

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. EXACT LOCATIONS AND TYPES OF HMA DIKE ARE SHOWN ON THE LAYOUT AND SUMMARY OF QUANTITIES SHEETS.

ABBREVIATIONS:

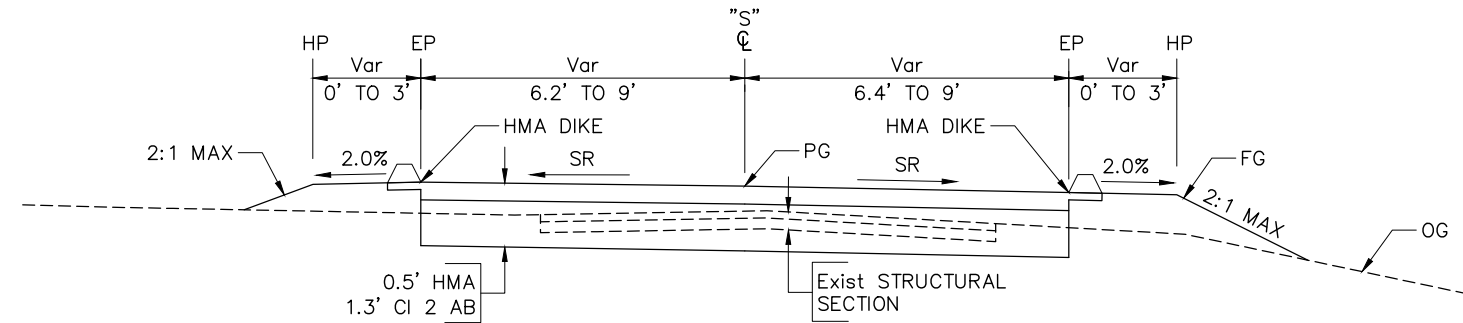
SR SUPERELEVATION RATE

DESIGN DESIGNATION (FREESTONE FLAT RD)

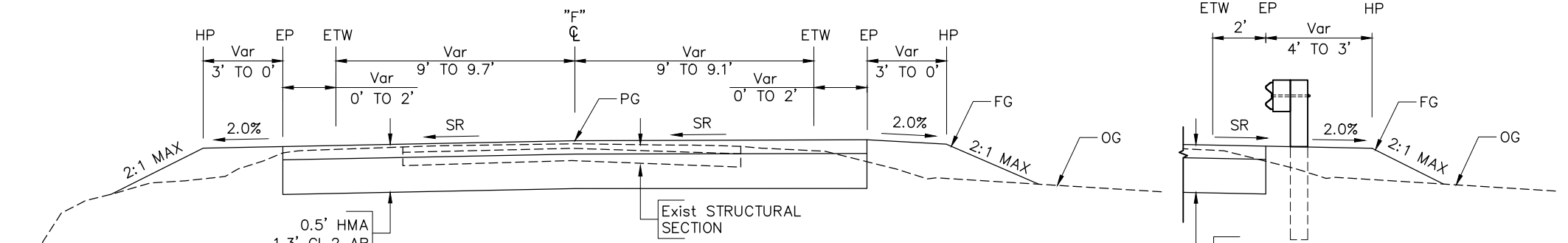
ADT (2009) = 96
 AADT (2029) = 150
 V = 40 MPH
 TI = 10

DESIGN DESIGNATION (SCOTT ROBIN RD)

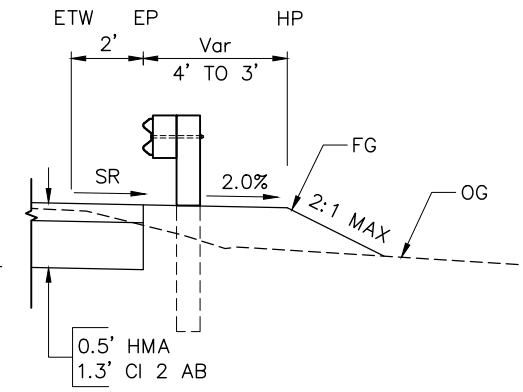
V = 20 MPH



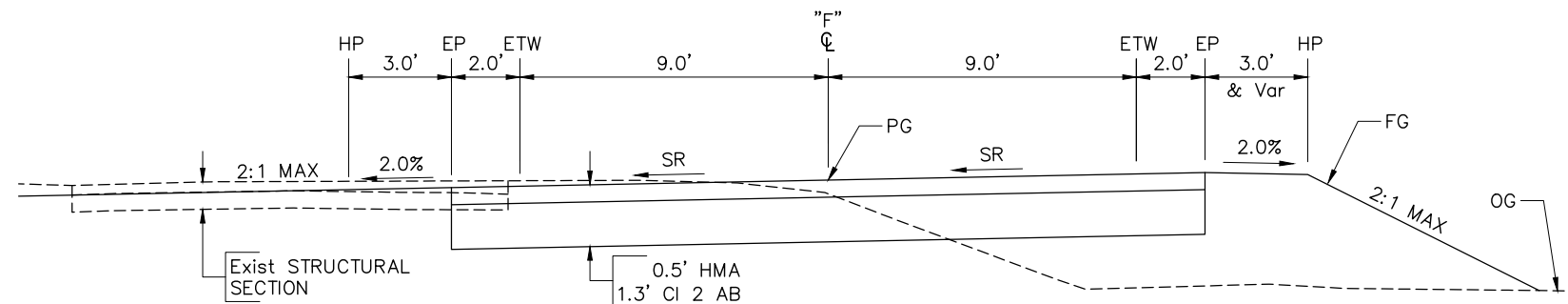
SCOTT ROBIN ROAD
 Sta "S" 1+00.00 TO Sta "S" 3+03.37



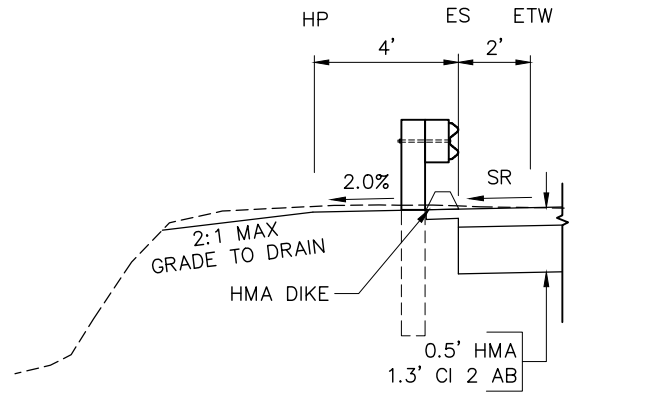
FREESTONE FLAT ROAD
 Sta "F" 409+26.00 TO Sta "F" 409+85.79



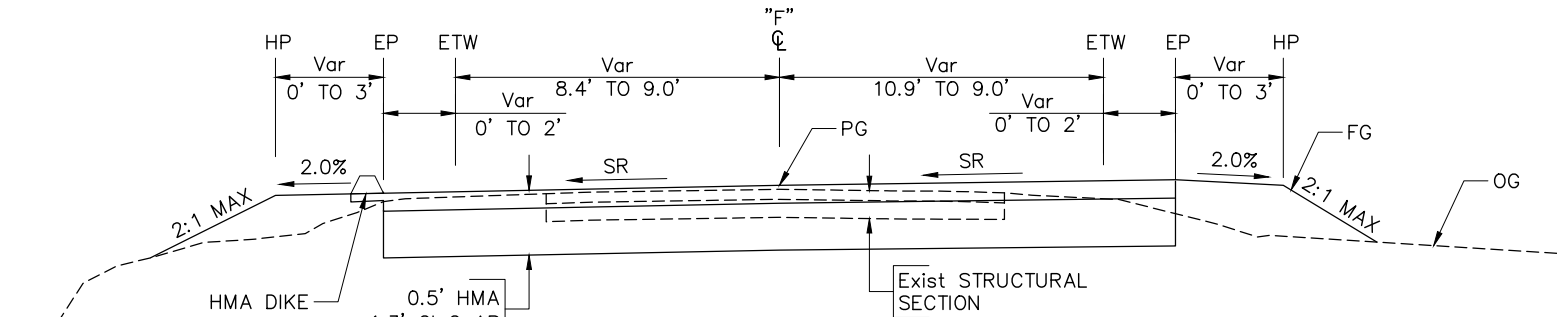
FREESTONE FLAT ROAD
 Sta "F" 407+12.06 TO Sta "F" 407+86.54



FREESTONE FLAT ROAD
 Sta "F" 404+27.00 TO Sta "F" 405+81.31 (BB)
 Sta "F" 406+89.66 (EB) TO Sta "F" 409+26.00



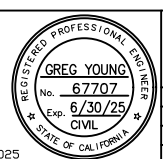
FREESTONE FLAT ROAD
 Sta "F" 404+80.42 TO Sta "F" 405+57.34



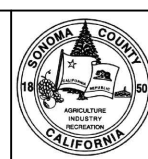
FREESTONE FLAT ROAD
 Sta "F" 403+66.79 TO Sta "F" 404+27.00

NOT TO SCALE

DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\RDWAY\S22-200_XS-1.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



SONOMA COUNTY PUBLIC INFRASTRUCTURE
 TRANSPORTATION & PUBLIC WORKS DIVISION
 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

TYPICAL CROSS SECTIONS	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	2
TOTAL SHEETS	32

NOTES:

- FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORDS AT THE COUNTY OFFICE.
- SEE CONSTRUCTION DETAILS FOR PERMANENT FENCING.
- LIMITS OF HMA DIKE TYPES F AND C VARY BASED ON TERMINAL SYSTEM LENGTH. SEE STANDARD PLAN A77Q4 "TYPE 12AA LAYOUT" FOR DIKE LIMITS. OMIT MGS BETWEEN THE TERMINAL SYSTEM AND TRANSITION RAILING (TYPE AGT). SEE DRAINAGE DETAILS FOR OVERSIDE DRAIN LOCATIONS. MODIFY DIKE AT OVERSIDE DRAIN LOCATIONS PER THE STANDARD PLANS.

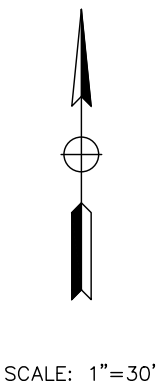
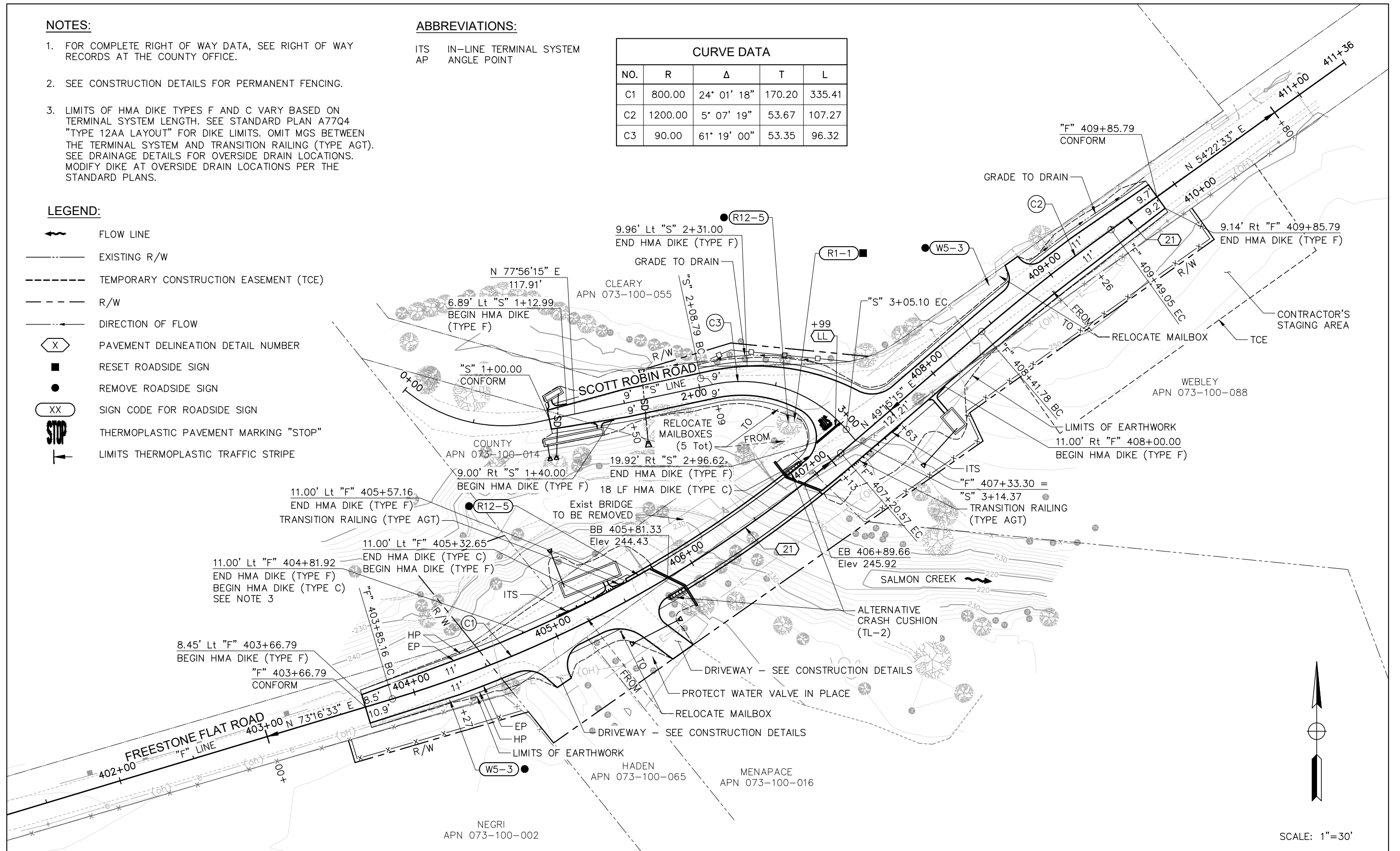
ABBREVIATIONS:

ITS IN-LINE TERMINAL SYSTEM
AP ANGLE POINT

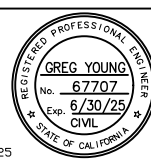
CURVE DATA				
NO.	R	Δ	T	L
C1	800.00	24° 01' 18"	170.20	335.41
C2	1200.00	5° 07' 19"	53.67	107.27
C3	90.00	61° 19' 00"	53.35	96.32

LEGEND:

- FLOW LINE
- EXISTING R/W
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- R/W
- DIRECTION OF FLOW
- PAVEMENT DELINEATION DETAIL NUMBER
- RESET ROADSIDE SIGN
- REMOVE ROADSIDE SIGN
- SIGN CODE FOR ROADSIDE SIGN
- THERMOPLASTIC PAVEMENT MARKING "STOP"
- LIMITS THERMOPLASTIC TRAFFIC STRIPE



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_L-1.DWG 4/25/2025

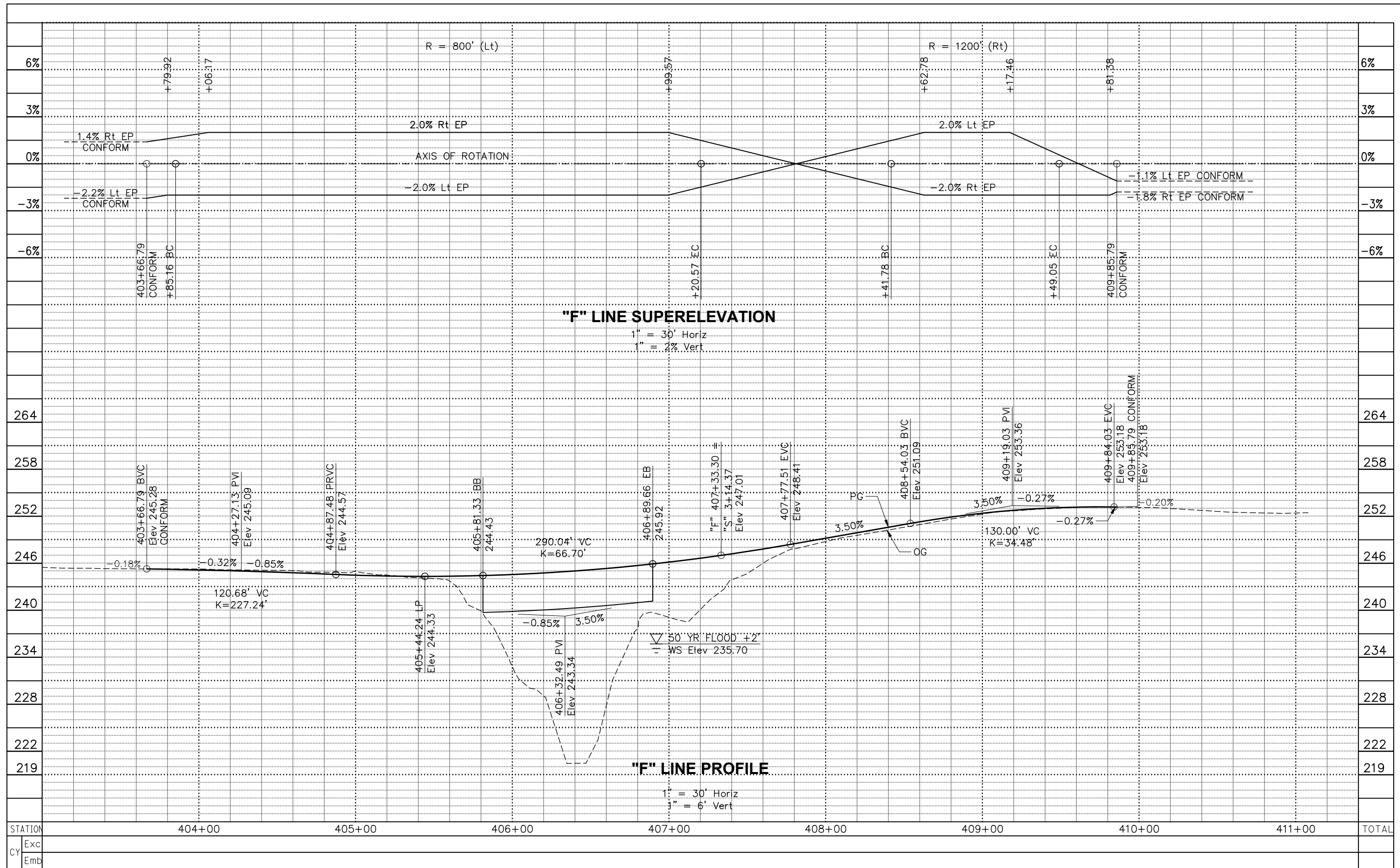


CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED

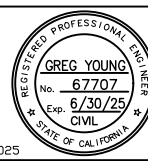


SONOMA COUNTY PUBLIC INFRASTRUCTURE
TRANSPORTATION & PUBLIC WORKS DIVISION
JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

LAYOUT	FREESTONE FLAT ROAD BRIDGE REPLACEMENT
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	3
TOTAL SHEETS	32



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_PS-1.DWG 4/25/2025

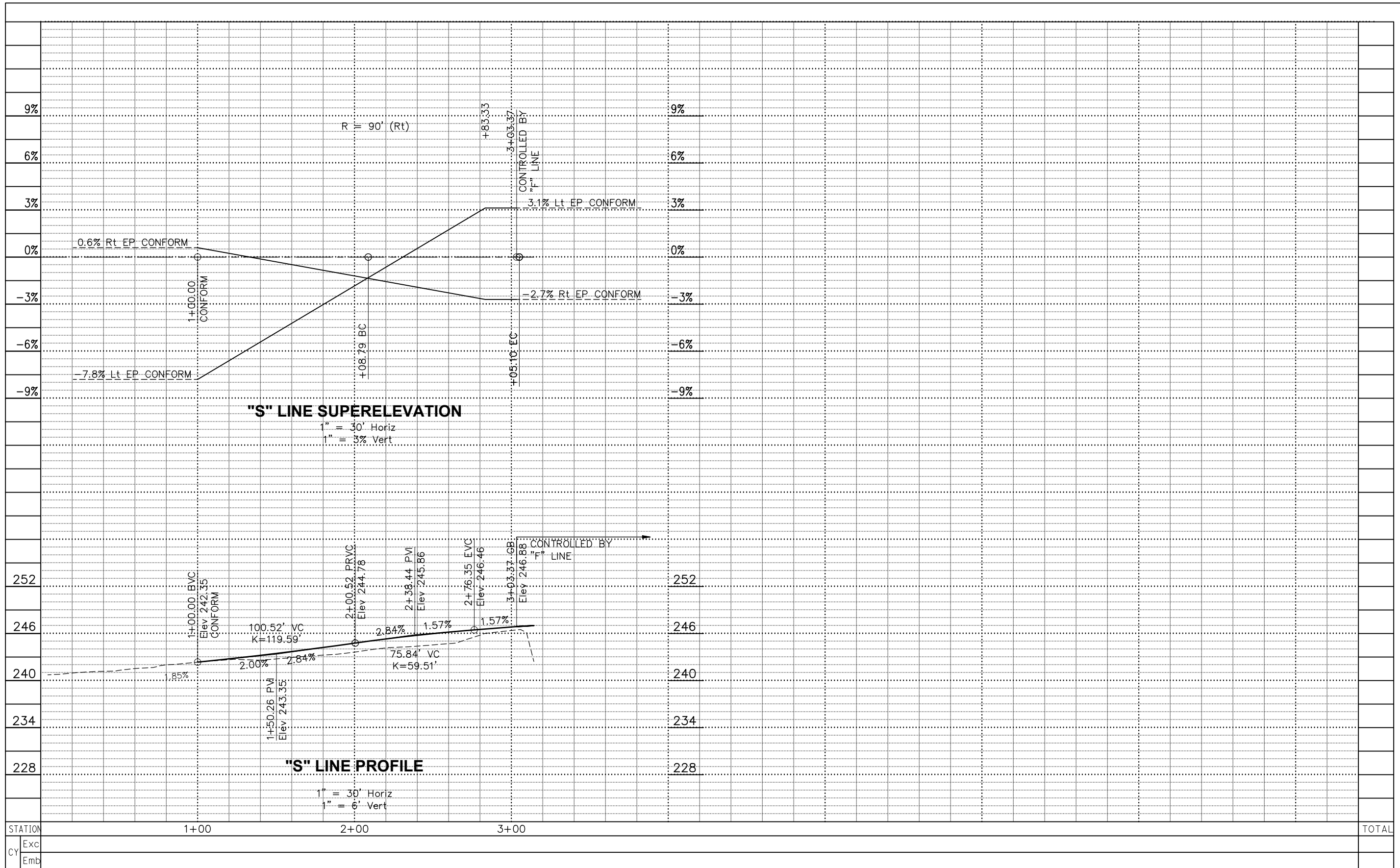


CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
RESIDENT ENGINEER AS BUILT DRAWINGS BY:			
DATE	DESCRIPTION	BY	APPROVED

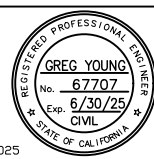


SONOMA COUNTY
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PROFILE & SUPERELEVATION		ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT		BUDGET NUMBER	C11004
		FISCAL YEAR	2024-25
		SHEET NUMBER	4
		TOTAL SHEETS	32



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_PS-2.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED

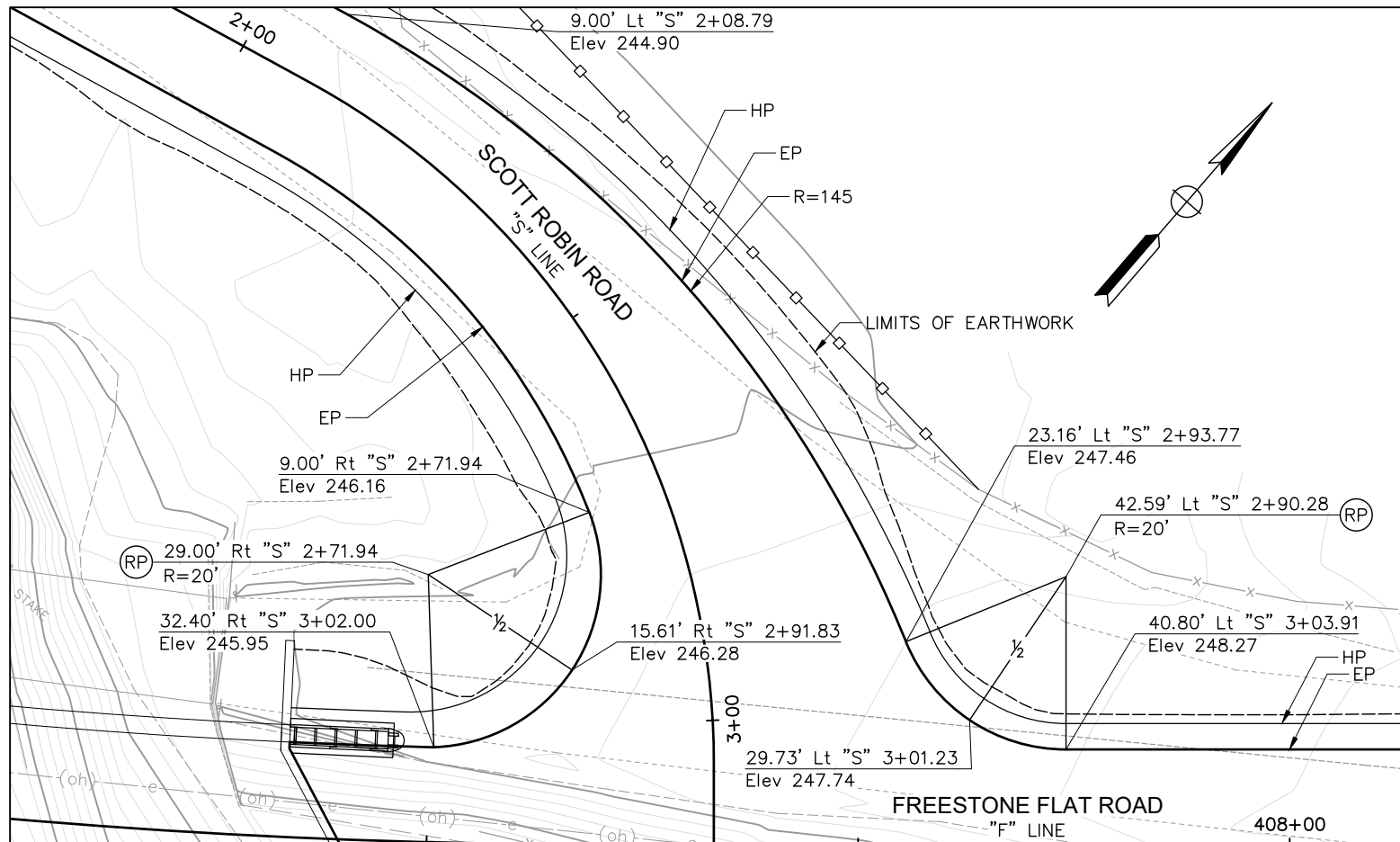


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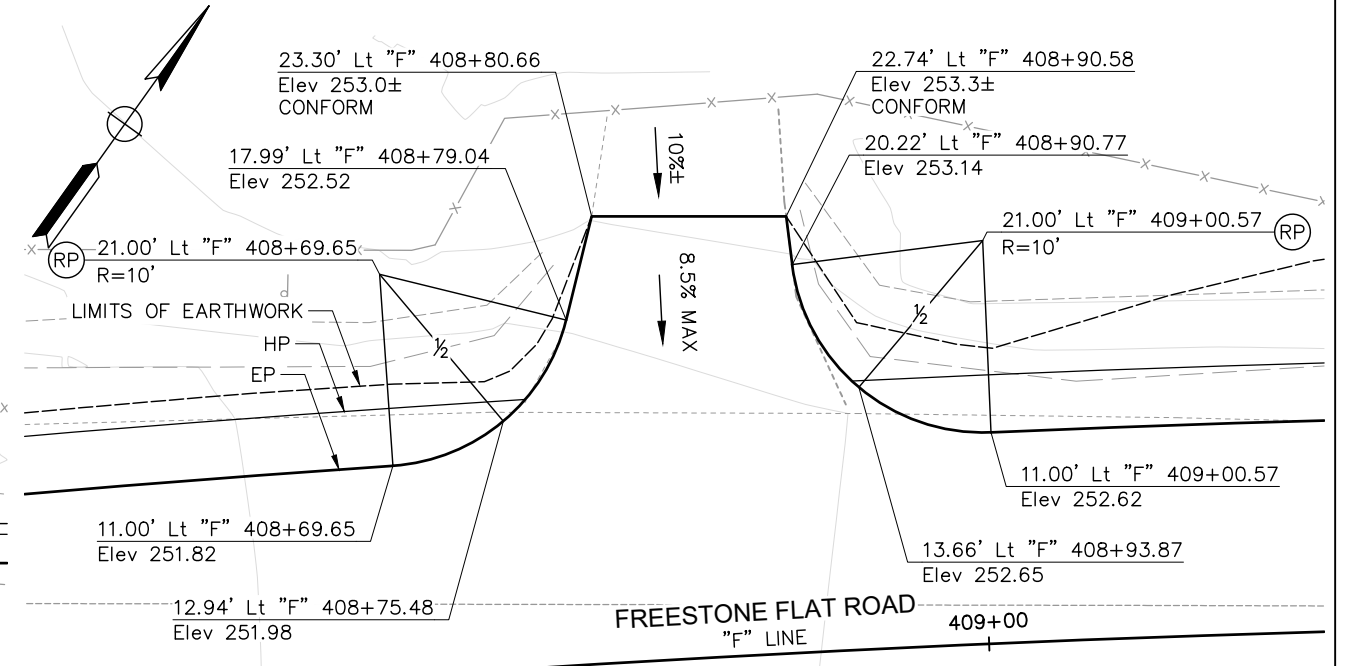
PROFILE & SUPERELEVATION

