

SANTA BARBARA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

LOWER MISSION CREEK FLOOD CONTROL PROJECT REACH 4

COUNTY PROJECT NUMBER SC 8042

BETWEEN GUTIERREZ STREET AND HALEY STREET
IN THE CITY OF SANTA BARBARA
SANTA BARBARA COUNTY, CALIFORNIA

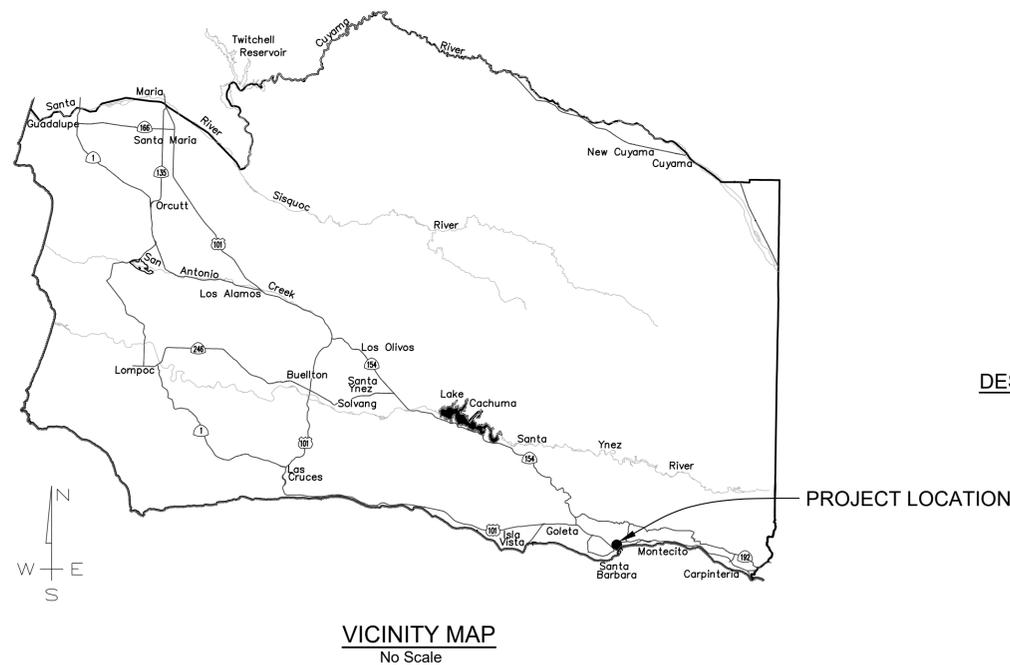
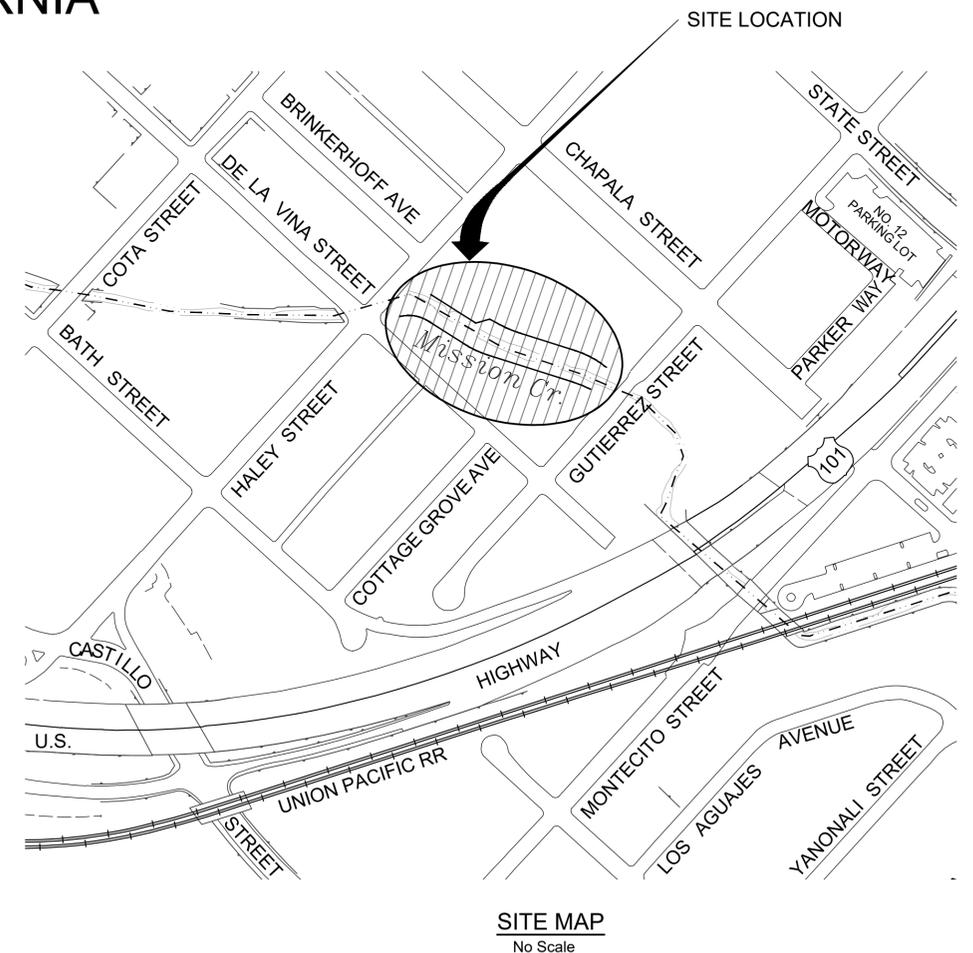
DISTRICT BOARD OF DIRECTORS

FIRST DISTRICT Roy Lee
SECOND DISTRICT Laura Capps
THIRD DISTRICT Joan Hartmann
FOURTH DISTRICT Bob Nelson
FIFTH DISTRICT Steve Lavagnino

CHAIR, BOARD OF DIRECTORS _____
Bob Nelson

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UNAUTHORIZED CHANGES OR USES: THE SANTA BARBARA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT AND ITS EMPLOYEES WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL PROPOSED CHANGES TO THE PLANS MUST BE PRESENTED IN WRITING TO THE DISTRICT AND APPROVED IN WRITING BY THE DISTRICT PRIOR TO IMPLEMENTATION OF ANY SUCH CHANGE OR USE.

CONTRACTOR'S LICENSE THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE" ADVERTISING FOR BIDS.

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: BENGAL ENGINEERING, INC.	REVIEWED BY: 11/12/2025 2:01 PM PST
REVIEWED BY: 11/11/2025 1:42 PM PST	ENVIRONMENTAL SERVICES MANAGER
FLOOD CONTROL ENGINEERING MANAGER	REVIEWED BY: 11/12/2025 2:03 PM PST
REVIEWED BY: 11/18/2025 2:15 PM PST	MAINTENANCE MANAGER
FLOOD CONTROL DEPUTY DIRECTOR	

SANTA BARBARA COUNTY
FLOOD CONTROL AND
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130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

TITLE SHEET, INDEX TO SHEETS
AND LOCATION MAP

DESIGNED BY: MD
DRAWN BY: HS
CHECKED BY: SO

P-1102

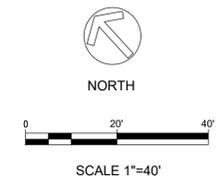
SHEET 1 OF 28

T-1



- SURVEY CONTROL**
1. POSITIONS FOR GROUND CONTROL FOR THE AERIAL MAPPING WERE DETERMINED BY A GNSS STATIC SURVEY PERFORMED BY REESE WATER & LAND SURVEYING SERVICES IN SEPTEMBER, 2016.
 2. SURVEY HORIZONTAL AND VERTICAL UNITS ARE US SURVEY FEET.
 3. THE HORIZONTAL DATUM FOR THE GROUND CONTROL FOR THE AERIAL MAPPING IS NAD83-2011(EPOCH 2010.00).
 4. GRID COORDINATES FOR AERIAL MAPPING ARE CALIFORNIA COORDINATE SYSTEM (CCS) ZONE 5.
 5. THE VERTICAL DATUM FOR THE GROUND CONTROL FOR THE AERIAL MAPPING IS NAVD88. ORTHOMETRIC HEIGHTS (ELEVATIONS) WERE DERIVED BY APPLYING A HIGH-PRECISION GEOID MODEL (GEOID12A) TO SURVEYED ELLIPSOID HEIGHTS.
 6. CENTERLINES, RIGHTS OF WAY, EASEMENTS OR OTHER TITLE LINES SHOWN ARE DERIVED FROM COMPILED RECORD INFORMATION TIED TO SURVEYED POSITIONS OF FOUND MONUMENTATION.
 7. NOT ALL BUILDINGS SHOWN.
 8. THIS PROJECT WAS ORIGINALLY SURVEYED IN 2016. SUBSEQUENT MODIFICATIONS TO THE SITE CONDITIONS MAY HAVE OCCURRED AND MAY NOT BE REFLECTED IN THE INFORMATION SHOWN HEREON. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK.

POINT TABLE				
POINT NO.	ELEVATION	NORTHING	EASTING	DESCRIPTION
102	27.39	1977617.45	6049699.12	MAG&CPW
105	23.52	1977502.15	6050486.07	MAG&CPW
108	26.85	1977631.54	6050333.18	N&T-CITYENGR
112	26.98	1977614.00	6049607.02	N&T-CITYENGR
115	27.00	1977488.45	6049744.47	N&T-CITYENGR
118	26.95	1977260.48	6049994.12	N&T-CITYENGR
201	21.96	1977388.77	6050591.51	CALT.BC
202	24.17	1977105.05	6050156.97	1"IP-CALIF-DOT
203	24.16	1977105.14	6050156.72	1/2"IP-LS3228



SC-1

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: Md. Wahiduzzaman BENGAL ENGINEERING, INC.	8/29/25 DATE
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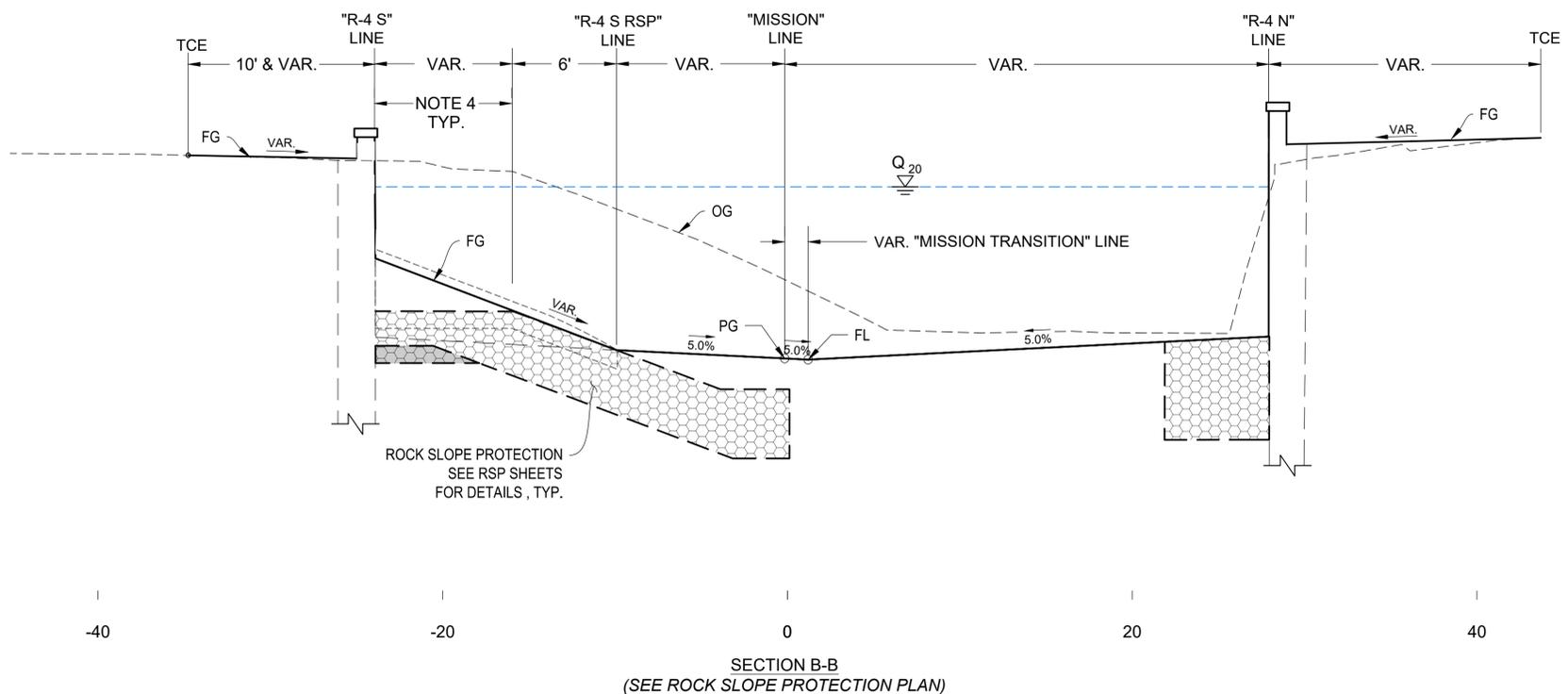


LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

SURVEY CONTROL DIAGRAM

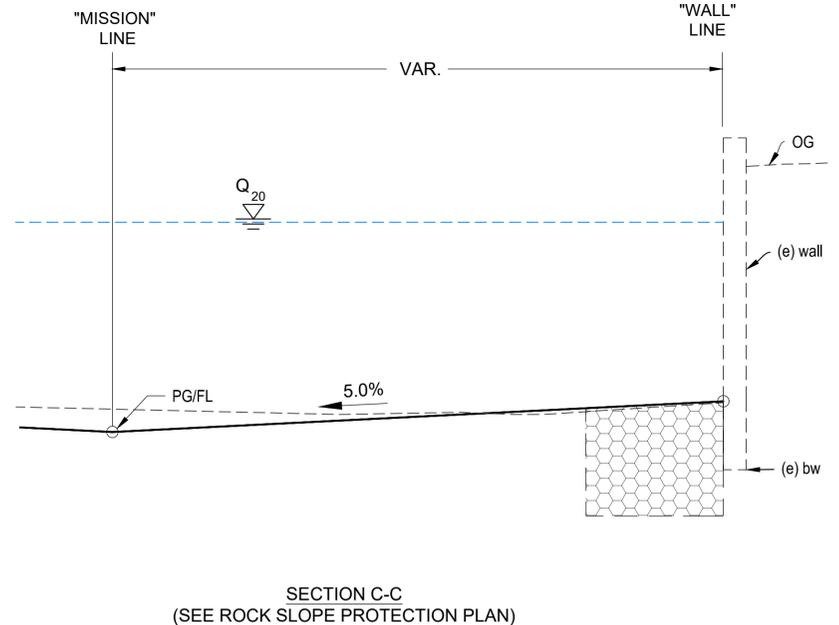
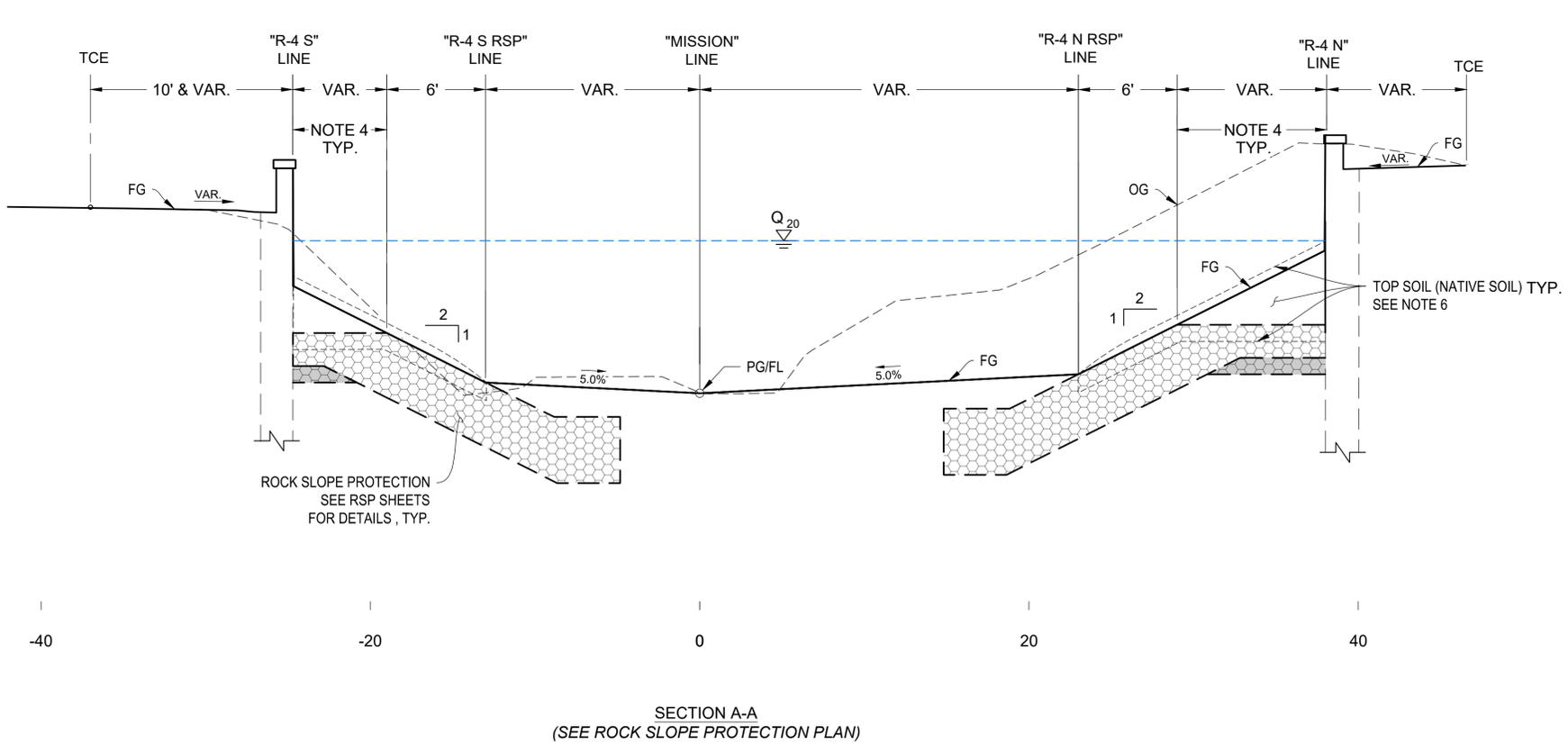
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SHEET 2 OF 28



- TYPICAL SECTION NOTES:**
1. SEE WALL GEOMETRY, WALL PROFILES, RSP PLAN AND CREEK GRADING FOR ADDITIONAL INFORMATION.
 2. SHORING IS NOT SHOWN.
 3. LOCATION OF ROCK SLOPE PROTECTION 1 & 2 TON BOULDERS IS SHOWN ON THE "ROCK SLOPE PROTECTION PLAN".
 4. LANDSCAPE PLANTING LIMITS, SEE SHEET L-1 FOR ADDITIONAL INFORMATION.
 5. SEE RSP AND LANDSCAPE PLANS FOR LIMITS OF TOP SOIL.
 6. TOP SOIL (NATIVE SOIL) - AFTER COMPLETION OF SLOPE GRADING AND RSP PLACEMENT, JET NATIVE TOPSOIL INTO VOIDS OF RSP TO A DEPTH OF 6-8 INCHES AND FORM A UNIFORM 6-INCH SOIL LAYER ABOVE FINISHED GRADE. TOPSOIL LAYER ABOVE FINISHED GRADE IS A SURFACE TREATMENT ONLY AND DOES NOT ALTER THE DESIGN FINISHED GRADE SHOWN ON THE PLANS.

