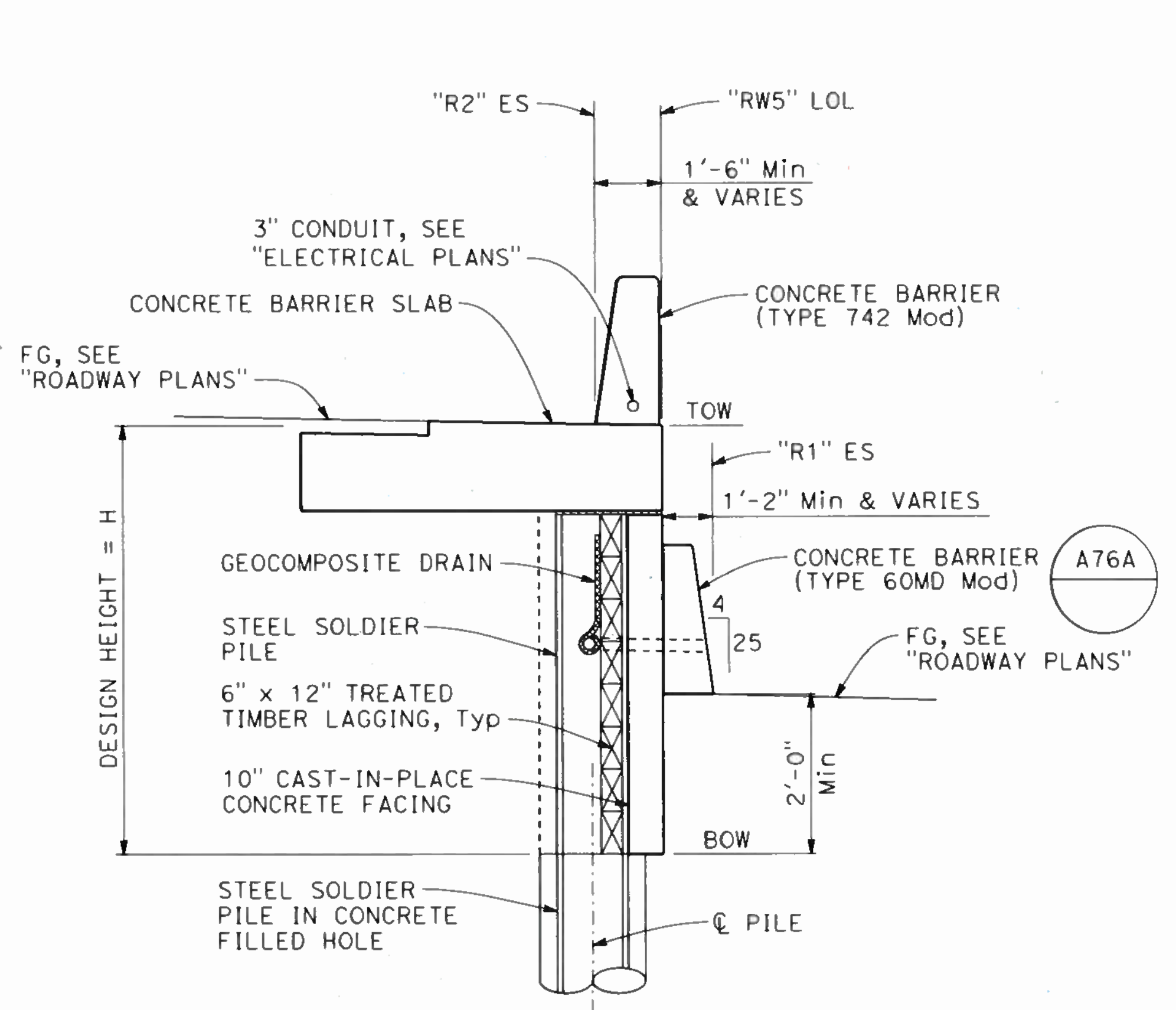
 DESIGN OVERSIGHT SIGN OFF DATE 4/14/19	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL-93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0034	RETAINING WALL No. 5 GENERAL PLAN No. 4	
	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9		
	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728	CONTRACT NO.: 04-3A6414	REVISION DATES	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)						PROJECT NUMBER & PHASE: 04190001531		DISREGARD PRINTS BEARING EARLIER REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						SHEET 75 OF 168		

USERNAME => JOHGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:04

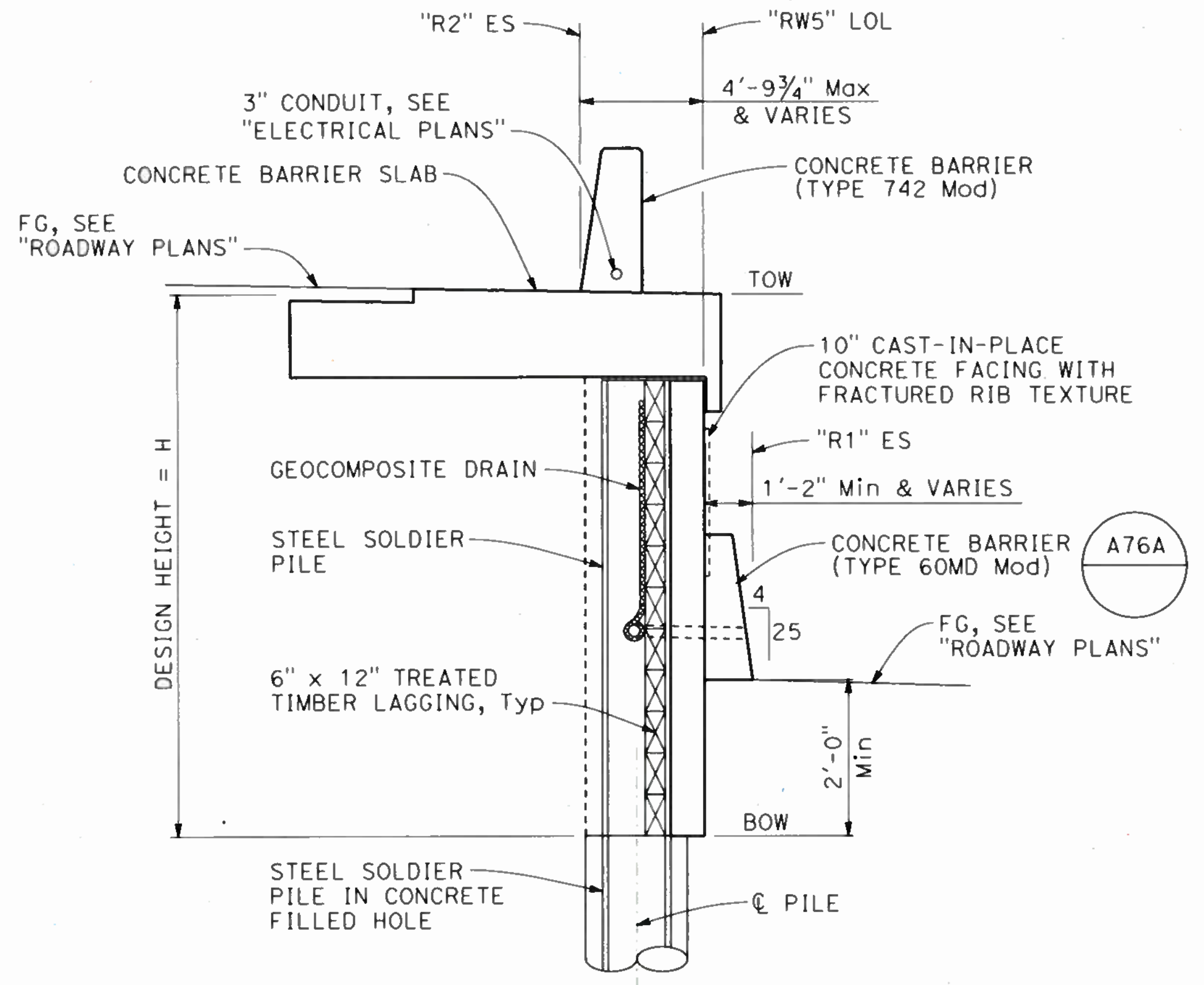
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	325	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PARTIAL PLAN - CONCRETE BARRIER SLAB
 3/8" = 1'-0"
 "RW5" 52+53.25 TO 52+96



TYPICAL SECTION
 3/8" = 1'-0"
 "RW5" 52+53.25 TO 52+73




TYPICAL SECTION
 3/8" = 1'-0"
 "RW5" 52+73 TO 52+96

NOTES:

1. For barrier slab limits, see "GENERAL PLAN No. 2" sheet.
2. For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
4. For details, see "SOLDIER PILE WALL DETAILS" sheets.
5. For excavation and backfill, see "SOLDIER PILE WALL DETAILS No. 1" sheet.

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

DESIGN OVERSIGHT

 SIGN OFF DATE: 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA
				CHECKED T. MEHTA
				PLANS AND SPECS COMPARED M. JACKSON

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 34E0034
 PROJECT ENGINEER JOHN MANISCALCO
 POST MILES 7.9

RETAINING WALL No. 5 GENERAL PLAN No. 5

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS




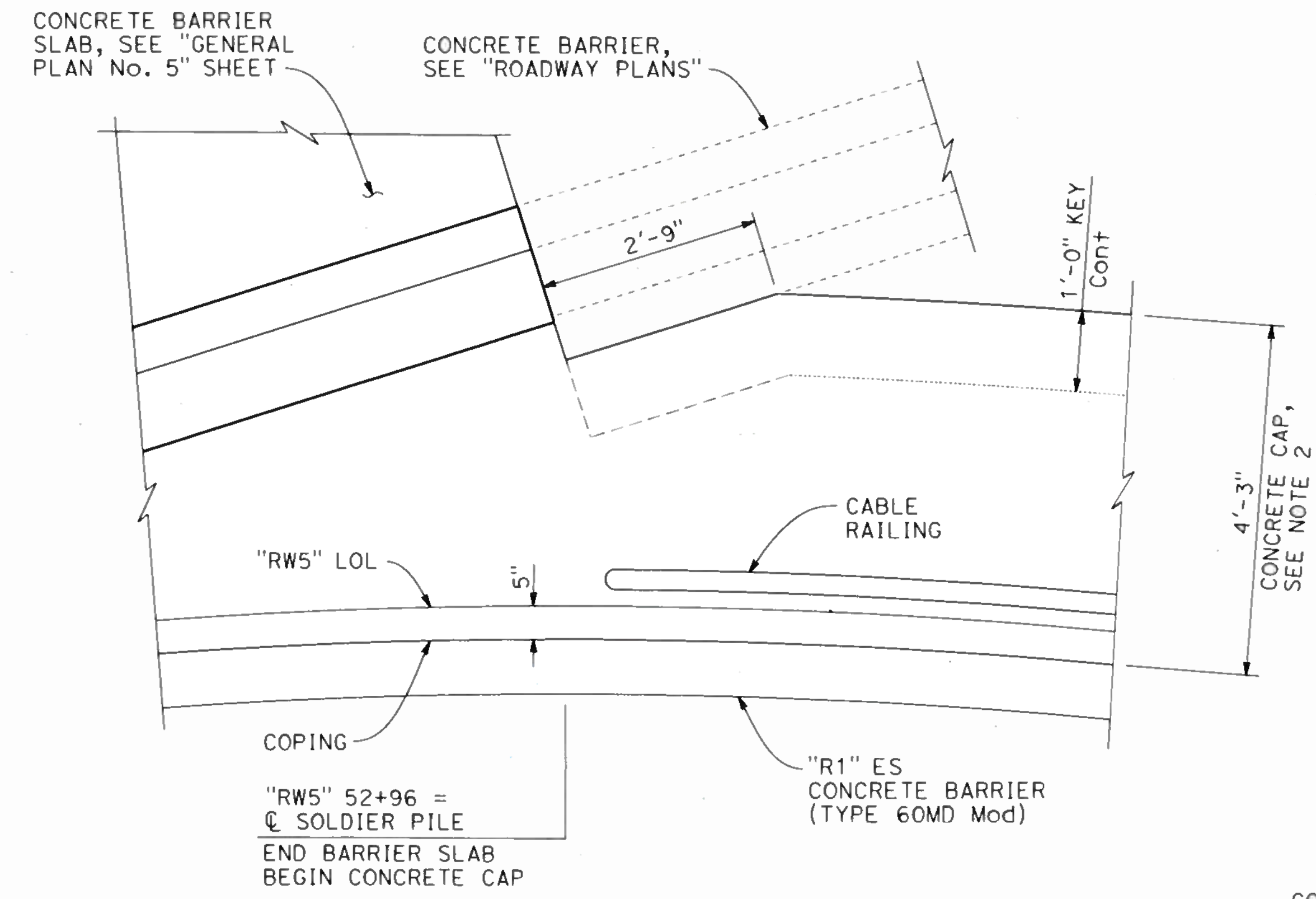
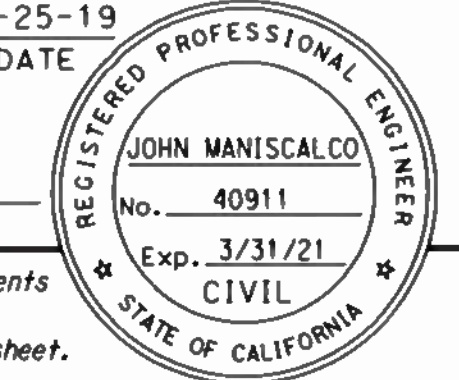
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A614

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 76	OF 168
	10-22-19 11-27-19 2-21-19 7-28-19		

FILE => RW5-a-gp05.dgn

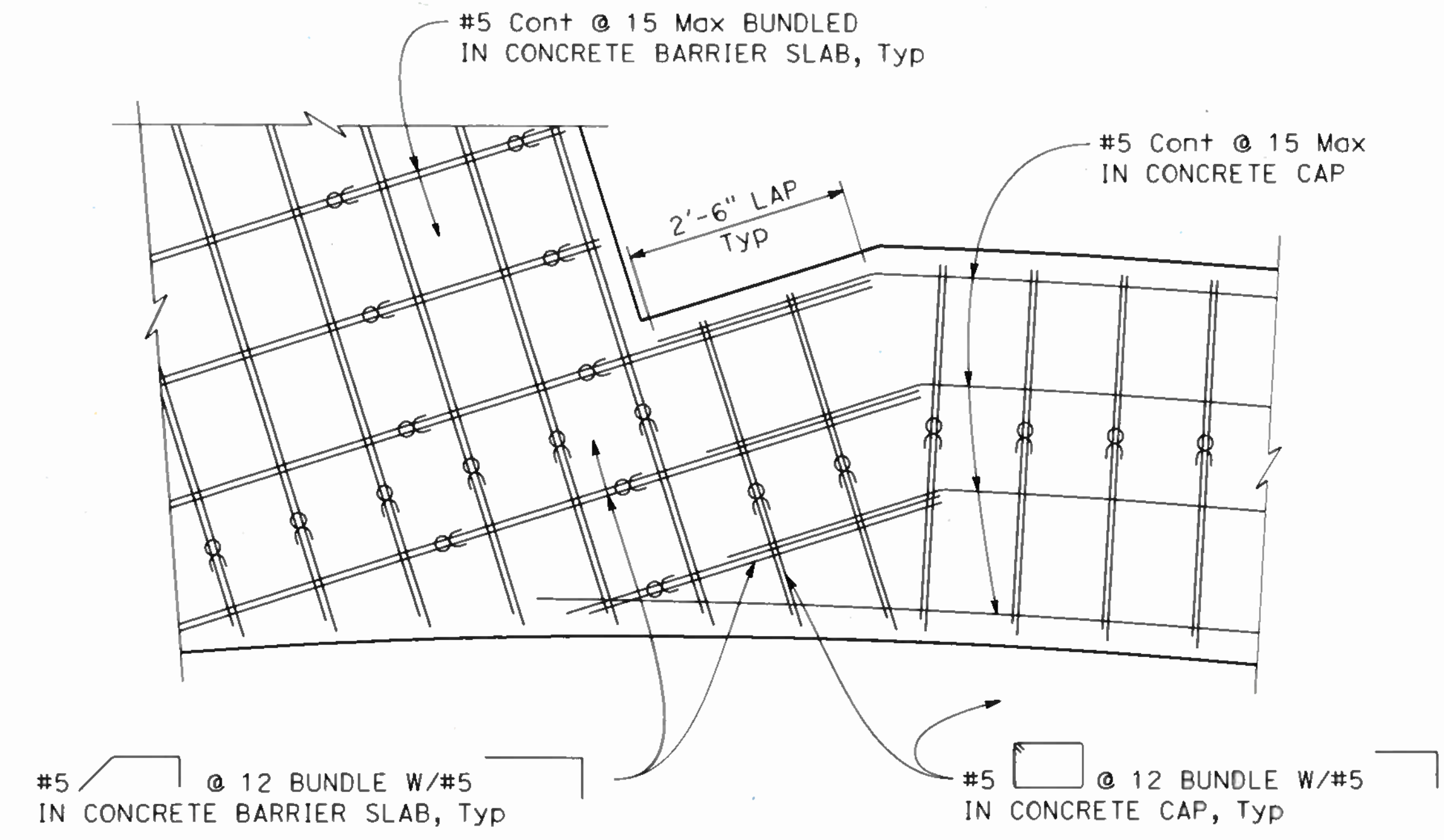
USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:04

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	326	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PARTIAL PLAN - CONCRETE CAP

3/4" = 1'-0"

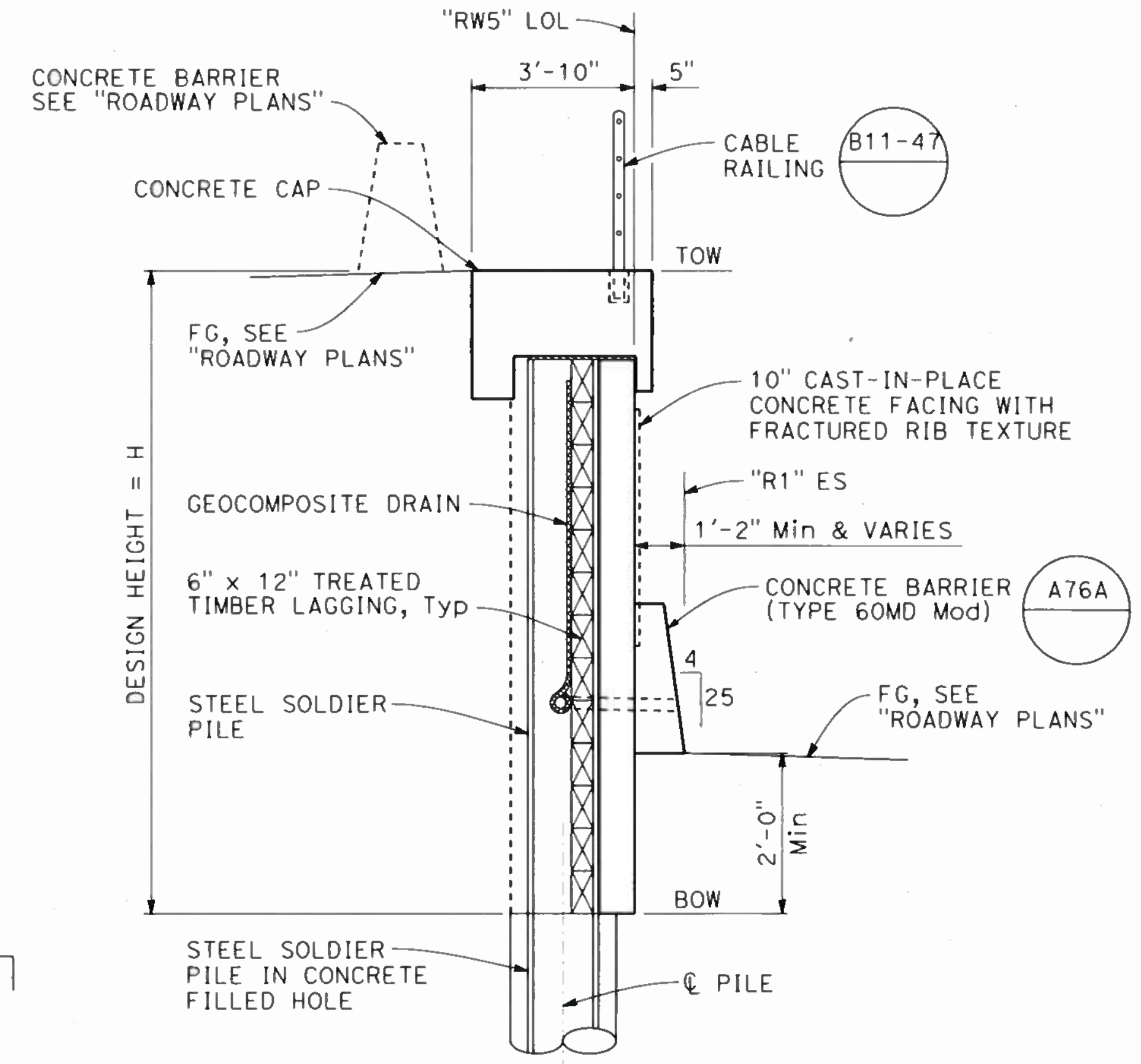


CONCRETE CAP TRANSITION DETAIL

3/4" = 1'-0"

NOTES:

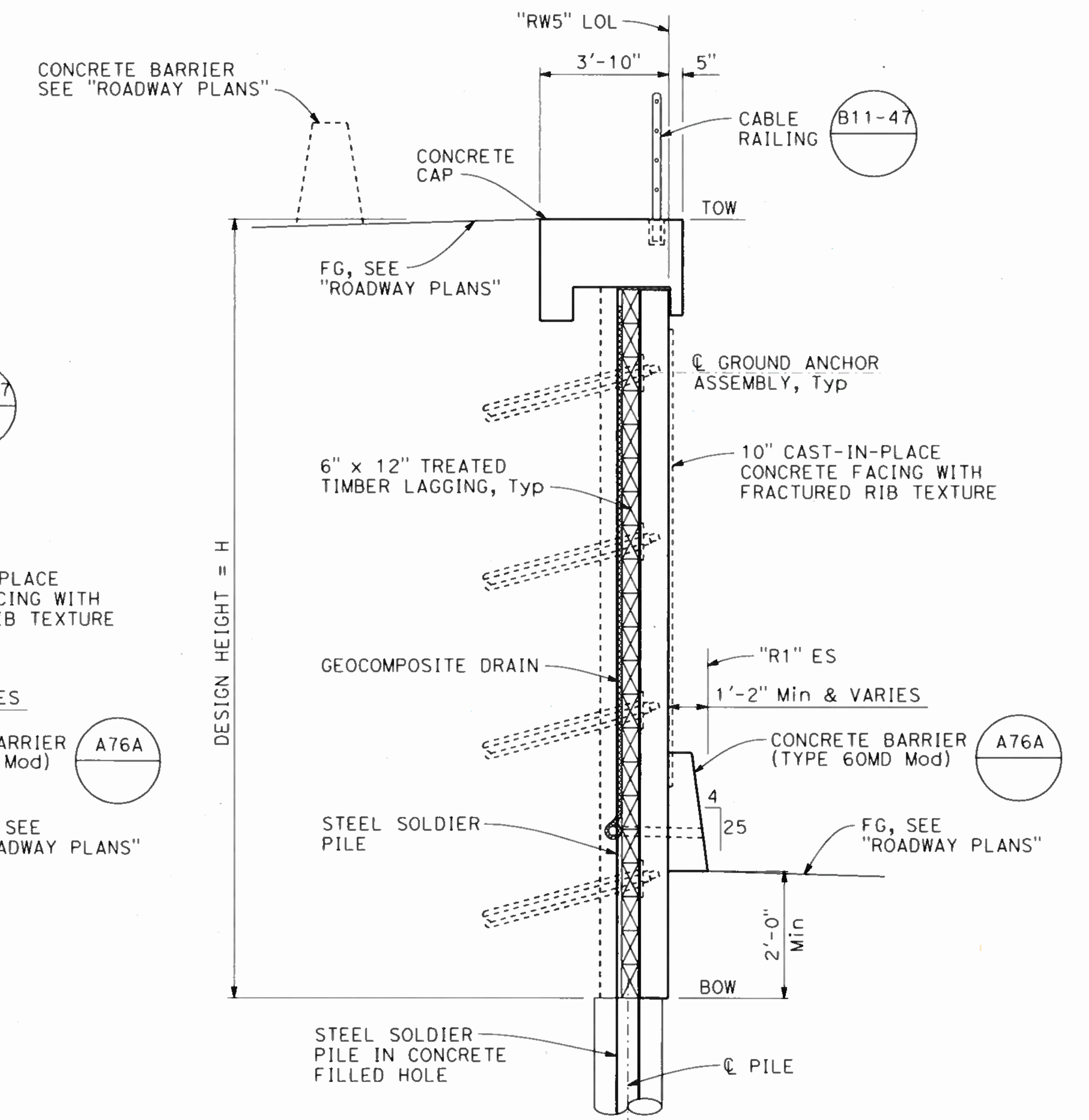
1. For limits, see "GENERAL PLAN No. 2" sheet.
2. For concrete cap details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
4. For details, see "SOLDIER PILE WALL DETAILS" sheets.
5. For excavation and backfill, see "SOLDIER PILE WALL DETAILS No. 1" sheet.



TYPICAL SECTION

3/8" = 1'-0"

"RW5" 52+96 TO 53+14



TYPICAL SECTION

3/8" = 1'-0"

"RW5" 53+14 TO 53+45.58

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

DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY" PERMIT DESIGN VEHICLE
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA
				PLANS AND SPECS COMPARED	M. JACKSON

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

**RETAINING WALL No. 5
GENERAL PLAN No. 6**

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-16-19 2-21-19 7-25-19	77	168

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	327	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

UTILITIES:

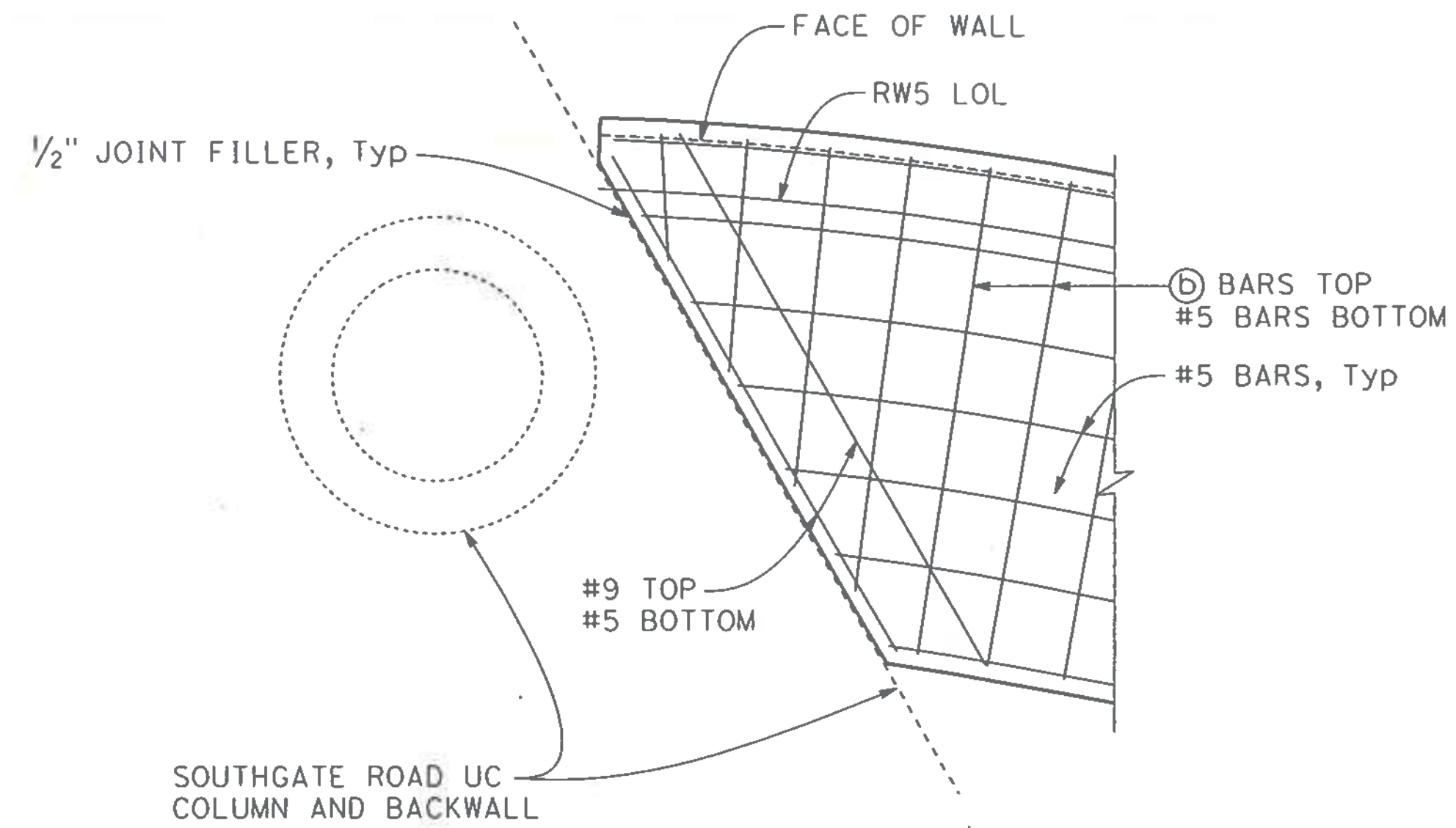
- 1 Existing Abandoned Water
- 2 Existing Abandoned Sewer
- 3 Existing Electrical to be Abandoned
- 4 Existing Overhead Electrical to be removed
- 5 Existing Gas to be Abandoned
- 6 Existing Abandoned Fiber Optic
- 7 Existing Storm Drain to be Abandoned
- 8 Existing Abandoned Telephone
- 9 Existing Water to be Abandoned
- 10 Existing Sewer to be Abandoned
- 11 Storm Drain
- 12 Joint Utility Line

LEGEND:

- Indicates existing structure
- ⊕ Indicates Steel Soldier Pile
- ⊙ Indicates CIDH Pile
- ▭ Indicates bottom of footing elevation
- ⊙ Indicates existing pile

NOTES:

- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
- For drainage details, see "DRAINAGE PLANS".



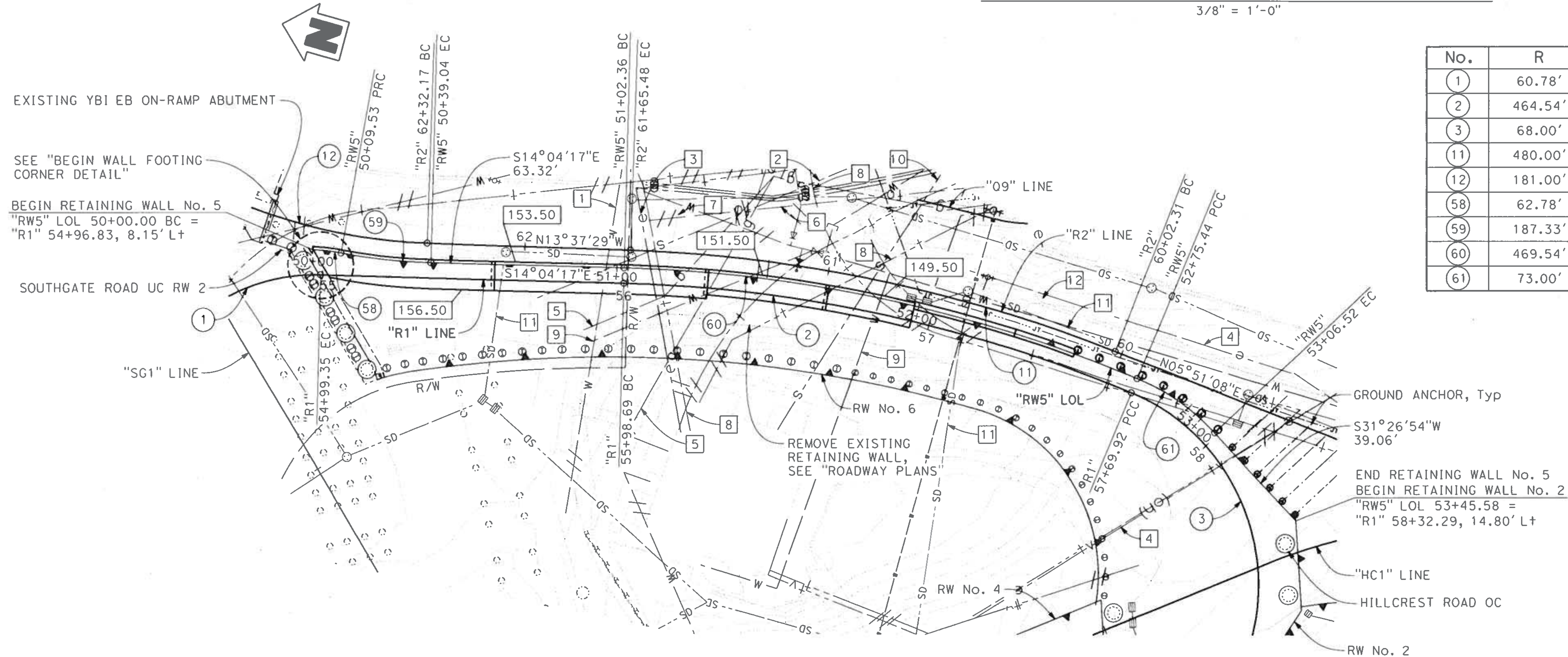
NOTE: FOR INFORMATION NOT SHOWN, SEE "TYPICAL SECTION" ON "RETAINING WALL DETAILS" SHEET.

BEGIN WALL FOOTING CORNER DETAIL

3/8" = 1'-0"

CURVE DATA

No.	R	Δ	T	L
1	60.78'	119°32'34"	104.31'	126.81'
2	464.54'	21°07'12"	86.60'	171.23'
3	68.00'	120°37'22"	119.27'	143.16'
11	480.00'	19°28'36"	82.38'	163.17'
12	181.00'	51°11'33"	86.71'	161.72'
58	62.78'	08°41'55"	4.77'	9.53'
59	187.33'	09°01'30"	14.78'	29.51'
60	469.54'	21°07'12"	87.53'	173.08'
61	73.00'	24°24'00"	15.78'	31.08'



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

5-17-19 APPROVAL DATE
PROFESSIONAL
Geotechnical

DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

SCALE: 1" = 20'	VERT. DATUM NGVD29	HORZ. DATUM NAD83, CCS ZONE 3
PHOTOGRAMMETRY AS OF: 10-9-2015	ALIGNMENT TIES	
SURVEYED BY TOWILL Inc.	DRAFTED BY D. ORTEGA	
FIELD CHECKED BY D. ORTEGA	CHECKED BY A. MARTINEZ	

DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE
QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER

**PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

**RETAINING WALL No. 5
FOUNDATION PLAN**

FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 78	OF 168
	10-22-19 11-14-19 1-24-20		

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:05

SOLDIER PILE TABLE

PILE NUMBER	"RW5" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
1	52+54.00	157.64	155.64	141.00	W18x130
2	52+61.50	158.64	156.64	141.00	W18x130
3	52+69.00	159.77	157.77	141.00	W18x130
4	52+76.50	161.03	159.03	141.00	W18x130
5	52+84.00	162.39	160.39	137.50	W18x130
6	52+91.50	163.79	161.79	137.50	W18x130
7	52+99.00	165.26	163.26	135.50	W18x175

SOLDIER PILE TABLE

PILE NUMBER	"RW5" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
8	53+06.50	167.19	165.19	135.50	W18x175
9	53+14.00	169.18	167.18	144.50	(2)W8x21
10	53+20.00	170.78	168.78	144.50	(2)W8x21
11	53+26.00	172.38	170.38	144.50	(2)W8x21
12	53+32.00	173.98	171.98	144.50	(2)W8x21
13	53+38.00	175.58	173.58	144.50	(2)W8x21
14	53+44.00	177.17	175.17	144.50	(2)W8x21

GROUND ANCHOR DESIGN TABLE

PILE NUMBER	LOCATION	FACTORED DESIGN LOAD FDL (kips)	FACTORED TEST LOAD FTL (kips)	LOCK-OFF LOAD LL (kips)
9	ROW 1	45	53	31
	ROW 2	26	32	18
	ROW 3	32	38	22
10, 11 & 12	ROW 1	53	65	36
	ROW 2	31	40	21
	ROW 3	40	50	27
13 & 14	ROW 4	40	49	27
	ROW 1	58	71	39
	ROW 2	34	43	23
	ROW 3	43	54	29
	ROW 4	43	54	29
ROW 5	37	46	25	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	328	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

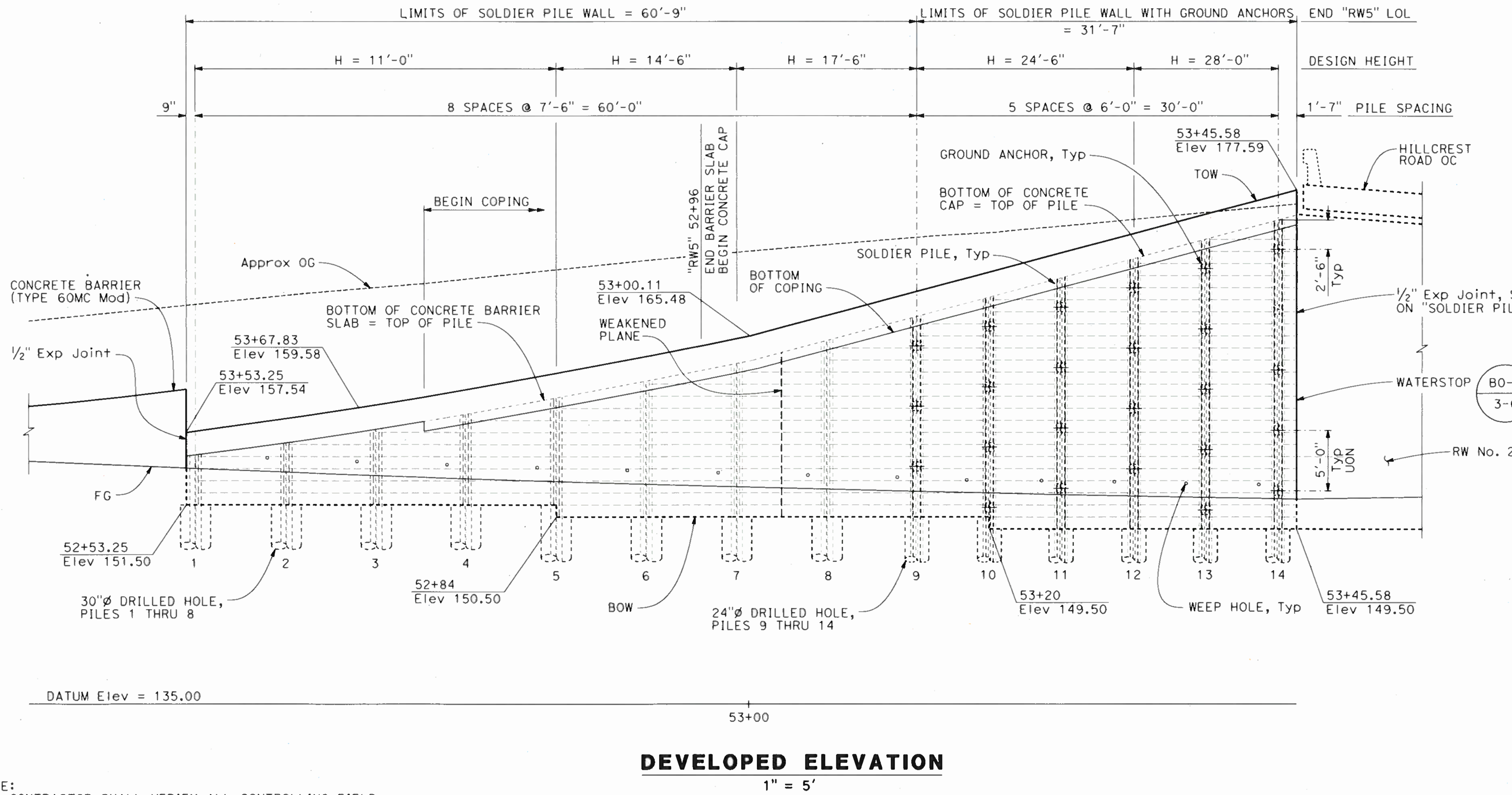
PLANS APPROVAL DATE

JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL ENGINEER STATE OF CALIFORNIA

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



- NOTES:**
- For information not shown, see "GENERAL PLAN No. 2", GENERAL PLAN No. 5" and "GENERAL PLAN No. 6" sheets.
 - For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
 - Concrete barrier not shown for clarity.
 - The top most row of ground anchors is considered "Row 1".
- LEGEND:**
- # Location of ground anchor assembly

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

 DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34E0034	RETAINING WALL No. 5 SOLDIER PILE WALL LAYOUT	
	DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER	POST MILES		7.9
	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER		UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531		CONTRACT NO.: 04-3A6414

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => RW5-f-spw_1o01.dgn

USE NAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	329	436

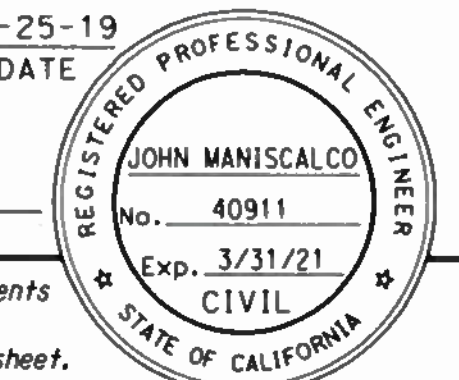
7-25-19
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

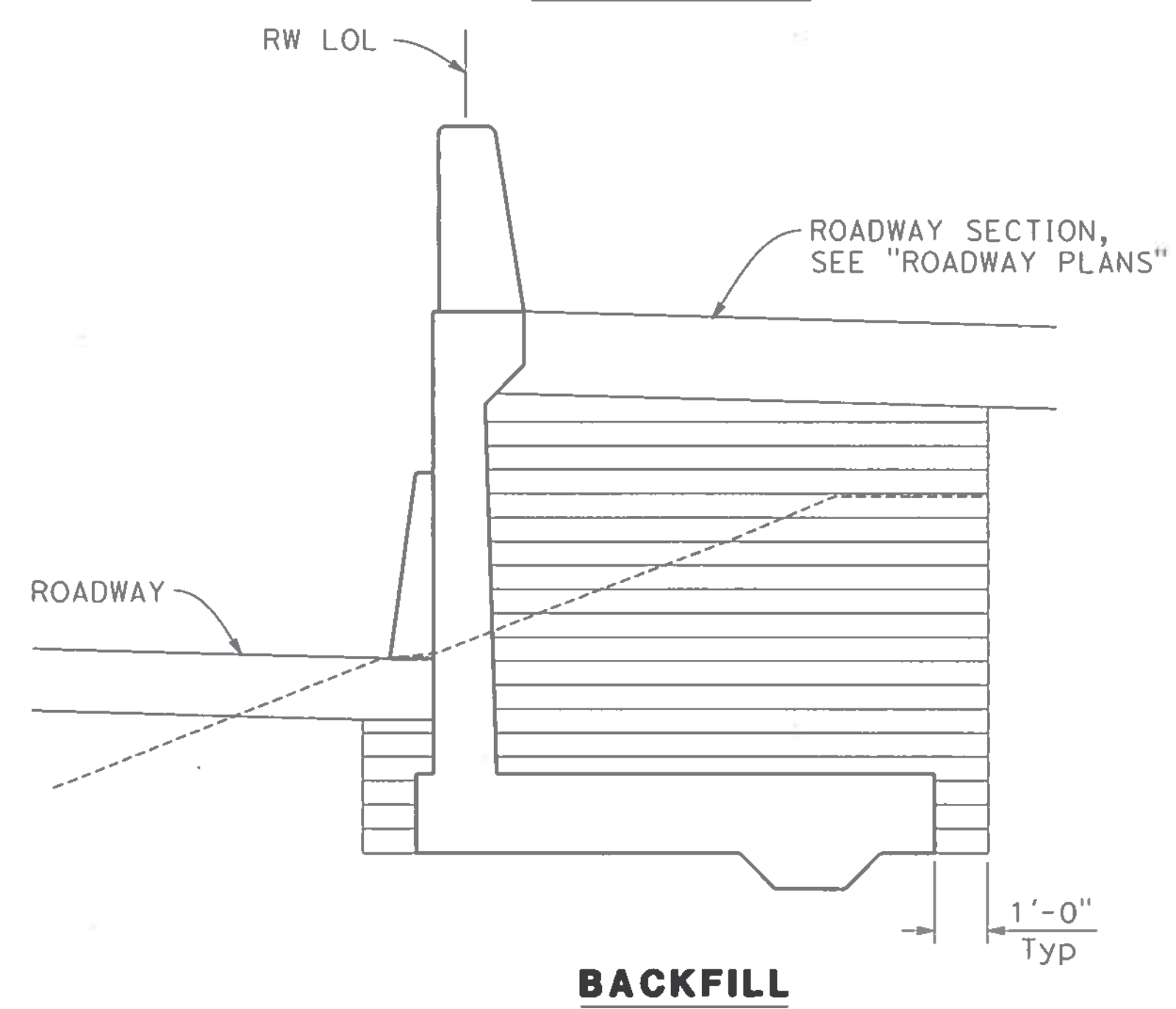
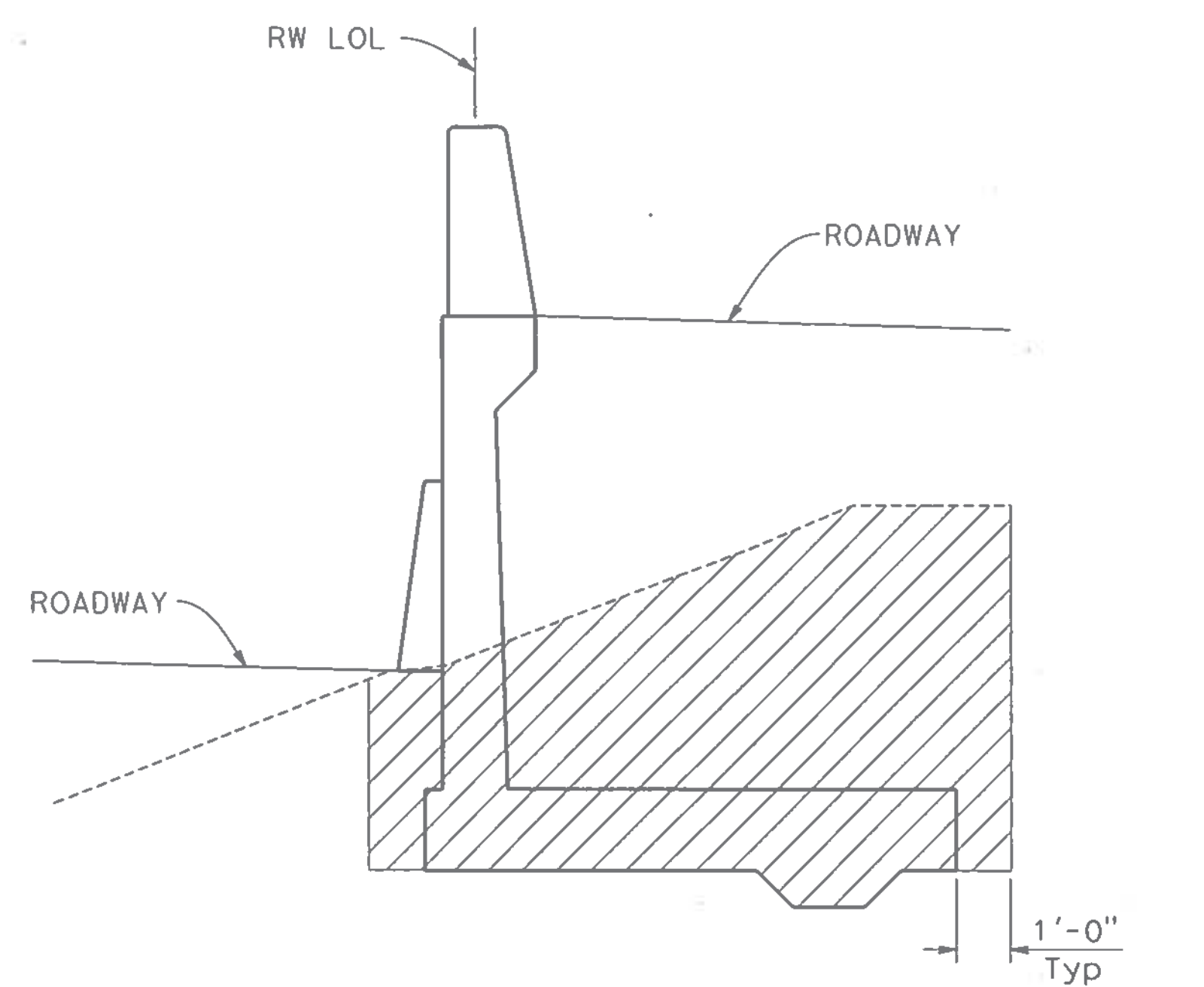
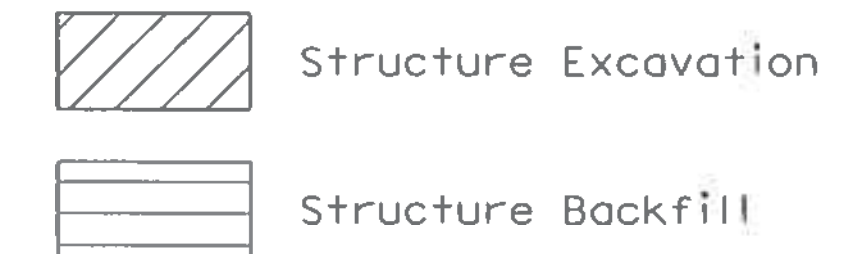
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



NOTES:

- For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
- For drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- No splices are allowed within H/4 above top of footing.
- Extend bars into barrier 10" from top of wall.
- Provide #6 @ 8 in addition to (C) bars shown over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations.

LEGEND:



LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL

NO SCALE

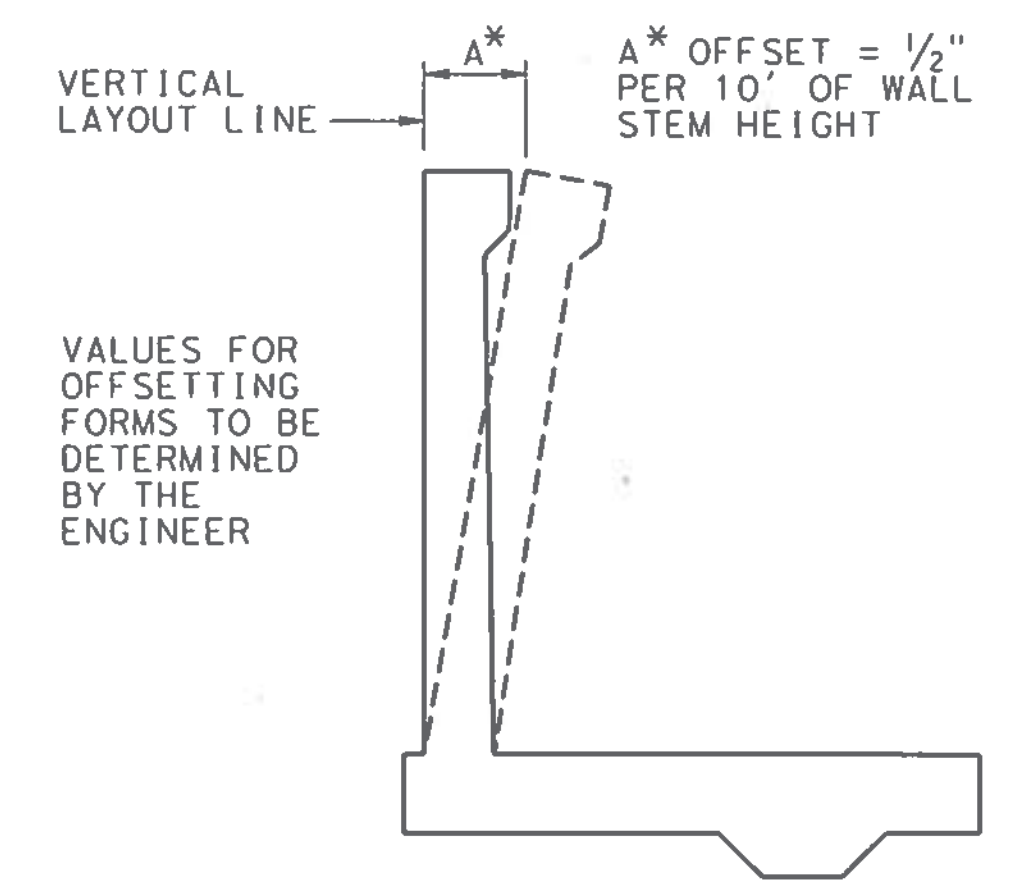
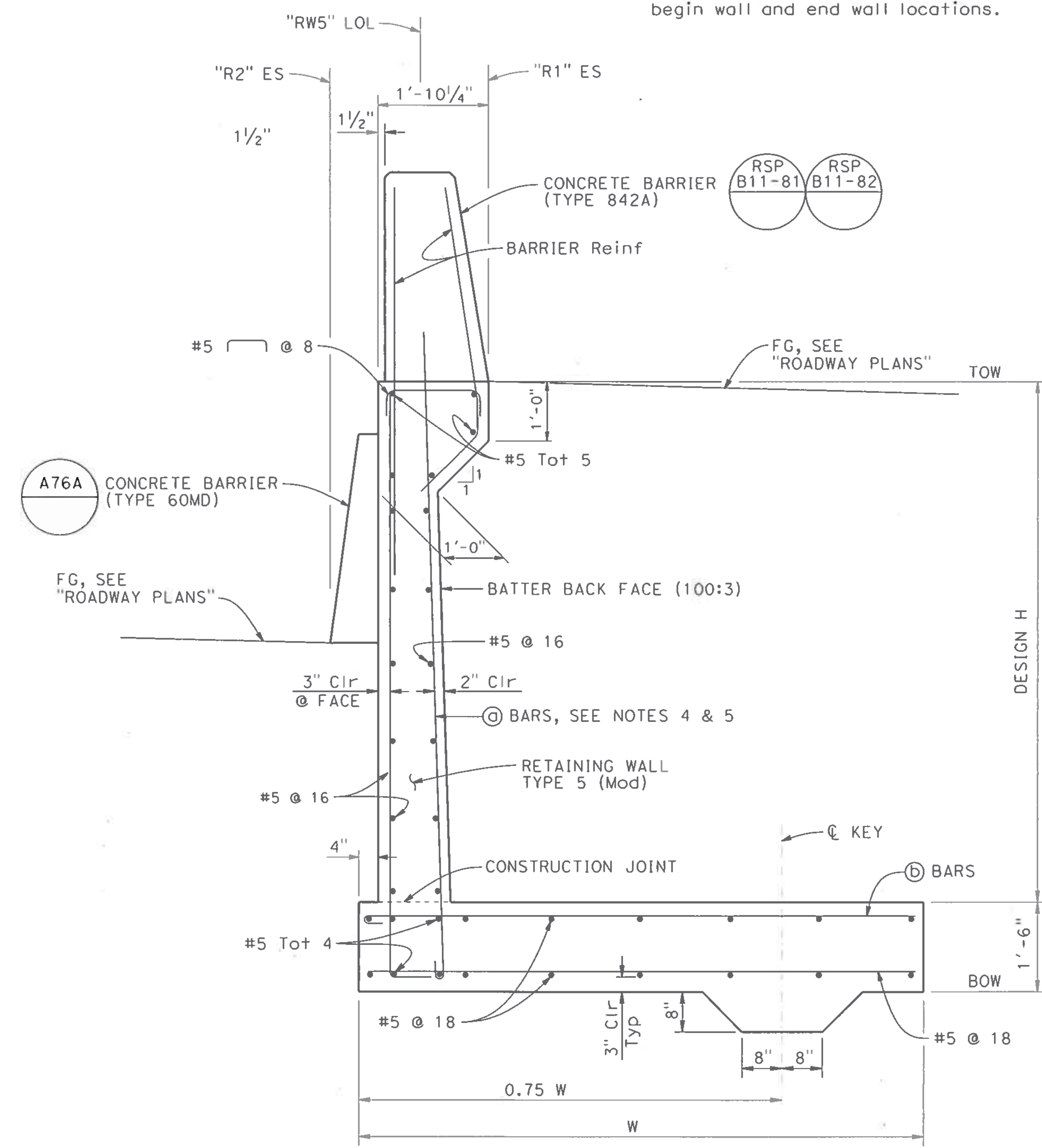


TABLE OF DIMENSIONS AND REINFORCEMENT

DESIGN H	8'	10'
W	8'-3"	9'-6"
(C) BARS	#7 @ 12	#7 @ 10
(D) BARS	#8 @ 12	#9 @ 10
SER: B'(FEET), q ₀ (ksf)	6.6, 1.3	6.2, 1.6
STR: B'(FEET), q ₀ (ksf)	6.3, 1.8	5.7, 2.2
EXT I: B'(FEET), q ₀ (ksf)	4.9, 1.5	4.0, 2.2
EXT II: B'(FEET), q ₀ (ksf)	3.3, 2.3	3.0, 2.9

LEGEND:

- SER: service limit state
- STR: strength limit state
- EXT: extreme event limit state
- B': effective footing width (feet)
- q₀: net bearing stress (ksf)
- q₀: gross uniform bearing stress (ksf)

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

DESIGN OVERSIGHT
SIGN OFF DATE
11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 34E0034
PROJECT ENGINEER JOHN MANISCALCO
POST MILES 7.9

RETAINING WALL No. 5
RETAINING WALL DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-23-19 1-24-19	80	168

FILE => RW5-g-rwd101.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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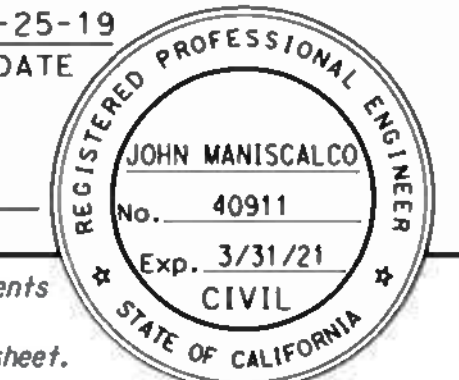
REGISTERED CIVIL ENGINEER DATE 7-25-19

PLANS APPROVAL DATE

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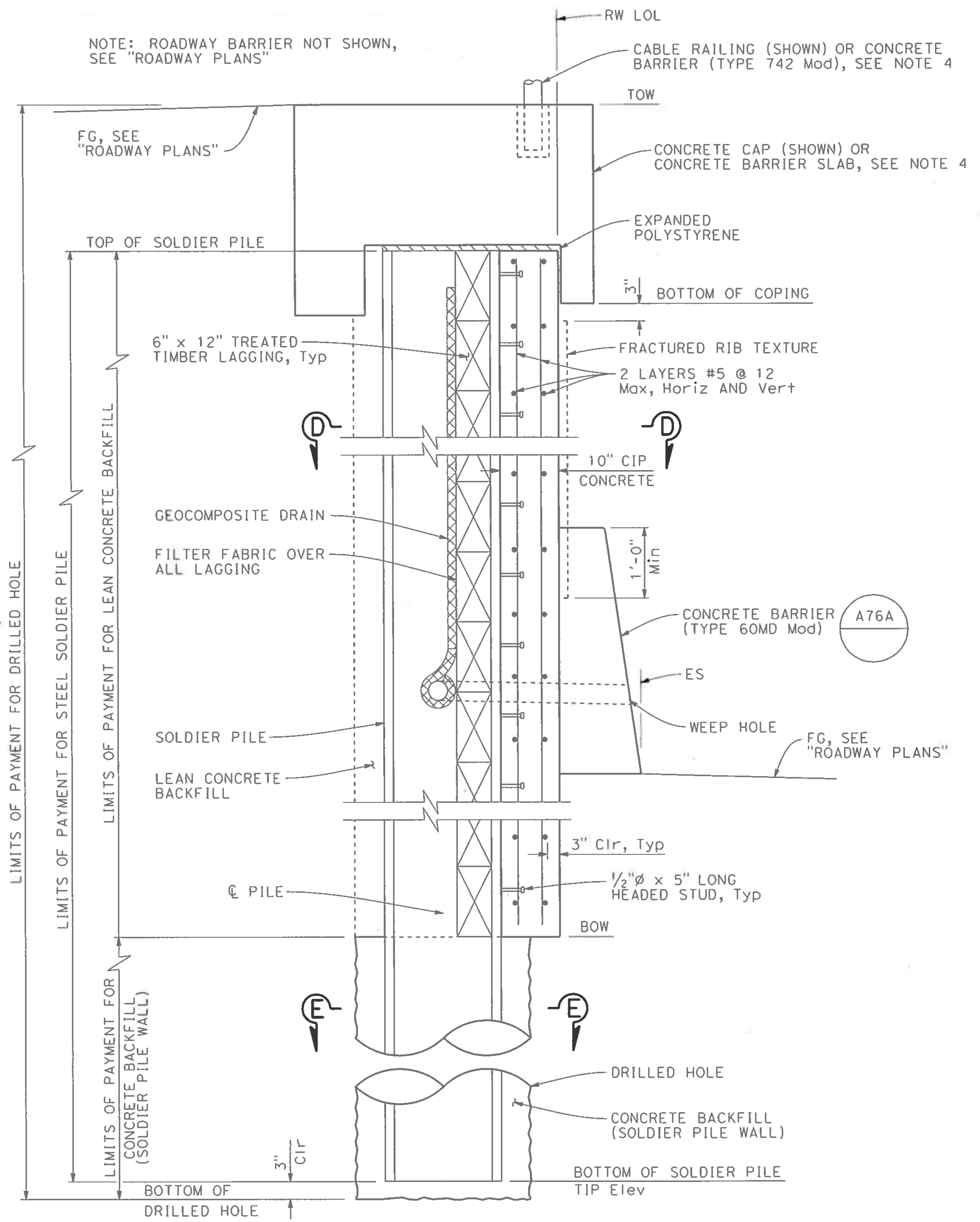
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



NOTES:

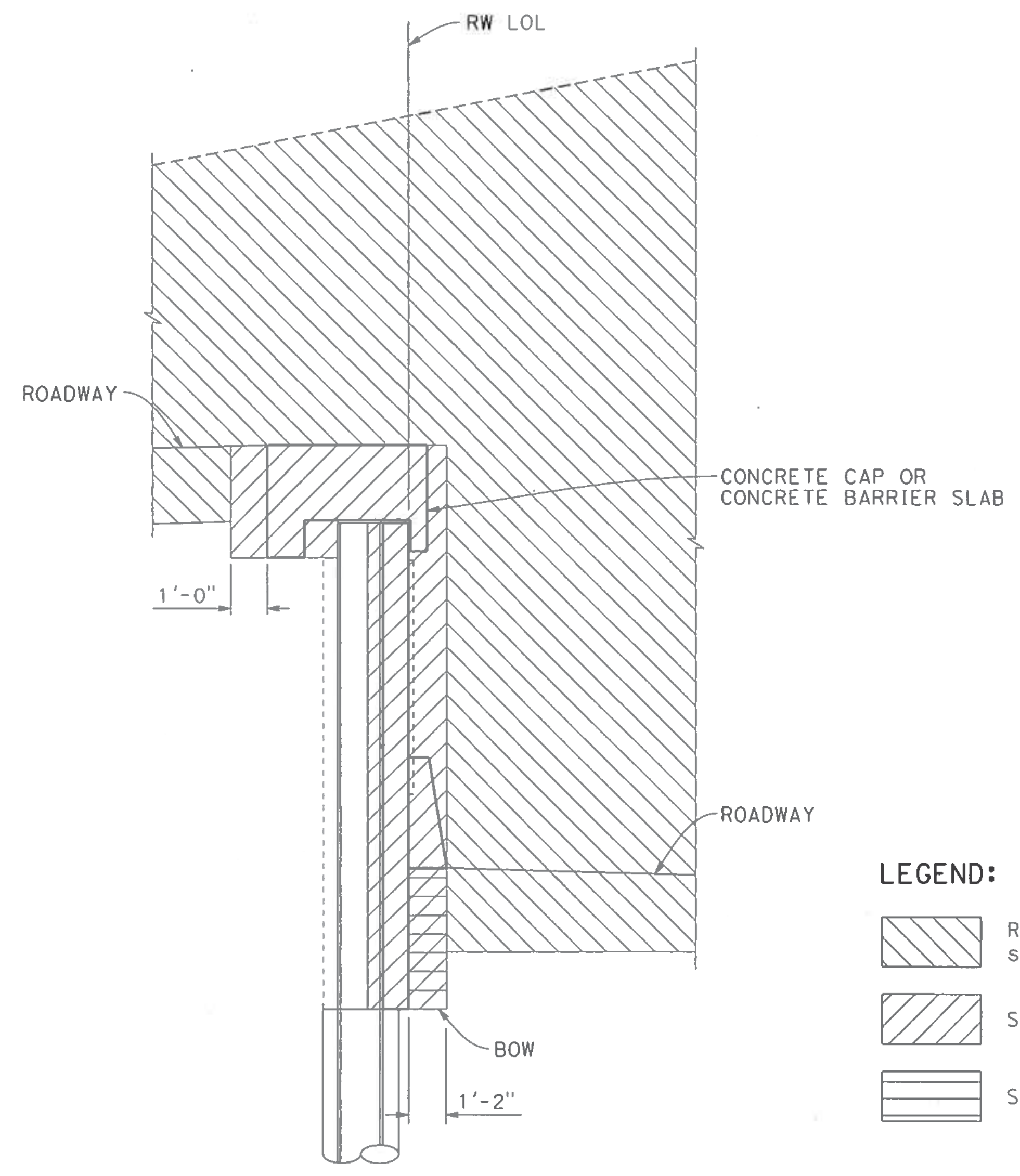
1. For "SECTION D-D" and "SECTION E-E", see "SOLDIER PILE WALL DETAILS No. 2" sheet.
2. For timber lagging details, see "SOLDIER PILE WALL DETAILS No. 4" sheet.
3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
4. For limits and details not shown, see "GENERAL PLAN No. 5" and "GENERAL PLAN No. 6" and "CONCRETE BARRIER SLAB DETAILS" sheets.



SINGLE PILE - SOLDIER PILE WALL SECTION

1" = 1'-0"

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



LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL

NO SCALE

LEGEND:

- Roadway Excavation, see "ROADWAY PLANS"
- Structure Excavation
- Structure Backfill

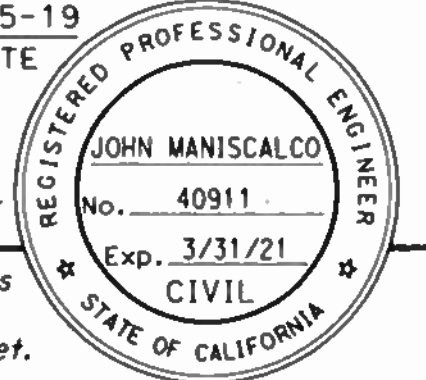
DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

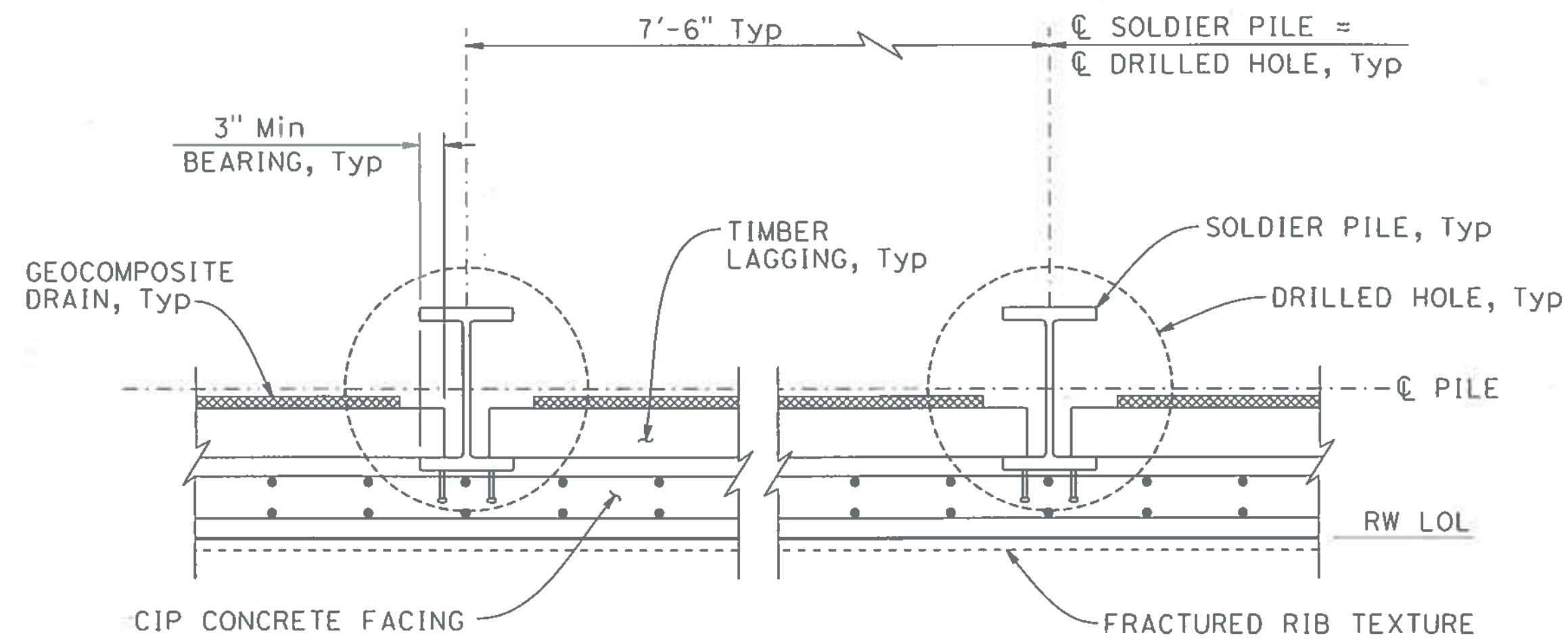
DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

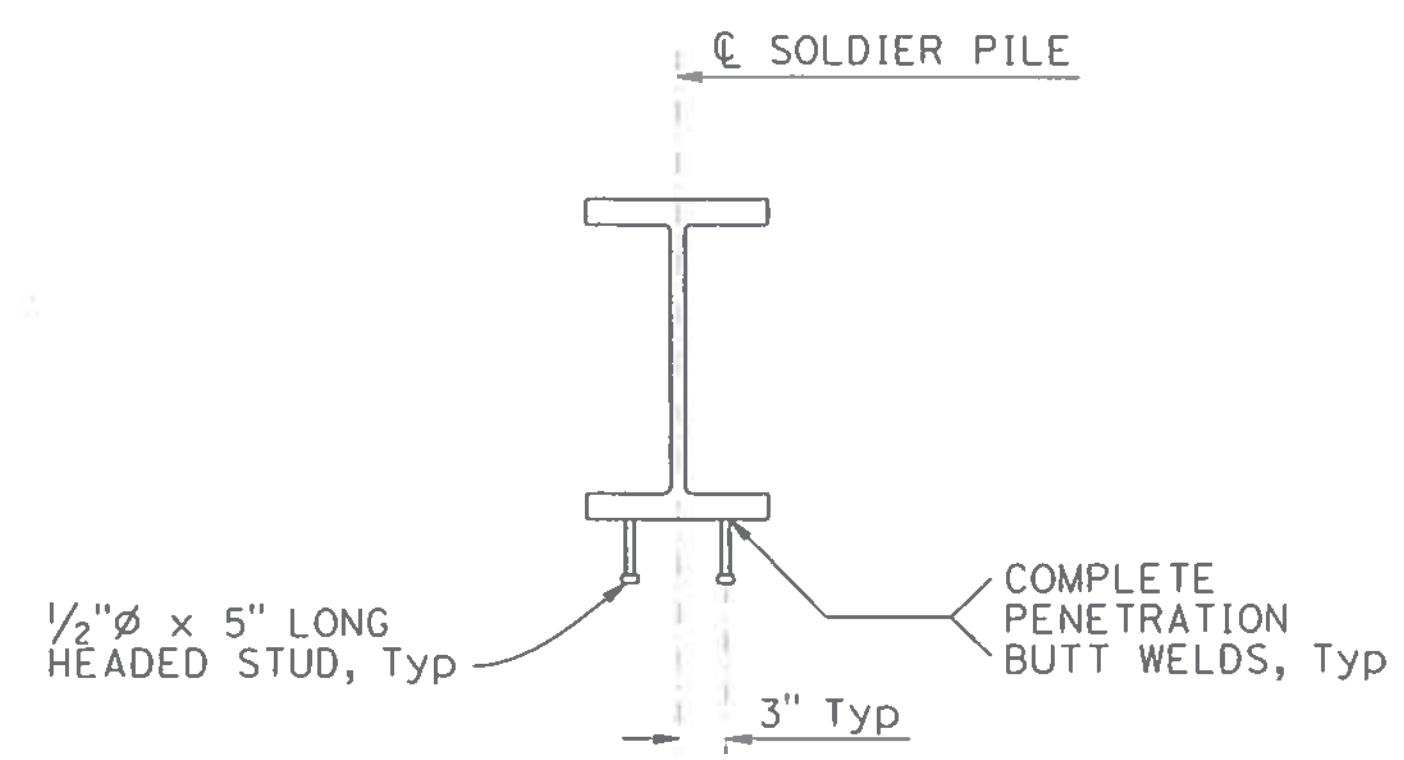
BRIDGE No.	34E0034
PROJECT ENGINEER	JOHN MANISCALCO
POST MILES	7.9

RETAINING WALL No. 5
SOLDIER PILE WALL DETAILS No. 1

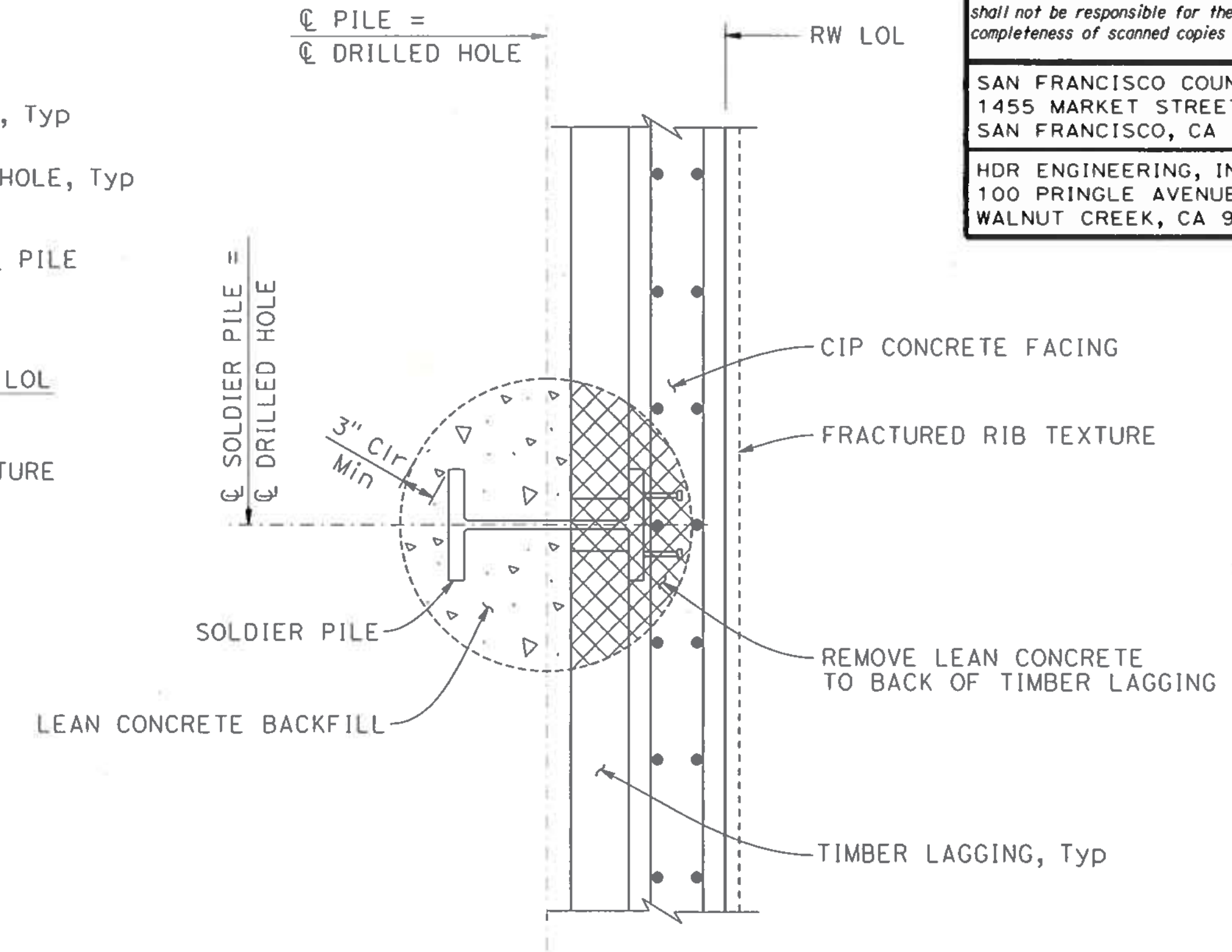
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	331	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



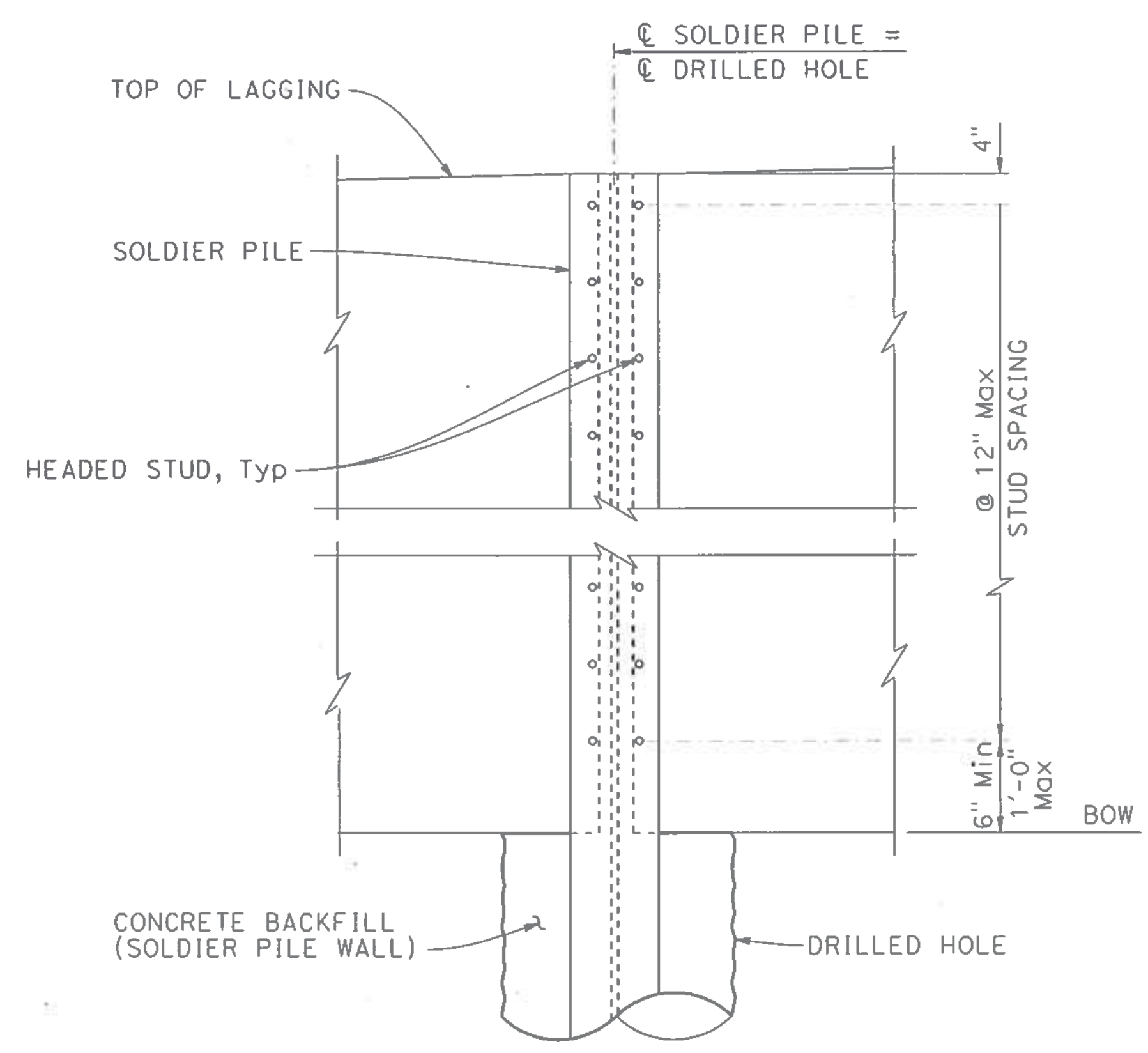
PARTIAL PLAN
3/4" = 1'-0"



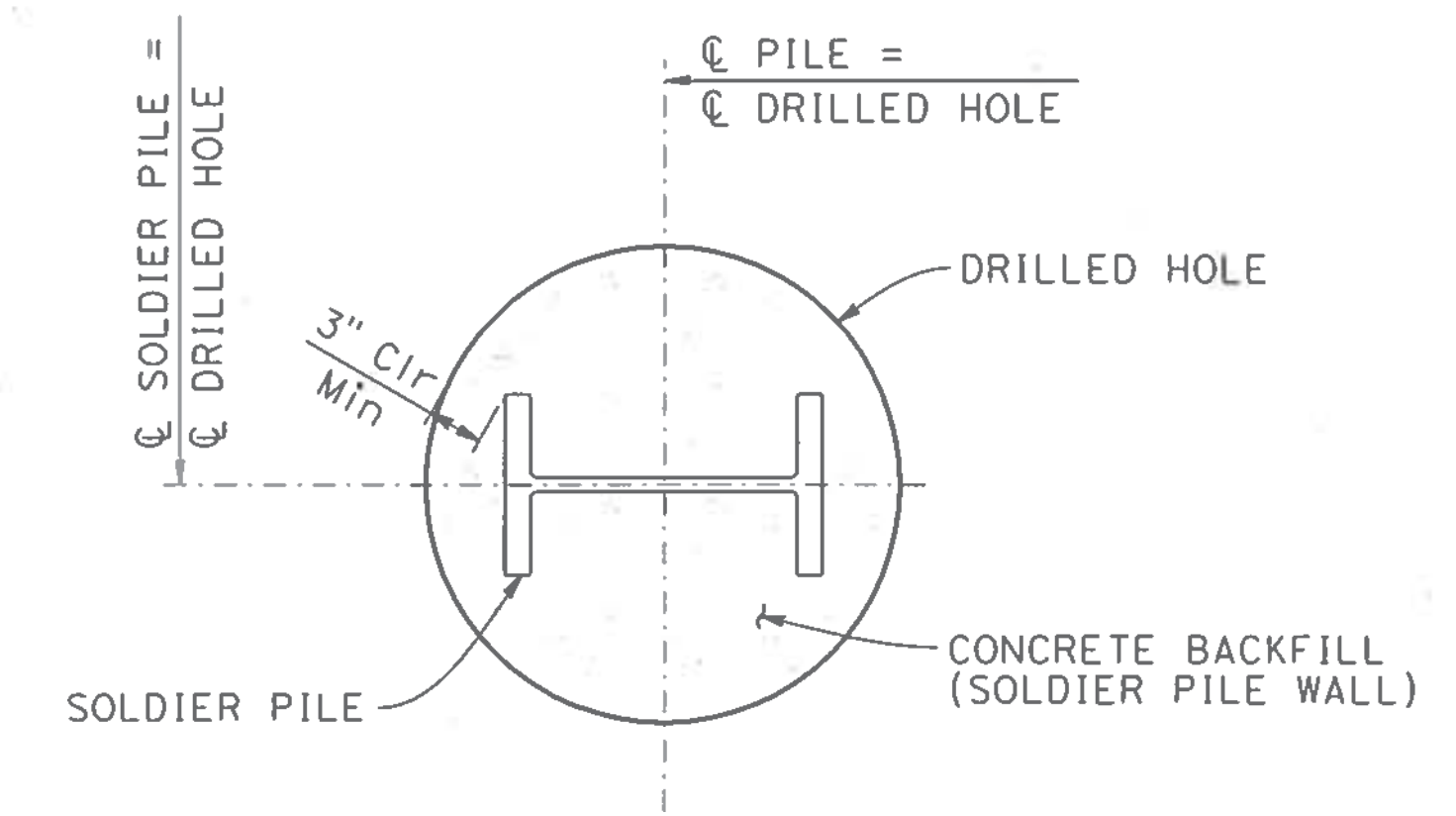
HEADED STUD DETAIL
NO SCALE



SECTION D-D
1" = 1'-0"



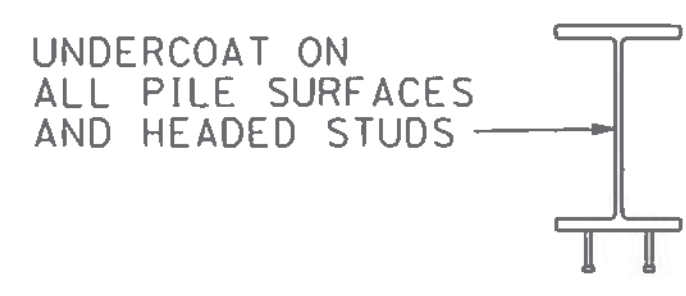
PARTIAL ELEVATION
3/4" = 1'-0"




SECTION E-E
1" = 1'-0"

NOTE: CLEAN AND PAINT STEEL SOLDIER PILE FROM TOP OF PILE TO 5'-0" BELOW BOTTOM OF TIMBER LAGGING.

LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE
NO SCALE



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

 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DESIGN	BY: K. SERRANO-PAINE	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	RETAINING WALL No. 5 SOLDIER PILE WALL DETAILS No. 2	
	DETAILS	BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		JOHN MANISCALCO PROJECT ENGINEER		
	QUANTITIES	BY: A. CHUNG	CHECKED: A. ROMINGER		POST MILES		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3				UNIT: 0728	7.9		
PROJECT NUMBER & PHASE: 04190001531				CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES		
				FILE => RW5-g-spwd+02.dgn	REVISION DATES: 10-22-19 11-14-19 2-21-19 1-24-19		
					SHEET	OF	
					82	168	

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:06

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	332	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA

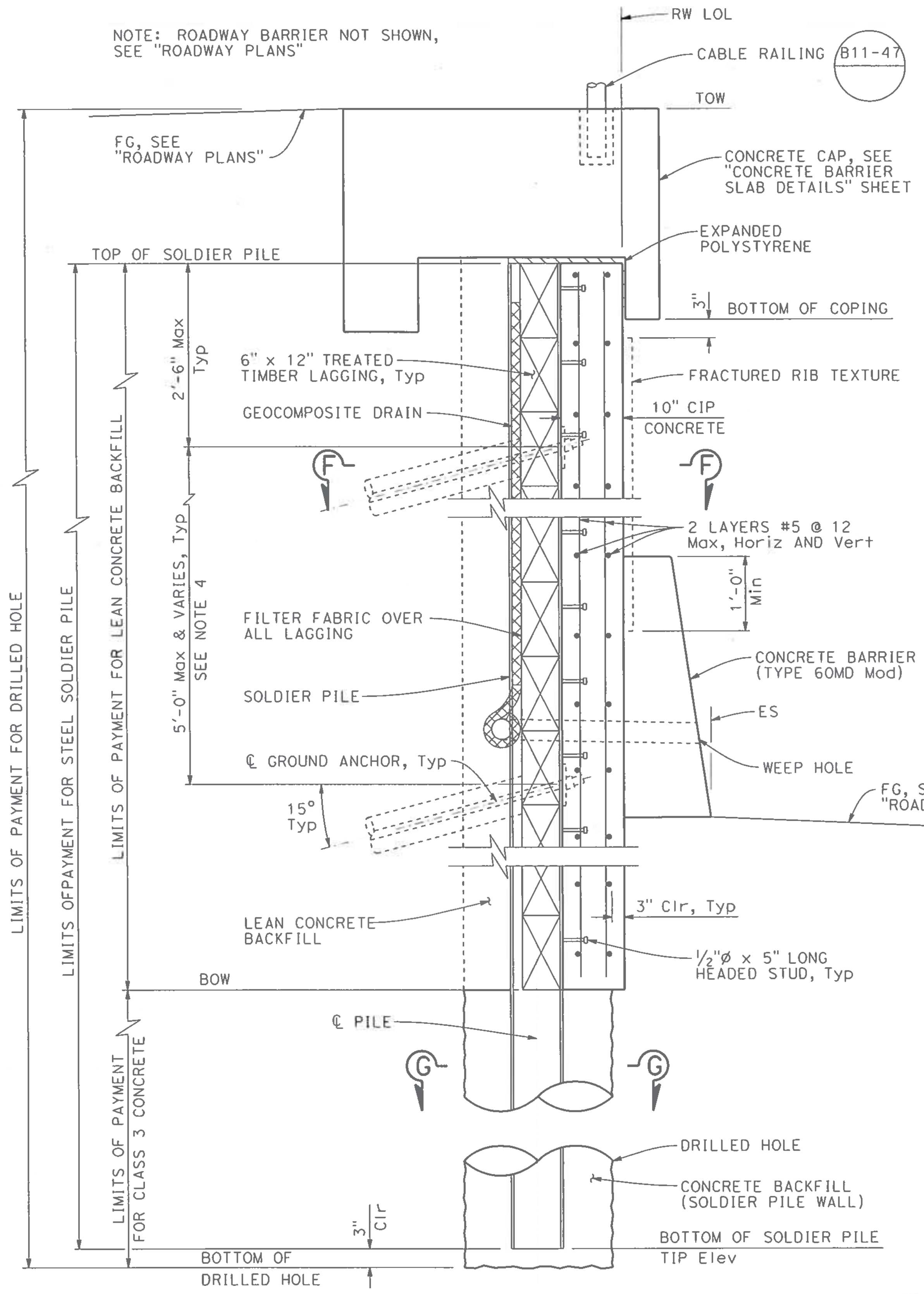
PLANS APPROVAL DATE

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1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

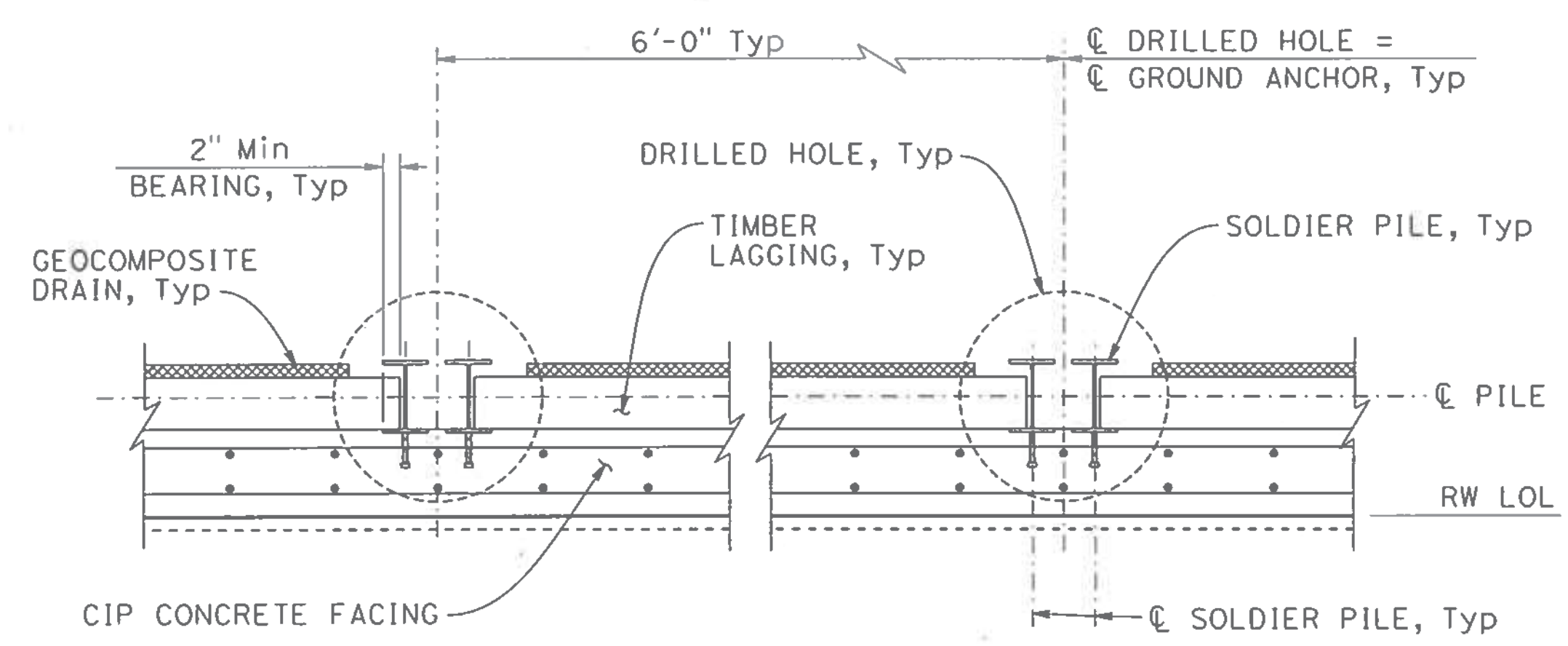
NOTE: ROADWAY BARRIER NOT SHOWN, SEE "ROADWAY PLANS"



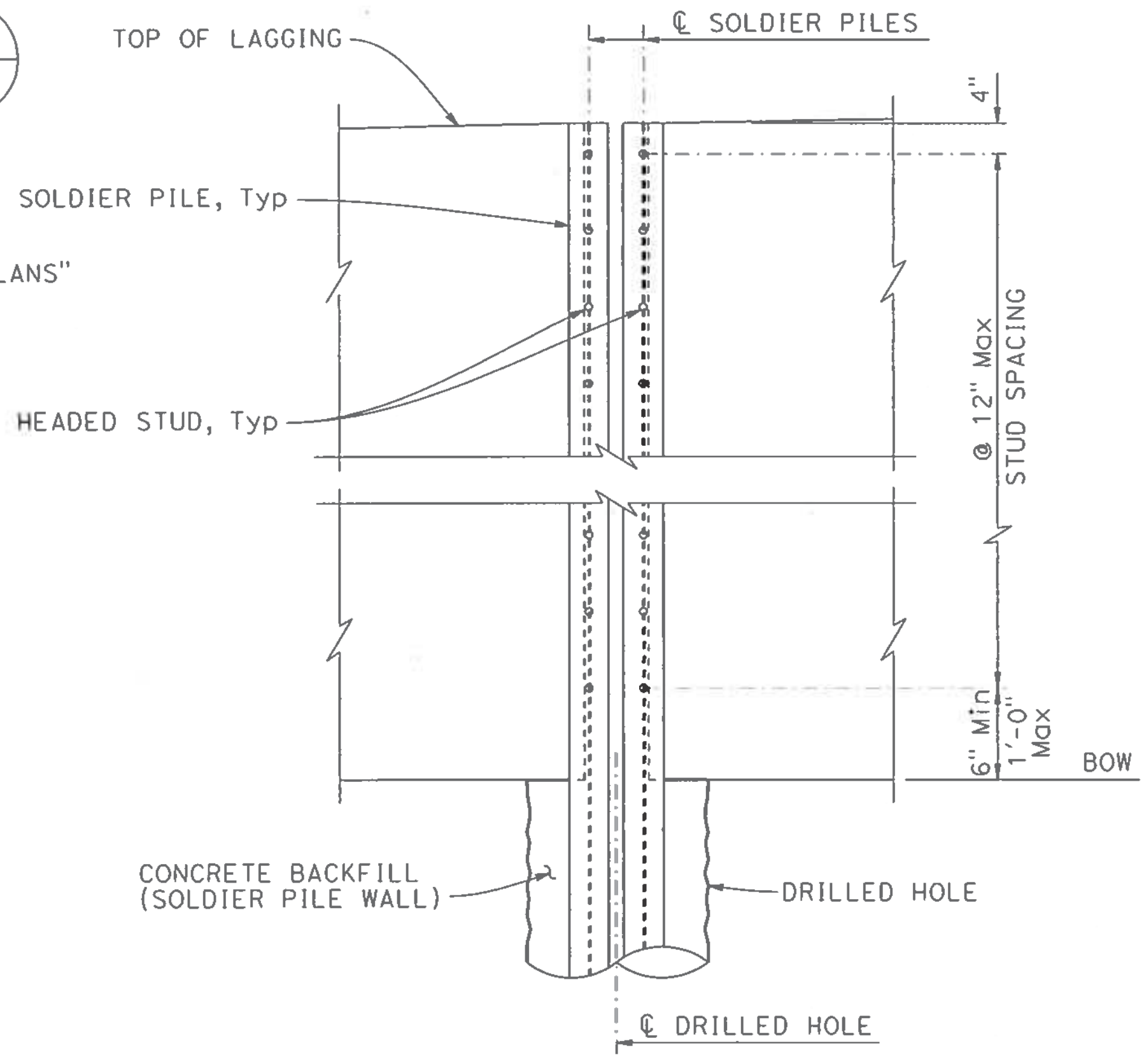
DOUBLE PILE - SOLDIER PILE WALL SECTION
1" = 1'-0"

NOTES:

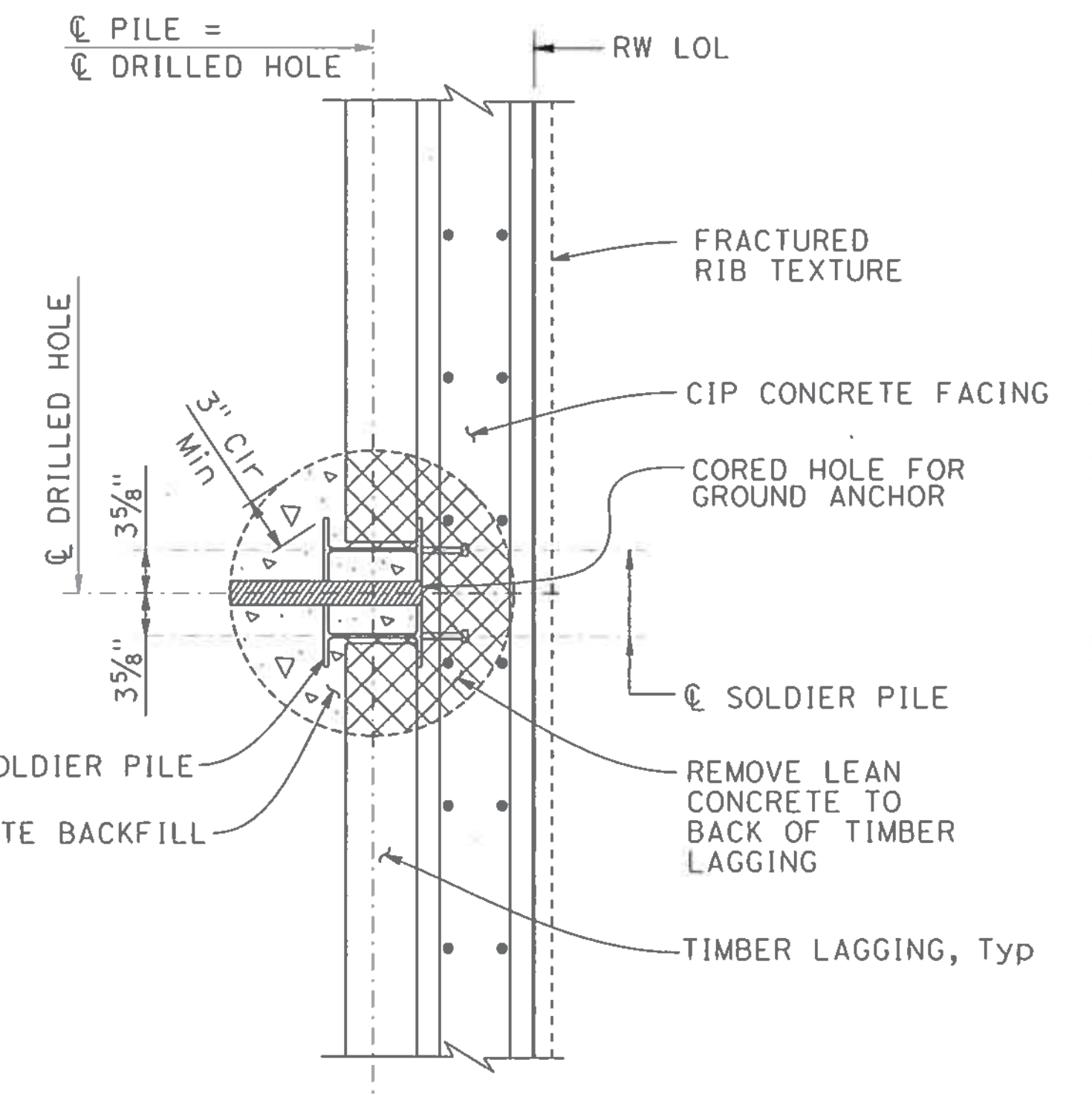
1. For timber lagging details, see "SOLDIER PILE WALL DETAILS No. 4" sheet.
2. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
3. For details not shown, see "SOLDIER PILE WALL DETAILS No. 5" sheet.
4. For ground anchor spacing, see "SOLDIER PILE WALL LAYOUT" sheet.



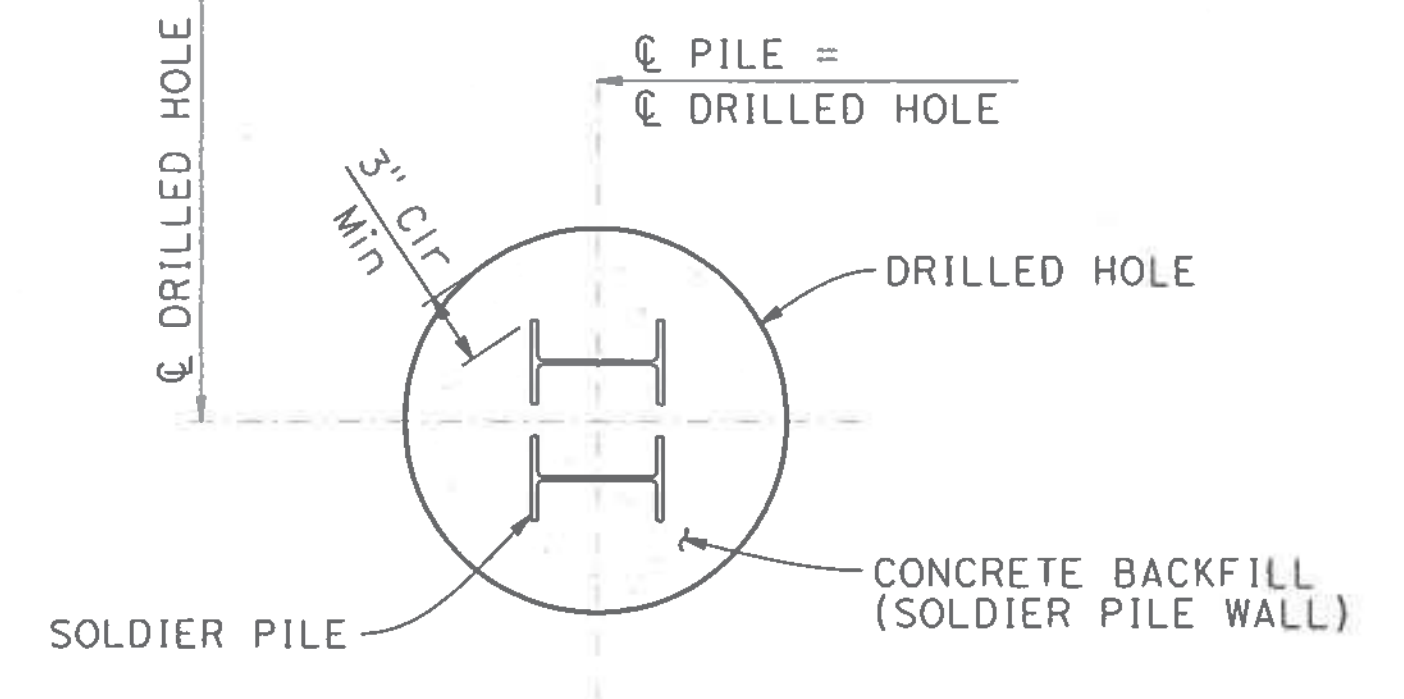
PARTIAL PLAN
3/4" = 1'-0"



PARTIAL ELEVATION
3/4" = 1'-0"



SECTION F-F
1" = 1'-0"



SECTION G-G
1" = 1'-0"

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

DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

RETAINING WALL No. 5
SOLDIER PILE WALL DETAILS No. 3

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:07

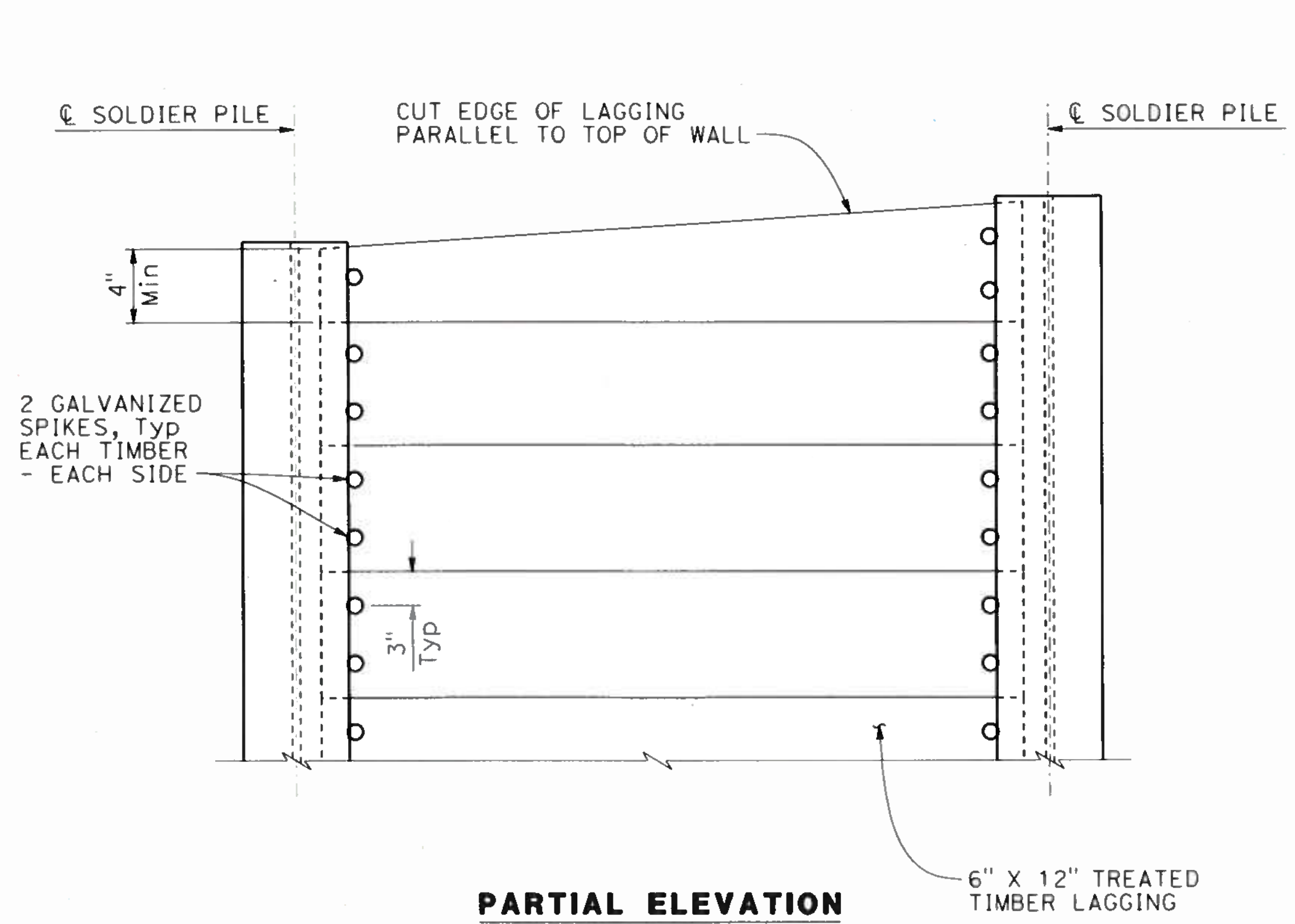
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	333	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

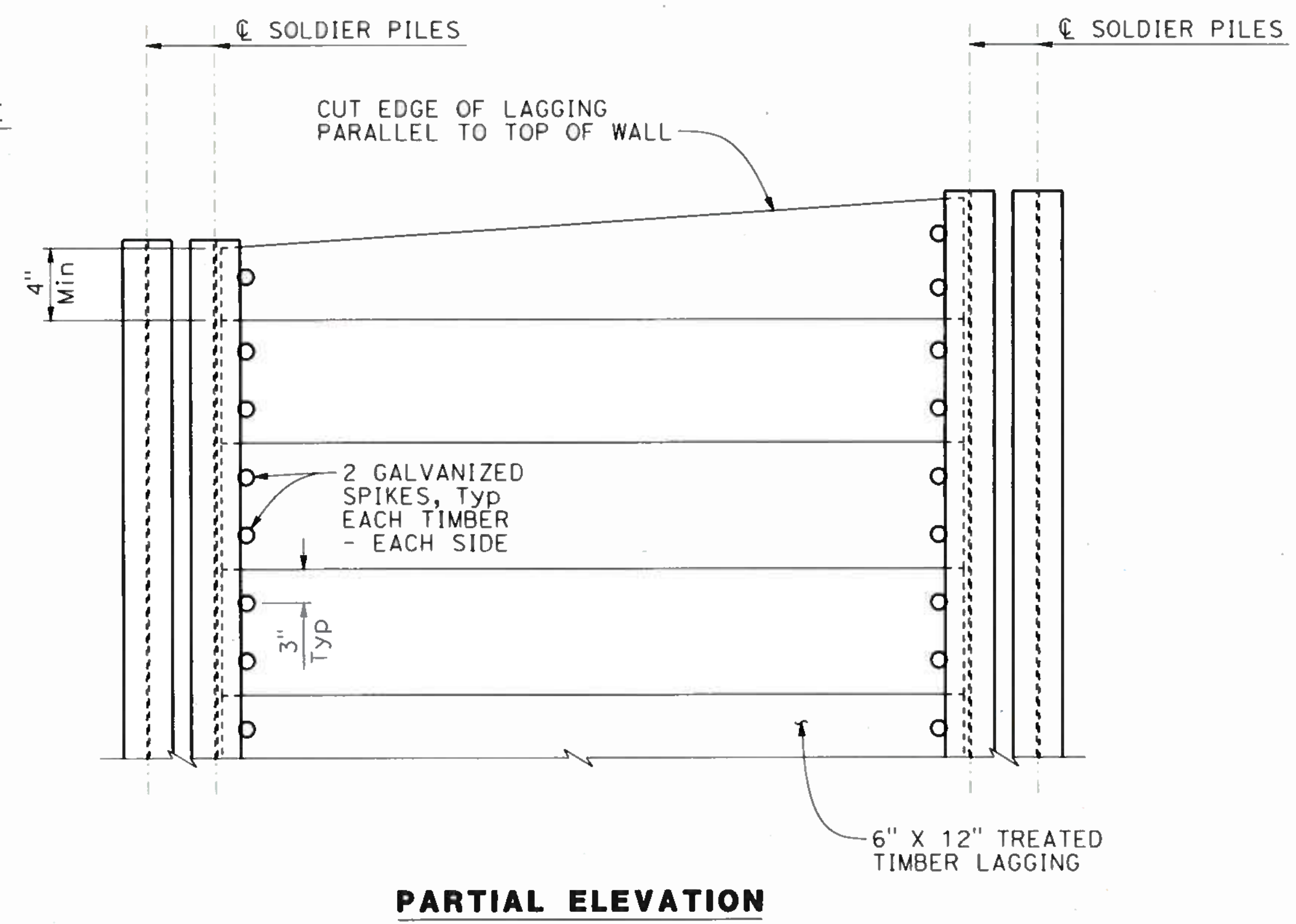
PLANS APPROVAL DATE _____
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 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



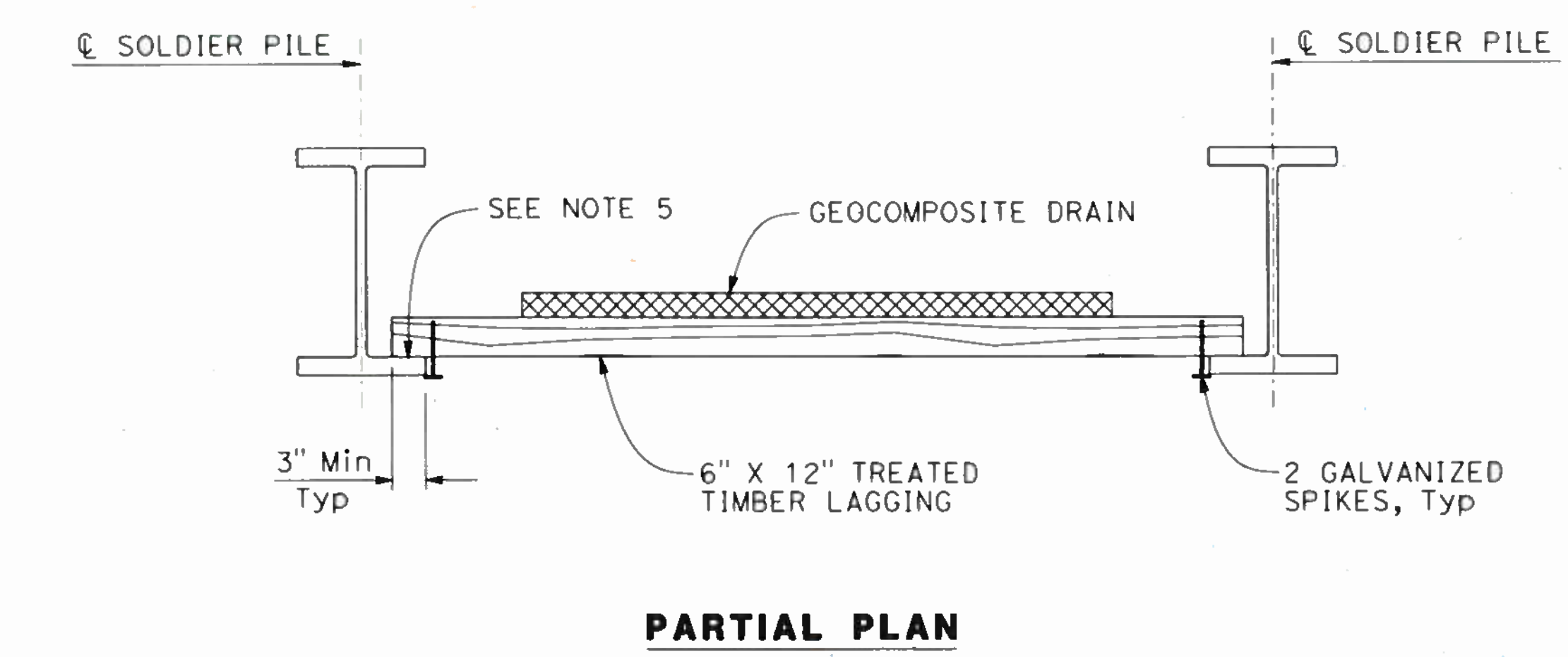
PARTIAL ELEVATION



PARTIAL ELEVATION

NOTES:

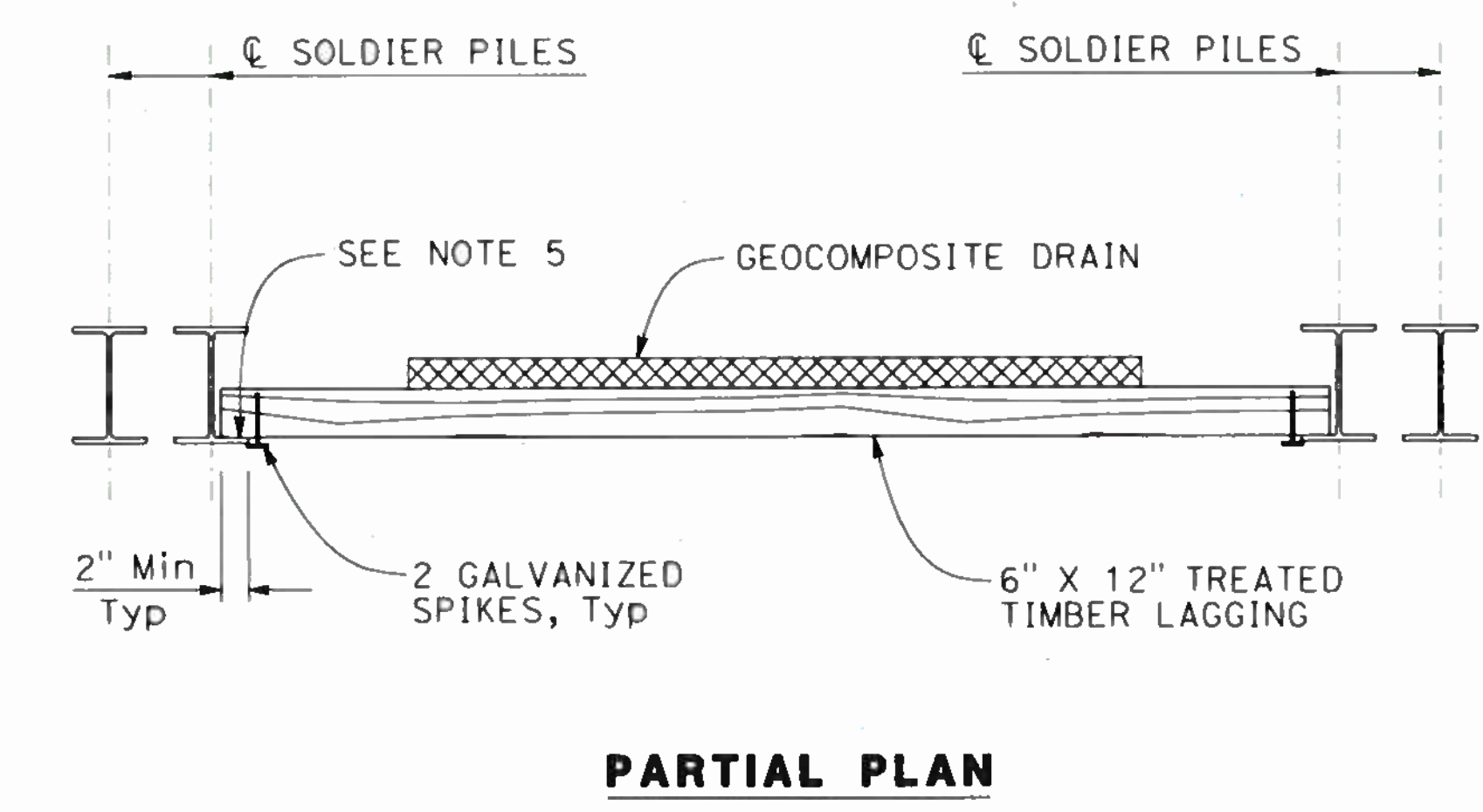
1. No clipping of timber lagging corners allowed.
2. Use 40d galvanized wire spikes for lagging.
3. Spikes, screws and nails shall not be bent.
4. Timber lagging to be treated on all sides.
5. All timber lagging to be placed with full bearing against soldier pile flanges.



PARTIAL PLAN

LAGGING DETAIL (ONE PILE)

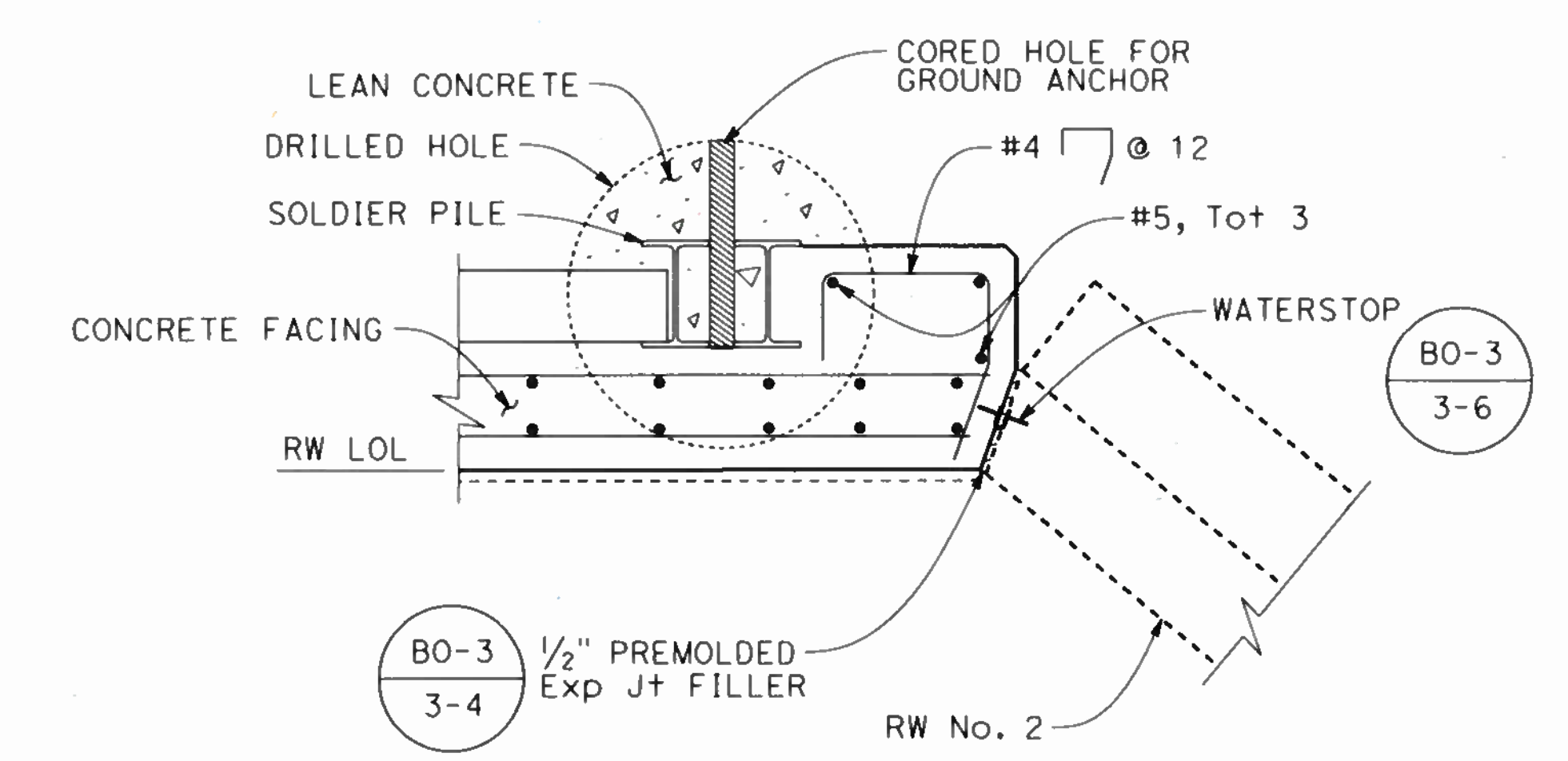
NO SCALE



PARTIAL PLAN

LAGGING DETAIL (TWO PILES)

NO SCALE



END WALL DETAIL

1" = 1'-0"

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

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

RETAINING WALL No. 5
SOLDIER PILE WALL DETAILS No. 4

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

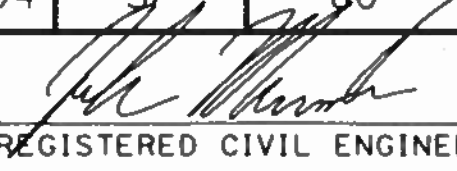
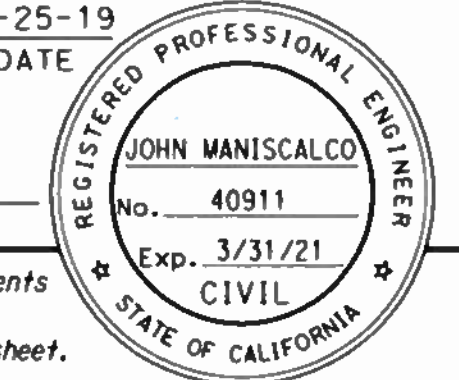
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-21-19 1-22-19 7-25-19	84	168

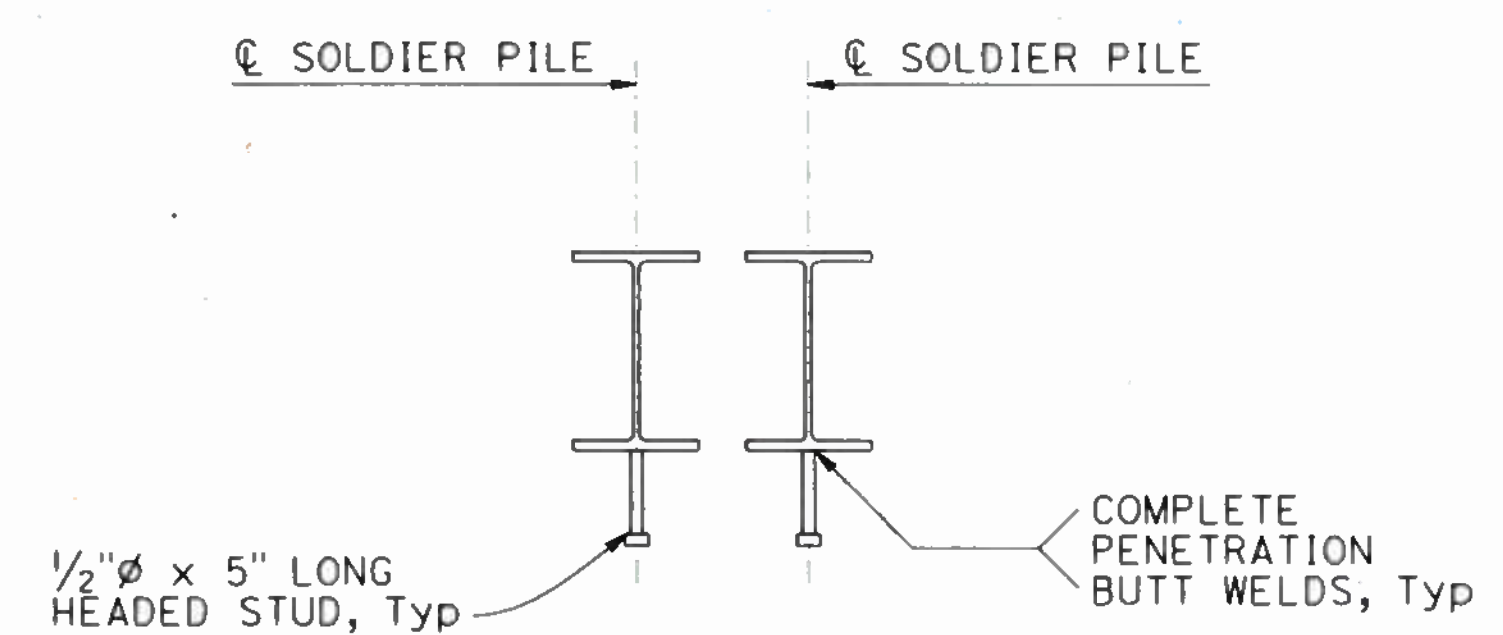
FILE => RWS-g-spwdt04.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:07

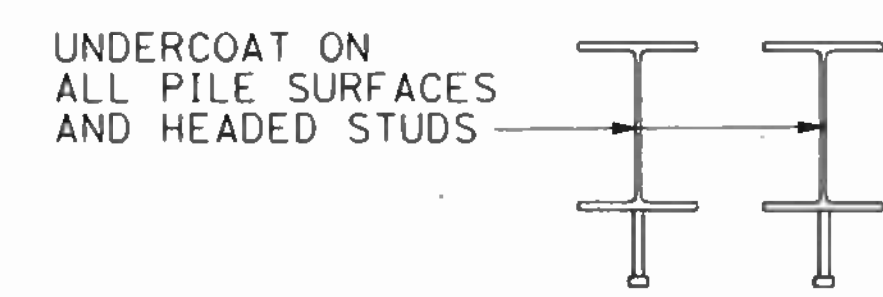
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	334	436
 REGISTERED CIVIL ENGINEER DATE 7-25-19					
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

1. For "SECTION F-F", see "SOLDIER PILE WALL DETAILS No. 3" sheet.
2. For ground anchors, see "SUB HORIZONTAL GROUND ANCHOR DETAILS" sheet.

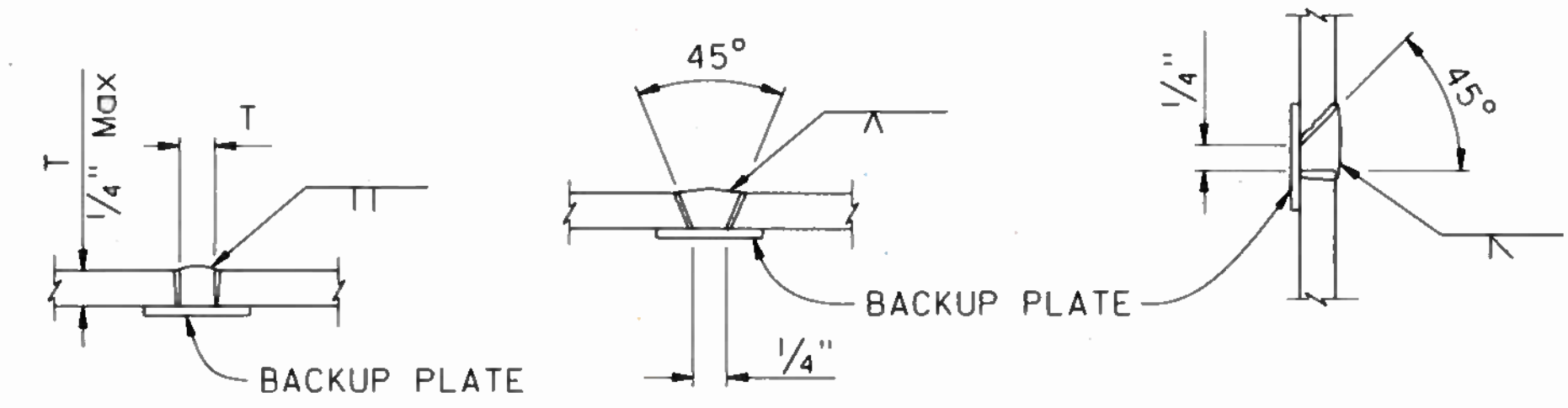


HEADED STUD DETAIL
NO SCALE



NOTE: CLEAN AND PAINT STEEL SOLDIER PILE FROM TOP OF PILE TO 5'-0" BELOW BOTTOM OF TIMBER LAGGING.

LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE
NO SCALE

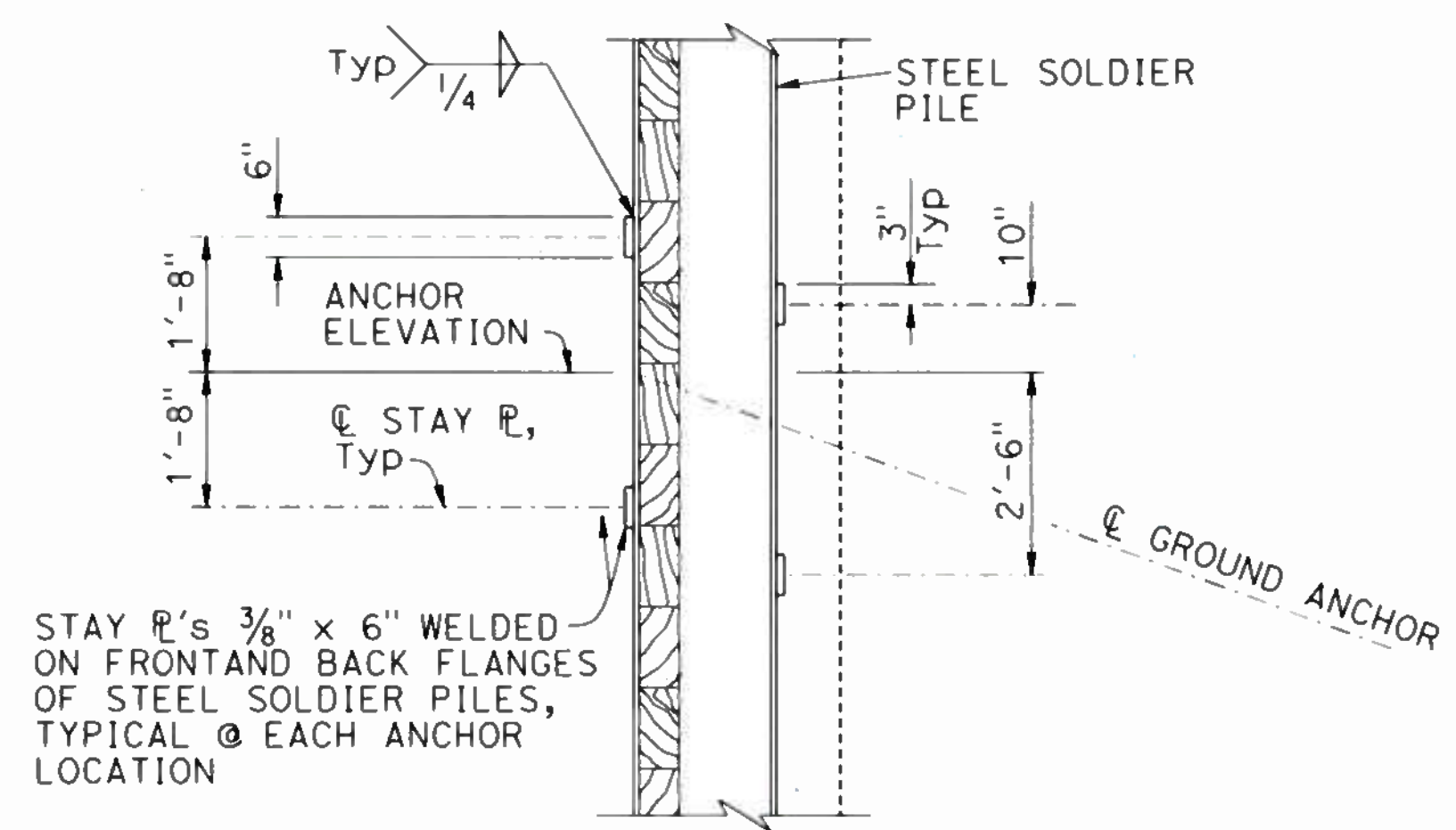


SQUARE GROOVE SINGLE VEE-GROOVE SINGLE BEVEL-GROOVE

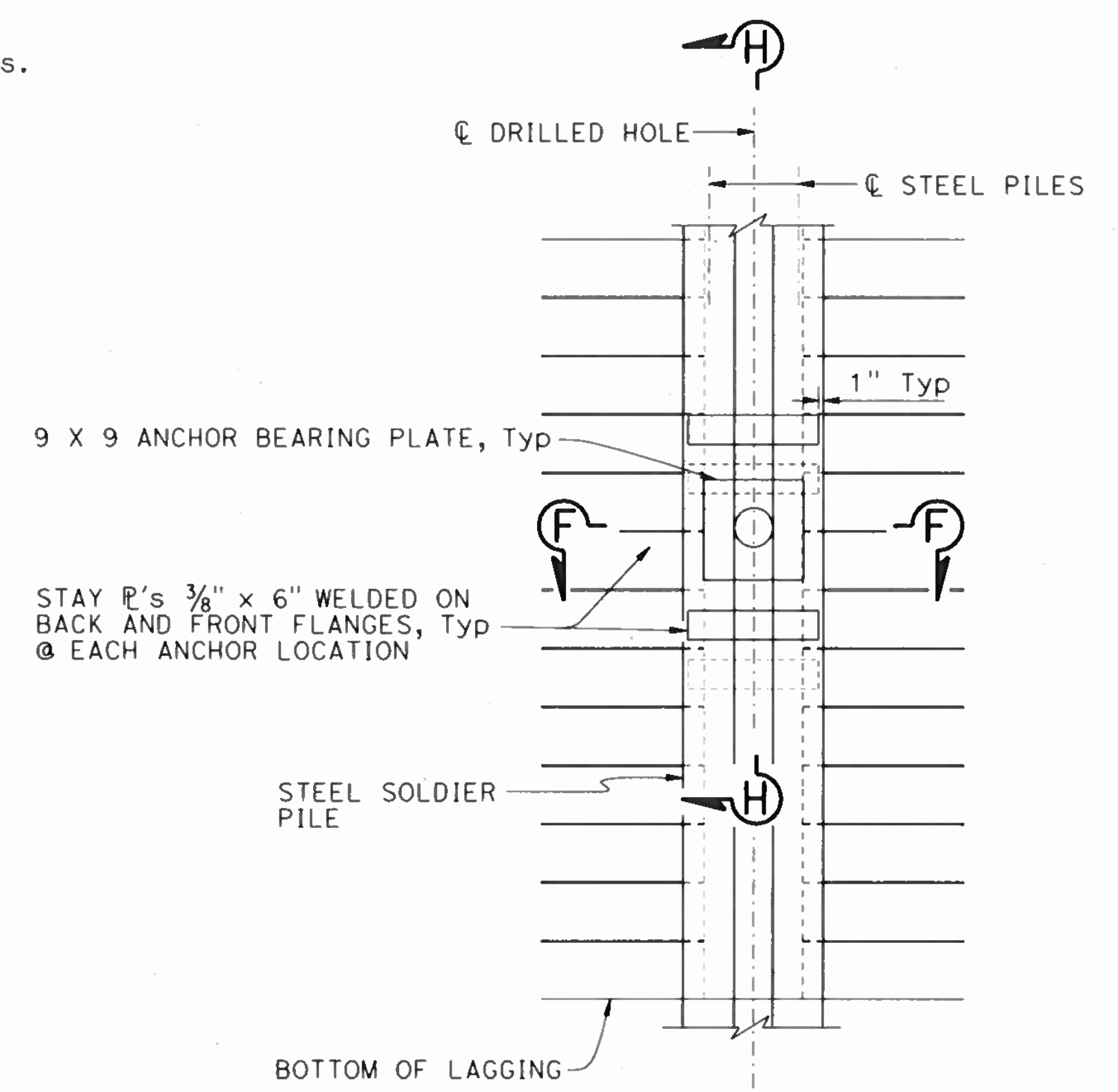
NOTES:

1. Single vee-groove and square groove permitted for all positions.
2. Single bevel-groove permitted for horizontal joints only.

PILE WELDING DETAIL-BUTT JOINTS
NO SCALE

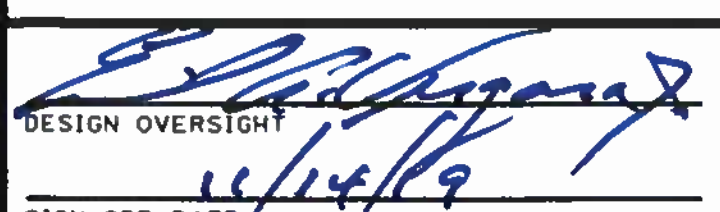


SECTION H-H STAY PLATE DETAILS
NO SCALE



PARTIAL ELEVATION
NO SCALE

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

 DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34E0034	RETAINING WALL No. 5 SOLDIER PILE WALL DETAILS No. 5
	DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		JOHN MANISCALCO PROJECT ENGINEER	POST MILES	
	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 10-22-19, 11-17-19, 2-27-19, 7-24-19 SHEET 85 OF 168

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => RW5-g-spwd+05.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:07

NOTES:

1. Clearance to reinforcing steel in concrete barrier to be 1".
2. No expansion joints in concrete barrier or barrier slab within wall limits.
3. For barrier details, see "MISCELLANEOUS DETAILS No. 3" sheet.
4. For limits of barrier slab and concrete cap, see "GENERAL PLAN No. 2" and "GENERAL PLANS No. 5" sheets.
5. Maximum of 2% slope away from RW to match finish grade, see "ROADWAY PLANS".

KEY NOTES:

- (A) 1/2" Expanded polystyrene recessed 2" into barrier slab at front face
- (B) 1" Expanded Polystyrene
- (C) Contact joint
- (D) 5'-0" wide pavement reinforcing fabric
- ∞ Indicates bundled bars
- * Epoxy Coated Reinforcement

DESIGN DATA - BARRIER SLAB

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014
 F_t : 54 kips
 EQE: $k_h = 0.33$
 $k_v = 0.0$

REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
 $n = 8$

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	335	436

7-25-19
 REGISTERED CIVIL ENGINEER DATE

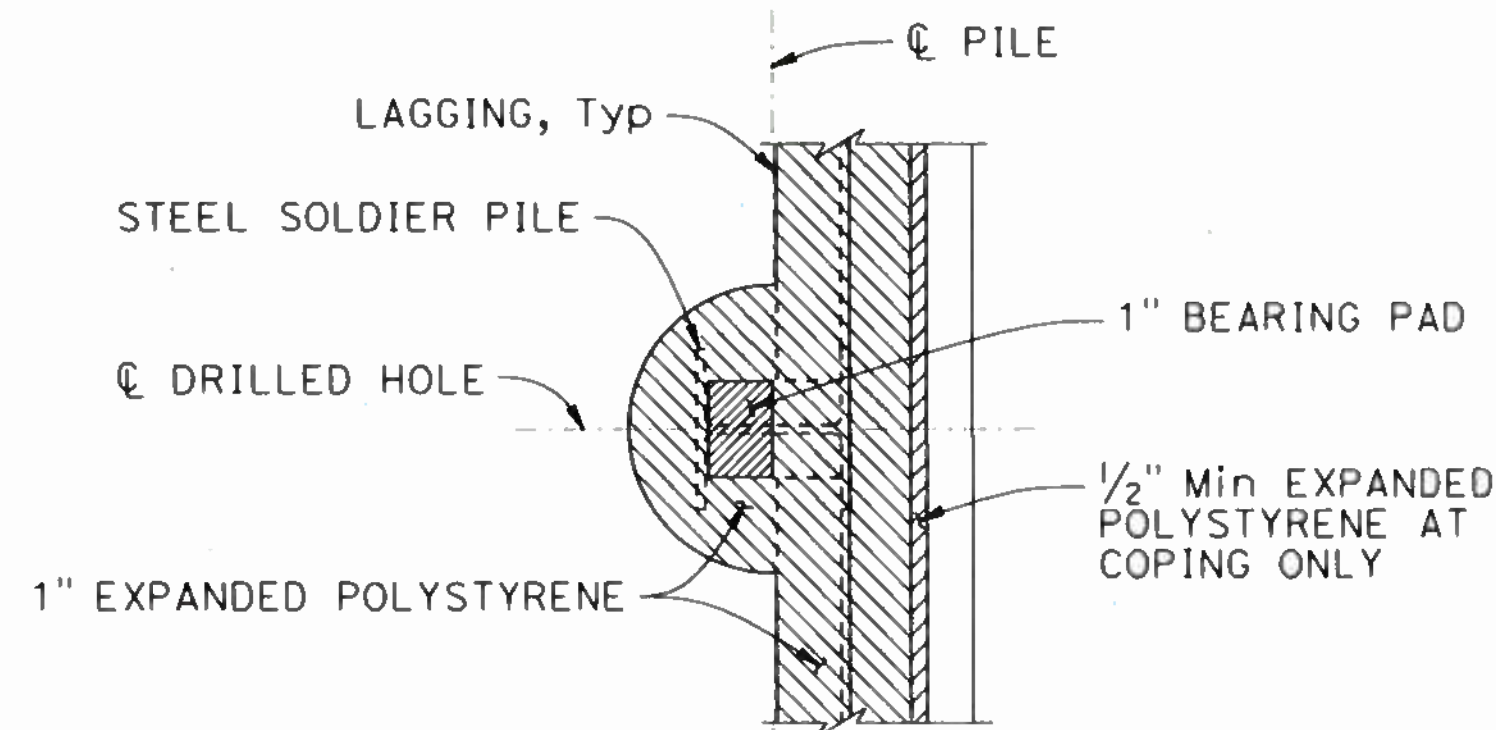
JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

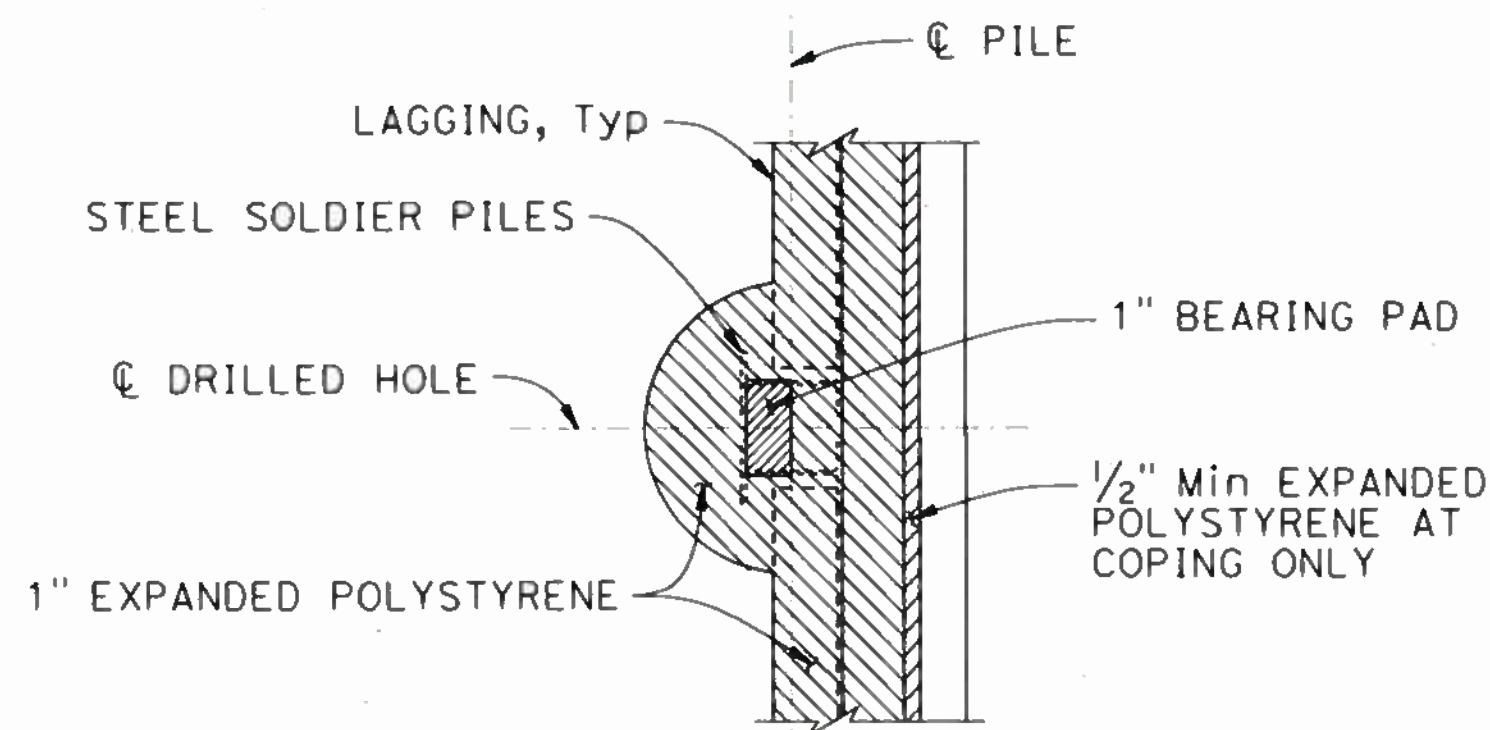
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



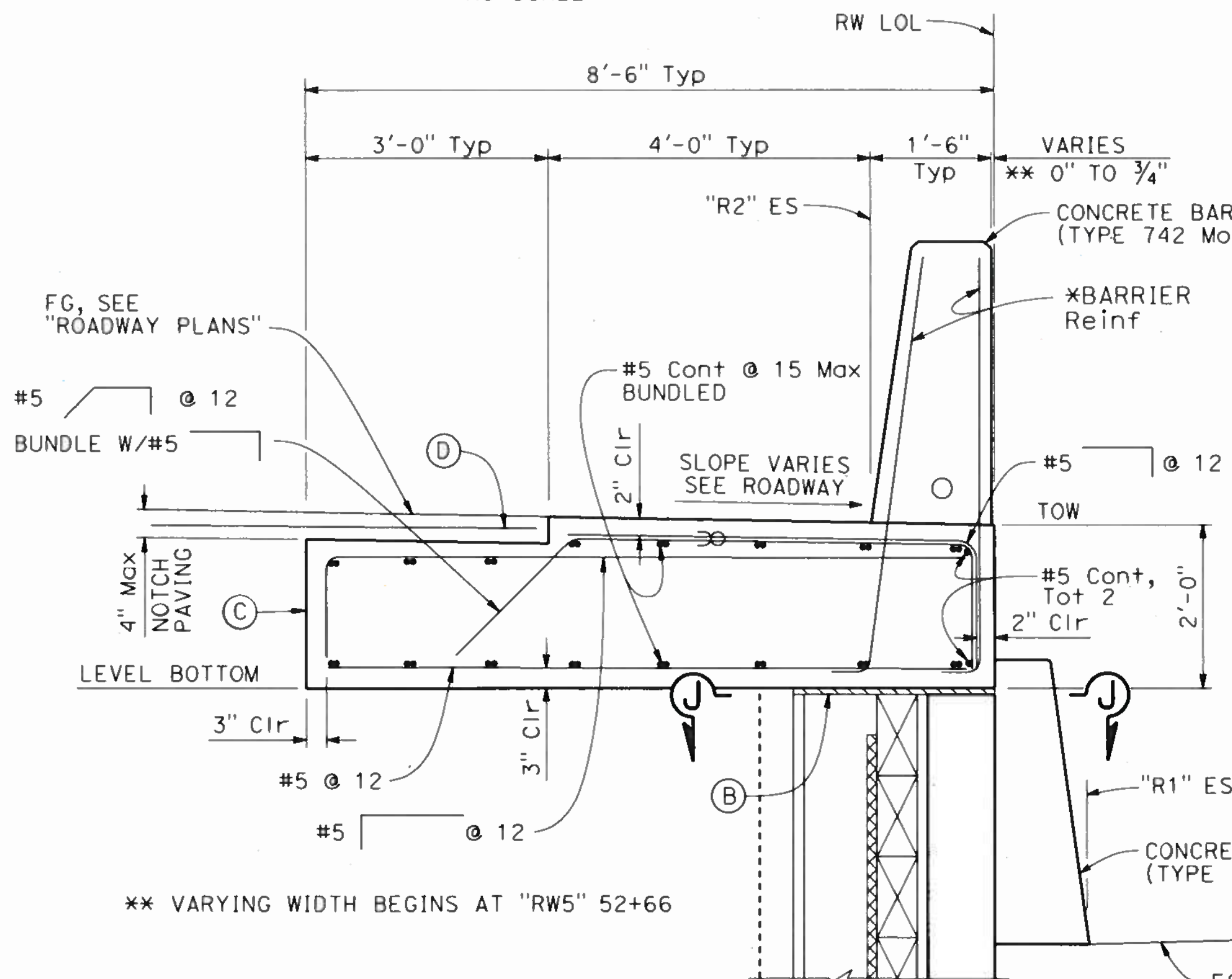
SINGLE PILE - SECTION J-J

NO SCALE



DOUBLE PILE - SECTION J-J

NO SCALE

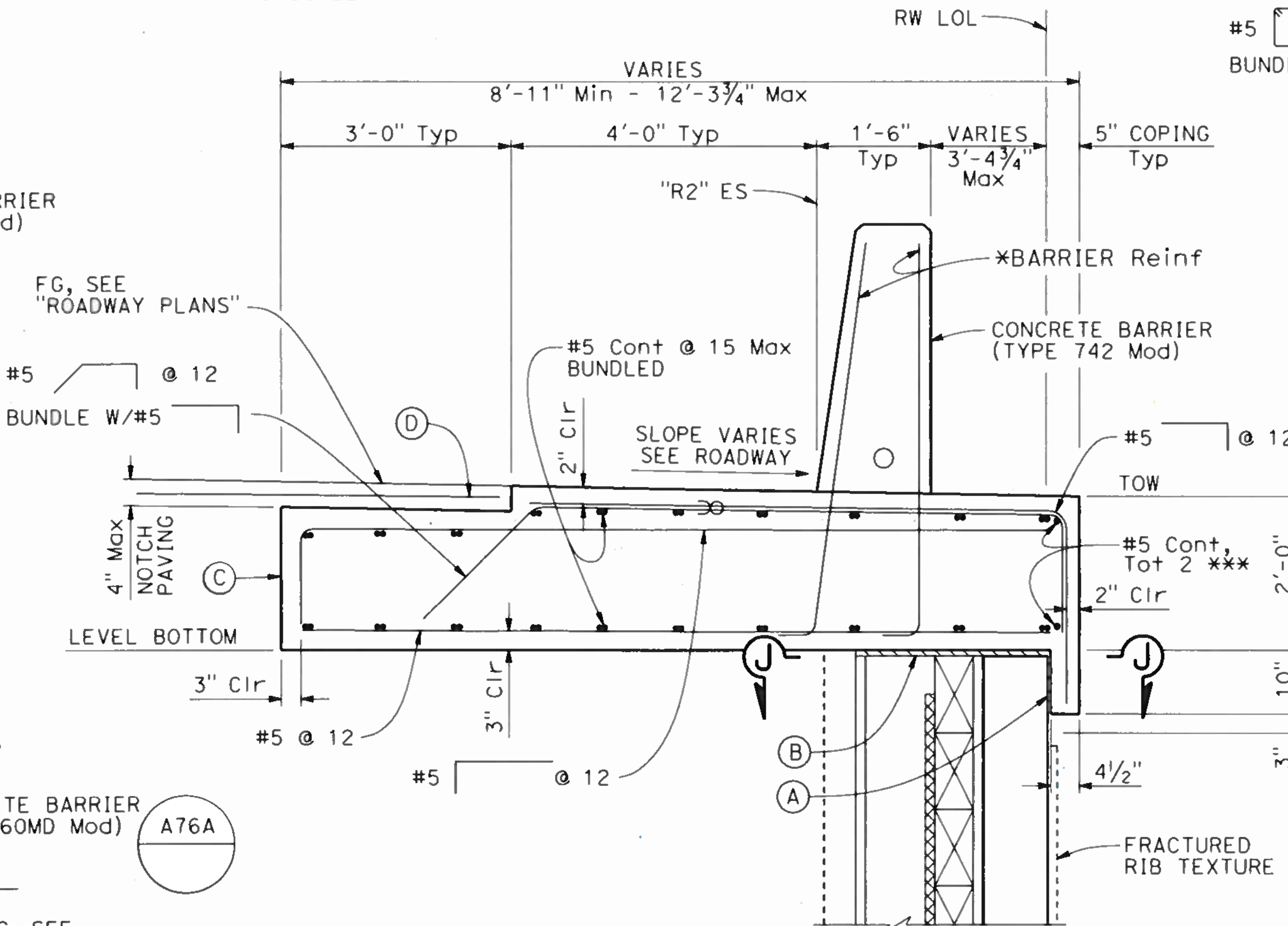


CONCRETE BARRIER SLAB SECTION

3/4" = 1'-0"

"RW5" 52+53.25 TO 52+73

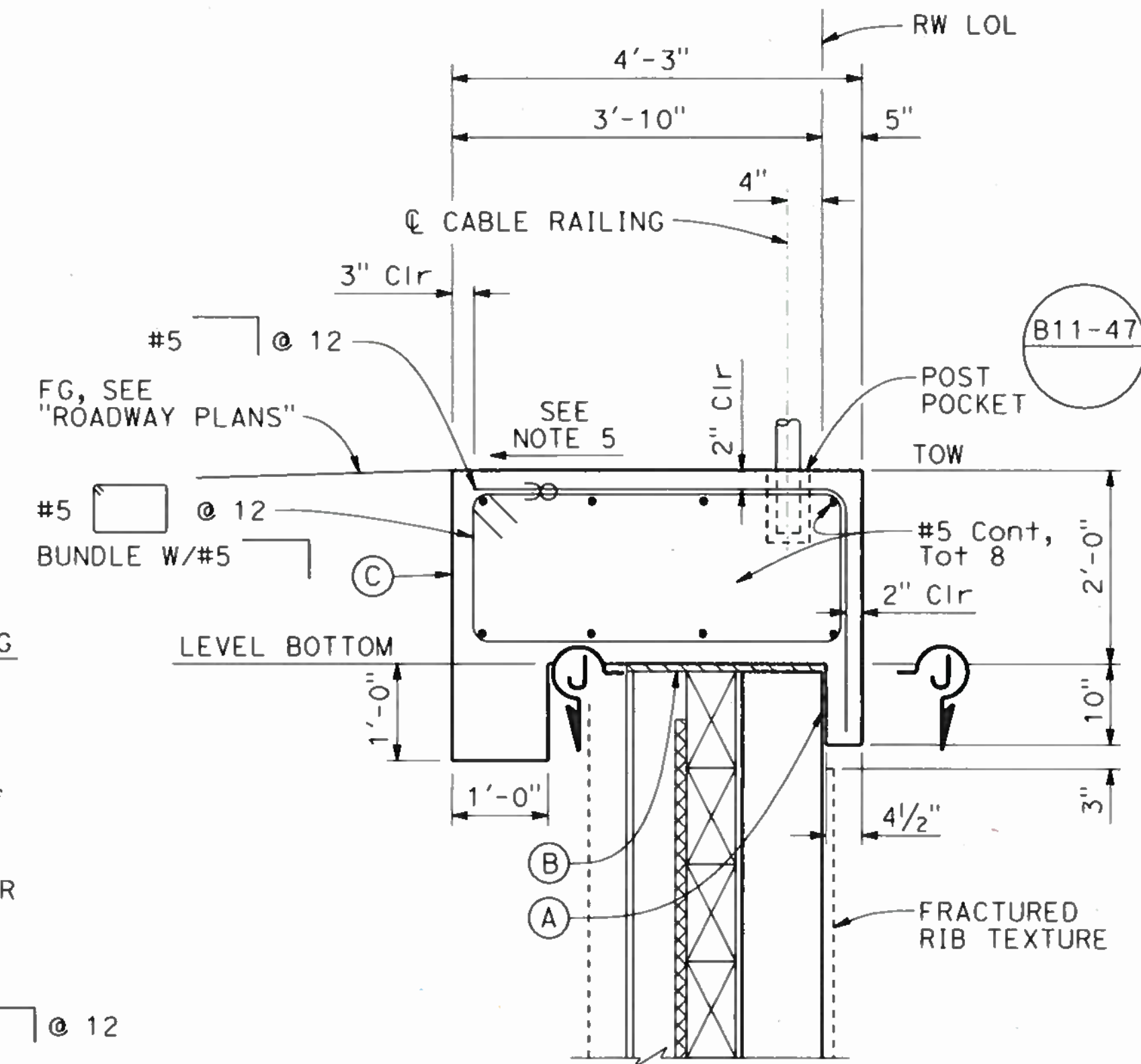
NOTE: THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



CONCRETE BARRIER SLAB SECTION

3/4" = 1'-0"

"RW5" 52+73 TO 52+96



CONCRETE CAP SECTION

3/4" = 1'-0"

"RW5" 52+96 TO 53+45.58

DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/18

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	34E0034
POST MILES	7.9

RETAINING WALL No. 5
CONCRETE BARRIER SLAB DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

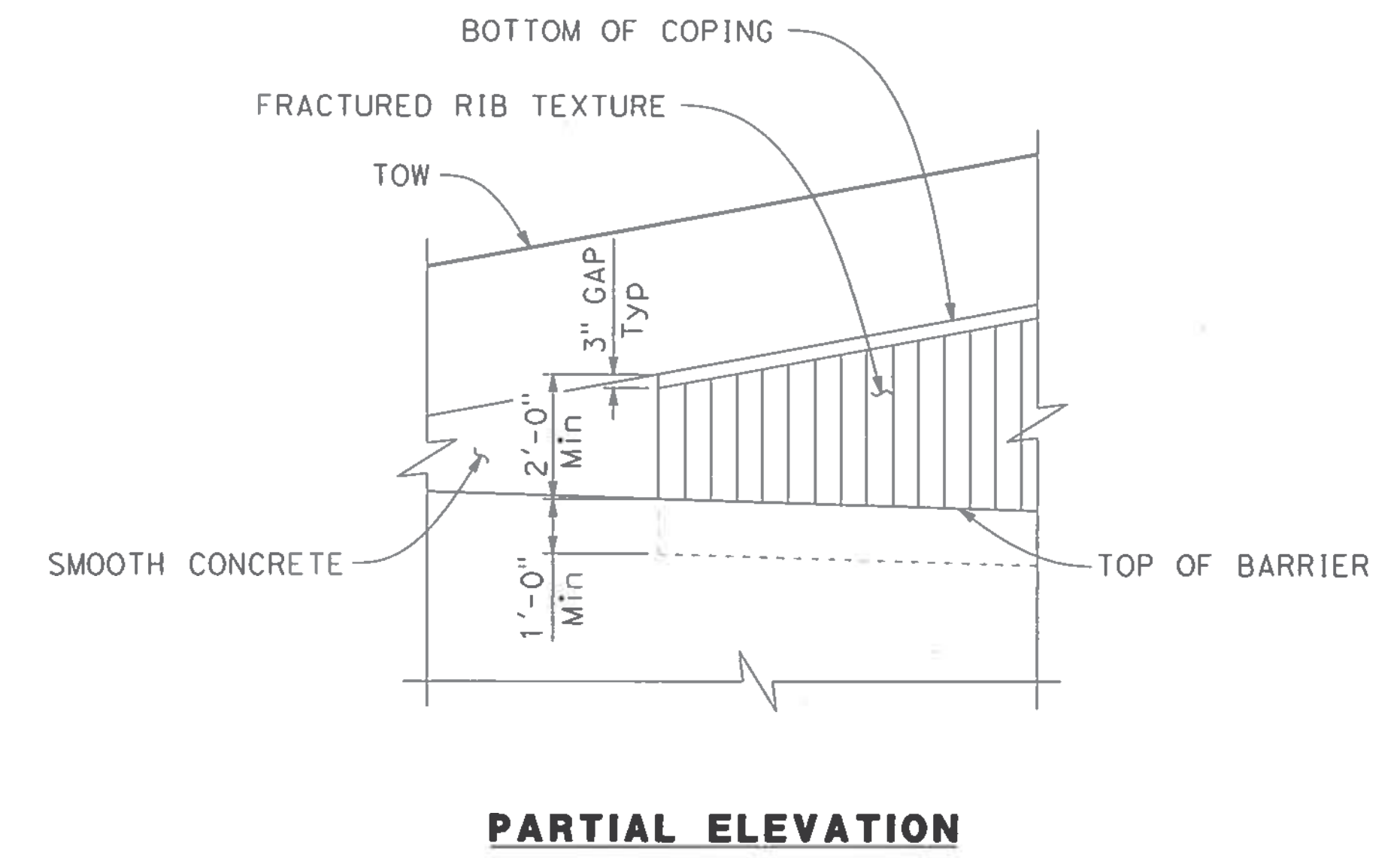
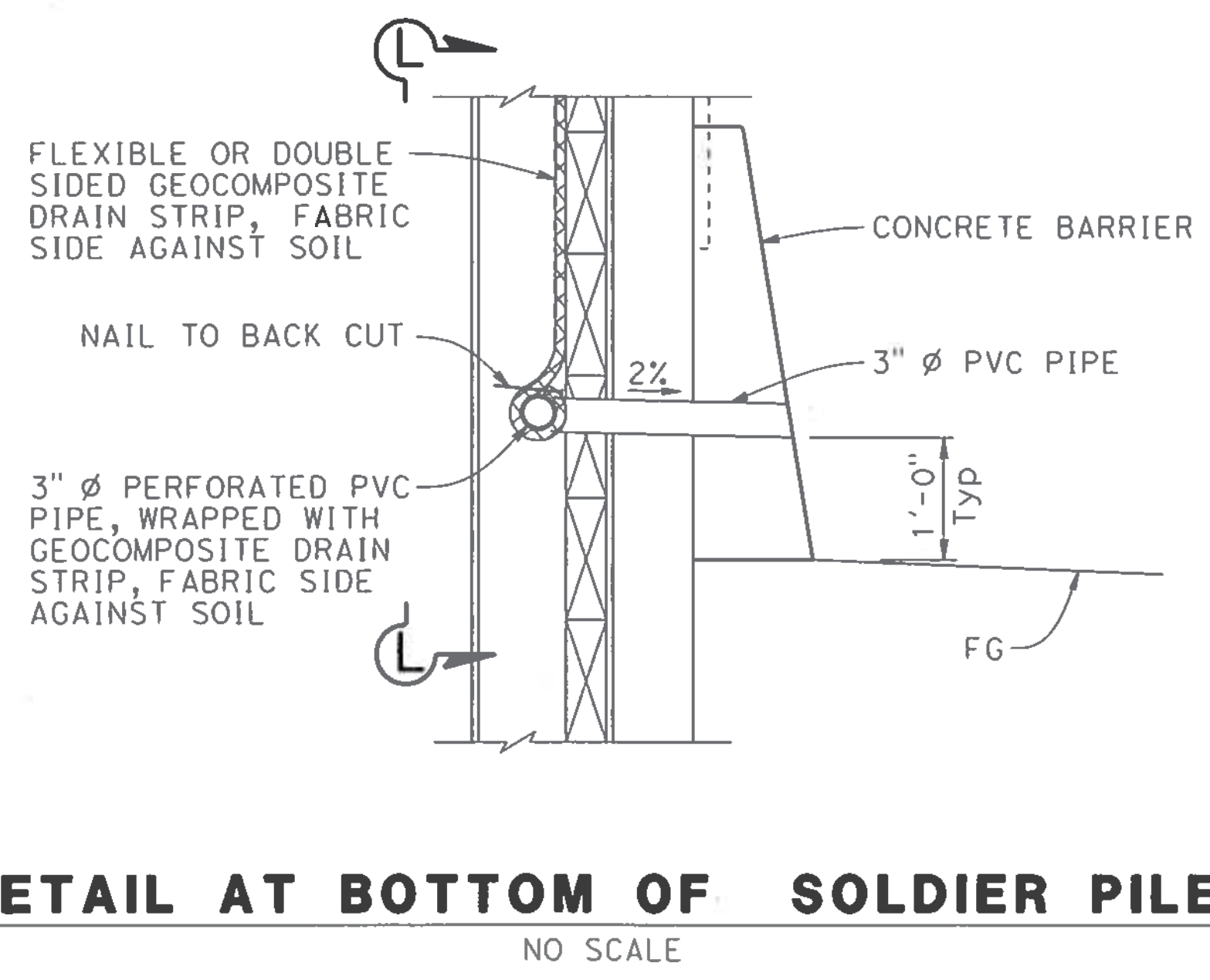
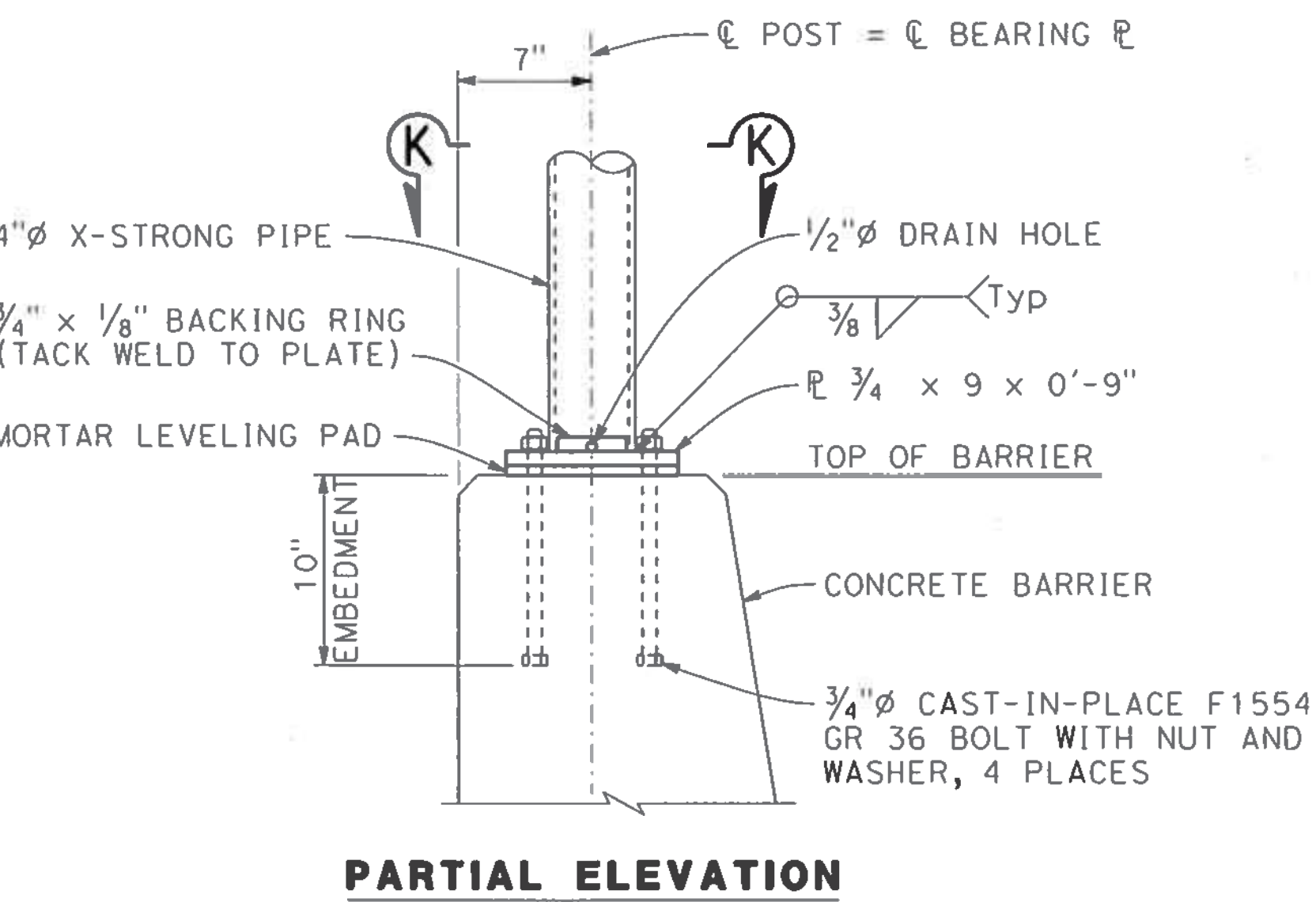
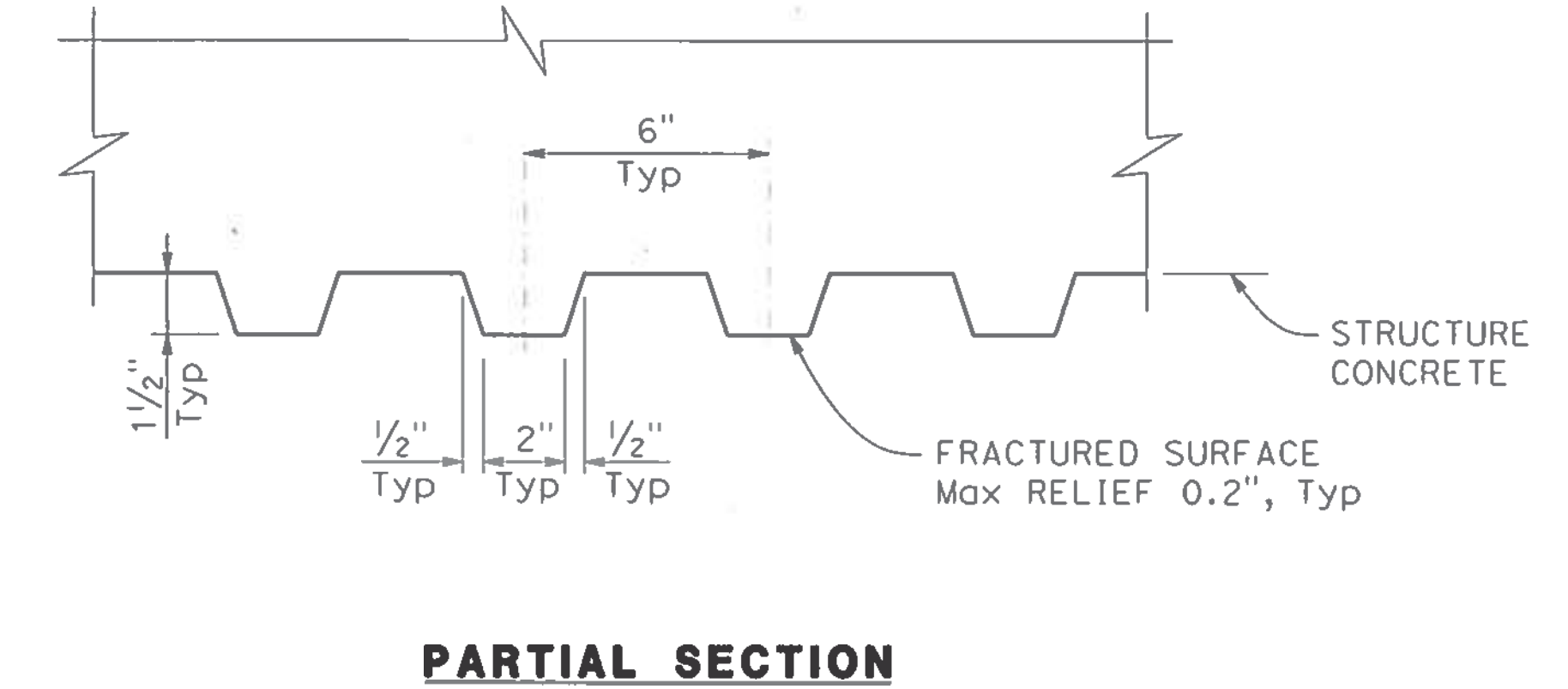
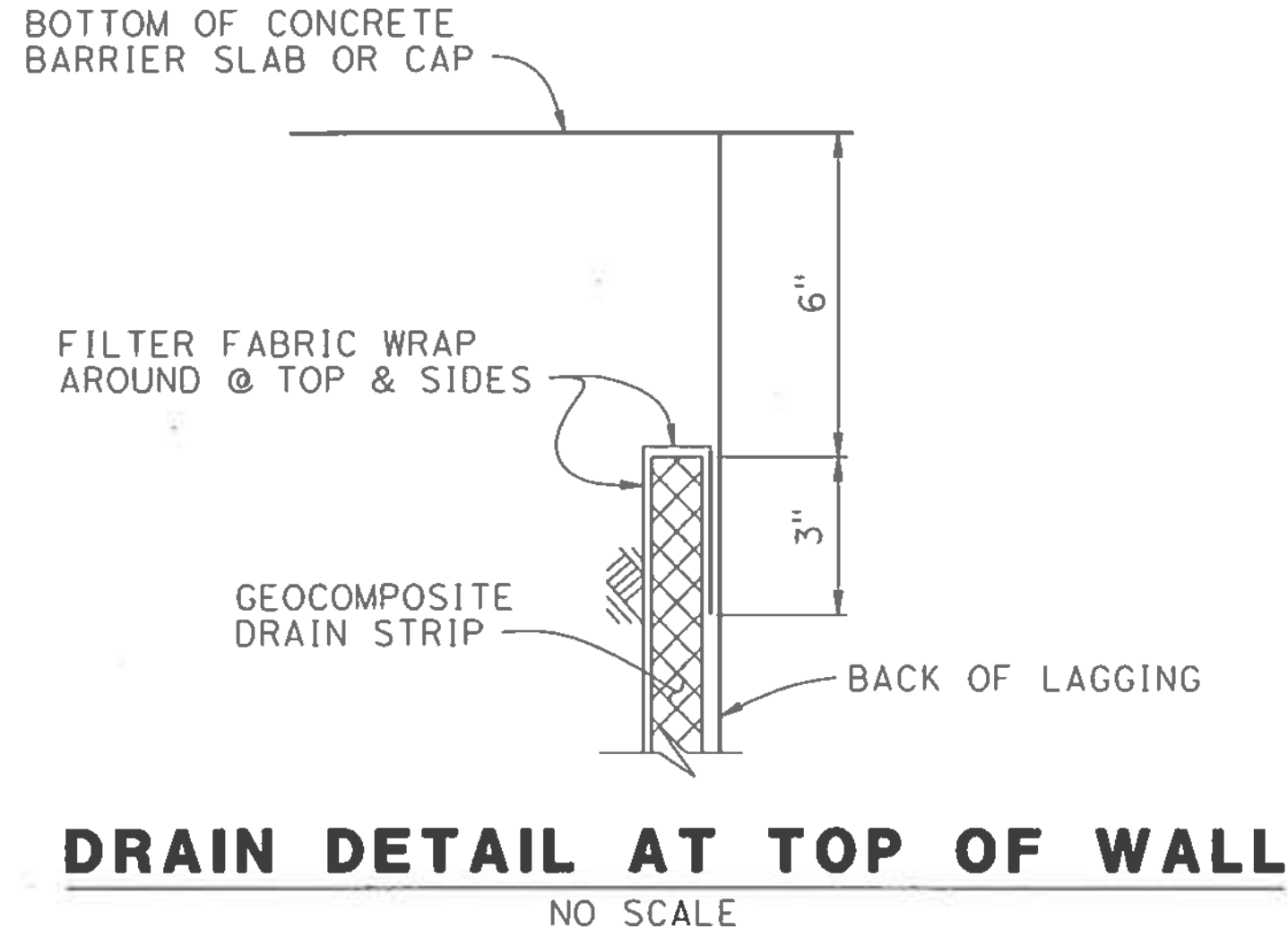
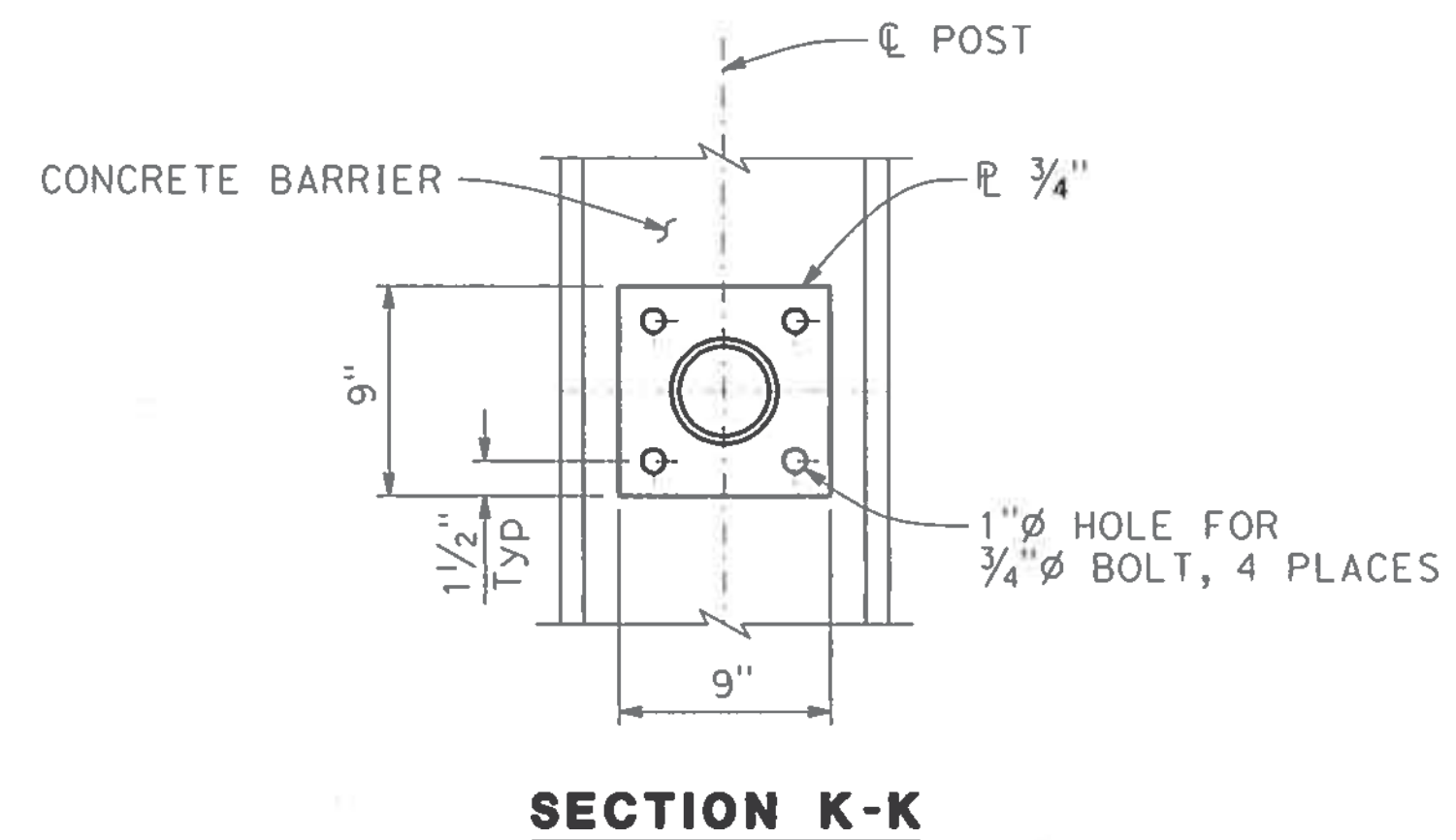
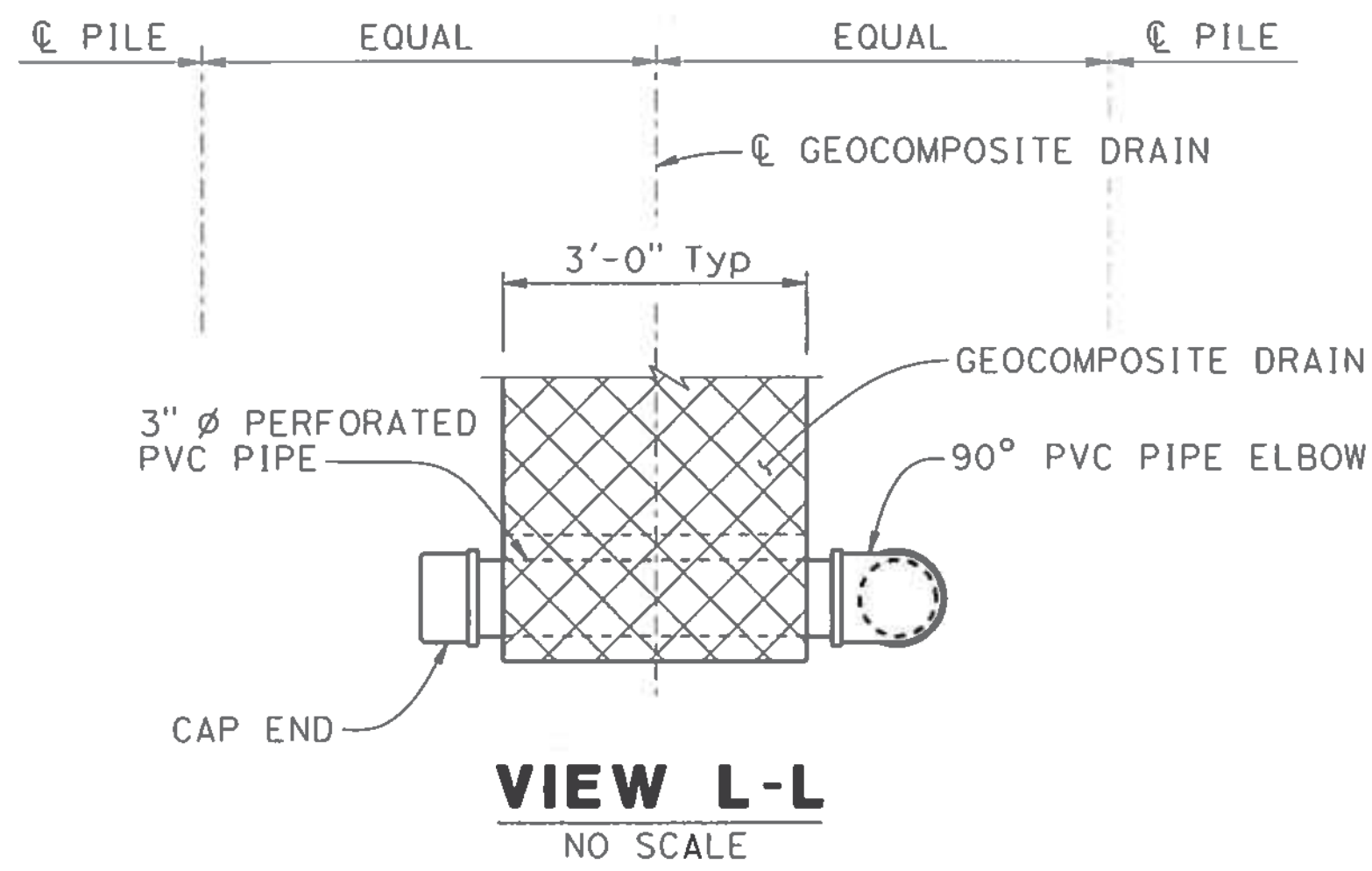
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10-22-19 11-14-19 2-21-19 7-24-19	86	168

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	336	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



BARRIER MOUNTED SIGN DETAIL

DRAIN DETAIL AT BOTTOM OF SOLDIER PILE WALL

FRACTURED RIB TEXTURE DETAIL

1 1/2" = 1'-0"
 NOTE: ALL STEEL SHALL BE GALVANIZED.

