



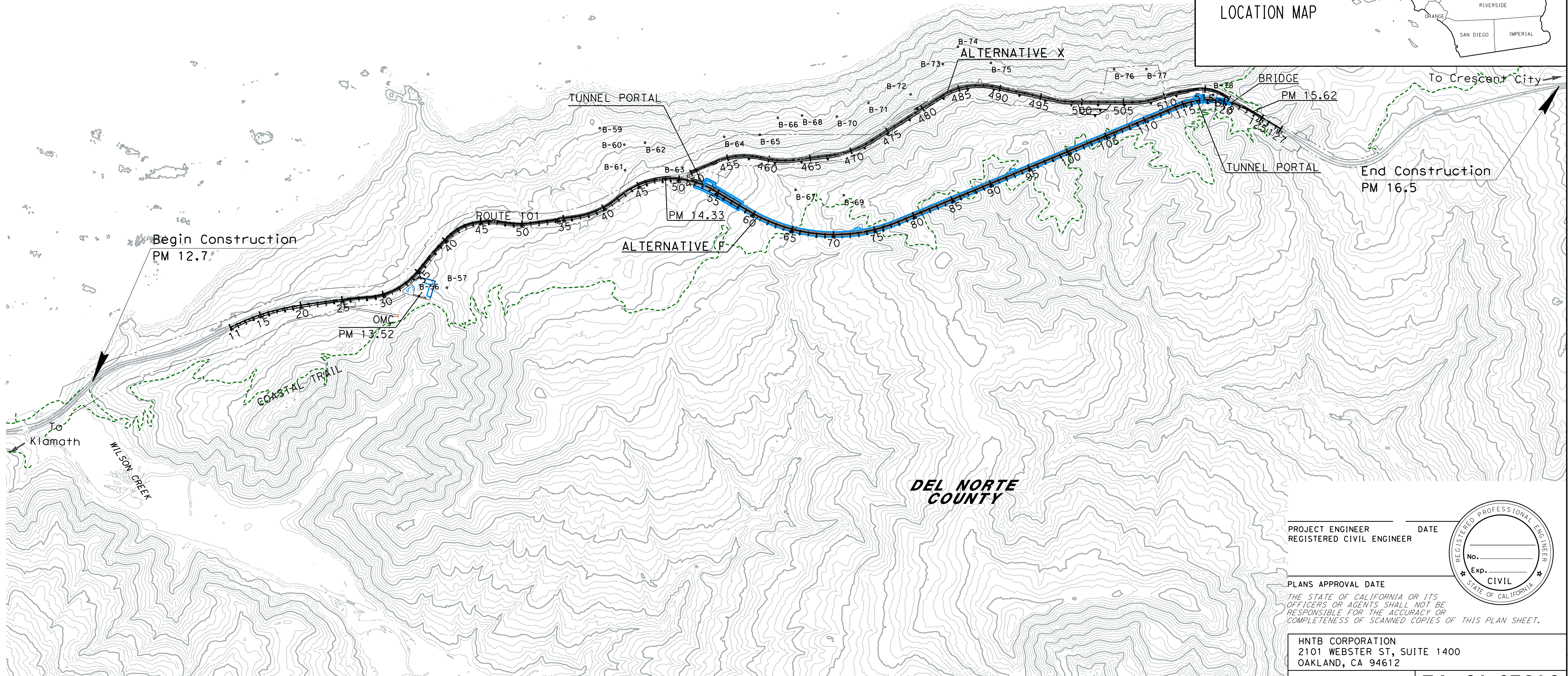
## **Appendix A. Project Location Map**



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY  
IN DEL NORTE COUNTY  
NEAR CRESCENT CITY  
FROM WILSON CREEK BRIDGE TO  
DAMNATION CREEK TRAILHEAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018

GEOMETRIC APPROVAL DRAWINGS



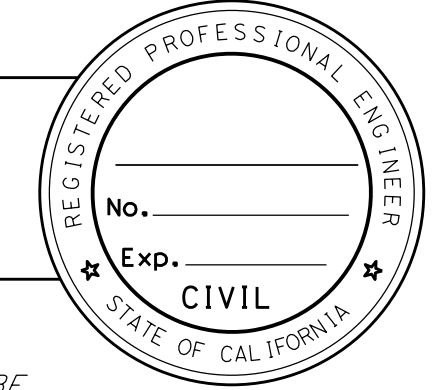
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES)  
OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