FREESTONE FLAT ROAD
BRIDGE REPLACEMENT

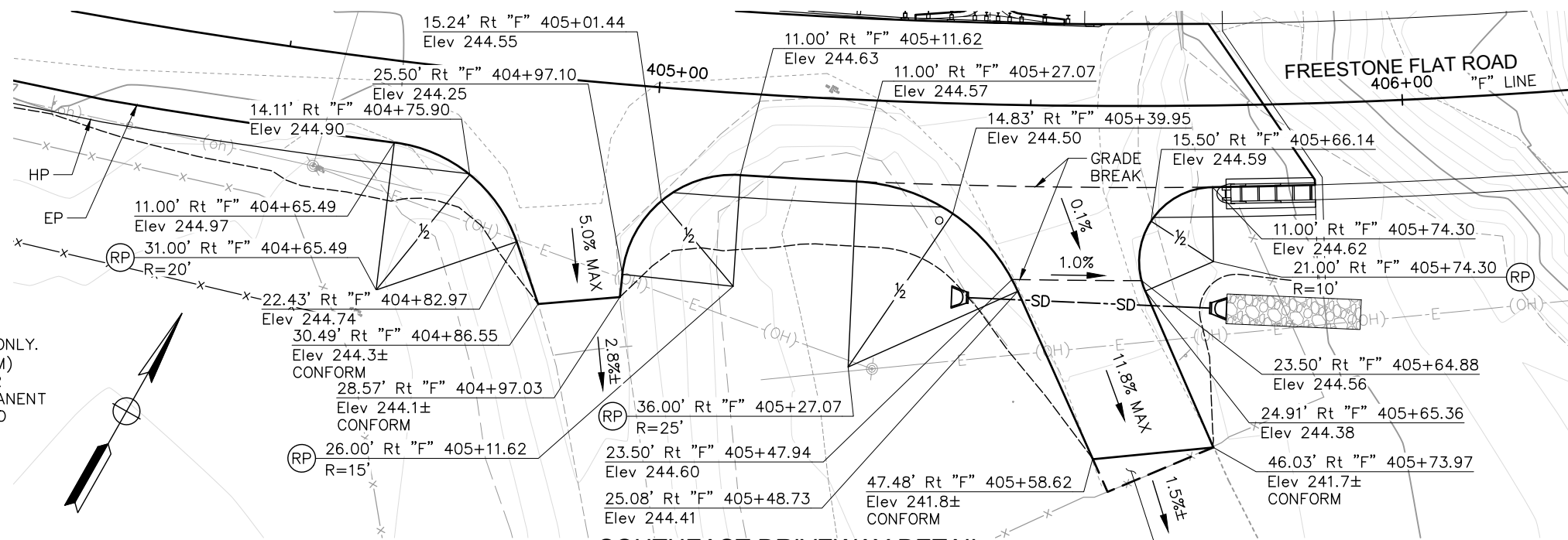
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	5
TOTAL SHEETS	32



SCALE: 1"=10'



SCALE: 1"=5'



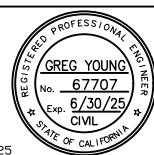
SCALE: 1"=10'

SCALE: AS SHOWN

NOTE:

THIS PLAN ACCURATE FOR FENCING ONLY. INSTALL TEMPORARY FENCE (TYPE WM) BEFORE EXISTING FENCE REMOVAL OR RECONSTRUCTION UNLESS NEW PERMANENT FENCING CAN BE INSTALLED PRIOR TO REMOVAL.

DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\RDWAY\S22-200_C-1.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
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DATE	DESCRIPTION	BY	APPROVED

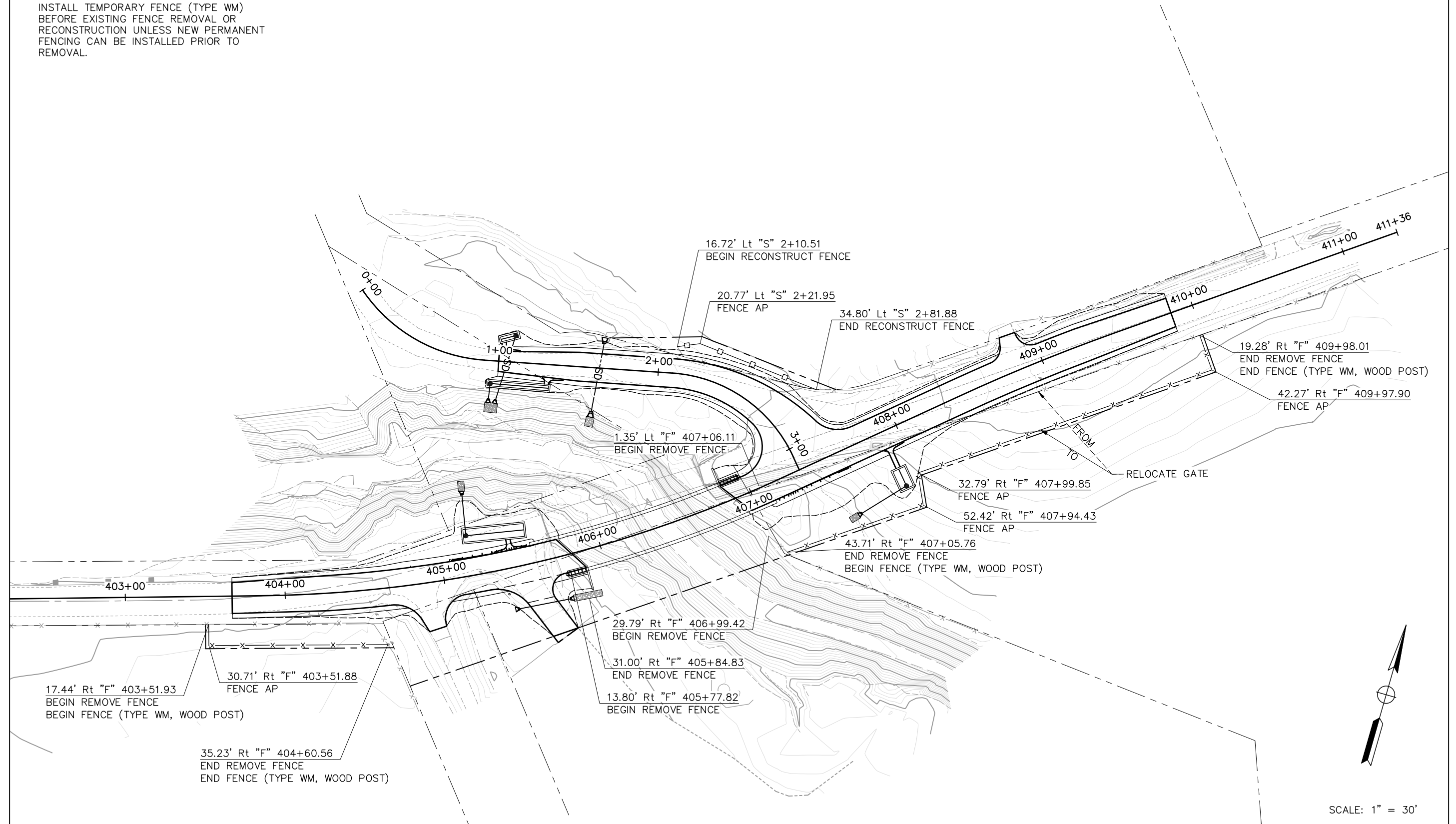


SONOMA COUNTY
PUBLIC
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CONSTRUCTION DETAILS - DRIVEWAY AND INTERSECTION		ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT		BUDGET NUMBER	C11004
		FISCAL YEAR	2024-25
		SHEET NUMBER	6
		TOTAL SHEETS	32

NOTE:

THIS PLAN ACCURATE FOR FENCING ONLY.
 INSTALL TEMPORARY FENCE (TYPE WM)
 BEFORE EXISTING FENCE REMOVAL OR
 RECONSTRUCTION UNLESS NEW PERMANENT
 FENCING CAN BE INSTALLED PRIOR TO
 REMOVAL.

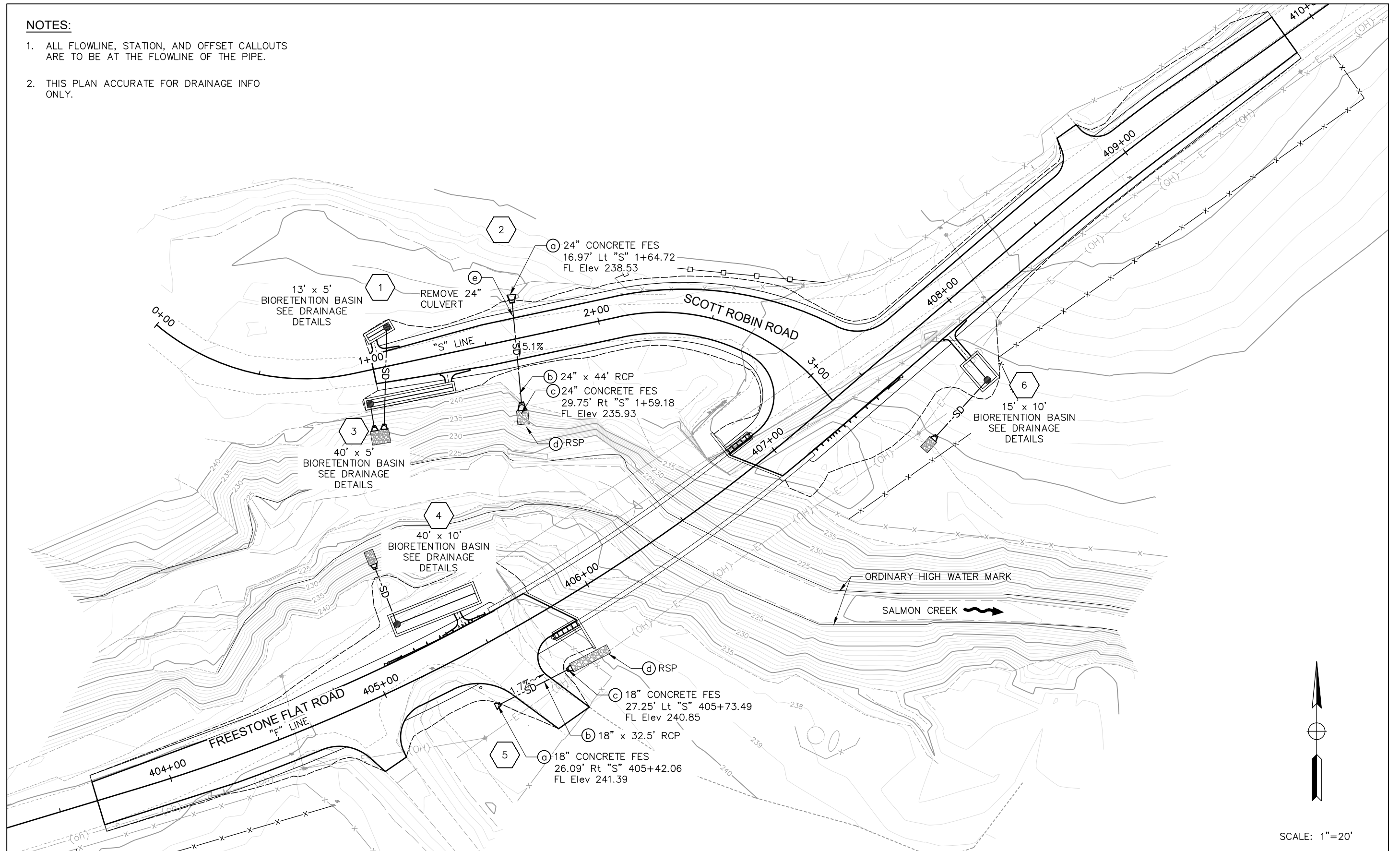


SCALE: 1" = 30'

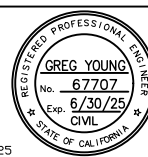
DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER	CONSTRUCTION COMPLETED:			SONOMA COUNTY PUBLIC INFRASTRUCTURE TRANSPORTATION & PUBLIC WORKS DIVISION JOHANNES J. HOEVERTSZ, P.E., DIRECTOR	CONSTRUCTION DETAILS - FENCING	ROAD NUMBER	60014
DRAWING BY	KDW		RESIDENT ENGINEER AS BUILT DRAWINGS BY:				FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\RDWAY\S22-200_C-1.DWG 4/25/2025	DATE				FISCAL YEAR	2024-25	
			DESCRIPTION	BY	APPROVED		SHEET NUMBER	7	
							TOTAL SHEETS	32	

NOTES:

1. ALL FLOWLINE, STATION, AND OFFSET CALLOUTS ARE TO BE AT THE FLOWLINE OF THE PIPE.
2. THIS PLAN ACCURATE FOR DRAINAGE INFO ONLY.



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_D-1.DWG 4/25/2025



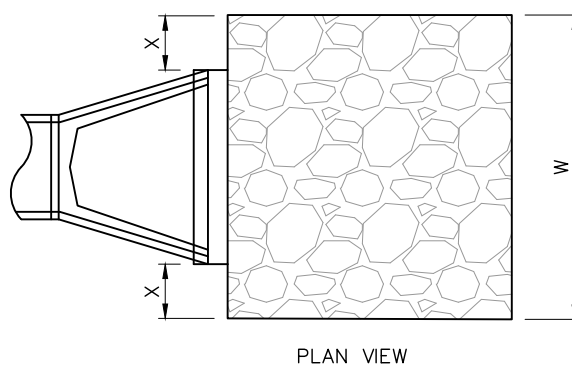
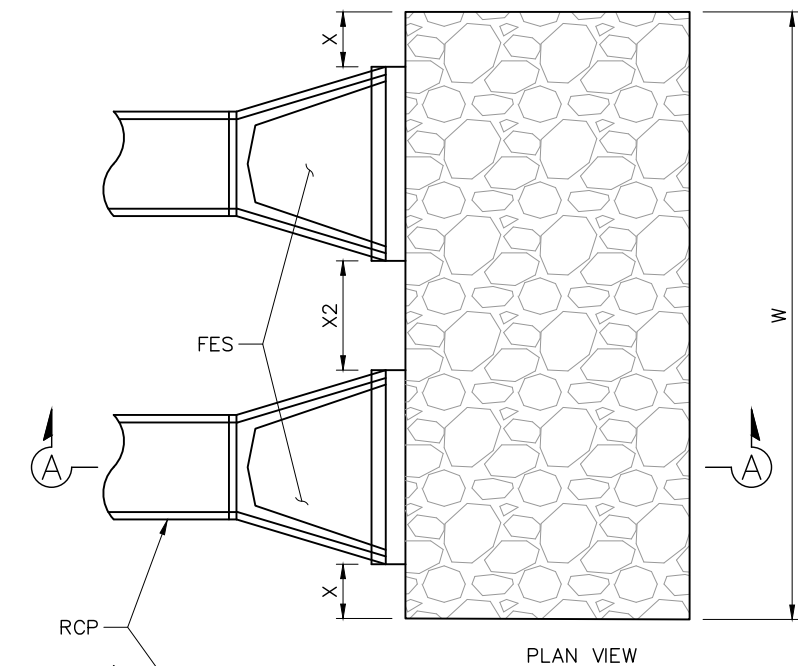
CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



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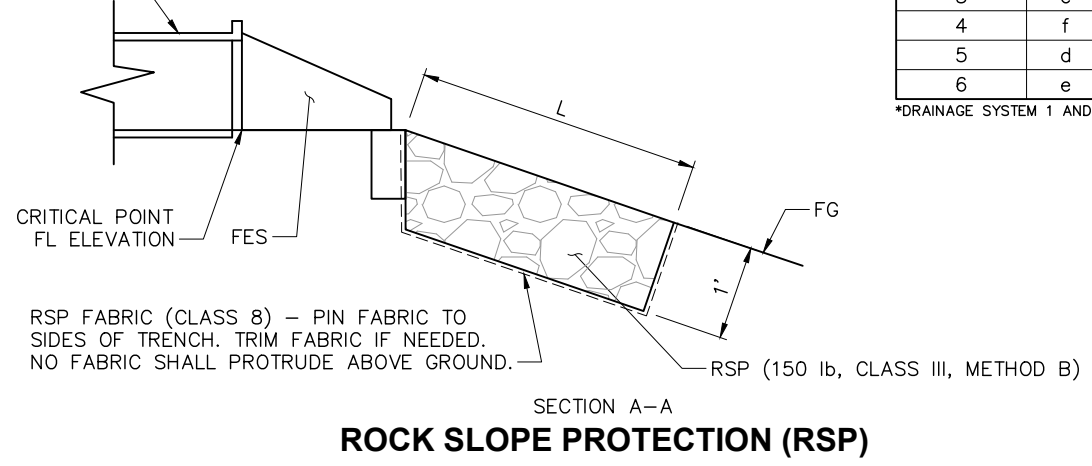
DRAINAGE PLAN	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	

ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	8
TOTAL SHEETS	32



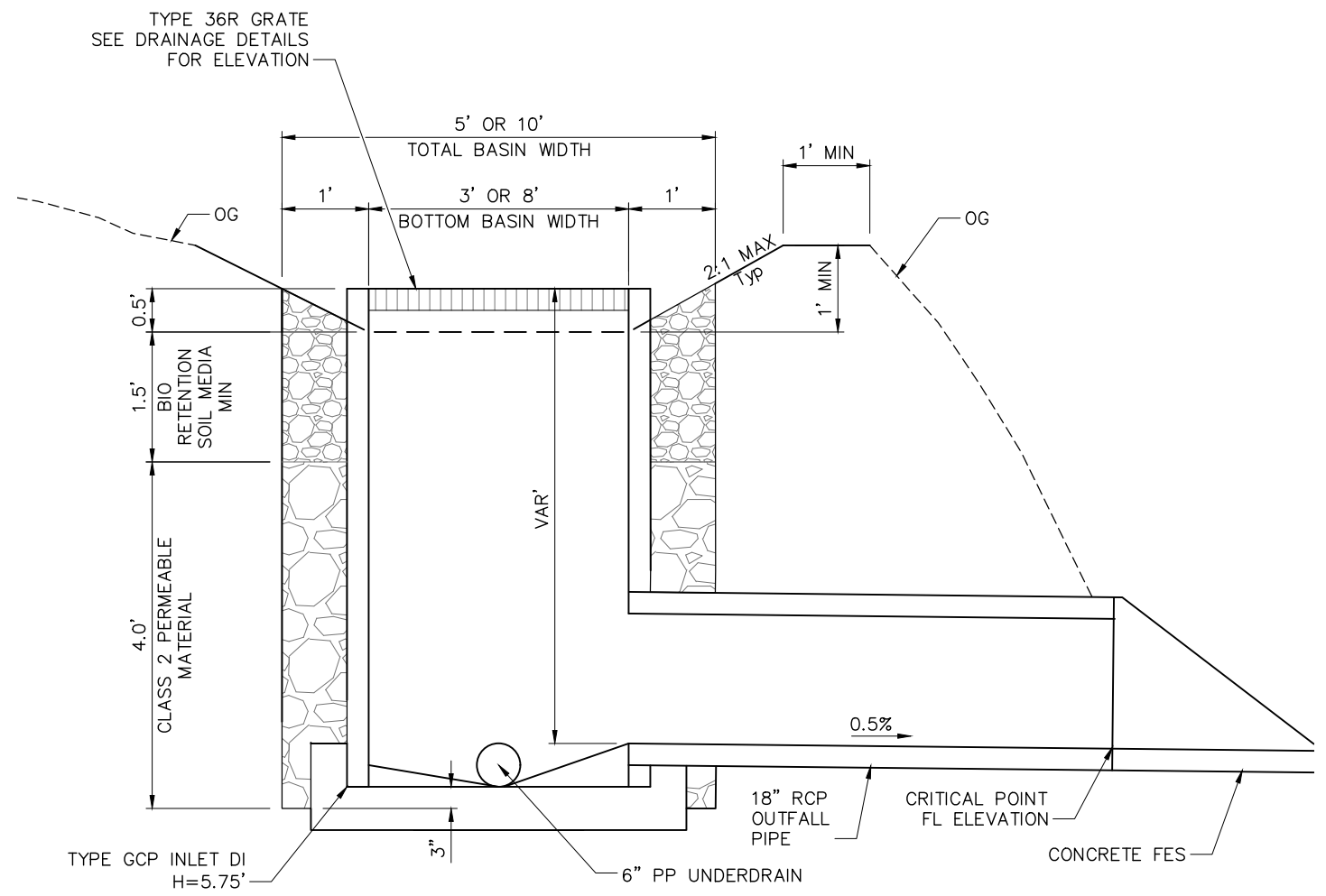
RSP LAYOUT					
DRAINAGE SYSTEM	ITEM	L	W	X	X2
1*					
2	d	6'	5'	6"	
3	e	6'	8'	6"	3"
4	f	6'	4'	6"	
5	d	18'	4'	6"	
6	e	6'	4'	6"	

*DRAINAGE SYSTEM 1 AND 3 OUTLET ONTO THE SAME RSP PAD



SECTION A-A
ROCK SLOPE PROTECTION (RSP)

RSP FABRIC (CLASS 8) – PIN FABRIC TO SIDES OF TRENCH. TRIM FABRIC IF NEEDED. NO FABRIC SHALL PROTRUDE ABOVE GROUND.

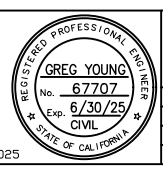


TYPICAL BIORETENTION BASIN SECTION AT GCP INLET
SCALE: 1" = 1'

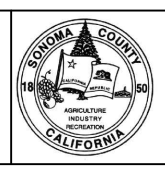
NOTES:

- FOR DETAILS NOT SHOWN SEE STD PLAN D75B.

DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_DD-2.DWG 4/25/2025



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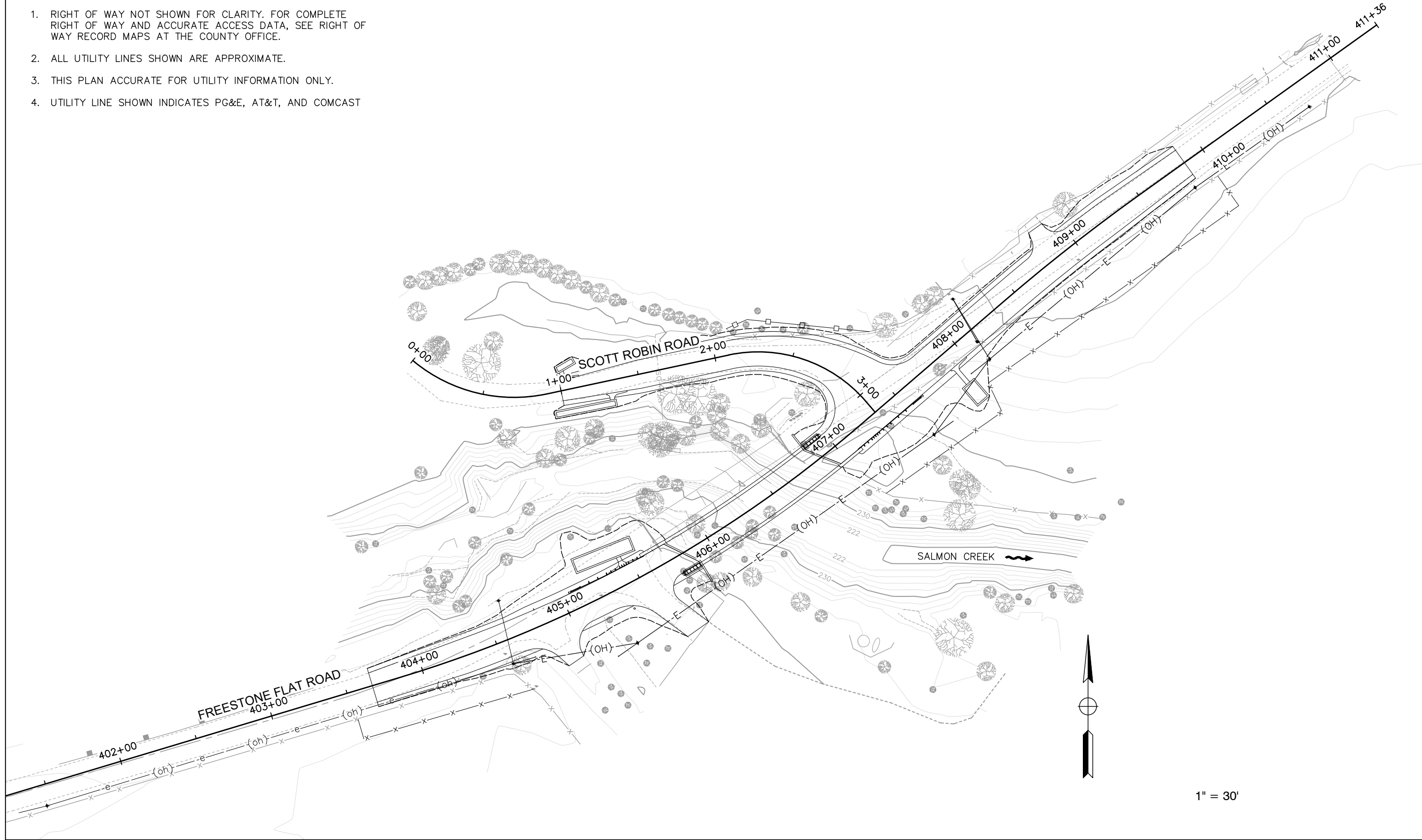


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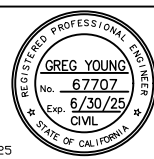
DRAINAGE DETAILS		ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT		BUDGET NUMBER	C11004
		FISCAL YEAR	2024-25
		SHEET NUMBER	10
		TOTAL SHEETS	32

NOTES:

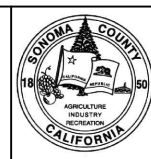
1. RIGHT OF WAY NOT SHOWN FOR CLARITY. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. ALL UTILITY LINES SHOWN ARE APPROXIMATE.
3. THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY.
4. UTILITY LINE SHOWN INDICATES PG&E, AT&T, AND COMCAST



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_U-1.DWG 4/25/2025



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

UTILITY PLAN	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	

ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	11
TOTAL SHEETS	32

NOTES:

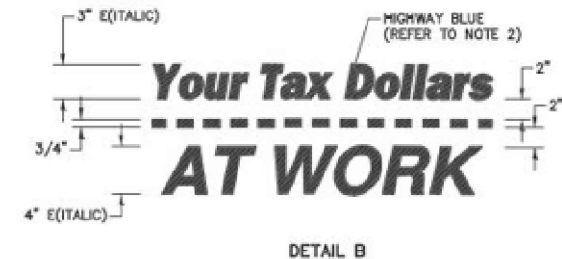
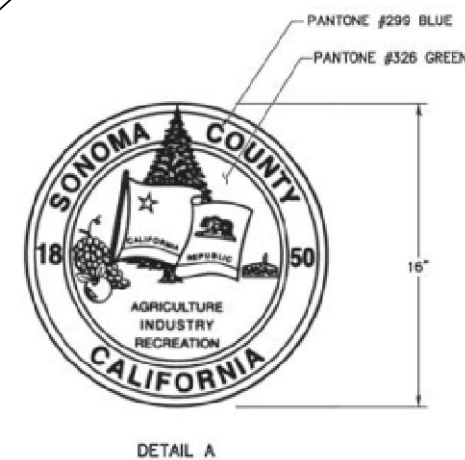
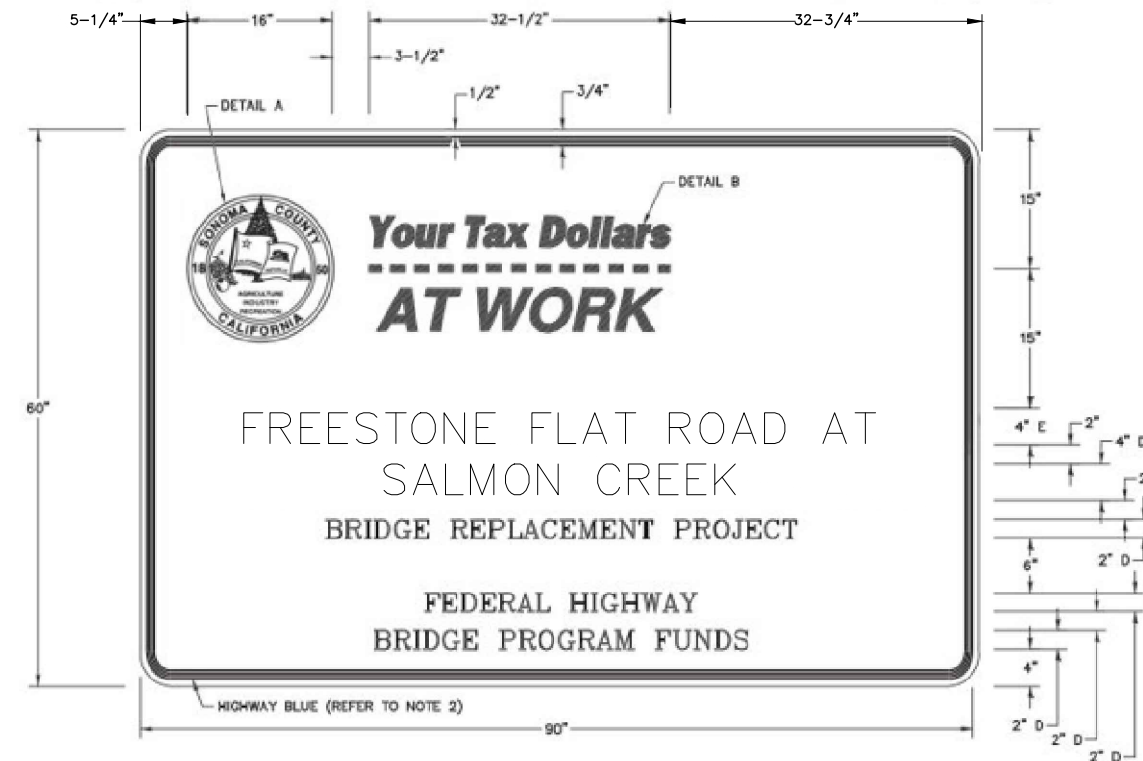
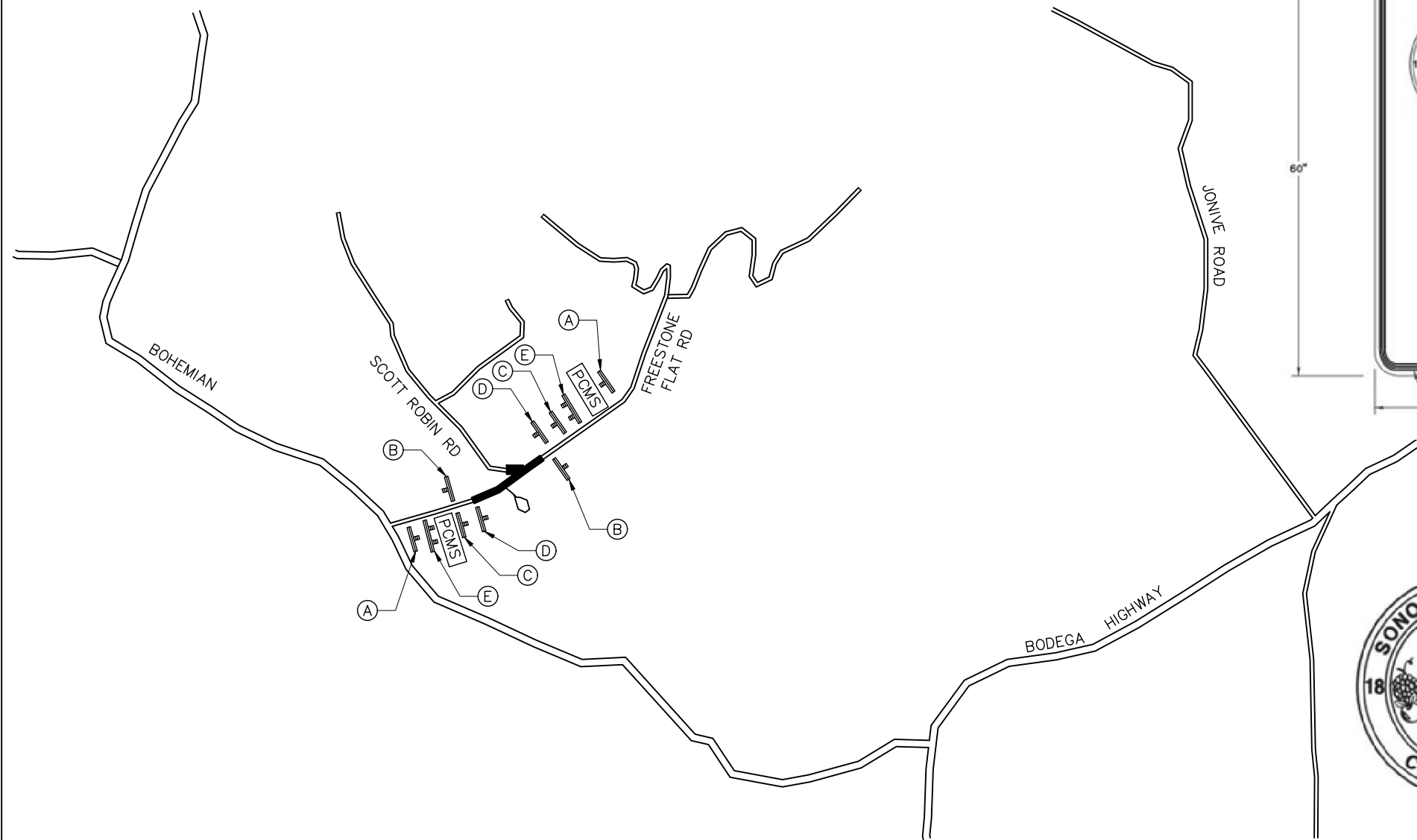
- EXCEPT AS OTHERWISE SHOWN, THE LEGEND OF SIGN SHALL BE BLACK ON A WHITE BACKGROUND (NON-REFLECTIVE).
- THE BORDER OF THE SIGN AND DETAIL "B", SHALL BE BLUE (NON-REFLECTIVE).
- THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
- LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
- ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

LEGEND:

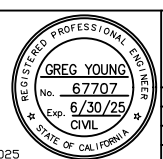
-  CONSTRUCTION AREA SIGN
-  WORK AREA
-  CONSTRUCTION AREA SIGN (CAS) NUMBER
-  PORTABLE CHANGEABLE MESSAGE SIGN

SIGN No.	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
A	-	C23 (CA)	30" x 30"	ROAD WORK AHEAD	1 - 4" x 4"	2
B	G20-2	-	36" x 18"	END ROAD WORK	1 - 4" x 4"	2
C	W5-3	-	36" x 36"	ONE LANE BRIDGE	1 - 4" x 6"	2
D	R2-1 (10)	-	24" x 36"	SPEED LIMIT 10 MPH	1 - 4" x 4"	2
E	PROJECT FUNDING SIGN		60" x 90"	SEE DETAIL	2 - 4" x 6"	2**
					TOTAL	8**

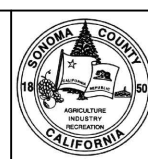
*FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE STAGE CONSTRUCTION & TRAFFIC HANDLING PLANS
 **PROJECT FUNDING SIGN PAID SEPARATELY



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\RDADWAY\S22-200_CS-1.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



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 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

CONSTRUCTION AREA SIGNS	ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
	FISCAL YEAR	2024-25
	SHEET NUMBER	12
	TOTAL SHEETS	32










NOTES:

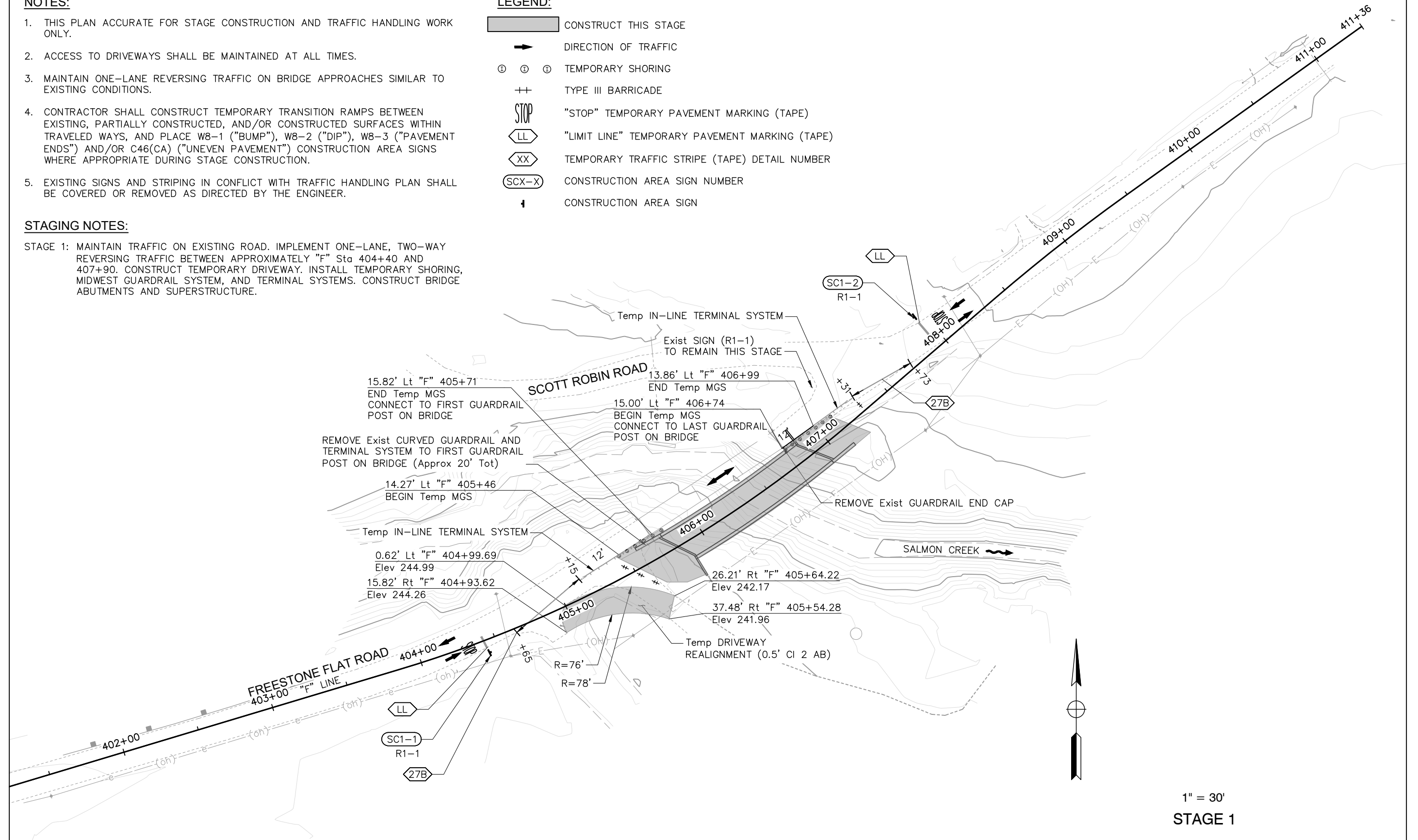
1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY.
2. ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
3. MAINTAIN ONE-LANE REVERSING TRAFFIC ON BRIDGE APPROACHES SIMILAR TO EXISTING CONDITIONS.
4. CONTRACTOR SHALL CONSTRUCT TEMPORARY TRANSITION RAMP BETWEEN EXISTING, PARTIALLY CONSTRUCTED, AND/OR CONSTRUCTED SURFACES WITHIN TRAVELED WAYS, AND PLACE W8-1 ("BUMP"), W8-2 ("DIP"), W8-3 ("PAVEMENT ENDS") AND/OR C46(CA) ("UNEVEN PAVEMENT") CONSTRUCTION AREA SIGNS WHERE APPROPRIATE DURING STAGE CONSTRUCTION.
5. EXISTING SIGNS AND STRIPING IN CONFLICT WITH TRAFFIC HANDLING PLAN SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

STAGING NOTES:

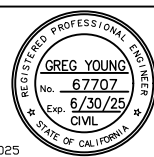
STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROAD. IMPLEMENT ONE-LANE, TWO-WAY REVERSING TRAFFIC BETWEEN APPROXIMATELY "F" Sta 404+40 AND 407+90. CONSTRUCT TEMPORARY DRIVEWAY. INSTALL TEMPORARY SHORING, MIDWEST GUARDRAIL SYSTEM, AND TERMINAL SYSTEMS. CONSTRUCT BRIDGE ABUTMENTS AND SUPERSTRUCTURE.

LEGEND:

-  CONSTRUCT THIS STAGE
-  DIRECTION OF TRAFFIC
-  TEMPORARY SHORING
-  TYPE III BARRICADE
-  "STOP" TEMPORARY PAVEMENT MARKING (TAPE)
-  "LIMIT LINE" TEMPORARY PAVEMENT MARKING (TAPE)
-  TEMPORARY TRAFFIC STRIPE (TAPE) DETAIL NUMBER
-  CONSTRUCTION AREA SIGN NUMBER
-  CONSTRUCTION AREA SIGN



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\RDWAY\S22-200_SC-1.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



SONOMA COUNTY
PUBLIC
INFRASTRUCTURE
TRANSPORTATION & PUBLIC WORKS DIVISION
JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

STAGE CONSTRUCTION & TRAFFIC HANDLING	ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
	FISCAL YEAR	2024-25
	SHEET NUMBER	13
	TOTAL SHEETS	32

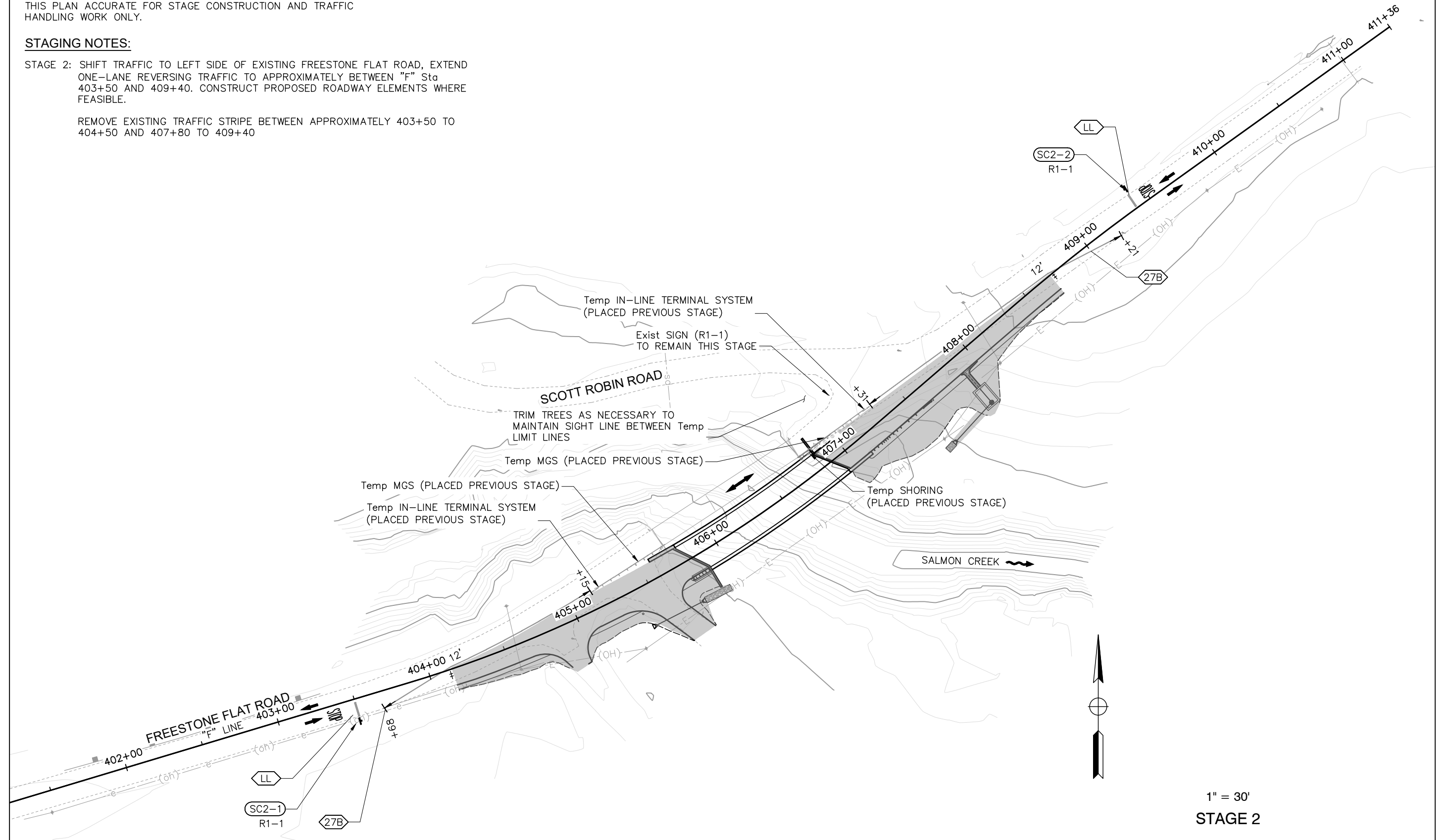
NOTE:

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY.

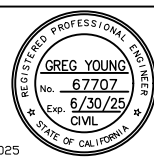
STAGING NOTES:

STAGE 2: SHIFT TRAFFIC TO LEFT SIDE OF EXISTING FREESTONE FLAT ROAD, EXTEND ONE-LANE REVERSING TRAFFIC TO APPROXIMATELY BETWEEN "F" Sta 403+50 AND 409+40. CONSTRUCT PROPOSED ROADWAY ELEMENTS WHERE FEASIBLE.

REMOVE EXISTING TRAFFIC STRIPE BETWEEN APPROXIMATELY 403+50 TO 404+50 AND 407+80 TO 409+40



DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_SC-2.DWG 4/25/2025



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STAGE CONSTRUCTION & TRAFFIC HANDLING	ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
	FISCAL YEAR	2024-25
	SHEET NUMBER	14
	TOTAL SHEETS	32

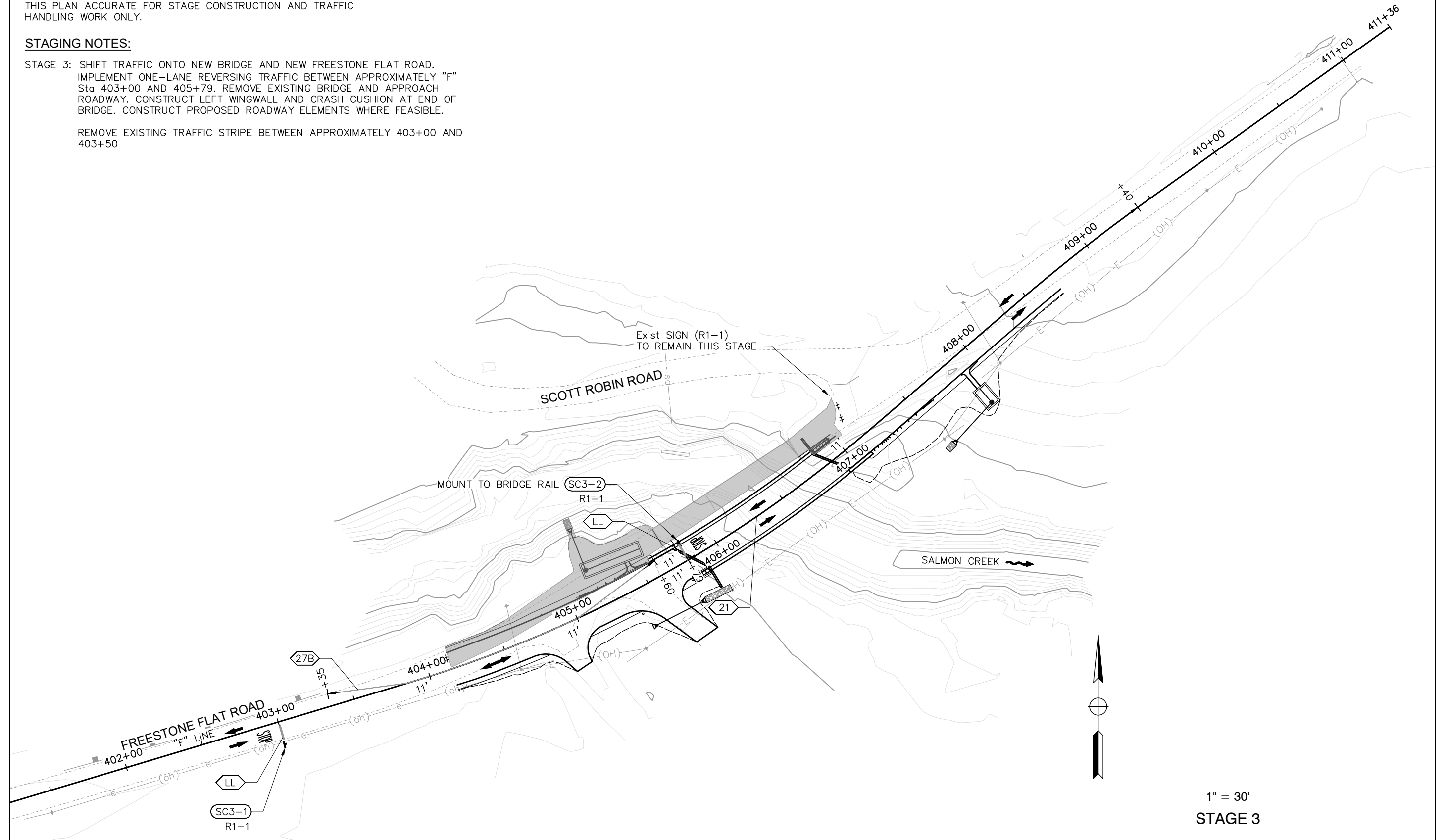
NOTE:

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY.

STAGING NOTES:

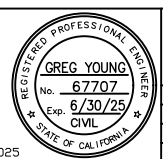
STAGE 3: SHIFT TRAFFIC ONTO NEW BRIDGE AND NEW FREESTONE FLAT ROAD. IMPLEMENT ONE-LANE REVERSING TRAFFIC BETWEEN APPROXIMATELY "F" Sta 403+00 AND 405+79. REMOVE EXISTING BRIDGE AND APPROACH ROADWAY. CONSTRUCT LEFT WINGWALL AND CRASH CUSHION AT END OF BRIDGE. CONSTRUCT PROPOSED ROADWAY ELEMENTS WHERE FEASIBLE.