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

DESIGN OVERSIGHT
 SIGN OFF DATE 10/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

RETAINING WALL No. 5
MISCELLANEOUS DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS


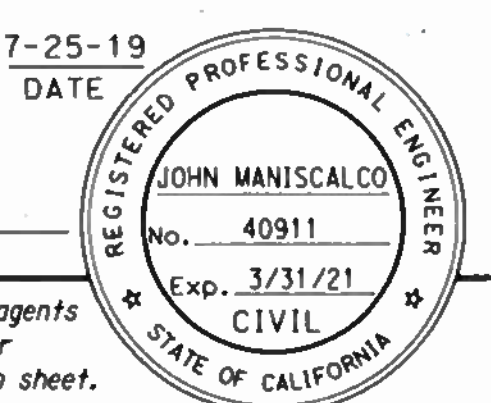
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

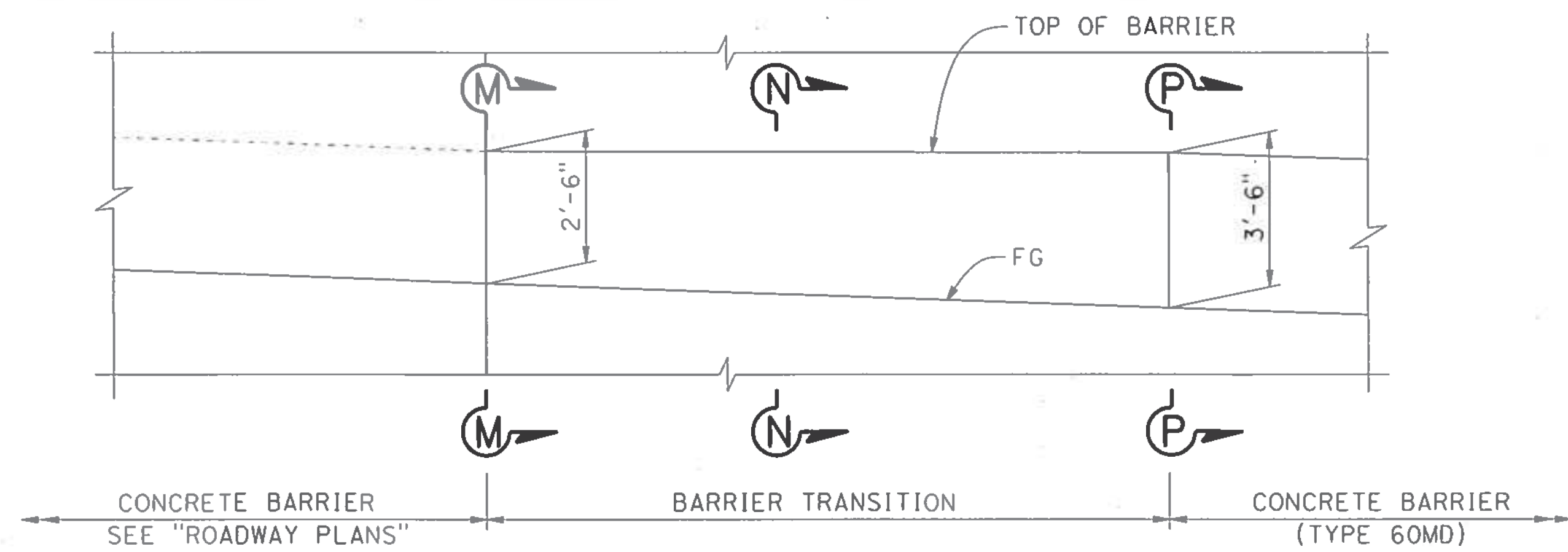
CONTRACT NO.: 04-3A6414

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10-22-19 11-27-19 1-22-19 7-25-19	87	168

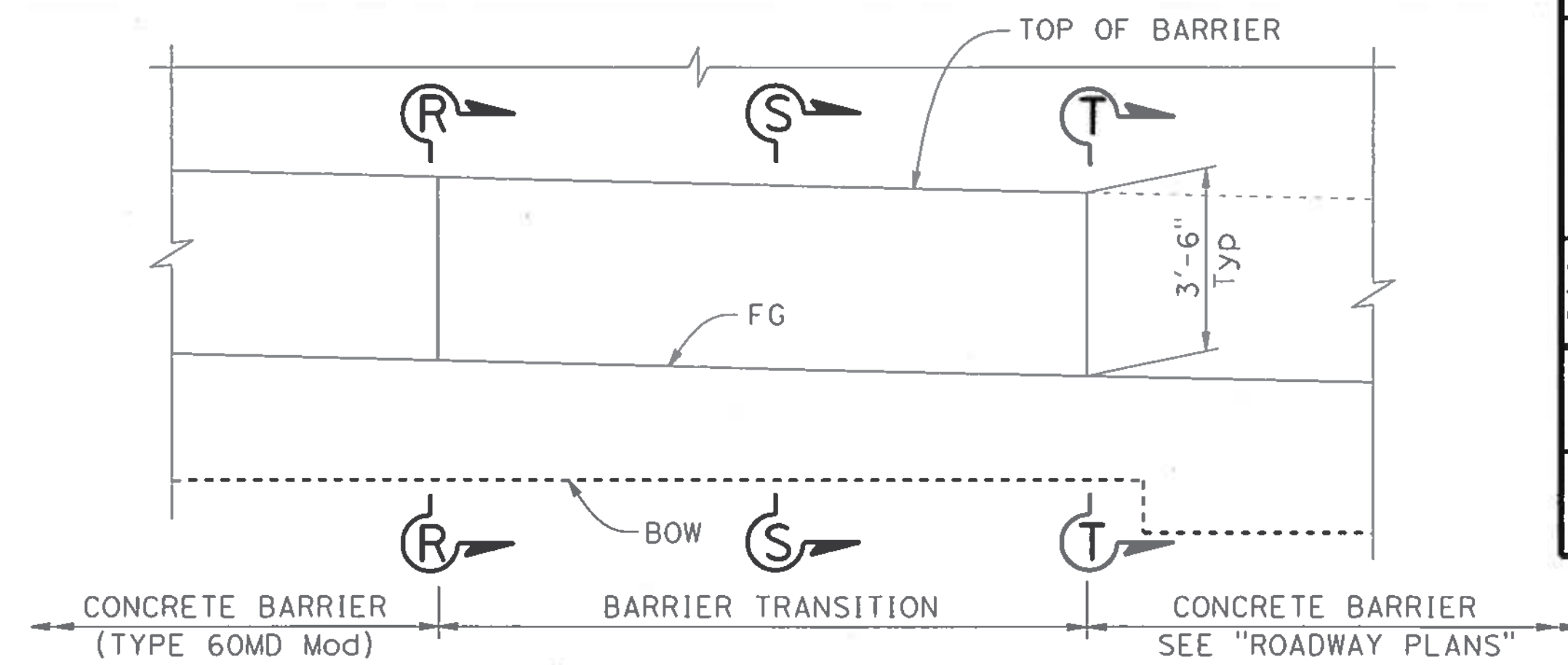
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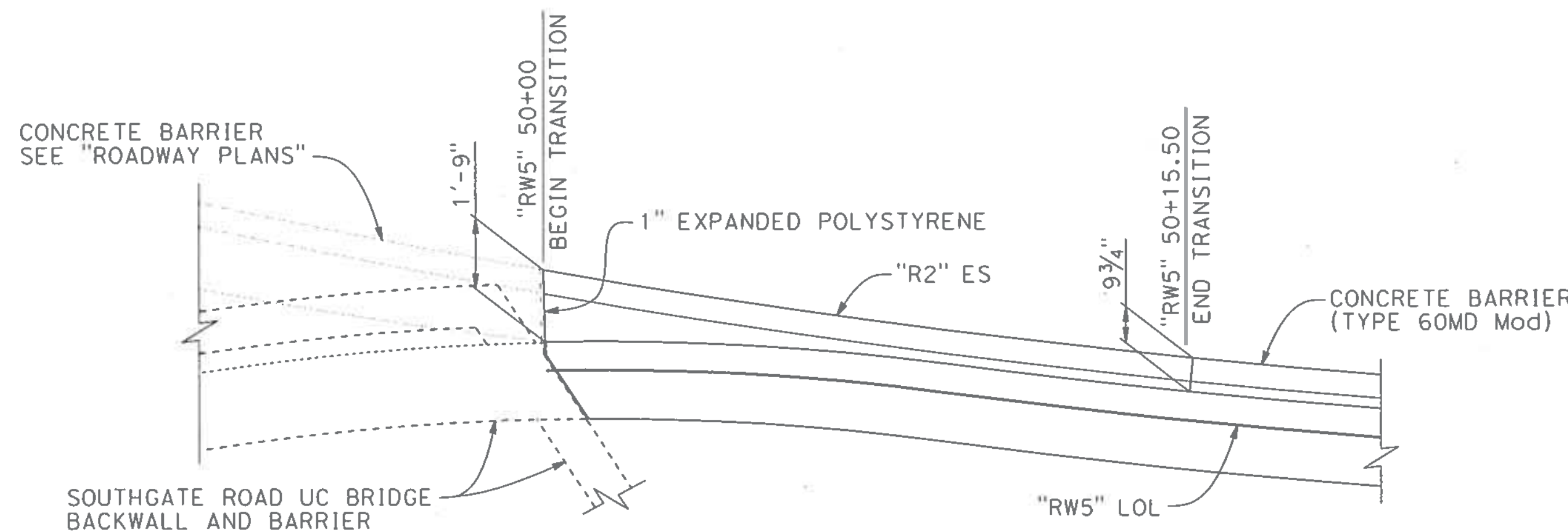
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	337	436
 REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PARTIAL MIRRORED ELEVATION



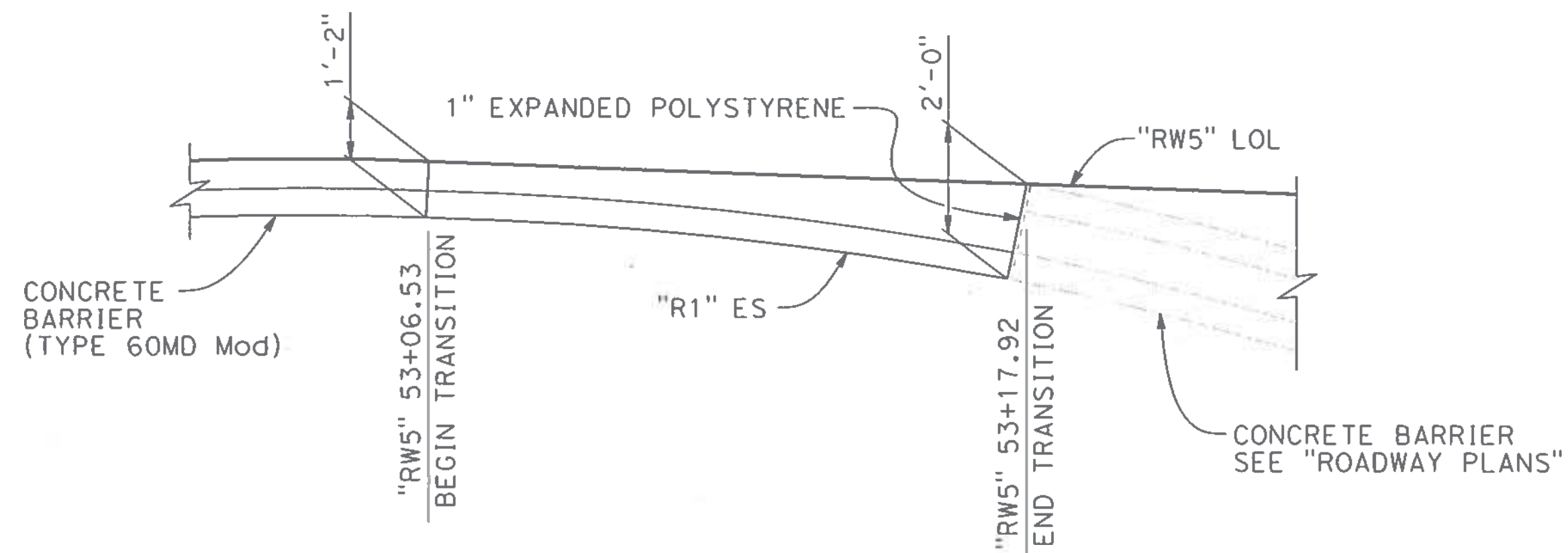
PARTIAL ELEVATION



PARTIAL PLAN

BARRIER TRANSITION DETAIL AT "R2" FACE

3/8" = 1'-0"

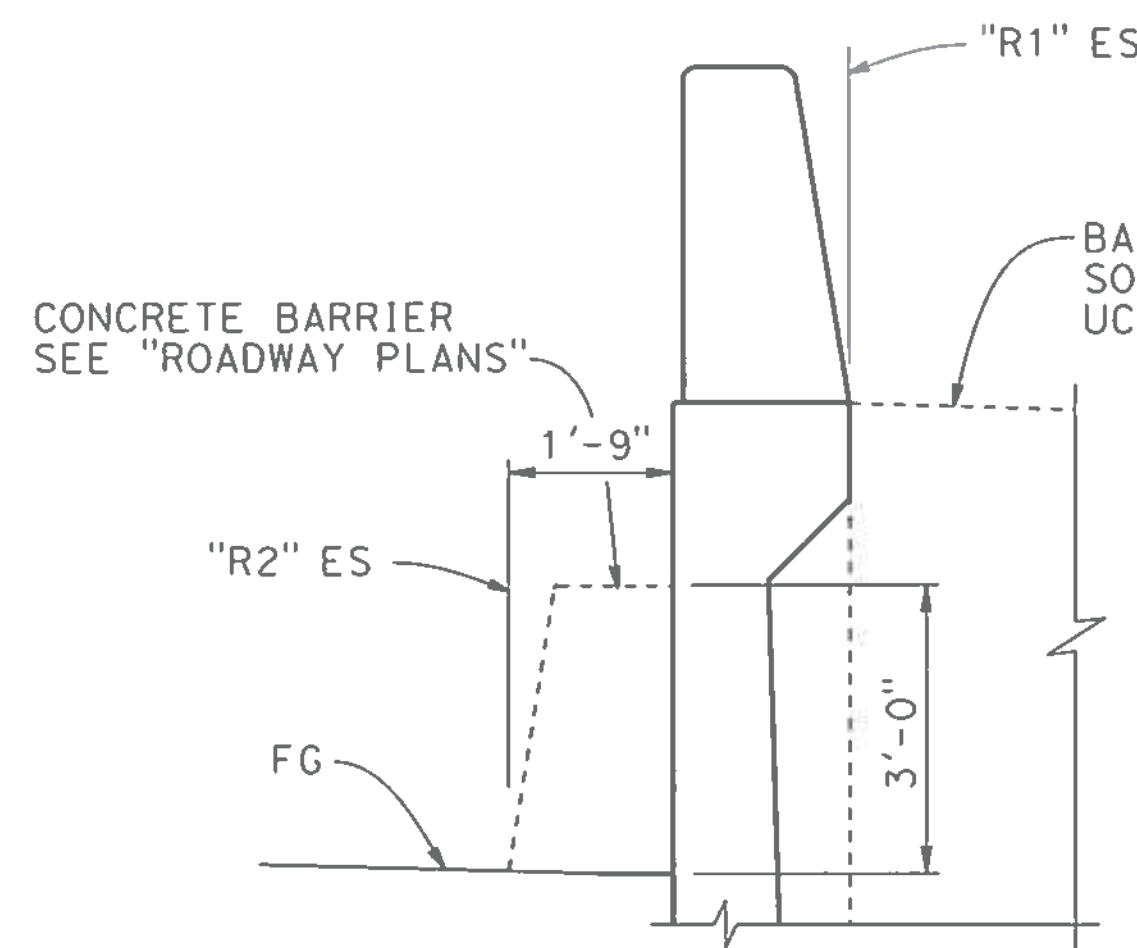


PARTIAL PLAN

BARRIER TRANSITION DETAIL AT "R1" FACE

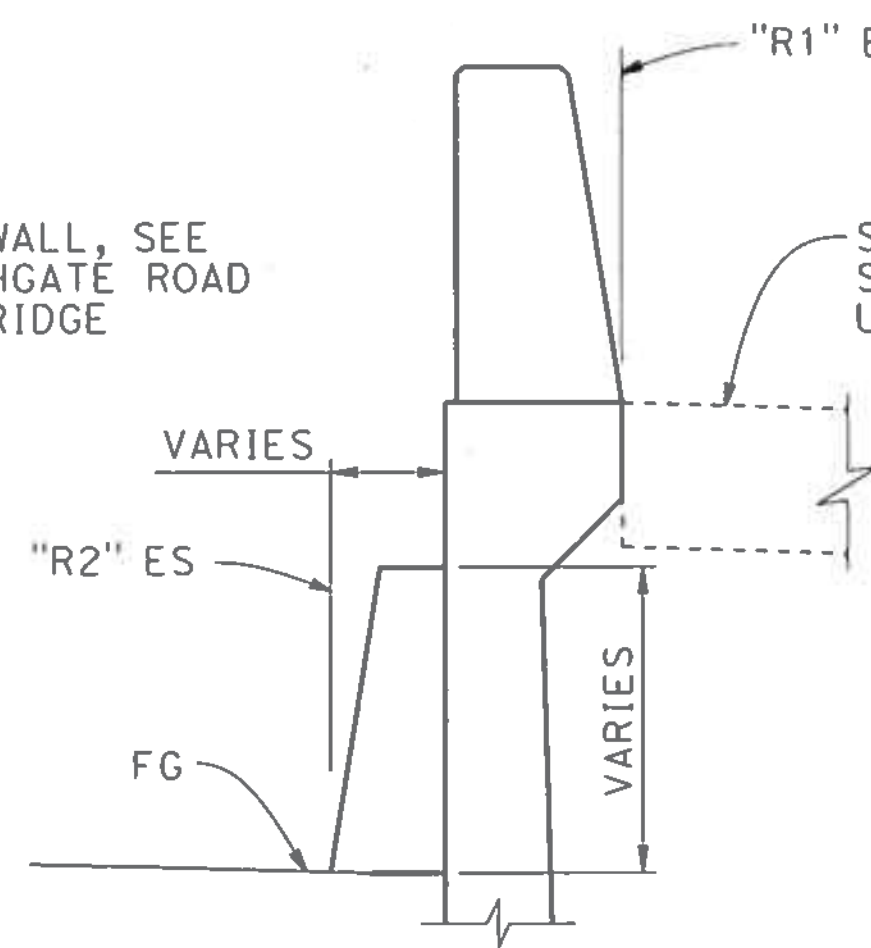
3/8" = 1'-0"

FOR INFORMATION NOT SHOWN, SEE STANDARD PLAN 



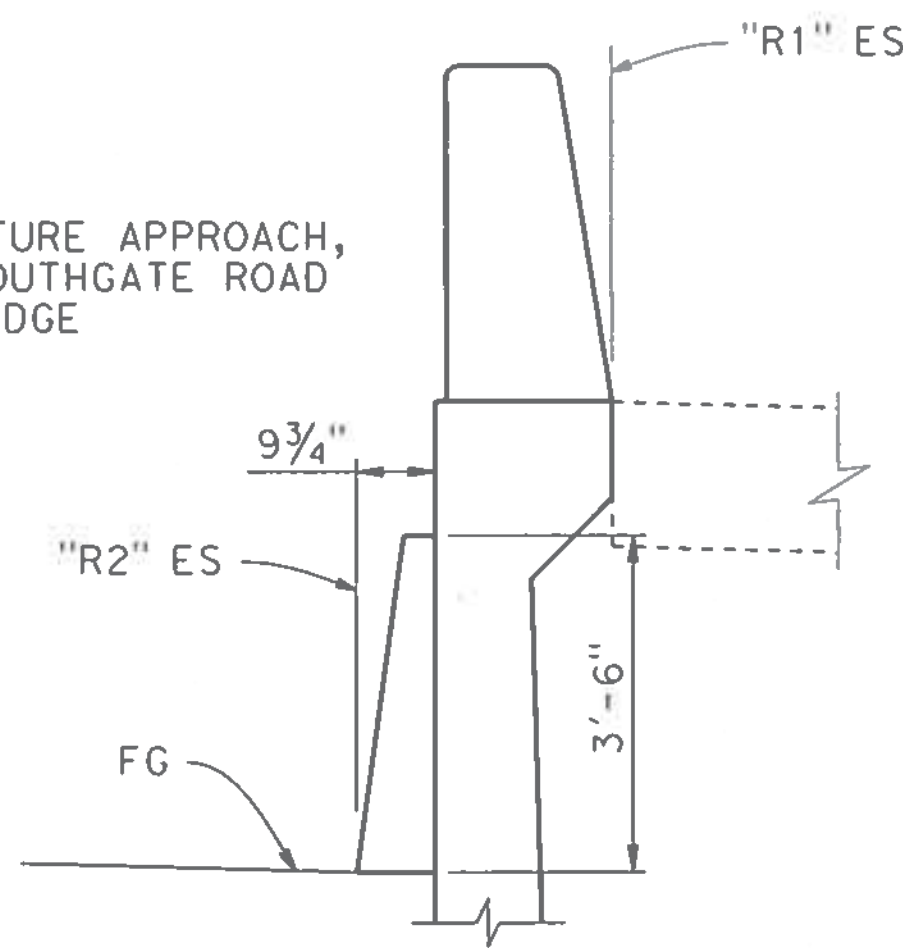
SECTION M-M

1/2" = 1'-0"



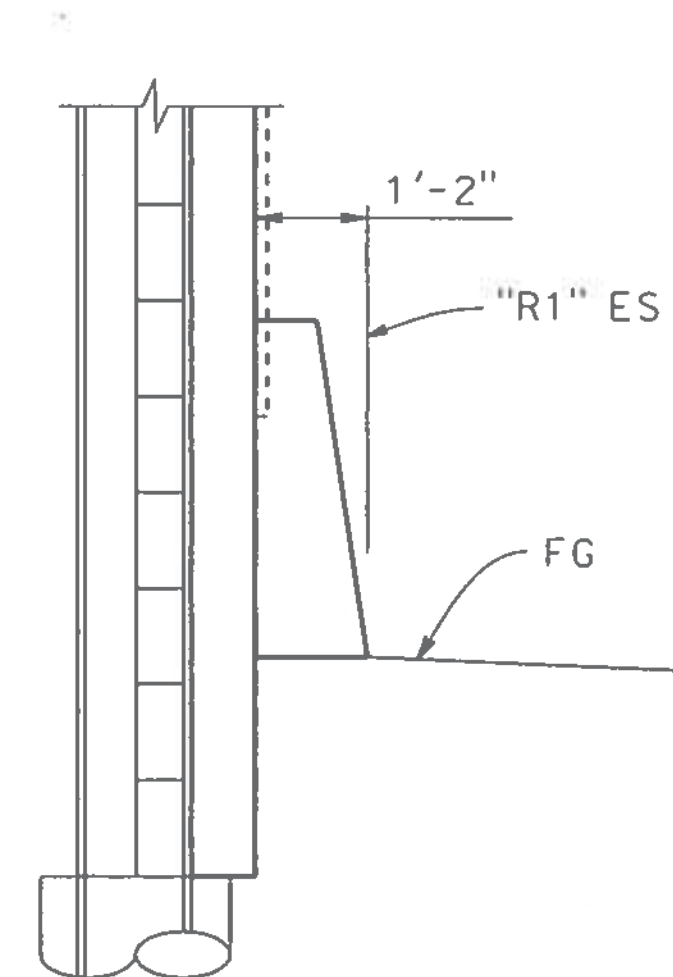
SECTION N-N

1/2" = 1'-0"



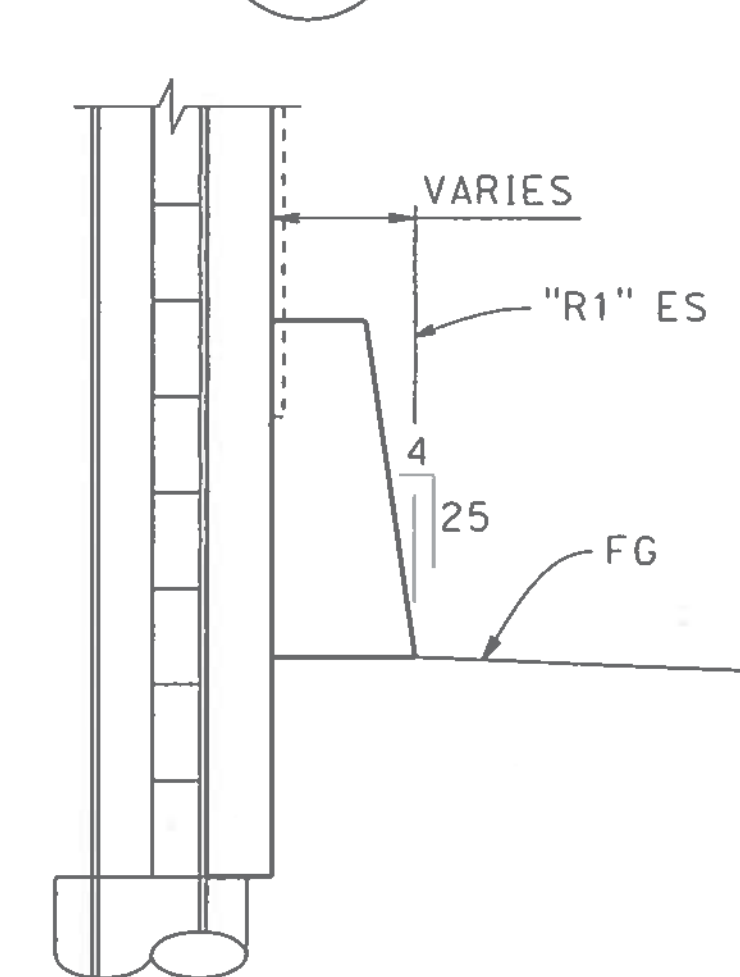
SECTION P-P

1/2" = 1'-0"



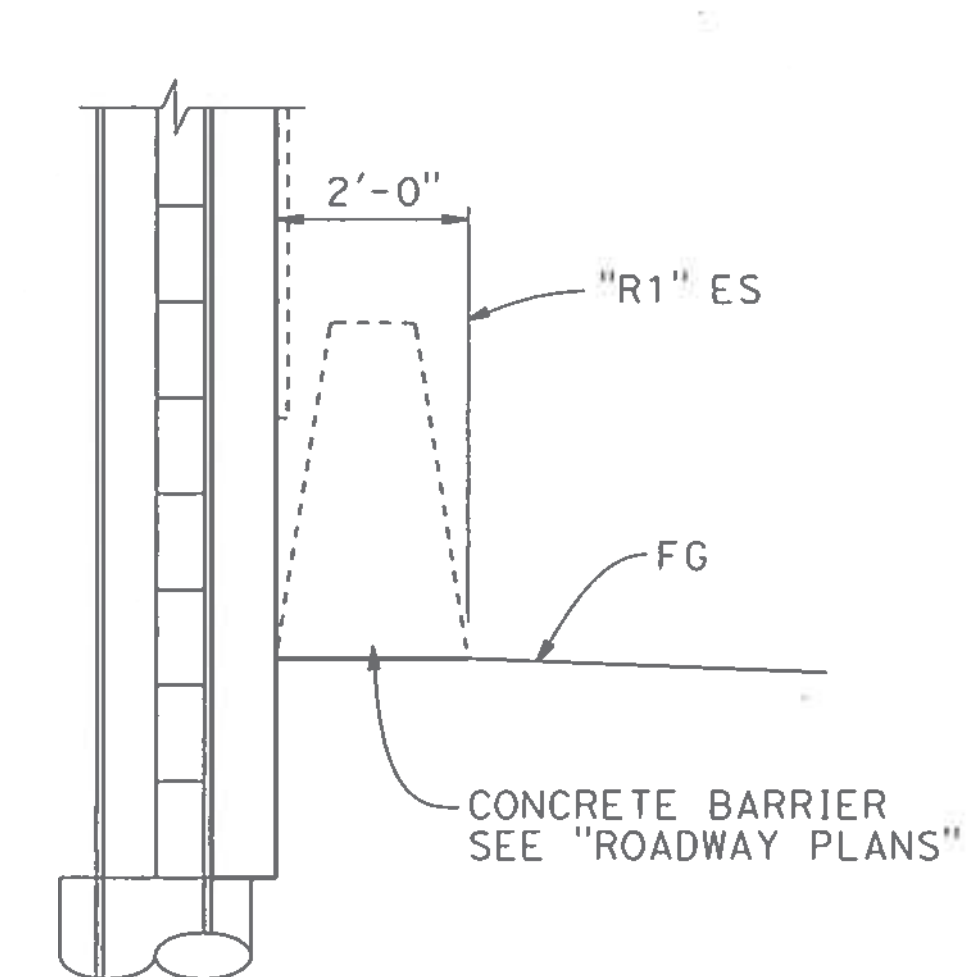
SECTION R-R

1/2" = 1'-0"



SECTION S-S

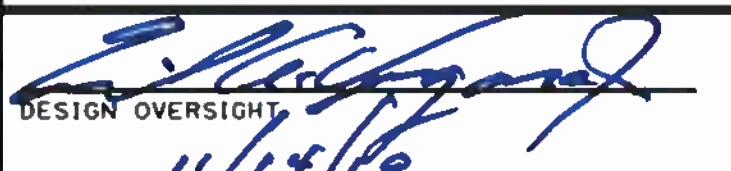
1/2" = 1'-0"



SECTION T-T

1/2" = 1'-0"

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

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

RETAINING WALL No. 5
MISCELLANEOUS DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

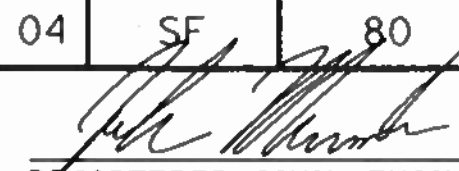
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

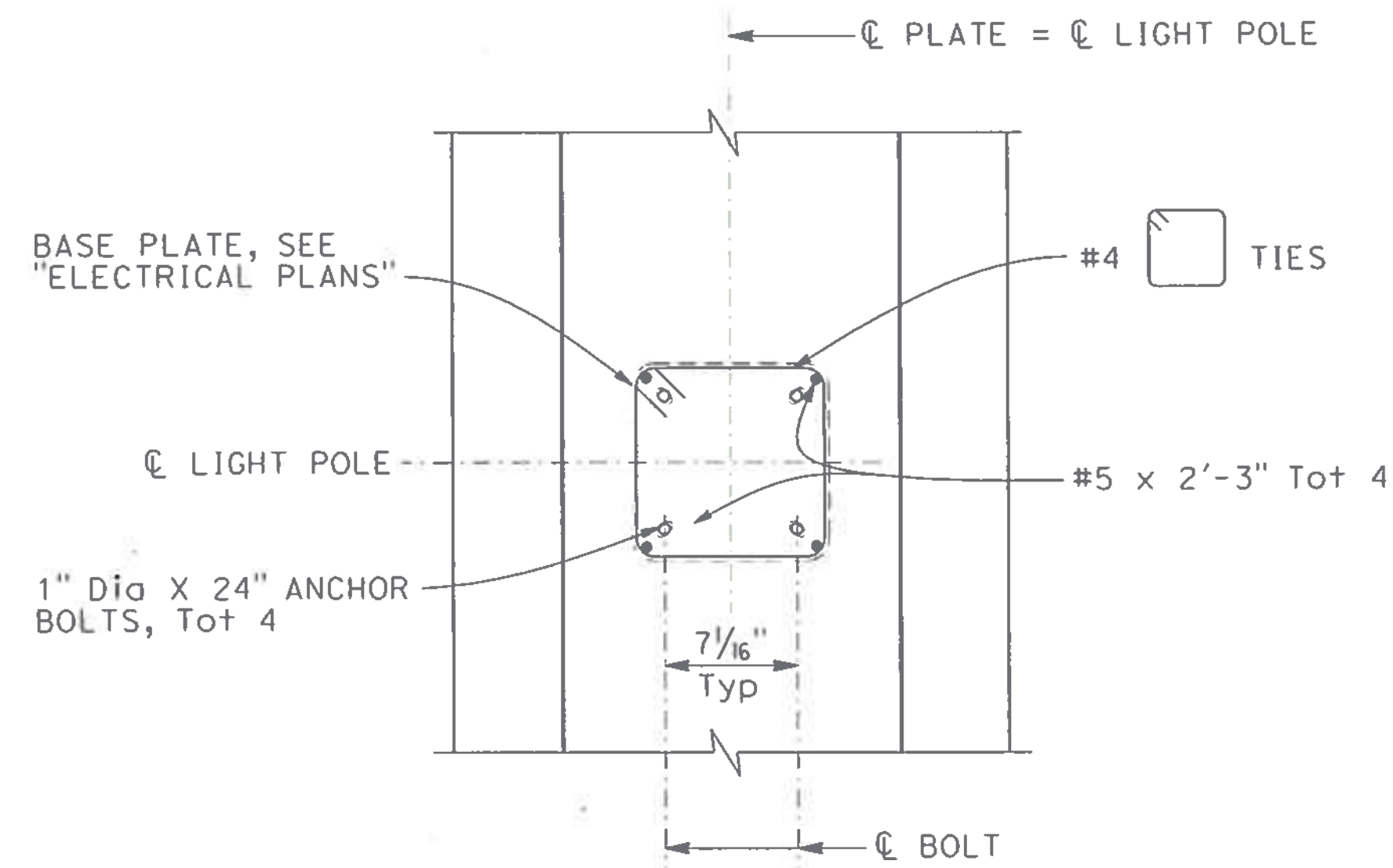
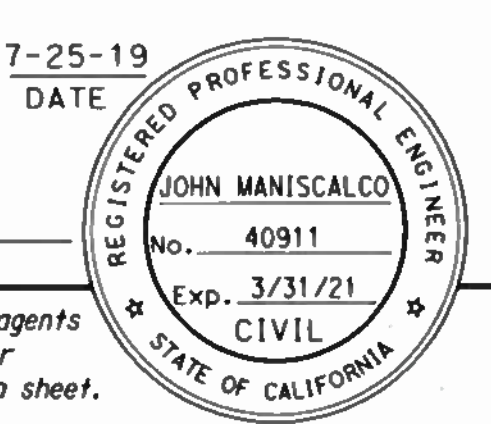
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-27-19 2-24-19 1-24-19	88	168

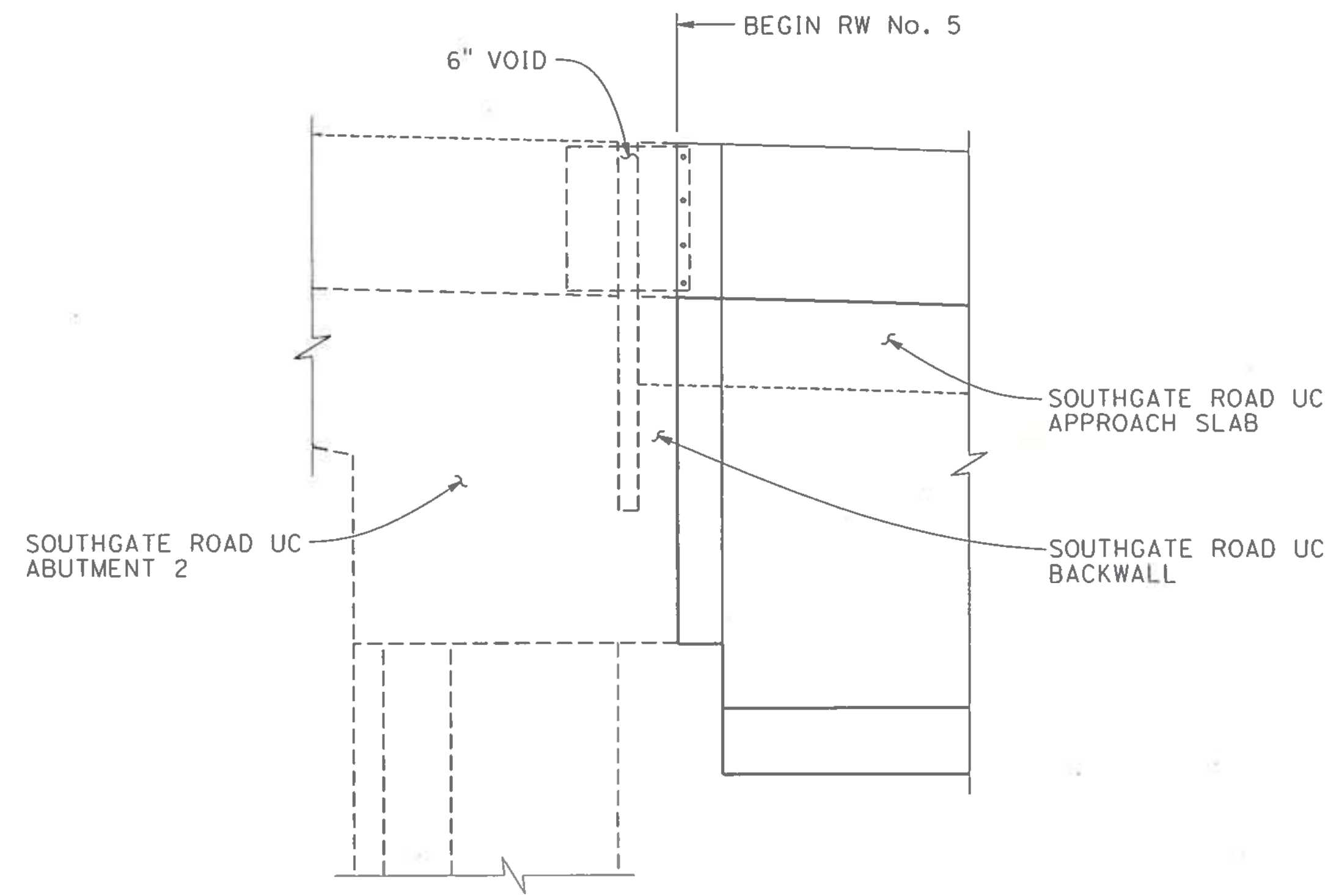
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USERNAME => JORGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	338	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



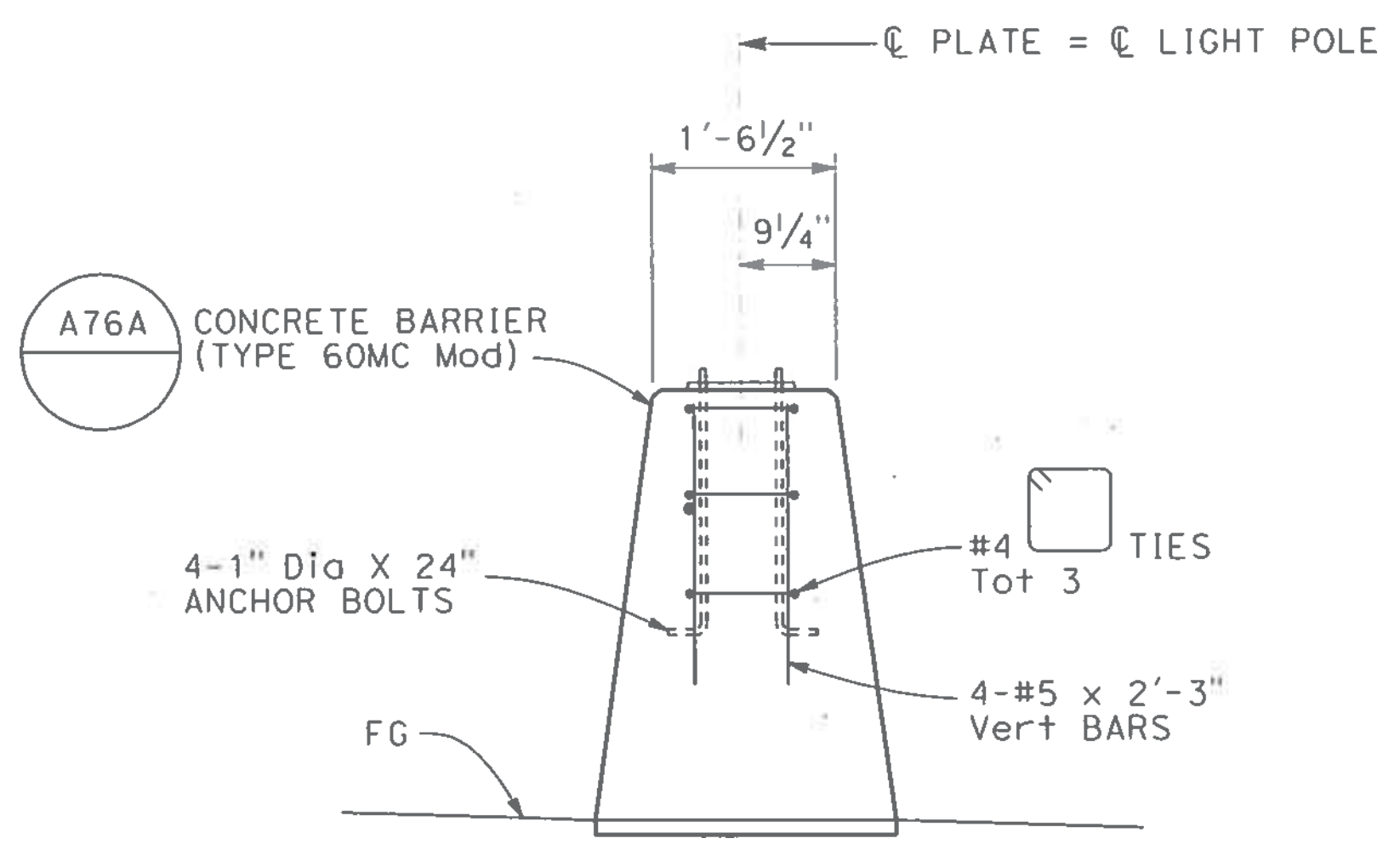
BASE PLATE DETAIL



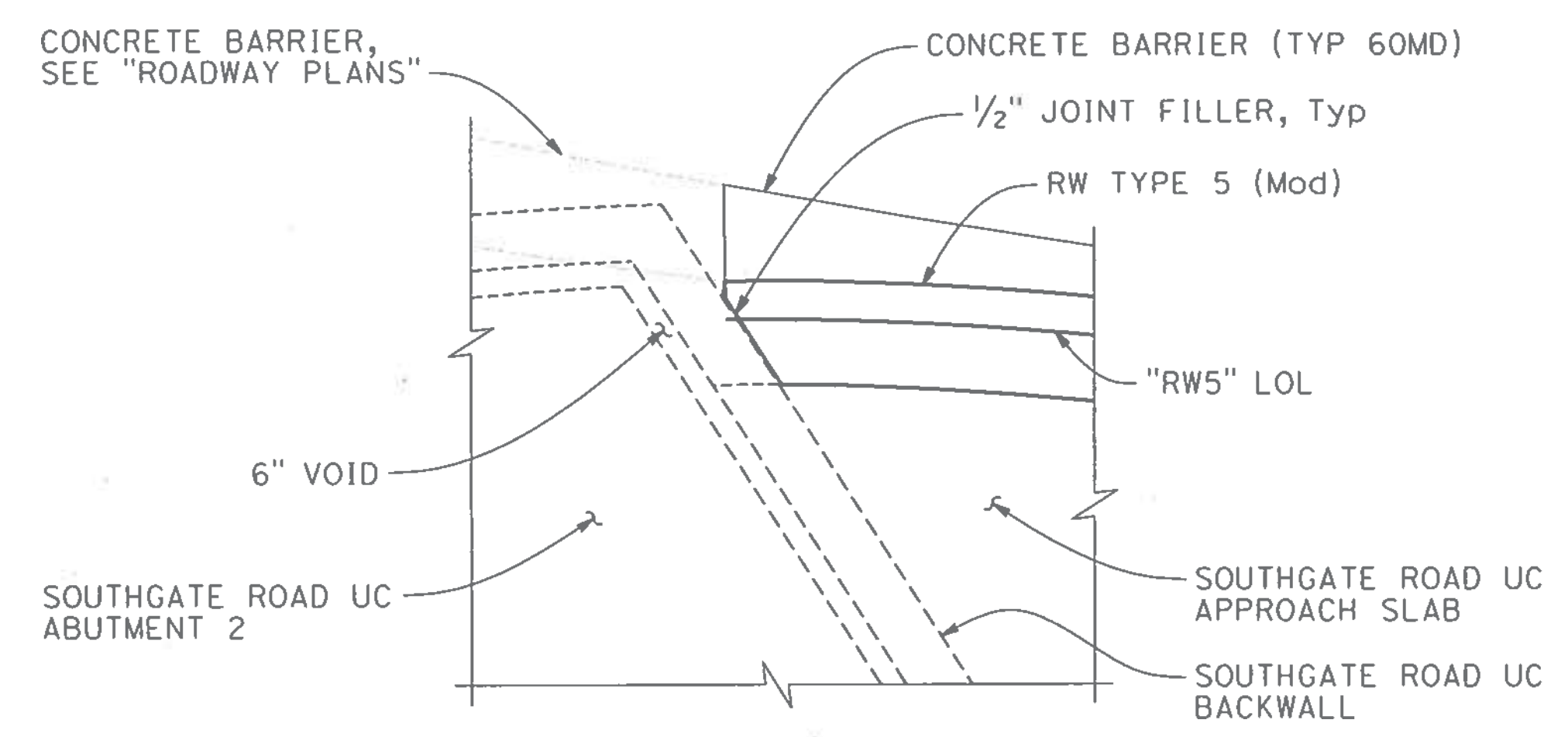
ELEVATION

NOTES:

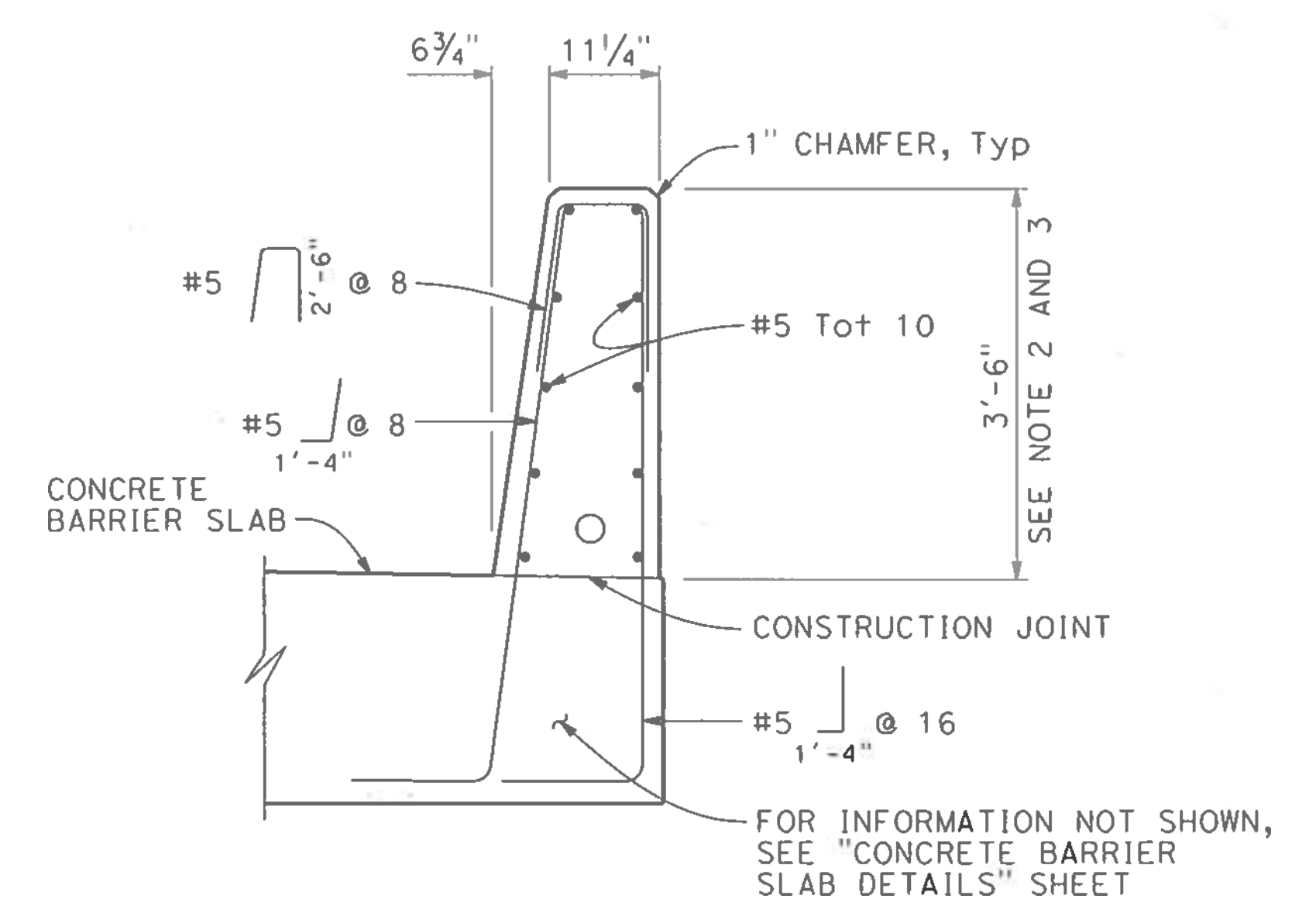
1. Walls are to be backfilled before barrier is placed.
2. Clearance to reinforcing steel in concrete barrier to be 1", except as noted. All barrier reinforcement shall be epoxy coated. Longitudinal reinforcement to stop at all expansion joints.
3. Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.



SECTION
LIGHT POLE DETAIL
3/4" = 1'-0"

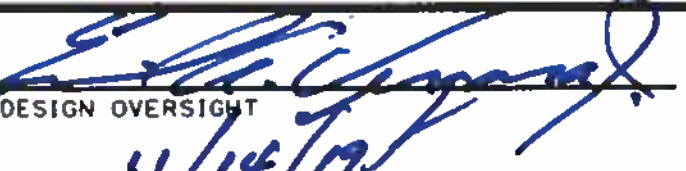


PLAN
BEGIN WALL DETAIL
3/8" = 1'-0"



CONCRETE BARRIER (TYPE 742 MOD)
3/4" = 1'-0"

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

DESIGN OVERSIGHT

SIGN OFF DATE
11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	3480034
POST MILES	7.9

RETAINING WALL No. 5
MISCELLANEOUS DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 2-27-19 1-24-19	89	168

USERNAME => JOHNGREEN DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:08

GENERAL NOTES

DESIGN:
AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments. 2

PRESTRESSING STEEL:
Bars - ASTM Designation: A722 Type II (150 ksi)

Strand Tendons-ASTM Designation: A416 (270 Ksi Low Relaxation steel)

FTL = Factored Test Load per anchor (Kips)
fpu = Minimum tensile strength of prestressing steel
As = Minimum cross sectional area of prestressing steel in ground anchor (square inch)

$$As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.75 \text{ fpu}} \text{ (Strands)}$$

$$As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.80 \text{ fpu}} \text{ (Bars)}$$

- NOTES:**
- (A) Level of initial grouting for drilled hole 6" in diameter or smaller
 - (B) Level of secondary grouting
 - (C) Level of initial grouting inside corrugated sheathing
 - (D) Bonded length shall be determined by the contractor
 - (E) For unbonded length, see PROJECT PLANS
 - (F) For inclination, see PROJECT PLANS
 - (G) Face of Wall Excavation

- NOTES:**
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
 2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
 3. Silicone sealant to cover full width of flange.
 4. Steel tube (Min thickness = 1/4") welded to bearing plate. Galvanize assembly after fabrication.
 5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = 1/4") to be 1" greater than outside diameter of smooth sheathing.
 6. Galvanize assembly after fabrication.
 7. For other wall details, see PROJECT PLANS.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	339	436

7-25-19
REGISTERED CIVIL ENGINEER DATE

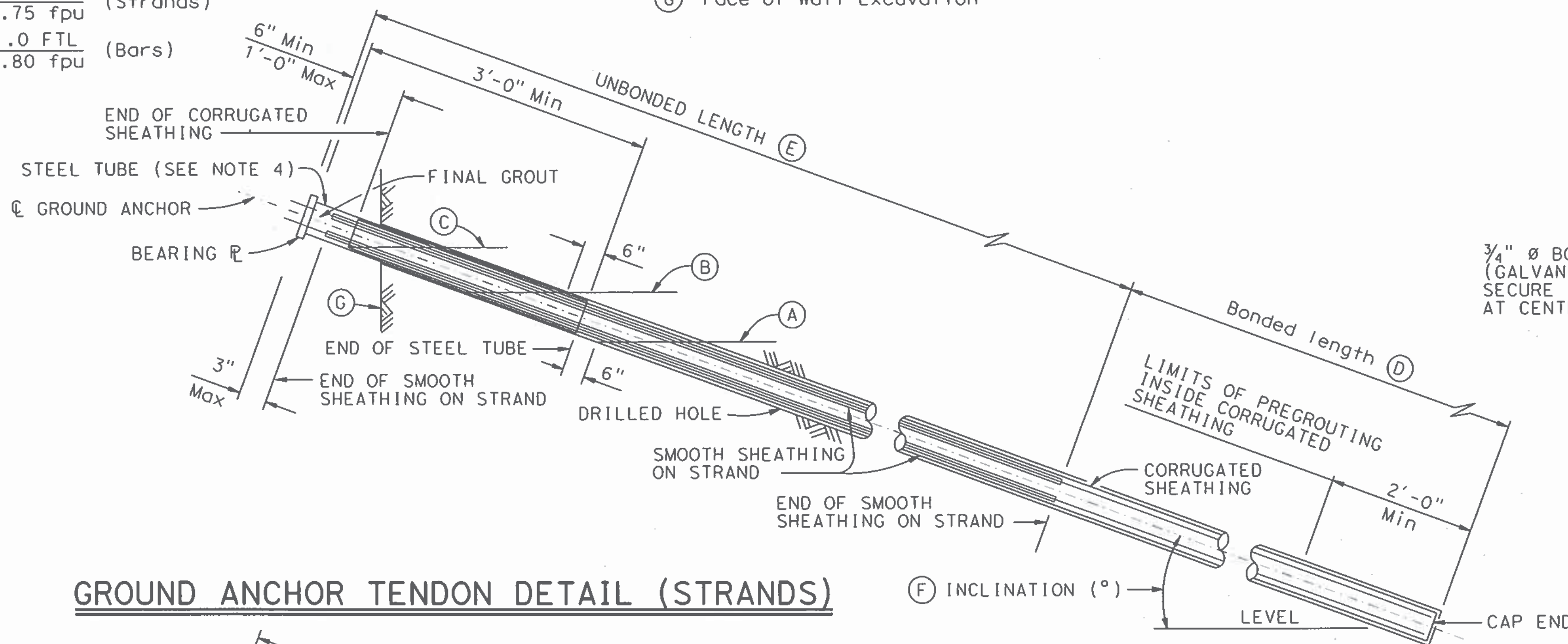
REGISTERED PROFESSIONAL ENGINEER
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

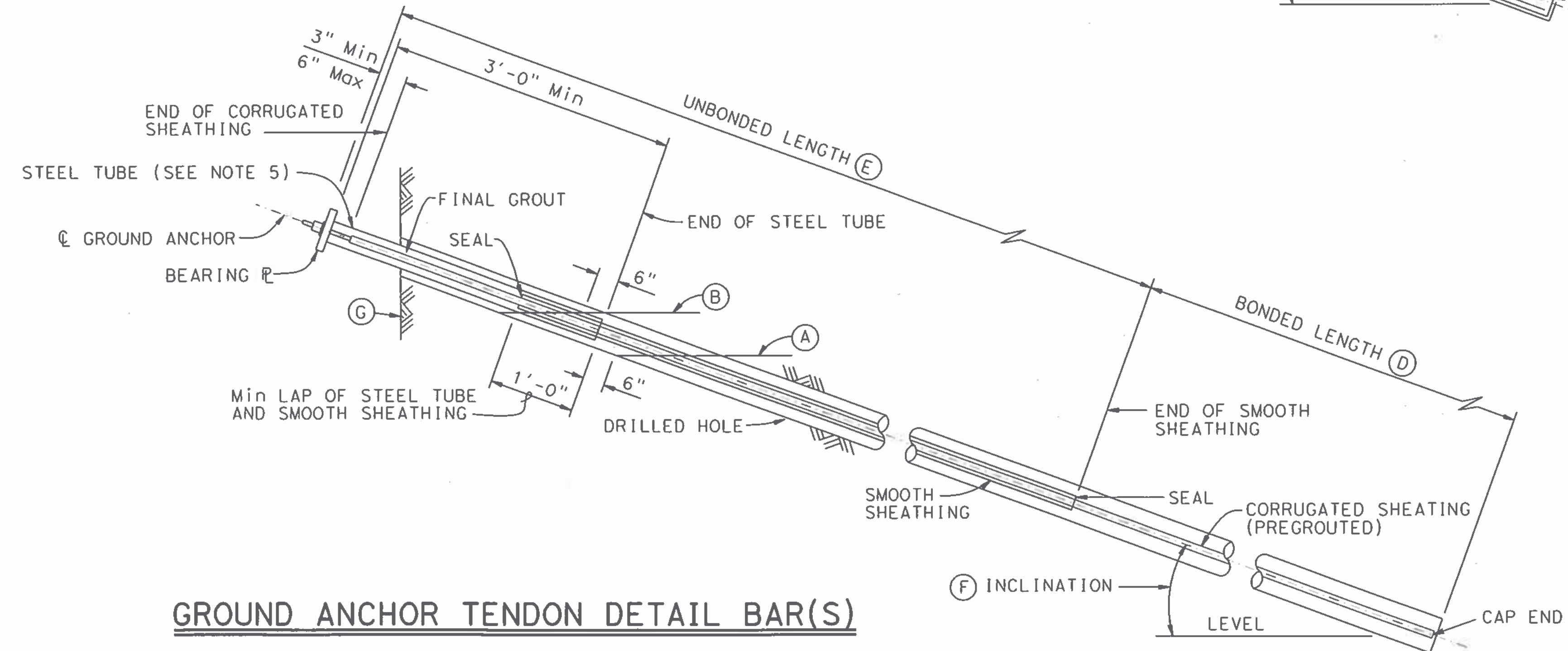
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

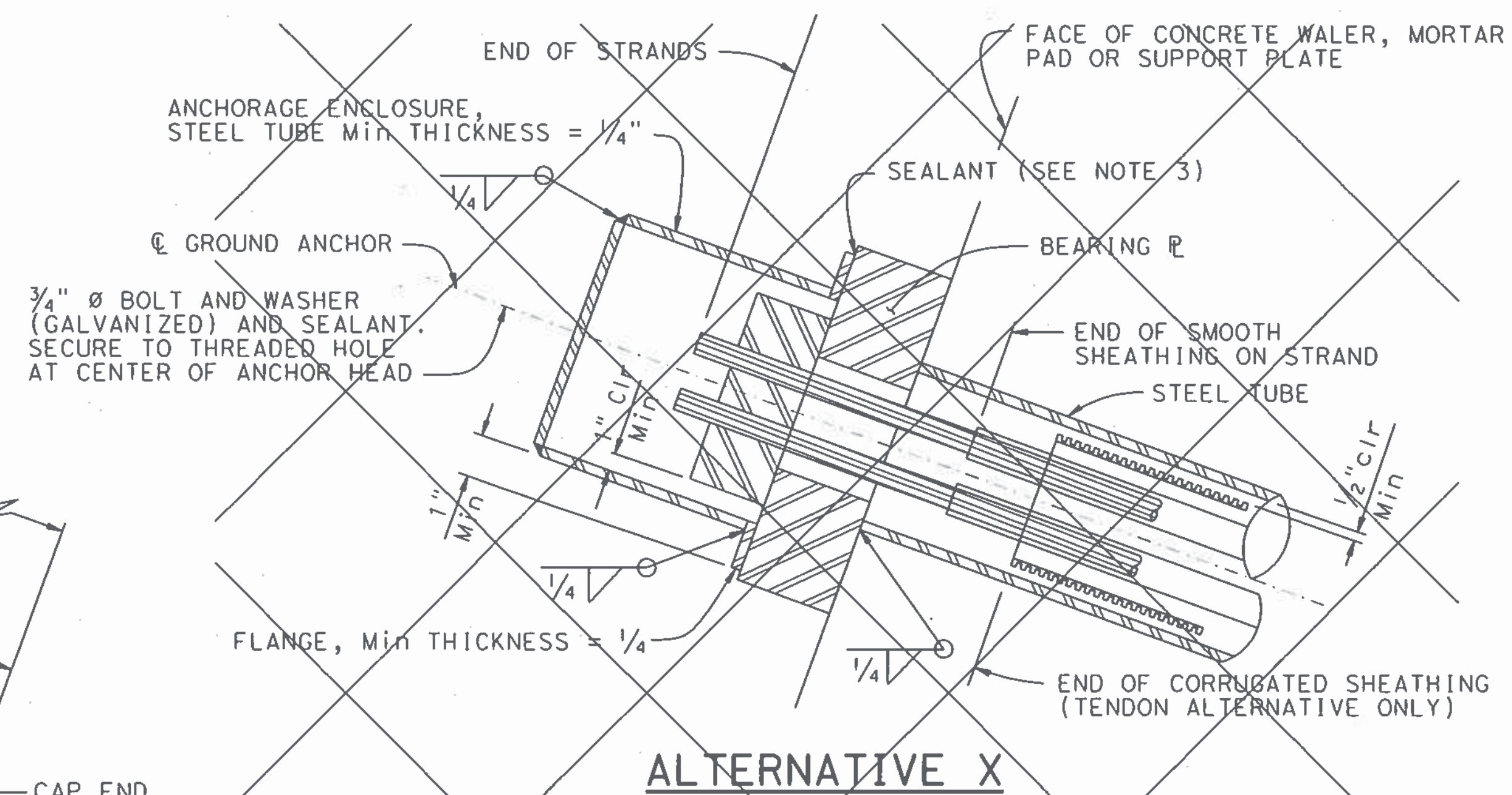
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



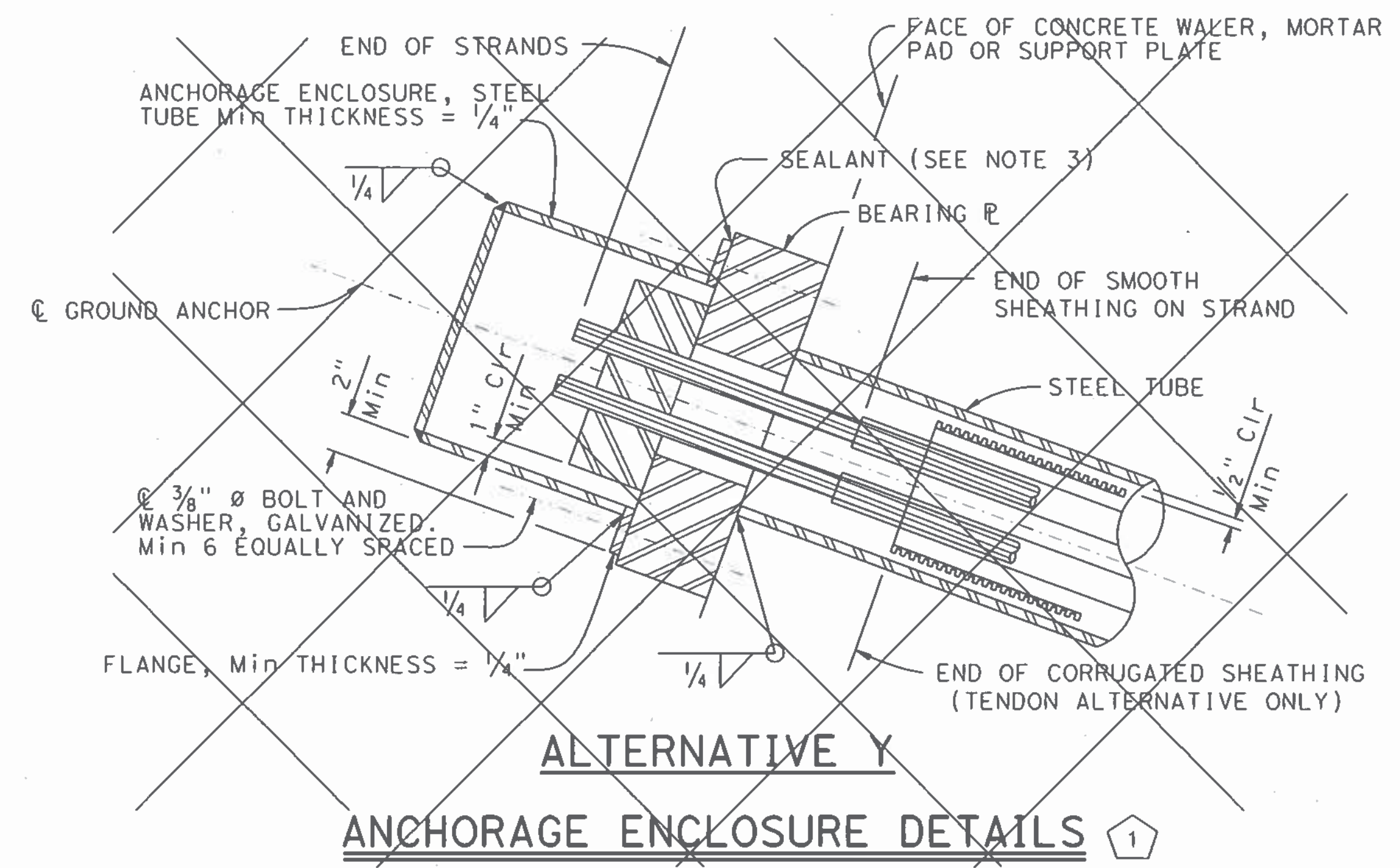
GROUND ANCHOR TENDON DETAIL (STRANDS)



GROUND ANCHOR TENDON DETAIL BAR(S)



ALTERNATIVE X



ALTERNATIVE Y

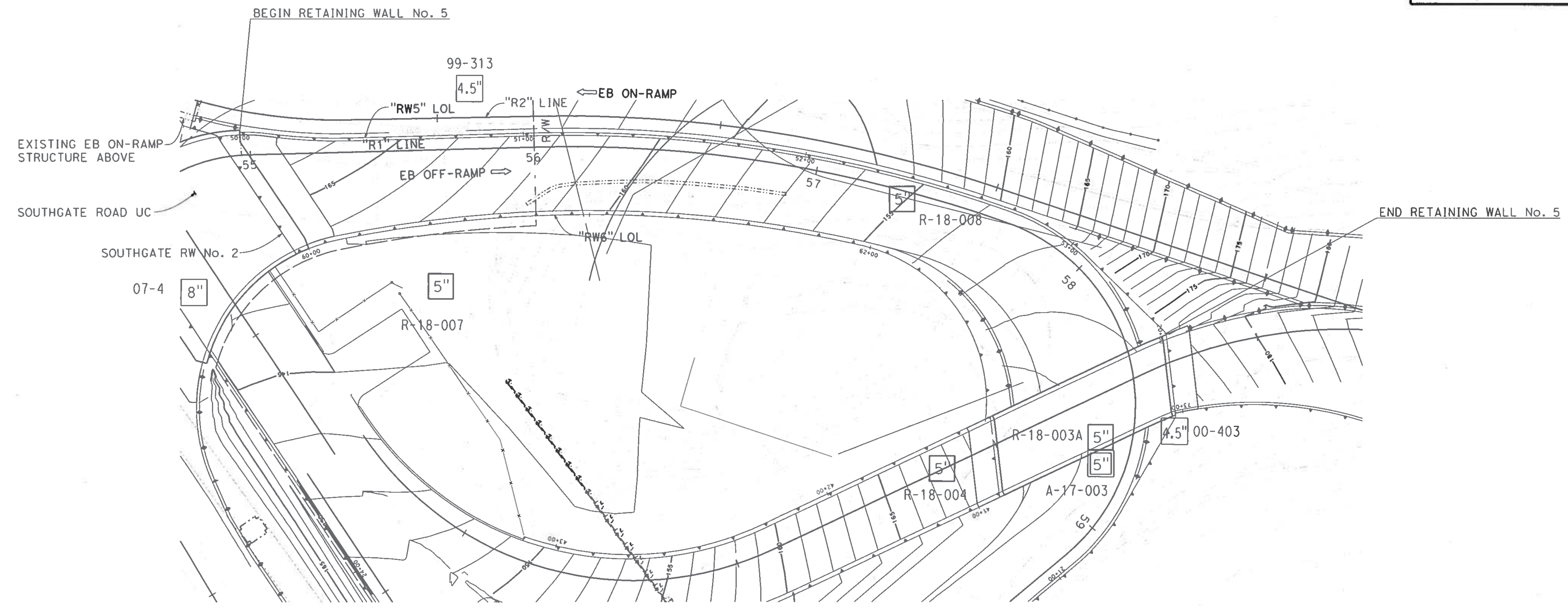
ANCHORAGE ENCLOSURE DETAILS

BRIDGE STANDARD DETAILS		1 DETAIL NOT USED 2 NOTE REVISED		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES		BRIDGE NO. 34E0034 POST MILES 7.9		RETAINING WALL No. 5 SUB HORIZONTAL GROUND ANCHOR DETAILS	
xs12-040 FILE NO.	July 2014 APPROVAL DATE	The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California.		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3		UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531		CONTRACT NO.: 04-3A6414		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html		FILE => RW5-u-shgawd1.dgn USERNAME => JOHNGREEN		DATE PLOTTED => 22-OCT-2019		TIME PLOTTED => 14:09		REVISION DATES: 10-22-19, 11-14-19, 2-27-19, 7-24-19		SHEET 90 OF 168	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	340	436

GEOTECHNICAL PROFESSIONAL DATE: 5-17-19
 GARY PARIKH
 No. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 GEOTECHNICAL
 PLANS APPROVAL DATE: _____
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



PLAN
 1" = 20'

 DESIGN OVERSIGHT SIGN OFF DATE: 11/14/19	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	FRANK WANG PROJECT ENGINEER	BRIDGE NO. 34E0034	RETAINING WALL No. 5 LOG OF TEST BORINGS 1 OF 6
	CHECKED BY FRANK WANG	DATE: JAN 2018		UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414	POST MILES 7.9	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET OF 91 168

FILE => RW5-z-1of601.dgn

USERNAME => ogothier DATE PLOTTED => 21-OCT-2019 TIME PLOTTED => 16:22

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	341	436

5-17-19
 GEOTECHNICAL PROFESSIONAL DATE
 GARY PARIKH
 No. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

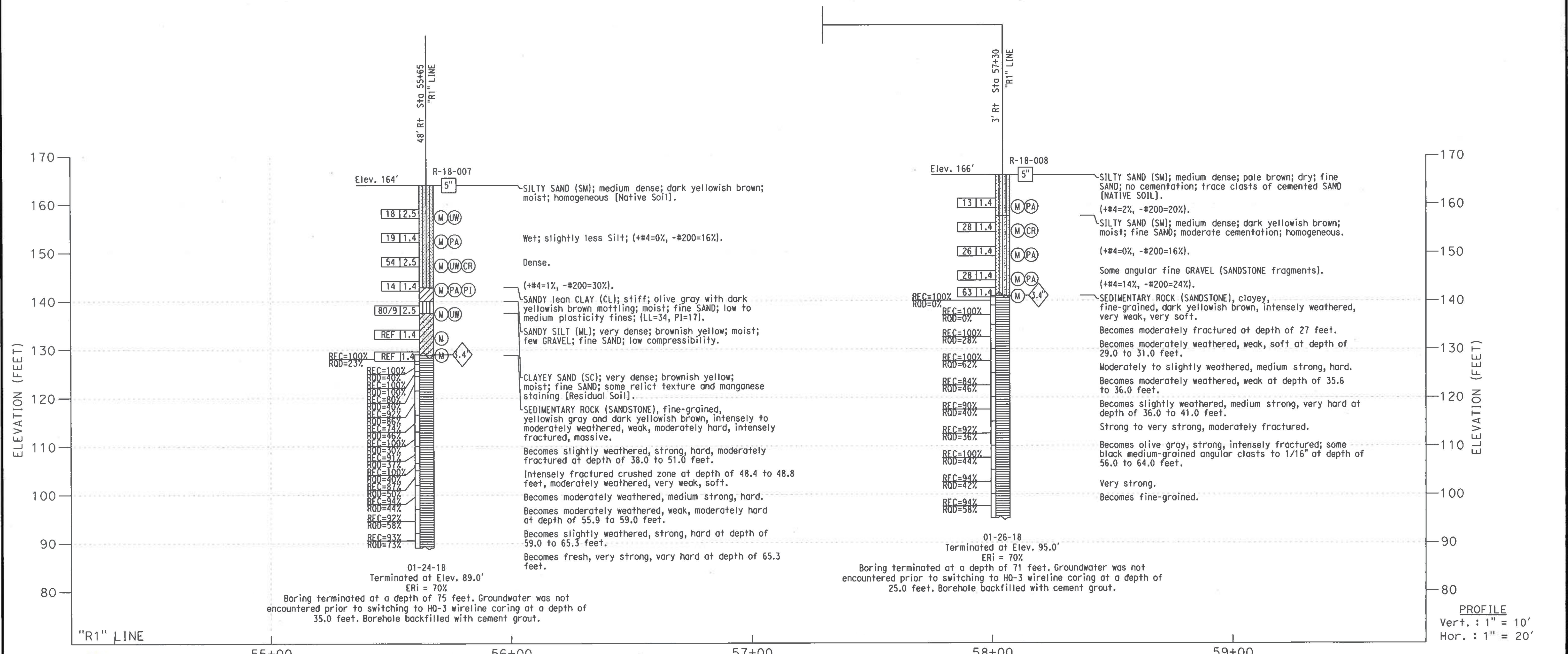
BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

NOTES:
 Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

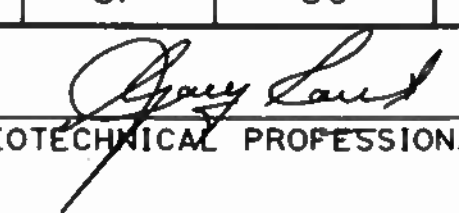
All dimensions are in feet unless otherwise shown



DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY: DATE: JAN 2018	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	FRANK WANG PROJECT ENGINEER	BRIDGE NO. 34E0034	RETAINING WALL No. 5 LOG OF TEST BORINGS 2 OF 6
	CHECKED BY FRANK WANG	UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531		CONTRACT NO.: 04-3A6414	REVISION DATES SHEET 92 OF 168	

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414 DISREGARD PRINTS BEARING EARLIER REVISION DATES

USERNAME => gqouht1@DATE PLOTTED => 21-OCT-2019 TIME PLOTTED => 16:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	342	436
 GEOTECHNICAL PROFESSIONAL			DATE 5-17-19		
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
BAY AREA TOLL AUTHORITY 375 BEALE STREET, SUITE 800 SAN FRANCISCO, CA 94105					
PARIKH CONSULTANTS, INC. 2360 OUME DRIVE, SUITE A SAN JOSE, CA 95131					

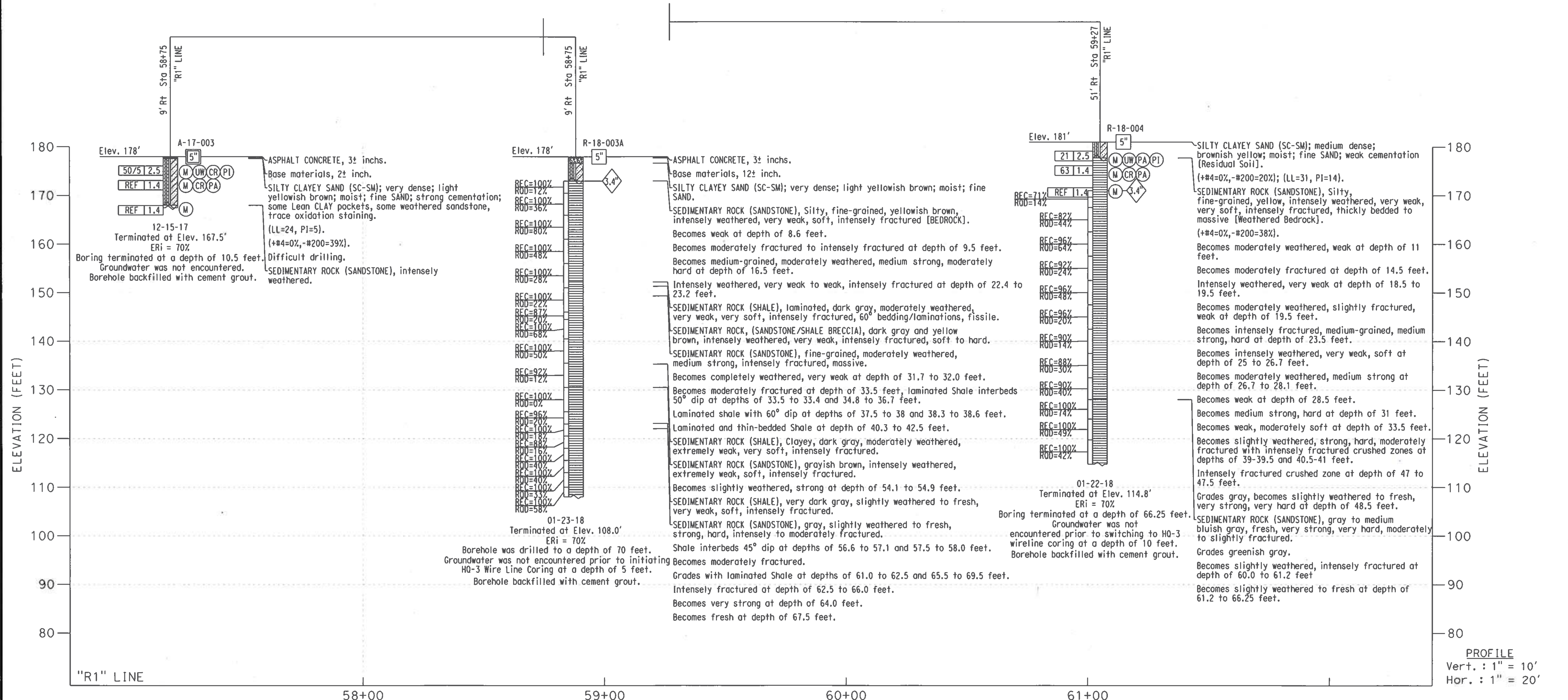
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



 DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	FRANK WANG PROJECT ENGINEER	BRIDGE NO. 34E0034	RETAINING WALL No. 5 LOG OF TEST BORINGS 3 OF 6
	CHECKED BY FRANK WANG	DATE: DEC 2017 THROUGH JAN 2018		UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	POST MILES 7.9	

LEGEND OF BORING OPERATIONS

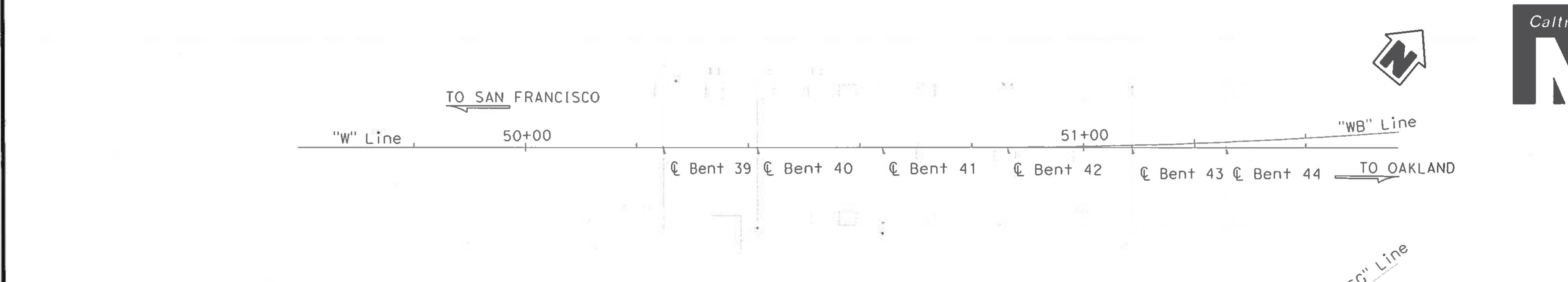
IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPE OF BORINGS

LEGEND FOR EARTH MATERIALS (USCS)

CONSISTENCY CLASSIFICATION FOR SOILS

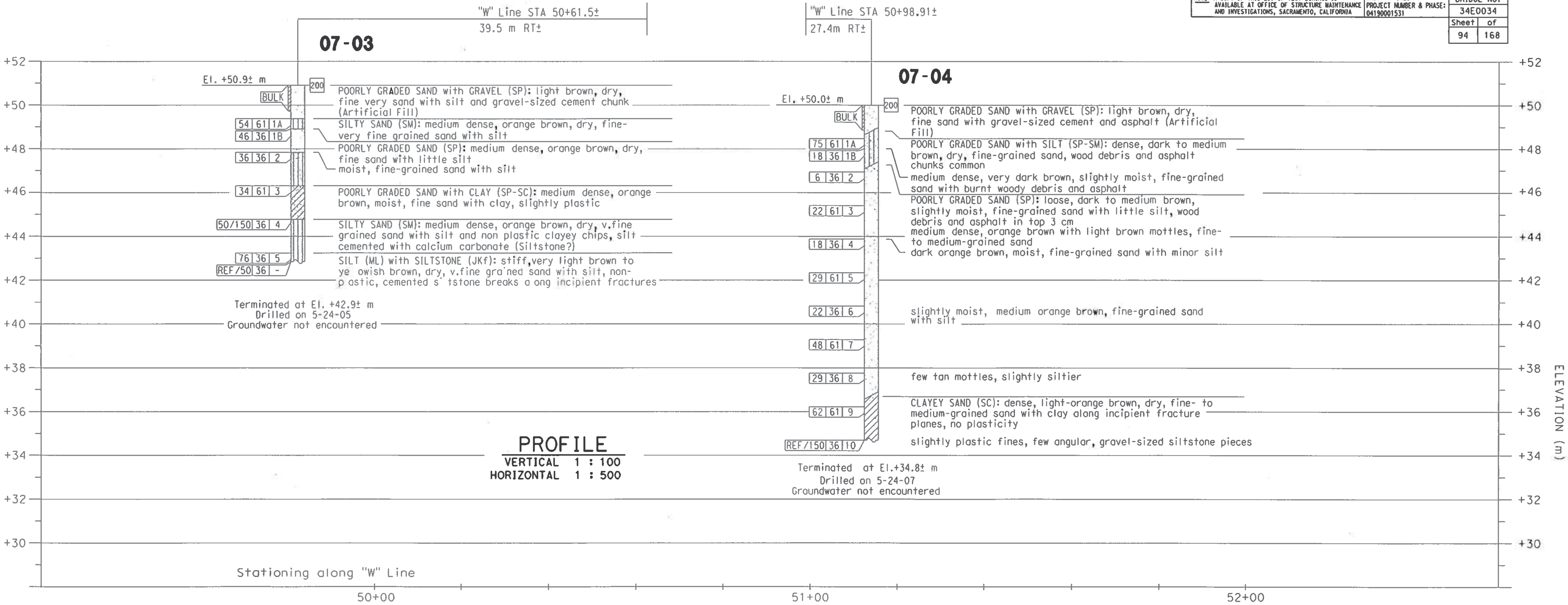
NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 6" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
07-04	54+40	36' Rt.



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

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DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	343	436

REGISTERED CIVIL ENGINEER
 No. G.E. 666
 Exp. 12/31/19
 GEOTECHNICAL

REGISTERED PROFESSIONAL ENGINEER
 No. GE 2564
 Exp. 12-31-08
 GEOTECHNICAL

RETAINING WALL No. 5
LOG OF TEST BORINGS 4 OF 6

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT	BRIDGE No.
0728	34E0034

Sheet 94 of 168

DESIGN OVERSIGHT

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER M. KAPUSKAR

BRIDGE NO. 34-0006

KILOMETER POST

DATE: 05/24/07

FILE => 34-0006-29-z-11tb06.dgn

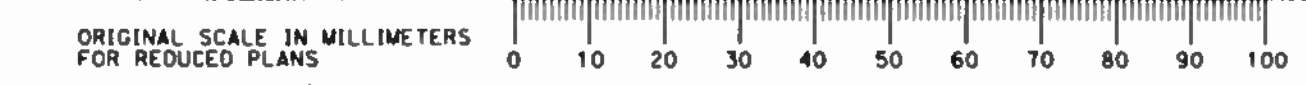
WEST TIE-IN PHASE 3

LOG OF TEST BORINGS NO. 6

REVISION DATES (PRELIMINARY STAGE ONLY)

NO.	DATE	DESCRIPTION

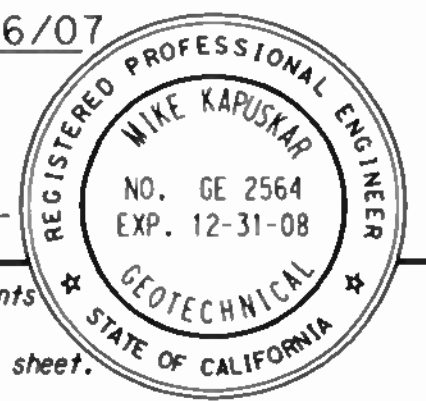
SHEET 29 OF 29



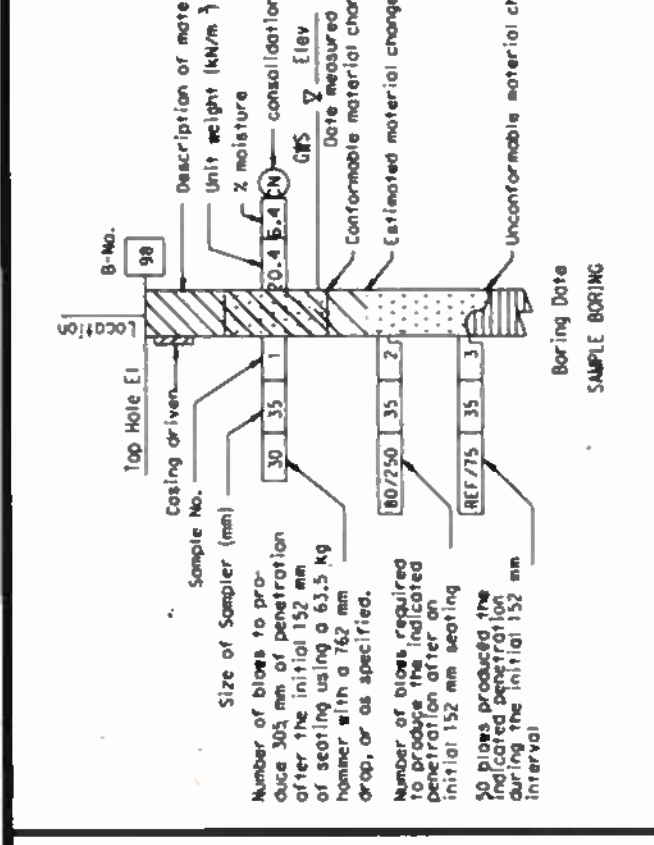
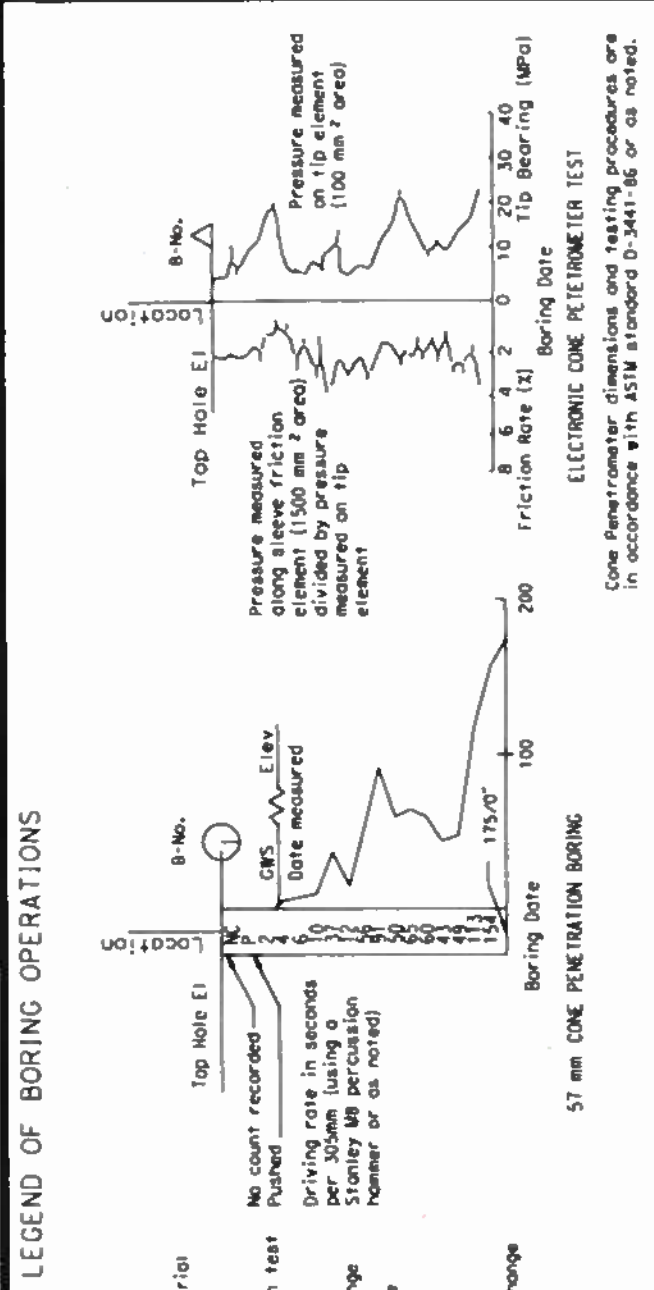


DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	481	821

09/06/07
 GEOTECHNICAL PROFESSIONAL
 2-21-12
 PLANS APPROVAL DATE
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FUGRO-EARTH MECHANICS
 7700 EDGEWATER DRIVE, SUITE 846
 OAKLAND, CA 94621



IN-SITU, LAB & FIELD TEST DESIGNATIONS

AL	Atterberg Limits
CA	Consolidation
CN	Maximum Density
CS	Direct Shear
CR	R-Value
CP	Pocket Penetrometer
SE	Sand Equivalent
UC	Unconfined Compression
UD	Unconsolidated Triaxial
WA	Wash Analysis

TYPE OF BORINGS

57	57 MM CONE PENETRATION
ROT	ROTARY WASH
PC	PISTON CONE
PE	PISTON CONE
DI	DIAMOND
CB	CORE BORING
ST	SOIL TUBE

LEGEND FOR EARTH MATERIALS (USES)

CL	CLAY (CL or CH)
ML	SILT (ML or MH)
SM	POORLY GRADED SILTY SAND (SM)
SC	CLAYEY SAND (SC)
GC	GRAVEL (GC)
GM	POORLY GRADED SILTY CLAY (GM)
GC	GRAVEL (GC)

CONSISTENCY CLASSIFICATION FOR SOILS

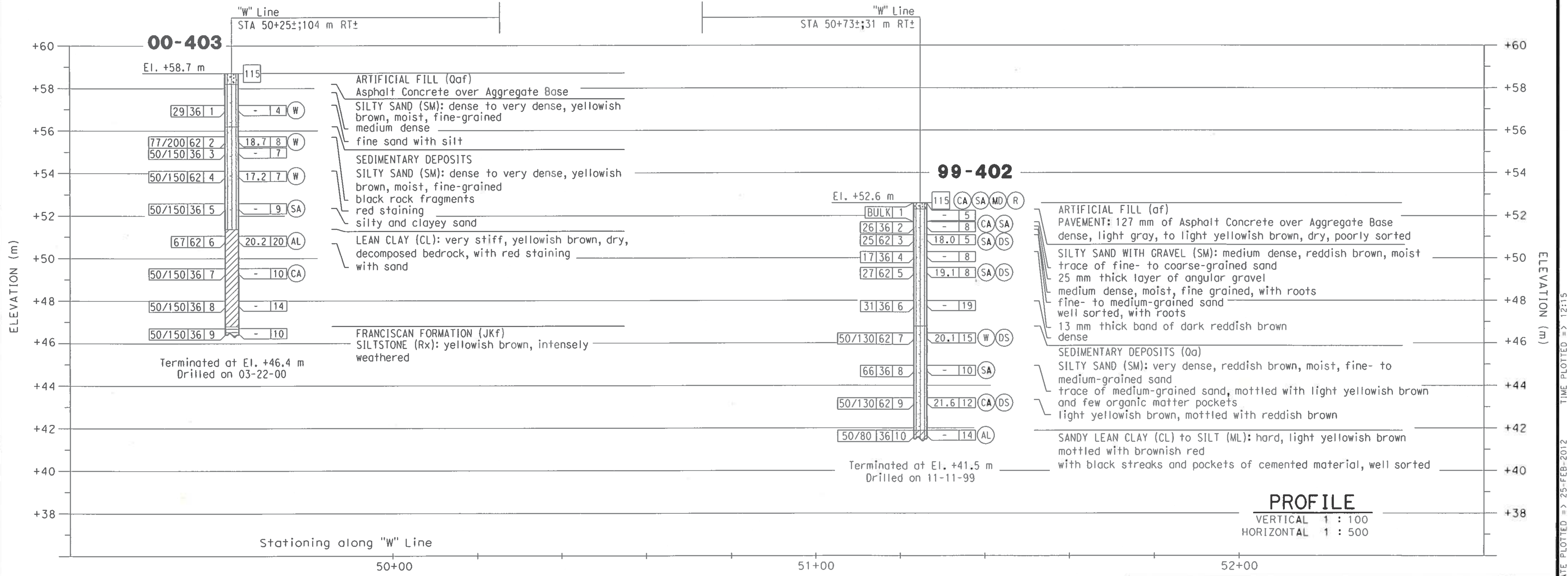
SP No. (Blows/305mm)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-100	Very Dense



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES
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RETAINING WALL No. 5
LOG OF TEST BORINGS 5 OF 6

DATE: 5-17-19
 PROJECT NUMBER & PHASE: 34E0034
 SHEET No. of: 95 of 168



Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 6" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
00-403	58+60	14' Lt.

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

WEST TIE-IN PHASE 3
YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)
LOG OF TEST BORINGS NO. 5

DESIGN OVERSIGHT
 DRAWN BY: G. J. GUNARANJAN 01/03/07
 CHECKED BY: M. KAPUSKAR 01/05/07
 S. SICILIANO, L. FLUKE
 FIELD INVESTIGATION BY:
 DATE: AS NOTED

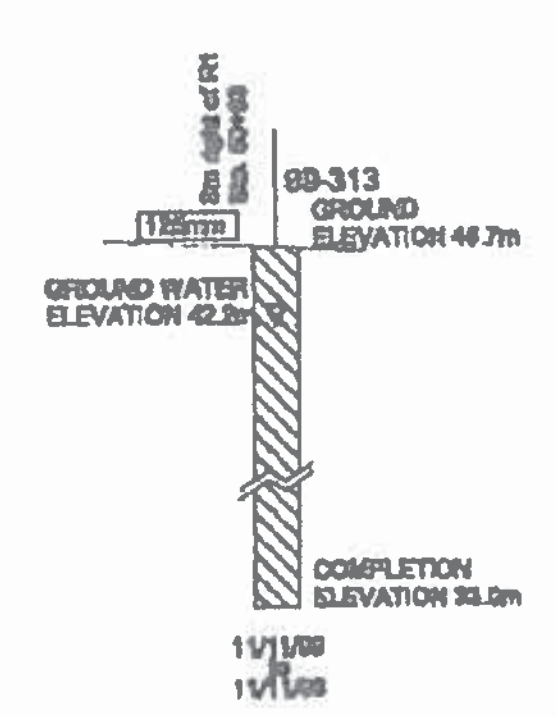
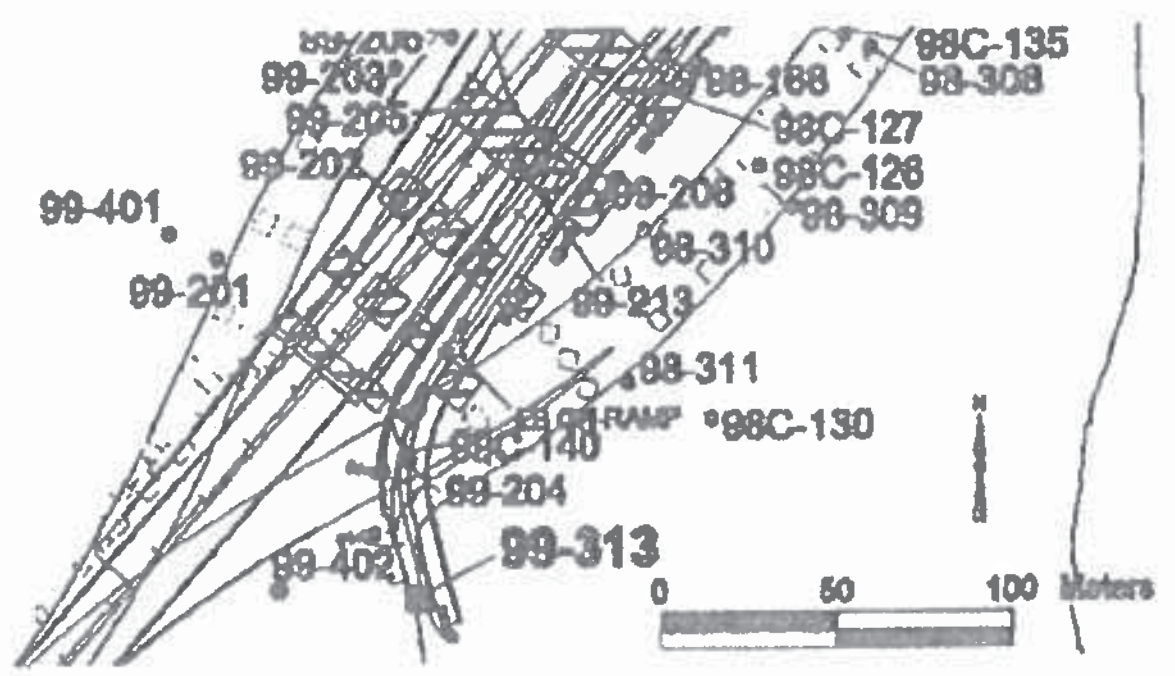
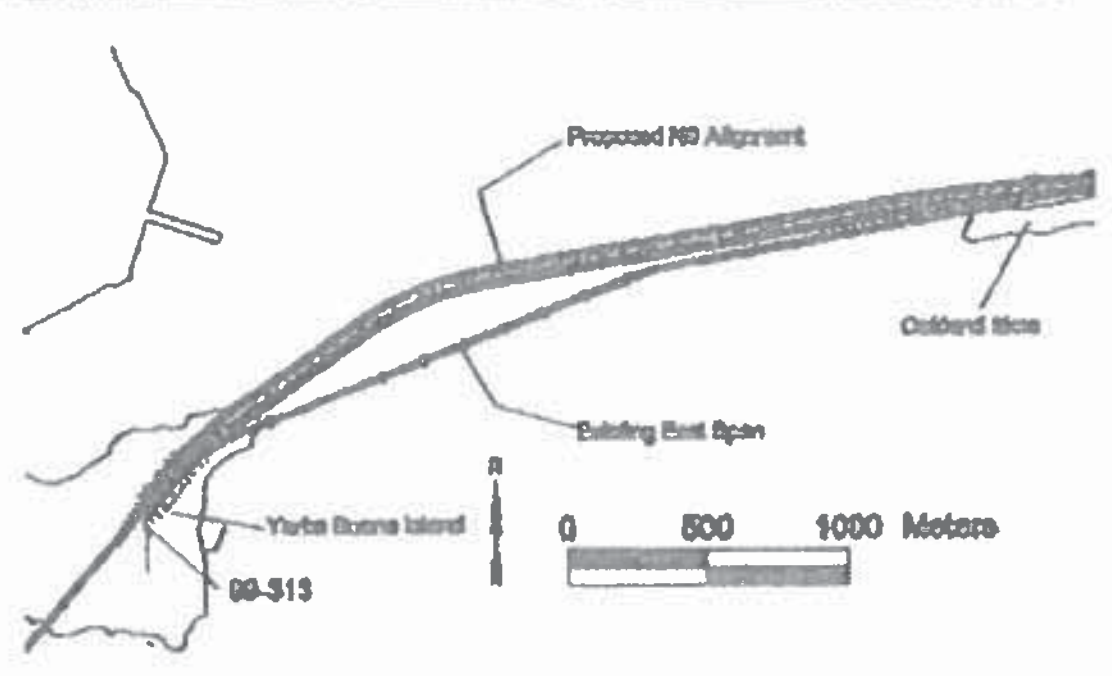
PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR
 PROJECT ENGINEER

BRIDGE NO. 34-0006
 KILOMETER POST 12.8

SOIL AND ROCK TYPES

Well graded GRAVEL (GW)	Steady silty CLAY (CL)
Poorly graded GRAVEL (GP)	Lean CLAY (CL)
GRAVEL with sand (GP or GW)	Steady lean CLAY (CL)
GRAVEL with clay (GP or GW)	Silty CLAY (CL, SL)
Clayey GRAVEL (GC)	Steady SILT (ML)
GRAVEL with silt (GP or GW)	SILT (ML)
Silty GRAVEL (GM)	Steady SILT (ML)
Well graded SAND (SW)	Clayey silt (ML, CL)
Poorly graded SAND (SP)	Highly plastic CLAY (CH)
SAND with gravel (SP or SW)	Low plasticity ORGANIC (OL)
SAND with clay (SP-GC)	SLATES (SL)
Clayey SAND (SC)	SILTSTONE (SL)
Silty SAND (SM)	CLAYSTONE (CL)
SAND with silt (SP-SM)	Interbedded Rock Strata (RS)
CLAY (CH)	PAVEMENT (PA)



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	12.7/13.2	778	806

6-23-08
 PLAN APPROVAL DATE

FUGRO EARTH MECHANICS, A JOINT VENTURE
 7750 Paradise Lane, Suite 120
 Oakland, CA 94631
 (510) 882-2333, FAX (510) 882-8855

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SAMPLERS

78mm OD, 78mm ID Thin Wall Tube	78mm OD, 80mm ID Modified Osterman Loper
57mm OD, 57mm ID Thin Wall Tube	57mm OD, 58mm ID SPT Split Spoon Sampler
53.6mm OD, 54mm ID Osterman Loper	Rock Core (Small symbol represents recovery %)

* A Vermeer-CO, 04-000-10 tapered sleeve tube was used to sample coarse sand, gravel and rock

STANDARD PENETRATION TEST (SPT) AND MODIFIED CALIFORNIA (MC) LOPER SAMPLERS

Samplers were driven with a 63.5 kg hammer dropped approximately 760 mm.

30 Number of blows to produce 30 cm of penetration after the initial 15 cm of seating.
 60/20cm Number of blows required to produce the indicated penetration after an initial 15 cm seating.
 60/20cm 60 Blows produced the indicated penetration during the initial 15 cm interval.

Note: In rock coring interval recovery (R%) and RSD are shown in the Blow Count column.

TUBE AND OFFSHORE LOPER SAMPLERS

WCH Osterman Loper sampler advanced with the weight of an 80 kg hammer.

FUSH or SAFE Pushed Osterman Loper.

150/20cm Number of blows required to produce the indicated penetration using a 60mm ID tube sampler. The sampler was driven with an 80 kg drop-hammer dropped approximately 1.5 m.

CLASSIFICATION TESTS BLOW COUNTS AND ROCK QUALITY

PERCENT PASSING 200 SIEVE
 WATER CONTENT (%)
 TOTAL UNIT WEIGHT (kN/m³)
 THEORETICAL TOTAL UNIT WEIGHT (kN/m³)
 PLASTIC LIMIT (LL) LIQUID LIMIT (LL)
 PLASTICITY INDEX (PI)

EQUIVALENT SPT BLOW COUNT (NO BLOW COUNTS) OR SPT BLOW COUNT
 ROCK QUALITY DESIGNATION (RQD)
 ROCK RECOVERY PERCENT
 ROCK CORING RATE

STRENGTH TESTS

POCKET PENETROMETER
 TORQUE
 RESISTANCE VALUE
 UNCONSOLIDATED UNDRAINED TRIAXIAL
 SWEDISH FALL CONE
 UNCONSOLIDATED COMPRESSION (UC)
 Oa (Open symbols indicate remolded tests)
 S (Shear Strength Integrated from CPT Tip Resistance (S_t = 0.15))

POINT LOAD TEST (ROCK-INTACT SPECIMEN)
 POINT LOAD TEST (ROCK ALONG WEAK PLANE)
 UNCONSOLIDATED COMPRESSION (ROCK)
 S (Shear Strength Integrated from CPT Tip Resistance (S_t = 0.15))

Rock Samples Intact along (diameter)
 Intact sample would have greater strength
 FRACTURE DENSITY (ROCK)

STRENGTH OF COHESIVE SOILS

Consistency	Undrained Shear Strength (kPa)
Very Soft	less than 12
Soft	12 to 25
Firm	25 to 50
Stiff	50 to 100
Very Stiff	100 to 200
Hard	greater than 200

DENSITY OF GRANULAR SOILS

Consistency	Relative Density (RD)
Very Loose	less than 15
Loose	15 to 30
Medium Dense	30 to 50
Dense	50 to 75
Very Dense	greater than 75

* Estimated from sample drying record and CPT tip resistance.

BORING 99-313

COORDINATES: E168983 N47099
 CA State Plane Zone 3, NAD83, Meters
 GROUND ELEVATION: 46.7m (MSL)
 START DATE: 11/1/09

STATION: 3m right of R1 Sta. 60+83
 COMPLETION ELEVATION: 33.0m (MSL)
 END DATE: 11/1/09

DEPTH (m)	ELEVATION (m)	SOIL TYPE	BLOW COUNT	MATERIAL DESCRIPTION	CORING RATE (cm/min)				FRACTURE DENSITY (Fract/m)					
					15	17	19	21	5	10	15	20		
0	46.7	ARTIFICIAL FILL (AF)		PAVEMENT, 127mm of Asphalt Concrete over Aggregate Base (0.3m)										
0.3	46.4	SEDIMENTARY DEPOSITS (SD)		Medium to coarse SAND with gravel and silt (SW-SM), very dense, light gray, dry gravel to sub-angular to sub-rounded rock fragments up to 127mm, 0.8m to 2.1m (2.3m)										
2.3	44.1			Fine GRAVEL with silt and sand (GW-GM), dense to very dense, light to dark gray, dry with fine to medium sand (4.8m)										
4.8	41.6			Fine to Medium SAND (SP), dense, yellowish brown, moist (5.1m)										
5.1	41.3			Fine to Medium SAND with silt (SP-SM), dense to very dense, reddish brown, moist silty at 0.1m (5.1m)										
10.2	36.2			dense, silty fine to medium sand, at 9.1m										
12.2	34.2			silty fine sand, light yellowish brown, below 12.2m										
13.7	32.7			with intensely weathered sandstone fragments and silt clay, at 13.7m (15.2m)										
15.2	31.2			Steady SILT (ML), very dense, light yellowish brown weathered sandstone, extremely soft and friable TOTAL DEPTH 15.7m BACKFILLED WITH Cement Grout										

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

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DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	345	436

5-17-19
 DATE

RETAINING WALL No. 5

LOG OF TEST BORINGS 6 OF 8

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

BRIDGE No.	34E0034
Sheet of	96 of 168

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 6" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "EB" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
99-313	55+78	21' Lt.

ROBERT PRICE / BABA MOHAN	DRAWN BY	J. PALMER	L. FLUKE	M. KAPUSKAR	BRIDGE NO.	34-0172 8
GEOTECHNICAL DESIGN ENGINEER	CHECKED BY	M. KAPUSKAR, S. VARATHARAJ	FIELD INVESTIGATOR	PROJECT ENGINEER	KM POST	
			DATE: SEE ABOVE		POST MILE	

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ORIGINAL SCALE IN CENTIMETERS 0 1 2 3 4 5 6 7 8 9 10
 FOR REDUCED PLANS

CU 04251
 EA 0120S1

SAN FRANCISCO OAKLAND BAY BRIDGE EAST SPAN SEISMIC SAFETY PROJECT

YBI EB ON-RAMP STRUCTURE

LOG OF TEST BORINGS NO. 1

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
	7	17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	346	436

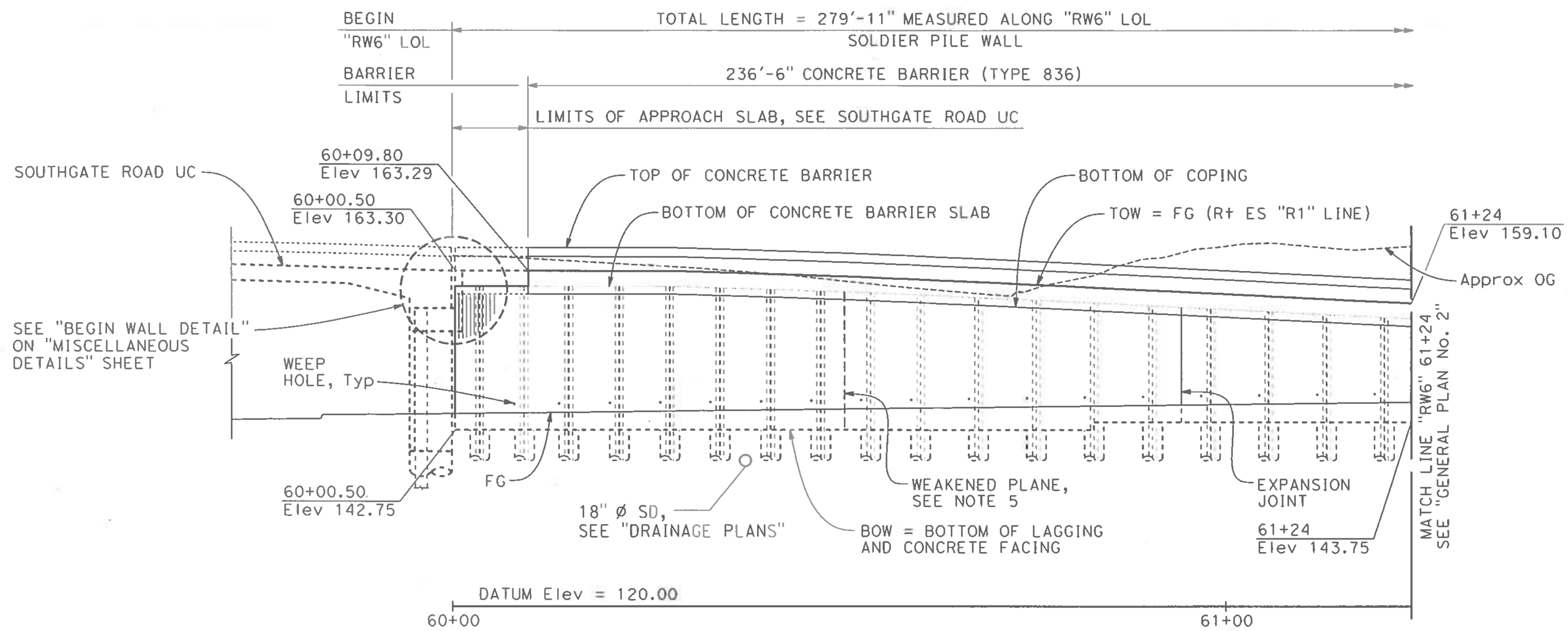
REGISTERED CIVIL ENGINEER
DATE 7-25-19
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

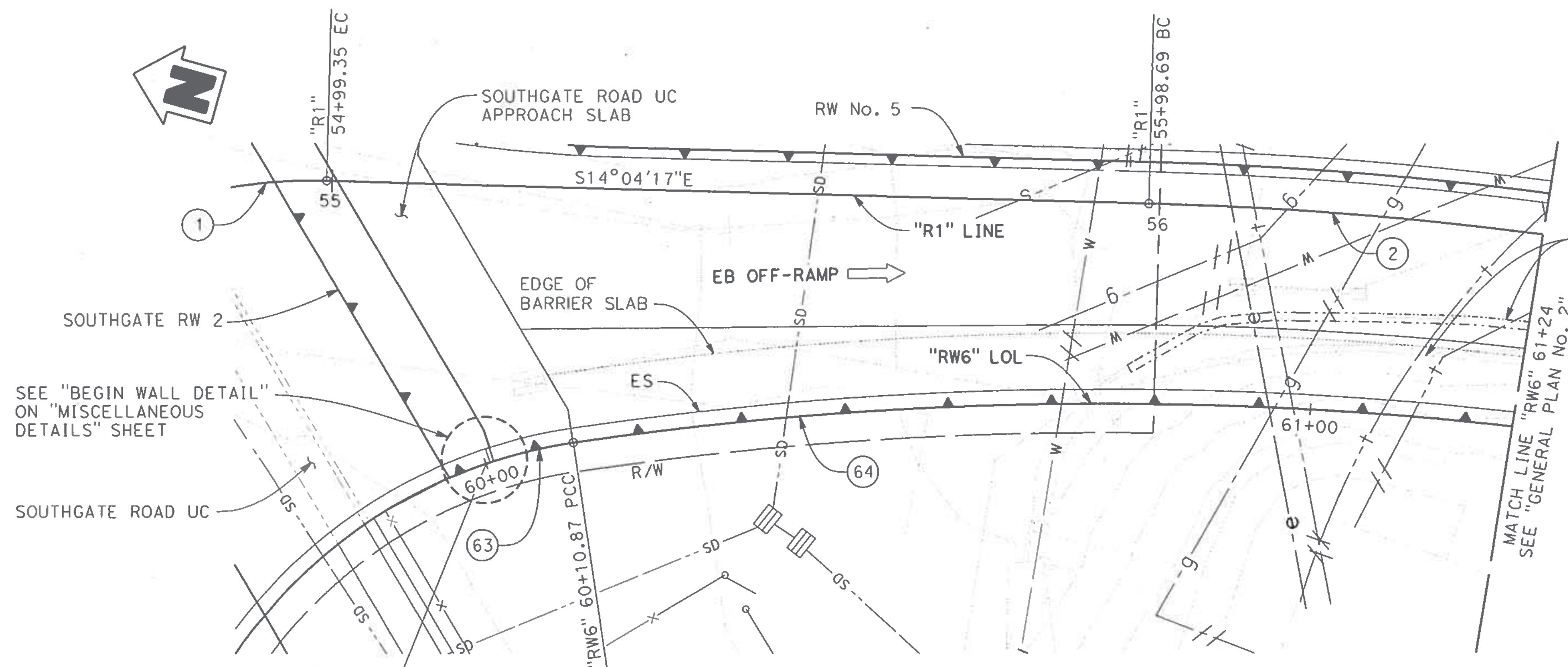
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



DEVELOPED ELEVATION
1" = 10'



PLAN
1" = 10'

LEGEND:

- Indicates existing structure
- ← Indicates direction of traffic

NOTES:

- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 3" and "GENERAL PLAN No. 4" sheets.
- For drainage details, see "MISCELLANEOUS DETAILS" sheet and "DRAINAGE PLANS".
- Expansion joints in CIP facing shall be located at a Max spacing of 96 feet center to center and shall be centered between piles. For detail, see "SOLDIER PILE WALL DETAILS No. 2" sheet.
- Weakened Planes in CIP facing shall be located at a Max spacing of 48 feet and shall be centered between piles. For detail see B0-3 3-2
- For wall elevations, see "SOLDIER PILE WALL LAYOUT" sheets.

QUANTITIES

STRUCTURE EXCAVATION (SOLDIER PILE WALL)	543	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	51	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	88	CY
LEAN CONCRETE BACKFILL	83	CY
STEEL SOLDIER PILE (W14X82)	332	LF
STEEL SOLDIER PILE (W18X158)	195	LF
STEEL SOLDIER PILE (W18X211)	197	LF
STEEL SOLDIER PILE (W18X258)	363	LF
24" DRILLED HOLE	377	LF
30" DRILLED HOLE	803	LF
STRUCTURAL CONCRETE, RETAINING WALL	124	CY
STRUCTURAL CONCRETE, BARRIER SLAB	202	CY
FRACTURED RIB TEXTURE	2,564	SQ FT
BAR REINFORCING STEEL (RETAINING WALL)	14,656	LB
TIMBER LAGGING	21	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	1	LS
CONCRETE BARRIER (TYPE 836)	237	LF

CURVE DATA

No.	R	Δ	T	L
1	60.78'	119°32'34"	104.31'	126.81'
2	464.54'	21°07'12"	86.60'	171.23'
63	60.50'	10°17'55"	5.45'	10.87'
64	440.50'	22°54'04"	89.22'	176.07'

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

DESIGN OVERSIGHT	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG	SPECIFICATIONS	BY T. MEHTA
			PLANS AND SPECS COMPARED	M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO. 34E0035
POST MILES 7.9

RETAINING WALL No. 6
GENERAL PLAN No. 1

USERNAME => svc_in_pwd&P&E; PLOTTED => 22-OCT-2019 TIME PLOTTED => 16:13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	347	436

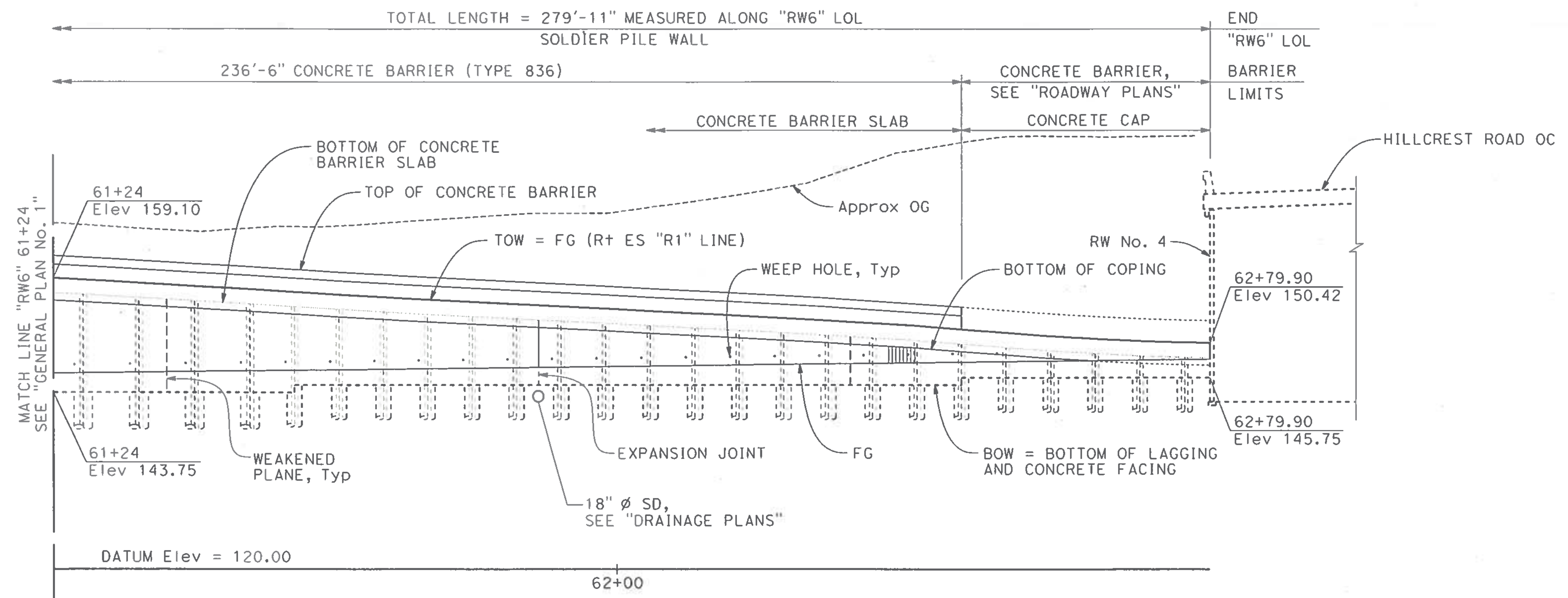
REGISTERED CIVIL ENGINEER
DATE 7-25-19

PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



DEVELOPED ELEVATION

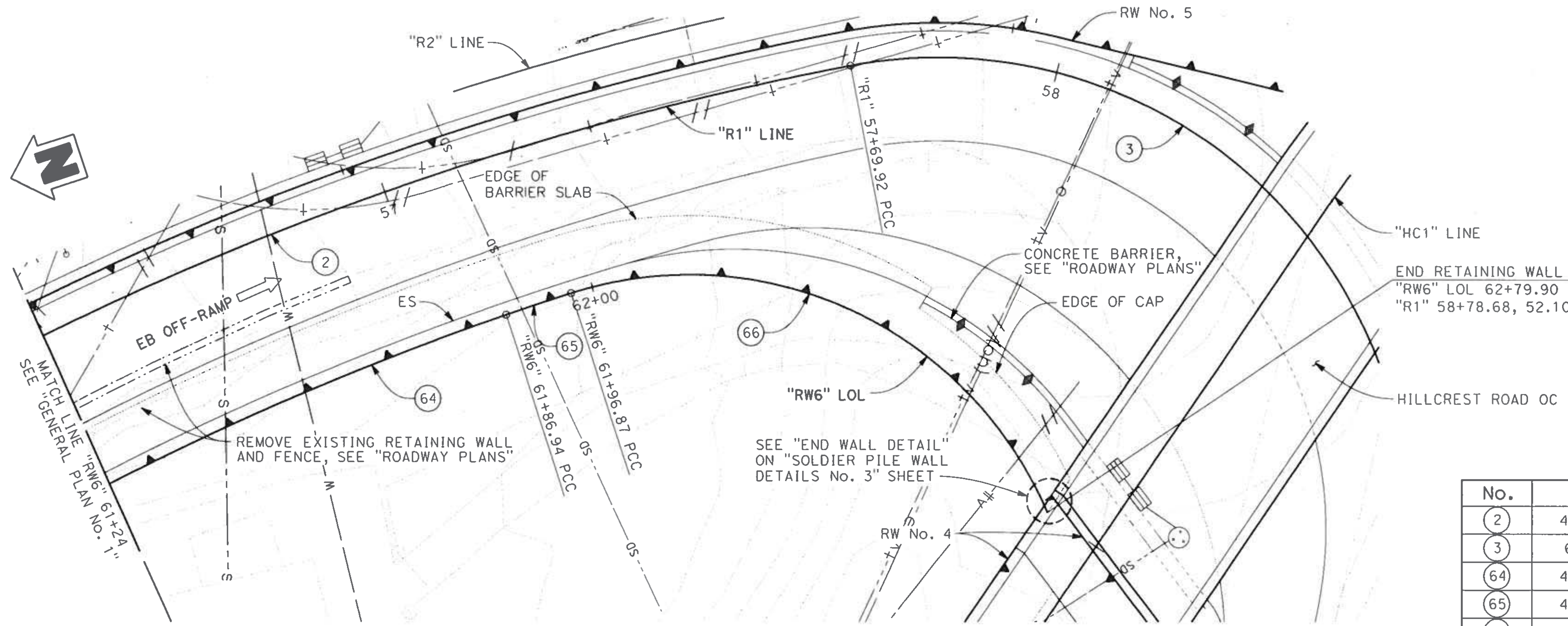
1" = 10'

LEGEND:

- Indicates existing structure
- ← Indicates direction of traffic

NOTE:

- For notes, see "GENERAL PLAN No. 1" sheet.



PLAN

1" = 10'

CURVE DATA

No.	R	Δ	T	L
2	464.54'	21°07'12"	86.60'	171.23'
3	68.00'	120°37'22"	119.27'	143.16'
64	440.50'	22°54'04"	89.22'	176.07'
65	440.50'	01°17'28"	4.96'	9.93'
66	56.29'	84°31'06"	51.15'	83.03'

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

DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN BY K. SERRANO-PAINE	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA
QUANTITIES BY A. ROMINGER	CHECKED A. CHUNG	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
GENERAL PLAN No. 2

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)


ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-15 11-11-16 2-21-19 7-25-19	98	168

USERNAME => svc_in_pw&MET&PLOTTER => 22-OCT-2019 TIME PLOTTED => 16:13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	348	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th edition with the California Amendments, January 2014

LIVE LOAD: 240 psf

SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
 Unit Weight, $\gamma = 120$ pcf
 Friction Angle, $\phi = 34$ degrees
 Active Pressure Coefficient, $K_a = 0.28$
 Passive Pressure Coefficient, $K_p = 7.3$
 Seismic Coefficient, $K_h = 0.33$

CONCRETE: $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

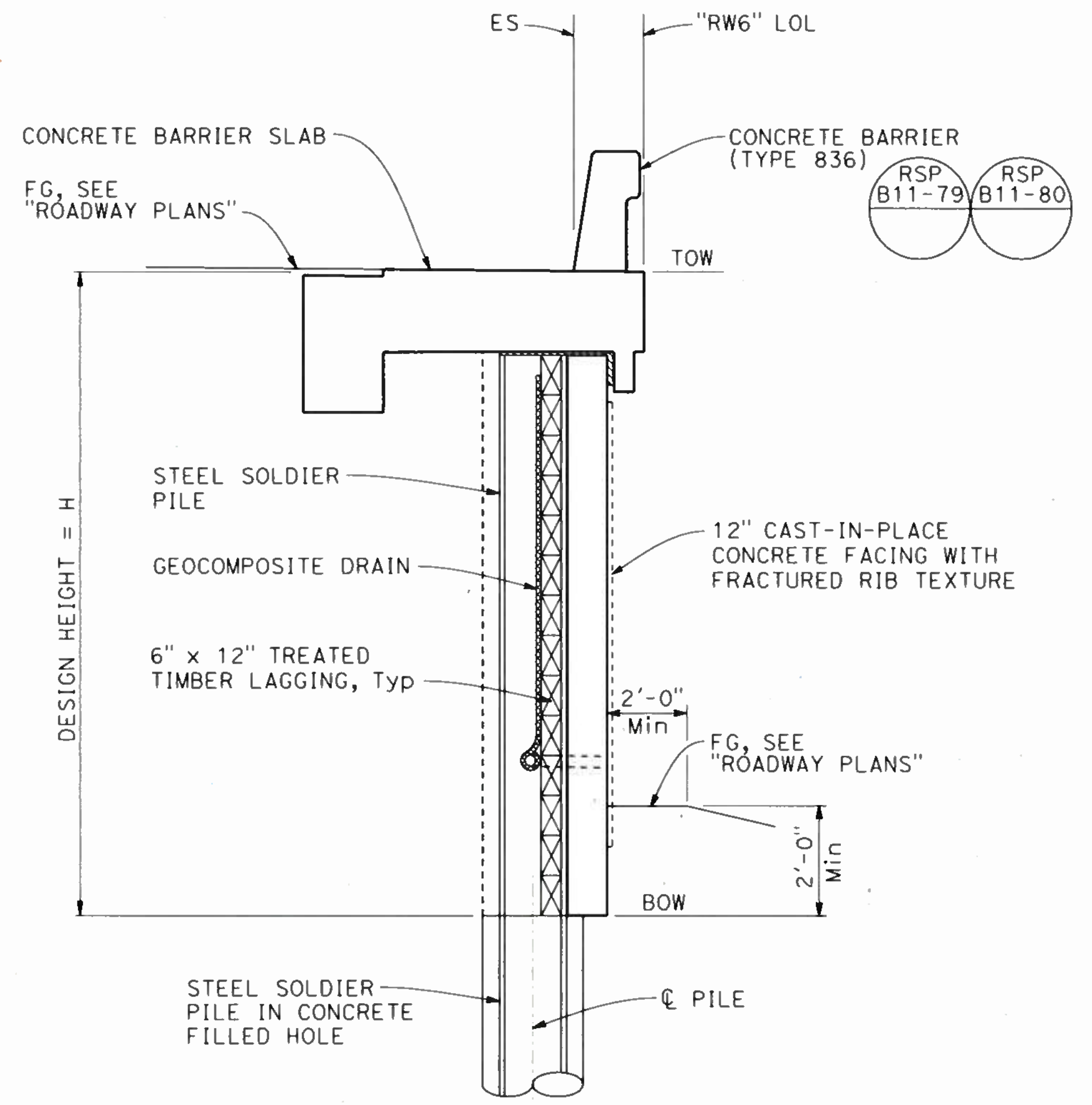
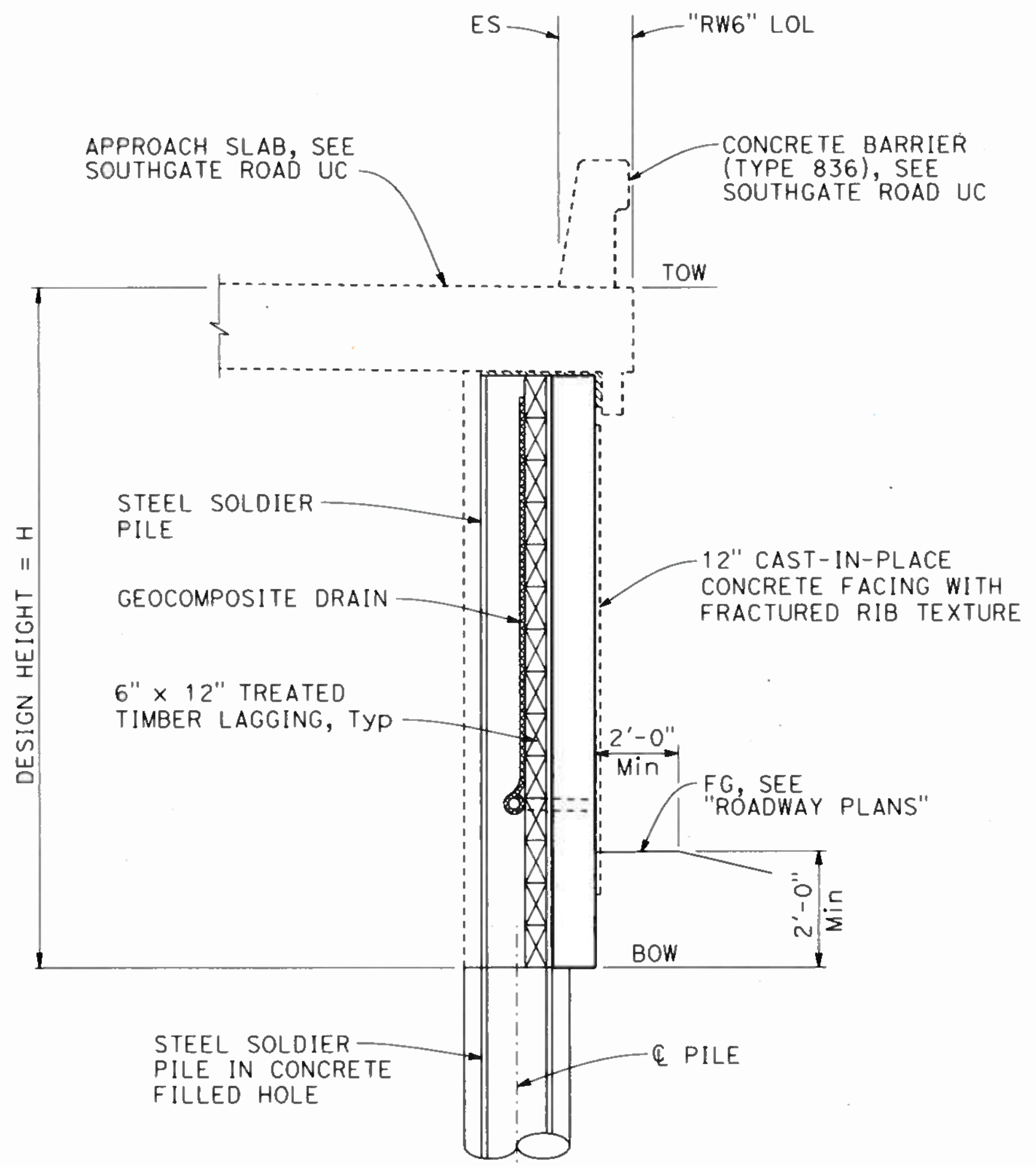
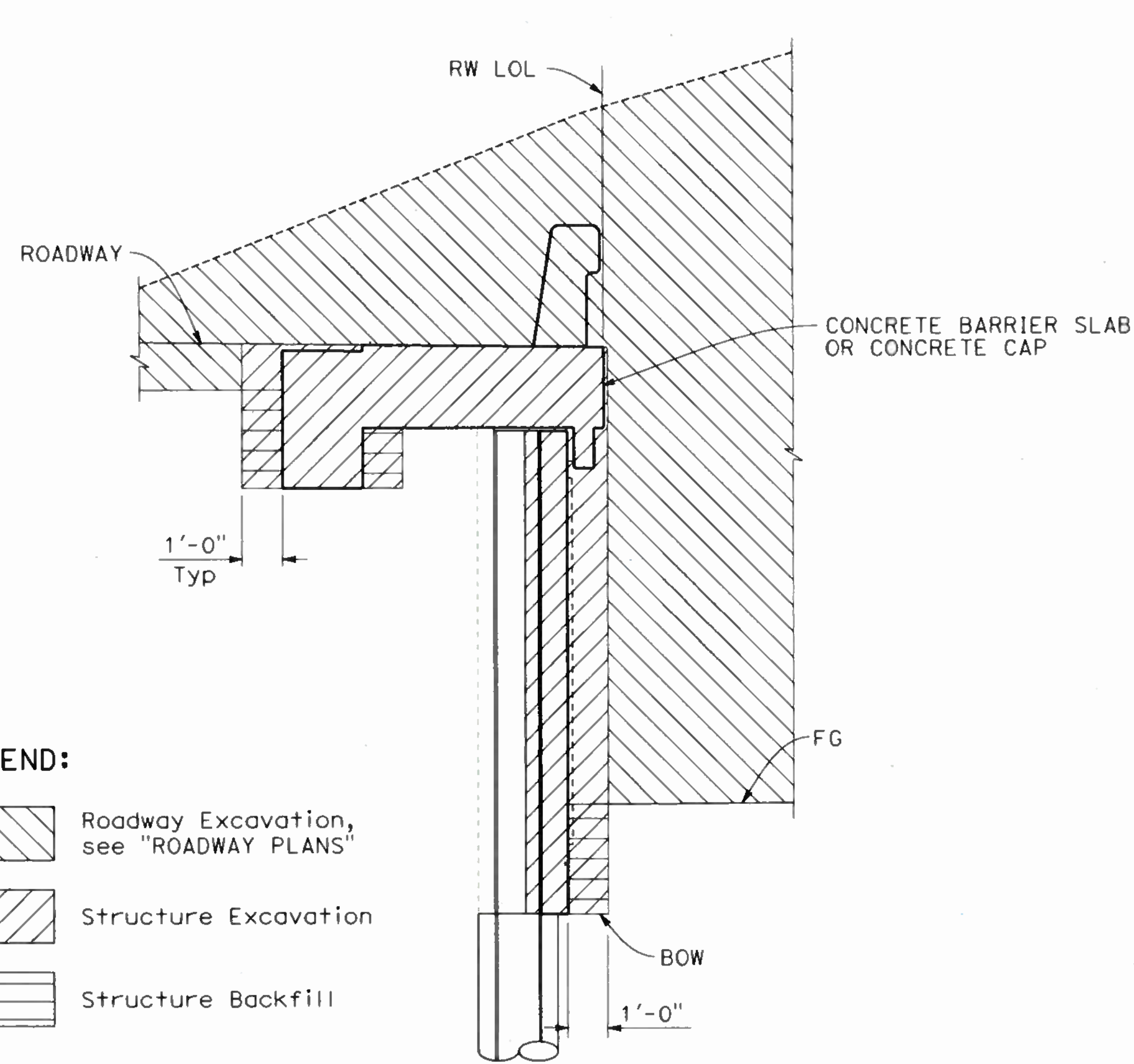
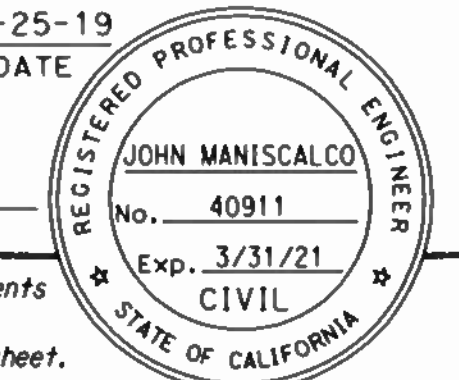
STRUCTURAL STEEL: ASTM A992 ($f_y = 50$ ksi, $f_u = 65$ ksi)

WELDED STUD: ASTM A29 Type B

STRUCTURAL TIMBER: Treated Douglas Fir, Grade No. 1 or better Timber to be full sawn

NOTES:

- For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- For barrier slab details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.

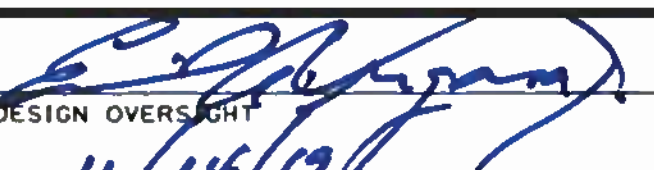


LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL
NO SCALE

TYPICAL SECTION AT APPROACH SLAB
3/8" = 1'-0"
"RW6" 60+00 TO 60+09.80

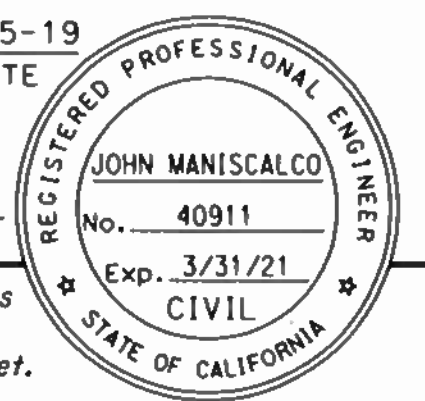
TYPICAL SECTION
3/8" = 1'-0"
"RW6" 60+09.80 TO 61+96.75

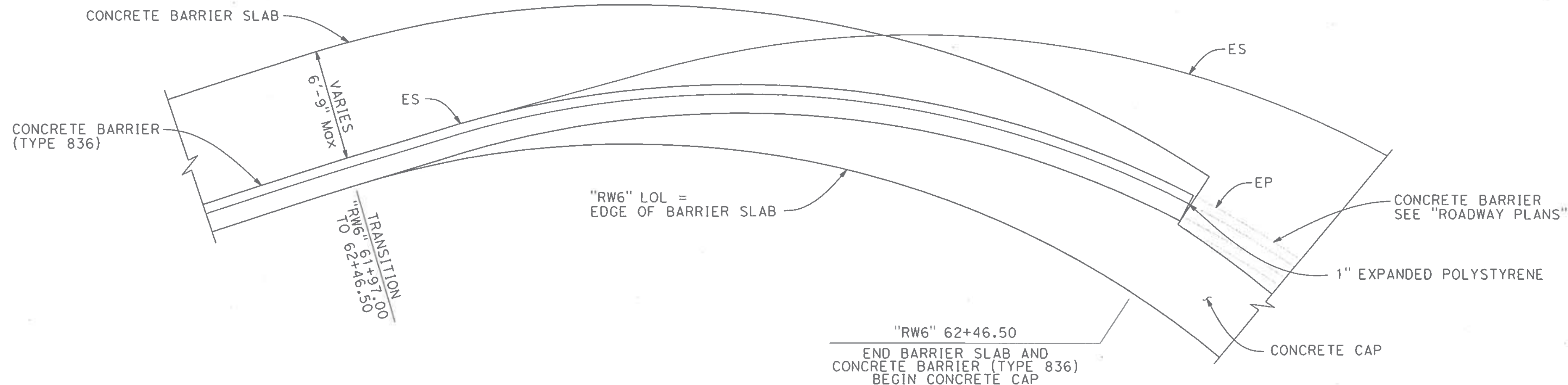
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT  SIGN OFF DATE 11/14/19	DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY" PERMIT DESIGN VEHICLE
	DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT	BY K. SERRANO-PAINE
	QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG	SPECIFICATIONS	BY T. MEHTA

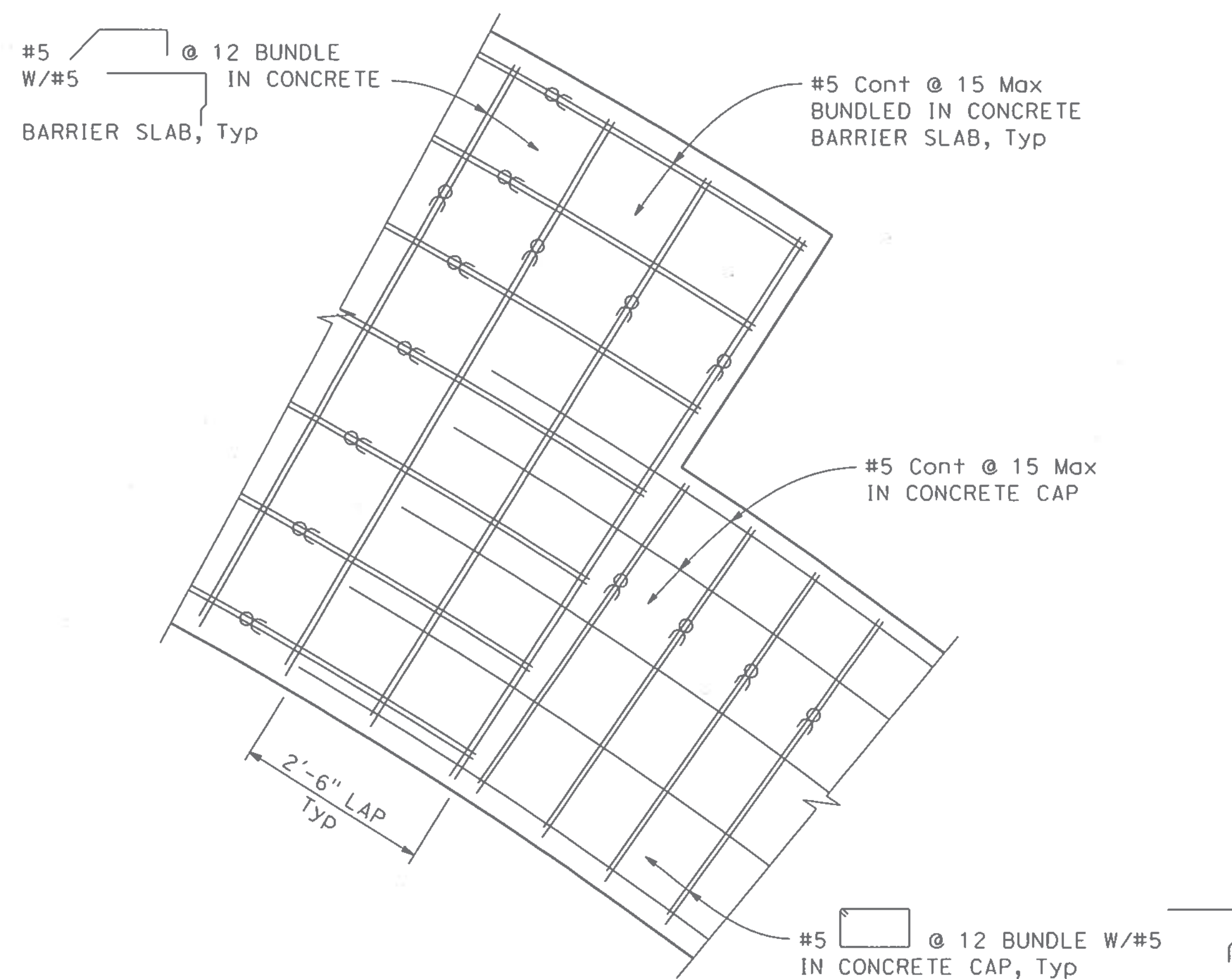
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	34E0035
	PROJECT ENGINEER	JOHN MANISCALCO
	POST MILES	7.9

RETAINING WALL No. 6	
GENERAL PLAN No. 3	

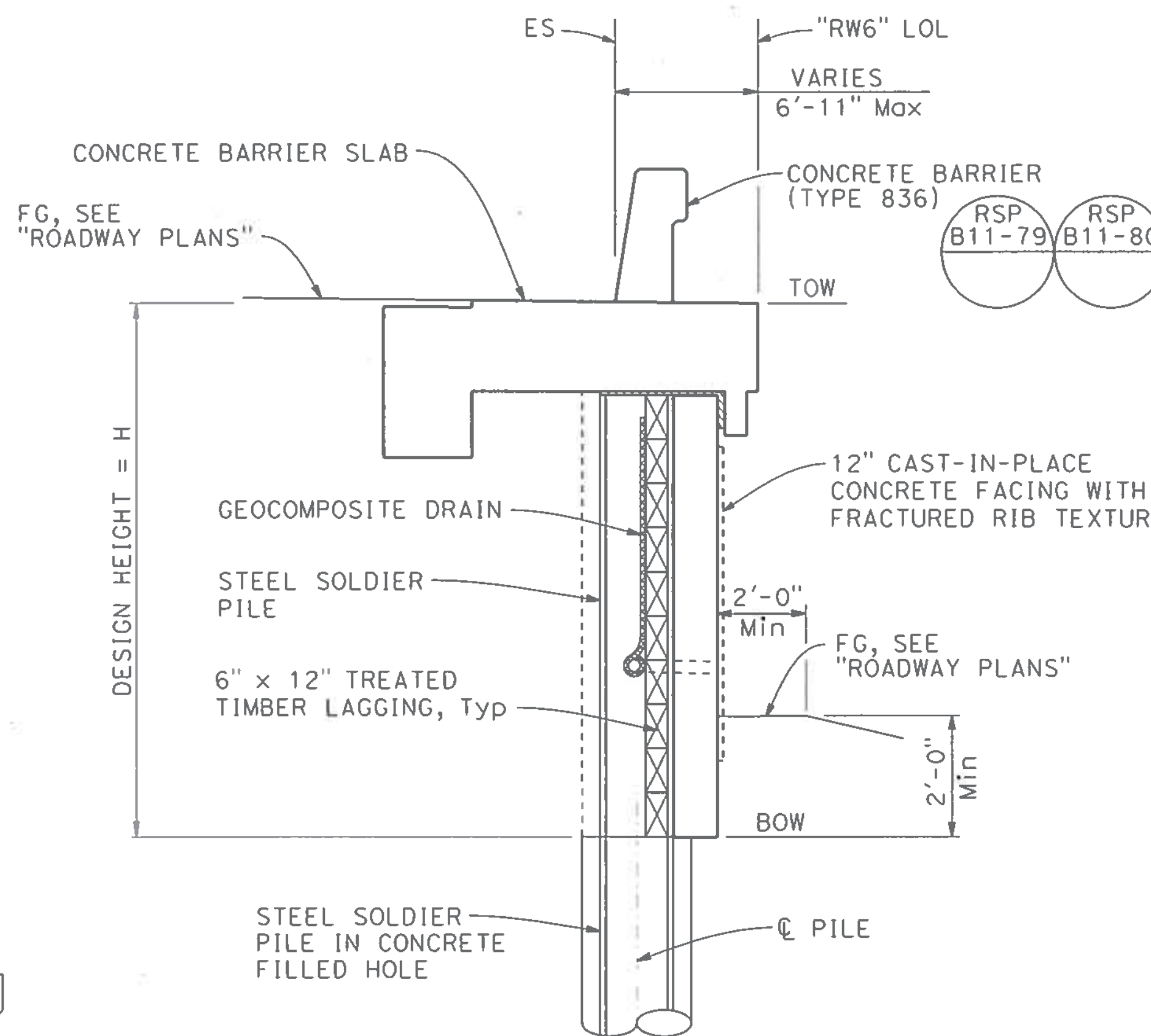
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	349	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



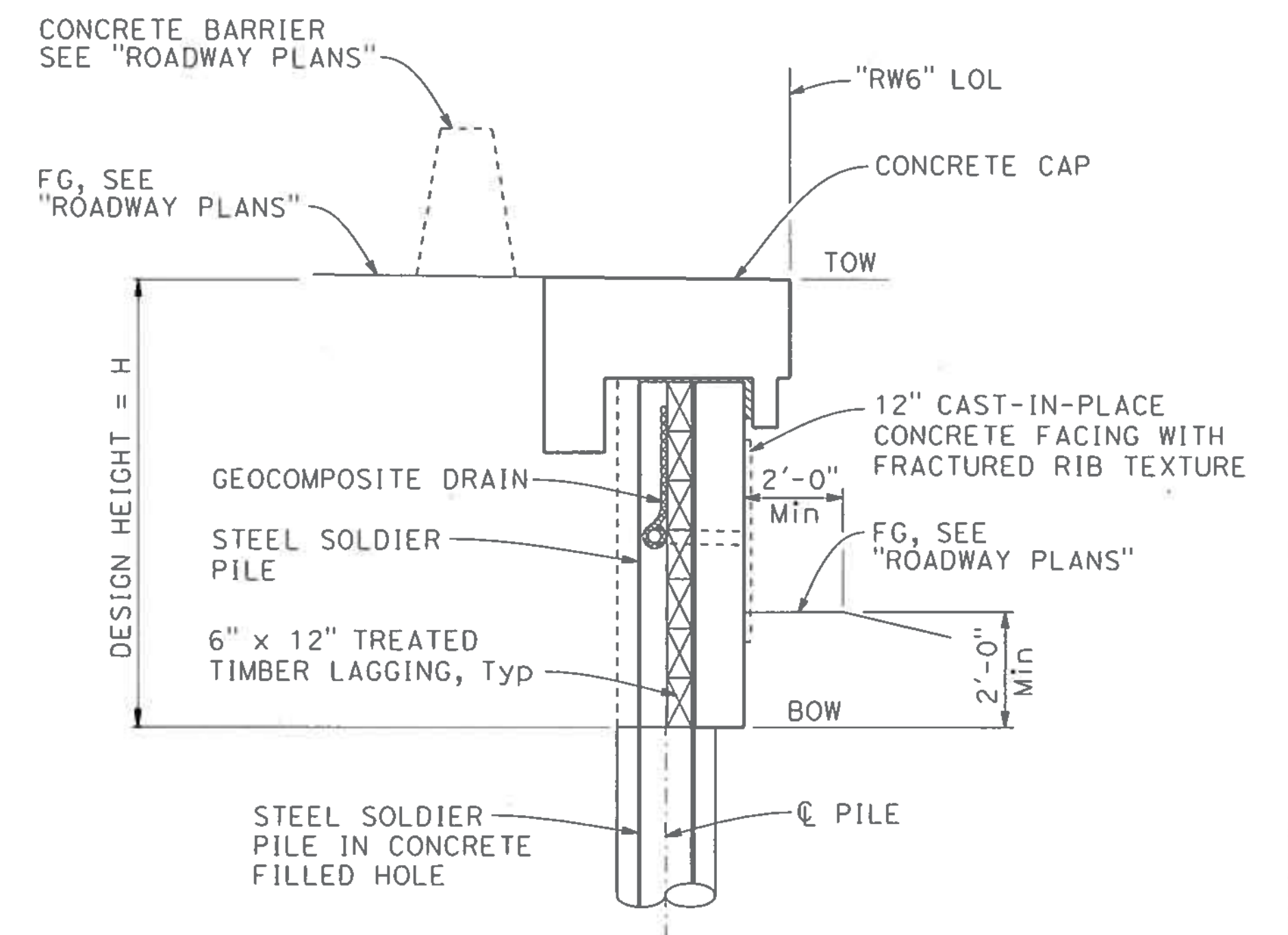
PARTIAL PLAN
1/4" = 1'-0"



CONCRETE CAP TRANSITION DETAIL
3/4" = 1'-0"



TYPICAL SECTION
3/8" = 1'-0"
"RW6" 61+96.75 TO 62+46.50




TYPICAL SECTION
3/8" = 1'-0"
"RW6" 62+46.50 TO 62+79.90

NOTES:

1. For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
2. For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
3. For barrier slab and cap details, see "CONCRETE BARRIER SLAB DETAILS" sheet.
4. For Fractured Rib texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.