NO SCALE

PROJECT ENGINEER  
REGISTERED CIVIL ENGINEER

DATE

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



HNTB CORPORATION  
2101 WEBSTER ST, SUITE 1400  
OAKLAND, CA 94612

CONTRACT No.	<b>EA 01-0F280</b>
PROJECT ID	<b>0115000099</b>















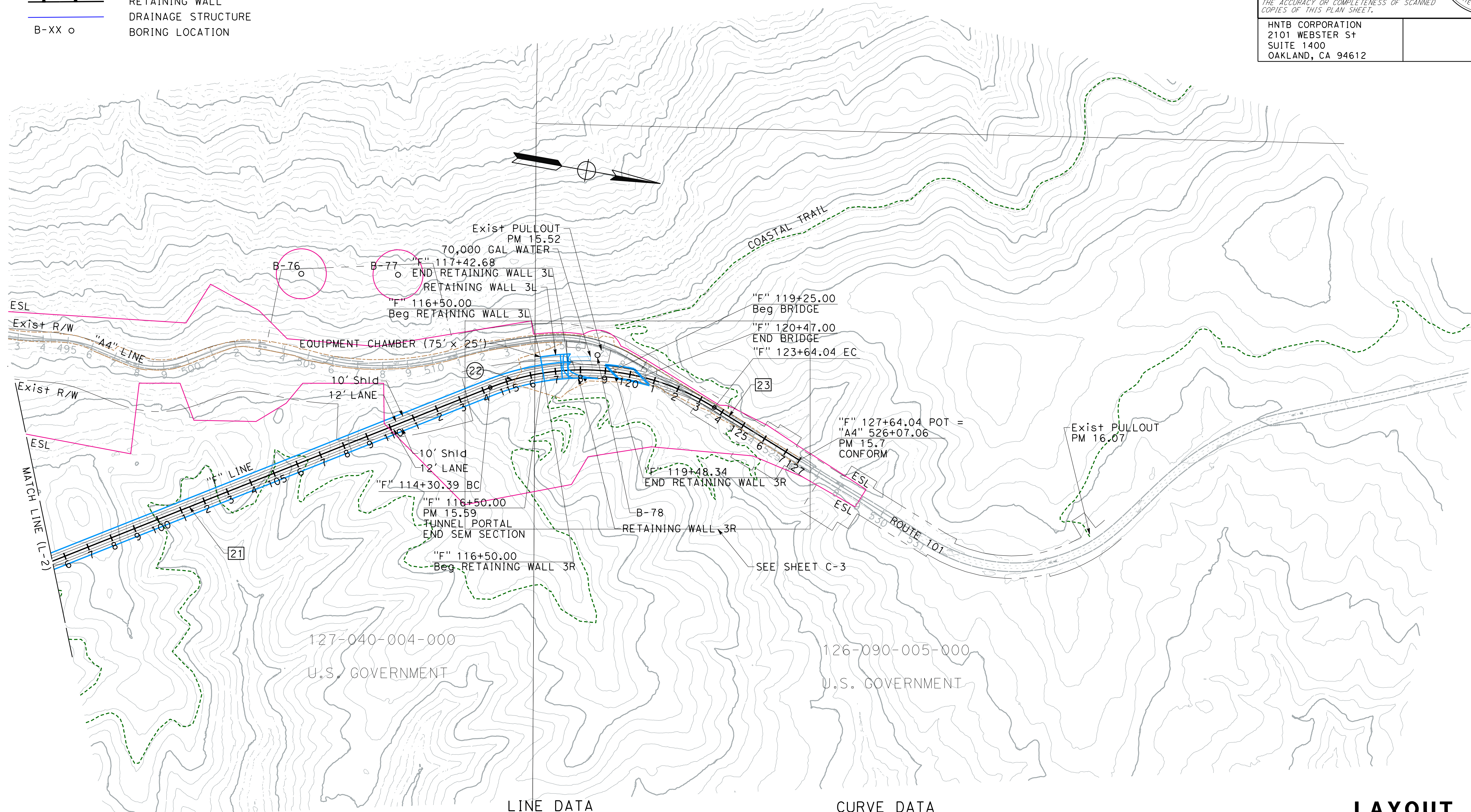




Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101	12.7/16.5		
<div style="display: flex; justify-content: space-between;"> <div>REGISTERED CIVIL ENGINEER</div> <div>DATE</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div>PLANS APPROVAL DATE</div> <div style="text-align: center;">  </div> </div> <div style="margin-top: 20px;"> <p><i>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</i></p> </div>					
HNTB CORPORATION 2101 WEBSTER ST SUITE 1400 OAKLAND, CA 94612					

LEGEND:

- |   |                                  |
|---|----------------------------------|
|  | CUT/FILL LINE                    |
|  | COASTAL TRAIL                    |
|  | ENVIRONMENTAL STUDY LIMITS (ESL) |
|  | Exist R/W                        |
|  | STRUCTURE                        |
|  | RETAINING WALL                   |
|  | DRAINAGE STRUCTURE               |
| B-XX ○  | BORING LOCATION                  |



LINE DATA		
No. #	LENGTH	DIRECTION
21	3636.31'	N 21° 39' 03" W
23	400.00'	N 31° 50' 37" E

CURVE DATA				
No. (✱)	R	Δ	T	L
22	1000.00'	53°29'40"	503.98'	933.65'

**LAYOUT**  
**ALTERNATIVE F**  
SCALE: 1" = 200'  
**L-3**





## **Appendix B. Consultant-prepared Structures APS Checklist**



# Consultant Prepared Advance Planning Study (APS) Checklist

Sheet 1 of 2

Date: 2/2/2024	Consultant Firm (for structures): HNTB		Phone No: 212-594-9717
Designed by: Raymond Sandiford			Phone No: 212-594-9717
EA: 01-0F280	County: DN	Rte: 101	KP(PM) 12.0-15.5
Project Description: The Last Chance Grade Project proposes improvements to US Highway 101 located in southern Del Norte County between Wilson Creek and Crescent City.			
Bridge No(s): F-1	Bridge Name(s): F-Alignment tunnel OMC Building		
Total number of bridges in project: 1		APS Alternative Letter or Number (if more than one): 1	
Purpose of this APS: Initial APS Cost & Feasibility <input checked="" type="checkbox"/> Revised scope <input type="checkbox"/> Update cost <input type="checkbox"/>			