REMOVE EXISTING TRAFFIC STRIPE BETWEEN APPROXIMATELY 403+00 AND 403+50



1" = 30'
STAGE 3

DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_SC-3.DWG 4/25/2025



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STAGE CONSTRUCTION & TRAFFIC HANDLING	ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
	FISCAL YEAR	2024-25
	SHEET NUMBER	15
	TOTAL SHEETS	32

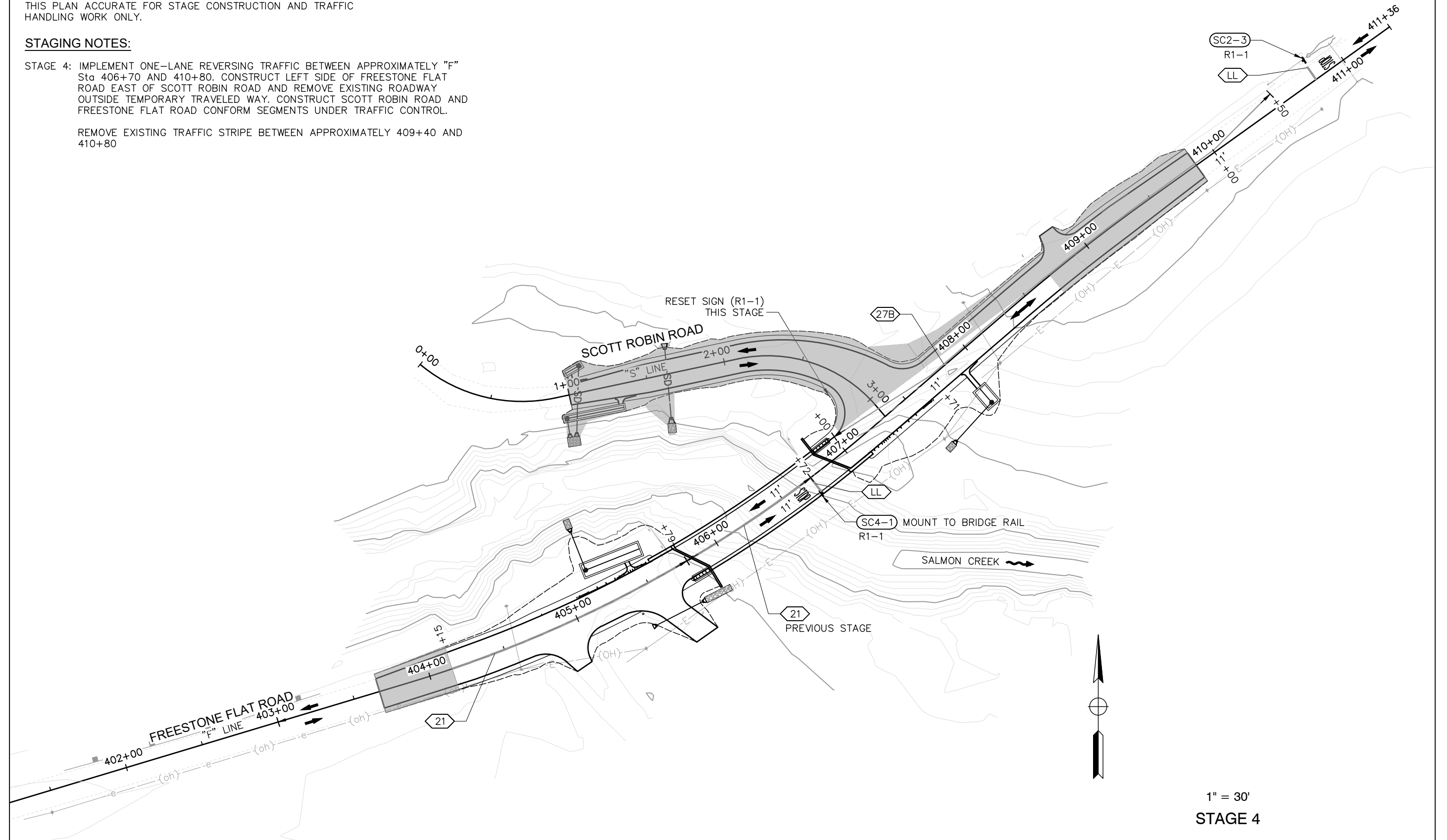
NOTE:

THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING WORK ONLY.

STAGING NOTES:

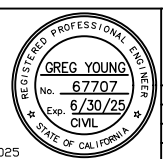
STAGE 4: IMPLEMENT ONE-LANE REVERSING TRAFFIC BETWEEN APPROXIMATELY "F" Sta 406+70 AND 410+80. CONSTRUCT LEFT SIDE OF FREESTONE FLAT ROAD EAST OF SCOTT ROBIN ROAD AND REMOVE EXISTING ROADWAY OUTSIDE TEMPORARY TRAVELED WAY. CONSTRUCT SCOTT ROBIN ROAD AND FREESTONE FLAT ROAD CONFORM SEGMENTS UNDER TRAFFIC CONTROL.

REMOVE EXISTING TRAFFIC STRIPE BETWEEN APPROXIMATELY 409+40 AND 410+80



1" = 30'
STAGE 4

DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_SC-4.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
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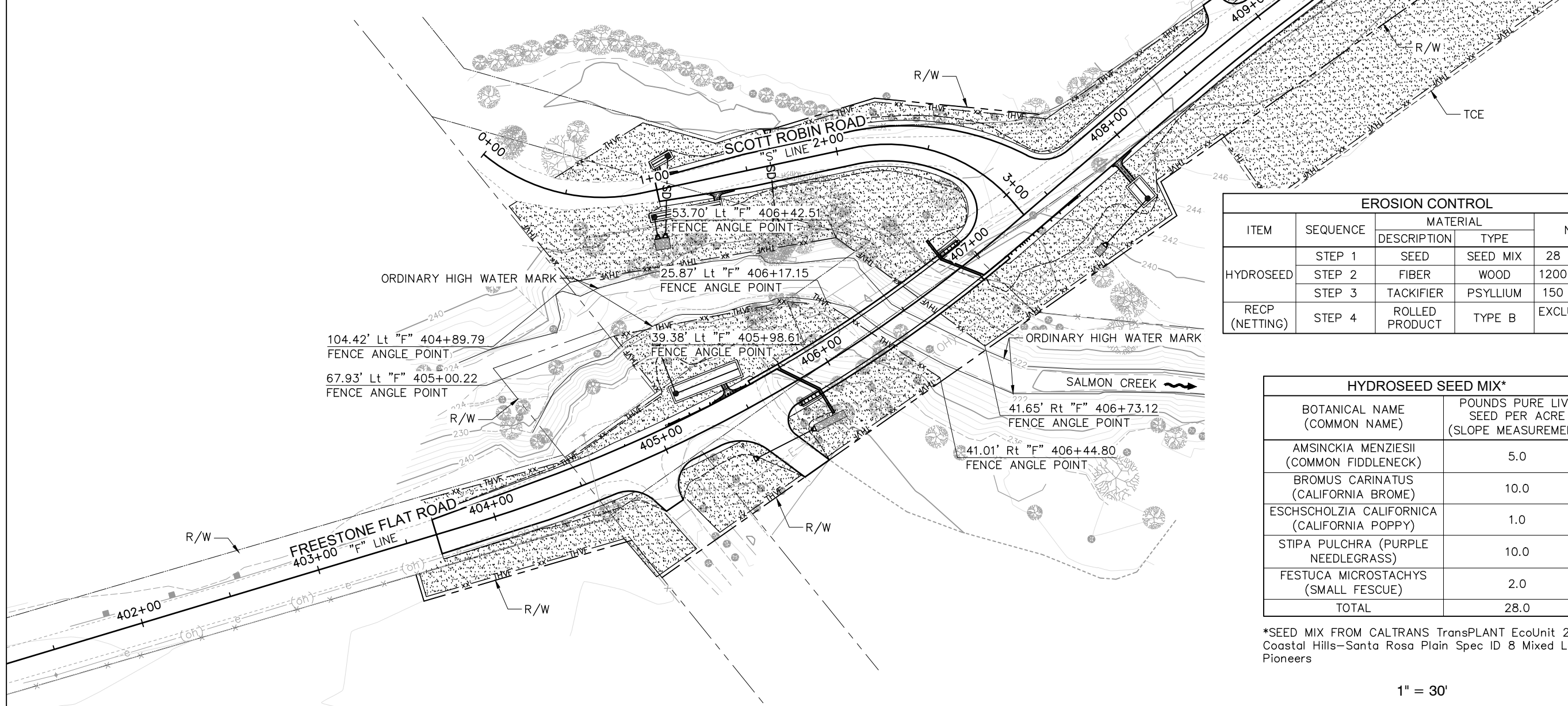
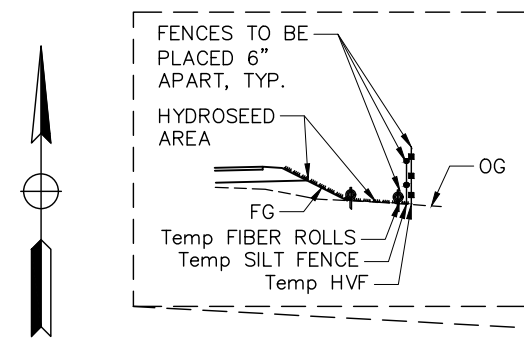
STAGE CONSTRUCTION & TRAFFIC HANDLING	ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
	FISCAL YEAR	2024-25
	SHEET NUMBER	16
	TOTAL SHEETS	32

NOTES:

- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
- THIS PLAN ACCURATE FOR EROSION CONTROL WORK ONLY.
- EROSION CONTROL PER CONTRACTOR'S APPROVED SWPPP.
- TEMPORARY CONCRETE WASHOUT TO BE PLACED AS DIRECTED BY THE ENGINEER.
- LOCATION OF TEMPORARY FIBER ROLLS ARE SCHEMATIC. ACTUAL PLACEMENT LOCATIONS OF TEMPORARY FIBER ROLLS SHALL BE IN ACCORDANCE WITH SPECIAL PROVISIONS.
- EROSION CONTROL (HYDROSEED) SHALL NOT BE PLACED WITHIN ACTIVE CREEK.
- DELINEATION OF TEMPORARY FIBER ROLLS AND TEMPORARY SILT FENCE WILL MATCH TEMPORARY HIGH-VISIBILITY FENCE - SEE DETAIL THIS SHEET. PLACE TEMPORARY HIGH-VISIBILITY FENCE 2' OFFSET FROM RIGHT OF WAY OR TEMPORARY CONSTRUCTION EASEMENT AS DIRECTED BY THE ENGINEER.

LEGEND:

- xx — THVF — TEMPORARY HIGH-VISIBILITY FENCE
- [Stippled Area] LIMITS OF HYDROSEED AND ROLLED EROSION CONTROL PRODUCT (NETTING) (TYPE B), EXCLUDE ROLLED EROSION CONTROL WITHIN TCE



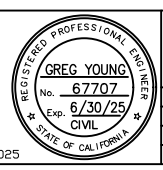
EROSION CONTROL				
ITEM	SEQUENCE	MATERIAL		NOTES
		DESCRIPTION	TYPE	
HYDROSEED	STEP 1	SEED	SEED MIX	28 LB/ACRE
	STEP 2	FIBER	WOOD	1200 LB/ACRE
	STEP 3	TACKIFIER	PSYLLIUM	150 LB/ACRE
RECP (NETTING)	STEP 4	ROLLED PRODUCT	TYPE B	EXCLUDE FROM TCE

HYDROSEED SEED MIX*	
BOTANICAL NAME (COMMON NAME)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
AMSINCKIA MENZIESII (COMMON FIDDLENECK)	5.0
BROMUS CARINATUS (CALIFORNIA BROME)	10.0
ESCHSCHOLZIA CALIFORNICA (CALIFORNIA POPPY)	1.0
STIPA PULCHRA (PURPLE NEEDLEGRASS)	10.0
FESTUCA MICROSTACHYS (SMALL FESCUE)	2.0
TOTAL	28.0

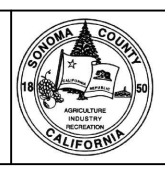
*SEED MIX FROM CALTRANS TransPLANT EcoUnit 263Aj Coastal Hills-Santa Rosa Plain Spec ID 8 Mixed Lowland Pioneers

1" = 30'

DESIGN BY	KDW	<i>Greg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	KDW	
CHECKED BY	MS	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\ROADWAY\S22-200_EC-1.DWG 4/25/2025



CONSTRUCTION COMPLETED:			
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SONOMA COUNTY PUBLIC INFRASTRUCTURE
TRANSPORTATION & PUBLIC WORKS DIVISION
JOHANNES J. HOEVERTZ, P.E., DIRECTOR

EROSION CONTROL		ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT		BUDGET NUMBER	C11004
		FISCAL YEAR	2024-25
		SHEET NUMBER	17
		TOTAL SHEETS	32

DRAINAGE QUANTITIES																	
AT			DRAINAGE SYSTEM	BIORETENTION		36" PRECAST CONCRETE PIPE INLET	MISCELLANEOUS IRON AND STEEL	18" REINFORCED CONCRETE PIPE		18" CONCRETE FLARED END SECTION	REMOVE CULVERT (LF)	24" REINFORCED CONCRETE PIPE		24" CONCRETE FLARED END SECTION	ROCK SLOPE PROTECTION (150 LB. CLASS III, METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	COMMENTS
LINE	STATION	OFFSET		CY	LF			LB	LF			EA	LF				
"S"	00+95.00	14' Rt	3	42	5.8	236	8.3	1						1.8	8.4	BIORETENTION BASIN	
"S"	01+09.00	17' Lt	1	14	5.8	236	41	1								BIORETENTION BASIN	
"F"	405+18.00	25' Lt	4	82	5.8	236	24	1						0.9	4.9	BIORETENTION BASIN	
"F"	407+90.00	37' Rt	6	31	5.8	236	31	1						0.9	4.9	BIORETENTION BASIN	
"F"	405+50.00	27' Rt	5				33	2						2.7	13		
"S"	01+60.00		2							51		44		2	1.1	5.8	
TOTAL				168	23	944	137	6		51		44		2	7.4	37	

EROSION CONTROL QUANTITIES											
FROM			TO			HYDROSEED	ROLLED EROSION CONTROL PRODUCT (NETTING TYPE B)	TEMPORARY FIBER ROLLS	TEMPORARY SILT FENCE	TEMPORARY HIGH-VISIBILITY FENCE	COMMENTS
LINE	FROM	OFFSET	LINE	TO	OFFSET						
"F"	403+66.79	Lt	"F"	406+20.00	Lt	4700	4700	430	330	330	
"F"	403+50.00	Rt	"F"	406+44.00	Rt	7000	7000	580	405	405	BB SE
"S"	00+40.00	Lt	"S"	03+00.00	Lt	3200	3200	505	280	280	"S" North
"S"	00+40.00	Rt	"S"	03+00.00	Rt	8750	8750	470	260	260	"S" South
"F"	407+70.00	Lt	"F"	409+85.00	Lt	1950	1950	205	205	205	EB NW
"F"	406+70.00	Rt	"F"	410+50.00	Rt	19400	9400	735	550	550	EB SE
TOTAL						45,000	35,000	2,925	2,030	2,030	

SIGNING AND STRIPING QUANTITIES														
FROM			TO			TEMPORARY TRAFFIC STRIPE (TAPE)	TEMPORARY PAVEMENT MARKING (TAPE)	REMOVE PAINTED TRAFFIC STRIPE	4" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY)	THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)	TYPE III BARRICADE	REMOVE ROADSIDE SIGN	RESET ROADSIDE SIGN	COMMENTS
LINE	STATION	OFFSET	LINE	STATION	OFFSET									
"F"	403+00.00		"F"	407+00.00					800					LAYOUT DETAIL 21
"F"	407+63.00		"F"	410+80.00					634					LAYOUT DETAIL 21
"S"	02+99.00		"S"	02+99.00	20' Rt					20				LAYOUT LIMIT LINE
"S"	02+99.00		"S"	02+99.00						22				LAYOUT STOP
"F"	404+65.00	Rt	"F"	405+15.00	Lt	52	32				3			STAGE 1 DETAIL 27B
"F"	407+31.00	Lt	"F"	407+73.00	Lt	43	32				1			STAGE 1 DETAIL 27B
"F"	403+68.00	Rt	"F"	405+15.00	Lt	150	32				1			STAGE 2 DETAIL 27B
"F"	407+31.00	Lt	"F"	409+21.00	Rt	190	32				1			STAGE 2 DETAIL 27B
"F"	403+50.00		"F"	404+50.00				100						STAGE 2
"F"	407+80.00		"F"	409+40.00				160						STAGE 2
"F"	403+35.00		"F"	405+60.00		225	32				1			STAGE 3 DETAIL 27B
"F"	405+79.00		"F"	409+40.00		722	32				2			STAGE 3 DETAIL 21
"F"	403+00.00		"F"	403+50.00				50						STAGE 3
"F"	403+00.00		"F"	405+79.00		558	32							STAGE 4 DETAIL 21
"F"	407+00.00		"F"	410+50.00		350	32							STAGE 4 DETAIL 27B
"F"	409+40.00		"F"	410+80.00				140						STAGE 4
"F"	404+25.00	Rt										1		LAYOUT
"S"	02+85.00	Rt										1		LAYOUT
"F"	408+70.00	Lt										1		LAYOUT
"S"	02+85.00	Rt	"S"	02+99.00	Rt								1	LAYOUT
TOTAL						2,290	256	450	1,434	42	9	4	1	

ROADWAY QUANTITIES																				
FROM			TO			CLASS 2 AGGREGATE BASE	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT DIKE (TYPE F)	PLACE HOT MIX ASPHALT DIKE (TYPE C)	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	ROADWAY EXCAVATION	EMBANKMENT (N)	IMPORTED BORROW	RELOCATE MAILBOX	REMOVE FENCE	TEMPORARY FENCE (TYPE WM)	FENCE (TYPE WM, WOOD POST)	RECONSTRUCT FENCE	RELOCATE GATE	COMMENTS
LINE	FROM	OFFSET	LINE	TO	OFFSET															
"F"	403+66.79		"F"	BB		287	223													BB
"S"	01+00.00		"F"	409+85.79		528	411													EB + SCOTT ROBIN ROAD
"F"	404+93.62	Rt	"F"	405+64.22	Rt	22				44	22									STAGE 1 TEMP DRIVEWAY
"F"	403+66.79	8.45' Lt	"F"	405+57.16	11.00' Lt		2.3	140	50											
"S"	1+40.00	9.00' Rt	"S"	02+96.62	19.92' Rt		2.1	150	18											
"S"	1+12.99	6.89' Lt	"S"	2+31.00	9.96' Lt		1.6	120												
"F"	408+00.00	11.00' Rt	"F"	409+85.79	9.14' Rt		2.5	185												
"S"	01+00.00		"S"	02+95.00						154	63									
"F"	403+66.79		"F"	405+33.92						62	155	92								
"F"	406+89.66		"F"	409+85.79						402	406	4								
"F"	406+90.00	30.00' Lt	"S"	02+55.00	15.00' Rt															
"F"	405+22.77	1.37' Lt	"F"	405+38.05	16.19' Rt															
"F"	408+94.20	9.48' Rt	"F"	408+73.63	20.05' Lt															
"F"	403+51.93	17.44' Rt	"F"	404+60.56	35.23' Rt															
"F"	405+77.82	13.80' Rt	"F"	405+84.83	31.00' Rt															
"F"	406+99.42	29.79' Rt	"F"	407+05.76	43.71' Rt															
"F"	407+05.76	43.71' Rt	"F"	409+98.01	19.28' Rt															
"F"	407+06.11	1.35' Lt	"F"	409+98.01	19.28' Rt															
"S"	02+10.51	16.72' Lt	"S"	02+81.88	34.80' Lt															
"F"	408+90.26	17.26' Rt	"F"	408+82.17	39.85' Rt															
"F"	405+32.00	Lt					0.8				4.8									FOR HMA OVERSIDE DRAIN
"S"	01+00.00	Lt					0.5				3.1									FOR HMA OVERSIDE DRAIN
"S"	01+30.00	Rt					0.5				2.8									FOR HMA OVERSIDE DRAIN
"F"	407+90.00	Rt					1.0				5.7									FOR HMA OVERSIDE DRAIN
TOTAL						837	645	595	68	17	662	624	96	7	460	553	460	98	1	

GUARD RAIL QUANTITIES											
FROM			TO			TRANSITION RAILING (TYPE AGT)	IN-LINE TERMINAL SYSTEM	ALTERNATIVE CRASH CUSHION	TEMPORARY IN-LINE TERMINAL SYSTEM	TEMPORARY MIDWEST GUARDRAIL SYSTEM	COMMENTS
LINE	FROM	OFFSET	LINE	TO	OFFSET						
"F"	NEW BB	Lt				1	1				
"F"	NEW EB	Rt				1	1				
"F"	NEW BB	Rt						1			
"F"	NEW EB	Lt						1			
"F"	EXIST BB								1		STAGE 1
"F"	EXIST EB								1		STAGE 1
"F"	405+46.00	14.27' Lt	"F"	405+71.00	15.82' Lt					25	STAGE 1
"F"	406+74.00	15.00' Lt	"F"	406+99.00	13.86' Lt					25	STAGE 1
TOTAL						2	2	2	2	50	

DESIGN BY: KDW
 DRAWING BY: KDW
 CHECKED BY: MS

Greg Young
 REGISTERED CIVIL ENGINEER
 PLANS APPROVAL DATE: 6/30/25
 S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD\S22-200\CAD\ROADWAY\S22-200_0-1.DWG 4/25/2025

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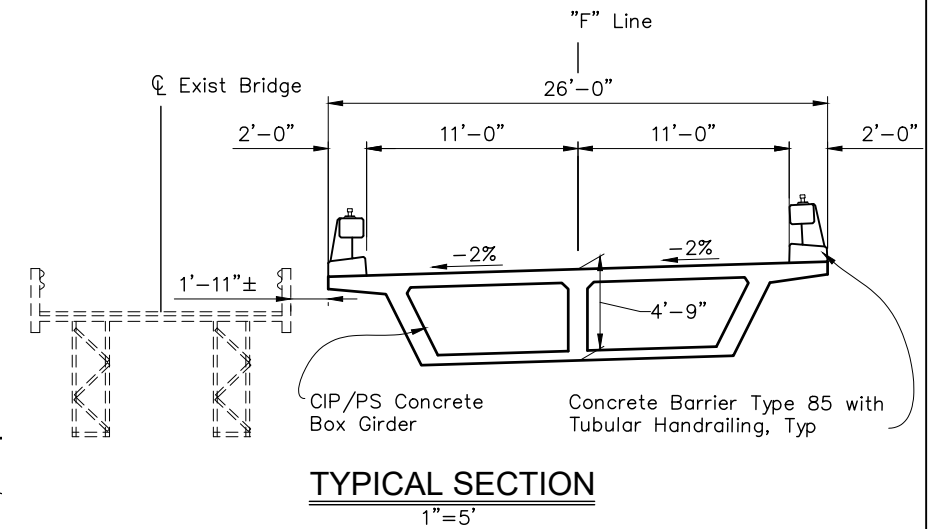
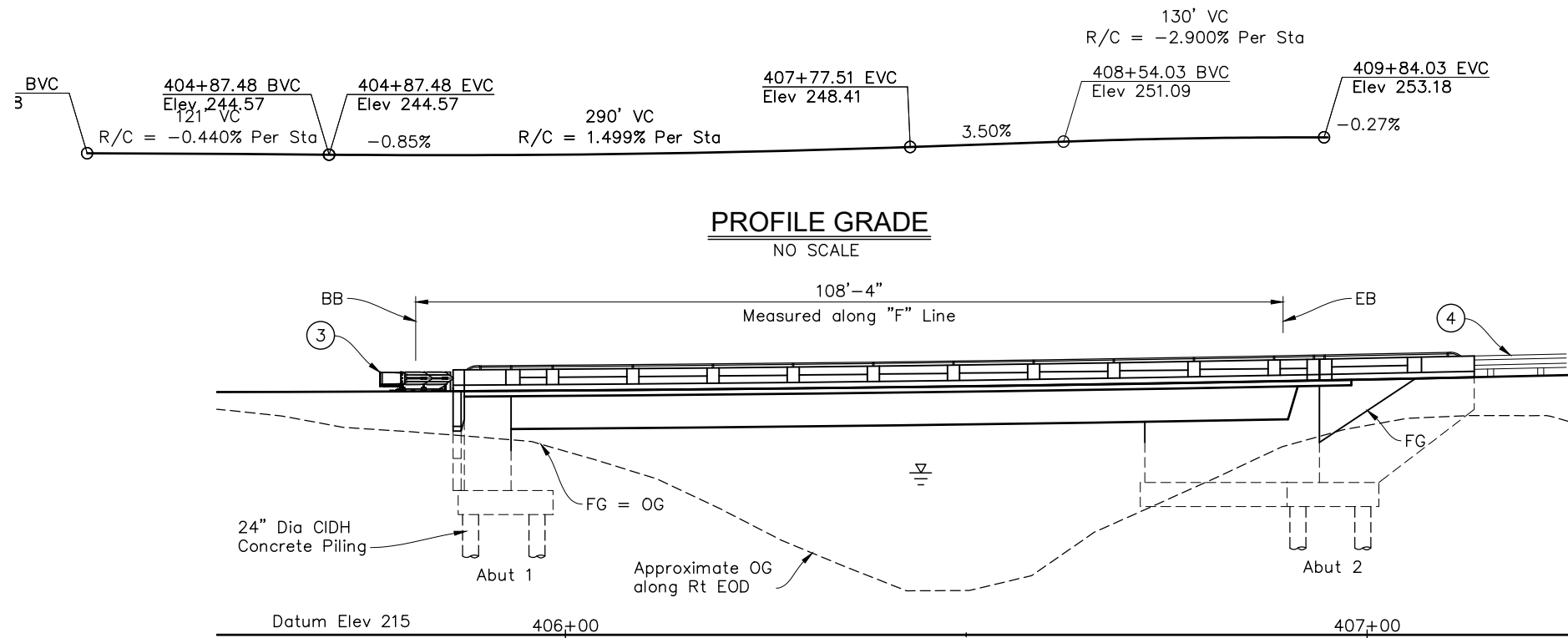
RESIDENT ENGINEER AS BUILT DRAWINGS BY:
 DATE: DESCRIPTION: BY: APPROVED:



SONOMA COUNTY
 PUBLIC
 INFRASTRUCTURE
 TRANSPORTATION & PUBLIC WORKS DIVISION
 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

SUMMARY OF QUANTITIES
 FREESTONE FLAT ROAD
 BRIDGE REPLACEMENT

ROAD NUMBER: 60014
 BUDGET NUMBER: C11004
 FISCAL YEAR: 2024-25
 SHEET NUMBER: 18
 TOTAL SHEETS: 32



INDEX TO PLANS

Sheet Number	Sheet Title
19	General Plan
20	General Notes
21	Deck Contours
22	Foundation Plan
23	Abutment 1 Layout
24	Abutment 2 Layout
25	Abutment Details No. 1
26	Abutment Details No. 2
27	Abutment Details No. 3
28	Typical Section
29	Girder Layout
30	Girder Reinforcement No. 1
31	Girder Reinforcement No. 2
32	Log of Test Borings

- Legend:**
- ① Paint "Salmon Creek Bridge"
 - ② Paint "No. 20C0594"
 - ③ Alternative Crash Cushion
 - ④ MGS, see Road Plans
 - ▽ Highwater elevation
 - Existing structure

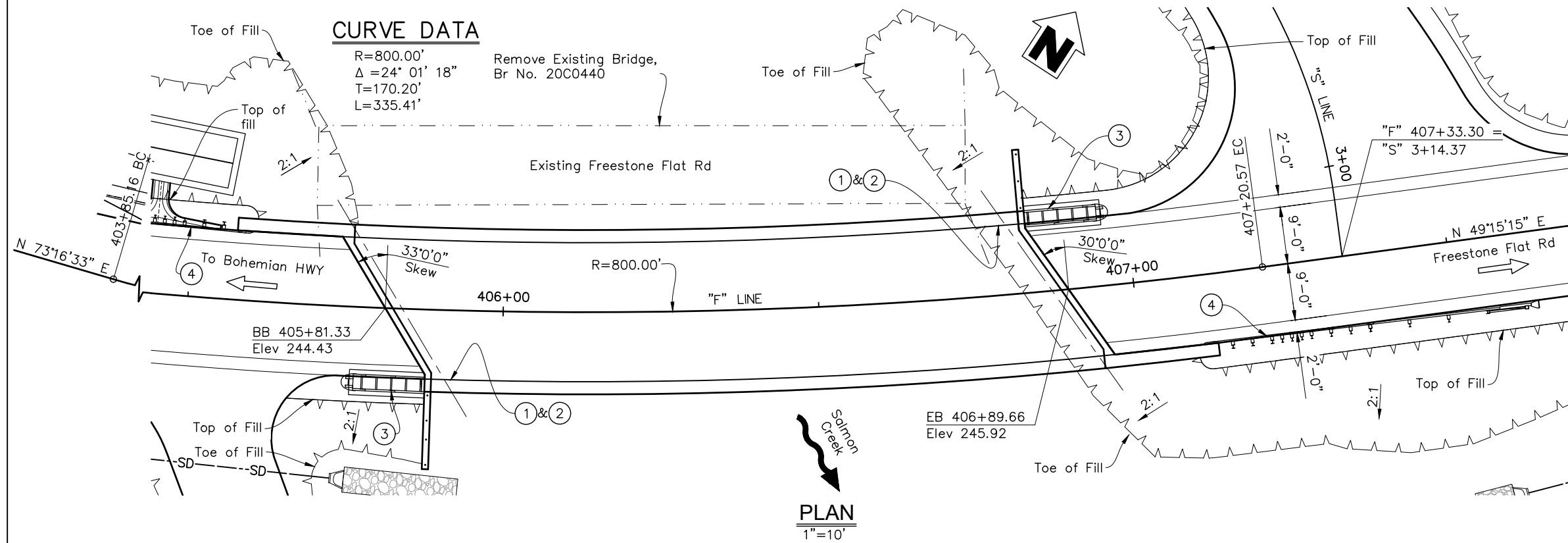
Note:

- For General Notes, Quantities and Hydrologic Summary, see "General Notes" sheet.

