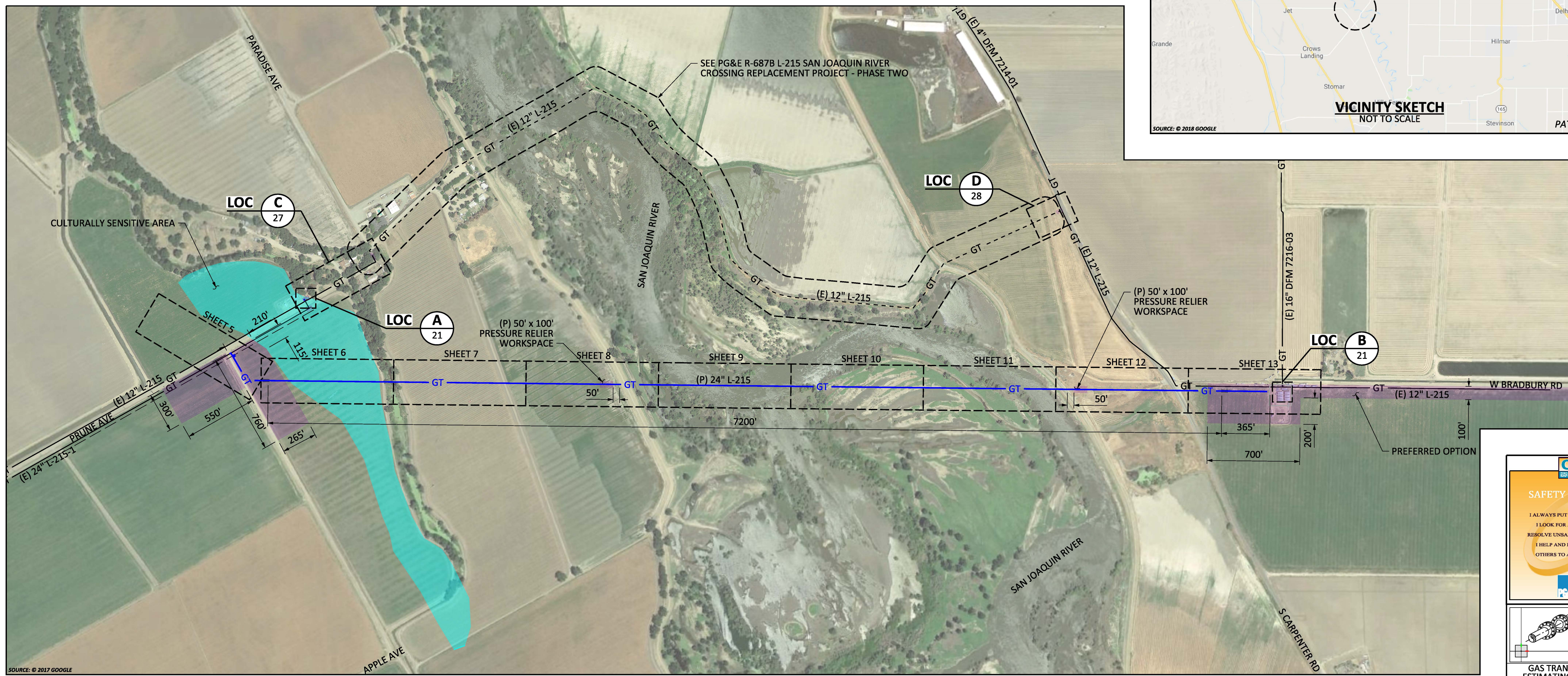
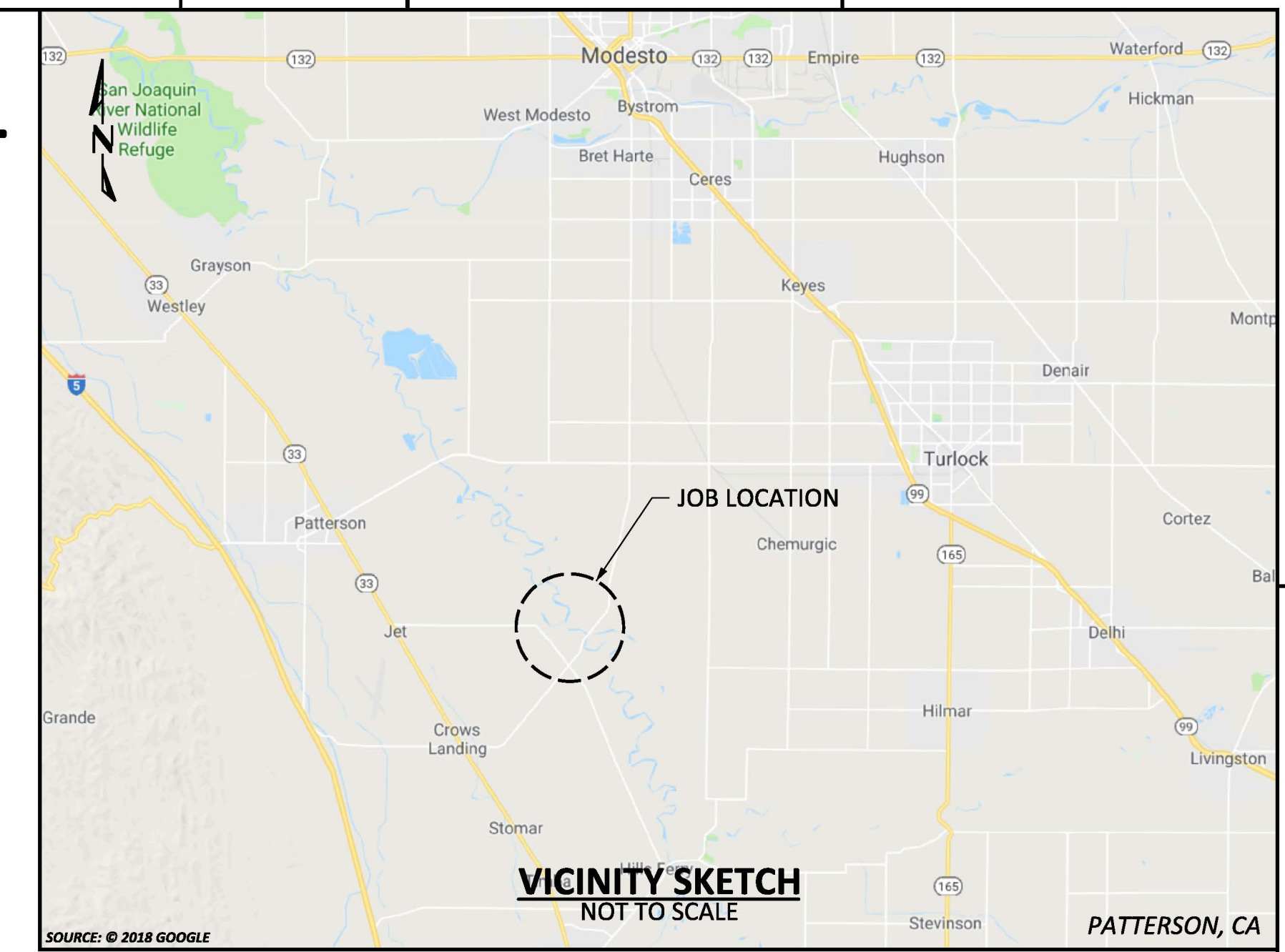