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

DESIGN OVERSIGHT

 11/14/19
 SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

LOAD & RESISTANCE FACTOR DESIGN	BY K. SERRANO-PAINE	CHECKED T. MEHTA
LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	BY T. MEHTA	CHECKED M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	34E0035
POST MILES	7.9

PROJECT ENGINEER	JOHN MANISCALCO
------------------	-----------------

RETAINING WALL No. 6
GENERAL PLAN No. 4

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414


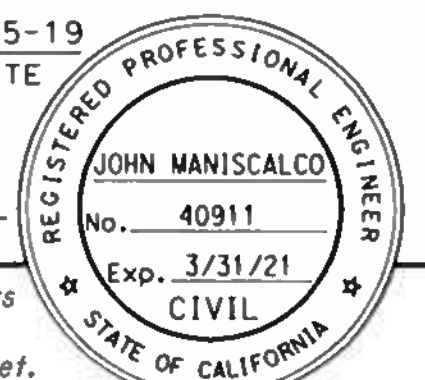
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-17-19 2-21-19 7-28-19	100	168

FILE => RW6-a-gp04.dgn

USERNAME => svc_in_pwsubmit.plotted => 22-OCT-2019 TIME PLOTTED => 16:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	350	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE


SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

UTILITIES:

- 1 Existing Abandoned Television
- 2 Existing Gas to be Abandoned
- 3 Existing Abandoned Fiber Optic
- 4 Existing Abandoned Water
- 5 Existing Storm Drain to be Abandoned
- 6 Existing Overhead Electrical to be removed
- 7 Existing Electrical to be Abandoned
- 8 Existing Abandoned Telephone
- 9 Existing Water to be Abandoned
- 10 Existing Sewer to be Abandoned
- 11 Storm Drain

LEGEND:

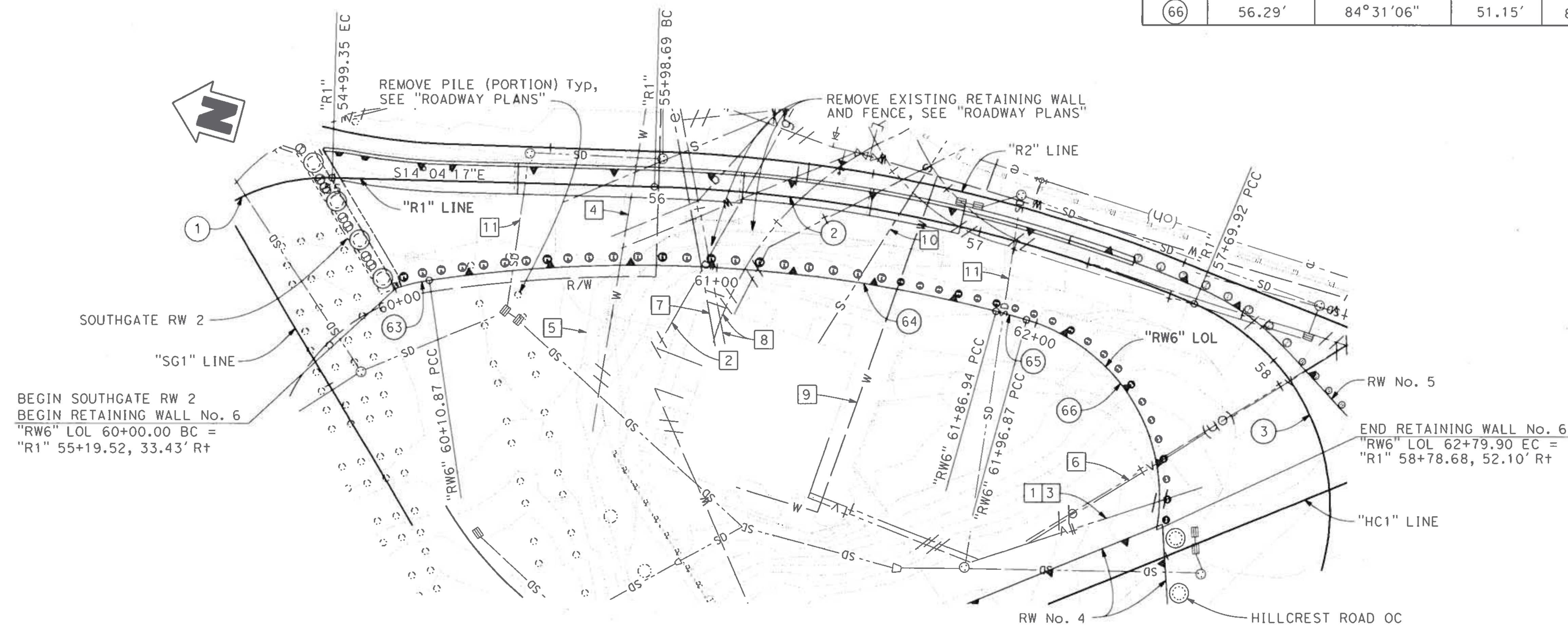
- Indicates existing structure
- ⊙ Indicates Steel Soldier Pile
- Indicates CIDH Pile

NOTES:

- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
- For drainage details, see "DRAINAGE PLANS".

CURVE DATA

No.	R	Δ	T	L
1	60.78'	119°32'34"	104.31'	126.81'
2	464.54'	21°07'12"	86.60'	171.23'
3	68.00'	120°37'22"	119.27'	143.16'
63	60.50'	10°17'55"	5.45'	10.87'
64	440.50'	22°54'04"	89.22'	176.07'
65	440.50'	01°17'28"	4.96'	9.93'
66	56.29'	84°31'06"	51.15'	83.03'



BEGIN SOUTHGATE RW 2
 BEGIN RETAINING WALL No. 6
 "RW6" LOL 60+00.00 BC =
 "R1" 55+19.52, 33.43' Rt

END RETAINING WALL No. 6
 "RW6" LOL 62+79.90 EC =
 "R1" 58+78.68, 52.10' Rt

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

5-17-19
 GEOTECHNICAL PROFESSIONAL APPROVAL DATE

SCALE: 1" = 20' VERT. DATUM NGVD29 HORZ. DATUM NAD83, CCS ZONE 3	DESIGN BY K. SERRANO-PAINE CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0035 POST MILES 7.9	RETAINING WALL No. 6 FOUNDATION PLAN	
PHOTOGRAMMETRY AS OF: 10-9-2015 ALIGNMENT TIES	DETAILS BY L. DAVIS CHECKED K. SERRANO-PAINE		JOHN MANISCALCO PROJECT ENGINEER		
SURVEYED BY TOWILL Inc. DRAFTED BY D. ORTEGA	QUANTITIES BY A. ROMINGER CHECKED A. CHUNG		UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414		
SIGN OFF DATE 11/14/19	FIELD CHECKED BY D. ORTEGA CHECKED BY A. MARTINEZ	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 10-22-19, 11-12-19, 2-21-19, 1-28-19	SHEET 101 OF 168

TIME PLOTTED => 16:12
 USERNAME => svc_itl_dwgsapfe (PLOTTED => 22-OCT-2019)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	351	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

SOLDIER PILE TABLE

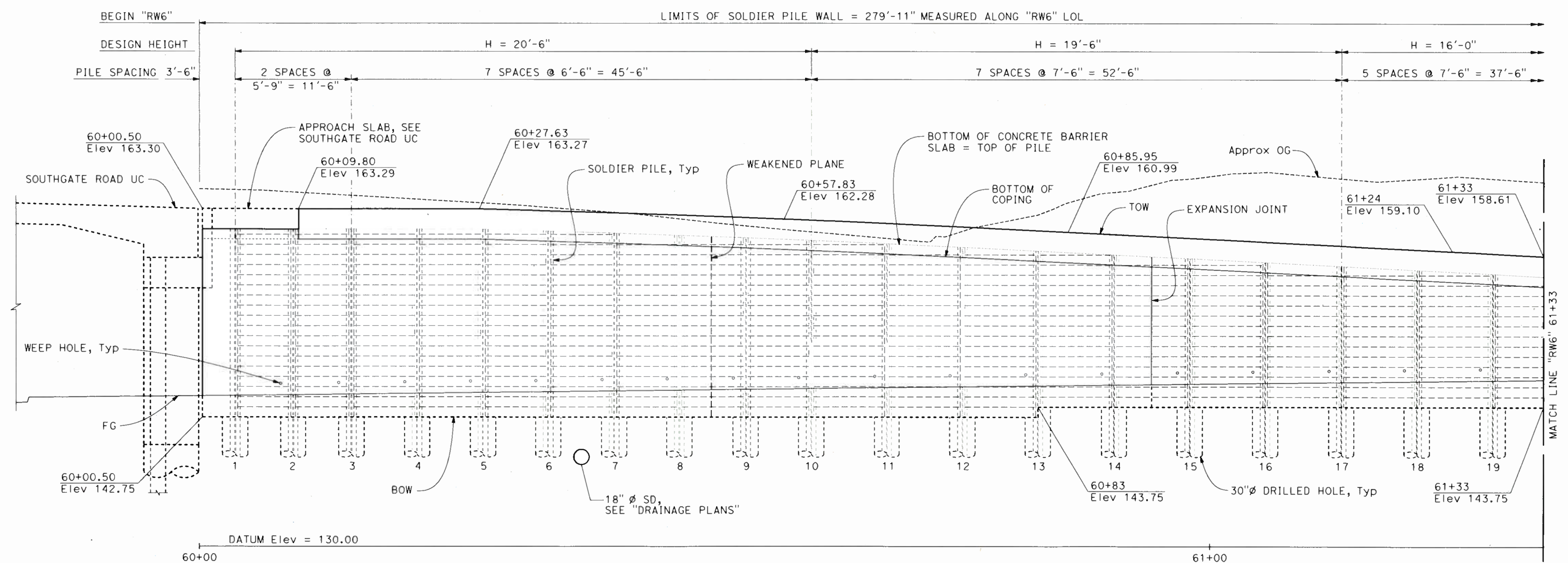
PILE NUMBER	"RW6" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
1	60+03.50	163.30	161.30	124.75	W18x258
2	60+09.25	163.29	161.29	124.75	W18x258
3	60+15.00	163.28	161.28	124.75	W18x258
4	60+21.50	163.28	161.28	124.75	W18x258
5	60+28.00	163.27	161.27	124.75	W18x258
6	60+34.50	163.10	161.10	124.75	W18x258
7	60+41.00	163.09	161.09	124.75	W18x258
8	60+47.50	162.68	160.68	124.75	W18x258
9	60+54.00	162.45	160.45	124.75	W18x258

SOLDIER PILE TABLE

PILE NUMBER	"RW6" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
10	60+60.50	162.18	160.18	124.75	W18x258
11	60+68.00	161.86	159.86	125.75	W18x211
12	60+75.50	161.52	159.52	125.75	W18x211
13	60+83.00	161.16	159.16	125.75	W18x211
14	60+90.50	160.78	158.78	126.75	W18x211
15	60+98.00	160.41	158.41	126.75	W18x211
16	61+05.50	160.04	158.04	126.75	W18x211
17	61+13.00	159.67	157.67	128.75	W18x158
18	61+20.50	159.30	157.30	128.75	W18x158
19	61+28.00	158.92	156.92	128.75	W18x158

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 4" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- Concrete barrier not shown for clarity.



DEVELOPED ELEVATION

1" = 5'

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

DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
SOLDIER PILE WALL LAYOUT No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-24-19	102	168

FILE => RW6-f-spw_1o01.dgn

USERNAME => SVC_ID_PWSBATE (PLOTTED => 22-OCT-2019 TIME PLOTTED => 16:12)

SOLDIER PILE TABLE

PILE NUMBER	"RW6" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
20	61+35.50	158.49	156.49	128.75	W18x158
21	61+43.00	158.06	156.06	128.75	W18x158
22	61+50.50	157.62	155.62	128.75	W18x158
23	61+56.50	157.27	155.27	128.75	W18x158
24	61+62.50	156.93	154.93	133.25	W14x82
25	61+68.50	156.58	154.58	133.25	W14x82
26	61+74.50	156.23	154.23	133.25	W14x82
27	61+80.50	155.94	153.94	133.25	W14x82
28	61+86.50	155.64	153.64	133.25	W14x82
29	61+92.50	155.34	153.34	133.25	W14x82
30	61+98.50	155.04	153.04	133.25	W14x82
31	62+04.50	154.73	152.73	134.75	W14x82

SOLDIER PILE TABLE

PILE NUMBER	"RW6" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
32	62+10.50	154.41	152.41	134.75	W14x82
33	62+16.50	154.10	152.10	134.75	W14x82
34	62+22.50	153.77	151.77	134.75	W14x82
35	62+28.50	153.43	151.43	134.75	W14x82
36	62+34.50	153.09	151.09	134.75	W14x82
37	62+40.50	152.73	150.73	134.75	W14x82
38	62+46.50	152.26	150.26	134.75	W14x82
39	62+52.50	151.80	149.80	138.75	W14x82
40	62+58.50	151.36	149.36	138.75	W14x82
41	62+64.50	150.99	148.99	138.75	W14x82
42	62+70.50	150.69	148.69	138.75	W14x82
43	62+76.50	150.50	148.50	138.75	W14x82

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 4" sheets.
- For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
- Concrete barrier not shown for clarity.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	352	436

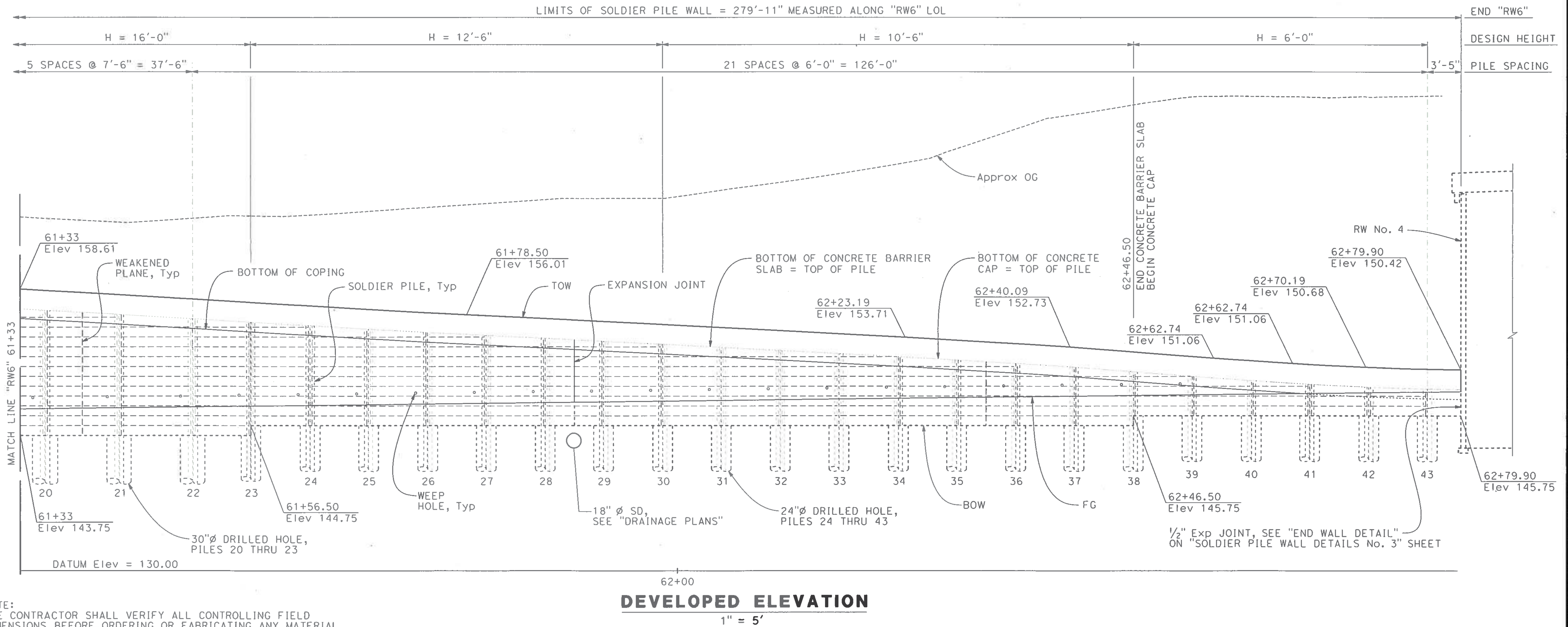
REGISTERED CIVIL ENGINEER
DATE 7-25-19
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



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

DESIGN OVERSIGHT
SIGN OFF DATE 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
SOLDIER PILE WALL LAYOUT No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

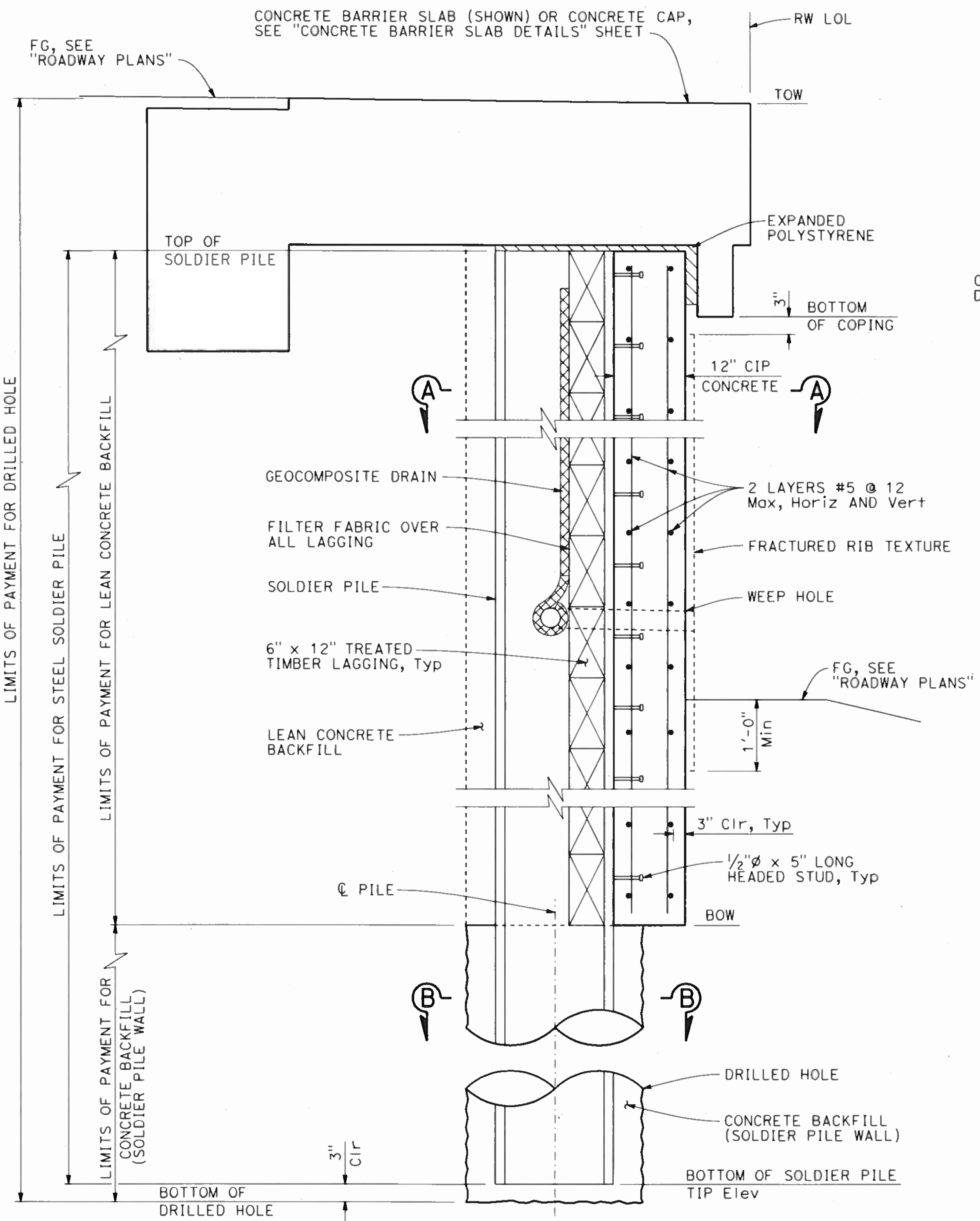
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-24-20	103	168

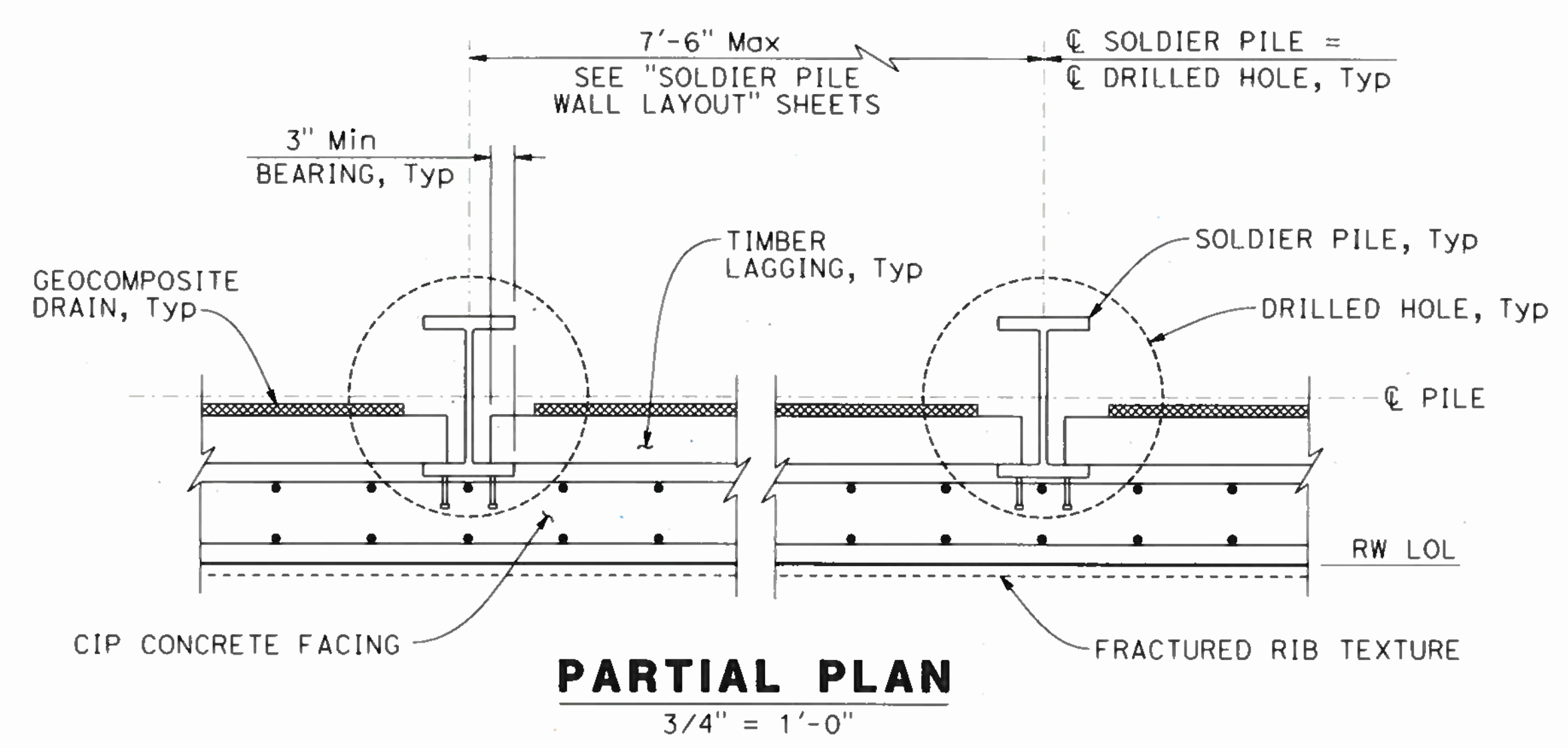
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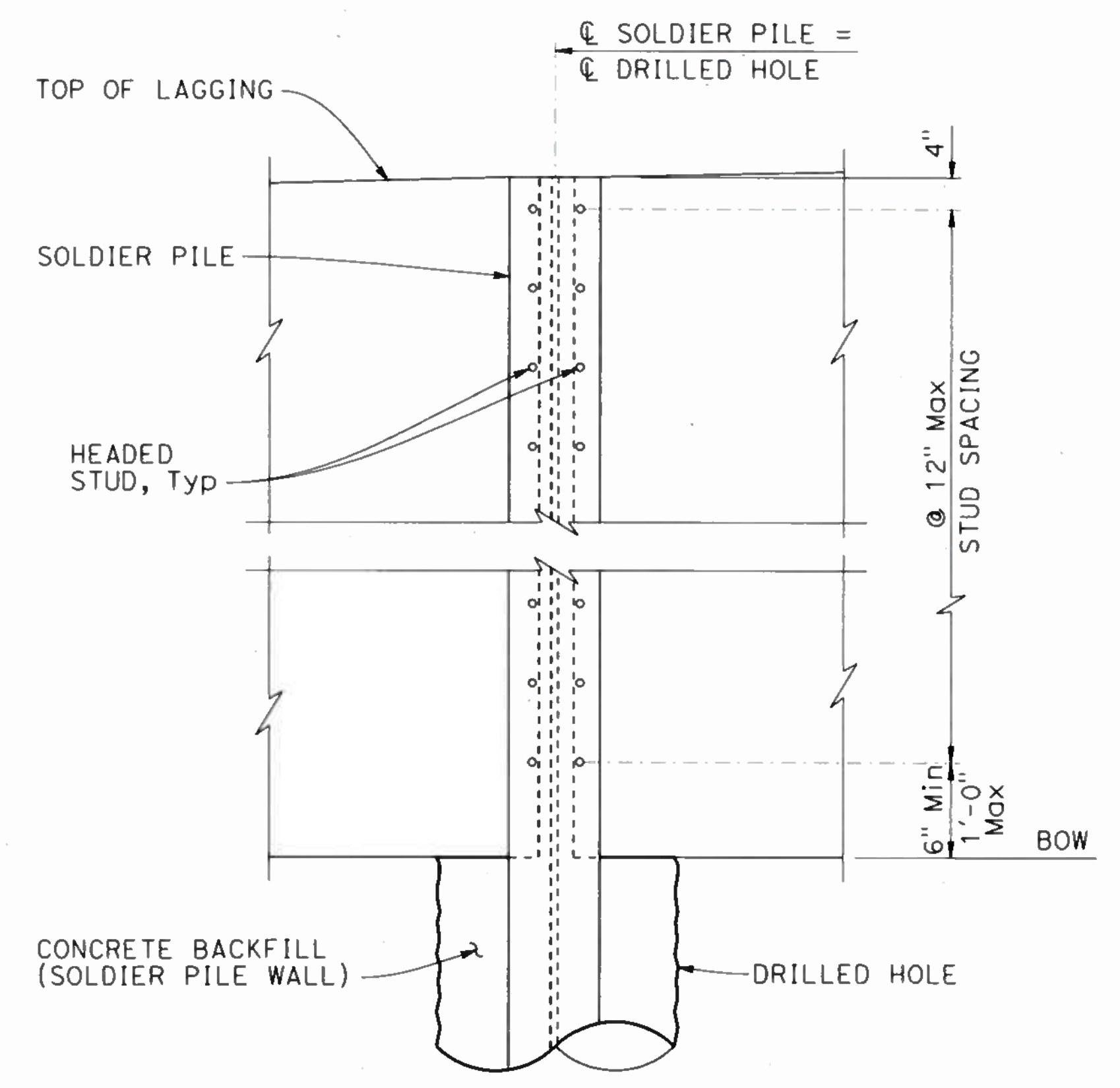
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04	SF	80	7.8/8.0	353	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



SOLDIER PILE WALL SECTION
1" = 1'-0"



PARTIAL PLAN
3/4" = 1'-0"



PARTIAL ELEVATION
3/4" = 1'-0"

- NOTES:**
1. For "SECTION A-A" and "SECTION B-B", see "SOLDIER PILE WALL DETAILS No. 2" sheet.
 2. For timber lagging details, see "SOLDIER PILE WALL DETAILS No. 3" sheet.
 3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.
 4. For limits, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.

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

DESIGN OVERSIGHT
SIGN OFF DATE: 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
SOLDIER PILE WALL DETAILS No. 1

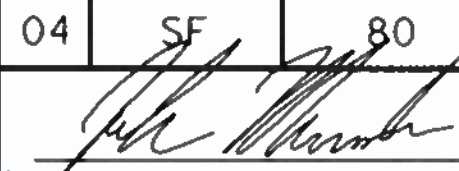
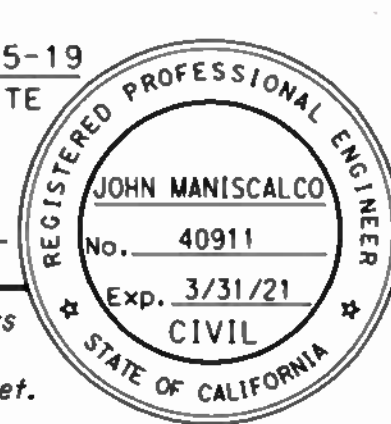
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

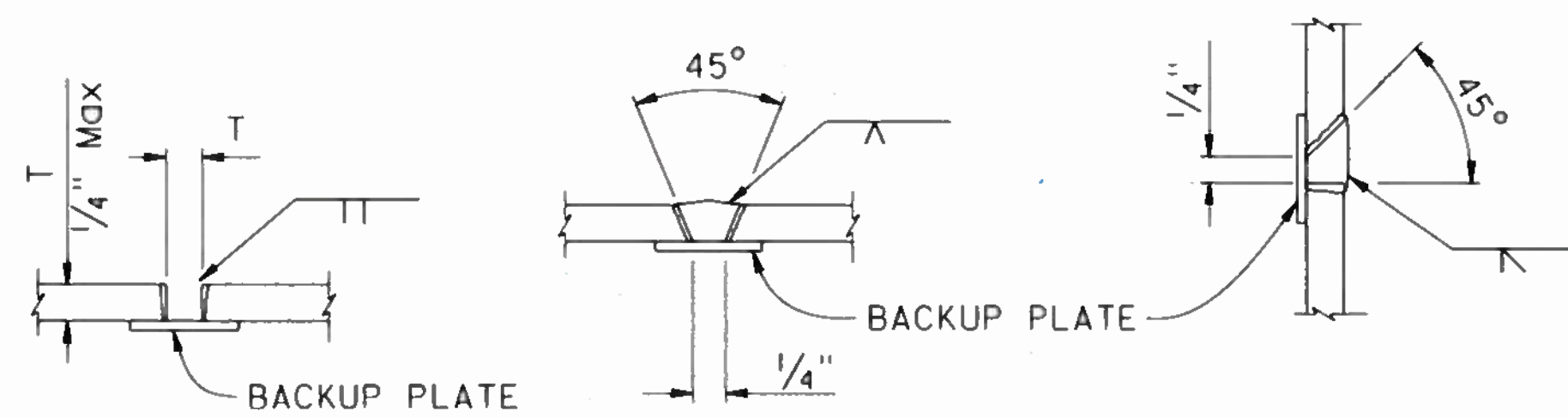
DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

1. Single vee-groove and square groove permitted for all positions.
2. Single bevel-groove permitted for horizontal joints only.
3. Repair damage areas of paint after anchor installation.



SQUARE GROOVE SINGLE VEE-GROOVE SINGLE BEVEL-GROOVE

PILE WELDING DETAIL-BUTT JOINTS

NO SCALE

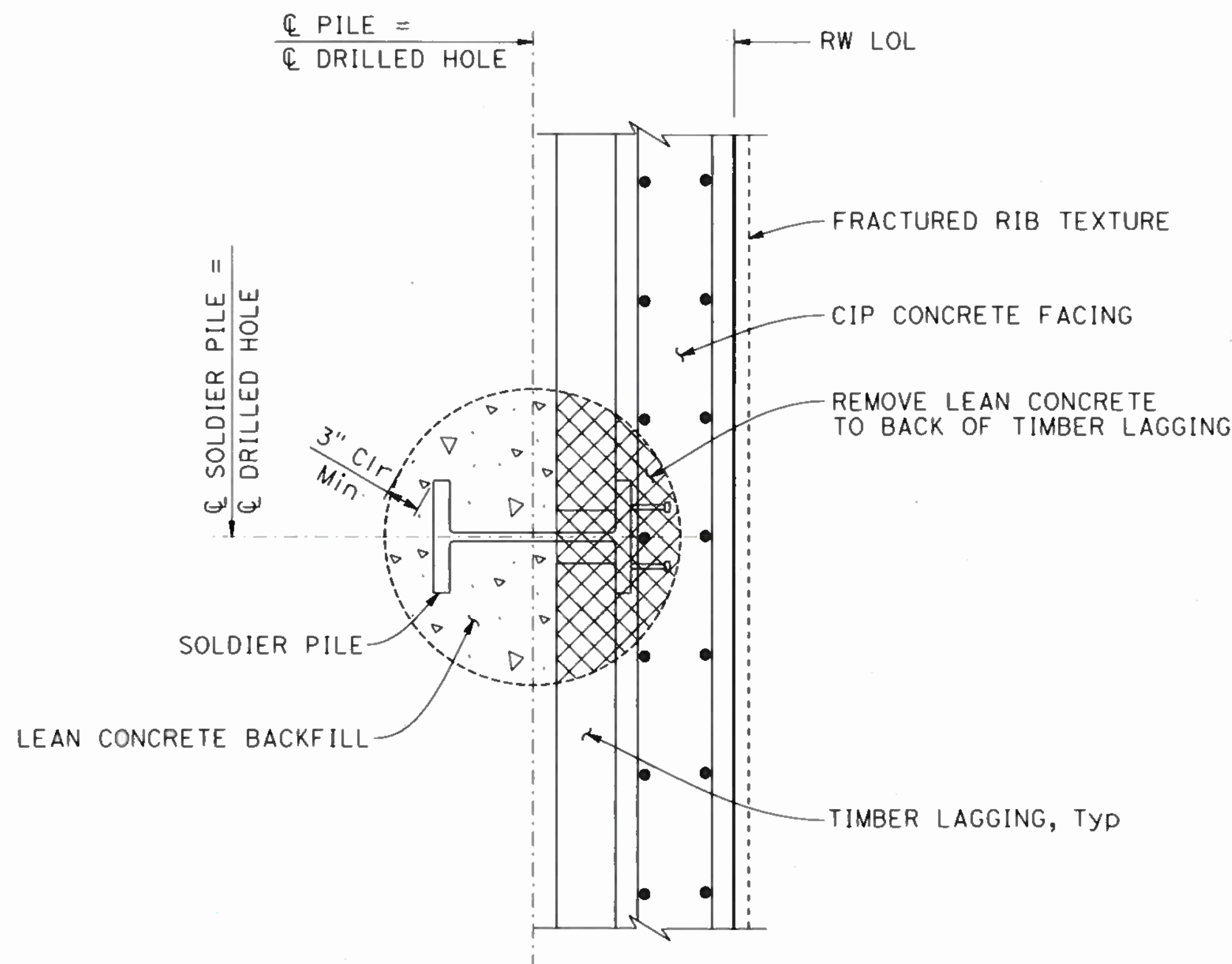
UNDERCOAT ON ALL PILE SURFACES AND HEADED STUDS



NOTE: CLEAN AND PAINT STEEL SOLDIER PILE FROM TOP OF PILE TO 5'-0" BELOW BOTTOM OF TIMBER LAGGING.

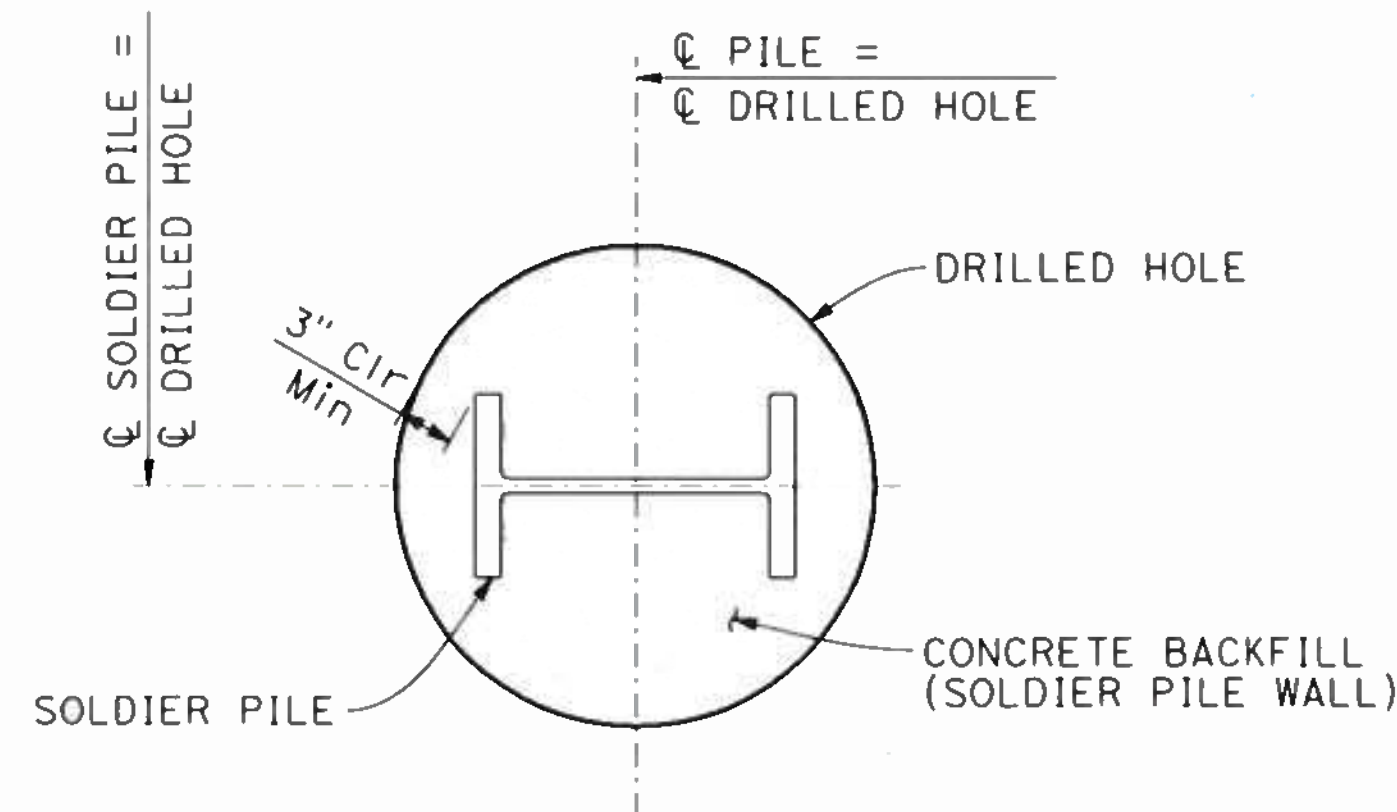
LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE

NO SCALE



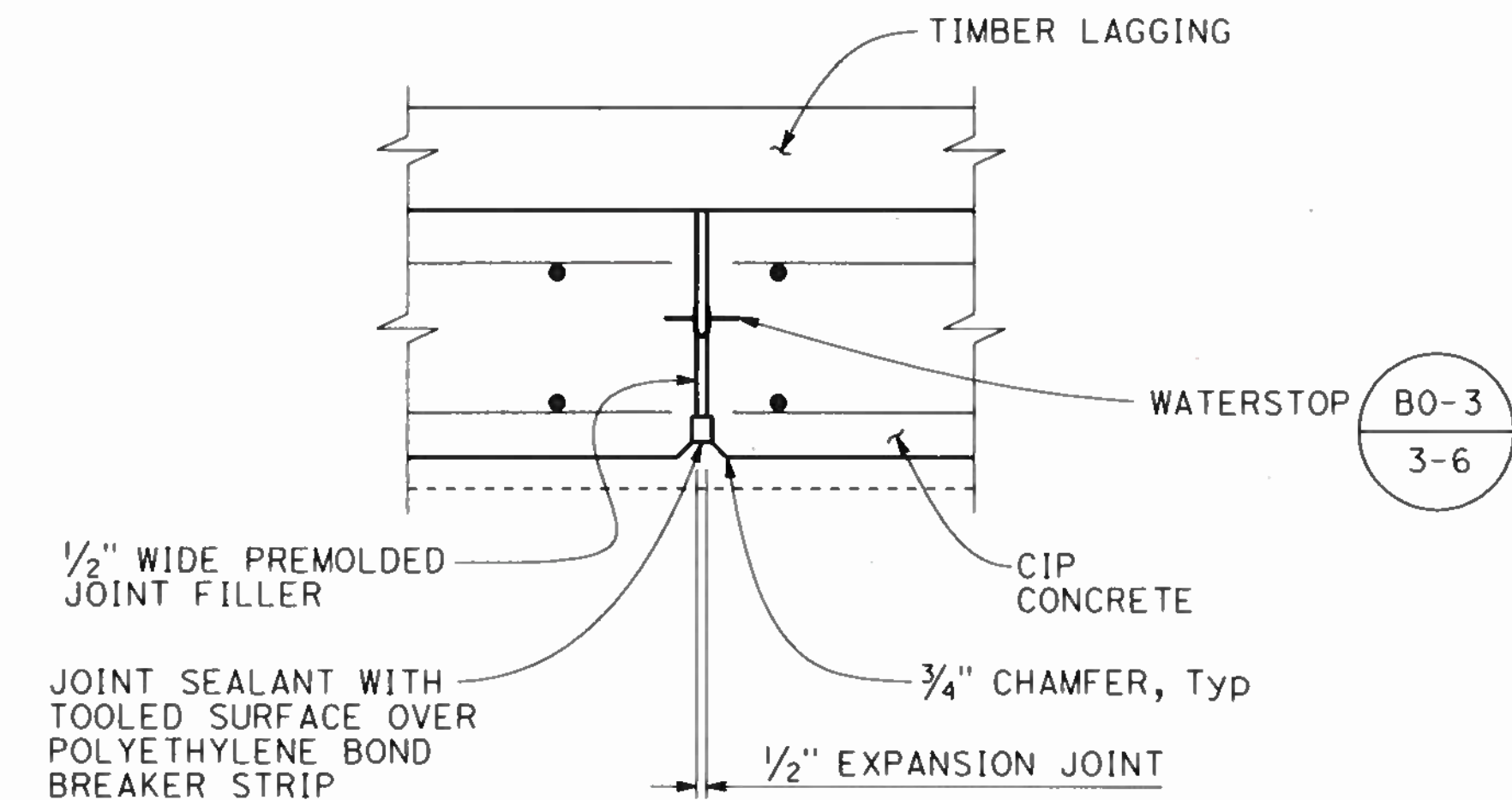
SECTION A-A

1" = 1'-0"



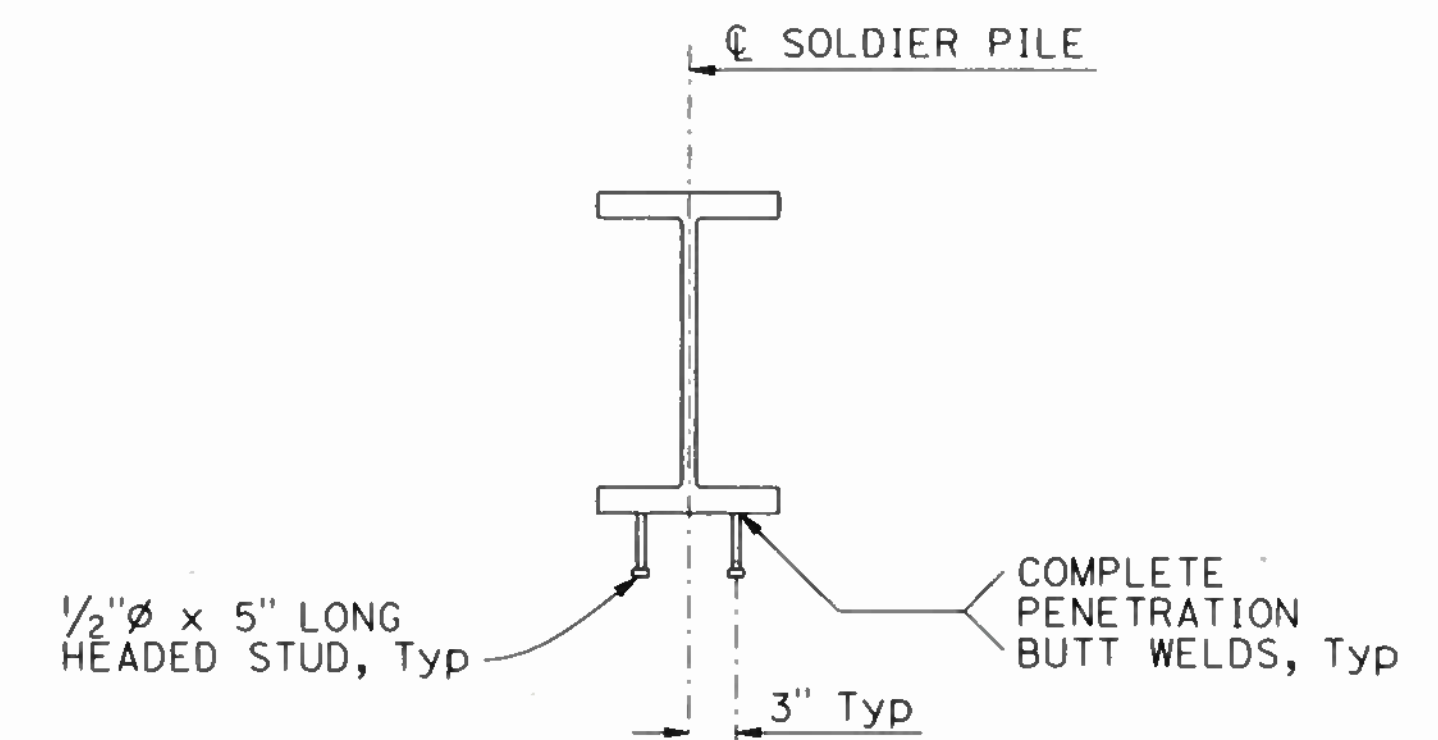
SECTION B-B

1" = 1'-0"



EXPANSION JOINT DETAIL


1 1/2" = 1'-0"



HEADED STUD DETAIL

NO SCALE

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

DESIGN OVERSIGHT

 SIGN OFF DATE: 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
SOLDIER PILE WALL DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

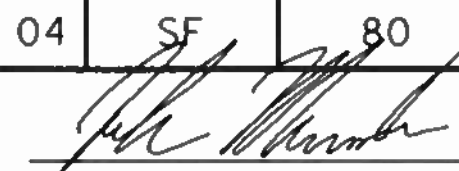
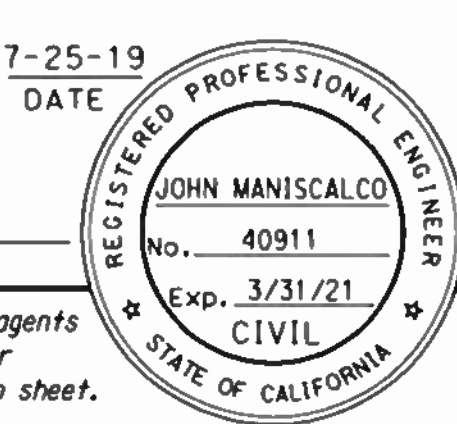
CONTRACT NO.: 04-3A6414

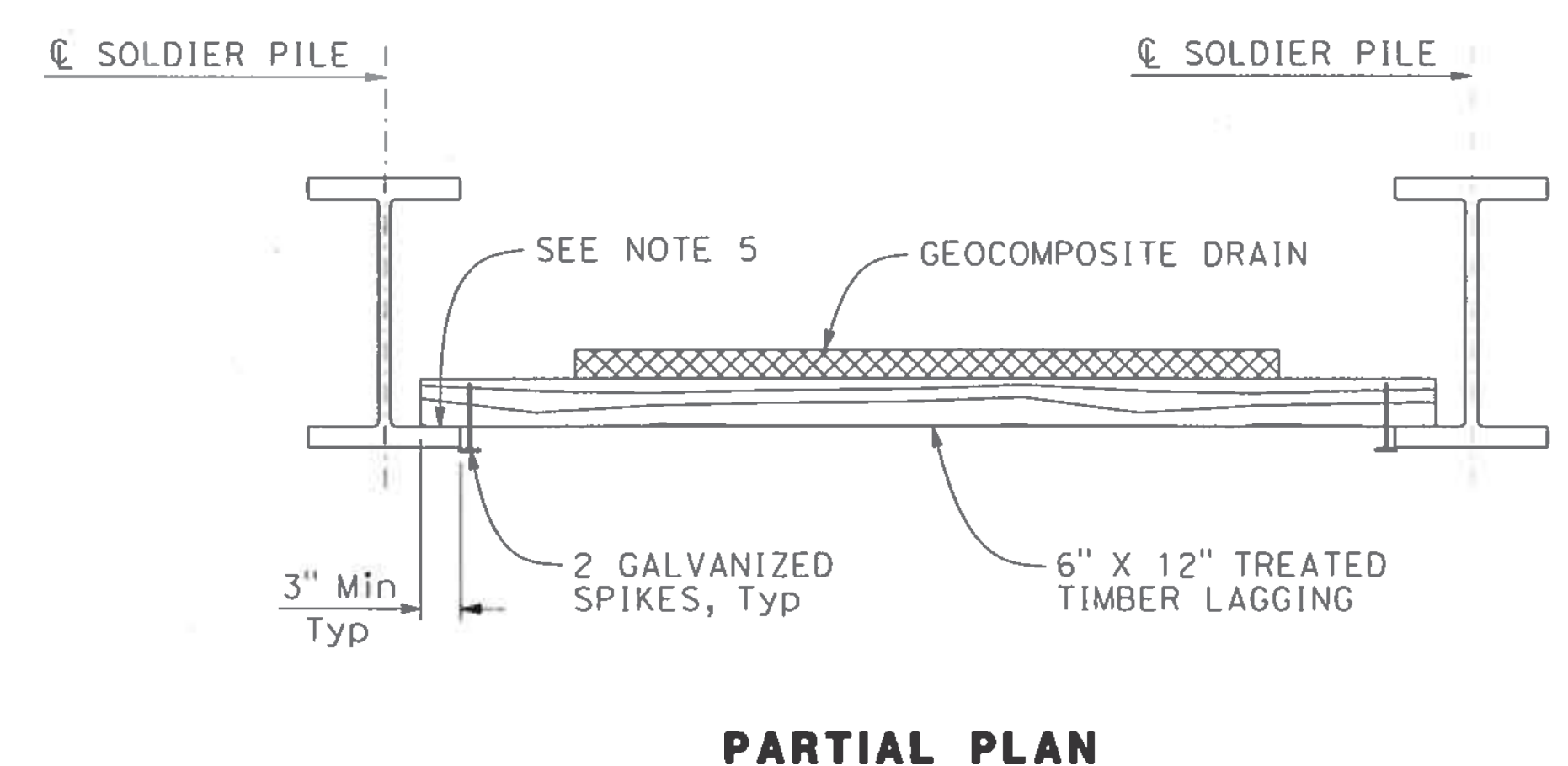
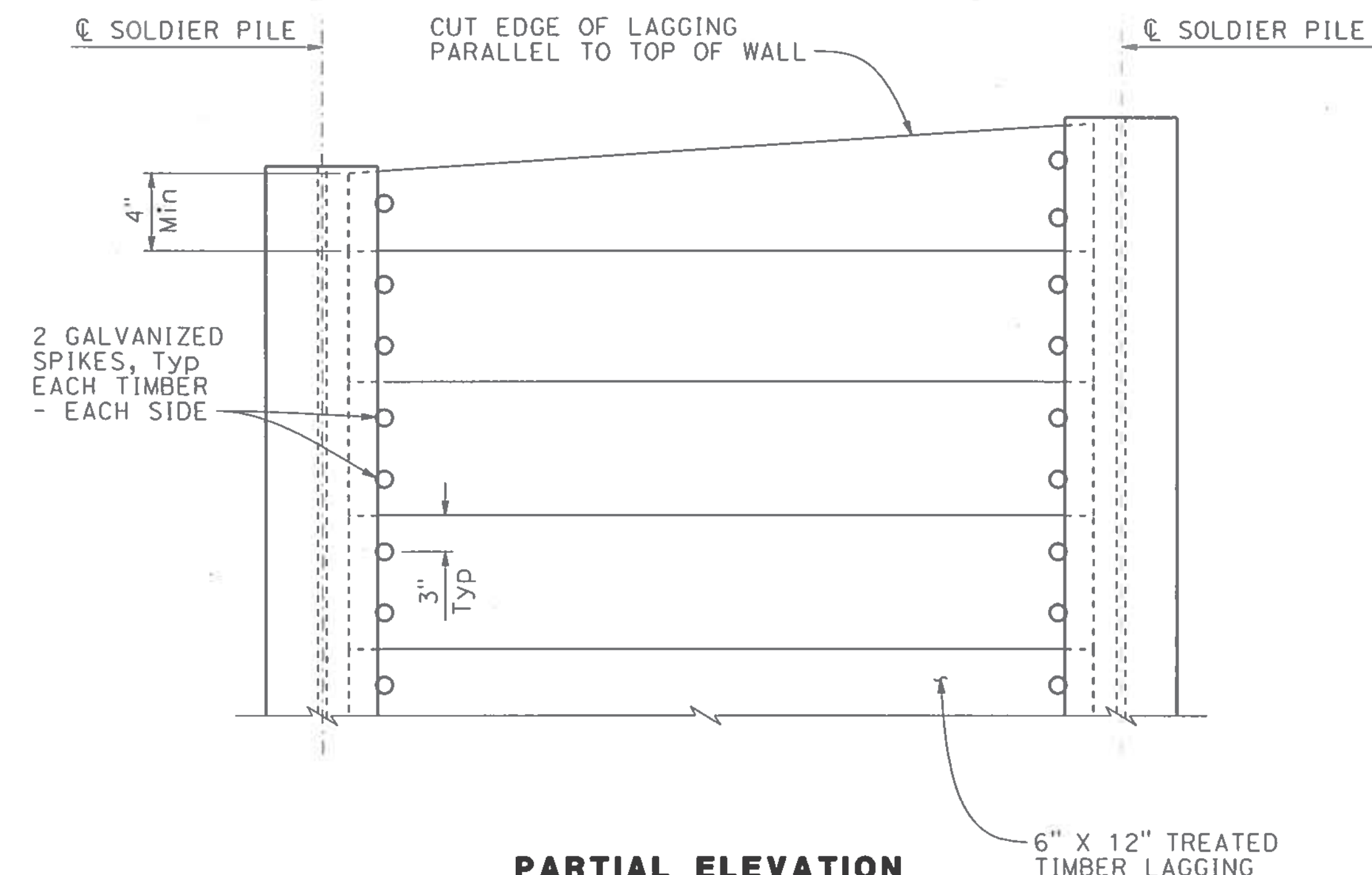
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
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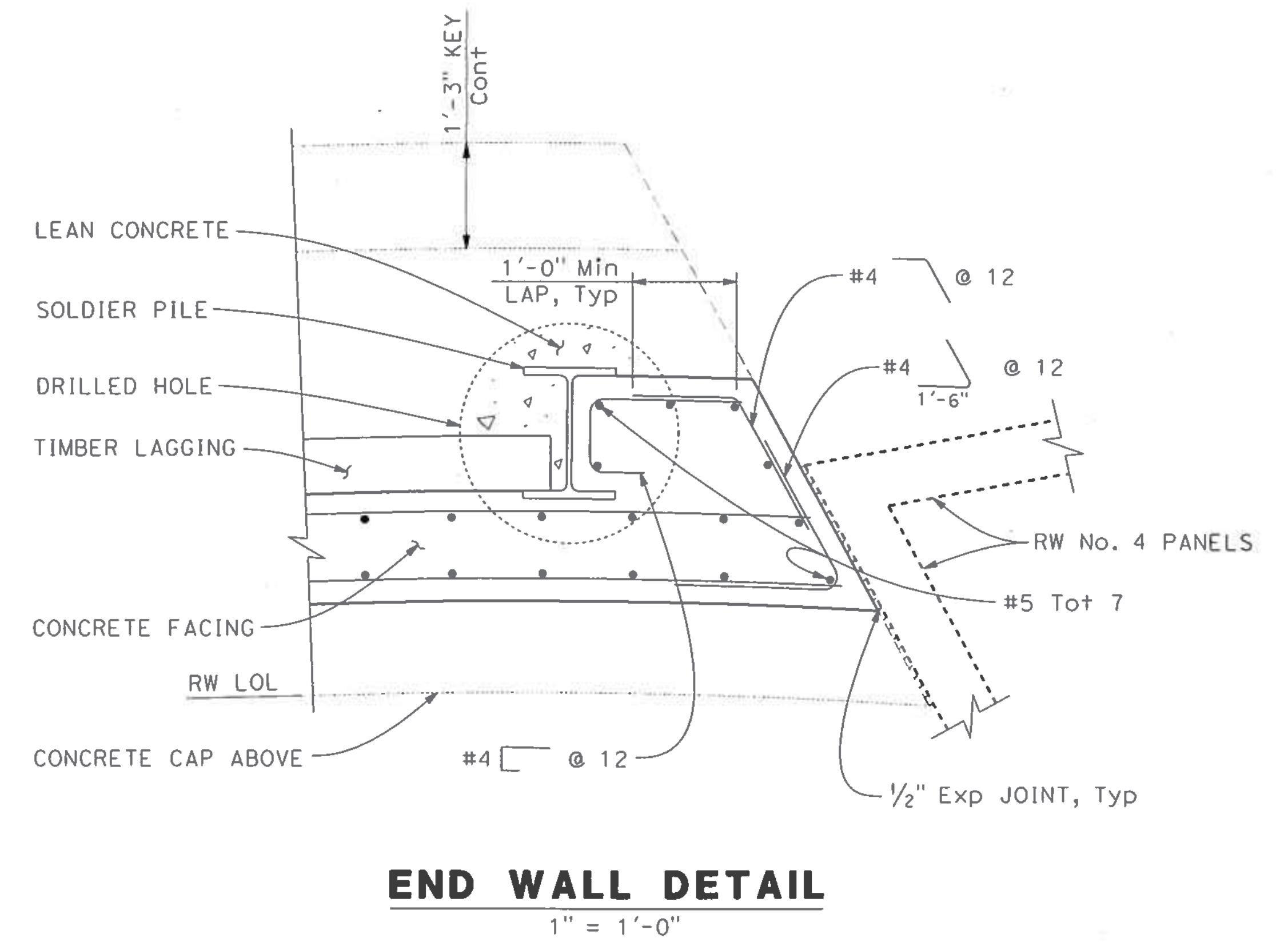
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 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



LAGGING DETAIL
NO SCALE



NOTES:

1. No clipping of timber lagging corners allowed.
2. Use 40d galvanized wire spikes for lagging.
3. Spikes, screws and nails shall not be bent.
4. Timber lagging to be treated on all sides.
5. All timber lagging to be placed with full bearing against soldier pile flanges.

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


 DESIGN OVERSIGHT
 11/14/19
 SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
SOLDIER PILE WALL DETAILS No. 3

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

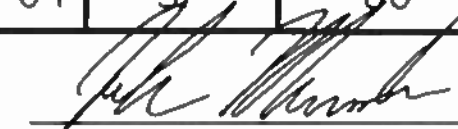
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-27-19 2-27-19 7-28-19	106	168

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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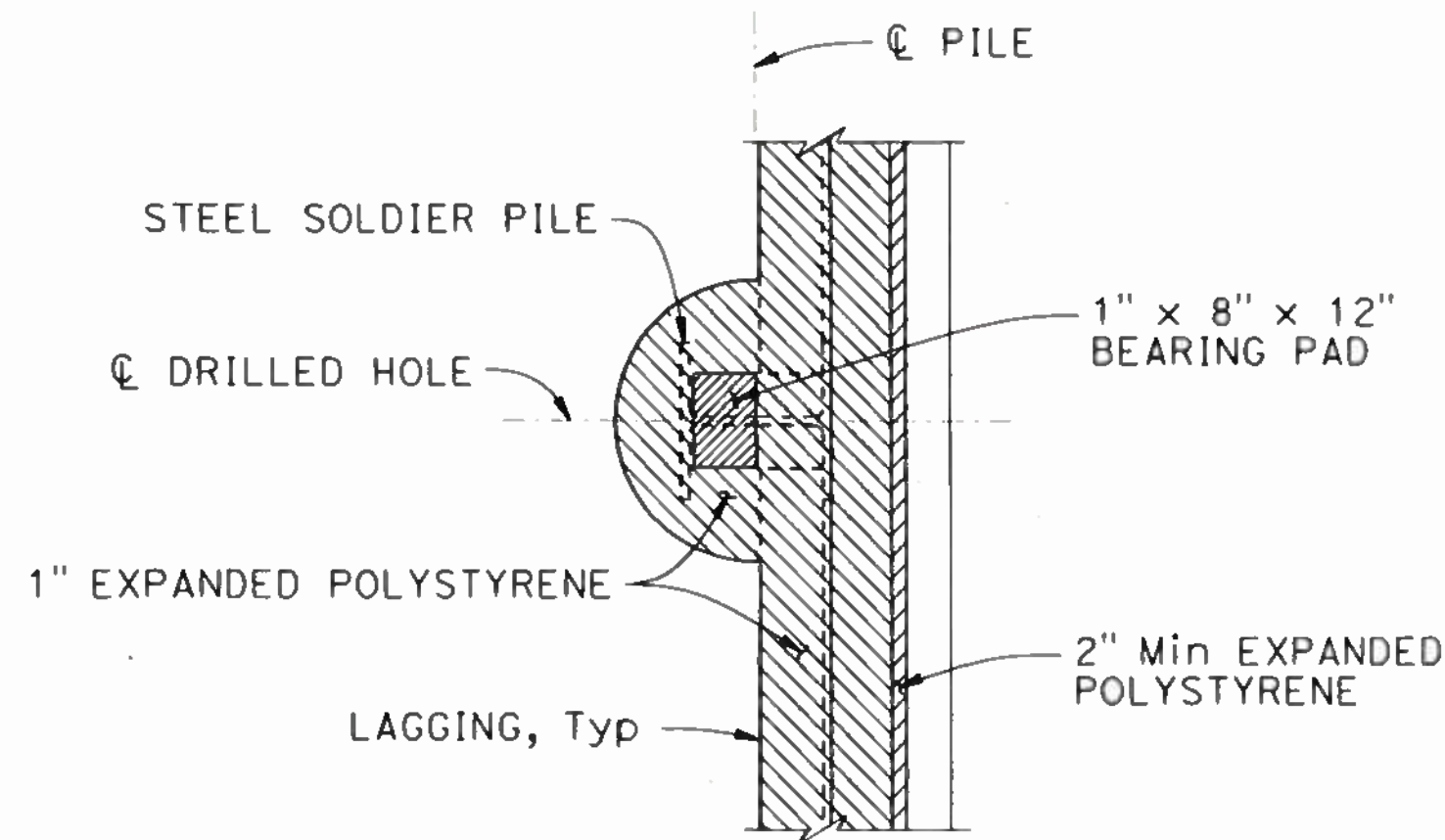
 REGISTERED CIVIL ENGINEER		7-25-19 DATE
PLANS APPROVAL DATE		
JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA		
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103		
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596		

NOTES:

1. Clearance to reinforcing steel in concrete barrier to be 1".
2. No expansion joints in concrete barrier or barrier slab within wall limits.
3. For limits of approach slab, barrier slab and concrete cap, see "GENERAL PLAN No. 1" thru "GENERAL PLAN No. 3" sheets.

KEY NOTES:

- (A) 2" Expanded polystyrene recessed 2" into barrier slab at front face
- (B) 1" Expanded Polystyrene
- (C) Contact joint
- (D) 4'-0" wide pavement reinforcing fabric
- ⊗ Indicates bundled bars
- * Epoxy Coated Reinforcement



SECTION C-C
NO SCALE

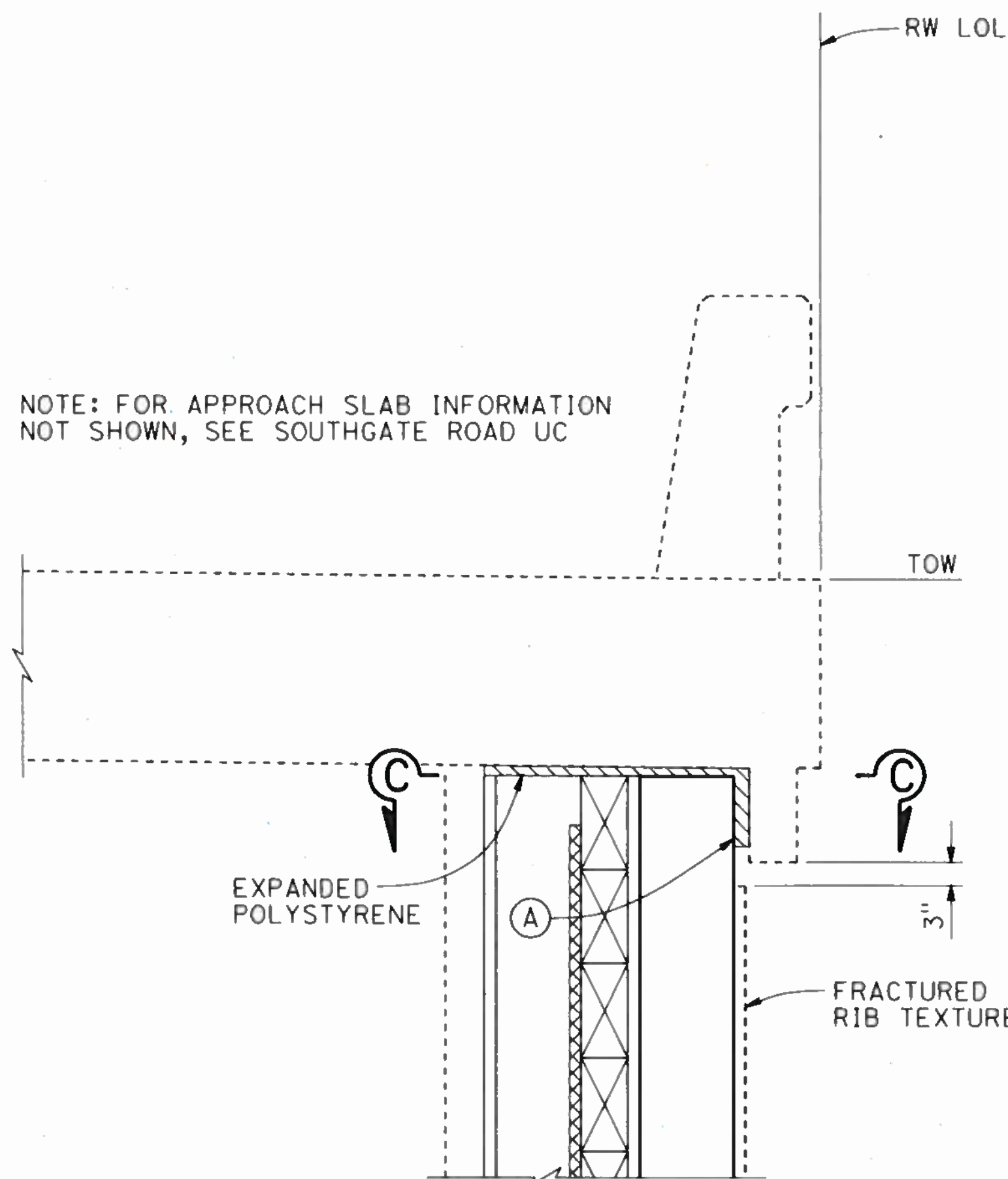
DESIGN DATA - BARRIER SLAB

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014

F_t : 54 kips

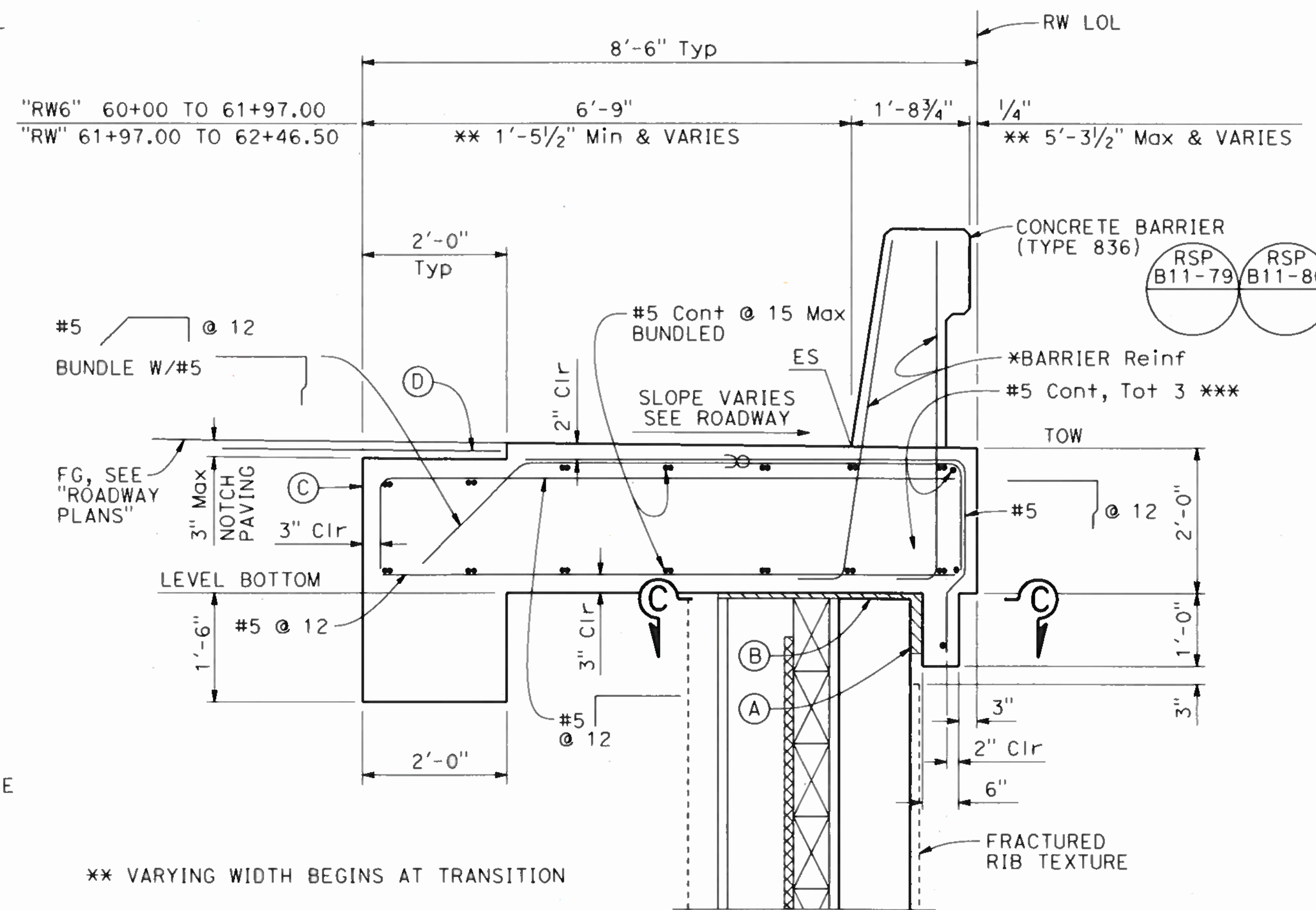
EQE: $k_h = 0.33$
 $k_v = 0.0$

REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
 $n = 8$



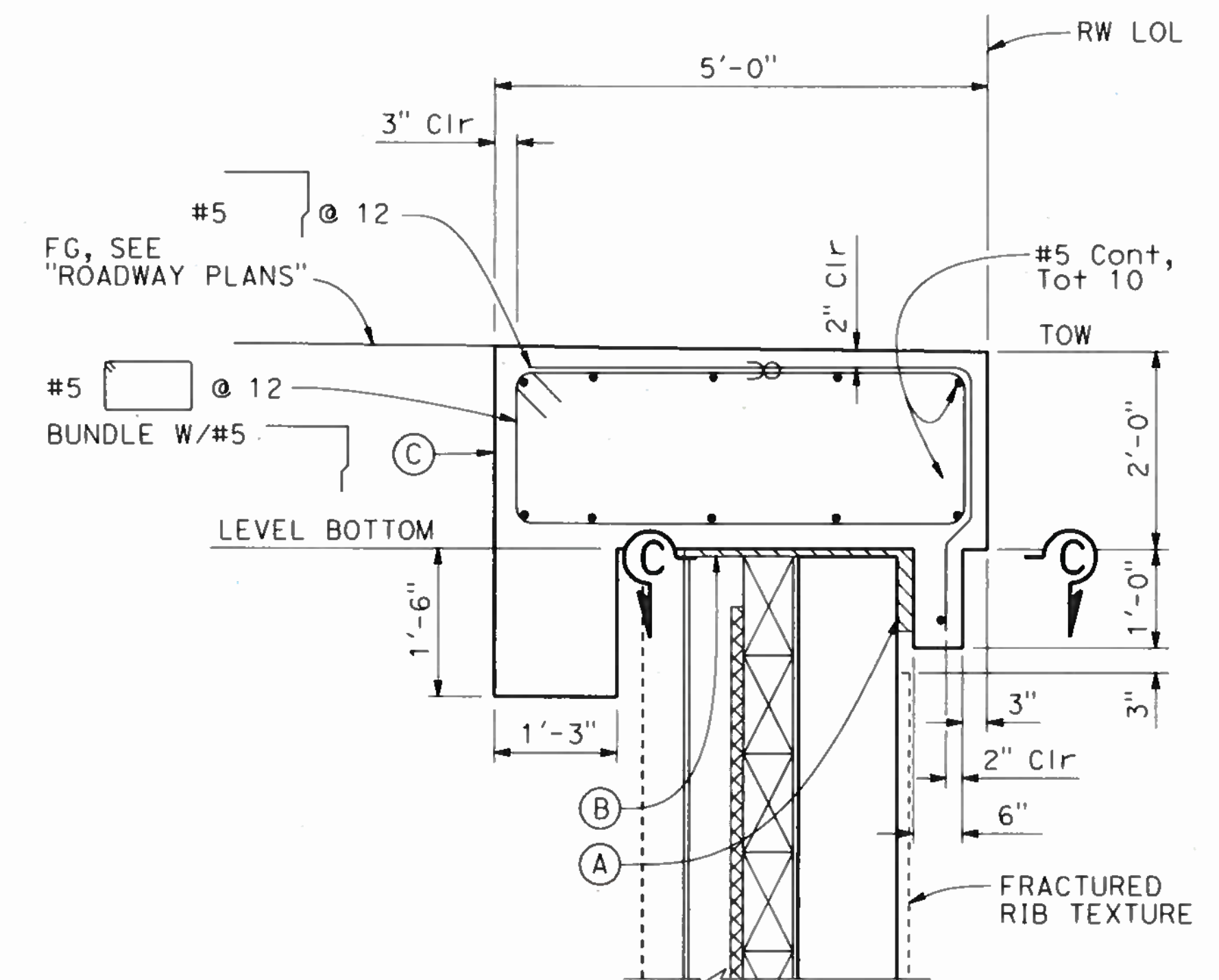
CONCRETE BARRIER SLAB SECTION AT APPROACH SLAB

3/4" = 1'-0"
60+00 TO "RW6" 60+09.80



CONCRETE BARRIER SLAB SECTION

3/4" = 1'-0"
"RW6" 60+09.80 TO "RW6" 62+46.50



CONCRETE CAP SECTION

3/4" = 1'-0"
"RW6" 62+46.50 TO "RW6" 62+79.90

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

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
CONCRETE BARRIER SLAB DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

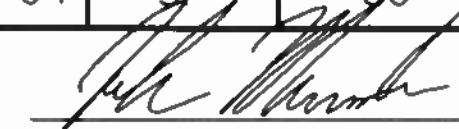
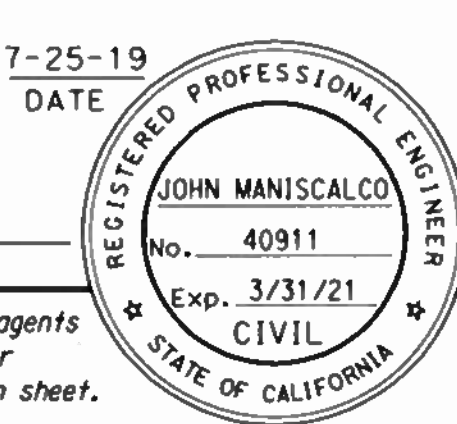
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

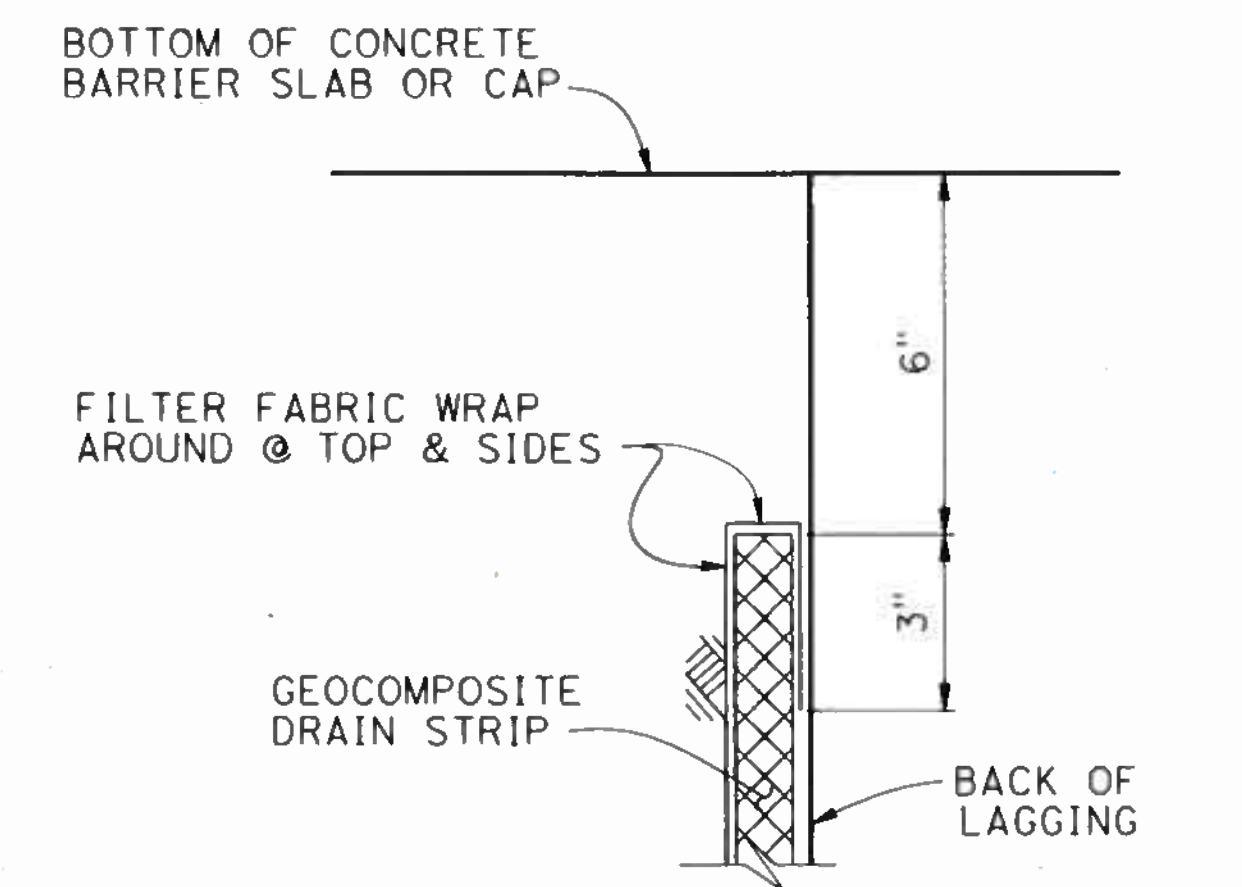
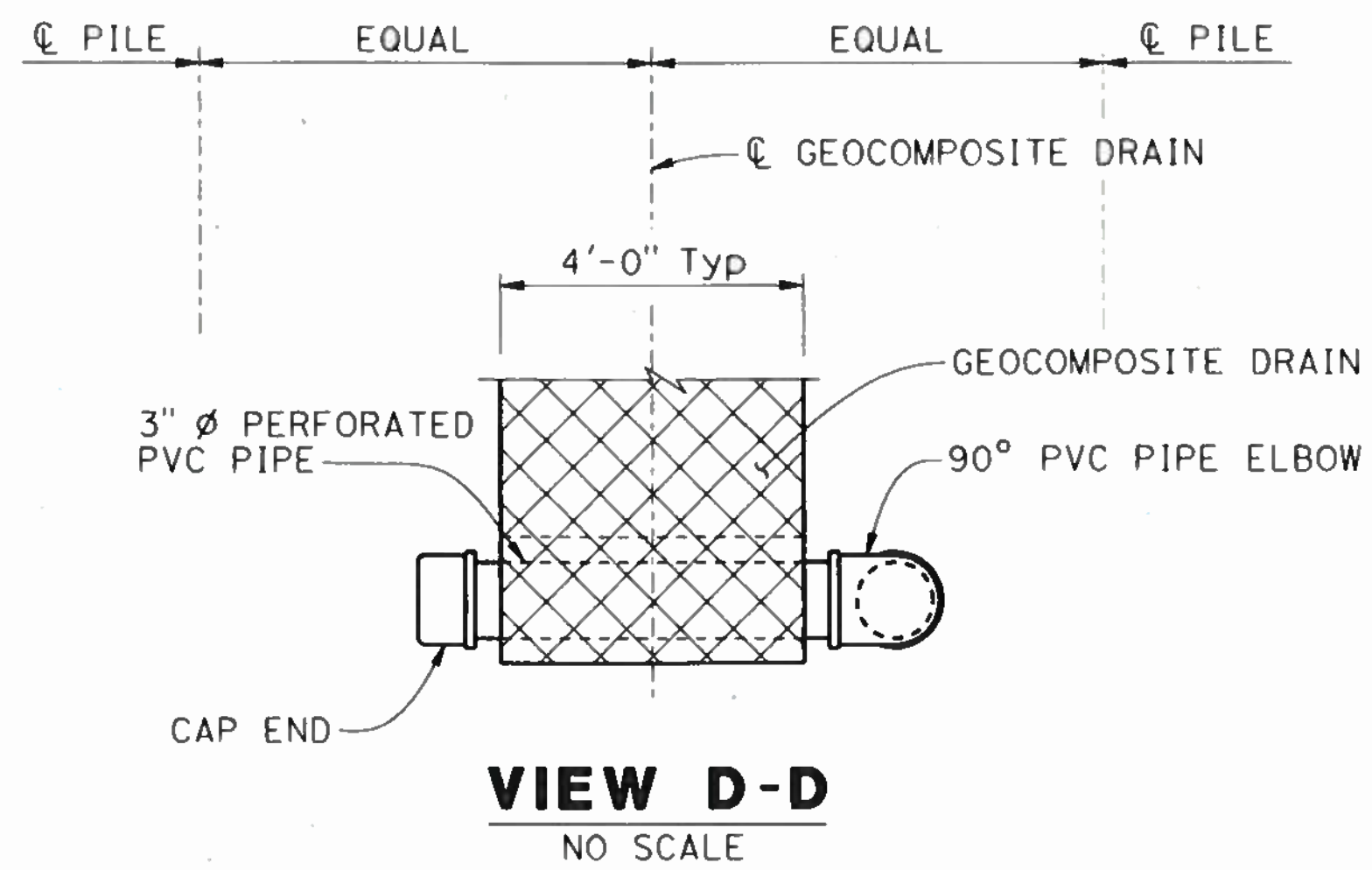
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531
CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 107	OF 168
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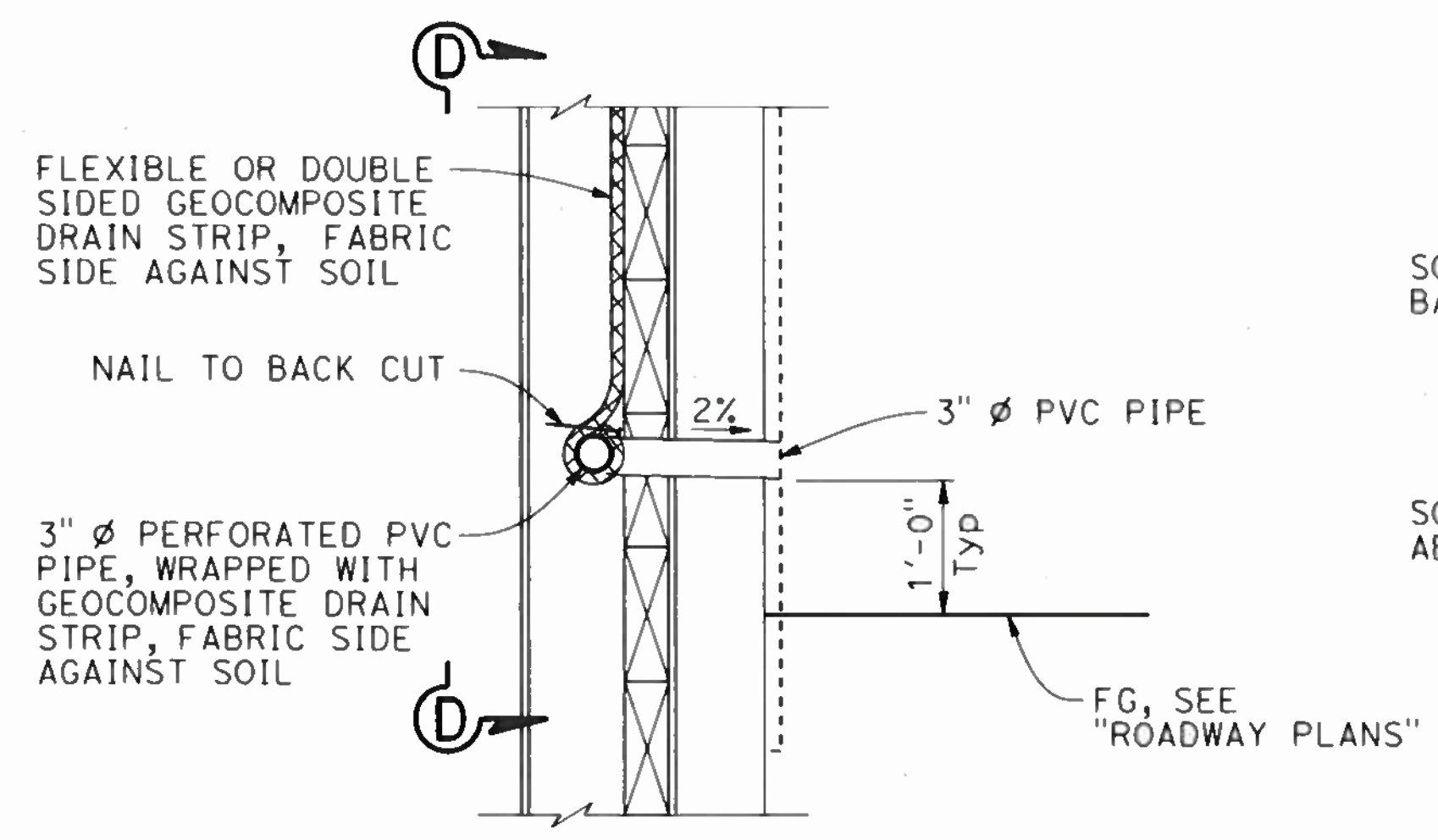
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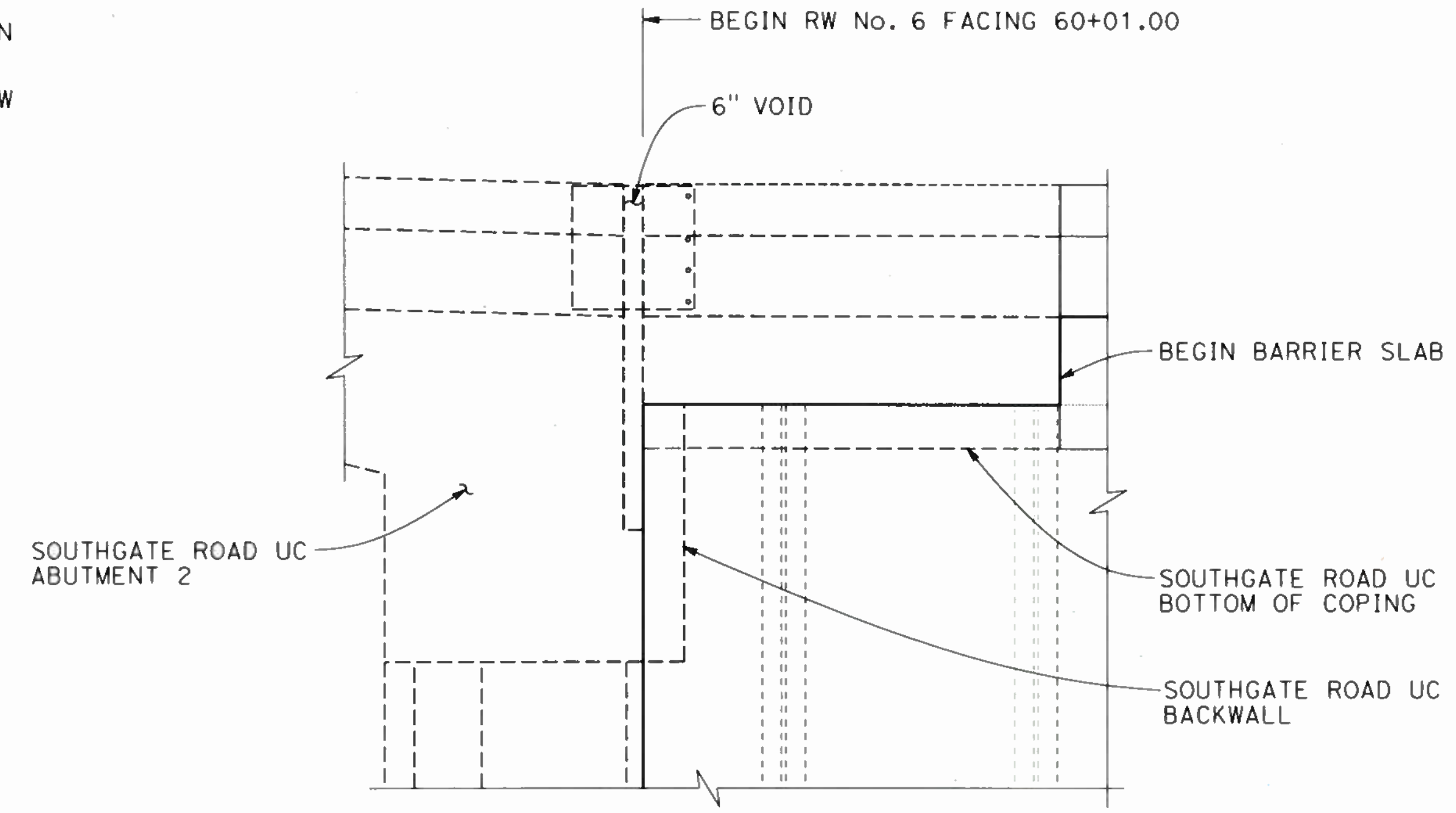
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	357	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



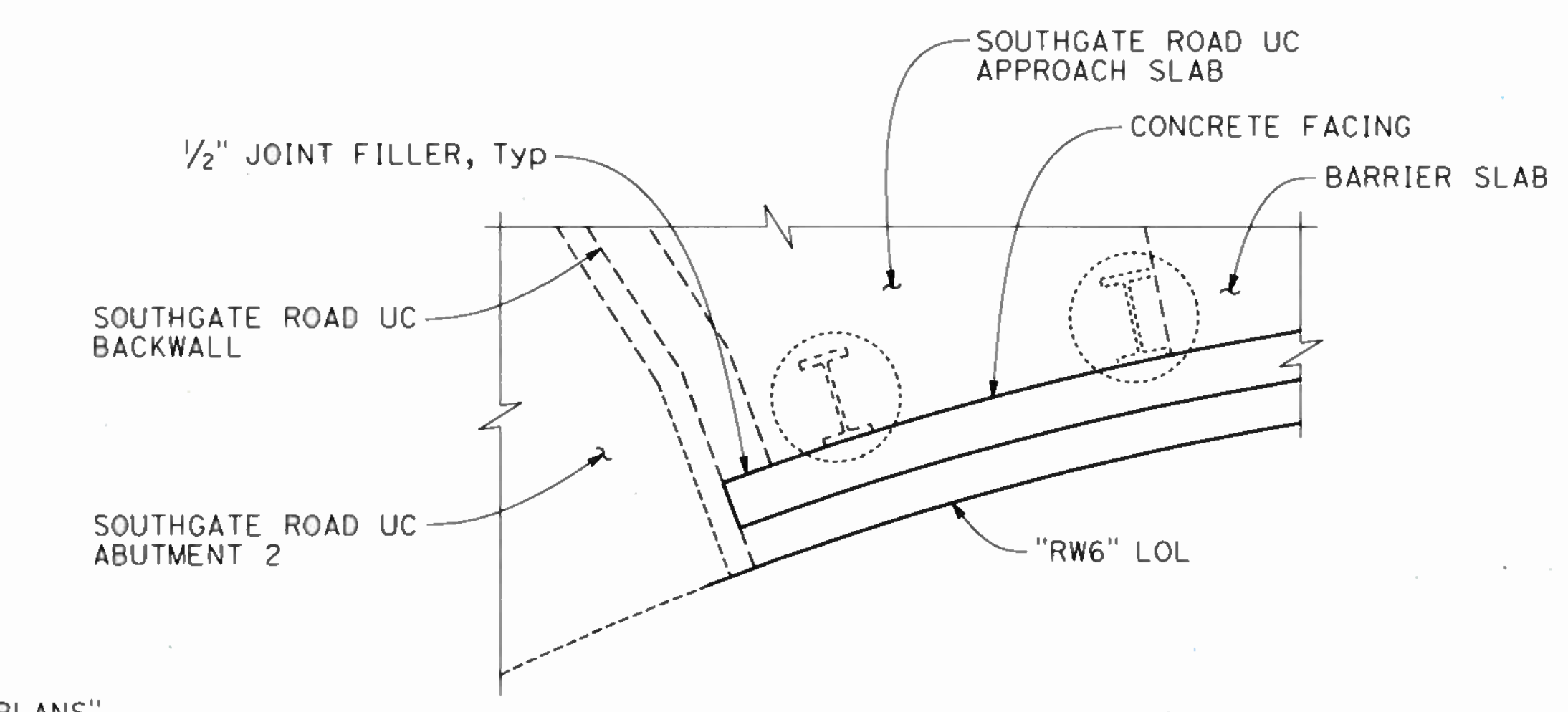
DRAIN DETAIL AT TOP OF WALL
NO SCALE



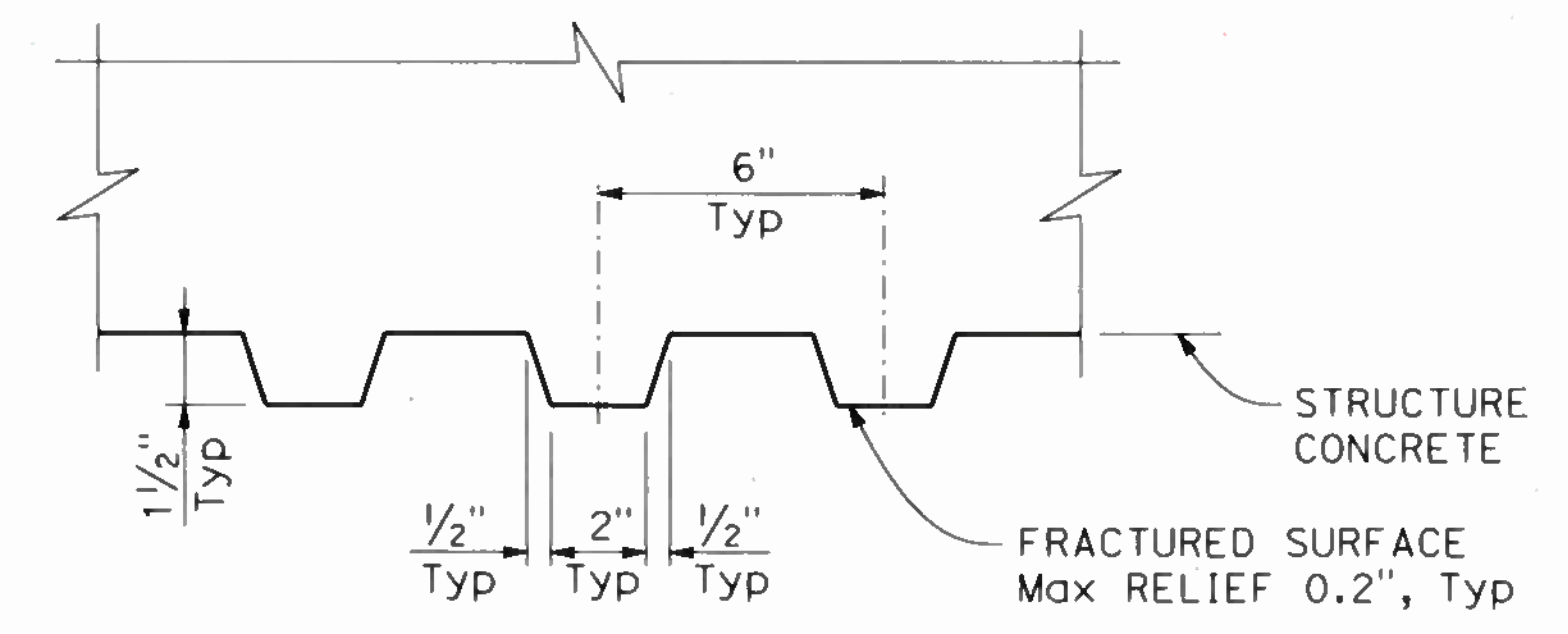
DRAIN DETAIL AT BOTTOM OF WALL
NO SCALE



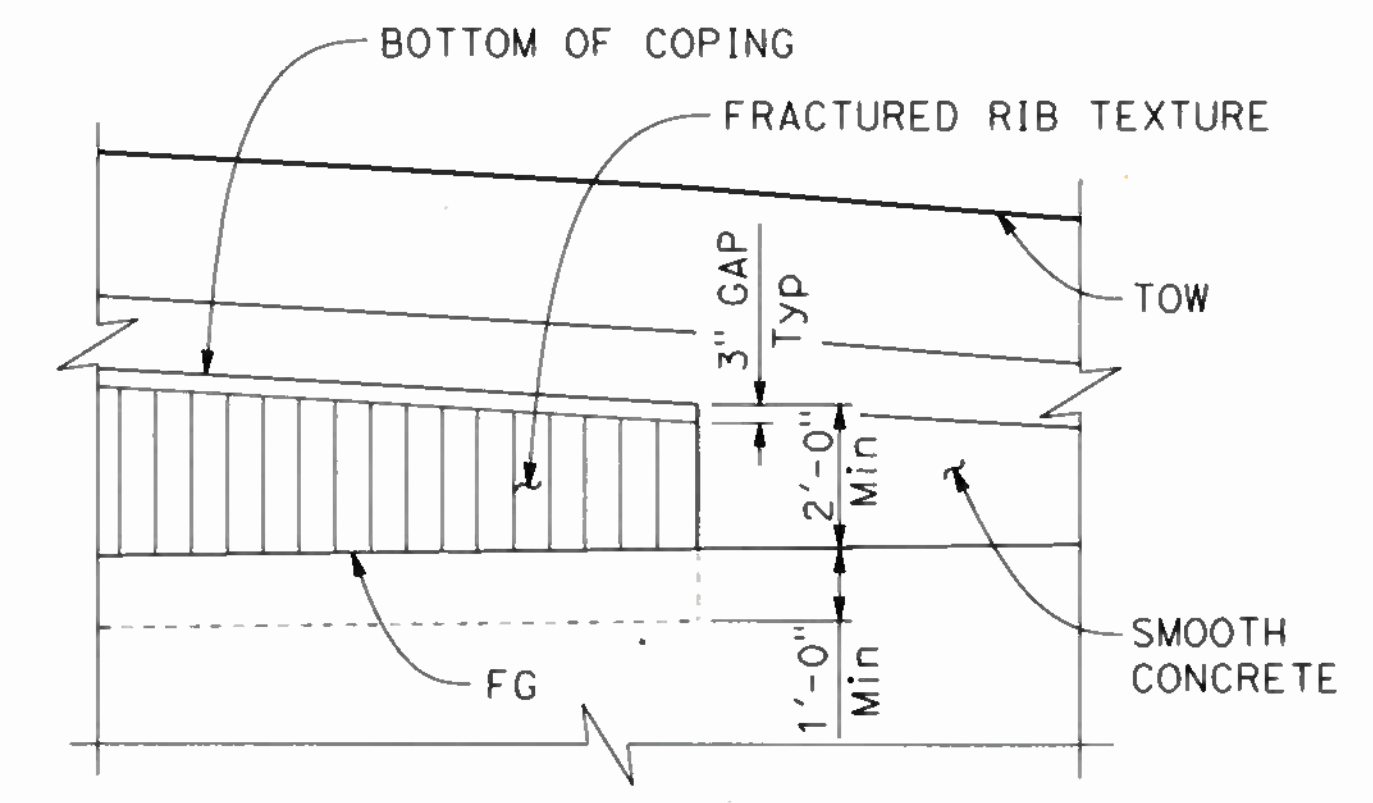
ELEVATION



BEGIN WALL DETAIL
3/8" = 1'-0"



PARTIAL SECTION



PARTIAL ELEVATION AT END OF WALL
FRACTURED RIB TEXTURE DETAIL
NO SCALE

NOTE:
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DESIGN OVERSIGHT
SIGN OFF DATE: 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. ROMINGER	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0035
POST MILES	7.9

RETAINING WALL No. 6
MISCELLANEOUS DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-24-19	108	168

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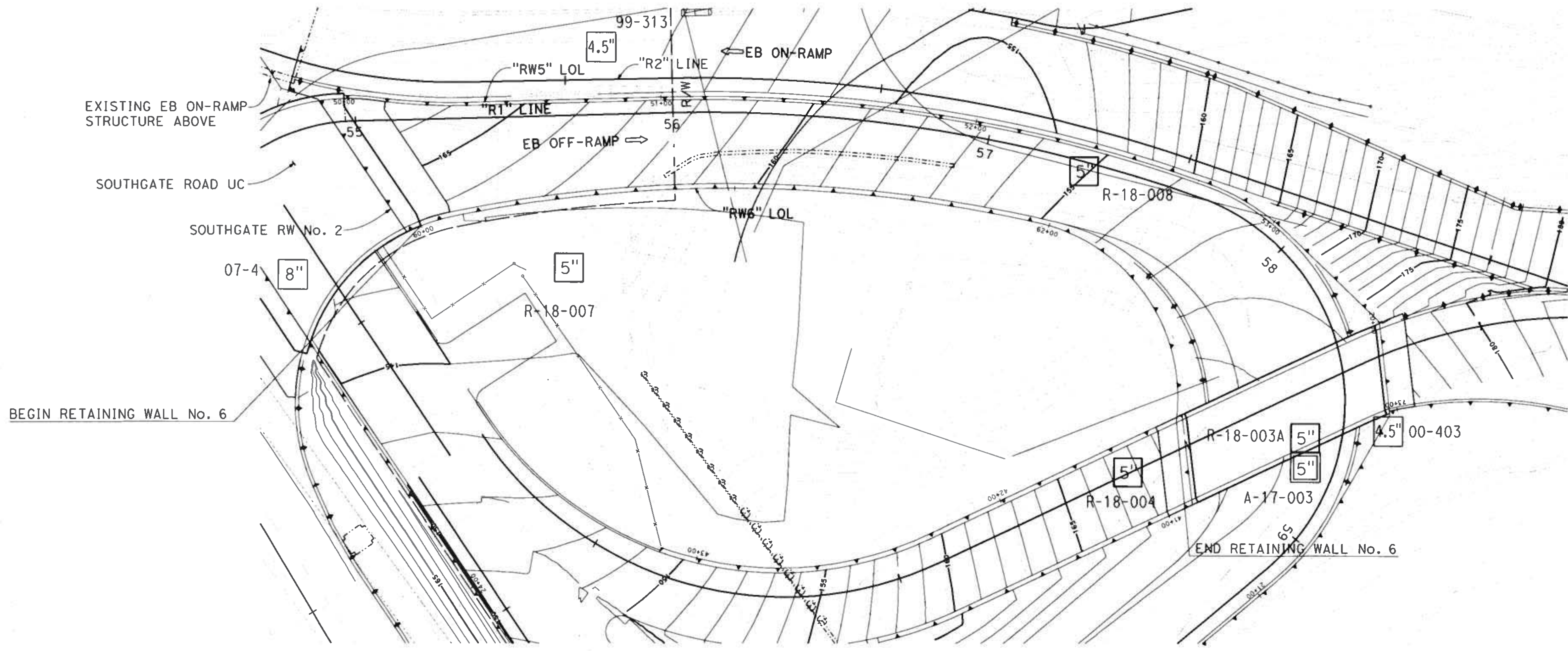
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	358	436

5-17-19
 GEOTECHNICAL PROFESSIONAL DATE
 PLANS APPROVAL DATE
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BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



PLAN
1" = 20'

DESIGN OVERSIGHT
 SIGN OFF DATE: 11/14/19

DRAWN BY: KIM OUYANG
 CHECKED BY: FRANK WANG

L.S. BHANGOO
 FIELD INVESTIGATION BY:
 DATE: JAN 2018

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

FRANK WANG
 PROJECT ENGINEER

BRIDGE NO.
 34E0035
 POST MILES
 7.9

RETAINING WALL No. 6
LOG OF TEST BORINGS 1 OF 6

GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

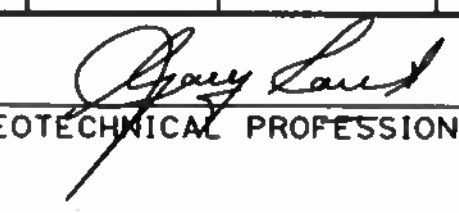



UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-23-18 11-27-18 2-28-19 5-17-19	109	168

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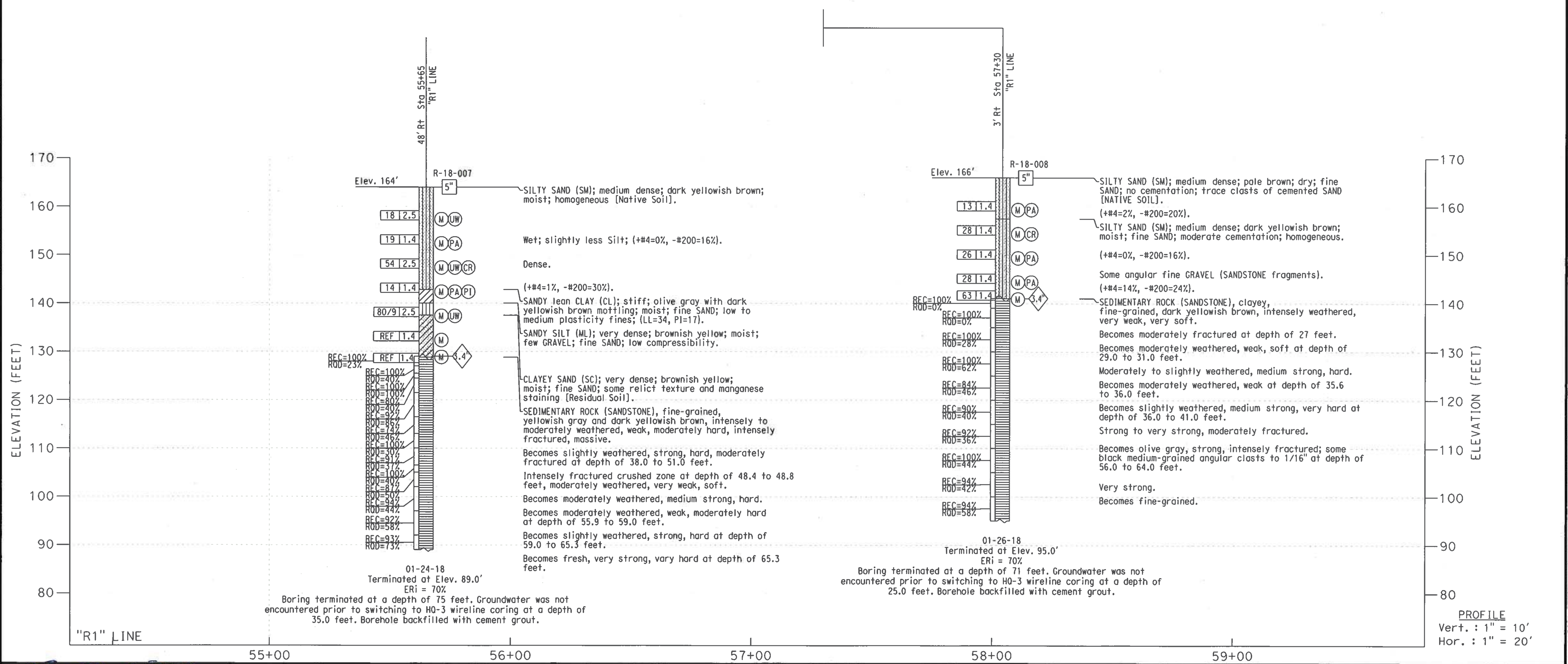
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	359	436
 GEOTECHNICAL PROFESSIONAL DATE 5-17-19					
PLANS APPROVAL DATE					
<i>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</i>					
BAY AREA TOLL AUTHORITY 375 BEALE STREET, SUITE 800 SAN FRANCISCO, CA 94105					
PARIKH CONSULTANTS, INC. 2360 QUME DRIVE, SUITE A SAN JOSE, CA 95131					


NOTES:
 Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock, Logging, Classification, and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



 DESIGN OVERSIGHT SIGN OFF DATE 11/14/19	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY: DATE: JAN 2018	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0035	RETAINING WALL No. 6 LOG OF TEST BORINGS 2 OF 6
	CHECKED BY FRANK WANG	FRANK WANG PROJECT ENGINEER		POST MILES 7.9	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	REVISION DATES 4-21-16 11-17-16 2-21-15 5-17-19	SHEET OF 110 168

USERNAME => oqoufhtier DATE PLOTTED => 21-OCT-2019 TIME PLOTTED => 16:25

NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	360	436

5-17-19

GEOTECHNICAL PROFESSIONAL DATE

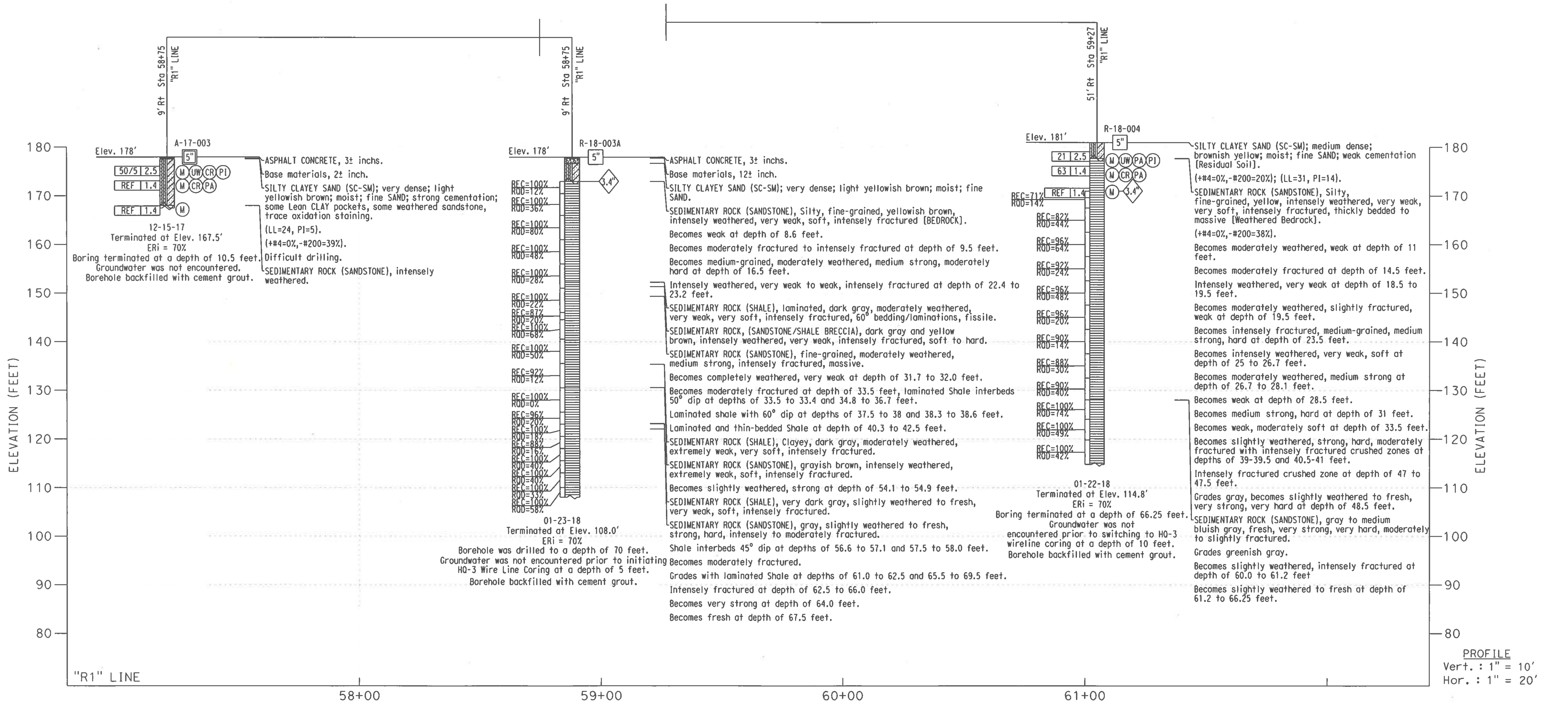
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 GARY PARIKH
 No. 666
 Exp. 12/31/19
 GEOTECHNICAL
 STATE OF CALIFORNIA

BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105

PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131



<p>DESIGN OVERSIGHT</p> <p style="text-align: right;">11/14/19</p> <p>SIGN OFF DATE</p>	<p>DRAWN BY: KIM OUYANG</p> <p>CHECKED BY: FRANK WANG</p>	<p>L.S. BHANGOO</p> <p>FIELD INVESTIGATION BY:</p> <p>DATE: DEC 2017 THROUGH JAN 2018</p>	<p>PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION</p>	<p>FRANK WANG</p> <p>PROJECT ENGINEER</p>	<p>BRIDGE NO. 34E0035</p> <p>POST MILES 7.9</p>	<p>RETAINING WALL No. 6</p> <p>LOG OF TEST BORINGS 3 OF 6</p>
---	---	---	---	---	---	---

LEGEND OF BORING OPERATIONS

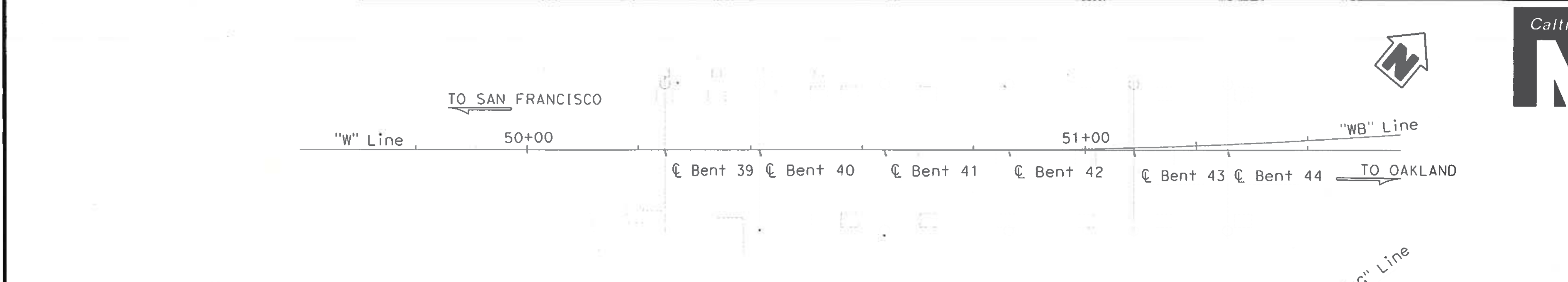
IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPE OF BORINGS

LEGEND FOR EARTH MATERIALS (USCS)

CONSISTENCY CLASSIFICATION FOR SOILS

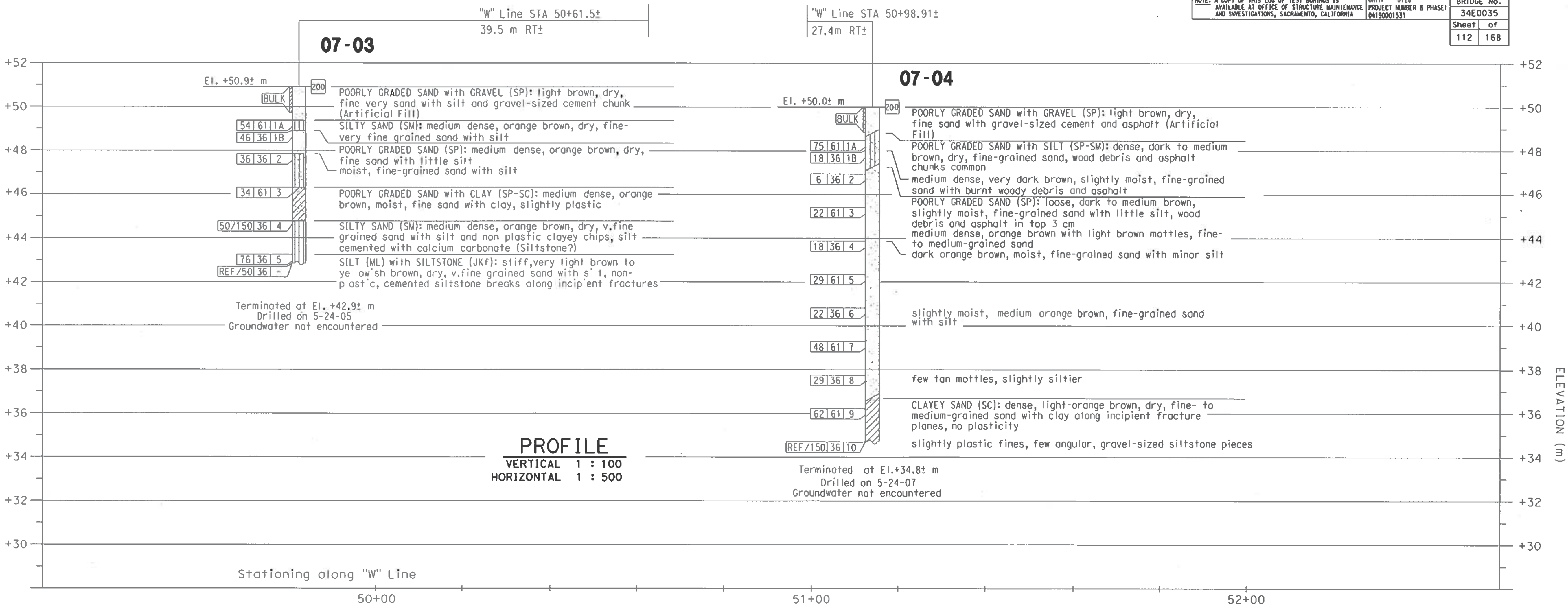
NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 6" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
07-04	54+40	36' Rt.



Caltrans Metric

DIST: 04 COUNTY: SF ROUTE: 80 KILOMETER TOTAL PROJECT: 12.6/13.9 SHEET No: 482 TOTAL SHEETS: 821

09/06/07
 GEOTECHNICAL PROFESSIONAL

2-21-12
 PLANS APPROVAL DATE

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

FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	361	436

5-17-19
 REGISTERED CIVIL ENGINEER DATE

RETAINING WALL No. 6

LOG OF TEST BORINGS 4 OF 6

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0728 PROJECT NUMBER & PHASE: 34E0035 04190001531

BRIDGE No.	Sheet of
34E0035	112 of 168

PLAN 1:500

REGISTERED PROFESSIONAL ENGINEER
 GARY PARIKH
 No. G.E. 666
 Exp. 12/31/19
 GEOTECHNICAL
 STATE OF CALIFORNIA

DESIGN OVERSIGHT: [Signature]

DRAWN BY: K. THANT 05/29/07

CHECKED BY: M. KAPUSKAR 06/04/07

C.DOMROSE
 FIELD INVESTIGATION BY:
 DATE: 05/24/07

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR
 PROJECT ENGINEER

BRIDGE NO. 34-0006

KILOMETER POST

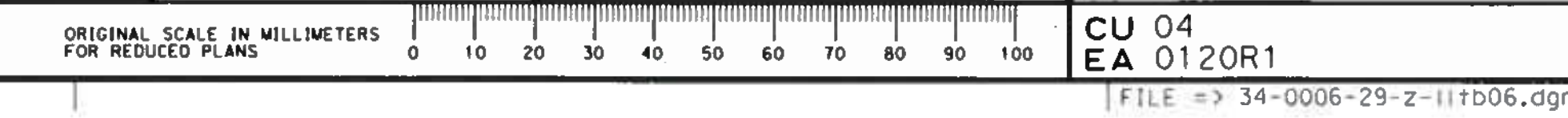
WEST TIE-IN PHASE 3

LOG OF TEST BORINGS NO. 6

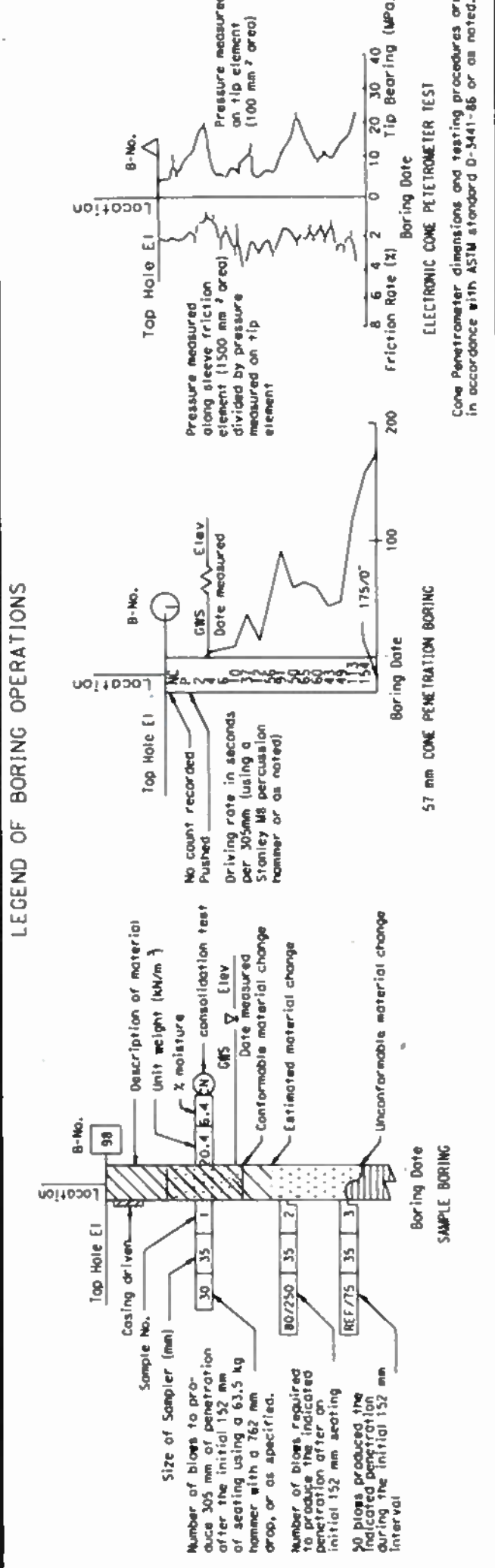
CU 04
 EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET	OF
	29	29



LEGEND OF BORING OPERATIONS



IN-SITU, LAB & FIELD TEST DESIGNATIONS

AL	Atterberg Limits	CA	Consolidation	CS	Maximum Density	CR	Direct Shear	CP	Pocket Penetration	CS	Grain Size	CE	Sand Equivalent	UC	Unconfined Compression	UT	Unconfined Torsion	WA	Wash Analysis
----	------------------	----	---------------	----	-----------------	----	--------------	----	--------------------	----	------------	----	-----------------	----	------------------------	----	--------------------	----	---------------

TYPE OF BORINGS

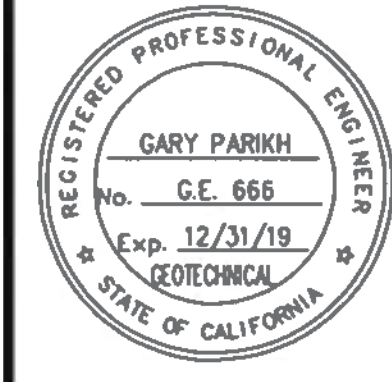
1	57 mm Cone Penetration	2	Rotary Wash	3	Electronic Cone Penetrometer	4	Auger Boring (Dry)	5	Test Pit	6	Diamond Core Boring	7	Soil Tube
---	------------------------	---	-------------	---	------------------------------	---	--------------------	---	----------	---	---------------------	---	-----------

LEGEND FOR EARTH MATERIALS (USCS) BASED ON ASTM D2487, D2488

CL	CLAY (CL or CH)	ML	SILT (ML or MH)	OL	ORGANIC CLAY	OL	ORGANIC SILT	GM	GRAVEL (GM)	GC	GRAVEL (GC)
----	-----------------	----	-----------------	----	--------------	----	--------------	----	-------------	----	-------------

CONSISTENCY CLASSIFICATION FOR SOILS According to the Standard Penetration Test (ASTM D-1586)

0-4	Very Loose	5-10	Loose	11-30	Medium Dense	31-50	Dense	50	Very Dense	>30	Hard
-----	------------	------	-------	-------	--------------	-------	-------	----	------------	-----	------



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SF	80	7.8/8.0	362	436

DATE: 5-17-19

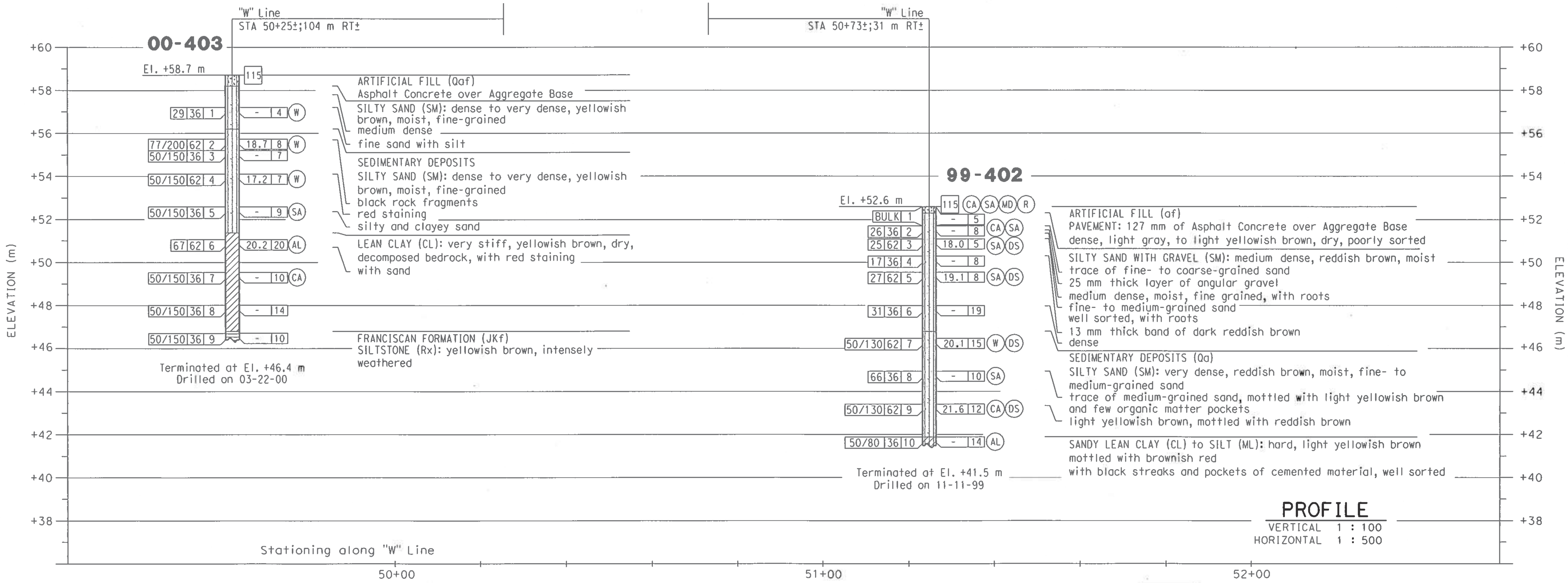
REGISTERED CIVIL ENGINEER

RETAINING WALL No. 6

LOG OF TEST BORINGS 6 OF 6

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: D128	BRIDGE No.
PROJECT NUMBER & PHASE: 34E0035	
Sheet of 113	168



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9		481	821

09/06/07

GEOTECHNICAL PROFESSIONAL

2-21-12

PLANS APPROVAL DATE

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

FUGRO-EARTH MECHANICS
7700 EDGEWATER DRIVE, SUITE 846
OAKLAND, CA 94621

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 6" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
00-403	58+60	14' Lt.

PROFILE

VERTICAL 1 : 100

HORIZONTAL 1 : 500

WEST TIE-IN PHASE 3

YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)

LOG OF TEST BORINGS NO. 5

DESIGN OVERSIGHT

DRAWN BY: G. J. GUNARANJAN 01/03/07

CHECKED BY: M. KAPUSKAR 01/05/07

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

S. SICILIANO, L. FLUKE FIELD INVESTIGATION BY: DATE: AS NOTED

BRIDGE No. 34-0006

KILOMETER POST 12.8

CU 04 EA 0120P1

DISREGARD PRINTS BEARING EARLIER REVISION DATES



USERNAME => s128843 DATE PLOTTED => 25-FEB-2012 TIME PLOTTED => 12:15

SOIL AND ROCK TYPES

Well graded GRAVEL (GW)	Stiff clay CLAY (CL)
Poorly graded GRAVEL (GP)	Lean CLAY (CL)
GRAVEL with sand (GP or GW)	Stiff lean CLAY (CL)
GRAVEL with clay (GP or GW)	Silty CLAY (CL-ML)
Clayey GRAVEL (GC)	Shrinkable SILT (ML)
GRAVEL with silt (GP or GW)	SILT (ML)
Silty GRAVEL (GM)	Sandy SILT (ML)
Well graded SAND (SW)	Clayey silt (ML-CL)
Poorly graded SAND (SP)	Highly plastic CLAY (CH)
SAND with gravel (SP or SW)	Rocky Clay (sand content)
SAND with clay (SP-SC)	Low plasticity CLAY (CL)
Clayey SAND (SC)	SANDSTONE (SQ)
Silty SAND (SM)	SILTSTONE (ST)
SAND with silt (SP-SM)	CLAYSTONE (CT)
Fat CLAY (CH)	Interbedded Rock Strata (RS)
	PAVEMENT

SAMPLERS

75mm OD, 75mm ID 12m Washed Tube	75mm OD, 50mm ID Modified Cast Iron Luer
57mm OD, 50mm ID 12m Washed Drive Tube	57mm OD, 25mm ID CPT Right Rotation Sampler
57mm OD, 54mm ID Clayton Luer	Rock Core (sand content) Impervious Recovery (IR)

* A vertical OD, 54mm ID tapered drive tube was used to sample coarse sand, gravel and rock

STANDARD PENETRATION TEST (SPT) AND MODIFIED CALIFORNIA (MC) LINER SAMPLERS

Samplers were driven with a 63.5 kg hammer dropped approximately 760 mm.

20 Number of blows to produce 30 cm of penetration after the initial 15 cm of seating.

60/20cm Number of blows required to produce the indicated penetration after an initial 15 cm seating.

60/30cm 60 blows produced the indicated penetration during the initial 15 cm interval.

Note: In rock testing interval recovery (R) and RSD are shown in the Blow Count column.

TUBE AND OFFSHORE LINER SAMPLERS

WCH Offshore liner sample advanced with the weight of an 80 kg hammer.

PLTH or SAPE Fluted thin-walled 75mm OD tube.

120/30cm Number of blows required to produce the indicated penetration using a 64mm ID tube sampler. The sampler was driven with an 80 kg concrete hammer dropped approximately 1.5 m.

CLASSIFICATION TESTS BLOW COUNTS AND ROCK QUALITY

■ PERCENT PASSING #200 SIEVE
 ■ WATER CONTENT (w)
 ○ TOTAL UNIT WEIGHT (γ_{total})
 ○ THEORETICAL TOTAL UNIT WEIGHT (γ_{max})
 PLASTICITY LIMIT (LL) LIQUID LIMIT (WL)

● EQUIVALENT SPT BLOW COUNT
 ● SPT BLOW COUNT (N) OR SPT BLOW COUNT
 --- ROCK QUALITY DESIGNATION (RQD)
 --- ROCK RECOVERY PERCENT
 --- ROCK CORROSION RATE

STRENGTH TESTS

● POCKET PENETROMETER
 ● TORVANE
 ● REMOTE VANE
 ● REMOTE VANE (90 DEGREE VANE)
 ▲ UNCONFINED UNDERMINED TRIAXIAL
 ▲ SWEDISH FALL CONE
 ▲ UNCONFINED COMPRESSION (SOIL)
 ○_d (Open symbols indicate restricted tests)
 < Shear strength interpolated from CPT Tip Resistance (45° to 15°)

● POINT LOAD TEST (ROCK-INTACT SPECIMEN)
 ● POINT LOAD TEST (ROCK-ALONG WEAK PLANE)
 ■ UNCONFINED COMPRESSION (ROCK)
 + Soil Strength Excess Capacity of Measuring Device
 Rock strength breaks along discontinuity; initial sample would have greater strength
 --- FRACTURE DENSITY (ROCK)

STRENGTH OF COHESIVE SOILS

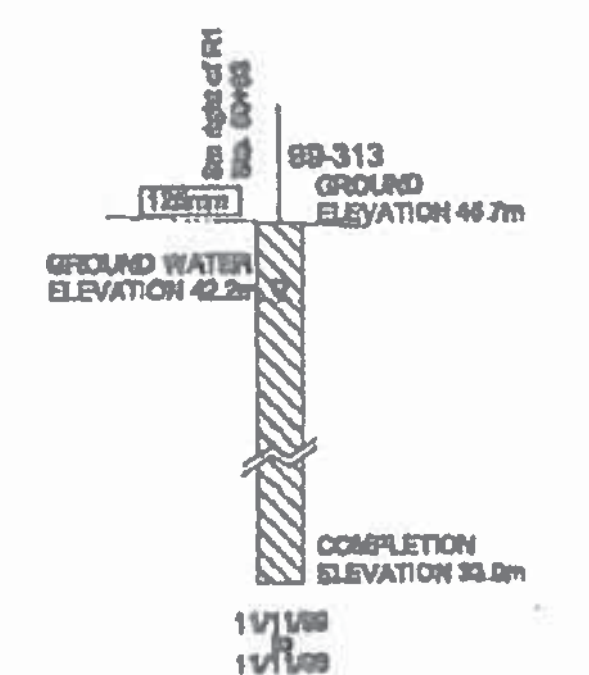
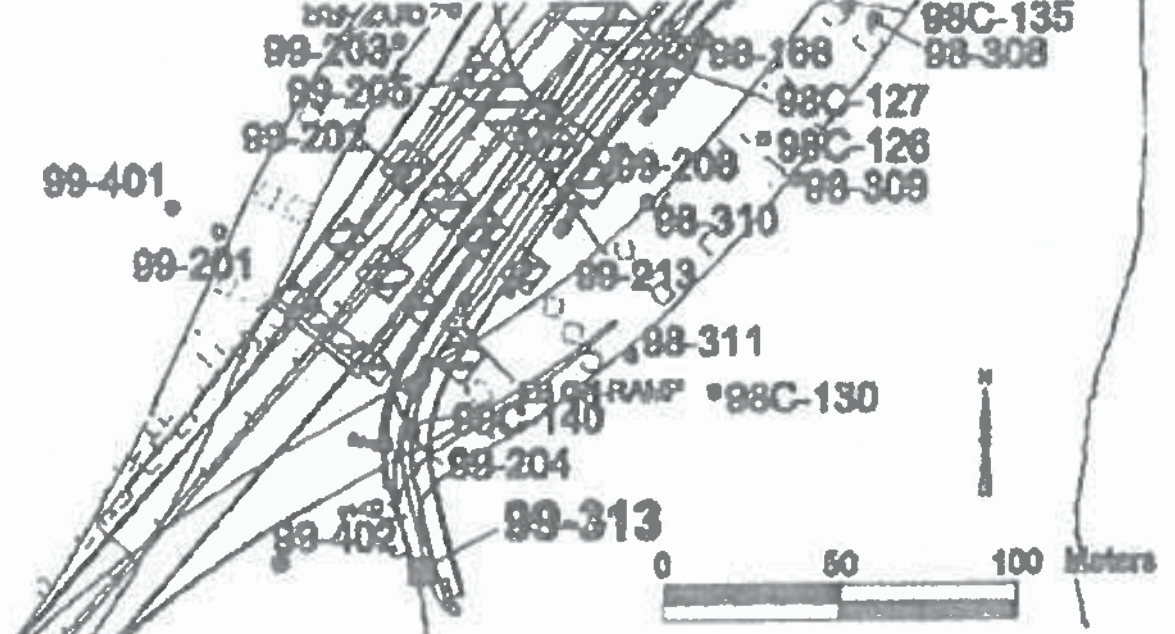
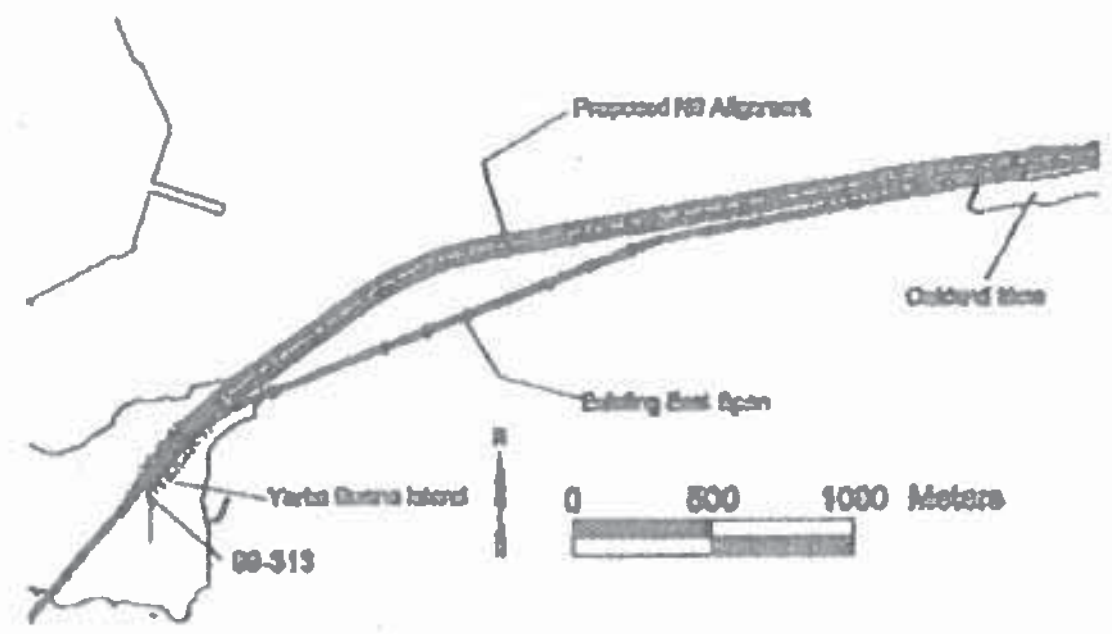
Undrained Shear Strength (kPa)

Consistency	Shear Strength (kPa)
Very Soft	less than 10
Soft	10 to 25
Firm	25 to 50
Stiff	50 to 100
Very Stiff	100 to 200
Hard	greater than 200

DENSITY OF GRANULAR SOILS

Classification	Relative Density (Dr)
Very Loose	less than 15
Loose	15 to 30
Medium Dense	30 to 50
Dense	50 to 85
Very Dense	greater than 85

* Estimated from maximum dry unit weight and CPT tip resistance.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	12.7/13.2	778	806

6-23-08
PLANS APPROVAL DATE

FUGRO-EARTH MECHANICS, A JOINT VENTURE
7760 Paradise Lane, Suite 120
Oakland, CA 94621
(510) 552-8533, FAX (510) 552-6055

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

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013

BORING 99-313

COORDINATES: E1635033 N947089
 CA State Plane Zone 3, NAD83, Meters
 GROUND ELEVATION: 46.7m (MSL)
 START DATE: 11/1/99

STATION: 3m right of R1 Sta. 50+53
 COMPLETION ELEVATION: 33.0m (MSL)
 END DATE: 11/1/99

DEPTH (m)	ELEVATION (m)	SOIL TYPE	BLOW COUNT	MATERIAL DESCRIPTION	CORROSION RATE (mm/yr)				FRACTURE DENSITY (Fract/m)				
					TESTED	RECOVERY (%)	EQ. BLOW COUNTS	UNIT WEIGHT (pcf)	5	10	15	20	
0.0	46.7	ARTIFICIAL FILL (AF)		PAVEMENT, 127mm of Asphalt Concrete over Aggregate Base									
0.3	46.4	SEDIMENTARY DEPOSITS (SD)		Medium to Coarse SAND with gravel and silt (SP-SM), very dense, light grey, dry									
2.0	44.7		42	gravel to sub-angular to sub-rounded rock fragments up to 127mm, 0.8m to 2.1m									
4.0	42.7		60	Fine GRAVEL with silt and sand (GW-GM), dense to very dense, light to dark grey, dry with fine to medium sand									
8.0	38.7		74	Fine to Medium SAND (SP), dense, yellowish brown, moist									
12.0	34.7		44	Fine to Medium SAND with silt (SP-SM), dense to very dense, reddish brown, moist silty at 8.1m									
16.0	30.7		38	silty fine sand, light yellowish brown, below 12.2m									
19.0	27.7		60	with intensely weathered sandstone fragments and silt clay, at 13.7m									
24.0	22.7		60	Bandy SILT (ML), very dense, light yellowish brown - weathered sandstone, extremely soft and friable									



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

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DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	363	436

5-17-19
DATE

RETAINING WALL No. 6

LOG OF TEST BORINGS 6 OF 6

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0128
PROJECT NUMBER & PHASE: 34E0035
04190001531

Sheet of
114 168

- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 6" dated February 18, 2019, for stationing. Based on the drawings provided by HDR, "EB" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "R1" Line	Offset from "R1" Line
99-313	55+78	21' Lt.

ROBERT PRICE / SABA MOHAM	DRAWN BY J. PALMER	L. FLUKE	M. KAPUSKAR	BRIDGE NO. 34-0172 S	SAN FRANCISCO OAKLAND BAY BRIDGE EAST SPAN SEISMIC SAFETY PROJECT	
CHECKED BY M.KAPUSKAR, S.VARATHARAJ	FIELD INVESTIGATOR	SEE ABOVE	PROJECT ENGINEER	KM POST	YBI EB ON-RAMP STRUCTURE	
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION			POST MILE	LOG OF TEST BORINGS NO. 1		
ORIGINAL SCALE IN CENTIMETERS FOR REDUCED PLANS			CU 04251 EA 0120S1	REVISION DATES (PRELIMINARY STAGE ONLY)		
			DIBEGARD PRINTS BEARING EARLIER REVISION DATES			SHEET OF 7 17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	364	436

REGISTERED CIVIL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

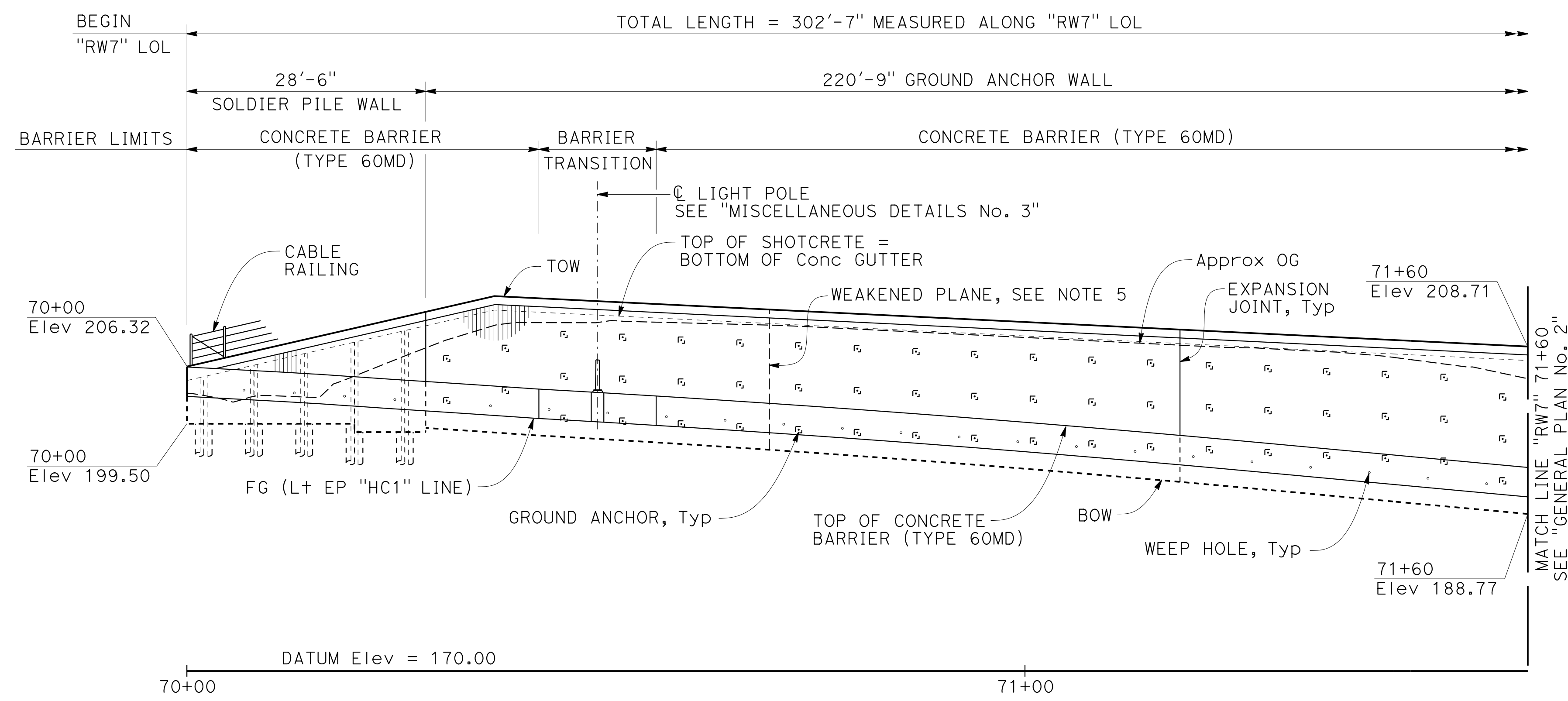
7-25-19
 DATE

PLANS APPROVAL DATE

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

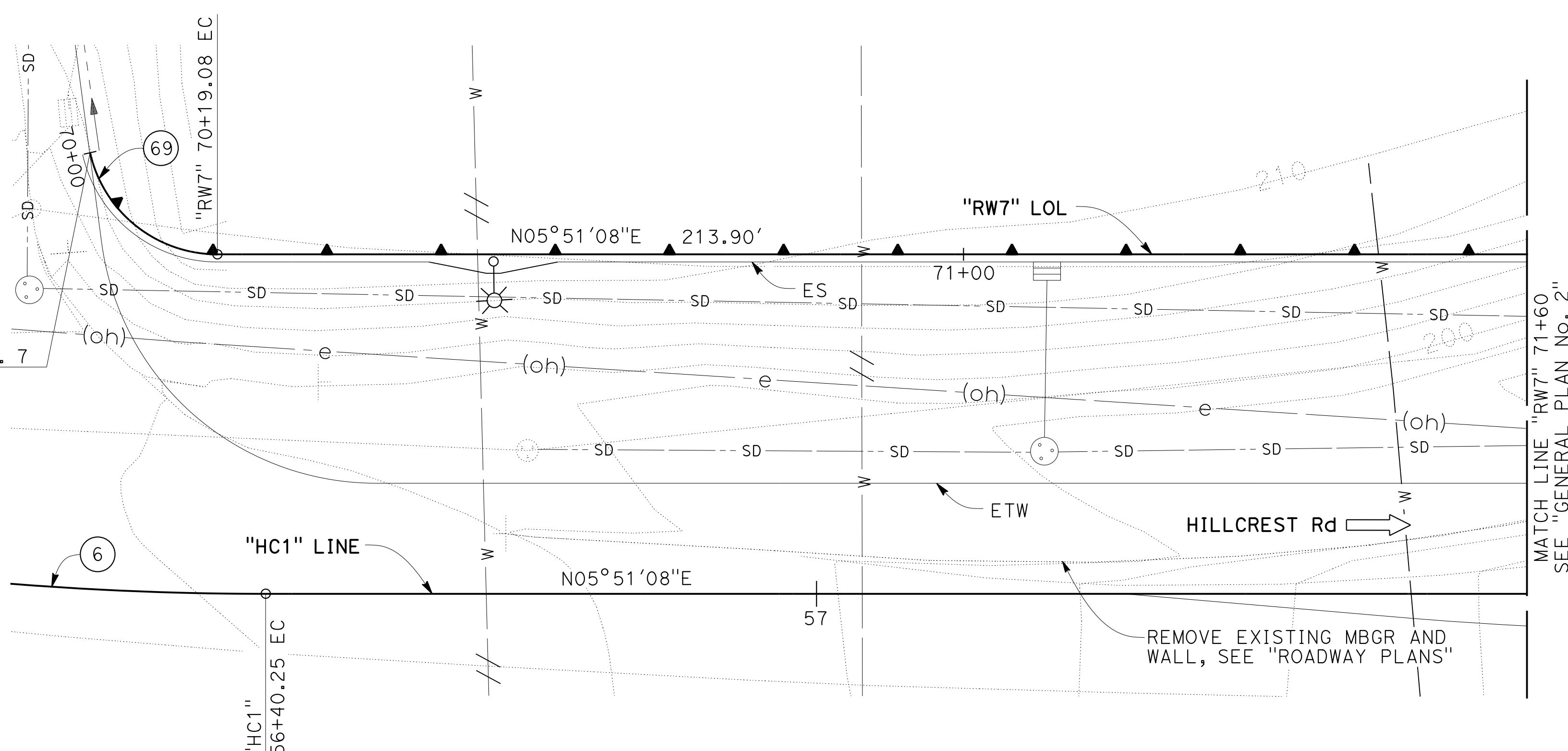
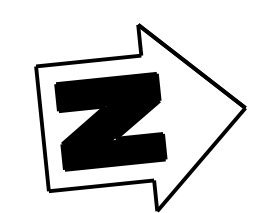
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



DEVELOPED ELEVATION

1" = 10'



PLAN

1" = 10'

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

LEGEND:

← Indicates direction of traffic

NOTES:

- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 3" sheet.
- For architectural treatment and drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS" sheets.
- Expansion joints in CIP facing shall be located at a Max spacing of 96 feet center to center and shall be centered between anchors and/or piles. For detail, see "MISCELLANEOUS DETAILS No. 1" sheet.
- Weakened Planes in CIP facing shall be located at a Max spacing of 48 feet and shall be centered between anchors and/or piles. For detail see B0-3 3-2
- For wall elevations, see "GROUND ANCHOR WALL LAYOUT" sheet and "SOLDIER PILE WALL LAYOUT" sheets.
- For barrier transition details, see "MISCELLANEOUS DETAILS No. 3" sheet.

QUANTITIES

STRUCTURE EXCAVATION (SOLDIER PILE WALL)	52	CY
STRUCTURE EXCAVATION (GROUND ANCHOR WALL)	288	CY
STRUCTURE BACKFILL (GROUND ANCHOR WALL)	28	CY
STRUCTURE BACKFILL (SOLDIER PILE WALL)	16	CY
CONCRETE BACKFILL (SOLDIER PILE WALL)	16	CY
LEAN CONCRETE BACKFILL	14	CY
GROUND ANCHOR (SUB HORIZONTAL), LOCATION E	84	EA
STEEL SOLDIER PILE (W14x82)	262	LF
24" DRILLED HOLE	240	LF
STRUCTURAL CONCRETE, RETAINING WALL	127	CY
FRACTURED RIB TEXTURE	2,631	SQ FT
BAR REINFORCING STEEL (RETAINING WALL)	39,549	LB
STRUCTURAL SHOTCRETE	91	CY
TIMBER LAGGING	4	MFBM
CLEAN AND PAINT STEEL SOLDIER PILING	1	LS
MINOR CONCRETE (GUTTER) (CY)	10	CY
CABLE RAILING	303	LF
CONCRETE BARRIER (TYPE 60MD)	303	LF
CONCRETE BARRIER TRANSITION	36	LF

CURVE DATA

No.	R	Δ	T	L
6	350.00'	20°48'09"	64.25'	127.08'
69	14.17'	77°08'23"	11.30'	19.08'

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. MALLA	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 GENERAL PLAN No. 1
SIGN OFF DATE	DETAILS BY: L. DAVIS	CHECKED: K. SERRANO-PAINE	LAYOUT BY: K. SERRANO-PAINE	CHECKED: T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.8	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: J. CHEN	CHECKED: A. CHUNG	SPECIFICATIONS BY: T. MEHTA	PLANS AND SPECS COMPARED: M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	



ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

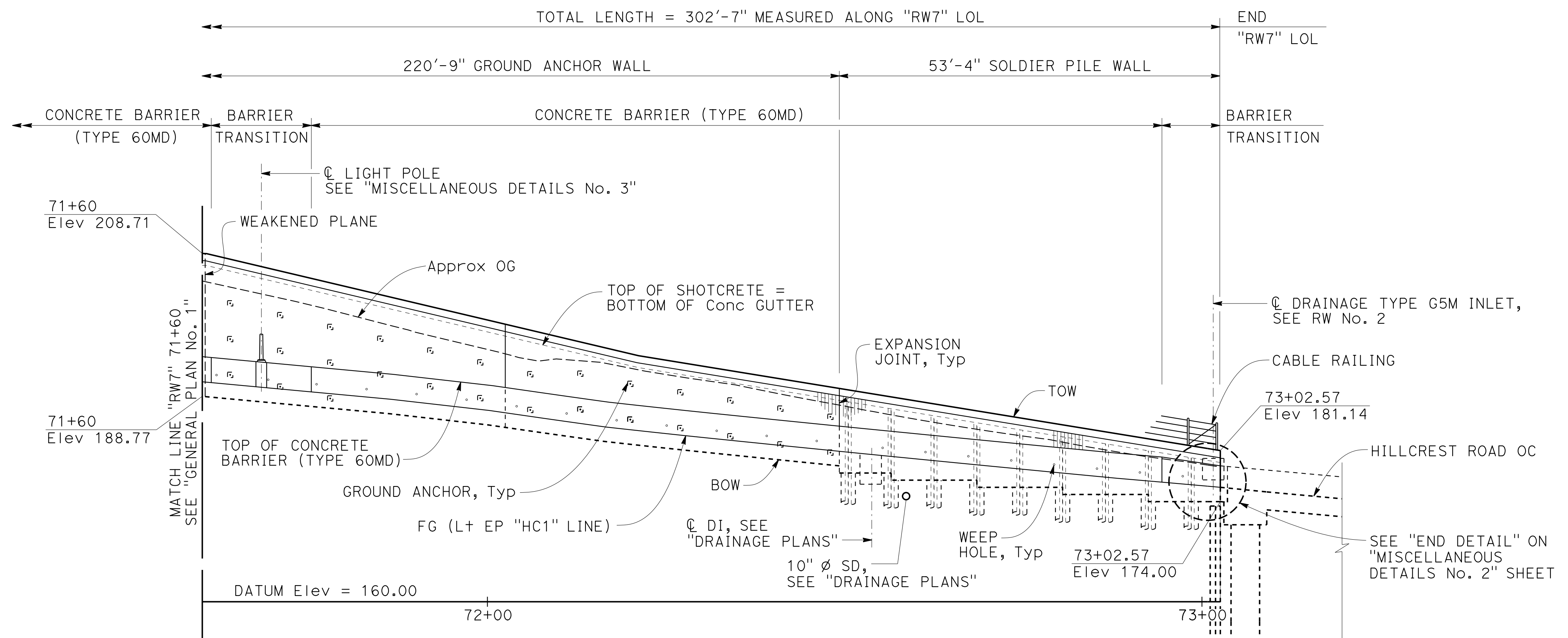
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19

SHEET 115 OF 168

FILE => RW7-a-gp01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	365	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



DEVELOPED ELEVATION

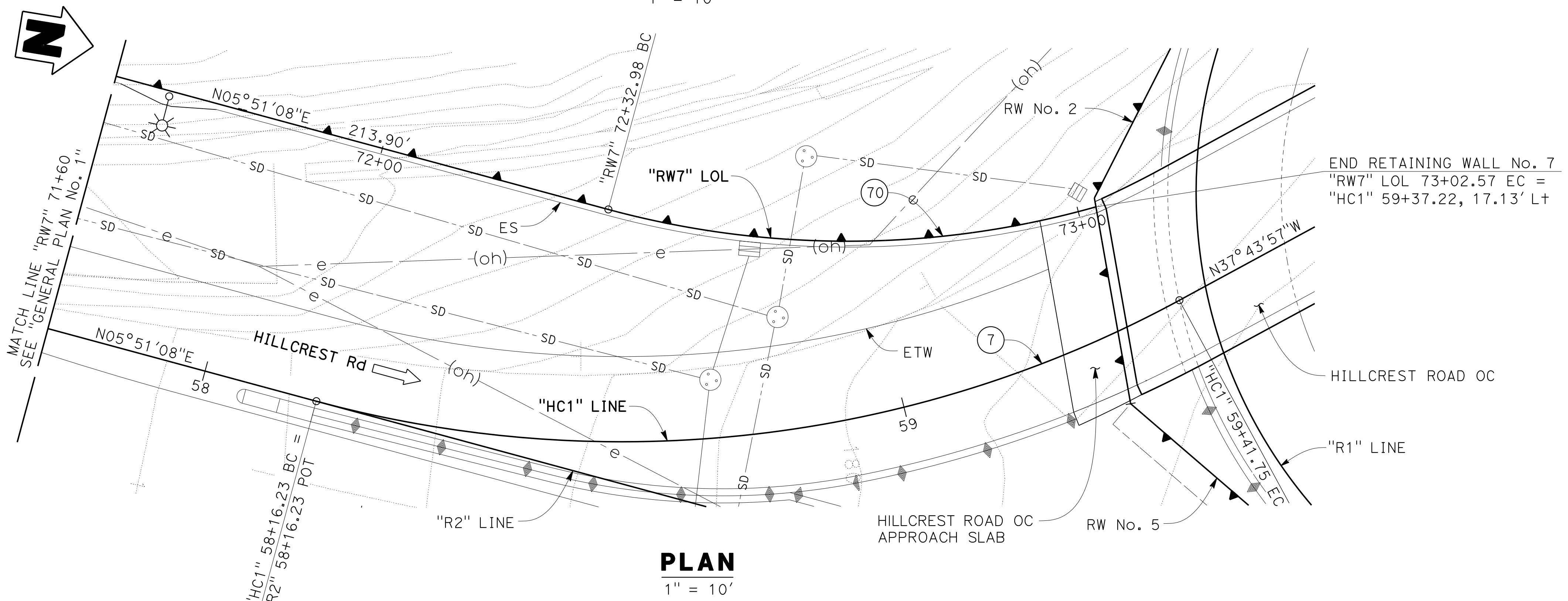
1" = 10'

LEGEND:

← Indicates direction of traffic

NOTE:

1. For additional notes, see "GENERAL PLAN No. 1" sheet.



PLAN

1" = 10'


CURVE DATA

No.	R	Δ	T	L
7	165.00'	43°35'04"	65.97'	125.52'
70	129.17'	30°52'12"	35.66'	69.59'

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 GENERAL PLAN No. 2
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.8	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY J. CHEN	CHECKED A. CHUNG	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 116 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:25

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	366	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th edition with the California Amendments, January 2014

LIVE LOAD: None

CONCRETE: $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

DESIGN DATA - SOLDIER PILE WALL

SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
 Unit Weight, $\gamma = 130$ pcf
 Friction Angle, $\phi = 34$ degrees
 Active Pressure Coefficient, $K_a = 0.50$
 Passive Pressure Coefficient, $K_p = 7.0$
 Seismic Coefficient, $K_h = 0.33$

STRUCTURAL STEEL: ASTM A992 ($f_y = 50$ ksi, $f_u = 65$ ksi)

WELDED STUD: ASTM A29 Type B

STRUCTURAL TIMBER: Treated Douglas Fir, Grade No. 1 or better
 Timber to be full sawn

DESIGN DATA - GROUND ANCHOR WALL

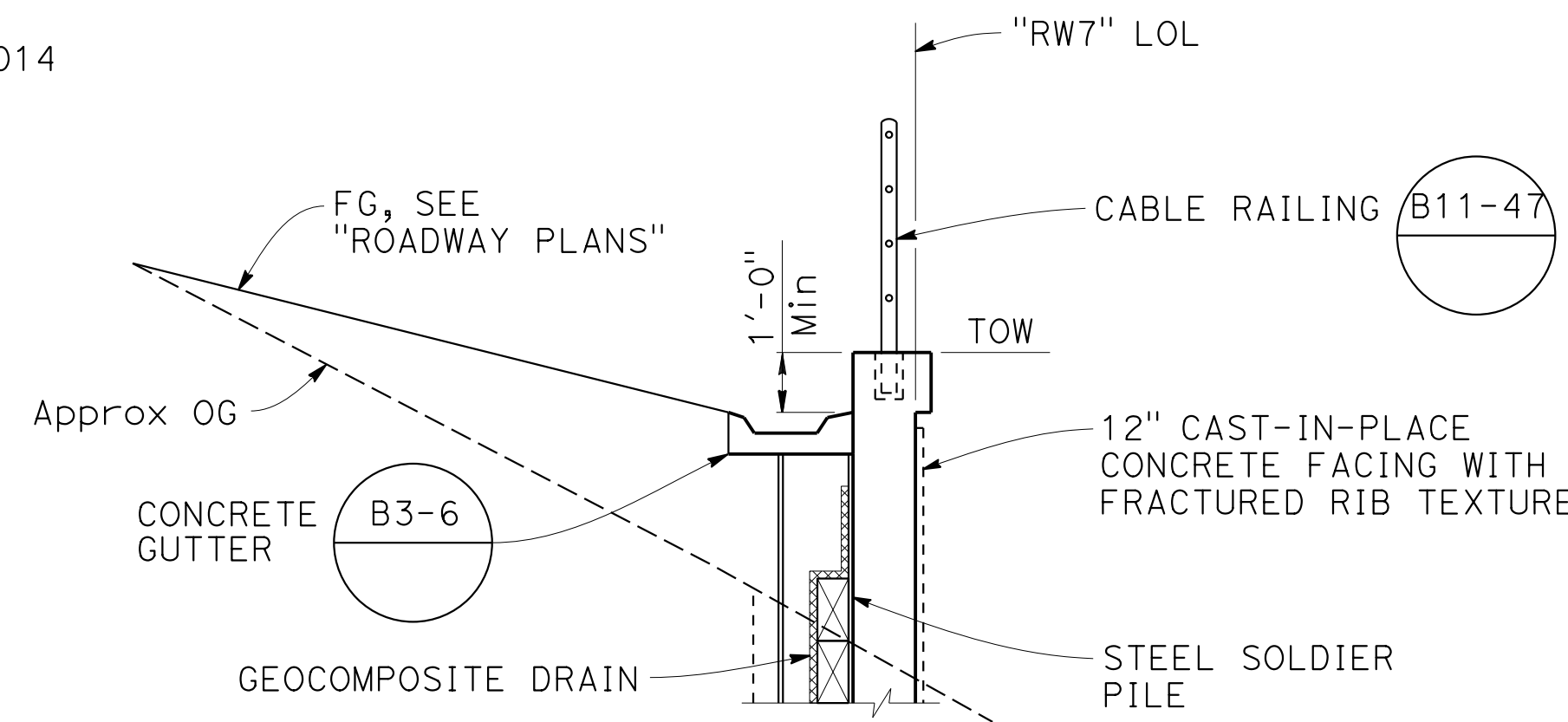
DESIGN: Memo to Designers 5-12, Earth Retaining Systems using ground anchors.

SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
 Unit Weight, $\gamma = 130$ pcf
 Friction Angle, $\phi = 34$ degrees
 Active Pressure Coefficient, $K_a = 0.5$
 Seismic Coefficient, $K_h = 0.33$

SHOTCRETE: $f'_c = 4,000$ psi
 $f_y = 60,000$ psi

PRESTRESSING STEEL: See "SUB HORIZONTAL GROUND ANCHOR DETAILS" sheet.

STEEL PLATE: ASTM A709 GRADE 36
 Unbonded Length, $L_e = 25'-0"$

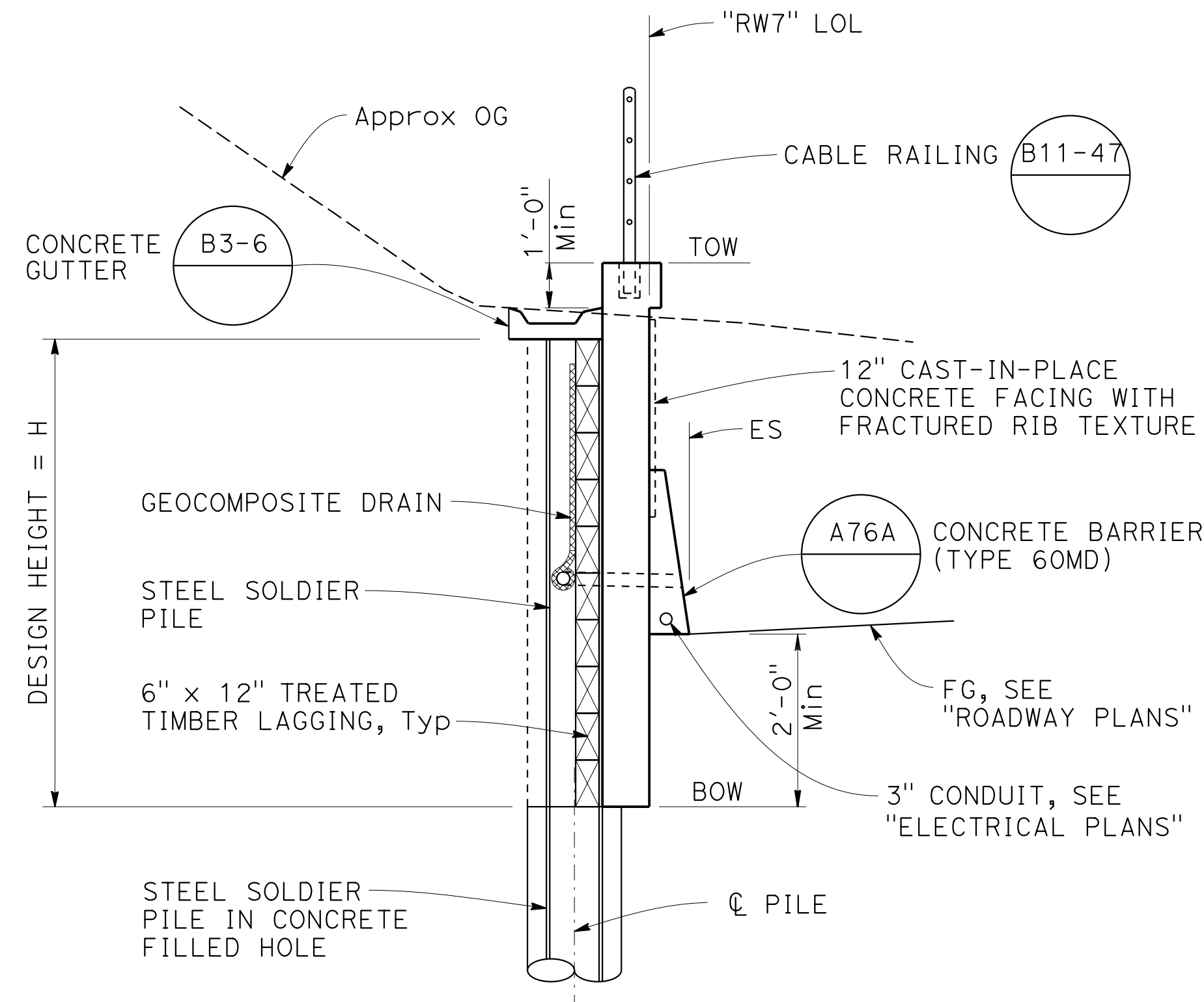


NOTE: FOR INFORMATION NOT SHOWN, SEE TYPICAL SECTION "RW7" 72+49.25 TO 73+02.57

TYPICAL SECTION

3/8" = 1'-0"

"RW7" 70+00 TO 70+28.50



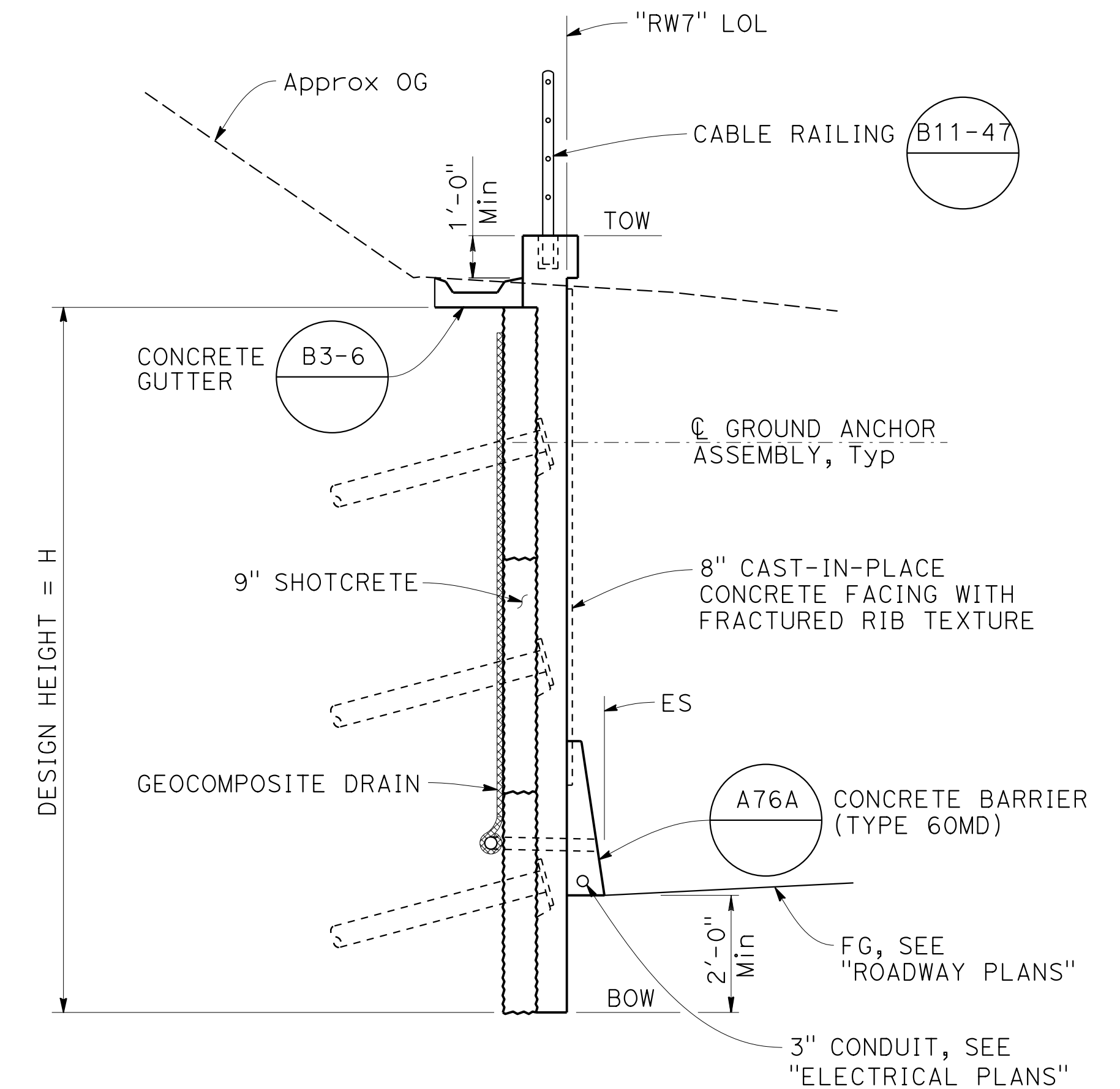
TYPICAL SECTION

3/8" = 1'-0"

"RW7" 72+49.25 TO 73+02.57

NOTES:

- For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
- For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet and "SOLDIER PILE WALL DETAILS" sheets.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- For excavation and backfill, see "MISCELLANEOUS DETAILS No. 2" sheet.



TYPICAL SECTION

3/8" = 1'-0"


"RW7" 70+28.50 TO 72+49.25

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. MALLA	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7	
DETAILS	BY: L. DAVIS	CHECKED: K. SERRANO-PAINE	LAYOUT BY: K. SERRANO-PAINE	CHECKED: T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.8	GENERAL PLAN No. 3	
QUANTITIES	BY: J. CHEN	CHECKED: A. CHUNG	SPECIFICATIONS BY: T. MEHTA	PLANS AND SPECS COMPARED: M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404	REVISION DATES	SHEET 117 OF 168
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
					FILE => RW7-a-gp03.dgn		REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	367	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

LEGEND:

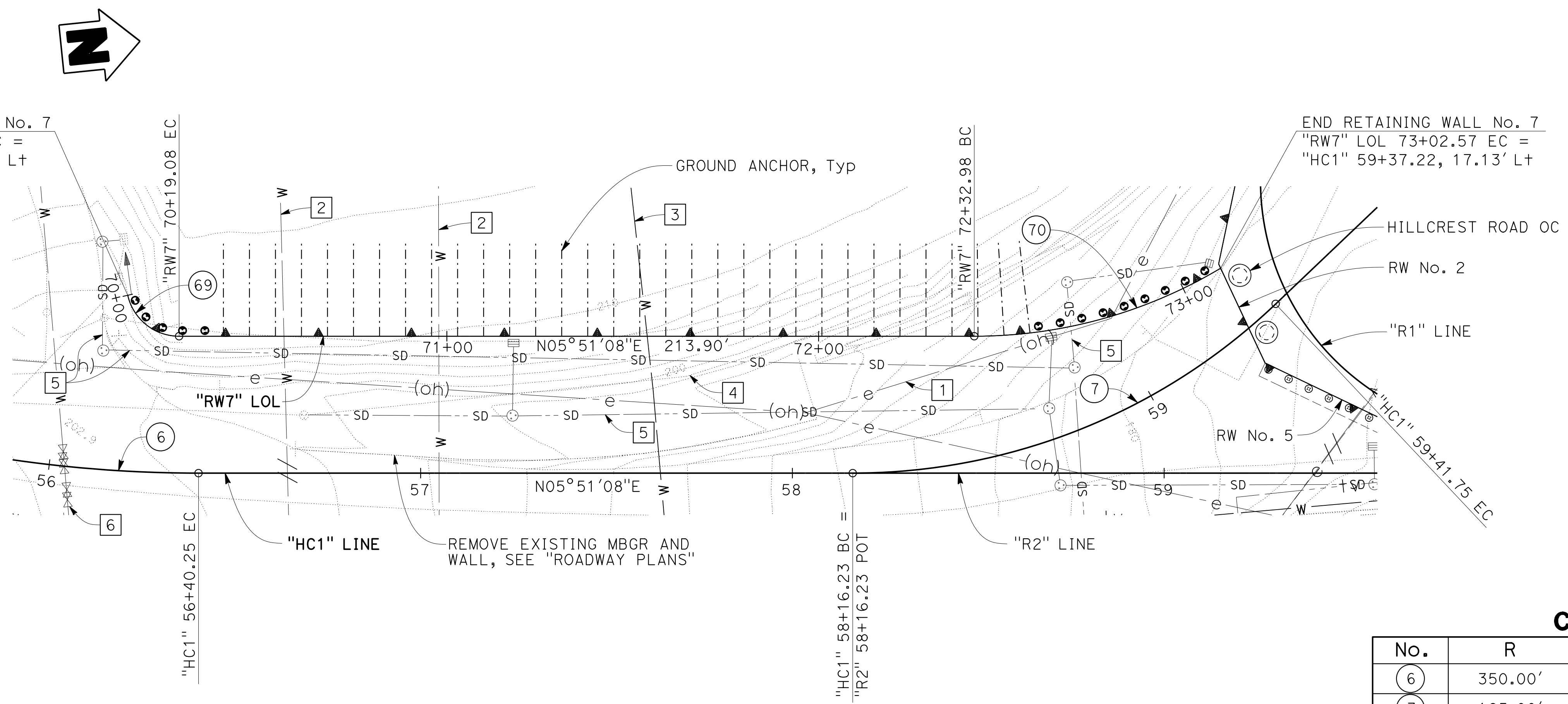
- ⊙ Indicates Steel Soldier Pile
- ⊕ Indicates CIDH Pile

NOTES:

1. Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
2. For drainage details, see "DRAINAGE PLANS".

UTILITIES:

- 1 Existing Overhead Electrical to be removed
- 2 Existing Abandoned Water
- 3 Existing Water to be Abandoned
- 4 Existing Storm Drain to be Abandoned
- 5 Storm Drain
- 6 Relocated Water



BEGIN RETAINING WALL No. 7
 "RW7" LOL 70+00.00 BC =
 "HC1" 56+18.22, 47.25' Lt

END RETAINING WALL No. 7
 "RW7" LOL 73+02.57 EC =
 "HC1" 59+37.22, 17.13' Lt

CURVE DATA

No.	R	Δ	T	L
6	350.00'	20° 48' 09"	64.25'	127.08'
7	165.00'	43° 35' 04"	65.97'	125.52'
69	14.17'	77° 08' 23"	11.30'	19.08'
70	129.17'	30° 52' 12"	35.66'	69.59'

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

5-17-19
 APPROVAL DATE
 JOHN MANISCALCO
 REGISTERED PROFESSIONAL ENGINEER

DESIGN OVERSIGHT	SCALE: 1" = 20'	VERT.DATUM NGVD29	HORIZ.DATUM NAD83, CCS ZONE 3	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 FOUNDATION PLAN
SIGN OFF DATE	PHOTOGRAMMETRY AS OF: 10-9-2015	ALIGNMENT TIES	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.8	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)	SURVEYED BY TOWILL Inc.	DRAFTED BY D. ORTEGA	QUANTITIES BY J. CHEN	CHECKED A. CHUNG	UNIT: 0728		CONTRACT NO.: 04-3A6404	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 PROJECT NUMBER & PHASE: 04000205071
 REVISION DATES: 4-30-18, 11-14-18, 2-27-19, 7-25-19
 SHEET 118 OF 168
 FILE => RW7-e-fp101.dgn

USERNAME => JOHGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	368	436

LEGEND:

⊕ Location of ground anchor assembly

NOTES:

1. For information not shown, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
2. For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet.
3. Cable railing and concrete barrier not shown for clarity.
4. Top most row of ground anchors in each design zone is considered "ROW 1". For "GROUND ANCHOR DESIGN TABLE" see "GROUND ANCHOR WALL LAYOUT No. 2" sheet.
5. For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".

REGISTERED CIVIL ENGINEER DATE 7-25-19

PLANS APPROVAL DATE

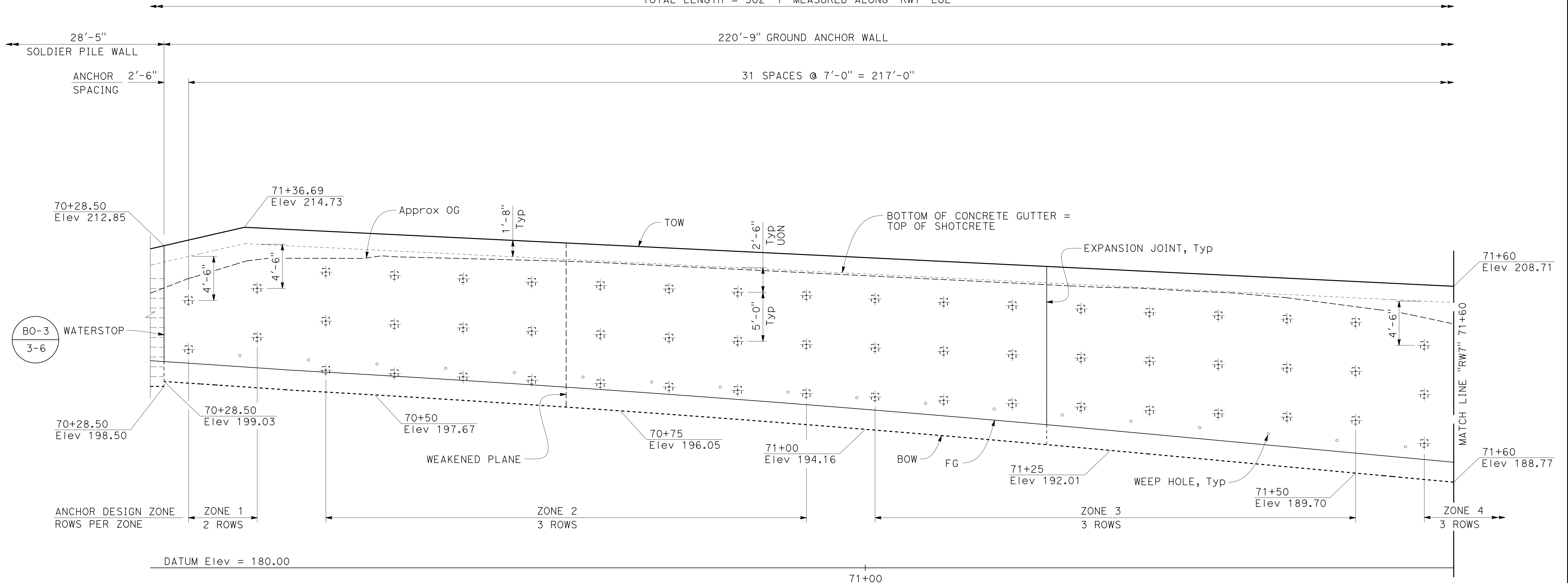
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

TOTAL LENGTH = 302'-7" MEASURED ALONG "RW7" LOL



DEVELOPED ELEVATION

1" = 5'

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 GROUND ANCHOR WALL LAYOUT No. 1	
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.8
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY J. CHEN	CHECKED A. CHUNG		PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A6404

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0728

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-30-18	119	168
11-12-18		
2-27-19		
7-25-19	119	168

FILE => RW7-f-gow_1o01.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:26

GROUND ANCHOR DESIGN TABLE

GROUND ANCHOR ZONE	LOCATION	FACTORED DESIGN LOAD FDL (kips)	FACTORED TEST LOAD FTL (kips)	LOCK-OFF LOAD LL (kips)
ZONE 1	ROW 1	50	60	34
	ROW 2	59	71	40
ZONE 2	ROW 1	41	49	28
	ROW 2	39	45	27
	ROW 3	46	55	31
ZONE 3	ROW 1	48	57	33
	ROW 2	36	42	25
	ROW 3	79	95	53
ZONE 4	ROW 1	71	84	48
	ROW 2	37	43	25
	ROW 3	61	73	41
ZONE 5	ROW 1	50	60	34
	ROW 2	63	75	43
ZONE 6	ROW 1	27	33	19
	ROW 2	44	54	30

LEGEND:

⊕ Location of ground anchor assembly

NOTES:

- For information not shown, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
- For details not shown, see "GROUND ANCHOR WALL DETAILS" sheet.
- Cable railing and concrete barrier not shown for clarity.
- Top most row of ground anchors in each design zone is considered "ROW 1".
- For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".

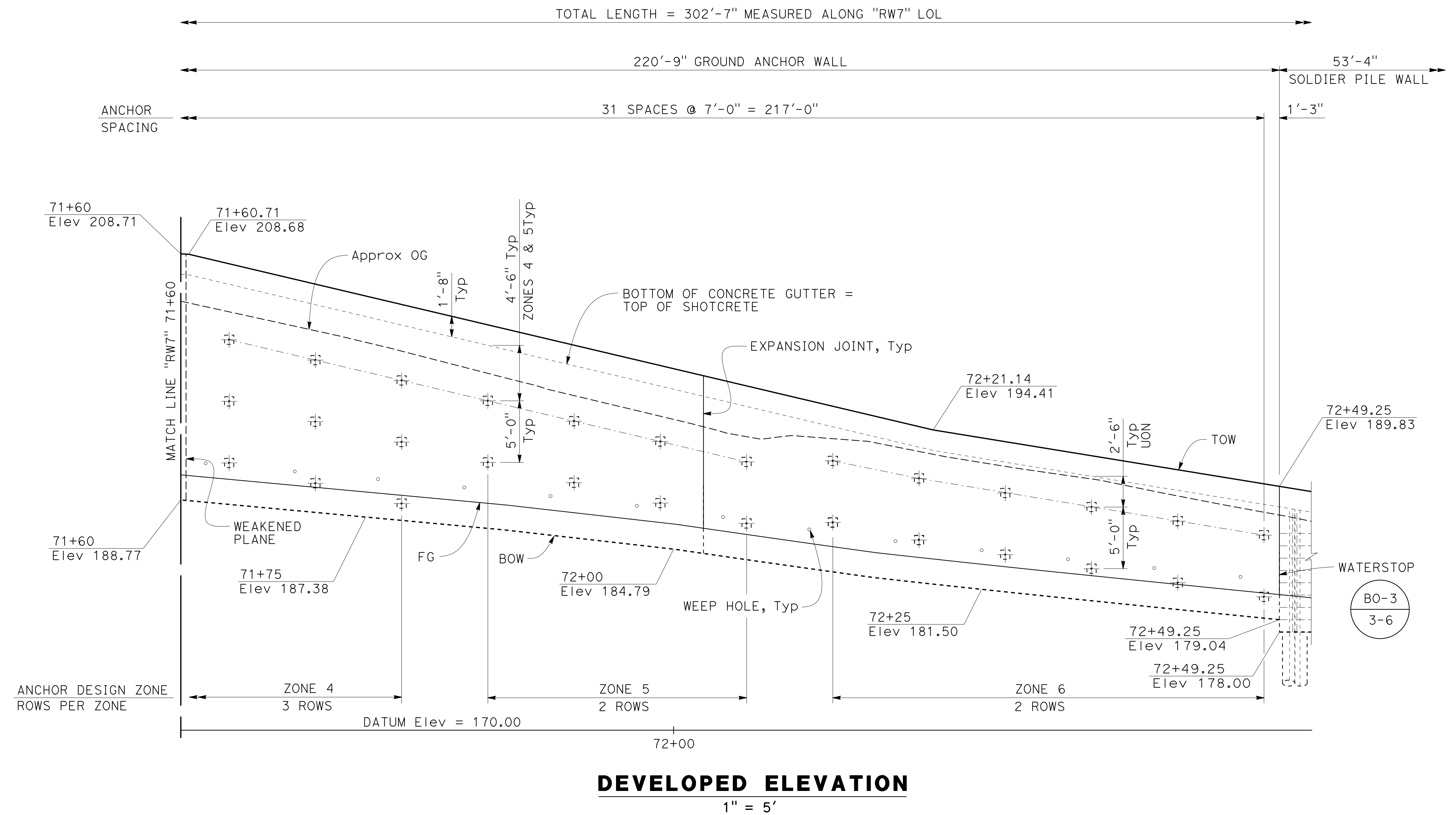
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	369	436

REGISTERED CIVIL ENGINEER
DATE: 7-25-19
PLANS APPROVAL DATE: _____

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 GROUND ANCHOR WALL LAYOUT No. 2	
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO		POST MILES: 7.8
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: J. CHEN	CHECKED: A. CHUNG		PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A604

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

UNIT: 0728
PROJECT NUMBER & PHASE: 04000205071
CONTRACT NO.: 04-3A604

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-28-18	120	168
11-12-18		
2-27-19		
7-25-19		

FILE => RW7-f-gow_1o02.dgn

SOLDIER PILE TABLE

PILE NUMBER	"RW7" LOL STATION	TOW ELEVATION (FEET)	TOP OF PILE ELEVATION (FEET)	TIP ELEVATION (FEET)	PILE TYPE
1	70+02.00	206.78	205.11	189.00	W14x82
2	70+08.00	208.16	206.49	189.00	W14x82
3	70+14.00	209.54	207.87	189.00	W14x82
4	70+20.00	210.91	209.24	186.00	W14x82
5	70+26.00	212.28	210.61	186.00	W14x82
6	72+50.50	189.63	187.96	167.50	W14x82
7	72+56.50	188.65	186.98	166.50	W14x82
8	72+62.50	187.67	186.00	166.50	W14x82
9	72+68.50	186.69	185.02	165.50	W14x82
10	72+74.50	185.72	184.05	165.50	W14x82
11	72+80.50	184.74	183.07	166.50	W14x82
12	72+86.50	183.76	182.09	166.50	W14x82
13	72+92.50	182.78	181.11	165.50	W14x82
14	72+98.50	181.81	180.14	165.50	W14x82

NOTES:

1. For information not shown, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
2. For details not shown, see "SOLDIER PILE WALL DETAILS" sheets.
3. Cable railing and concrete barrier not shown for clarity.
4. For drainage details, see "MISCELLANEOUS DETAILS No. 1" and "DRAINAGE PLANS".

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	370	436

REGISTERED CIVIL ENGINEER *[Signature]* DATE 7-25-19

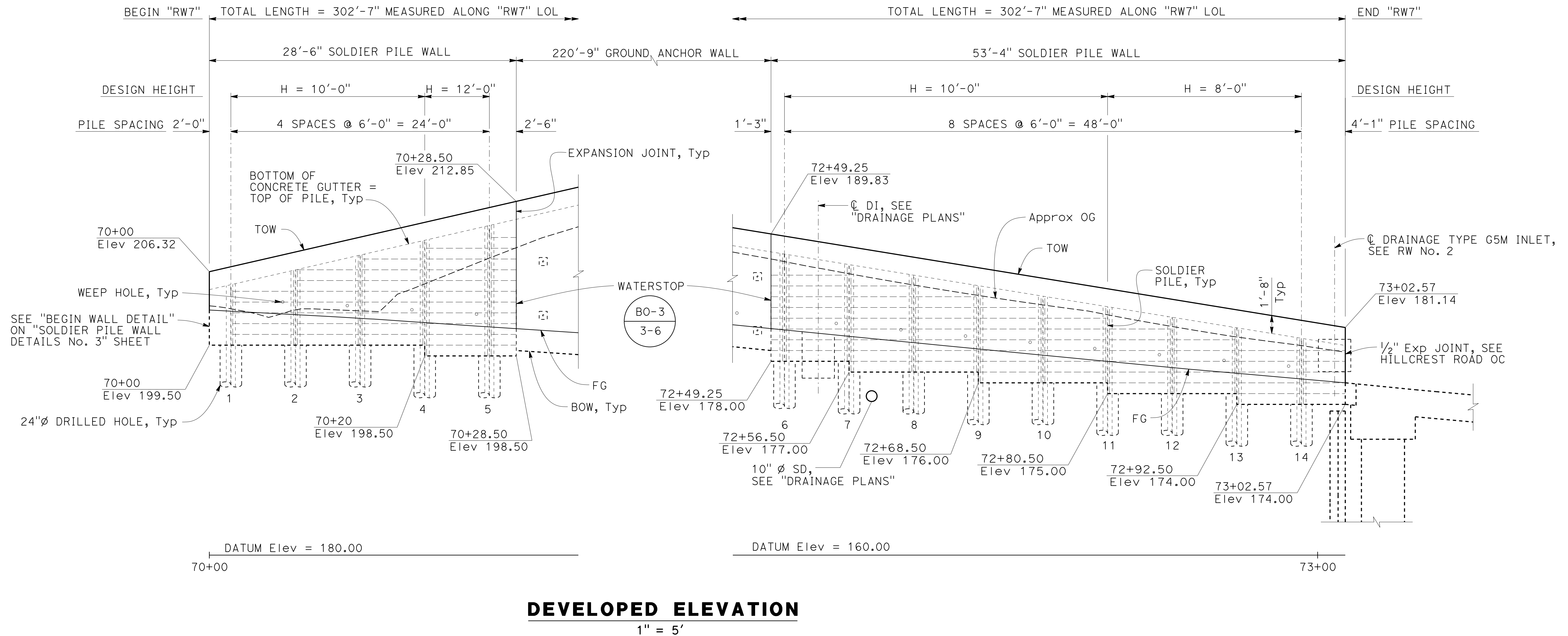
PLANS APPROVAL DATE _____

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
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STATE OF CALIFORNIA

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100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



DEVELOPED ELEVATION

1" = 5'

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER: JOHN MANISCALCO	BRIDGE NO.: N/A	RETAINING WALL No. 7 SOLDIER PILE WALL LAYOUT
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT NUMBER & PHASE: 04000205071	POST MILES: 7.8	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: J. CHEN	CHECKED: A. CHUNG		CONTRACT NO.: 04-3A6404	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	

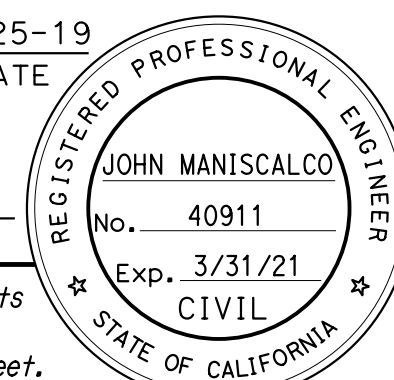
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

UNIT: 0728

DISREGARD PRINTS BEARING EARLIER REVISION DATES

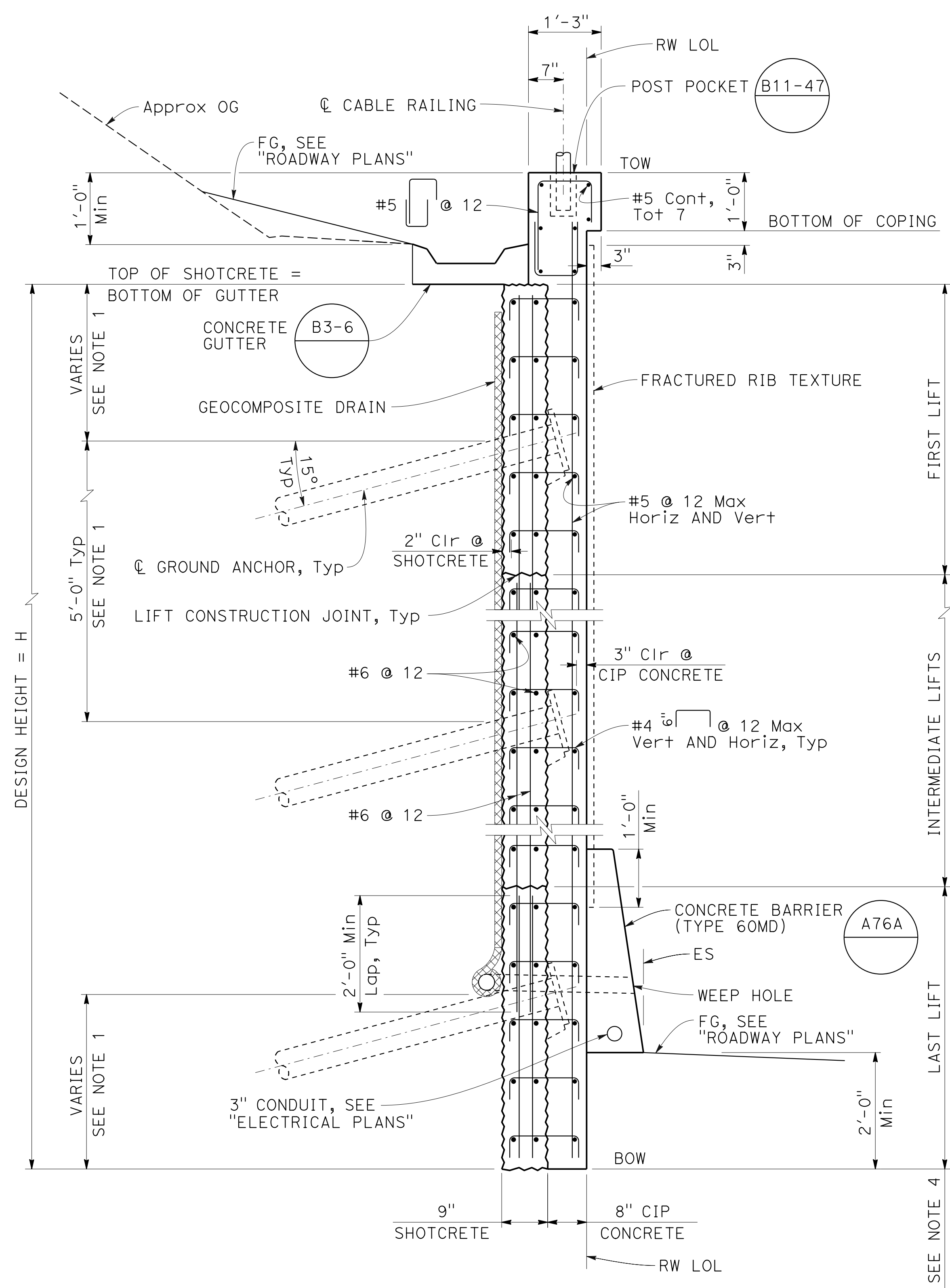
SHEET 121 OF 168

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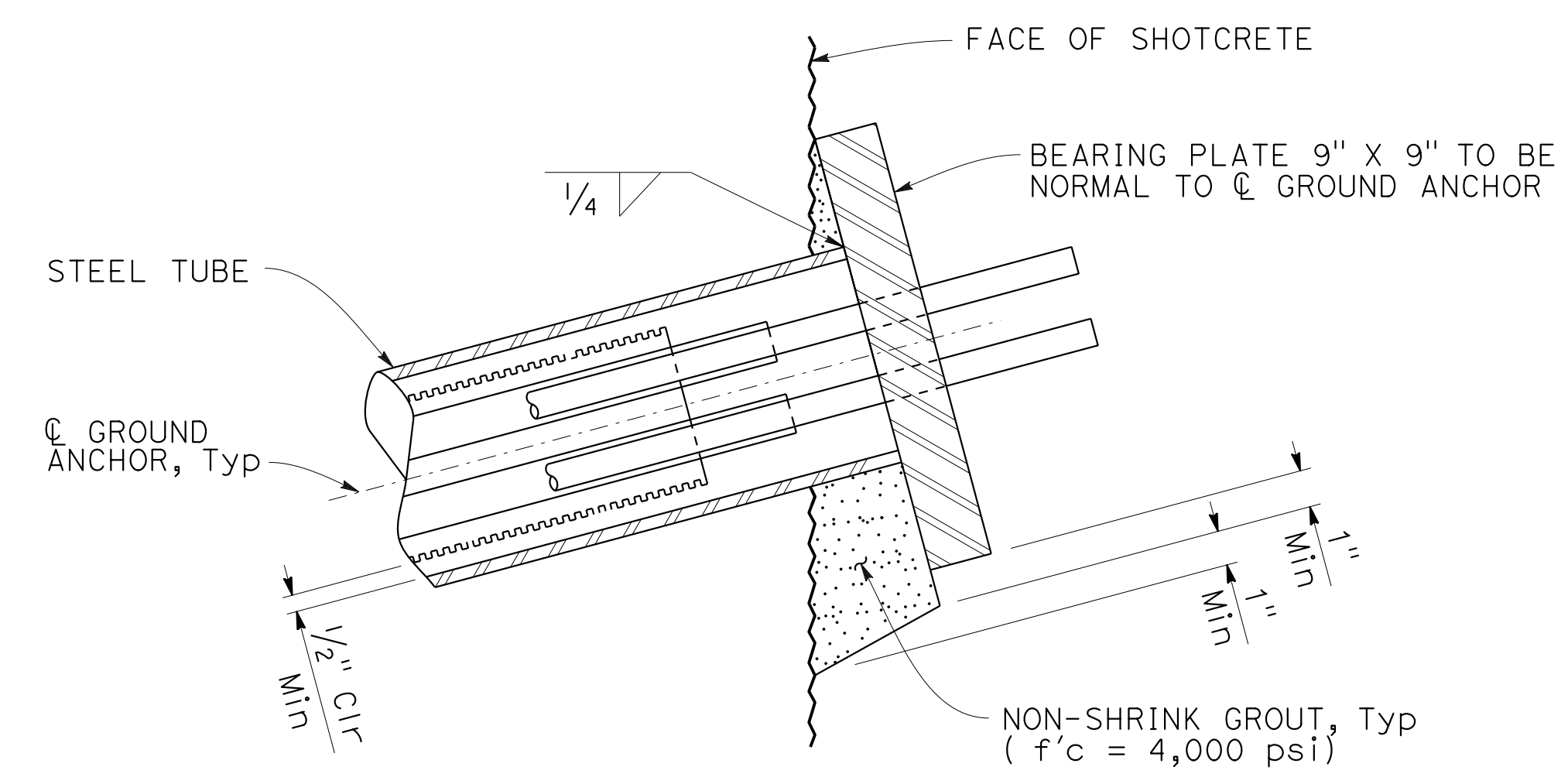
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	371	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

- For wall layout and ground anchor spacing, see "GROUND ANCHOR WALL LAYOUT" sheets.
- BOW shall be placed against undisturbed material.
- For limits and type of gutter, see typical sections on "GENERAL PLAN No. 3" sheet.
- All ground anchor wall lifts shall not exceed 5'-0".
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" SHEET.



GROUND ANCHOR WALL SECTION
3/4" = 1'-0"




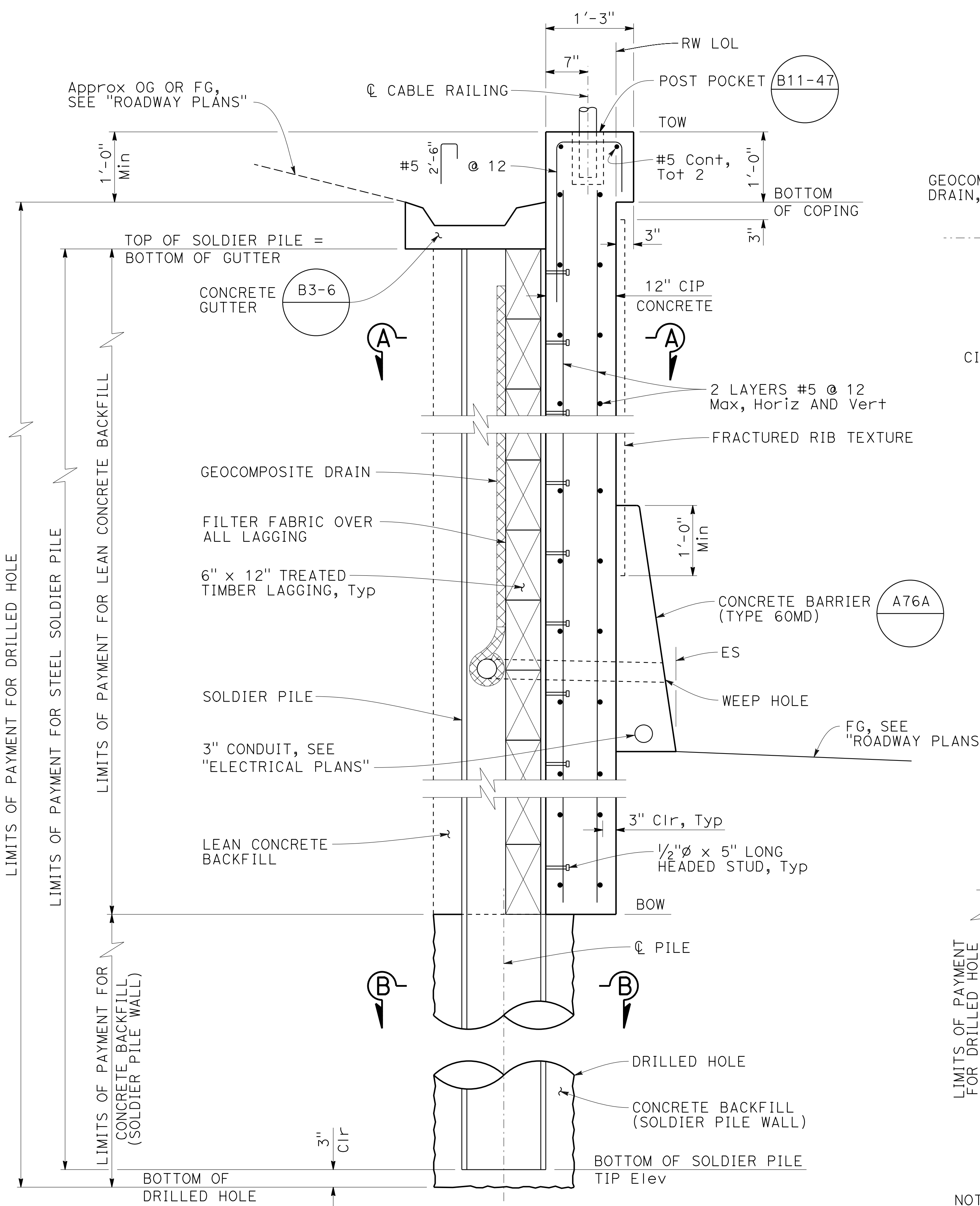
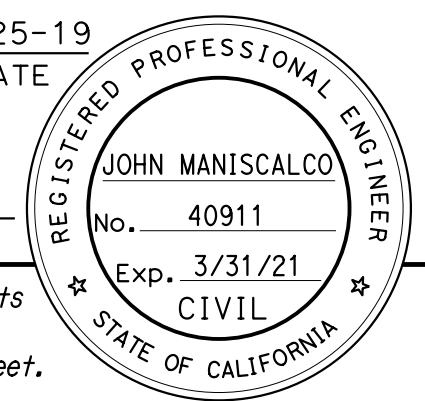
GROUND ANCHOR ANCHORAGE DETAIL
NO SCALE

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

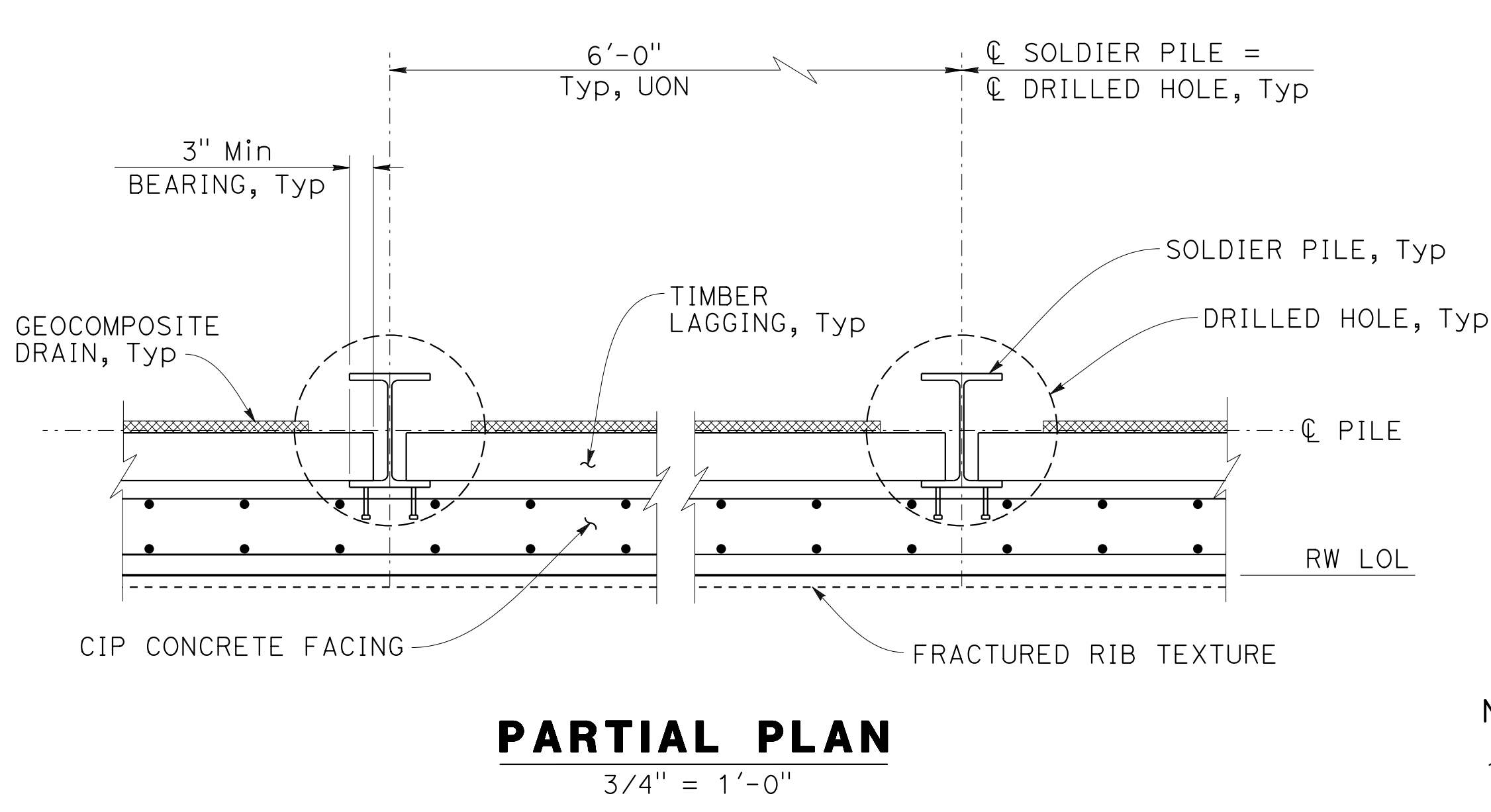
DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	RETAINING WALL No. 7 GROUND ANCHOR WALL DETAILS
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		N/A	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: J. CHEN	CHECKED: A. CHUNG		POST MILES: 7.8	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A6404	REVISION DATES	SHEET 122 OF 168
			DISREGARD PRINTS BEARING EARLIER REVISION DATES	4-30-18 11-12-18 2-27-19 7-25-19	

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:27

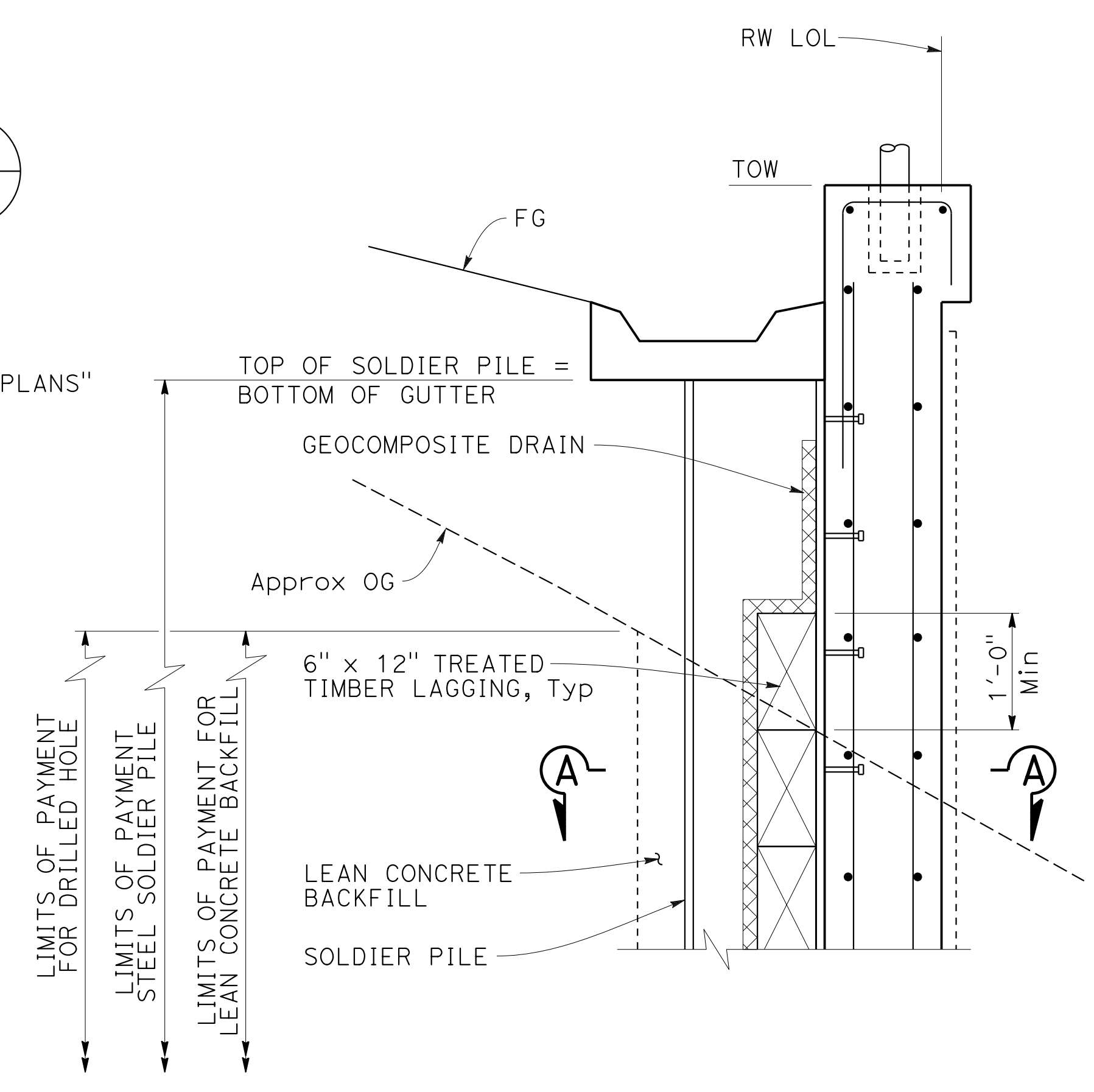
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	372	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE _____					
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HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



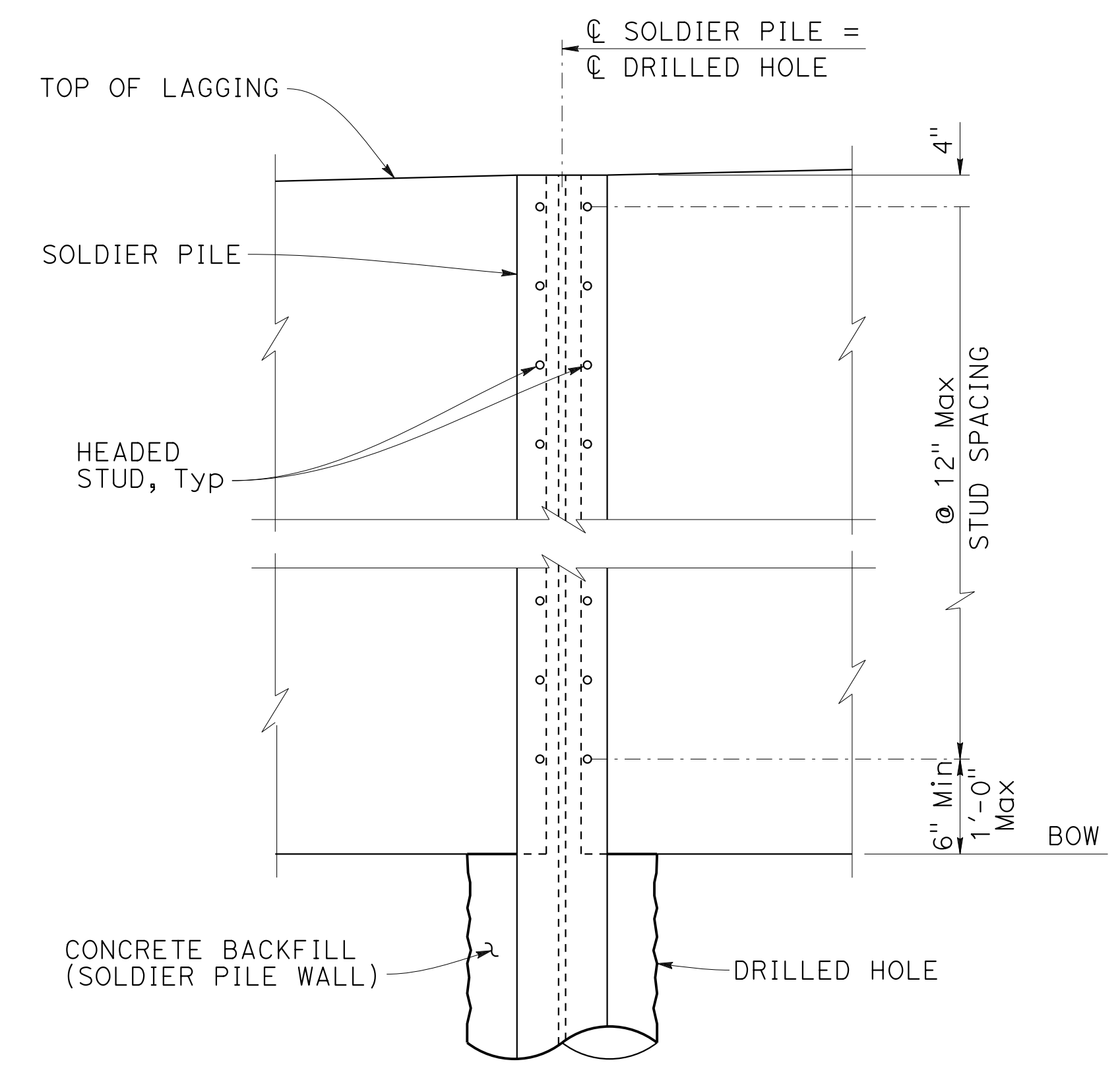
SOLDIER PILE WALL SECTION IN CUT
1" = 1'-0"



PARTIAL PLAN
3/4" = 1'-0"



SOLDIER PILE WALL SECTION IN FILL
1" = 1'-0"



PARTIAL ELEVATION
3/4" = 1'-0"

- NOTES:**
1. For "SECTION A-A" and "SECTION B-B", see "SOLDIER PILE WALL DETAILS No. 2" sheet.
 2. For timber lagging details, see "SOLDIER PILE WALL DETAILS No. 3" sheet.
 3. For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.

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

DESIGN OVERSIGHT	BY K. SERRANO-PAINE	CHECKED A. MALLA
SIGN OFF DATE	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
	BY J. CHEN	CHECKED A. CHUNG

DESIGN	BY K. SERRANO-PAINE	CHECKED A. MALLA
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY J. CHEN	CHECKED A. CHUNG

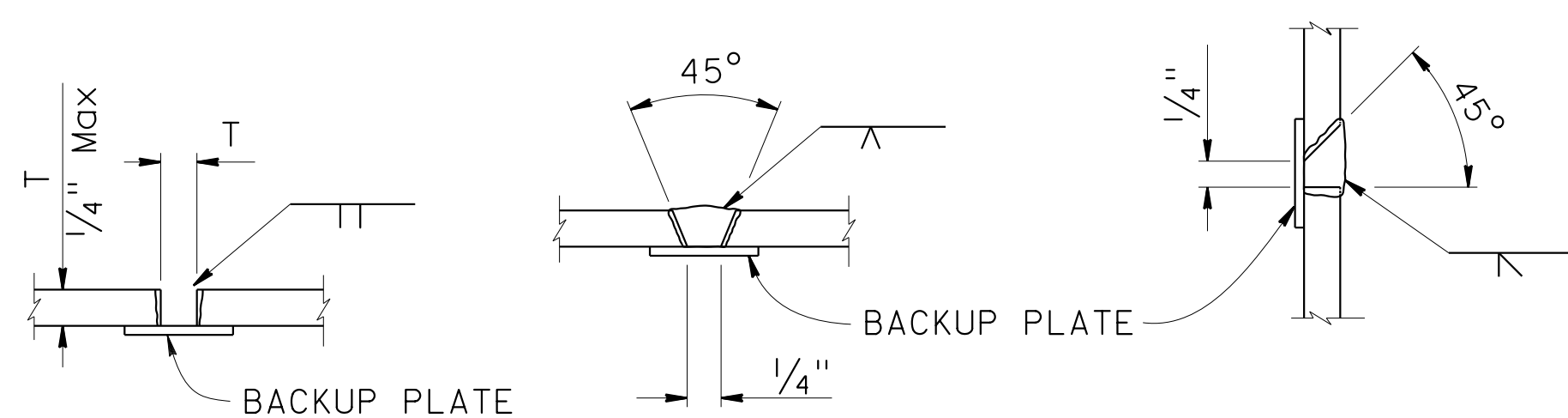
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		JOHN MANISCALCO PROJECT ENGINEER
BRIDGE NO. N/A		POST MILES 7.8

RETAINING WALL No. 7 SOLDIER PILE WALL DETAILS No. 1	
UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071
CONTRACT NO.: 04-3A6404	REVISION DATES

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	123	168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:27

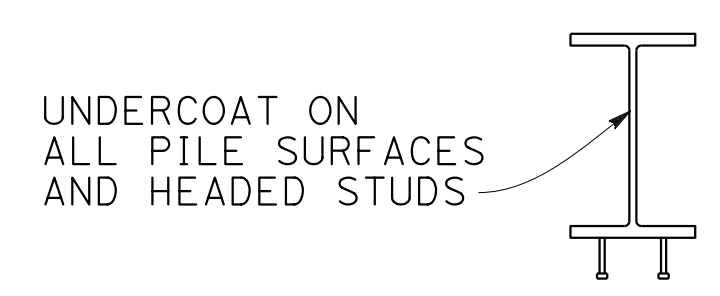
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	373	436
REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE			7-25-19		
JOHN MANISCALCO No. 40911 Exp. 3/31/21 CIVIL STATE OF CALIFORNIA					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



SQUARE GROOVE SINGLE VEE-GROOVE SINGLE BEVEL-GROOVE

PILE WELDING DETAIL-BUTT JOINTS

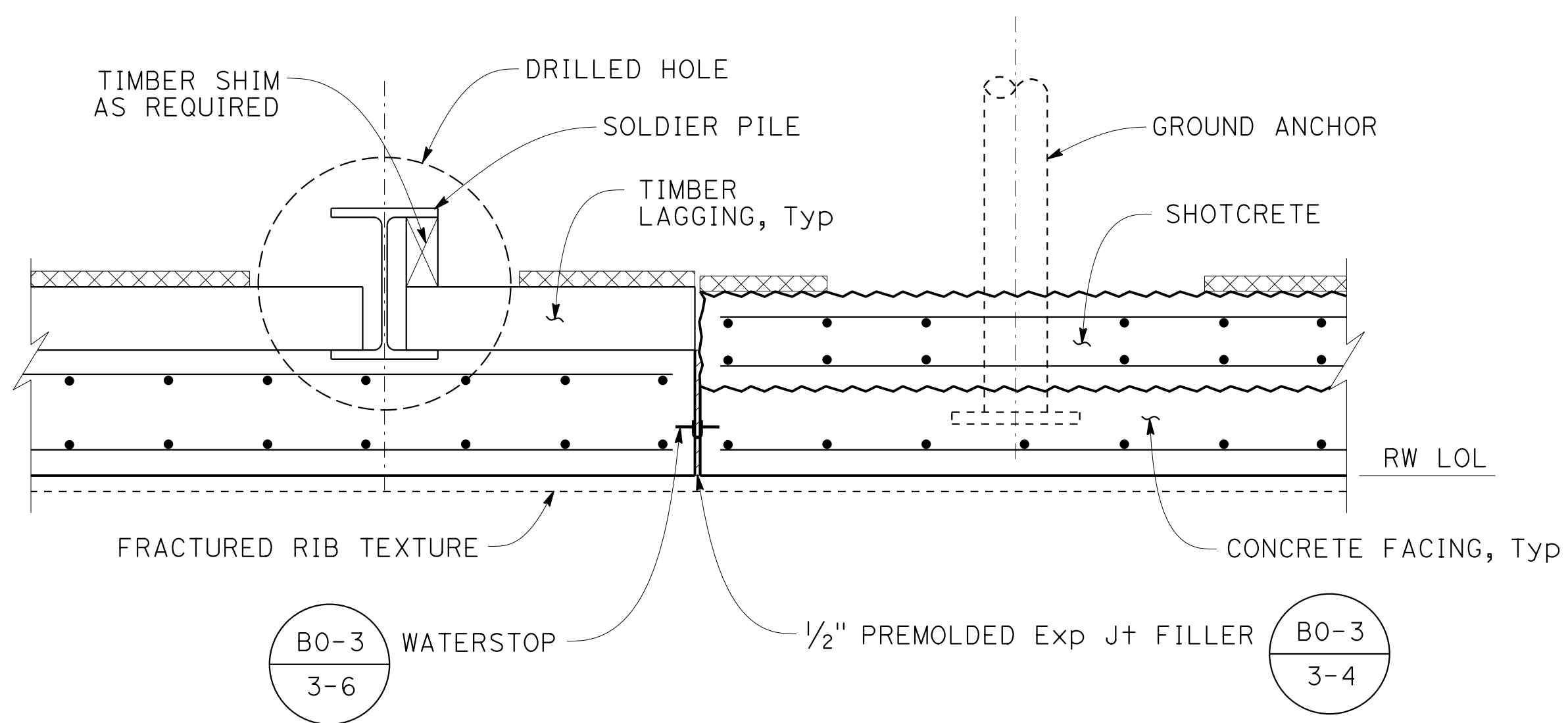
NO SCALE



NOTE: CLEAN AND PAINT STEEL SOLDIER PILE FROM TOP OF PILE TO 5'-0" BELOW BOTTOM OF TIMBER LAGGING.

LIMITS OF CLEAN & PAINT STEEL SOLDIER PILE

NO SCALE



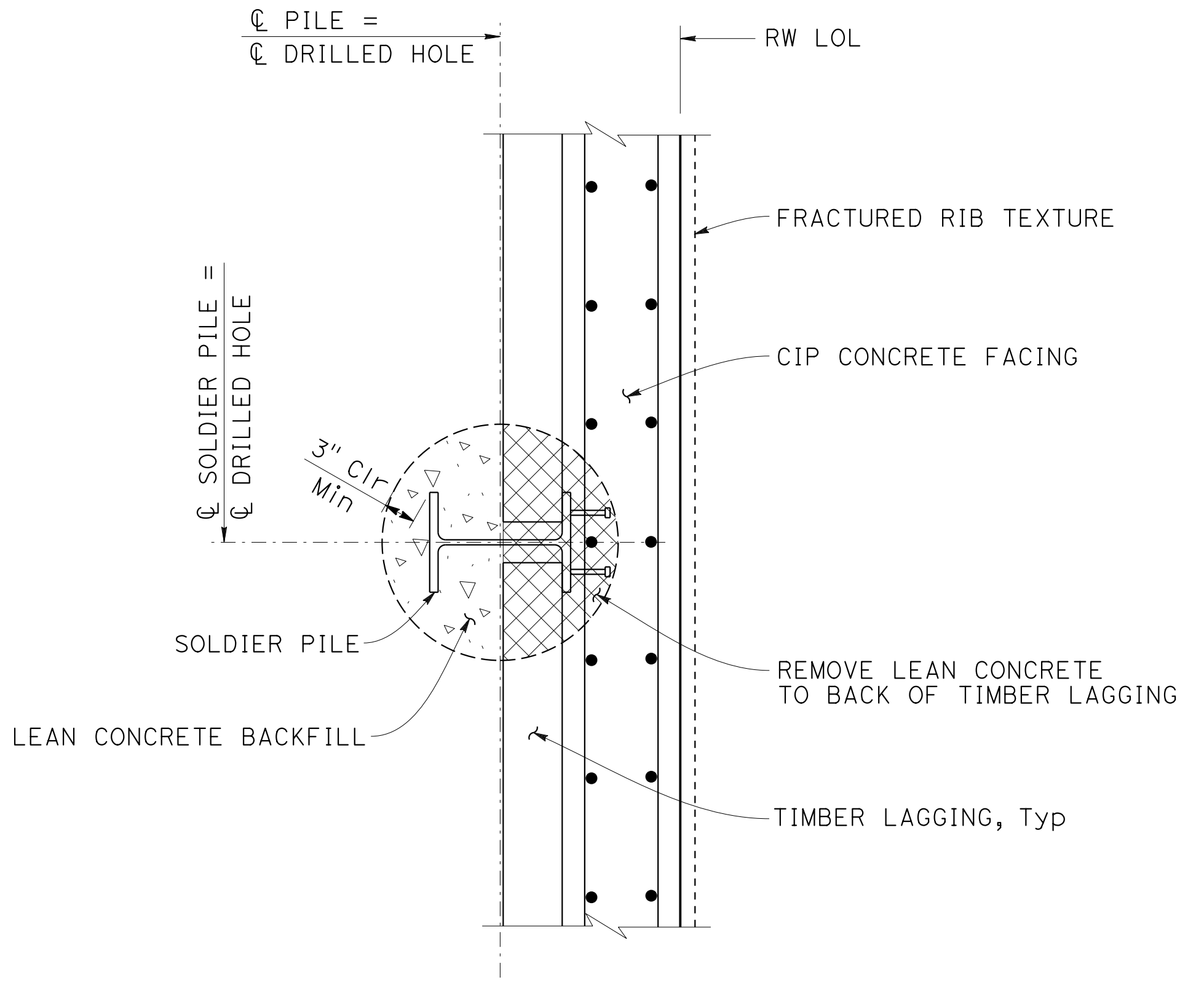
SOLDIER PILE WALL TO SHOTCRETE WALL JOINT

1" = 1'-0"

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

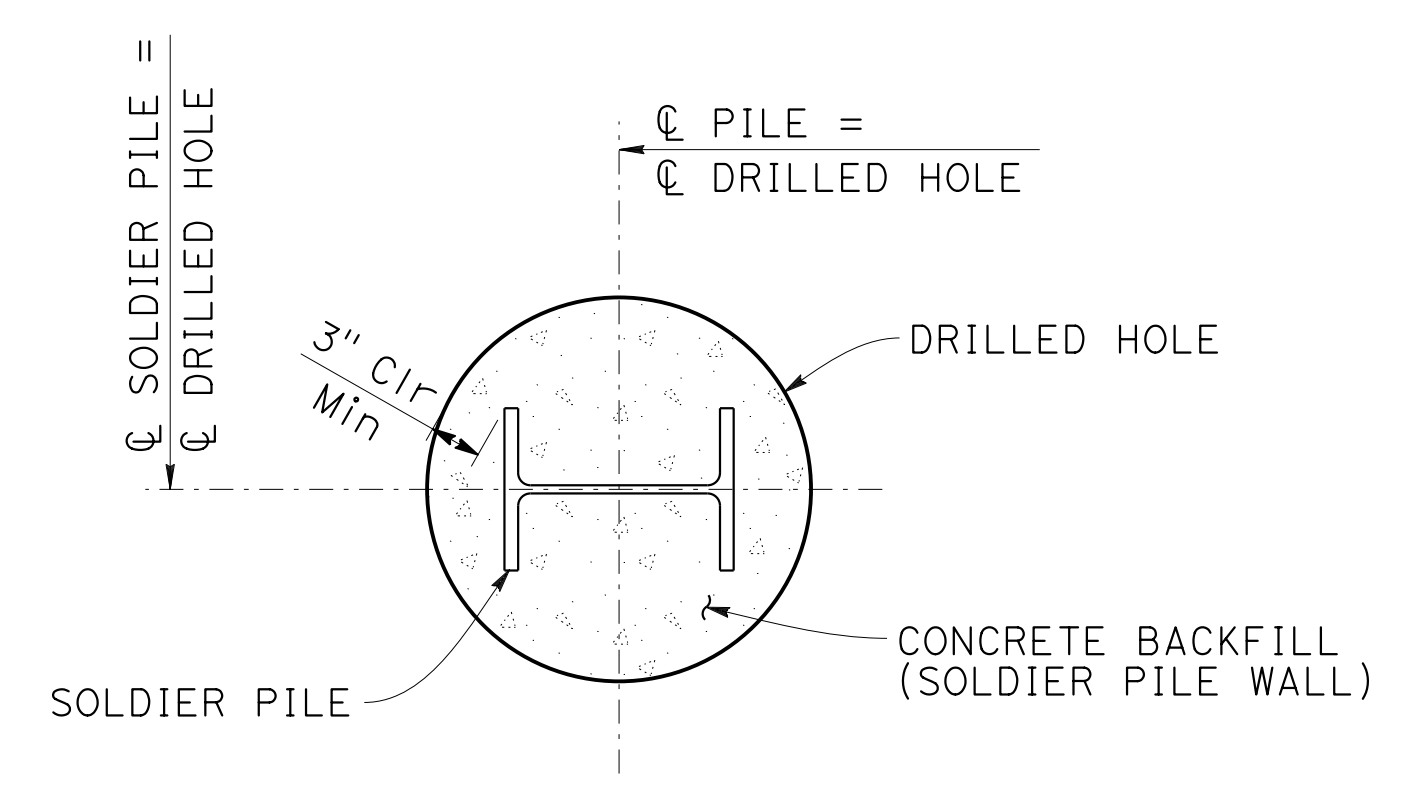
NOTES:

1. Single vee-groove and square groove permitted for all positions.
2. Single bevel-groove permitted for horizontal joints only.
3. Repair damage areas of paint after anchor installation.



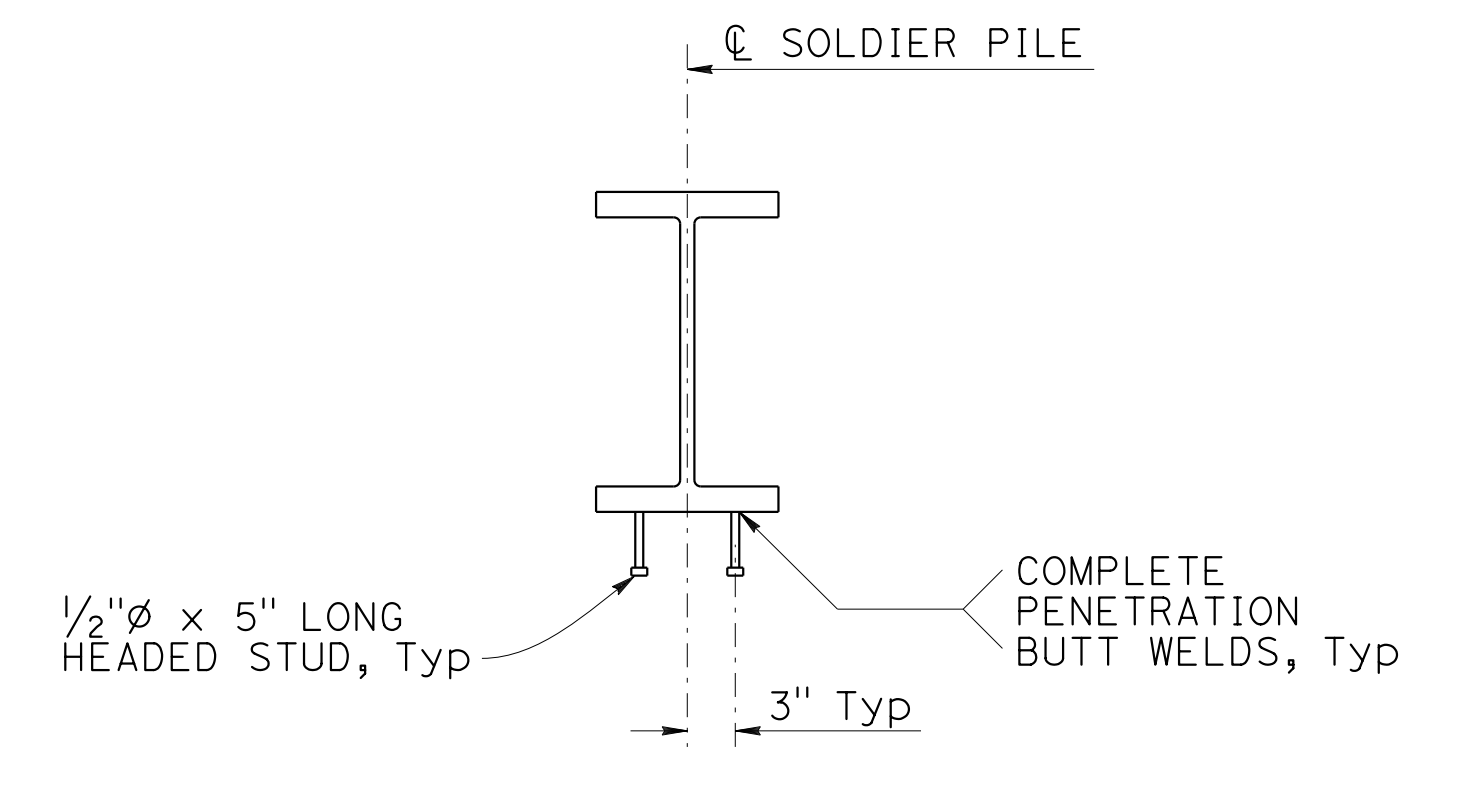
SECTION A-A

1" = 1'-0"



SECTION B-B

1" = 1'-0"



CONCRETE ANCHOR DETAIL

NO SCALE

DESIGN OVERSIGHT	
SIGN OFF DATE	

DESIGN	BY K. SERRANO-PAINE	CHECKED A. MALLA
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY J. CHEN	CHECKED A. CHUNG

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	7.8

RETAINING WALL No. 7
SOLDIER PILE WALL DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	4-30-18 11-12-18 2-27-19 7-25-19	124	168

FILE => RW7-g-spwdt02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:27

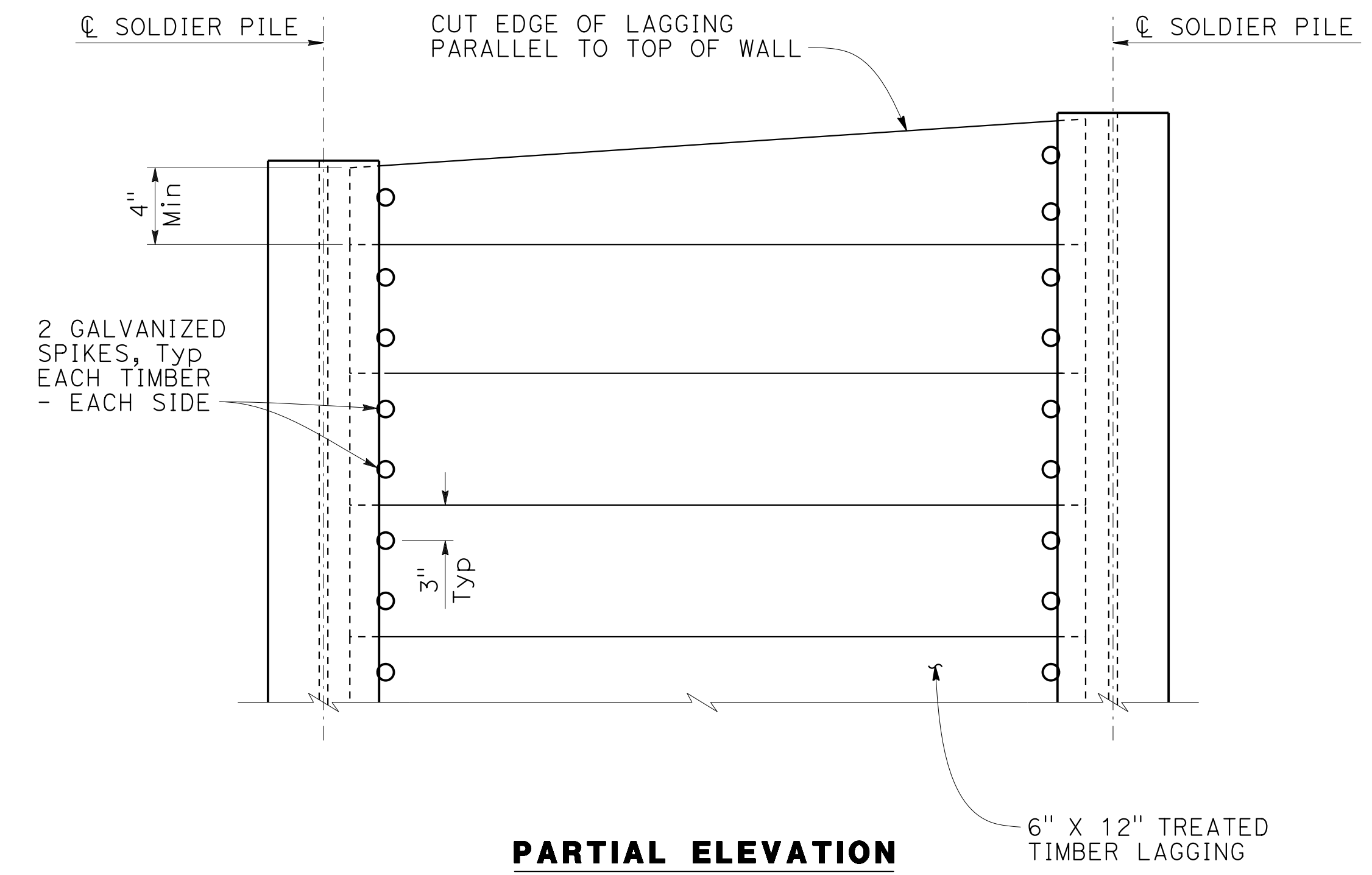
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	374	436

REGISTERED CIVIL ENGINEER **JOHN MANISCALCO** No. 40911 Exp. 3/31/21 CIVIL
 DATE 7-25-19
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

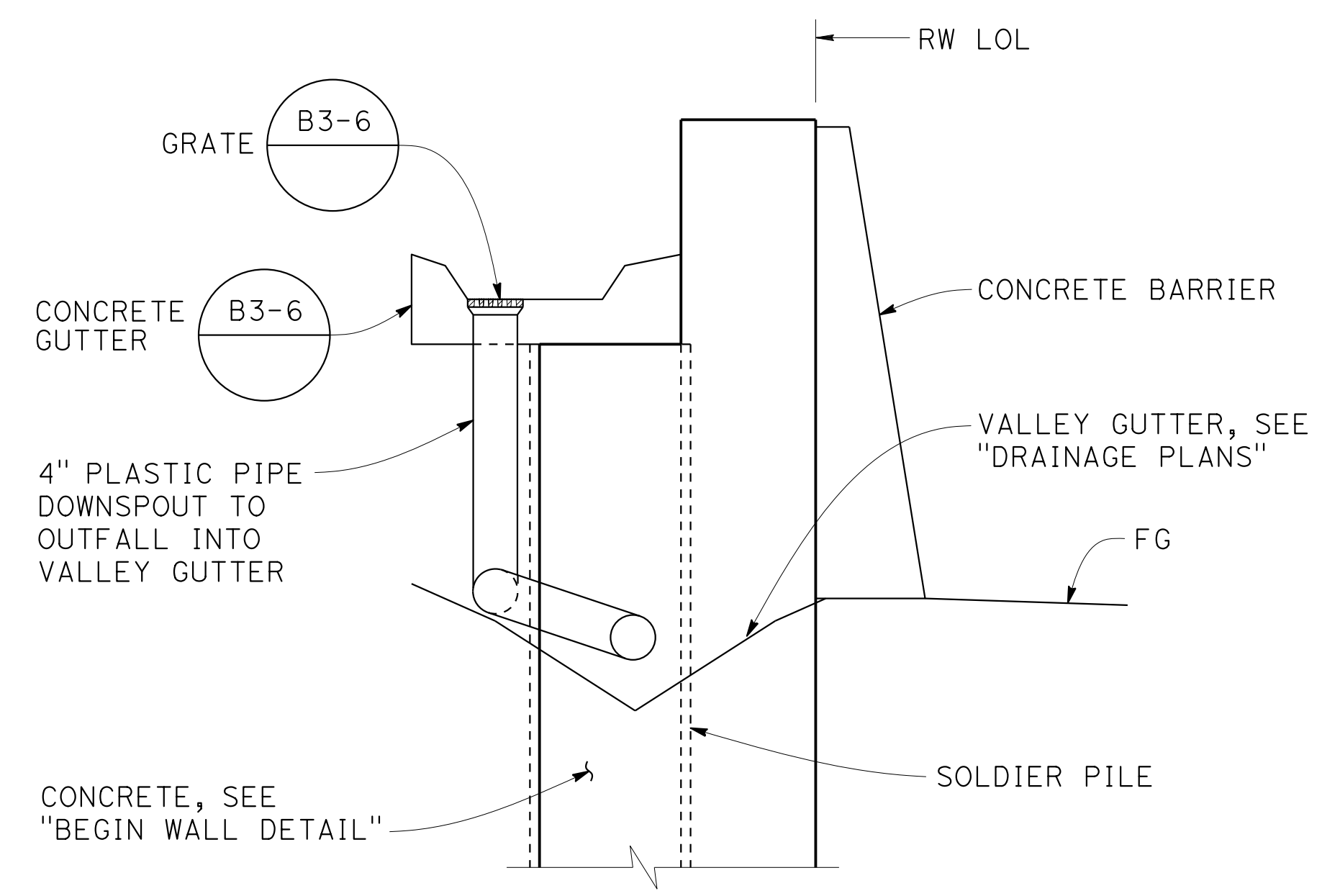
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

1. No clipping of timber lagging corners allowed.
2. Use 40d galvanized wire spikes for lagging.
3. Spikes, screws and nails shall not be bent.
4. Timber lagging to be treated on all sides.
5. All timber lagging to be placed with full bearing against soldier pile flanges.

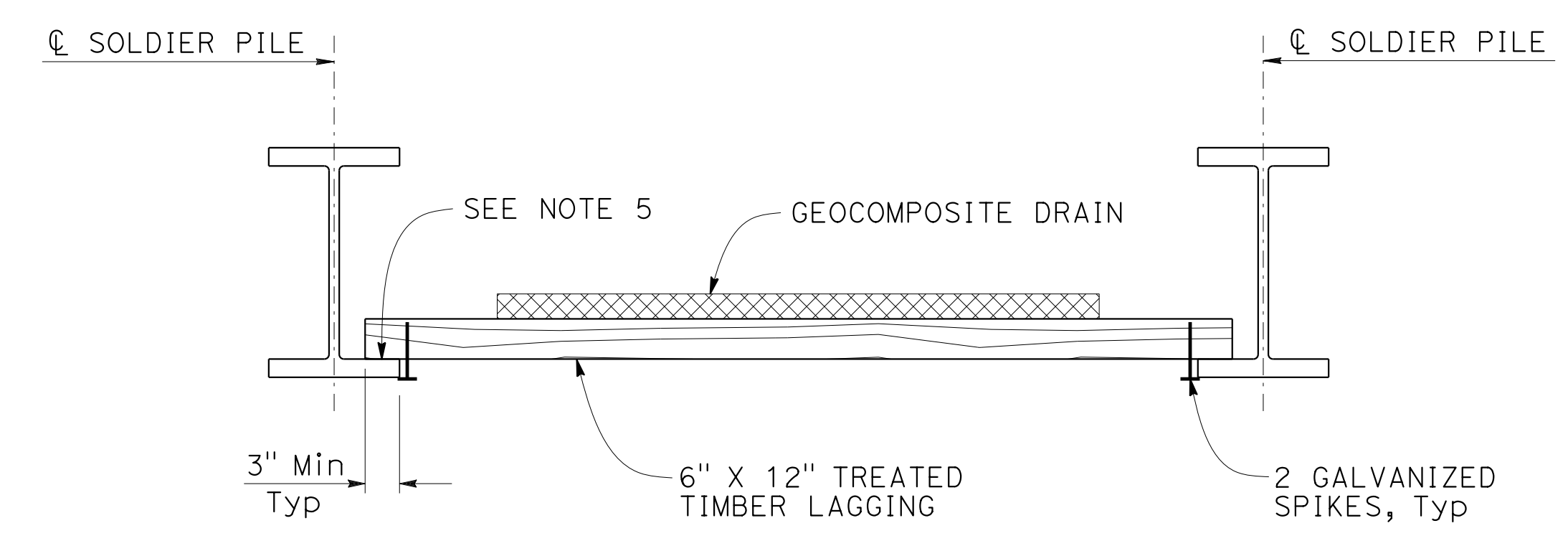


PARTIAL ELEVATION



DOWNSPOUT DETAIL

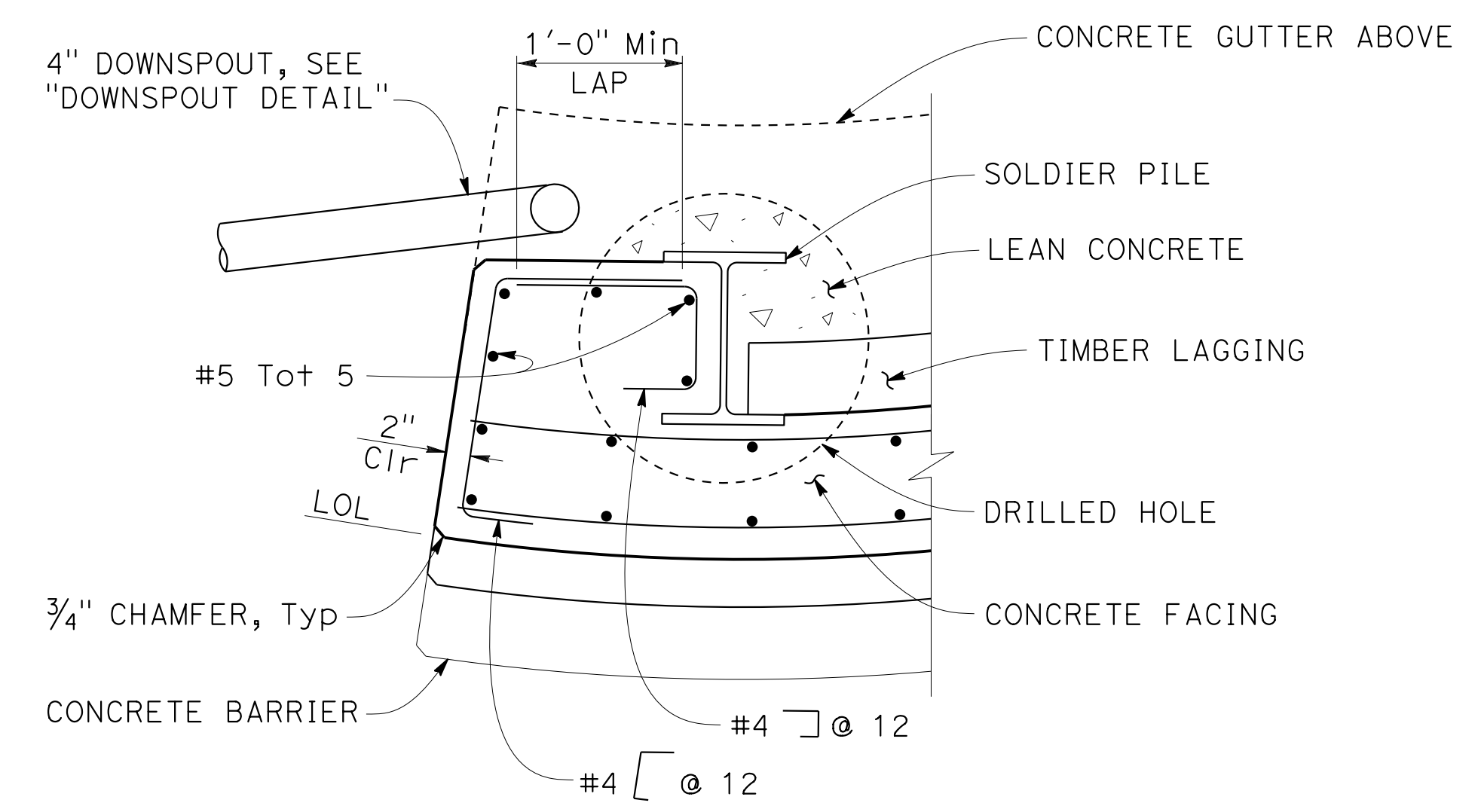
NO SCALE



PARTIAL PLAN

LAGGING DETAIL

NO SCALE



BEGIN WALL DETAIL

1" = 1'-0"

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

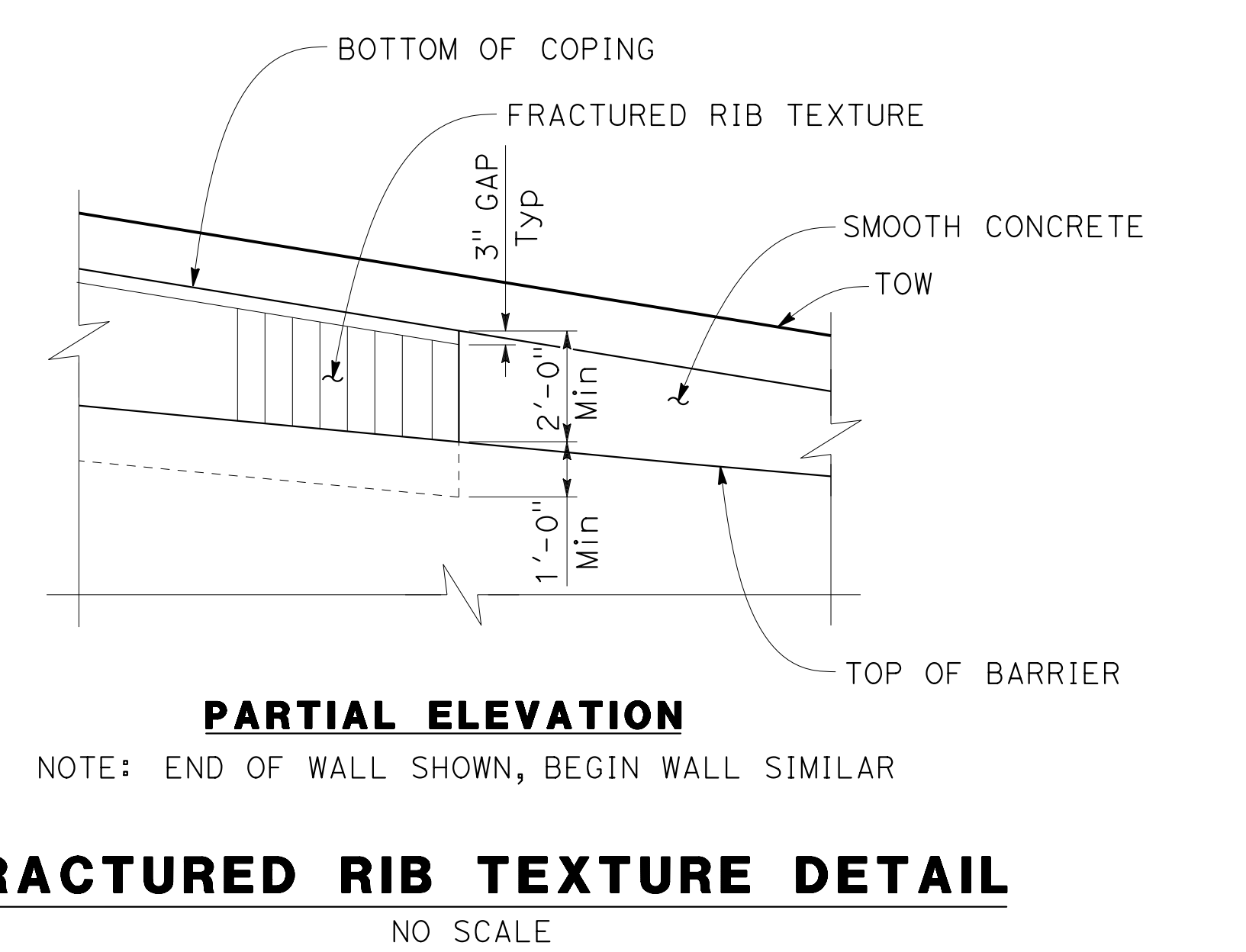
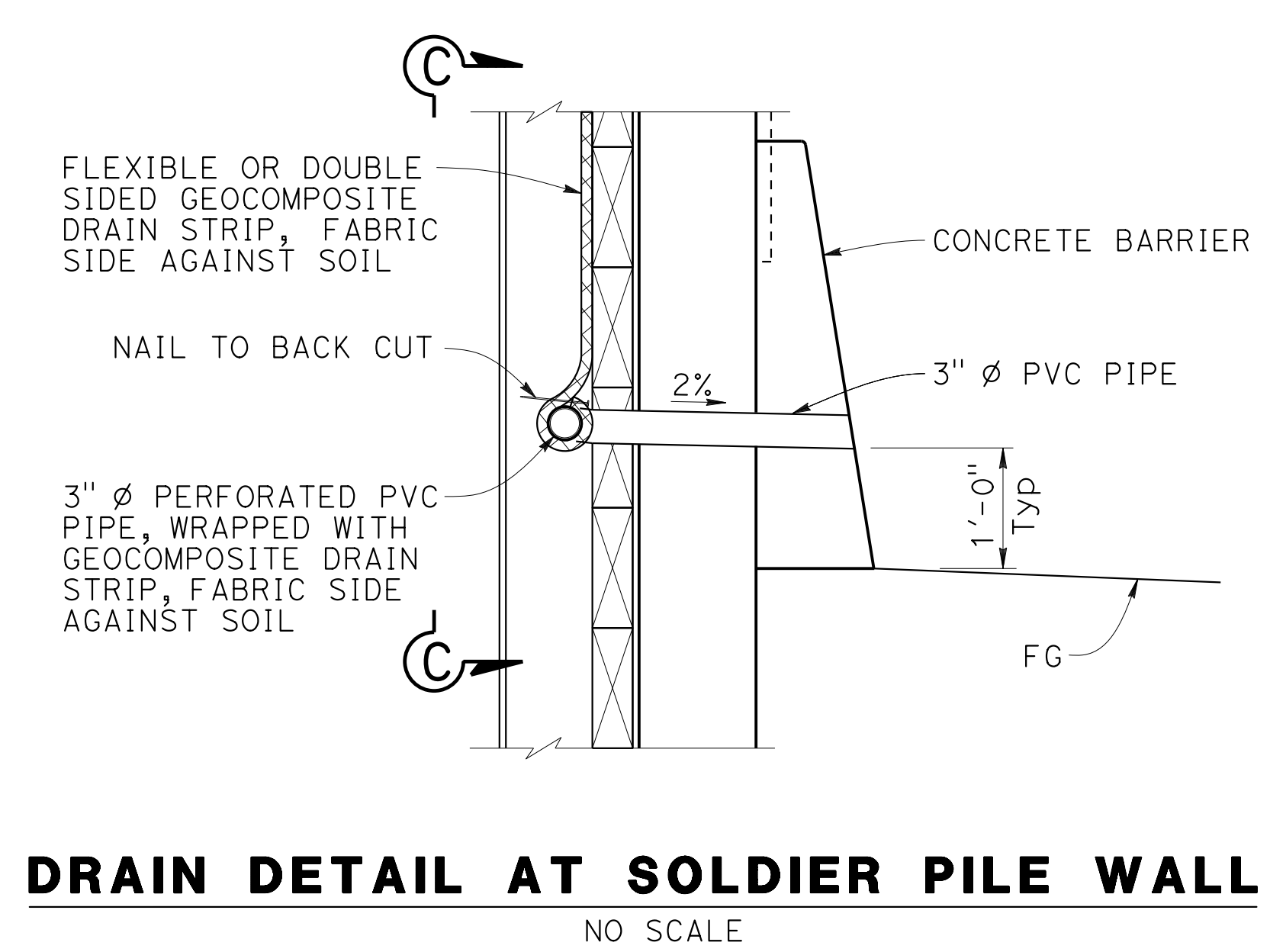
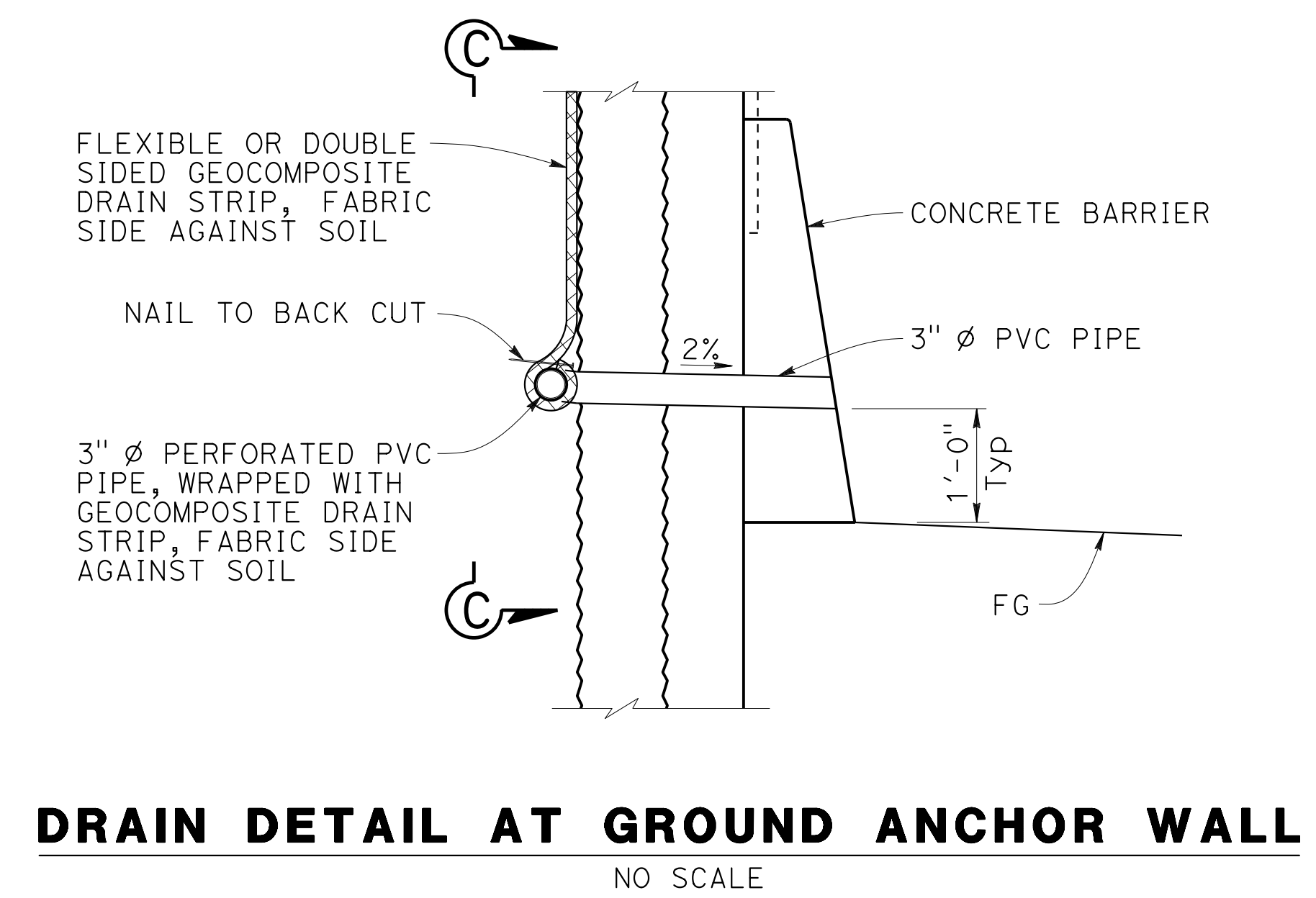
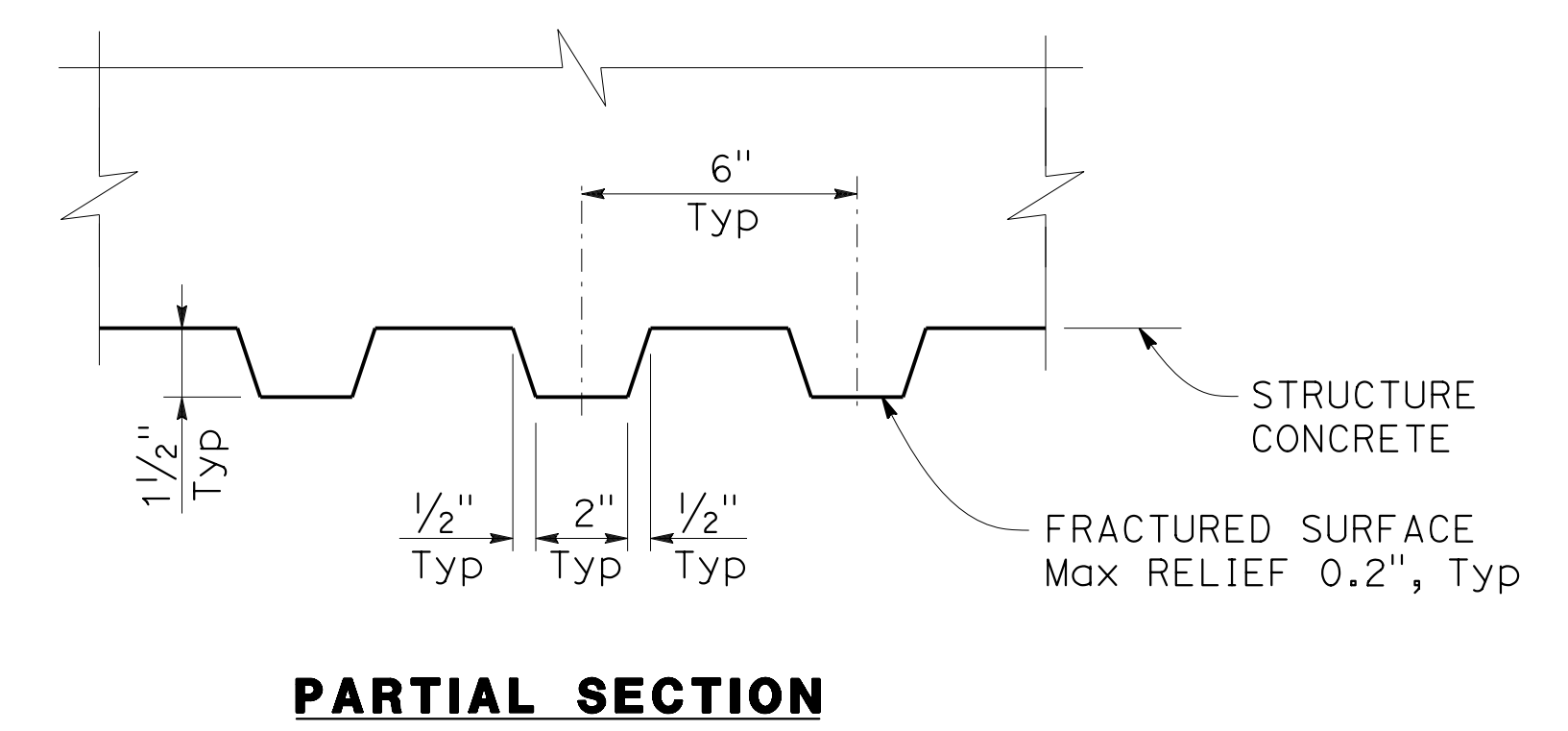
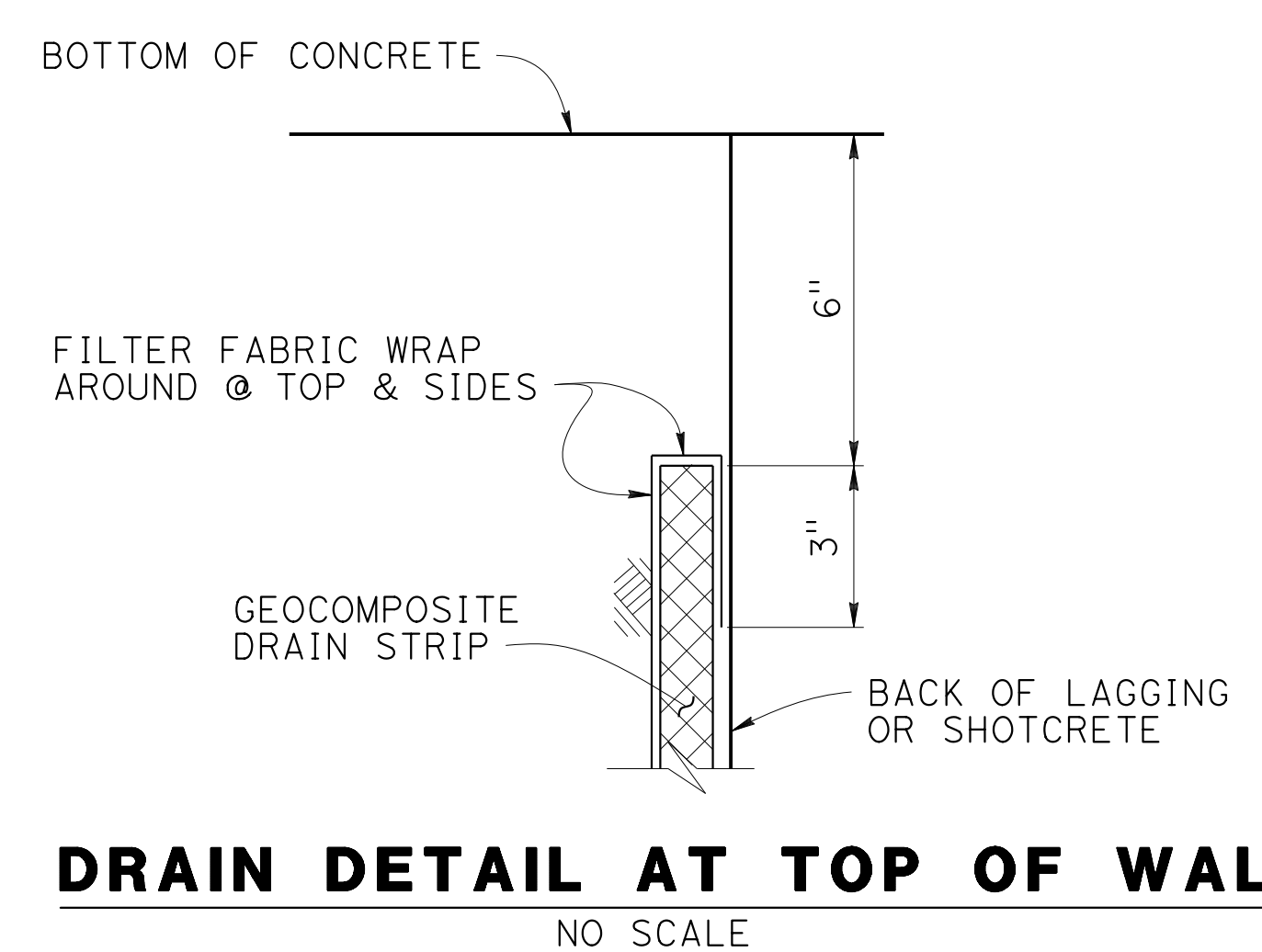
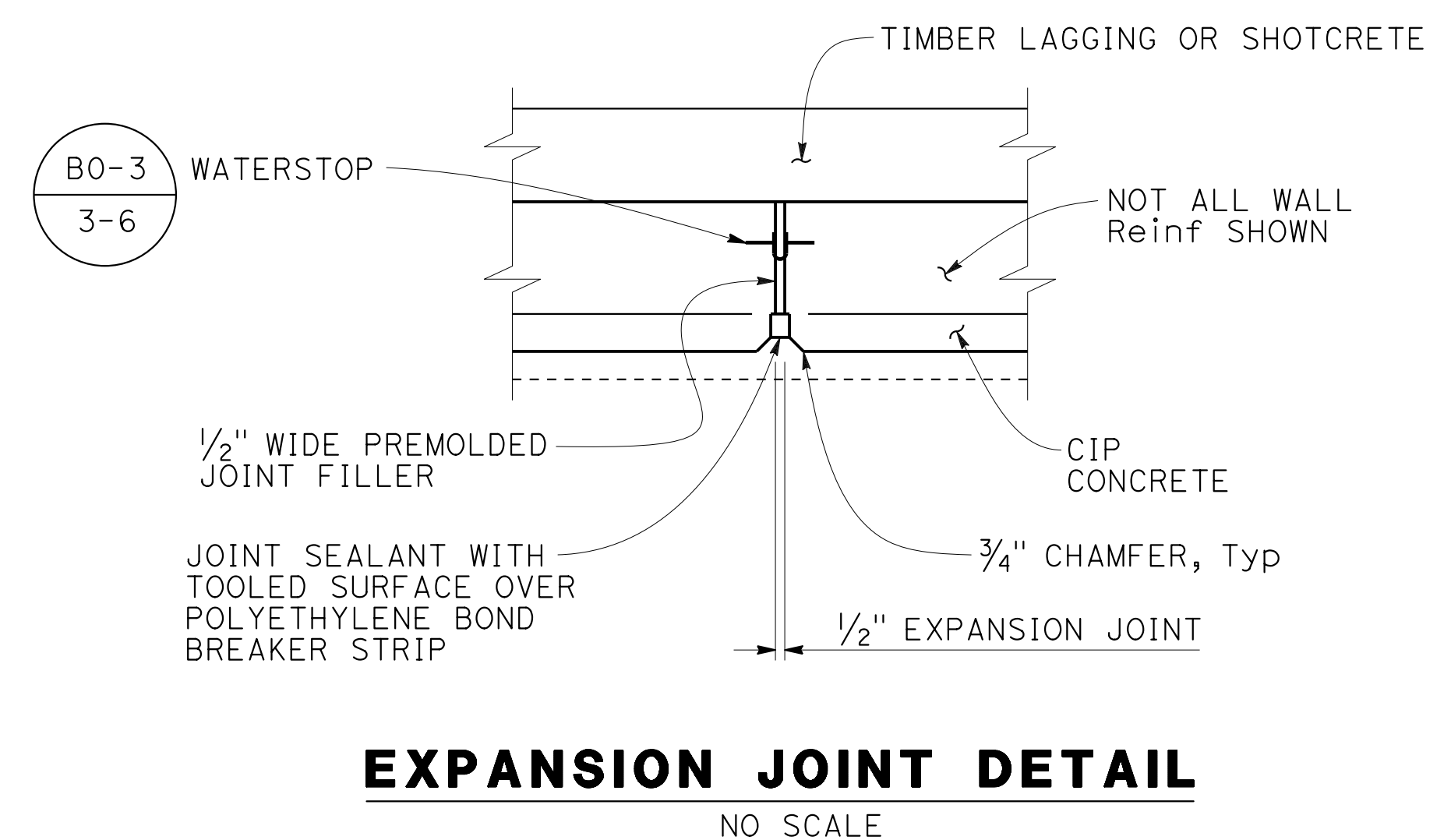
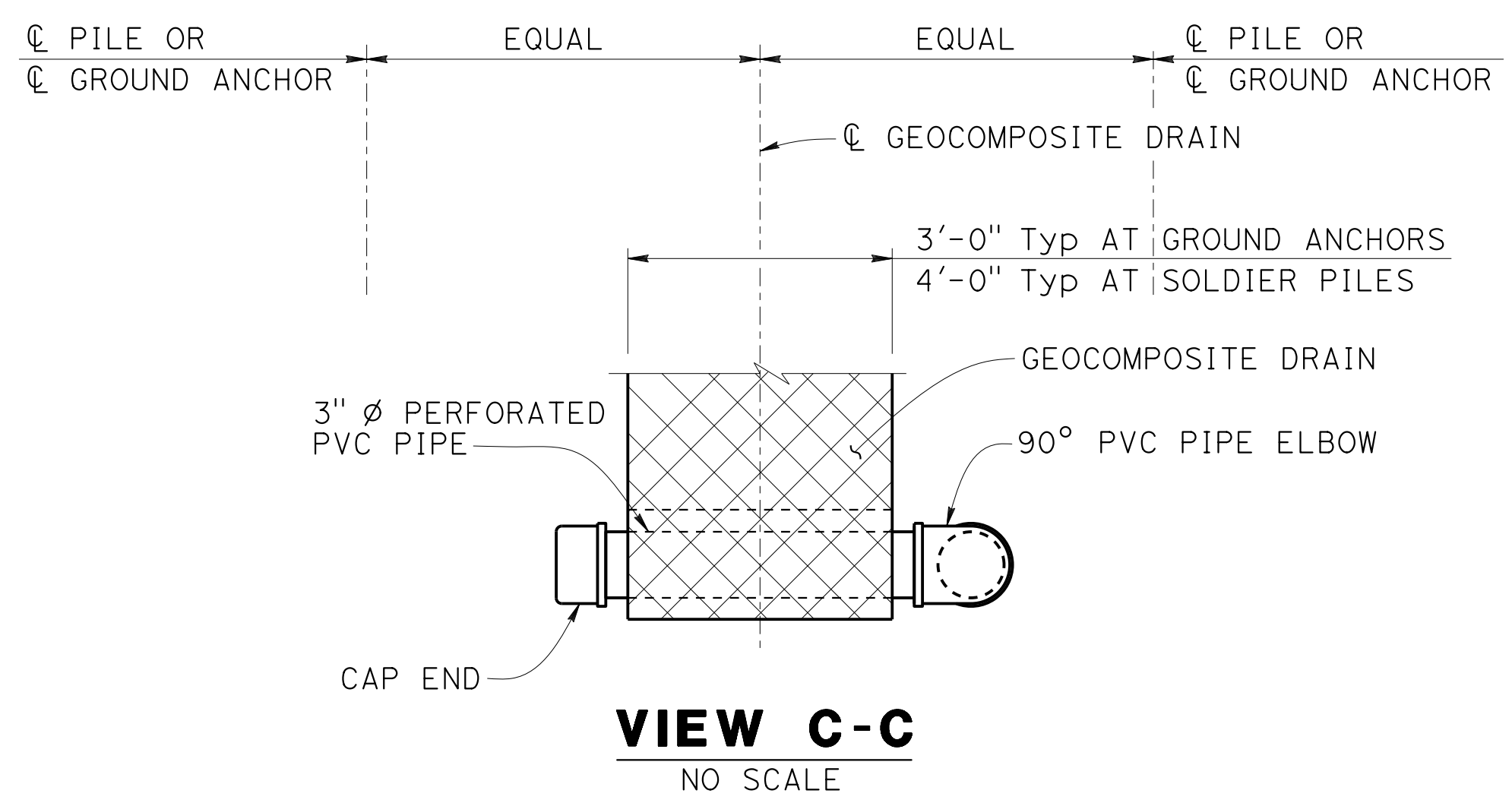
DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 SOLDIER PILE WALL DETAILS No. 3	
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.8
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY J. CHEN	CHECKED A. CHUNG		PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A6404
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	UNIT: 0728	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
			FILE => RW7-g-spwd+03.dgn	PROJECT NUMBER & PHASE: 04000205071	REVISION DATES	
				CONTRACT NO.: 04-3A6404	4-30-18 11-12-18 2-27-19 7-25-19	
					SHEET 125 OF 168	

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	375	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596




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

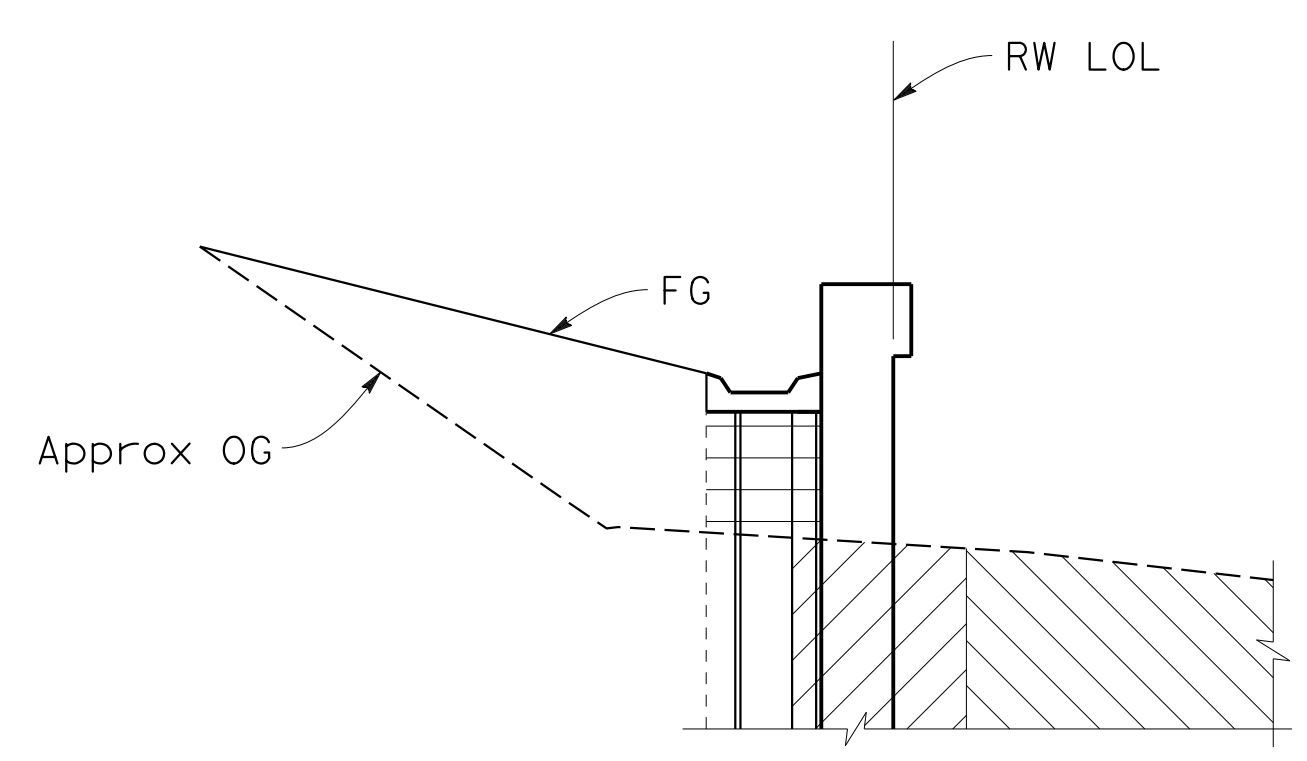
DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 MISCELLANEOUS DETAILS No. 1	
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.8
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY J. CHEN	CHECKED A. CHUNG		PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A6404
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	
0 1 2 3			PROJECT NUMBER & PHASE: 04000205071	REVISION DATES	SHEET 126 OF 168	
			FILE => RW7-u-miscd+01.dgn	4-30-18 11-12-18 2-27-19 7-25-19		

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	376	436


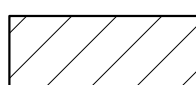
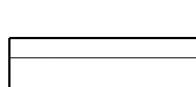

 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

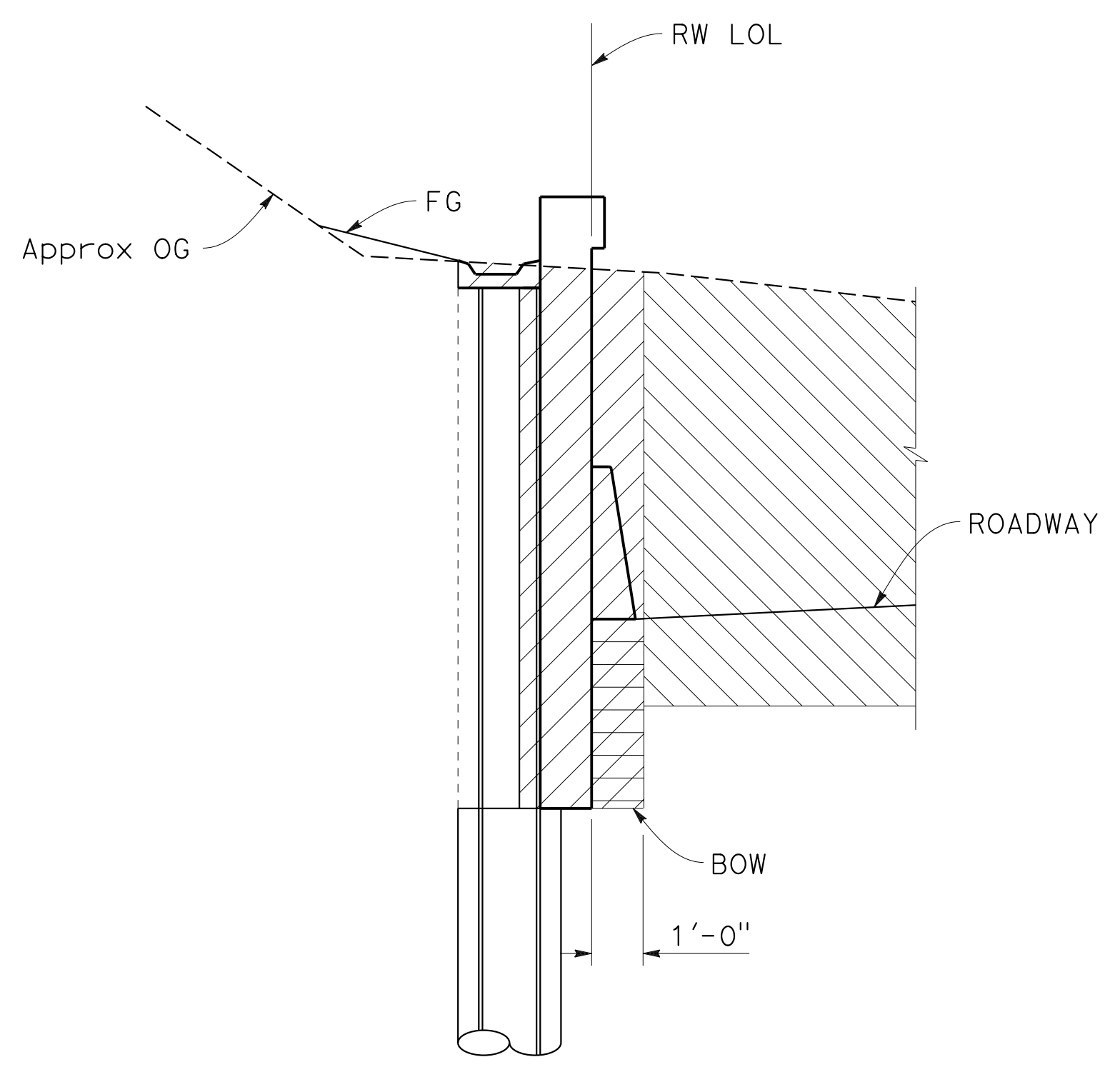
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



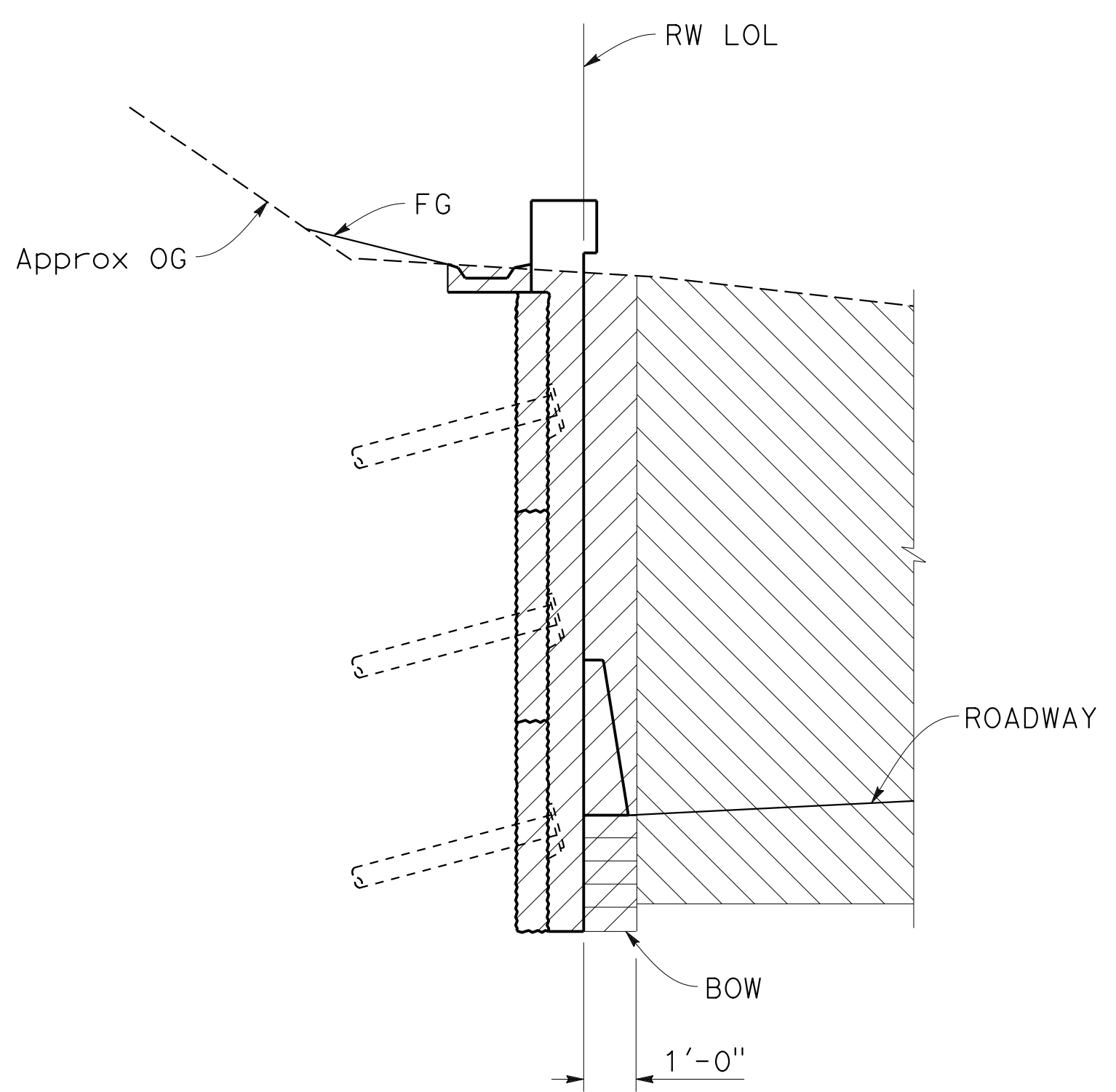
SOLDIER PILE WALL IN CUT

LEGEND:

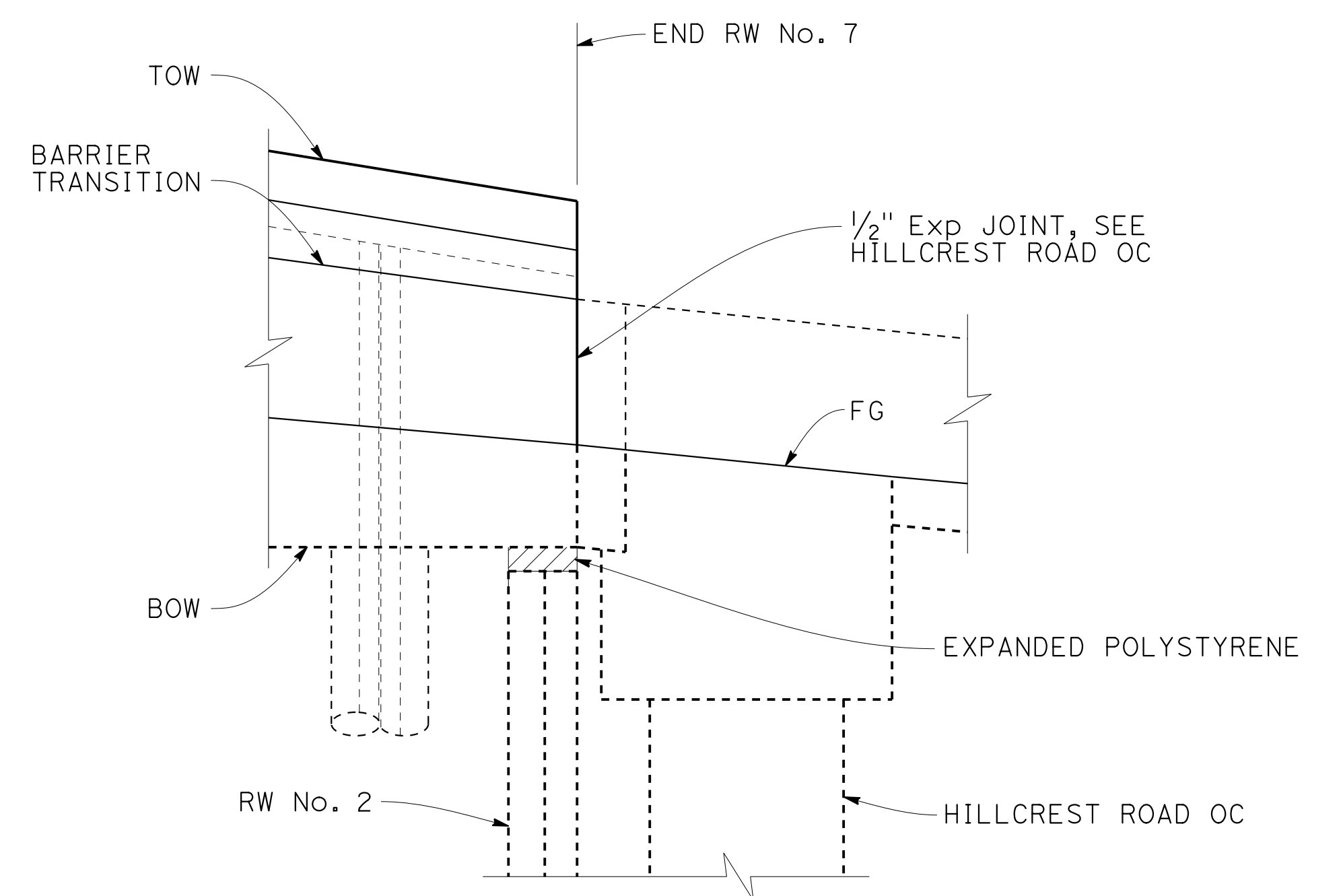
-  Roadway Excavation, see "ROADWAY PLANS"
-  Structure Excavation
-  Structure Backfill



SOLDIER PILE WALL IN FILL



GROUND ANCHOR WALL




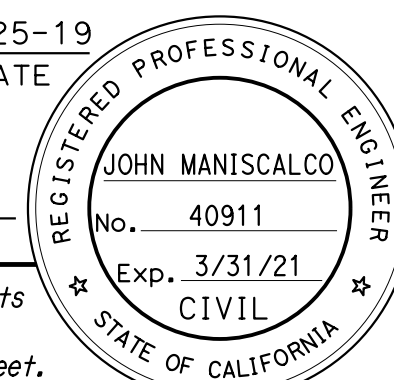
END DETAIL
3/8" = 1'-0"

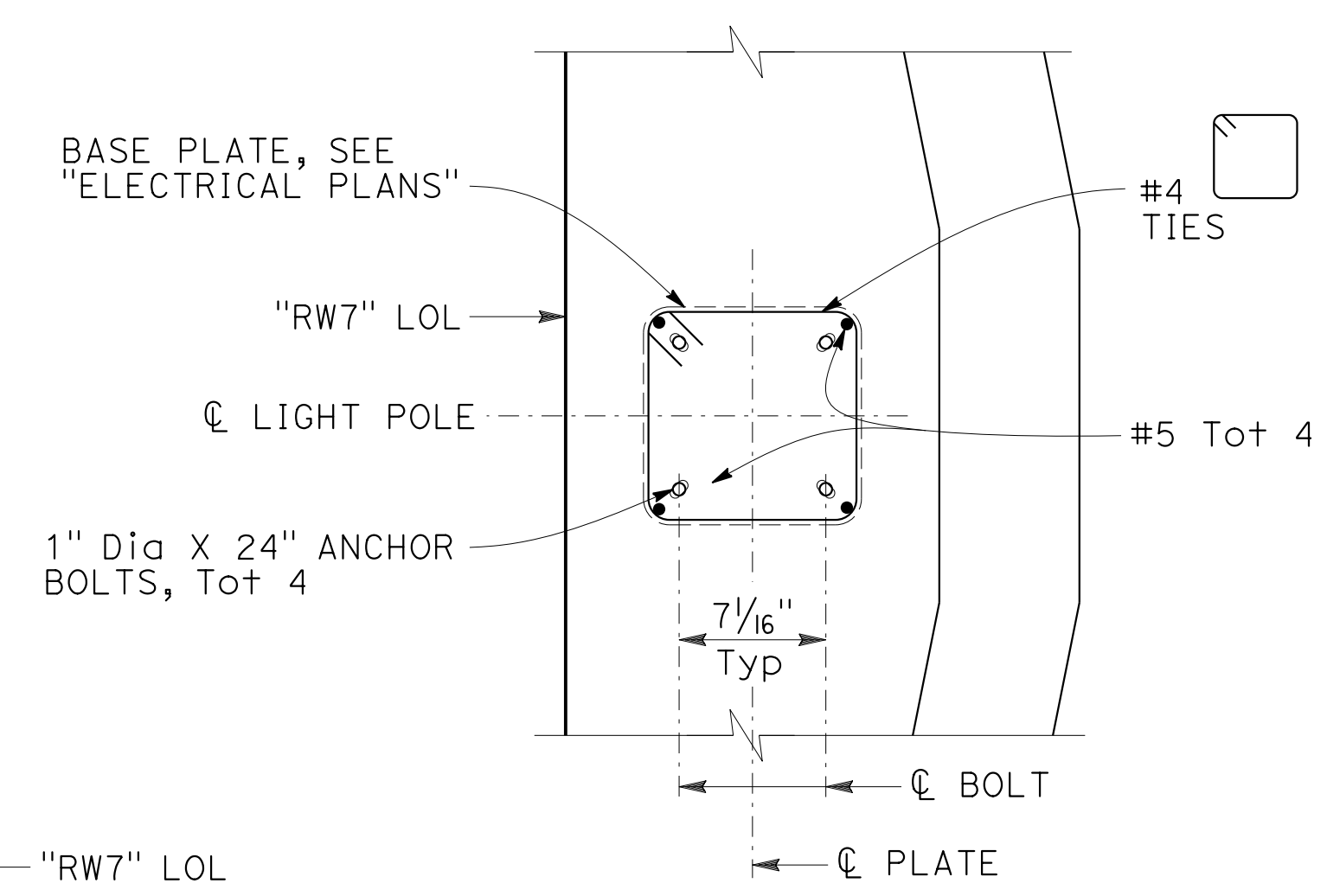
LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL

NO SCALE

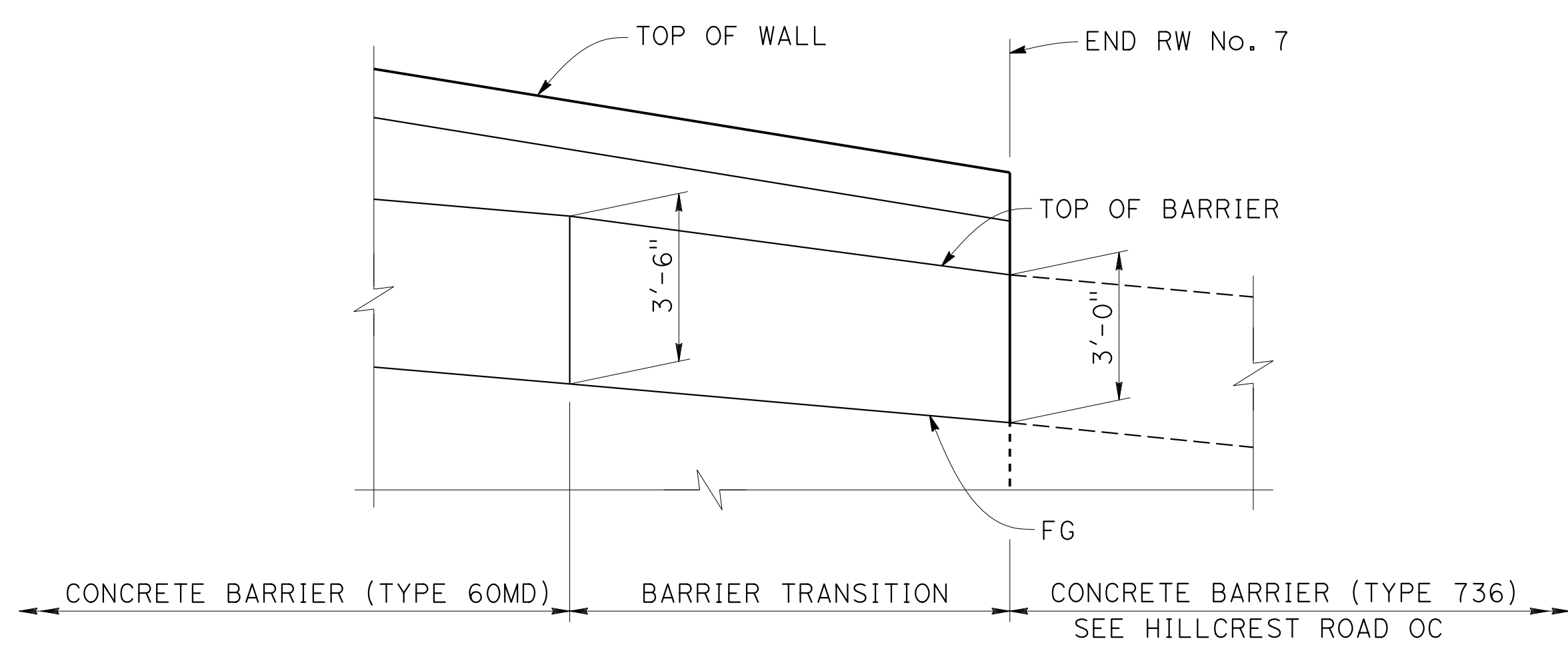
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT	DESIGN	BY K. SERRANO-PAINE	CHECKED A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	RETAINING WALL No. 7 MISCELLANEOUS DETAILS No. 2													
	DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE		N/A														
SIGN OFF DATE	QUANTITIES	BY J. CHEN	CHECKED A. CHUNG	PROJECT ENGINEER	POST MILES	7.8													
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404	<table border="1"> <tr> <th colspan="4">REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18</td> <td>11-12-18</td> <td>2-27-19</td> <td>7-25-19</td> <td>127</td> <td>168</td> </tr> </table>	REVISION DATES				SHEET	OF	4-30-18	11-12-18	2-27-19	7-25-19	127	168
REVISION DATES				SHEET	OF														
4-30-18	11-12-18	2-27-19	7-25-19	127	168														

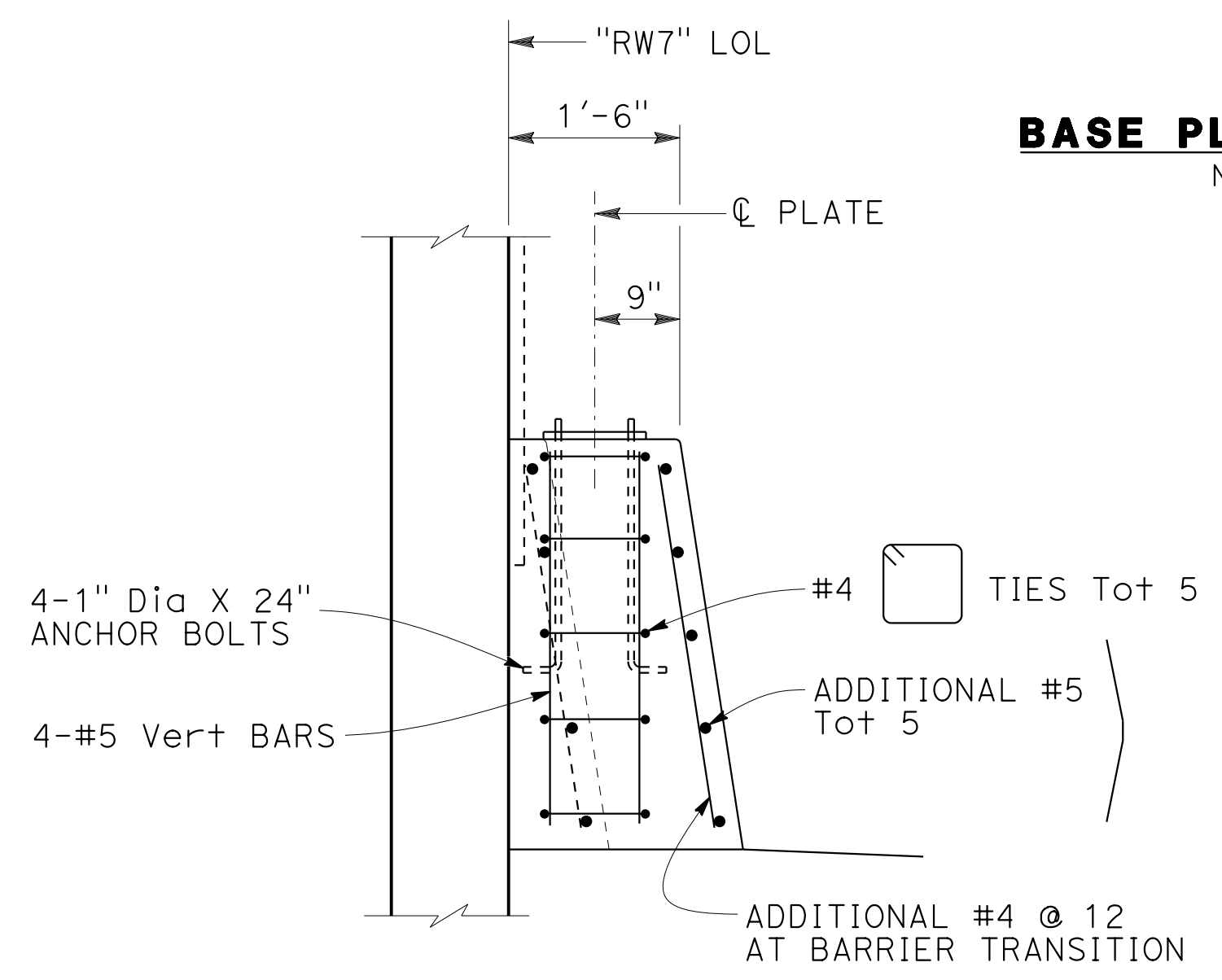
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	377	436
 REGISTERED CIVIL ENGINEER			7-25-19 DATE		
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



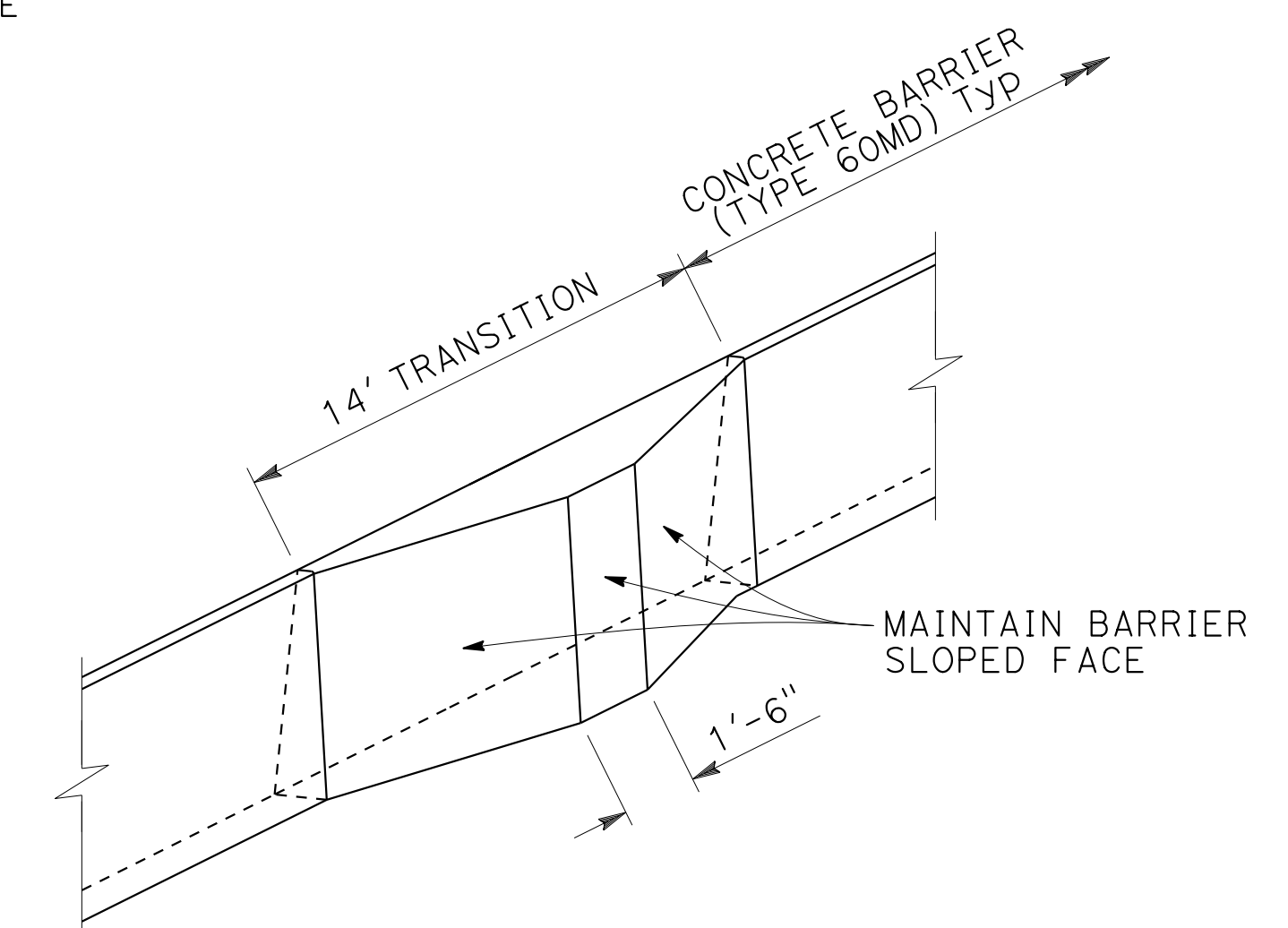
BASE PLATE DETAIL
NO SCALE



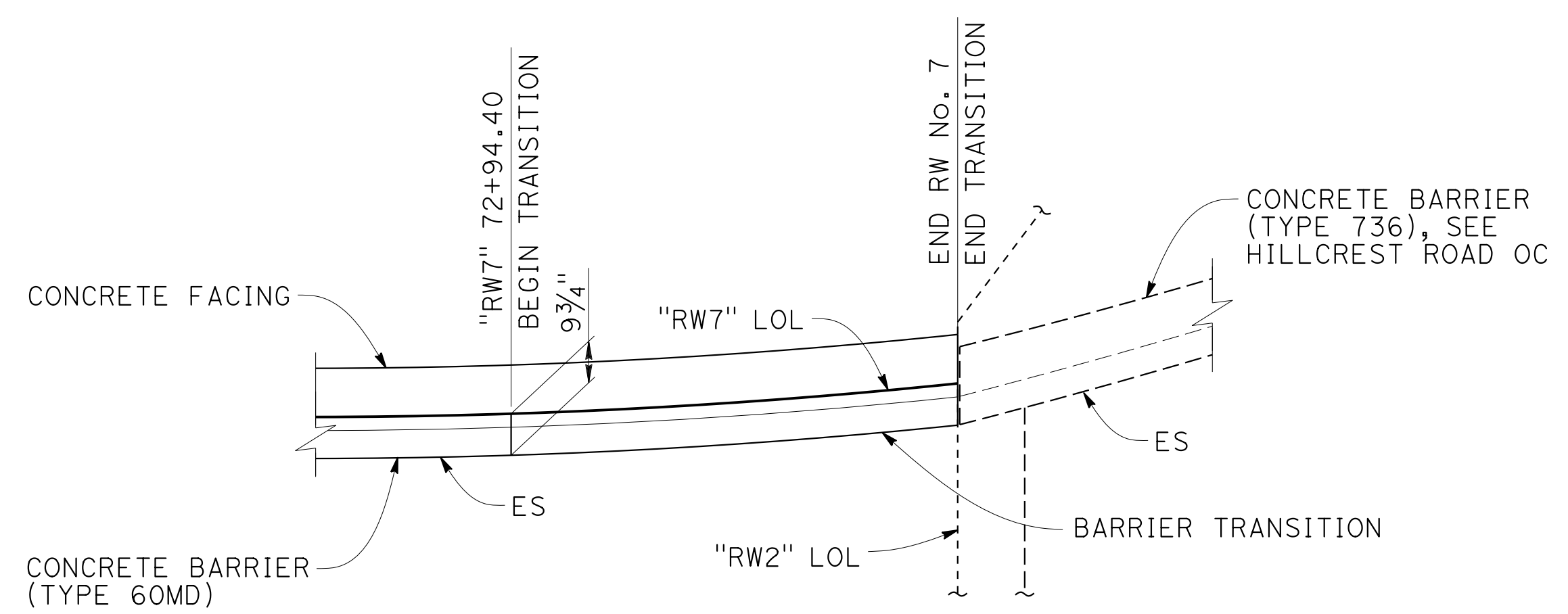
PARTIAL ELEVATION



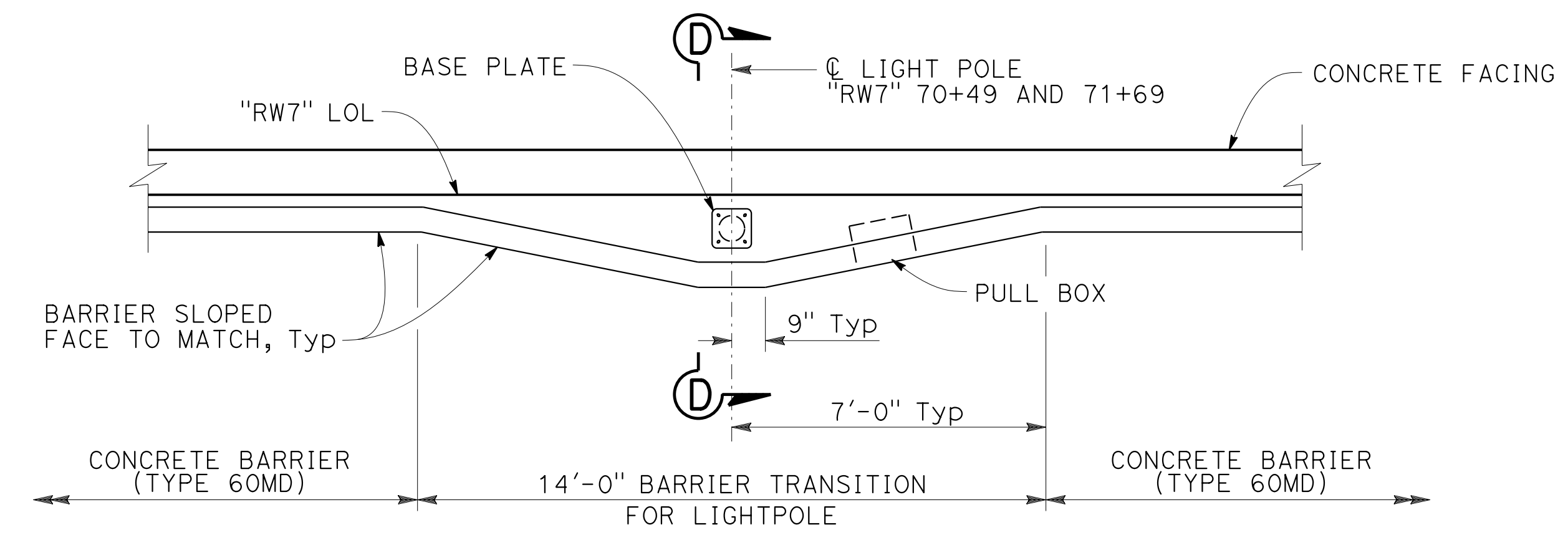
SECTION D-D
3/4" = 1'-0"



ISOMETRIC
NO SCALE



PARTIAL PLAN
BARRIER TRANSITION DETAIL
3/8" = 1'-0"



PARTIAL PLAN
LIGHT POLE DETAIL AND BARRIER TRANSITION
3/8" = 1'-0"

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

DESIGN OVERSIGHT	DESIGN BY: K. SERRANO-PAINE	CHECKED: A. MALLA	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 7 MISCELLANEOUS DETAILS No. 3	
SIGN OFF DATE	DETAILS BY: L. DAVIS/E. GRAY	CHECKED: K. SERRANO-PAINE		PROJECT ENGINEER: JOHN MANISCALCO		
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: J. CHEN	CHECKED: A. CHUNG		PROJECT NUMBER & PHASE: 04000205071		
		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 0728	CONTRACT NO.: 04-3A6404	REVISION DATES	SHEET 128 OF 168
		0 1 2 3	PROJECT NUMBER & PHASE: 04000205071	DISREGARD PRINTS BEARING EARLIER REVISION DATES	4-30-18 11-12-18 2-27-19 7-25-19	
			FILE => RW7-u-miscd+03.dgn			

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:28

GENERAL NOTES

DESIGN:
AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments, 2

PRESTRESSING STEEL:
Bars - ASTM Designation: A722 Type II (150 ksi)
Strand Tendons-ASTM Designation: A416 (270 Ksi Low Relaxation steel)
FTL = Factored Test Load per anchor (Kips)
fpu = Minimum tensile strength of prestressing steel
As = Minimum cross sectional area of prestressing steel in ground anchor (square inch)

$As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.75 \text{ fpu}}$ (Strands)
 $As(\text{Min}) = \frac{1.0 \text{ FTL}}{0.80 \text{ fpu}}$ (Bars)

- NOTES:
- (A) Level of initial grouting for drilled hole 6" in diameter or smaller
 - (B) Level of secondary grouting
 - (C) Level of initial grouting inside corrugated sheathing
 - (D) Bonded length shall be determined by the contractor
 - (E) For unbonded length, see PROJECT PLANS
 - (F) For inclination, see PROJECT PLANS
 - (G) Face of Wall Excavation

- NOTES:
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
 2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
 3. Silicone sealant to cover full width of flange.
 4. Steel tube (Min thickness = 1/4") welded to bearing plate. Galvanize assembly after fabrication
 5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = 1/4") to be 1" greater than outside diameter of smooth sheathing.
 6. Galvanize assembly after fabrication.
 7. For other wall details, see PROJECT PLANS.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	378	436

7-25-19
REGISTERED CIVIL ENGINEER DATE

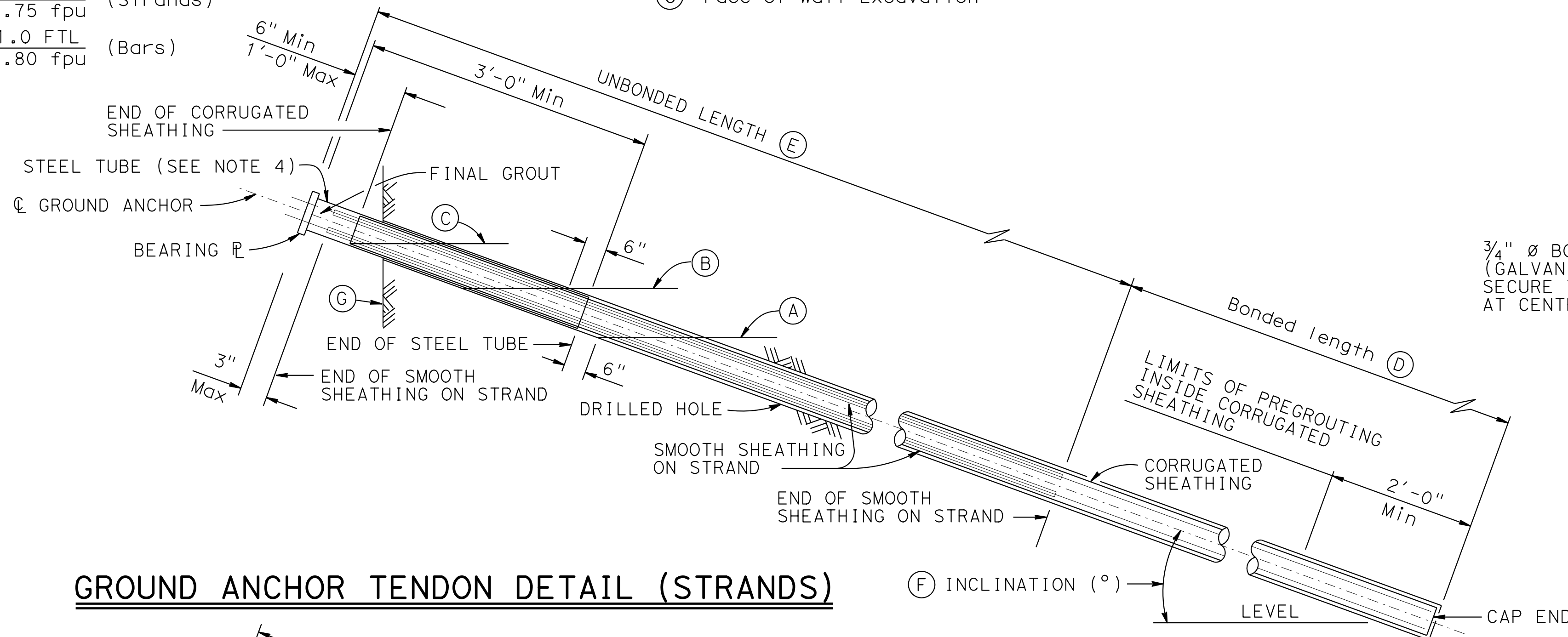
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

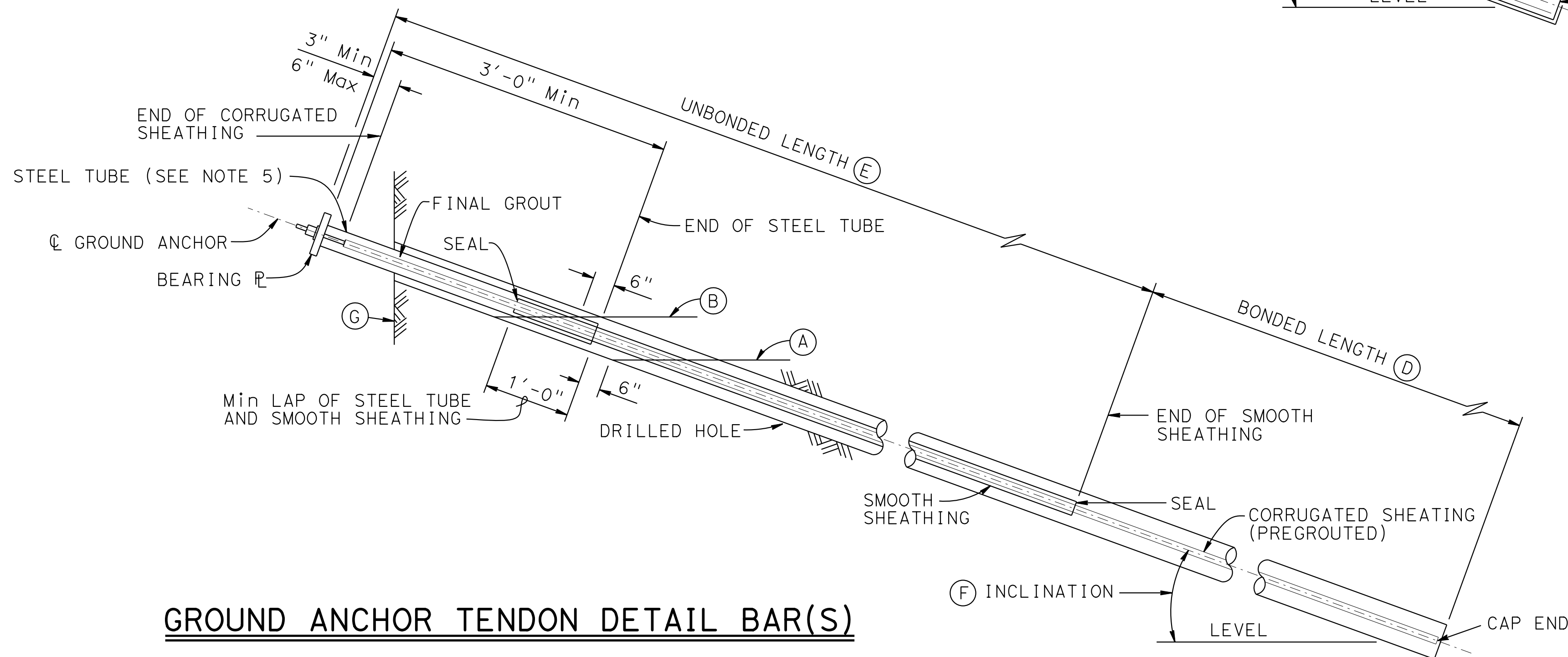
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

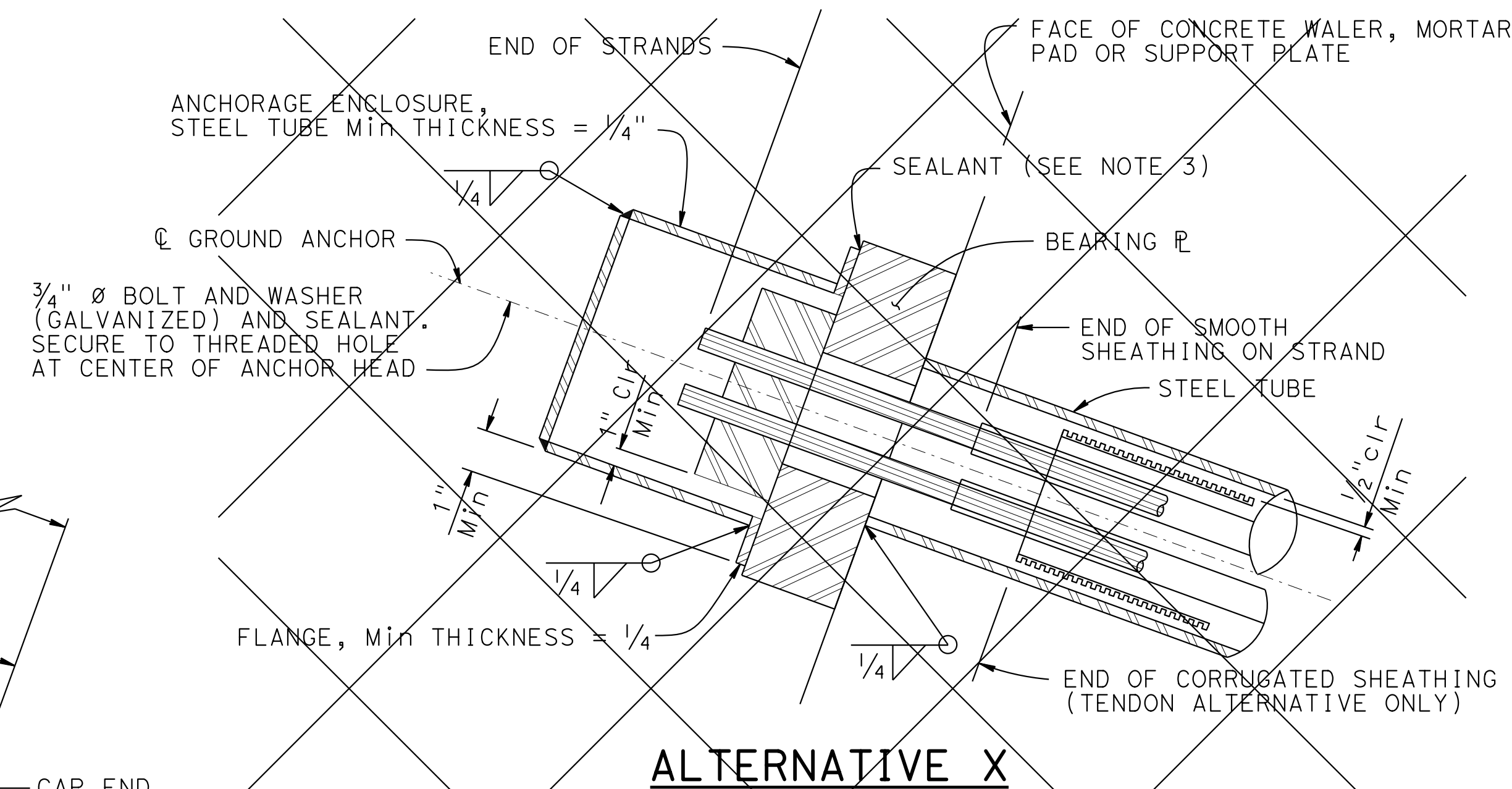
HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



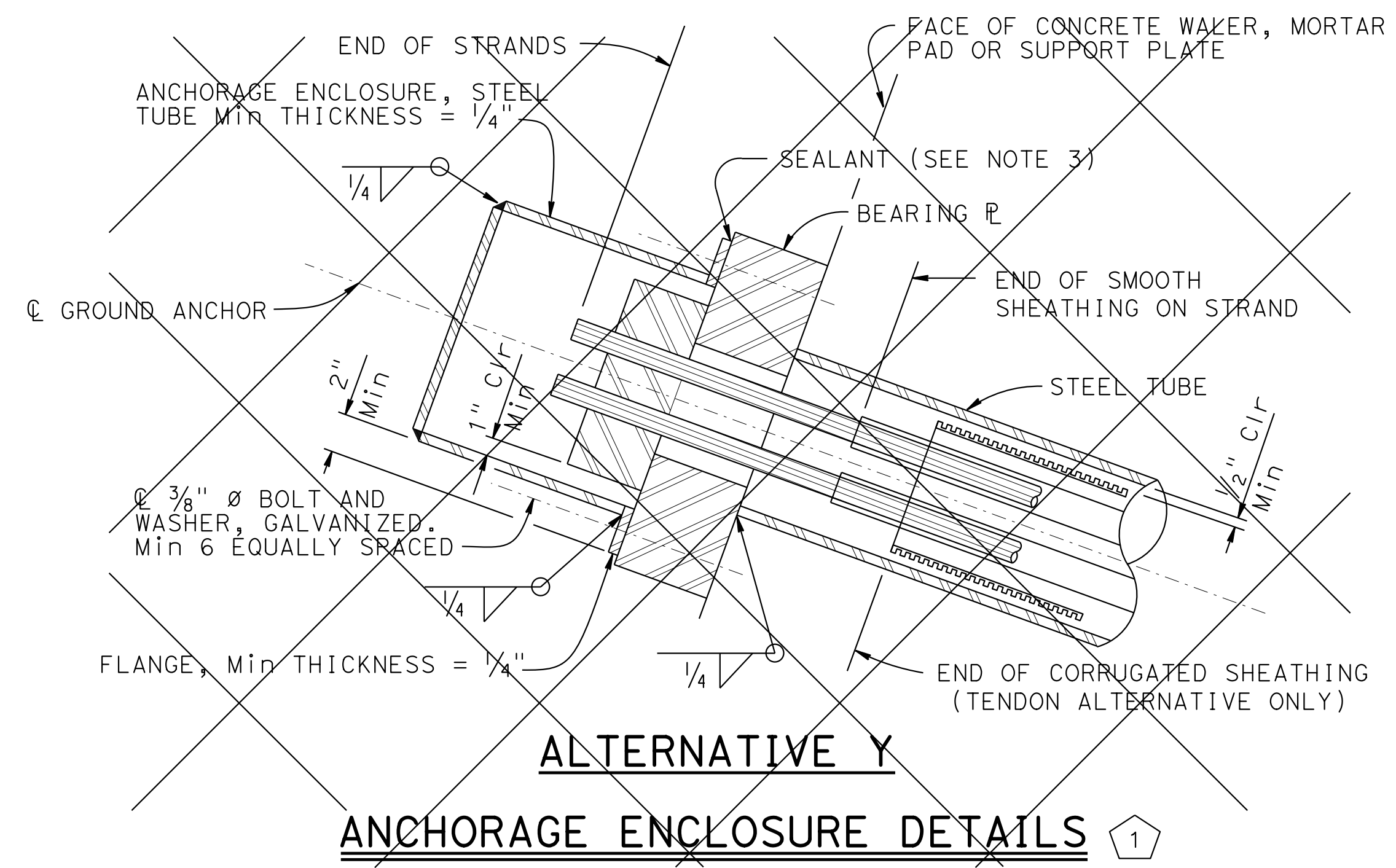
GROUND ANCHOR TENDON DETAIL (STRANDS)



GROUND ANCHOR TENDON DETAIL BAR(S)



ALTERNATIVE X



ANCHORAGE ENCLOSURE DETAILS

- 1 DETAIL NOT USED
- 2 NOTE REVISED

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. N/A
POST MILES 7.8

RETAINING WALL No. 7
SUB HORIZONTAL GROUND ANCHOR DETAILS

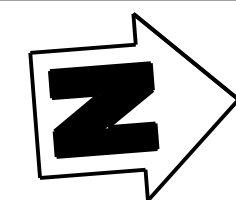
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

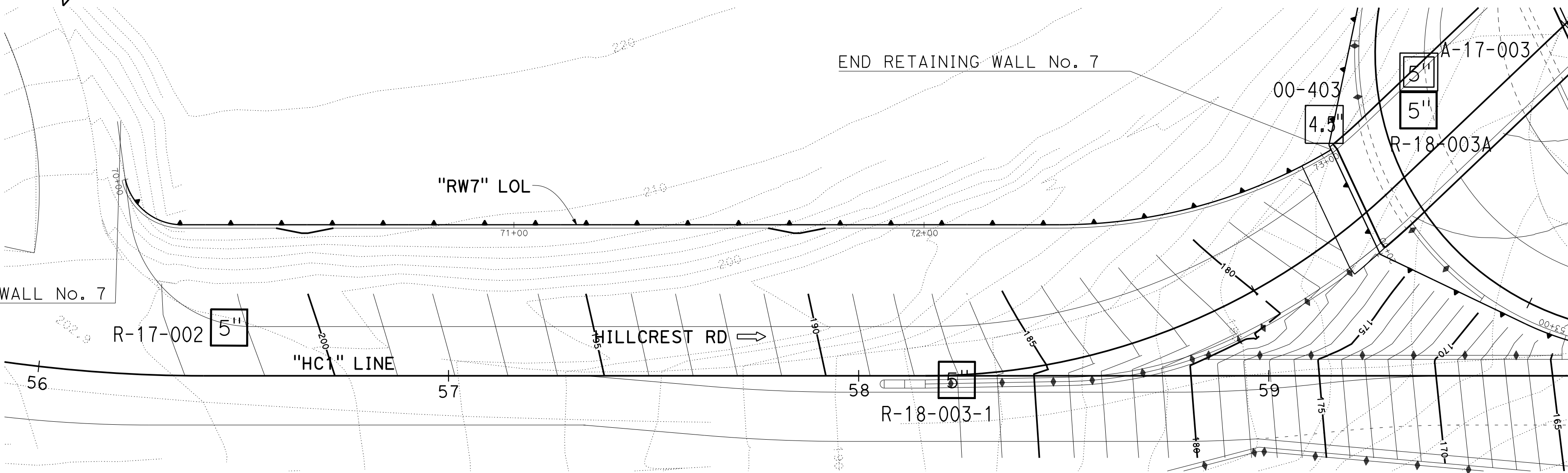
See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



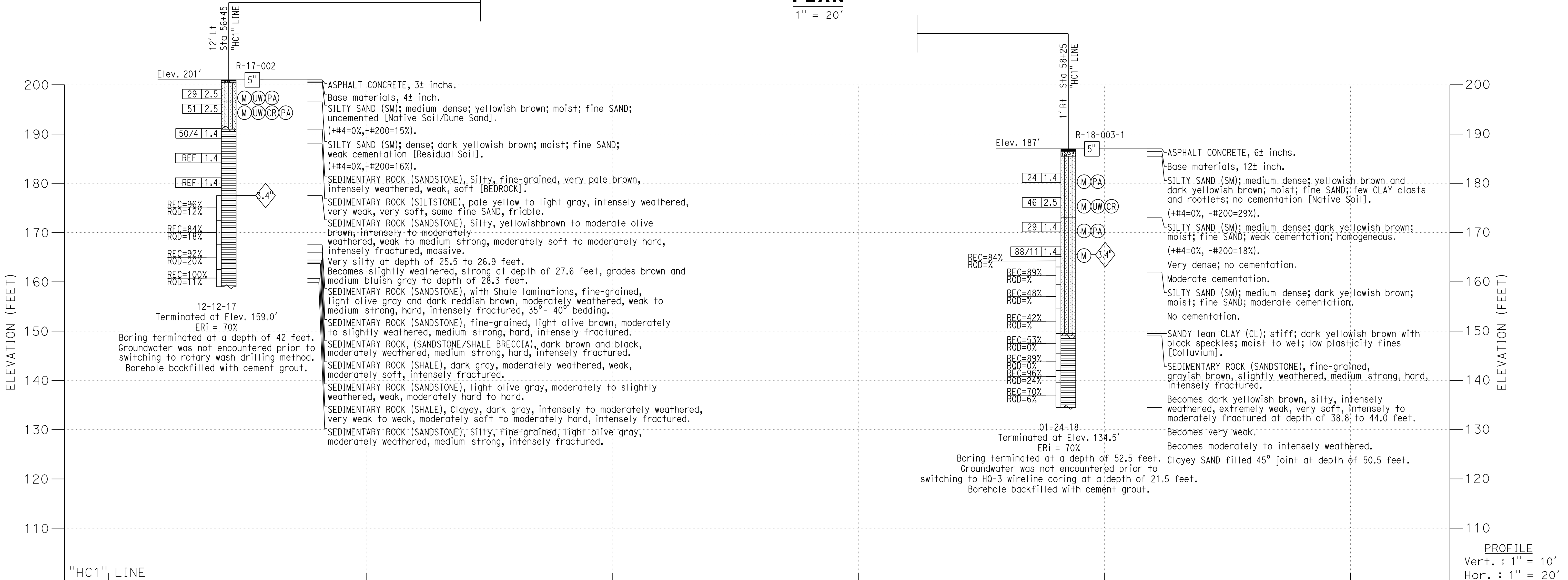
BEGIN RETAINING WALL No. 7

END RETAINING WALL No. 7



PLAN

1" = 20'



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	379	436

7-25-19
 GEOTECHNICAL PROFESSIONAL DATE
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

DESIGN OVERSIGHT	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	FRANK WANG PROJECT ENGINEER	BRIDGE NO. N/A	RETAINING WALL No. 7
SIGN OFF DATE	CHECKED BY FRANK WANG	DATE: DEC 2017 THROUGH JAN 2018	POST MILES 7.9	LOG OF TEST BORINGS 1 OF 3	

NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown

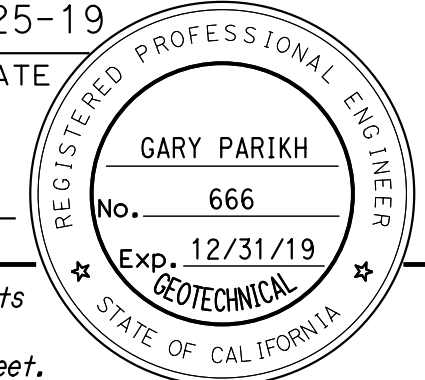
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	380	436

7-25-19
DATE

GEOTECHNICAL PROFESSIONAL

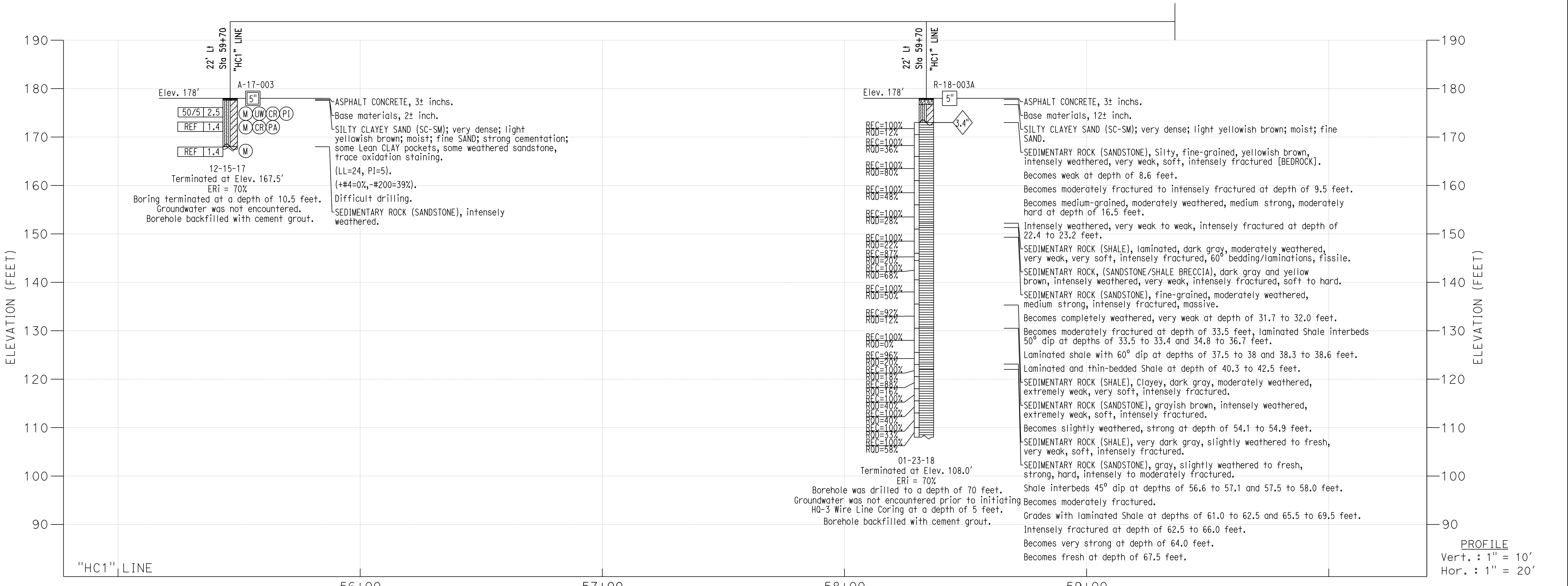
PLANS APPROVAL DATE

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



BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105


PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

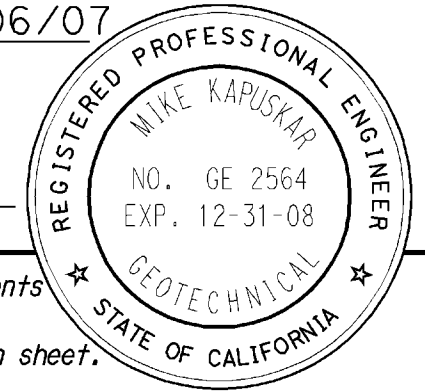


DESIGN OVERSIGHT	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	FRANK WANG PROJECT ENGINEER	BRIDGE NO. N/A	RETAINING WALL No. 7
SIGN OFF DATE	CHECKED BY FRANK WANG	DATE: DEC 2017 THROUGH JAN 2018	POST MILES 7.9	LOG OF TEST BORINGS 2 OF 3	



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9		481	821

 09/06/07
 GEOTECHNICAL PROFESSIONAL
 PLANS APPROVAL DATE 2-21-12
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FUGRO-EARTH MECHANICS
 7700 EDGEWATER DRIVE, SUITE 846
 OAKLAND, CA 94621

LEGEND FOR BORING OPERATIONS

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

LEGEND FOR SOILS

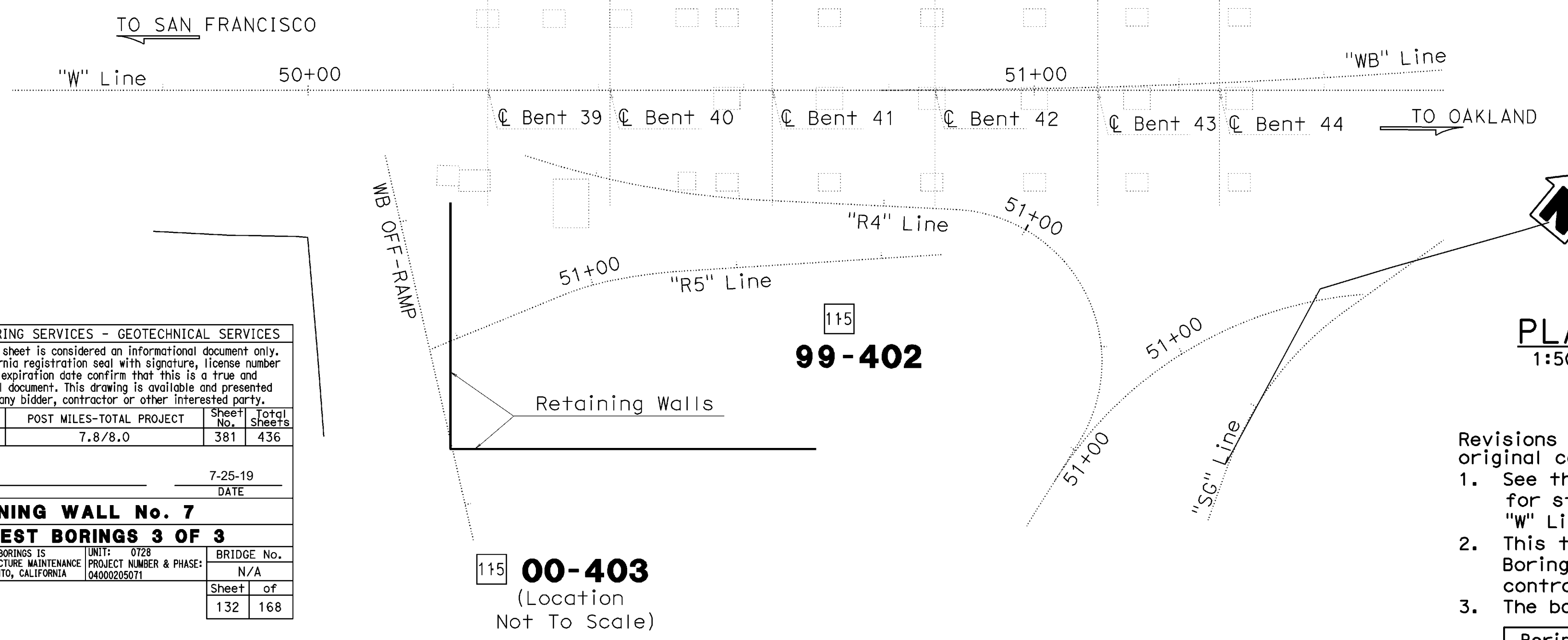
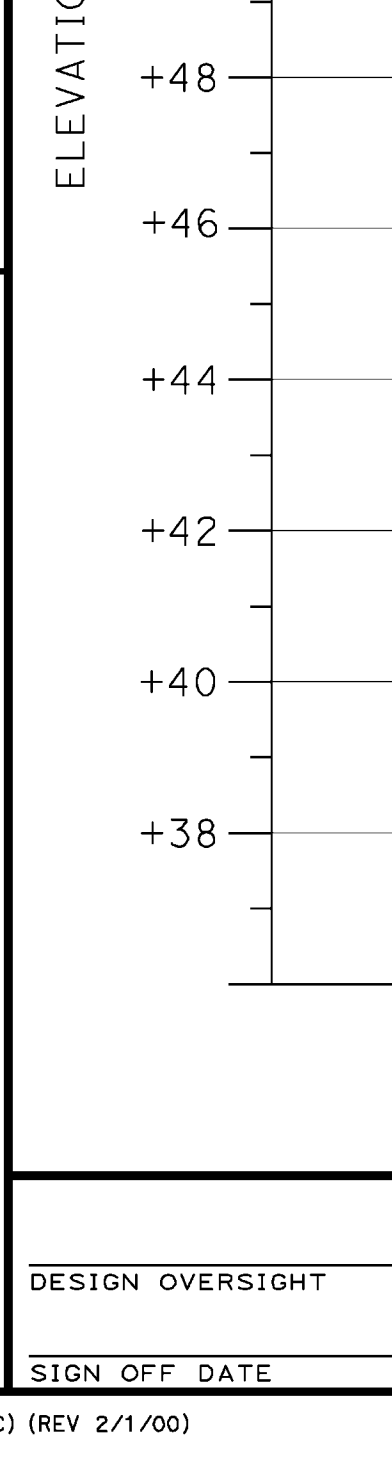
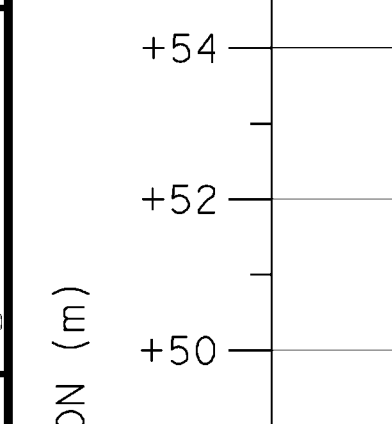
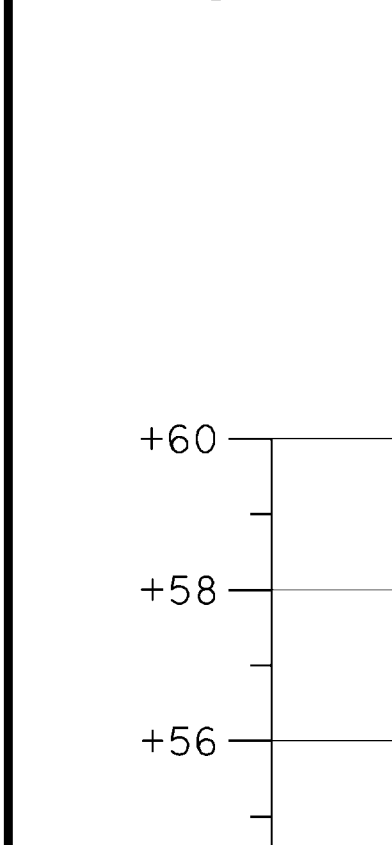
CONSISTENCY CLASSIFICATION

TYPE OF BORINGS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

UNITS

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	381	436

Gary Parikh
 No. G.E. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA

Gary L. Siciliano
 Exp. 7-25-19
 REGISTERED CIVIL ENGINEER
 DATE

RETAINING WALL No. 7

LOG OF TEST BORINGS 3 OF 3

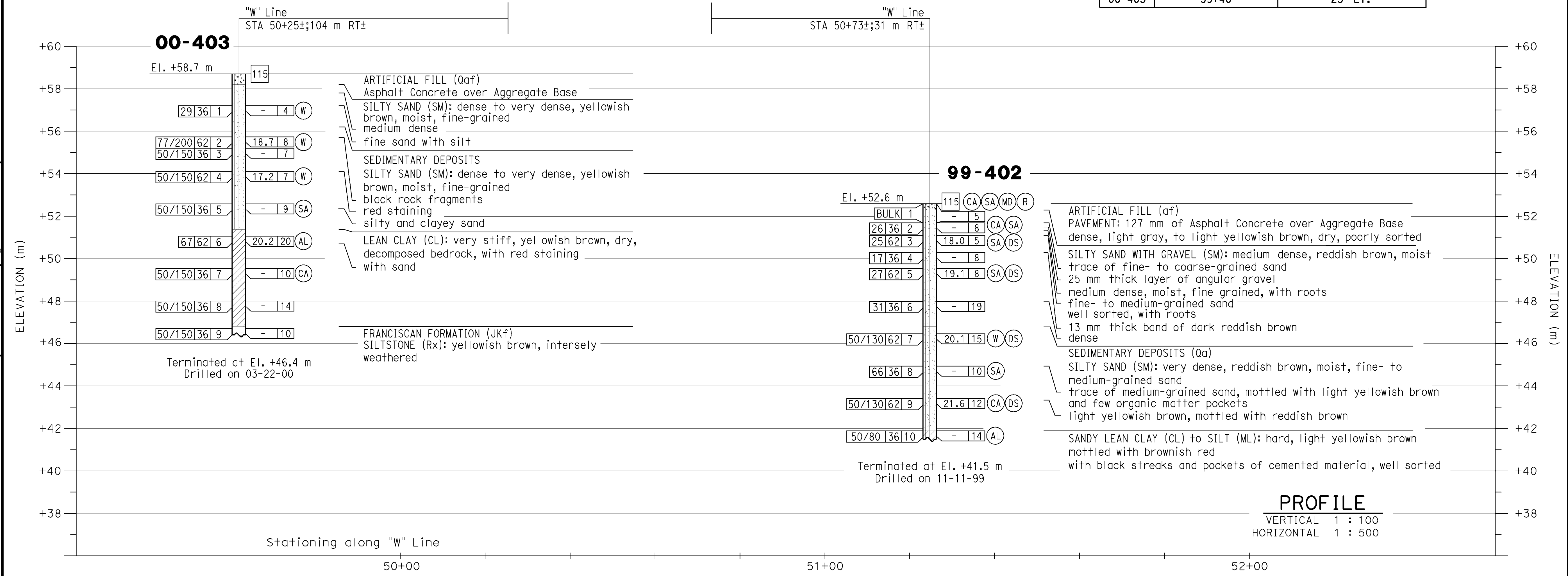
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA	UNITS: 0728	BRIDGE No.
PROJECT NUMBER & PHASE: 040020205071	N/A	

Sheet of 132 of 168

PLAN 1:500

- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "HC1" Line	Offset from "HC1" Line
00-403	59+40	23' Lt.