CURVE DATA

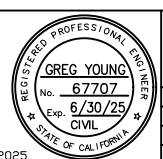
R=800.00'
 $\Delta = 24^\circ 01' 18''$
 T=170.20'
 L=335.41'

Remove Existing Bridge, Br No. 20C0440



DESIGN BY S. SALVADOR
 DRAWING BY P. KENNEY
 CHECKED BY J. WILSON

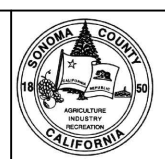
Greg Young
 REGISTERED CIVIL ENGINEER
 No. 67707
 Exp. 6/30/25
 CIVIL
 STATE OF CALIFORNIA



CONSTRUCTION COMPLETED:

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SONOMA COUNTY PUBLIC INFRASTRUCTURE
 TRANSPORTATION & PUBLIC WORKS DIVISION
 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

GENERAL PLAN
FREESTONE FLAT ROAD BRIDGE REPLACEMENT

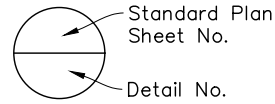
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	19
TOTAL SHEETS	32

QUANTITIES

Structure Excavation (Bridge)	352	CY
Structure Backfill (Bridge)	231	CY
Temporary Shoring	LUMP	SUM
24" Cast-In-Drilled Hole Piling	492	LF
Prestressing Cast-In-Place Concrete	LUMP	SUM
Structural Concrete, Bridge Footing	72	CY
Structural Concrete, Bridge	183	CY
Structural Concrete, Bridge (Polymer Fiber)	79	CY
Joint Seal (MR 1 1/2")	61	LF
Bar Reinforcing Steel (Bridge)	83827	LB
Bridge Removal	LUMP	SUM
Tubular Hand Railing	248	LF
Cable Railing	22	LF
Concrete Barrier (Type 85)	250	LF

2024 CALTRANS STANDARD PLANS

See Special Provisions for Standard Plans list



HYDROLOGIC SUMMARY

Drainage area: 5.0 Square Miles

	Design Flood	Base Flood
Frequency (years)	50	100
Discharge (cubic feet per second)	1540	1790
Water Surface Elev at Bridge (ft)	233.7	235.2

Flood plain data based upon information available when the plans were prepared and are shown to meet Federal requirements. The accuracy of said information is not warranted by the County and interested or affected parties should make their own investigations.

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 8th edition with California Amendments; except that Standard Bridge Detail XS sheets are designed using Bridge Design Specifications (1996 AASHTO w/Revisions by Caltrans).

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), version 2.0, dated April 2019.

DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE LOADING: HL93 and permit design load.

SEISMIC LOADING: Soil profile $V_{s30} = 250$ m/s
 Moment Magnitude $M_{max} = 8.0$
 Peak Ground Acceleration = 0.55 g

REINFORCED CONCRETE:

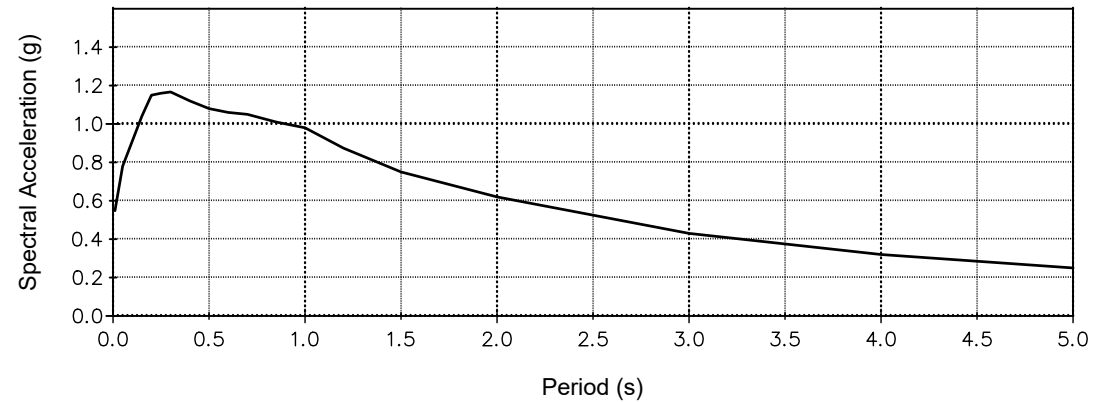
$f_y = 60$ ksi

$f'_c = 3.6$ ksi, unless otherwise noted

$n = 8$

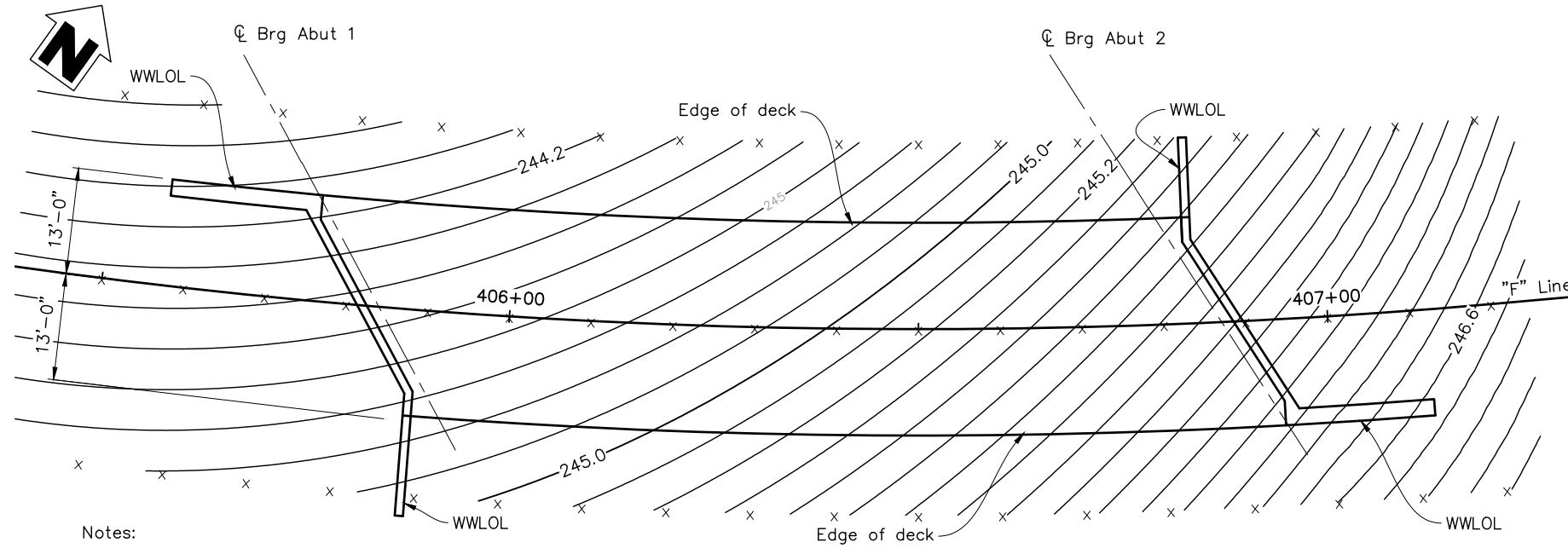
PRESTRESSED CONCRETE:

See "Prestressing Notes" on "Girder Layout" sheet.



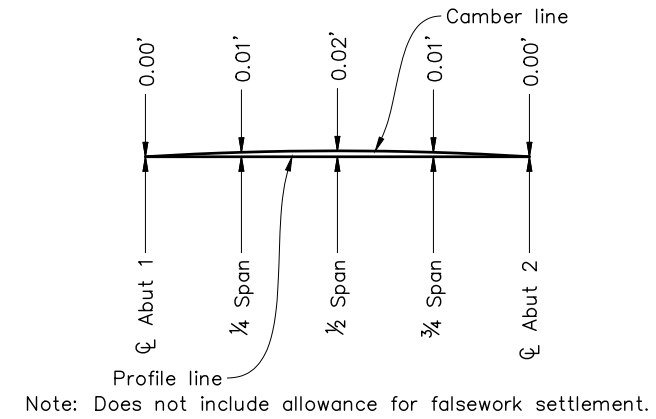
ACCELERATION RESPONSE SPECTRA CURVE

DESIGN BY	S. SALVADOR		CONSTRUCTION COMPLETED:			SONOMA COUNTY PUBLIC INFRASTRUCTURE TRANSPORTATION & PUBLIC WORKS DIVISION JOHANNES J. HOEVERTSZ, P.E., DIRECTOR	GENERAL NOTES	ROAD NUMBER	60014
DRAWING BY	P. KENNEY		REGISTERED CIVIL ENGINEER				"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION	BUDGET NUMBER	C11004
CHECKED BY	J. WILSON		PLANS APPROVAL DATE				RESIDENT ENGINEER AS BUILT DRAWINGS BY:	FISCAL YEAR	2024-25
S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\BRIDGE\S22200A-B-GNOTE.DWG 4/25/2025								SHEET NUMBER	20
								TOTAL SHEETS	32

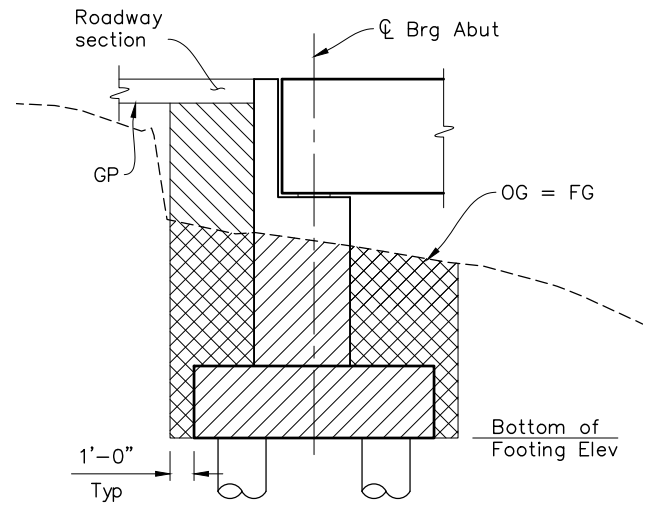


Notes:
 X = 10' intervals along station line
 Contours Intervals = 0.10'
 Contours do not include camber or falsework settlement

PLAN
 1"=10'



CAMBER DIAGRAM
 No Scale

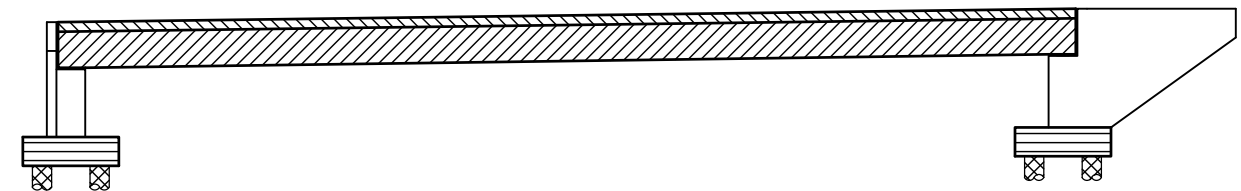


ABUTMENT TYPICAL SECTION

- Indicates Structure Excavation (Bridge)
- Indicates Structure Backfill (Bridge)

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL
 No Scale

Note:
 Abutment limits shown, wingwalls similar

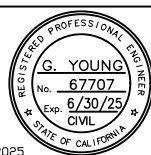


- Structural Concrete, Bridge
- Structural Concrete, Bridge Footing
- Structural Concrete, Bridge (f'c=4.0 ksi at 28 days)
- CIDH Concrete Piling (f'c=4.0 ksi at 28 days)
- Structural Concrete, Bridge (Polymer Fiber) (f'c=4.0 ksi at 28 days)

CONCRETE STRENGTH AND TYPE LIMITS
 No Scale

DESIGN BY	S. SALVADOR
DRAWING BY	P. KENNEY
CHECKED BY	J. WILSON

Dreg Young
 REGISTERED CIVIL ENGINEER
 No. 67707
 Exp. 6/30/25
 CIVIL
 STATE OF CALIFORNIA
 PLANS APPROVAL DATE
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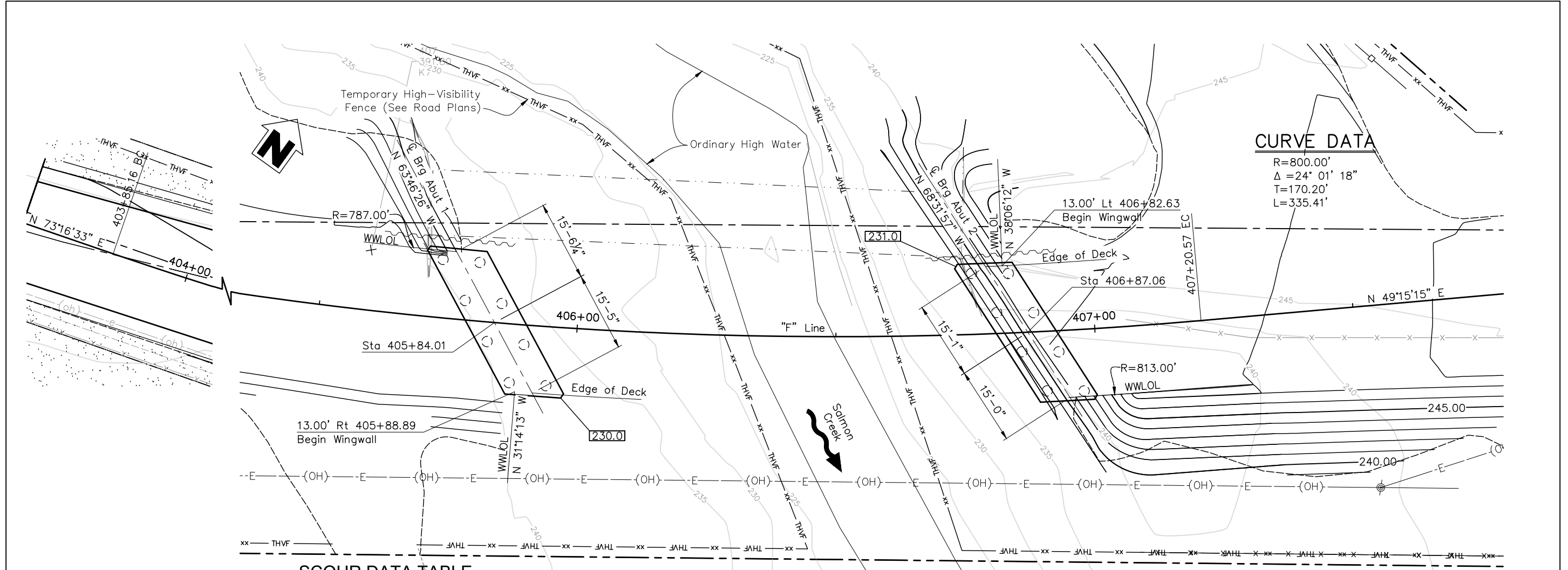


CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



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DECK CONTOURS	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	21
TOTAL SHEETS	32



CURVE DATA

R=800.00'
 $\Delta = 24^\circ 01' 18''$
 T=170.20'
 L=335.41'

SCOUR DATA TABLE

SUPPORT No.	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (ft)	SHORT TERM (LOCAL) SCOUR DEPTH (ft)
Abut 1	232.4	0
Abut 2	233.4	0

Thalweg Elev: 220.00

BENCH MARK DATA

No.	NORTHING	EASTING	ELEVATION	LINE	STATION	OFFSET	DESCRIPTION
1	1901509.829	6297473.345	252.05	"F"	411+53.82	7.85' Rt	MAG DOTPW 1
2	1901375.763	6297285.227	252.82	"F"	409+22.66	6.97' Rt	MAG DOTPW 2
3	1901301.460	6297143.651	247.30	"F"	407+66.38	26.44' Lt	MAG DOTPW 3
4	1901119.633	6296937.868	244.53	"F"	404+91.49	9.98' Rt	MAG DOTPW 4
5	1901004.458	6296575.558	246.58	"F"	401+12.38	8.88' Rt	MAG DOTPW 5
6	1901263.84	6296891.491	241.48	"F"	405+12.33	140.30' Lt	MAG DOTPW 6
7	1901169.129	6296988.133	244.59	"F"	405+58.75	139.44' Lt	MAG DOTPW 7

PLAN
1"=10'

Legend:

- X.X Indicates bottom of footing elevation
- Indicates vertical pile
- Indicates existing structure to be removed
- ~~~ Indicates temporary shoring*

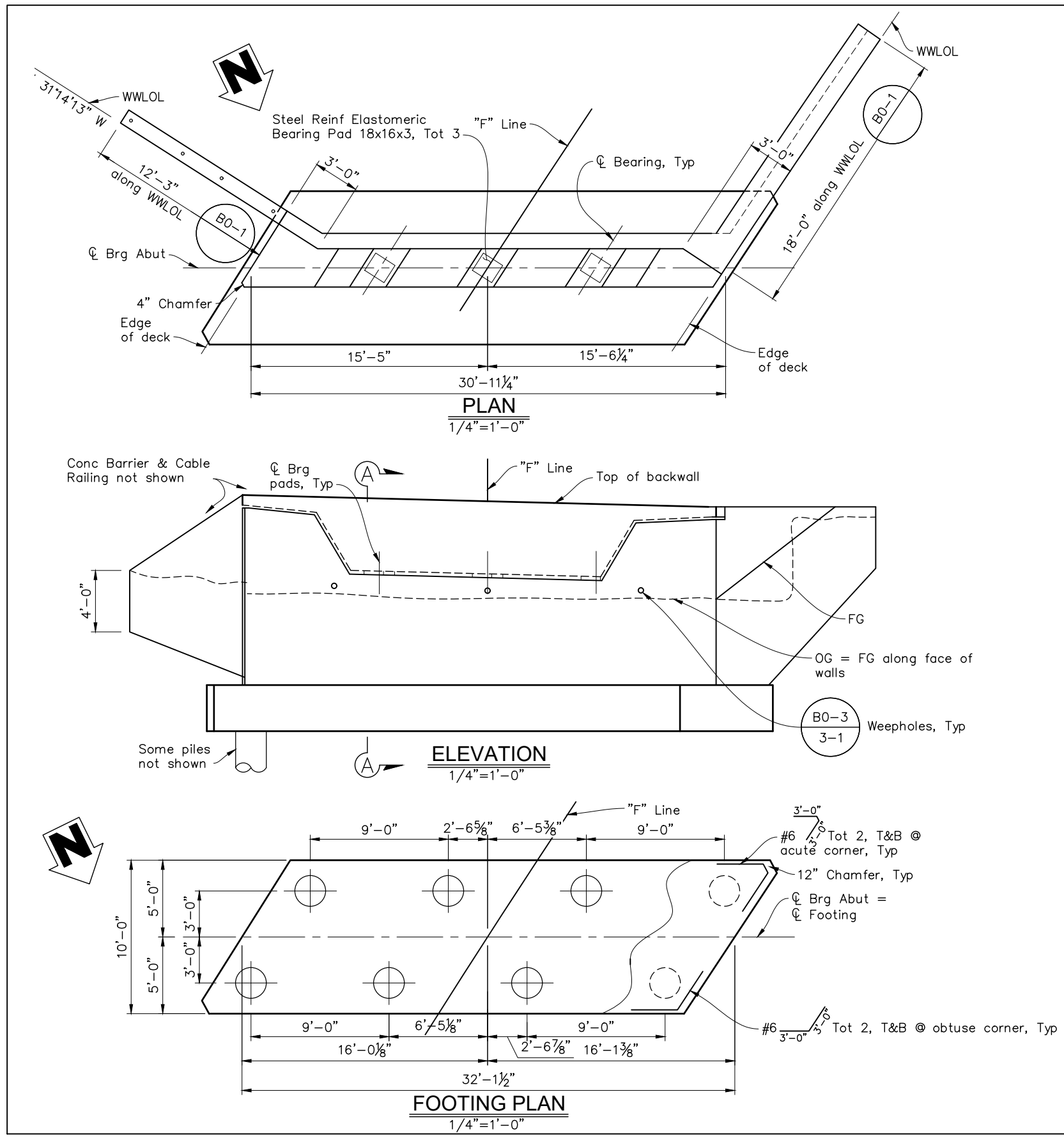
PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE		DESIGN TIP ELEVATION	SPECIFIED TIP ELEVATION
		COMPRESSION	TENSION		
Abut 1	24" CIDH	360 kips	0	195(a), 215(b)	195.0
Abut 2	24" CIDH	360 kips	0	205(a), 215(b)	205.0

- Notes:
- Design Tip Elevation is controlled by the following demands:
 (a) Compression, (b) Lateral Loads.
 - The specific tip elevation shall not be raised above design tip elevations for lateral and tolerable settlement.

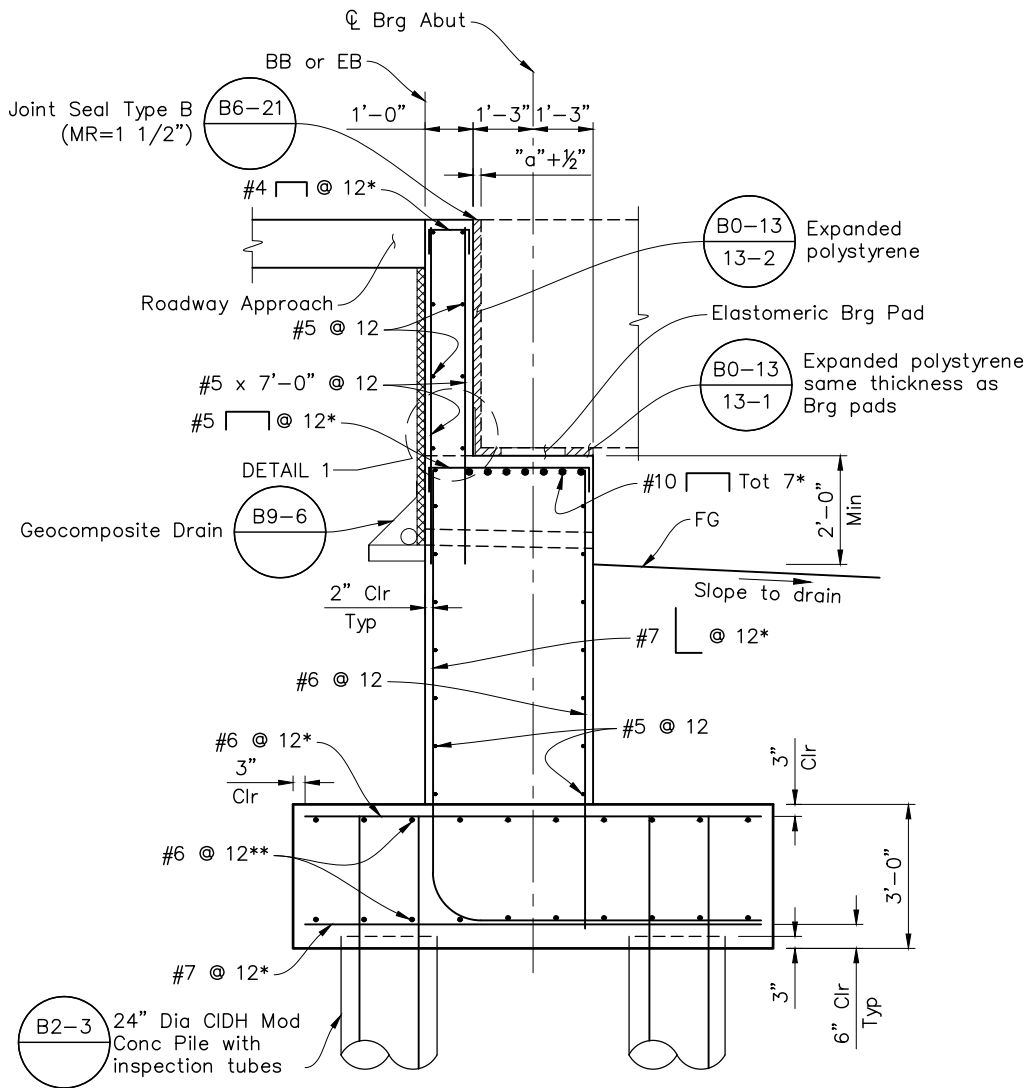
* Temporary shoring will be required for bridge removal and construction actual shoring locations and design are the responsibility of the contractor. Additional temporary shoring may be required at other locations not shown depending on contractor means and methods.

DESIGN BY	S. SALVADOR	<i>Dreg Young</i> REGISTERED CIVIL ENGINEER	CONSTRUCTION COMPLETED:		SONOMA COUNTY PUBLIC INFRASTRUCTURE TRANSPORTATION & PUBLIC WORKS DIVISION JOHANNES J. HOEVERTSZ, P.E., DIRECTOR	FOUNDATION PLAN	ROAD NUMBER	60014
DRAWING BY	P. KENNEY	G. YOUNG No. 67707 Exp. 6/30/25 CIVIL STATE OF CALIFORNIA	"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION	RESIDENT ENGINEER AS BUILT DRAWINGS BY:		FREESTONE FLAT ROAD BRIDGE REPLACEMENT	BUDGET NUMBER	C11004
CHECKED BY	J. WILSON	PLANS APPROVAL DATE	DATE	DESCRIPTION			FISCAL YEAR	2024-25
		S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\BRIDGE\S22200A-E-FPLO1.DWG 4/25/2025		BY			SHEET NUMBER	22
				APPROVED			TOTAL SHEETS	32



Notes:

1. For sections and details not shown, see Abutment Details sheets.
2. For "a", see "Joint Seals (Maximum Movement Ratings = 2")" Std. Plan.



* Place parallel to "F" Line spaced along ϕ bearing abutment
 ** Place parallel to ϕ bearing abutment

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

DESIGN BY	S. SALVADOR
DRAWING BY	P. KENNEY
CHECKED BY	J. WILSON

Dreg Young
 REGISTERED CIVIL ENGINEER
 No. 67707
 Exp. 6/30/25
 CIVIL
 STATE OF CALIFORNIA
 PLANS APPROVAL DATE
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 4/25/2025



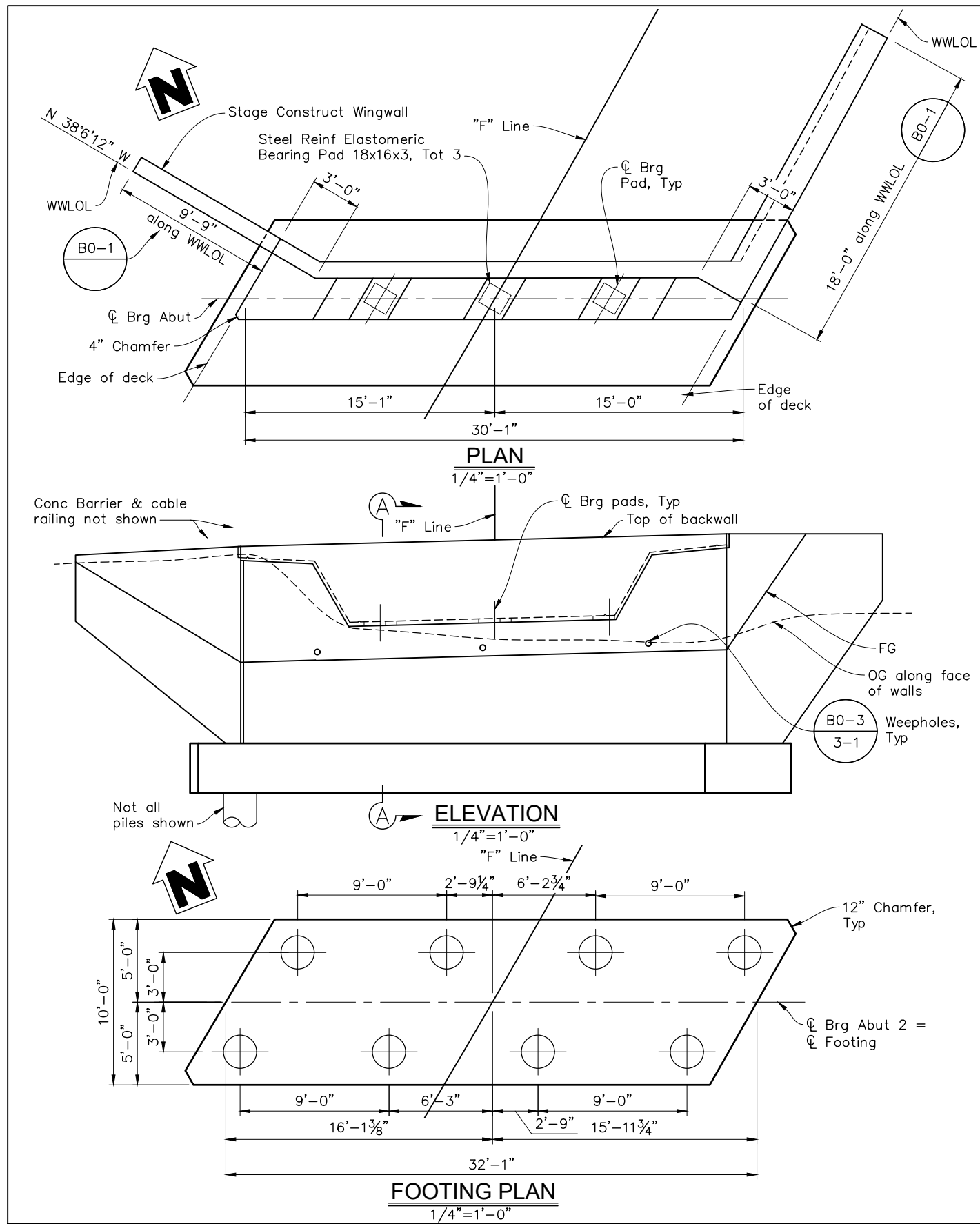
CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



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 TRANSPORTATION & PUBLIC WORKS DIVISION
 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

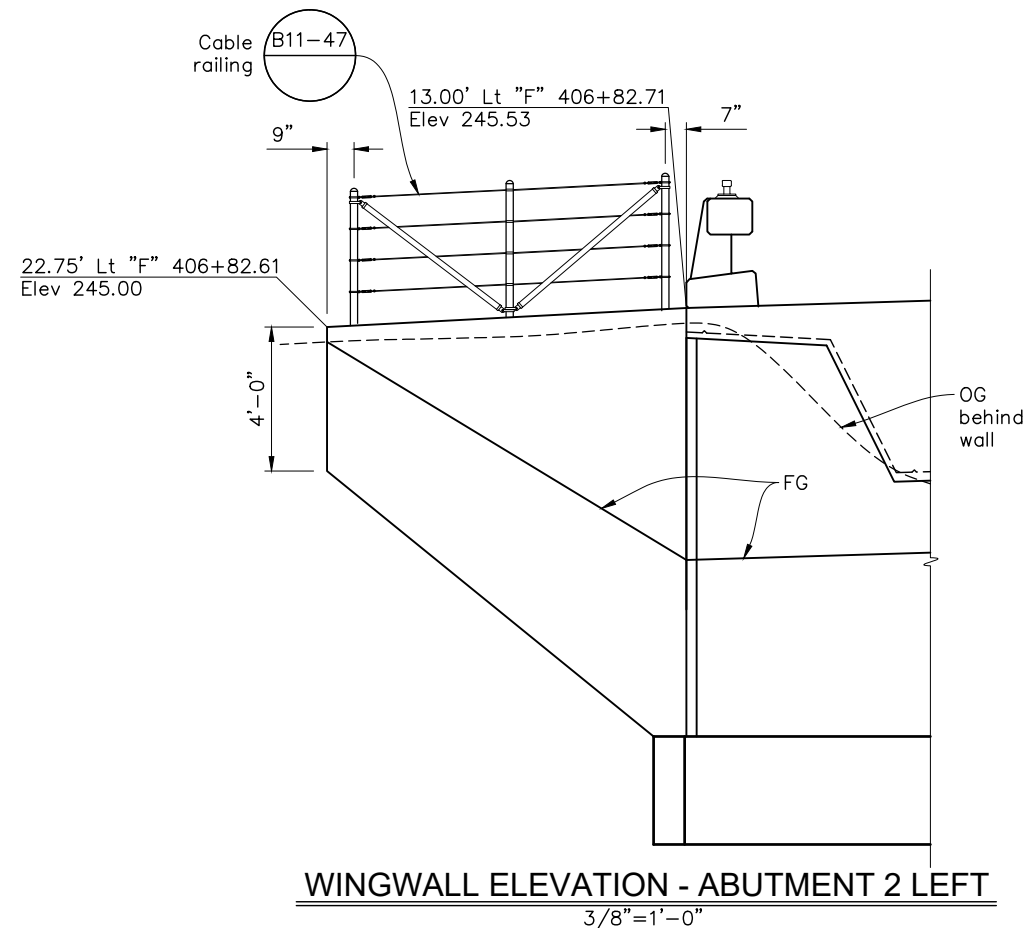
ABUTMENT 1 LAYOUT	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	

ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	23
TOTAL SHEETS	32



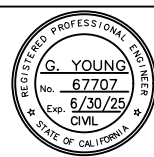
Notes:

1. For "Section A-A" and reinforcing details, see "Abutment 1 Layout" sheet.
2. For sections and details not shown, see Abutment Details sheets.
3. For "a", see "Joint Seals (Maximum Movement Ratings = 2")".



DESIGN BY	S. SALVADOR
DRAWING BY	P. KENNEY
CHECKED BY	J. WILSON

Dreg Young
 REGISTERED CIVIL ENGINEER
 No. 67707
 Exp. 6/30/25
 CIVIL
 PLANS APPROVAL DATE
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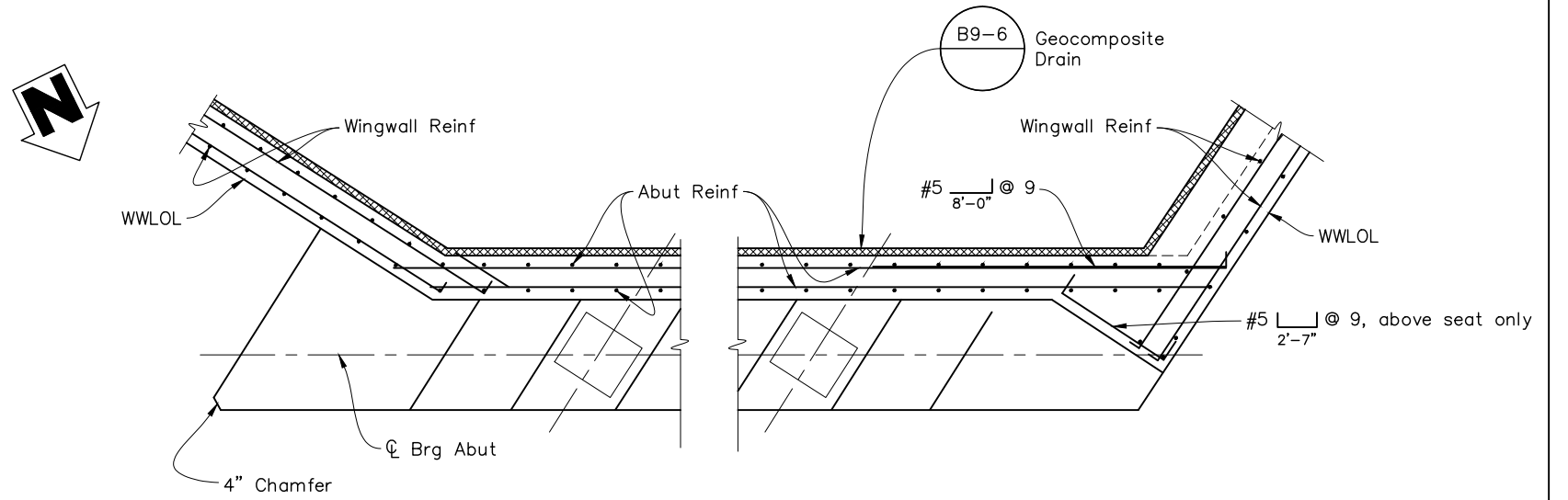
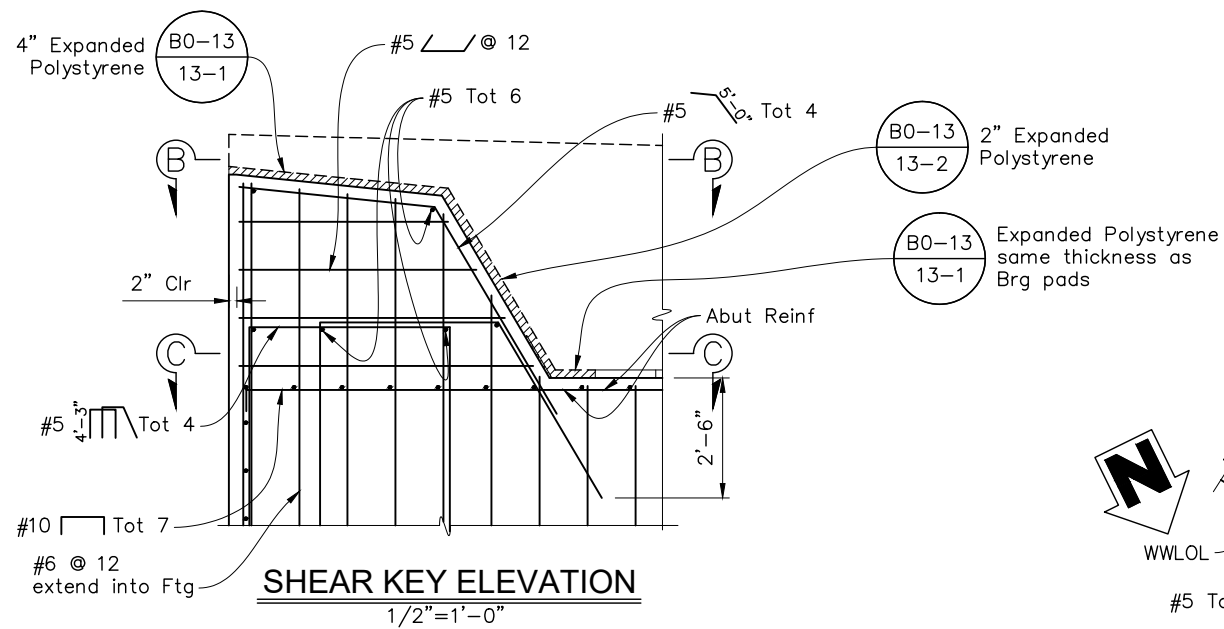
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"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



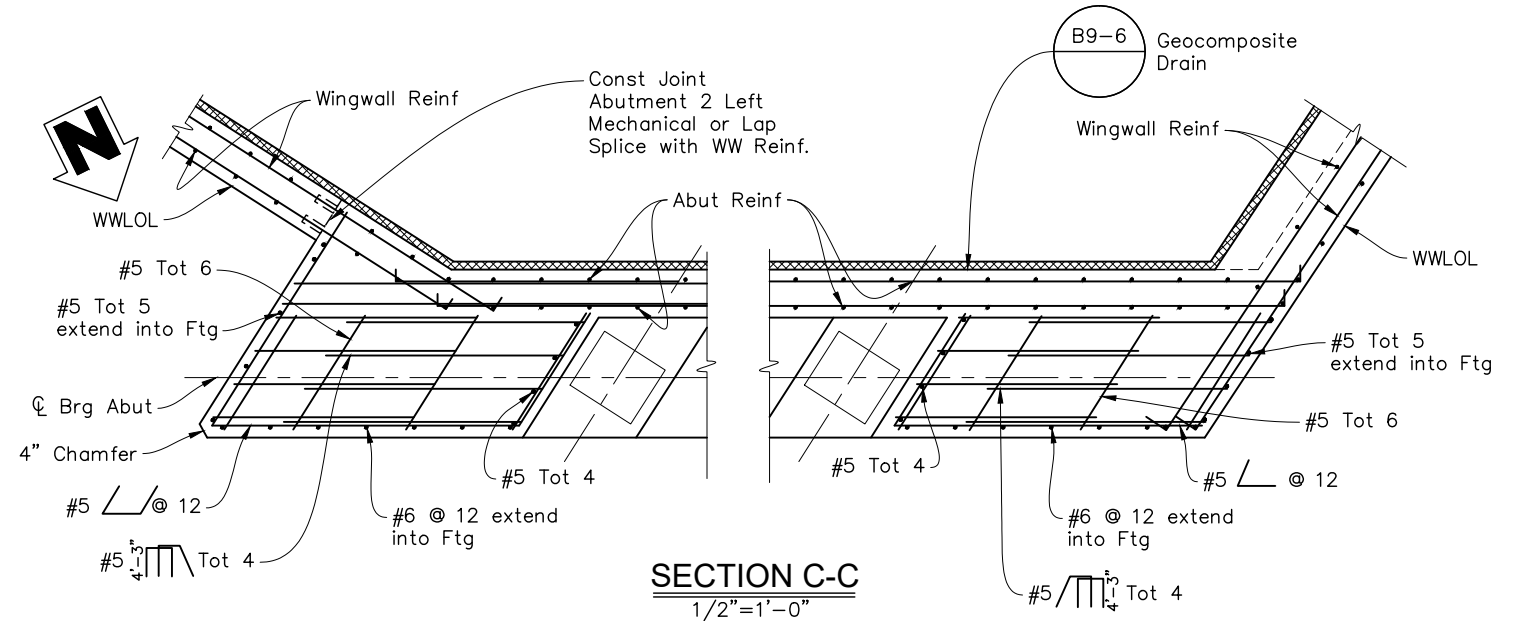
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 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

ABUTMENT 2 LAYOUT	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	

ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	24
TOTAL SHEETS	32



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



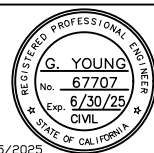
SECTION C-C
1/2" = 1'-0"

Notes:

1. Abutment 1 shown, Abutment 2 similar.

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No. 67707
Exp. 6/30/25
PLANS APPROVAL DATE
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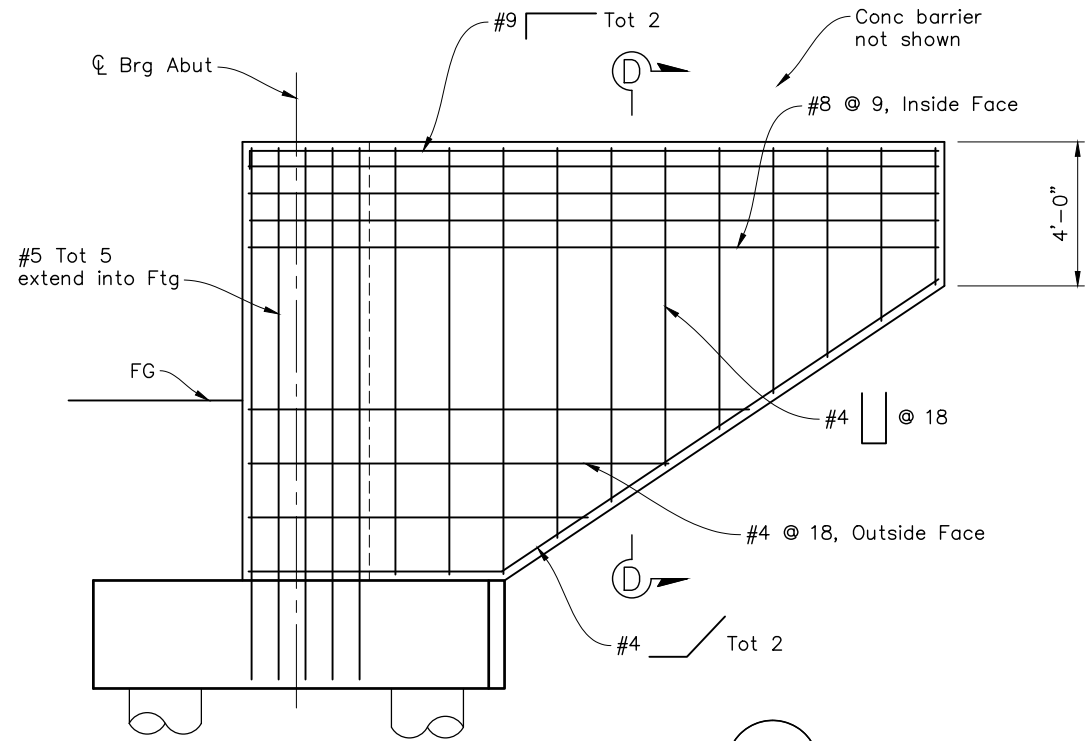
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ABUTMENT DETAILS NO. 1
FREESTONE FLAT ROAD
BRIDGE REPLACEMENT

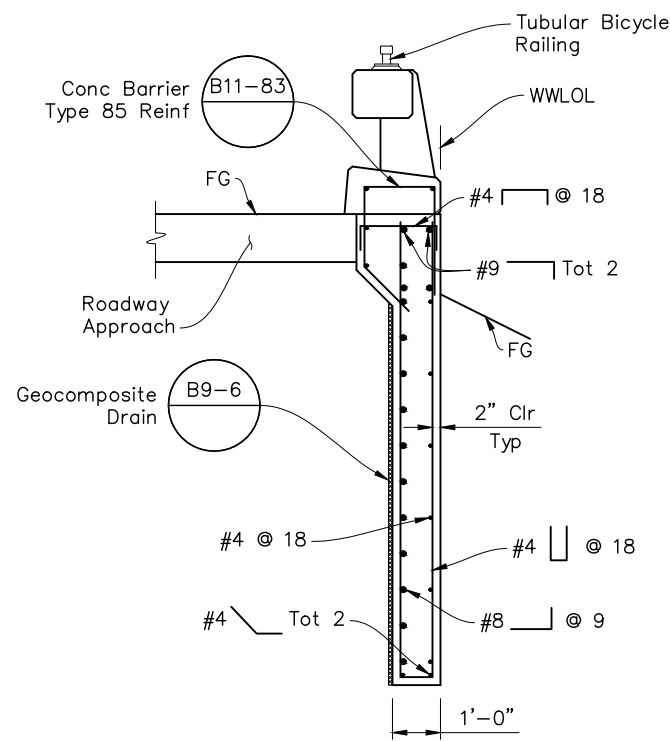
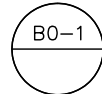
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	25
TOTAL SHEETS	32



Note:
Abutment 1 left wingwall
Abutment 2 right wingwall.

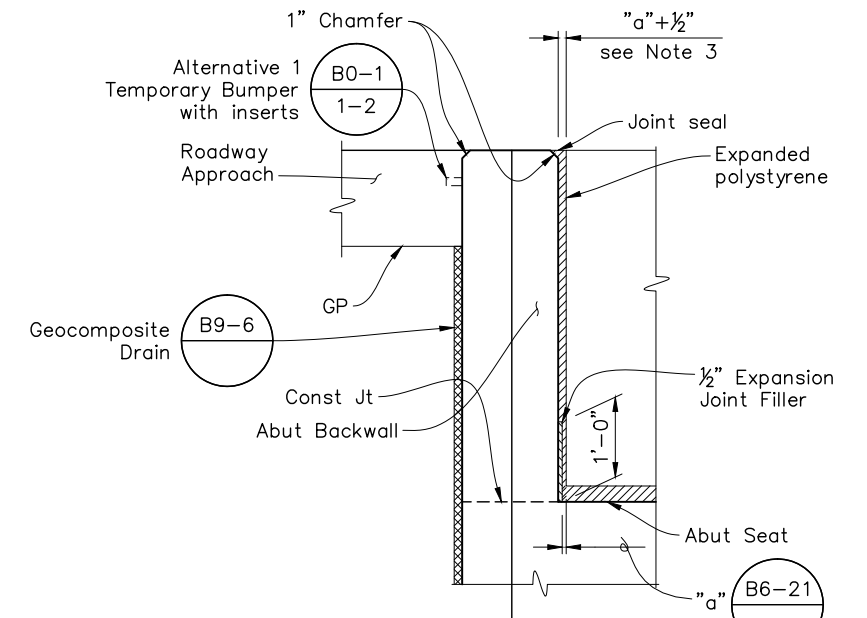
WINGWALL ELEVATION

3/8"=1'-0"



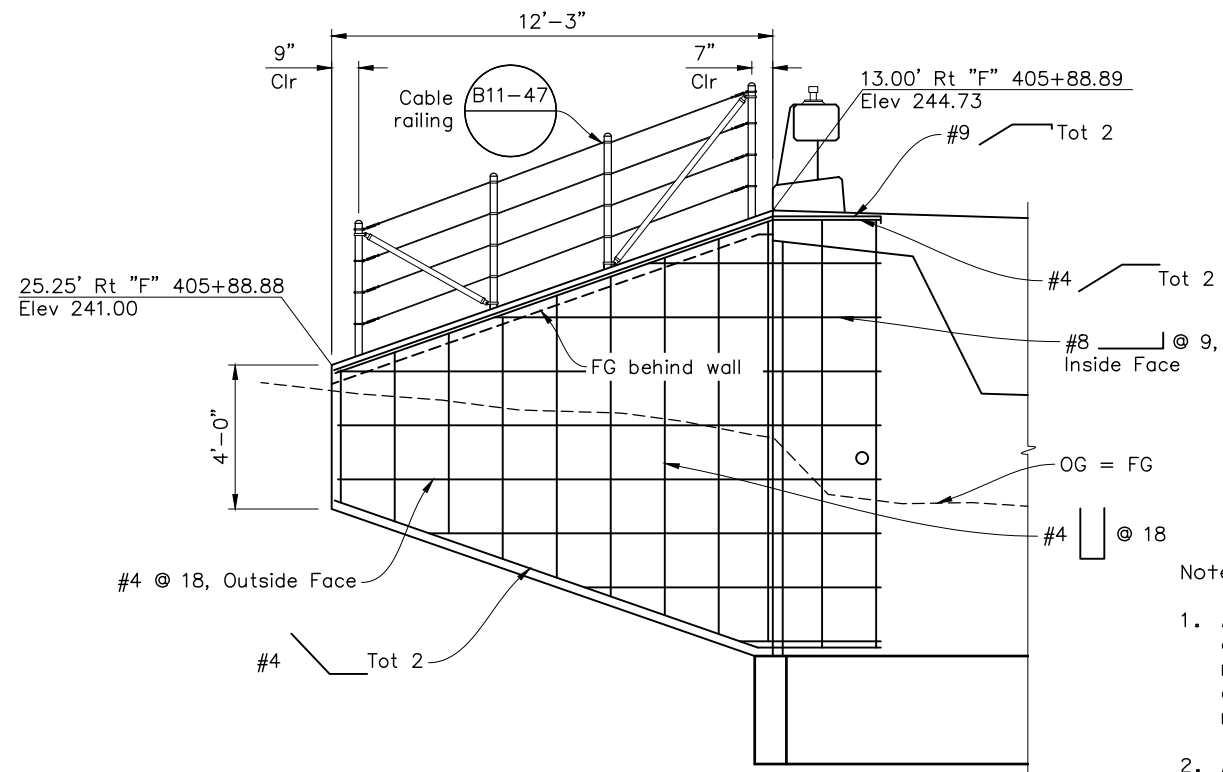
SECTION D-D

1/2"=1'-0"



DETAIL 1

No Scale

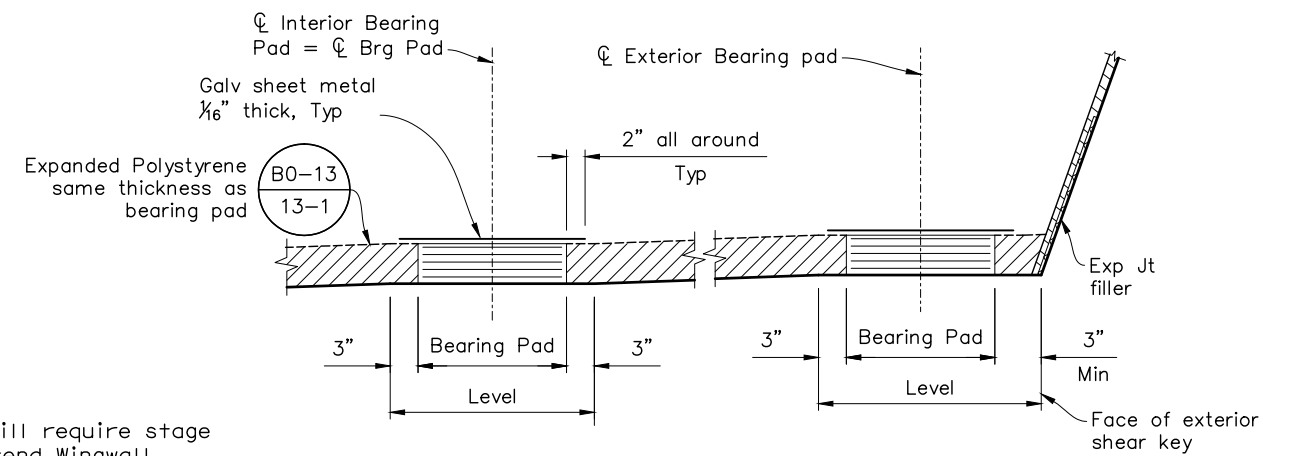


WINGWALL ELEVATION - ABUTMENT 1 RIGHT

3/8"=1'-0"

Notes:

1. Abut 2 Wingwall will require stage construction. Extend Wingwall reinforcement with mechanical splice couplers. Shoring will be required to maintain traffic.
2. Abut 2 Left Wingwall reinforcement similar.
3. For "a", see "Joint Seals (Maximum Movement Ratings = 2")" Std. Plan.



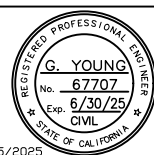
Note: Coat top of Bearing Pad with silicon grease prior to placing sheet metal.

BEARING PAD DETAIL

No Scale

DESIGN BY	S. SALVADOR
DRAWING BY	P. KENNEY