- LEGEND:**
- PG PROFILE GRADE
 - FL FLOW LINE
 - ROCK SLOPE PROTECTION (1/4 T, METHOD B) SEE RSP PLANS FOR MORE INFORMATION
 - ROCK SLOPE PROTECTION (20 LB, CLASS I, METHOD B) SEE RSP PLANS FOR MORE INFORMATION



X-1

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Md. Wahiduzzaman
BENGAL ENGINEERING, INC. DATE: 8/29/25

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LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

"MISSION" LINE
TYPICAL CROSS-SECTIONS

DESIGNED BY: MD
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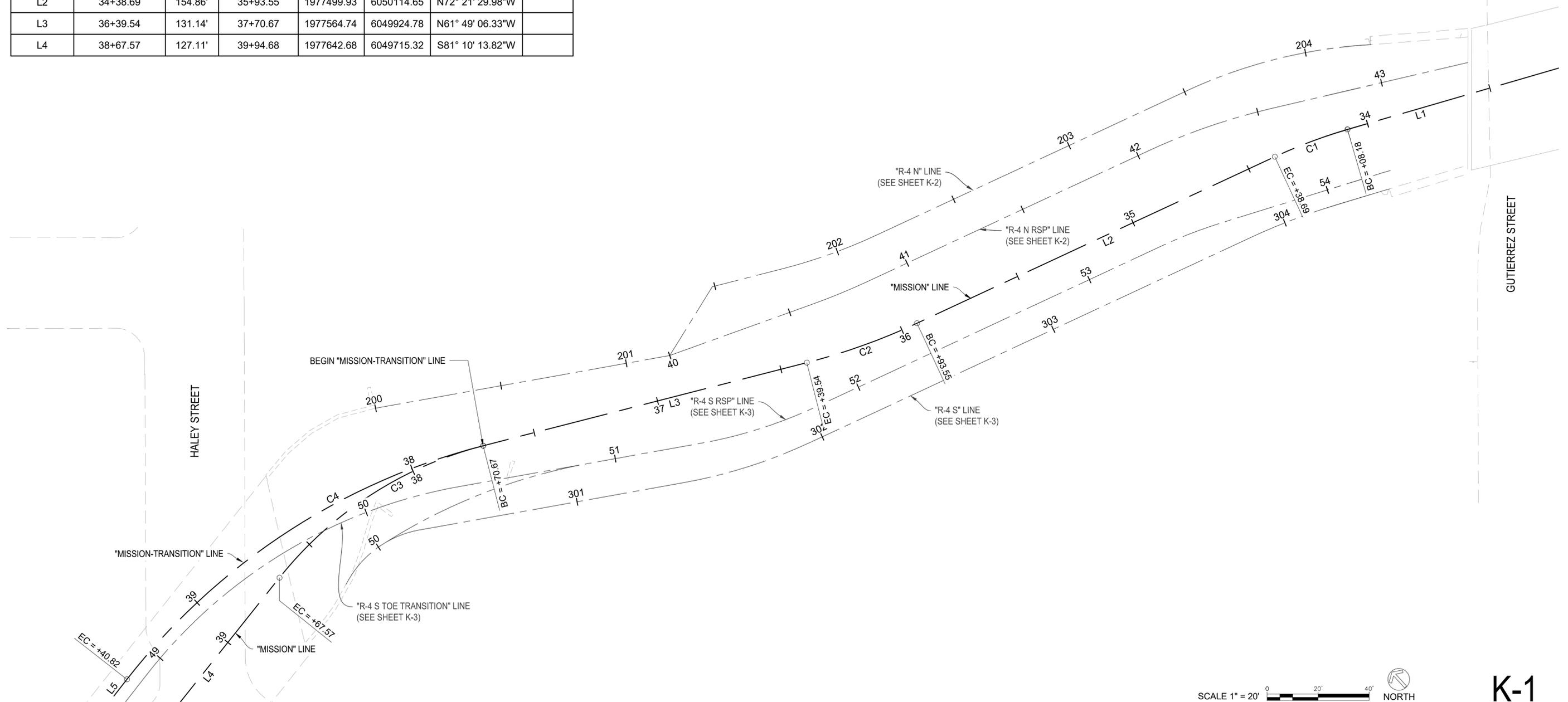
P-1102
SHEET 3 OF 28

NOTES:

- ALIGNMENTS LINE GO BEYOND LIMITS SHOWN.

"MISSION" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
C1	34+08.18	30.51'	34+38.69	1977488.51	6050142.91	008°44'29"	200.00'
C2	35+93.55	45.99'	36+39.54	1977546.87	6049967.08	010°32'24"	250.00'
C3	37+70.67	96.89'	38+67.57	1977626.67	6049809.19	037°00'40"	150.00'
L1	33+00.98	107.20'	34+08.18	1977440.87	6050238.95	N63° 37' 01.27"W	
L2	34+38.69	154.86'	35+93.55	1977499.93	6050114.65	N72° 21' 29.98"W	
L3	36+39.54	131.14'	37+70.67	1977564.74	6049924.78	N61° 49' 06.33"W	
L4	38+67.57	127.11'	39+94.68	1977642.68	6049715.32	S81° 10' 13.82"W	

"MISSION TRANSITION" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
C4	37+70.67	170.15'	39+40.82	1977626.67	6049809.19	037°39'25"	258.88'
L5	39+40.82	81.71'	40+22.52	1977653.83	6049644.31	S80° 31' 29.01"W	



SCALE 1" = 20' NORTH

K-1

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LOWER MISSION CREEK
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KEYLINE GEOMETRY

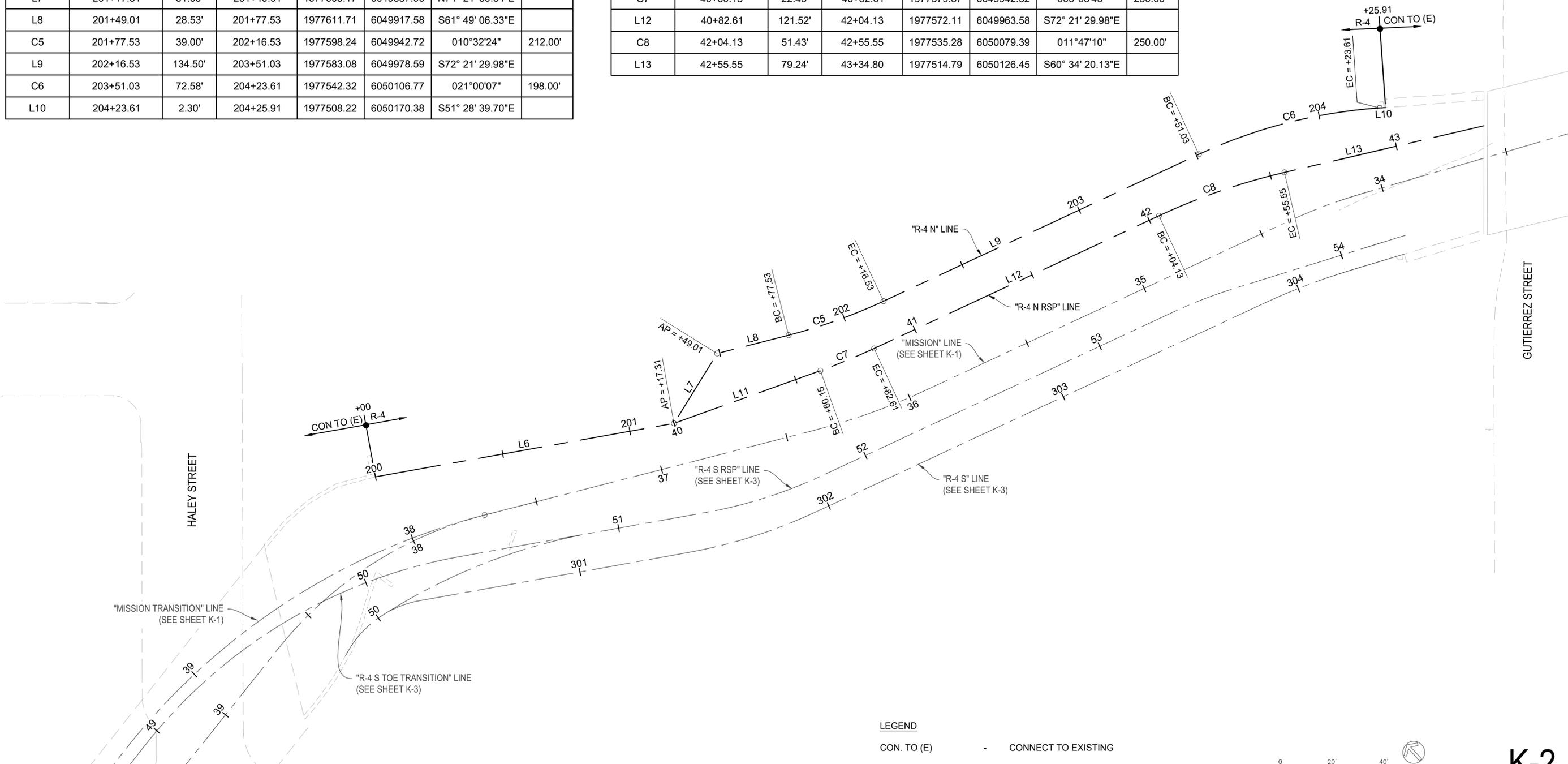
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SHEET 4 OF 28

"R-4 N" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
L6	200+00.00	117.31'	201+17.31	1977666.08	6049788.04	S57° 34' 16.48"E	
L7	201+17.31	31.69'	201+49.01	1977603.17	6049887.06	N74° 21' 39.84"E	
L8	201+49.01	28.53'	201+77.53	1977611.71	6049917.58	S61° 49' 06.33"E	
C5	201+77.53	39.00'	202+16.53	1977598.24	6049942.72	010°32'24"	212.00'
L9	202+16.53	134.50'	203+51.03	1977583.08	6049978.59	S72° 21' 29.98"E	
C6	203+51.03	72.58'	204+23.61	1977542.32	6050106.77	021°00'07"	198.00'
L10	204+23.61	2.30'	204+25.91	1977508.22	6050170.38	S51° 28' 39.70"E	

"R-4 N RSP" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
L11	40+00.00	60.15'	40+60.15	1977603.17	6049887.06	S67° 12' 44.85"E	
C7	40+60.15	22.45'	40+82.61	1977579.87	6049942.52	005°08'45"	250.00'
L12	40+82.61	121.52'	42+04.13	1977572.11	6049963.58	S72° 21' 29.98"E	
C8	42+04.13	51.43'	42+55.55	1977535.28	6050079.39	011°47'10"	250.00'
L13	42+55.55	79.24'	43+34.80	1977514.79	6050126.45	S60° 34' 20.13"E	



LEGEND
 CON. TO (E) - CONNECT TO EXISTING
 R-4 - LOWER MISSION CREEK REACH 4

SCALE 1" = 20' NORTH

K-2

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 Md. Wahiduzzaman
 BENGAL ENGINEERING, INC. DATE: 8/29/25

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 REACH 4
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KEYLINE GEOMETRY

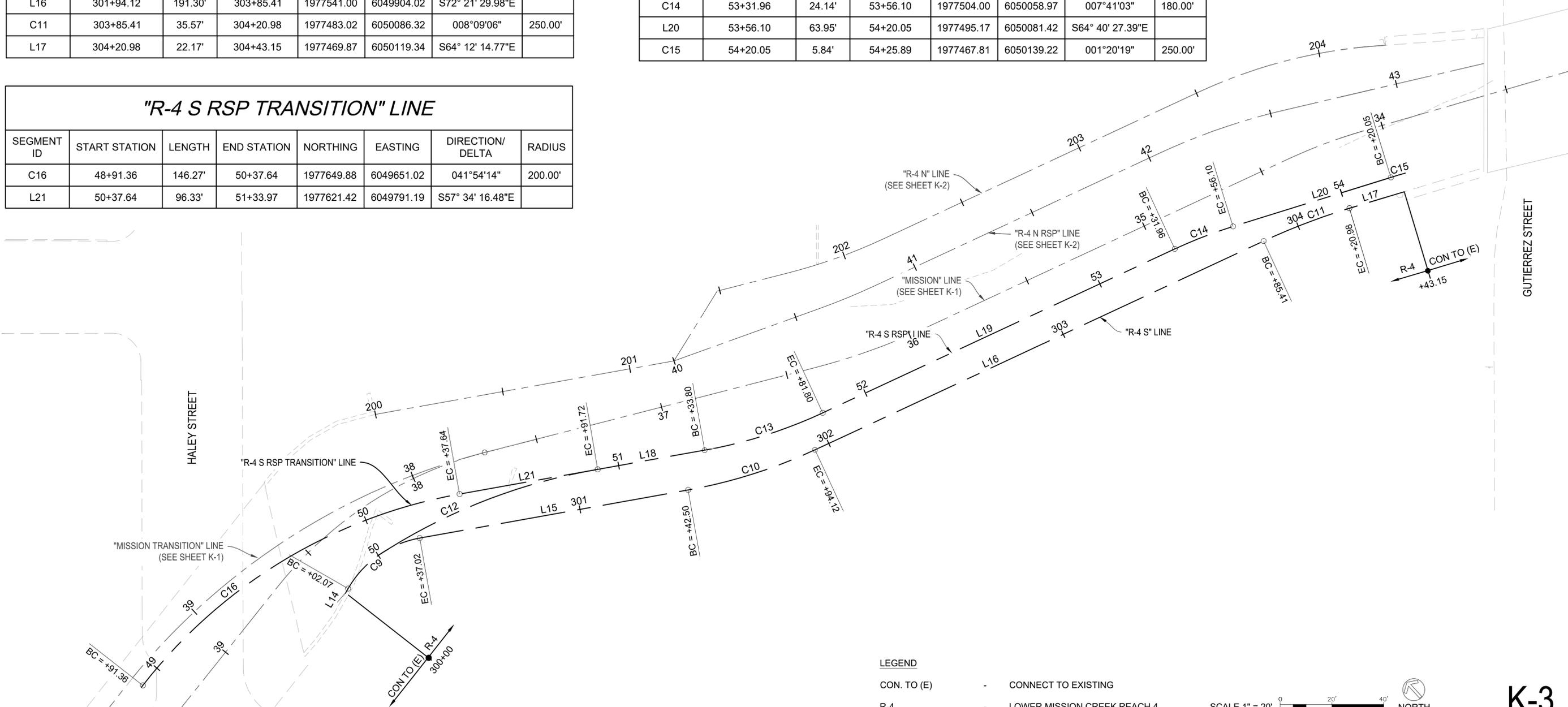
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 SHEET 5 OF 28

"R-4 S" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
L14	299+90.05	12.02'	300+02.07	1977620.06	6049723.33	N72° 22' 11.56"E	
C9	300+02.07	34.95'	300+37.02	1977623.70	6049734.79	050°03'32"	40.00'
L15	300+37.02	105.48'	301+42.50	1977619.34	6049768.35	S57° 34' 16.48"E	
C10	301+42.50	51.62'	301+94.12	1977562.78	6049857.38	014°47'13"	200.00'
L16	301+94.12	191.30'	303+85.41	1977541.00	6049904.02	S72° 21' 29.98"E	
C11	303+85.41	35.57'	304+20.98	1977483.02	6050086.32	008°09'06"	250.00'
L17	304+20.98	22.17'	304+43.15	1977469.87	6050119.34	S64° 12' 14.77"E	

"R-4 S RSP" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
C12	50+00.00	91.72'	50+91.72	1977625.25	6049752.06	023°21'25"	225.00'
L18	50+91.72	42.07'	51+33.80	1977592.33	6049836.99	S57° 34' 16.48"E	
C13	51+33.80	48.00'	51+81.80	1977569.77	6049872.50	014°47'13"	186.00'
L19	51+81.80	150.16'	53+31.96	1977549.51	6049915.87	S72° 21' 29.98"E	
C14	53+31.96	24.14'	53+56.10	1977504.00	6050058.97	007°41'03"	180.00'
L20	53+56.10	63.95'	54+20.05	1977495.17	6050081.42	S64° 40' 27.39"E	
C15	54+20.05	5.84'	54+25.89	1977467.81	6050139.22	001°20'19"	250.00'

"R-4 S RSP TRANSITION" LINE							
SEGMENT ID	START STATION	LENGTH	END STATION	NORTHING	EASTING	DIRECTION/ DELTA	RADIUS
C16	48+91.36	146.27'	50+37.64	1977649.88	6049651.02	041°54'14"	200.00'
L21	50+37.64	96.33'	51+33.97	1977621.42	6049791.19	S57° 34' 16.48"E	



LEGEND
 CON. TO (E) - CONNECT TO EXISTING
 R-4 - LOWER MISSION CREEK REACH 4

SCALE 1" = 20' NORTH

K-3

REVISIONS			
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 Md. Wahiduzzaman
 BENGAL ENGINEERING, INC. DATE: 8/29/25

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LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

KEYLINE GEOMETRY

DESIGNED BY: MD
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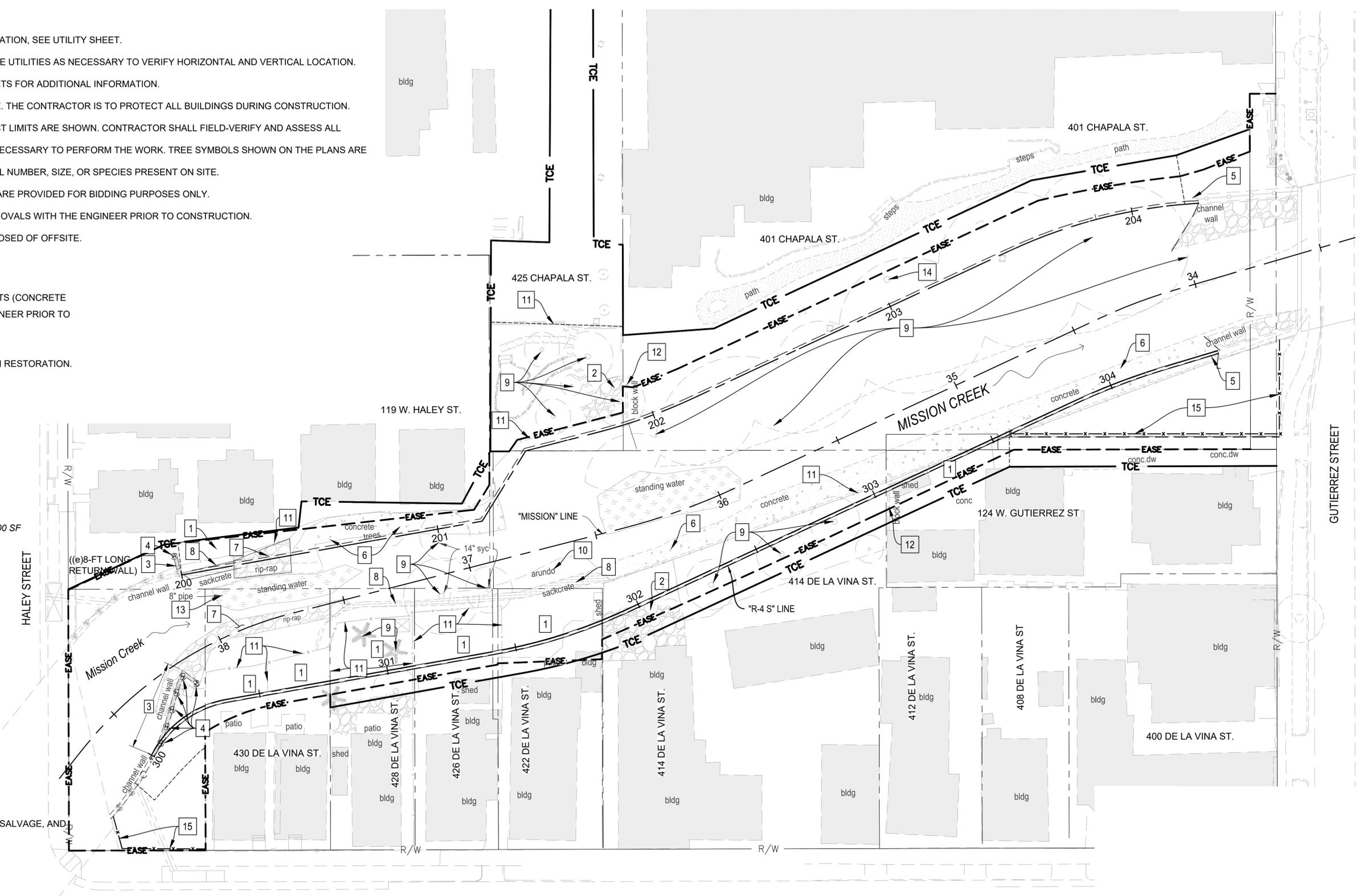
P-1102
 SHEET 6 OF 28

NOTES:

1. FOR OVERHEAD AND UNDERGROUND UTILITY INFORMATION, SEE UTILITY SHEET.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO POT HOLE UTILITIES AS NECESSARY TO VERIFY HORIZONTAL AND VERTICAL LOCATION.
3. SEE TYPICAL SECTIONS, PROFILE AND GRADING SHEETS FOR ADDITIONAL INFORMATION.
4. BUILDINGS EXIST ON SITE AND ENCROACH IN THE TCE. THE CONTRACTOR IS TO PROTECT ALL BUILDINGS DURING CONSTRUCTION.
5. NOT ALL EXISTING TREES AND BRUSH WITHIN PROJECT LIMITS ARE SHOWN. CONTRACTOR SHALL FIELD-VERIFY AND ASSESS ALL VEGETATION REQUIRING CLEARING AND GRUBBING NECESSARY TO PERFORM THE WORK. TREE SYMBOLS SHOWN ON THE PLANS ARE NOT TO SCALE AND MAY NOT REPRESENT THE ACTUAL NUMBER, SIZE, OR SPECIES PRESENT ON SITE.
6. QUANTITIES SHOWN BELOW ARE APPROXIMATE AND ARE PROVIDED FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL VERIFY EXISTING LIMITS OF REMOVALS WITH THE ENGINEER PRIOR TO CONSTRUCTION.
7. ARUNDO AND ROOT MASS TO BE REMOVED AND DISPOSED OF OFFSITE.