L-215 SAN JOAQUIN RIVER XING REPLACEMENT L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE PATTERSON, STANISLAUS COUNTY



SCHEDULE OF SHEETS

SHEET 1	-- TITLE & INDEX
SHEET 2	-- CONSTRUCTION NOTES
SHEET 3	-- LEGEND & STAMPS
SHEET 4-12	-- PLAN & PROFILE
SHEET 13-16	-- HDD PROFILE
SHEET 17-25	-- DETAILS
SHEET 26	-- BILL OF MATERIALS
SHEET 27, 28	-- RETIREMENT DETAILS

KEY MAP
SCALE: 1" = 400'

IMPACTED RECORD DRAWINGS:
 YES, JT02 ACTIVATED NO

CAP # 118729556

SAFETY PLEDGE

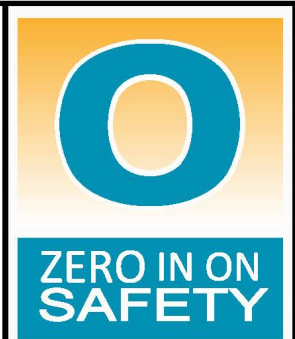
I ALWAYS PUT SAFETY FIRST.
I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

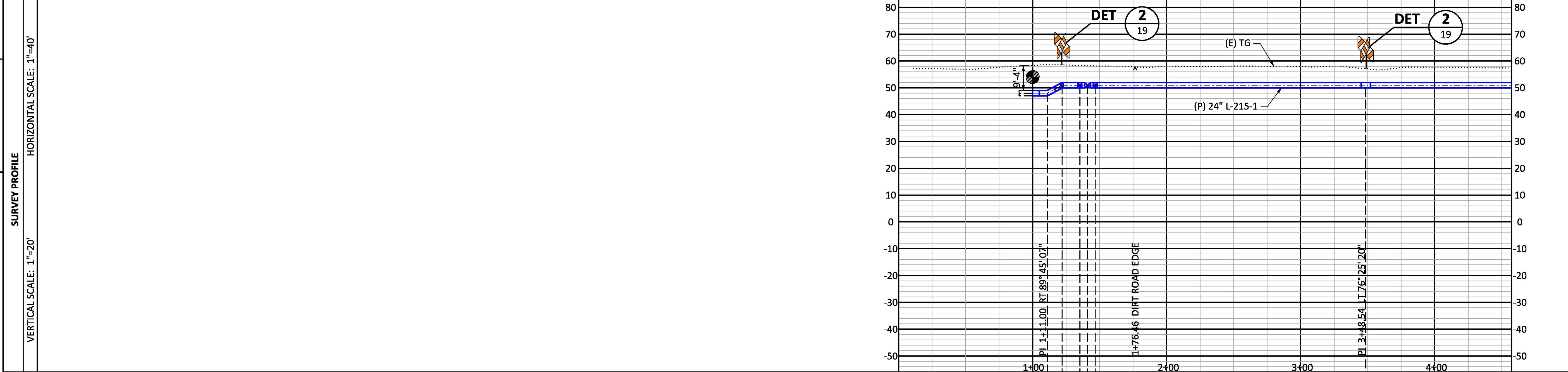
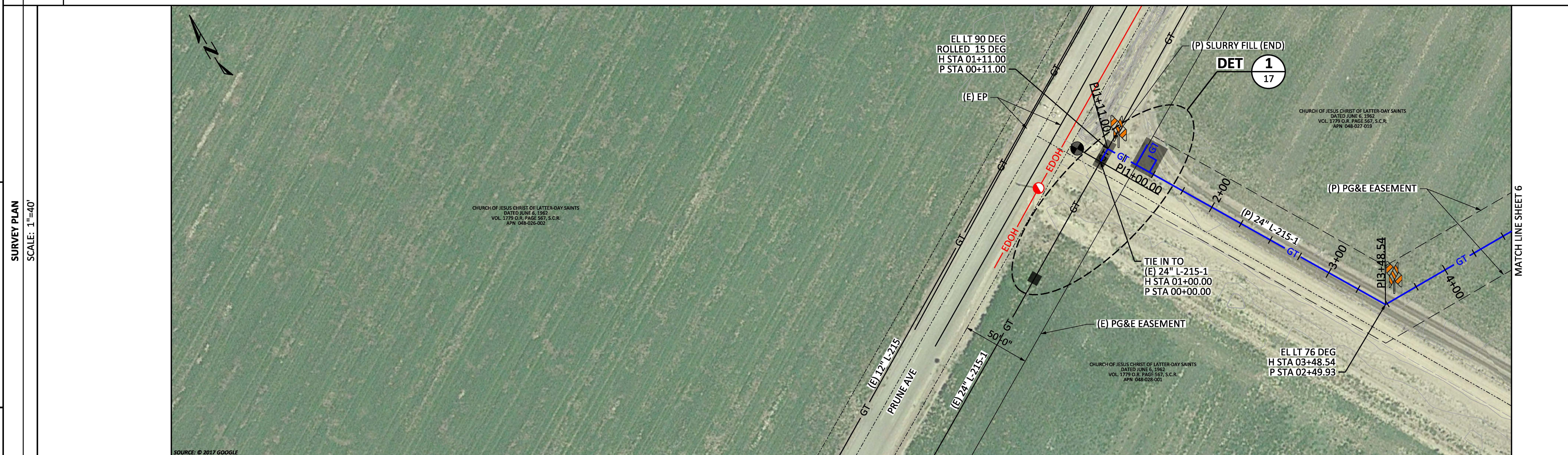
APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - TITLE & INDEX
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	1 OF 28 SHEETS
74004060	A

Estimating.pcn



PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING	PIPELINE STATIONING
0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00	0+00
1+00	1+00	1+00	1+00	1+00	1+00	1+00	1+00	1+00	1+00	1+00	1+00
2+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00	2+00
3+00	3+00	3+00	3+00	3+00	3+00	3+00	3+00	3+00	3+00	3+00	3+00
4+00	4+00	4+00	4+00	4+00	4+00	4+00	4+00	4+00	4+00	4+00	4+00
4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38	4+57.38

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NO.	DATE	DESCRIPTION	PM/SPEC	DWN	CHKD	SUPV	APVD BY
1		90% DESIGN REVIEW	74004060	E1A4	MDGR		

APPROVED BY: PSRS SUPV DSGN E1A4 DWN E1A4 CHKD MDGR OK DATE SCALES

PIPELINE - PLAN & PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL SHEET 26
DWG LIST SHEET 2
TRACKING NUMBER **R-687**
SHEET NO. 4 OF 28 SHEETS
74004060 A