## Part A Items to collect and considerations prior to beginning the APS

All items listed in Part A are to be made available and submitted if requested by the Liaison Engineer.  
(Mark **N/A** if not applicable)

- ☒ Preliminary profile grade of proposed structure.
- ☒ Typical section of the proposed structure. (Including barrier type, sidewalks, cross slope %, etc.)
- ☒ Grades or spot elevations of roadway below the structure.
- N/A Typical section of roadway below the structure. (Including shoulders, gutters, embankment slope.)
- ☒ Site map: including horizontal alignment of new structure and the roadway below, topo, contours, etc.
- N/A Stage construction or detour plan for traffic on the structure.  
(number of lanes to remain open, Temp Railing, etc.)
- N/A Stage construction or detour plan for the roadway below the structure.  
(falsework openings for each stage and any restrictions.)
- N/A "As Built" plans for existing structures.
- N/A Future widening plans of upper and lower roadway (verify with Route Concept Report).
- ☒ Site aerial photograph (at the proposed structure).
- ☒ Environmental and/or permit requirements (areas of potential impact, construction windows, etc.)
- ☒ Overhead and underground utility plans
- N/A Any other information that you feel is necessary to complete the study. (Other concerns that may affect the APS: local agency requirements such as aesthetics, improvements in vicinity of structure, airspace usage, other obstructions, etc.)




# Consultant Prepared Advance Planning Study (APS) Checklist

Sheet 2 of 2

## Part B Considerations during the APS design and cost estimate preparation

1.	Has this project been discussed with:	the OSFP Liaison Engineer?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
		the Caltrans District Project Manager?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
		the roadway consultant?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
2.	Have the Caltrans Structures Maintenance records been reviewed?		Yes	<input checked="" type="checkbox"/>	No	<input checked="" type="checkbox"/>
	If the records recommend any work for the structure, is it included in the APS?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
3.	Are there special aesthetic considerations?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
4.	(Widenings and Modifications)					
	Has this project been reviewed for seismic retrofit requirements?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
	Are seismic retrofit requirements included in the APS?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
5.	Any special Railroad requirements?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
	Shoofly required?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
	Cost of shoofly included as a separate item in the project cost estimate?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
6.	Any special foundation requirements, including scour critical work, special excavation such as Type A, Type D, and/or hazardous or contaminated material?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
7.	Any special construction requirements, including limited site accessibility or seasonal work?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
8.	Other items to be included in the cost such as slope paving, approach slabs, and/or adjacent retaining walls?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
9.	Remove existing bridge?		Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
	Total Deck Area:					
10.	Any other unusual or special requirements?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
11.	Provide and attach a consultant prepared Design Memo to summarize and document any important assumptions, discussions, decisions, unusual items, local agency requirements such as aesthetics, improvements in vicinity of the structure, airspace usage, other obstructions, or any items noted above.					
	Summary attached?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>

Designer: (Printed Name)	Designer's Signature:	Date:
Raymond E. Sandiford		2/2/2024





## **Appendix C. Planning Cost Estimates**



GENERAL PLAN - ADVANCED PLANNING ESTIMATE

GENERAL PLAN ESTIMATE	X	ADVANCE PLANNING ESTIMATE
-----------------------	---	---------------------------

		IN EST:	11/22/2023
		OUT EST:	11/22/2023
BRIDGE NAME:	Alternative F - Tunnel	DISTRICT:	01
BRIDGE NUMBER:	n/a	CO:	DN
TYPE:	SEM, Single, Two-Lane Tunnel	RTE:	101
EA:	01-0F280	PM:	12.7/16.5
PROJECT ID:	01.1500.0099	DEPTH	n/a
ACCELERATED BRIDGE PROJECT:	NO	LENGTH (FT)	6,000' Tunnel & 500' Approach Struct.
DESIGN SECTION:	Consultant	WIDTH	66.25' (Average Ht)
# OF STRUCTURES IN PROJECT :	1	AREA (SF)	397,500
PRICES BY :	R. Sandiford	EST. NO.	
PRICES CHECKED BY :	J. Kovac	COST INDEX:	
QUANTITIES BY:	R. Sandiford	DATE:	11/22/2023
		DATE:	11/22/2023