LEGEND:

- 1 REMOVE AND CLEAR RESIDENTIAL IMPROVEMENTS (CONCRETE PADS, DECKS, ETC. COORDINATE WITH THE ENGINEER PRIOR TO ALL CLEARING).
- 2 REMOVE AND SALVAGE FLAGSTONE TO REUSE IN RESTORATION. CONTRACTOR TO COORDINATE WITH ENGINEER
- 3 DEMOLISH EXISTING CONCRETE WALL
- 4 DEMOLISH EXISTING SOLDIER PILES (TOT. 7) 4-FT BELOW CREEK FINISHED GRADE.
- 5 REMOVE SHEET PILES
- 6 REMOVE CONCRETE SLOPED EMBANKMENT ≈ 3200 SF
- 7 REMOVE RIP-RAP ≈ 1000 SF
- 8 REMOVE SACKCRETE ≈ 350 SF
- 9 REMOVE (E) TREES
- 10 REMOVE ARUNDO. SEE NOTE 7.
- 11 REMOVE FENCE (TYPE VARIES)
- 12 REMOVE C.M.U. BLOCK WALL
- 13 ABANDON PIPE
- 14 SALVAGE AND RESET LANDSCAPE FEATURE
- 15 RESET EXISTING FENCES AND GATES (REMOVE, SALVAGE, AND REINSTALL IN SAME LOCATION)



DE LA VINA STREET



DEM-1

REVISIONS			
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DESIGNED BY: Md. Wahiduzzaman BENGAL ENGINEERING, INC.	8/29/25 DATE
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LOWER MISSION CREEK
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REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

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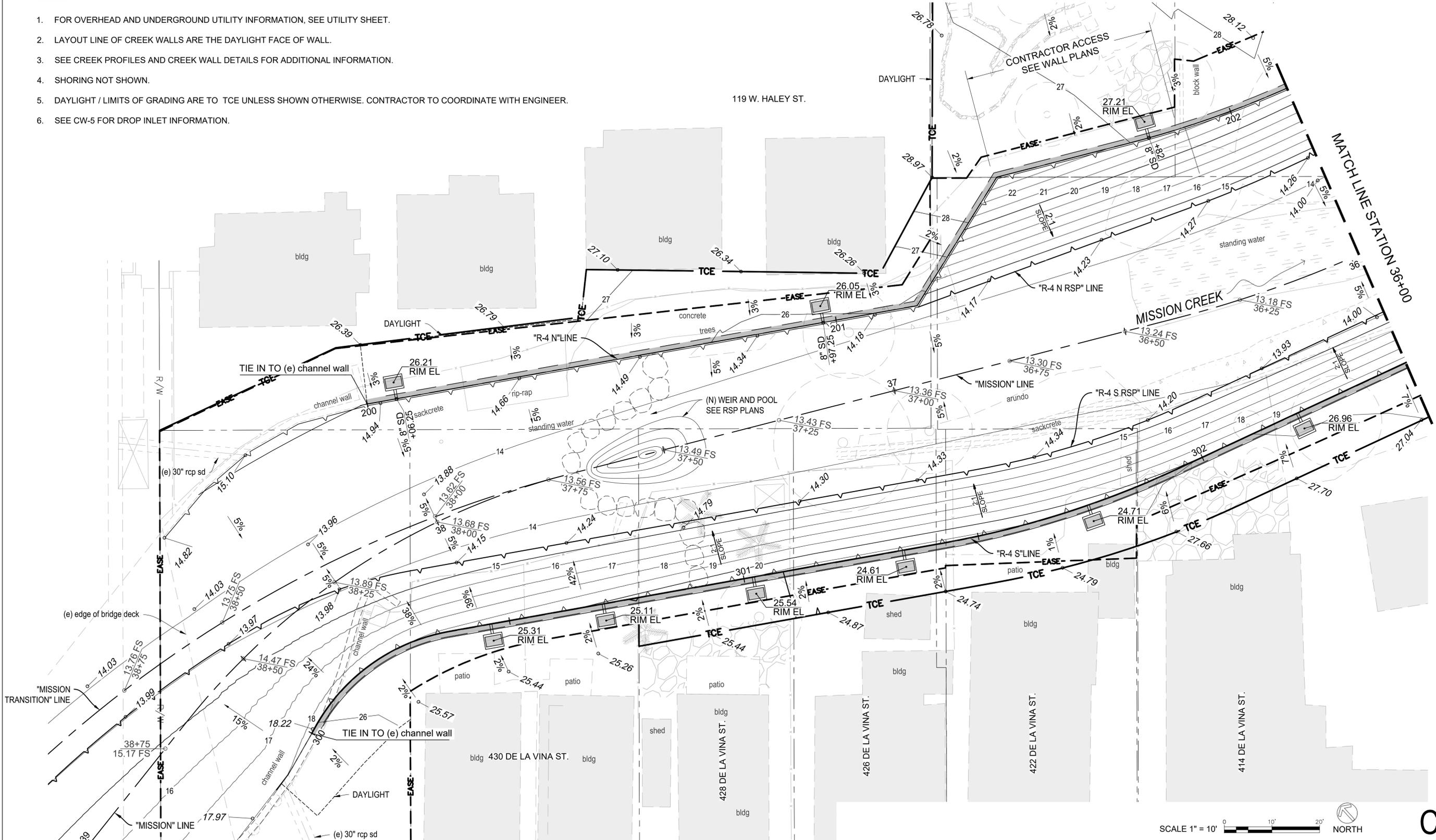
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SHEET 7 OF 28

NOTES:

1. FOR OVERHEAD AND UNDERGROUND UTILITY INFORMATION, SEE UTILITY SHEET.
2. LAYOUT LINE OF CREEK WALLS ARE THE DAYLIGHT FACE OF WALL.
3. SEE CREEK PROFILES AND CREEK WALL DETAILS FOR ADDITIONAL INFORMATION.
4. SHORING NOT SHOWN.
5. DAYLIGHT / LIMITS OF GRADING ARE TO TCE UNLESS SHOWN OTHERWISE. CONTRACTOR TO COORDINATE WITH ENGINEER.
6. SEE CW-5 FOR DROP INLET INFORMATION.



SCALE 1" = 10' NORTH

CG-1

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DESIGNED BY:
Md. Wahiduzzaman
BENGAL ENGINEERING, INC. 8/29/25
DATE

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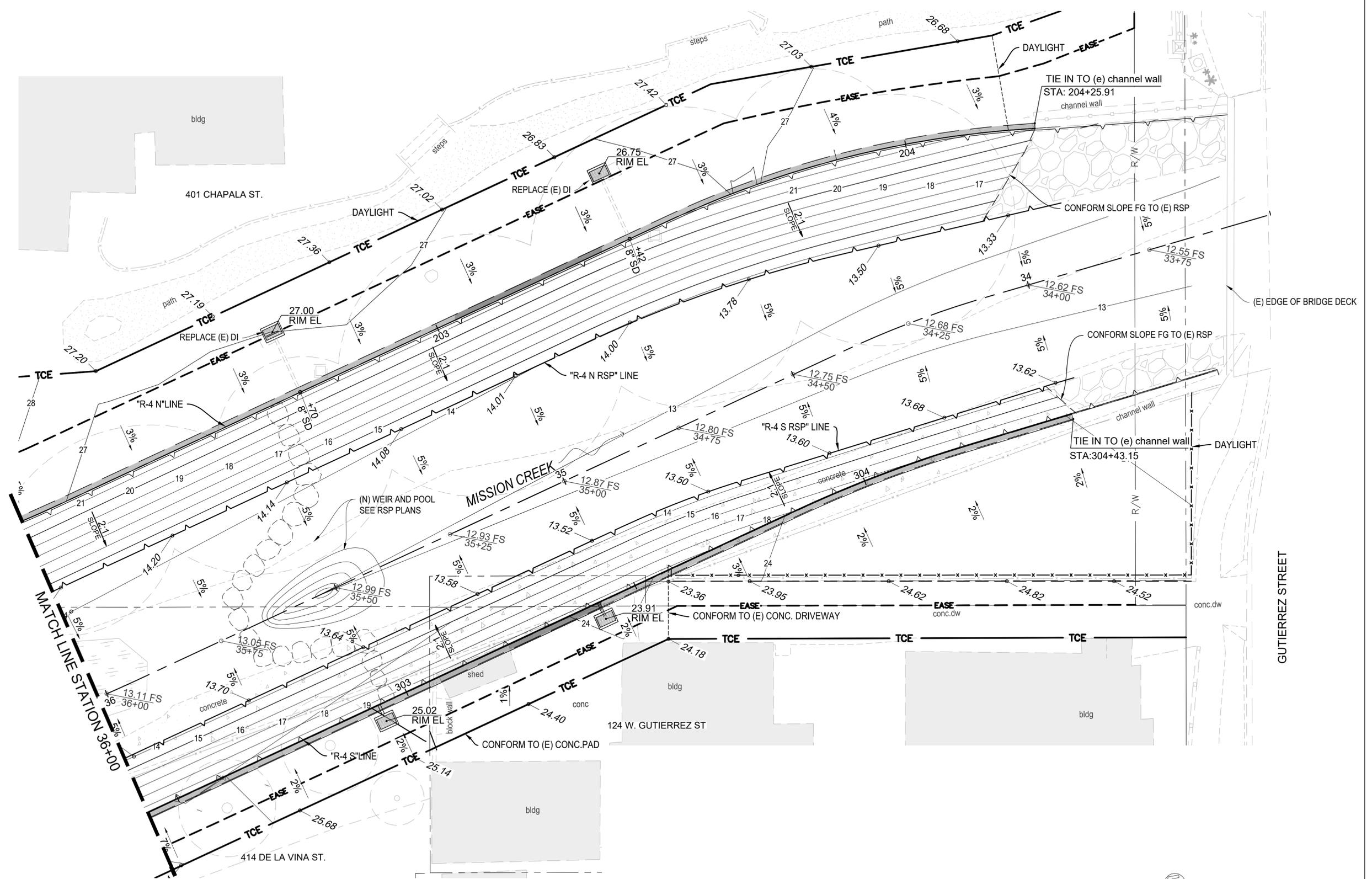


LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

CIVIL GRADING AND
DRAINAGE

DESIGNED BY:
MD
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SO

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SHEET 8 OF 28



SCALE 1" = 10' NORTH

CG-2

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 BENGAL ENGINEERING, INC. DATE

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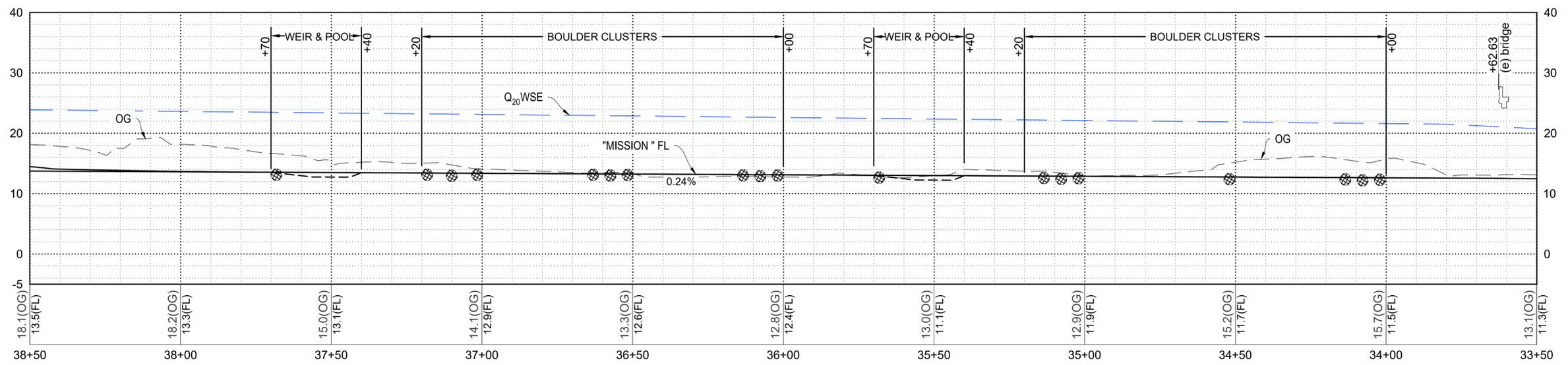


LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

CIVIL GRADING AND
 DRAINAGE

DESIGNED BY: MD
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P-1102
 SHEET 9 OF 28



"MISSION" PROFILE
SCALE: 1" = 20' H, 1" = 10' V

NOTES:

- SEE WALL GEOMETRY, PROFILES, AND CREEK GRADING FOR ADDITIONAL INFORMATION.

HYDRAULIC DATA			
STA.	Q (CFS)	V (FT/S)	WSE
38+50	3,400	7.7	24.0'
34+50	3,400	8.5	20.9'

P-1

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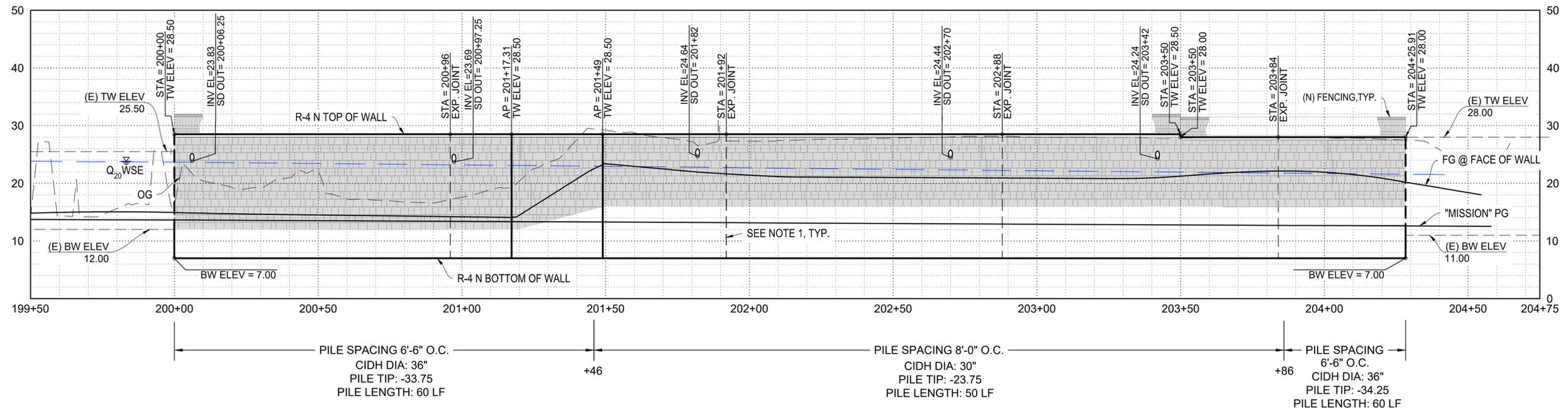
LOWER MISSION CREEK
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REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

MISSION CREEK PROFILE

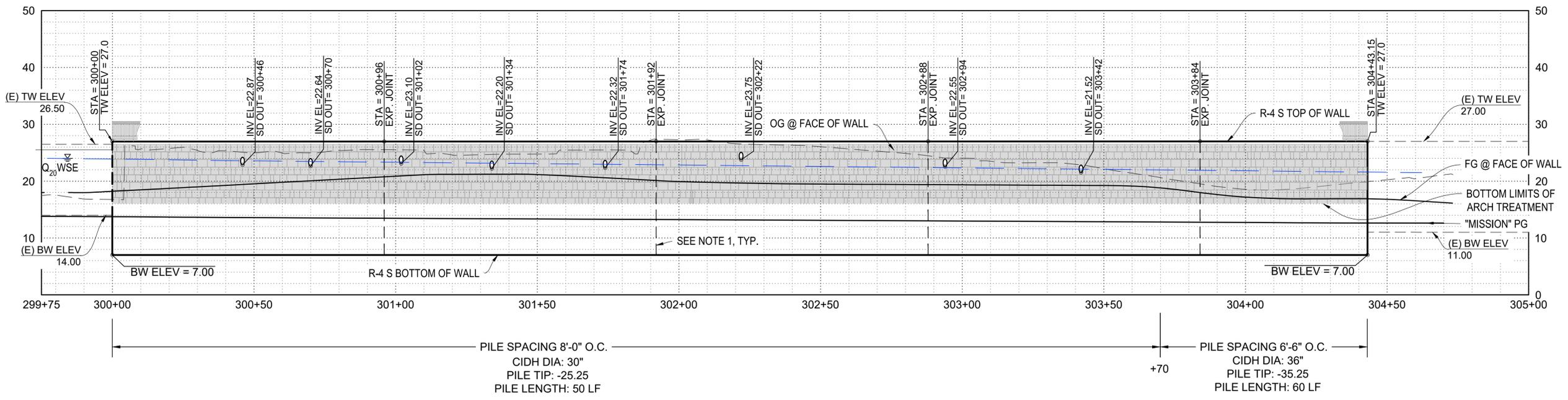
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SHEET 10 OF 28



"R-4 N" PROFILE
SCALE: 1" = 20' H, 1" = 10' V



"R-4 S" PROFILE
SCALE: 1" = 20' H, 1" = 10' V

NOTES:

1. SEE CALTRANS STD 80-3 FOR EXPANSION JOINT DETAILS.

REVISIONS			
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Md. Wahiduzzaman
BENGAL ENGINEERING, INC. 8/29/25
DATE

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(805) 568-3440



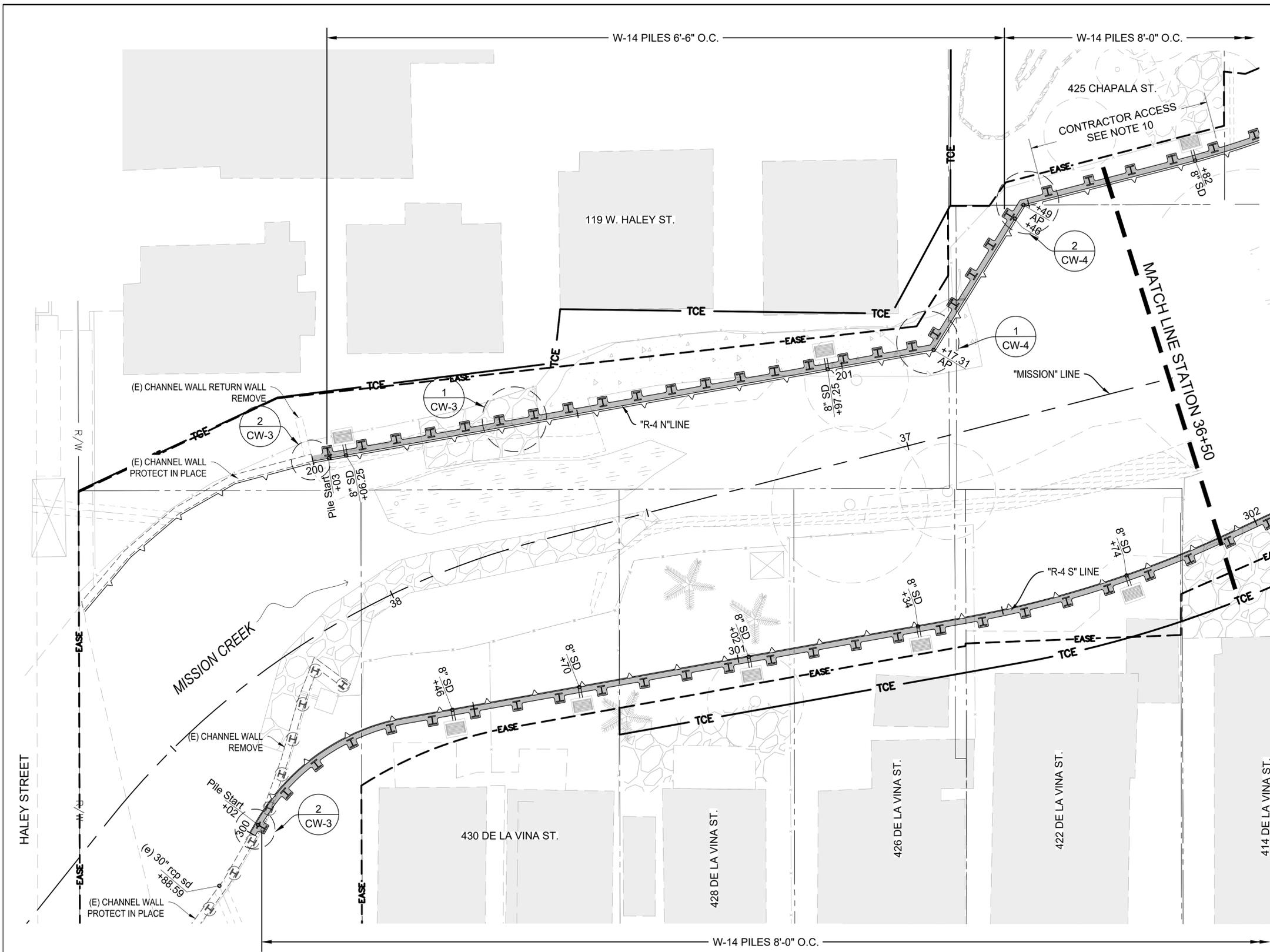
LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

CHANNEL WALL
PROFILES

DESIGNED BY:
MD
DRAWN BY:
HS
CHECKED BY:
SO

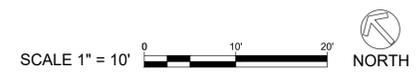
P-1102

SHEET 11 OF 28



NOTES:

1. FOR GRADING, WALL PROFILES AND KEYLINE GEOMETRY FOR ADDITIONAL INFORMATION.
2. SOLDIER PILES SHALL BE WIDE-FLANGE "HP" SHAPES CONFORMING TO ASTM A992, GRADE 50. ALL OTHER STEEL SHALL BE ASTM A572 GR50.
3. CONCRETE FOR WALLS SHALL HAVE 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS OTHERWISE NOTED. CONCRETE IS TINTED SEE CW-6.
4. CONCRETE USED FOR FILLING-IN HOLE AROUND STEEL PILE SHALL HAVE 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI.
5. REBARS REQUIRING WELDING SHALL CONFORM TO ASTM A706, GR60.
6. CEMENT SHALL BE TYPE II, CONFORMING TO ASTM C-150.
7. PROVIDE 3/4" CHAMFERS AT ALL CONCRETE CORNERS, UNLESS OTHERWISE NOTED.
8. SPLICES OF ADJACENT REBAR SHALL BE STAGGERED.
9. MINIMUM PROTECTIVE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS (UNLESS NOTED OTHERWISE):
 - 9.1. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH : 3"
 - 9.2. CAST IN FORMS AND EXPOSED TO EARTH & WEATHER : 2"
10. 425 CHAPALA STREET IS A MAIN ACCESS POINT FOR CONSTRUCTION. ENGINEER WILL ALLOW TOP OF SOLDIER PILES TO BE RECESSED THEN LATER SPLICED UP TO 5' BELOW FINAL PILE HEIGHT IN THIS LOCATION FOR ACCESS DURING CONSTRUCTION PHASES. CONTRACTOR TO SUBMIT WORK PLAN FOR ENGINEER APPROVAL AND AUTHORIZATION.