SAFETY PLEDGE

I ALWAYS PUT SAFETY FIRST.
I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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01-APR-2020 08:45AM

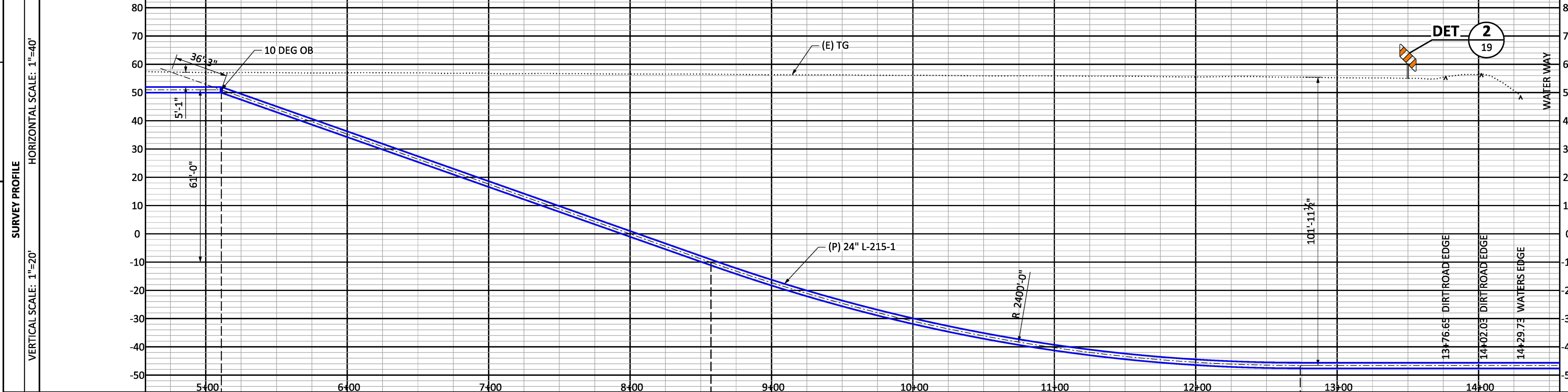
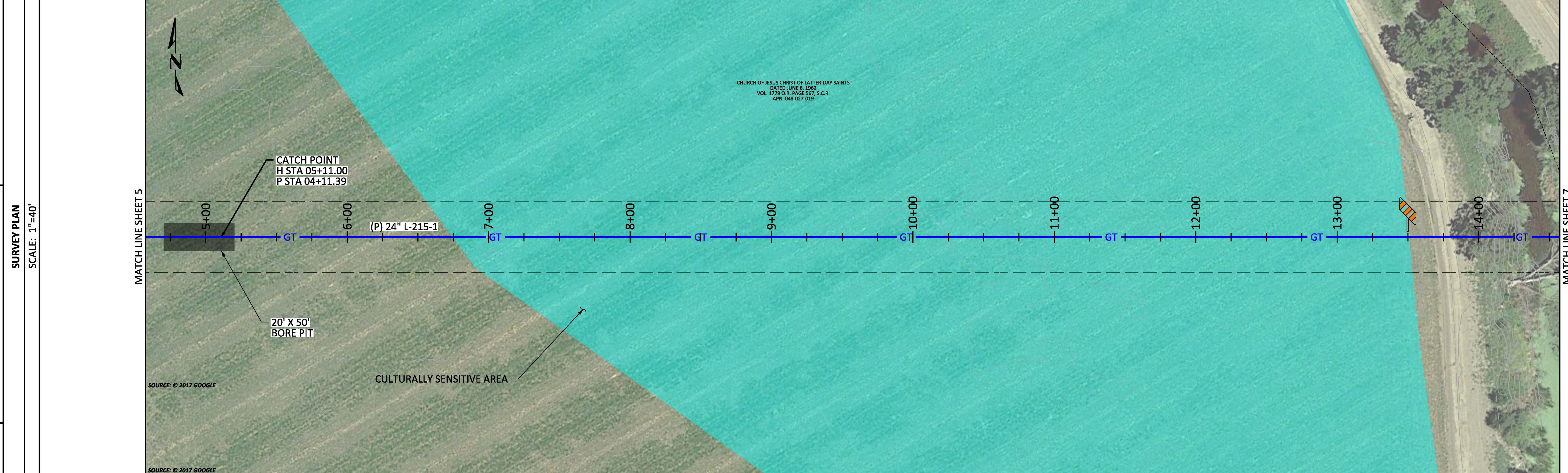
CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

048-027-019

04+57.38 - 14+57.38

SAFETY PLEDGE

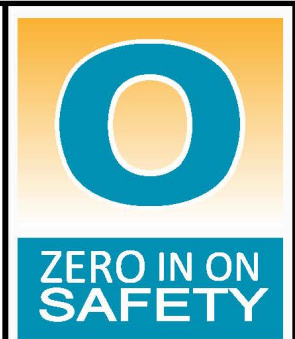
I ALWAYS PUT SAFETY FIRST.
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 I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.



PIPELINE STATIONING	VERTICAL SCALE: 1"=20'	HORIZONTAL SCALE: 1"=40'
CATCH POINT EL OB 10 DEG H STA 05+11.00 P STA 04+11.39	5+00	5+00
BEG RADIUS H STA 08+57.18 P STA 07+62.91	9+00	9+00
END RADIUS H STA 12+73.94 P STA 11+81.79	13+00	13+00

BOM#	2	8
MOI	OPEN CUT	

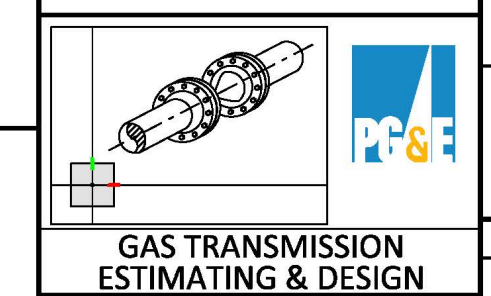
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NO.	DATE	DESCRIPTION	PM/SPEC	DWN	CHKD	SUPV	APVD BY
A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

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	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
DATE	
SCALES	