DESIGN OVERSIGHT

DRAWN BY: G. J. GUNARANJAN 01/03/07

CHECKED BY: M. KAPUSKAR 01/05/07

S. SICILIANO, L. FLUKE
 FIELD INVESTIGATION BY:
 DATE: AS NOTED

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR
 PROJECT ENGINEER

BRIDGE NO. 34-0006
 KILOMETER POST 12.8

WEST TIE-IN PHASE 3
YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)
LOG OF TEST BORINGS NO. 5

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	382	436

7-25-19
DATE

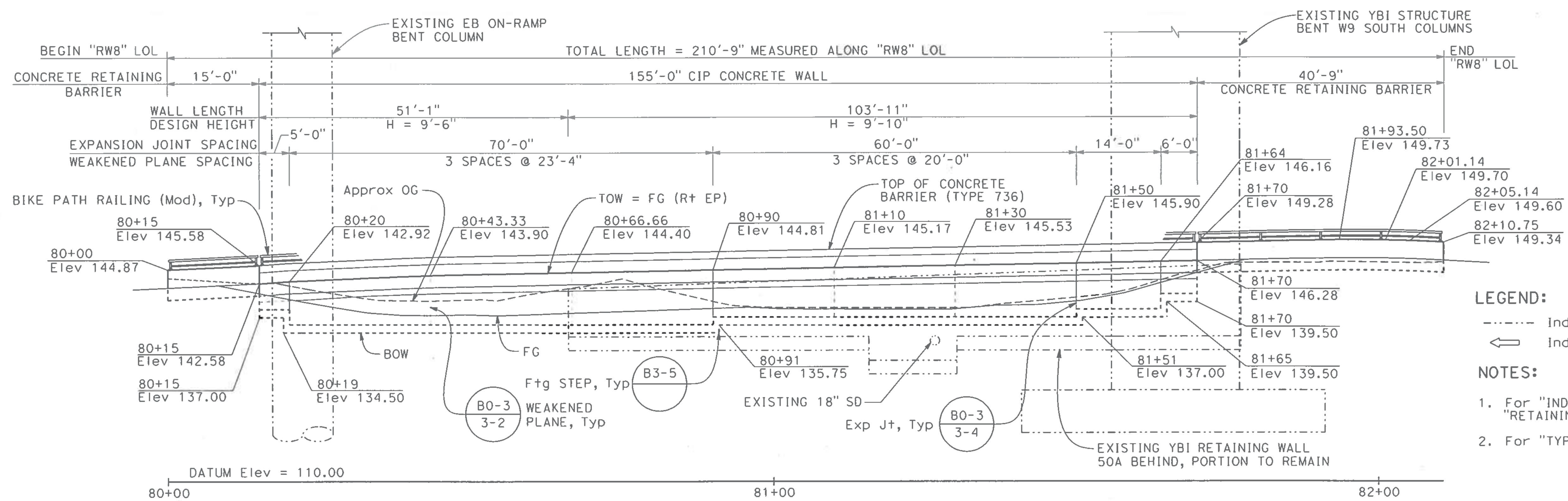
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



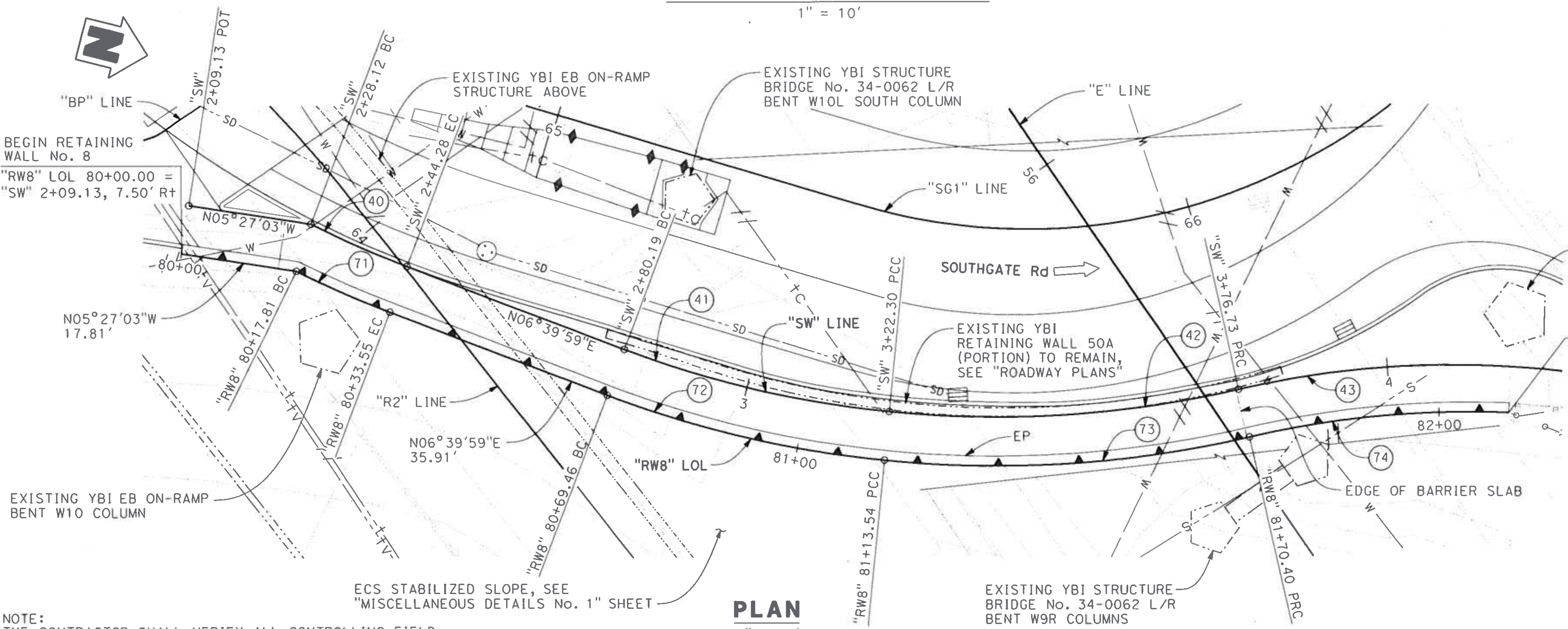
- LEGEND:**
- - - - - Indicates existing structure
 - ← Indicates direction of traffic
- NOTES:**
- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
 - For "TYPICAL SECTION", see "GENERAL PLAN No. 2" sheet.

DEVELOPED ELEVATION

1" = 10'

QUANTITIES

STRUCTURAL BACKFILL (RETAINING WALL)	16	CY
LIGHTWEIGHT EMBANKMENT MATERIAL (CELLULAR CONCRETE) (CLASS III)	358	CY
LIGHTWEIGHT CONCRETE (RETAINING WALL)	166	CY
BAR REINFORCING STEEL (RETAINING WALL)	26,198	LB
EMBANKMENT CONFINEMENT SYSTEM (ECS) REMOVAL (PORTION)	1	LS
MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	29	CY
BIKE PATH RAILING (RETAINING WALL) (Mod)	211	LF
CONCRETE RETAINING BARRIER	56	LF
CONCRETE BARRIER (TYPE 736)	155	LF



CURVE DATA

No.	R	Δ	T	L
(40)	155.10'	05°58'16"	8.09'	16.16'
(41)	160.00'	15°04'37"	21.17'	42.10'
(42)	168.00'	18°33'50"	27.46'	54.43'
(43)	150.00'	19°58'15"	26.41'	52.28'
(71)	162.60'	05°32'44"	7.87'	15.74'
(72)	167.50'	15°04'37"	22.17'	44.08'
(73)	175.50'	18°33'50"	28.68'	56.86'
(74)	154.73'	14°56'12"	20.28'	40.35'

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

DESIGN OVERSIGHT <i>[Signature]</i> 11/14/19	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0037	RETAINING WALL No. 8 GENERAL PLAN No. 1	
DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9		
QUANTITIES BY K. SERRANO-PAINE	CHECKED J. CHEN	SPECIFICATIONS BY T. MEHTA			UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES 10-27-19 11-17-19 1-21-19 7-21-19	SHEET OF 133 168

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => RW8-a-gp01.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

USERNAME => SVC_IN_PWSHET_PLOTTED => 22-OCT-2019 16:06

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 2012, 6th edition with the California Amendments, January 2014.

DESIGN LOADS: (*) Indicates lateral pressure only applicable for "RW8" 80+15 to 80+66

LIVE LOAD: 85 psf (Pedestrian)

LS: 240 psf (*)

SEISMIC: $k_h = 0.33, k_v = 0.0$

SOIL: $\gamma = 120$ pcf (*)
coefficient of friction, $\mu = 0.67$
 $\gamma_{LCC} = 40$ pcf

REINFORCED LIGHTWEIGHT CONCRETE: $\gamma_{Conc} = 110$ pcf
 $f'_c = 3,600$ psi at 28 days
 $f_y = 60,000$ psi

LOAD COMBINATIONS AND LIMIT STATES:

Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
Strength I $Q = \alpha DC + \beta EV + \gamma EH + 1.75LS + 1.75LL$
Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$
Extreme II $Q = 1.00DC + 1.00EV + 1.00EH + 0.05LS$


Where:

Q: Force Effects
a: 1.25 or 0.90, Whichever Controls Design
: 1.35 or 1.00, Whichever Controls Design
: 1.50 or 0.90, Whichever Controls Design
DC: Dead Load of Structure Components
EH: Horizontal Earth Fill Pressure
EV: Vert Earth Pressure from Earth Fill Weight
LS: Live Load Surcharge
LL: Pedestrian Live Load
EQE: Seismic Earth Pressure
EQD: Soil and Structural and Nonstructural Components Inertia
LCC: Lightweight Cellular Concrete

NOTES:

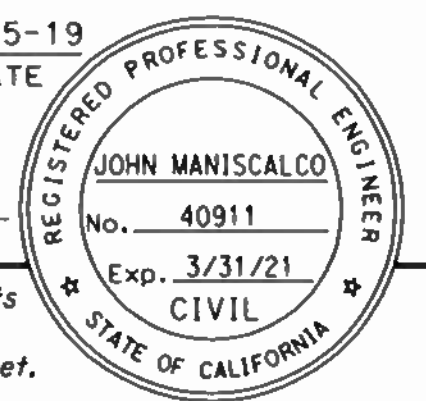
- For limits and existing retaining wall location, see "GENERAL PLAN No. 1" sheet.
- For wall details, see "RETAINING WALL DETAILS" sheet.
- For excavation and backfill, see "MISCELLANEOUS DETAILS No. 1" sheet.
- Footing width varies (6'-9" Min) as it is dependent on the location of the existing RW 50A. Footing shall be poured against existing wall with 2" expanded polystyrene between footing and existing retaining wall.

LEGEND:

- Indicates Existing Structure
-  Indicates Lightweight Embankment Material (Cellular Concrete) (Class III) Unit Wt = 40 pcf

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	383	436

7-25-19
 REGISTERED CIVIL ENGINEER DATE

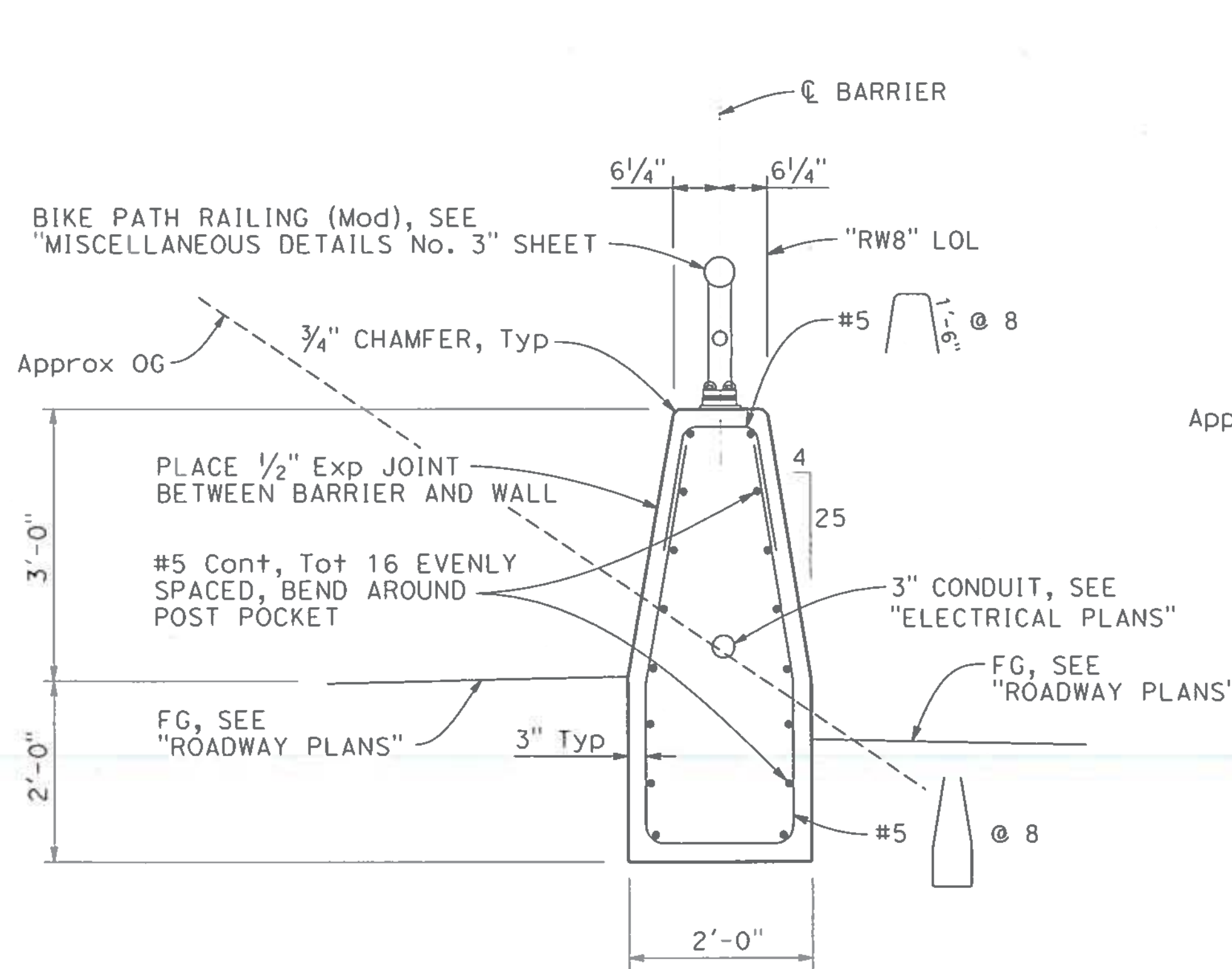


PLANS APPROVAL DATE

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

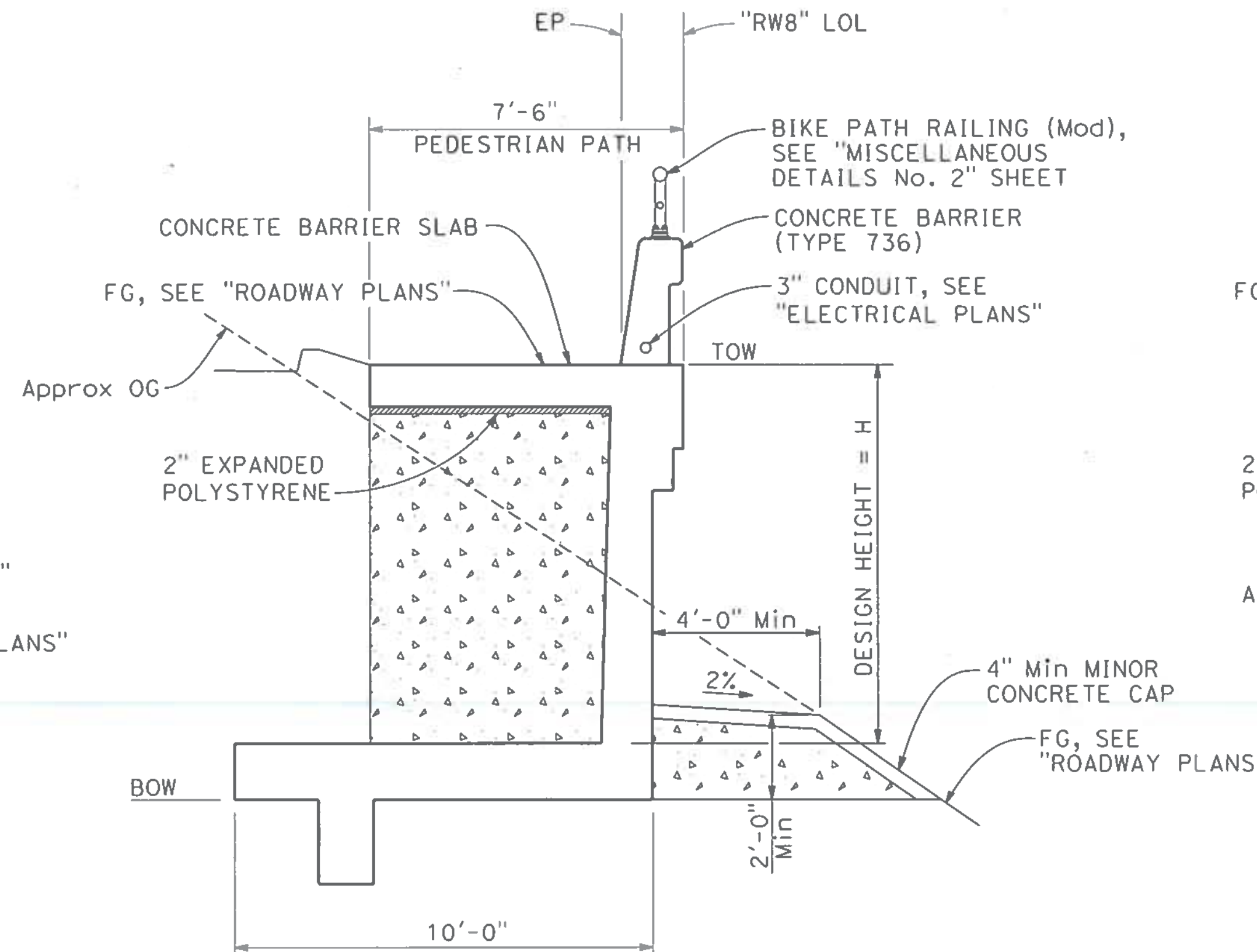
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



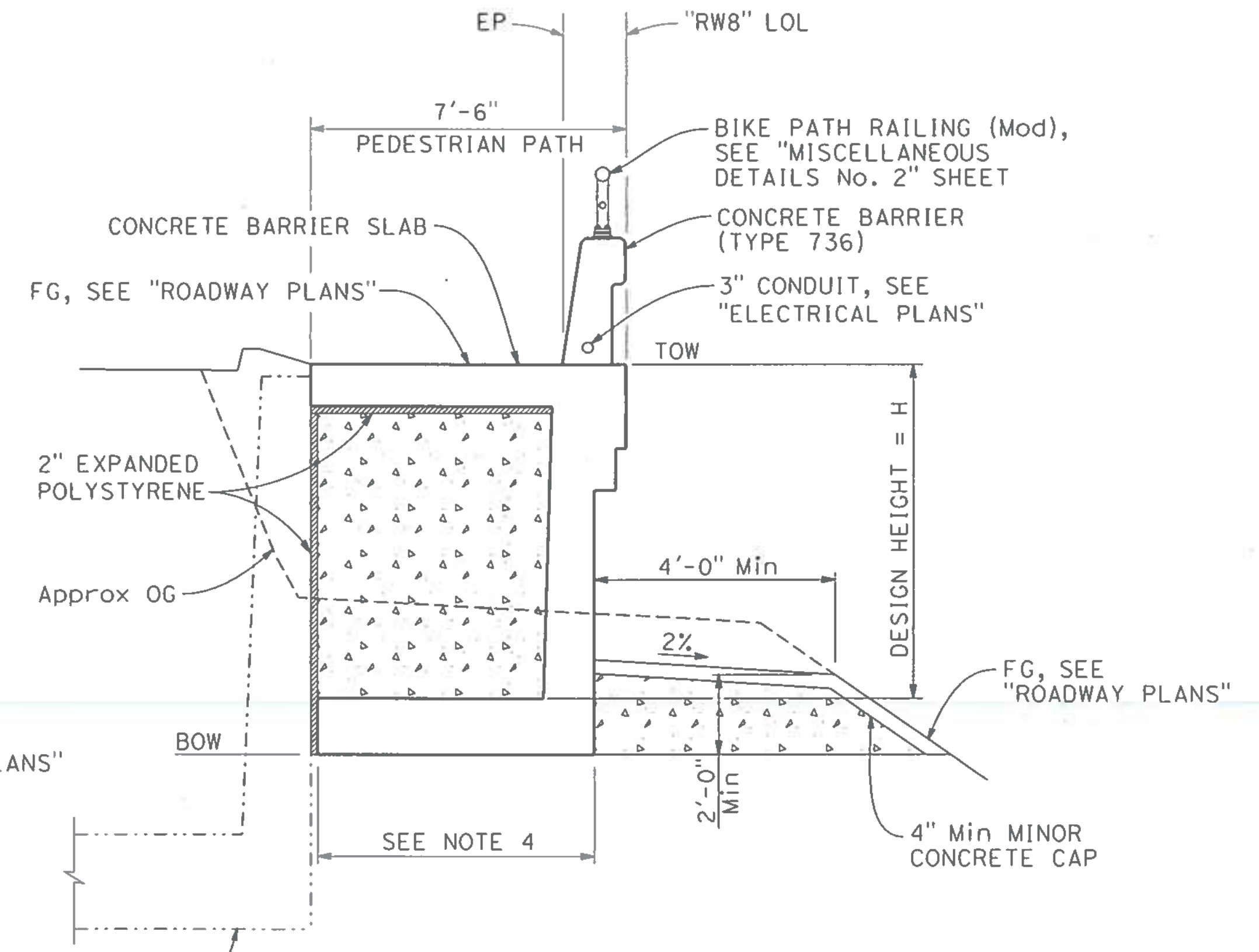
TYPICAL SECTION

3/4" = 1'-0"
"RW8" 80+00 TO 80+15
"RW8" 81+70 TO 82+10.75



TYPICAL SECTION


3/8" = 1'-0"
"RW8" 80+15 TO 80+66±



TYPICAL SECTION

3/8" = 1'-0"
"RW8" 80+66± TO 81+70

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

 DESIGN OVERSIGHT 11/14/19 SIGN OFF DATE	DESIGN BY K. SERRANO-PAINE	CHECKED A. MALLA	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0037	RETAINING WALL No. 8 GENERAL PLAN No. 2
	DETAILS BY L. DAVIS	CHECKED K. SERRANO-PAINE	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
QUANTITIES BY K. SERRANO-PAINE	CHECKED J. CHEN	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES	SHEET 134 OF 168

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 10-22-19, 11-14-19, 2-21-19, 7-24-19

FILE => RW8-a-gp02.dgn

TIME PLOTTED => 16:06
USER NAME => svc_in_pwsbmet (PLOTTED) => 22-OCT-2019

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	384	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.
 SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

UTILITIES:

- 1 Existing Television to be Abandoned
- 2 Existing Abandoned Sewer
- 3 Existing Abandoned Water
- 4 Existing Storm Drain
- 5 Existing Abandoned Telephone
- 6 Joint Utility Line

LEGEND:

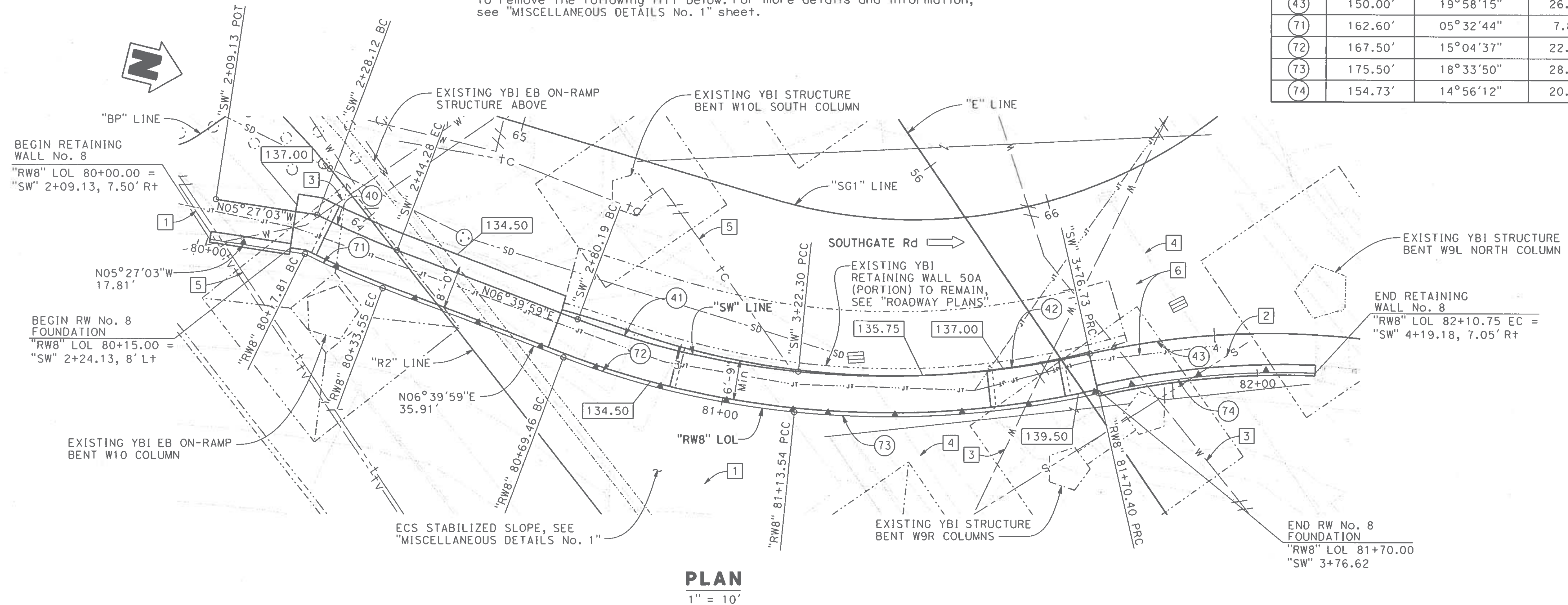
- Indicates existing structure
- ← Indicates direction of traffic
- XXX Indicates bottom of footing elevation
- ⊙ Indicates existing pile

NOTES:

- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 2" sheet.
- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS", "UTILITY PLANS" and "DRAINAGE PLANS".
- Elevations at bottom of footing are approximate. Contractor shall remove the necessary amount of ECS lifts down to accommodate the bottom of footing elevations provided on plans. If given elevation is within an ECS lift, Contractor is required to remove the following lift below. For more details and information, see "MISCELLANEOUS DETAILS No. 1" sheet.

CURVE DATA

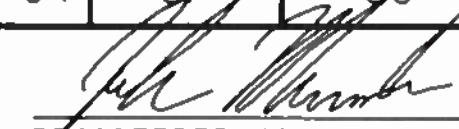
No.	R	Δ	T	L
40	155.10'	05°58'16"	8.09'	16.16'
41	160.00'	15°04'37"	21.17'	42.10'
42	168.00'	18°33'50"	27.46'	54.43'
43	150.00'	19°58'15"	26.41'	52.28'
71	162.60'	05°32'44"	7.87'	15.74'
72	167.50'	15°04'37"	22.17'	44.08'
73	175.50'	18°33'50"	28.68'	56.86'
74	154.73'	14°56'12"	20.28'	40.35'

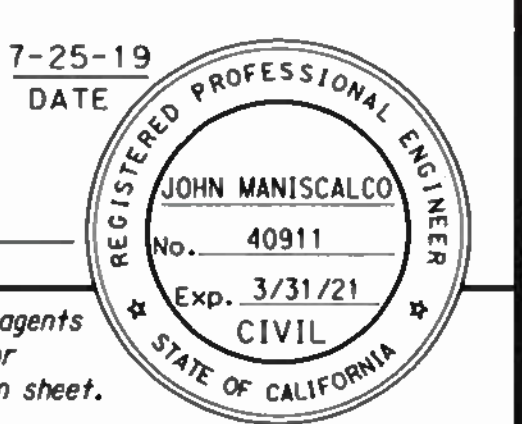


NOTE: THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

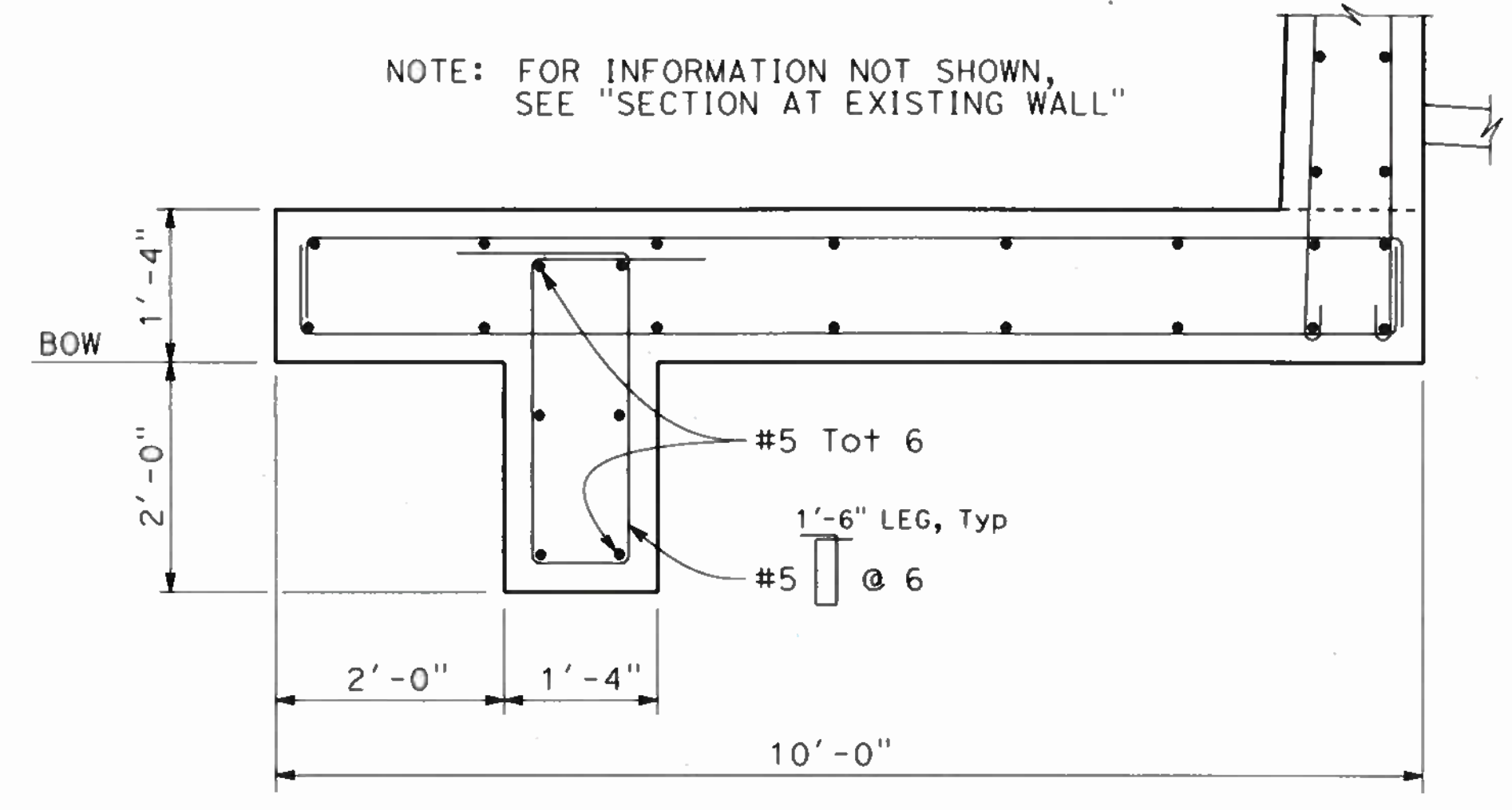
SCALE: 1" = 20' VERT. DATUM NGVD29 HORZ. DATUM NAD83, CCS ZONE 3 PHOTOGRAMMETRY AS OF: 10-9-2015 SURVEYED BY TOWILL Inc. FIELD CHECKED BY D. ORTEGA	ALIGNMENT TIES DRAFTED BY D. ORTEGA CHECKED BY A. MARTINEZ	DESIGN BY K. SERRANO-PAINE DETAILS BY L. DAVIS QUANTITIES BY K. SERRANO-PAINE	CHECKED J. ZHU CHECKED K. SERRANO-PAINE CHECKED J. CHEN	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE No. 34E0037 POST MILES 7.9	RETAINING WALL No. 8 FOUNDATION PLAN
FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)				UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 10-22-19, 11-12-19, 2-24-19, 7-24-19 SHEET 135 OF 168

TIME PLOTTED => 16:06
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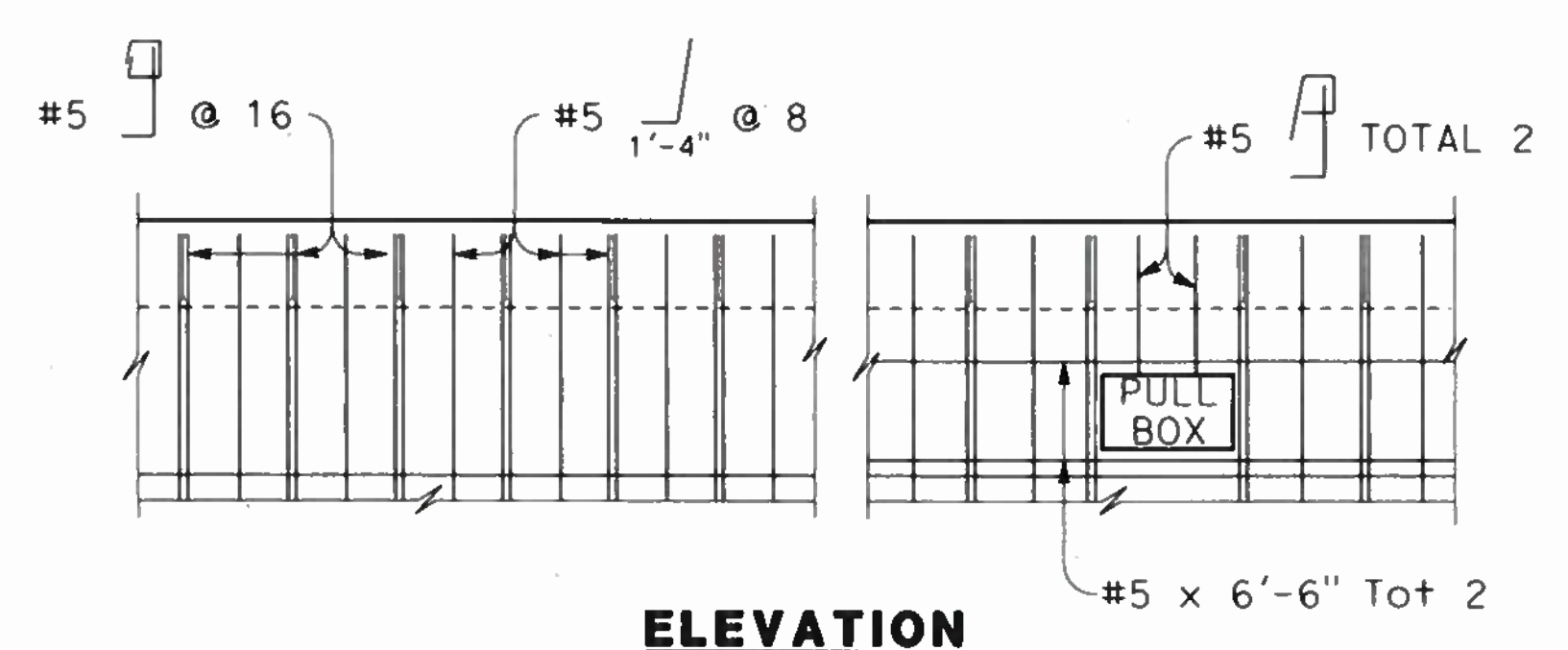
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	385	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE _____					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



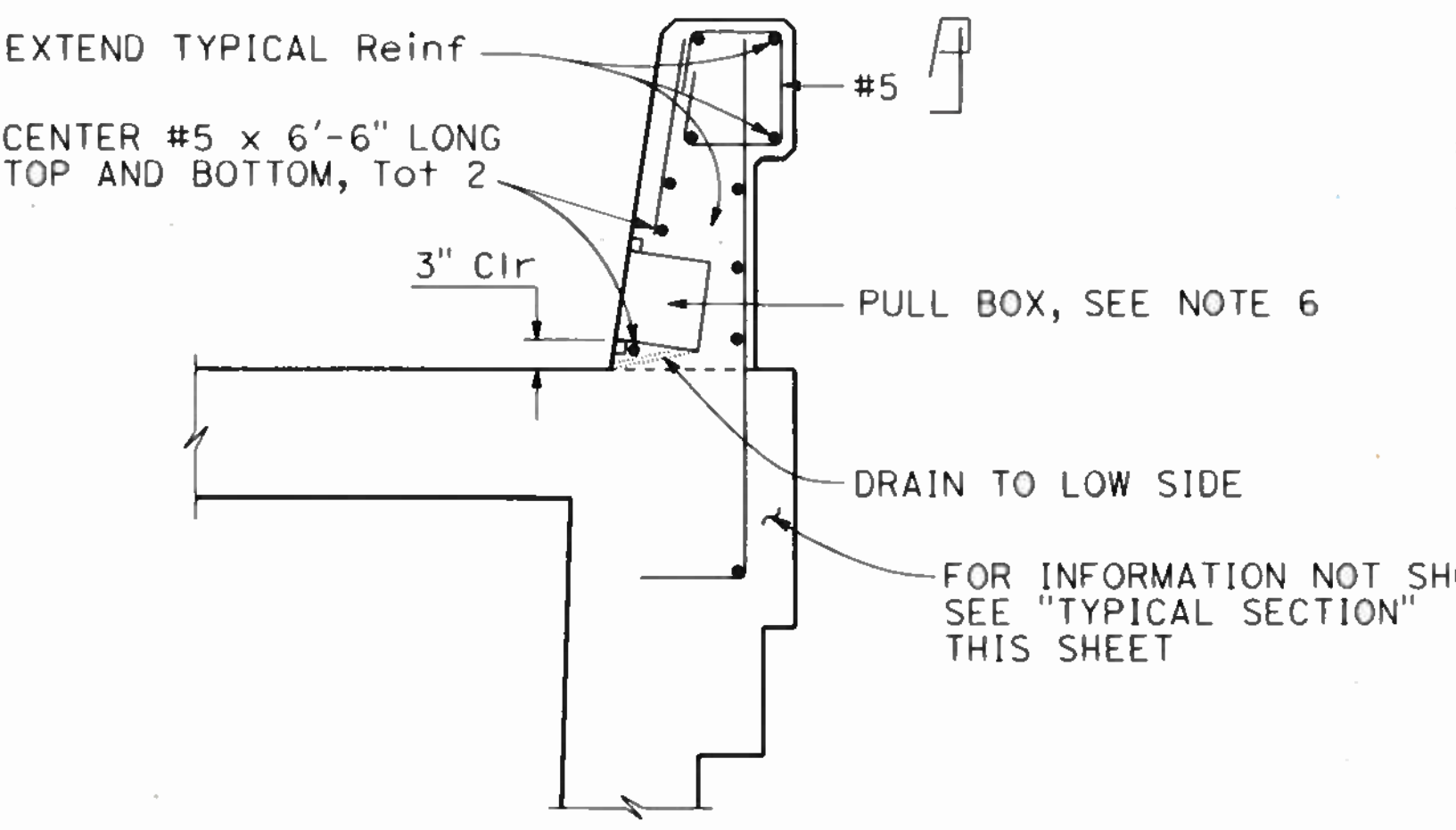
- NOTES:**
- For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
 - No splices are allowed within H/4 above top of footing.
 - Clearance to reinforcing steel in concrete barrier to be 1". All barrier reinforcement shall be epoxy coated unless otherwise noted.
 - No expansion joints in concrete barrier within wall limits.
 - Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See "ROADWAY PLANS".
 - See Standard Plans ES-9A thru ES-9E and "ELECTRICAL PLANS" for electrical details not shown.
 - Provide #6 @ 8 bars in addition to standard #7 @ 12 over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations.



SECTION AT FOOTING KEY
 3/4" = 1'-0"
 "RW8" 80+15 TO 80+66±

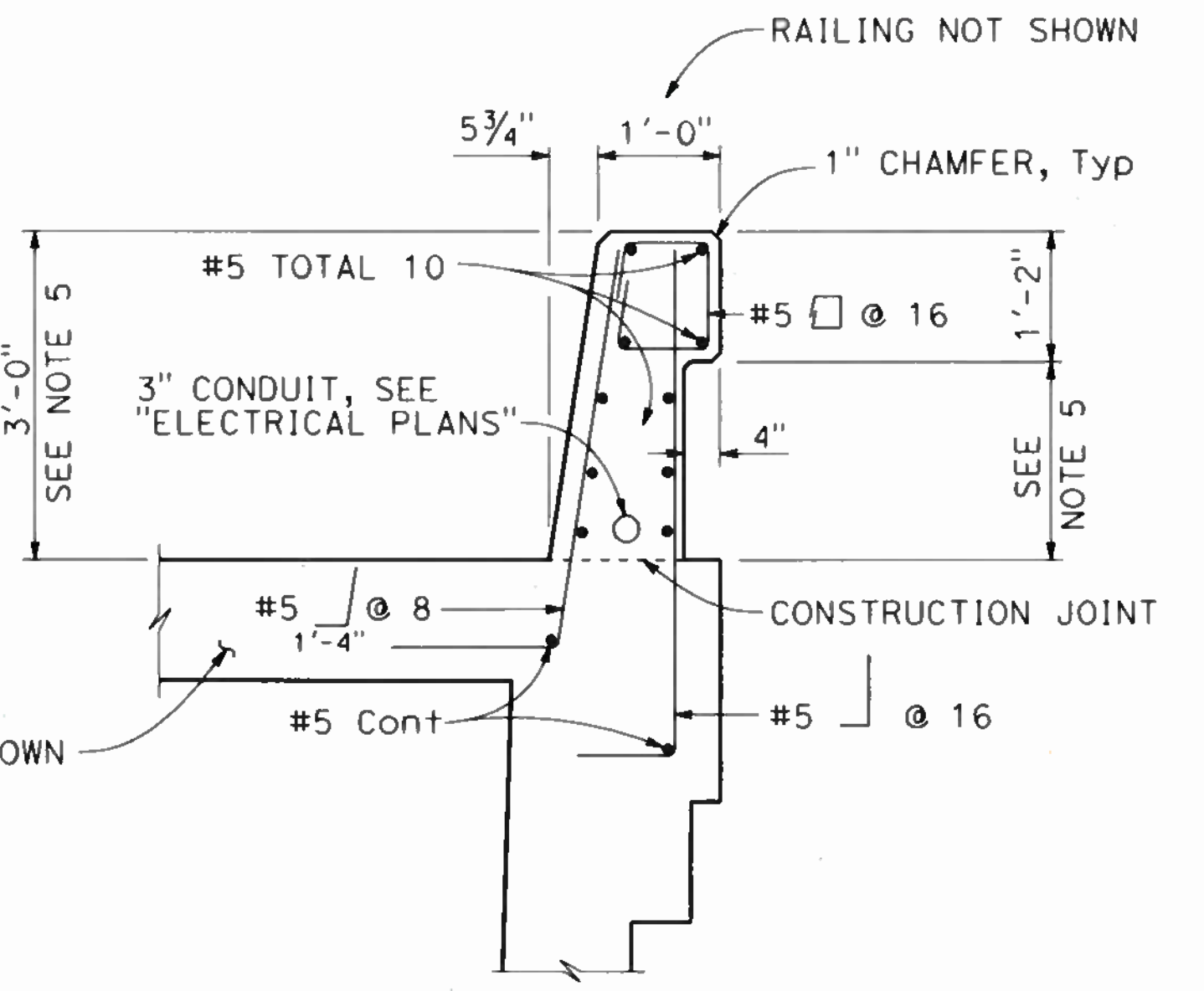


ELEVATION



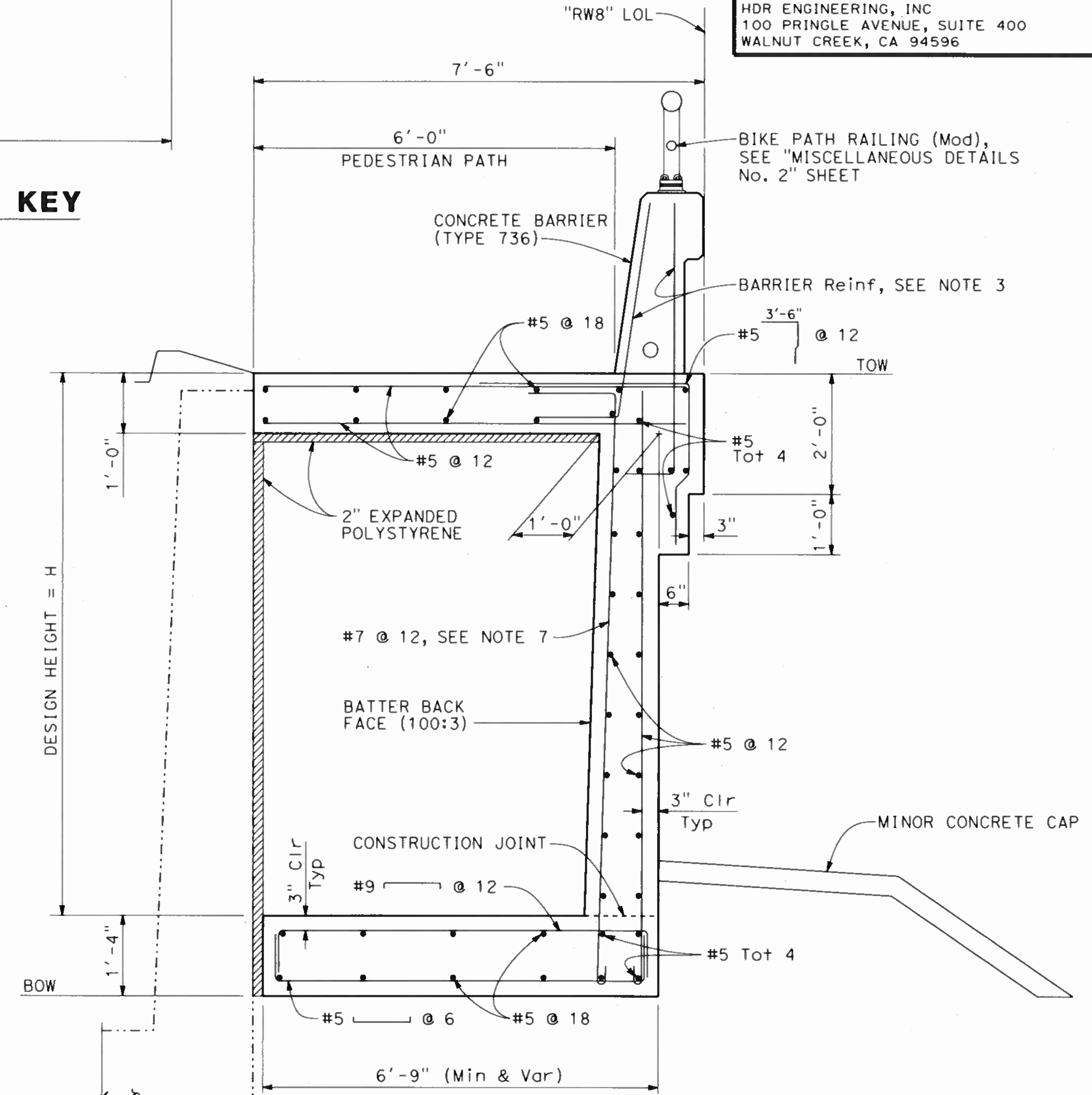
SECTION AT PULL BOX

NOTE: FOR INFORMATION NOT SHOWN, SEE "TYPICAL BARRIER SECTION"



TYPICAL BARRIER SECTION


CONCRETE BARRIER (TYPE 736)
 NO SCALE



SECTION AT EXISTING WALL
 3/4" = 1'-0"
 "RW8" 80+66± TO 81+70

EXISTING YBI RETAINING WALL 50A (PORTION) TO REMAIN

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

DESIGN OVERSIGHT

 SIGN OFF DATE 11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34E0034
POST MILES	7.9

RETAINING WALL No. 8
RETAINING WALL DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-14-19 2-27-19 7-28-19	136	168

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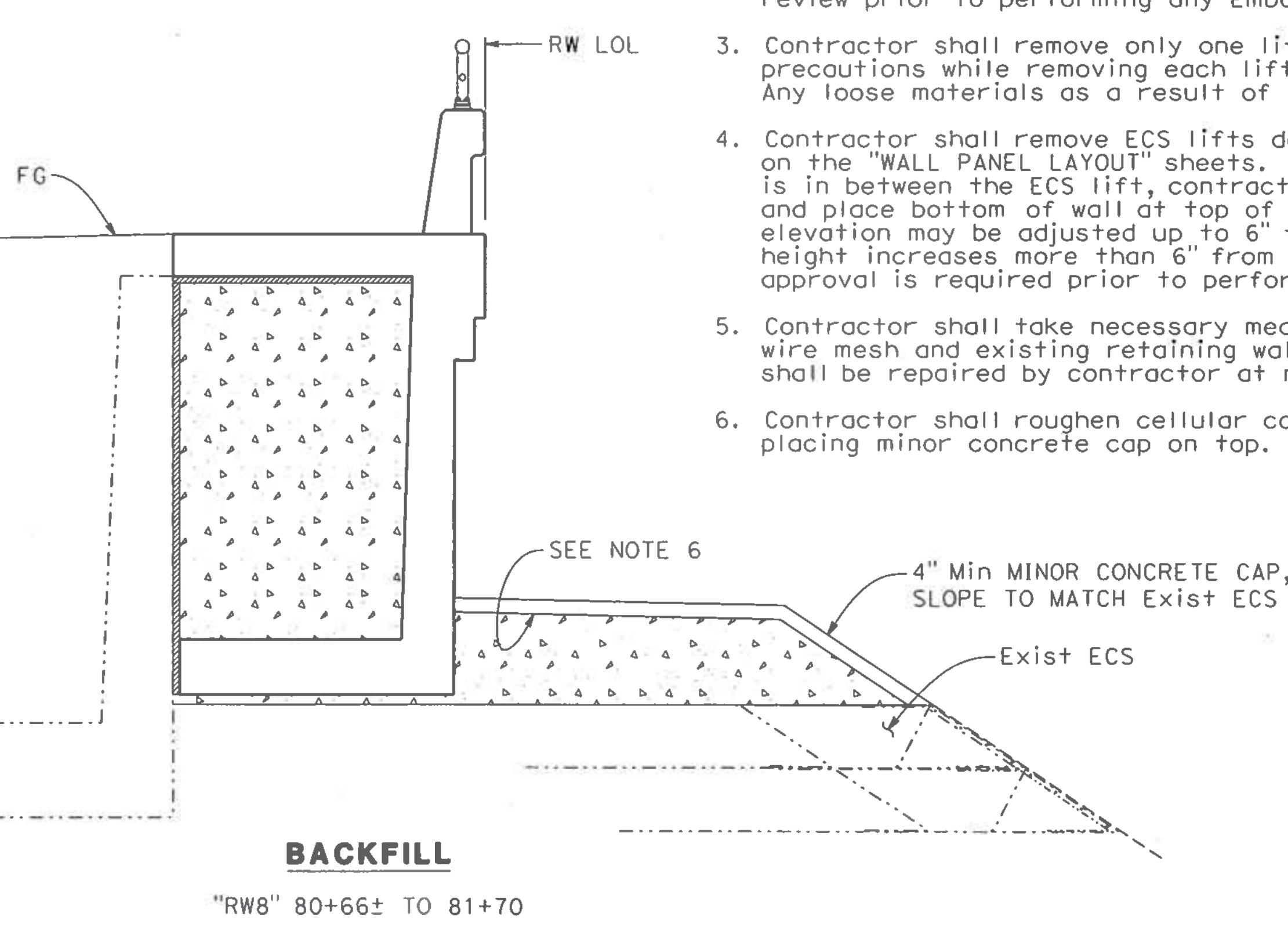
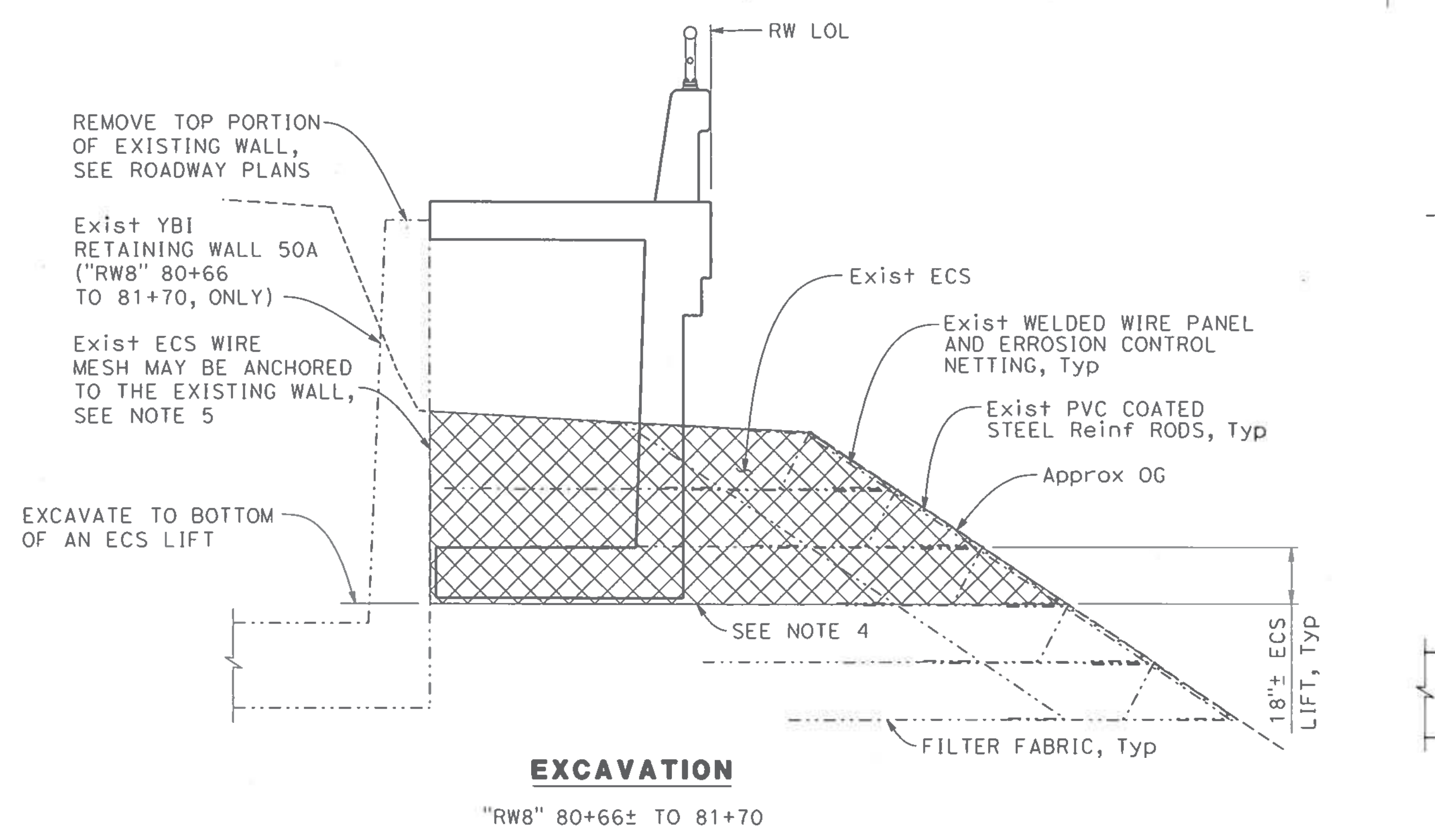
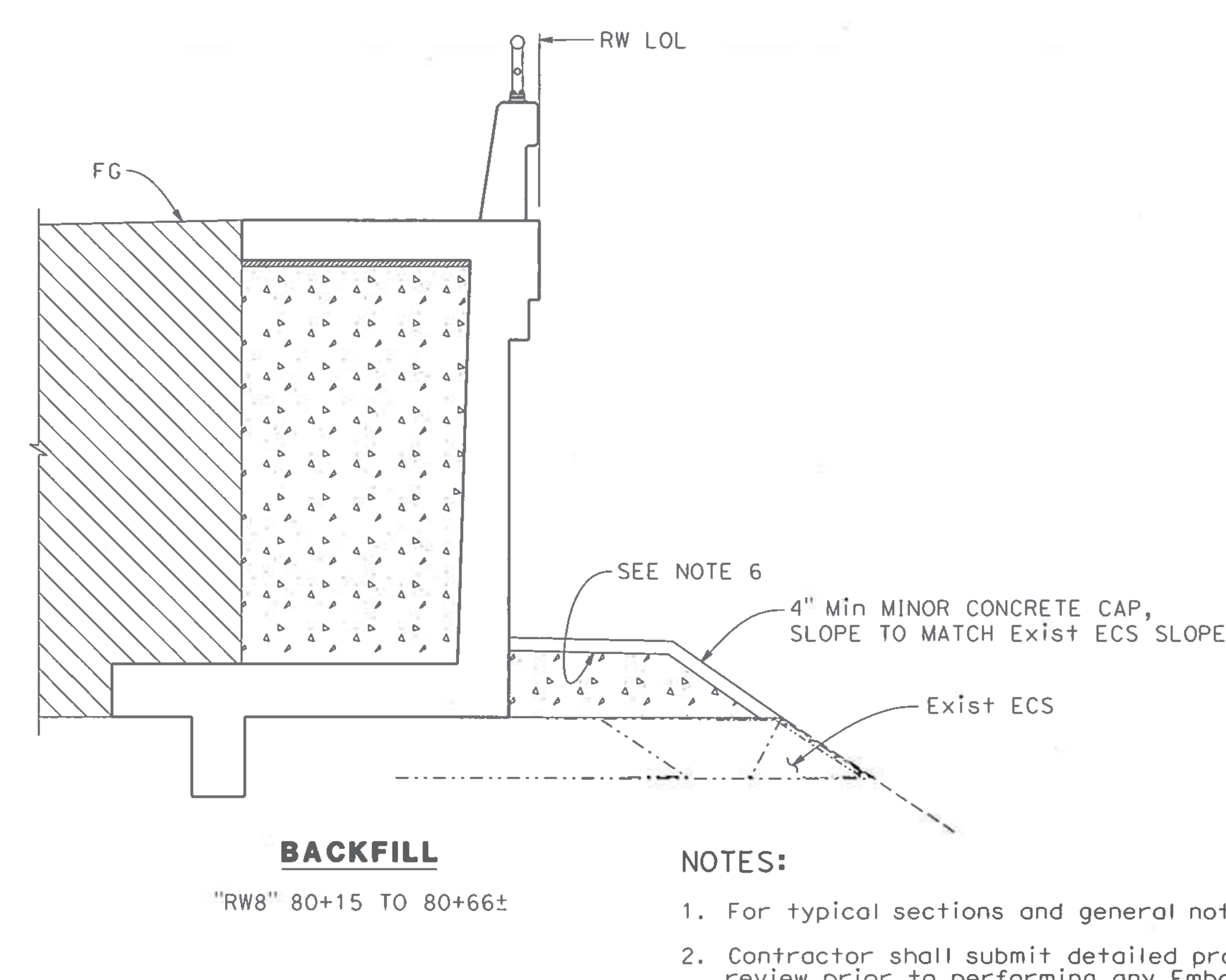
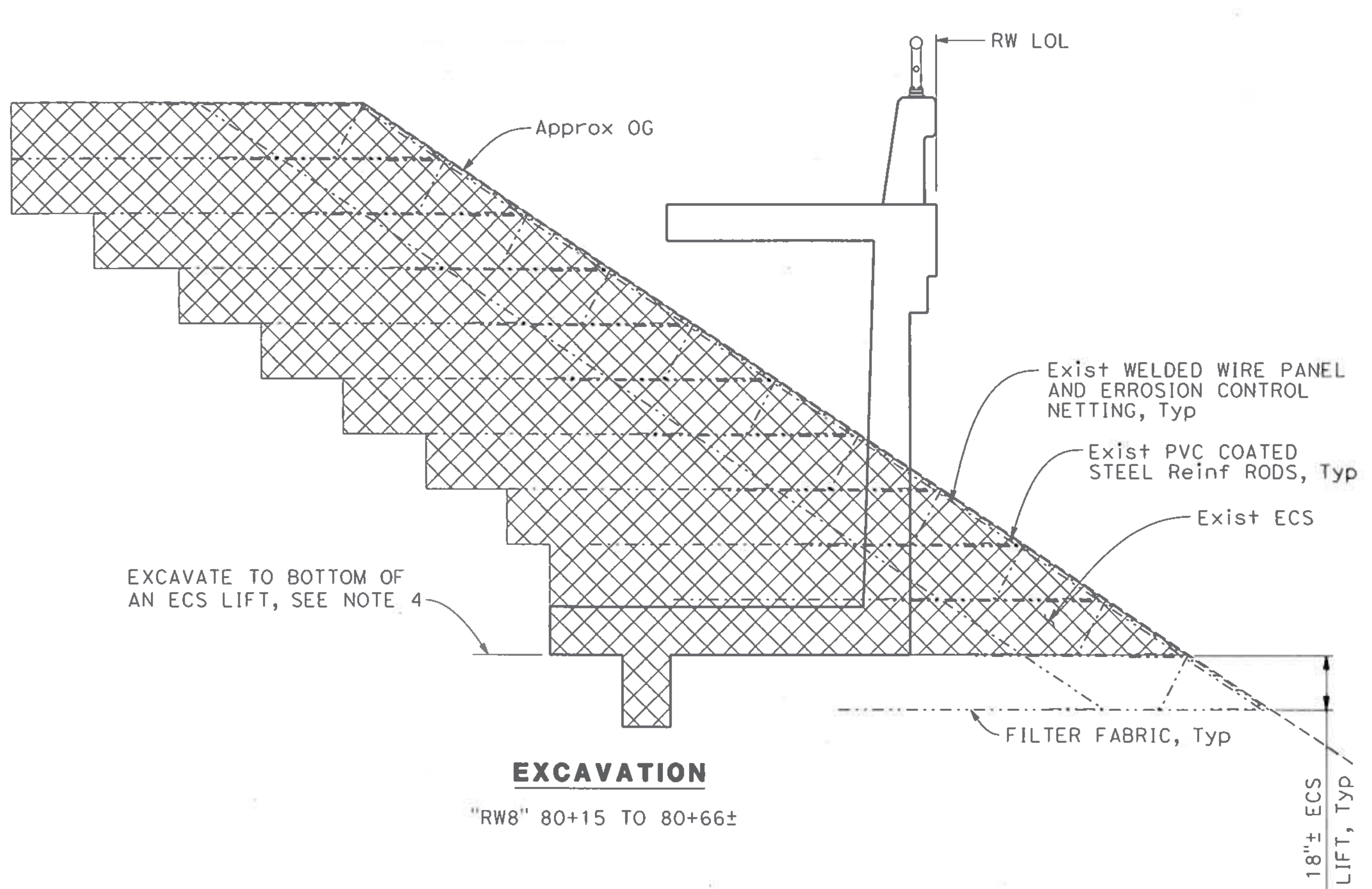
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	386	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 REGISTERED PROFESSIONAL ENGINEER
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



- NOTES:**
- For typical sections and general notes, see "GENERAL PLAN No. 2" sheet.
 - Contractor shall submit detailed procedures and shop drawings for Engineer's review prior to performing any Embankment Confinement System (ECS) removal.
 - Contractor shall remove only one lift at a time and take the necessary precautions while removing each lift to minimize disturbance to the next lift. Any loose materials as a result of removal shall be recompacted.
 - Contractor shall remove ECS lifts down to bottom of wall elevation shown on the "WALL PANEL LAYOUT" sheets. If the elevation of the bottom of wall is in between the ECS lift, contractor is required to remove the entire 18"± and place bottom of wall at top of the following lift. Bottom of wall elevation may be adjusted up to 6" to meet this requirement. If overall height increases more than 6" from what is shown on plans, Engineer's approval is required prior to performing any work.
 - Contractor shall take necessary measure to remove connection between ECS wire mesh and existing retaining wall behind. Any damage to existing wall shall be repaired by contractor at no additional cost.
 - Contractor shall roughen cellular concrete surface to 1/4" amplitude before placing minor concrete cap on top.

LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL

NO SCALE

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

LEGEND:

	Roadway Excavation, see "ROADWAY PLANS"
	Embankment Confinement System (ECS) Removal (Portion), see Notes 2 thru 4
	Lightweight Embankment Material (Cellular Concrete) (Class III)
-----	Indicates Existing Structure

DESIGN OVERSIGHT

 11/14/19
 SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED A. MALLA
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED J. CHEN

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	34E0037
PROJECT ENGINEER	JOHN MANISCALCO
POST MILES	7.9

RETAINING WALL No. 8
MISCELLANEOUS DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



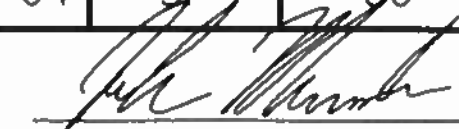
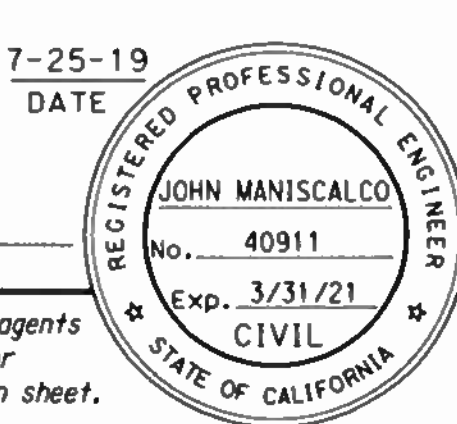
UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

REVISION DATES	SHEET	OF
10-22-19 11-12-19 1-22-20 7-25-19	137	168

DISREGARD PRINTS BEARING EARLIER REVISION DATES

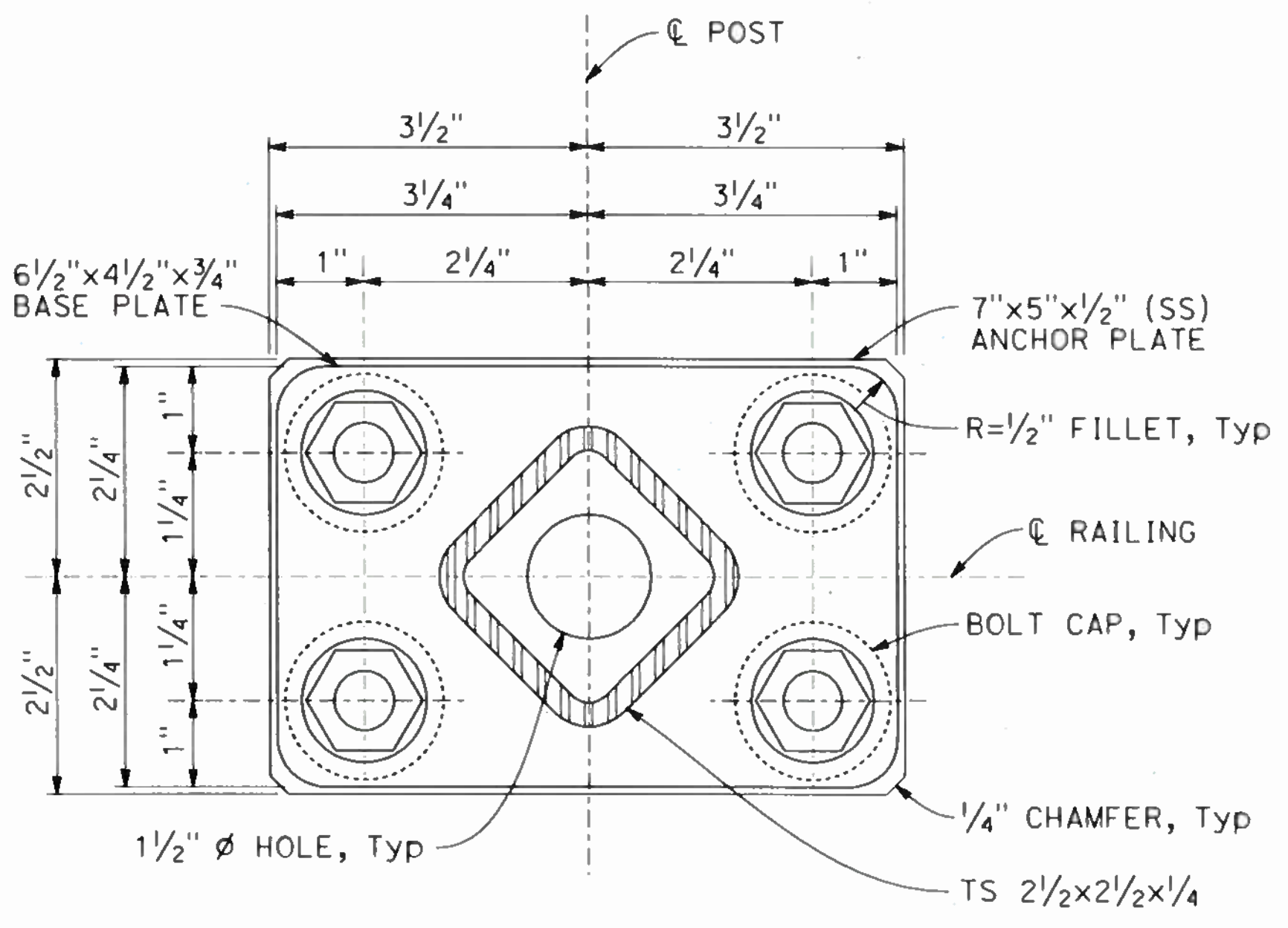
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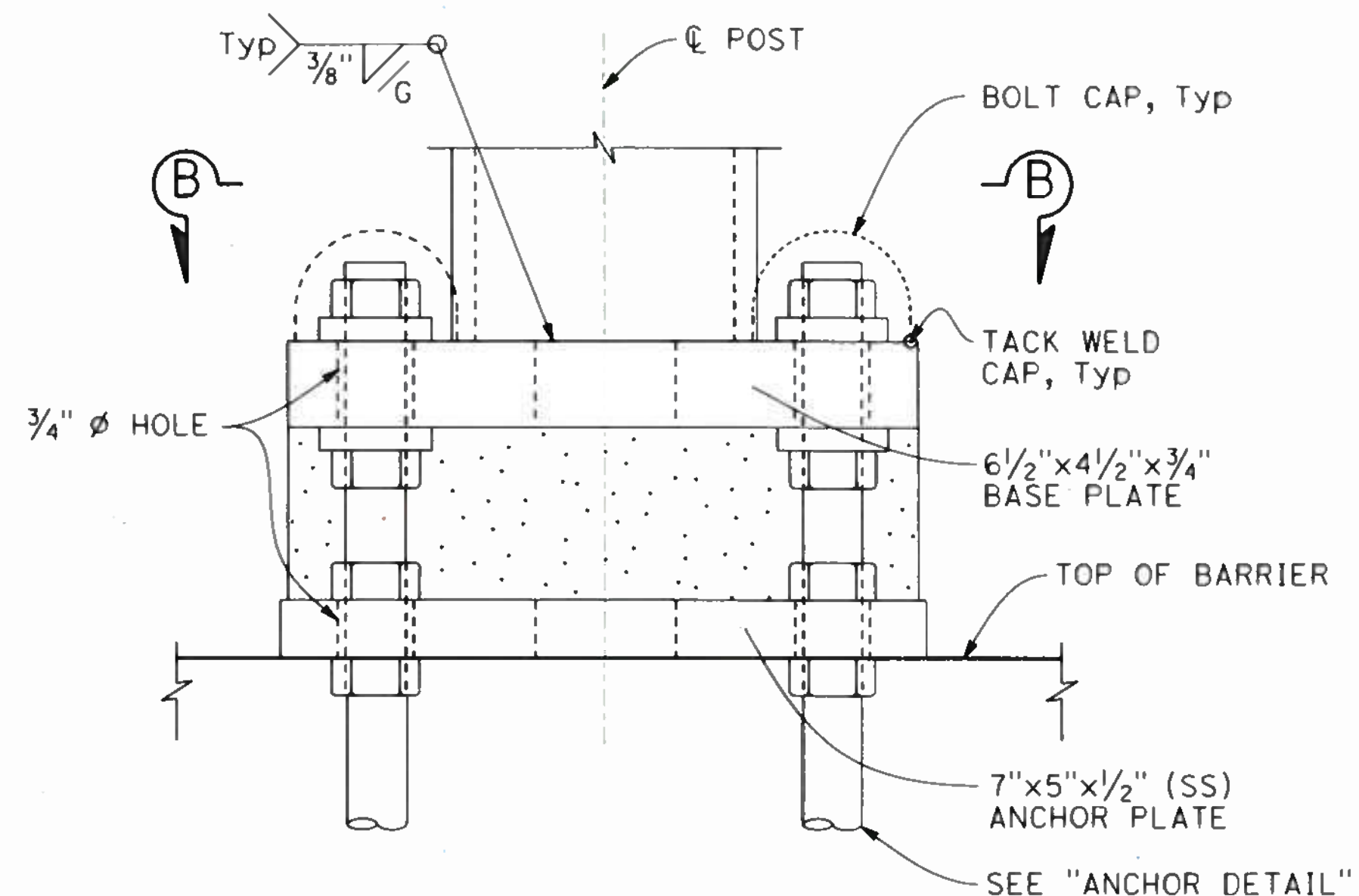
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	387	436
 REGISTERED CIVIL ENGINEER			7-25-19 DATE		
PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

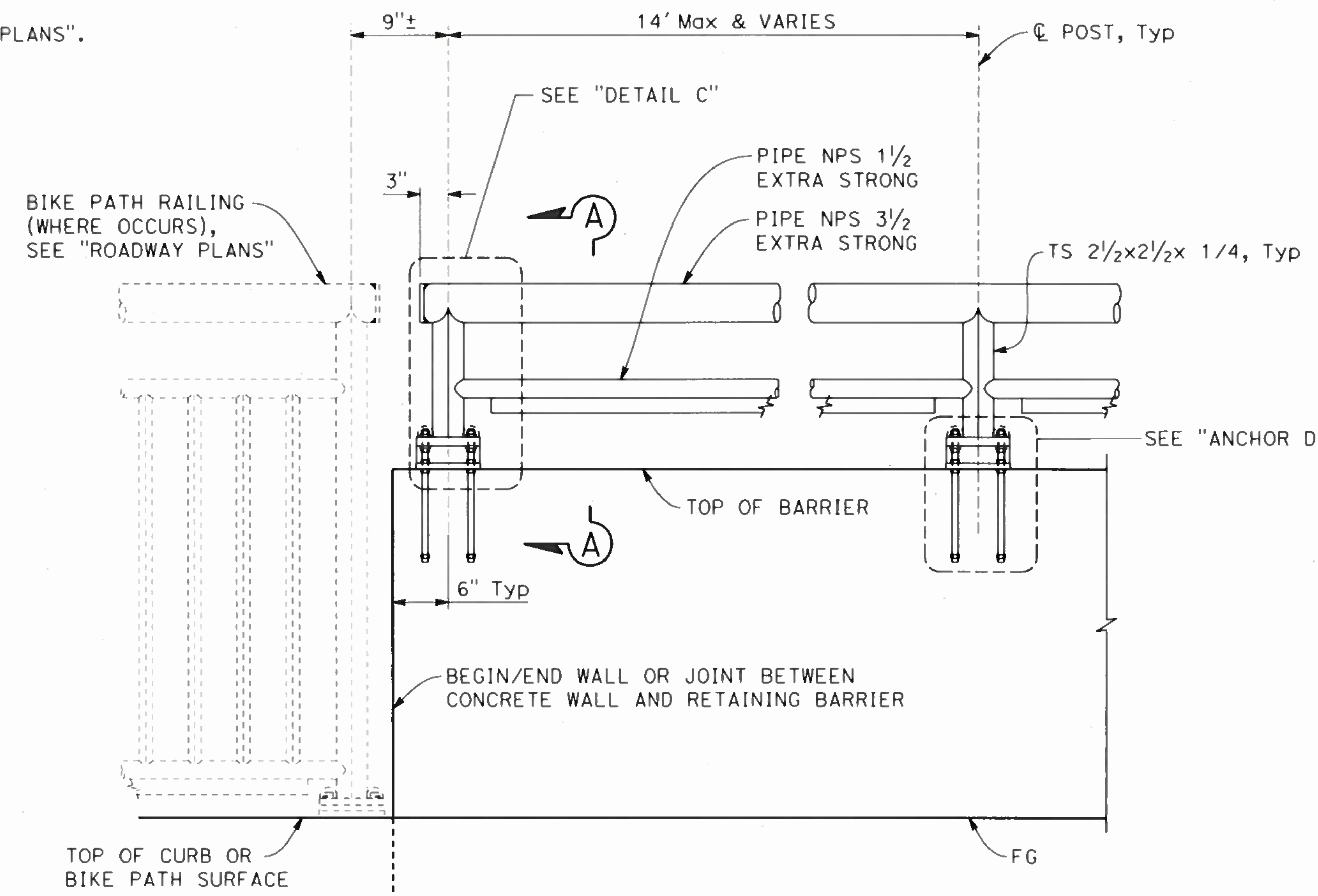
1. Railing to match existing adjacent railing on site and shown on "ROADWAY PLANS".
2. Remove all burrs and sharp edges and ground smooth all welds.
3. All metal parts (except stainless steel) shall be galvanized and coated.
4. Rails shall be continuous over not less than two posts.
5. Railing posts and tubes shall conform to ASTM A500 Grade C (Fy=50ksi)
6. Posts shall be vertical. Rails shall be parallel to top of bike path.



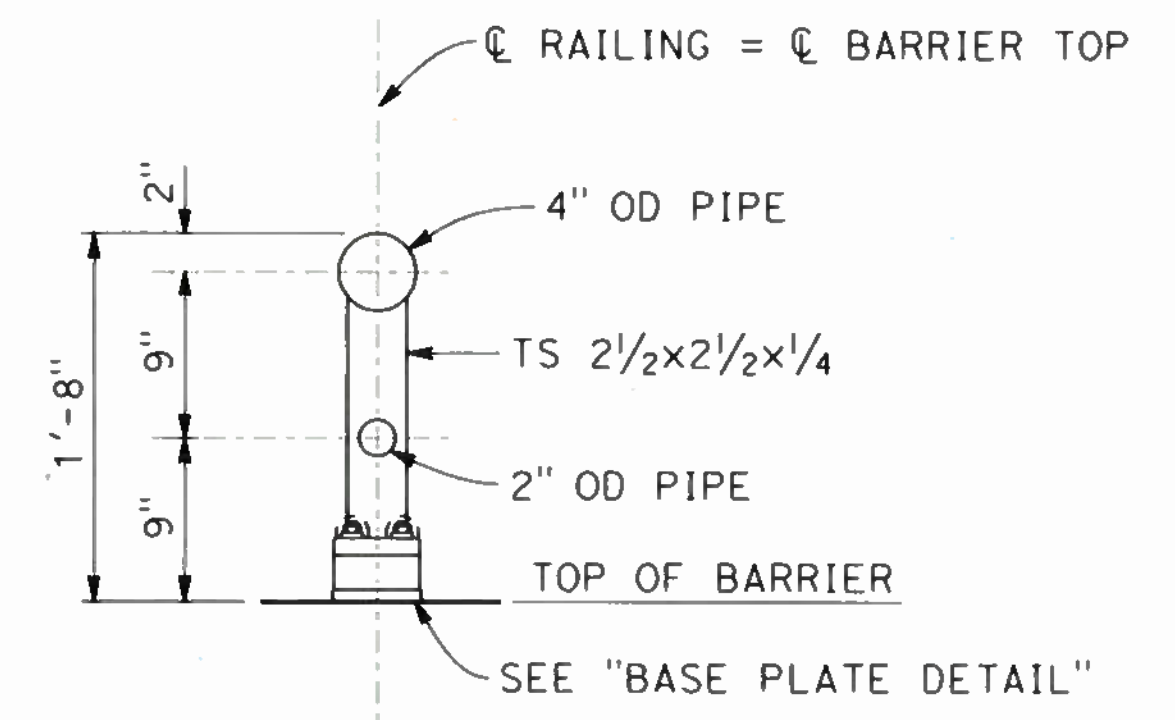
SECTION B-B
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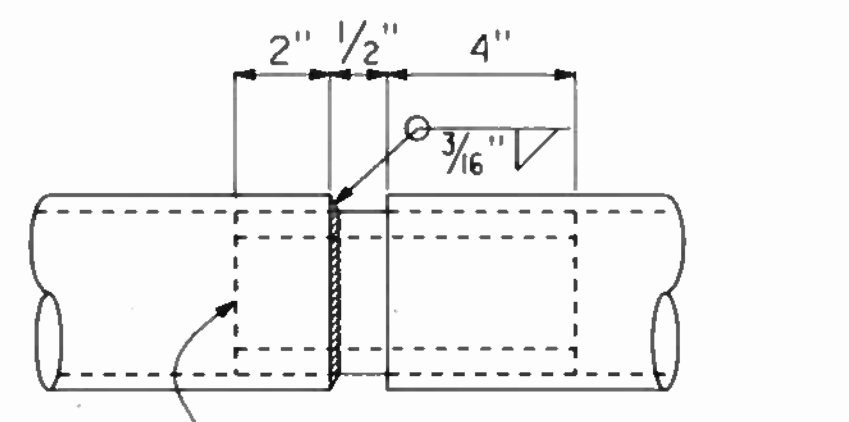
BASE PLATE DETAIL
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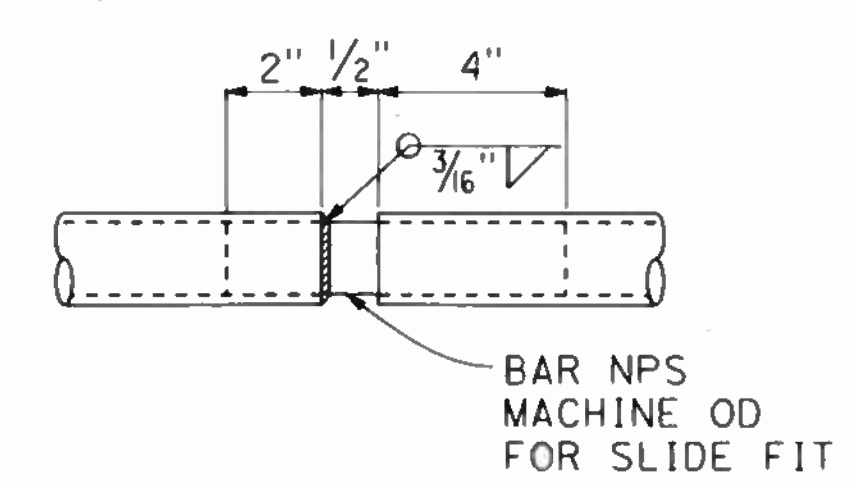
PARTIAL ELEVATION
NO SCALE



SECTION A-A
NO SCALE

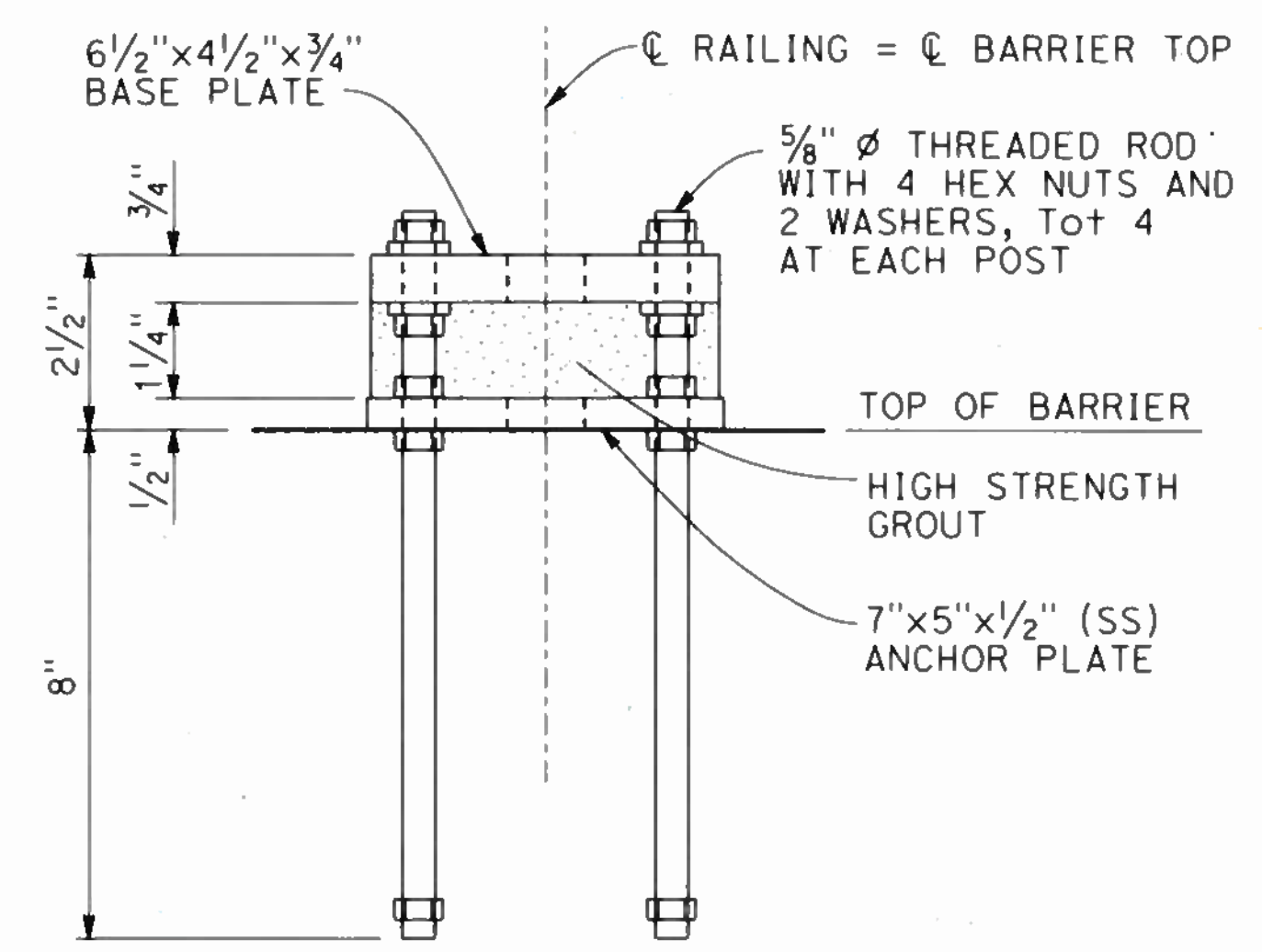


TOP RAILING

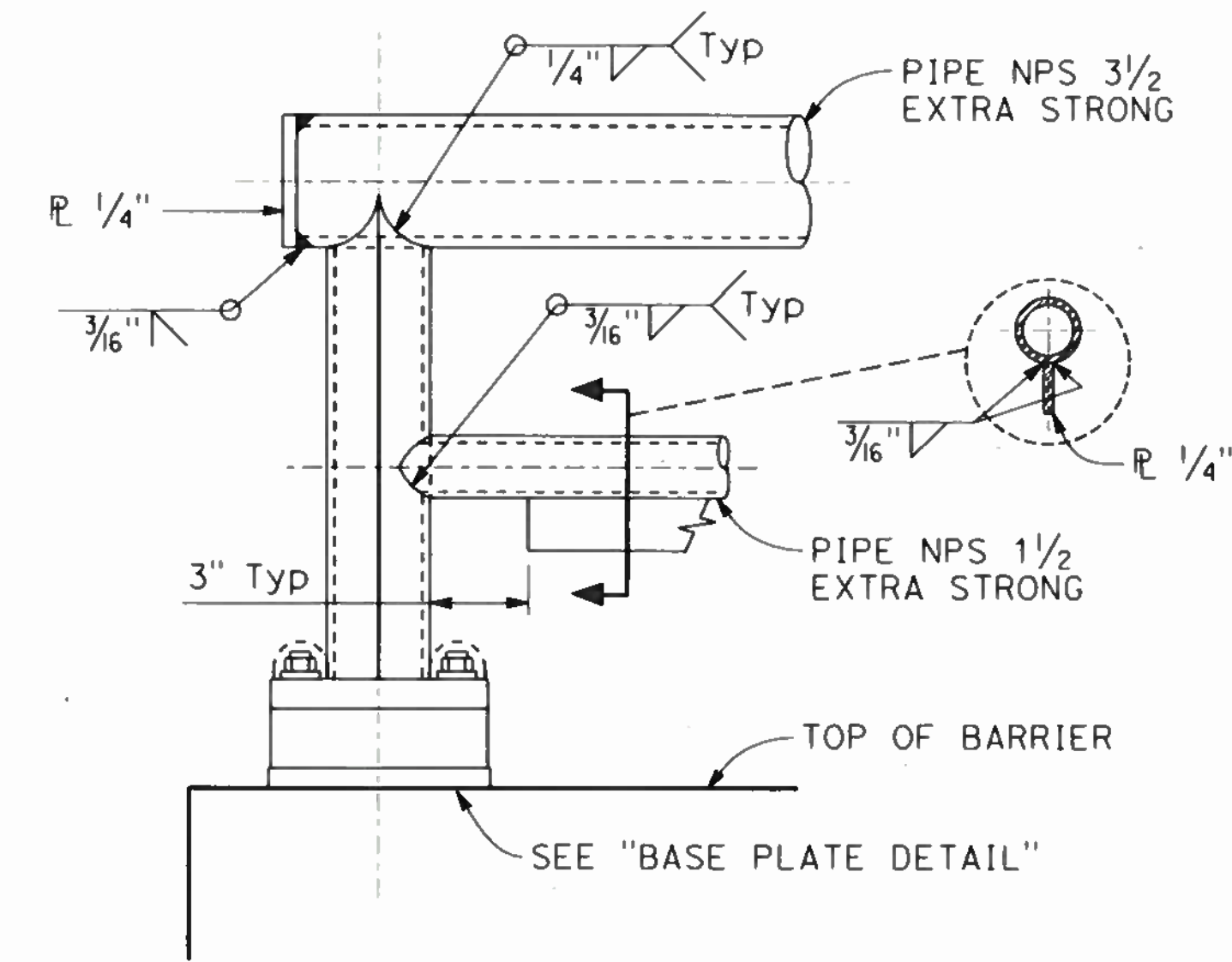


INTERMEDIATE RAILING

EXPANSION JOINT DETAIL
NO SCALE




ANCHOR DETAIL
NO SCALE



DETAIL C
NO SCALE

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

DESIGN OVERSIGHT

SIGN OF DATE
11/14/19

DESIGN	BY K. SERRANO-PAINE	CHECKED A. MALLA
DETAILS	BY L. DAVIS/E. GRAY	CHECKED K. SERRANO-PAINE
QUANTITIES	BY K. SERRANO-PAINE	CHECKED J. CHEN

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0037
POST MILES	7.9

RETAINING WALL No. 8
MISCELLANEOUS DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 1-24-20	138	168

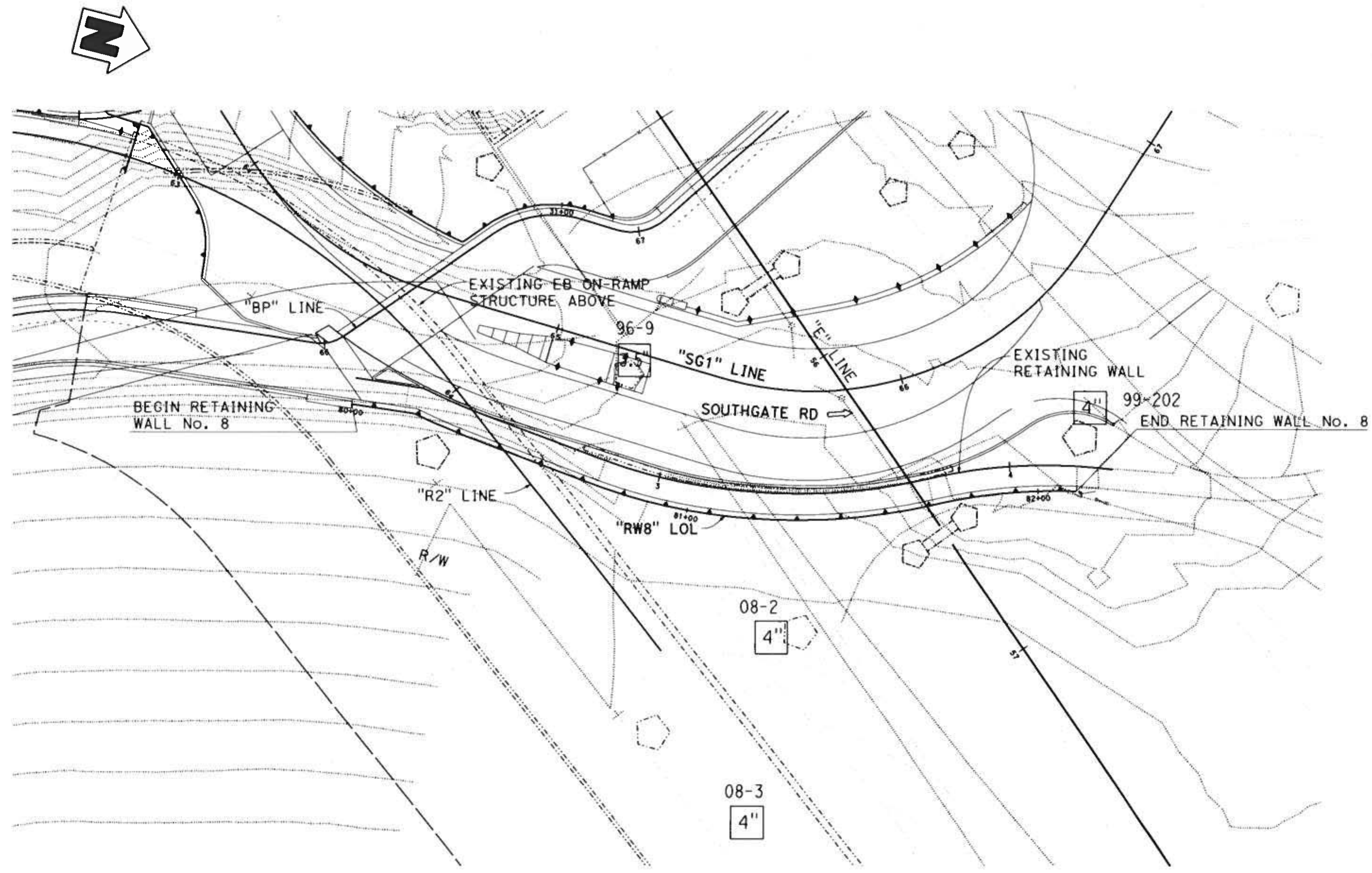
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	388	436

Gary Parikh
 GEOTECHNICAL PROFESSIONAL DATE 5-17-19
 PLANS APPROVAL DATE
 No. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 GARY PARIKH
 STATE OF CALIFORNIA
 GEOTECHNICAL

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 BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 OUME DRIVE, SUITE A
 SAN JOSE, CA 95131



PLAN
1" = 20'

DESIGN OVERSIGHT
 SIGN OFF DATE 4/14/19

DRAWN BY KIM OUYANG
 CHECKED BY FRANK WANG

L.S. BHANGOO
 FIELD INVESTIGATION BY:
 DATE: DEC 2017 THROUGH JAN 2018

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

FRANK WANG
 PROJECT ENGINEER

BRIDGE NO.	34E0037
POST MILES	7.9

RETAINING WALL No. 8
LOG OF TEST BORINGS 1 OF 4



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
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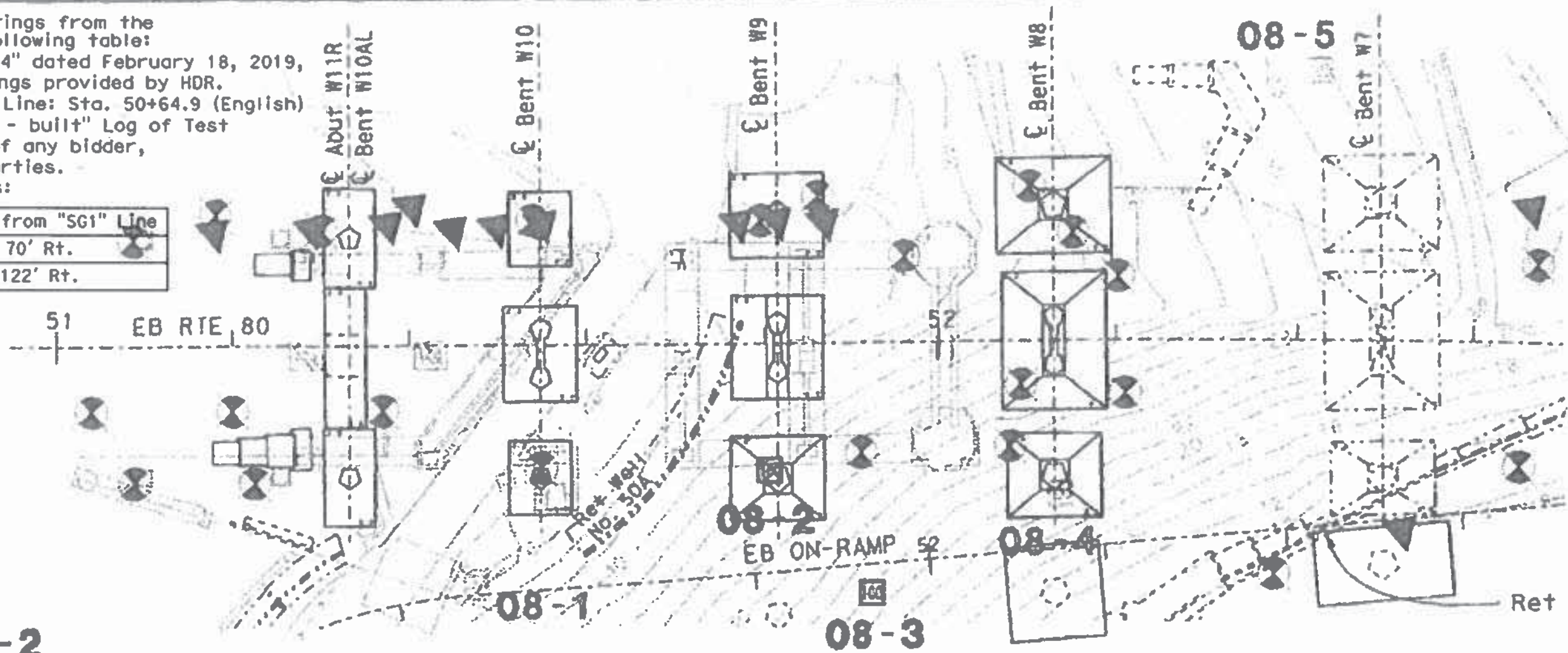
09/25/08
 GEOTECHNICAL PROFESSIONAL
 6-23-08
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

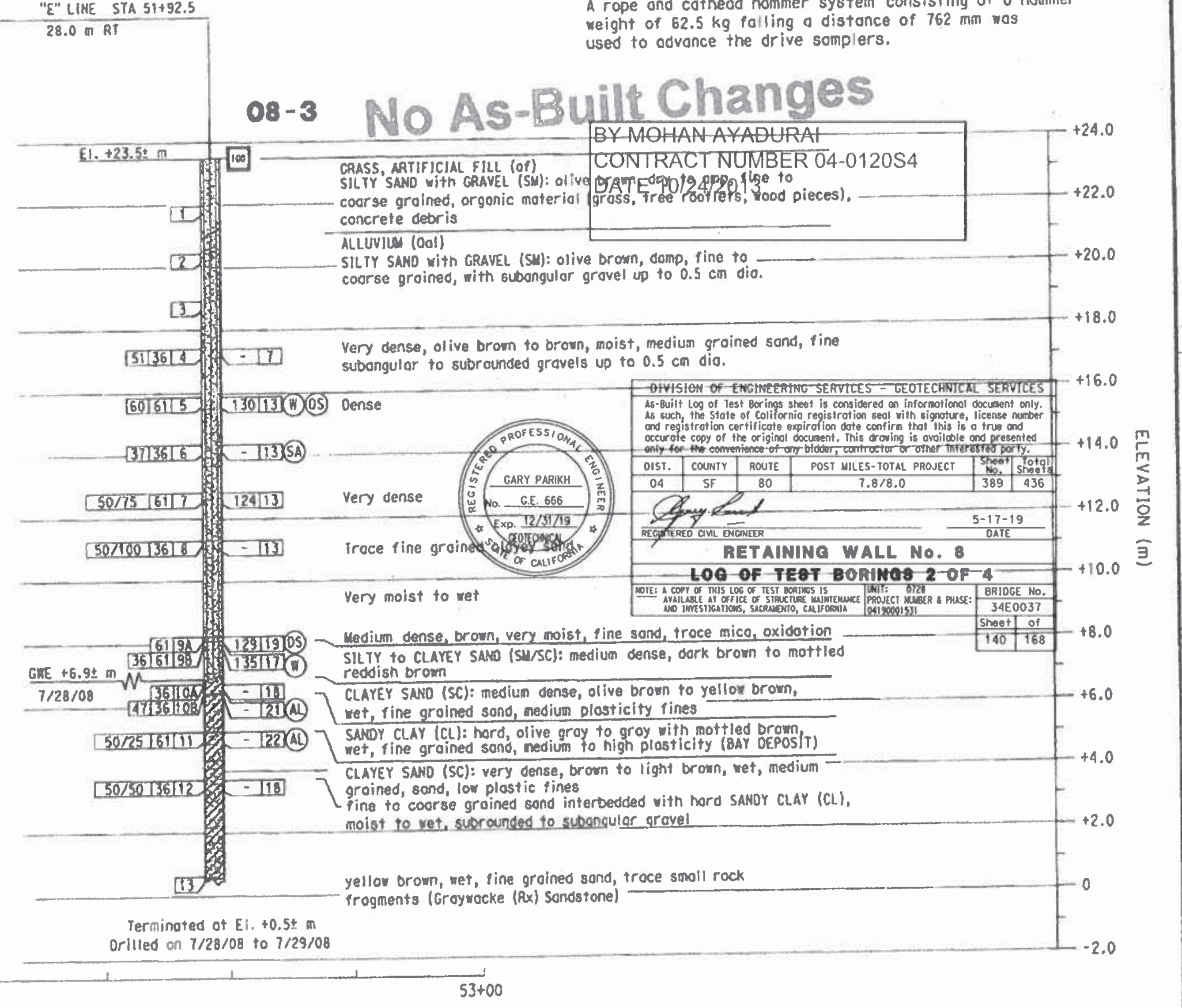
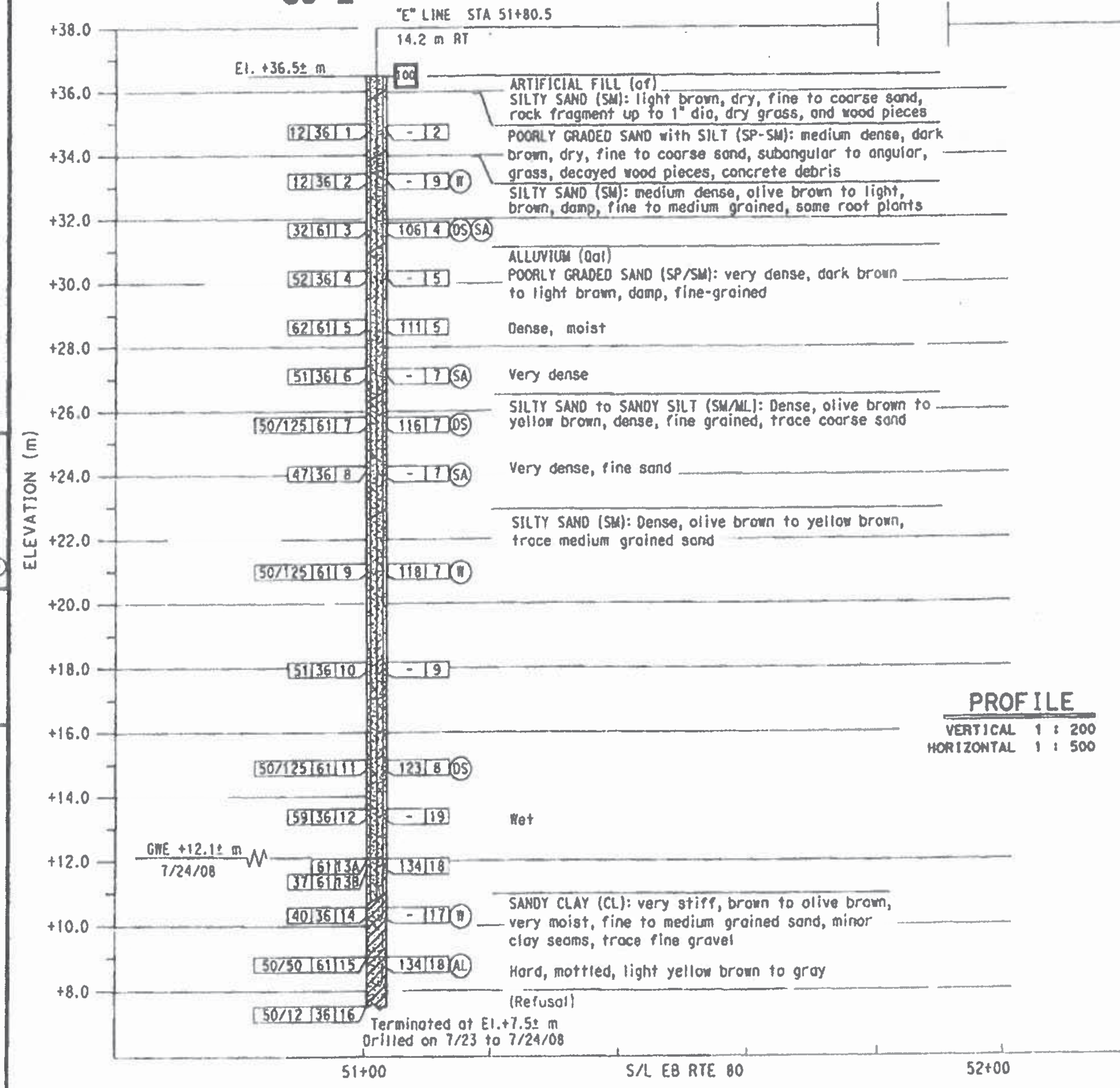
Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
 1. See the "Log of Test Borings 1 of 4" dated February 18, 2019, for stationing. Based on the drawings provided by HDR, "E" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 2. This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 3. The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
08-2	65+68	70' Rt.
08-3	65+67	122' Rt.



PLAN
1:500

NOTES:
 61 mm samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 61 mm and an outside diameter (O.D.) of 75 mm.
 A rope and cathead hammer system consisting of a hammer weight of 62.5 kg falling a distance of 762 mm was used to advance the drive samplers.



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES				
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.				
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No. / Total Sheets
04	SF	80	7.8/8.0	389 / 436
RETAINING WALL No. 8				Sheet of
LOG OF TEST BORINGS 2 OF 4				140 / 168
NOTES: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA				
UNIT: 0728		BRIDGE No.		
PROJECT NUMBER & PHASE:		34E0037		
DATE: 5-17-19				

LEGEND OF BORING OPERATIONS

IN-SITU LAB & FIELD TEST DESIGNATIONS

TYPE OF BORINGS

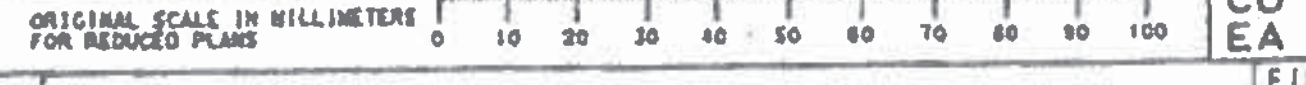
LEGEND FOR EARTH MATERIALS USES:

CONSISTENCY CLASSIFICATION FOR SOILS

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.

SABA MOHAN DESIGN OVERSIGHT	DRAWN BY K. THANT	08/12/08	K. THANT FIELD INVESTIGATION BY:
	CHECKED BY M. KAPUSKAR	09/25/08	DATE: As Noted

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	M. KAPUSKAR PROJECT ENGINEER	BRIDGE NO. 34-006 L/R	YBI TRANSITION STRUCTURES
		KILOMETER POST 12.8	LOG OF TEST BORINGS NO.23
CU 04251 EA 0120S1		DESIGNED PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)
			SHEET OF 1898 209



USERNAME = JTYPCRY DATE PLOTTED = 16-JAN-2009 TIME PLOTTED = 12:54

SOIL AND ROCK TYPES	
Well graded GRAVEL (GW)	Standy silty CLAY (CI)
Poorly graded GRAVEL (GP)	Lean CLAY (CL)
GRAVEL with sand (GP or GW)	Standy lean CLAY (CL)
GRAVEL with clay (GP or GW)	Silty CLAY (CI-ML)
Clayey GRAVEL (GC)	Standy SILT (ML)
GRAVEL with silt (GP or GW)	SILT (ML)
Silty GRAVEL (GM)	Standy SILT (ML)
Well graded SAND (SW)	Clayey silt (ML-CL)
Poorly graded SAND (SP)	Highly plastic CLAYEY SILT (MH)
SAND with gravel (SP or SW)	Low plastic CLAYEY SILT (ML)
SAND with silt (SP-GC)	SANDSTONE (SD)
Clayey SAND (SC)	SLTSTONE (SL)
Silty SAND (SM)	CLAYSTONE (CS)
SAND with silt (SP-SM)	Interbedded Rock Strata (RS)
Red CLAY (CR)	PAVEMENT

SAMPLERS

75mm-OD, 75mm-ID Thin Walled Tube
 75mm-OD, 50mm-ID Modified California Lier
 50mm-OD, 45mm-ID Thin Walled Drive Tube
 50mm-OD, 38mm-ID SPT Split Spoon Sampler
 50mm-OD, 45mm-ID Rock Core (used for rock samples recovery %)

STANDARD PENETRATION TEST (SPT) AND MODIFIED CALIFORNIA (MC) LIER SAMPLERS

Samplers were driven with a 63.5 kg hammer dropped approximately 760 mm.

20 Number of blows to produce 30 cm of penetration after the initial 15 cm of seating.
 60/30cm Number of blows required to produce the indicated penetration after an initial 15 cm seating.
 15/30cm 60 blows produced the indicated penetration during the initial 15 cm interval.

Note: In rock core interval recovery (%) ROD see shown in the Blow Count column.

TUBE AND OFFSHORE LIER SAMPLERS

WCH Offshore Lier sampler advanced with the weight of an 80 kg hammer.
 PUSH or SAVE Pushed 50mm-OD Thin-Walled Tube.
 15/30cm Number of blows required to produce the indicated penetration using a 45mm-ID tube sampler. The sampler was driven with an 80 kg concrete hammer dropped approximately 1.5 m.

CLASSIFICATION TESTS BLOW COUNTS AND ROCK QUALITY

- PERCENT PASSING 200 SIEVE
- WATER CONTENT (%)
- TOTAL LIER WEIGHT (gms)
- THEORETICAL TOTAL LIER WEIGHT (gms)
- PLASTIC LIMIT
- LIQUID LIMIT
- EQUIVALENT SPT BLOW COUNT (NO BLOWCOUNT) OR SPT BLOWCOUNT
- ROCK QUALITY DESIGNATION (RQD)
- ROCK WEAR PERCENT
- ROCK CORING RATE

STRENGTH TESTS

- POCKET PENETROMETER
- TORQUE
- RESISTANCE WANE
- MINIATURE WANE (P. RESISTANCE WANE)
- UNCONSOLIDATED UNDRAINED TRIAXIAL
- SWEDISH FALL CONE
- UNCONFINED COMPRESSION (UC)
- UC (Open spreads include unconfined tests)
- Shear Strength Indicated from CPT To Resistance (S_u = 12-15)
- POINT LOAD TEST (ROCK-INTACT SPECIMEN)
- POINT LOAD TEST (ROCK-ALONG WEAK PLANE)
- UNCONFINED COMPRESSION (ROCK)
- S_u Strength from Capacity of Measuring Device
- Rock Samples broken along discontinuity
- Intact sample would have greater strength
- FRACTURE DENSITY (ROCK)

STRENGTH OF CONCRETE SOILS

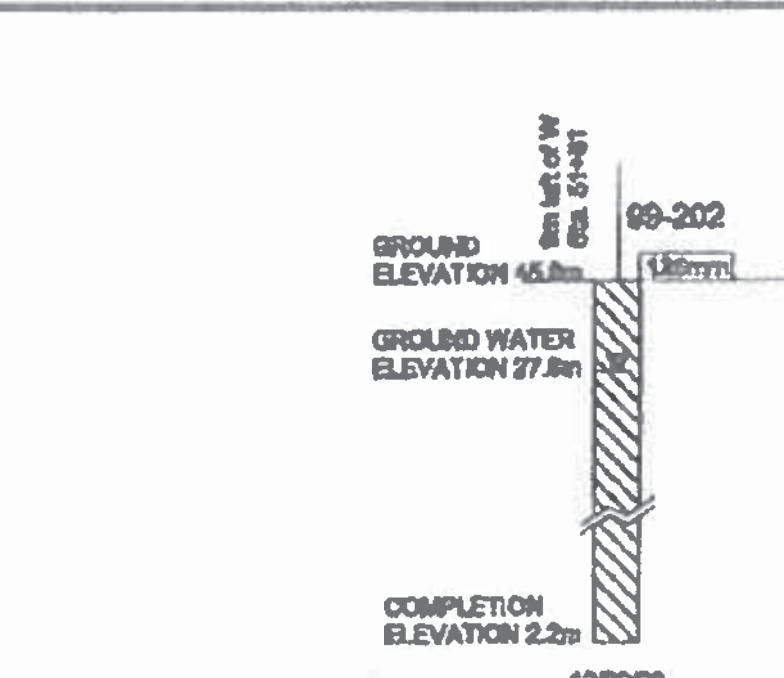
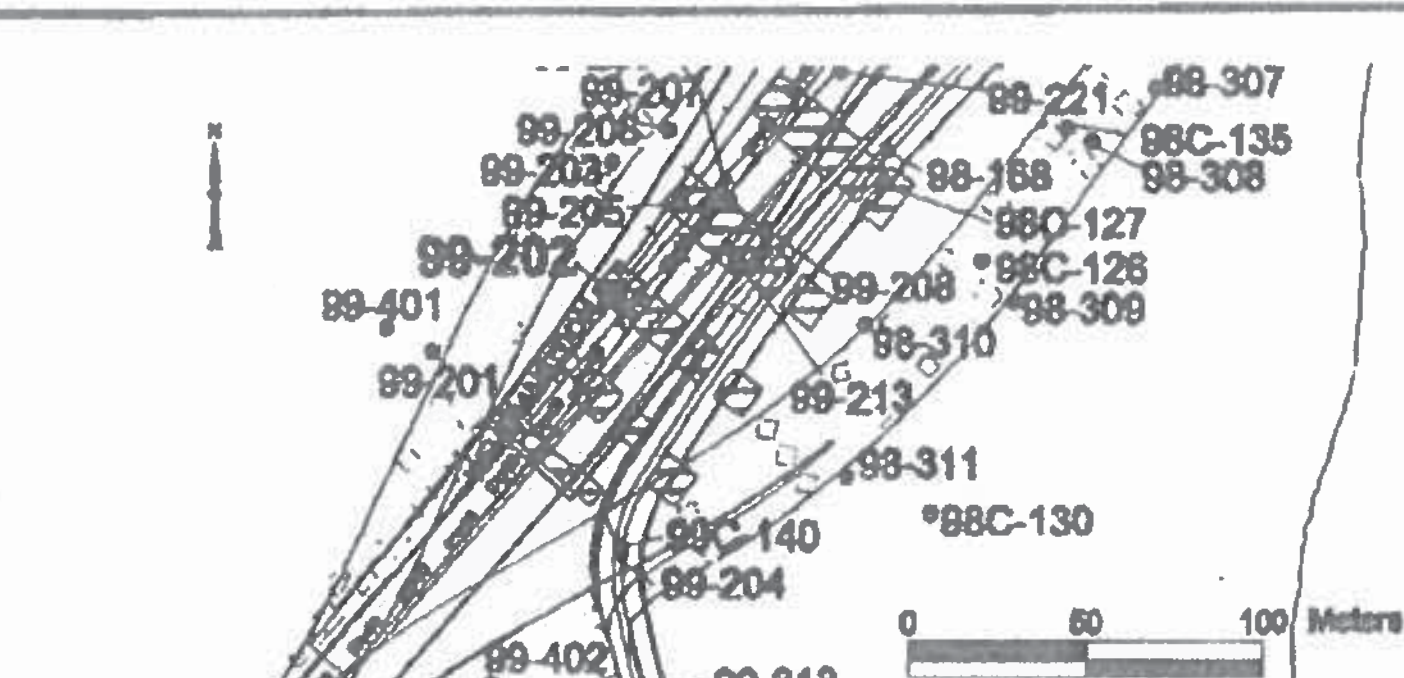
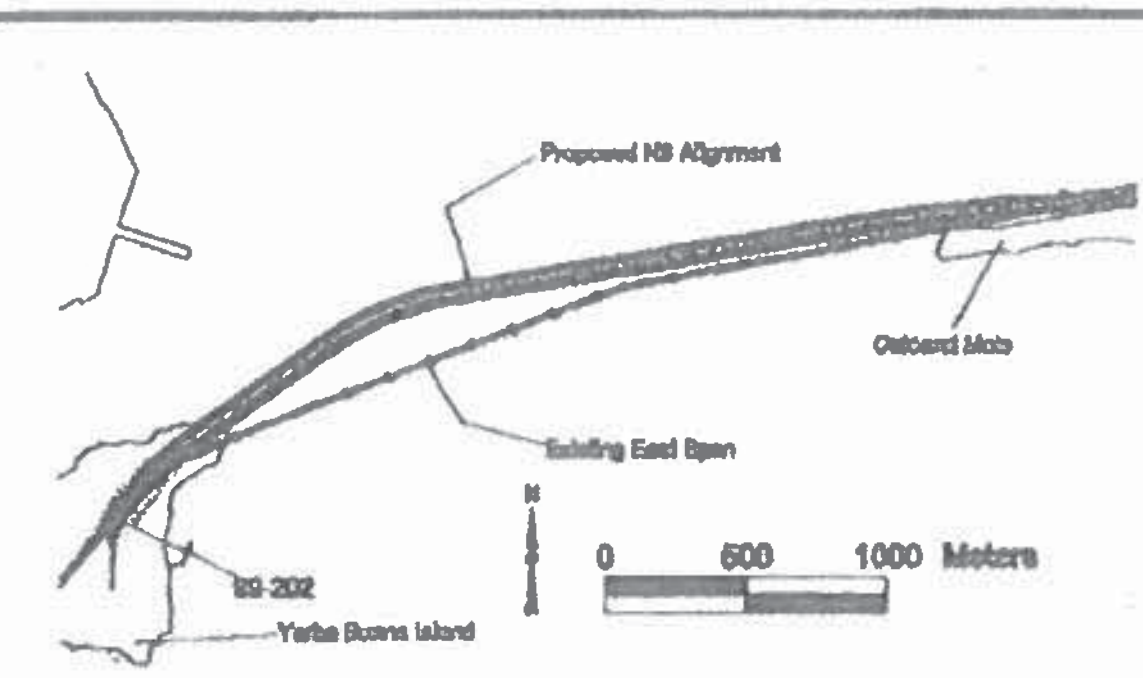
Correlation of Undrained Shear Strength (s_u)

Very Soft	less than 12
Soft	12 to 25
Firm	25 to 50
Stiff	50 to 100
Very Stiff	100 to 200
Hard	greater than 200

DENSITY OF GRANULAR SOILS

Descriptive Term	Relative Density (D _r)
Very Loose	less than 10
Loose	10 to 30
Medium Dense	30 to 50
Dense	50 to 80
Very Dense	greater than 80

*Estimated from sampler driving record and CPT tip resistance.



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SF	80	12.7/13.2	718	806

6-23-08
 PLANS APPROVAL DATE

FUGRO-EARTH MECHANICS, A JOINT VENTURE
 7700 Paradise Lane, Suite 120
 Oakland, CA 94621
 (510) 552-8532, FAX (510) 552-8558

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No As-Built Changes

BORING 99-202					
COORDINATES: E189527 N947211 CA State Plane Zone 8, NAD83, Meters GROUND ELEVATION: 45.0m (MSL) START DATE: 10/29/99			STATION: 6m left of W Sta. 51+81 COMPLETION ELEVATION: 2.2m (MSL) END DATE: 10/21/99		
DEPTH (m)	ELEVATION (m)	SOIL TYPE	BLOW COUNT	TEST RESULTS	FRACTURE DENSITY (Fract./m)
0.0	45.0	ARTIFICIAL FILL (AF)	0.0		
0.0	45.0	PAVEMENT, 70mm of Asphalt concrete, over Aggregate Base	0.0		
0.0	45.0	Silty Fine SAND (SM), dense to very dense, brown, dry	22		
0.0	45.0	-fine sand at 4.8m	31		
0.0	45.0	-with black streaks, and fine roots at 6.1m	36		
0.0	45.0	Medium SAND with silt (SP-SM), very dense, dark yellow brown, moist, well graded	48		
0.0	45.0	Silty Fine SAND (SM) to Fine SAND with silt (SP-SM), dense to very dense, dark yellow brown, moist	52		
0.0	45.0	-interbedded to very thinly bedded, dipping horizontal to 10 degrees, at 10.7m	61		
0.0	45.0	-cross-bedded at 13.7m	68		
0.0	45.0	-with medium sand below 16.2m	72		
0.0	45.0	-interbedded to thinly bedded at 16.8m	82		
0.0	45.0	Silty Fine SAND (SM) to Fine SAND with silt (SP-SM), dense to very dense, dark yellow brown, moist	92		
0.0	45.0	-rounded to well rounded grains, at 21.3m	98		
0.0	45.0	Clayey SAND (SC), medium dense to dense, dark yellowish brown, moist	108		
0.0	45.0	-reddish brown staining, below 35.1m	120		
0.0	45.0	Silty Fine SAND with clay (SP-SC), dense, dark yellowish brown with black grains, moist	142		
0.0	45.0	Fine SAND (SP) with silt (SP-SM), very dense to hard, dark yellowish brown, moist	152		
0.0	45.0	-fine to medium sand, very thin to thin bedded, slight mottling, dipping horizontal to 6 degrees, at 32.0m	162		
0.0	45.0	Silty Fine SAND (SP-SM) dense, dark yellowish brown, moist	172		
0.0	45.0	Lean CLAY with sand (CL) to SILT (ML), hard, yellowish brown mottled with yellow	182		
0.0	45.0	FRANCISCAN FORMATION (F)	192		
0.0	45.0	SANDSTONE (Sandstone) (FS), pale brown, slightly to moderately well-sorted, moderately hard to hard	202		
0.0	45.0	interbedded, fine to medium grained, with coarse black rock fragments	212		
0.0	45.0	AL DEPTH: 43.6m BACKFILLED W/TC Cement Grout	222		



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	390	436

5-17-19
 DATE

RETAINING WALL No. 8

LOG OF TEST BORINGS 3 OF 4

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

UNIT: 0728
 PROJECT NUMBER & PHASE: 34E0037
 BRIDGE No. 141
 Sheet of 168

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 4" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
99-202	66+38	32' Rt.

ROBERT PRICE / SABA MOHAN GEOTECHNICAL DESIGN ENGINEER	DRAWN BY J. PALMER	CHECKED BY S. VARATHARAJ	FIELD SUPERVISOR G. SCHELL	DATE SEE ABOVE	PROJECT ENGINEER M. KAPUSKAR	BRIDGE NO. 34-0008 L/R	POST MILE	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 188	OF 209
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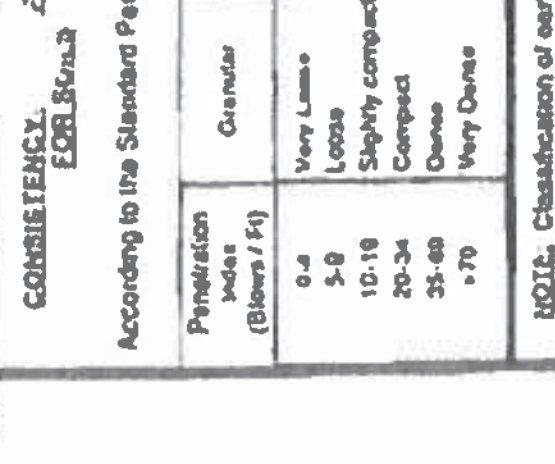
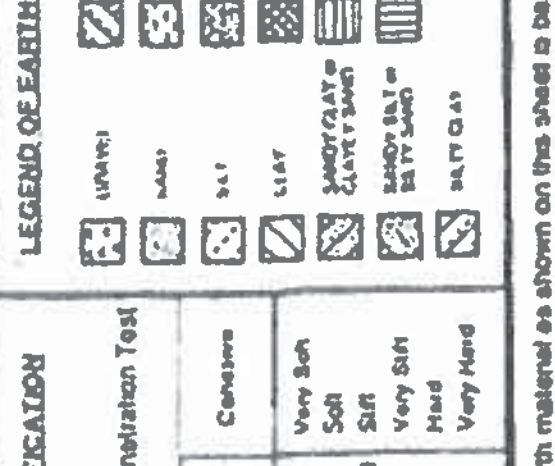
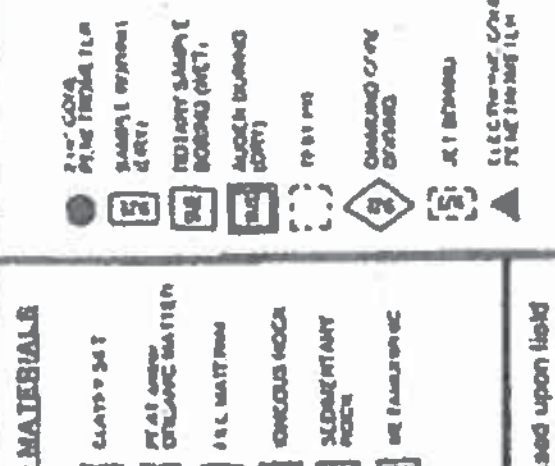
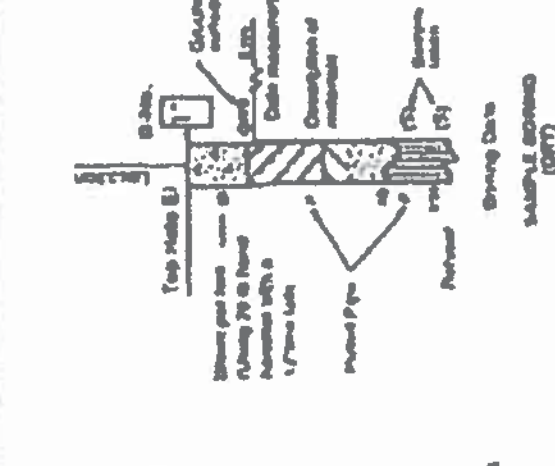
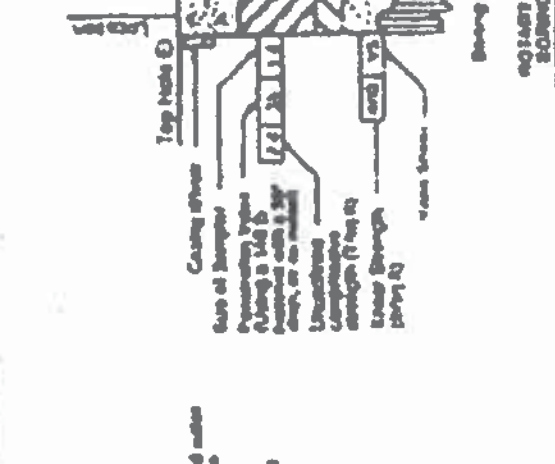
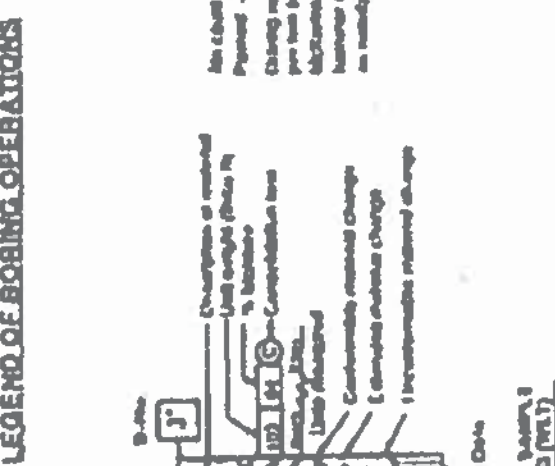
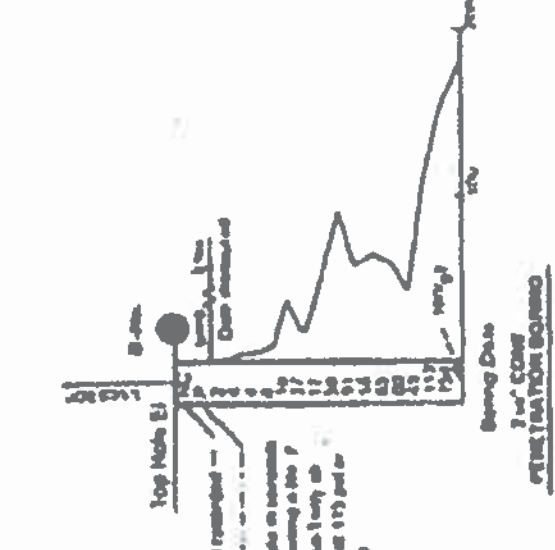
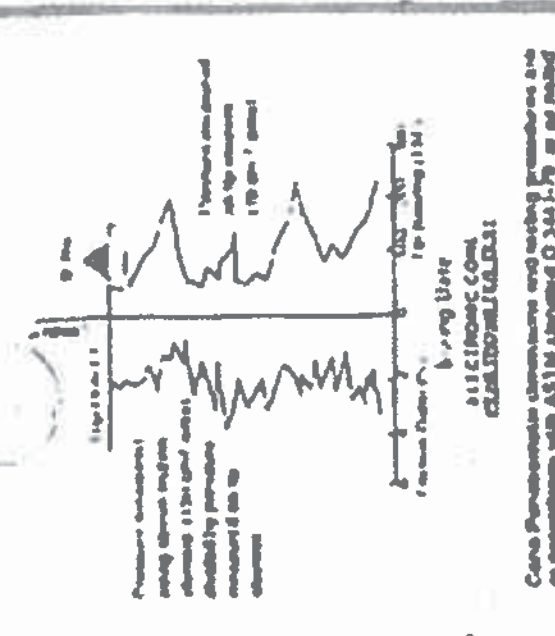
PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ORIGINAL SCALE IN CENTIMETERS FOR REDUCED PLANS

CU 0251
 EA 012051

SAN FRANCISCO OAKLAND BAY BRIDGE
 EAST SPAN SEISMIC SAFETY PROJECT
 YBI TRANSITION STRUCTURES
 LOG OF TEST BORINGS NO. 1

LEGEND OF BORING OPERATIONS



DIVISION OF ENGINEERING SERVICES - OFFICE OF GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES - TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	12.7/13.2	743	806

REGISTERED ENGINEER - CIVIL
 No. 12345
 Exp. 12-31-08
 DATE: 2/18/08

YBI TRANSITION STRUCTURES
AS-BUILT LOG OF TEST BORINGS NO. 5

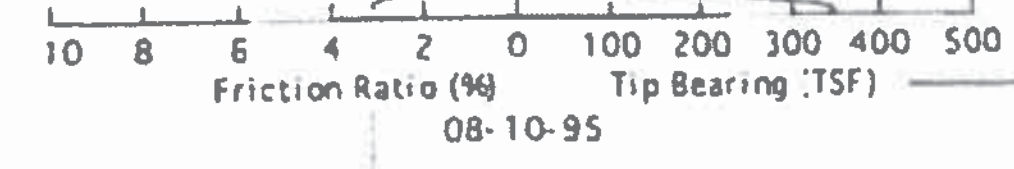
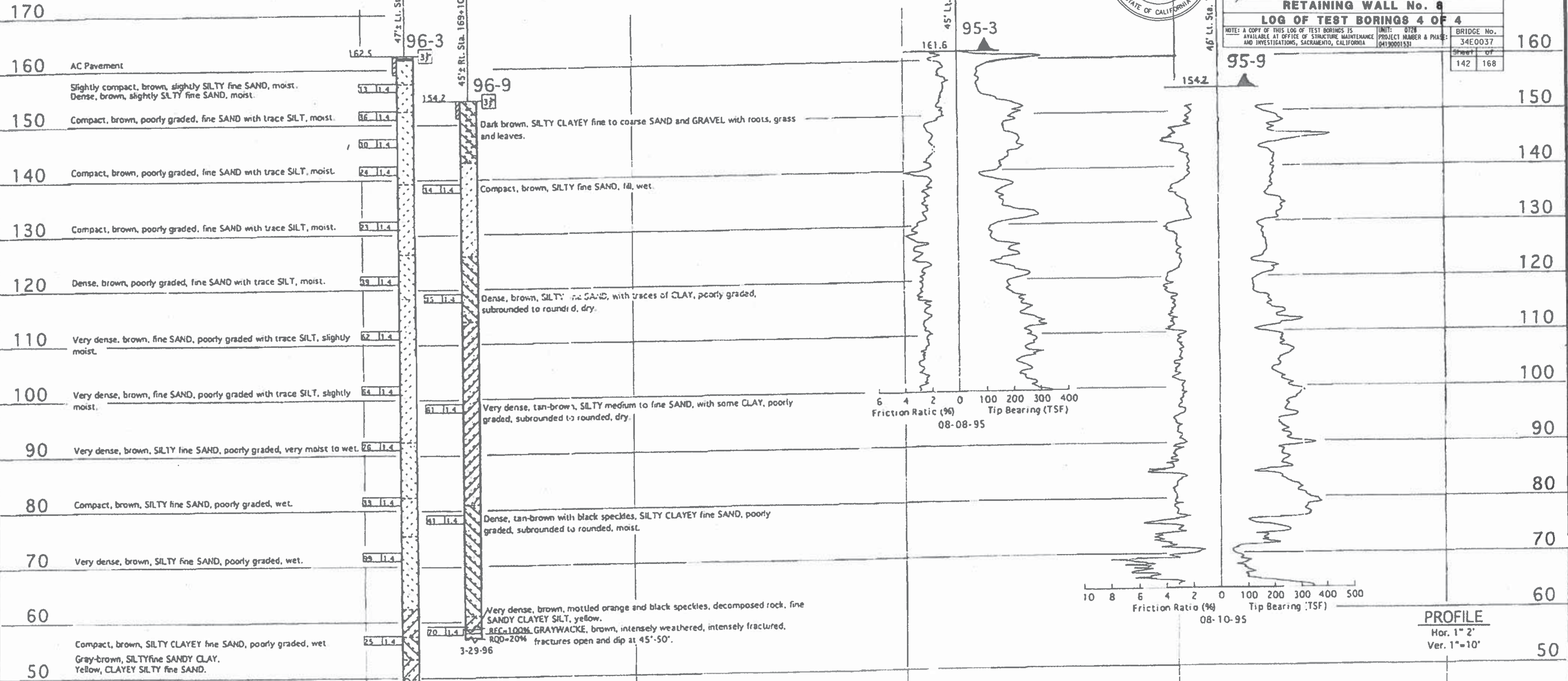
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT THE OFFICE OF STRUCTURES MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA.



FOR PLAN VIEW SEE "LOG OF TEST BORINGS 1 OF 13"

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013



PROFILE
 Hor. 1" = 2'
 Ver. 1" = 10'

DIST.	COUNTY	ROUTE	POST MILES - TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80			

REGISTERED GEOLOGIST
 R.W. FOX
 No. 83797
 Exp. 08-31-07
 CERTIFIED ENGINEERING GEOLOGIST
 STATE OF CALIFORNIA

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

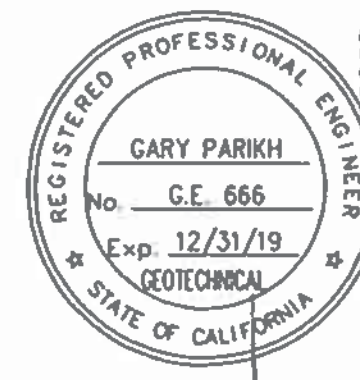
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES - TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SF	80	7.8/8.0	391	436

REGISTERED CIVIL ENGINEER
 No. G.E. 666
 Exp. 12/31/19
 DATE: 5-17-19

RETAINING WALL No. 8
LOG OF TEST BORINGS 4 OF 4

BRIDGE No. 34E0037
 SHEET OF 142 168



ENGINEERING SERVICE CENTER
 STRUCTURE FOUNDATIONS

FIELD INVESTIGATION BY:
 T. CROSBY

State of CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES
 STRUCTURE DESIGN

BRIDGE NO. 34-0004
 POST MILE 7.6/8.0

SAN FRANCISCO-OAKLAND BAY BRIDGE-EAST VIADUCT
 EARTHQUAKE RETROFIT PROJECT NO. 19
LOG OF TEST BORINGS 5 OF 13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	392	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

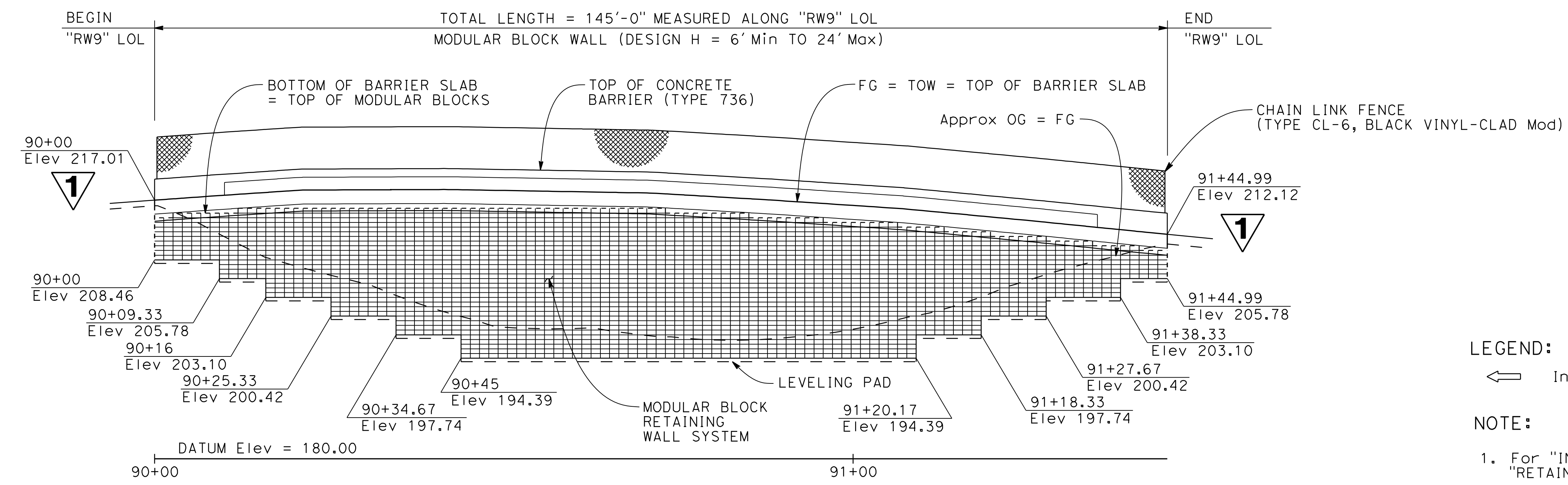
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



LEGEND:

← Indicates direction of traffic

NOTE:

- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 2" sheet.
- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".

TOP OF WALL ELEVATION TABLE

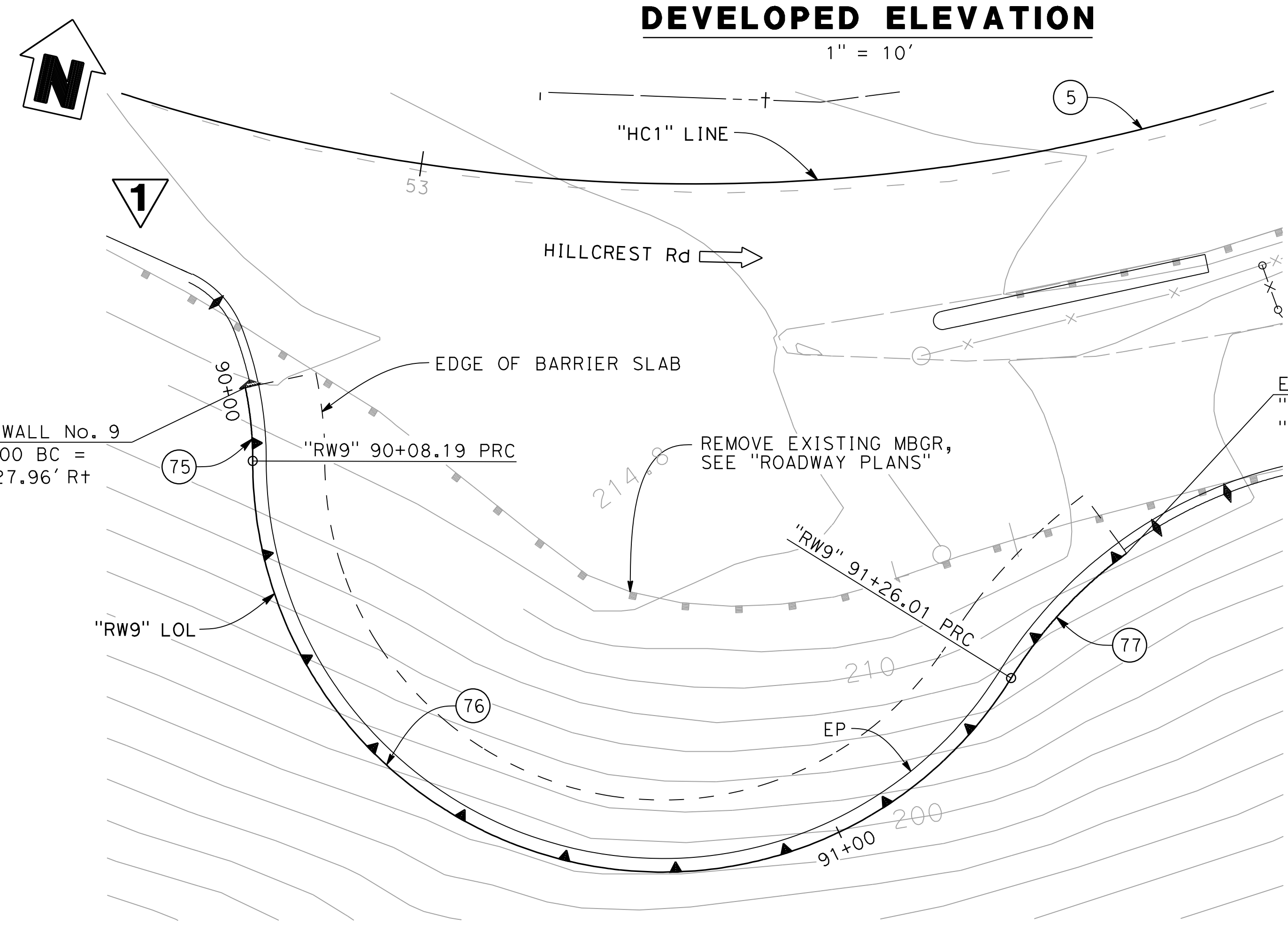
"RW9" LOL STATION	ELEVATION (FEET)
90+00	217.01
90+20	218.37
90+40	218.52
90+60	218.22
90+80	217.51
91+00	216.25
91+20	214.57
91+40	212.61
91+44.99	212.12

QUANTITIES

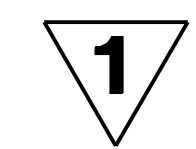
MECHANICALLY STABILIZED EMBANKMENT (MODULAR BLOCK WALL)	2,322	SQ FT
STRUCTURAL CONCRETE, BARRIER SLAB	91	CY
CONCRETE BARRIER (TYPE 736)	145	LF
CHAIN LINK FENCE (TYPE CL-6, BLACK VINYL-CLAD Mod)	145	LF

CURVE DATA

No.	R	Δ	T	L
5	206.00'	74°25'08"	156.42'	267.56'
75	39.50'	11°52'56"	4.11'	8.19'
76	45.50'	148°21'46"	160.59'	117.82'
77	49.50'	21°58'03"	9.61'	18.98'



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



REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

DESIGN OVERSIGHT	DESIGN BY T. MEHTA	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 9 GENERAL PLAN No. 1
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED T. MEHTA	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.8	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY T. MEHTA	CHECKED K. SERRANO-PAINE	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-12-19 2-27-19 7-28-19	143	168

FILE => RW9-a-gp01.dgn

USERNAME => TMARASIG DATE PLOTTED => 12/17/2019 TIME PLOTTED => 3:17:16 PM

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:
 AASHTO LRFD Bridge Design Specifications 2012,
 6th edition with the California Amendments, January 2014

DESIGN LOAD:
 Soil Pressure: Equivalent Fluid Pressure for
 Horizontal Backfill
 Active = 36 pcf
 $K_a = 0.28$ (Based on ϕ of 34°)

Live Load: Surcharge = 240 psf

SOIL PARAMETERS:
 Internal Design: $\phi = 34^\circ$, $\gamma = 120$ pcf
 External Design: ϕ (Retained Backfill) = 34°, $\gamma = 120$ pcf
 ϕ (Foundation) = 38°
 $K_H = 0.22$, $K_V = 0.0$
 Coefficient of Friction, $\mu = 0.67$

BEARING CAPACITY:

Effective Width B' (ft)	q ult (ksf)	q net (ksf)	q gross (ksf)	q extreme (ksf)
B'	0.84 B'	0.42 B'	0.55 B'	0.76 B'

REINFORCED CONCRETE:

$f'_c = 3,600$ psi, except as noted
 (Concrete compressive strength at 28 days)
 $f_y = 60,000$ psi (Yield strength of reinforcement)

DESIGN AND CONSTRUCTION NOTES:

- It is contractor's responsibility to design and build the Mechanically Stabilized Embankment (Modular Block Wall). The contractor shall submit calculations and shop drawings signed and sealed by a professional engineer registered in the state of California for approval prior to performing any work.
- The contractor shall verify all dimensions and elevations relating to existing conditions by making field surveys and measurements prior to commencing fabrication or construction.
- The contract drawings and specifications represent the completed structure, and are not intended to indicate the method or means of construction. The contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques, sequences and for job safety.
- The engineer's review of shop drawing is for general conformance of the design concept. Contractor is responsible for dimensions and quantities, means and methods of construction, and coordination with other trades. Review by the engineer shall not relieve the contractor of the contractual responsibility for any error or deviation from contract documents.