CW-1

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY:
Md. Wahiduzzaman
BENGAL ENGINEERING, INC. 8/29/25
DATE

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440

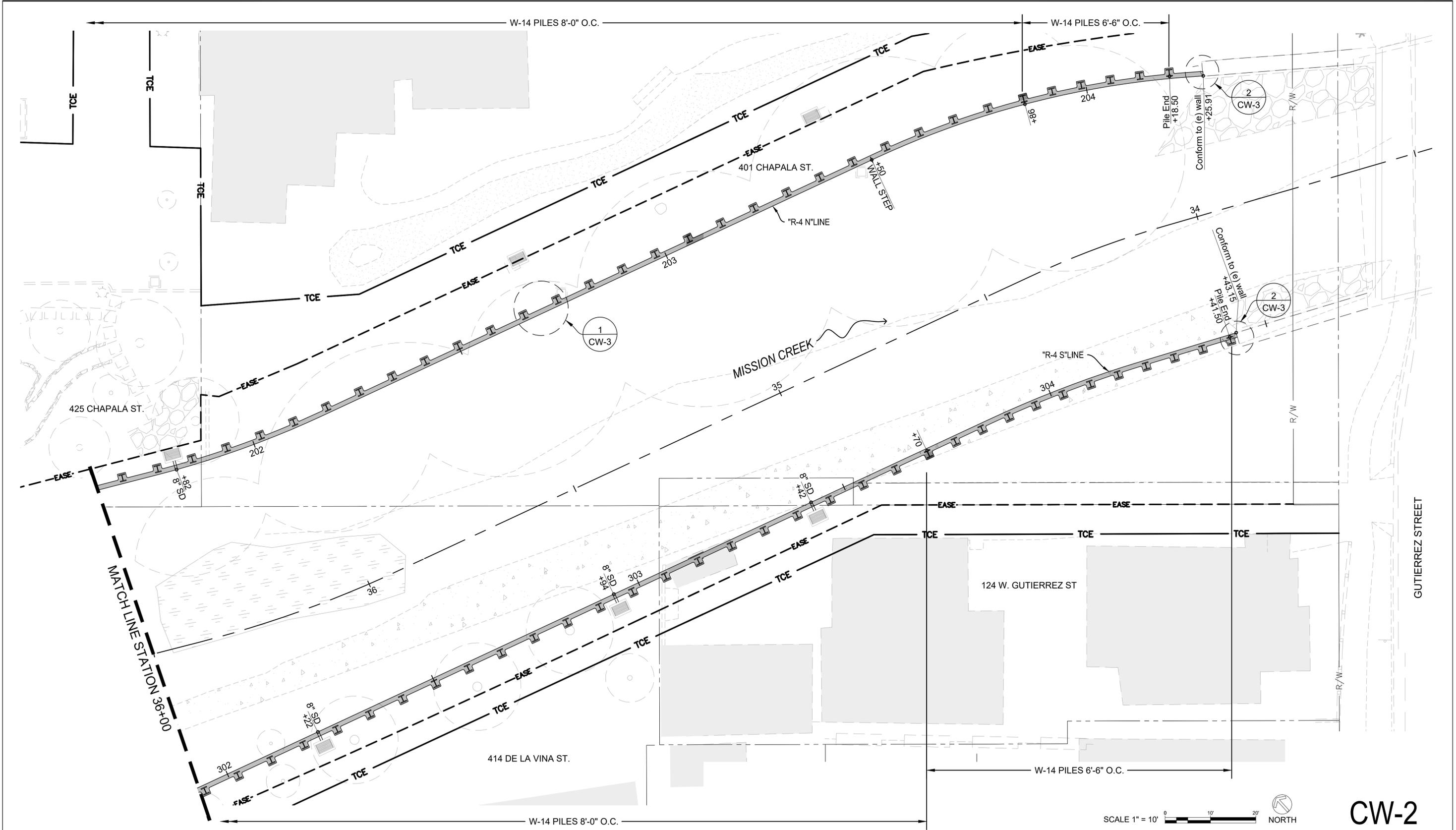


LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

CHANNEL WALL PLAN

DESIGNED BY:
MD
DRAWN BY:
HS
CHECKED BY:
SO

P-1102
SHEET 12 OF 28



SCALE 1" = 10' NORTH

CW-2

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY:
Md. Wahiduzzaman
BENGAL ENGINEERING, INC. DATE: 8/29/25

SANTA BARBARA COUNTY
FLOOD CONTROL DISTRICT

SANTA BARBARA COUNTY
FLOOD CONTROL DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

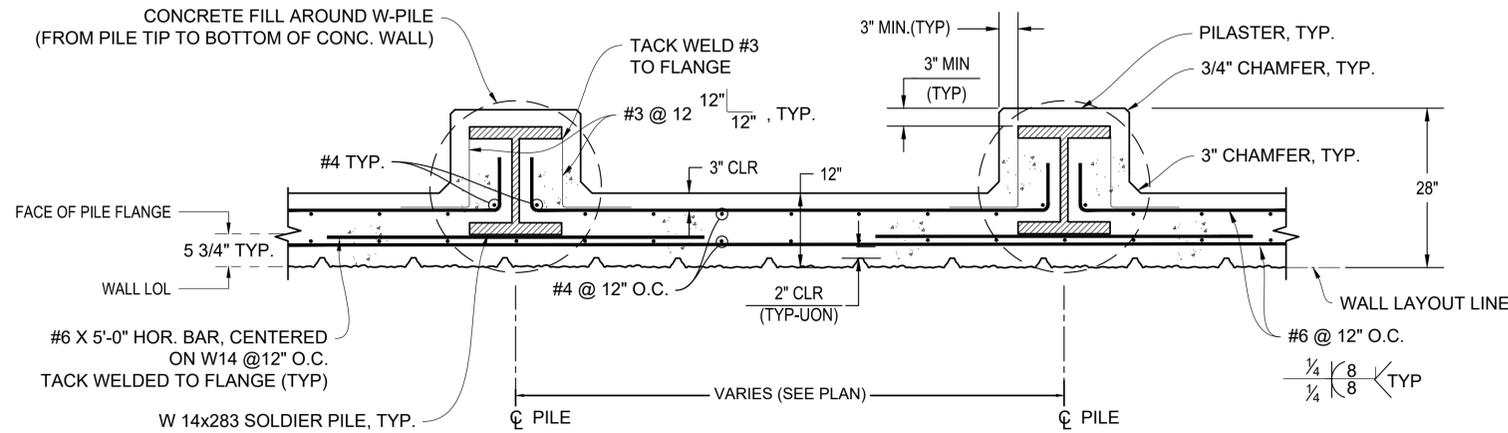
CHANNEL WALL PLAN

DESIGNED BY: MD
DRAWN BY: HS
CHECKED BY: SO

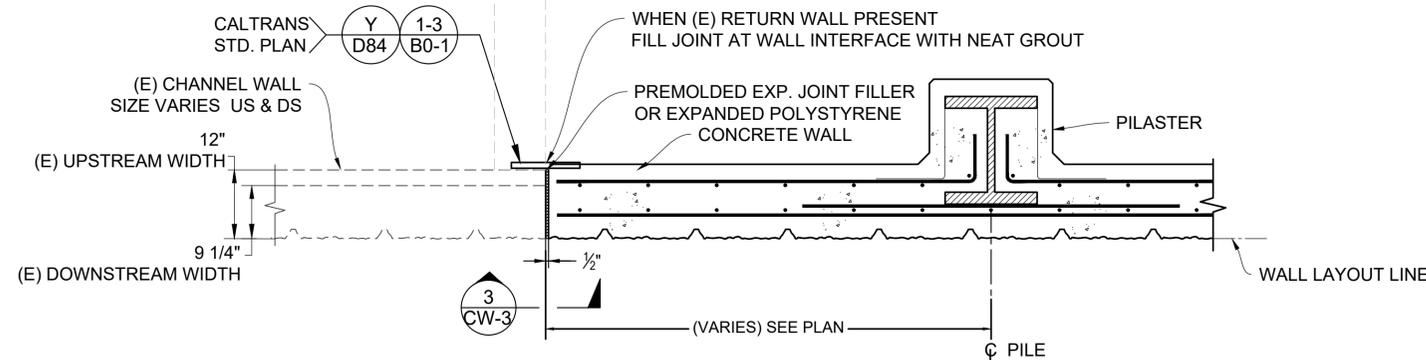
P-1102
SHEET 13 OF 28

NOTES:

1. HYDROPHILIC WATERSTOP SHALL BE "HYDROTITE", MANUFACTURED BY GREENSTREAK (3400 TREE COURT INDUSTRIAL BLVD, ST. LOUIS, MO 63122), OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION PROCEDURE.
2. RETROFIT WATERSTOP SHALL BE "JP320L", MANUFACTURED BY JP SPECIALTIES (551 BIRCH ST, LAKE ELSINORE, CA 92530), OR APPROVED EQUAL. FOLLOW MANUFACTURER'S RECOMMENDATION FOR INSTALLATION PROCEDURE.

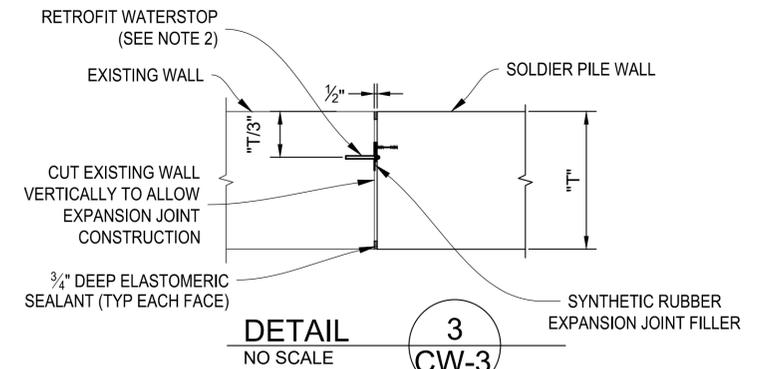


DETAIL 1
SCALE 3/4" = 1'-0"
CW-3



PLAN DETAIL 2
SCALE 3/4" = 1'-0"
CW-3

NOTE:
1. FOR INFO NOT SHOWN
SEE DETAIL ABOVE



DETAIL 3
NO SCALE
CW-3

NOTE: T = WALL THICKNESS

CW-3

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: BENGAL ENGINEERING, INC.	8/29/25 DATE
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SANTA BARBARA COUNTY
FLOOD CONTROL AND
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130 E. VICTORIA STREET
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(805) 568-3440



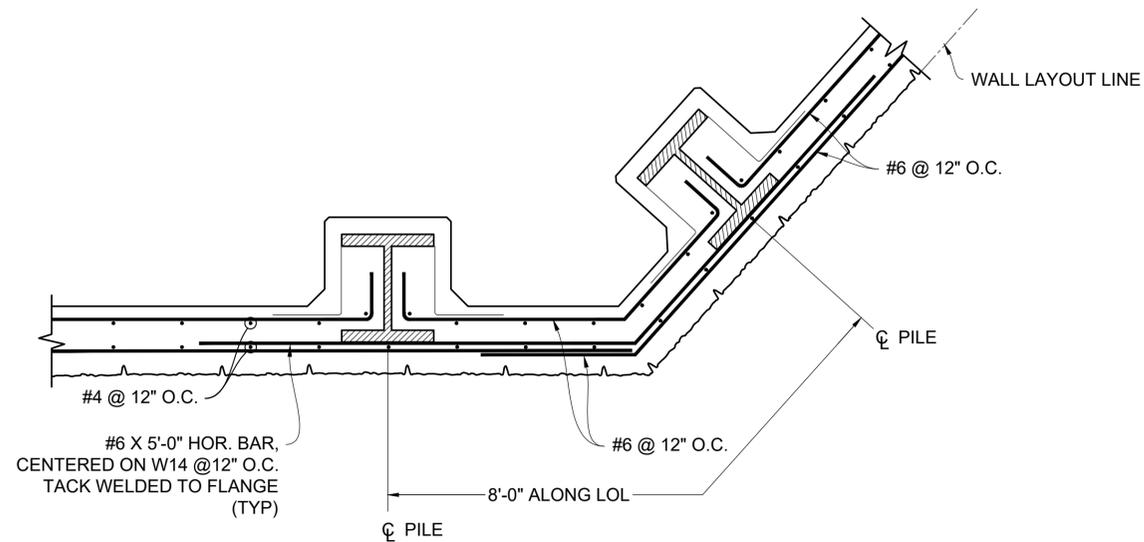
LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

CHANNEL WALL DETAILS

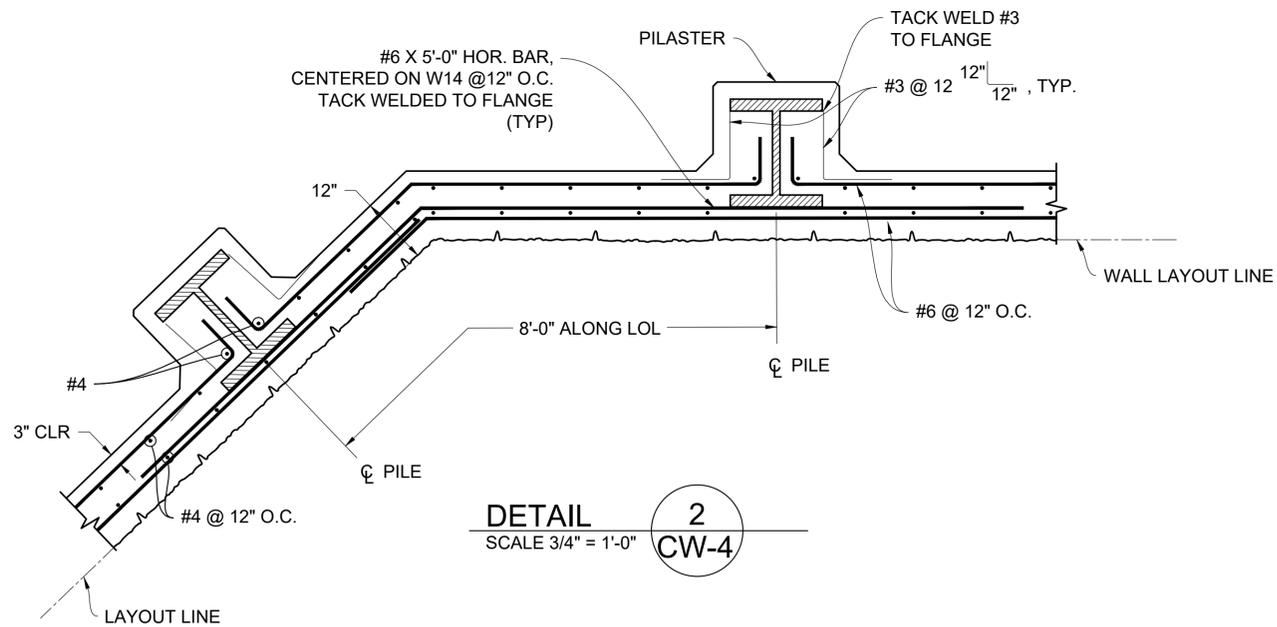
DESIGNED BY: MD
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P-1102

SHEET 14 OF 28



DETAIL 1
SCALE 3/4" = 1'-0"
CW-4



DETAIL 2
SCALE 3/4" = 1'-0"
CW-4

CW-4

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY:
Md. Wahiduzzaman
BENGAL ENGINEERING, INC. DATE: 8/29/25

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



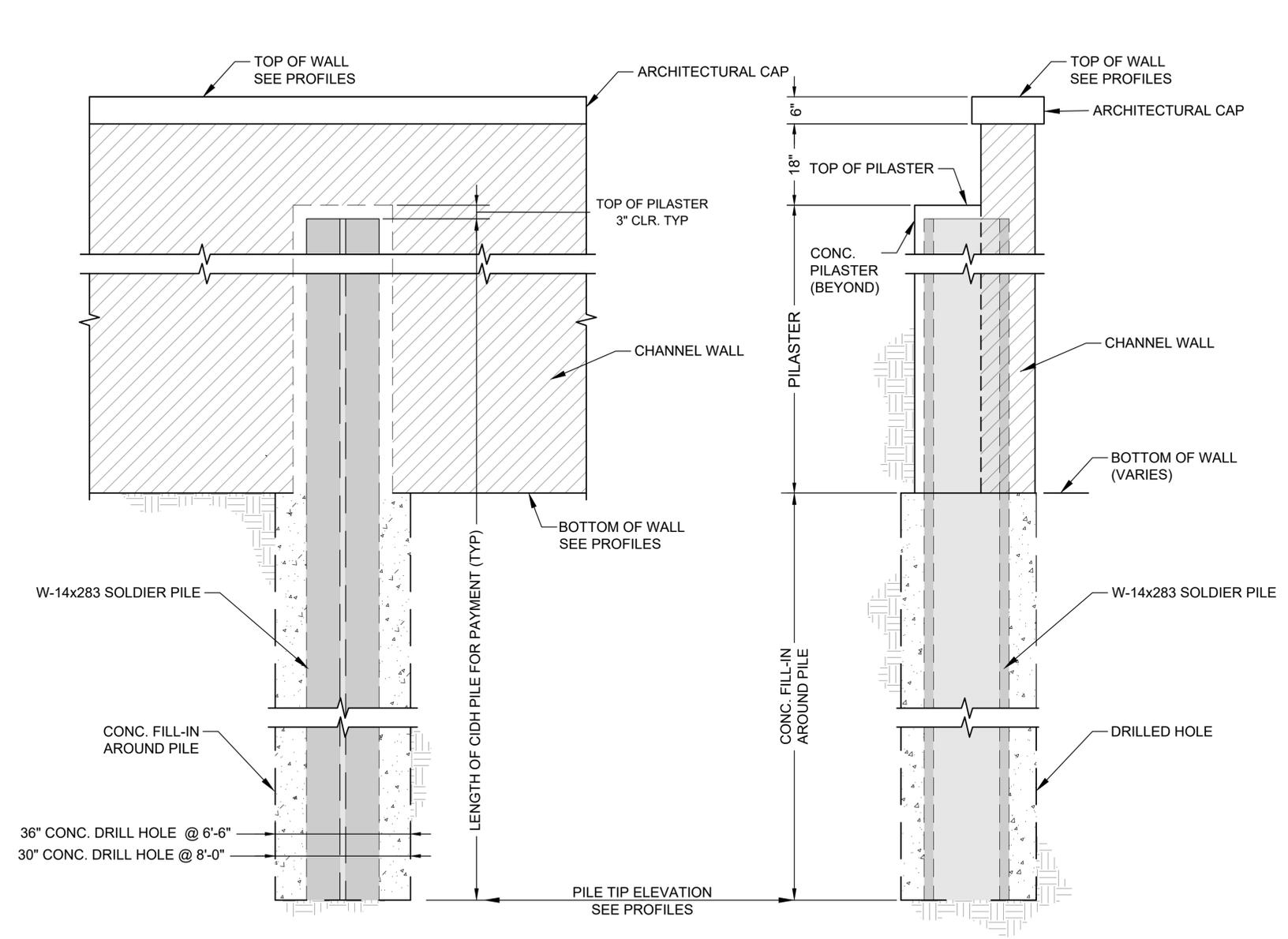
LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