PIPELINE - PLAN & PROFILE
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA



90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

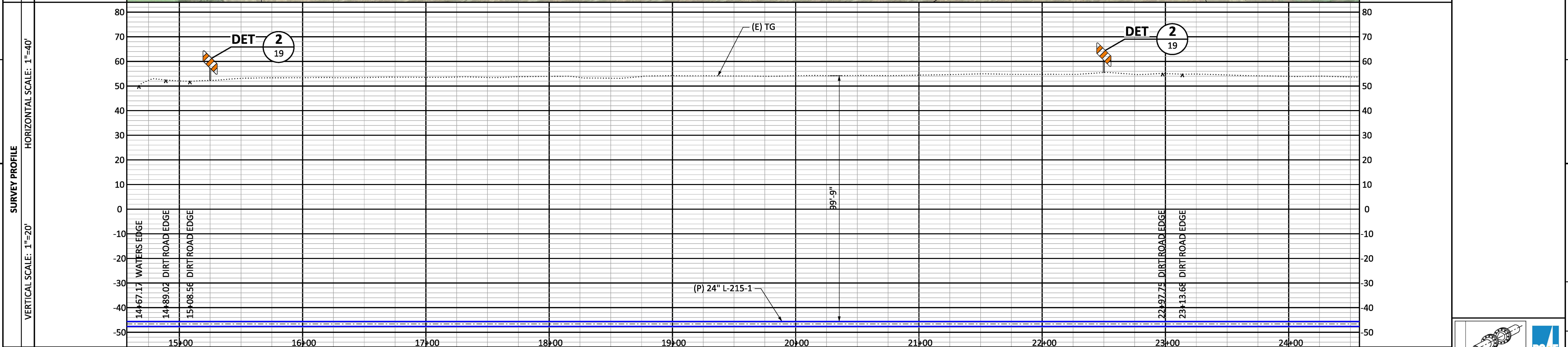
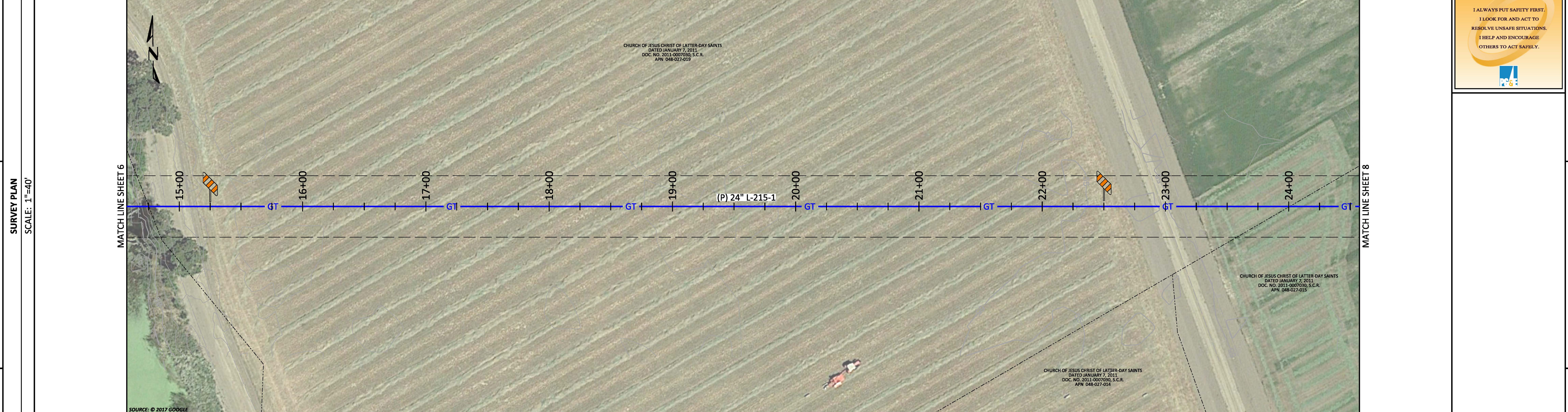
BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	5 OF 28 SHEETS
74004060	A

1 10 0 INCH

R/W OWNER/AGENCY
 APN CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS 048-027-019
 LDB CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS 048-027-015
 H STA 14+57.38 - 24+00.71 24+00.71 - 24+57.38

SAFETY PLEDGE

I ALWAYS PUT SAFETY FIRST.
 I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
 I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.



PIPELINE STATIONING

15+00	16+00	17+00	18+00	19+00	20+00	21+00	22+00	23+00	24+00
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90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

PIPELINE - PLAN & PROFILE
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

811 Know what's Below. Call before you dig.

ZERO IN ON SAFETY

NO.	DATE	DESCRIPTION	PM/SPEC	DWN	CHKD	SUPV	APVD BY
A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

APPROVED BY: PSRS, SUPV, DSGN E1A4, DWN E1A4, CHKD MDGR, OK, DATE, SCALES

BOM# MOI

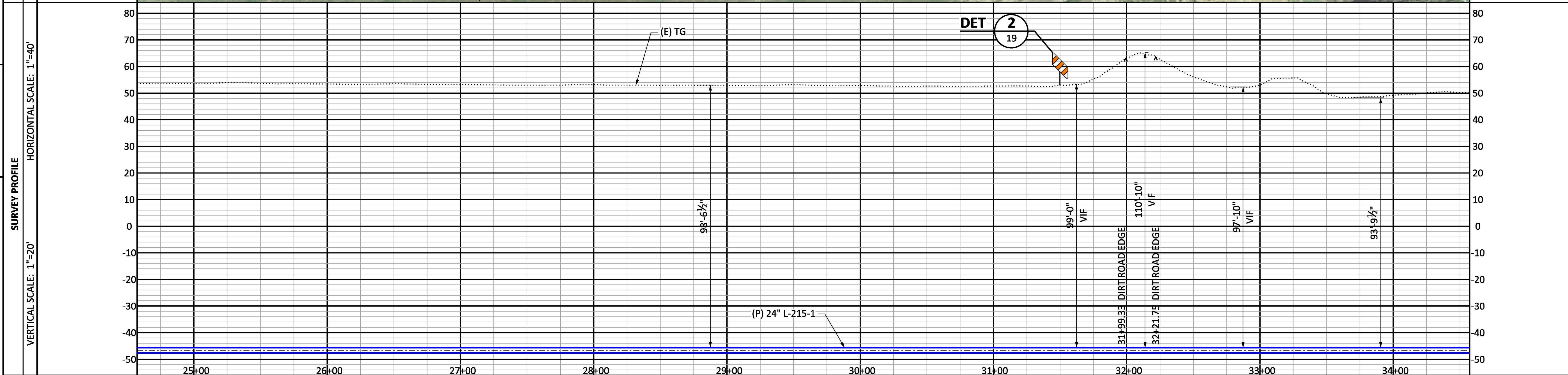
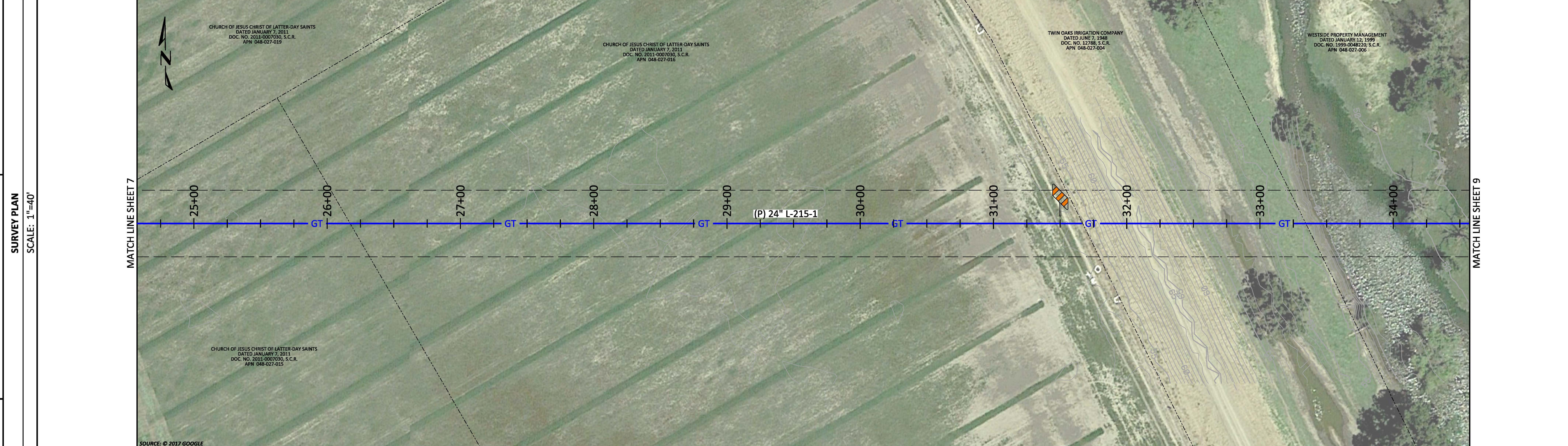
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BILL OF MATL SHEET 26
 DWG LIST SHEET 2
 TRACKING NUMBER R-687
 SHEET NO. 6 OF 28 SHEETS
 74004060 A