NOTES:

- For limits, see "GENERAL PLAN No. 1" sheet.
- For details not shown, see "RETAINING WALL DETAILS No. 1" sheet.
- For barrier slab, see "RETAINING WALL DETAILS No. 2" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	393	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

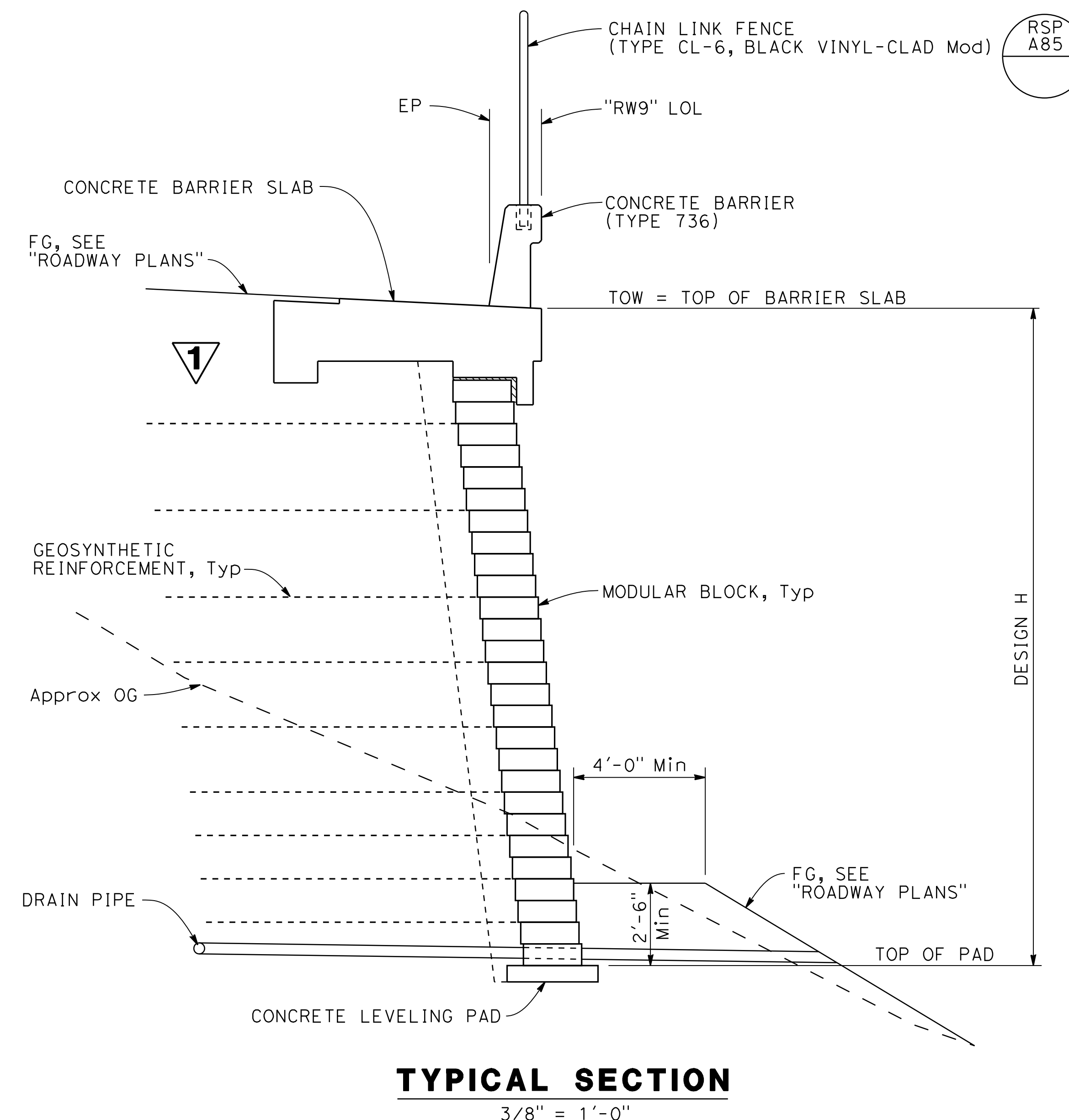
PLANS APPROVAL DATE

JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



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

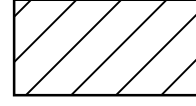
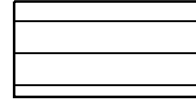
1 REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

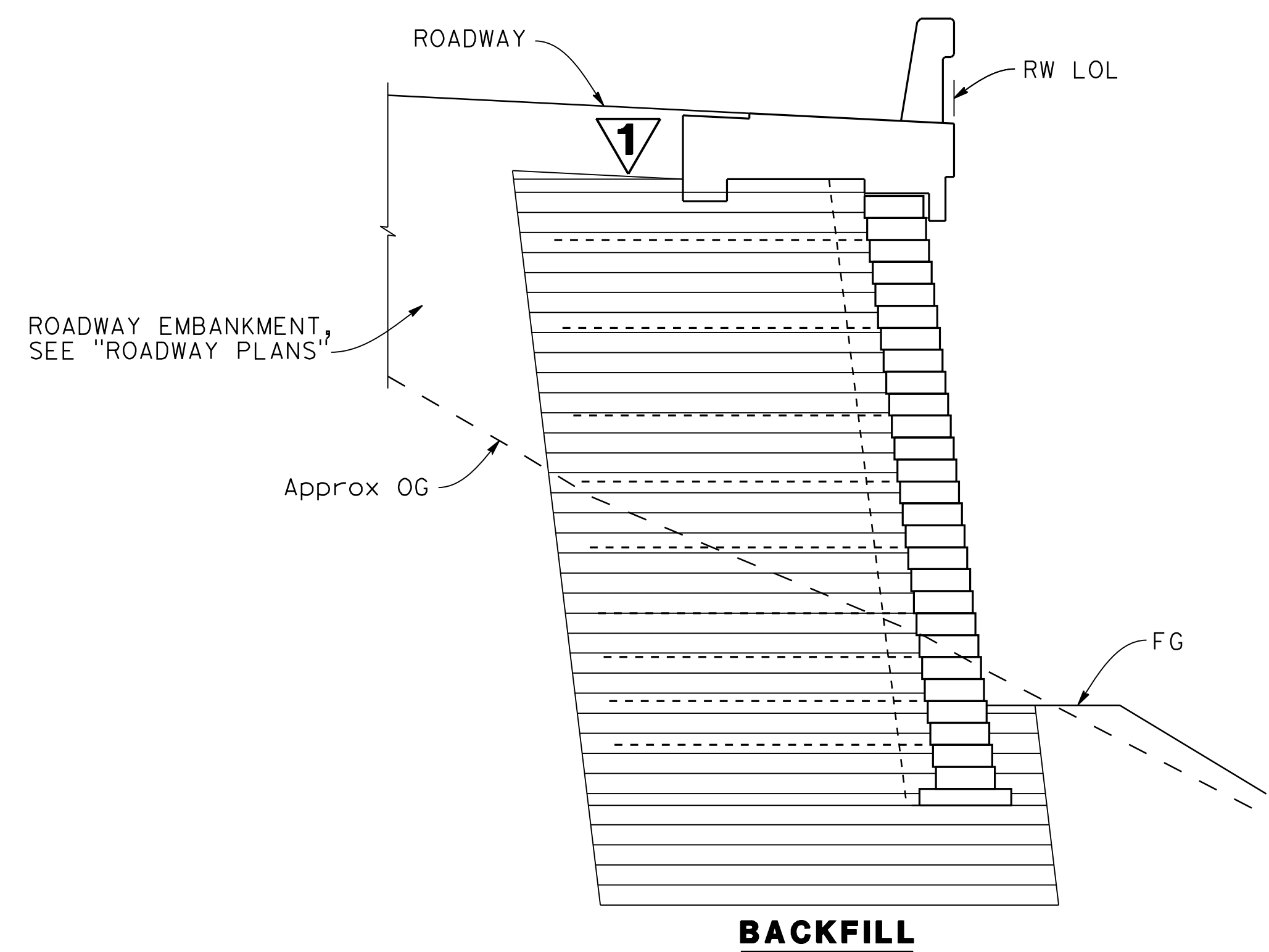
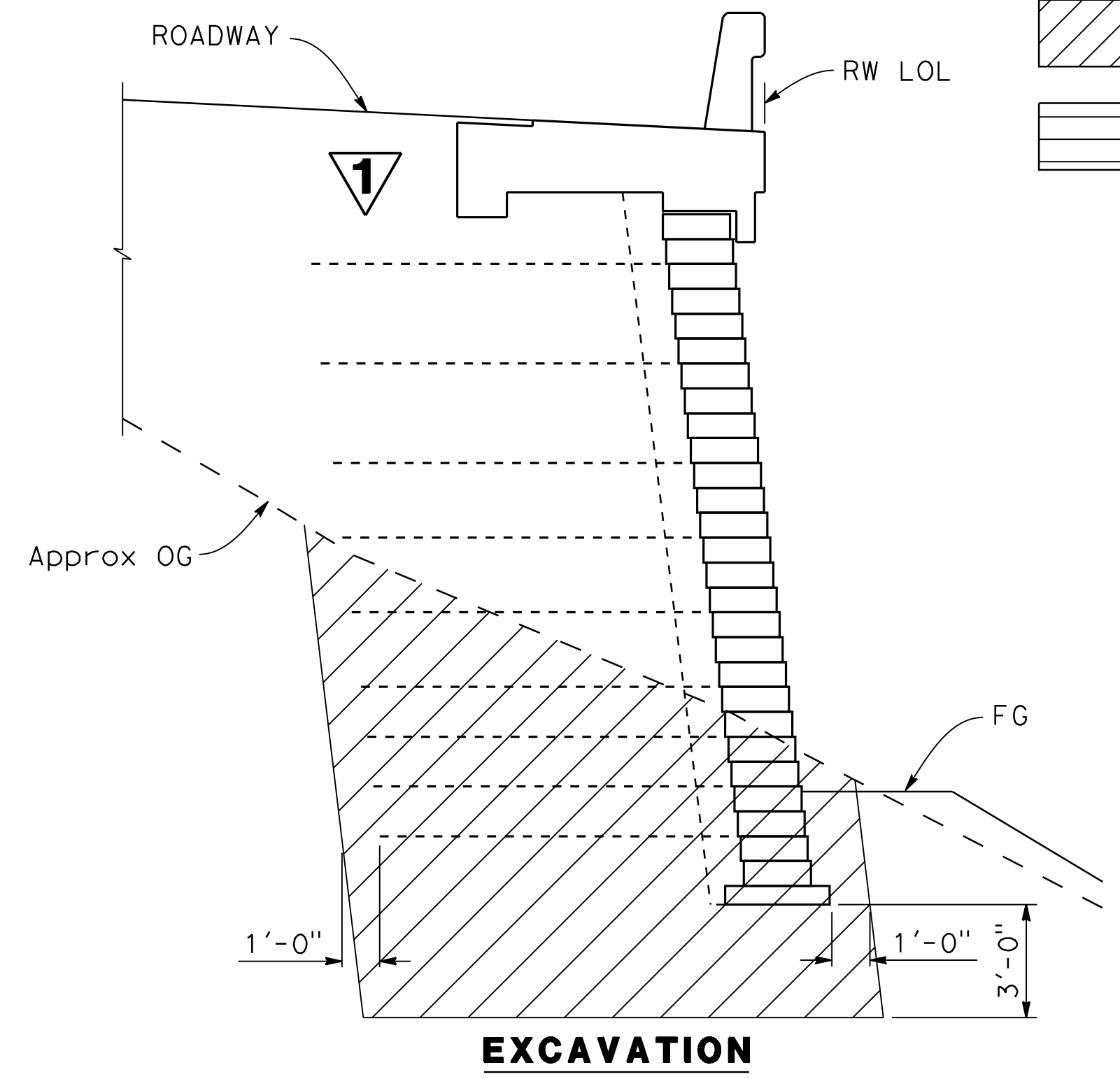
DESIGN OVERSIGHT	DESIGN BY T. MEHTA	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 9
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED T. MEHTA	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.8	GENERAL PLAN No. 2
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY T. MEHTA	CHECKED K. SERRANO-PAINE	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	UNIT: 0728	DISREGARD PRINTS BEARING EARLIER REVISION DATES	10-22-19 11-12-19 2-27-19 7-28-19
FILE => RW9-a-gp02.dgn	SHEET 144		OF 168		USERNAME => TMARASIG DATE PLOTTED => 12/17/2019 1:20:14 PM		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	394	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

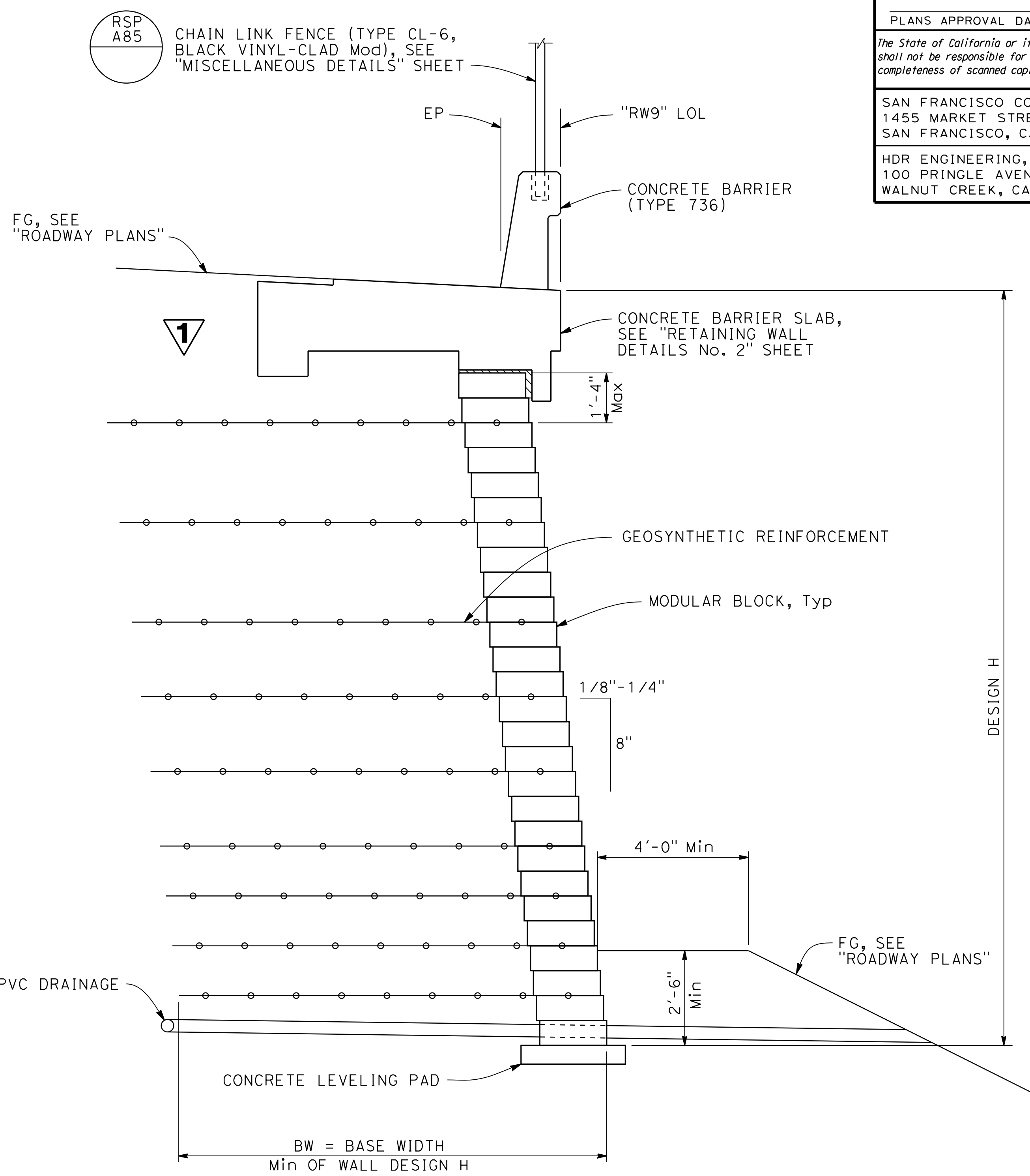
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

LEGEND:
 Structure Excavation
 Structure Backfill



LIMITS OF EXCAVATION & BACKFILL

NO SCALE



1/2" = 1'-0"

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

1 REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY T. MEHTA	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED T. MEHTA
QUANTITIES	BY T. MEHTA	CHECKED K. SERRANO-PAINE

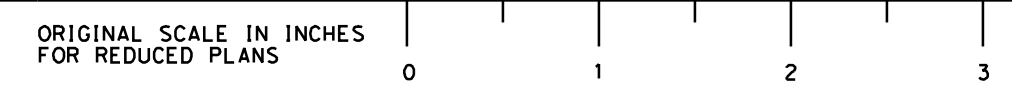
PREPARED FOR THE STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	7.8

RETAINING WALL No. 9
RETAINING WALL DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)



UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531

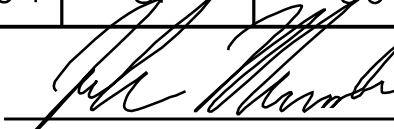
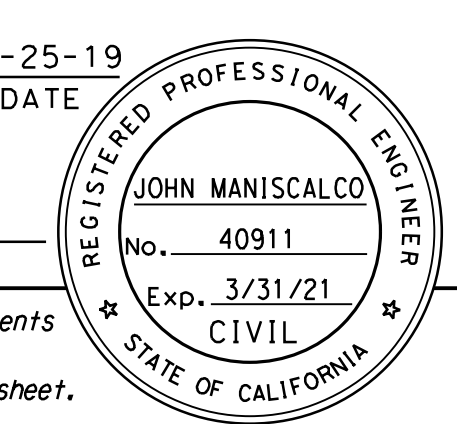
CONTRACT NO.: 04-3A6414

REVISION DATES	SHEET	OF
10-22-19 11-12-19 2-27-19 7-28-19	145	168

DISREGARD PRINTS BEARING EARLIER REVISION DATES

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	395	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

NOTES:

1. Clearance to reinforcing steel in concrete barrier to be 1". All barrier reinforcement shall be epoxy coated UON.
2. Not all barrier reinforcement shown, see "MISCELLANEOUS DETAILS" sheet.
3. No expansion joints in concrete barrier or barrier slab within wall limits.

KEY NOTES:

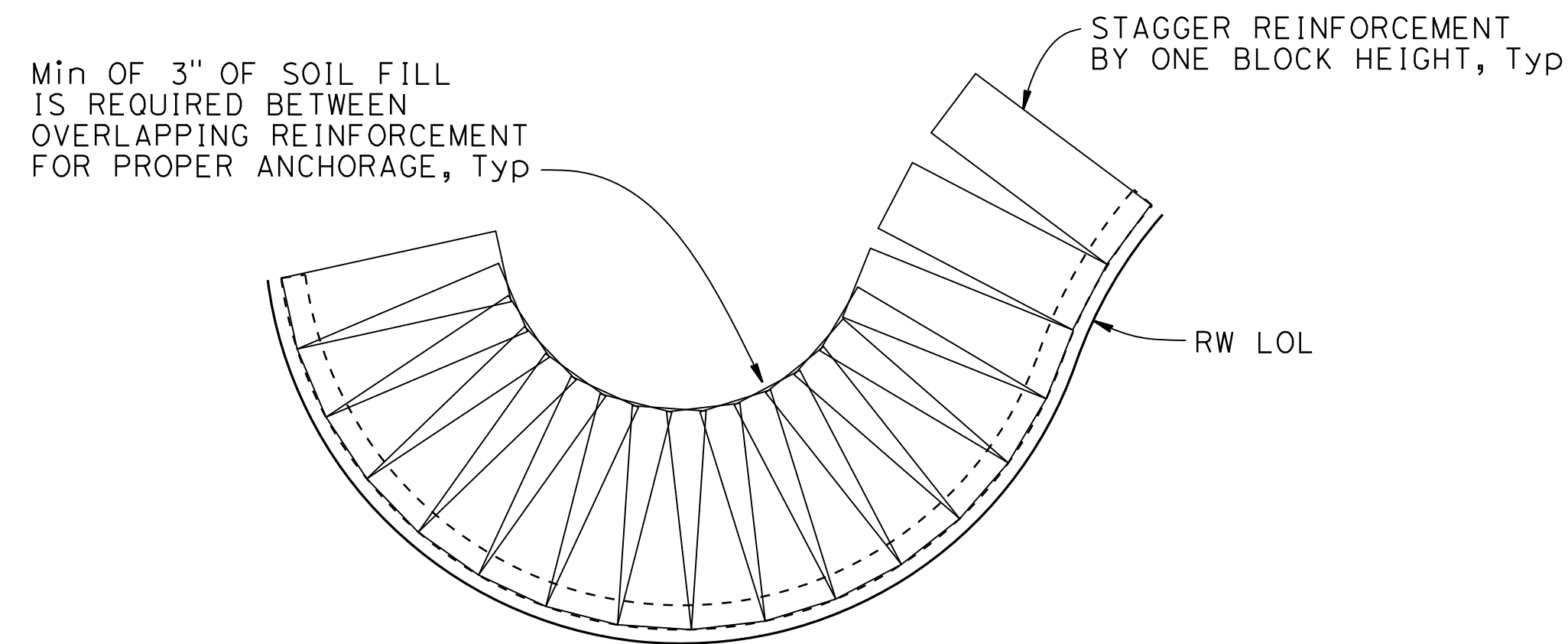
- (A) 2" Expanded polystyrene
- (B) 1" Expanded Polystyrene around 1" x 8" x 12" bearing pads @ 2'-0" Max
- (C) Contact joint
- (D) 4'-0" wide pavement reinforcing fabric
- ⊘ Indicates bundled bars

DESIGN DATA - BARRIER SLAB

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014

F_t : 54 kips
 EQE: $k_n = 0.33$
 $k_v = 0.0$

REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
 $n = 8$

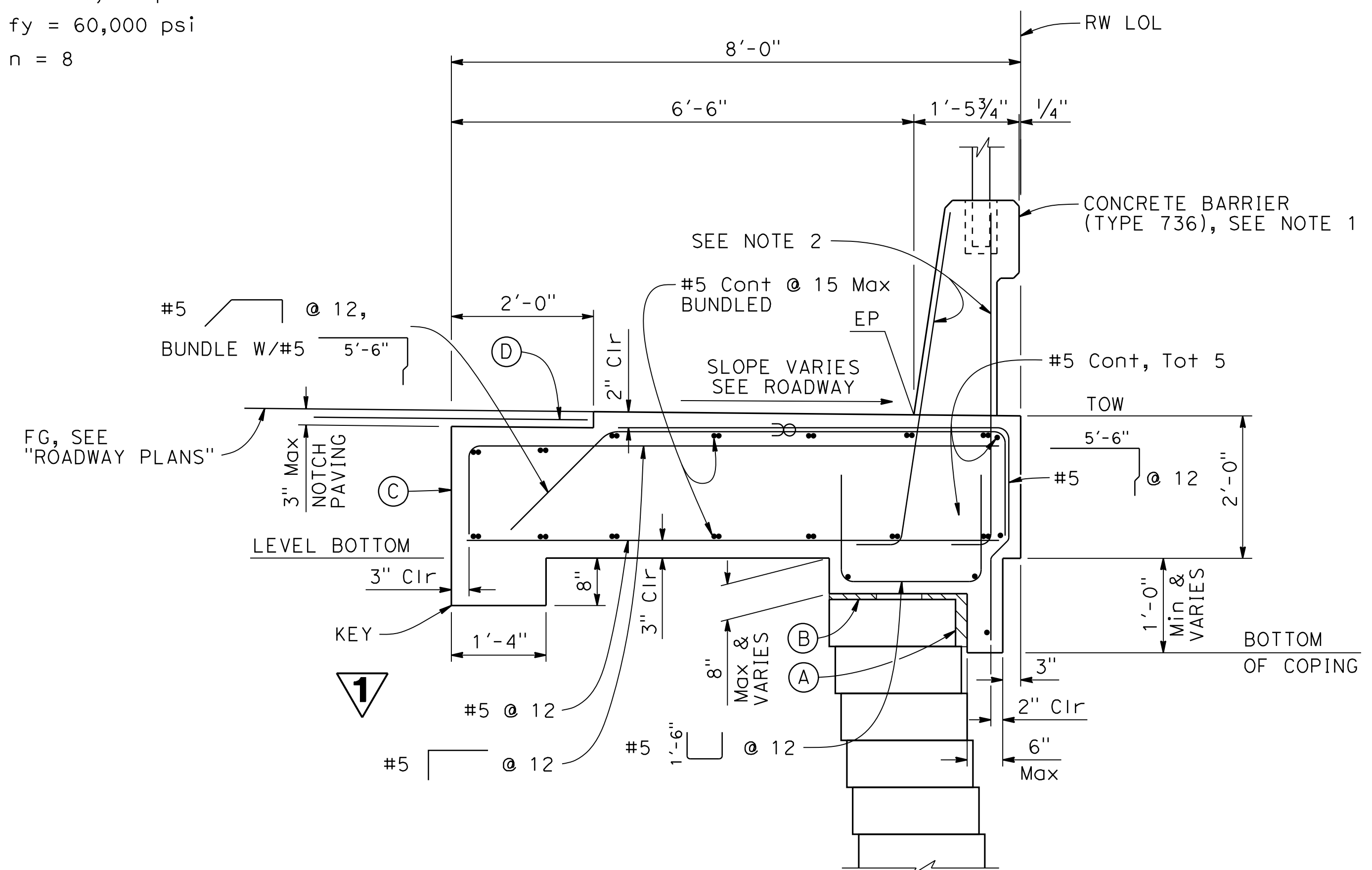


NOTES:

1. Correct orientation of Geosynthetic to obtain proper strength shall be detailed on shop drawing.
2. Adjacent widths of reinforcement shall be extended as necessary and not placed directly on top of each other.
3. Reinforcement is to be placed on level backfill and extended to front face of overlying blocks. Place next unit, pull reinforcement taut and backfill as required.

REINFORCEMENT PLACEMENT AROUND CURVES AND CORNERS

NO SCALE



CONCRETE BARRIER SLAB SECTION


3/4" = 1'-0"

NOTE: CONTRACTOR MAY PROPOSE TO USE ALTERNATE BARRIER SLAB SECTION FOLLOWING DESIGN CRITERIA SHOWN ON THIS SHEET. CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWING SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA FOR APPROVAL PRIOR TO PERFORMING ANY WORK.

1 REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

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

DESIGN OVERSIGHT	DESIGN	BY T. MEHTA	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	N/A	RETAINING WALL No. 9						
	DETAILS	BY L. DAVIS/E. GRAY	CHECKED T. MEHTA		PROJECT ENGINEER			POST MILES	7.8	RETAINING WALL DETAILS No. 2			
SIGN OFF DATE	QUANTITIES	BY T. MEHTA	CHECKED K. SERRANO-PAINE	JOHN MANISCALCO	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	REVISION DATES	SHEET			OF		
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	UNIT: 0728	DISREGARD PRINTS BEARING EARLIER REVISION DATES	10-22-19	11-12-19	2-27-19	7-28-19	146	168

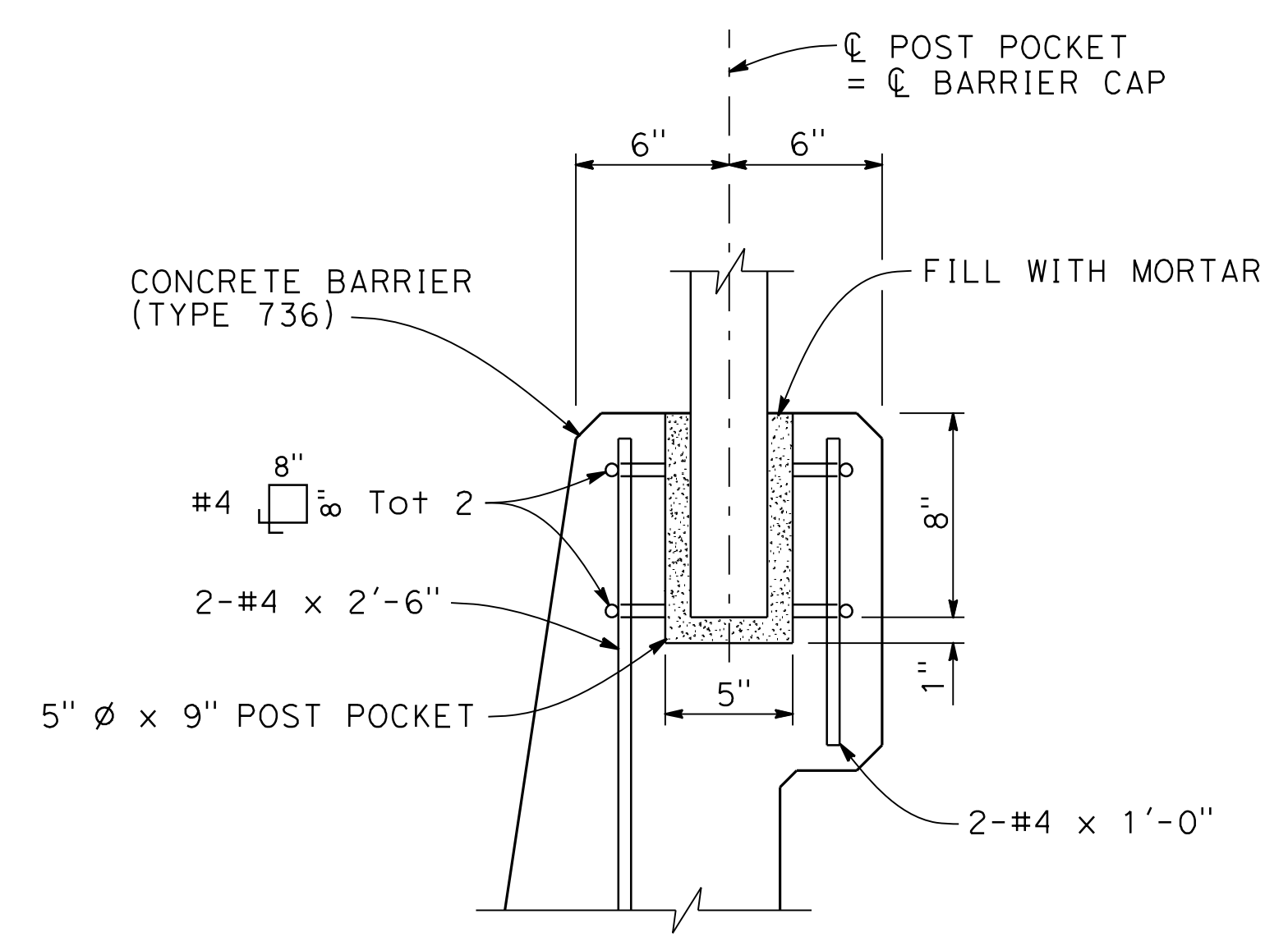
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	396	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

RSP
A85

NOTE:

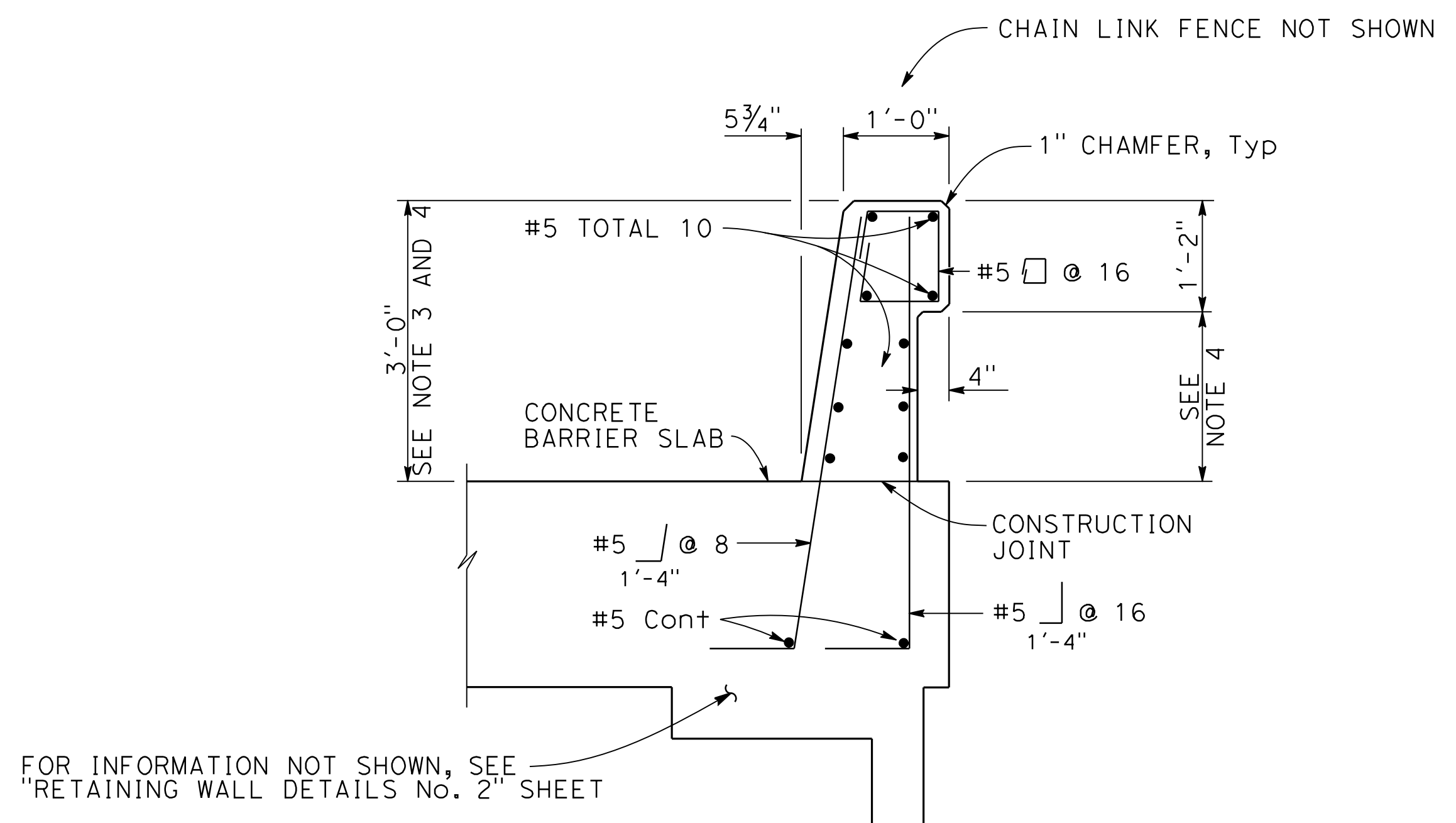
- For dimensions and details not shown, see STANDARD PLAN
- Walls are to be backfilled before barrier is placed.
- Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints. All barrier reinforcement shall be epoxy coated UON.
- Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.

1



POST ANCHORAGE DETAIL

NO SCALE
NOTE: STANDARD BARRIER REINFORCEMENT NOT SHOWN.



CONCRETE BARRIER (TYPE 736)

NO SCALE

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

1

REPLACED PER ADDENDUM No. 1 DATED DECEMBER 20, 2019

DESIGN OVERSIGHT	DESIGN BY T. MEHTA	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	RETAINING WALL No. 9 MISCELLANEOUS DETAILS
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED T. MEHTA		N/A	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY T. MEHTA	CHECKED K. SERRANO-PAINE		POST MILES 7.8	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414
			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 147 OF 168

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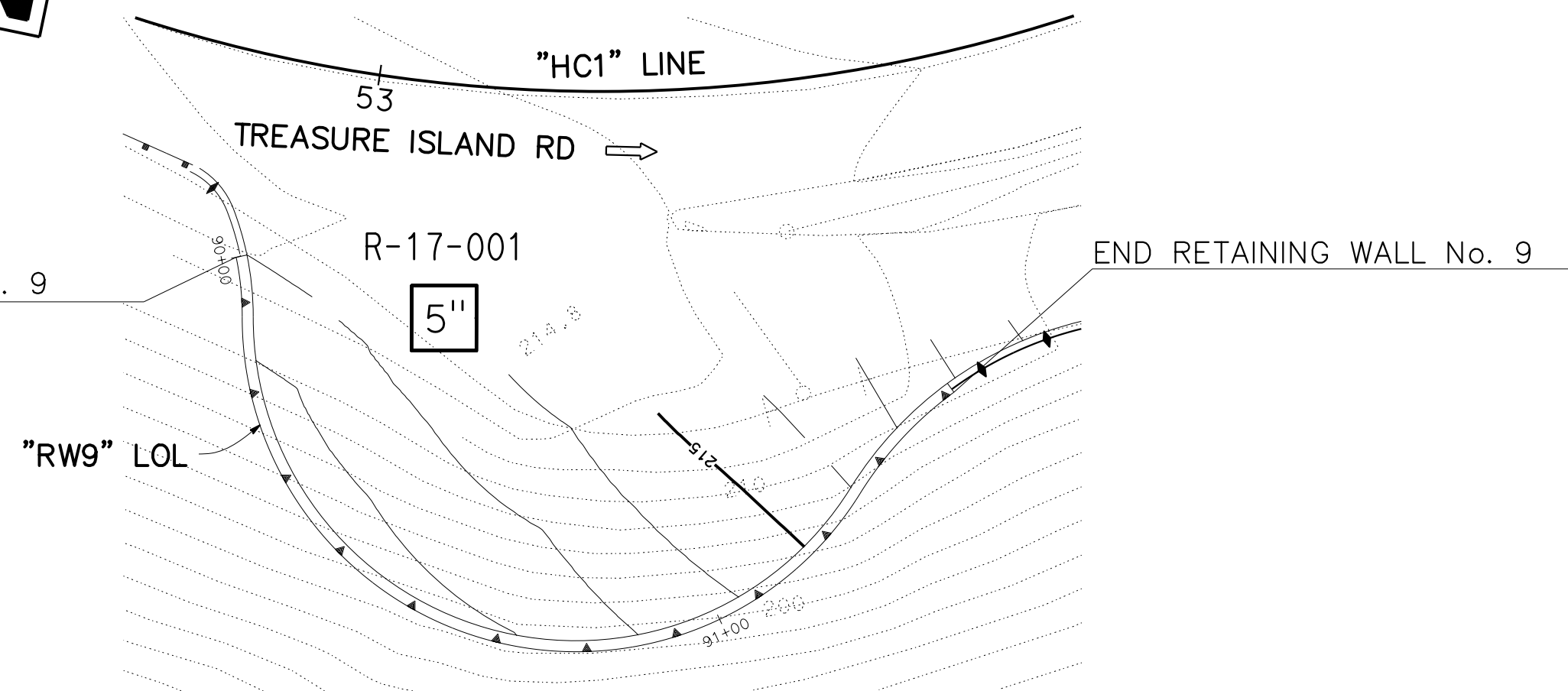
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

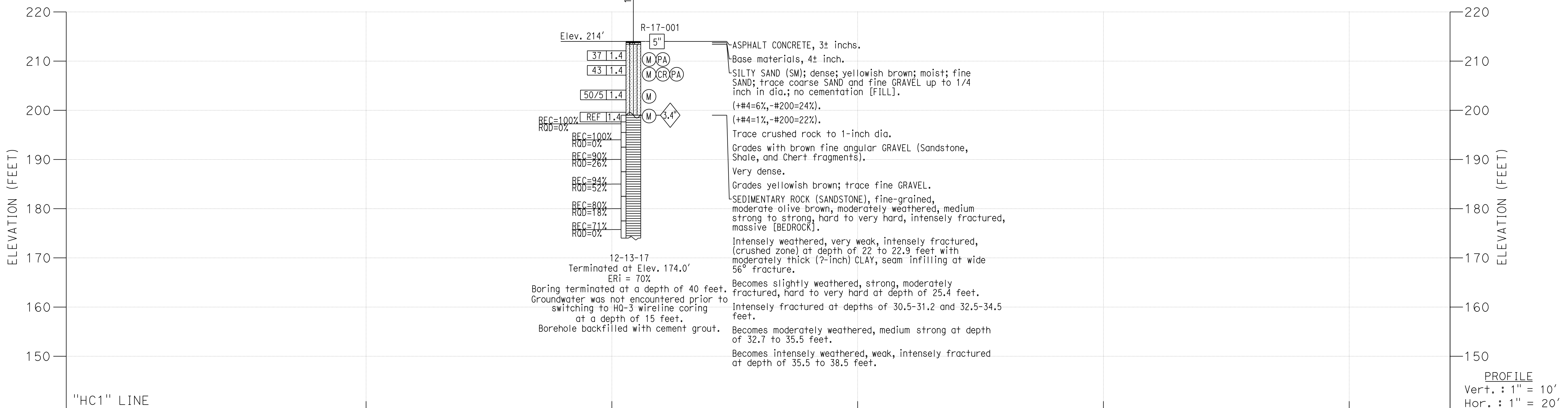
See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



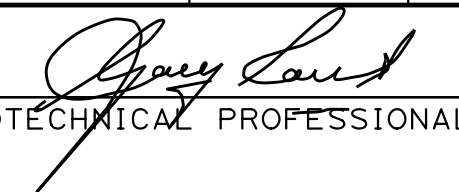
PLAN

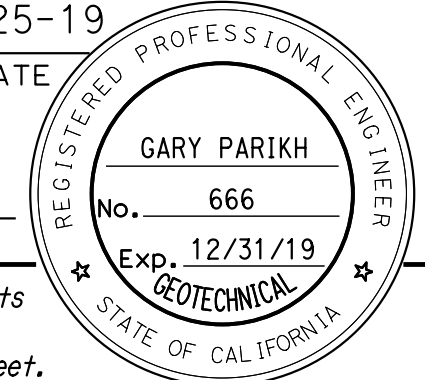
1" = 20'



PROFILE
 Vert. : 1" = 10'
 Hor. : 1" = 20'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	397	436


 GEOTECHNICAL PROFESSIONAL DATE: 7-25-19
 PLANS APPROVAL DATE: _____
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BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

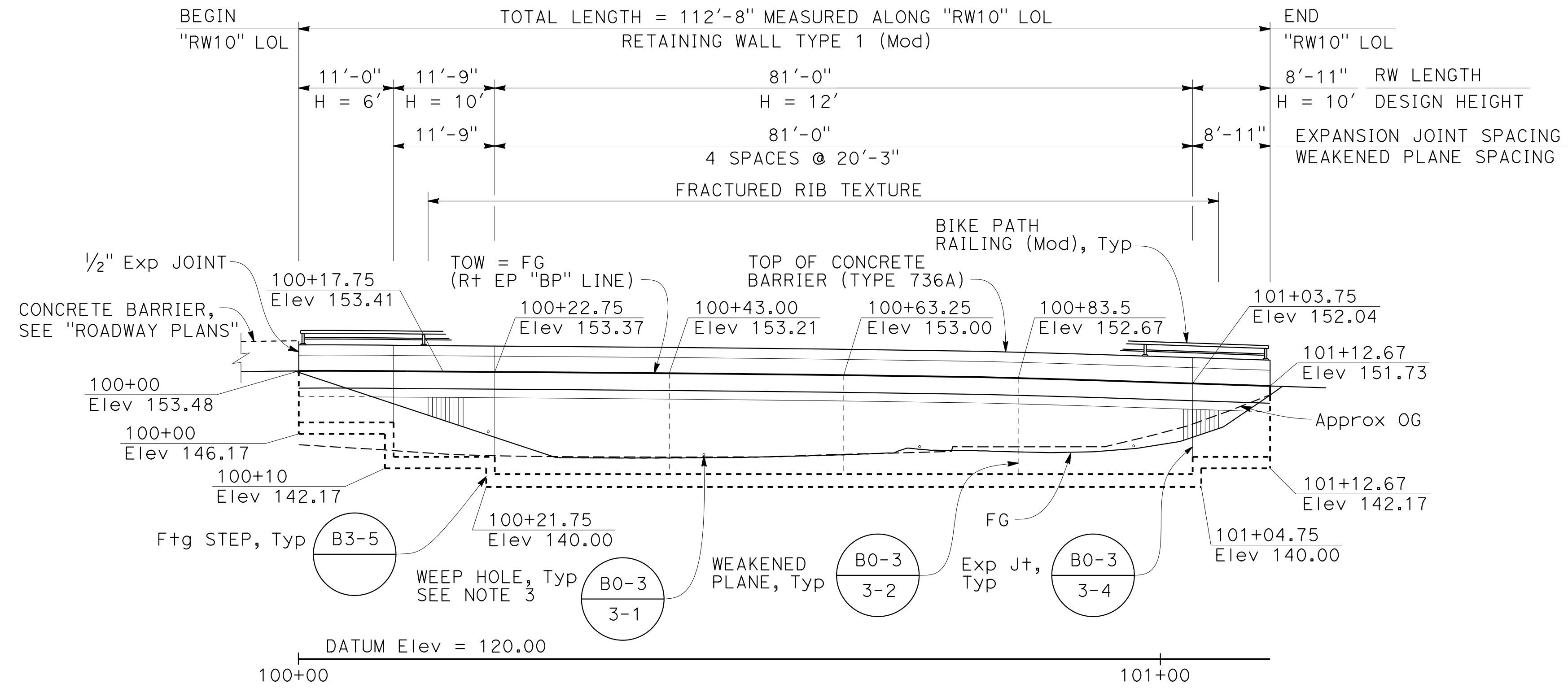
DESIGN OVERSIGHT	DRAWN BY	KIM OUYANG	L.S. BHANGOO	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	N/A	RETAINING WALL No. 9 LOG OF TEST BORING		
	CHECKED BY	FRANK WANG	FIELD INVESTIGATION BY:		PROJECT NUMBER & PHASE:	POST MILES		7.9	
SIGN OFF DATE	DATE:	DEC 2017		UNIT:	0728		CONTRACT NO.:	04-3A6401	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 4-23-18, 11-12-18, 2-14-19, 7-25-19	SHEET 148 OF 168

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 08:48

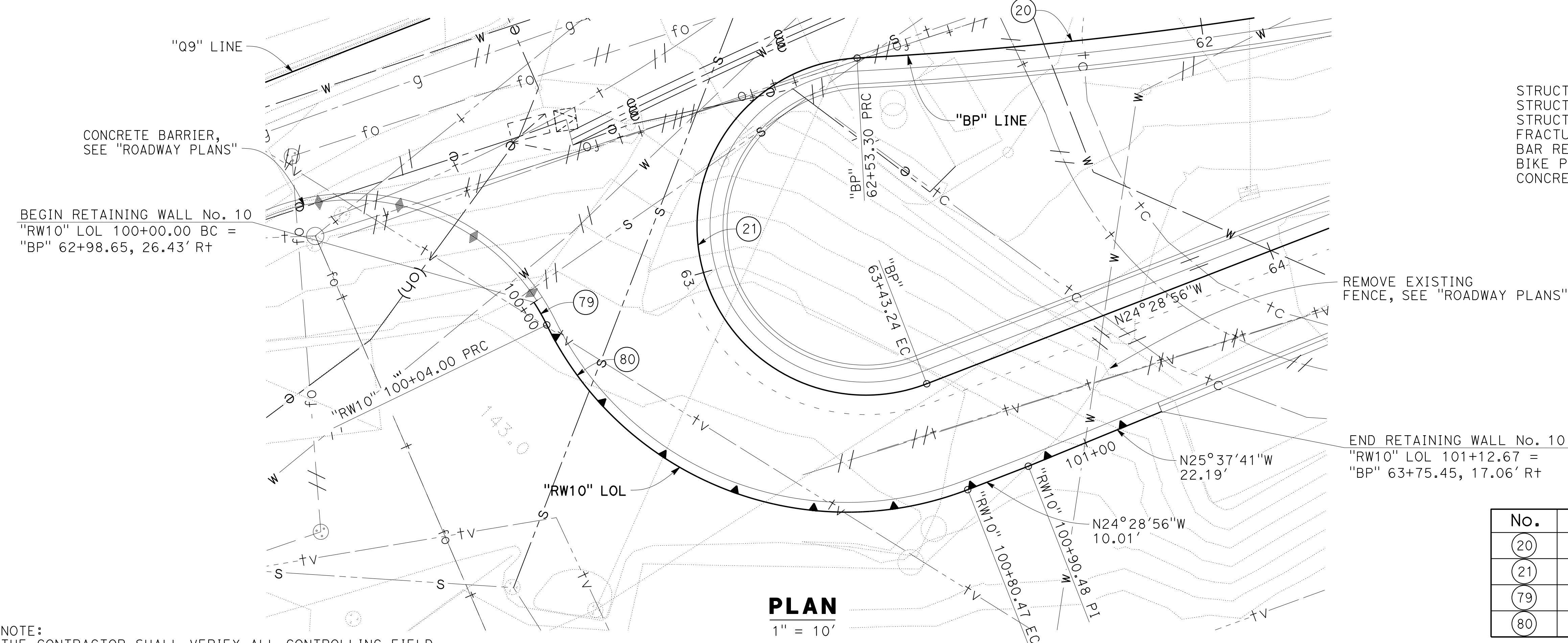
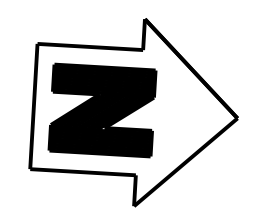
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	398	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
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 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



- NOTES:**
- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
 - For "TYPICAL SECTION", see "GENERAL PLAN No. 2" sheet.
 - For drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet and "DRAINAGE PLANS".
 - For limits of excavation and backfill, see Standard Plan A62B



QUANTITIES

STRUCTURE EXCAVATION (RETAINING WALL)	171	CY
STRUCTURE BACKFILL (RETAINING WALL)	290	CY
STRUCTURAL CONCRETE, RETAINING WALL	121	CY
FRACTURED RIB TEXTURE	583	SQ FT
BAR REINFORCING STEEL (RETAINING WALL)	18,312	LB
BIKE PATH RAILING (RETAINING WALL) (Mod)	113	LF
CONCRETE BARRIER (TYPE 736A)	113	LF

CURVE DATA

No.	R	Δ	T	L
20	624.94'	07°43'29"	42.19'	84.25'
21	26.00'	198°11'44"	162.37'	89.94'
79	33.50'	06°50'32"	2.00'	4.00'
80	51.50'	85°04'39"	47.26'	76.47'

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

DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 10 GENERAL PLAN No. 1
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED A. CARMAZZI	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A604	REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19 SHEET 149 OF 168	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 FILE => RW10-a-gp01.dgn

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014

LS: 240 psf

DC: Stem Architectural Treatment of thickness up to 2" of concrete (25 psf) considered

CT: 54 kip transverse force applied at $H_e = 32"$, distributed over 10 feet at the top of wall and 1 : 1 distribution down and outward.

SEISMIC: $k_h = 0.22, k_v = 0.0$

SOIL: $\phi = 34^\circ$ for backfill soil
 $\gamma = 120$ pcf
 $c = 0$ psf for foundation soil
coefficient of friction = 0.67

REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi

LOAD COMBINATIONS AND LIMIT STATES:

Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$

Strength I $Q = \alpha DC + \beta EV + \eta EH + 1.75LS$

Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$

Extreme II $Q = 1.00DC + 1.00EV + 1.00EH + 1.00CT$

Where:

Q: Force Effects

α : 1.25 or 0.90, Whichever Controls Design

β : 1.35 or 1.00, Whichever Controls Design

η : 1.50 or 0.90, Whichever Controls Design

DC: Dead Load of Structure Components

EH: Horizontal Earth Fill Pressure

EV: Vertical Earth Pressure from Earth Fill Weight

LS: Live Load Surcharge

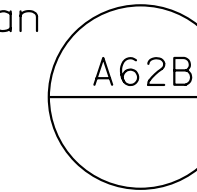
EQE: Seismic Earth Pressure

EQD: Soil and Structural and Nonstructural Components Inertia

CT: Vehicular Collision Force

NOTES:

- For limits, see "GENERAL PLAN No. 1" sheet.
- For details not shown, see "RETAINING WALL DETAILS" sheet.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- For limits of excavation and backfill, see Standard Plan



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	399	436

REGISTERED CIVIL ENGINEER DATE 7-25-19

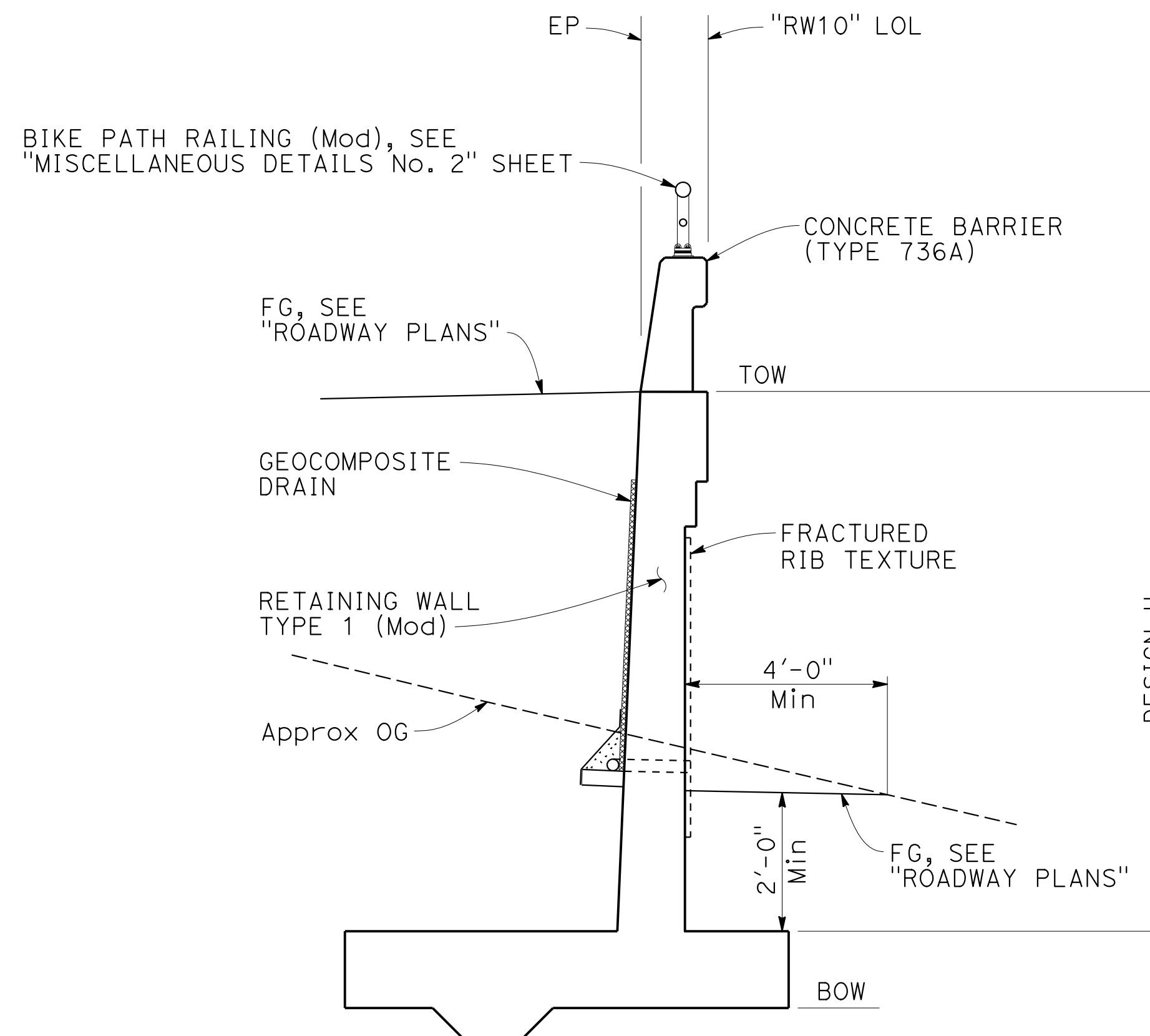
PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

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1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596



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

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

DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 10 GENERAL PLAN No. 2
SIGN OFF DATE	DETAILS BY L. DAVIS	CHECKED A. CARMAZZI	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA	JOHN MANISCALCO PROJECT ENGINEER	POST MILES 7.9	
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	REVISION DATES	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

DISREGARD PRINTS BEARING EARLIER REVISION DATES


REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19

SHEET 150 OF 168

FILE => RW10-a-gp02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	400	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

UTILITIES:

- 1 Existing Abandoned Telephone/Television
- 2 Existing Electrical to be Abandoned
- 3 Existing Abandoned Water
- 4 Existing Storm Drain to be Abandoned
- 5 Existing Abandoned Telecomm
- 6 Existing Television to be Abandoned
- 7 Existing Abandoned Sewer

LEGEND:

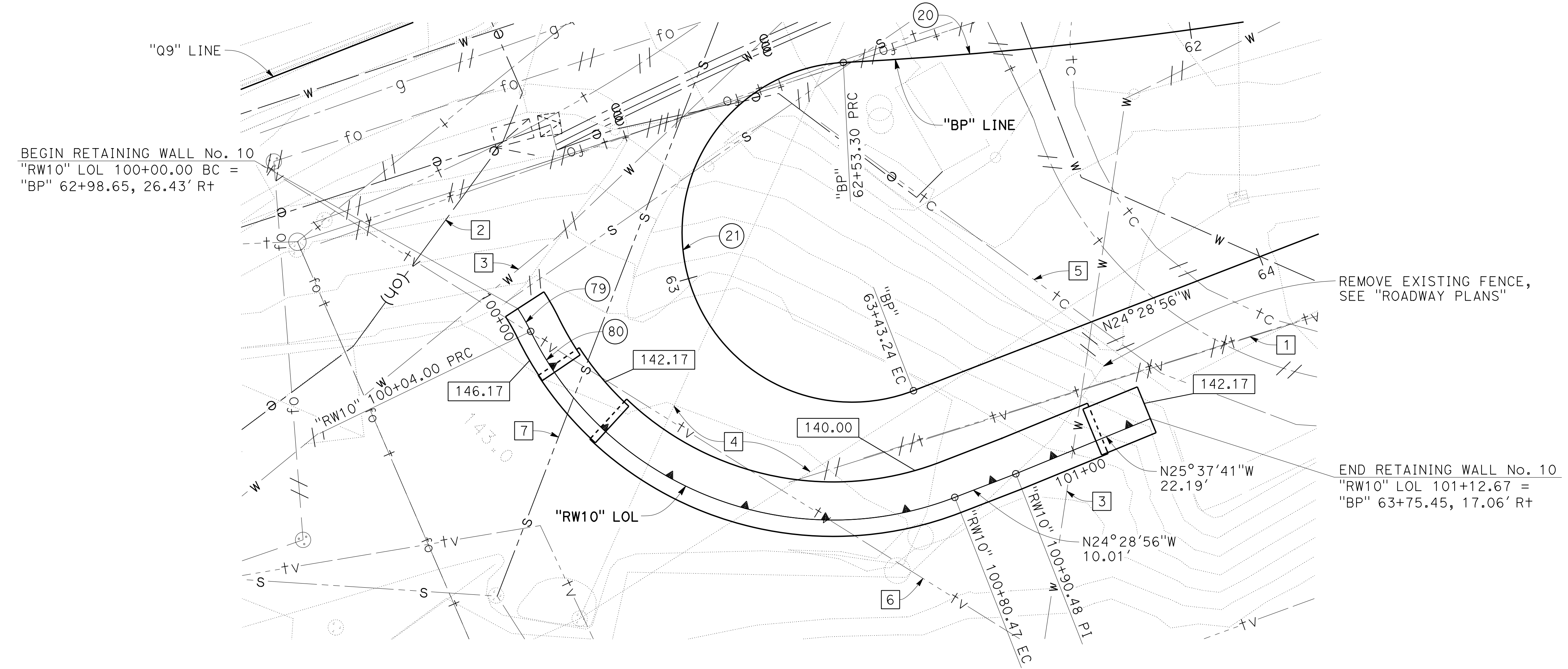
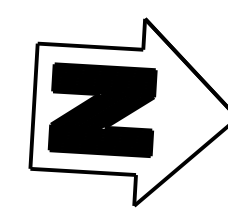
 Indicates bottom of footing elevation

NOTES:

- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
- For drainage details, see "DRAINAGE PLANS".

CURVE DATA

No.	R	Δ	T	L
20	624.94'	07°43'29"	42.19'	84.25'
21	26.00'	198°11'44"	162.37'	89.94'
79	33.50'	06°50'32"	2.00'	4.00'
80	51.50'	85°04'39"	47.26'	76.47'



BEGIN RETAINING WALL No. 10
 "RW10" LOL 100+00.00 BC =
 "BP" 62+98.65, 26.43' Rt

REMOVE EXISTING FENCE,
 SEE "ROADWAY PLANS"

END RETAINING WALL No. 10
 "RW10" LOL 101+12.67 =
 "BP" 63+75.45, 17.06' Rt

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

DESIGN OVERSIGHT	SCALE: 1" = 10'	VERT.DATUM NGVD29	HORZ.DATUM NAD83, CCS ZONE 3	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 10 FOUNDATION PLAN
SIGN OFF DATE	PHOTOGRAMMETRY AS OF: 10-9-2015	ALIGNMENT TIES	DETAILS BY L. DAVIS	CHECKED A. CARMAZZI	PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.9	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)	SURVEYED BY TOWILL Inc.	DRAFTED BY D. ORTEGA	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	CONTRACT NO.: 04-3A6404		REVISION DATES	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071
 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 4-30-18, 11-14-18, 2-27-19, 7-25-19
 USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:32
 FILE => RW10-e-fp101.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	401	436

REGISTERED CIVIL ENGINEER
DATE 7-25-19
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE _____

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SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

TABLE OF DIMENSIONS AND REINFORCEMENT

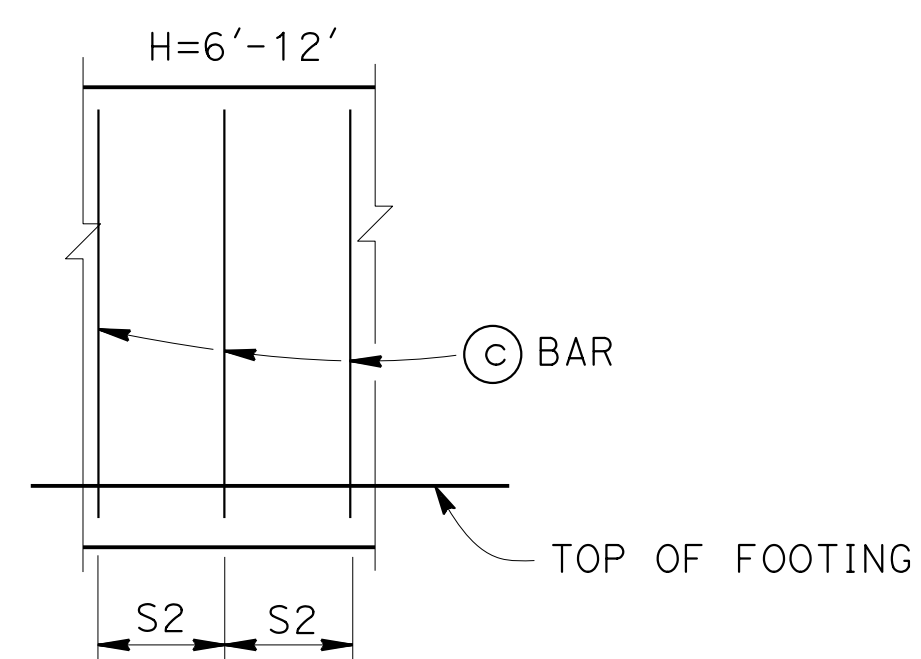
DESIGN H	6'	10'	12'
W	7'-0"	7'-7"	8'-8"
C	2'-3"	2'-4"	2'-8"
B	4'-9"	5'-3"	6'-0"
F	1'-4"	1'-4"	1'-6"
J	8"	8"	1'-0"
K	8"	8"	1'-0"
BATTER	1/2:12	1/2:12	1/2:12
SPACING "S1" (INCHES)	18"	18"	18"
SPACING "S2" (INCHES)	8"	8"	8"
⊙ BARS	#6	#6	#6
⊙ BARS	#5	#6	#6
hy	1'-10"	2'-3"	2'-3"
SER: B'(FEET), q ₀ (ksf)	6.6, 1.3	6.0, 1.9	6.9, 2.1
STR: B'(FEET), q ₀ (ksf)	6.3, 1.8	5.0, 2.6	5.6, 2.9
EXT I: B'(FEET), q ₀ (ksf)	4.9, 1.5	3.3, 3.2	3.6, 3.8
EXT II: B'(FEET), q ₀ (ksf)	3.3, 2.3	2.9, 3.6	4.2, 3.2

LEGEND:

- SER: service limit state
- STR: strength limit state
- EXT: extreme event limit state
- B': effective footing width (feet)
- q₀: net bearing stress (ksf)
- q₀: gross uniform bearing stress (ksf)

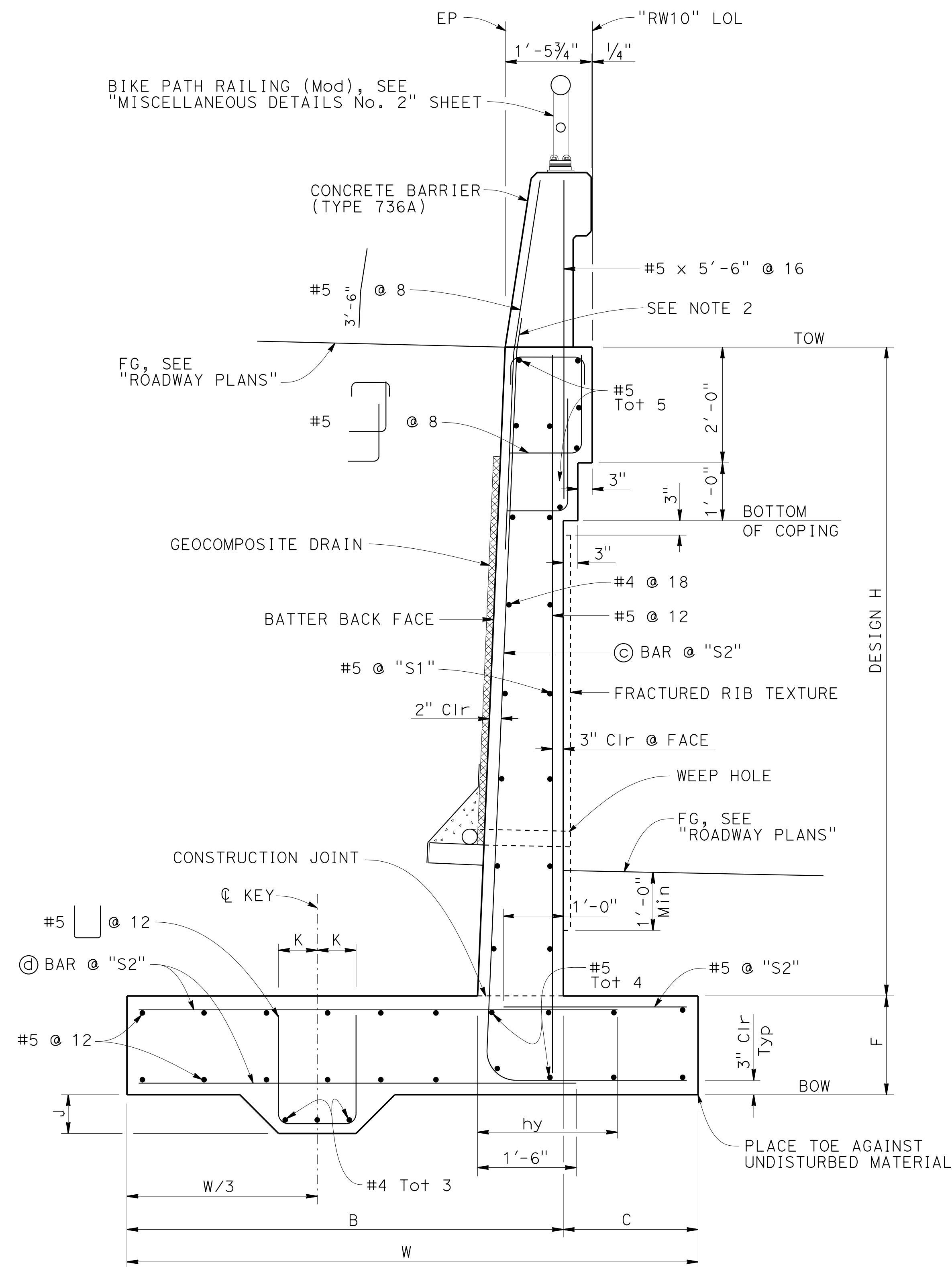
NOTES:

- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS No. 1" sheet.
- Extend ⊙ bars into barrier 6" from top of wall.
- No splices are allowed within H/4 above top of footing.
- Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints. All barrier reinforcement shall be epoxy coated UON.
- Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.



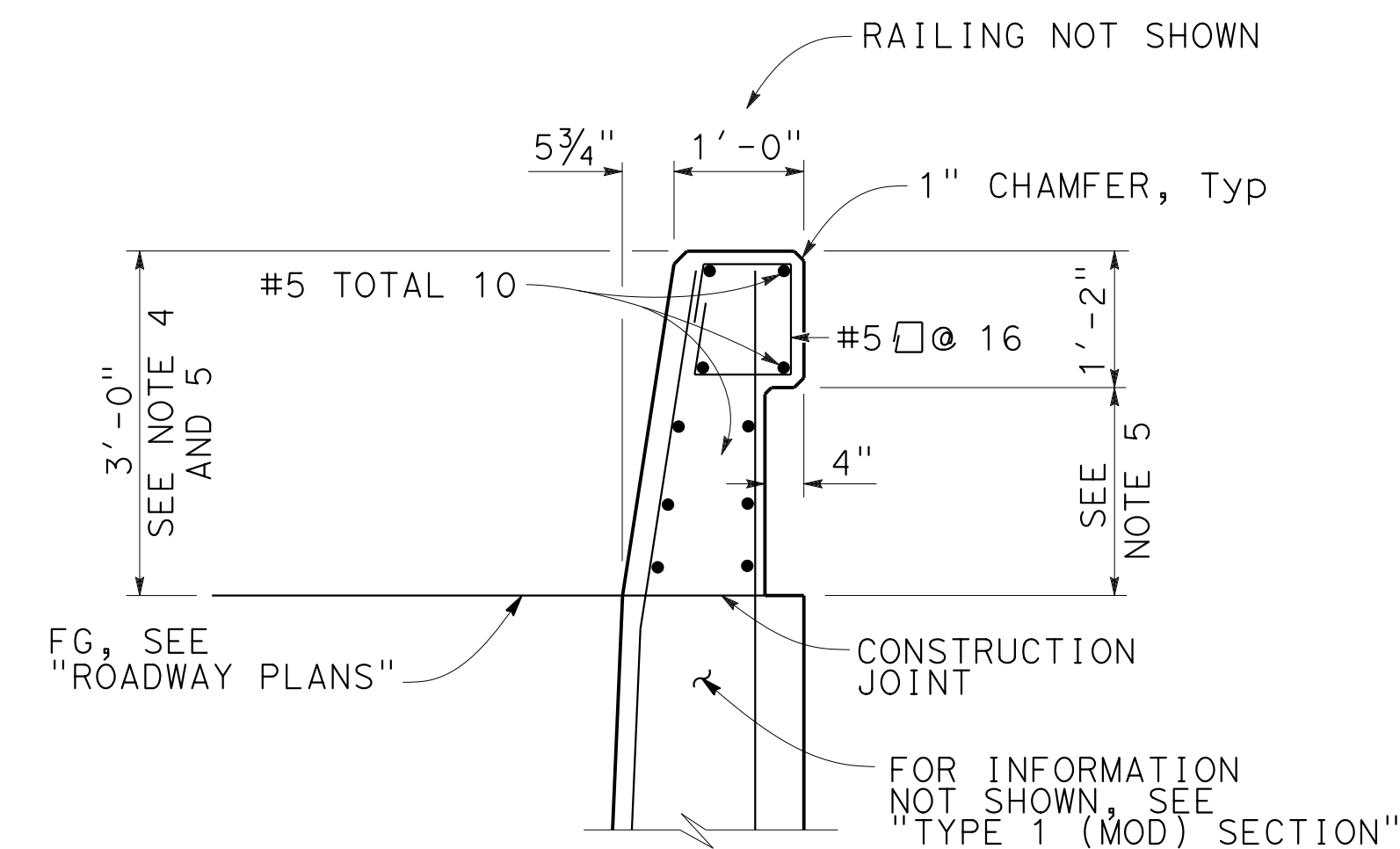
ELEVATION

NO SCALE



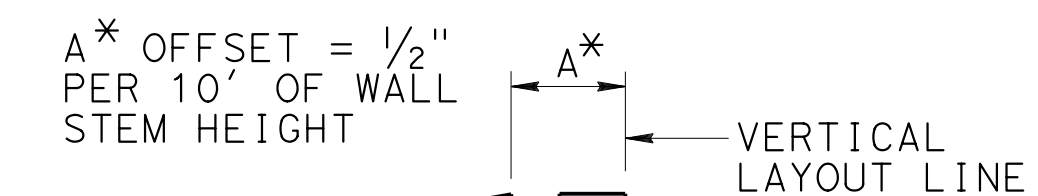
TYPE 1 (MOD) SECTION

3/4" = 1'-0"



CONCRETE BARRIER (TYPE 736A)

NO SCALE



WALL OFFSET

NO SCALE

NOTE:
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DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 10 RETAINING WALL DETAILS	
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED A. CARMAZZI		JOHN MANISCALCO PROJECT ENGINEER		POST MILES 7.9
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071		CONTRACT NO.: 04-3A604


ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

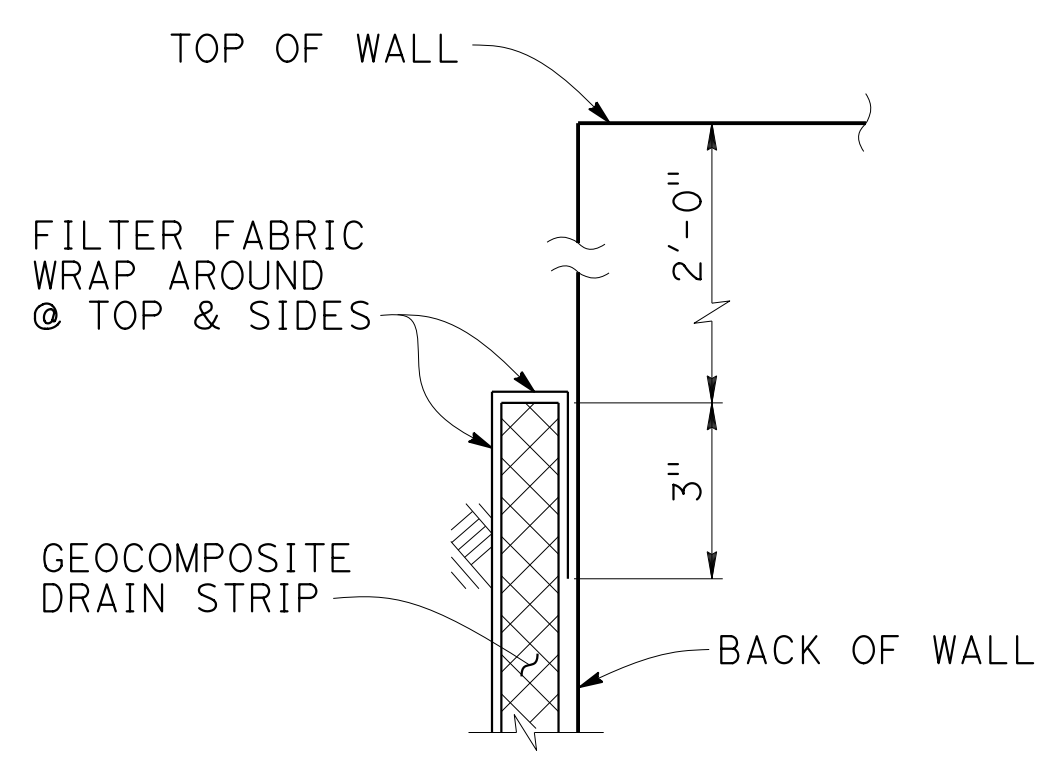
REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	152	168

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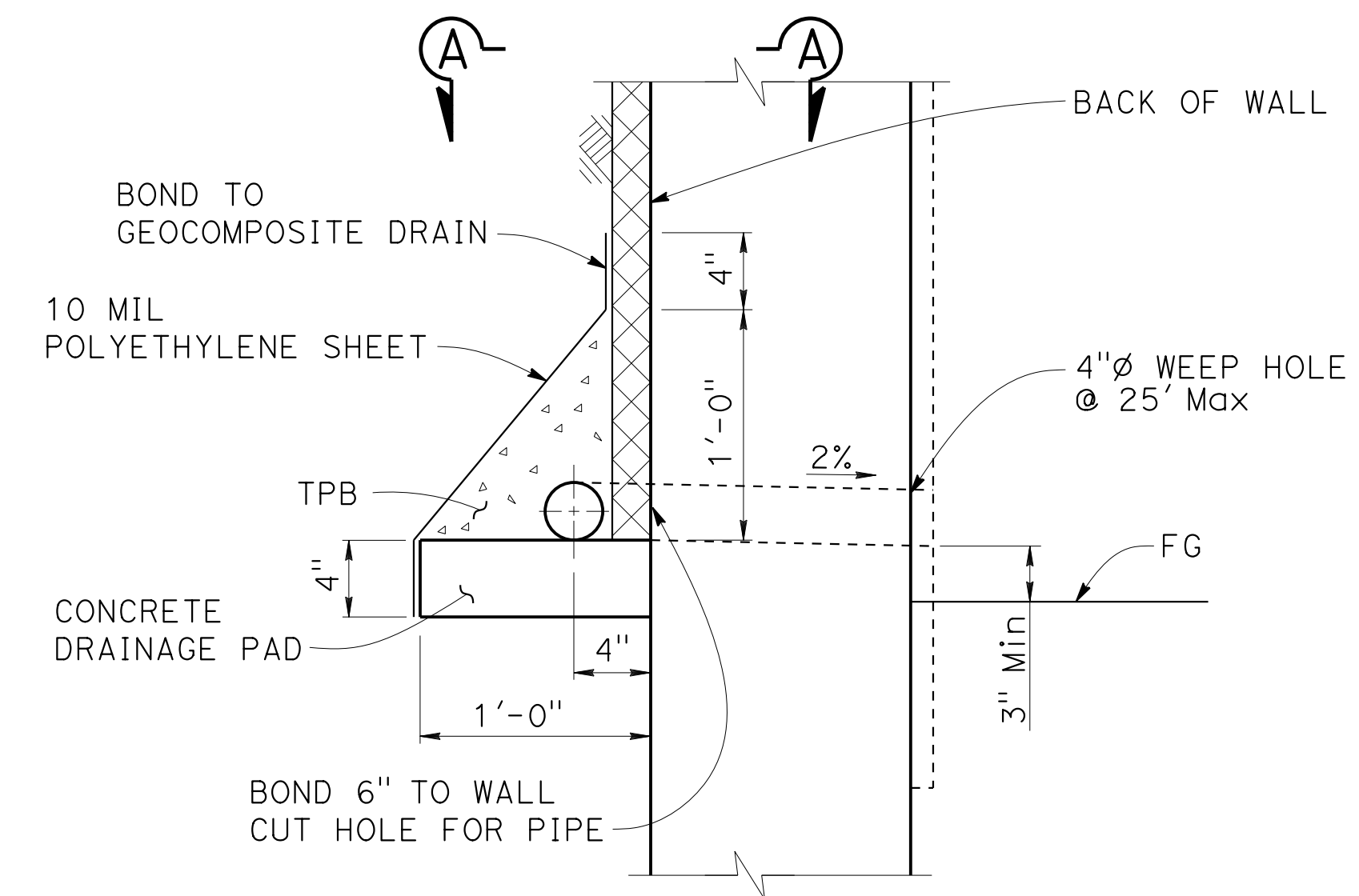
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	402	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

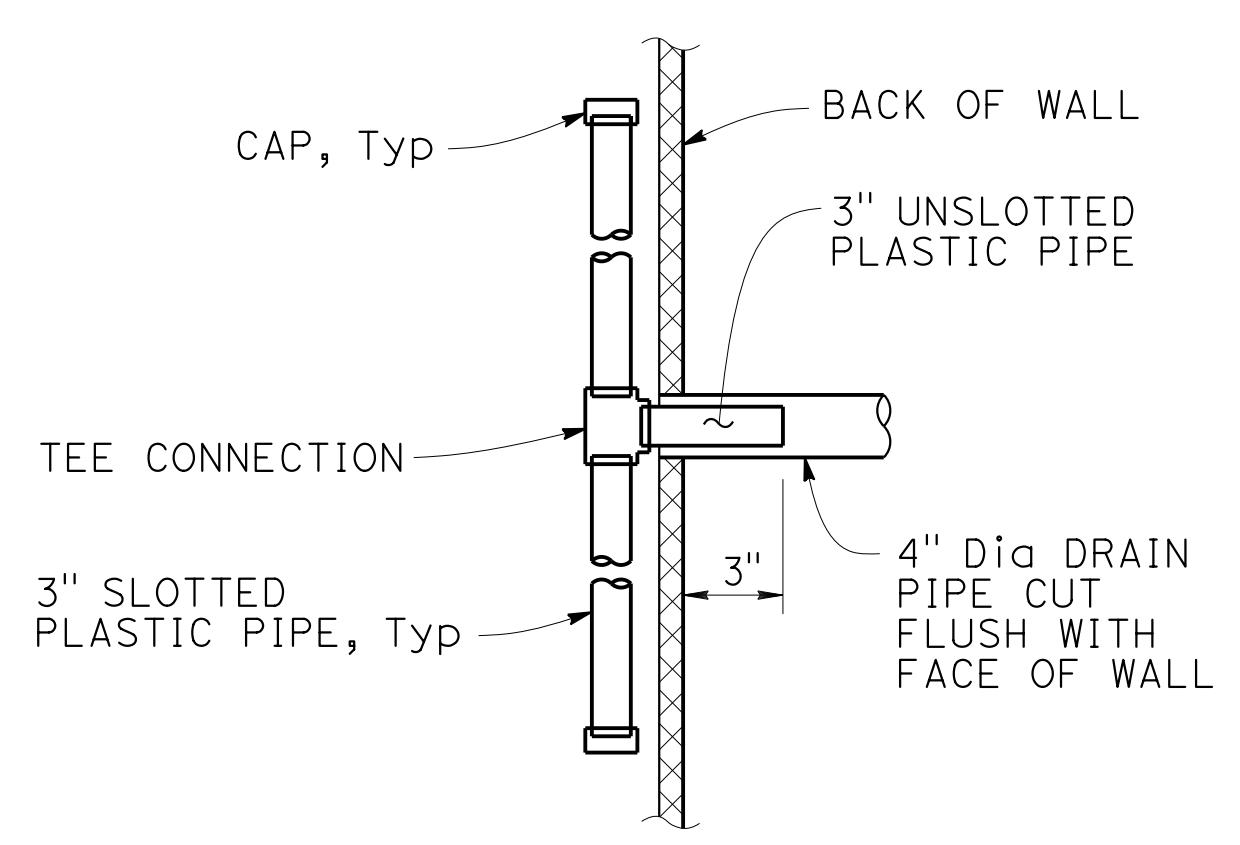
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 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



TOP DETAIL



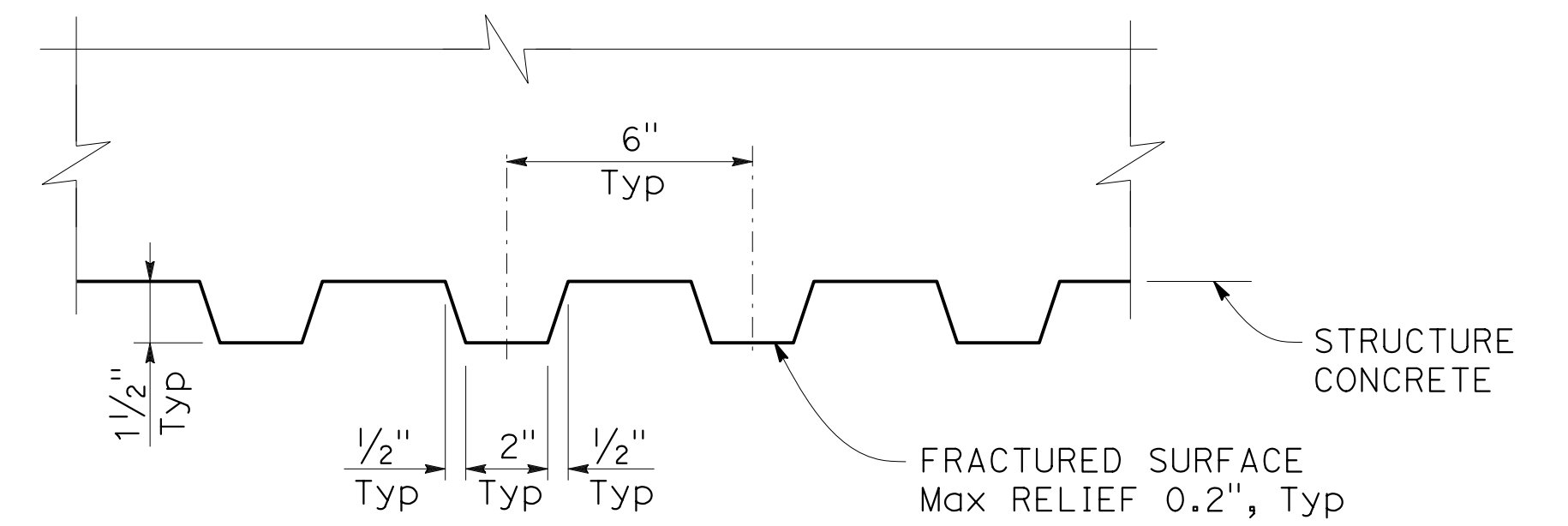
BOTTOM DETAIL



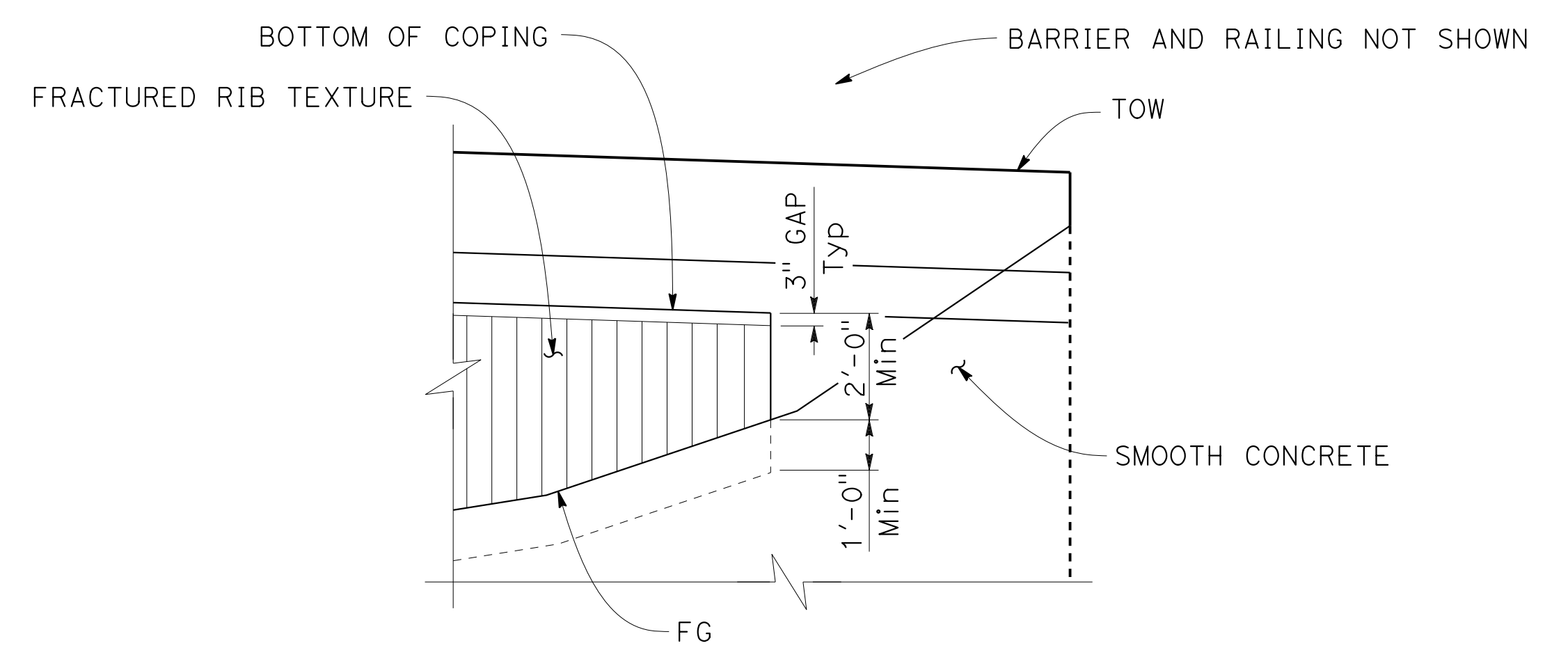
VIEW A-A

DRAINAGE DETAILS

NO SCALE



PARTIAL SECTION



PARTIAL ELEVATION

NOTE: END OF WALL SHOWN, BEGIN WALL SIMILAR

FRACTURED RIB TEXTURE DETAIL

NO SCALE

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

DESIGN OVERSIGHT	DESIGN BY K. SERRANO-PAINE	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. N/A	RETAINING WALL No. 10 MISCELLANEOUS DETAILS No. 1
SIGN OFF DATE	DETAILS BY L. DAVIS/E. GRAY	CHECKED A. CARMAZZI		PROJECT NUMBER & PHASE: 04000205071	
	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER		CONTRACT NO.: 04-3A6404	

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 153	OF 168
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USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:33

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	403	436

REGISTERED CIVIL ENGINEER
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

7-25-19
 DATE

PLANS APPROVAL DATE

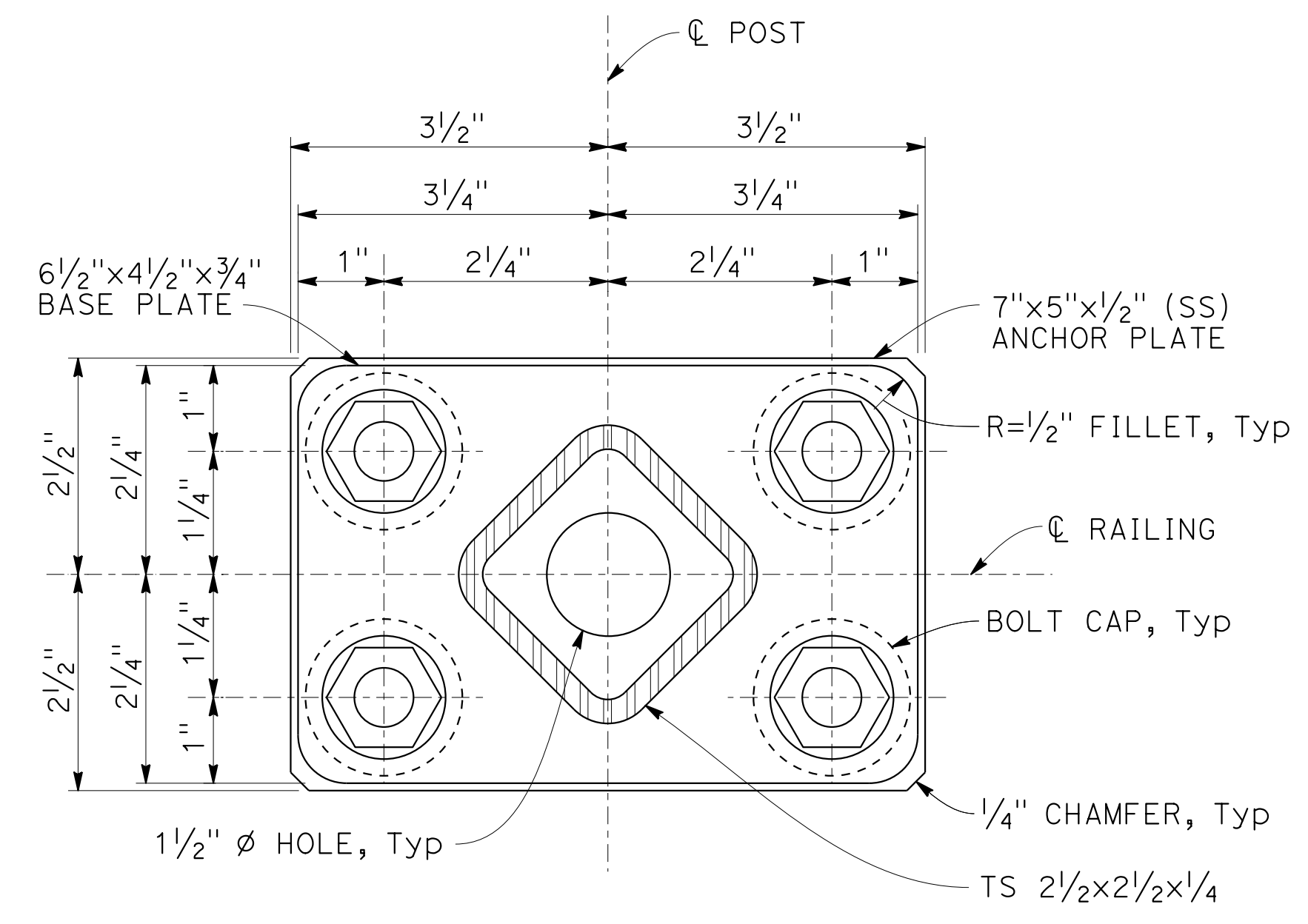
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 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

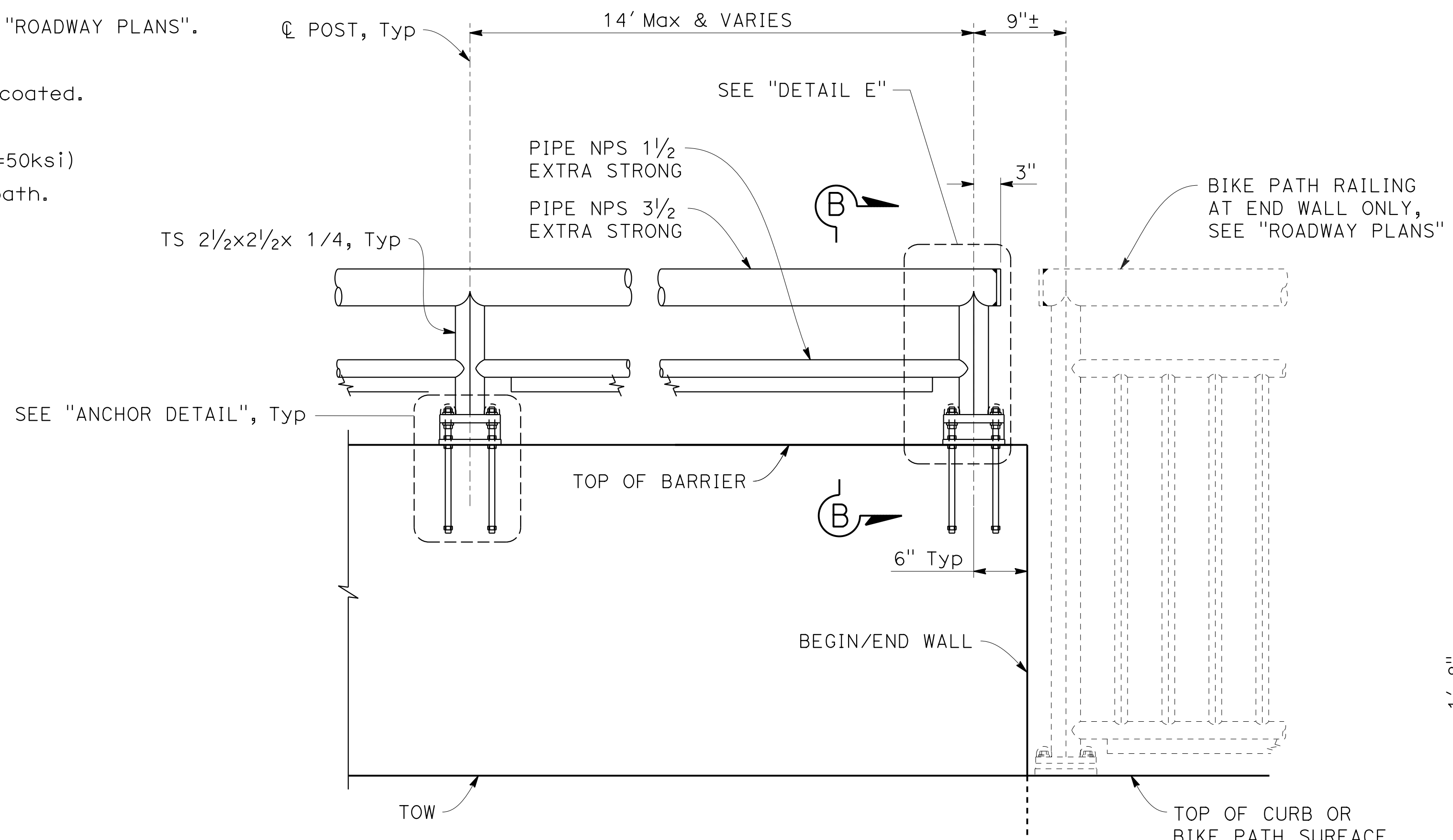
HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

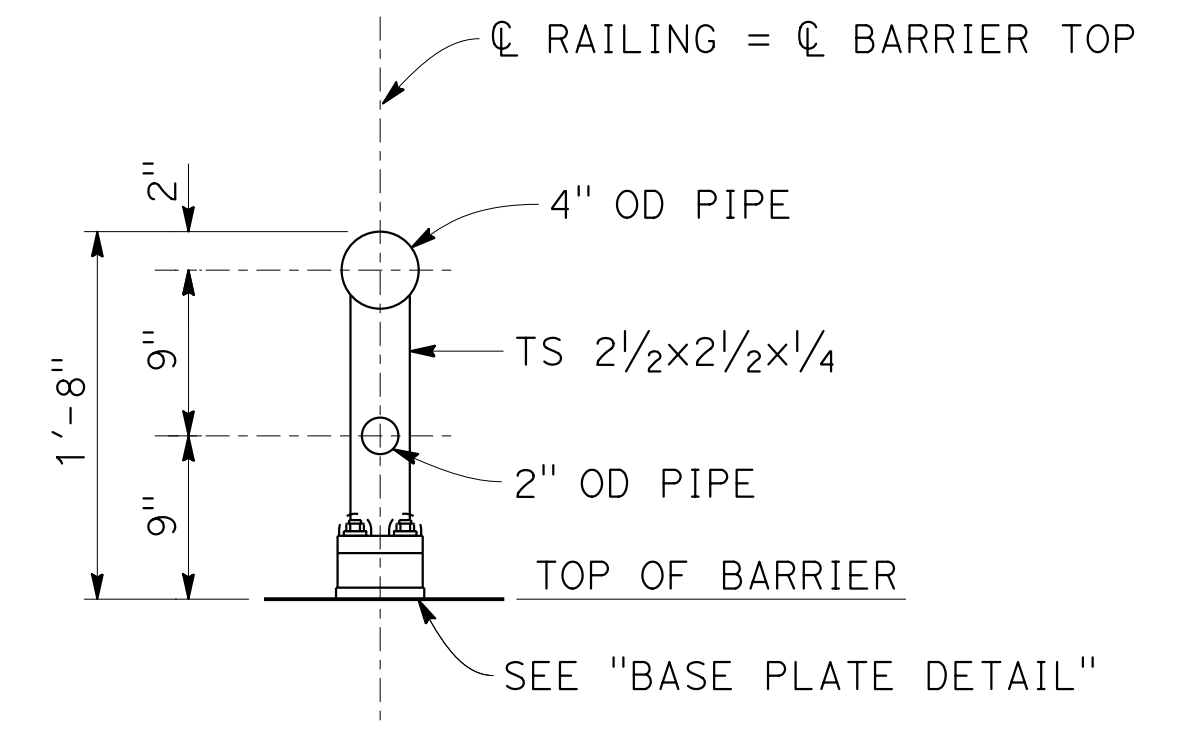
1. Railing to match existing adjacent railing on site and shown on "ROADWAY PLANS".
2. Remove all burrs and sharp edges and ground smooth all welds.
3. All metal parts (except stainless steel) shall be galvanized and coated.
4. Rails shall be continuous over not less than two posts.
5. Railing posts and tubes shall conform to ASTM A500 Grade C (Fy=50ksi)
6. Posts shall be vertical. Rails shall be parallel to top of bike path.



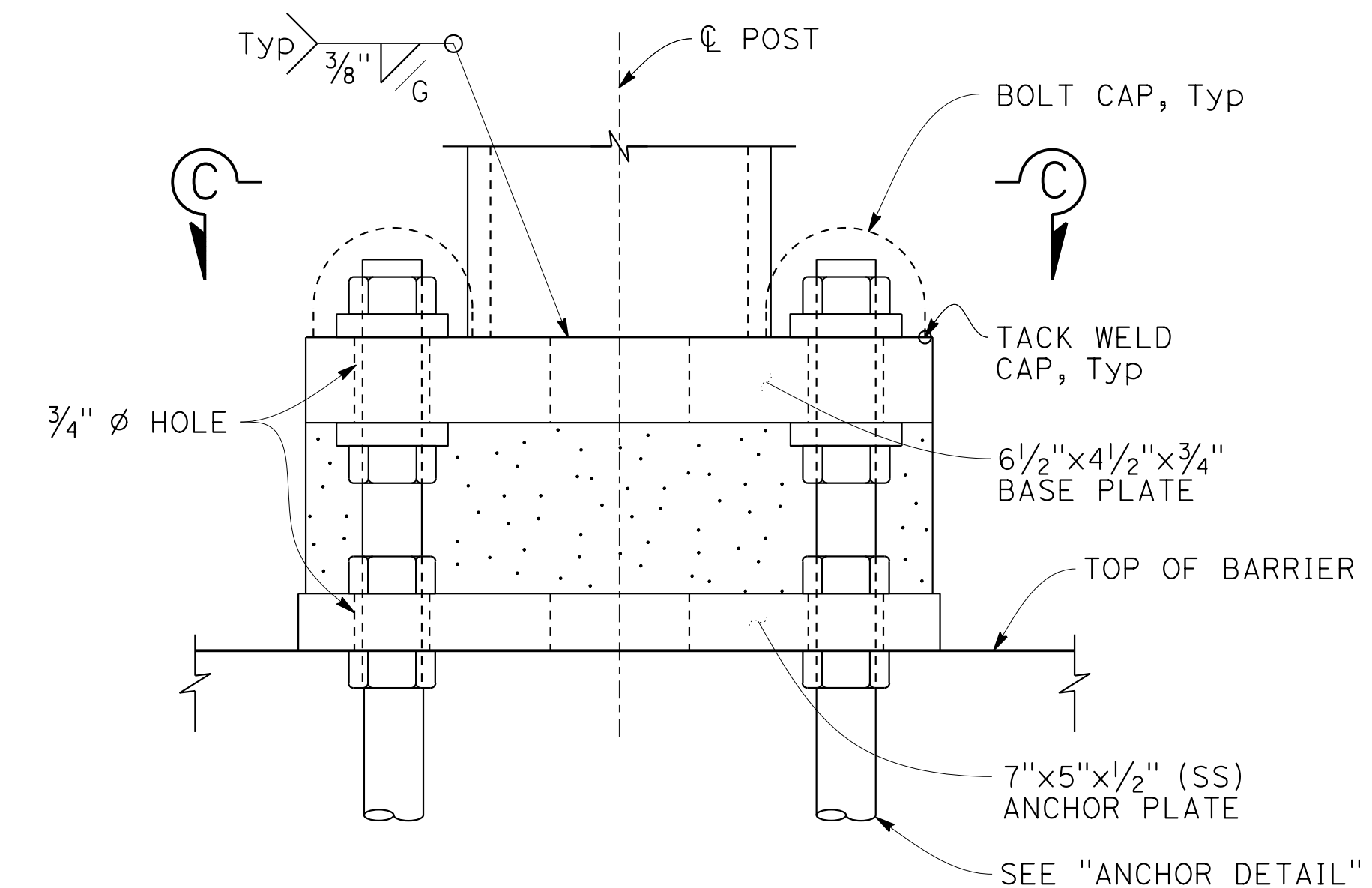
SECTION C-C
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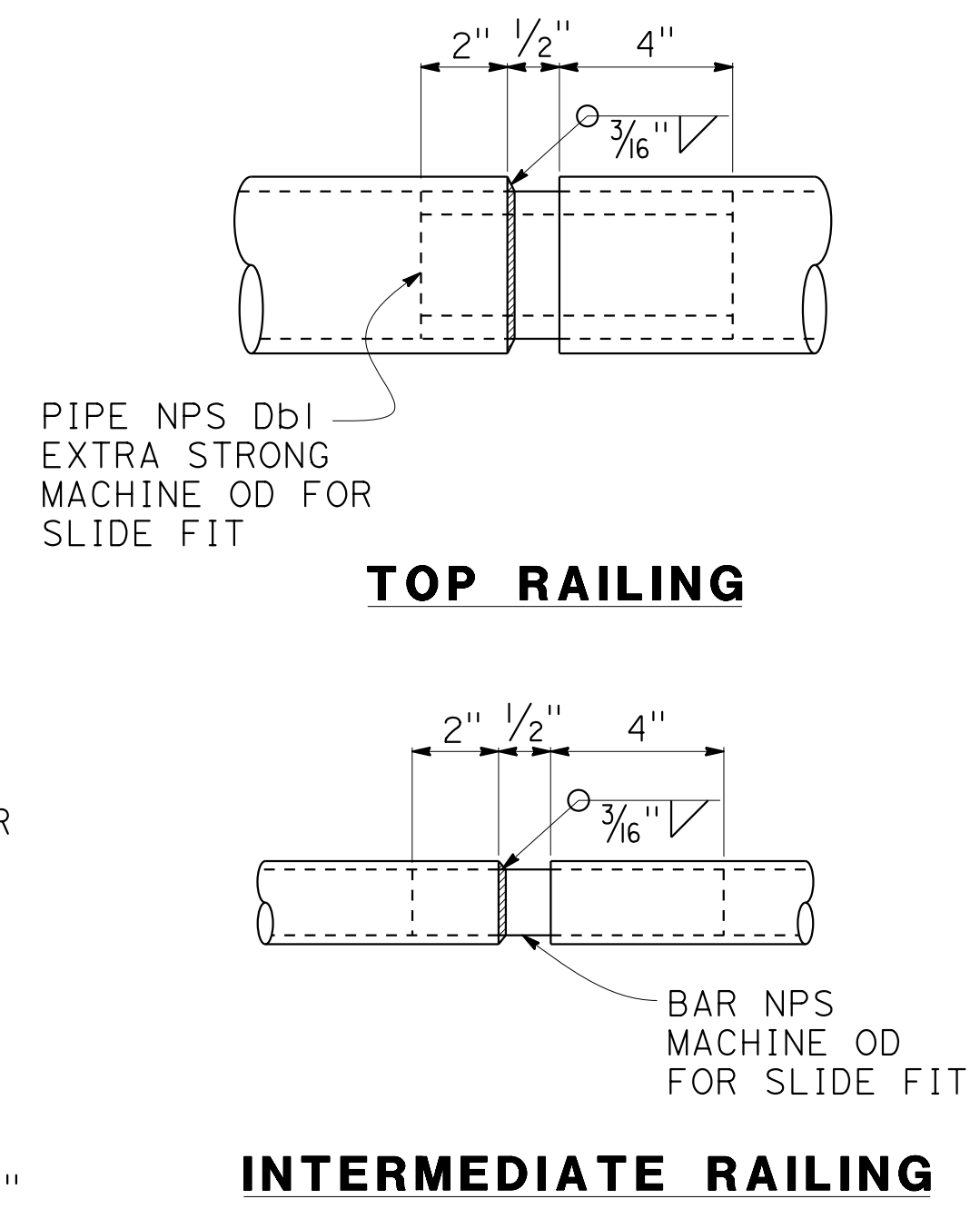
PARTIAL ELEVATION



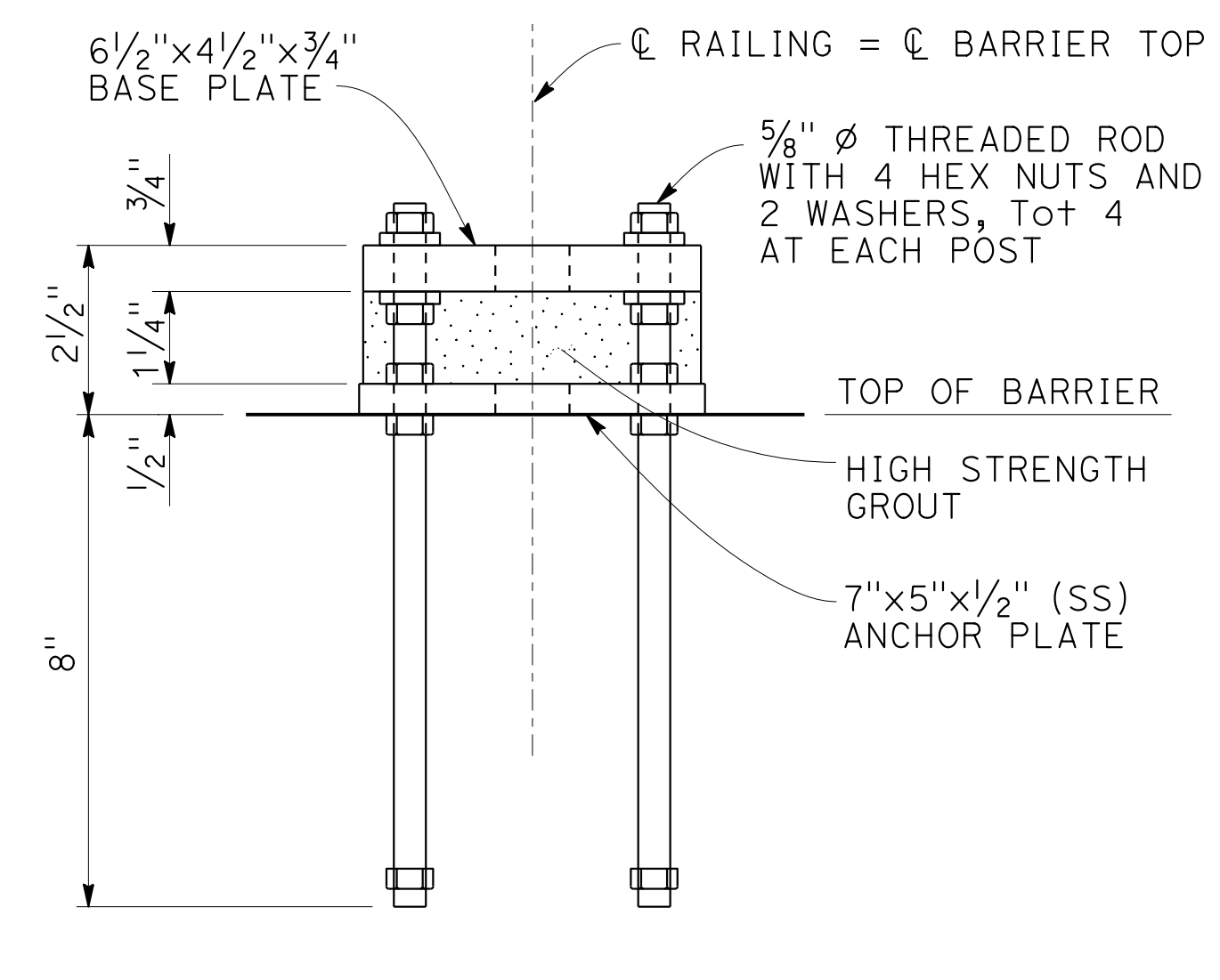
SECTION B-B
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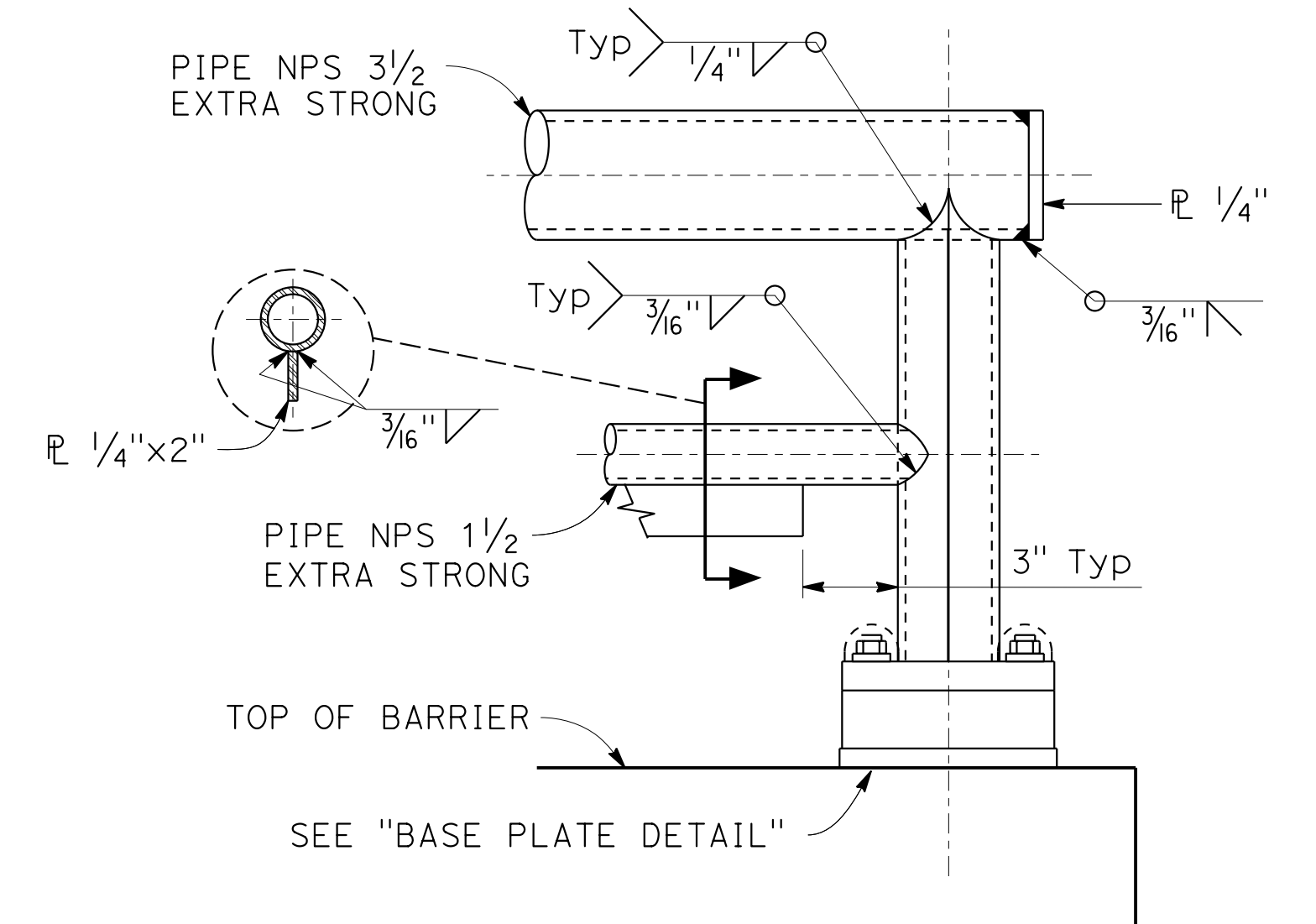
BASE PLATE DETAIL
NO SCALE



EXPANSION JOINT DETAIL
NO SCALE



ANCHOR DETAIL
NO SCALE



DETAIL E
NO SCALE

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

DESIGN OVERSIGHT
 SIGN OFF DATE

DESIGN	BY K. SERRANO-PAINE	CHECKED J. ZHU
DETAILS	BY L. DAVIS/E. GRAY	CHECKED A. CARMAZZI
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	N/A
POST MILES	7.9

RETAINING WALL No. 10
MISCELLANEOUS DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)



UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	4-30-18 11-12-18 2-27-19 7-25-19	154	168

FILE => RW10-u-miscdt02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 03:33

NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	404	436

Gary Parikh 7-25-19
 GEOTECHNICAL PROFESSIONAL DATE

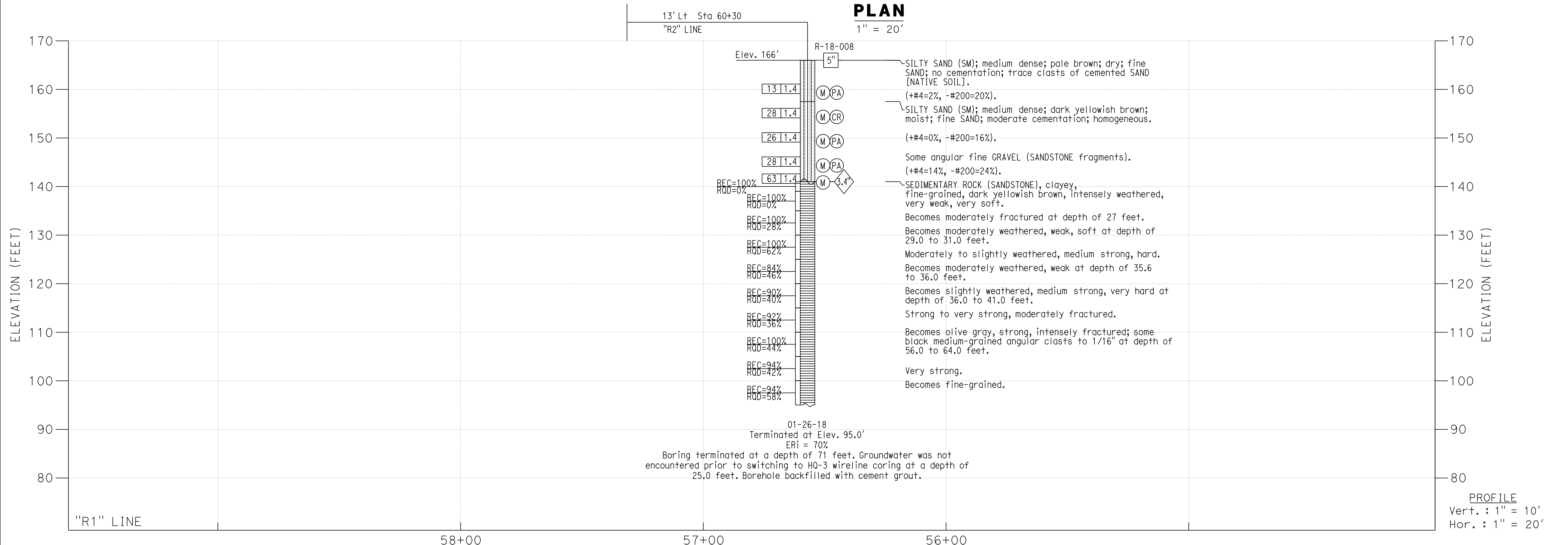
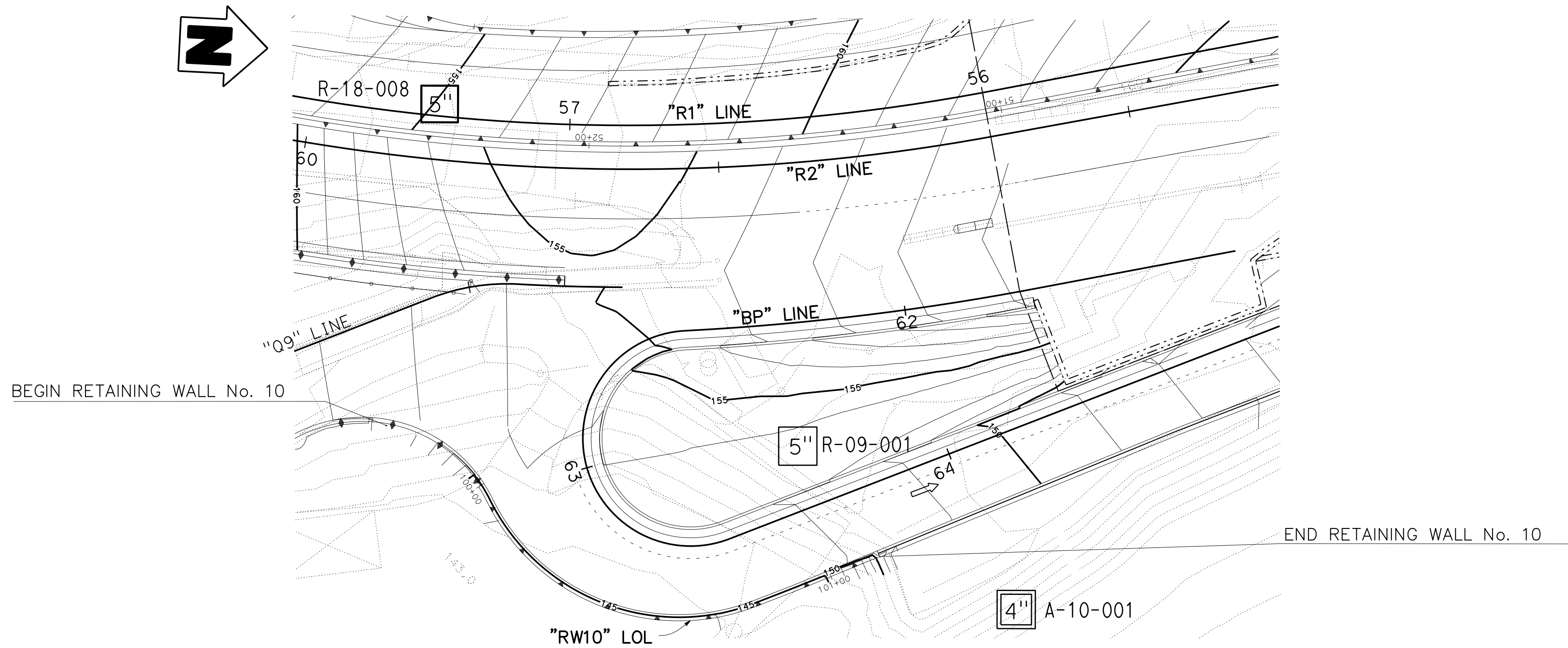
PLANS APPROVAL DATE

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

BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105

PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

REGISTERED PROFESSIONAL ENGINEER
 GARY PARIKH
 No. 666
 Exp. 12/31/19
 STATE OF CALIFORNIA
 GEOTECHNICAL

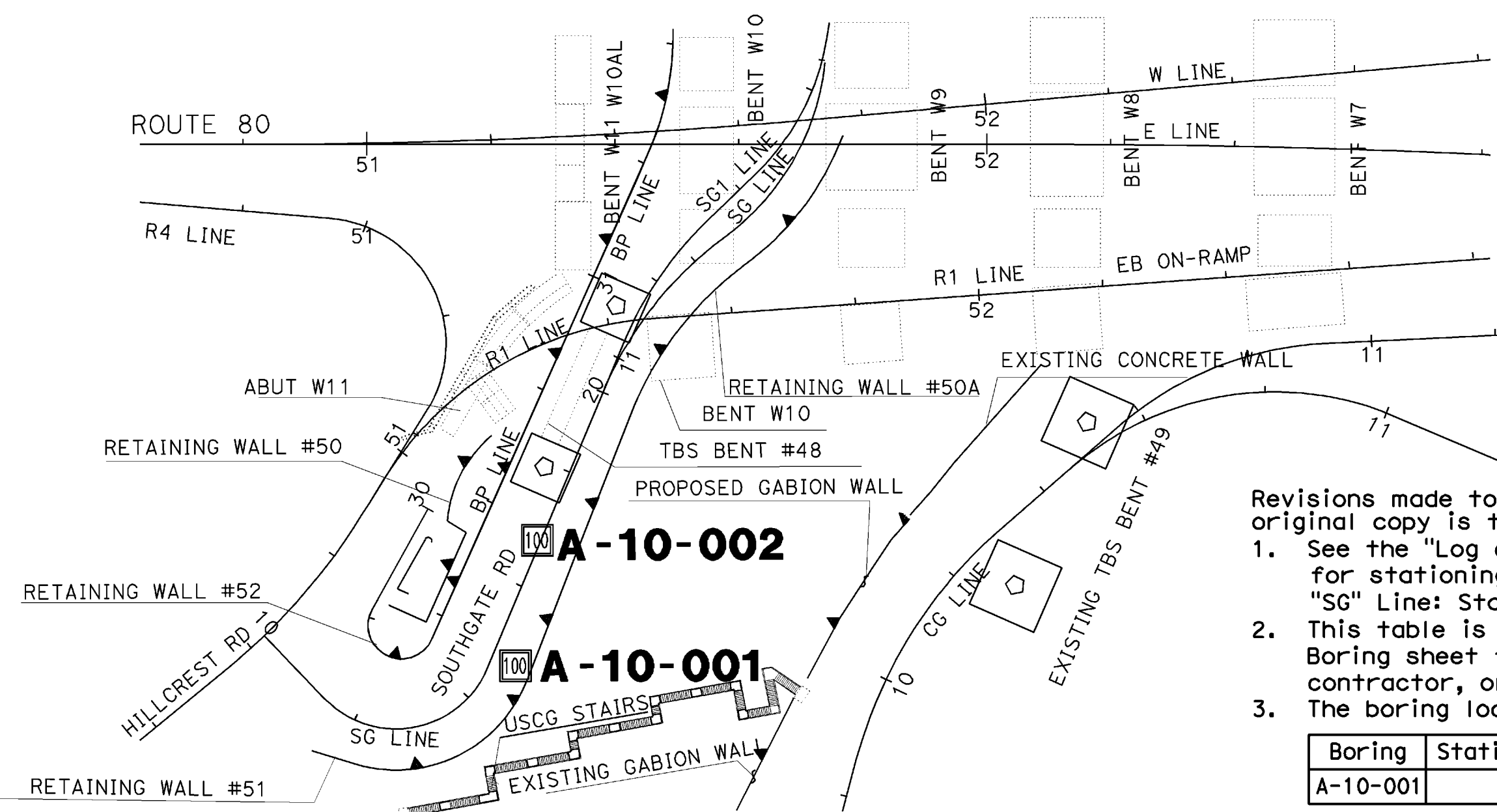


DESIGN OVERSIGHT	DRAWN BY KIM OUYANG	L.S. BHANGOO FIELD INVESTIGATION BY:	FRANK WANG PROJECT ENGINEER	BRIDGE NO. N/A	RETAINING WALL No. 10 LOG OF TEST BORING 1 OF 3
SIGN OFF DATE	CHECKED BY FRANK WANG	DATE: JAN 2018	POST MILES 7.9		

NOTES:
 61 mm samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 61 mm and an outside diameter (O.D.) of 75 mm.
 A rope and cathed hammer system consisting of a hammer weight of 62.5 kg falling a distance of 762 mm was used to advance the drive samplers.



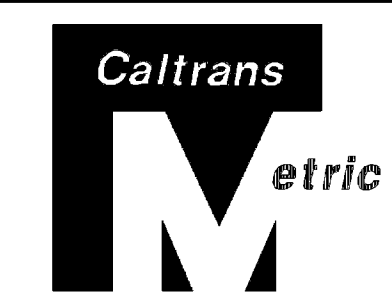
DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES				
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.				
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No. / Total sheets
04	SF	80	7.8/8.0	405 / 436
REGISTERED CIVIL ENGINEER			DATE	7-25-19
RETAINING WALL No. 10				
LOG OF TEST BORINGS 2 OF 3				
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA			UNIT: 0728	BRIDGE No. N/A
			PROJECT NUMBER & PHASE: 04000205071	
Sheet	of			
156	168			



PLAN
1:800

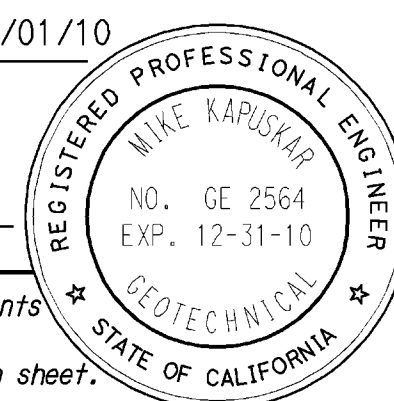
- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "SG" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "R2" Line	Offset from "R2" Line
A-10-001	61+54	114' Rt.



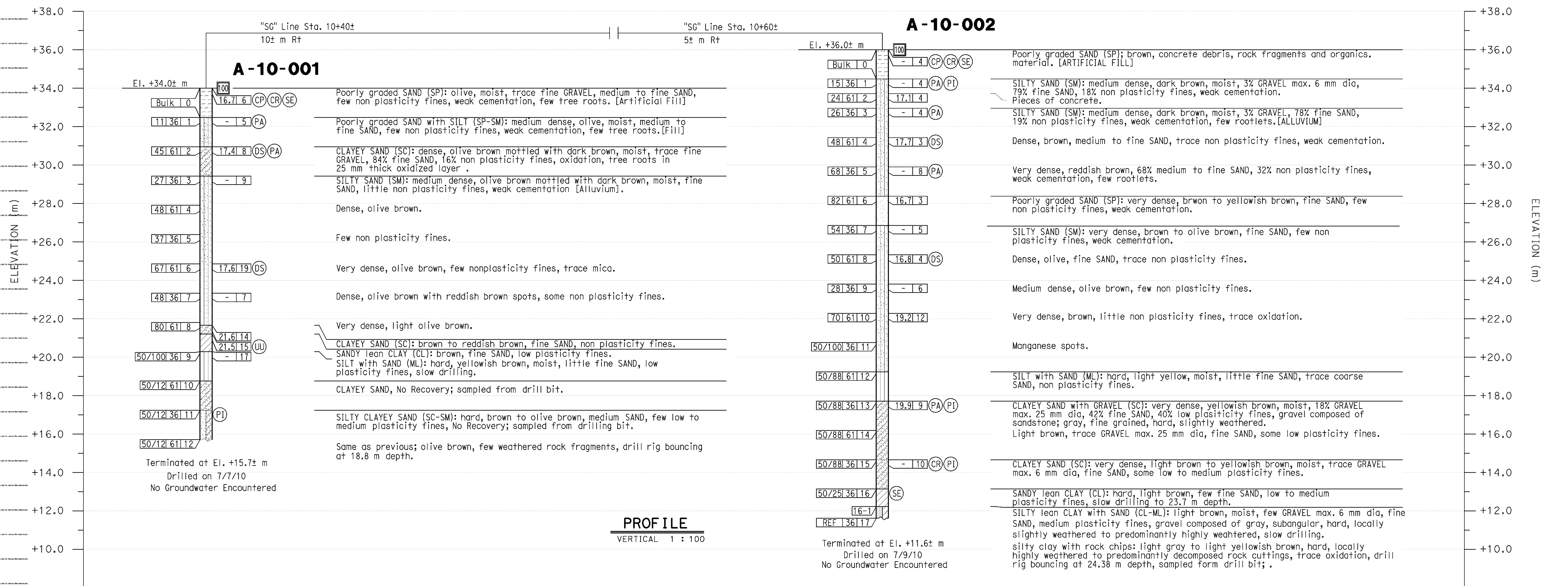
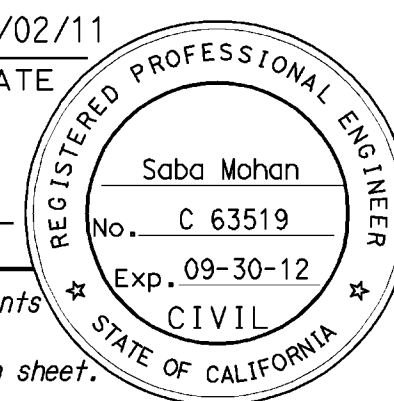
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	431	821

Mike Kyzar 10/01/10
 GEOTECHNICAL PROFESSIONAL
 2-21-12
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

S. Mohan 11/02/11
 REGISTERED CIVIL ENGINEER DATE
 Saba Mohan
 No. C 63519
 Exp. 09-30-12
 CIVIL
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PROFILE
VERTICAL 1 : 100

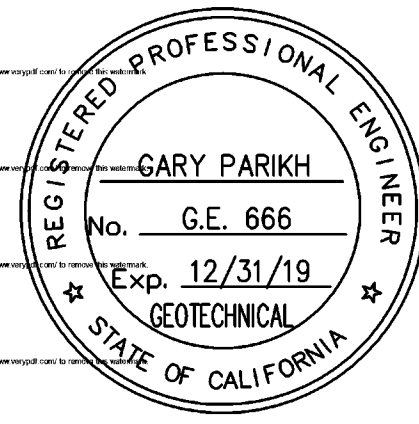
ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. RW51		RETAINING WALLS NO. 51	
FUNCTIONAL SUPERVISOR	DRAWN BY K. THANT	FIELD INVESTIGATION BY: K. THANT	M. KAPUSKAR PROJECT ENGINEER		KILOMETER POST 12.8		LOG OF TEST BORINGS NO. 4		
NAME SABA MOHAN	CHECKED BY M. KAPUSKAR			CU 04 EA 0120T1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 17 OF 29
GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)									

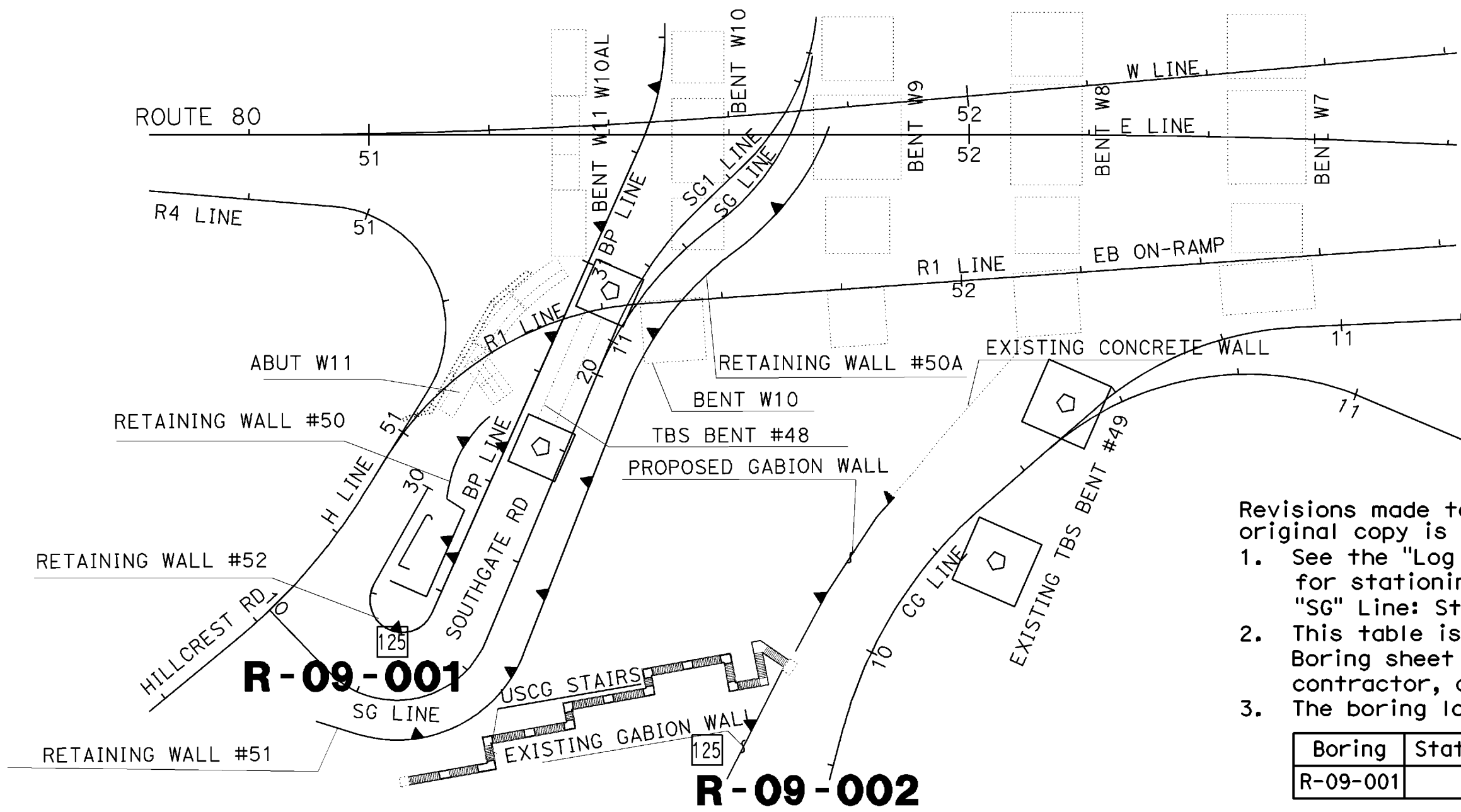


USERNAME => S109858 DATE PLOTTED => 25-FEB-2012 TIME PLOTTED => 1:31:54

NOTES:
 61 mm samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 61 mm and an outside diameter (O.D.) of 75 mm.
 A rope and cathead hammer system consisting of a hammer weight of 62.5 kg falling a distance of 762 mm was used to advance the drive samplers.



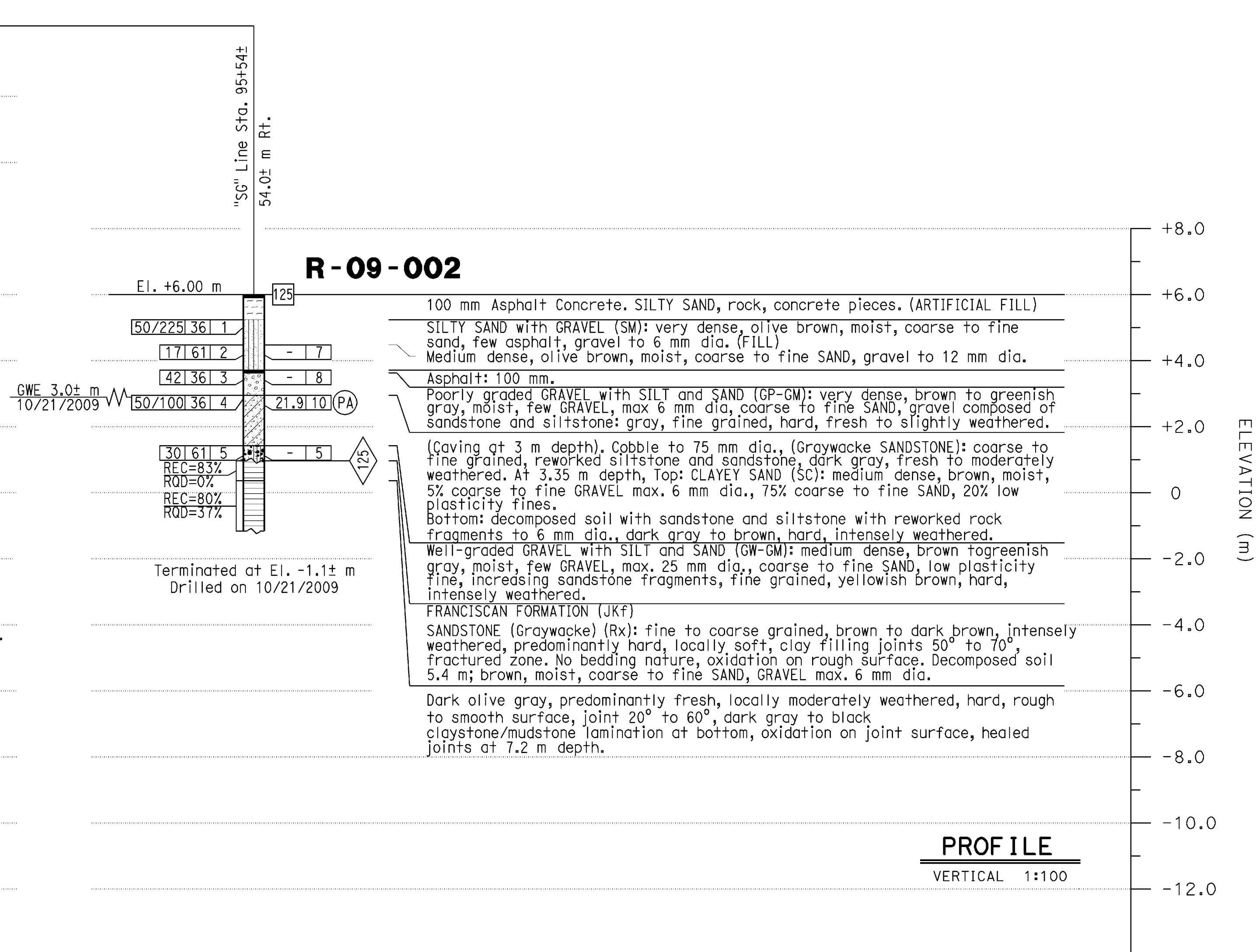
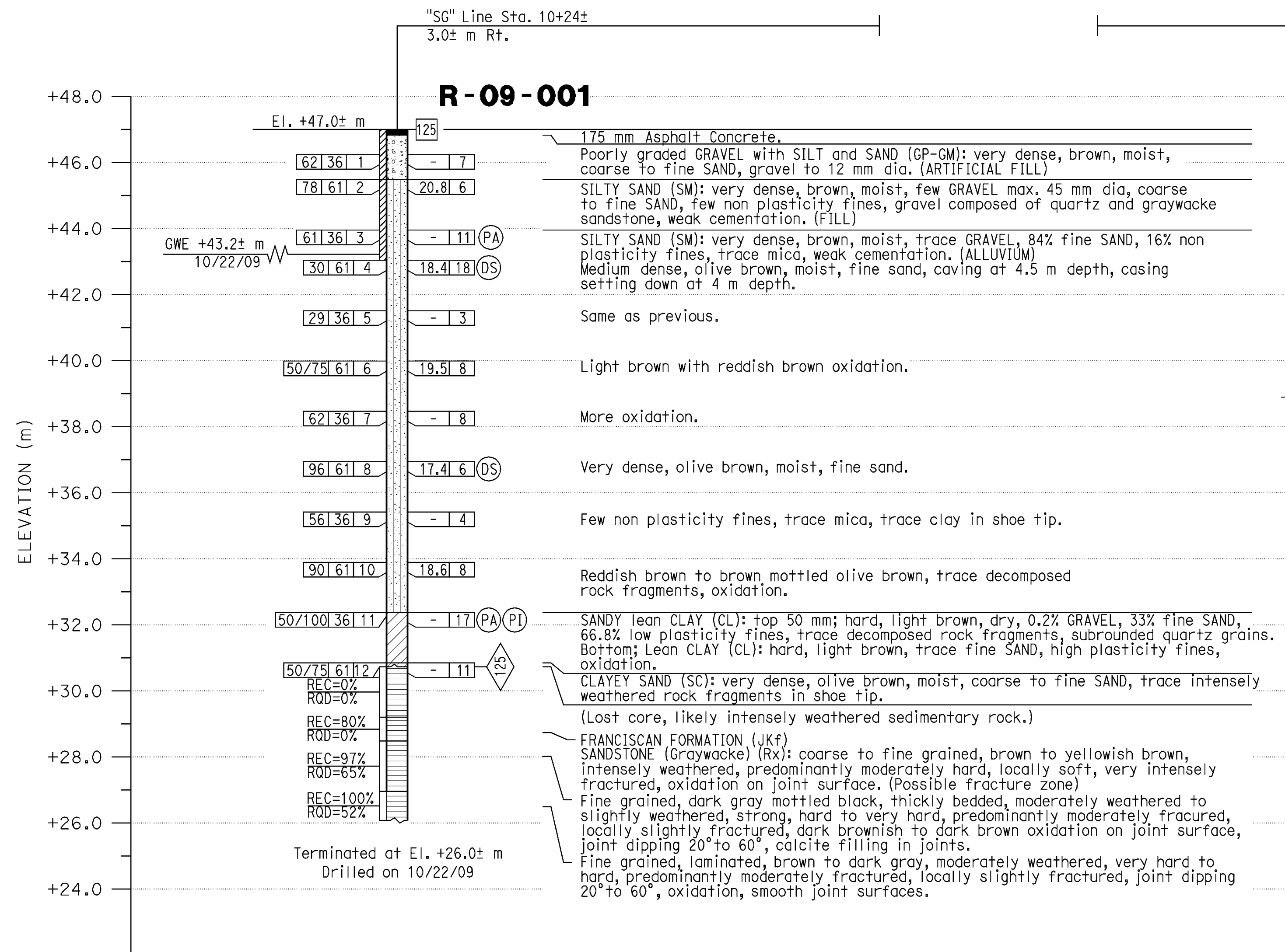
DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES					
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.					
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	406	436
				7-25-19	DATE
RETAINING WALL No. 10					
LOG OF TEST BORINGS 3 OF 3					
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA		UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	BRIDGE No.	N/A
		Sheet	of		
		157	168		



PLAN
1:800

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
 1. See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR.
 "SG" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 2. This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 3. The boring locations are as follows:

Boring	Stations "R2" Line	Offset from "R2" Line
R-09-001	61+14	68' Lt.

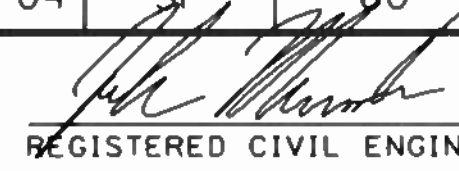
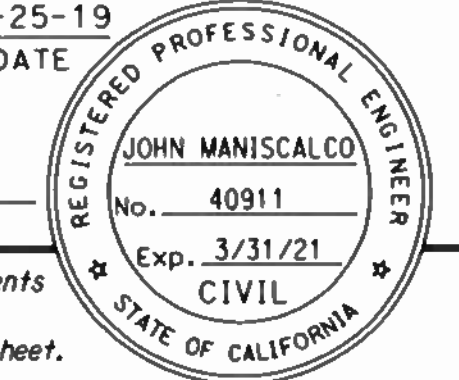


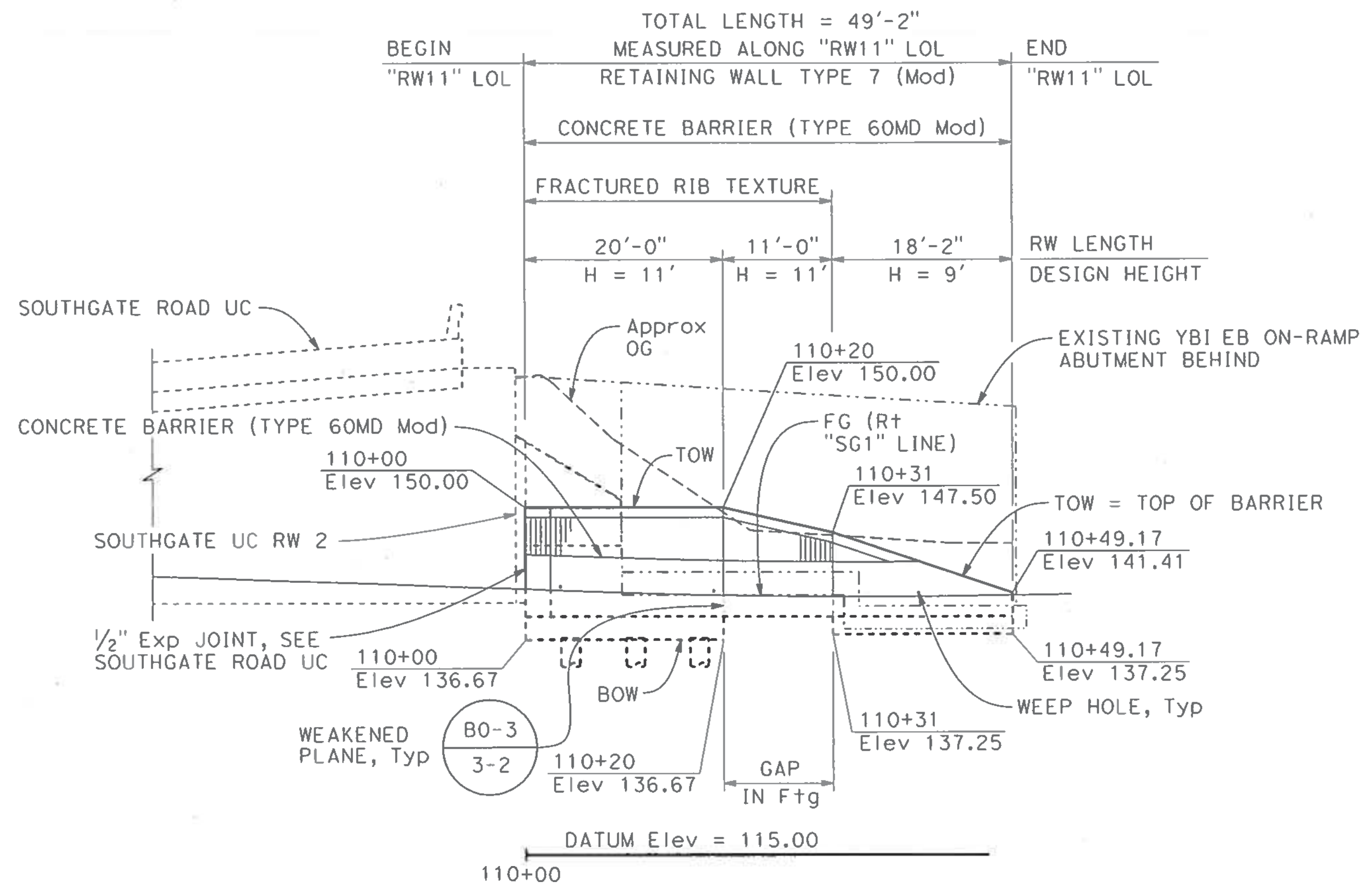
PROFILE
VERTICAL 1:100

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. RW51 KILOMETER POST 12.8		RETAINING WALLS NO. 51 LOG OF TEST BORINGS NO. 5	
FUNCTIONAL SUPERVISOR	DRAWN BY K. THANT	FIELD INVESTIGATION BY:	K. THANT	M. KAPUSKAR	PROJECT ENGINEER				
NAME SABA MOHAN	CHECKED BY M. KAPUSKAR								
GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)				ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS		CU 04 EA 0120T1		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
								REVISION DATES (PRELIMINARY STAGE ONLY)	
								09/25/08	
								SHEET 18 OF 29	

USERNAME => S109858 DATE PLOTTED => 25-FEB-2012 TIME PLOTTED => 13:54
 FILE => 04-0000027-y-lotb05.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	407	436
 REGISTERED CIVIL ENGINEER			DATE	7-25-19	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



MIRRORED DEVELOPED ELEVATION
1" = 10'

LEGEND:

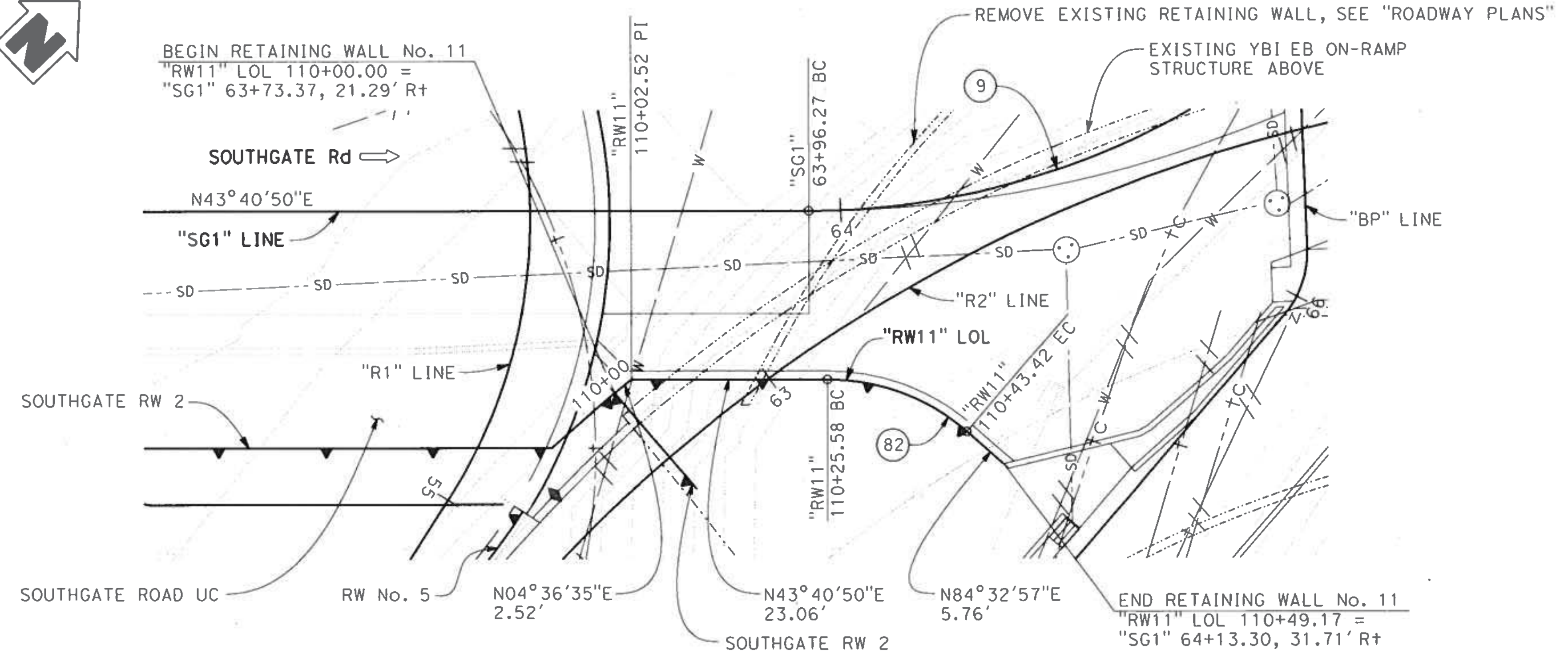
- - - - - Indicates existing structure
- ← Indicates direction of traffic

NOTES:

- For "INDEX TO PLANS" and "STANDARD PLANS", see "RETAINING WALL KEY MAP - INDEX TO PLANS" sheet.
- For "TYPICAL SECTION", see "GENERAL PLAN No. 2" sheet.