CONTRACT ITEMS		TYPE	UNIT	QUANTITY	PRICE	AMOUNT
1	MOBILIZATION/DEMOBILIZATION	Tunnel	LS	1	\$ 10,000,000.00	\$ 10,000,000
2	SITE PREPARATION	Tunnel	LS	1	\$ 5,000,000.00	\$ 5,000,000
3	SOUTH APP. STRUCT. - RETAINING WALL 1	Tunnel	SF	4,500	\$ 350.00	\$ 1,575,000
4	SOUTH APP. STRUCT. - SECANT PILES WALL (INCL. 2L & 2R)	Tunnel	LF	45,486	\$ 1,000.00	\$ 45,486,000
5	SOUTH APP. STRUCT. - INTERIOR SLABS	Tunnel	CY	10,000	\$ 1,500.00	\$ 15,000,000
6	SOUTH APP. STRUCT. - FINISHED INTERIOR WALLS	Tunnel	CY	12,500	\$ 1,500.00	\$ 18,750,000
7	SOUTH APP. STRUCT. - EXCAVATION	Tunnel	CY	281,667	\$ 60.00	\$ 16,900,020
8	SOUTH APP. STRUCT. - COLLAPSIBLE COLUMNS (INCL. 2L & 2R)	Tunnel	LF	107,143	\$ 150.00	\$ 16,071,450
9	SOUTH PORTAL - ARCH TREATMENT	Tunnel	LS	1	\$ 10,000,000.00	\$ 10,000,000
10	TUNNEL - SEM MUCKING	Tunnel	CY	737,100	\$ 715.00	\$ 527,026,500
11	TUNNEL - INITIAL LINING - FLASHCRETE	Tunnel	SF	1,447,875	\$ 28.00	\$ 40,540,500
12	TUNNEL - ROCK BOLTS	Tunnel	EA	13,406	\$ 330.00	\$ 4,423,980
13	TUNNEL - WATERPROOFING	Tunnel	SF	965,250	\$ 17.00	\$ 16,409,250
14	TUNNEL - FINAL LINING	Tunnel	CY	71,500	\$ 1,375.00	\$ 98,312,500
15	TUNNEL - INTERIOR CONCRETE	Tunnel	CY	29,250	\$ 1,375.00	\$ 40,218,750
16	NORTH PORTAL - EXCAVATION - ROCK REMOVAL	Tunnel	CY	40,000	\$ 150.00	\$ 6,000,000
17	NORTH PORTAL - SLOPE STABILIZATION	Tunnel	SF	47,400	\$ 50.00	\$ 2,370,000
18	NORTH PORTAL - 100' CIP TUNNEL EXTENSION	Tunnel	CY	721	\$ 1,500.00	\$ 1,081,500
19	NORTH PORTAL - ARCH TREATMENT	Tunnel	LS	1	\$ 4,000,000.00	\$ 4,000,000
20	GROUND IMPROVEMENT/MITIGATION	Tunnel	LS	1	\$ 50,000,000.00	\$ 50,000,000
21	ELECTRICAL	Tunnel	LS	1	\$ 27,000,000.00	\$ 27,000,000
22	MECHANICAL	Tunnel	LS	1	\$ 20,000,000.00	\$ 20,000,000
23	OMC FACILITY	Tunnel	LS	1	\$ 77,000,000.00	\$ 77,000,000
24						\$ -
25						\$ -
		SUBTOTAL				\$ 1,053,165,450
		TIME RELATED OVERHEAD				\$ -
		MOBILIZATION			Included above	\$ -
		SUBTOTAL BRIDGE ITEMS				\$ 1,053,165,450
		CONTINGENCIES			30%	\$ 315,949,635
		BRIDGE TOTAL COST				\$ 1,369,115,085
		COST PER SQ. FT				\$ 3,444
		REMOVAL (CONTINGENCIES INCL.)				\$ -
		WORK BY UTILITY FORCES				\$ -
		GRAND TOTAL				\$ 1,369,115,085
		BUDGET ESTIMATE AS OF				\$ 1,369,116,000

Comments:

	TYPE	UNIT	QUANTITY
REMOVAL		SQFT	

ESCALATION TO MIDPOINT OF CONSTRUCTION			
	Year	Escalation	\$ 1,369,115,085
	2023-2024	1.049	\$ 1,436,201,724
	2024-2025	1.038	\$ 1,490,777,390
	2025-2026	1.038	\$ 1,547,426,930
	2026-2033	1.298	\$ 2,009,054,071





## **Appendix D. Construction Working Days**



**Alignment F-4 - APS Construction Schedule**

[illegible]