1	2	3	4	5	6	7	8	9	10
OWNER/AGENCY CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS 048-027-015		CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS 048-027-016			TWIN OAKS IRRIGATION COMPANY 048-027-004		WESTSIDE PROPERTY MANAGEMENT 048-027-006		
APN LDB HSTA 24+57.38 - 26+17.26		26+17.26 - 31+66.94			31+66.94 - 33+34.38		33+34.38 - 34+57.38		

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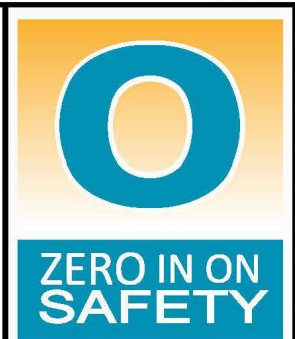
PIPELINE STATIONING	BOM#	
	MOI	

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

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				DSGN E1A4	
				DWN E1A4	
				CHKD MDGR	
				OK	
				DATE	
				SCALES	

PIPELINE - PLAN & PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

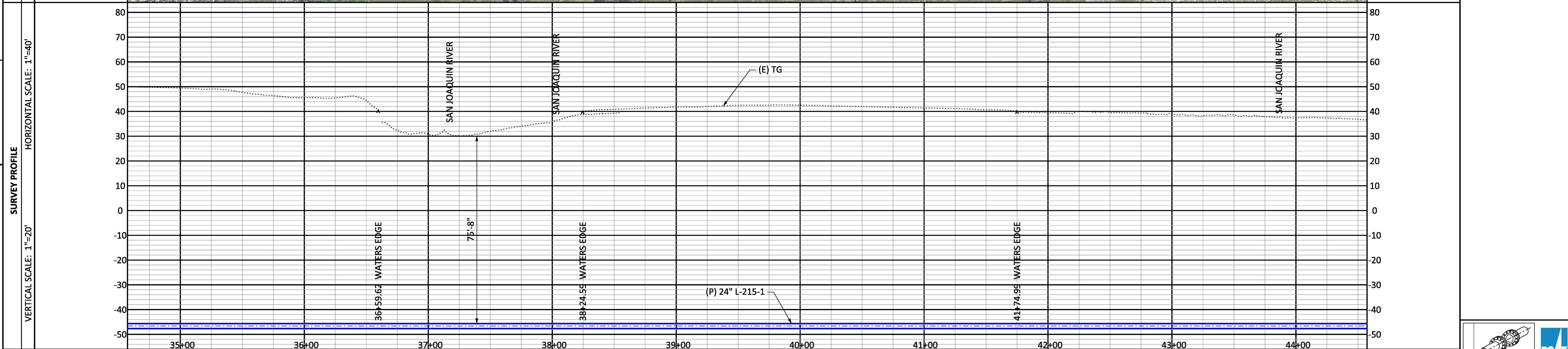
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	7 OF 28 SHEETS
74004060	A

R/W	OWNER/AGENCY	WESTSIDE PROPERTY MANAGEMENT 048-027-006	FRANK A.S. MENDONCA, ET. AL. 058-002-011
	APN	34+57.38 - 39+53.71	39+53.71 - 44+57.38
	LDB HSTA		

SAFETY PLEDGE

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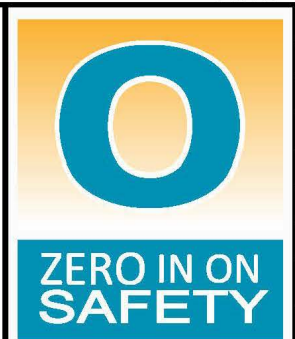
PIPELINE STATIONING	BOM#	
	MOI	

GAS TRANSMISSION
ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - PLAN & PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

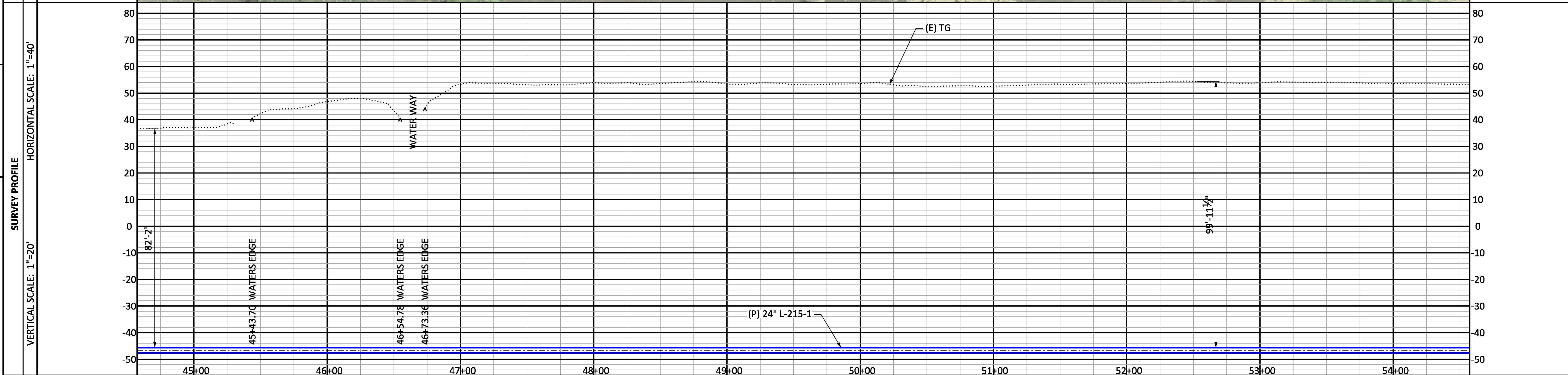
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	8 OF 28 SHEETS
74004060	A