QUANTITIES

STRUCTURE EXCAVATION (RETAINING WALL)	285	CY
STRUCTURE BACKFILL (RETAINING WALL)	43	CY
30" CAST-IN-DRILLED-HOLE CONCRETE PILING	171	LF
STRUCTURAL CONCRETE, RETAINING WALL	60	CY
FRACTURED RIB TEXTURE	134	SQ FT
BAR REINFORCING STEEL (RETAINING WALL)	14,389	LB
CONCRETE BARRIER (TYPE 60MD Mod)	50	LF

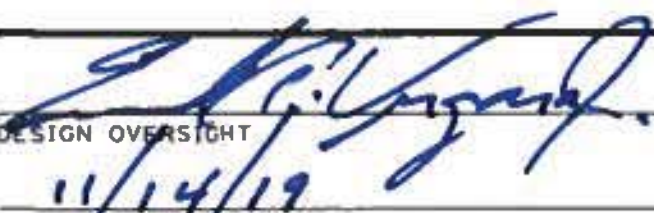


PLAN
1" = 10'

CURVE DATA

No.	R	Δ	T	L
9	91.00'	41°14'23"	34.24'	65.50'
82	25.00'	40°52'07"	9.31'	17.83'

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

 DESIGN OVERSIGHT 11/14/19 SIGN OFF DATE	DESIGN BY A. CARMAZZI	CHECKED K. SERRANO-PAINE	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY" PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0040	RETAINING WALL No. 11 GENERAL PLAN No. 1				
	DETAILS BY L. DAVIS	CHECKED A. CARMAZZI	LAYOUT BY K. SERRANO-PAINE	CHECKED T. MEHTA		PROJECT ENGINEER JOHN MANISCALCO		POST MILES 7.9			
	QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON	UNIT: 0728	PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 158	OF 168

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => RW11-a-gp01.dgn

USER NAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:59

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications 2012, 6th Edition with California Amendments, January 2014

LS: 0 psf

DC: Stem Architectural treatment thickness up to 2" of concrete (25 psf) considered

SEISMIC: $k_h = 0.33, k_v = 0.0$ Mononabe-Okabe Method

SOIL: $\phi = 34^\circ$ for backfill soil
 $\gamma = 120$ pcf
 $c = 0$ psf for foundation soil
 coefficient of friction = 0.67
 Passive Pressure $P_p = 740$ pcf

REINFORCED CONCRETE: $f'_c = 5,000$ psi
 $f_y = 60,000$ psi

LOAD COMBINATIONS AND LIMIT STATES:

Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$

Strength I $Q = \alpha DC + \phi EV + \eta EH + 1.75LS$

Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE + 1.00AB$

Where:

Q: Force Effects

α : 1.25 or 0.90, Whichever Controls Design

ϕ : 1.35 or 1.00, Whichever Controls Design

η : 1.50 or 0.90, Whichever Controls Design

DC: Dead Load of Structure Components

EH: Horizontal Earth Fill Pressure

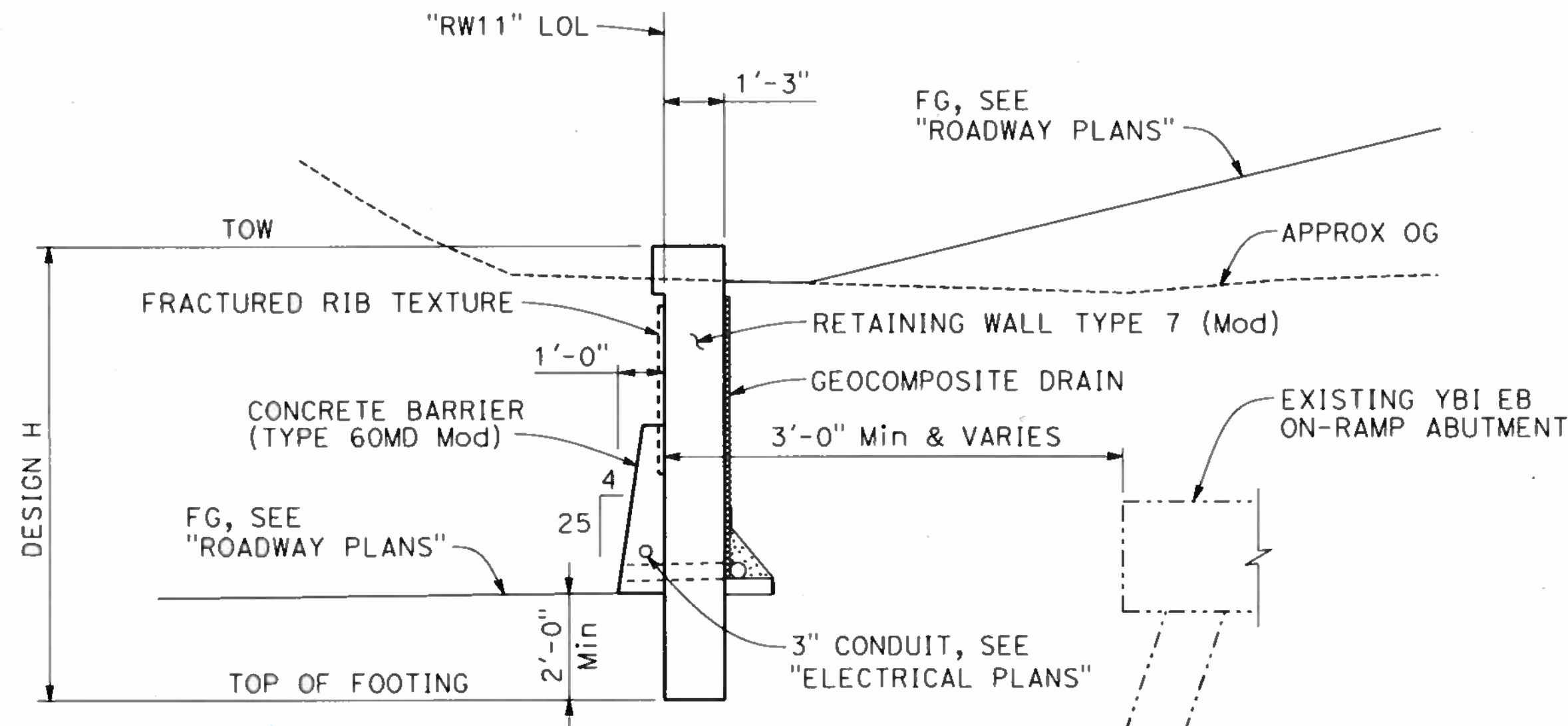
EV: Vertical Earth Pressure from Earth Fill Weight

LS: Live Load Surcharge

EQE: Seismic Earth Pressure

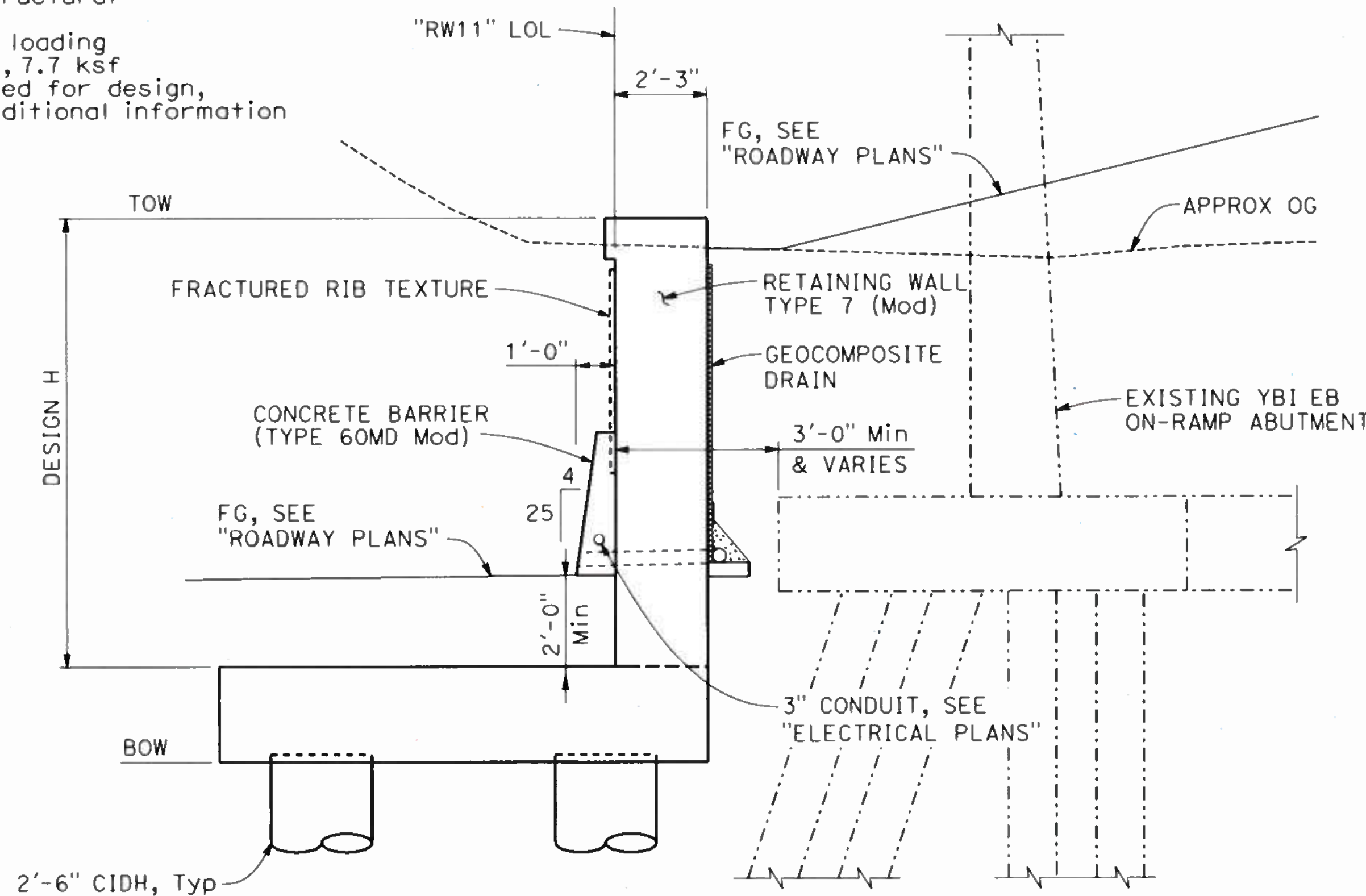
EOD: Soil and Structural and Nonstructural Components Inertia

AB: SFOBB Abutment 11 Additional loading
 For abutment loading diagram, 7.7 ksf uniform pressure is considered for design, see Foundation Report for additional information



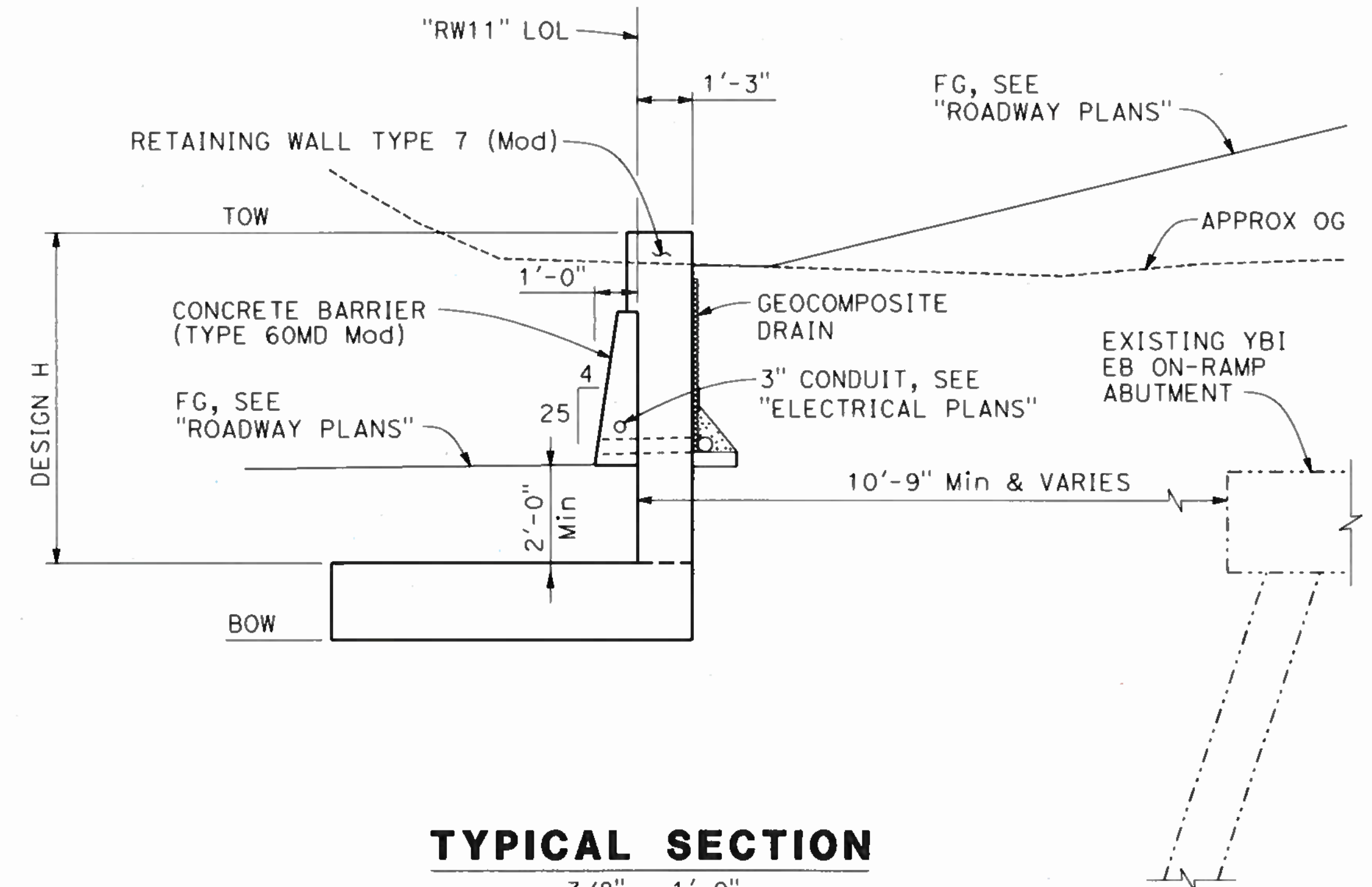
TYPICAL SECTION

3/8" = 1'-0"
 "RW11" 110+20 TO 110+31



TYPICAL SECTION

3/8" = 1'-0"
 "RW11" 110+00 TO 110+20



TYPICAL SECTION

3/8" = 1'-0"
 "RW11" 110+31 TO 110+49.17

LEGEND:

----- Indicates existing structure

NOTES:

1. For limits, see "GENERAL PLAN No. 1" sheet.
2. For details, see "RETAINING WALL DETAILS No. 1" sheet.
3. For Fractured Rib Texture, drainage details and excavation and backfill limits, see "MISCELLANEOUS DETAILS" sheet.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	408	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

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

DESIGN OVERSIGHT 11/14/19	DESIGN	BY A. CARMAZZI	CHECKED K. SERRANO-PAINE	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	RETAINING WALL No. 11 GENERAL PLAN No. 2	
	DETAILS	BY L. DAVIS	CHECKED A. CARMAZZI	LAYOUT	BY K. SERRANO-PAINE		CHECKED T. MEHTA		34E0040
	QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER	SPECIFICATIONS	BY T. MEHTA		CHECKED M. JACKSON		PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
 PROJECT NUMBER & PHASE: 04190001531
 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-13	159	168

FILE => RW11-a-gp02.dgn

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 13:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	409	436

PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	CUT-OFF ELEVATION (ft)
		COMPRESSION	TENSION			
110+00 TO 110+20	2'-6" Ø CIDH	290	110	110.92 (a), 118.42 (b), 126.62 (c), 108.42 (d)	108.42	136.92

LEGEND:

- Indicates existing structure
- ⊠ Indicates bottom of existing footing elevation
- ⊡ Indicates bottom of footing elevation
- ⊙ Indicates Steel Soldier Pile
- ⊙ Indicates CIDH Pile with steel casing
- ⊙ Indicates 30" CIDH Pile
- ⊙ Indicates existing HP Pile, not all shown
- ⊙ Indicates existing Battered HP Pile, not all shown
- ⊙ Indicates existing CIDH Pile

7-25-19
DATE

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

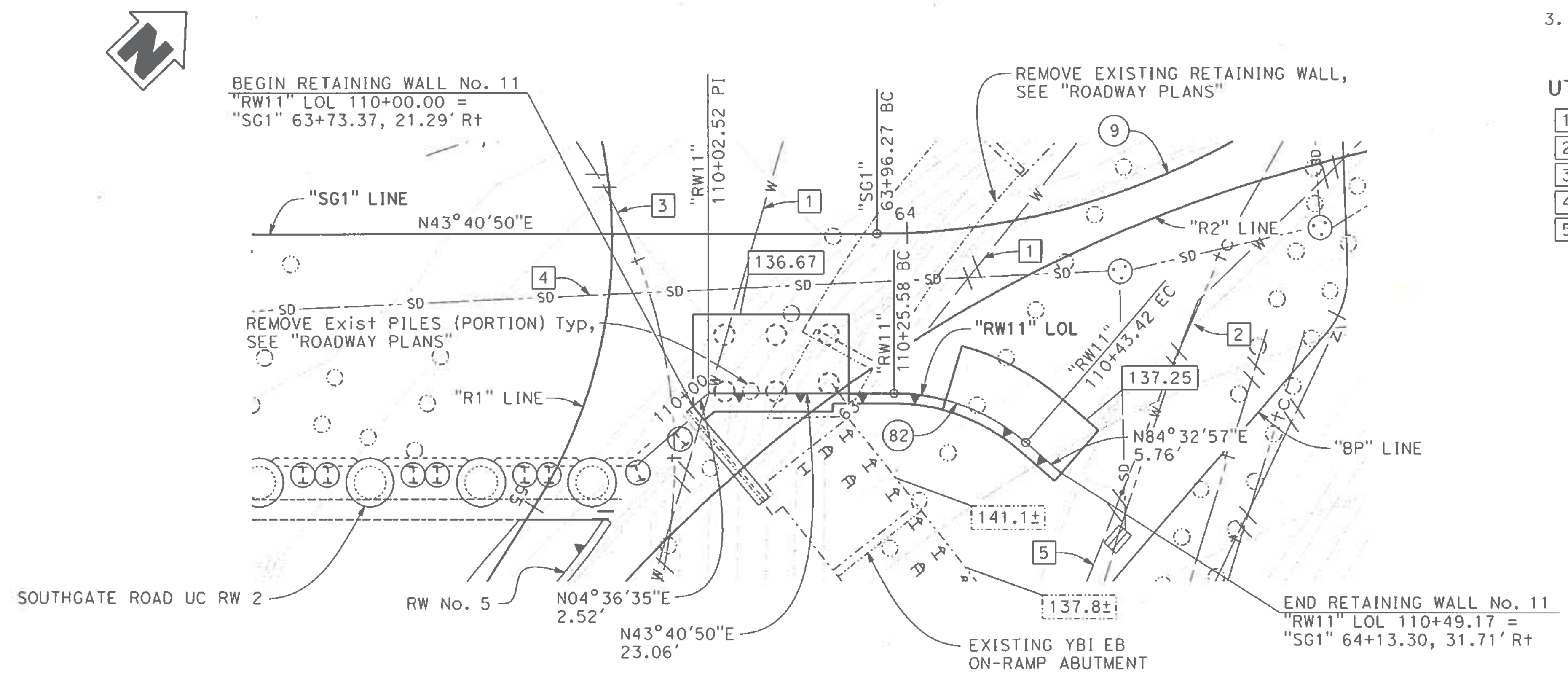
- NOTES:
- DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS:
(a) COMPRESSION (STRENGTH LIMIT), (b) TENSION, (c) SETTLEMENT, (d) LATERAL LOADS.
 - THE SPECIFIED TIP ELEVATION SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR TENSION, SETTLEMENT, AND LATERAL LOAD.

NOTES:

- Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
- For drainage details, see "DRAINAGE PLANS".
- For "PILE LAYOUT", see "RETAINING WALL DETAILS No. 2" sheet.

UTILITIES:

- 1 Existing Abandoned Water
- 2 Existing Storm Drain to be Abandoned
- 3 Existing Abandoned Telephone
- 4 Storm Drain
- 5 Existing Water to be Abandoned



CURVE DATA

No.	R	Δ	T	L
9	91.00'	41°14'23"	34.24'	65.50'
82	25.00'	40°52'07"	9.31'	17.83'

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

5-17-19 APPROVAL DATE

DESIGN OVERSIGHT
11/14/19

SCALE: 1" = 10'	VERT. DATUM NGVD29	HORIZ. DATUM NAD83, CCS ZONE 3	DESIGN BY A. CARMAZZI	CHECKED K. SERRANO-PAINE
PHOTOGRAMMETRY AS OF: 10-9-2015	ALIGNMENT TIES		DETAILS BY L. DAVIS	CHECKED A. CARMAZZI
SURVEYED BY TOWILL Inc.	DRAFTED BY D. ORTEGA		QUANTITIES BY A. CHUNG	CHECKED A. ROMINGER
FIELD CHECKED BY D. ORTEGA	CHECKED BY A. MARTINEZ			

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0040
POST MILES	7.9

RETAINING WALL No. 11 FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531 CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-22-19 2-22-19 7-28-19	160	168

TIME PLOTTED => 13:59 USERNAME => TKUKANEK DATE PLOTTED => 22-OCT-2019

TABLE OF DIMENSIONS AND REINFORCEMENT

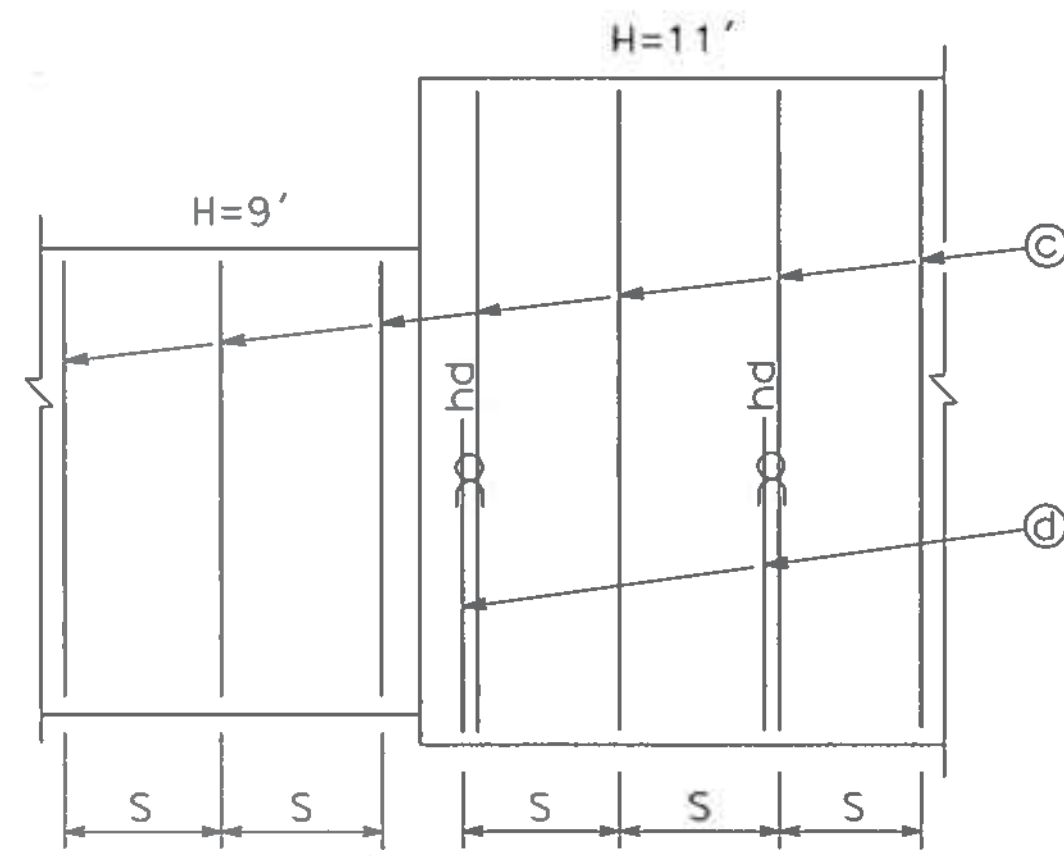
DESIGN H	WALL	STEM	WALL
	11'	11'	9'
W	12'-0"		8'-3"
C	9'-9"		7'-0"
B	2'-3"		1'-3"
F	2'-4"		1'-9"
STEM THICKNESS	2'-3"	1'-3"	1'-3"
BATTER	0	0	0
S	0'-6"	1'-0"	0'-6"
⊙ BARS	#11	#5	#6
⊕ BARS	#8		
hd	9'-6"		
⊙ BARS	#8 @ 12		#8 @ 12
⊕ BARS	#5 @ 12	#8 @ 6	#5 @ 12
⊕ BARS	#5 @ 12	#5 @ 12	#5 @ 12
Td (kips/ft)	0		0
To (kips/ft)	0		0
Tp = Larger of 1.33 Td & 1.25 To (kips/ft)	0		0
SER I: B' (ft), q ₀ (ksf)			7.6, 0.5
STR Ia: B' (ft), q ₀ (ksf)			7.0, 1.4
STR Ib: B' (ft), q ₀ (ksf)			6.0, 1.3
EXT I: B' (ft), q ₀ (ksf)			6.2, 1.2
EXT II: B' (ft), q ₀ (ksf)			3.2, 2.4

LEGEND:

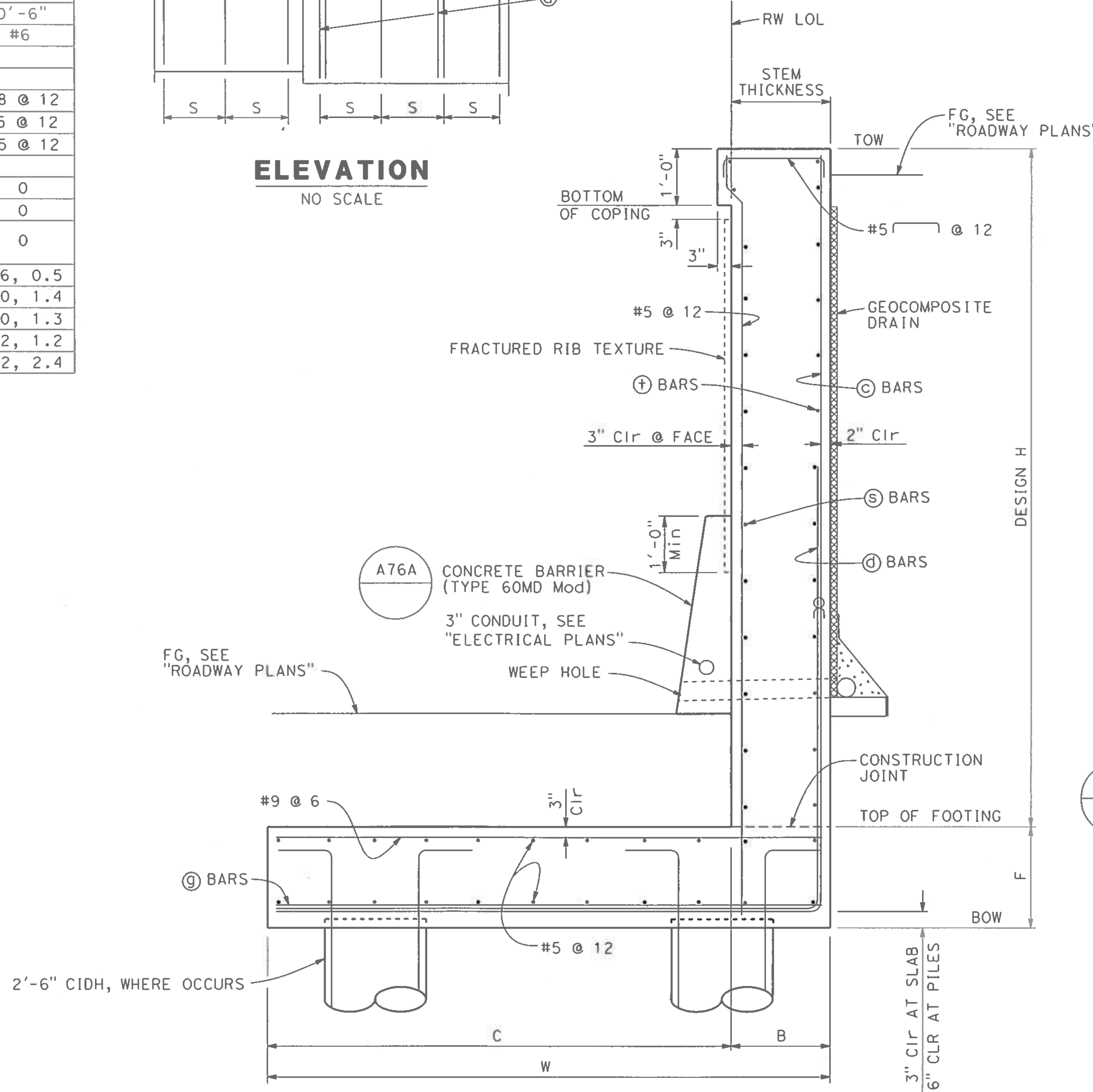
- SER: service limit state
- STR: strength limit state
- EXT: extreme event limit state
- B': effective footing width (ft)
- q₀: net bearing stress (ksf)
- q₀: gross uniform bearing stress (ksf)
- To: Anchor Lockoff Load
- Tp: Anchor Factored Test Load
- ⊙ Indicates bundled bars

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

DESIGN OVERSIGHT
SIGN OFF DATE
11/14/19



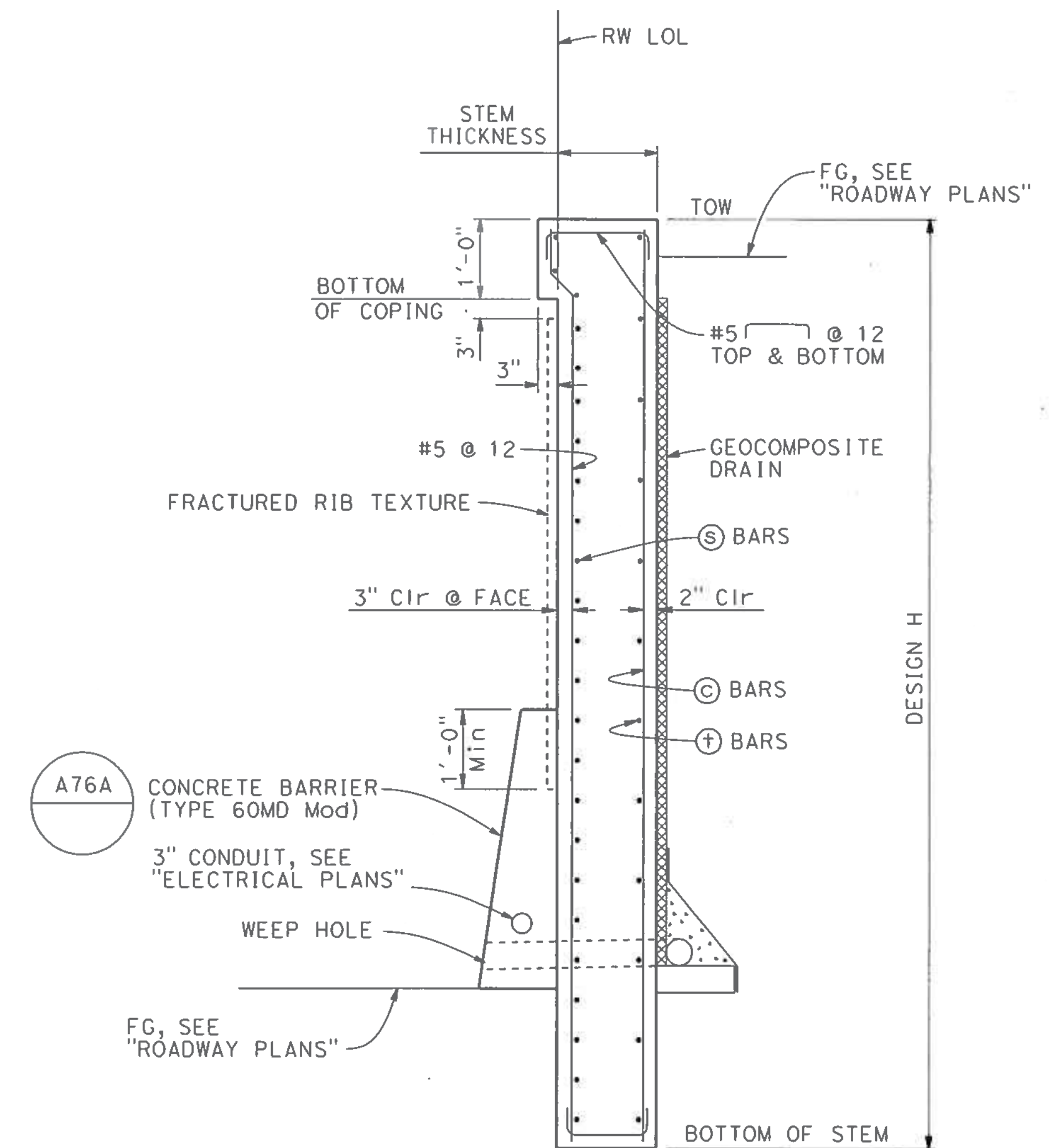
ELEVATION
NO SCALE



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

NOTES:

- For limits, see "GENERAL PLAN No. 1" and "GENERAL PLAN No. 2" sheets.
- For Fractured Rib Texture and drainage details, see "MISCELLANEOUS DETAILS" sheet.
- For footing layout, see "RETAINING WALL DETAILS No. 2" sheet.
- No splices are allowed within H/4 above top of footing.



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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	410	436

REGISTERED CIVIL ENGINEER
DATE 7-25-19
PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
JOHN MANISCALCO
No. 40911
Exp. 3/31/21
CIVIL
STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
1455 MARKET STREET, SUITE 2200
SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
100 PRINGLE AVENUE, SUITE 400
WALNUT CREEK, CA 94596

DESIGN	BY A. CARMAZZI	CHECKED K. SERRANO-PAINE
DETAILS	BY L. DAVIS/E. GRAY	CHECKED A. CARMAZZI
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0040
POST MILES	7.9


RETAINING WALL No. 11
RETAINING WALL DETAILS No. 1

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

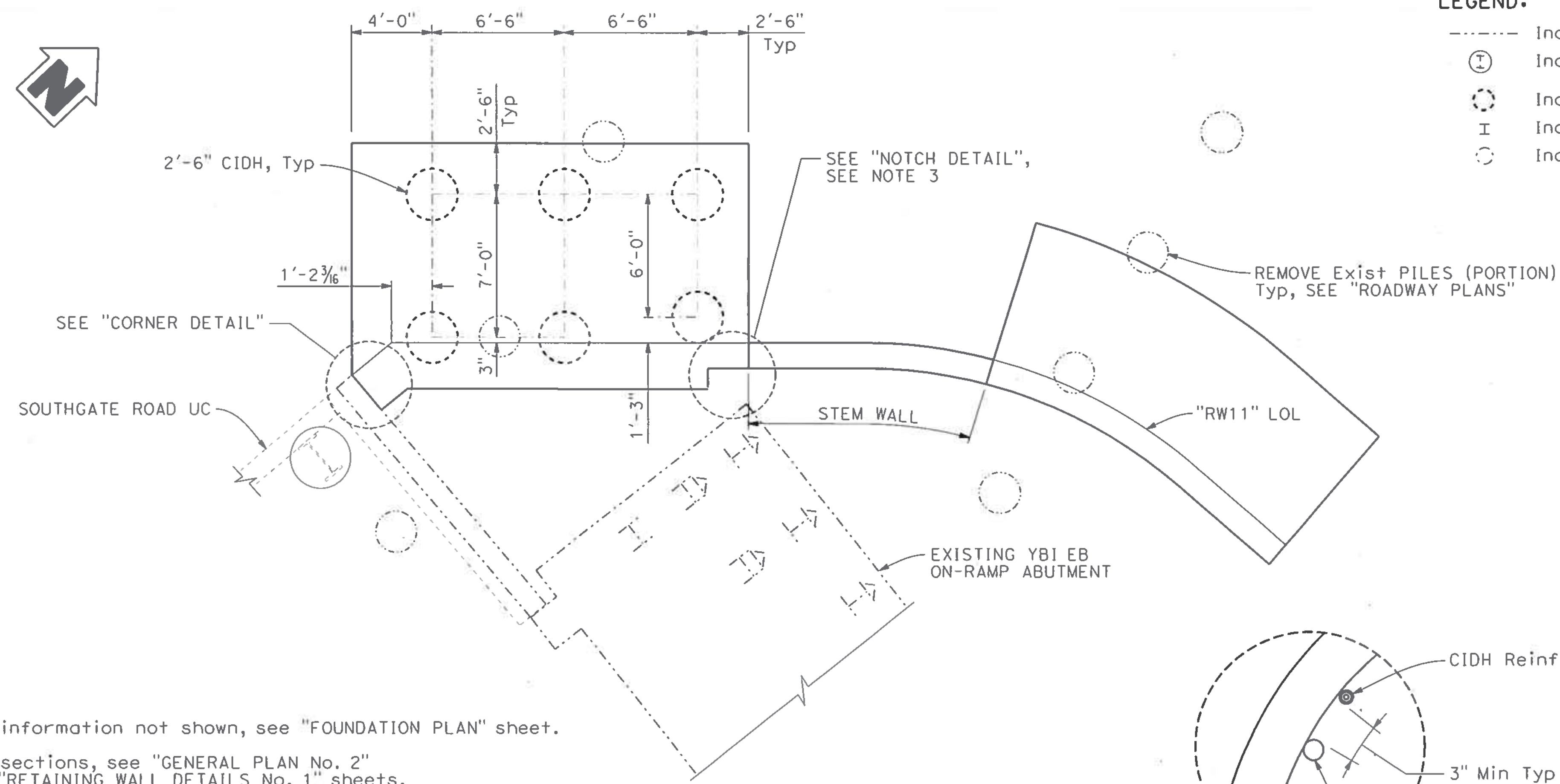
UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

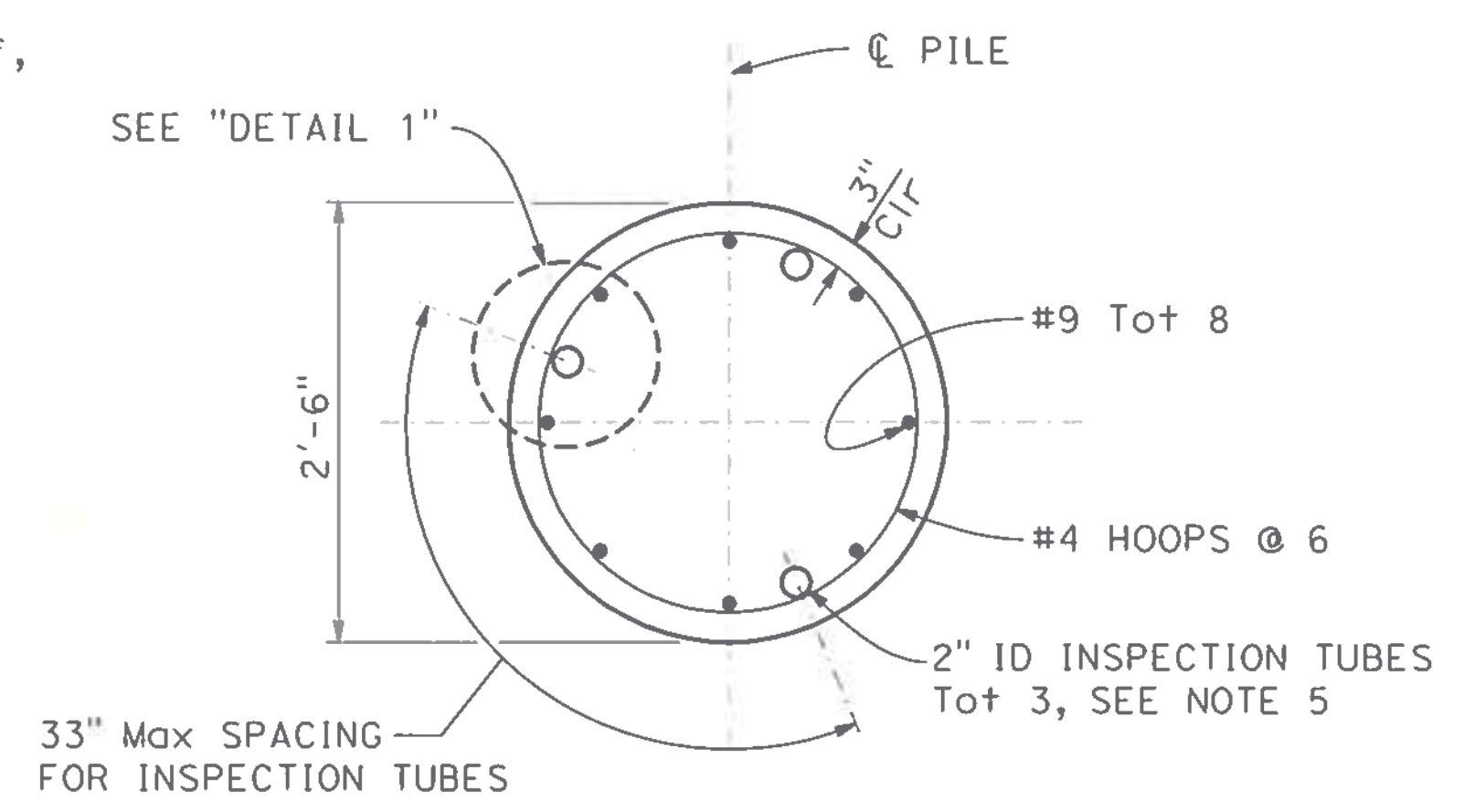
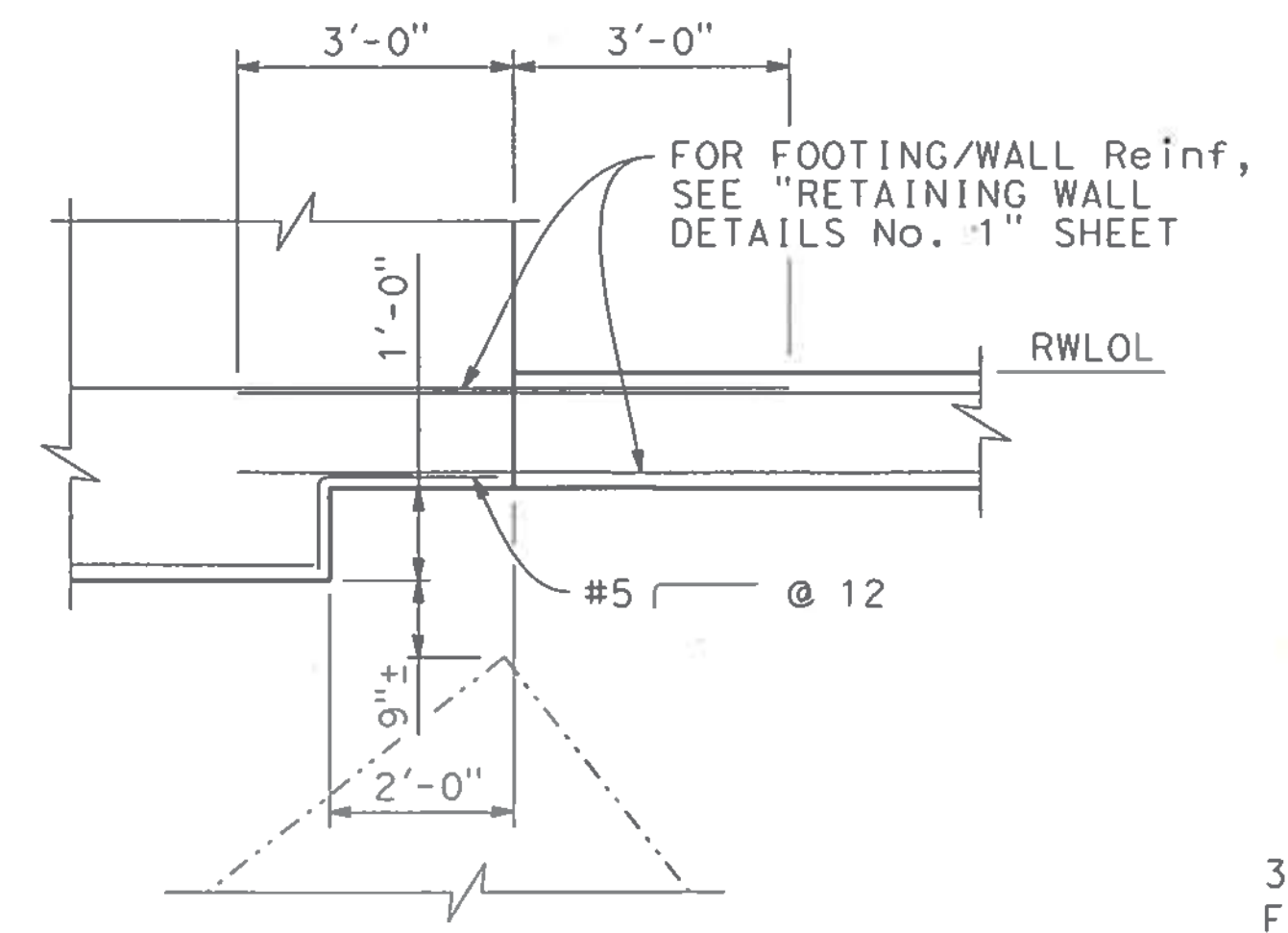
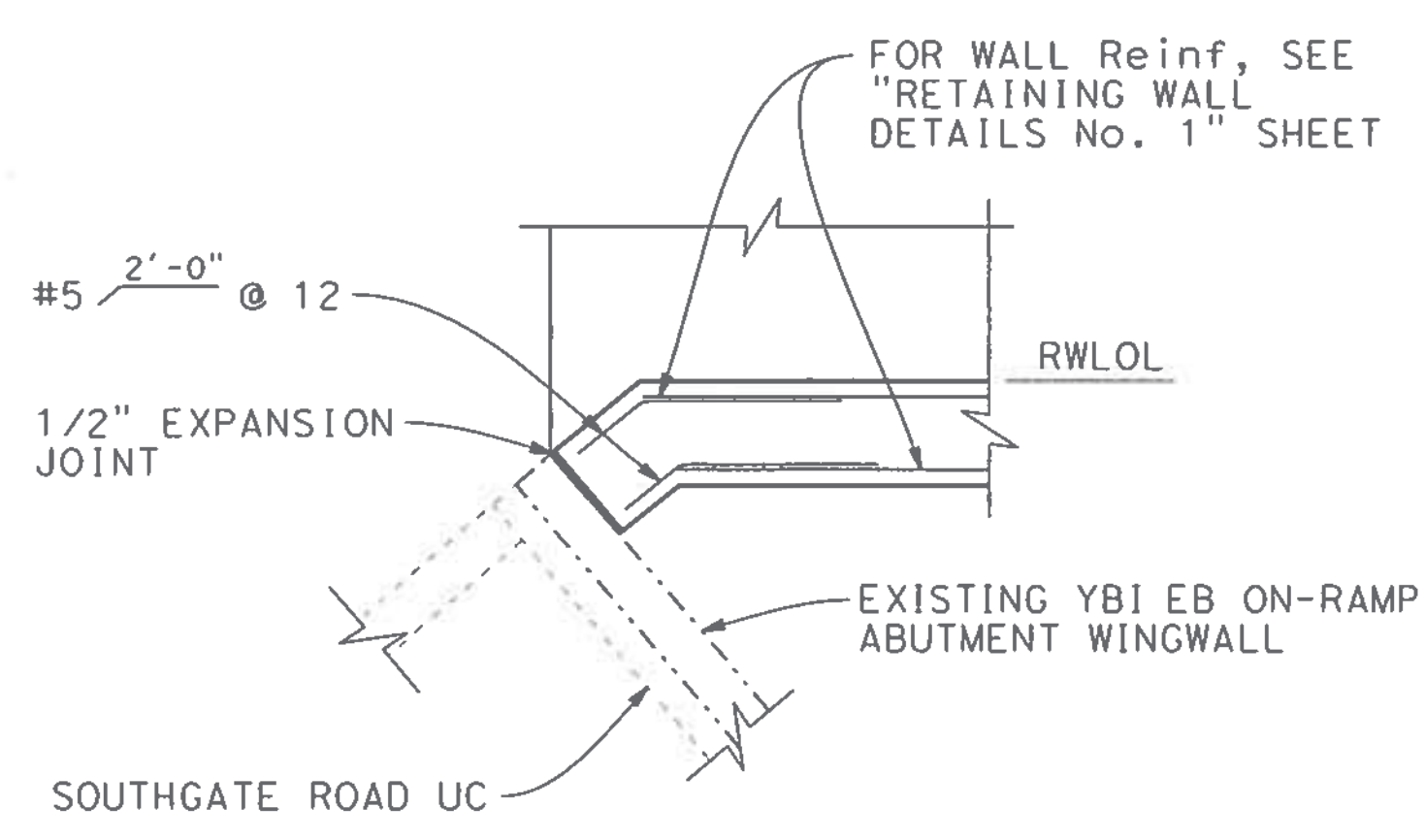
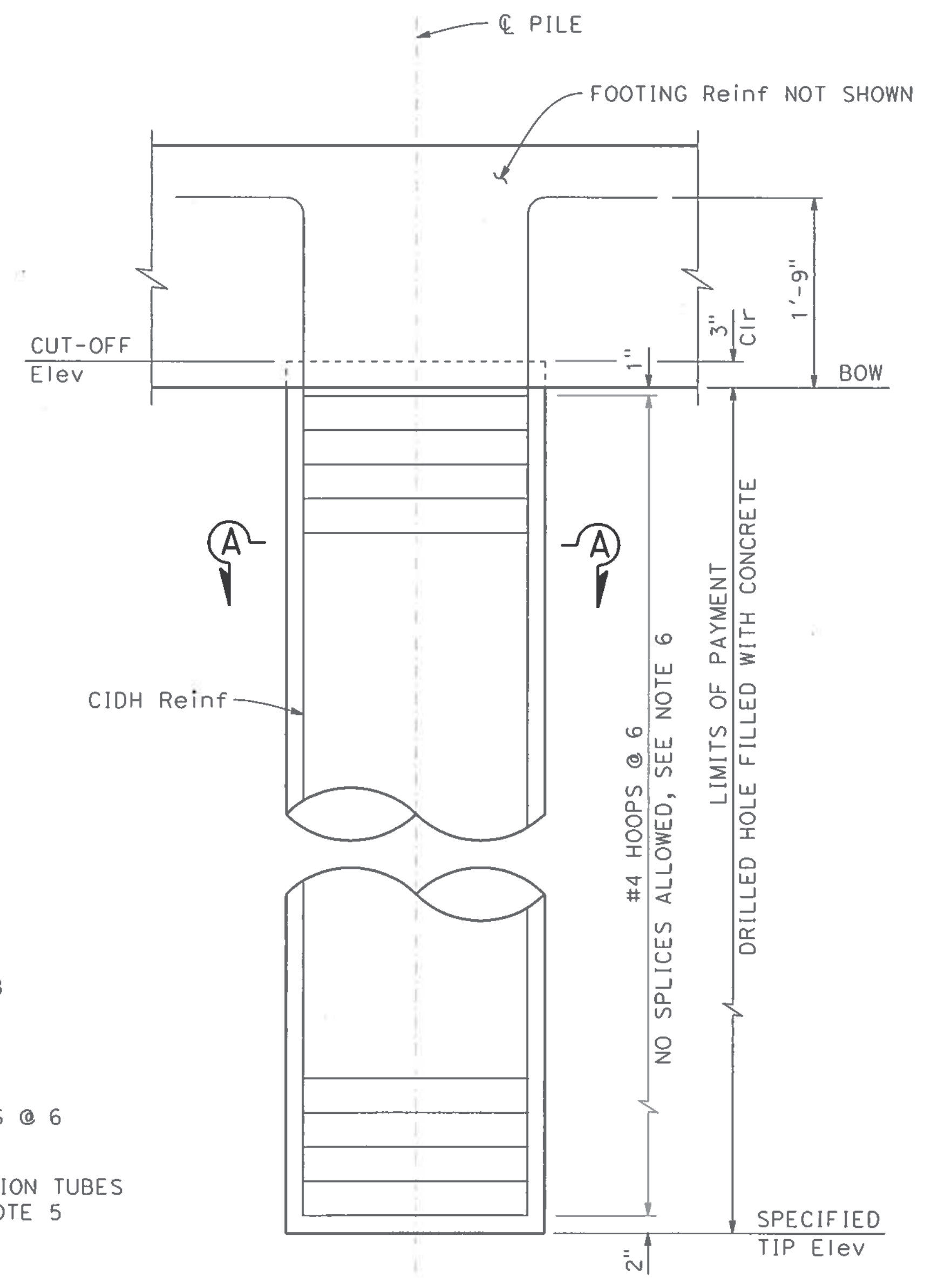
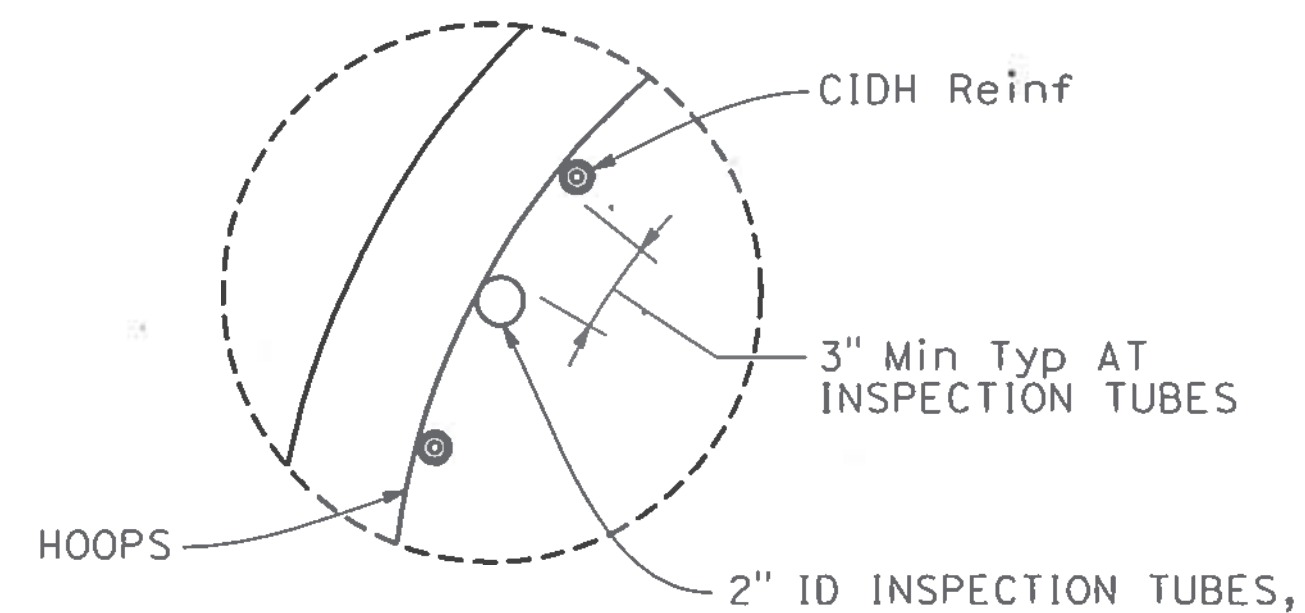
DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	10-22-19 11-12-19 2-27-19 7-28-19	161	168

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	411	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE _____					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

- LEGEND:**
- Indicates existing structure
 - ⊙ Indicates Steel Soldier Pile
 - ⊖ Indicates 30" CIDH Pile
 - I Indicates existing HP Pile, not all shown
 - Indicates existing CIDH Pile



- NOTES:**
- For information not shown, see "FOUNDATION PLAN" sheet.
 - For sections, see "GENERAL PLAN No. 2" and "RETAINING WALL DETAILS No. 1" sheets.
 - Notch in footing continues up into wall. Front face of wall stays flush with adjacent sections of wall.
 - For "PILE DATA TABLE" see "FOUNDATION PLAN" sheet.
 - For inspection tube requirements and procedures, see project specifications.
 - All hoops are "ultimate" butt spliced.



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

DESIGN OVERSIGHT
SIGN OFF DATE: 11/14/19

DESIGN	BY A. CARMAZZI	CHECKED K. SERRANO-PAINE
DETAILS	BY L. DAVIS/E. GRAY	CHECKED A. CARMAZZI
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0040
POST MILES	7.9

RETAINING WALL No. 11
RETAINING WALL DETAILS No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

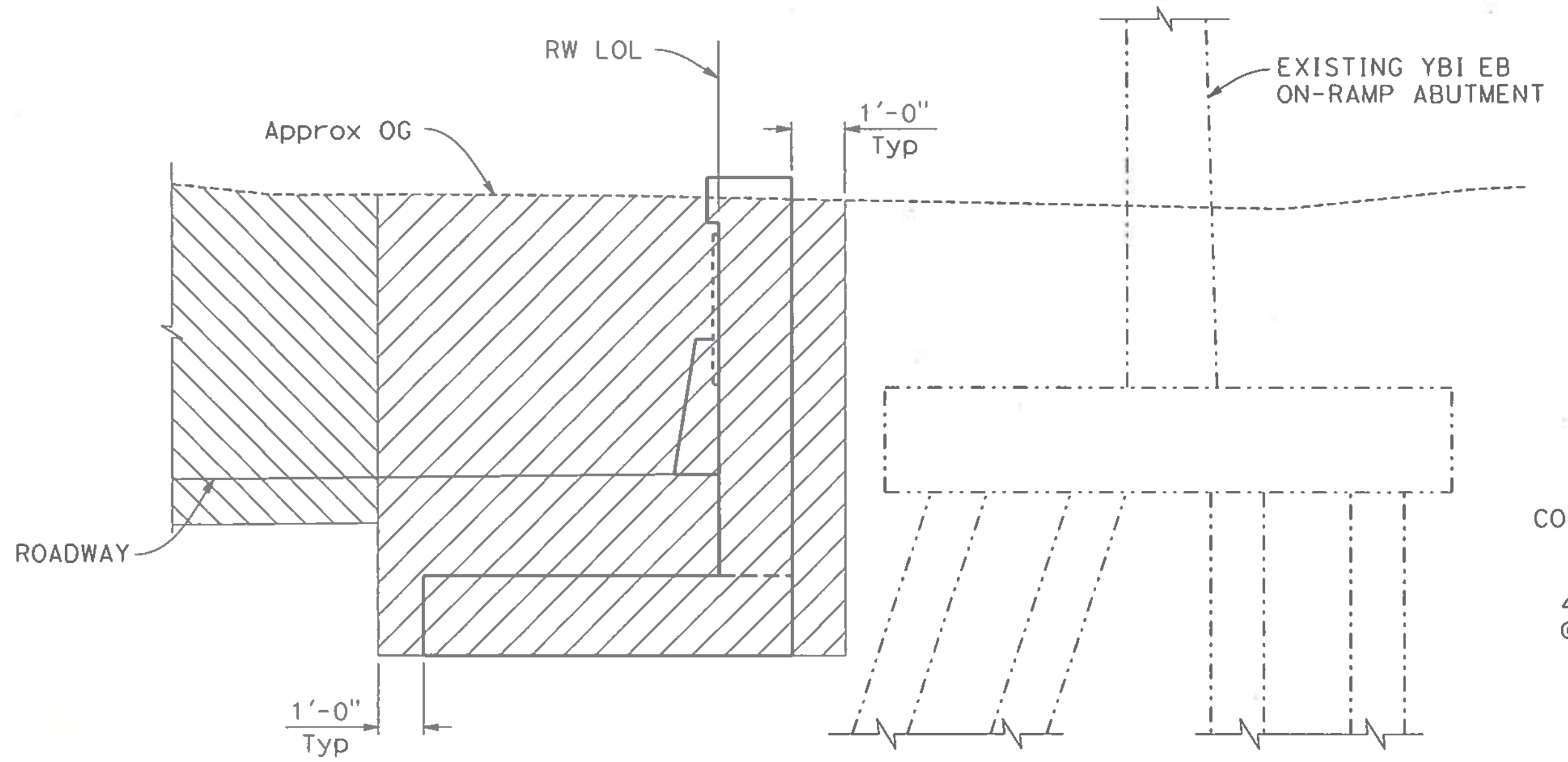
REVISION DATES	SHEET	OF
10-22-19 11-14-19 2-27-19 7-28-19	162	168

USERNAME => IKUKANE DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	412	436

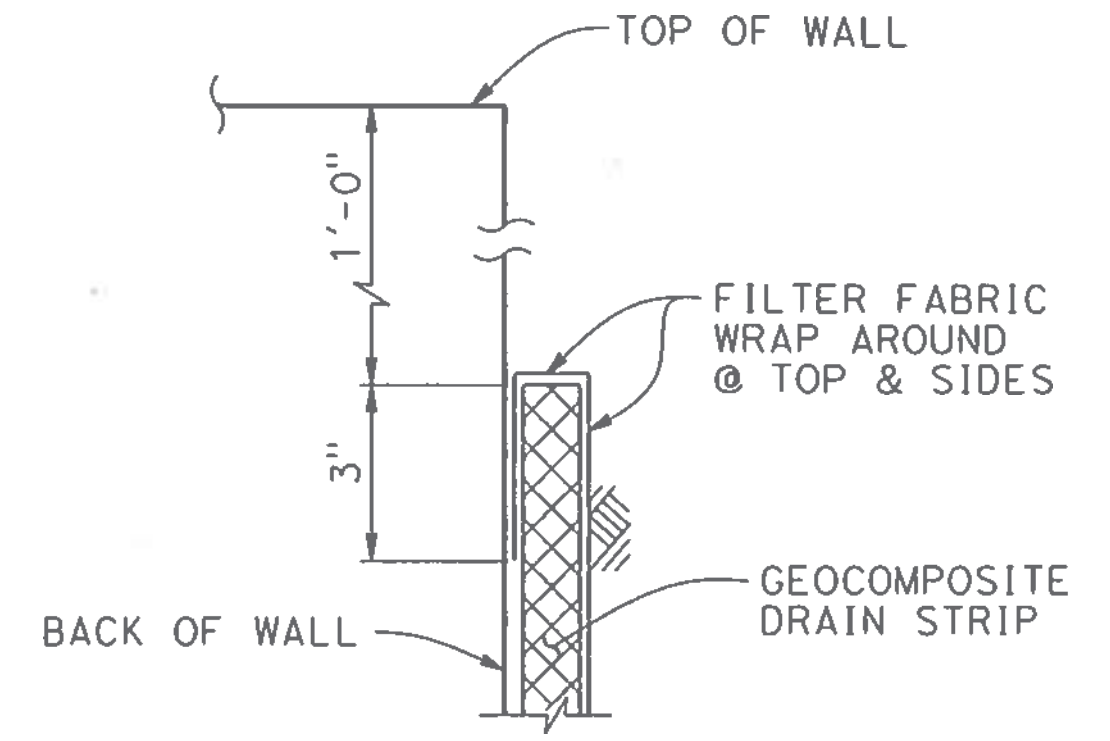
LEGEND:

- Roadway Excavation, see "ROADWAY PLANS"
- Structure Backfill
- Structure Excavation
- Indicates Existing Structure

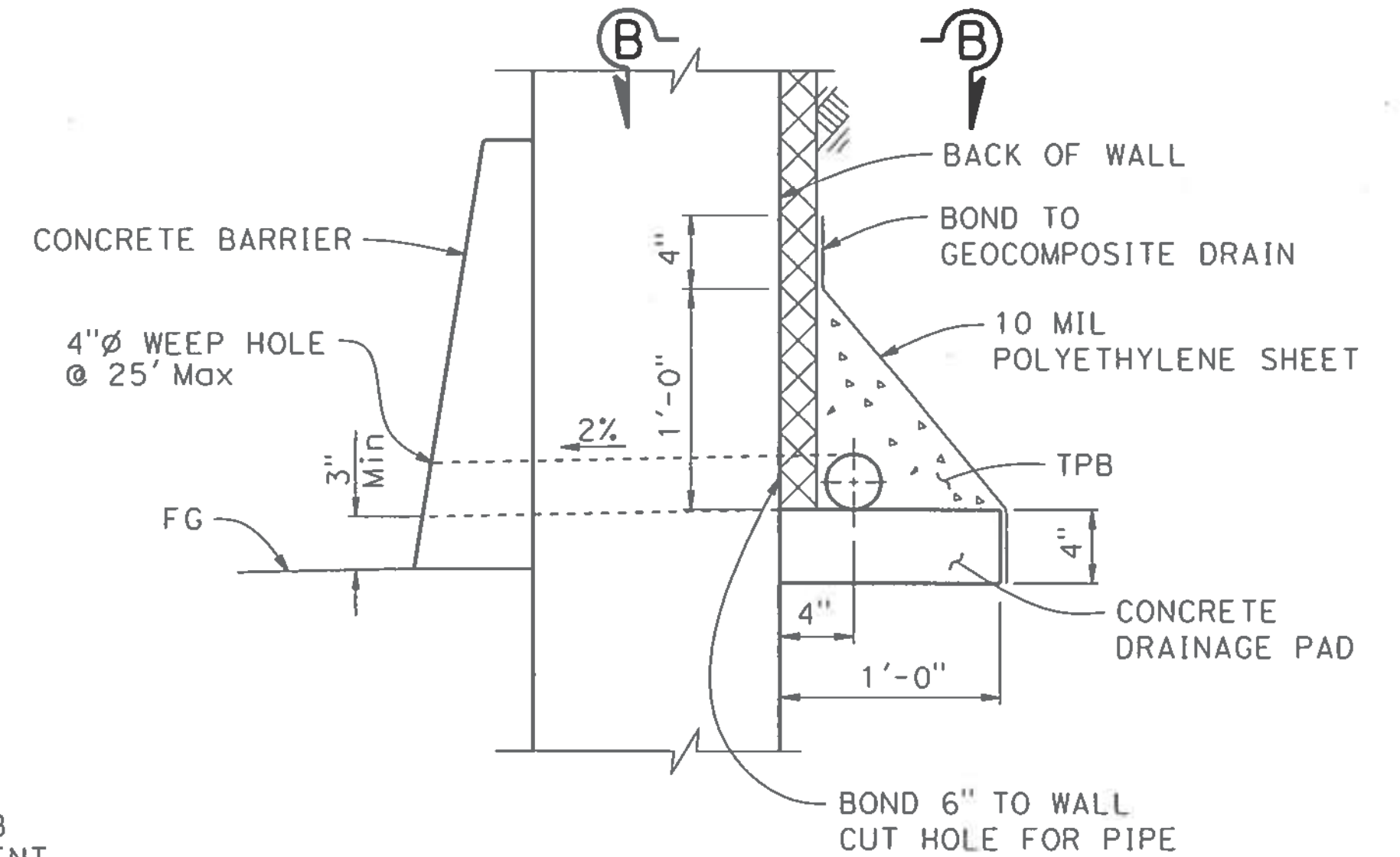


EXCAVATION

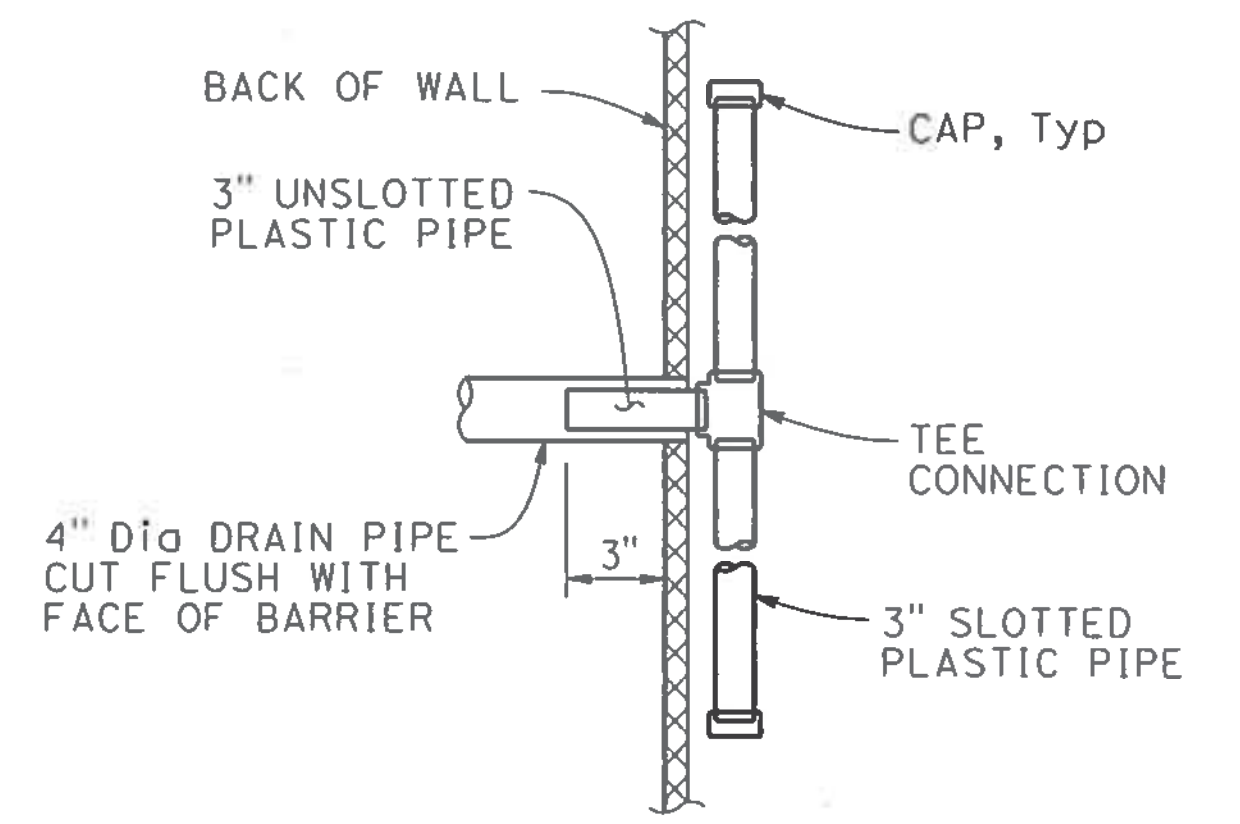
NOTE: TEMPORARY SHORING FOR EXCAVATION NEEDS TO RESIST 7.7 ksf OF PASSIVE PRESSURE FROM THE EXISTING ABUTMENT.



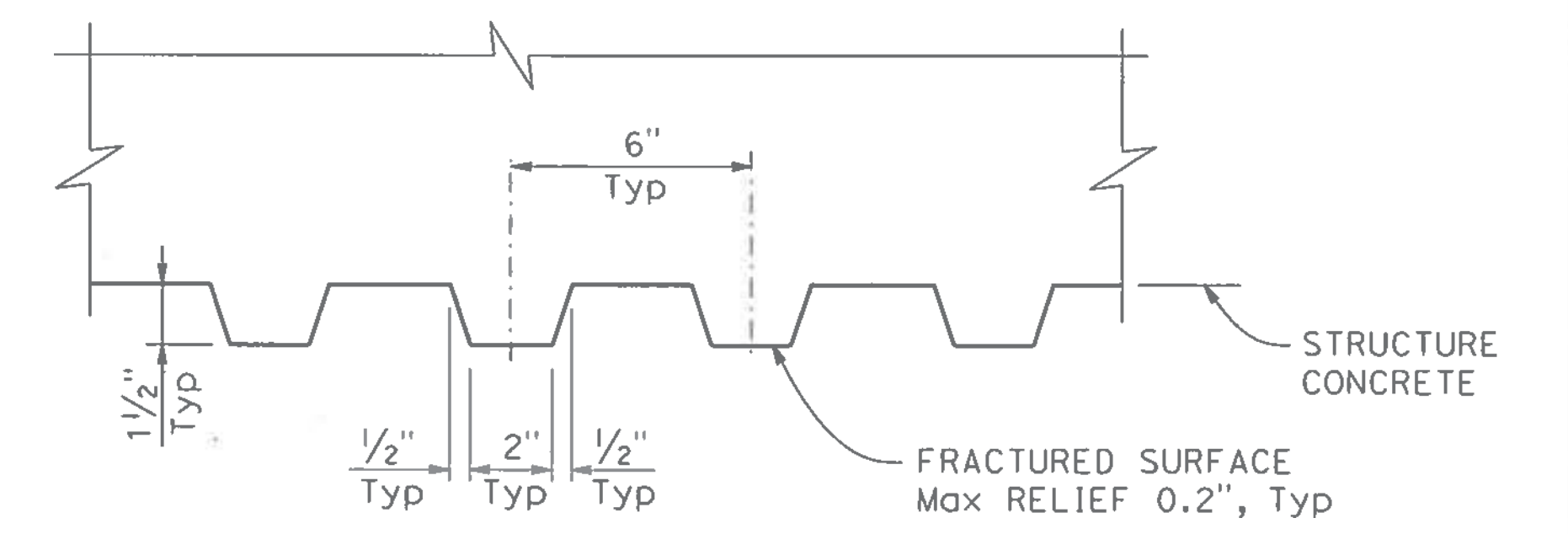
TOP DETAIL



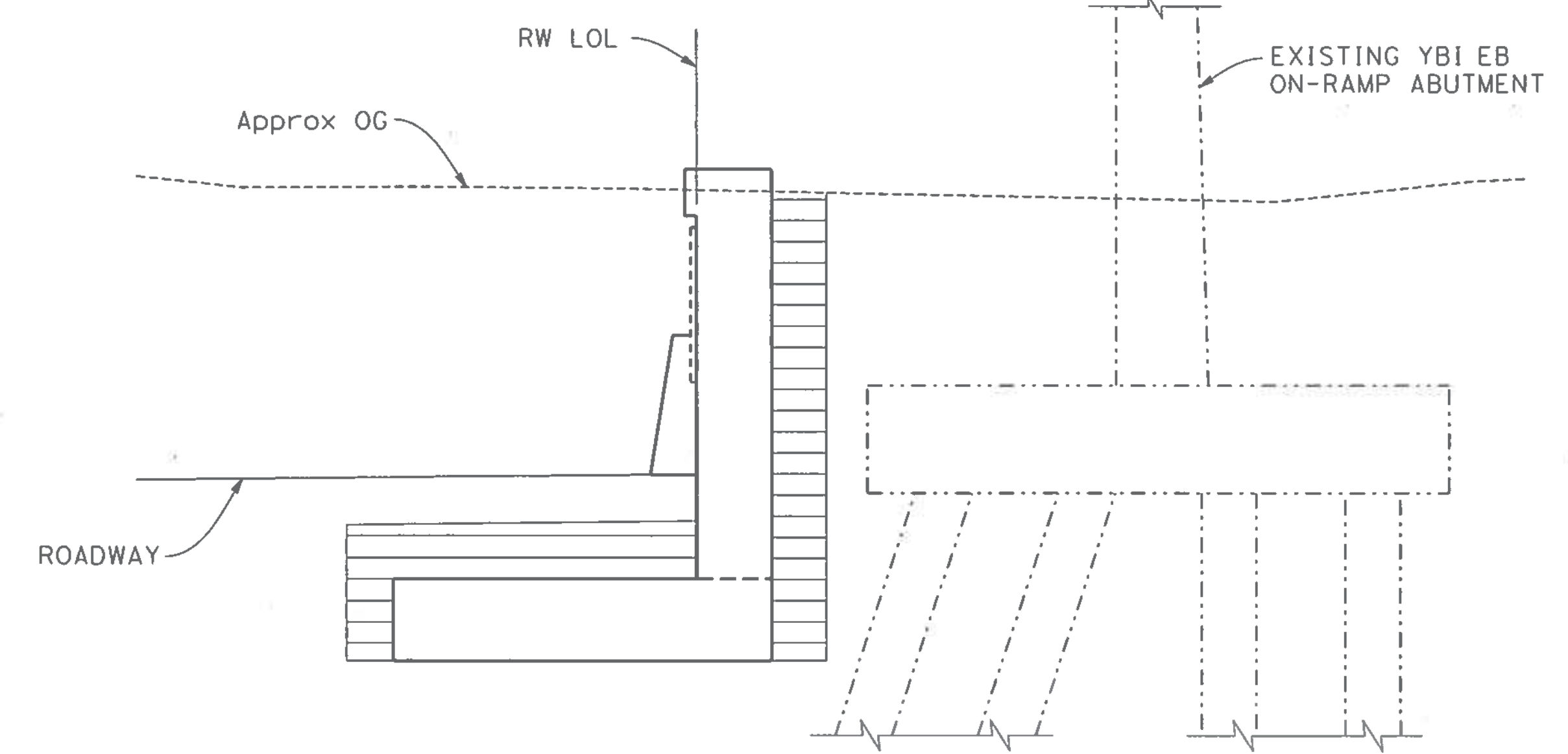
BOTTOM DETAIL



VIEW B-B



PARTIAL SECTION



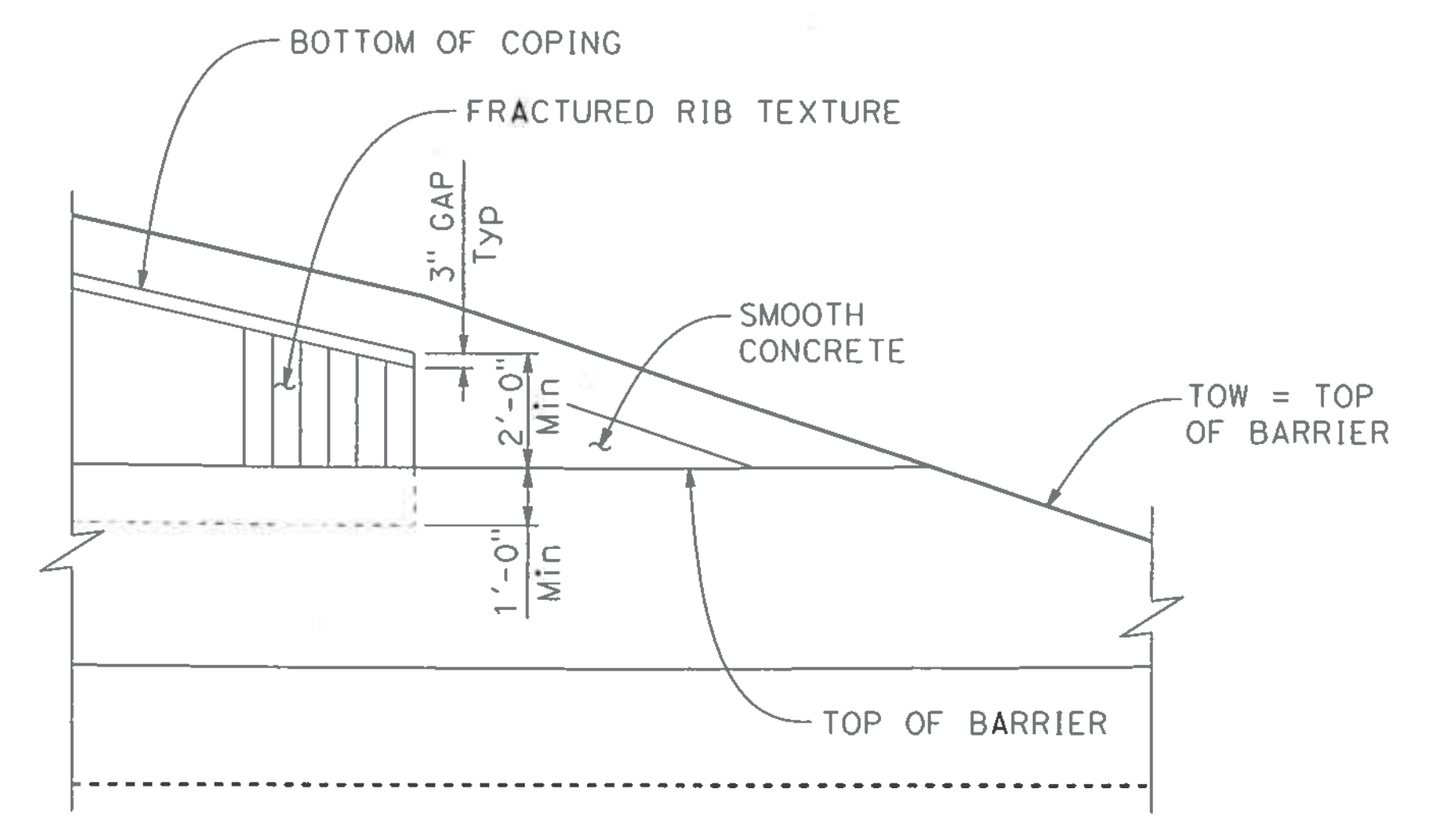
BACKFILL

LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL

NO SCALE

DRAINAGE DETAILS

NO SCALE



PARTIAL ELEVATION AT END OF WALL

FRACTURED RIB TEXTURE DETAIL

NO SCALE

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

DESIGN OVERSIGHT
SIGN OFF DATE
[Signature]
11/14/19

DESIGN	BY A. CARMAZZI	CHECKED K. SERRANO-PAINE
DETAILS	BY L. DAVIS/E. GRAY	CHECKED A. CARMAZZI
QUANTITIES	BY A. CHUNG	CHECKED A. ROMINGER

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34E0040
POST MILES	7.9

RETAINING WALL No. 11 MISCELLANEOUS DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 0728
PROJECT NUMBER & PHASE: 04190001531

CONTRACT NO.: 04-3A6414

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-22-19 11-14-19 2-24-19 7-28-19	163	168

FILE => RW11-u-miscdt01.dgn

USERNAME => JKUKANEG DATE PLOTTED => 22-OCT-2019 TIME PLOTTED => 14:00

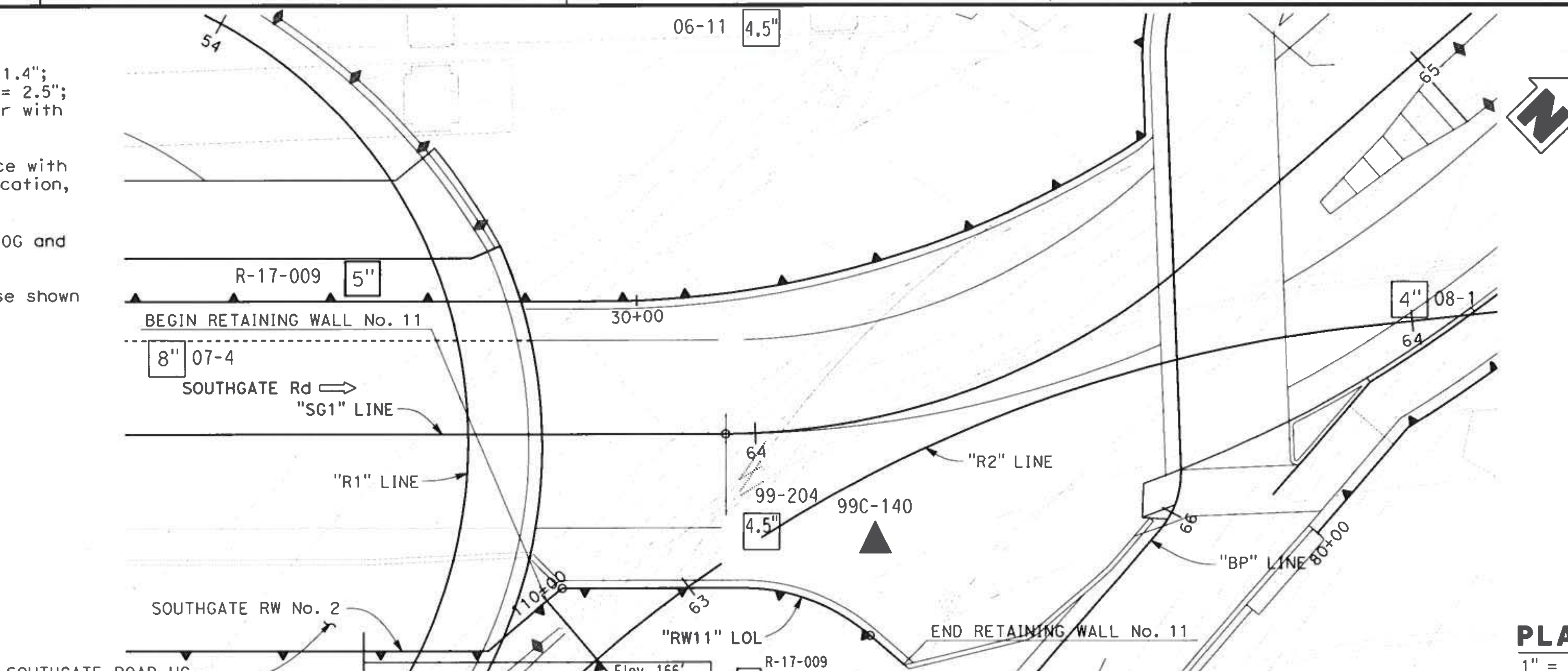
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

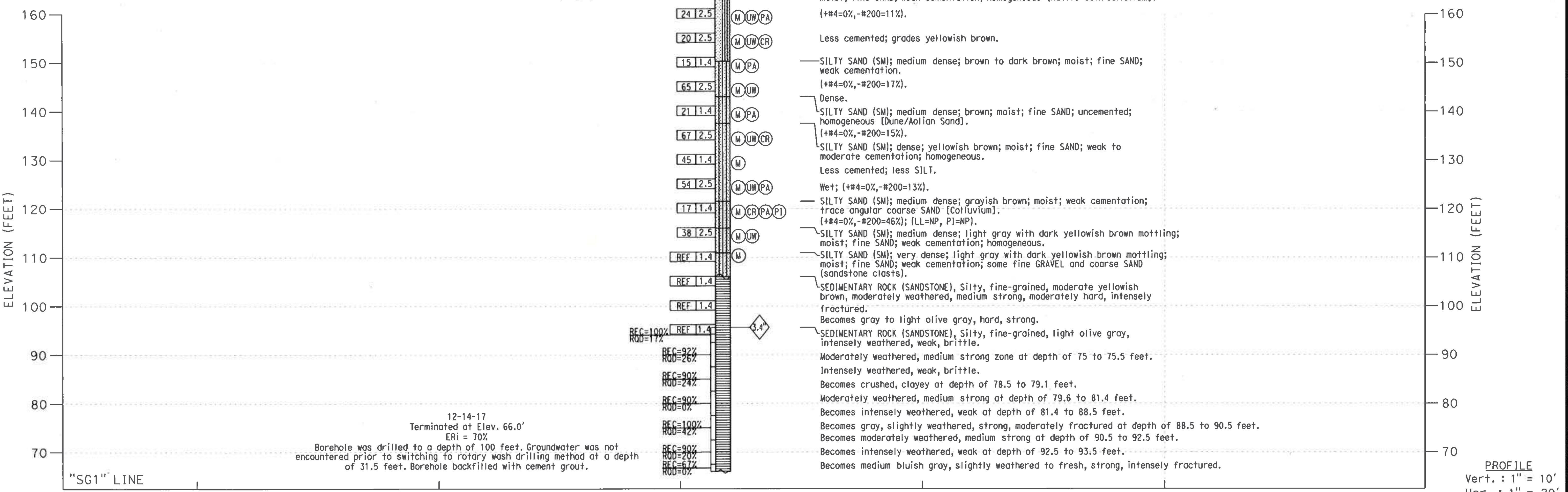
This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



PLAN
1" = 10'



12-14-17
 Terminated at Elev. 66.0'
 ERI = 70%
 Borehole was drilled to a depth of 100 feet. Groundwater was not
 encountered prior to switching to rotary wash drilling method at a depth
 of 31.5 feet. Borehole backfilled with cement grout.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	413	436

5-17-19
 GEOTECHNICAL PROFESSIONAL DATE

GARY PARIKH
 No. 666
 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 GEOTECHNICAL

PLANS APPROVAL DATE

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

BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105

PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

DESIGN OVERSIGHT <i>[Signature]</i> 11/15/19 SIGN OF DATE	DRAWN BY KIM OUYANG	DATE L.S. BHANGOO	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34E0040	RETAINING WALL No. 11
	CHECKED BY FRANK WANG	FIELD INVESTIGATION BY: DATE: DEC 2017		PROJECT ENGINEER FRANK WANG	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			UNIT: 0728 PROJECT NUMBER & PHASE: 04190001531	CONTRACT NO.: 04-3A6414	DISREGARD PRINTS BEARING EARLIER REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	REVISION DATES 4-23-18 11-17-18 2-18-19 5-17-19	SHEET OF 164 168

FILE => RW11-Z-lotb01.dgn

LEGEND OF BORING OPERATIONS

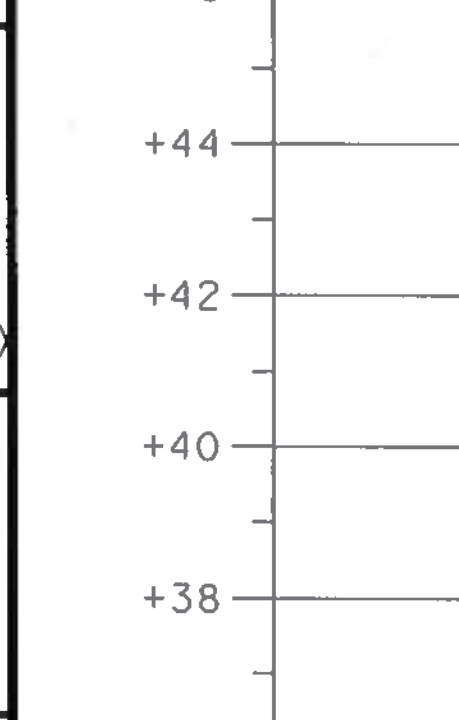
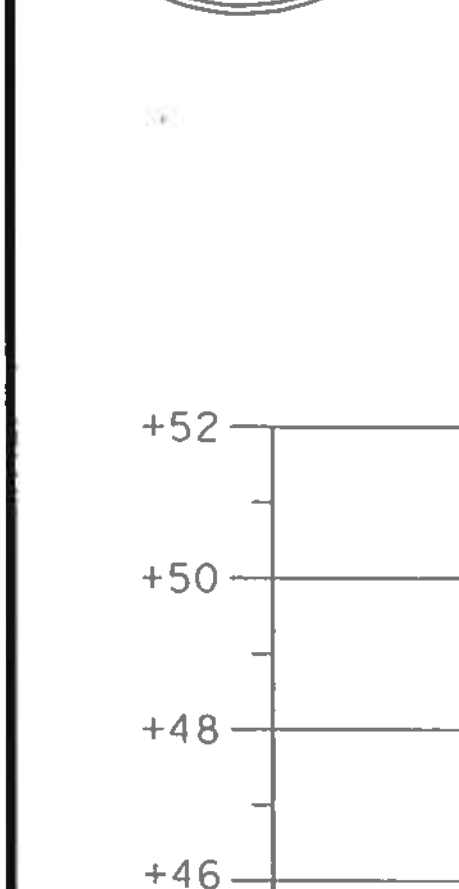
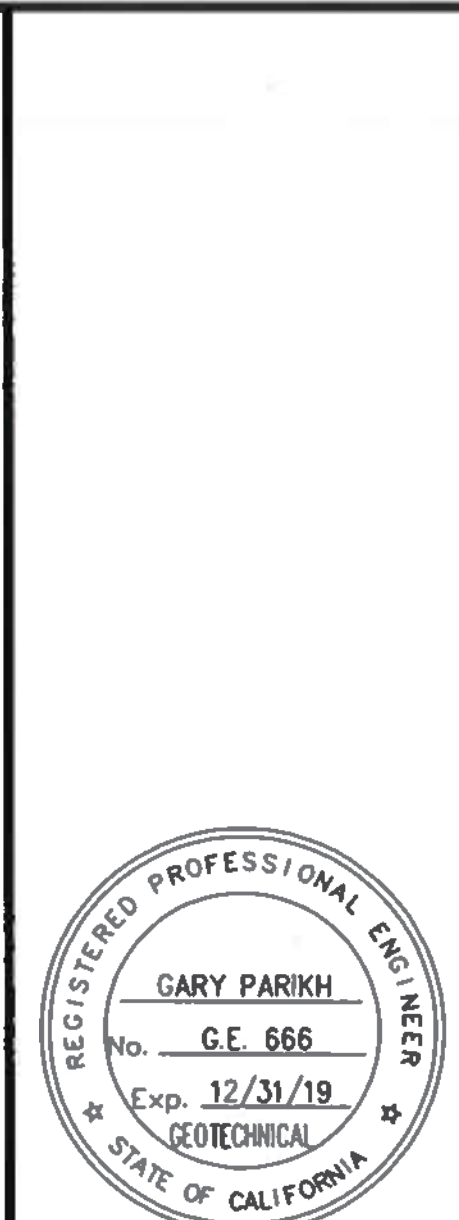
IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPE OF BORINGS

LEGEND FOR EARTH MATERIALS (USCS)

CONSISTENCY CLASSIFICATION FOR SOILS

NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



AL	Atterberg Limits	AN	Consolidation	AP	Pocket Penetrometer
CA	Corrosivity	MB	Maximum Density	RS	R-Value
CS	Direct Shear	OS	Direct Shear	SA	Sand Equivalent
CU	Unconfined Compression	UC	Unconfined Compression	WE	Wash Analysis

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	414	436

REGISTERED CIVIL ENGINEER: Gary Parikh, No. G.E. 666, Exp. 12/31/19

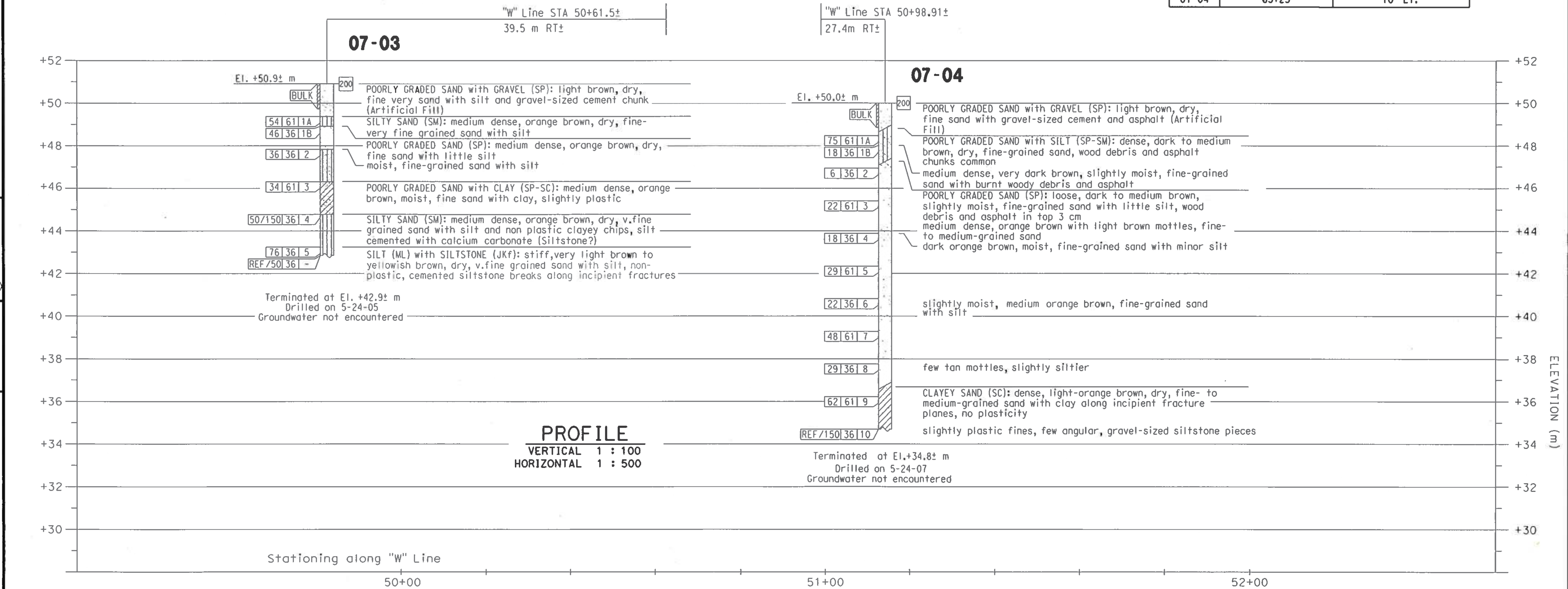
RETAINING WALL No. 11

LOG OF TEST BORINGS 2 OF 5

BRIDGE No. 34E0040, PROJECT NUMBER & PHASE: 0419000153J

DATE: 5-17-19

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA



WEST TIE-IN PHASE 3

LOG OF TEST BORINGS NO. 6

DESIGN OVERSIGHT: [Signature]

DRAWN BY: K. THANT, 05/29/07

CHECKED BY: M. KAPUSKAR, 06/04/07

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

C. DOMROSE, FIELD INVESTIGATION BY: DATE: 05/24/07

BRIDGE NO. 34-0006, PROJECT ENGINEER M. KAPUSKAR

CU 04, EA 0120R1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	482	821

09/06/07

GEOTECHNICAL PROFESSIONAL

2-21-12

PLANS APPROVAL DATE

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

FUGRO-EARTH MECHANICS, J.V.
7750 Pardee Lane, Suite 120
Oakland, CA 94621

PLAN 1:500

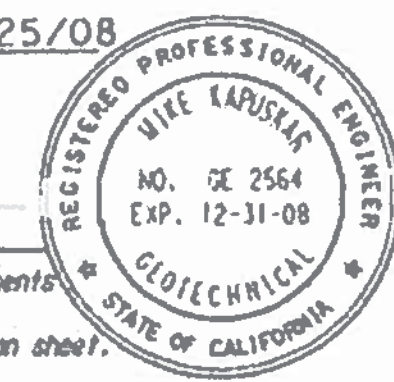
Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
07-04	63+25	10' Lt.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.7/13.2	783A	806

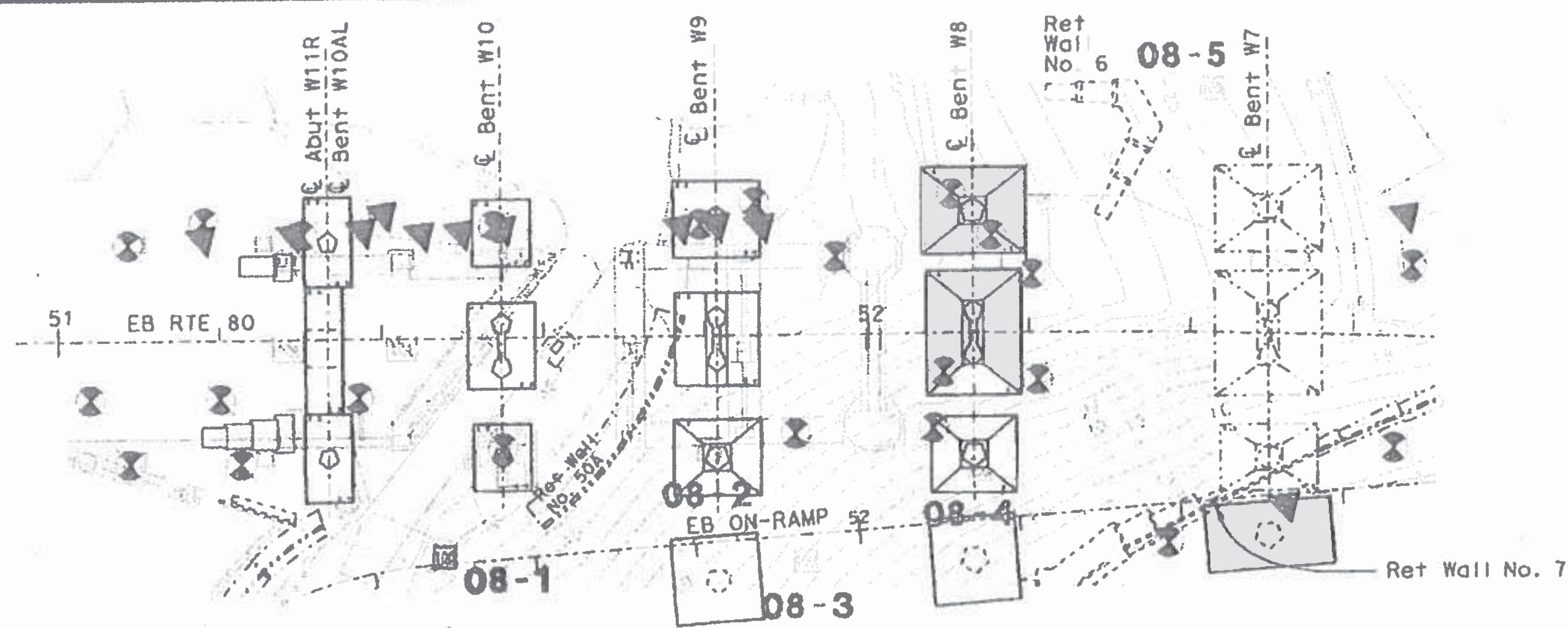
Hilda Kyele 09/25/08
 GEOTECHNICAL PROFESSIONAL



6-23-08
 PLANS APPROVAL DATE

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

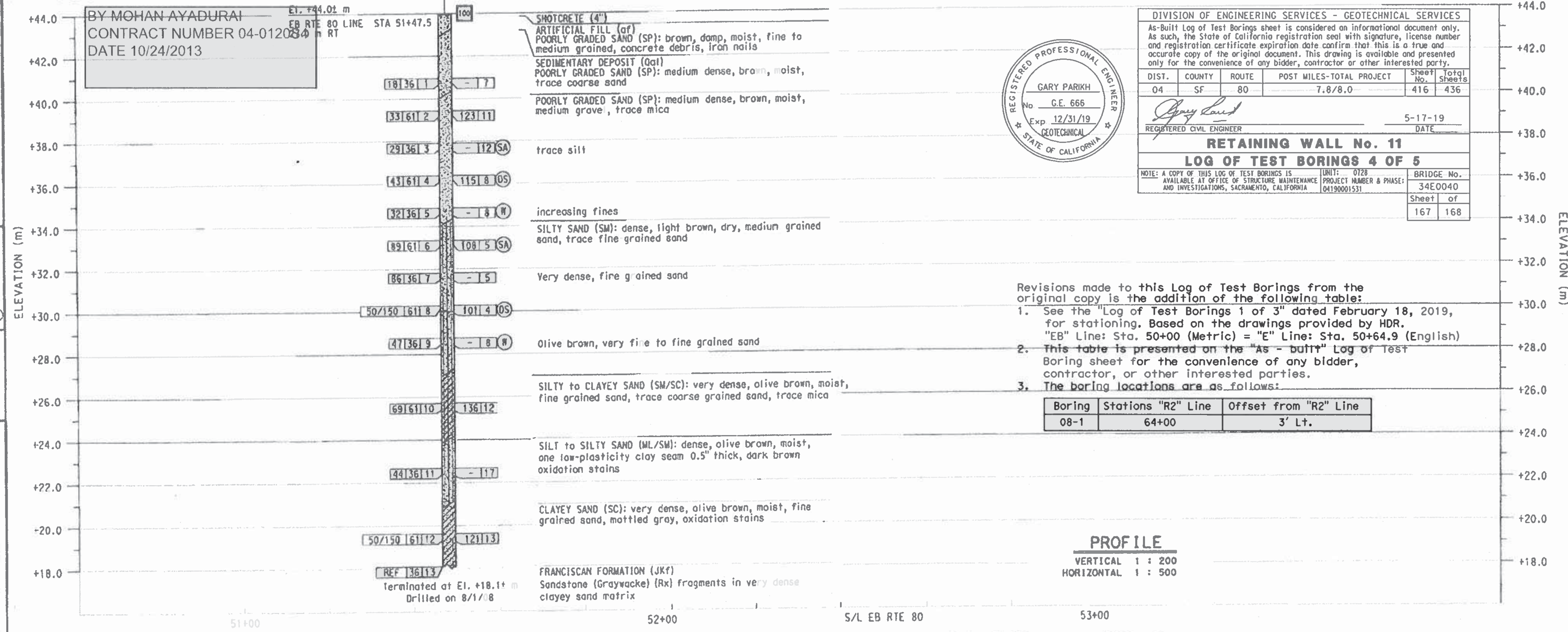
FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621



PLAN
 1:500

NOTES:
 61 mm samples were taken using a California split barrel sampler with an inside diameter (I.D.) of 61 mm and an outside diameter (O.D.) of 75 mm.
 A rope and cathead hammer system consisting of a hammer weight of 62.5 kg falling a distance of 762 mm was used to advance the drive samplers.

No As-Built Changes



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES				
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.				
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No. / Total Sheets
04	SF	80	7.8/8.0	416 / 436
			5-17-19	
			DATE	
RETAINING WALL No. 11				
LOG OF TEST BORINGS 4 OF 5				
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA		UNIT: 0728	BRIDGE No.	
		PROJECT NUMBER & PHASE: 04190001531	34E0040	
			Sheet of	
			167	168

Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 3" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "EB" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "R2" Line	Offset from "R2" Line
08-1	64+00	3' Lt.

PROFILE
 VERTICAL 1 : 200
 HORIZONTAL 1 : 500

ADDED PER ADDENDUM No. 2 DATED JANUARY 22, 2009

LEGEND OF BORING OPERATIONS

LEGEND FOR EARTH MATERIALS (USCS)
 BASED ON ASTM D2487, D2488

CONSISTENCY CLASSIFICATION FOR SOILS
 ACCORDING TO THE STANDARD PENETRATION TEST (ASTM D-1586)

TYPE OF BORINGS

IN-SITU LAB. & FIELD TEST DESIGNATIONS

SABA MOHAN DESIGN OVERSIGHT DATE: 08/11/08	DRAWN BY: K. THANT	K. THANT FIELD INVESTIGATION BY: DATE: 8/1/08	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34-0006	YBI EB ON-RAMP STRUCTURE (INITIAL) LOG OF TEST BORINGS NO.7
	CHECKED BY: M. KAPUSKAR	M. KAPUSKAR PROJECT ENGINEER		KILOMETER POST 12.8	
DATE: 09/02/08	ORIGINAL SCALE IN MILLIMETERS FOR REVISIONS		CU 04251 EA 0120S1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 12A OF 17

DATE PLOTTED: 02/13/09 1:58 PM

LEGEND OF BORING OPERATIONS

CONSISTENCY CLASSIFICATION FOR SOILS
 According to "The Standard Penetration Test" (ASTM D-1586)

Penetration (blows/30cm)	Soil Description
0-4	Very Loose
4-10	Loose
10-30	Medium Dense
30-50	Dense
50-100	Very Dense
>100	Hard

LEGEND FOR EARTH MATERIALS (USES) BASED ON ASTM D2487, D2488

TYPE OF BORINGS

IM-SITU, LAB & FIELD TEST DESIGNATIONS

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	417	436

DATE: 5-17-19

RETAINING WALL No. 11

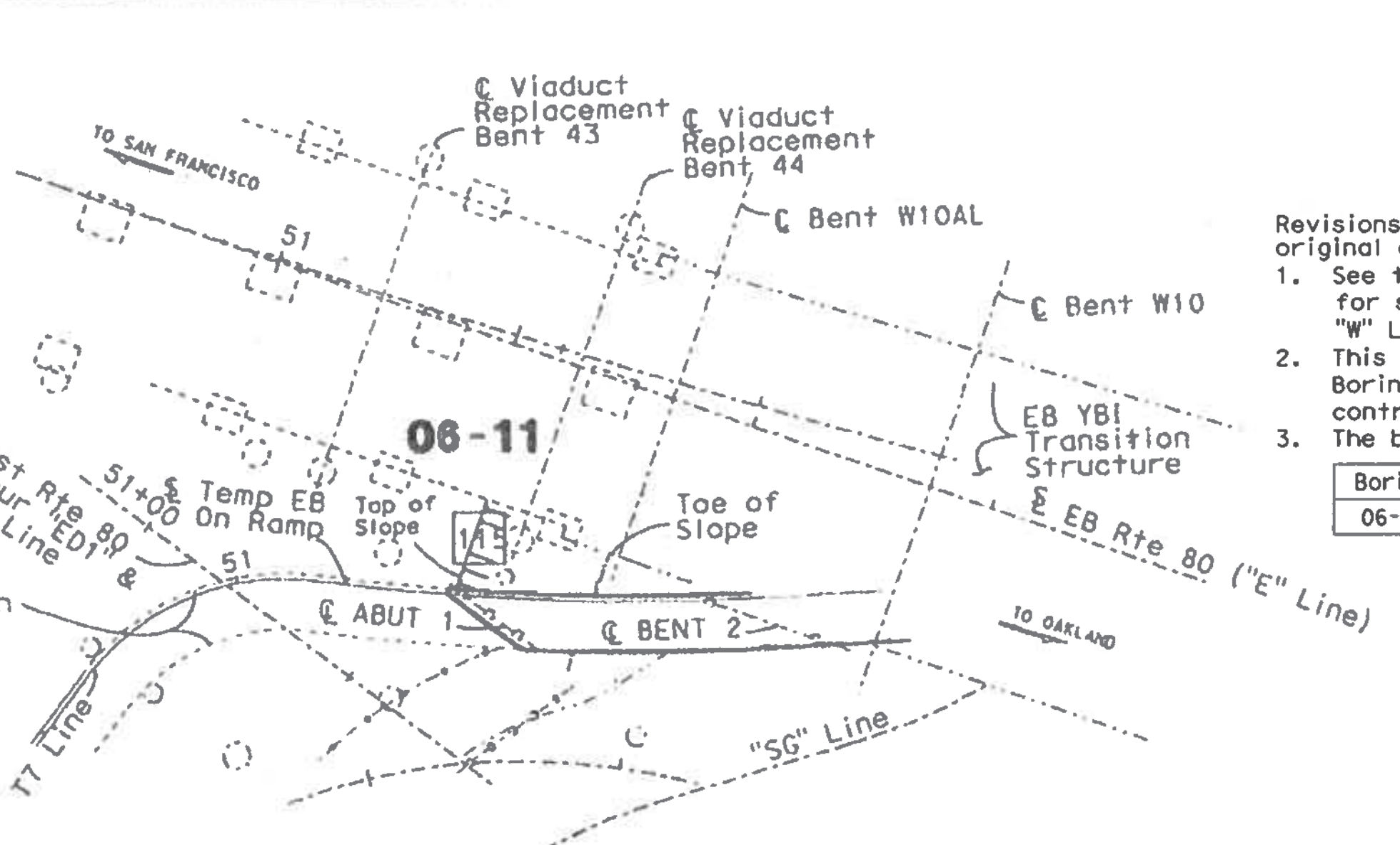
LOG OF TEST BORINGS 5 OF 5

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

PROJECT NUMBER & PHASE: 0728 34E0040

BRIDGE No.: 34E0040

Sheet of: 168 168



Revisions made to this Log of Test Borings from the original copy is the addition of the following table:

- See the "Log of Test Borings 1 of 5" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
- This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
- The boring locations are as follows:

Boring	Stations "SG1" Line	Offset from "SG1" Line
06-11	64+04	52' Lt.

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	12.7/13.2	768	806

02/25/08

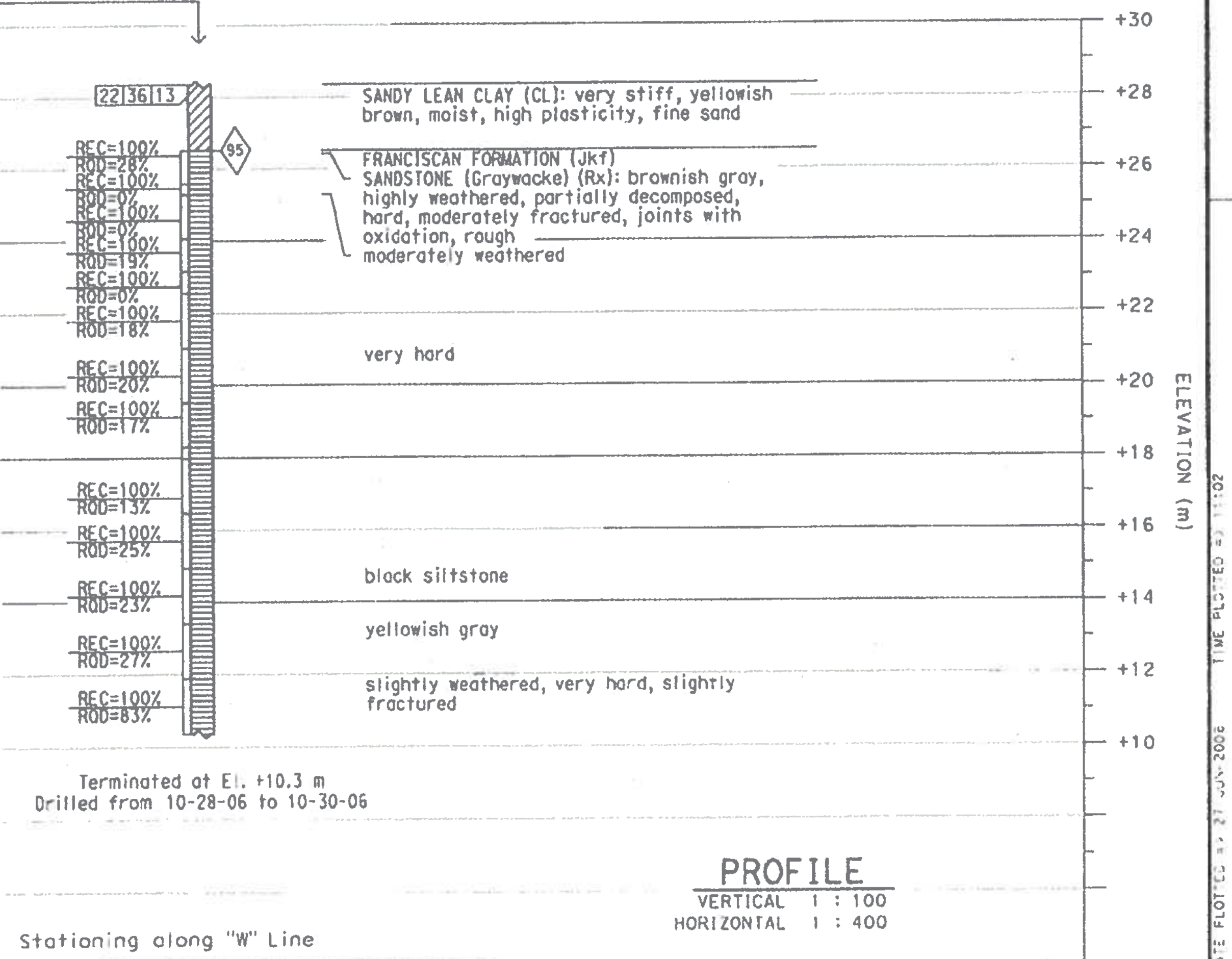
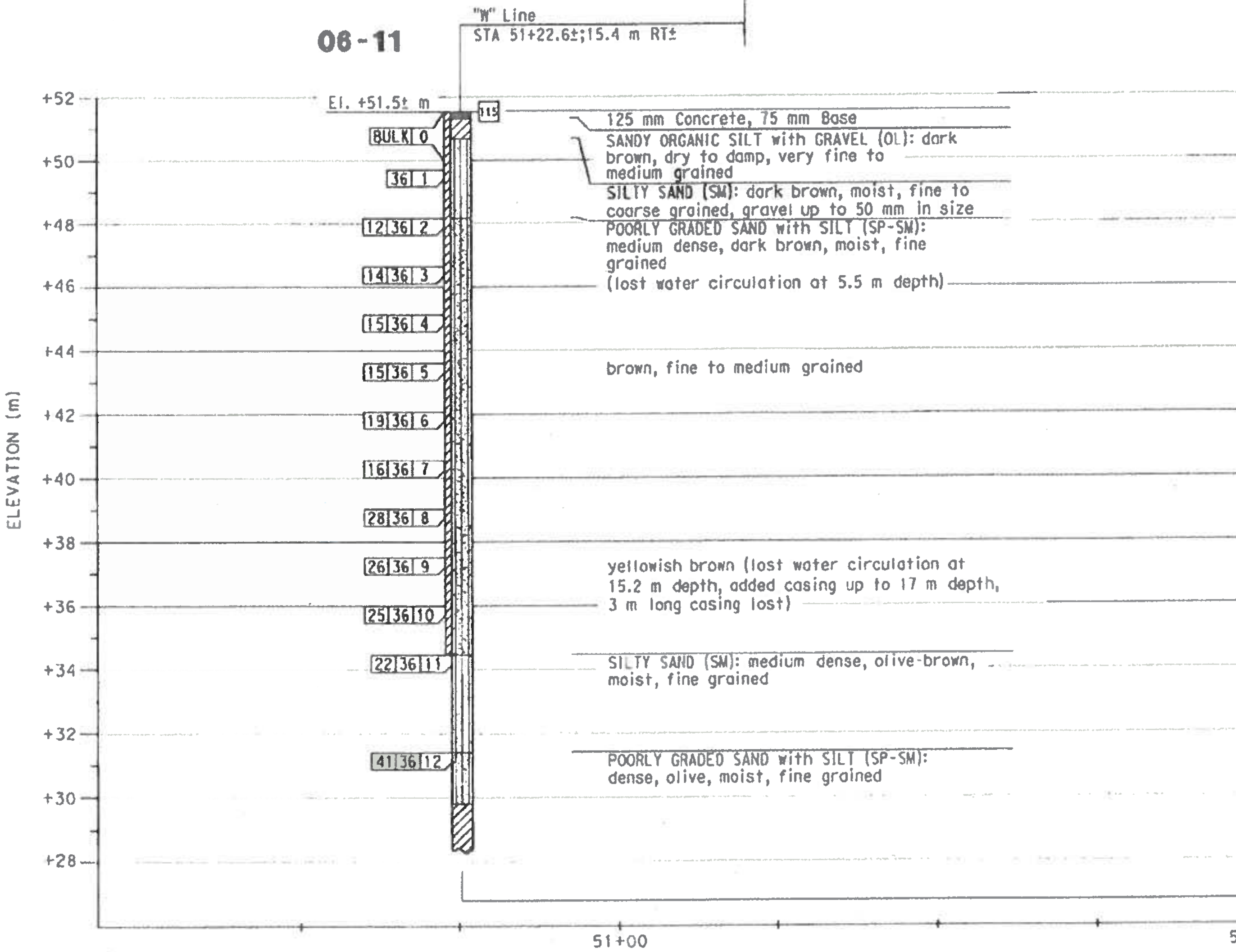
6-23-08

PLANS APPROVAL DATE

FUGRO-EARTH MECHANICS, J.V.
 7750 Pardee Lane, Suite 120
 Oakland, CA 94621

No As-Built Changes

BY MOHAN AYADURAI
 CONTRACT NUMBER 04-0120S4
 DATE 10/24/2013



DESIGNED BY	M. THAN	11/15/06
CHECKED BY	M. KAPUSKAR	11/28/06

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR
 PROJECT ENGINEER

BRIDGE NO. 34-0171 S
 KILOMETER POST 12.8

CU 04251
 EA 0120S1

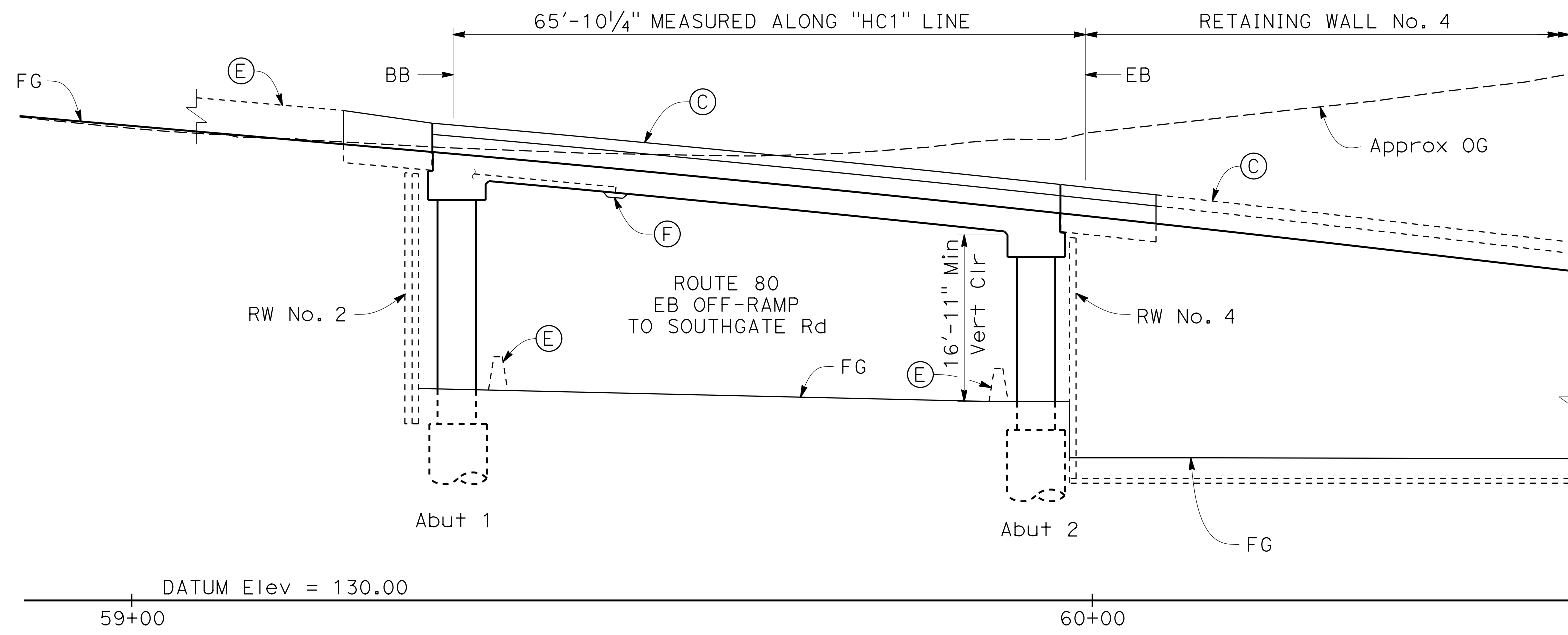
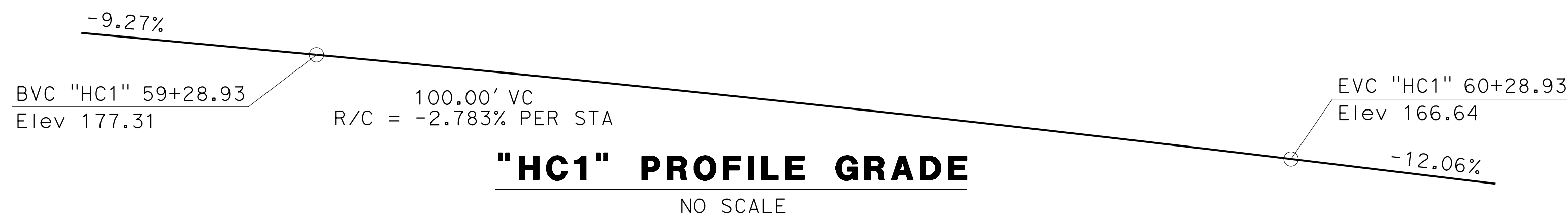
TEMPORARY EB ON-RAMP STRUCTURE	
LOG OF TEST BORINGS NO. 2	
REVISION DATES (PREL. UNDER STAGE ONE)	SHEET 10 OF 13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	418	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



LEGEND:

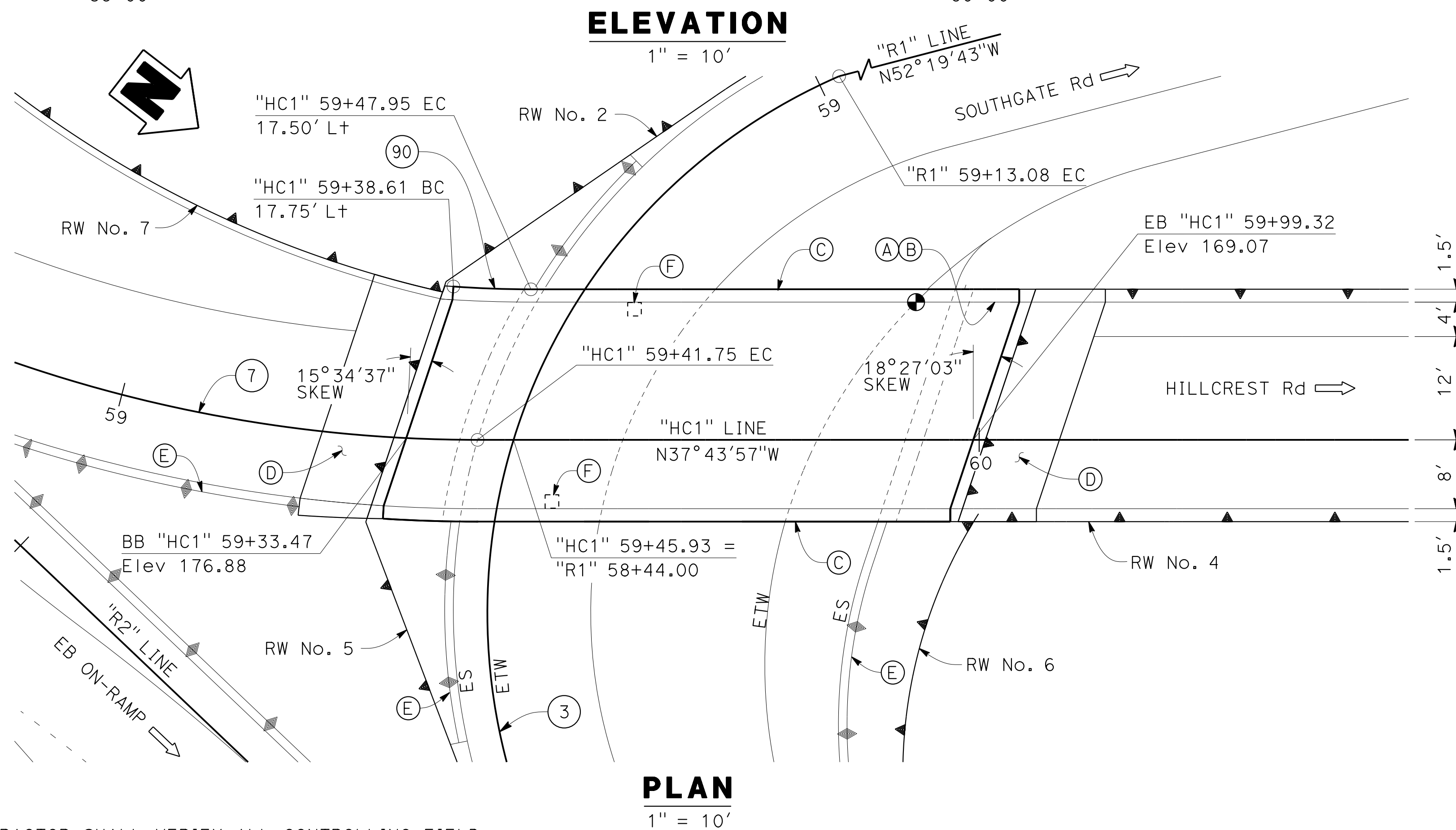
- ← Indicates direction of traffic
- Point of minimum vertical clearance

KEY NOTES:

- (A) Paint "Bridge No. 34C0093" and year completed
- (B) Paint "HILLCREST ROAD OC"
- (C) Concrete Barrier (Type 736)
- (D) Structure Approach Type EQ (10) Mod
- (E) Concrete Barrier (Type 60MC), see "ROAD PLANS"
- (F) Surface Mounted Luminaire and 2" PVC Conduit, see "ELECTRICAL PLANS"

NOTES:

1. For "TYPICAL SECTION" see "GENERAL PLAN No. 2" sheet.
2. For "PILE DATA TABLE" see "FOUNDATION PLAN" sheet.



QUANTITIES

STRUCTURE BACKFILL (BRIDGE)	5	CY
72" CAST-IN-DRILLED-HOLE PILING	148	LF
PRESTRESSING STEEL CAST-IN-PLACE CONCRETE	1	LS
STRUCTURAL CONCRETE, BRIDGE	63	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	148	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ10)	41	CY
JOINT SEAL (MR 1/2")	56	LF
BAR REINFORCING STEEL (BRIDGE)	103,533	LB
CONCRETE BARRIER (TYPE 736)	142	LF

CURVE DATA

No.	R	Δ	T	L
3	68'	120°37'22"	119.27'	143.16'
7	165'	43°35'04"	65.97'	125.52'
90	148.5'	86°31'25"	4.51'	9.01'

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

DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
SIGN OFF DATE	DETAILS BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI	LAYOUT BY A. CARMAZZI	CHECKED T. MEHTA
	QUANTITIES BY A. CARMAZZI	CHECKED A. CHUNG	SPECIFICATIONS BY T. MEHTA	PLANS AND SPECS COMPARED M. JACKSON

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.
 34C0093
 POST MILES
 7.9

**HILLCREST ROAD OC
 GENERAL PLAN No. 1**

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404


DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	1	19

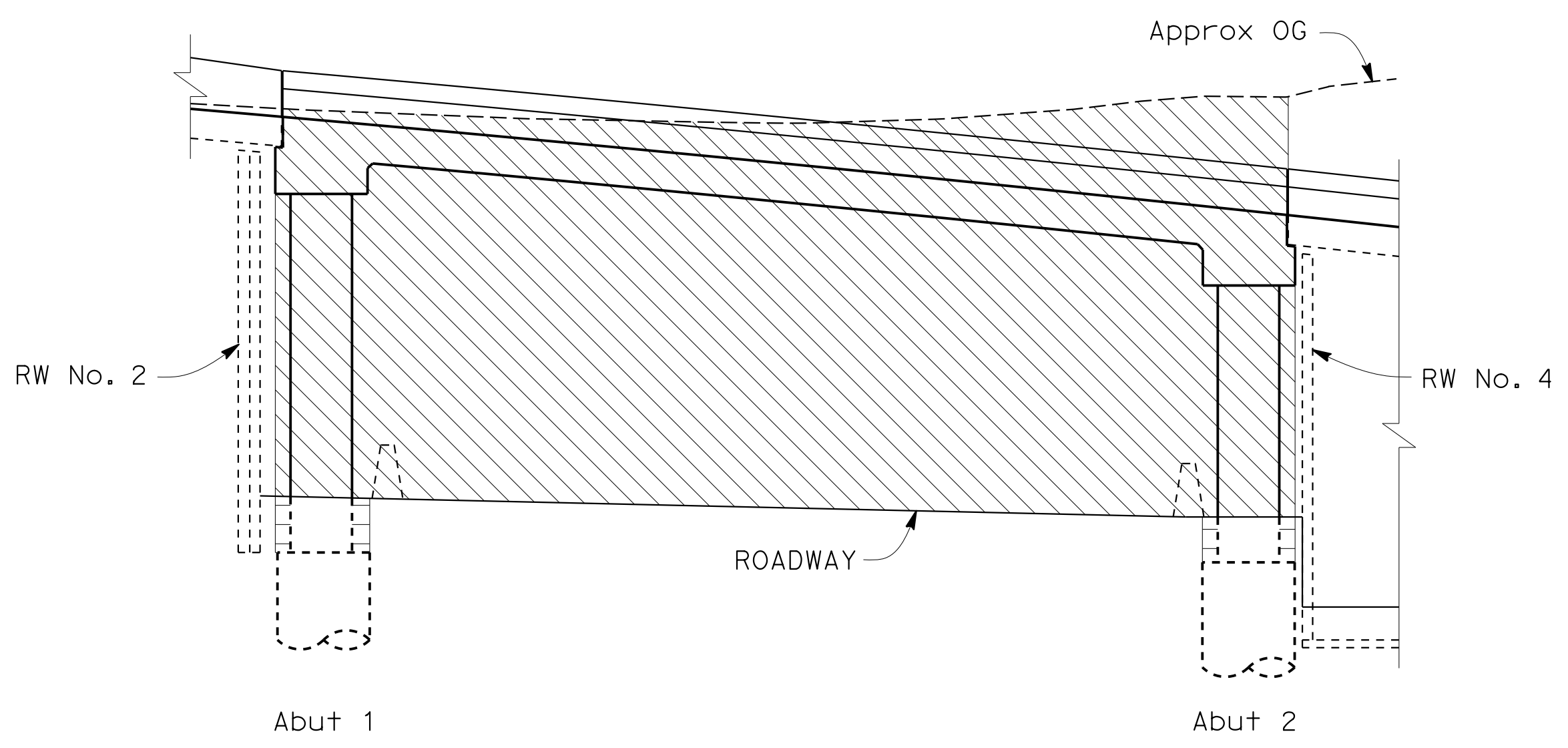
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USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 09:58

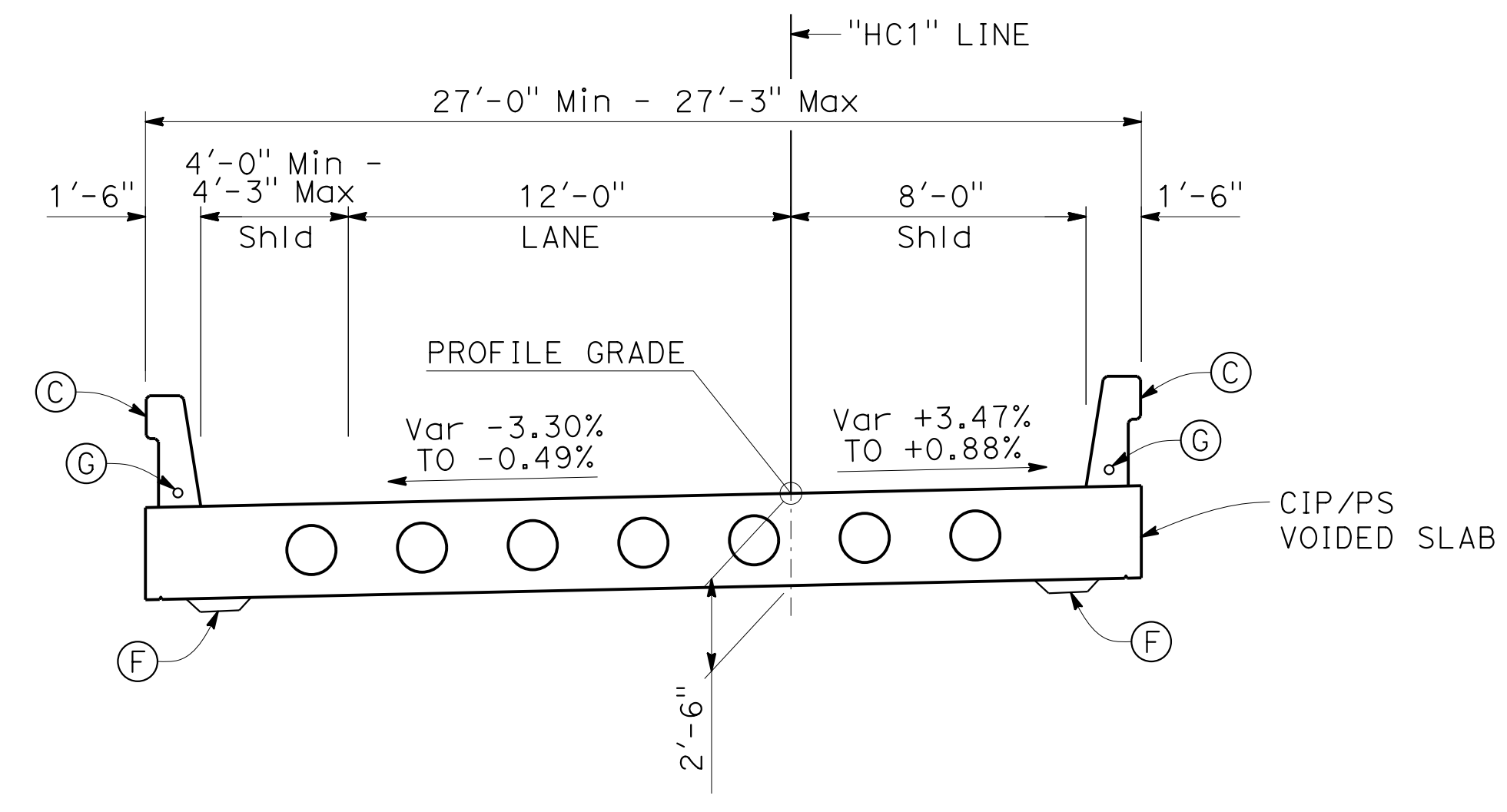
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	419	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

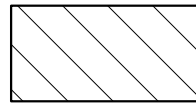
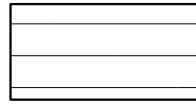
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



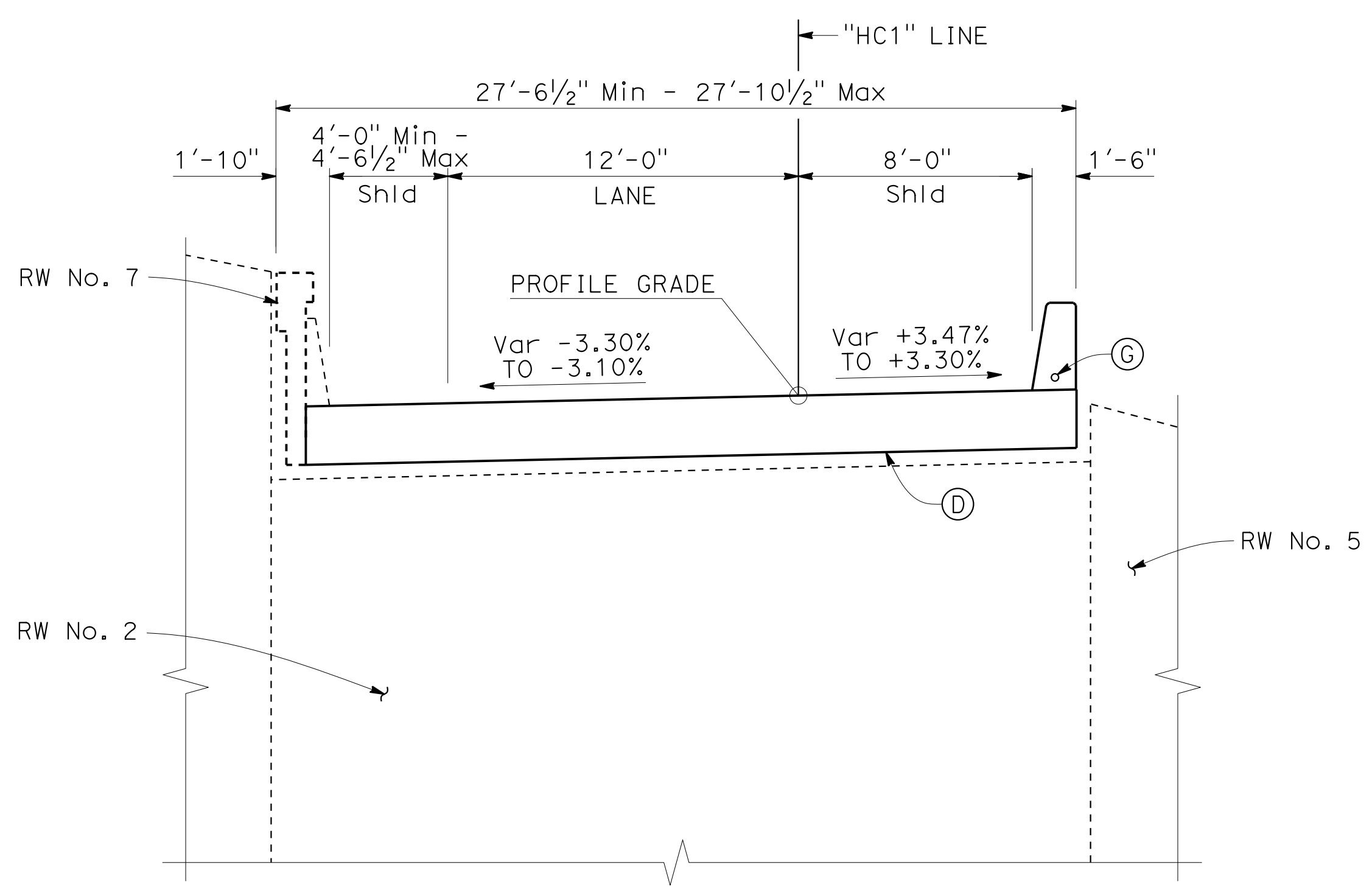
LIMITS OF PAYMENT FOR EXCAVATION & BACKFILL
NO SCALE



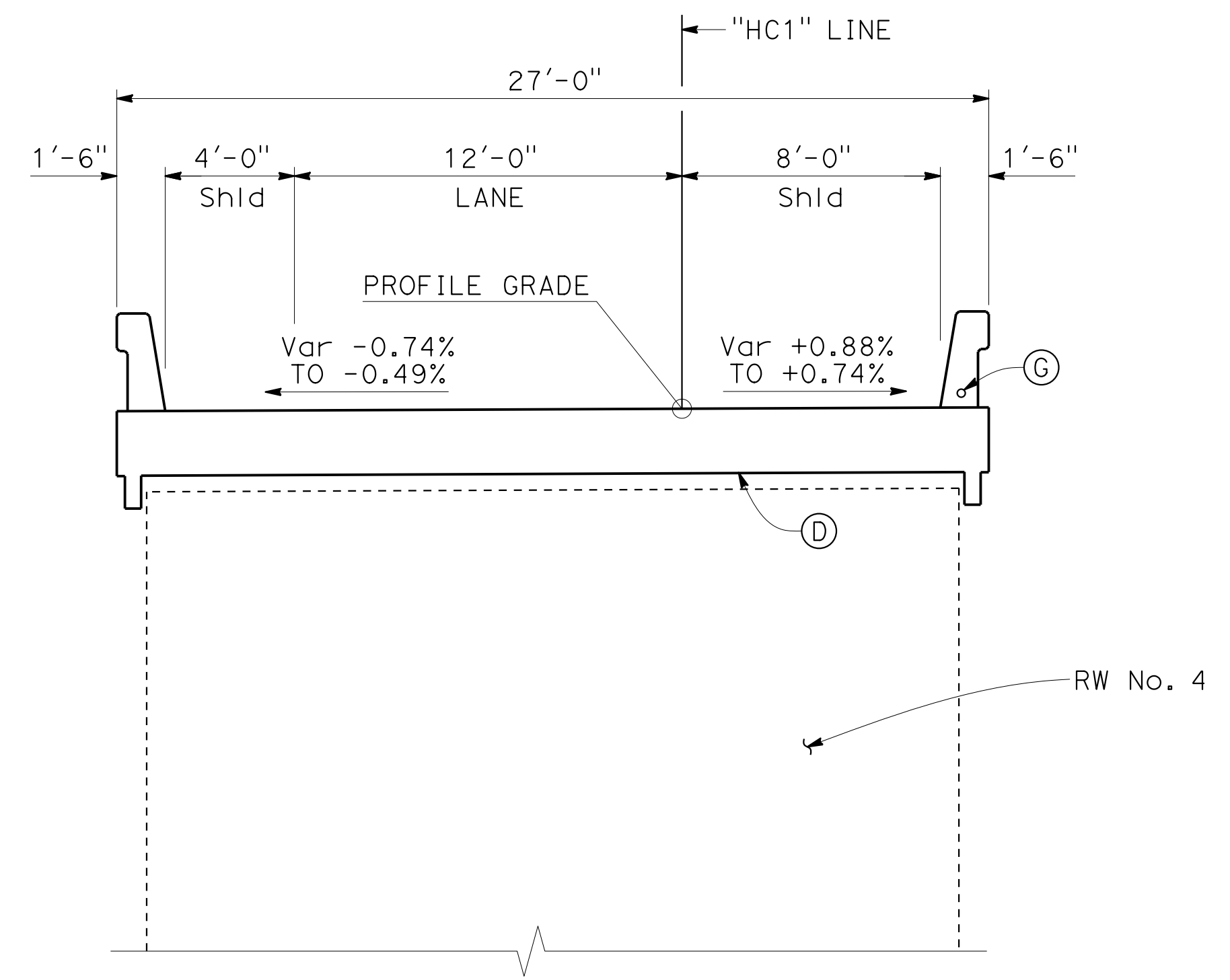
TYPICAL SECTION
1/4" = 1'-0"

- LEGEND:**
-  Roadway Excavation, see "ROADWAY PLANS"
 -  Structure Backfill

- KEY NOTES:**
- (C) Concrete Barrier (Type 736)
 - (D) Structure Approach Type EQ (10) Mod
 - (E) Surface Mounted Luminaire, see "ELECTRICAL PLANS"
 - (G) 3" Conduit, see "ELECTRICAL PLANS"



APPROACH SECTION AT RW2
1/4" = 1'-0"

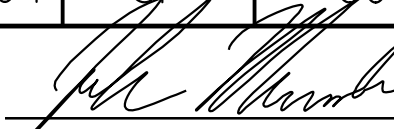
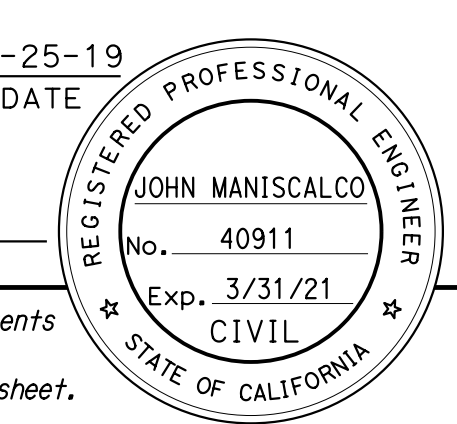


APPROACH SECTION AT RW4
1/4" = 1'-0"

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

DESIGN OVERSIGHT	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	HILLCREST ROAD OC GENERAL PLAN No. 2				
	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI	LAYOUT	BY A. CARMAZZI		CHECKED T. MEHTA		34C0093			
	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	SPECIFICATIONS	BY T. MEHTA		CHECKED M. JACKSON		PLANS AND SPECS COMPARED	POST MILES	7.9	
SIGN OFF DATE		DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 03/14/12)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0728	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A604	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 2	OF 19

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 09:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	420	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

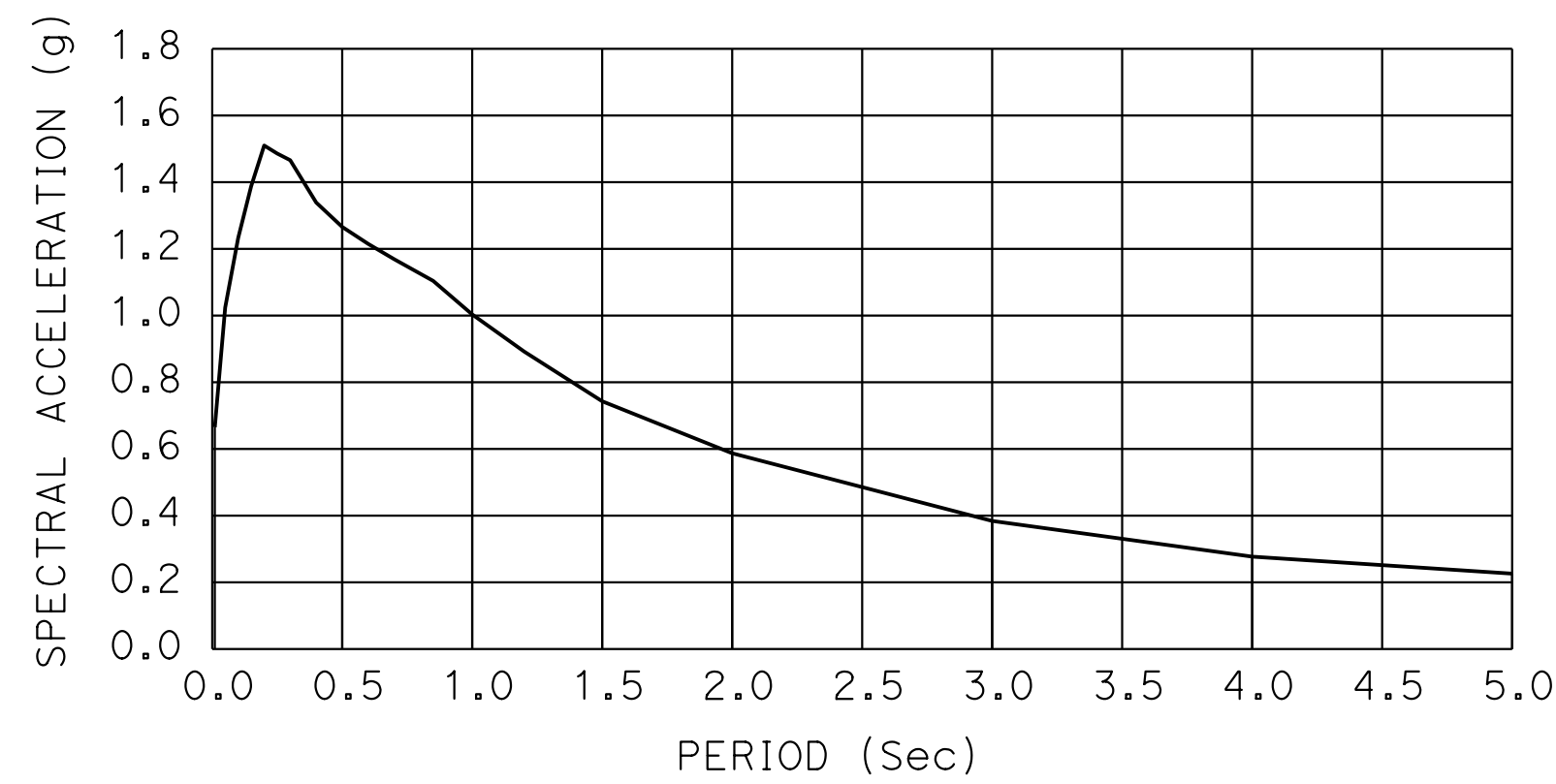
DESIGN:
AASHTO LRFD Bridge Design Specifications 2012, 6th edition with Caltrans Amendments, Preface dated January 2014.

SEISMIC DESIGN:
Caltrans Seismic Design Criteria (SDC), Version 1.7 dated April 2013.

DEAD LOAD:
Includes 35 psf for future wearing surface.

LIVE LOADING:
HL93 and permit design load.

SEISMIC LOADING:
Soil Profile: Vs30 = 1148 ft/sec
Moment Magnitude: Mmax = 7.3 R at 7.4 miles
Peak Ground Acceleration: 0.665 g



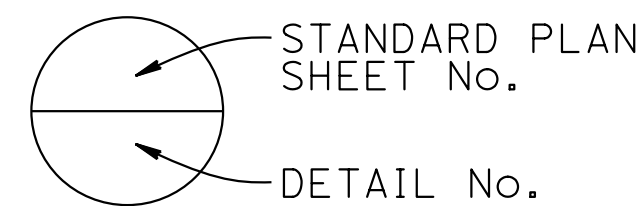
ARS CURVE (5% DAMPING)

REINFORCED CONCRETE:
 $f_y = 60,000$ psi
 $f'_c = 4,000$ psi (UON)
 $n = 8$

PRESTRESSED CONCRETE:
 See "PRESTRESSING NOTES" on "PRESTRESSING DETAILS" sheet

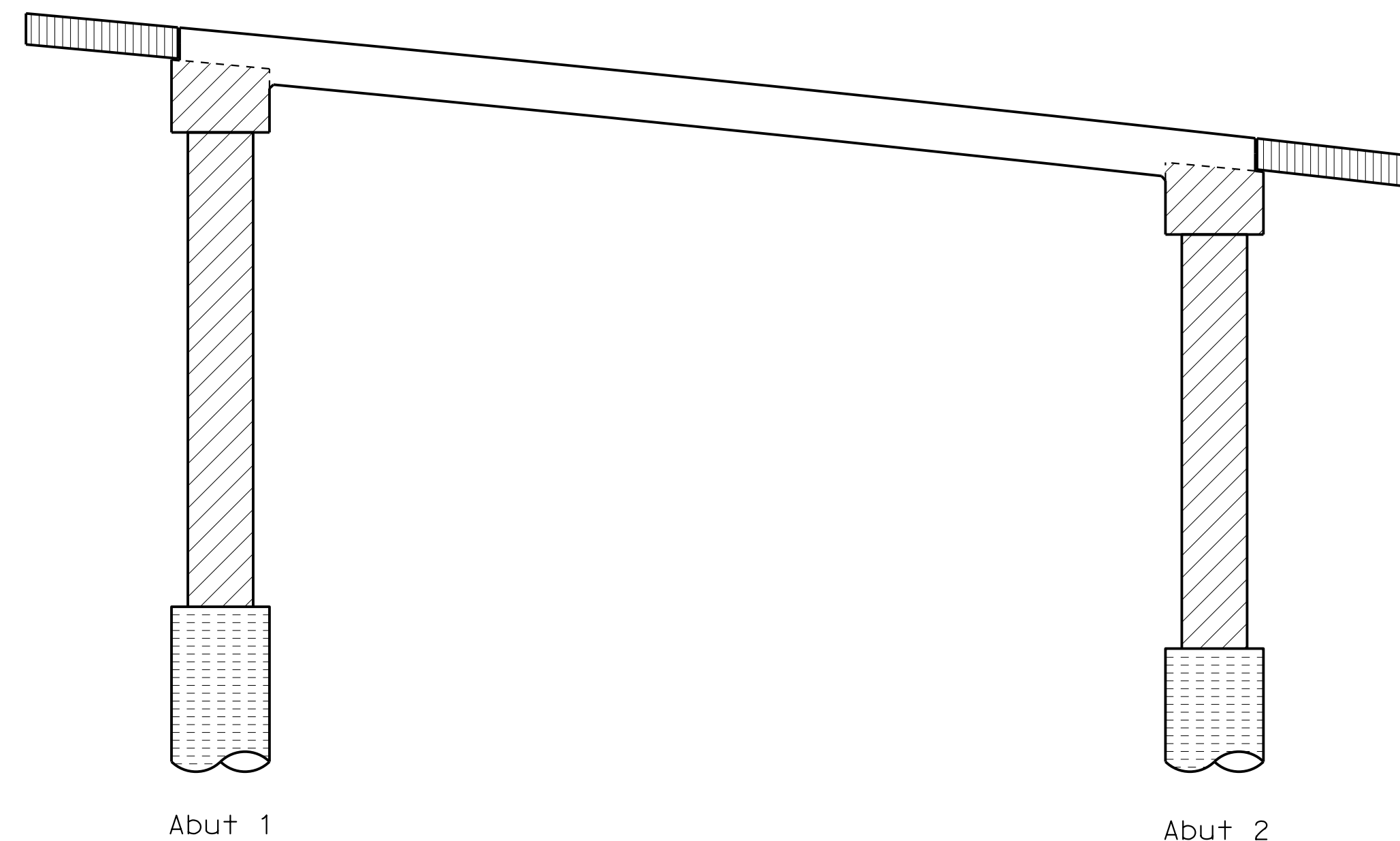
STANDARD PLANS DATED OCTOBER 2018

- A3A ABBREVIATIONS (SHEET 1 OF 3)
- A3B ABBREVIATIONS (SHEET 2 OF 3)
- A3C ABBREVIATIONS (SHEET 3 OF 3)
- A10A LEGEND - LINES AND SYMBOLS (SHEET 1 OF 5)
- A10B LEGEND - LINES AND SYMBOLS (SHEET 2 OF 5)
- A10C LEGEND - LINES AND SYMBOLS (SHEET 3 OF 5)
- A10D LEGEND - LINES AND SYMBOLS (SHEET 4 OF 5)
- A10E LEGEND - LINES AND SYMBOLS (SHEET 5 OF 5)
- A10F LEGEND - SOIL (SHEET 1 OF 2)
- A10G LEGEND - SOIL (SHEET 2 OF 2)
- A10H LEGEND - ROCK
- A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
- RSP B0-1 BRIDGE DETAILS
- B0-13 BRIDGE DETAILS
- B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
- B8-5 CAST-IN-PLACE POST-TENSIONED GIRDER DETAILS
- B9-4 STRUCTURE APPROACH TYPE EQ (10)
- B9-5 STRUCTURE APPROACH SLAB DETAILS
- B9-6 STRUCTURE APPROACH DRAINAGE DETAILS
- RSP ES-9E ELECTRICAL SYSTEMS (FLUSH-MOUNTED SOFFIT, PENDANT SOFFIT AND WALL-MOUNTED LUMINAIRE STRUCTURE INSTALLATIONS)



INDEX TO PLANS

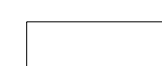
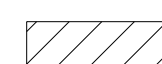

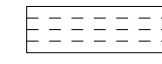
SHEET No.	TITLE
1	GENERAL PLAN No. 1
2	GENERAL PLAN No. 2
3	INDEX TO PLANS
4	DECK CONTOURS
5	FOUNDATION PLAN
6	ABUTMENT 1 LAYOUT
7	ABUTMENT 2 LAYOUT
8	ABUTMENT DETAILS No. 1
9	ABUTMENT DETAILS No. 2
10	COLUMN AND CIDH PILE DETAILS
11	TYPICAL SECTION
12	DECK REINFORCEMENT
13	PRESTRESSING DETAILS
14	MISCELLANEOUS DETAILS
15	CONCRETE BARRIER (TYPE 736)
16	STRUCTURE APPROACH SLAB
17	STRUCTURE APPROACH DETAILS
18	LOG OF TEST BORINGS 1 OF 2
19	LOG OF TEST BORINGS 2 OF 2



CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE


LEGEND:

-  Structural Concrete, Bridge (Polymer Fiber) See "PRESTRESSING NOTES" on "PRESTRESSING DETAILS" sheet
-  Structural Concrete, Bridge ($f'_c = 4.0$ ksi @ 28 Days)
-  Structural Concrete, Approach Slab ($f'_c = 3.6$ ksi @ 28 days)
-  Cast-In-Drilled Hole Concrete Pile ($f'_c = 4.0$ ksi @ 28 Days)

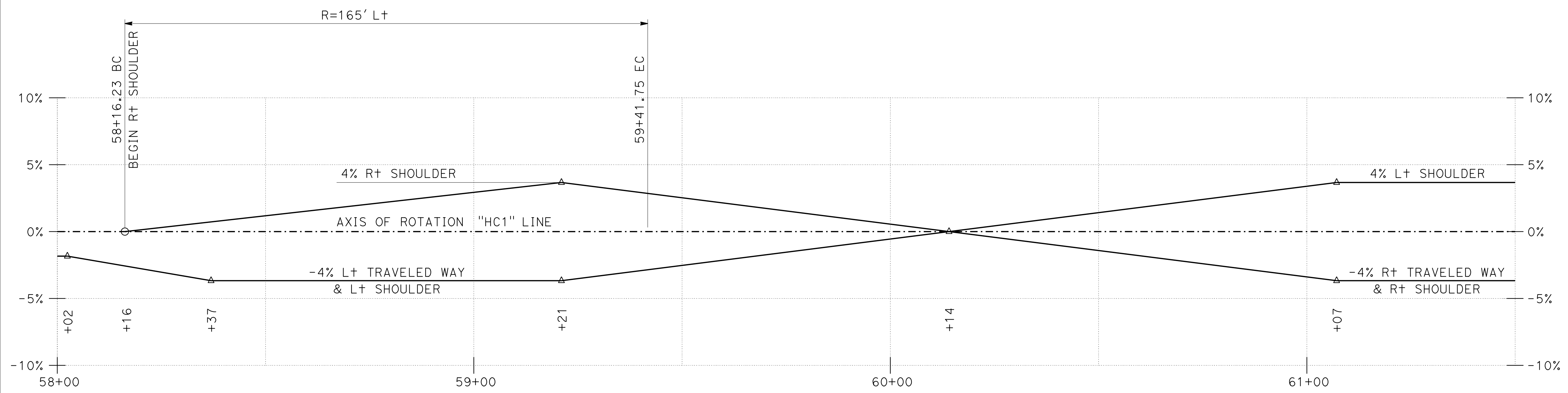
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT SIGN OFF DATE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">DESIGN</td> <td style="width: 30%;">BY A. CARMAZZI</td> <td style="width: 30%;">CHECKED J. ZHU</td> </tr> <tr> <td>DETAILS</td> <td>BY R. TONEY/L. DAVIS</td> <td>CHECKED A. CARMAZZI</td> </tr> <tr> <td>QUANTITIES</td> <td>BY A. CARMAZZI</td> <td>CHECKED A. CHUNG</td> </tr> </table>	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	JOHN MANISCALCO PROJECT ENGINEER	BRIDGE NO. 34C0093 POST MILES 7.9	HILLCREST ROAD OC INDEX TO PLANS								
DESIGN	BY A. CARMAZZI	CHECKED J. ZHU																				
DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI																				
QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG																				
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td style="width: 20%;">4-30-18</td> <td style="width: 20%;">11-12-18</td> <td style="width: 20%;">2-27-19</td> <td style="width: 20%;">7-25-19</td> </tr> <tr> <td colspan="3"></td> <td style="text-align: center;">3</td> </tr> <tr> <td colspan="3"></td> <td style="text-align: center;">19</td> </tr> </table>	REVISION DATES		SHEET	OF	4-30-18	11-12-18	2-27-19	7-25-19				3				19
REVISION DATES		SHEET	OF																			
4-30-18	11-12-18	2-27-19	7-25-19																			
			3																			
			19																			

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	421	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



SUPPERELEVATION DIAGRAM

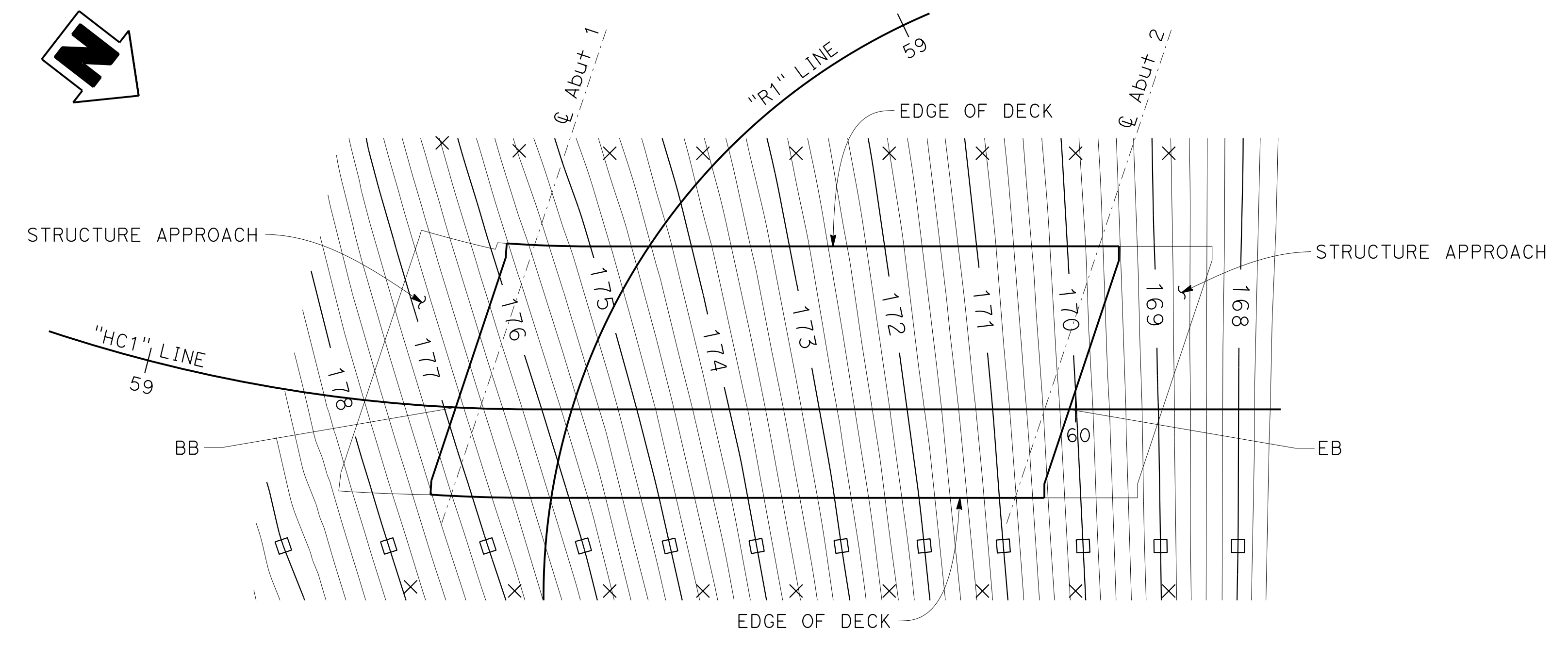
NO SCALE

NOTES:

1. Contours do not include camber.
2. Contour interval = 0.20'.

LEGEND:

- × Indicates 10' interval measured along "HC1" Line.
- Indicates even foot contours.



PLAN

1" = 10'

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

DESIGN OVERSIGHT	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	HILLCREST ROAD OC DECK CONTOURS	
	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		34C0093		
SIGN OFF DATE	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	JOHN MANISCALCO PROJECT ENGINEER	POST MILES	7.9	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 FILE => 34C0093-d-dc01.dgn	CONTRACT NO.: 04-3A6404 DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	SHEET 4 OF 19

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 09:59

PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	CUTOFF ELEVATION (ft)
		COMPRESSION	TENSION			
ABUTMENT 1	6'-0" ∅ CIDH	880	245	125.0 (a), 134.0 (b), 134.0 (c), 113.0 (d)	113.0	150.0
ABUTMENT 2	6'-0" ∅ CIDH	800	262	126.0 (a), 132.0 (b), 132.0 (c), 111.0 (d)	111.0	148.0

NOTES:
 1. DESIGN TIP ELEVATIONS ARE CONTROLLED BY THE FOLLOWING DEMANDS: (a) COMPRESSION (STRENGTH LIMIT), (b) TENSION, (c) SETTLEMENT, (d) LATERAL LOADS.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	422	436

7-25-19
 REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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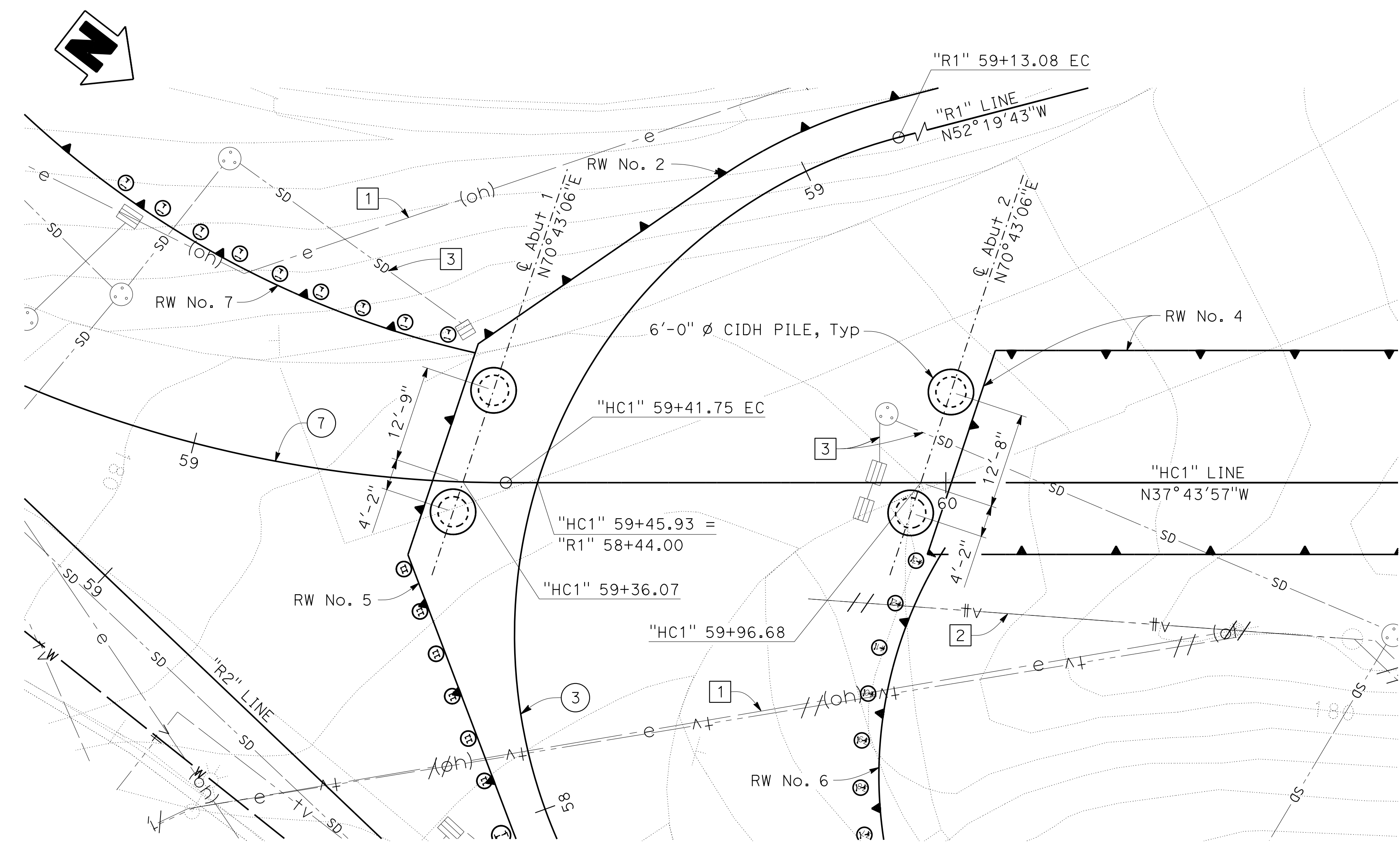
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 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

BENCHMARK

POINT	N	E	ELEVATION	DESCRIPTION
YB10	2,122,323.24	6,023,410.11	187.58	MAG NAIL WITH TOWILL TAG

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983, 1991.35 EPOCH, ZONE 3, US SURVEY FEET. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).



PLAN

LEGEND:

- Indicates CIDH pile
- ⊕ Indicates Steel Soldier pile

NOTES:

1. Utility locations shown are approximate. Contractor to field verify all utility locations prior to construction. For disposition and owner, see "ROADWAY PLANS" and "UTILITY PLANS".
2. For drainage details, see "DRAINAGE PLANS".

UTILITIES:

- 1 Existing OH Electrical to be Removed
- 2 Existing Abandoned Television
- 3 Storm Drain

CURVE DATA

No.	R	Δ	T	L
3	68'	120°37'22"	119.27'	143.16'
7	165'	43°35'04"	65.97'	125.52'

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

5-17-19
 SEITECHNICAL PROFESSIONAL APPROVAL DATE


DESIGN OVERSIGHT	SCALE: 1" = 10'	VERT. DATUM NGVD29	HORZ. DATUM NAD83, CCS ZONE 3	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	BRIDGE NO. 34C0093	HILLCREST ROAD OC FOUNDATION PLAN
SURVEYED BY TOWILL Inc.	PHOTOGRAMMETRY AS OF: 10-9-2015	ALIGNMENT TIES	DETAILS BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI	PROJECT ENGINEER JOHN MANISCALCO	POST MILES 7.9	
FIELD CHECKED BY D. ORTEGA	DRAFTED BY D. ORTEGA	CHECKED BY A. MARTINEZ	QUANTITIES BY A. CARMAZZI	CHECKED A. CHUNG	PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404	
FOUNDATION PLAN SHEET (ENGLISH) (REV. 03/14/12)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0728	REVISION DATES
						PROJECT NUMBER & PHASE: 04000205071	4-30-18 11-12-18 2-27-19 7-25-19
						CONTRACT NO.: 04-3A6404	SHEET 5 OF 19

DISREGARD PRINTS BEARING EARLIER REVISION DATES

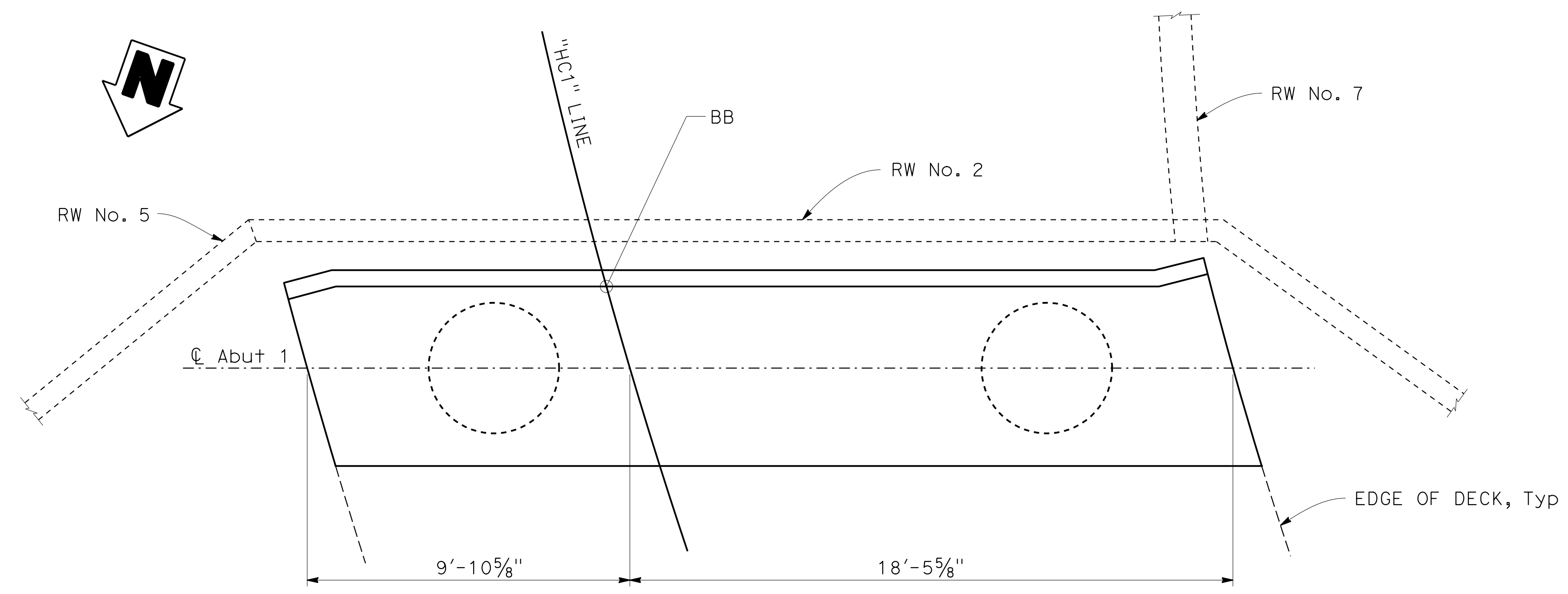
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USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 09:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	423	436

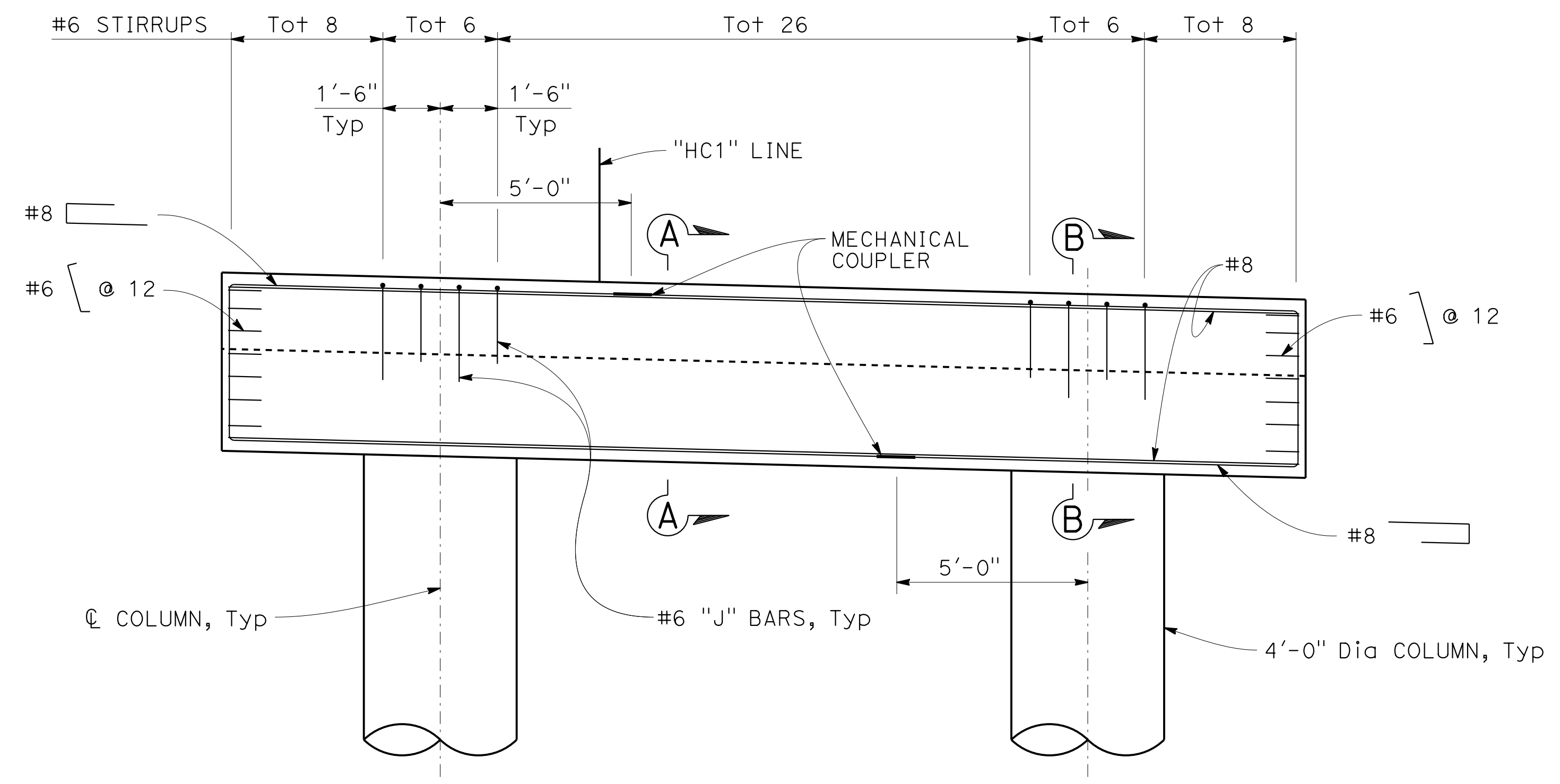

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 WALNUT CREEK, CA 94596



NOTES:

1. For column details, see "COLUMN AND CIDH PILE DETAILS" sheet.
2. For "SECTION A-A" and "SECTION B-B", see "ABUTMENT DETAILS No. 2" sheet.
3. Top and bottom bars shall be coupled as shown, alternate coupler locations between adjacent bars. Min of 8 top bars must be coupled with 8 bottom bars.