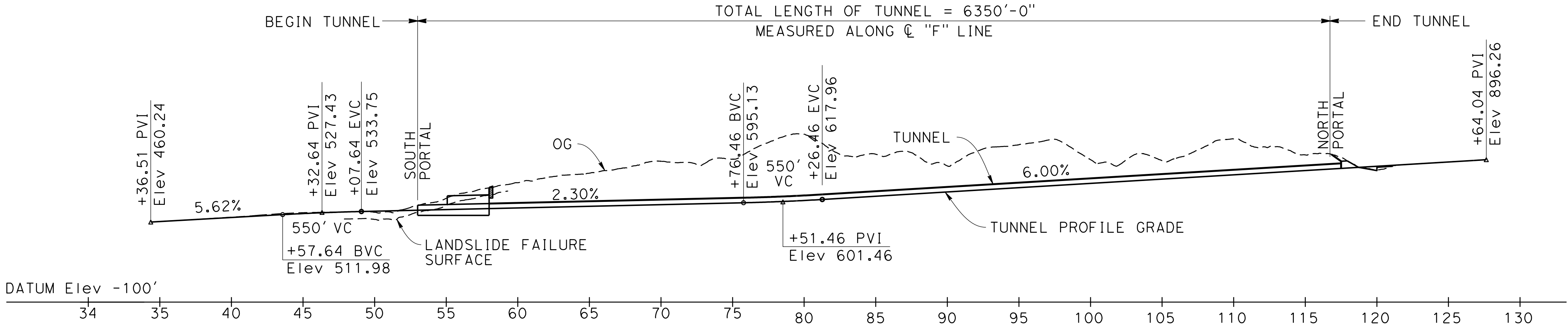
## **Appendix E. Structure APS Plan**



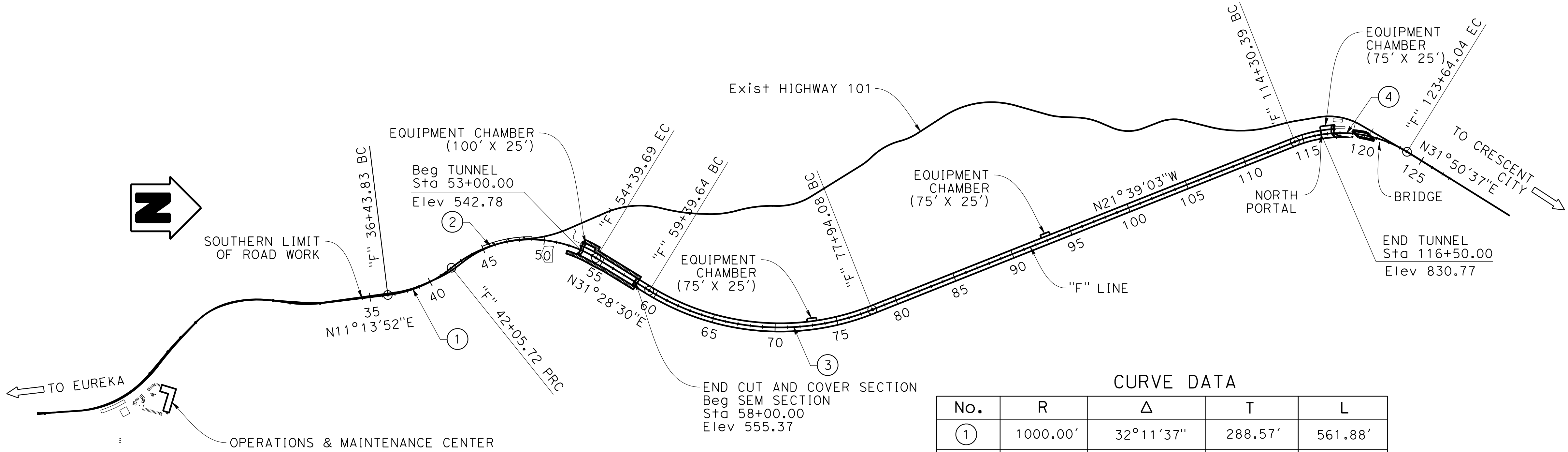
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
01	DN	101	12.7/16.5
HNTB CORPORATION 2101 WEBSTER ST., Ste 1400 OAKLAND, CA 94612			

NOTES:

1. Linings for sequentially mined tunnel - An initial shotcrete lining of approximately 6 inches thickness (or 12 inches thickness with combination of lattice girders if necessary), temporary rock bolts, a high density polyethylene (HDPE) waterproof lining, and then a final lining of 24 inches of cast-in-place reinforced concrete. Concrete compressive strength - 5,000 psi minimum.
2. Interior concrete will be either cast-in-place concrete or a combination of cast-in-place and precast concrete. Concrete compressive strength - 5,000 psi minimum.
3. Tunnel drains southward to the south portal to a sump pit.



DEVELOPED PROFILE  
SCALE: 1" = 500'



PLAN  
SCALE: 1" = 500'

CURVE DATA

No.	R	Δ	T	L
①	1000.00'	32°11'37"	288.57'	561.88'
②	1000.00'	70°42'06"	709.37'	1233.98'
③	2000.00'	53°07'32"	999.90'	1854.44'
④	1000.00'	53°29'40"	503.98'	933.65'

DATE OF ESTIMATE	11-22-2023
BRIDGE REMOVAL	= N/A
STRUCTURE HEIGHT	= 66'-3"
LENGTH	= 6,350'-0"
WIDTH	= 116'-7"
AREA	= 397,500 SF
COST/LF INCLUDING TRO, MOBILIZATION & 30% CONTINGENCY	= \$3,312
TOTAL COST	= \$1,316,456,813