CHECKED BY	J. WILSON

Dreg Young
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
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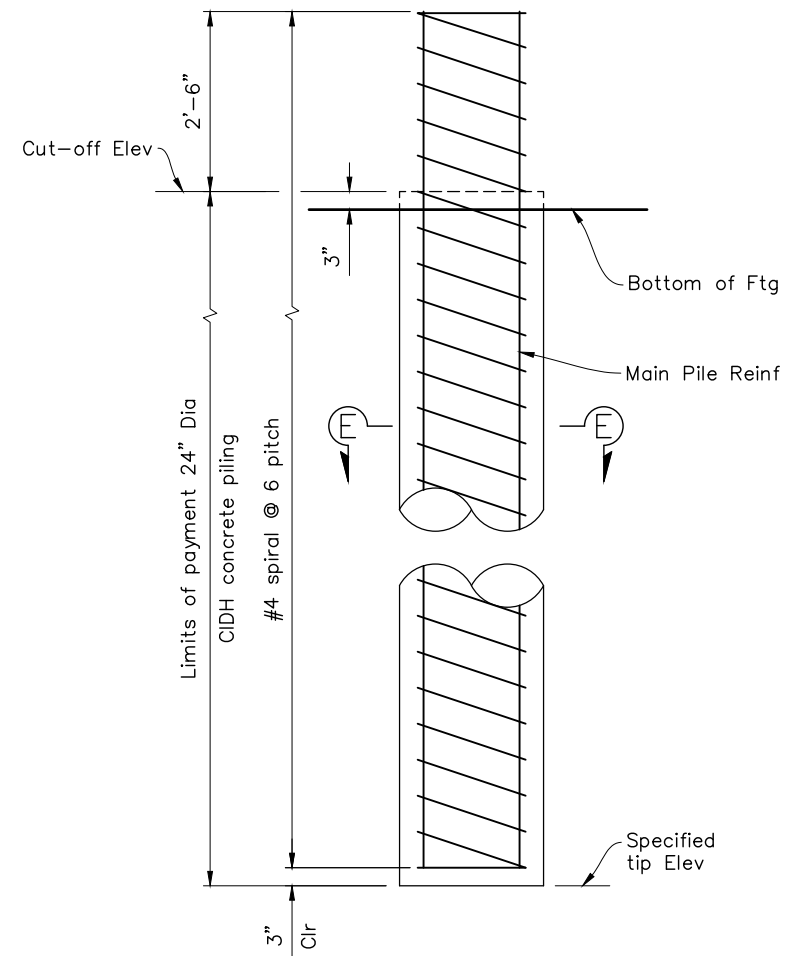
CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



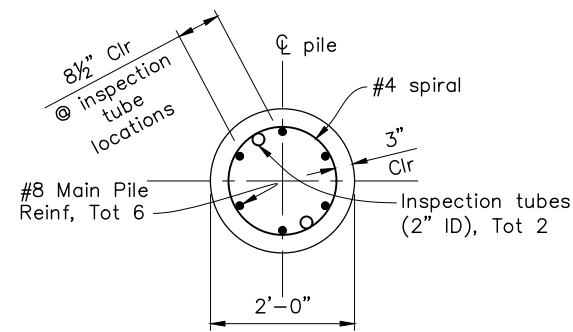
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JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

ABUTMENT DETAILS NO. 2
FREESTONE FLAT ROAD
BRIDGE REPLACEMENT

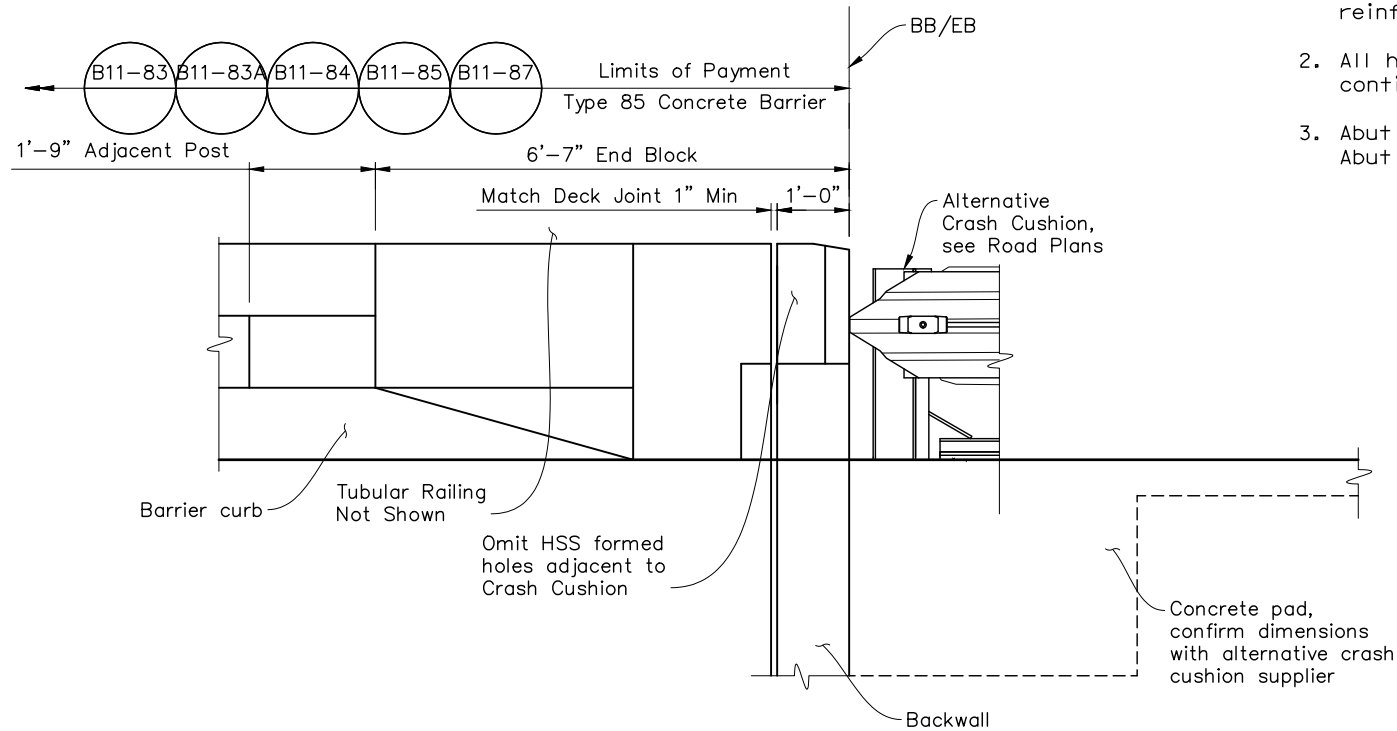
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BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	26
TOTAL SHEETS	32



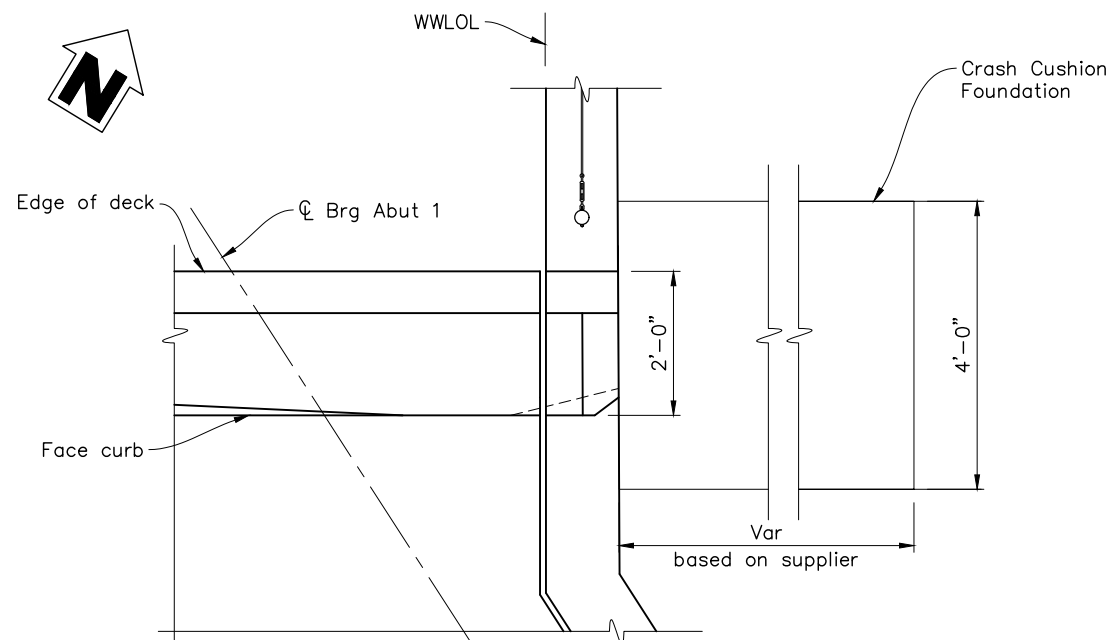
24" CIDH CONCRETE PILE
3/4"=1'-0"



SECTION E-E
Scale



ALTERNATIVE CRASH CUSHION CONNECTION
3/4"=1'-0"



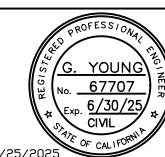
ALTERNATIVE CRASH CUSHION CONNECTION - PLAN
3/4"=1'-0"

Notes:

1. No splices allowed in the main pile reinforcement.
2. All hoops to be ultimate butt splice continuous.
3. Abut 2 Alternative Crash Cushion shown, Abut 1 similar

DESIGN BY	S. SALVADOR
DRAWING BY	P. KENNEY
CHECKED BY	J. WILSON

Dreg Young
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
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S22-200\CAD\BRIDGE\S22200A-F-A01DT3.DWG 4/25/2025



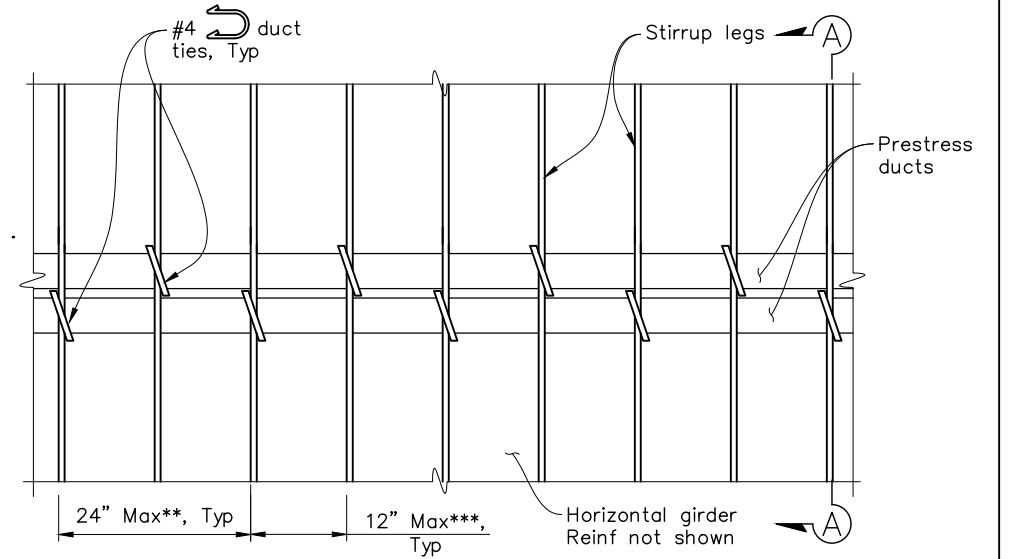
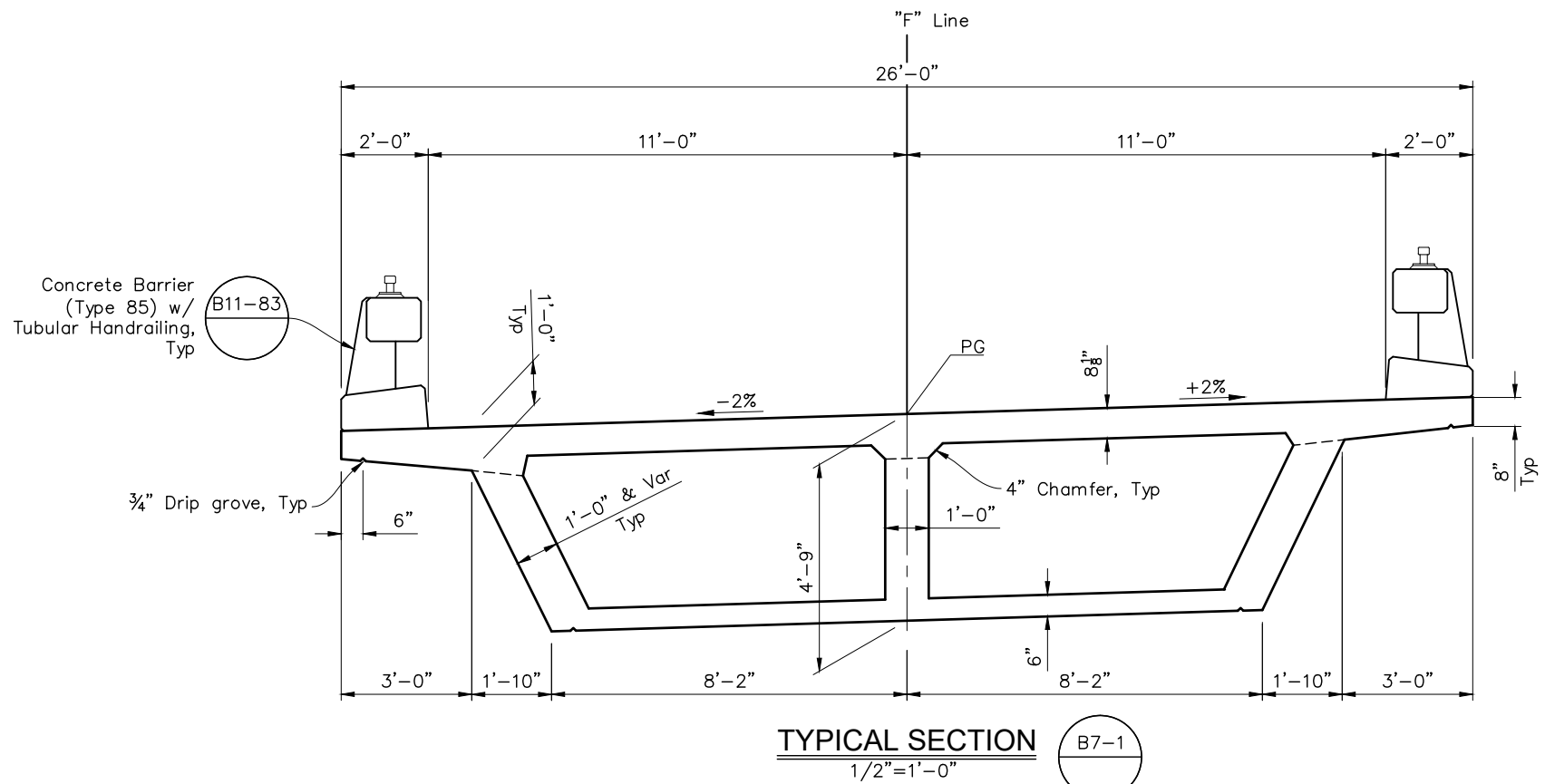
CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



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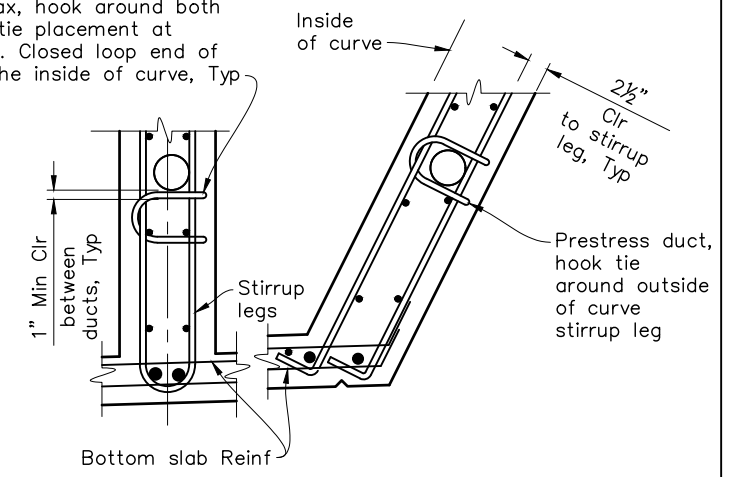
ABUTMENT DETAILS NO. 3	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	

ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	27
TOTAL SHEETS	32



**Duct tie spacing may be increased to 36" where stirrup spacing is at 18"
 ***Offset to adjacent tie may be increased to 18" where stirrup spacing is at 18"

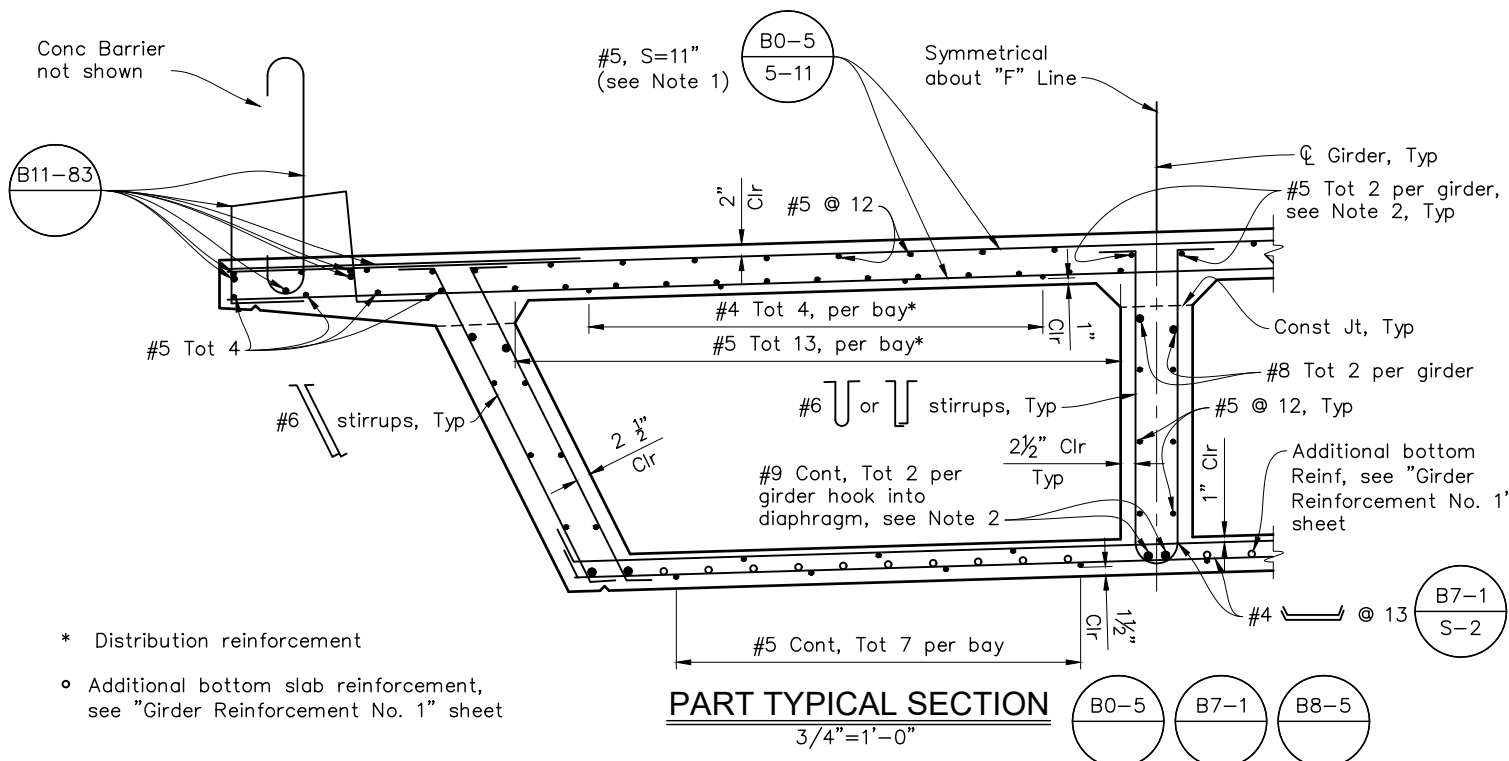
#4 duct ties @ 24" Max, hook around both stirrup legs. alternate duct tie placement at adjacent ducts @ 12" Max***. Closed loop end of duct ties to be placed on the inside of curve, Typ



**Duct tie spacing may be increased to 36" where stirrup spacing is at 18"
 ***Offset to adjacent tie may be increased to 18" where stirrup spacing is at 18"

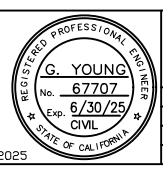
Notes:

1. Place transverse top and bottom slab reinforcement perpendicular to and spaced along "F" Line.
2. No "Lap Splices" allowed. Service splices only.
3. Where ducts change horizontal direction, such as at girder flares, Standard Detail B8-5 supercedes "Detail A".
4. "Detail A" reinforcement for the anticipated duct size. Girder stem width may need to be increased beyond the typical 12" width.

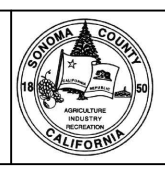


- * Distribution reinforcement
- o Additional bottom slab reinforcement, see "Girder Reinforcement No. 1" sheet

DESIGN BY	S. SALVADOR	<i>Dreg Young</i>
		REGISTERED CIVIL ENGINEER
DRAWING BY	P. KENNEY	
CHECKED BY	J. WILSON	
PLANS APPROVAL DATE		
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S22-200\CAD\BRIDGE\S22200A-K-TSD1.DWG 4/25/2025		

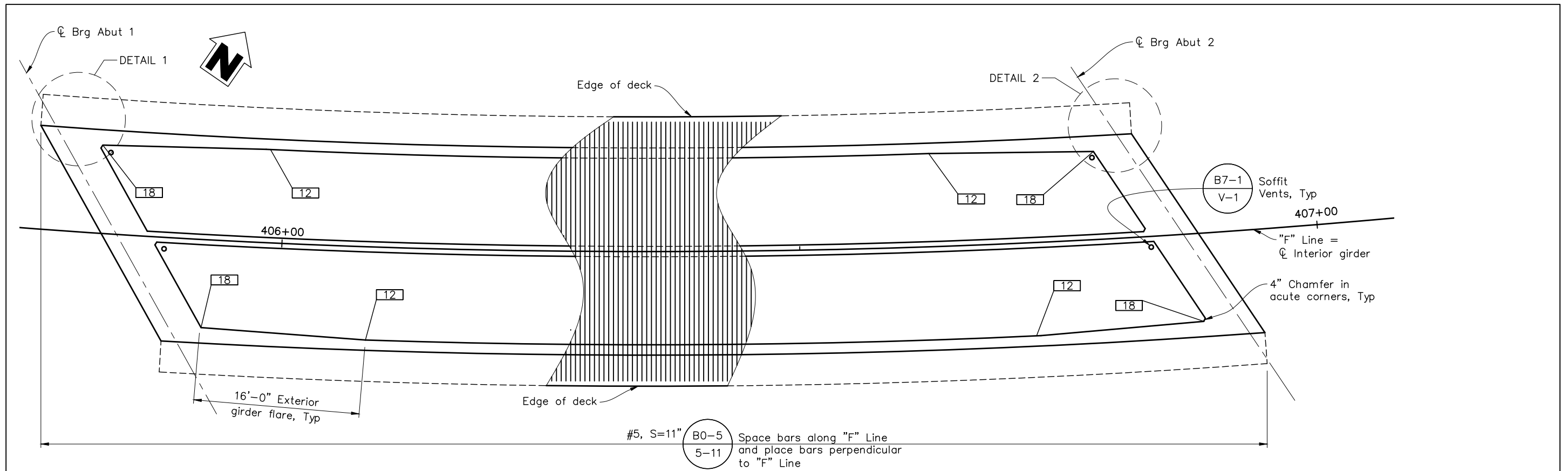


CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED



SONOMA COUNTY
PUBLIC
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 TRANSPORTATION & PUBLIC WORKS DIVISION
 JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

TYPICAL SECTION		ROAD NUMBER	60014
		BUDGET NUMBER	C11004
FREESTONE FLAT ROAD BRIDGE REPLACEMENT		FISCAL YEAR	2024-25
		SHEET NUMBER	28
		TOTAL SHEETS	32



PLAN
1"=5'

LEGEND:
 Indicates girder stem width in inches

- Notes:
- For additional top and bottom slab reinforcement, see "Typical Section" sheet and "Girder Reinforcement Sheet No. 1" sheet.
 - For Detail 1 and Detail 2, see "Girder Reinforcement No. 2" sheet.

PRESTRESSING NOTES

270 KSI Low Relaxation Strand:
 $P_{jack} = 6,070$ kips
 Anchor set = $\frac{3}{8}$ in
 Total Number of Girders = 3

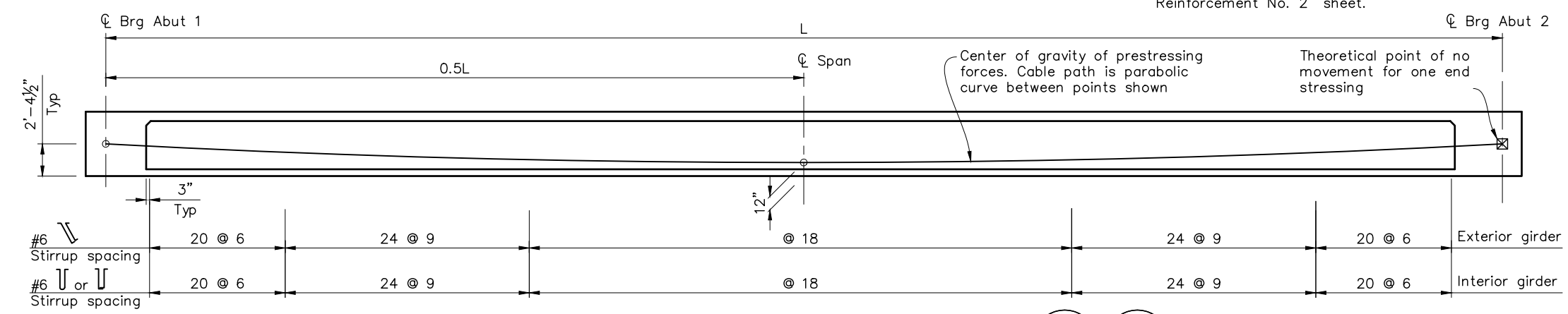
Final distribution of prestress force (P_{jack}) between girders shall not exceed the ratio of 10:9.
 Concrete: $f'_c = 4$ ksi @ 28 days
 $f'_{ci} = 3.5$ ksi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at

$\boxtimes = 0.954$ times jacking stress.

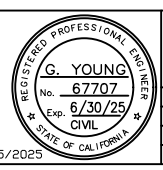
$\mu = 0.0002$ 1/ft $K = 0.15$ 1/rad

One end stressing shall be performed from Abutment 1 end.

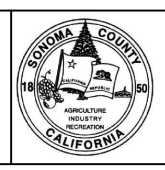


LONGITUDINAL SECTION B7-1 B8-5
1"=5'

DESIGN BY	S. SALVADOR	<i>Dreg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	P. KENNEY	
CHECKED BY	J. WILSON	PLANS APPROVAL DATE



CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED

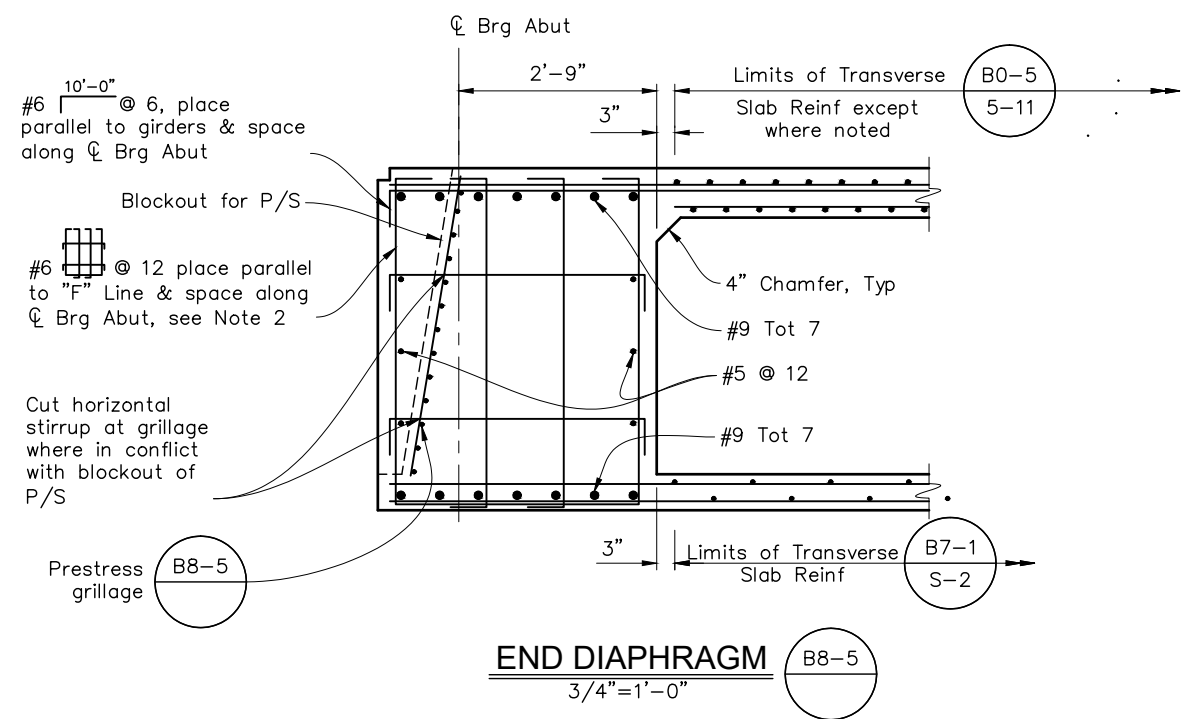
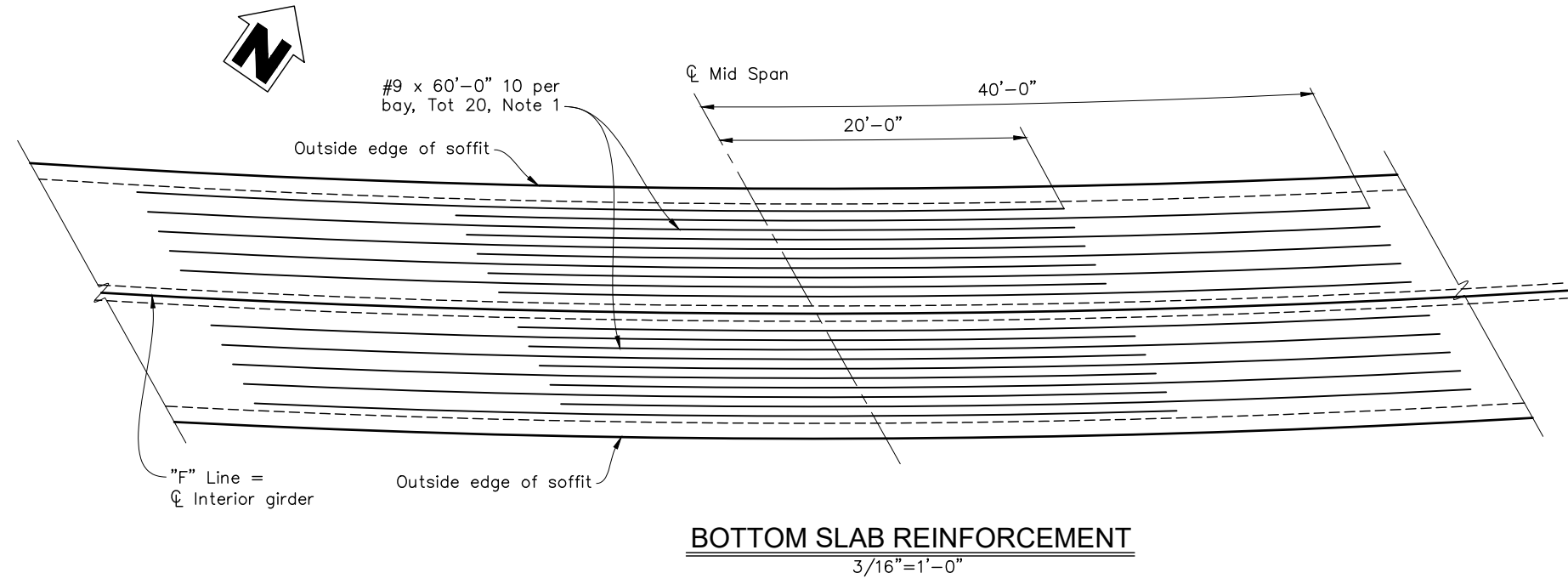


SONOMA COUNTY PUBLIC INFRASTRUCTURE
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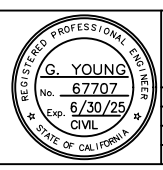
GIRDER LAYOUT	
FREESTONE FLAT ROAD BRIDGE REPLACEMENT	
ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	29
TOTAL SHEETS	32

Notes:

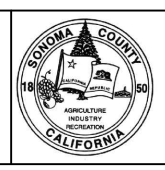
1. No "Lap" splices allowed. "Service" splices only.