R/W	OWNER/AGENCY	FRANK A.S. MENDONCA, ET. AL.	RONALD K. DePAUW
	APN	058-002-011	048-031-004
	LDB		
	H STA	44+57.38 - 45+96.75	45+96.75 - 54+57.38

SAFETY PLEDGE

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 I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
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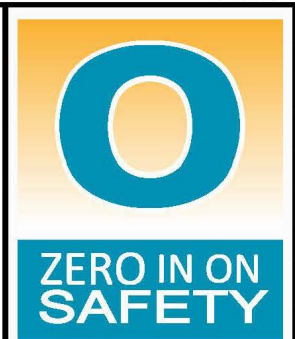
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GAS TRANSMISSION
ESTIMATING & DESIGN

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PACIFIC GAS AND ELECTRIC COMPANY

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			DWN E1A4
			CHKD MDGR
			OK
			DATE
			SCALES

PIPELINE - PLAN & PROFILE
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY

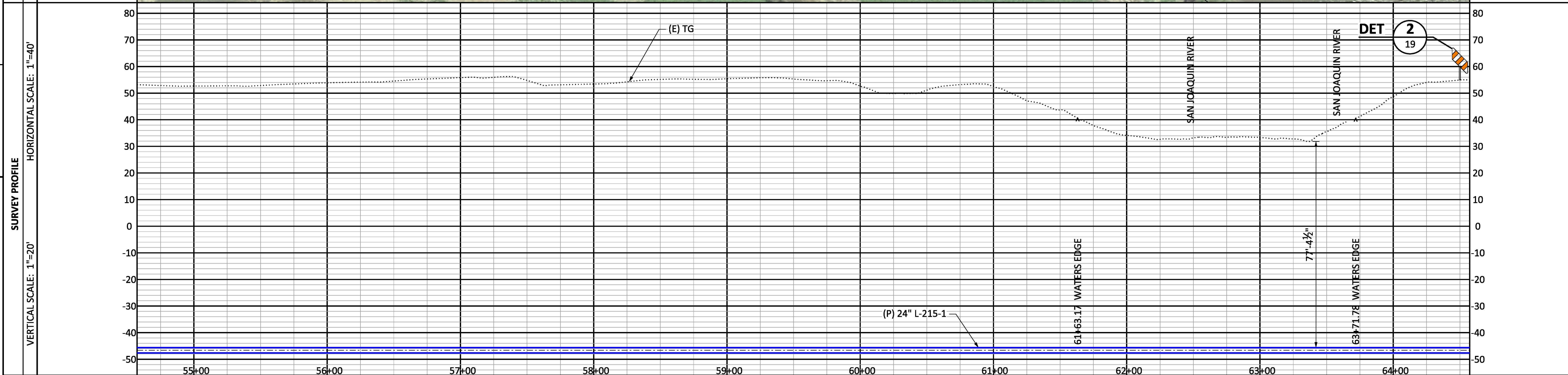
GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	9 OF 28 SHEETS
74004060	A

1	2	3	4	5	6	7	8	9	10
OWNER/AGENCY		RONALD K. DePAUW 048-031-004			STATE OF CALIFORNIA			BENITO VELASQUEZ, ET. AL. 057-001-002	
APN		54+57.38 - 60+06.27			60+06.27 - 62+91.88			62+91.88 - 64+57.38	
LDB									
HSTA									

SAFETY PLEDGE

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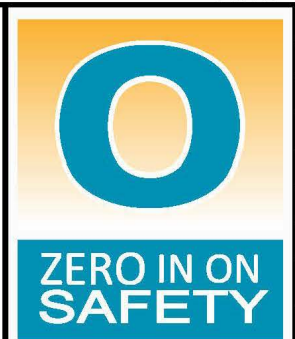
PIPELINE STATIONING	BOM#	
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PACIFIC GAS AND ELECTRIC COMPANY

GAS TRANSMISSION ESTIMATING & DESIGN

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1		90% DESIGN REVIEW	74004060	E1A4	MDGR		

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	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - PLAN & PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

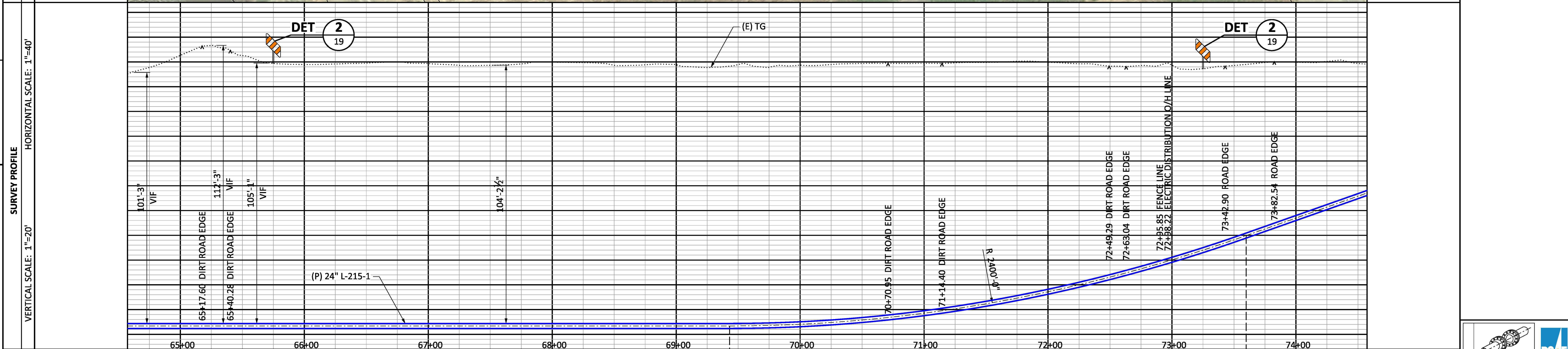
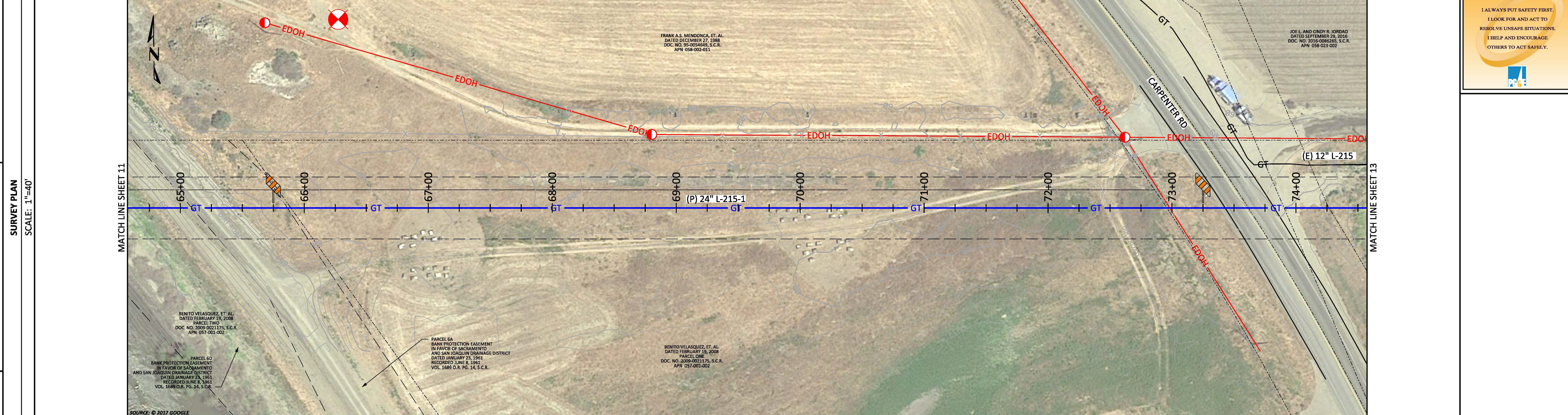
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	10 OF 28 SHEETS
74004060	A