CHANNEL WALL DETAILS

DESIGNED BY: MD
DRAWN BY: HS
CHECKED BY: SO

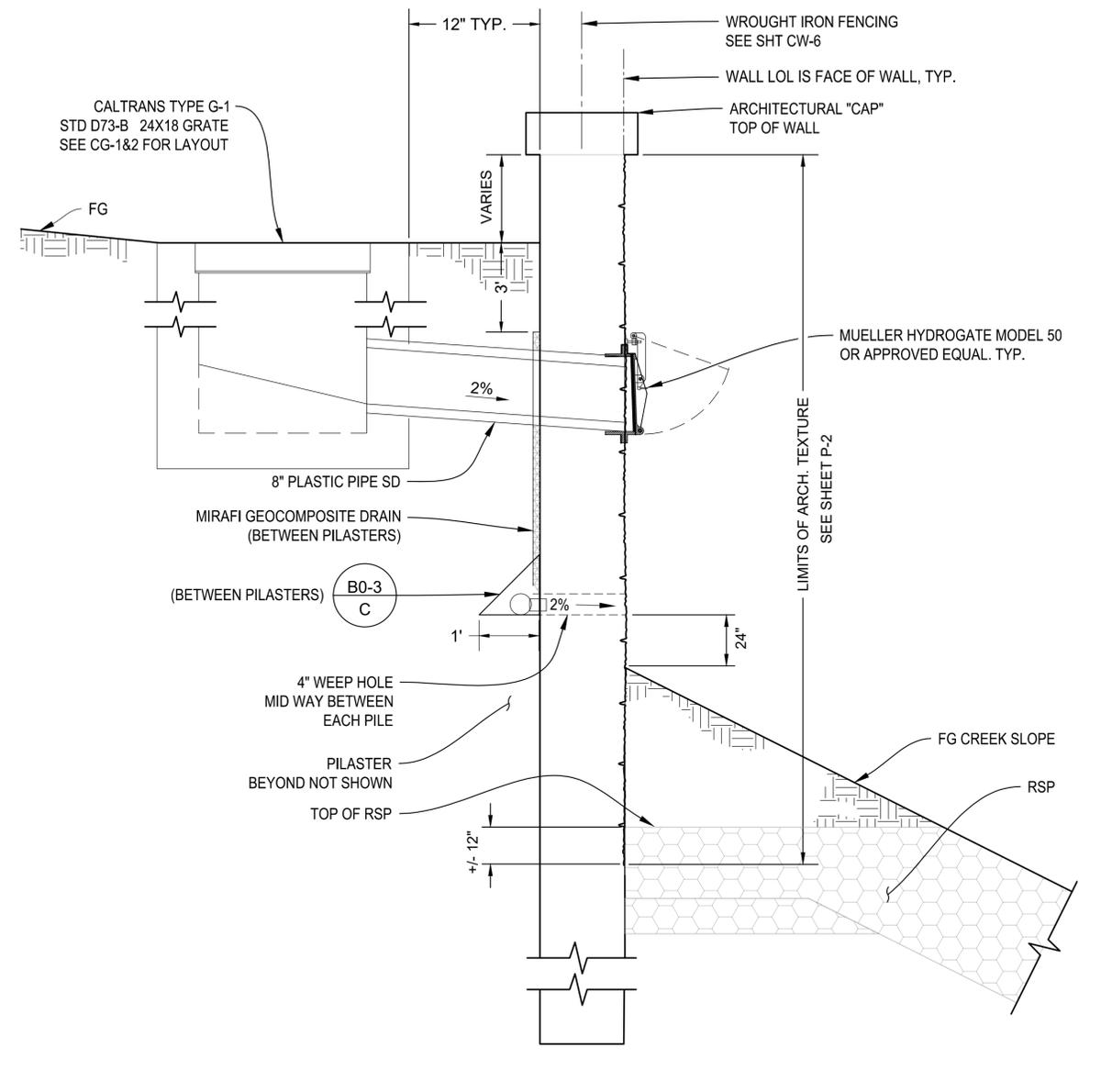
P-1102

SHEET 15 OF 28



ELEVATION
SCALE 3/4" = 1'-0"
A
CW-4

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



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

NOTE:
1. REBARS NOT SHOWN. SEE CW-3 AND CW-4 FOR REBAR INFO.
2. SEE SHT P-2 FOR ADDITIONAL PILE INFORMATION AND DRAINAGE OUTLET ELEVATIONS.

CW-5

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REVISIONS																																
NO.	DESCRIPTION	DATE	APR																													
DRAWN BY: HS	CHECKED BY: SO	SHEET 16 OF 28																														



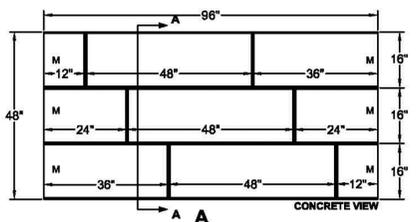
**FITZGERALD
FORMLINERS**
Foming The Future™

PATTERN 17004
Liberty Island Stone 1.625" Depth
Random Cut Stone, Heavy Texture Face

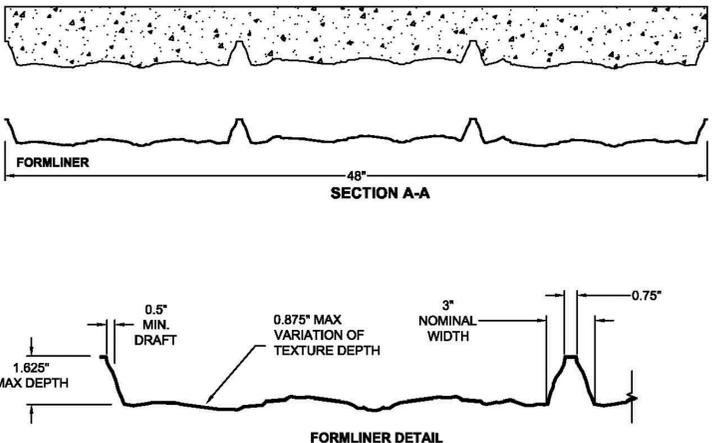
Vac-U-Form™
Styrene - Single Use.
ABS Plastic - Up to 15 reuses.

Stone & Rock
Part Size: 96" W x 48" H
Max Depth: 1.65"
Grout Width: 0.375"

Pattern matches side to side
and top to bottom.



CONCRETE VIEW
(1.625" DEPTH)



CONCRETE

FORMLINER

SECTION A-A

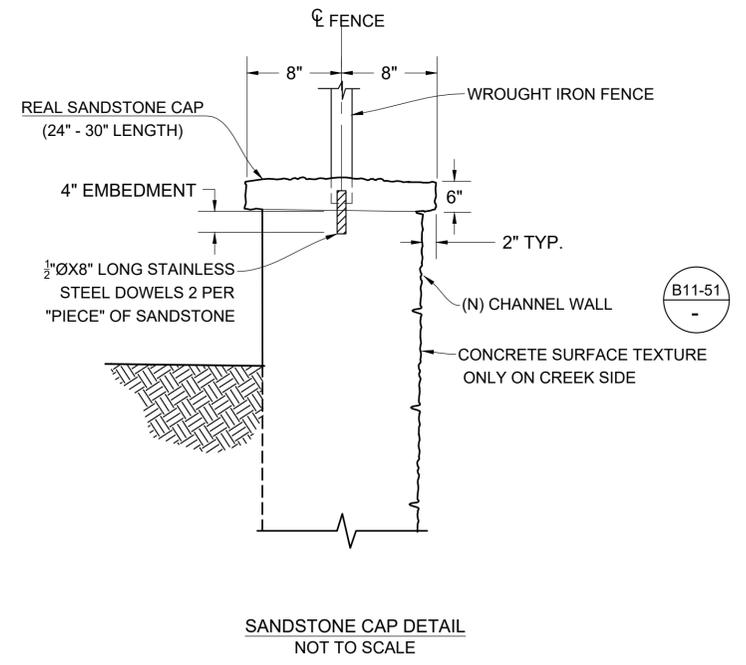
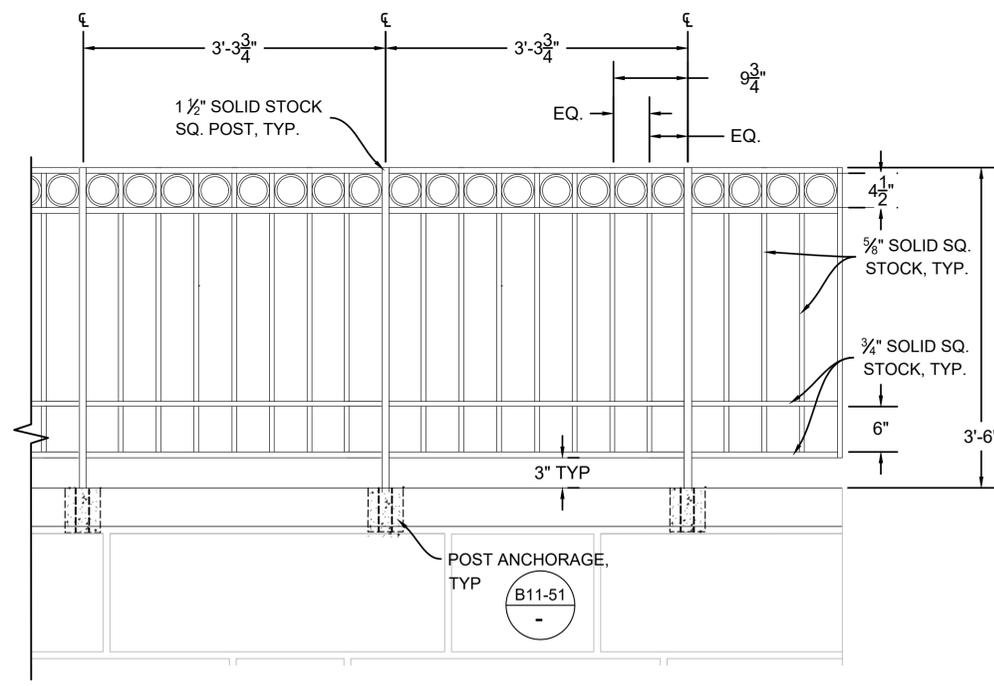
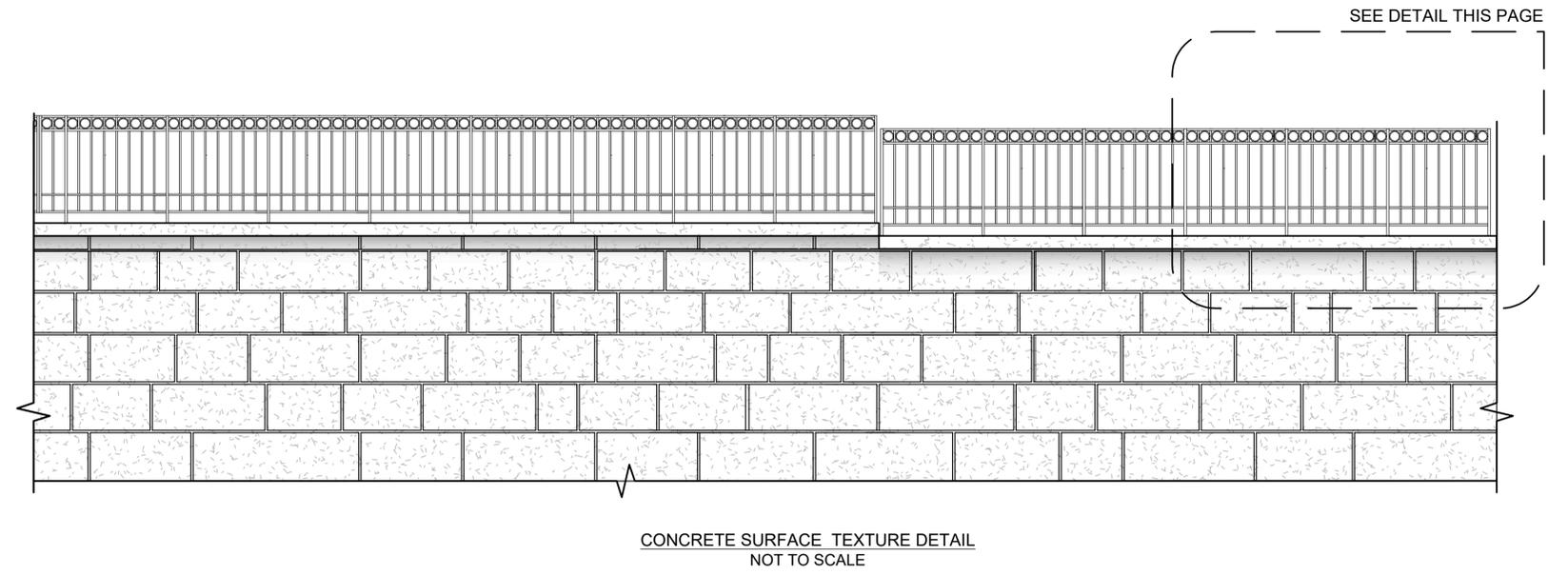
FORMLINER DETAIL

0.5" MIN. DRAFT
0.875" MAX VARIATION OF TEXTURE DEPTH
3" NOMINAL WIDTH
1.625" MAX DEPTH
0.75"

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CONCRETE SURFACE TEXTURE - FORMLINER
NOT TO SCALE

WALL TEXTURE NOTES:

- MISSION CREEK WALLS TO HAVE CONCRETE SURFACE TEXTURE ON CREEK SIDE WALL FACE. SEE WALL PROFILES FOR TEXTURE LIMITS
- CONCRETE SURFACE TEXTURE (SANDSTONE) MUST BE "FITZGERALD LIBERTY STONE" RANDOM CUT STONE; HEAVY TEXTURED FACE PATTERN TYPE A OR EQUIVALENT (48-INCH MAX LENGTH, SEE MANUFACTURERS CUT SHEET).
- MISSION CREEK WALLS CONCRETE COLOR IS DAVIS-COLOR "MESA BUFF" (A TAN SANDSTONE COLOR OR EQUIVALENT).
- FORMLINER SEAMS ARE TO BE TIGHT FITTING "INTERLOCKING" WITH NO GAPS IN BETWEEN PANELS AFTER FORMS ARE TAKEN DOWN. THE CONTRACTOR MUST BURR, SAND AND CLEAN SEAM EXTRUDED EDGES.

CW-6

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: Md. Wahiduzzaman
BENGAL ENGINEERING, INC. DATE: 8/29/25

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

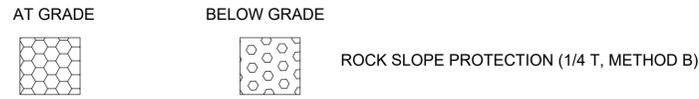
CHANNEL WALL DETAILS

DESIGNED BY: MD
DRAWN BY: HS
CHECKED BY: SO

P-1102

SHEET 17 OF 28

LEGEND:



WEIR RSP



BOULDER CLUSTER

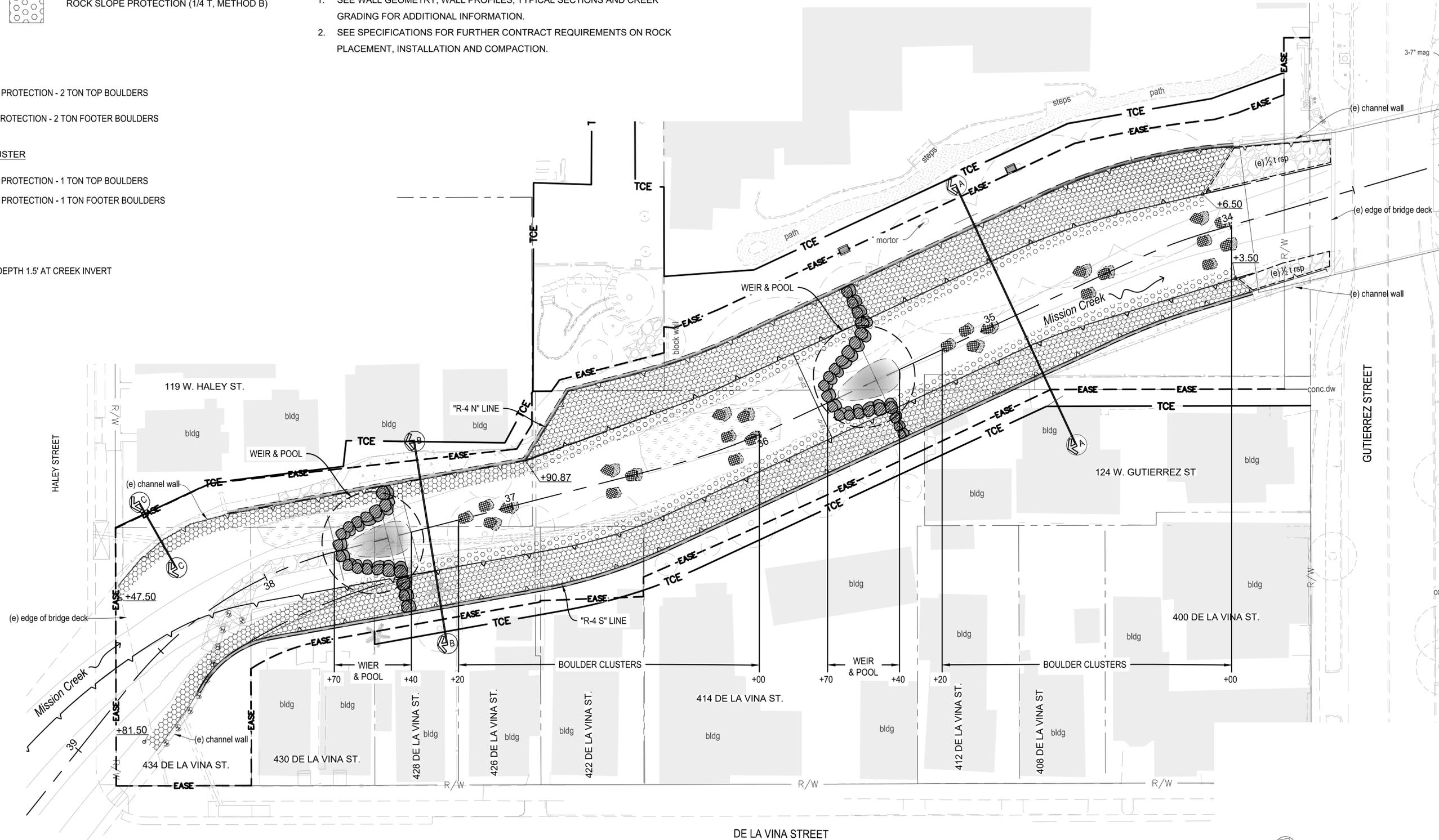


WEIR POOL



ROCK SLOPE PROTECTION NOTES:

1. SEE WALL GEOMETRY, WALL PROFILES, TYPICAL SECTIONS AND CREEK GRADING FOR ADDITIONAL INFORMATION.
2. SEE SPECIFICATIONS FOR FURTHER CONTRACT REQUIREMENTS ON ROCK PLACEMENT, INSTALLATION AND COMPACTION.