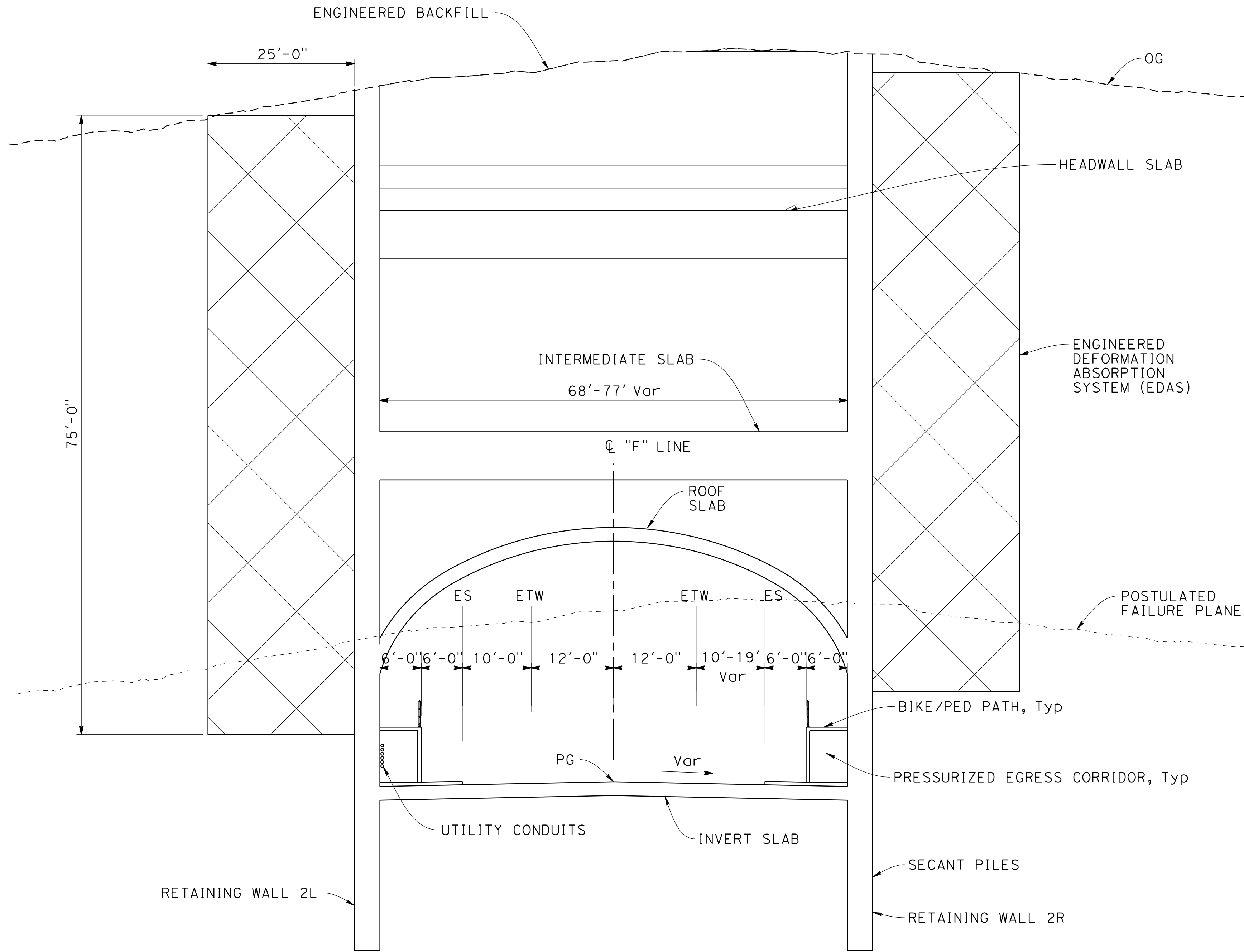
DESIGNED BY	R. SANDIFORD	DATE	11/22/23
DRAWN BY	B. WONG	DATE	11/22/23
CHECKED BY	M. AMINI	DATE	11/22/23
APPROVED	J. LITZINGER	DATE	11/22/23