R/W	OWNER/AGENCY	BENITO VELASQUEZ, ET. AL. 057-001-002	BENITO VELASQUEZ, ET. AL. 057-001-002	(E) CALTRANS R/W	JOE L. AND CINDY R. JORDAO 058-023-002
	APN	64+57.38 - 65+89.18	65+89.18 - 72+95.91	72+95.91 - 74+26.73	74+26.73 - 74+57.38
	LDB				
	HSTA				

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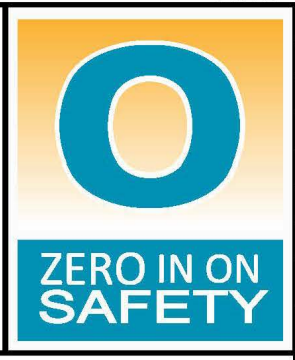
PIPELINE STATIONING	VERTICAL SCALE: 1"=20'	HORIZONTAL SCALE: 1"=40'													
	101'-3" VIF	65+17.66 DIRT ROAD EDGE	65+40.28 DIRT ROAD EDGE	105'-1" VIF	104'-2 1/2"	(P) 24" L-215-1	70+70.95 DIRT ROAD EDGE	71+14.40 DIRT ROAD EDGE	R 2400'-0"	72+49.29 DIRT ROAD EDGE	72+63.04 DIRT ROAD EDGE	72+95.95 FENCE LINE	72+98.22 ELECTRIC DISTRIBUTION D/H LINE	73+42.90 ROAD EDGE	73+82.54 ROAD EDGE
BOM#	1 HDD														
MOI	BEG RADIUS H STA 69+43.06 P STA 68+50.91														
	END RADIUS H STA 73+59.61 P STA 72+69.79														

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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NO.	DATE	DESCRIPTION	PM/SPEC	E1A4	MDGR	CHKD	SUPV	APVD BY
1		90% DESIGN REVIEW	74004060	E1A4	MDGR			

APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - PLAN & PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

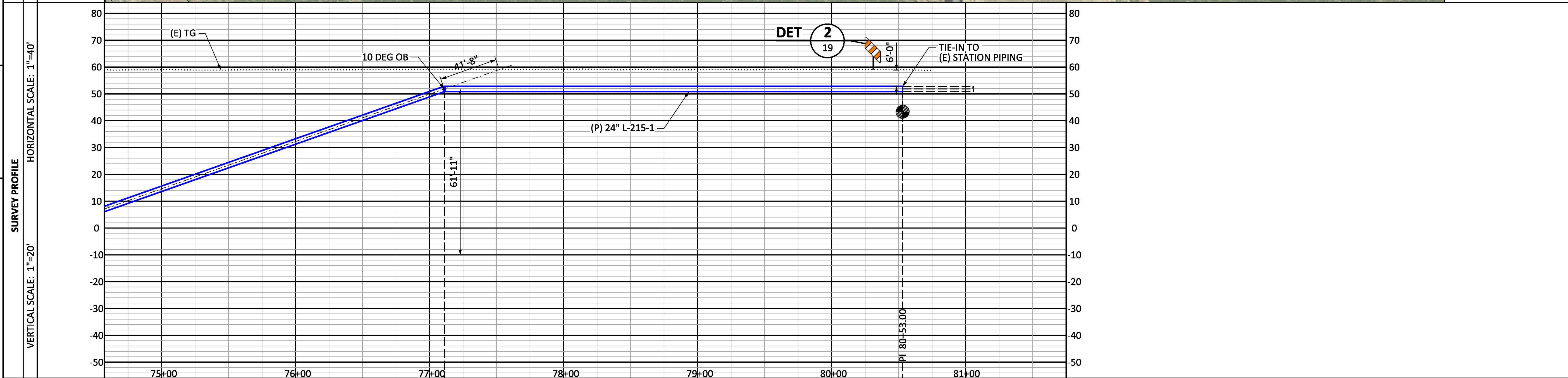
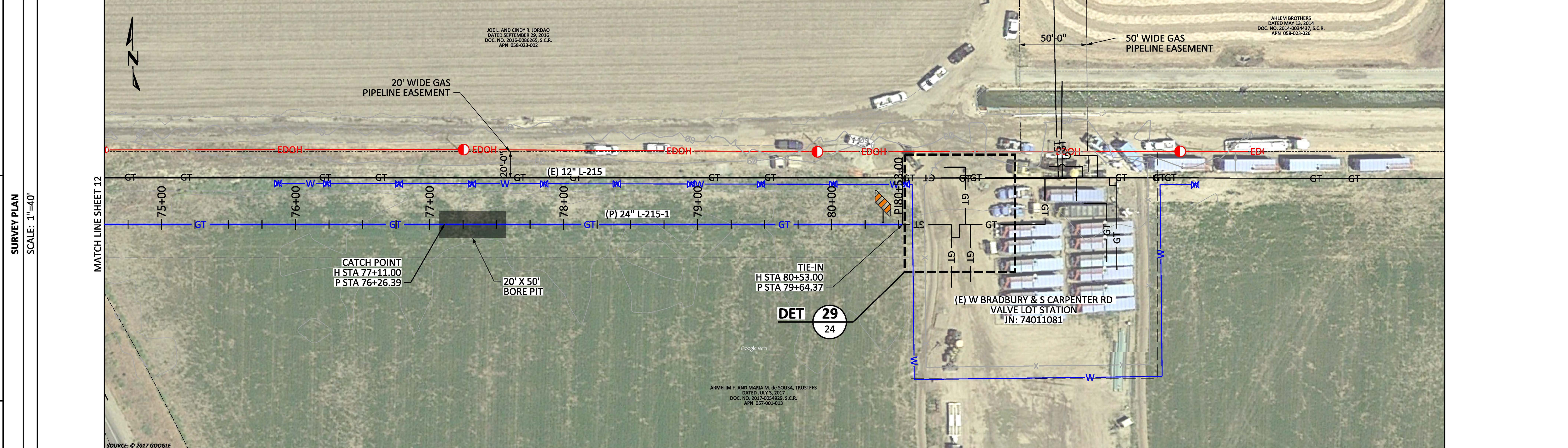
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	11 OF 28 SHEETS
74004060	A