ROCK SLOPE PROTECTION PLAN
SCALE: 1" = 20'



RSP-1

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: Md. Wahiduzzaman
 BENGAL ENGINEERING, INC. DATE: 8/29/25

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 130 E. VICTORIA STREET
 SANTA BARBARA, CA 93101
 (805) 568-3440

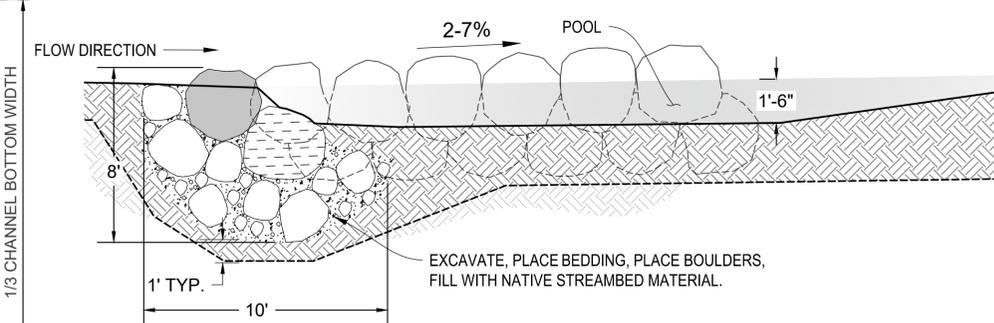
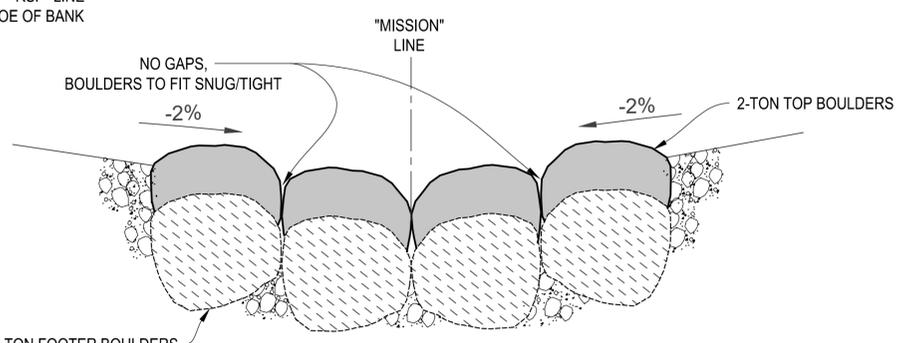
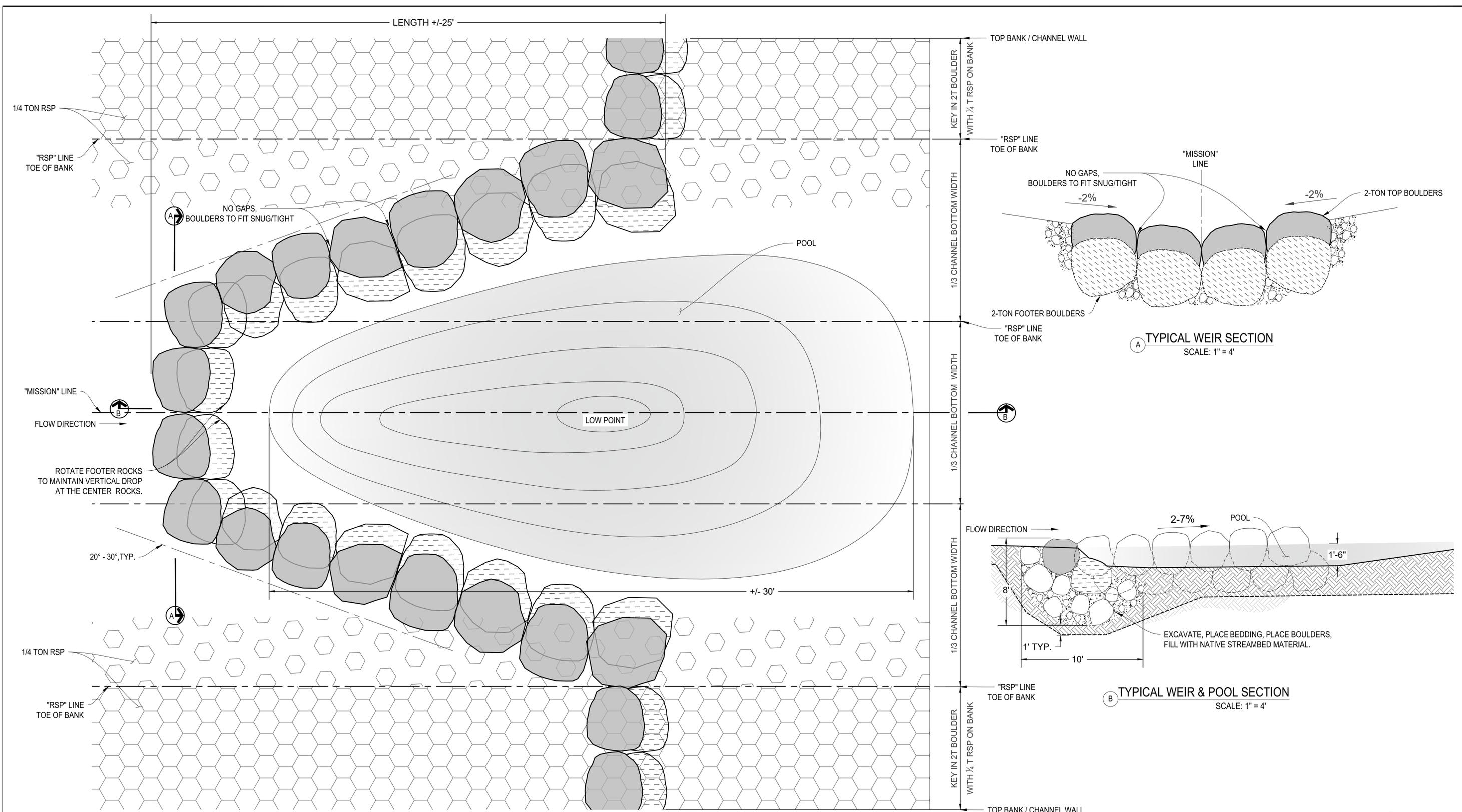


LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

ROCK SLOPE PROTECTION
 PLAN

DESIGNED BY: MD
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 CHECKED BY: SO

P-1102
 SHEET 18 OF 28



1 WEIR AND POOL DETAIL
SCALE: 1" = 4'

B TYPICAL WEIR & POOL SECTION
SCALE: 1" = 4'

RSP-2

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY:
Md. Wahiduzzaman
BENGAL ENGINEERING, INC.
8/29/25
DATE

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440

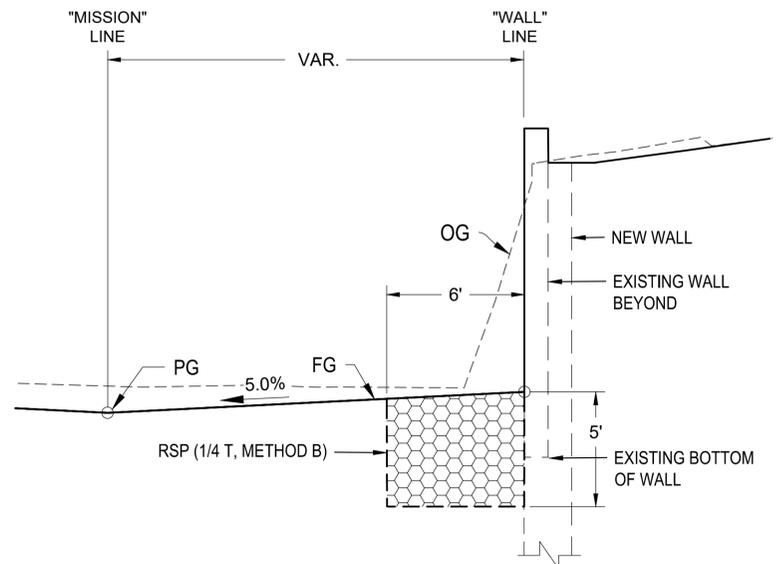


LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

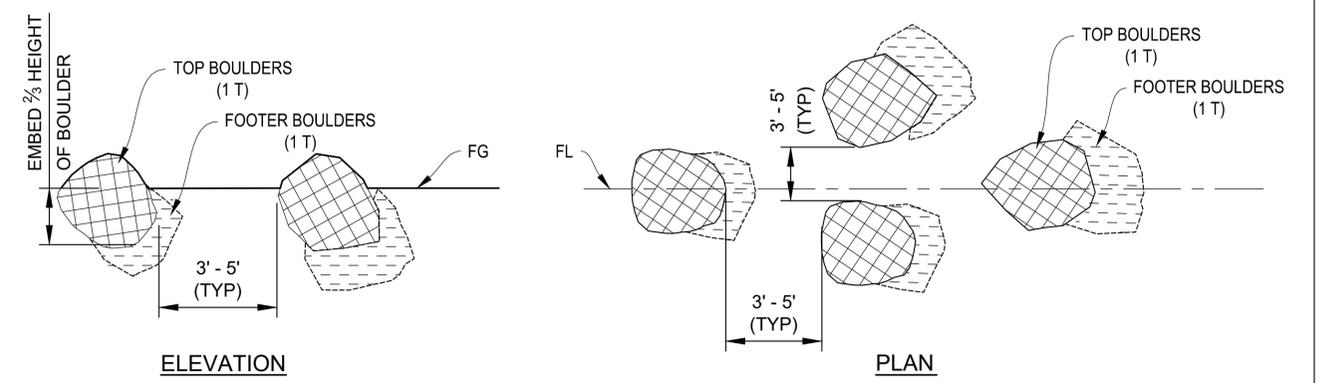
ROCK SLOPE PROTECTION
WEIR DETAILS

DESIGNED BY:
MD
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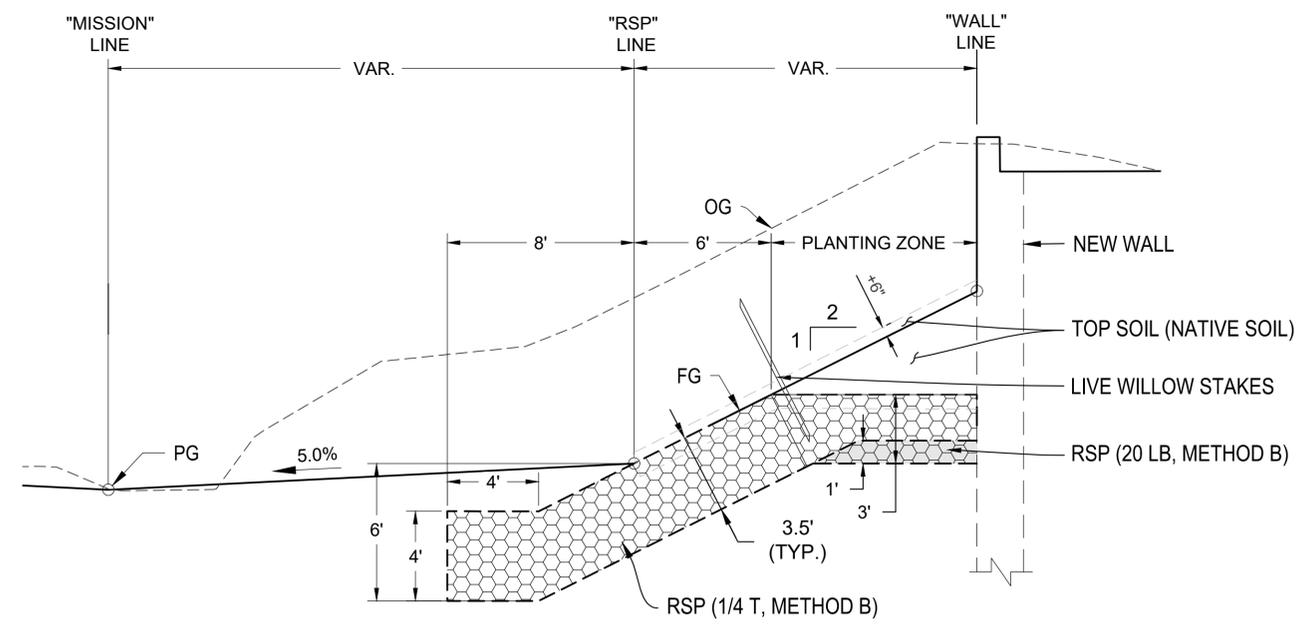
P-1102
SHEET 19 OF 28



ROCK SLOPE PROTECTION - WALL DETAIL
SCALE: 1" = 4'



1 BOULDER CLUSTERS
NOT TO SCALE



ROCK SLOPE PROTECTION - SLOPED DETAIL
SCALE: 1" = 4'

BOULDER CLUSTER NOTES:

1. EACH BOULDER CLUSTER CONSIST OF 3 TO 5 PAIRS OF ROCK SPACED AT ABOUT 50 FEET APART. TOP ROCK PROTRUDES 18 TO 24 INCHES ABOVE MISSION CREEK INVERT.
2. BOULDER CLUSTERS SHOULD BE PLACED IN RANDOM PATTERNS.
3. CONTRACTOR CAN USE NATIVE LOCALLY EXCAVATED BOULDERS WITHIN THE PROJECT SITE IF THEY MEET SIZE DETAILED.
4. INSTALLATION OF BOULDER CLUSTERS REQUIRES CAREFUL PLACEMENT OF ROCK. ROCKS SHOULD NEVER BE DUMPED RATHER PLACED WITH A HYDRAULIC EXCAVATOR WITH A BUCKET AND THUMB ATTACHMENT.
5. SEE CHANNEL WALL PLANS AND PROFILES FOR WALL HEIGHTS AND OTHER ADDITIONAL INFORMATION.

NOTES:

1. SEE SHEET L-1 FOR MORE INFORMATION ON TOP SOIL (NATIVE SOIL) AND LIVE WILLOW STAKES.

RSP-3

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY:
Md. Wahiduzzaman
BENGAL ENGINEERING, INC. DATE: 8/29/25

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



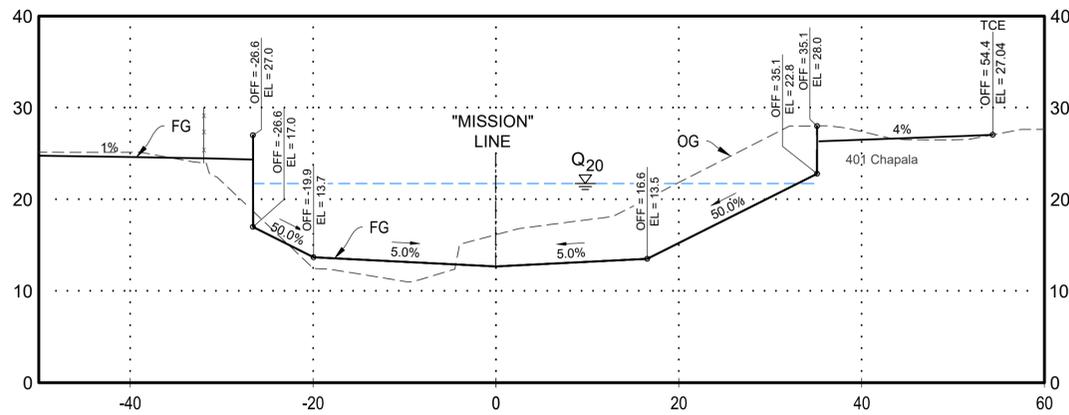
LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

ROCK SLOPE PROTECTION
SLOPE DETAILS

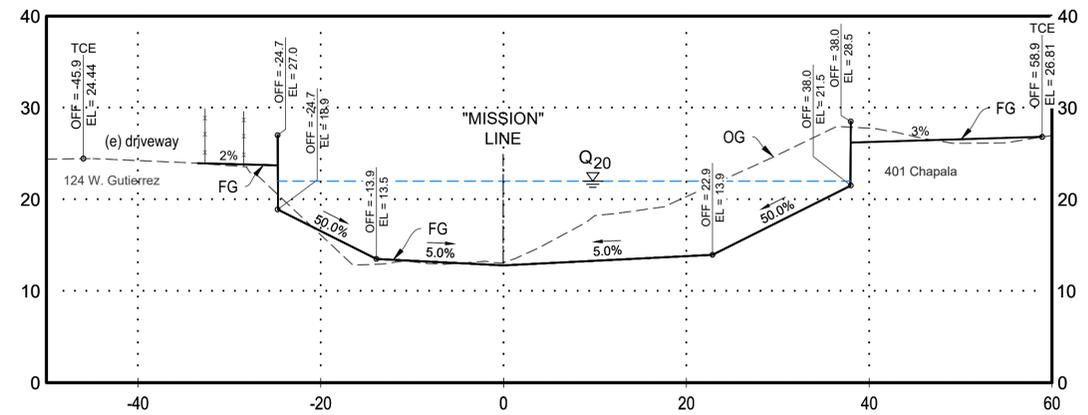
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P-1102
SHEET 20 OF 28

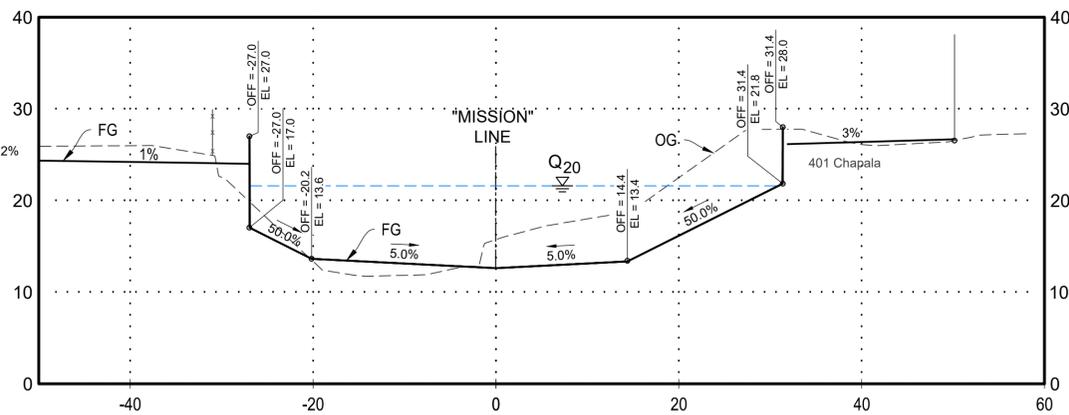
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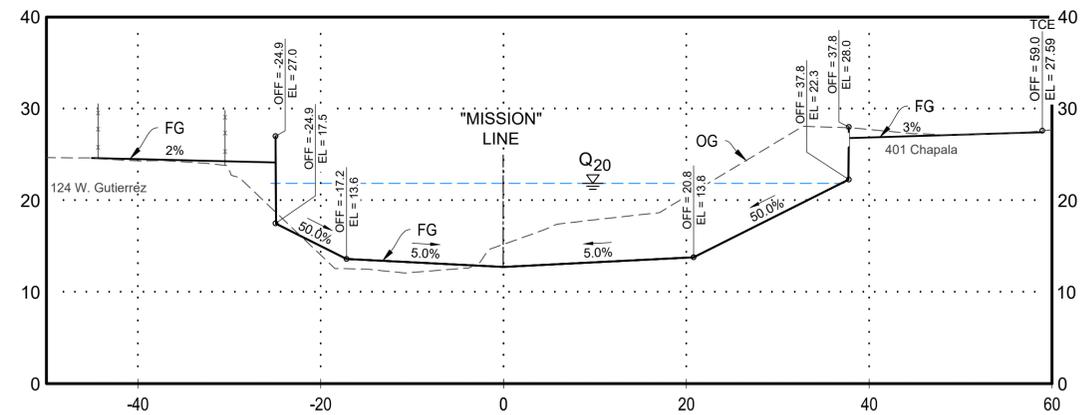
34+75



34+00



34+50



CROSS SECTION LEGEND:

- PROTECT EXISTING
- DEMOLISH EXISTING

TYPICAL SECTION NOTES:

1. SEE WALL GEOMETRY, WALL PROFILES AND CREEK GRADING FOR ADDITIONAL INFORMATION.

SCALE 1" = 10' H&V

XS-1

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: Md. Wahiduzzaman	8/29/25
BENGAL ENGINEERING, INC.	DATE

SANTA BARBARA COUNTY
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 130 E. VICTORIA STREET
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LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

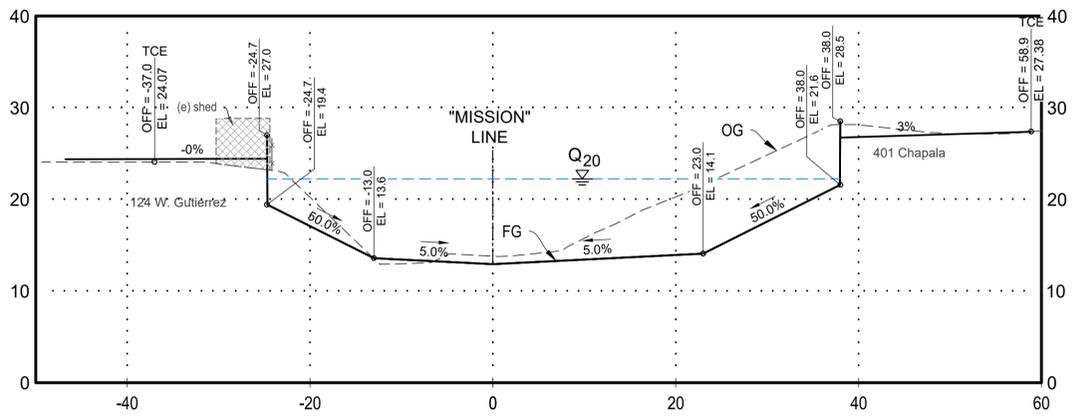
"MISSION" LINE
 CROSS SECTIONS
 STA. 34+00 TO 34+75

DESIGNED BY: MD
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CHECKED BY: SO

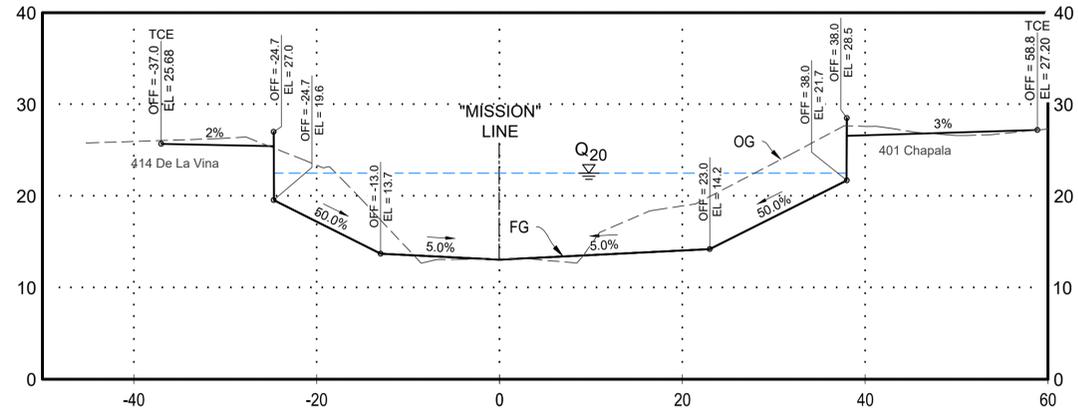
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 SHEET 21 OF 28