2. Diaphragm stirrup hooks must run along same plane as longitudinal deck Reinf.
3. Top transverse deck reinforcement not shown, see "Girder Layout" sheet.



DESIGN BY	S. SALVADOR	<i>Dreg Young</i> REGISTERED CIVIL ENGINEER
DRAWING BY	P. KENNEY	
CHECKED BY	J. WILSON	PLANS APPROVAL DATE S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD S22-200\CAD\BRIDGE\S22200A-D-G1R_RF01.DWG 4/25/2025

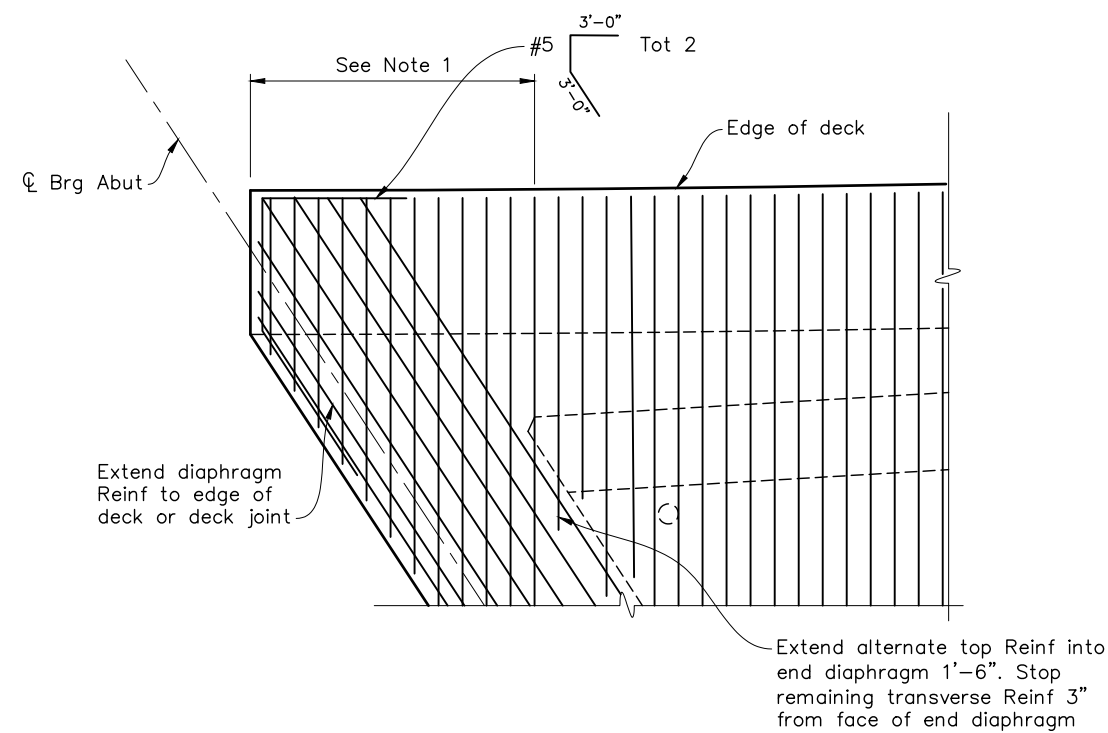


CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED

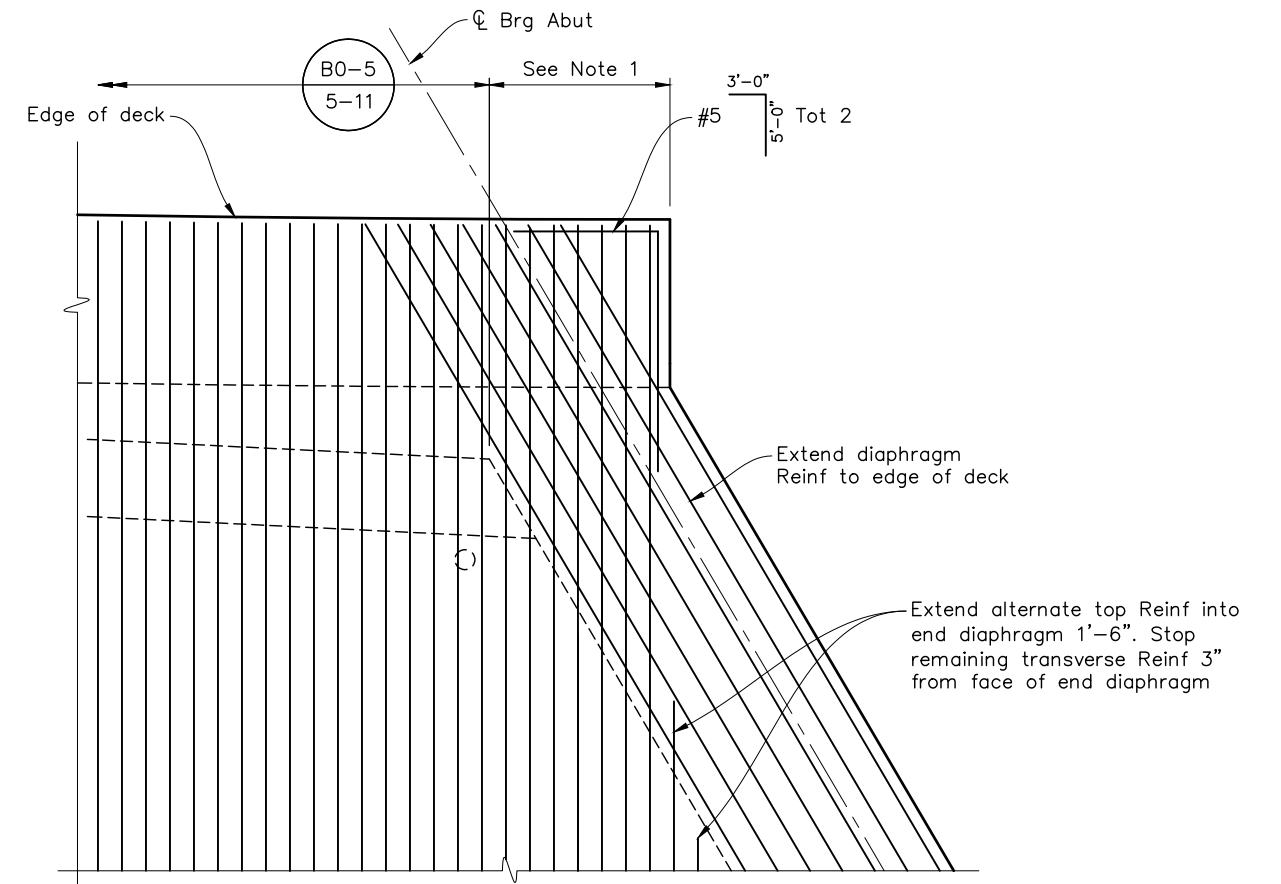


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JOHANNES J. HOEVERTSZ, P.E., DIRECTOR

GIRDER REINFORCEMENT NO. 1		ROAD NUMBER	60014
FREESTONE FLAT ROAD BRIDGE REPLACEMENT		BUDGET NUMBER	C11004
		FISCAL YEAR	2024-25
		SHEET NUMBER	30
		TOTAL SHEETS	32



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

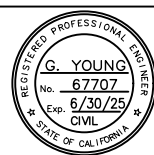


Notes:

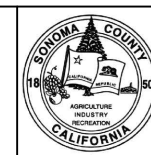
1. Extend all transverse deck reinforcement through end diaphragm to the edge of deck at deck corners.

DESIGN BY S. SALVADOR
DRAWING BY P. KENNEY
CHECKED BY J. WILSON

Dreg Young
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
S:\CLIENT\SONOMA COUNTY\FREESTONE FLAT ROAD
S22-200\CAD\BRIDGE\S22200A-D-G1R_RF02.DWG
4/25/2025



CONSTRUCTION COMPLETED:			
"AS BUILT" INFORMATION TO BE COMPLETED AFTER CONSTRUCTION			
DATE	DESCRIPTION	BY	APPROVED

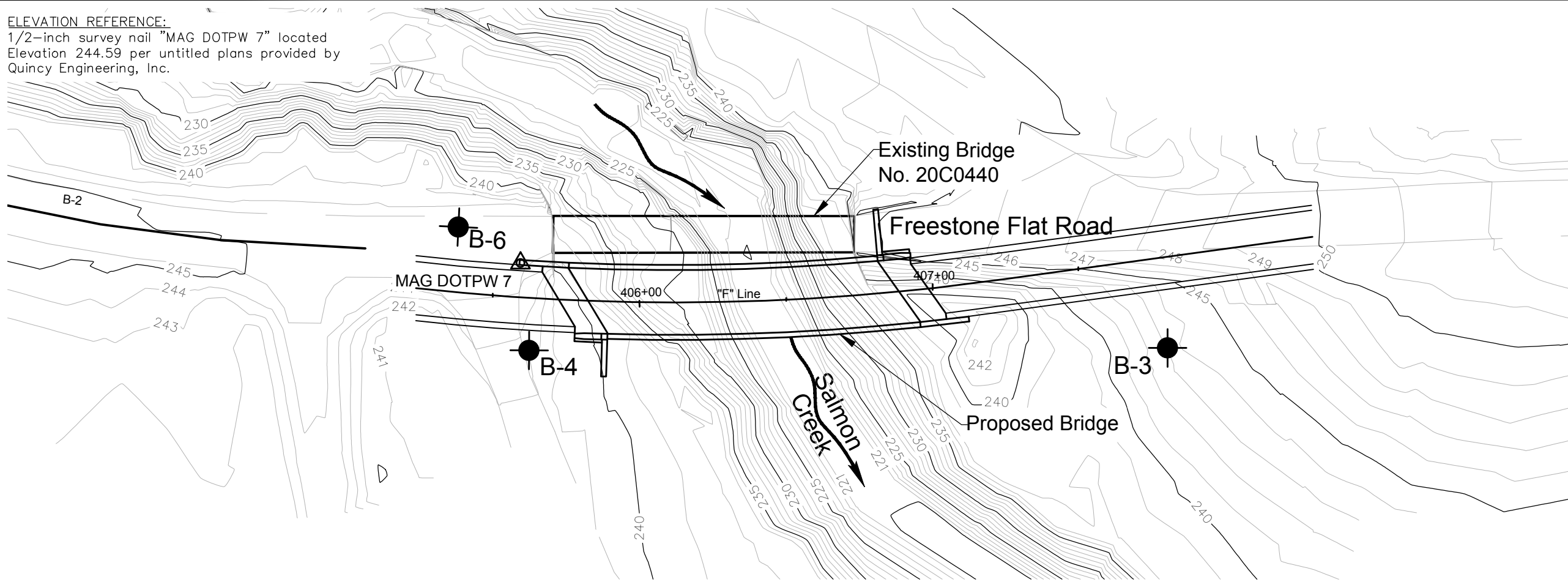


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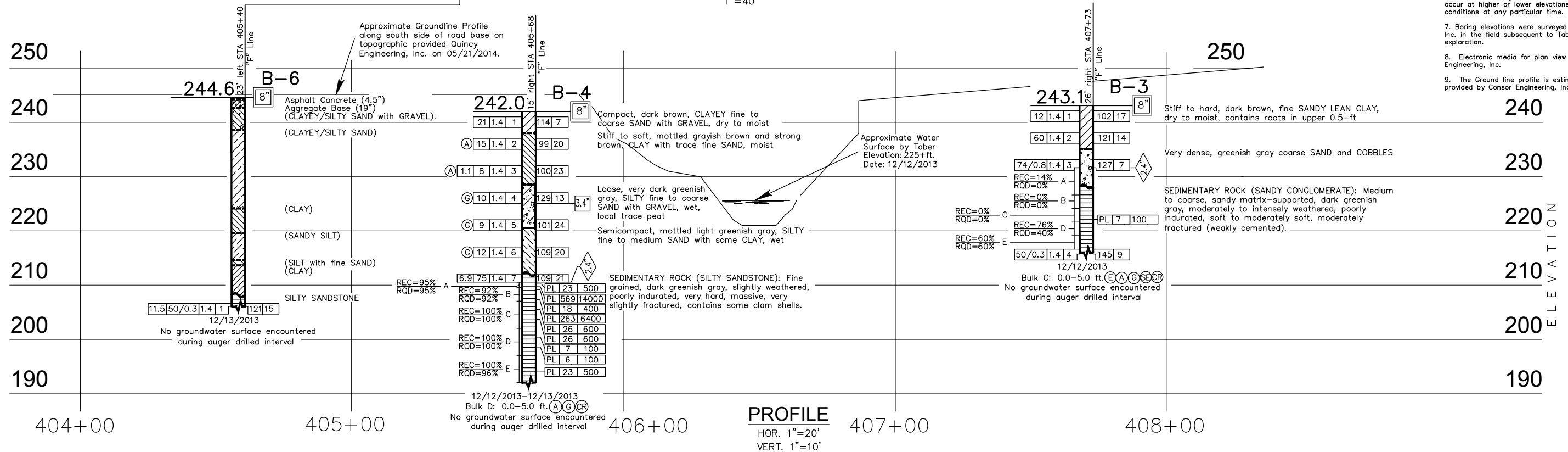
GIRDER REINFORCEMENT NO. 2
FREESTONE FLAT ROAD
BRIDGE REPLACEMENT

ROAD NUMBER	60014
BUDGET NUMBER	C11004
FISCAL YEAR	2024-25
SHEET NUMBER	31
TOTAL SHEETS	32

ELEVATION REFERENCE:
 1/2-inch survey nail "MAG DOTPW 7" located
 Elevation 244.59 per untitled plans provided by
 Quincy Engineering, Inc.



PLAN
 1"=40'



DIST	COUNTY	ROUTE	TOTAL PROJECT	SHEET NO	TOTAL SHEETS
4	SON			32	32

REGISTERED CIVIL ENGINEER
 DATE: 06/07/2023
 WILLIAM E. NICHOLS
 No. 82103
 CIVIL ENGINEER
 STATE OF CALIFORNIA

PLANS APPROVAL DATE

Sonoma County or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

Crawford & Associates, Inc.
 4701 Freepoint Blvd
 Sacramento, CA 95822 (916) 455-4225
 Project Number: 22-807.1

Consor Engineering, Inc.
 11017 Cobblersrock Drive, Suite 100
 Rancho Cordova, CA 95670 (916) 368-9181

- Notes:
- Field classification of soils was in accordance with ASTM D 2488-09a "Description and Identification of Soils (Visual-Manual Procedure)".
 - Soil legends are provided in 2018 Caltrans Standard Plans A10F, A20G, and A10H.
 - Standard Penetration tests (SPTs) were performed in accordance with ASTM D 1586-11 using hammer operated with an automated drop system. Drill rods were 1 5/8-inch diameter "A"-rods; sampler was driven with brass and steel liners. Hammer energy transfer ratio (ETR) measurements indicate an ETR = 64.5% as of 01/03/2013.
 - The length of each sampled interval is shown graphically on the boring log. Whole number blow counts ("N") represent the "standard penetration resistance" interval in accordance with ASTM D1586-11. Where less than 1 foot of penetration is achieved, the blow count shown is for that fraction of the "standard penetration resistance" interval actually penetrated. Where indicated by an asterisk (*) the number of blows shown is for only that fraction of the initial 0.5 ft "seating drive" interval penetration. Material characteristics shown in () where estimated.
 - Rock classification according to Bureau of Reclamation, U.S. Department of the Interior (USBR), "Engineering Geology Field Manual", and "Manual of Field Geology", (Compton, Robert R.). Rock Quality Designation (RQD), Weathering, Rock Hardness/Strength, Bedding, and Fracture Density, as shown on this sheet, were used to describe all rock core from boring B-2, B-3 and B-4. Descriptors were determined in the field. REC = Core Recovered (percent). RQD = Rock Quality Designation (percent).
 - Groundwater surface elevations in the borings indicated on the "Log of Test Boring" sheet reflect the fluid level in the borings on the specified date. Groundwater surface elevations are subject to seasonal fluctuations and may occur at higher or lower elevations depending on the conditions at any particular time.
 - Boring elevations were surveyed by Quincy Engineering, Inc. in the field subsequent to Taber Consultants field exploration.
 - Electronic media for plan view provided by Consor Engineering, Inc.
 - The Ground line profile is estimated from topography provided by Consor Engineering, Inc.

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		SONOMA COUNTY PUBLIC WORKS DEPARTMENT		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN		BRIDGE NO.		FREESTONE FLAT ROAD BRIDGE OVER SALMON CREEK	
FUNCTIONAL SUPERVISOR		DRAWN BY: Maria Ayala		FIELD INVESTIGATION BY: Bret D. McIntyre		DESIGN BRANCH		POST MILE		LOG OF TEST BORINGS	
NAME: Eric Nichols		CHECKED BY: Keiko Lewis								REVISION DATES	
						CU XXXXX EA XXXXXX		DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 32 OF 32	