J. LITZINGER PROJECT ENGINEER
----------------------------------

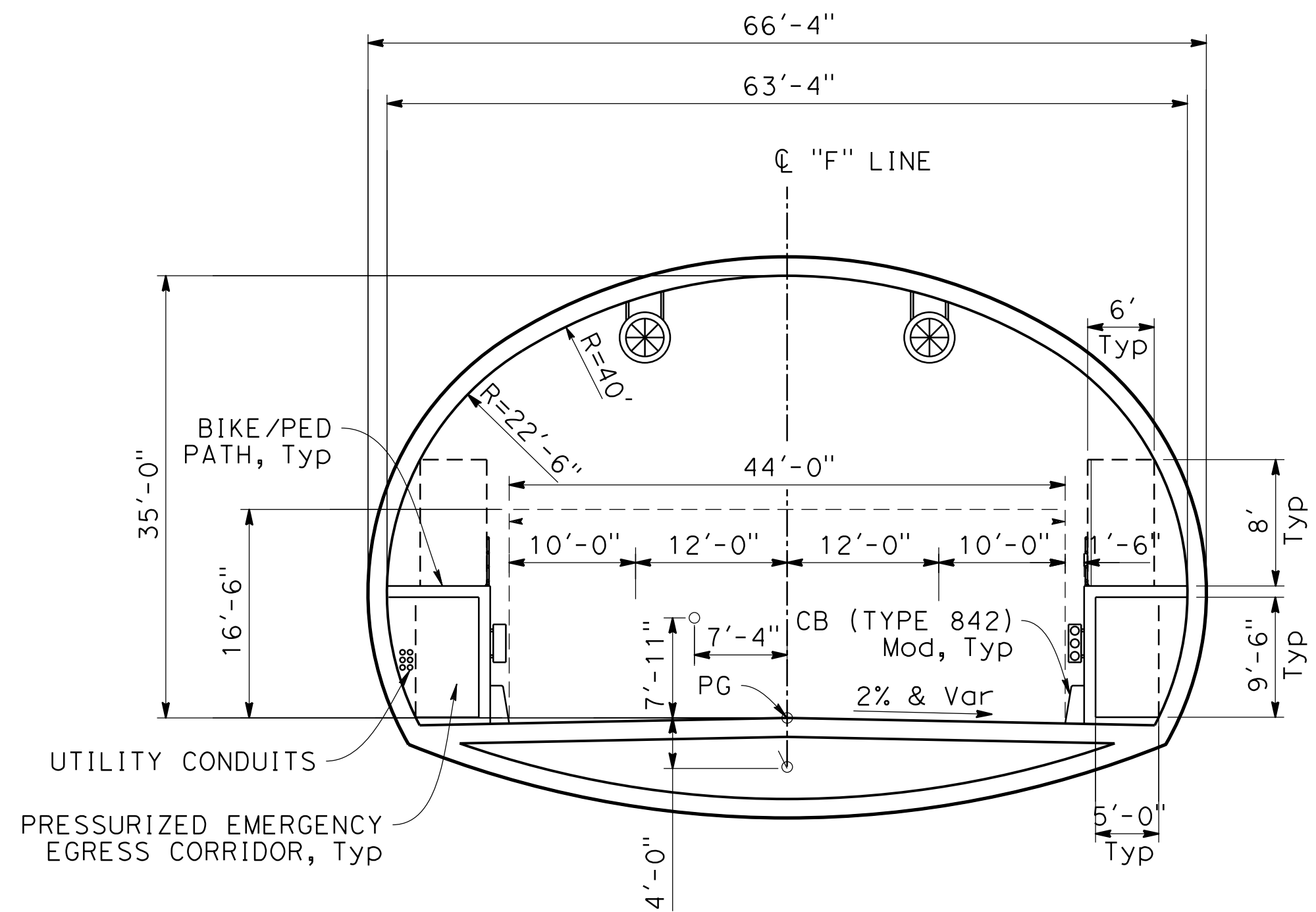
PLANNING STUDY	
LCG ALT F TUNNEL	
BRIDGE NO. X	UNIT: X
SCALE: X	PROJECT NUMBER & PHASE: 0115000099

X DESIGN OVERSIGHT
X SIGN OFF DATE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
01	DN	101	12.7/16.5
HNTB CORPORATION 2101 WEBSTER ST, Ste 1400 OAKLAND, CA 94612			



"F" 53+00.00 TO 58+00.00  
**CUT AND COVER /  
ENGINEERED DEFORMATION  
ABSORPTION SYSTEM**  
SCALE: 1" = 10'



"F" 58+00.00 TO 116+50.00  
**TUNNEL - SEM SECTION**  
SCALE: 1" = 10'

X	DESIGN OVERSIGHT
X	SIGN OFF DATE

DESIGNED BY	R. SANDIFORD	DATE	11/22/23
DRAWN BY	B. WONG	DATE	11/22/23
CHECKED BY	M. AMINI	DATE	11/22/23
APPROVED	J. LITZINGER	DATE	11/22/23