Building11 sheds4 sheds4

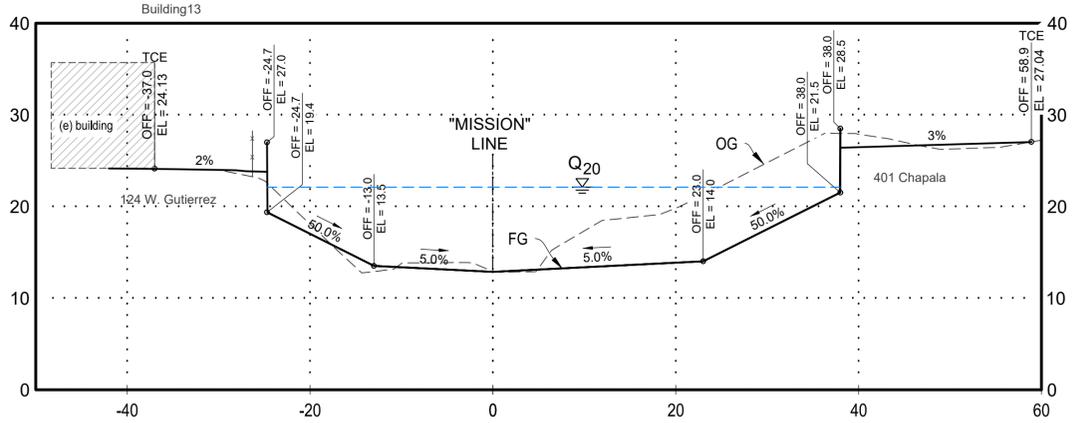
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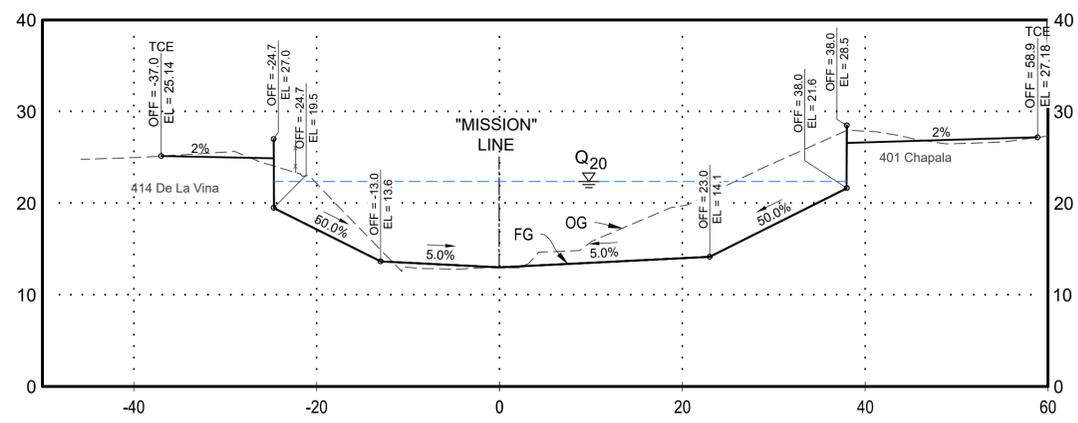
35+75



35+00



35+50



CROSS SECTION LEGEND:

- PROTECT EXISTING
- DEMOLISH EXISTING

SCALE 1" = 10' H&V

XS-2

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: Md. Wahiduzzaman	8/29/25
BENGAL ENGINEERING, INC.	DATE

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
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(805) 568-3440



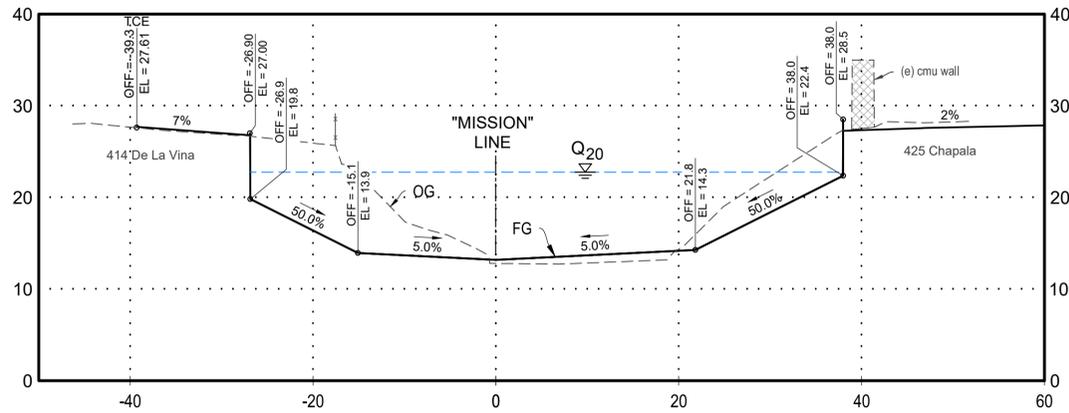
LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

"MISSION" LINE
CROSS-SECTIONS
STA. 35+00 TO 35+75

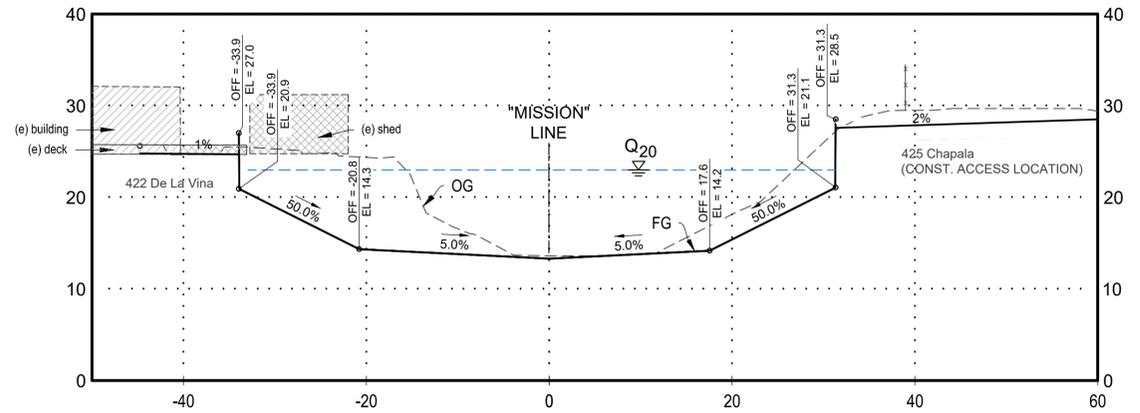
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P-1102
SHEET 22 OF 28

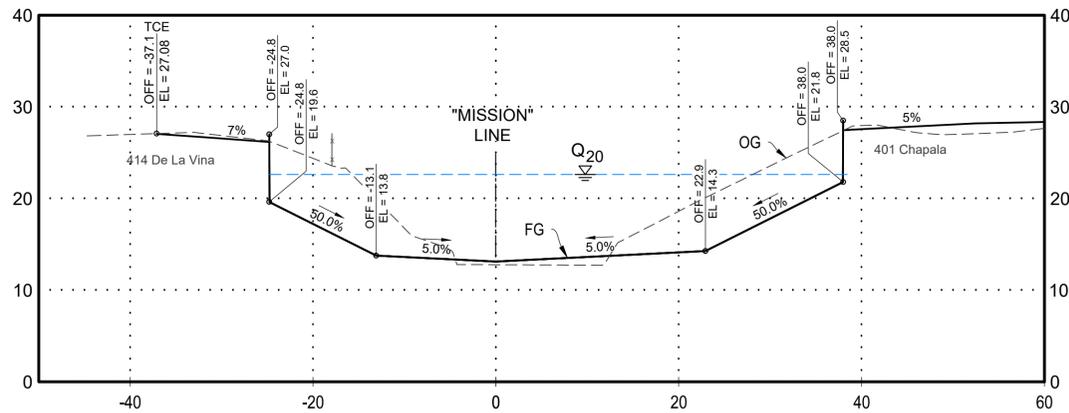
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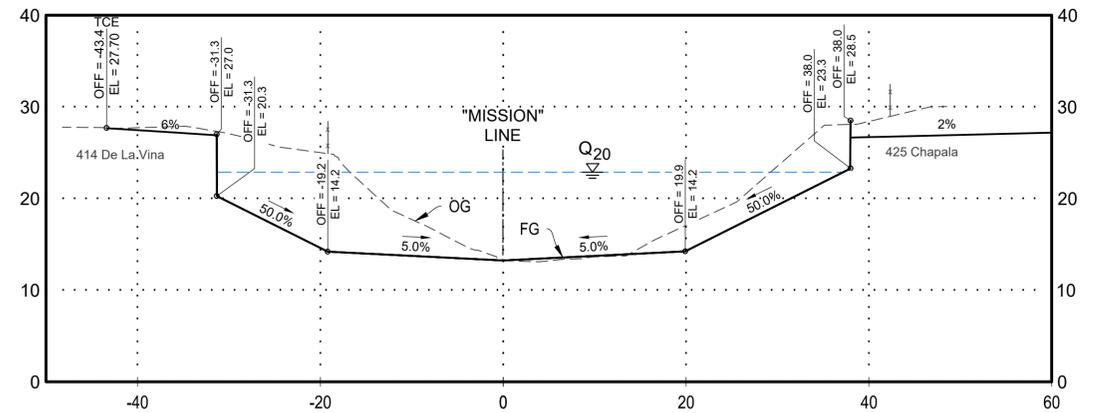
36+75



36+00



36+50



CROSS SECTION LEGEND:

- PROTECT EXISTING
- DEMOLISH EXISTING

SCALE 1" = 10' H&V

XS-3

REVISIONS			
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BENGAL ENGINEERING, INC.	DATE

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



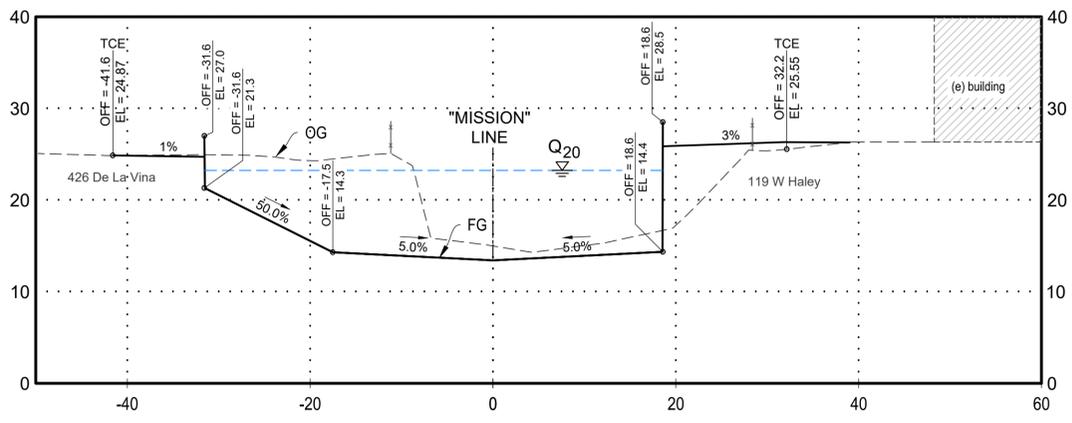
LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

"MISSION" LINE
CROSS-SECTIONS
STA. 36+00 TO 36+75

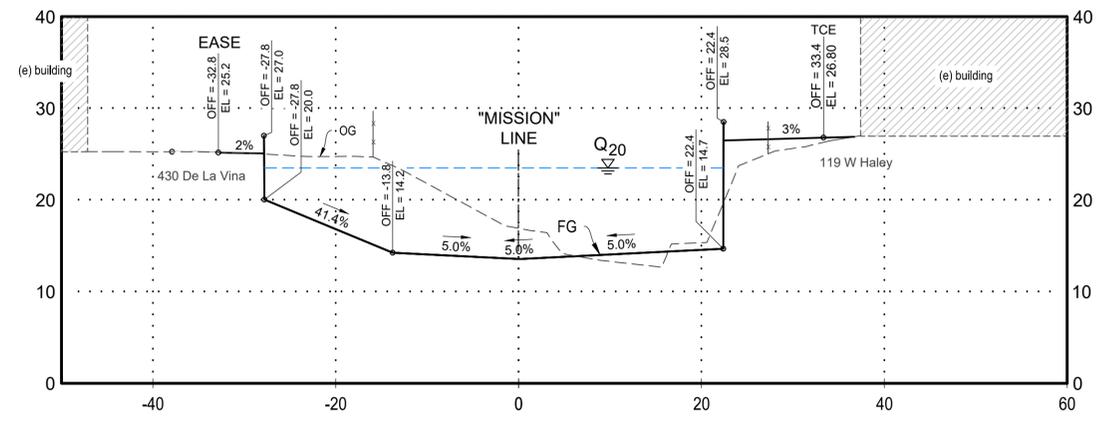
DESIGNED BY: MD	P-1102
DRAWN BY: HS	
CHECKED BY: SO	

SHEET 23 OF 28

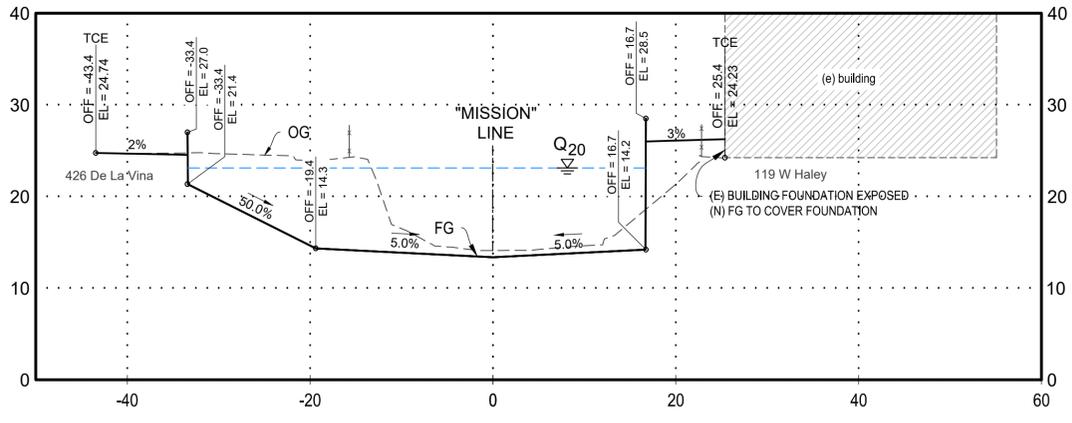
37+25



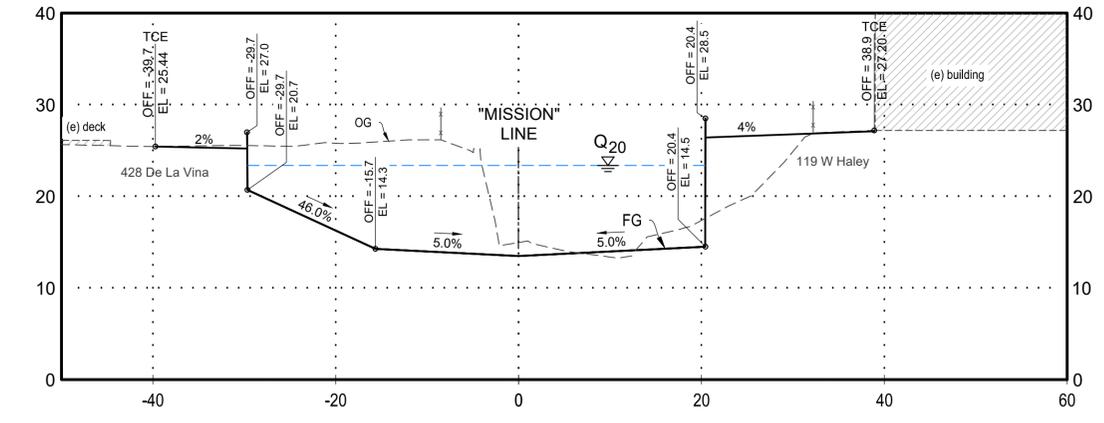
37+75



37+00



37+50



CROSS SECTION LEGEND:

- PROTECT EXISTING
- DEMOLISH EXISTING

SCALE 1" = 10' H&V

XS-4

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY: Md. Wahiduzzaman 8/29/25
 BENGAL ENGINEERING, INC. DATE

SANTA BARBARA COUNTY
 FLOOD CONTROL AND
 WATER CONSERVATION DISTRICT
 130 E. VICTORIA STREET
 SANTA BARBARA, CA 93101
 (805) 568-3440



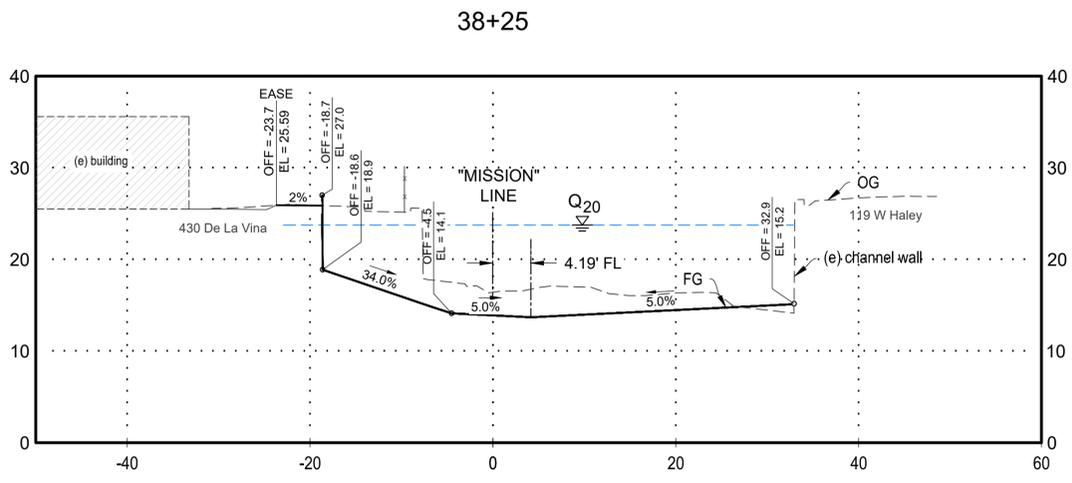
LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

"MISSION" LINE
 CROSS-SECTIONS
 STA. 37+00 TO 37+75

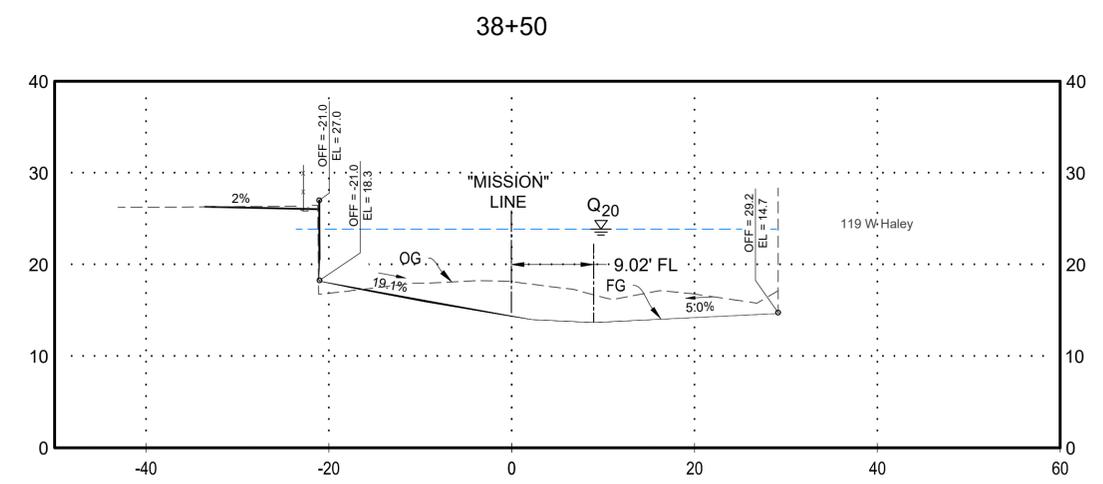
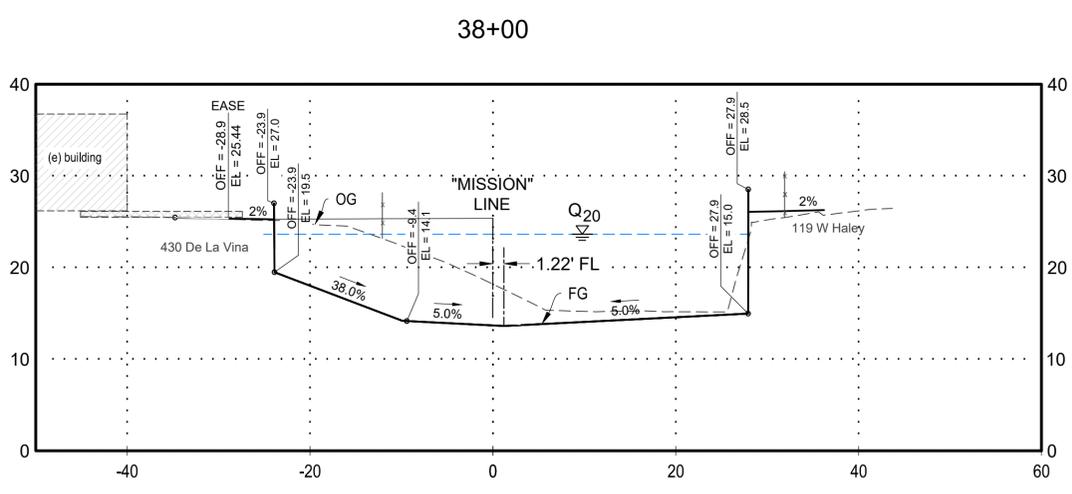
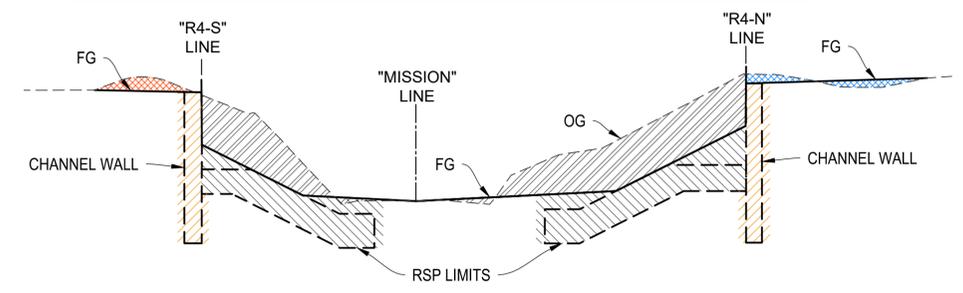
DESIGNED BY:	MD	P-1102
DRAWN BY:	HS	
CHECKED BY:	SO	
SHEET		24 OF 28

NOTE:

*QUANTITIES REFLECTED FOR SOUTH AND NORTH AREA GRADING ARE APPROXIMATE. GRADING EXCAVATION AND BACKFILL PAID FOR IN SUPPLEMENTAL WORK - SITE RESTORATION FOR THE INDIVIDUAL PROPERTIES.