NOTE: NOT ALL REINFORCING SHOWN FOR CLARITY.

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

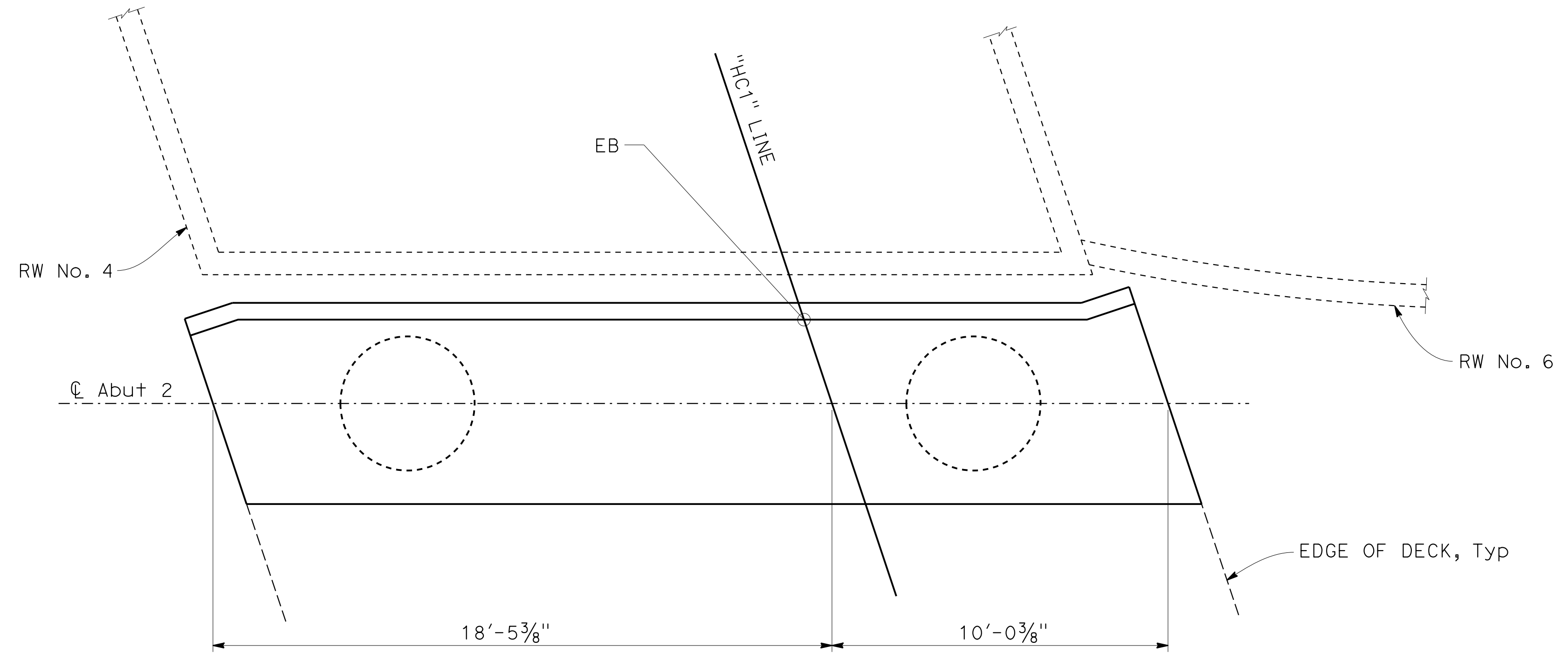
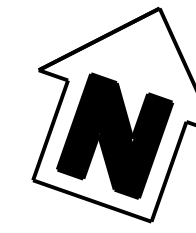
DESIGN OVERSIGHT	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	HILLCREST ROAD OC ABUTMENT 1 LAYOUT		
	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		34C0093			
SIGN OFF DATE	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	JOHN MANISCALCO PROJECT ENGINEER	POST MILES	7.9		
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 FILE => 34C0093-f-a01_lo1.dgn	CONTRACT NO.: 04-3A6404	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	SHEET 6 OF 19

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 09:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	424	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

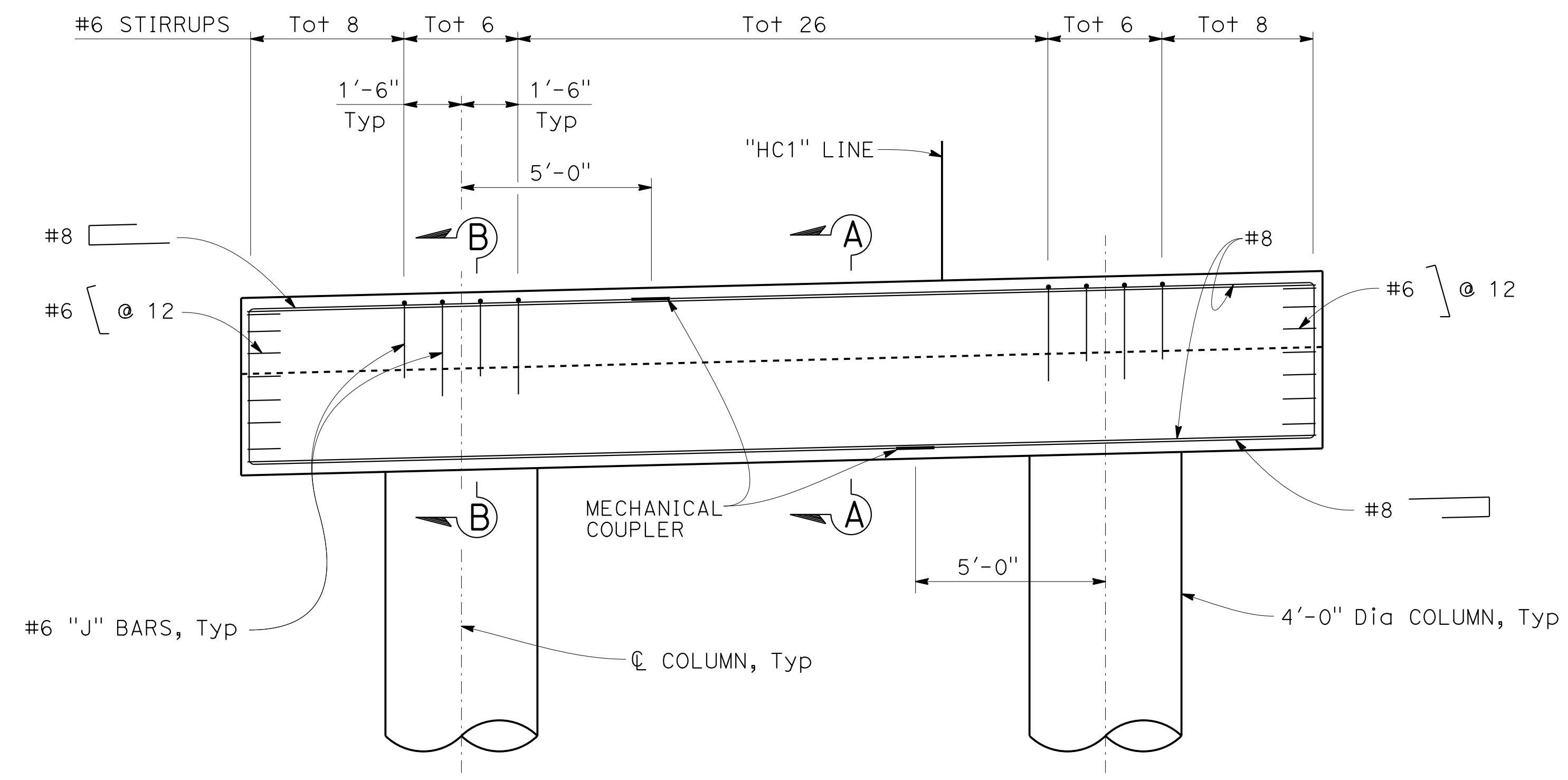
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



PLAN
3/8" = 1'-0"

NOTES:

1. For column details, see "COLUMN AND CIDH PILE DETAILS" sheet.
2. For "SECTION A-A" and "SECTION B-B", see "ABUTMENT DETAILS No. 2" sheet.
3. Top and bottom bars shall be coupled as shown, alternate coupler locations between adjacent bars. Min of 8 top bars must be coupled with 8 bottom bars.



ELEVATION
3/8" = 1'-0"

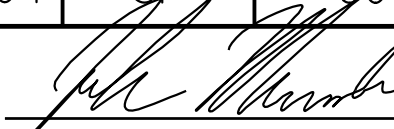
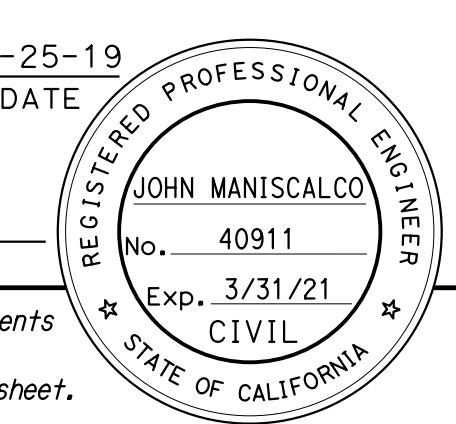
NOTE: NOT ALL REINFORCING SHOWN FOR CLARITY.

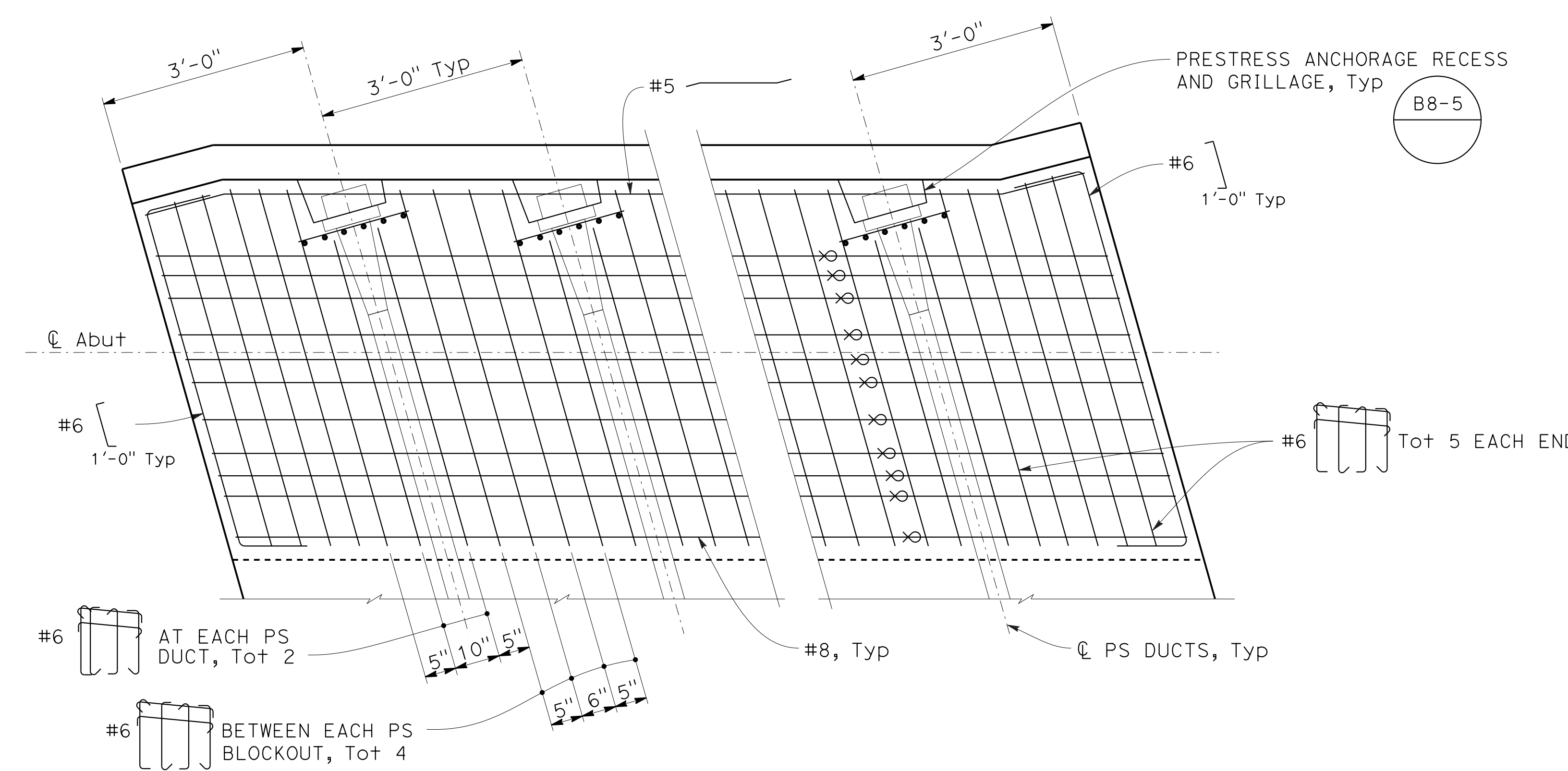
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	HILLCREST ROAD OC ABUTMENT 2 LAYOUT												
	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		34C0093													
SIGN OFF DATE	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	JOHN MANISCALCO PROJECT ENGINEER	POST MILES	7.9												
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A6404													
				DISREGARD PRINTS BEARING EARLIER REVISION DATES		<table border="1"> <tr> <th colspan="2">REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18</td> <td>11-12-18</td> <td>2-27-19</td> <td>7-25-19</td> </tr> <tr> <td></td> <td></td> <td>7</td> <td>19</td> </tr> </table>	REVISION DATES		SHEET	OF	4-30-18	11-12-18	2-27-19	7-25-19			7	19
REVISION DATES		SHEET	OF															
4-30-18	11-12-18	2-27-19	7-25-19															
		7	19															

FILE => 34C0093-f-a02_1o1.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	425	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



PARTIAL PLAN

3/4" = 1'-0"

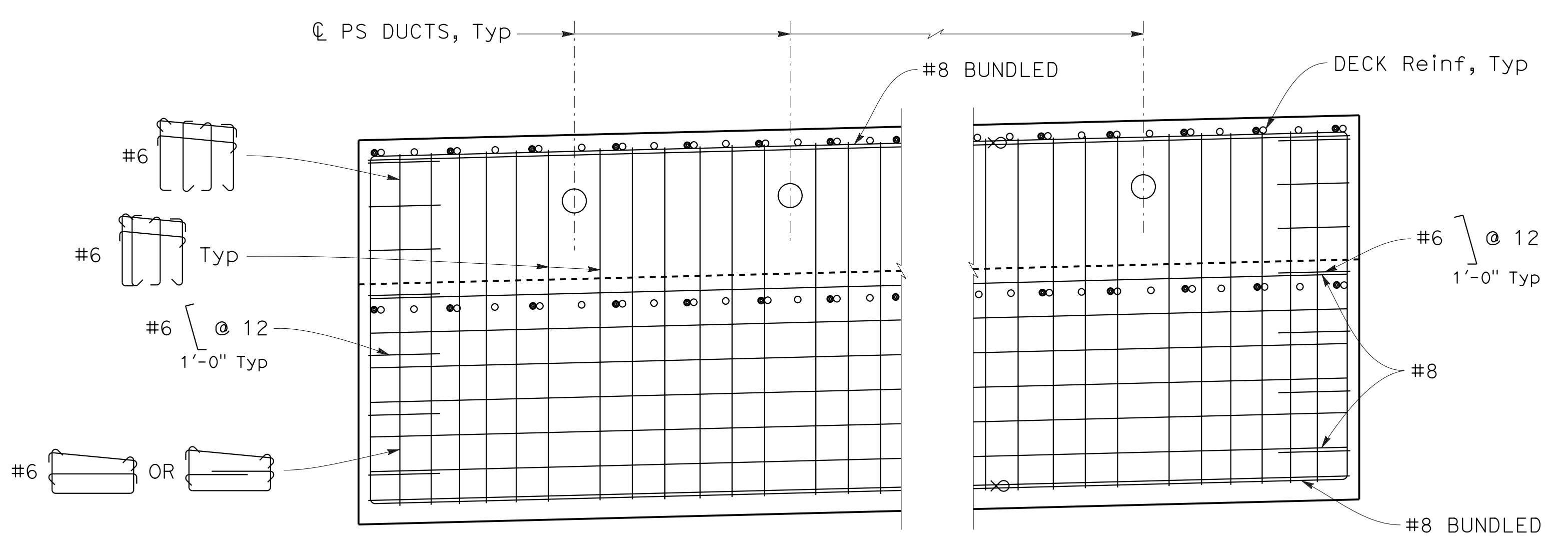
NOTE: SLAB REINFORCING NOT SHOWN FOR CLARITY

LEGEND:

⊗ Bundled Bars

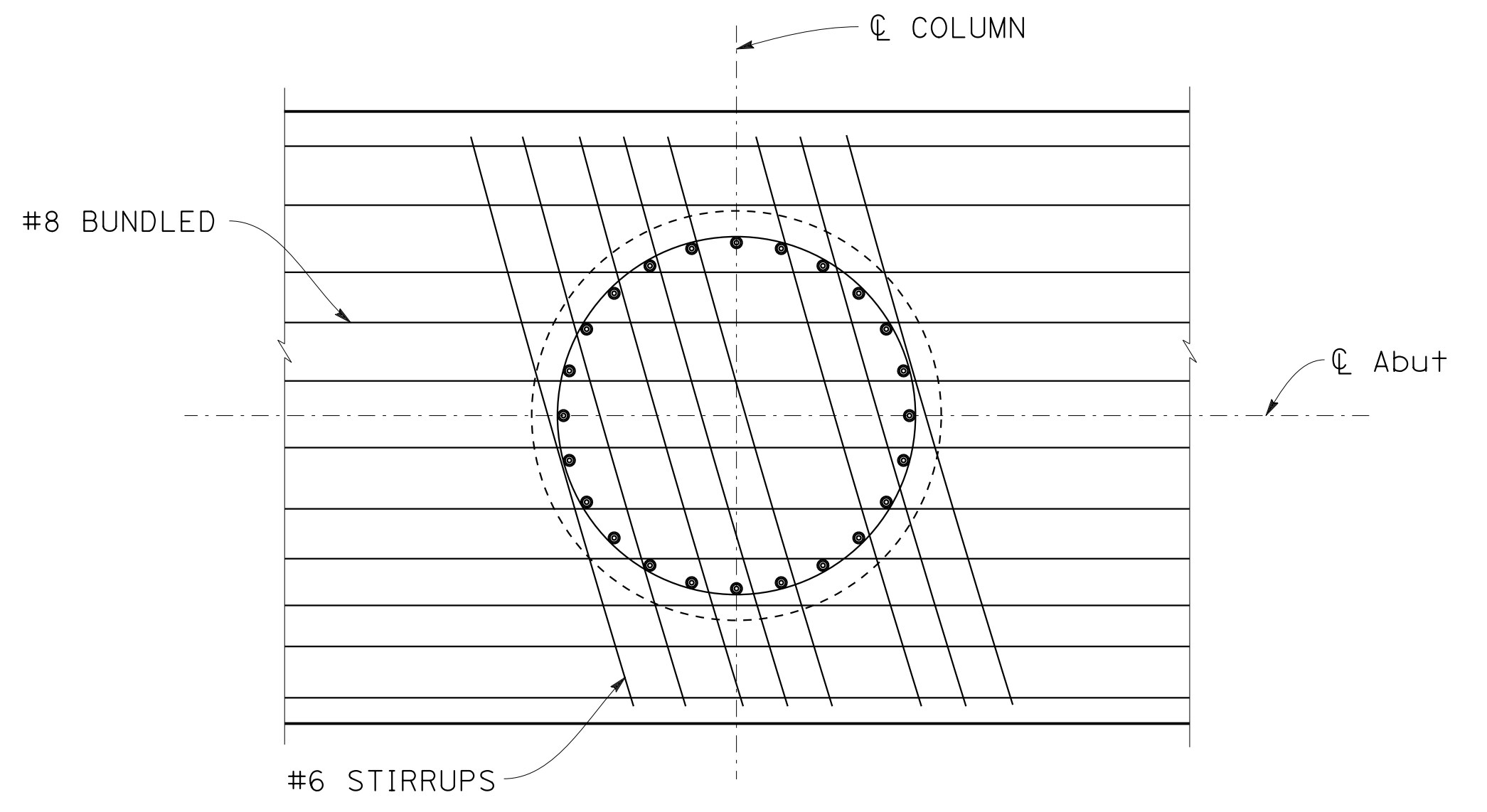
NOTES:

1. Adjust all steel reinforcing to clear the Prestressed Ducts.
2. For details not shown, see "PRESTRESSING DETAILS" sheet.



PARTIAL ELEVATION

3/4" = 1'-0"



COLUMN THREADING DETAIL

3/4" = 1'-0"

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

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN	BY A. CARMAZZI	CHECKED J. ZHU
DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI
QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
PROJECT ENGINEER

BRIDGE NO.	34C0093
POST MILES	7.9

HILLCREST ROAD OC ABUTMENT DETAILS No. 1

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

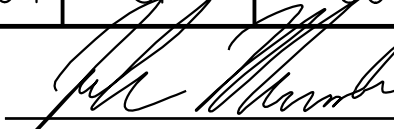
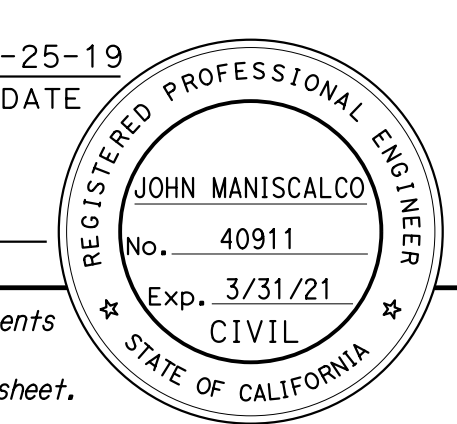
UNIT: 0728
PROJECT NUMBER & PHASE: 04000205071

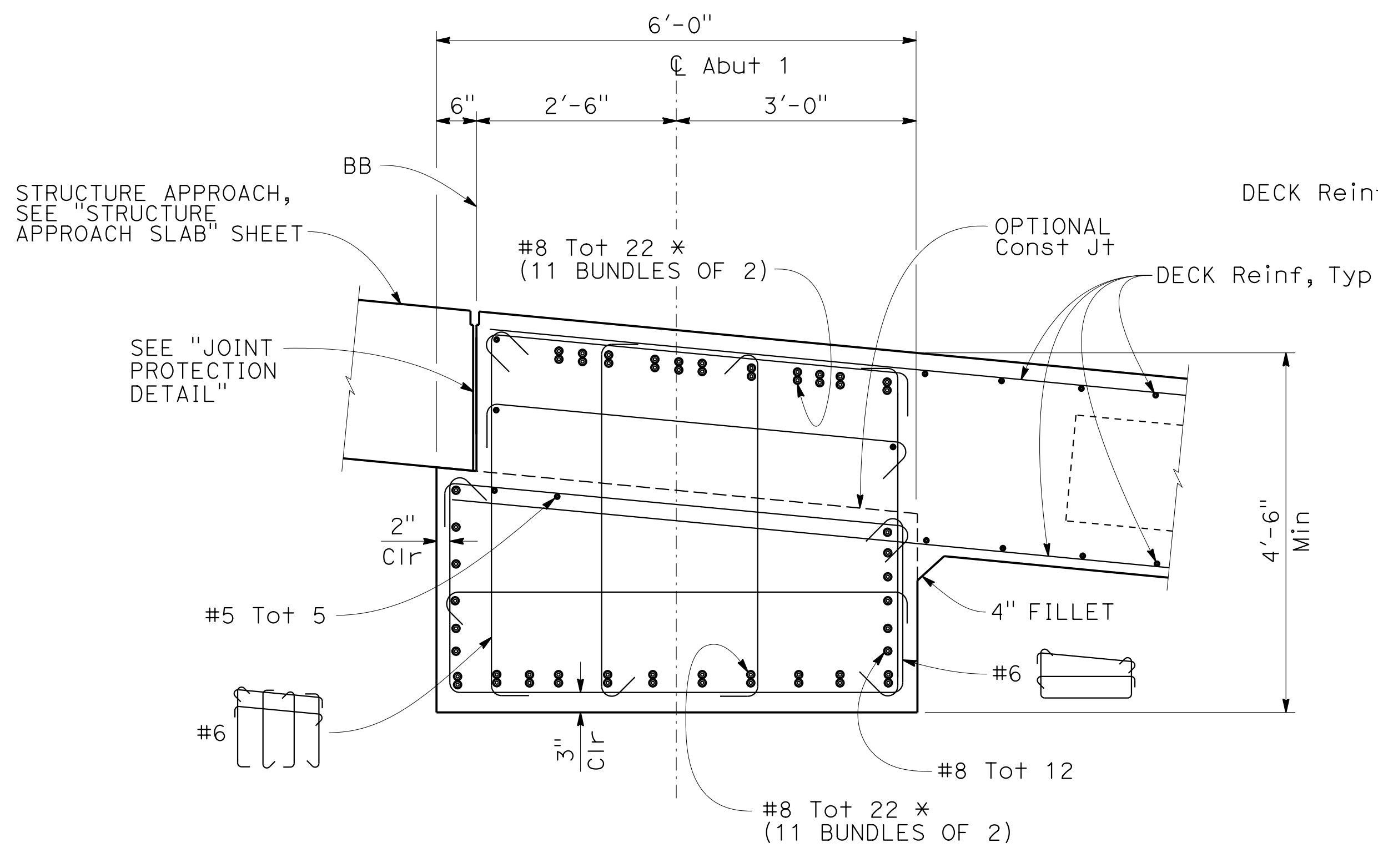
CONTRACT NO.: 04-3A6404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
4-30-18	11-12-18	2-27-19	7-25-19	8	19

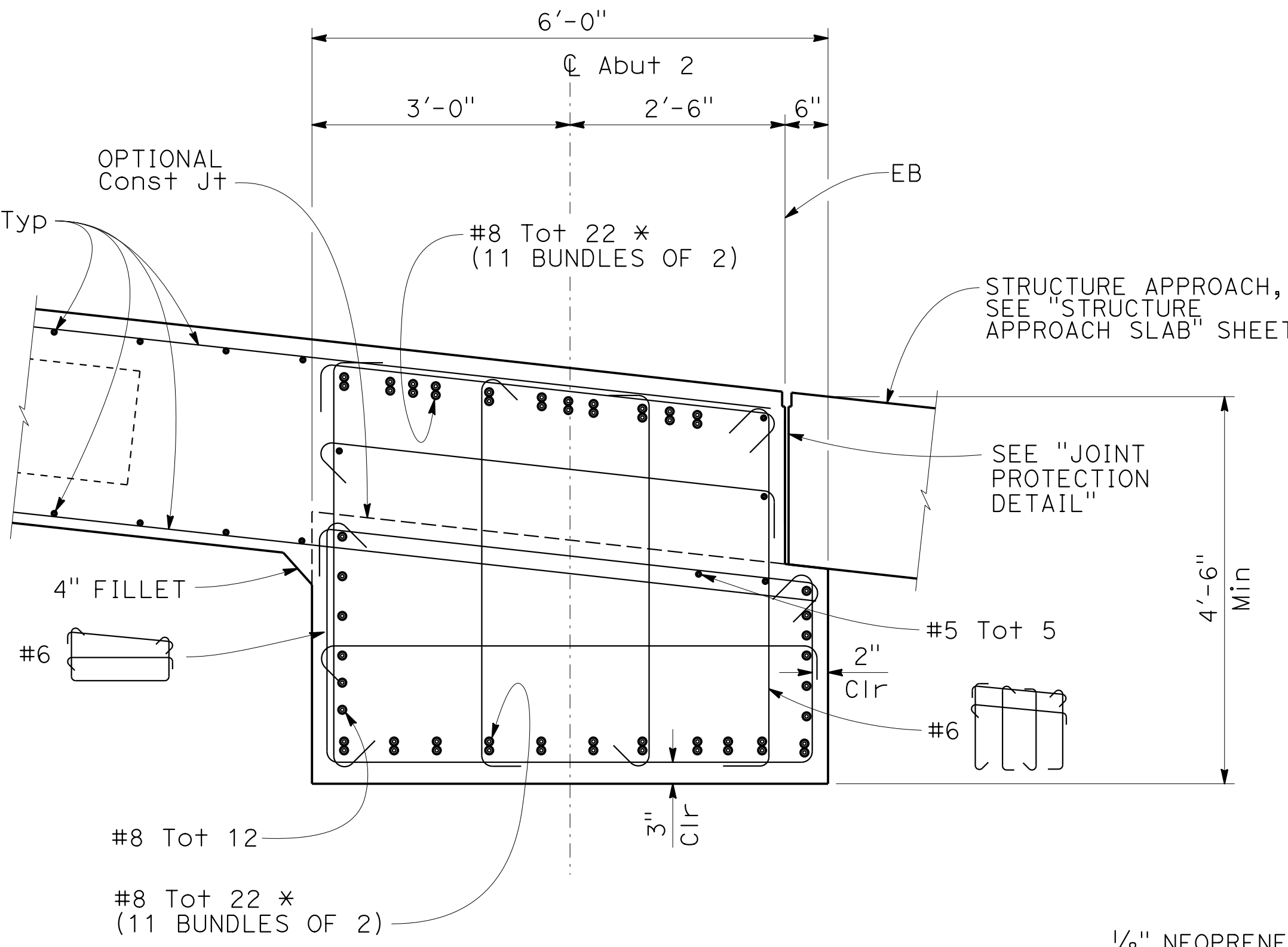
USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	426	436
 REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					



ABUTMENT 1

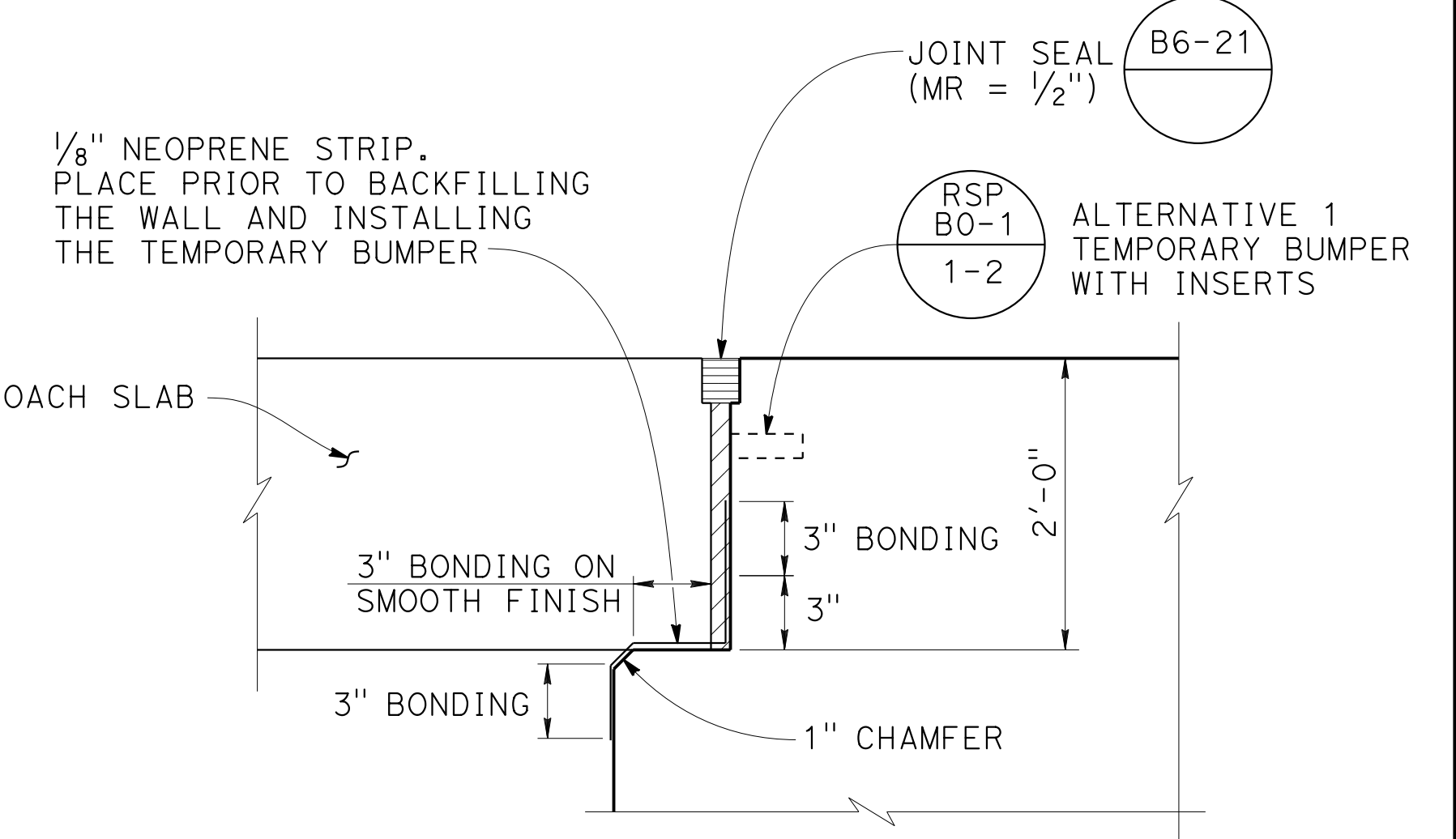
* FOR BAR DETAILS, SEE "ABUTMENT 1 LAYOUT" SHEET



ABUTMENT 2

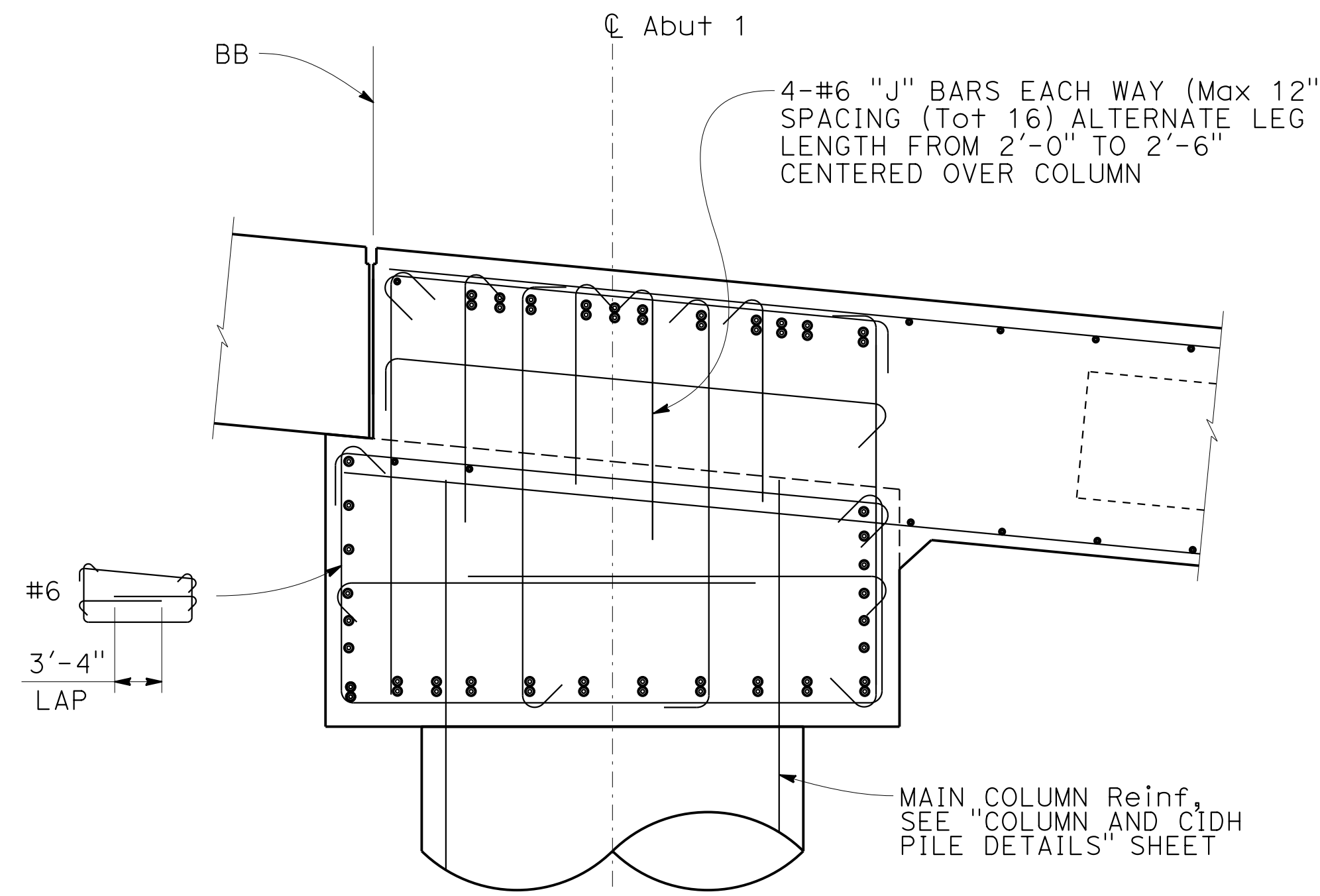
* FOR BAR DETAILS, SEE "ABUTMENT 2 LAYOUT" SHEET

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

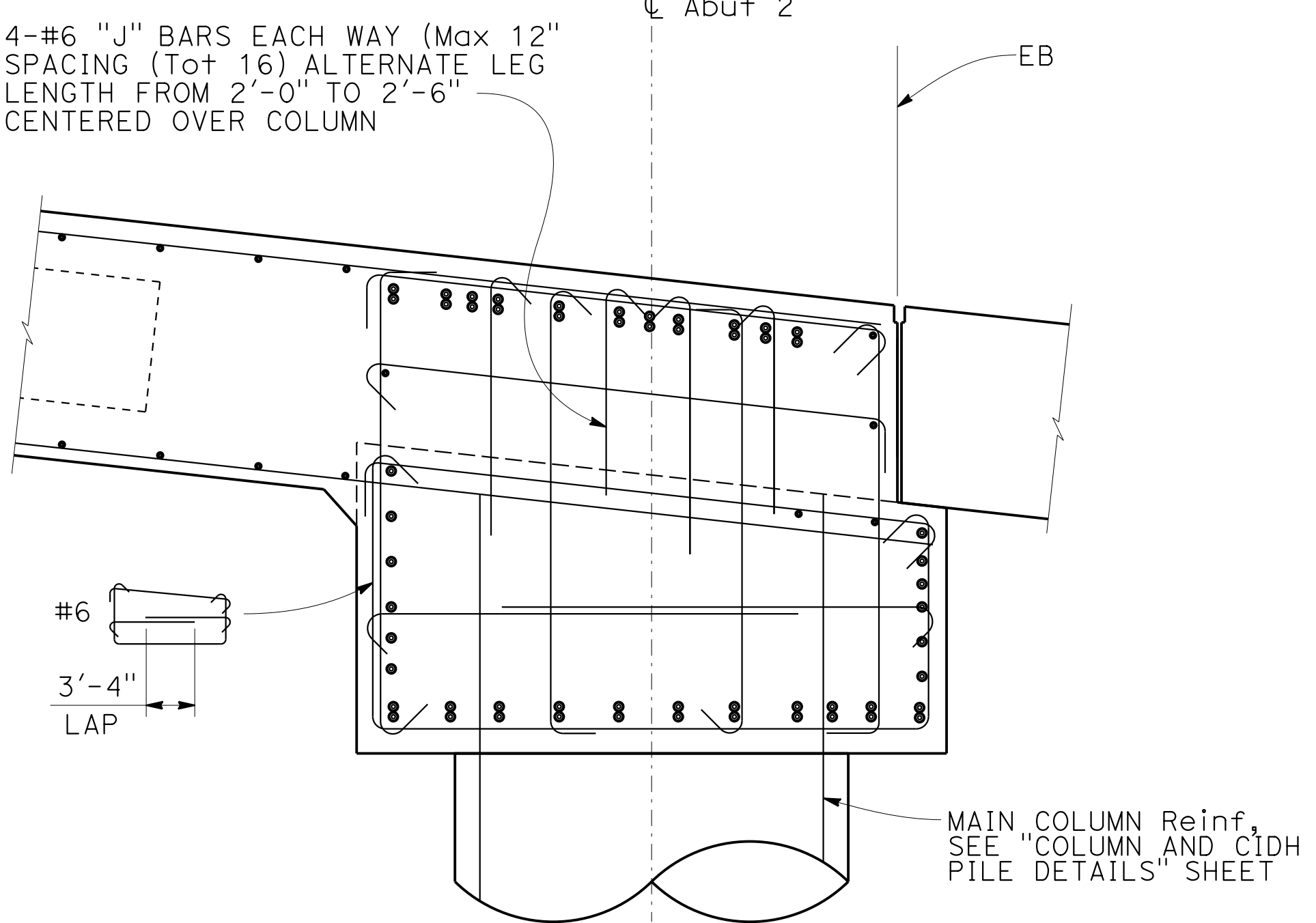


JOINT PROTECTION DETAIL
NO SCALE

- NOTES:
- Adjust all steel reinforcing to clear the Prestressed Ducts.
 - For details not shown, see "ABUTMENT 1 LAYOUT" and "ABUTMENT 2 LAYOUT" sheets.



ABUTMENT 1



ABUTMENT 2

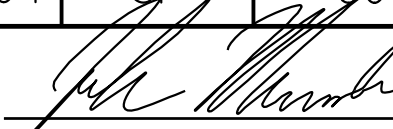
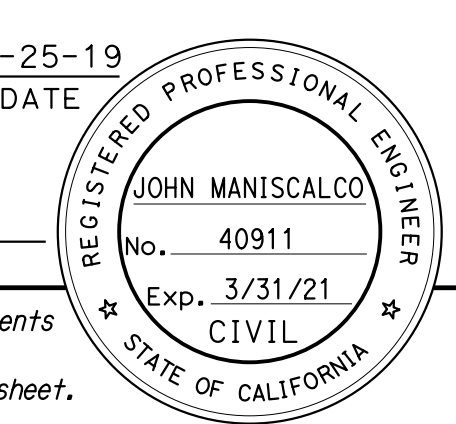
SECTION B-B
3/4" = 1'-0"

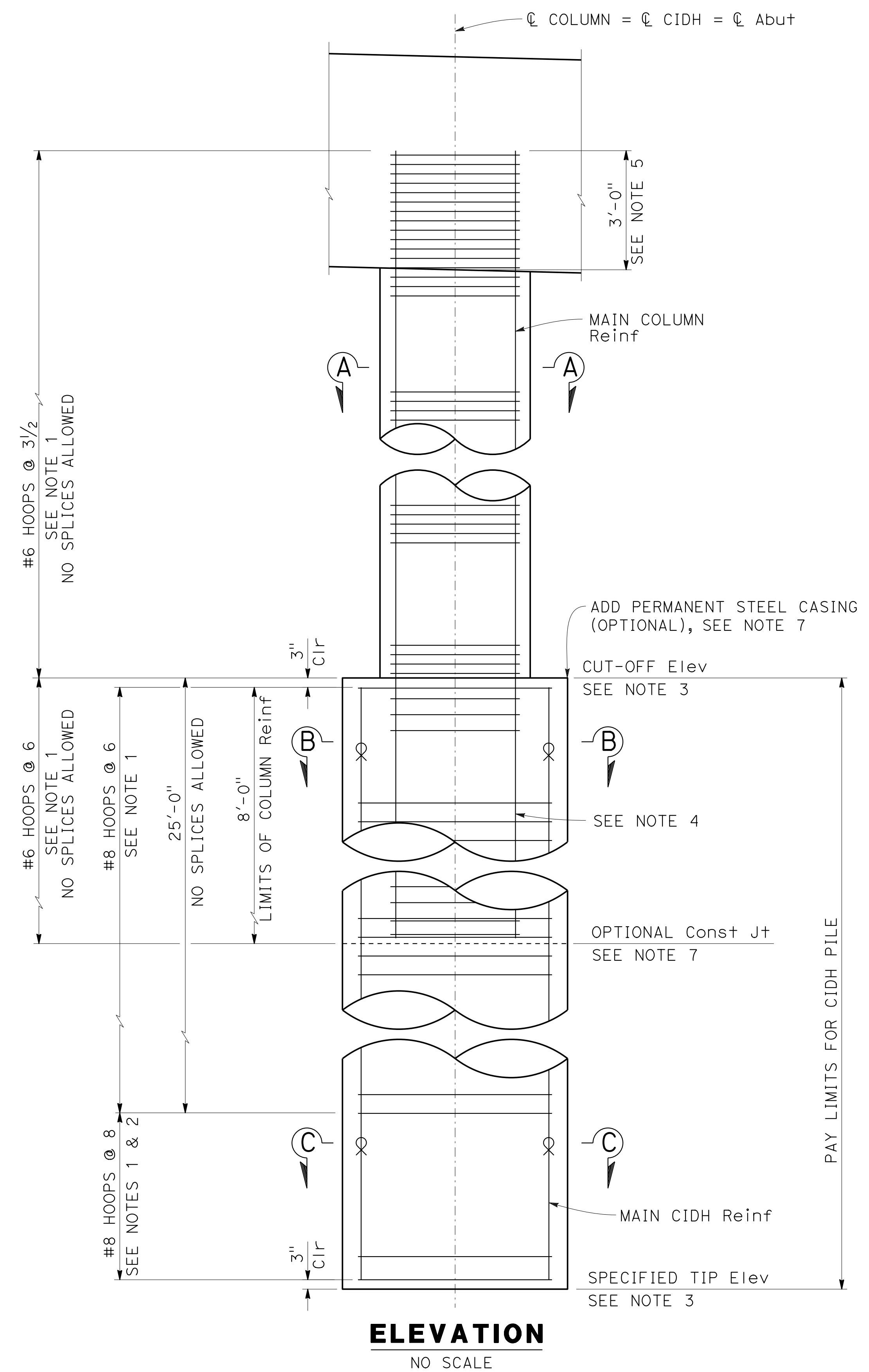
NOTE: FOR INFORMATION NOT SHOWN, SEE "SECTION A-A"

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

DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34C0093	HILLCREST ROAD OC ABUTMENT DETAILS No. 2
SIGN OFF DATE	DETAILS BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		POST MILES 7.9	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CARMAZZI	CHECKED A. CHUNG		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3			DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 4-30-18, 11-12-18, 2-27-19, 7-25-19	SHEET 9 OF 19	

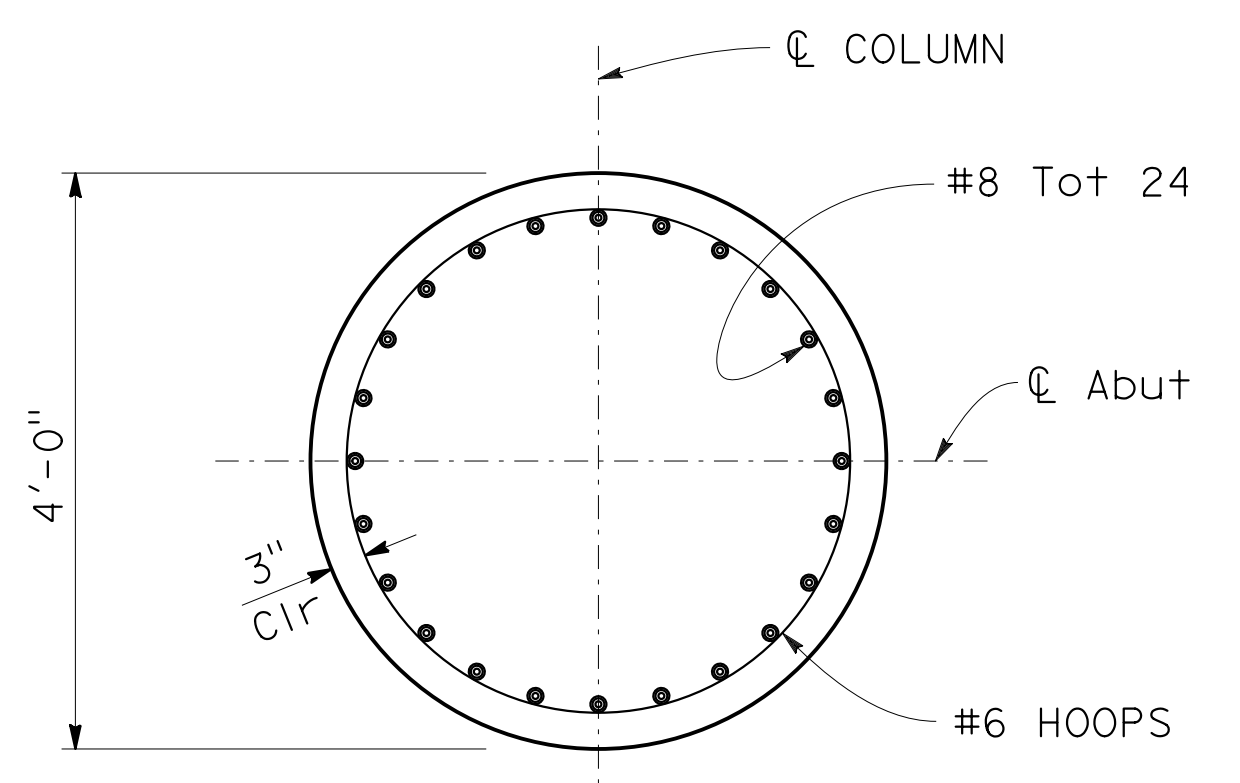
USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	427	436
 REGISTERED CIVIL ENGINEER			7-25-19	DATE	
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY 1455 MARKET STREET, SUITE 2200 SAN FRANCISCO, CA 94103					
HDR ENGINEERING, INC 100 PRINGLE AVENUE, SUITE 400 WALNUT CREEK, CA 94596					

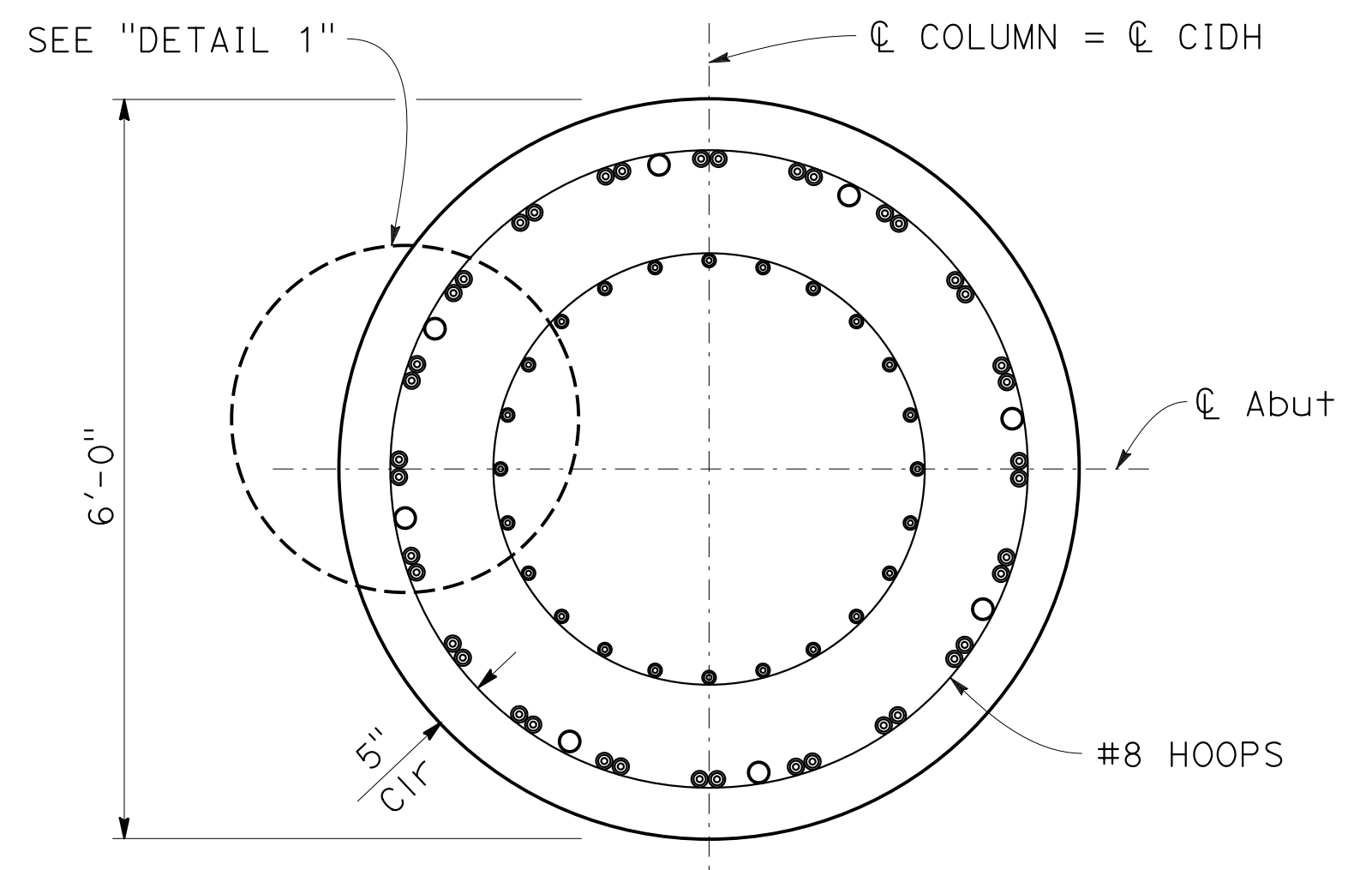


ELEVATION
NO SCALE

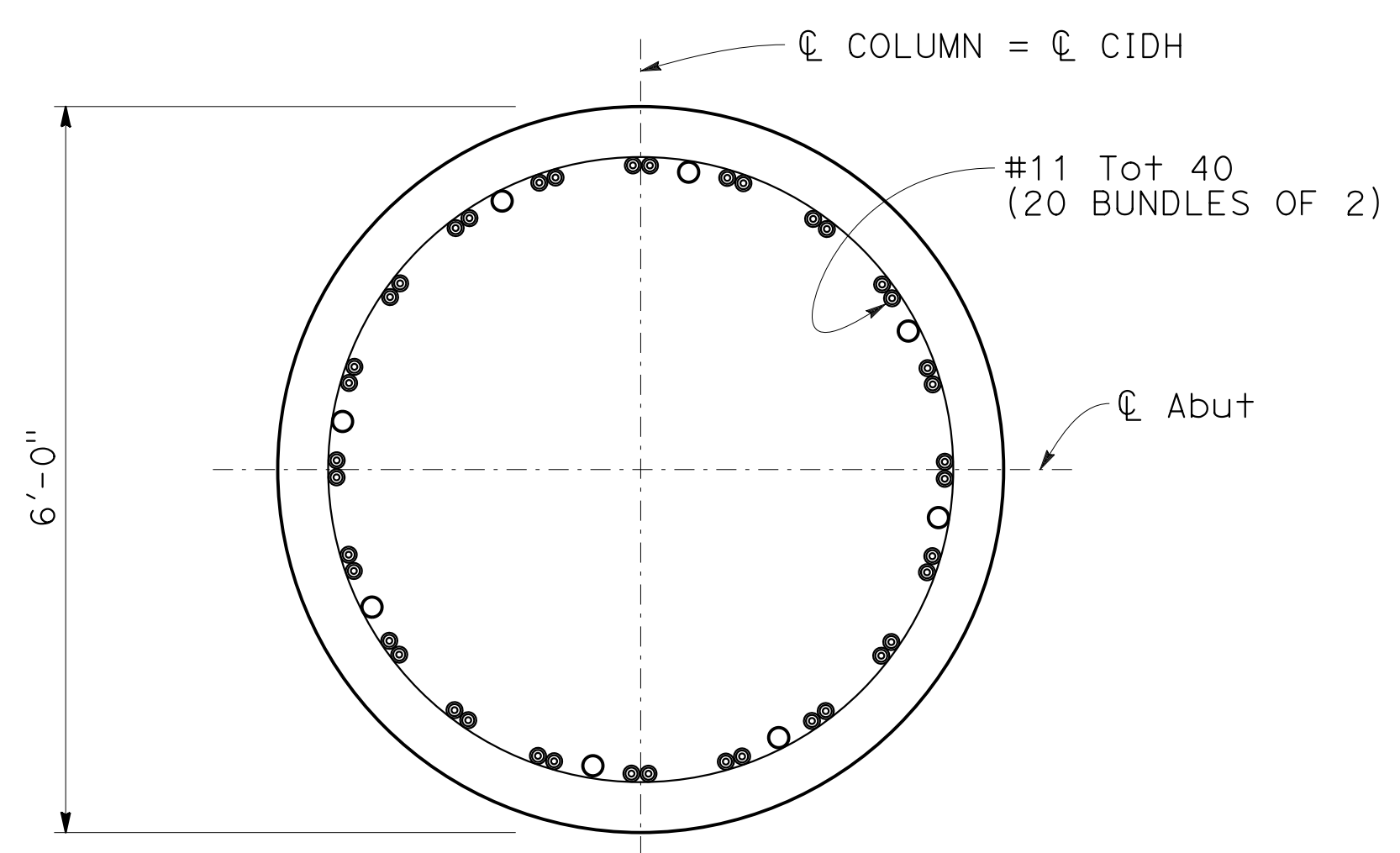
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



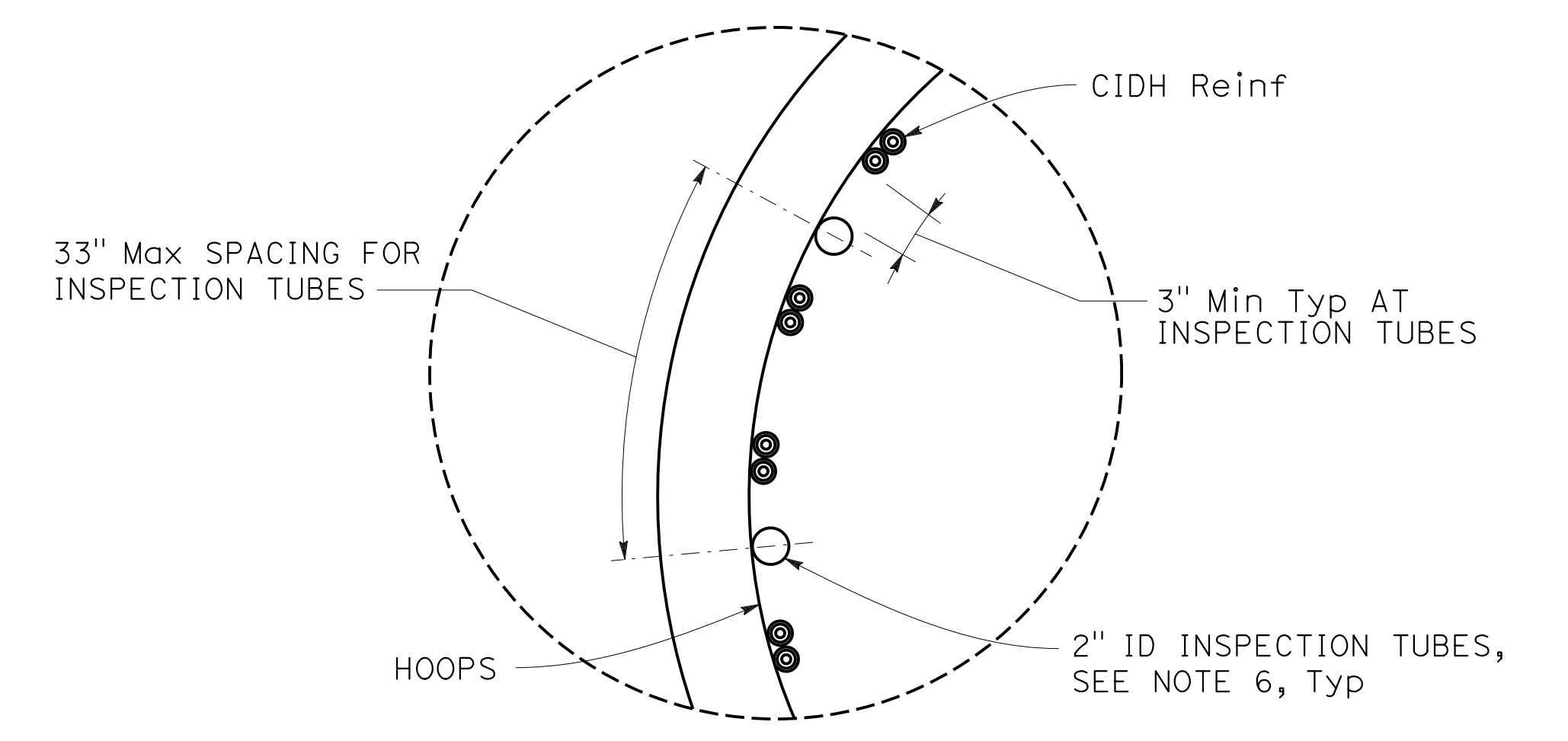
SECTION A-A
3/4" = 1'-0"



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



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



DETAIL 1
NO SCALE

LEGEND:

⊗ Bundled Bars

NOTES:

1. All hoops are "Ultimate" butt spliced continuous.
2. Only staggered "Ultimate" butt splices are allowed in main shaft reinforcement in this zone.
3. For "PILE DATA TABLE" see "FOUNDATION PLAN" sheet.
4. Terminate alternate bars 1'-0" from Optional Construction Joint.
5. Hoop spacing in cap can be varied to accommodate cap reinforcement. The total number of hoops shall not be less than the equivalent of what is shown on plans.
6. For inspection tube requirements and procedures, see project specifications.
7. Permanent steel casing is required if optional construction joint is used. If construction joint is omitted the permanent steel casing is not needed.

DESIGN OVERSIGHT	
SIGN OFF DATE	

DESIGN	BY A. CARMAZZI	CHECKED J. ZHU
DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI
QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

BRIDGE NO.	34C0093
POST MILES	7.9

HILLCREST ROAD OC COLUMN AND CIDH PILE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	10	19

FILE => 34C0093-j-cde+01.dgn

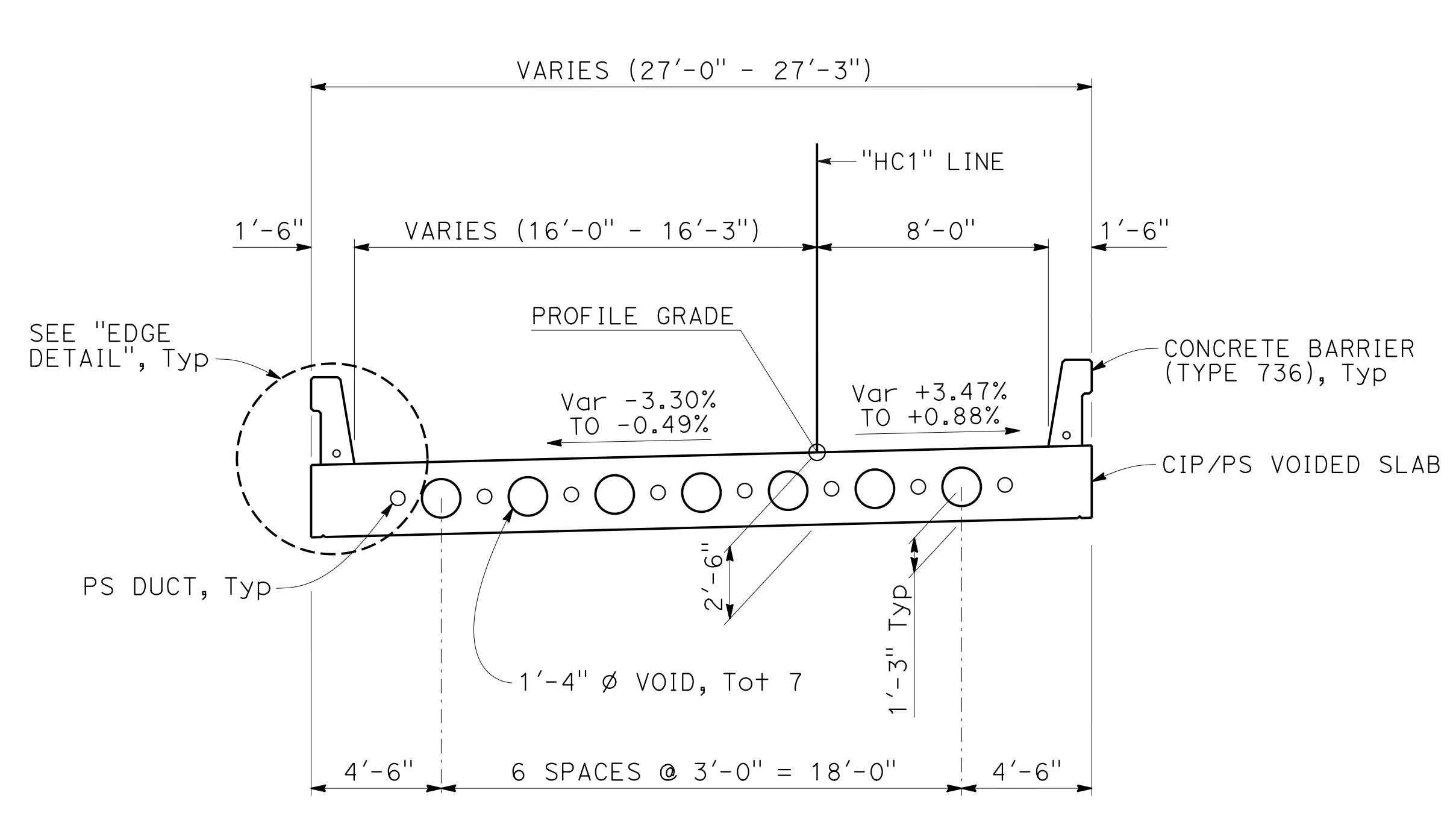
USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:01

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	428	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

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

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



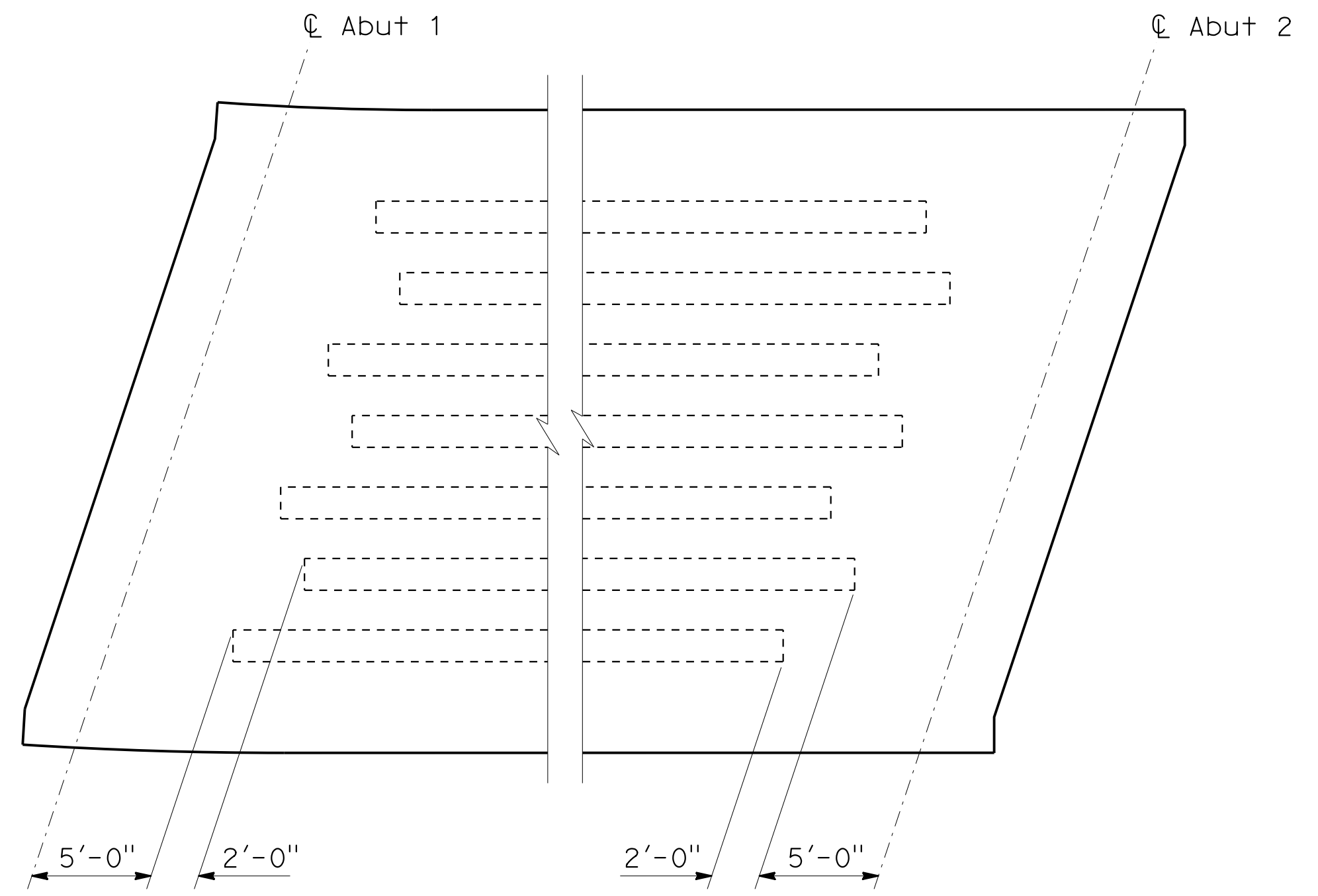
TYPICAL SECTION

1/4" = 1'-0"

NOTE: MEASUREMENTS ARE NORMAL TO LAYOUT LINE

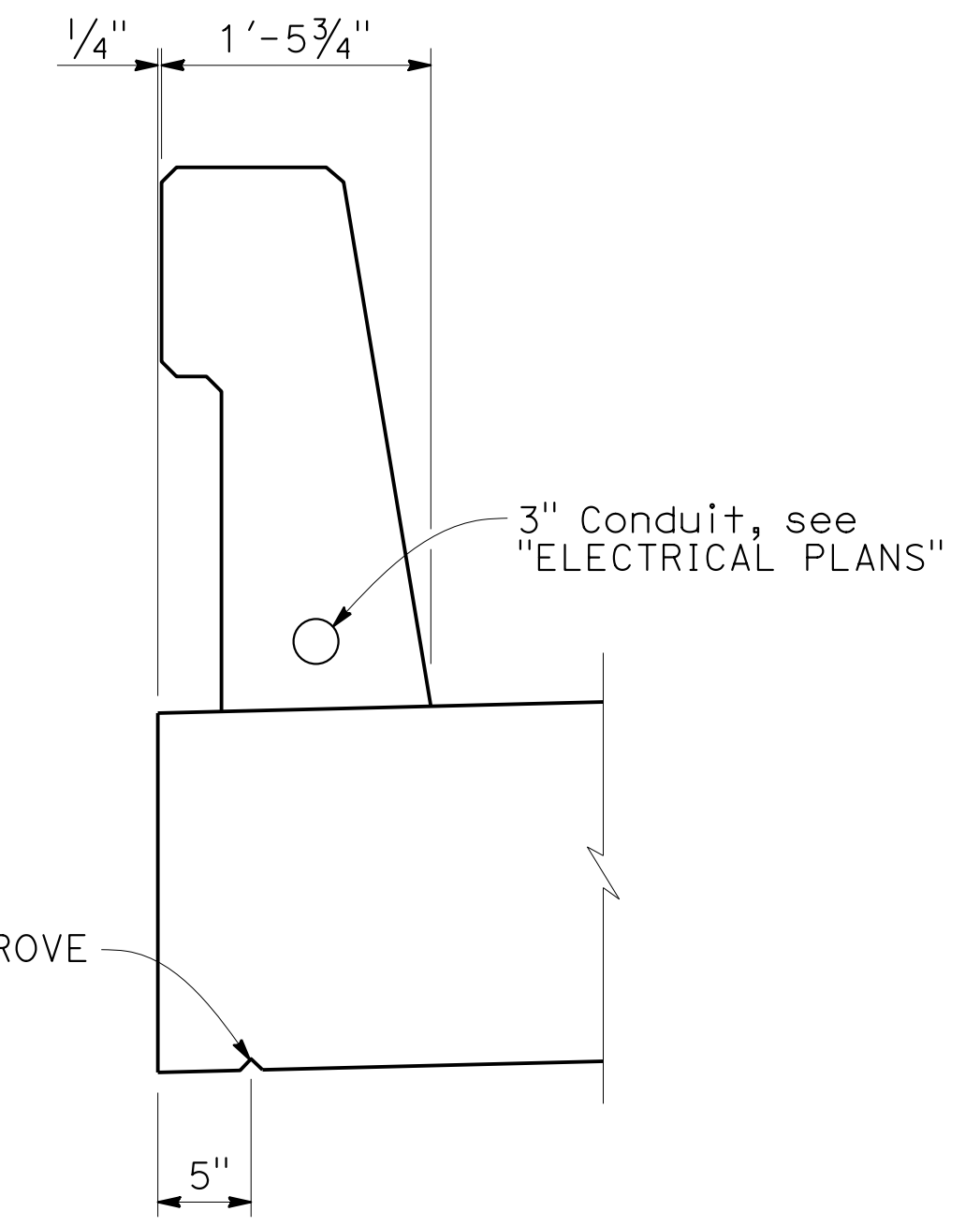
LEGEND:

- Indicates additional Reinf, see "DECK REINFORCEMENT" sheet
- Indicates typical deck Reinf



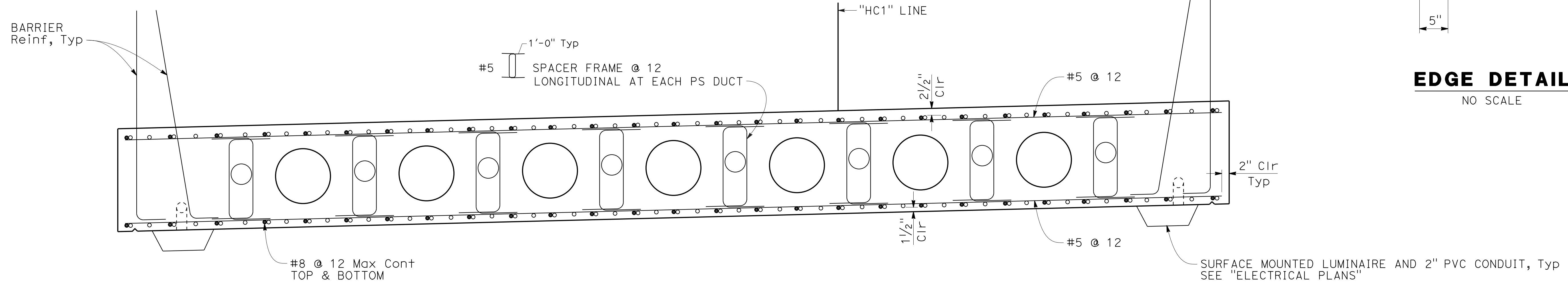
VOID LAYOUT

3/16" = 1'-0"



EDGE DETAIL

NO SCALE



ENLARGED TYPICAL SECTION

3/4" = 1'-0"


B8-5

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

DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34C0093	HILLCREST ROAD OC TYPICAL SECTION															
SIGN OFF DATE	DETAILS BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		POST MILES 7.9																
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CARMAZZI	CHECKED A. CHUNG		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404																
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18</td> <td>11</td> <td>19</td> </tr> <tr> <td>11-12-18</td> <td></td> <td></td> </tr> <tr> <td>2-27-19</td> <td></td> <td></td> </tr> <tr> <td>7-25-19</td> <td></td> <td></td> </tr> </table>	REVISION DATES	SHEET	OF	4-30-18	11	19	11-12-18			2-27-19			7-25-19		
REVISION DATES	SHEET	OF																		
4-30-18	11	19																		
11-12-18																				
2-27-19																				
7-25-19																				

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:01

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	429	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

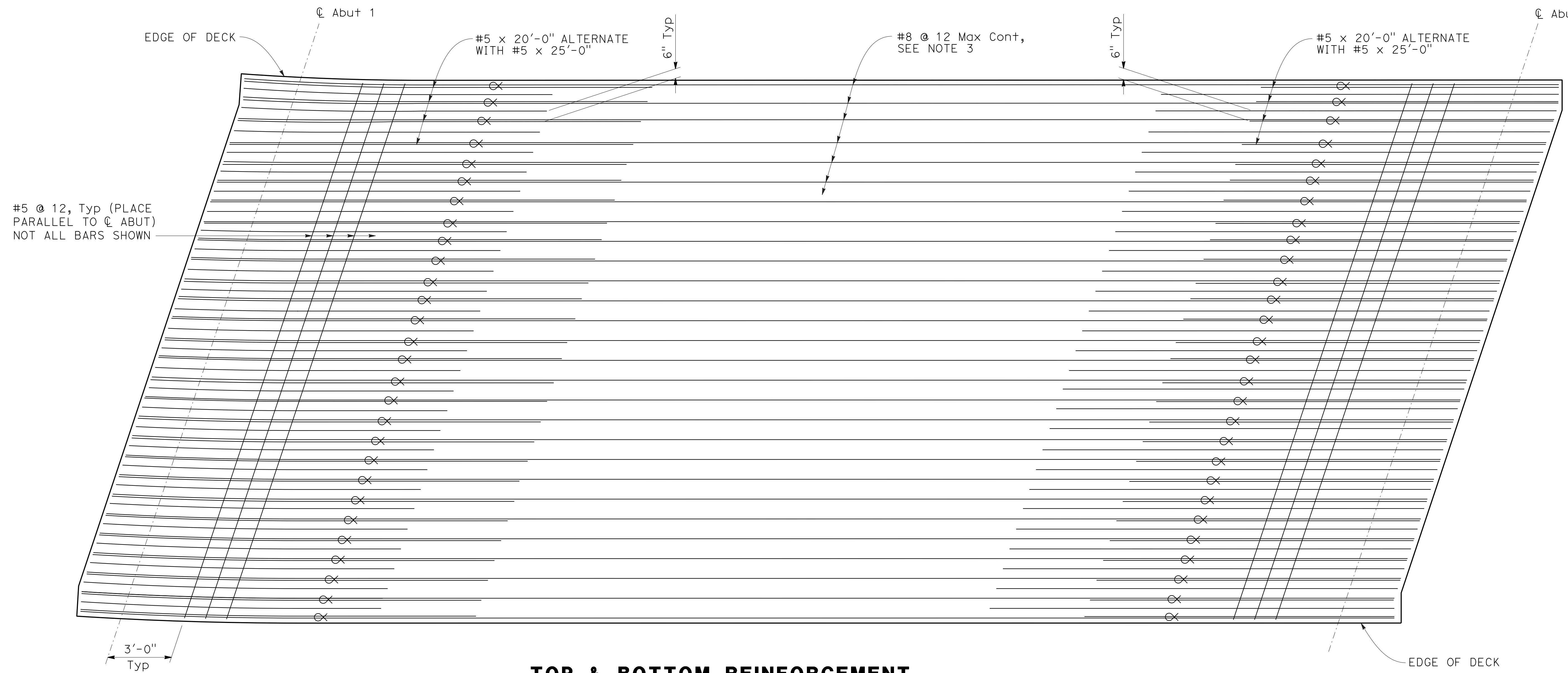
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

LEGEND:

⊗ Bundled Bars

NOTES:

1. For details not shown, see "TYPICAL SECTION" sheet.
2. Additional reinforcement shall be spaced equally.
3. No splices allowed in main slab reinforcement.



TOP & BOTTOM REINFORCEMENT


NO SCALE

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

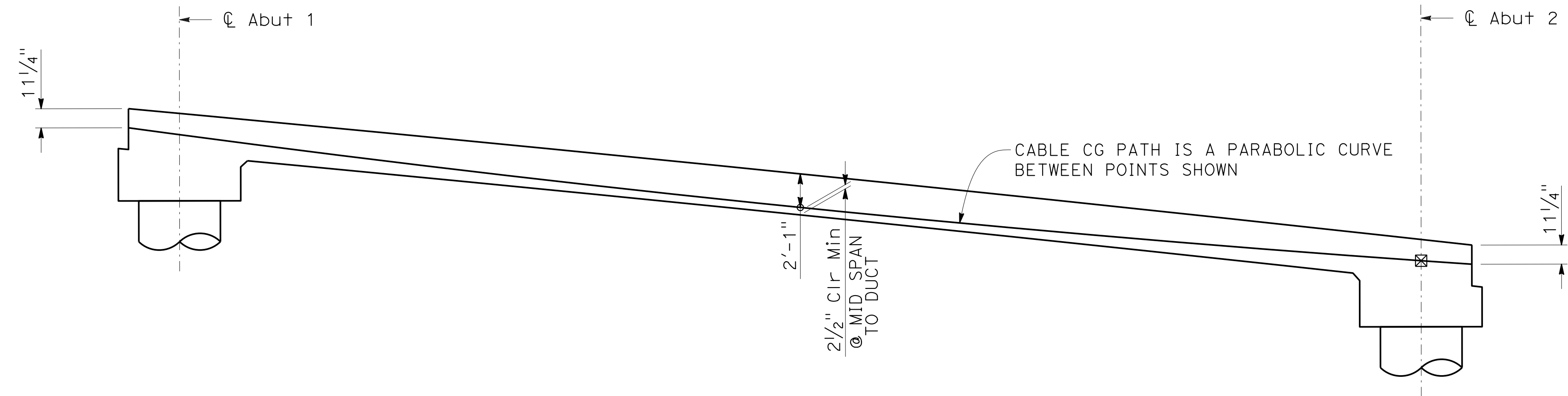
DESIGN OVERSIGHT	DESIGN BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34C0093	HILLCREST ROAD OC DECK REINFORCEMENT															
SIGN OFF DATE	DETAILS BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		POST MILES 7.9																
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY A. CARMAZZI	CHECKED A. CHUNG		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404																
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18</td> <td>12</td> <td>19</td> </tr> <tr> <td>11-12-18</td> <td></td> <td></td> </tr> <tr> <td>2-27-19</td> <td></td> <td></td> </tr> <tr> <td>7-25-19</td> <td></td> <td></td> </tr> </table>	REVISION DATES	SHEET	OF	4-30-18	12	19	11-12-18			2-27-19			7-25-19		
REVISION DATES	SHEET	OF																		
4-30-18	12	19																		
11-12-18																				
2-27-19																				
7-25-19																				

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:01

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	430	436


 REGISTERED CIVIL ENGINEER DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

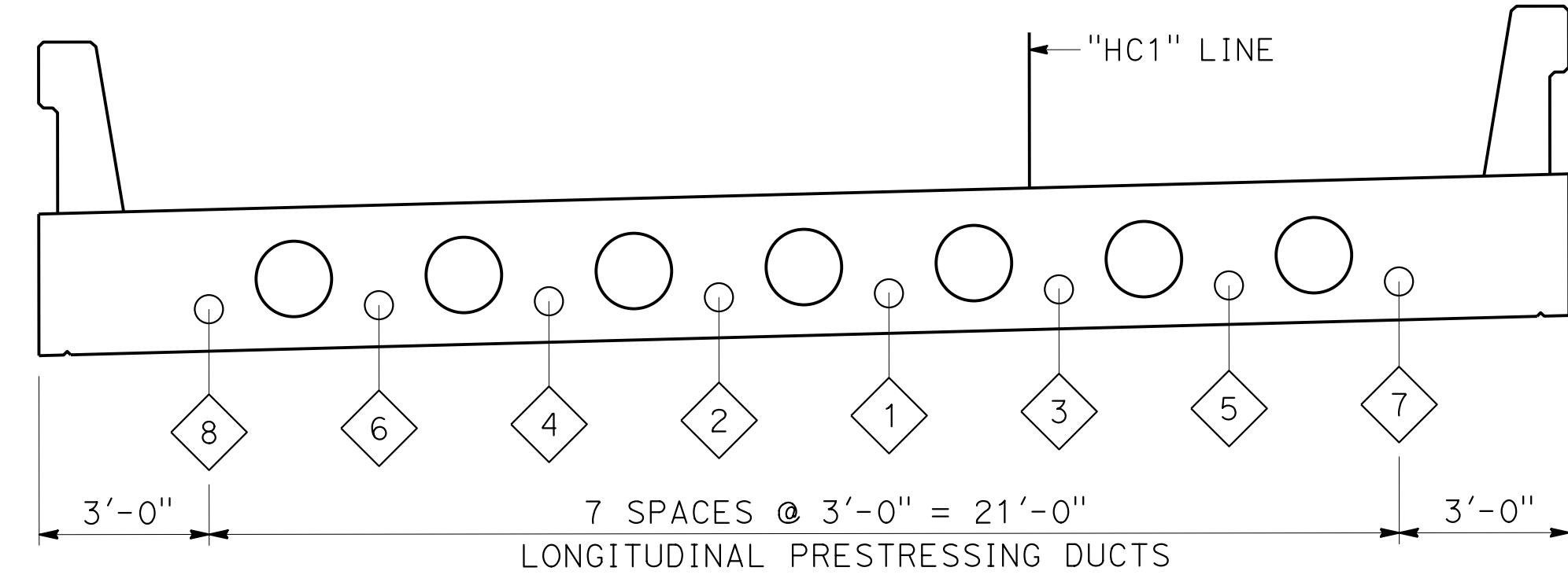
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



CABLE PATH
NO SCALE

LEGEND:

- ☒ Indicates point of no movement for one end stressing
- ◊ Indicates sequence of prestressing ducts



SEQUENCING OF PRESTRESSED DUCTS
3/8" = 1'-0"

NOTE: MEASUREMENTS ARE NORMAL TO LAYOUT LINE

PRESTRESSING NOTES

270 KSI Low Relaxation Strand:

$P_{jack} = \frac{3516}{8} \text{ kips}$
 Anchor Set = $\frac{3}{8}$ inch
 No. of Prestressing Ducts = 8

Contractor shall submit elongation calculations based on initial stress at

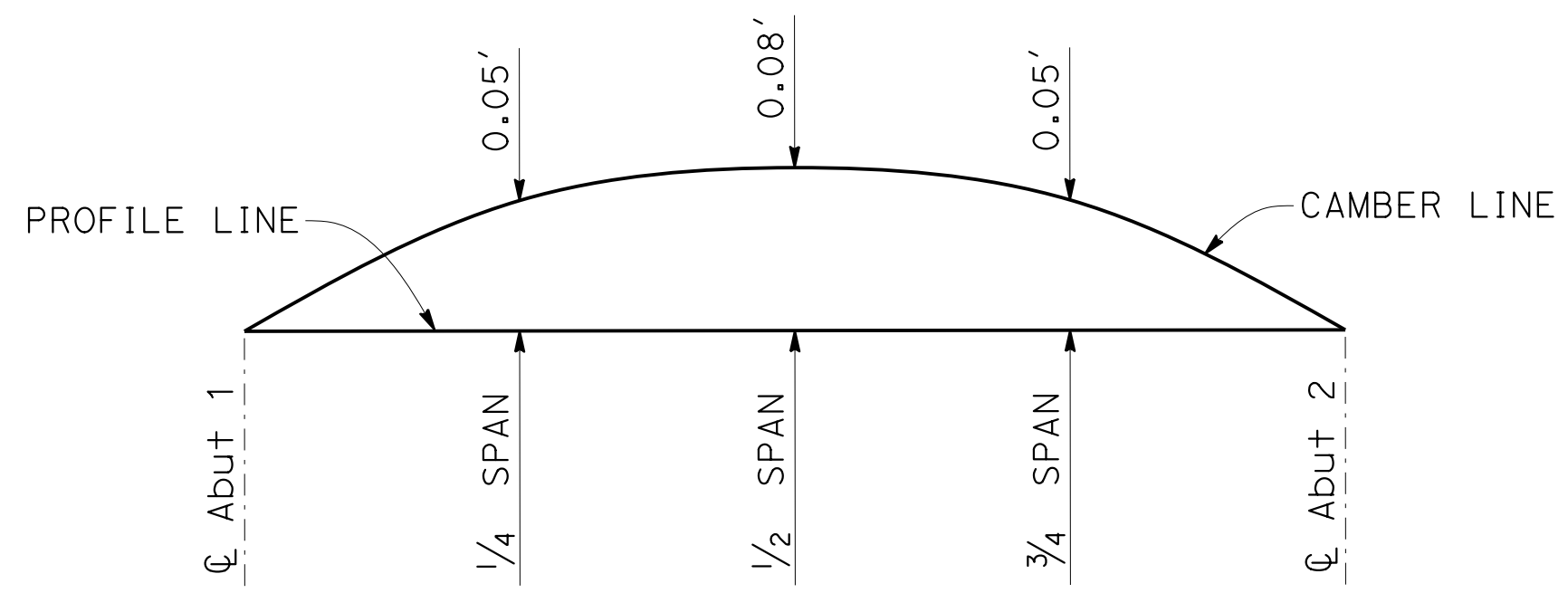
☒ = 0.875 time jacking stress.

One end stressing shall be performed from Abutment 1

Concrete: $f'_c = 4.0$ ksi @ 28 days

$f'_{ci} = 3.5$ ksi @ time of stressing

Distribution of prestress force (P_{jack}) between tendons shall not exceed the ratio of 3:2 Maximum. Final force variation between tendons shall not exceed 146 Kips.



CAMBER DIAGRAM
NO SCALE

(DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT)

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

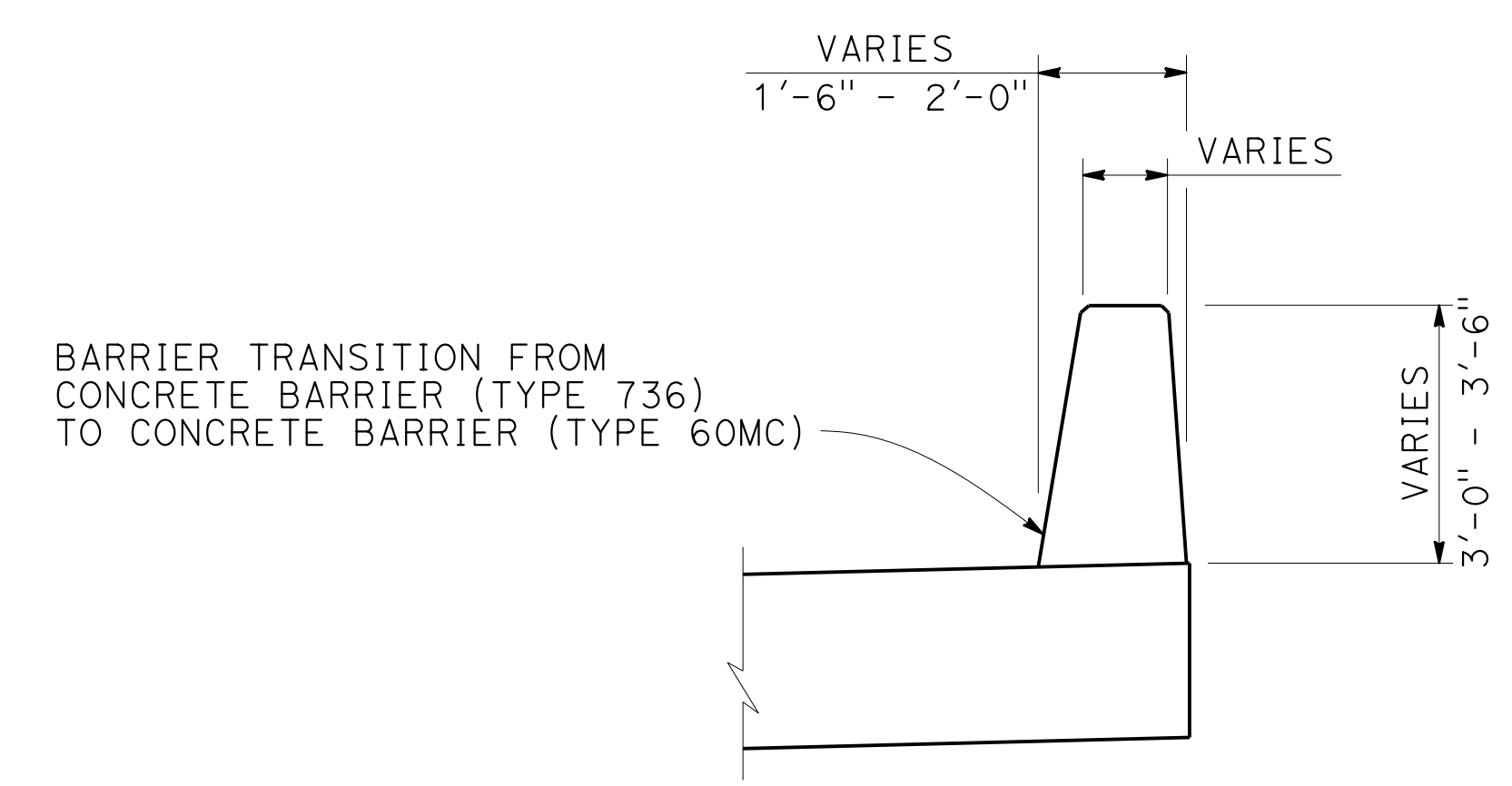
DESIGN OVERSIGHT	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	HILLCREST ROAD OC PRESTRESSING DETAILS		
	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		34C0093			
SIGN OFF DATE	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	JOHN MANISCALCO PROJECT ENGINEER	POST MILES	7.9		
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.: 04-3A604	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	SHEET 13 OF 19

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	431	436

REGISTERED CIVIL ENGINEER *[Signature]* DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



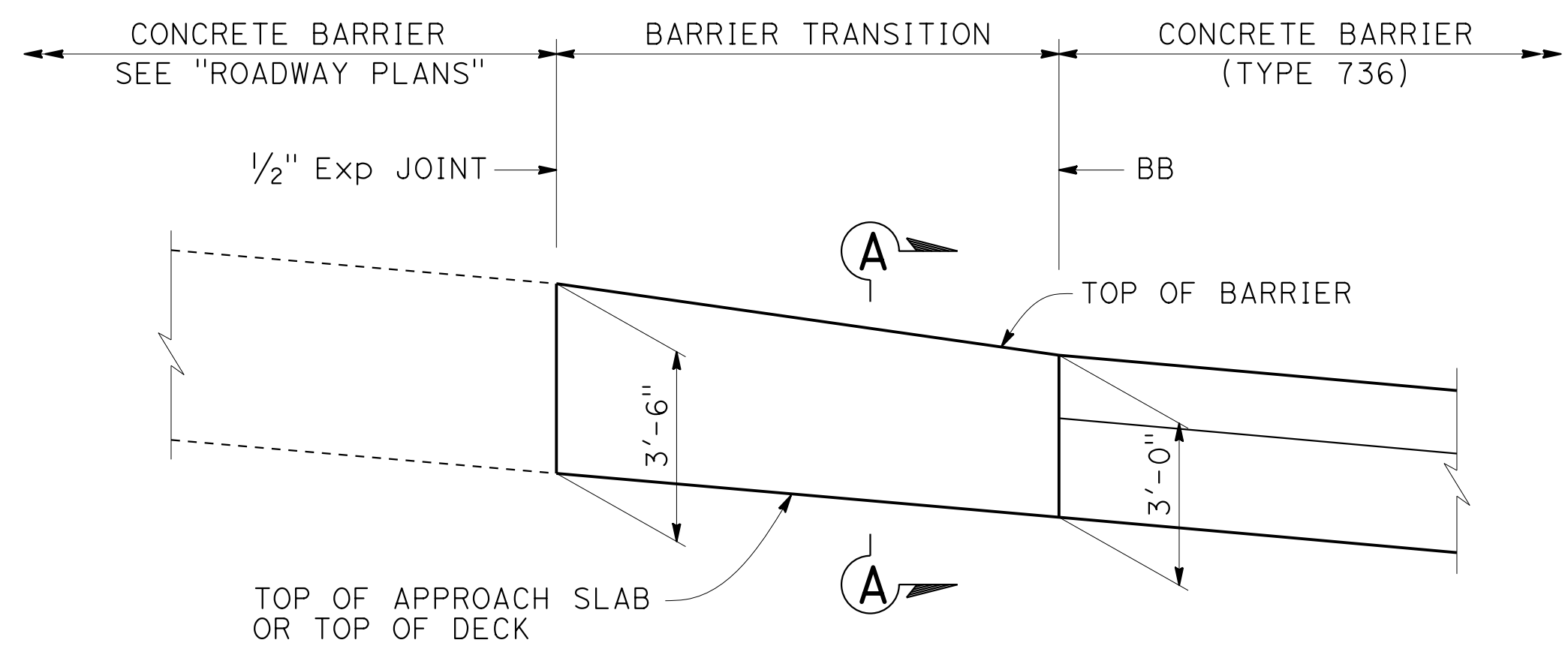
SECTION A-A

LEGEND:

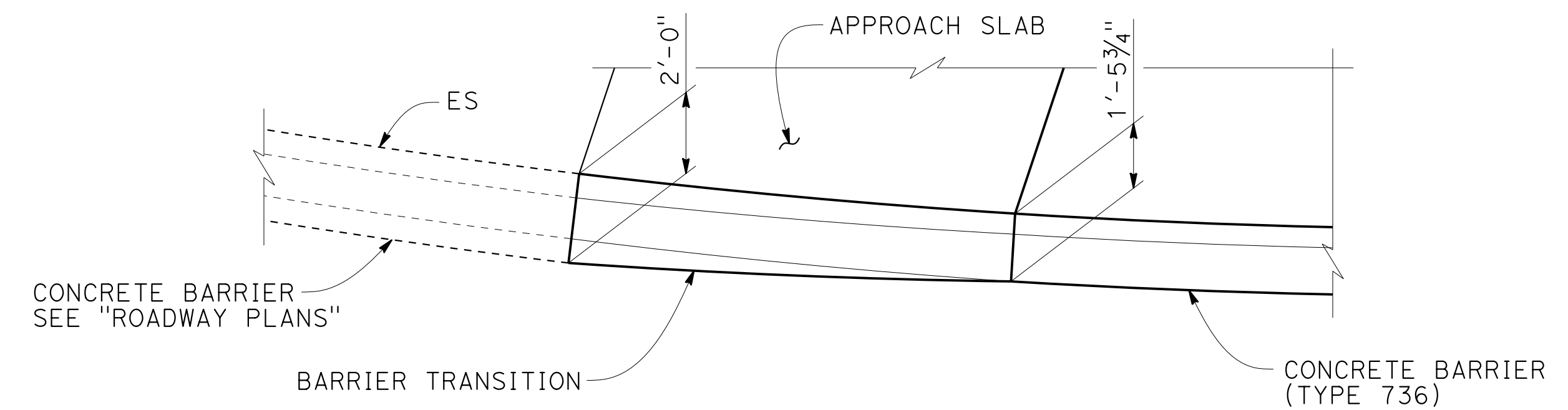
- ⊙ Indicates typical slab bottom Reinf
- Indicates additional #8 bar
- ⊗ Bundled Bars

NOTE:

1. Bundle additional #8 x 14'-0" and #5 x 8'-0" bars with typical slab bottom reinforcement as shown in section. The #5 bars to be placed 2" clear of edge of structure.



PARTIAL ELEVATION



PARTIAL PLAN

BARRIER TRANSITION DETAILS

NO SCALE

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

DESIGN OVERSIGHT	DESIGN	BY A. CARMAZZI	CHECKED J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	HILLCREST ROAD OC MISCELLANEOUS DETAILS	
	DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI		34C0093		
SIGN OFF DATE	QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG	JOHN MANISCALCO PROJECT ENGINEER	POST MILES	7.9	
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	CONTRACT NO.:	04-3A604	
				DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 4-30-18 11-12-18 2-27-19 7-25-19	SHEET 14 OF 19

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:02

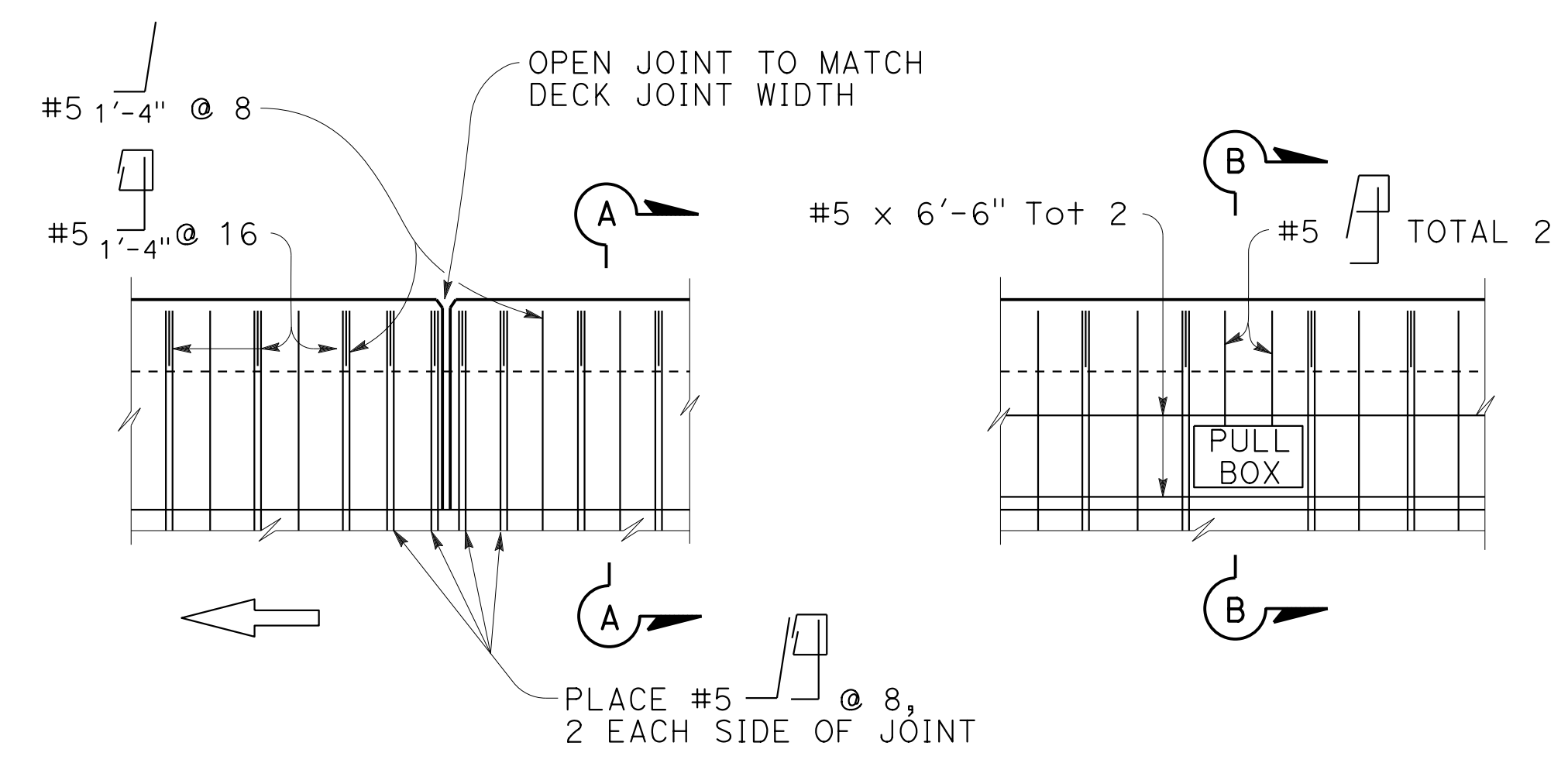
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	432	436

REGISTERED CIVIL ENGINEER *[Signature]* DATE 7-25-19
 PLANS APPROVAL DATE _____
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

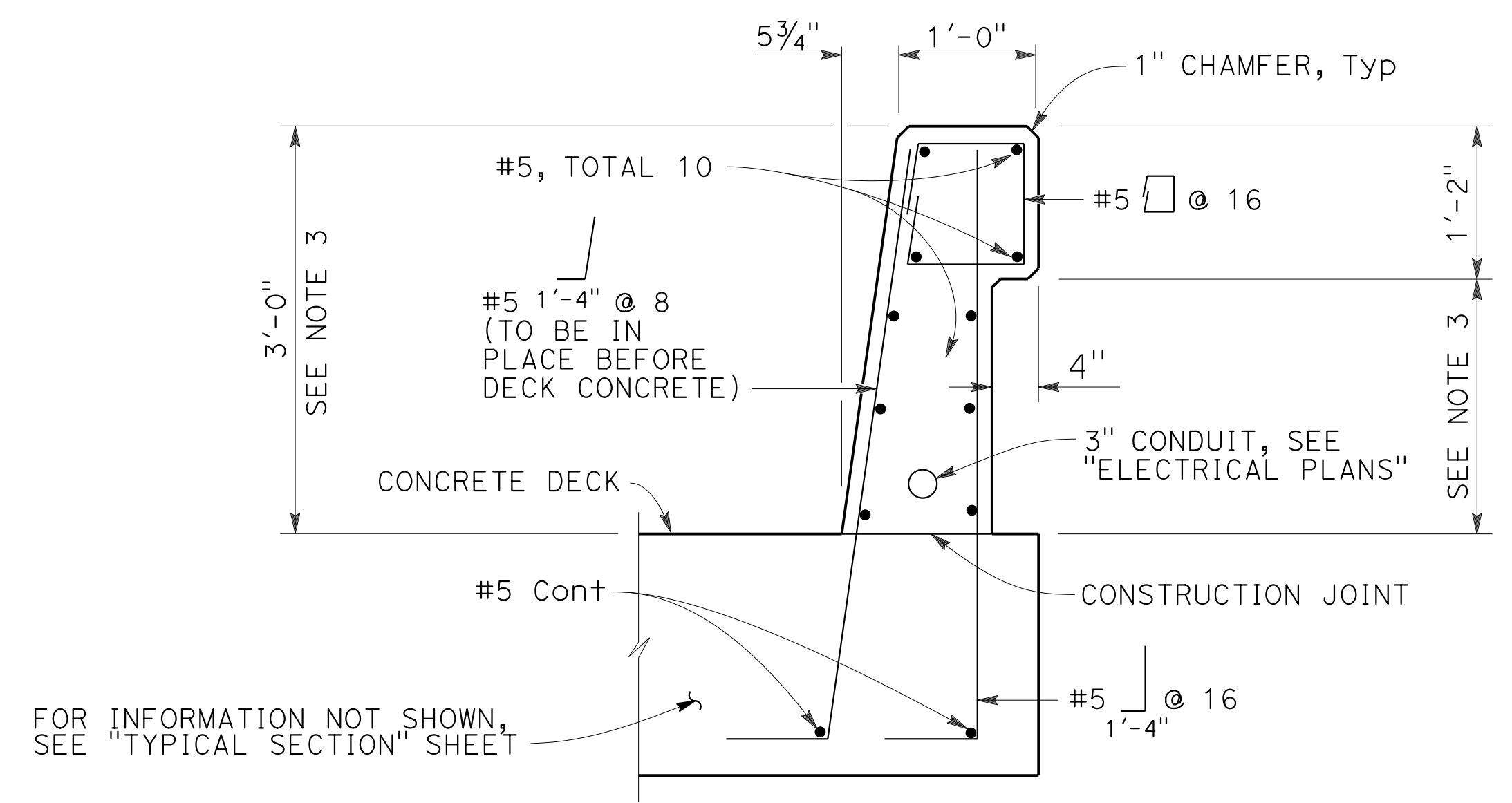
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103
 HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

NOTES:

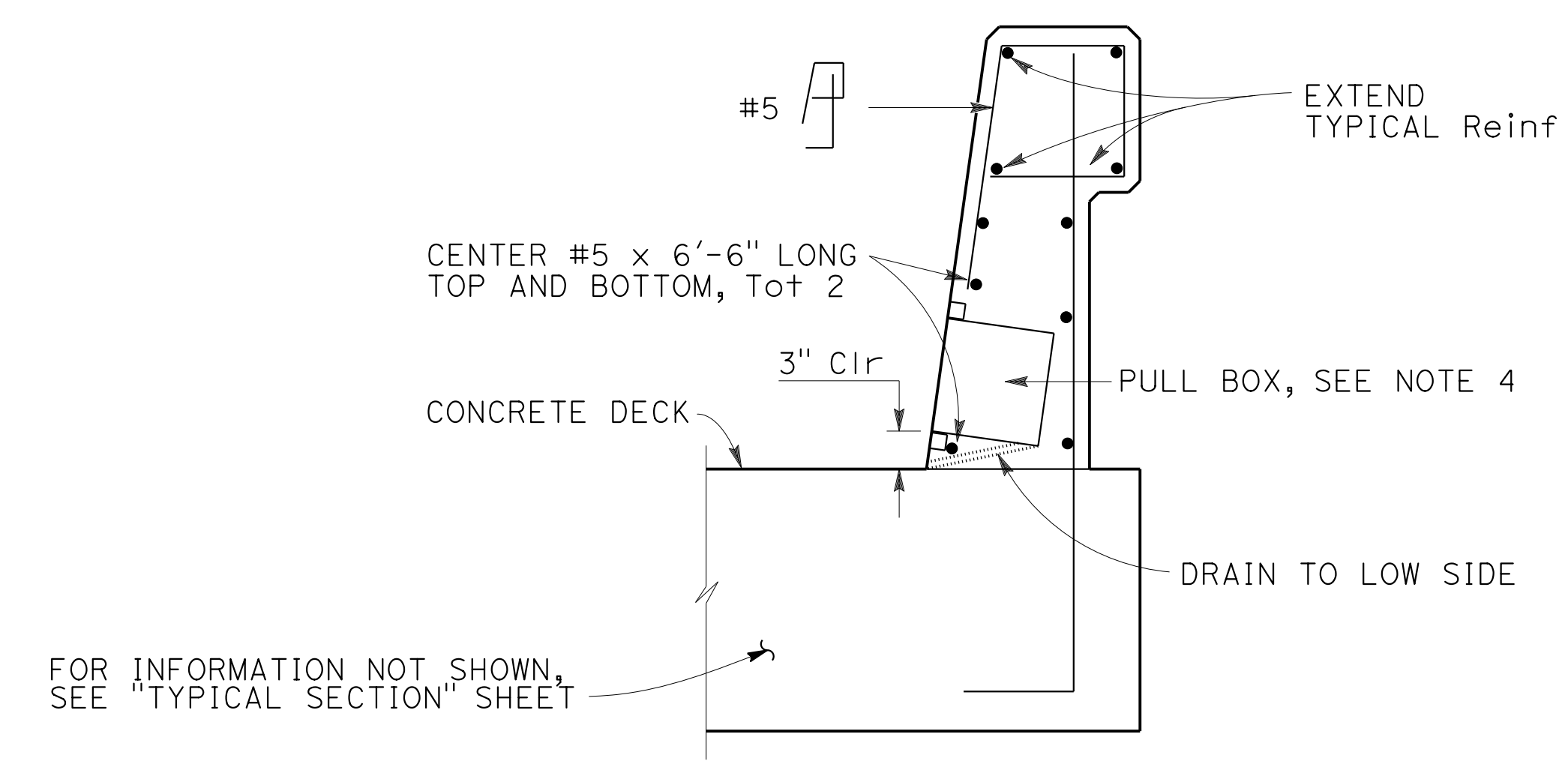
1. Walls are to be backfilled before barrier is placed.
2. Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints. All barrier Reinf to be epoxy coated UON.
3. Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.
4. See Standard Plans ES-9A thru ES-9E and "ELECTRICAL PLANS" for electrical details not shown.



ELEVATION



SECTION A-A



SECTION B-B

CONCRETE BARRIER (TYPE 736)

NO SCALE

DESIGN OVERSIGHT _____
 SIGN OFF DATE _____

DESIGN	BY A. CARMAZZI	CHECKED J. ZHU
DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI
QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO.	34C0093
POST MILES	7.9

HILLCREST ROAD OC
CONCRETE BARRIER (TYPE 736)

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 0728
PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	15	19

FILE => 34C0093-u-miscdt02.dgn

USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	433	436

REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

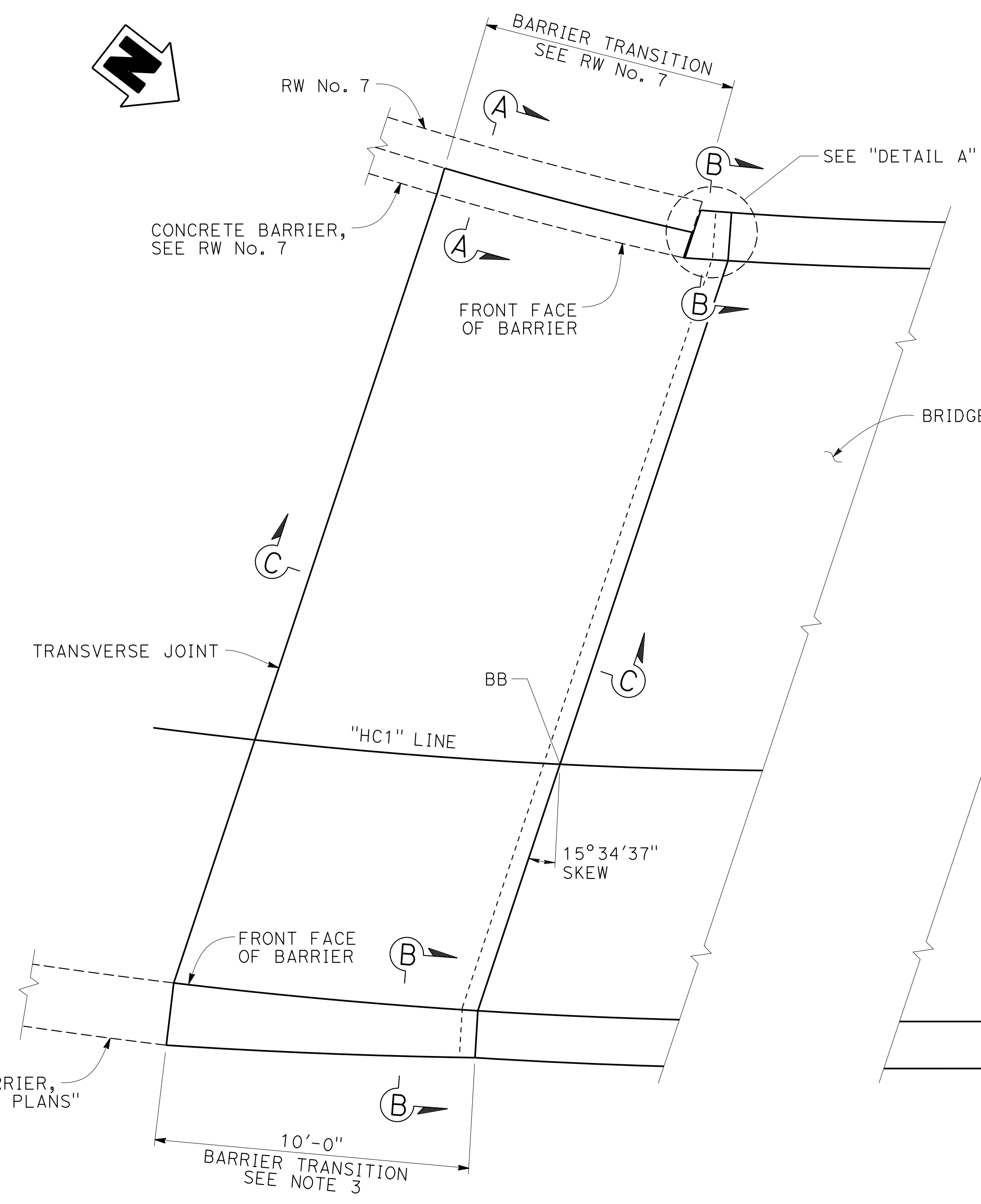
PLANS APPROVAL DATE

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

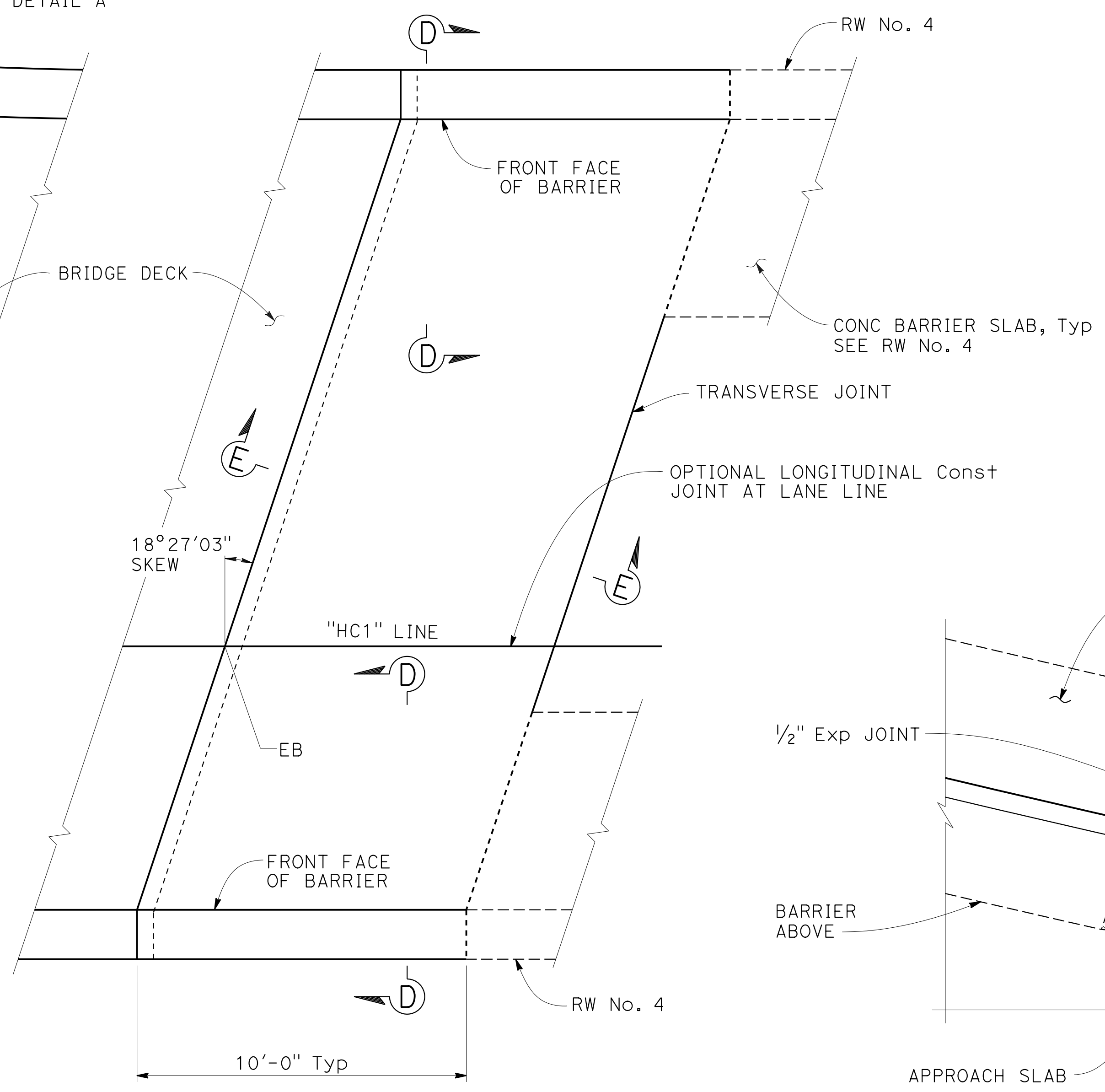
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596

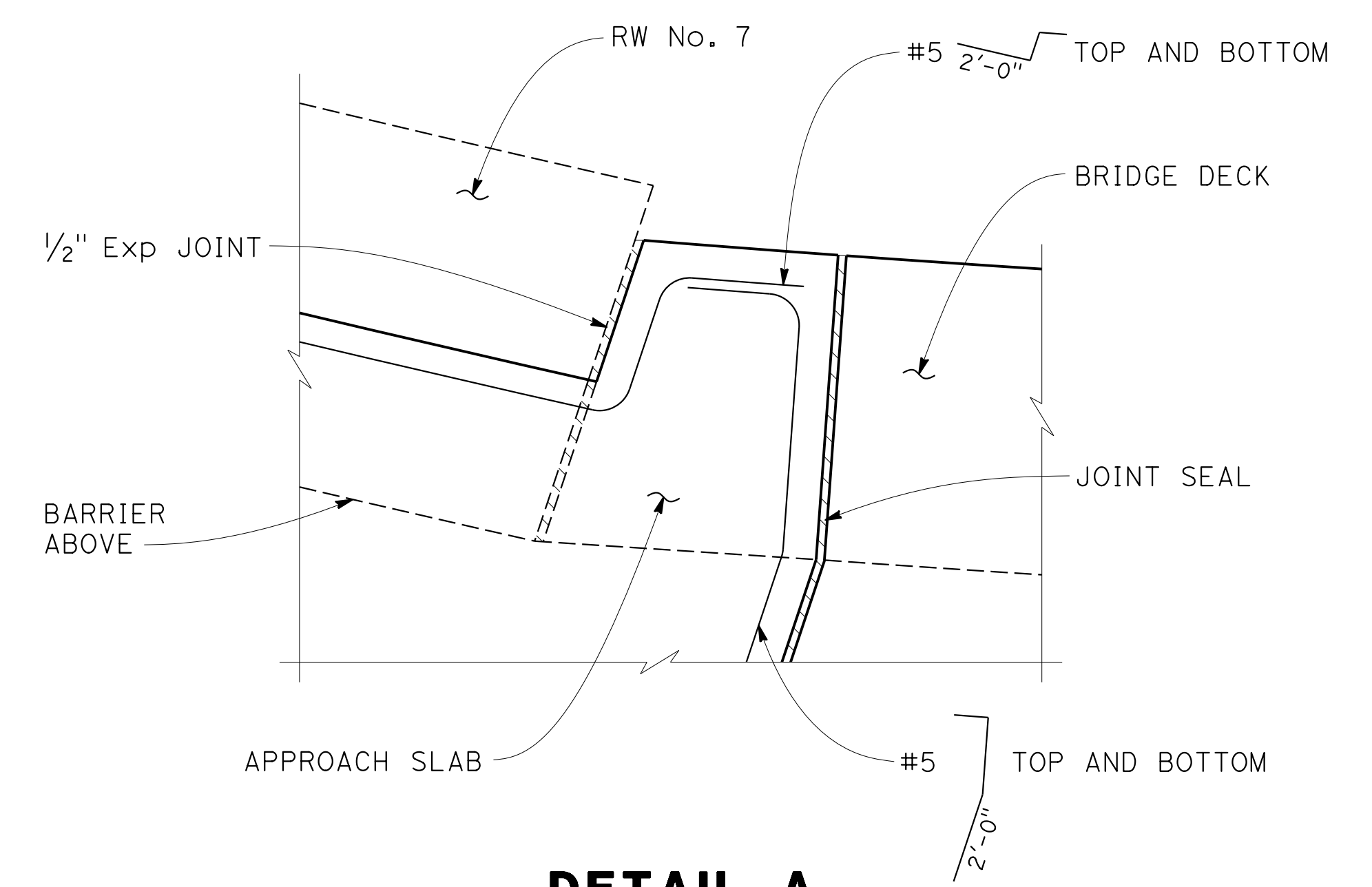
- NOTES:**
1. For "SECTION A-A" thru "SECTION E-E", see "STRUCTURE APPROACH DETAILS" sheet.
 2. For details not shown, refer to Revised Standard Plan RSP B9-4 and RSP B9-5.
 3. For "BARRIER TRANSITION DETAILS", see "MISCELLANEOUS DETAILS" sheet.
 4. For drainage details, see "RETAINING WALL" plans.



ABUTMENT 1 PLAN
 3/8" = 1'-0"



ABUTMENT 2 PLAN
 3/8" = 1'-0"



DETAIL A
 1 1/2" = 1'-0"

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

DESIGN OVERSIGHT
 SIGN OFF DATE

DESIGN	BY A. CARMAZZI	CHECKED J. ZHU
DETAILS	BY R. TONEY/L. DAVIS	CHECKED A. CARMAZZI
QUANTITIES	BY A. CARMAZZI	CHECKED A. CHUNG

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

JOHN MANISCALCO
 PROJECT ENGINEER

BRIDGE NO. 34C0093
 POST MILES 7.9

HILLCREST ROAD OC STRUCTURE APPROACH SLAB

DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

UNIT: 0728
 PROJECT NUMBER & PHASE: 04000205071

CONTRACT NO.: 04-3A6404

REVISION DATES	SHEET	OF
4-30-18 11-12-18 2-27-19 7-25-19	16	19

FILE => 34C0093-u-sad01.dgn

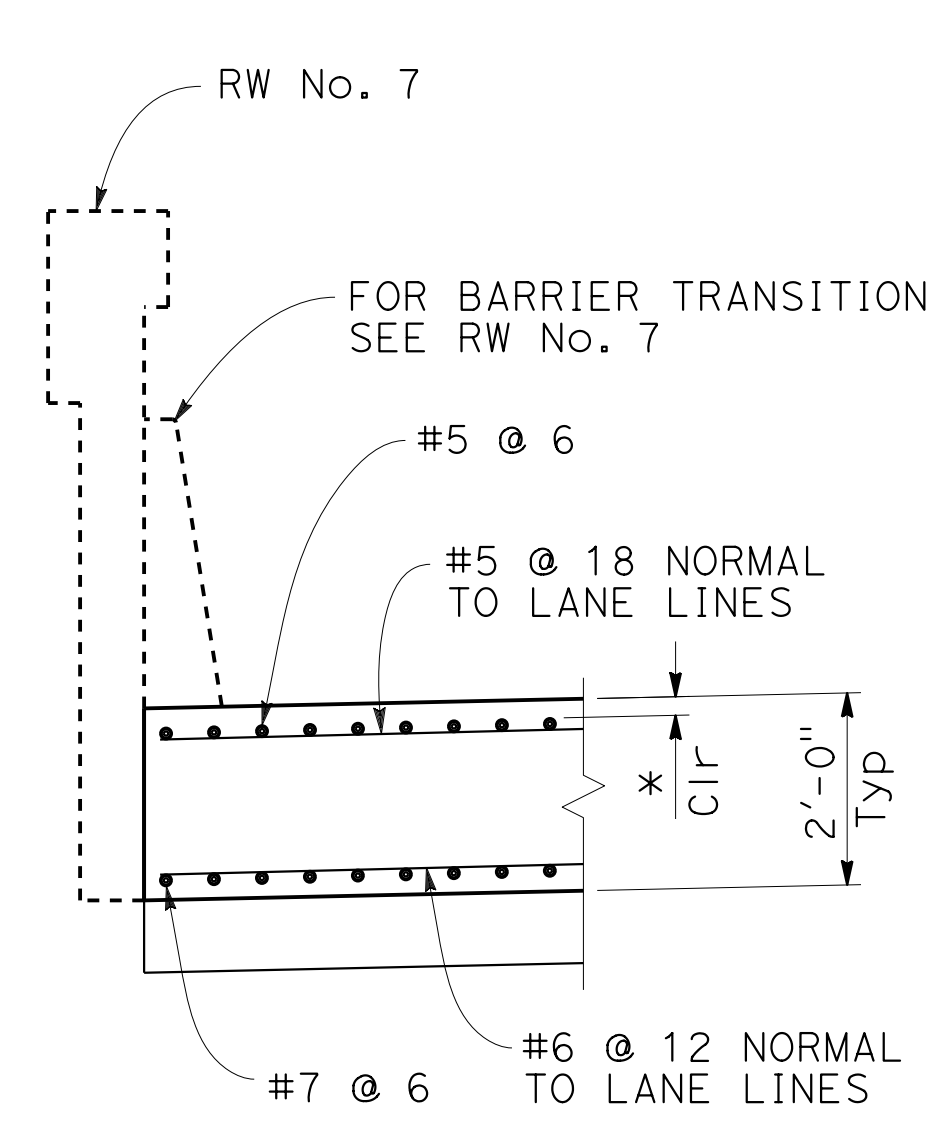
USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019 TIME PLOTTED => 10:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	434	436

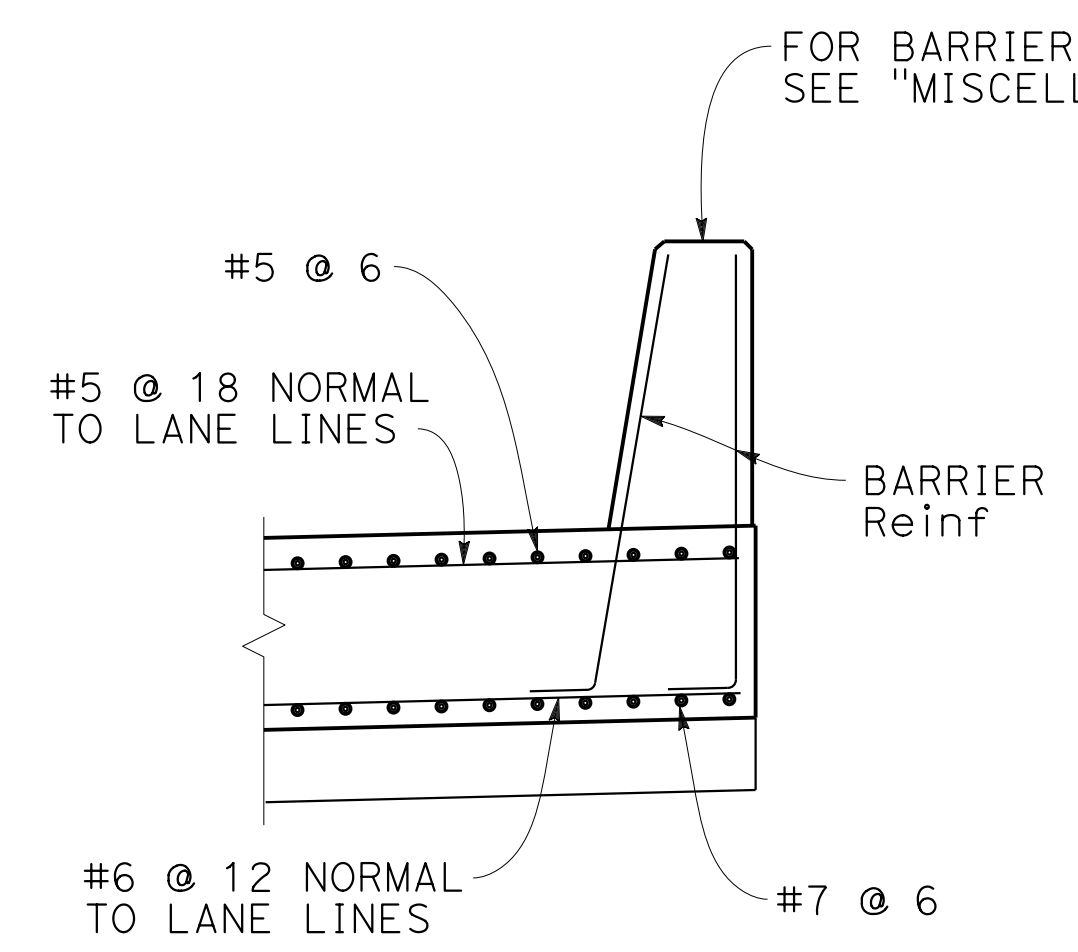
REGISTERED CIVIL ENGINEER
 DATE 7-25-19
 JOHN MANISCALCO
 No. 40911
 Exp. 3/31/21
 CIVIL
 STATE OF CALIFORNIA

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
 1455 MARKET STREET, SUITE 2200
 SAN FRANCISCO, CA 94103

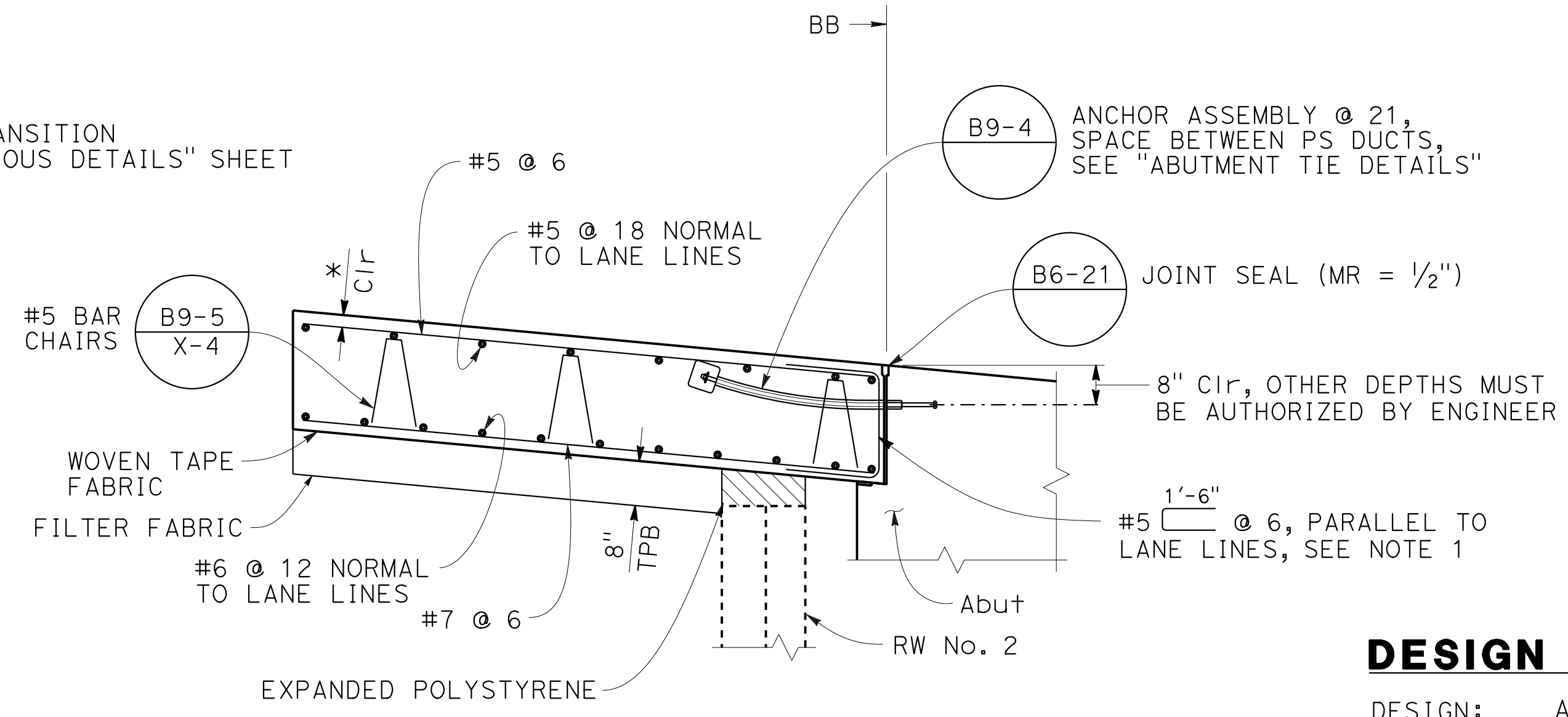
HDR ENGINEERING, INC
 100 PRINGLE AVENUE, SUITE 400
 WALNUT CREEK, CA 94596



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



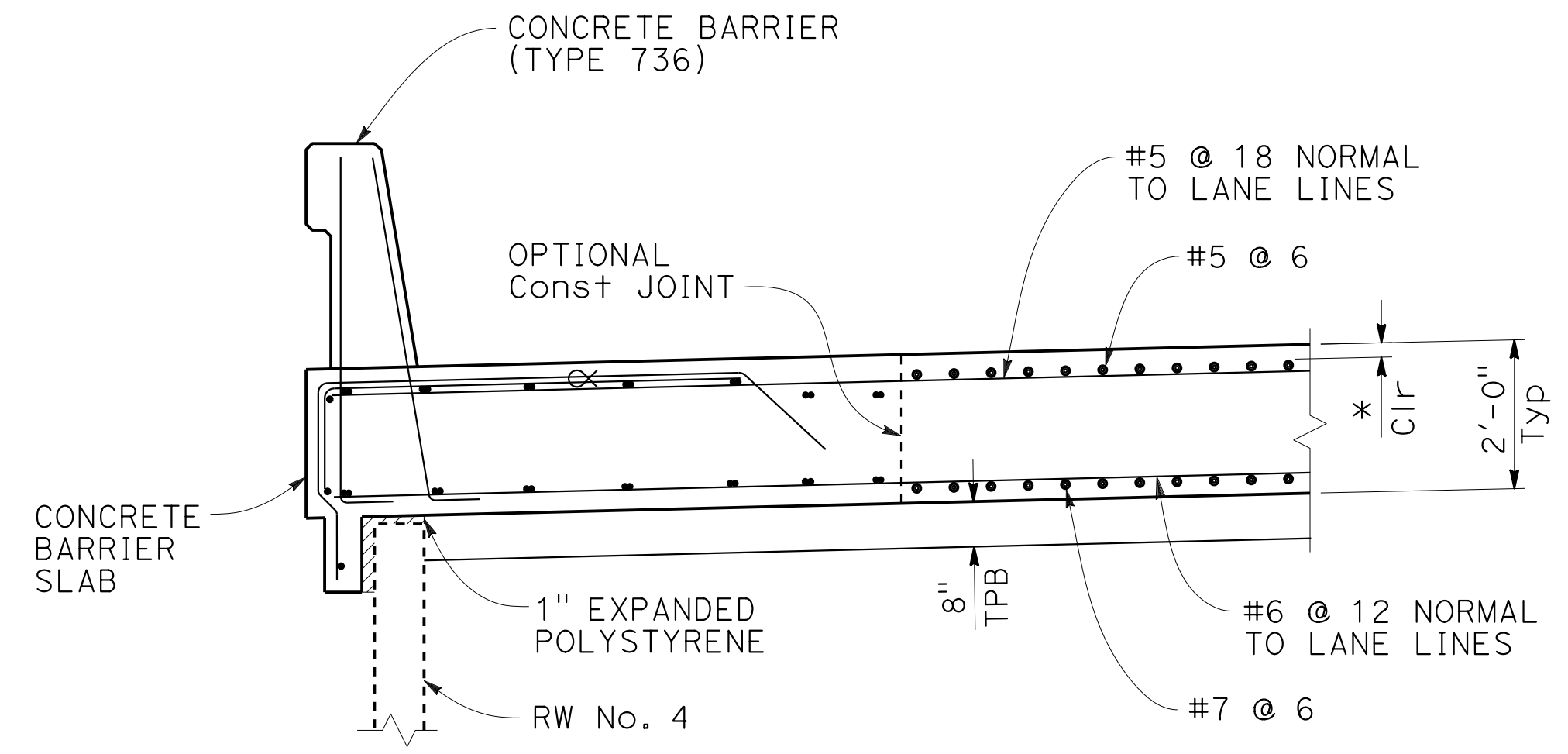
SECTION B-B
 1/2" = 1'-0"



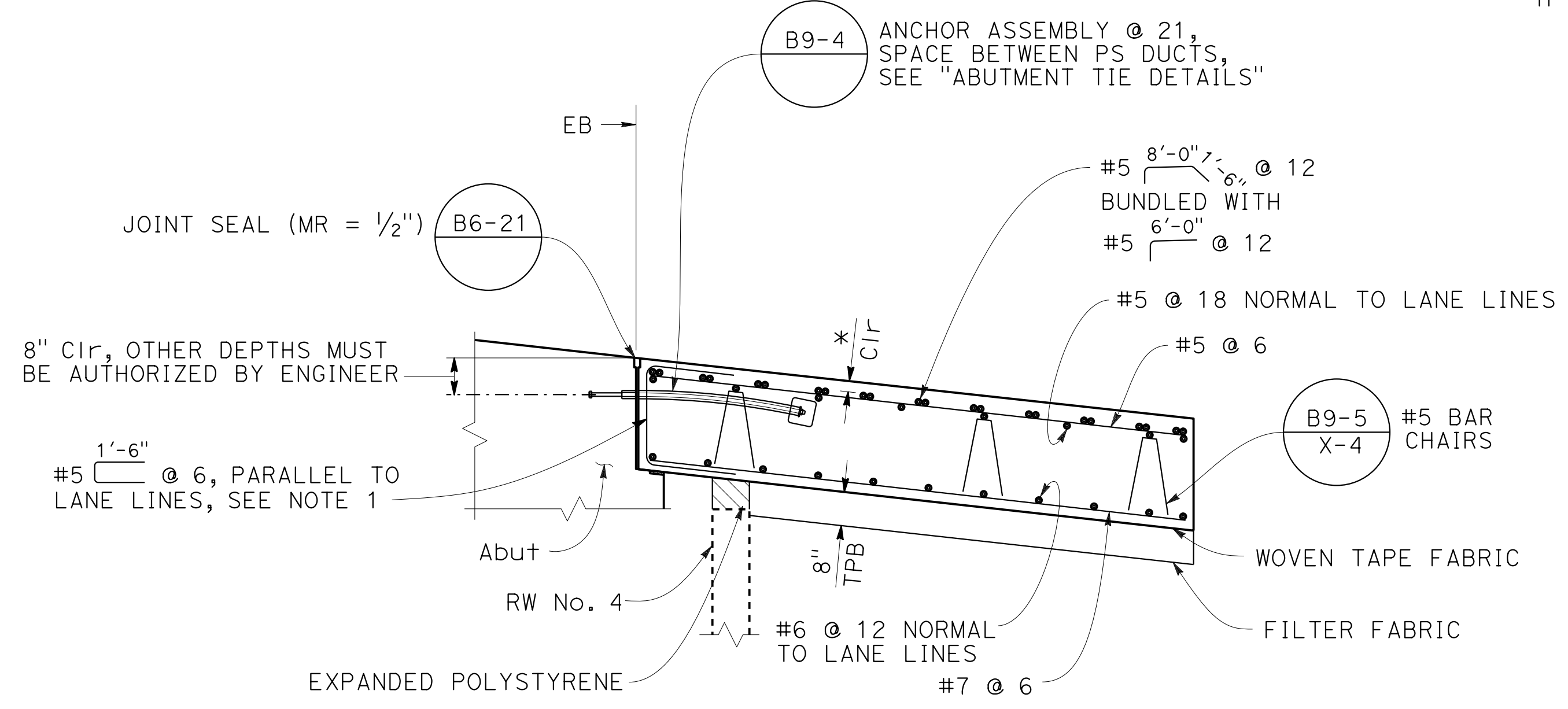
SECTION C-C
 1/2" = 1'-0"

DESIGN NOTES

- DESIGN: AASHTO LRFD Bridge Design Specifications, 2012 Edition with Caltrans Amendments, preface dated January 2014
- LIMIT STATES: Service I, Strength I & II, Extreme II and Fatigue I (Y_{FAT} = 1.0)
- DEAD LOAD: Includes 35 psf for future wearing surface
- LIVE LOAD: HL93 and permit design load
- REINFORCED CONCRETE:
 f_y = 60 ksi
 f'c = 3.6 ksi
 n = 8



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



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

LEGEND:

- ⊗ Bundled Bars
- * All approach slab reinforcement shall be epoxy coated and 2" clir, Typ UON. Top mat cover of minimum 2 1/2" clir.

NOTES:

1. Adjust reinforcement to clear sawcut for sealed joint.
2. At the Contractor's option, approach slab transverse reinforcement may be placed parallel to BB or EB. Spacing of transverse reinforcement is measured along "HC1" Line.
3. For details not shown, refer to Standard Plan B9-4 and B9-5.
4. For drainage details, see "RETAINING WALL" plans.

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

DESIGN OVERSIGHT	DESIGN BY: A. CARMAZZI	CHECKED: J. ZHU	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 34C0093	HILLCREST ROAD OC STRUCTURE APPROACH DETAILS						
SIGN OFF DATE	DETAILS BY: R. TONEY/L. DAVIS	CHECKED: A. CARMAZZI		POST MILES 7.9							
DESIGN DETAIL SHEET (ENGLISH) (REV. 03/14/12)	QUANTITIES BY: A. CARMAZZI	CHECKED: A. CHUNG		UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6404							
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>4-30-18</td> <td>17</td> <td>19</td> </tr> </table>	REVISION DATES	SHEET	OF	4-30-18	17	19
REVISION DATES	SHEET	OF									
4-30-18	17	19									

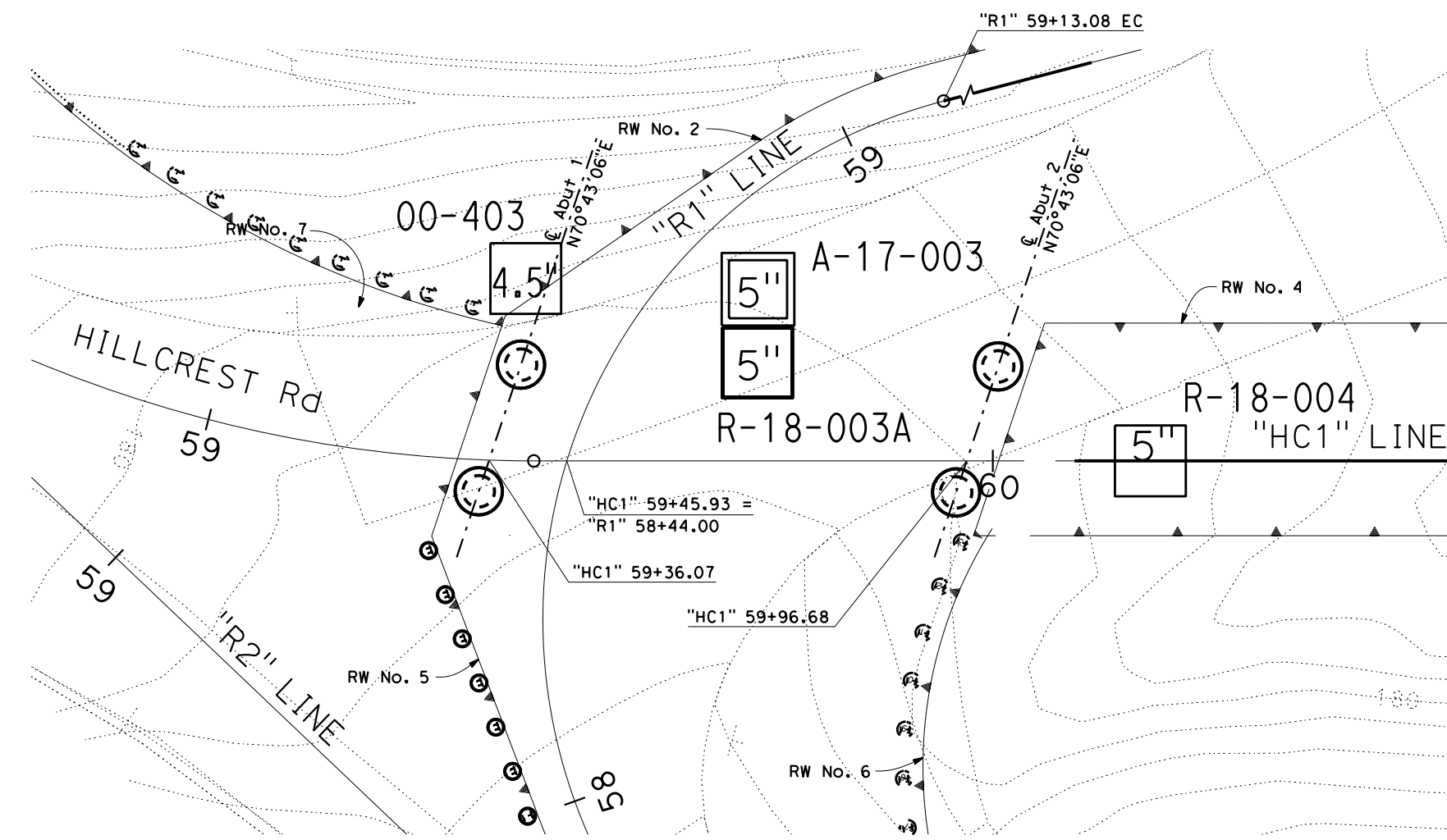
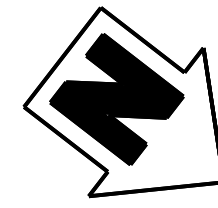
NOTES:

Standard Penetration Test Sampler: I.D. = 1.4";
 O.D. = 2" Modified California Sampler: I.D. = 2.5";
 O.D. = 3" Hammer Assembly: A 140 lb hammer with
 a 30" drop (Automatic Hammer)

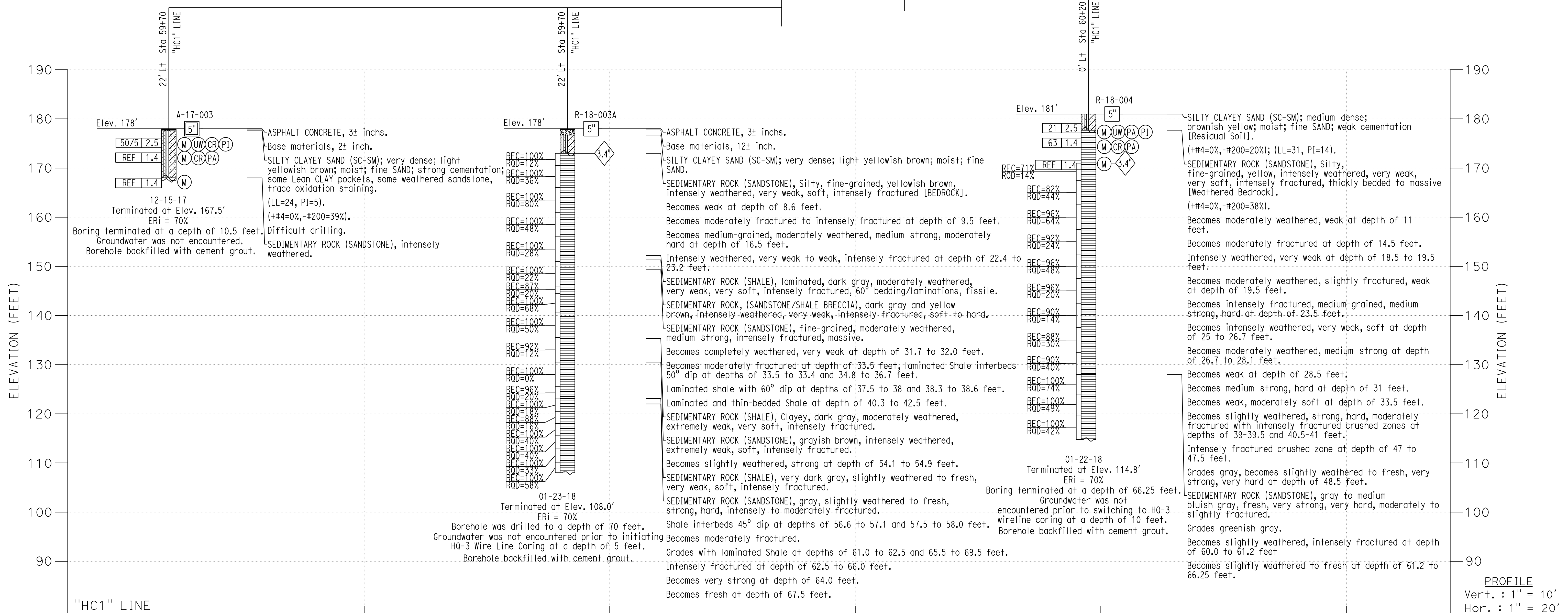
This LOTB sheet was prepared in accordance with
 the Caltrans Soil & Rock, Logging, Classification,
 and Presentation Manual (2010)

See Caltrans 2015 Standard Plans A10F, A10G and
 A10H for Soil and Rock Legend.

All dimensions are in feet unless otherwise shown



PLAN
 1" = 20'

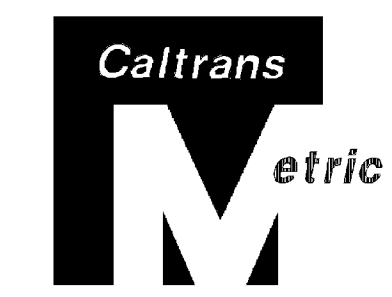


TIME PLOTTED => 10:03
 USERNAME => JOHNGREEN DATE PLOTTED => 25-JUL-2019

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SF	80	7.8/8.0	435	436

GEOTECHNICAL PROFESSIONAL DATE: 7-25-19
 GARY PARIKH No. 666 Exp. 12/31/19
 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA
 PLANS APPROVAL DATE: _____
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.
 BAY AREA TOLL AUTHORITY
 375 BEALE STREET, SUITE 800
 SAN FRANCISCO, CA 94105
 PARIKH CONSULTANTS, INC.
 2360 QUME DRIVE, SUITE A
 SAN JOSE, CA 95131

DESIGN OVERSIGHT	DRAWN BY: KIM OUYANG	L.S. BHANGOO	FRANK WANG	BRIDGE NO. 34C0093	HILLCREST ROAD OC
SIGN OFF DATE	CHECKED BY: FRANK WANG	FIELD INVESTIGATION BY:	PROJECT ENGINEER	POST MILES 7.9	
GS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 03/14/12)			PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT NUMBER & PHASE: 04000205071 CONTRACT NO.: 04-3A6401	LOG OF TEST BORINGS 1 OF 2
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			UNIT: 0728 PROJECT NUMBER & PHASE: 04000205071	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 4-28-18, 11-12-18, 2-14-19, 7-25-19 SHEET 18 OF 19



DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST MILES	SHEET No	TOTAL SHEETS
04	SF	80	12.6/13.9	481	481	821

Mike Kydel 09/06/07
 GEOTECHNICAL PROFESSIONAL

2-21-12
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 MIKE KAPUSKAR
 NO. GE 2564
 EXP. 12-31-08
 STATE OF CALIFORNIA

FUGRO-EARTH MECHANICS
 7700 EDGEWATER DRIVE, SUITE 846
 OAKLAND, CA 94621

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

CONSISTENCY CLASSIFICATION FOR SOILS (According to the Standard Penetration Test (ASTM D1586))

SPT N-Value (blows/30mm)	Soil Description
0-4	Very Loose
5-10	Loose
11-20	Medium Dense
21-30	Dense
31-50	Very Dense
>50	Hard

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

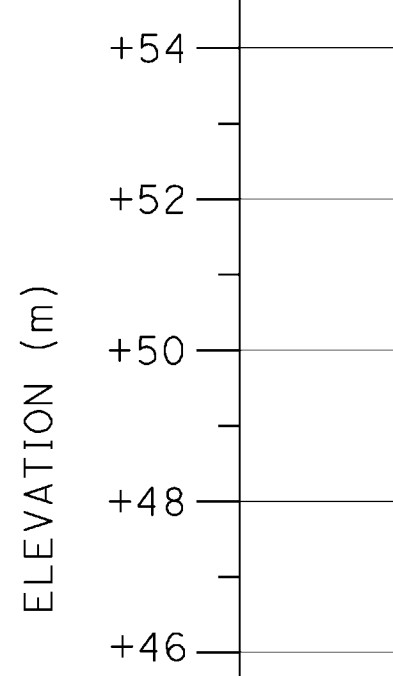
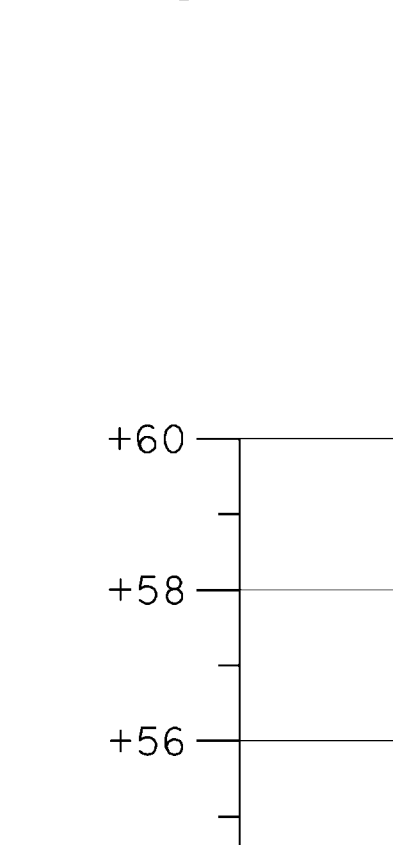
TYPE OF BORINGS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)

LEGEND FOR EARTH MATERIALS (BASED ON ASTM D2487, D2488)



NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	436	436

Gary Parikh
 No. G.E. 666
 Exp. 12/31/19
 GEOTECHNICAL

Gregory L. Siciliano
 5-17-19
 DATE
 REGISTERED CIVIL ENGINEER

HILLCREST ROAD OC
LOG OF TEST BORINGS 2 OF 2

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

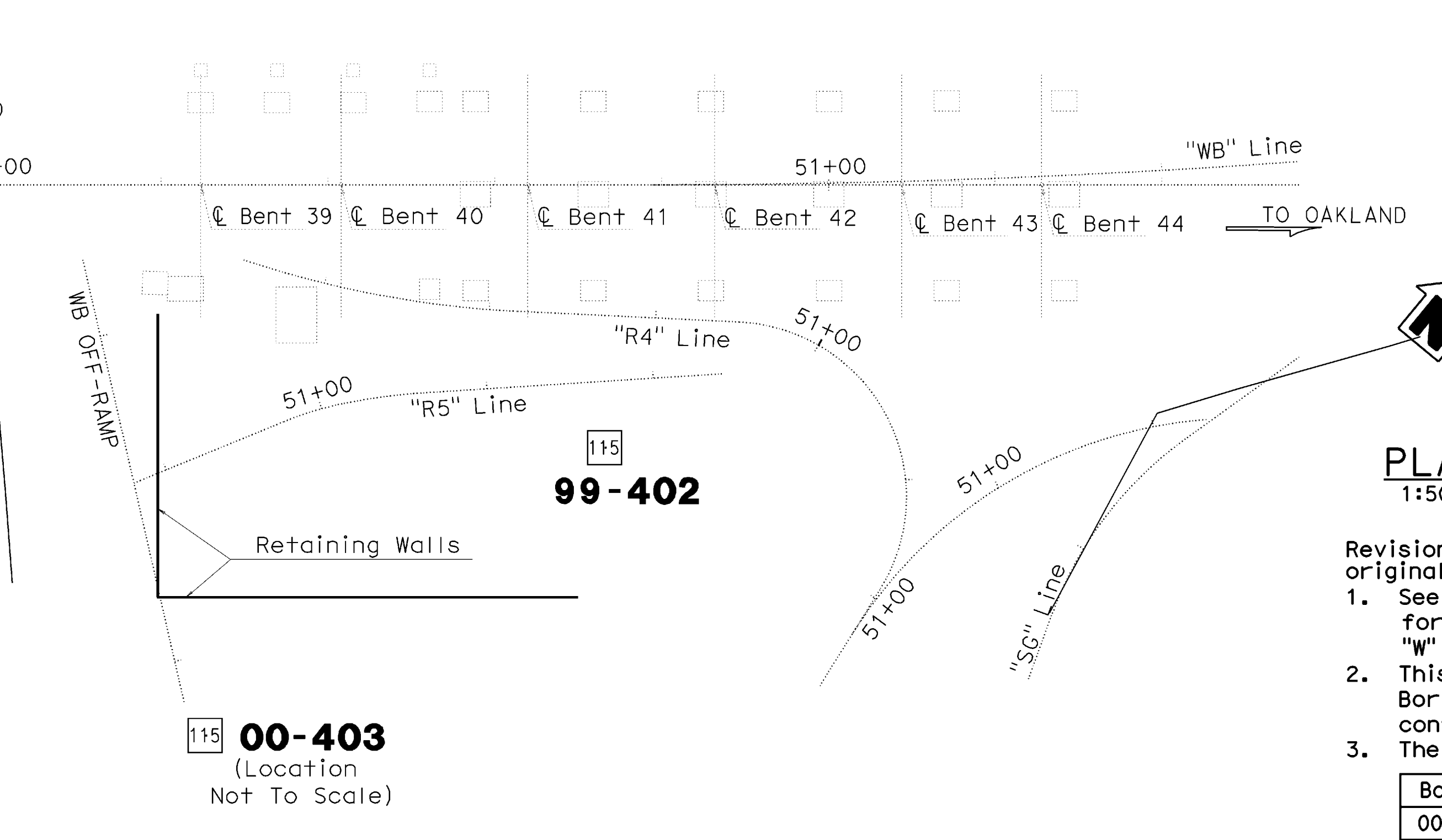
UNIT:	BRIDGE No.
0728	34C0093
PROJECT NUMBER & PHASE:	Sheet of
0400205071	19 of 19

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
04	SF	80	7.8/8.0	436	436

HILLCREST ROAD OC
LOG OF TEST BORINGS 2 OF 2

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

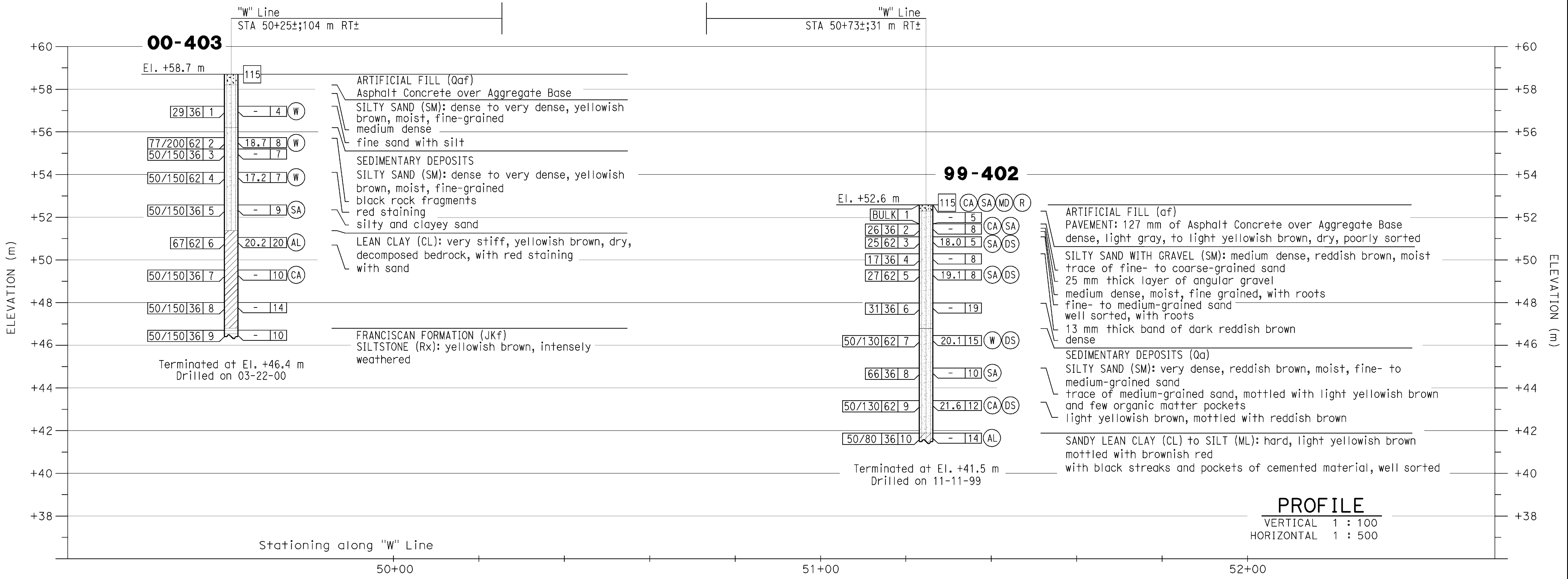
UNIT:	BRIDGE No.
0728	34C0093
PROJECT NUMBER & PHASE:	Sheet of
0400205071	19 of 19



PLAN
1:500

- Revisions made to this Log of Test Borings from the original copy is the addition of the following table:
- See the "Log of Test Borings 1 of 2" dated February 18, 2019, for stationing. Based on the drawings provided by HDR. "W" Line: Sta. 50+00 (Metric) = "E" Line: Sta. 50+64.9 (English)
 - This table is presented on the "As - built" Log of Test Boring sheet for the convenience of any bidder, contractor, or other interested parties.
 - The boring locations are as follows:

Boring	Stations "HC1" Line	Offset from "HC1" Line
00-403	59+40	23' Lt.



PROFILE
 VERTICAL 1 : 100
 HORIZONTAL 1 : 500

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

DESIGN OVERSIGHT	DRAWN BY G. J. GUNARANJAN 01/03/07	S. SICILIANO, L. FLUKE FIELD INVESTIGATION BY: DATE: AS NOTED	BRIDGE NO. 34-0006	WEST TIE-IN PHASE 3 YBI EDGE BEAM SUPPORT STRUCTURE (YBIEBSS)
SIGN OFF DATE	CHECKED BY M. KAPUSKAR 01/05/07	DATE: AS NOTED	KILOMETER POST 12.8	

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

M. KAPUSKAR
PROJECT ENGINEER

LOG OF TEST BORINGS NO. 5

CU 04
EA 0120P1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)

NO.	DATE	DESCRIPTION

SHEET 28 OF 29



FILE => 34-0006-28-z-11+p05.dgn

USERNAME => s128843 DATE PLOTTED => 25-FEB-2012 TIME PLOTTED => 12:15