J. LITZINGER PROJECT ENGINEER
----------------------------------

PLANNING STUDY	
TUNNEL TYPICAL SECTIONS	
BRIDGE NO. X	UNIT: X
SCALE: X	PROJECT NUMBER & PHASE: 0115000099



X

DESIGN OVERSIGHT

X

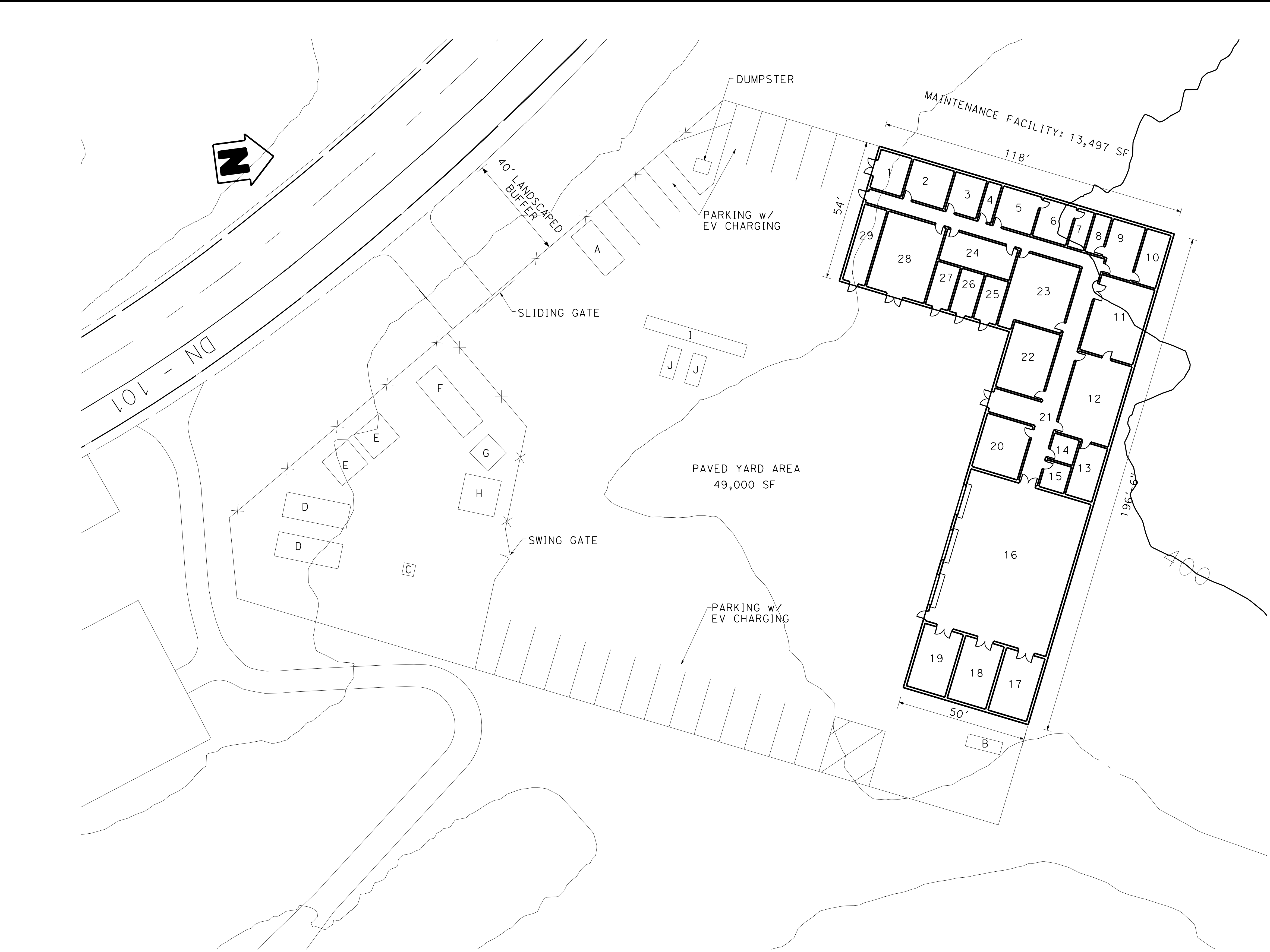
SIGN OFF DATE

PLAN  
SCALE: 1" = 20'

DESIGNED BY	J. HARDER	DATE	11/22/23
DRAWN BY	J. TRAUTMANN	DATE	11/22/23
CHECKED BY	M. AMINI	DATE	11/22/23
APPROVED	J. LITZINGER	DATE	11/22/23

J. LITZINGER  
PROJECT ENGINEER

PLANNING STUDY	
LCG ALT F OMC	
BRIDGE NO. X	UNIT: X
SCALE: X	PROJECT NUMBER & PHASE: 0115000099



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT
01	DN	101	12.7/16.5
HNTB CORPORATION 2101 WEBSTER St, Ste 1400 OAKLAND, CA 94612			

OMC BUILDING

No.	DESCRIPTION	AREA
1	Hazmat Storage	187
2	Small Part Storage	248
3	Lamp Storage	187
4	Janitor's Closet	81
5	Women's Locker Room	233
6	Women's Restroom	202
7	Women's Shower	96
8	Men's Shower	96
9	Men's Locker Room	261
10	Men's Restroom	201
11	Comm/Server Room	635
12	Control Room	681
13	Conference Room	226
14	Shift Supervisor Room	99
15	Office Supply Room	106
16	Equip Storage Bays	2920
17	Electric Workshop	383
18	Electronic Workshop	383
19	Machine/Weld Workshop	383
20	Crew Office	388
21	Corridor	1305
22	Breakroom/Kitchen	472
23	HVAC/Equip Room	654
24	Electrical Room	347
25	Cone/Barrier Storage	154
26	Soap Storage	154
27	Fuses/Flares Storage	154
28	Misc Elect Storage	694
29	Fire Exting Storage	266

UTILITIES

No.	DESCRIPTION
A	15,000 gal Domestic Water
B	1,500 gal Propane
C	12.47 kV Junction Boxes
D	(2) 2.5 MW Diesel Generators
E	(2) 5,200 gal Diesel Tanks
F	Generator Paralleling Switchgear
G	480/277 V 3-phase Transformer
H	Generator Stepup Transformer
I	Fuel Island
J	(2) 2,000 gal Tanks (Diesel, Unld)
See Sh+ C-1	3,000 gal Septic Holding Tank - at Parking Lot
See Sh+ D-1	New PacifiCorp Substation - 1300' south of portal

DATE OF ESTIMATE	11-22-2023
BRIDGE REMOVAL	= N/A
STRUCTURE HEIGHT	= 12'-0"
LENGTH	= 196'-6"
WIDTH	= 118'-0"
AREA	= 13,497 SF
COST/LF INCLUDING TRO, MOBILIZATION & 30% CONTINGENCY	= \$5,705
TOTAL COST	= \$77,000,000