EARTHWORK QUANTITIES				
LEGEND	LOCATION	CUT	FILL	NET CUT/FILL
	CHANNEL EXCAVATION	3,890 CY	137 CY	-3760 CY
	*SOUTH AREA GRADING EXCAVATION	100 CY	64 CY	-36 CY
	*NORTH AREA GRADING EXCAVATION	102 CY	195 CY	-94 CY
	STRUCTURE EXCAVATION RSP	3,100 CY	-	-
	STRUCTURE EXCAVATION WALL	2,150 CY	-	-



CROSS SECTION LEGEND:

PROTECT EXISTING

DEMOLISH EXISTING

SCALE 1" = 10' H&V

XS-5

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REVISIONS																															
NO.	DESCRIPTION	DATE	APR																												

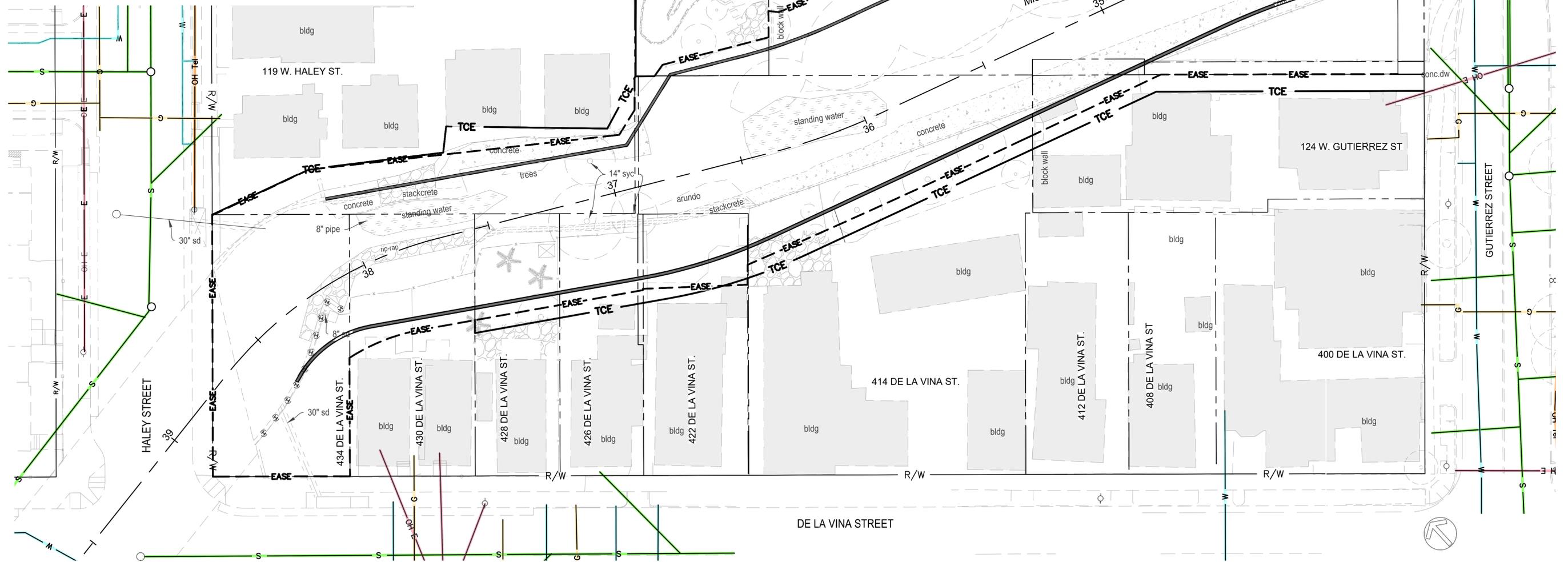
APWA Utility Color Code
Red = Electric
Yellow = Gas-Oil-Steam
Orange = Communication and TV
Blue = Potable Water Lines
Green = Sewer Lines
Purple = Reclaimed Water Lines

LEGEND

	GAS LINE
	OVERHEAD COMMUNICATION LINE
	OVERHEAD ELECTRIC
	OVERHEAD HIGH VOLTAGE ELECTRIC
	SANITARY SEWER
	STORM DRAIN (SIZE VARIES)
	UNDERGROUND COMMUNICATION
	UNDERGROUND ELECTRIC
	WATER LINE
	CITY RIGHT OF WAY
	FLOOD CONTROL EASEMENT
	PROPERTY LINE
	TEMPORARY CONSTRUCTION EASEMENT

NOTES:

- THIS PLAN SHEET SHOWS THE APPROXIMATE UTILITIES BELIEVED TO EXIST WITHIN THE PUBLIC RIGHT OF WAY. UNDERGROUND UTILITY LOCATIONS ARE SHOWN BASED ON INFORMATION PROVIDED BY OTHERS. IT IS THE CONTRACTORS RESPONSIBILITY TO POTHOLE AS NECESSARY TO VERIFY HORIZONTAL AND VERTICAL LOCATION.
- OVERHEAD LINES ON GUTIERREZ STREET HAVE BEEN RELOCATED BY THE BRIDGE REPLACEMENT PROJECT. CONTRACTOR SHALL REVIEW THE PROJECT SITE TO VERIFY LOCATIONS OF ALL VISIBLE SURFACE AND OVERHEAD UTILITIES. REFER TO THE UTILITY PLAN FOR THE GUTIERREZ STREET BRIDGE REPLACEMENT PROJECT FOR ADDITIONAL INFORMATION.



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--	-----------------

SANTA BARBARA COUNTY
FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
130 E. VICTORIA STREET
SANTA BARBARA, CA 93101
(805) 568-3440



LOWER MISSION CREEK
FLOOD CONTROL PROJECT
REACH 4
SANTA BARBARA COUNTY, CALIFORNIA

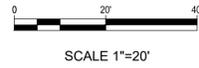
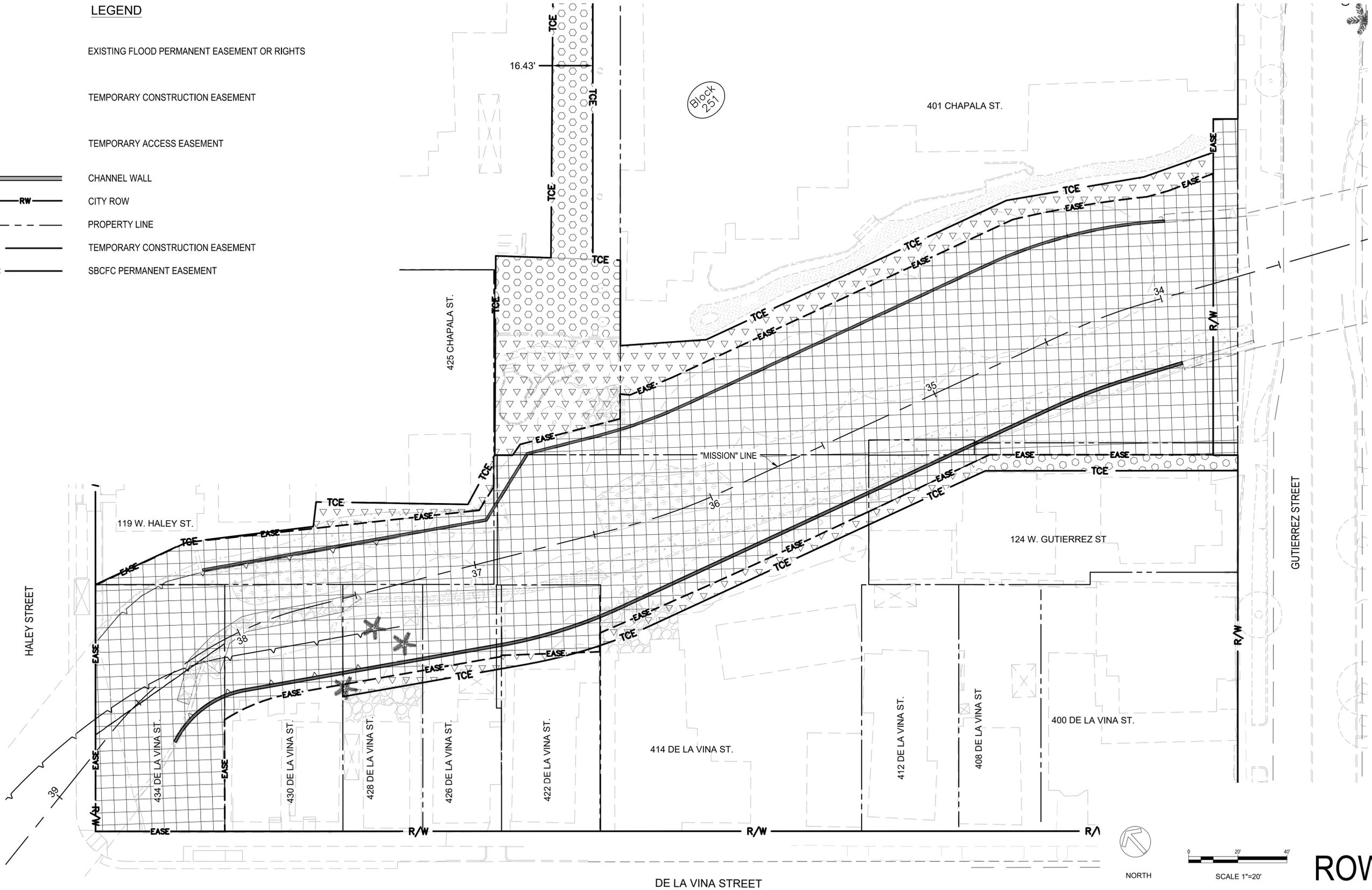
EXISTING UTILITY

DESIGNED BY: MD
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U-1
P-1102
SHEET 26 OF 28

LEGEND

-  EXISTING FLOOD PERMANENT EASEMENT OR RIGHTS
-  TEMPORARY CONSTRUCTION EASEMENT
-  TEMPORARY ACCESS EASEMENT
-  CHANNEL WALL
-  CITY ROW
-  PROPERTY LINE
-  TEMPORARY CONSTRUCTION EASEMENT
-  SBCFC PERMANENT EASEMENT



ROW-1

REVISIONS			
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DESIGNED BY:

 BENGAL ENGINEERING, INC. 8/29/25
 DATE

SANTA BARBARA COUNTY
 FLOOD CONTROL AND
 WATER CONSERVATION DISTRICT
 130 E. VICTORIA STREET
 SANTA BARBARA, CA 93101
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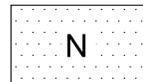
LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

RIGHT OF WAY
 PROJECT ACCESS

DESIGNED BY:
 MD
 DRAWN BY:
 HS
 CHECKED BY:
 SO

P-1102

SHEET 27 OF 28



PLANTING AREA N (NORTH)
ESTIMATED AREA: 3,000 SF

SCIENTIFIC NAME	COMMON NAME	SIZE	QUANTITY
ARTEMISIA DOUGLASIANA	MUGWORT	1-GAL	34
BACCHARIS SALICIFOLIA	MULEFAT	1-GAL	27
LEYMUS CONDENSATUS	GIANT WILD RYE	1-GAL	11
RIBES SPECIOSUM	FUSCHIA-FLOWERED GOOSEBERRY	1-GAL	7
ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1-GAL	7
RUBUS URSINUS	WILD BLACKBERRY	1-GAL	81
☒ SALIX LASIOLEPIS	ARROYO WILLOW (STAKES)	1-GAL	47
SAMBUCUS MEXICANUS	MEXICAN ELDERBERRY	1-GAL	6
PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	5-GAL	5
UMBELLULARIA CALIFORNICA	CALIFORNIA BAY LAUREL	5-GAL	3



PLANTING AREA S (SOUTH)
ESTIMATED AREA: 2,000 SF

SCIENTIFIC NAME	COMMON NAME	SIZE	QUANTITY
ARTEMISIA DOUGLASIANA	MUGWORT	1-GAL	34
BACCHARIS SALICIFOLIA	MULEFAT	1-GAL	23
LEYMUS CONDENSATUS	GIANT WILD RYE	1-GAL	9
RIBES SPECIOSUM	FUSCHIA-FLOWERED GOOSEBERRY	1-GAL	6
ROSA CALIFORNICA	CALIFORNIA WILD ROSE	1-GAL	6
RUBUS URSINUS	WILD BLACKBERRY	1-GAL	68
☒ SALIX LASIOLEPIS	ARROYO WILLOW (STAKES)	1-GAL	40
SAMBUCUS MEXICANUS	MEXICAN ELDERBERRY	1-GAL	5
PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	5-GAL	4
UMBELLULARIA CALIFORNICA	CALIFORNIA BAY LAUREL	5-GAL	3

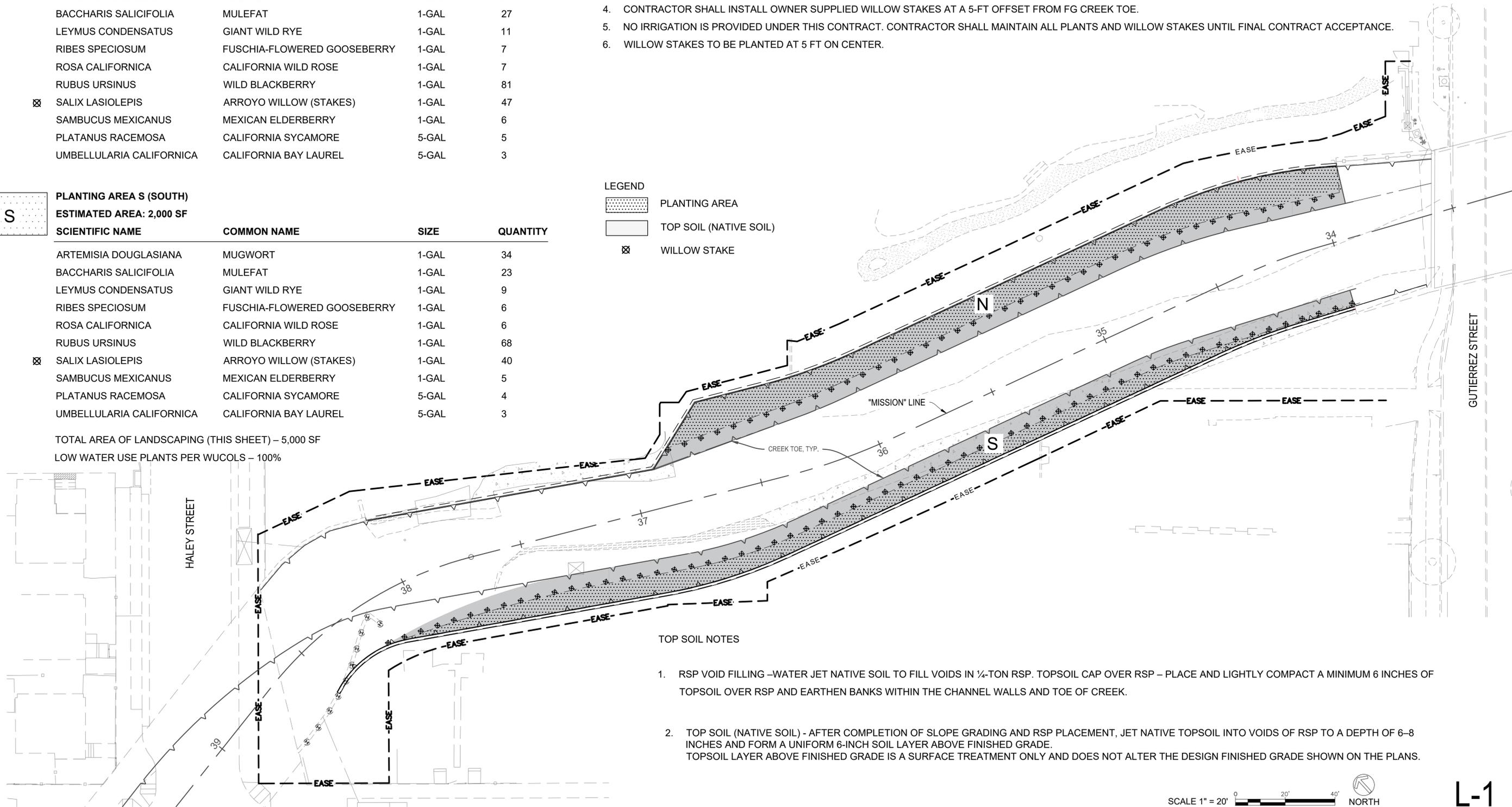
TOTAL AREA OF LANDSCAPING (THIS SHEET) – 5,000 SF
 LOW WATER USE PLANTS PER WUCOLS – 100%

PLANTING NOTES

1. PLANT SPECIES, SIZES, AND QUANTITIES SHOWN ARE PER SANTA BARBARA COUNTY FLOOD CONTROL. PLANTS TO LOCATED AS DIRECTED IN THE FIELD BY THE ENGINEER.
2. PLANTING AREA IS DIAGRAMMATIC ONLY.
3. CONTRACTOR SHALL INSTALL OWNER SUPPLIED PLANTINGS.
4. CONTRACTOR SHALL INSTALL OWNER SUPPLIED WILLOW STAKES AT A 5-FT OFFSET FROM FG CREEK TOE.
5. NO IRRIGATION IS PROVIDED UNDER THIS CONTRACT. CONTRACTOR SHALL MAINTAIN ALL PLANTS AND WILLOW STAKES UNTIL FINAL CONTRACT ACCEPTANCE.
6. WILLOW STAKES TO BE PLANTED AT 5 FT ON CENTER.

LEGEND

- PLANTING AREA
- TOP SOIL (NATIVE SOIL)
- WILLOW STAKE



TOP SOIL NOTES

1. RSP VOID FILLING – WATER JET NATIVE SOIL TO FILL VOIDS IN ¼-TON RSP. TOPSOIL CAP OVER RSP – PLACE AND LIGHTLY COMPACT A MINIMUM 6 INCHES OF TOPSOIL OVER RSP AND EARTHEN BANKS WITHIN THE CHANNEL WALLS AND TOE OF CREEK.
2. TOP SOIL (NATIVE SOIL) - AFTER COMPLETION OF SLOPE GRADING AND RSP PLACEMENT, JET NATIVE TOPSOIL INTO VOIDS OF RSP TO A DEPTH OF 6-8 INCHES AND FORM A UNIFORM 6-INCH SOIL LAYER ABOVE FINISHED GRADE. TOPSOIL LAYER ABOVE FINISHED GRADE IS A SURFACE TREATMENT ONLY AND DOES NOT ALTER THE DESIGN FINISHED GRADE SHOWN ON THE PLANS.

SCALE 1" = 20' NORTH

L-1

REVISIONS			
NO.	DESCRIPTION	DATE	APR



DESIGNED BY:
 Md. Wahiduzzaman
 BENGAL ENGINEERING, INC. DATE: 8/29/25

SANTA BARBARA COUNTY
 FLOOD CONTROL DISTRICT

SANTA BARBARA COUNTY
 FLOOD CONTROL AND
 WATER CONSERVATION DISTRICT
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LOWER MISSION CREEK
 FLOOD CONTROL PROJECT
 REACH 4
 SANTA BARBARA COUNTY, CALIFORNIA

LANDSCAPE PLAN

DESIGNED BY: MD
 DRAWN BY: HS
 CHECKED BY: SO

P-1102
 SHEET 28 OF 28