R/W OWNER/AGENCY
 APN ARMEIM F. AND MARIA M. de SOUSA, TRUSTEES
 LDB 057-001-013
 H STA 74+57.38 - 80+75.60

SAFETY PLEDGE

I ALWAYS PUT SAFETY FIRST.
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PIPELINE STATIONING

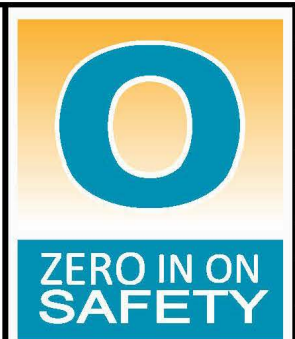
BOM#	1	8	2
MOI	HDD		OPEN CUT

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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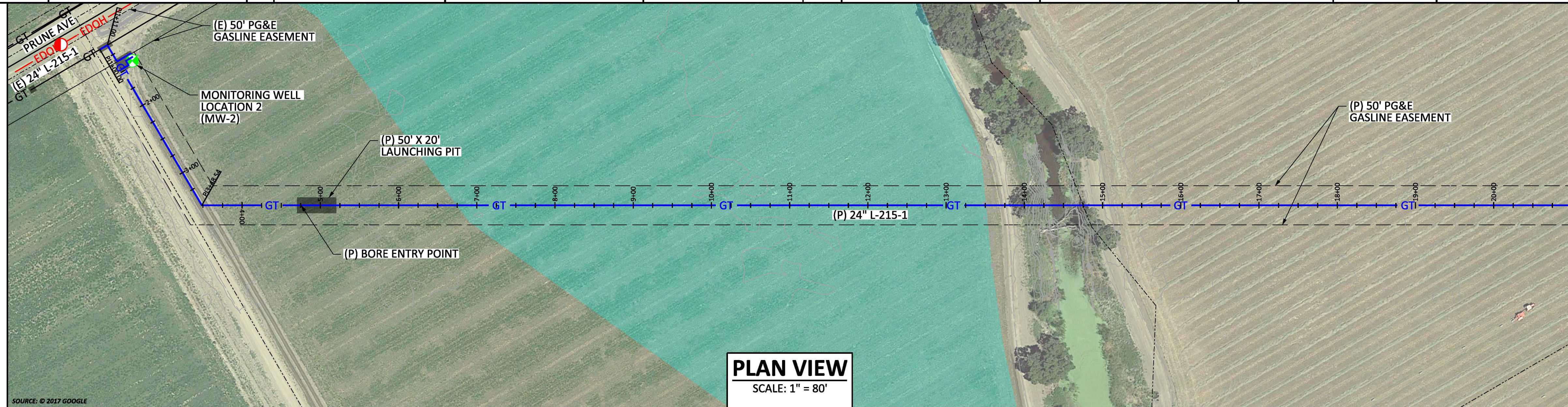
NO.	DATE	DESCRIPTION	PM/SPEC	E1A4	MDGR	CHKD	SUPV	APVD BY
1		90% DESIGN REVIEW	74004060	E1A4	MDGR			

APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
DATE	
SCALES	

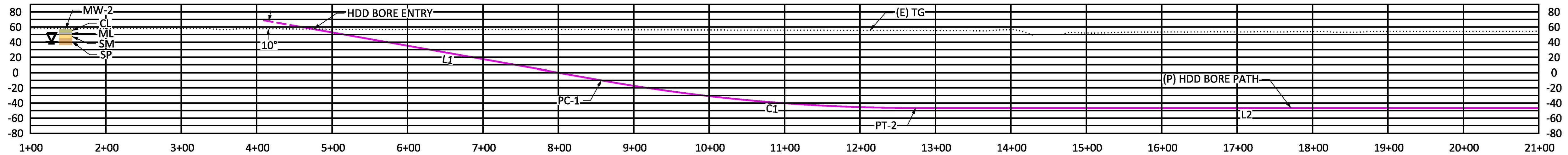
PIPELINE - PLAN & PROFILE
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	12 OF 28 SHEETS
74004060	A



PLAN VIEW
SCALE: 1" = 80'



PROFILE
SCALE: 1" = 80'

HDD NOTES:

- WHEN BALLAST WATER IS REQUIRED DURING PRODUCT PIPE PULLBACK, CONTRACTOR TO FURNISH TWO (2) TREMMIE PIPES DURING FILL (ONE FOR FILL OPERATIONS, ONE AS REDUNDANT BACKUP). TREMMIE PIPE TO BE CONSTRUCTED OF NEW MATERIAL.
- DOWNHOLE PRESSURE SUBASSEMBLIES WILL BE REQUIRED ON ALL HDD PROJECTS. CONTRACTOR MUST KEEP LOG OF MUD PRESSURE AND SUBMIT TO PG&E PROJECT ENGINEER DAILY DURING PILOT DRILLING.
- CONTRACTOR IS RESPONSIBLE FOR MITIGATING INTERFERENCE OF TRACKING EQUIPMENT AND FURNISHING STEERING TOOLS AND SURFACE COILS CAPABLE OF PROVIDING ACCURATE STEERING INFORMATION.
A. IF INTERFERENCE IS ENCOUNTERED, CONTRACTOR TO COMMUNICATE ISSUE TO PG&E PROJECT ENGINEER WITHIN 24 BUSINESS HOURS.
- CONTRACTOR MUST PROVIDE PG&E PROJECT ENGINEER PILOT BORE STEERING AND TRACKING DATA DAILY UNTIL BORE COMPLETION. CONTRACTOR MUST FURNISH BOTH RAW AND PLUGGED AZIMUTH DATA WITH A WRITTEN EXPLANATION FOR ANY PLUGGED DATA. REAMING MAY NOT PROCEED UNTIL PG&E ACCEPTS PILOT BORE DATA.
- IF PLANNED DRILLING PROFILE DEVIATES FROM DESIGN, CONTRACTOR TO PROVIDE PROPOSED DRILLING PROFILE AT LEAST 5 BUSINESS DAYS PRIOR TO BEGINNING PILOT DRILLING FOR PG&E PROJECT ENGINEER REVIEW AND APPROVAL.
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- MONITORING: THE RIGHT AND LEFT LEVEE EMBANKMENTS CROSSING THE BOREHOLE PATH MUST BE MONITORED BY A LICENSED PROFESSIONAL ENGINEER, P.E. OR PROFESSIONAL GEOLOGIST, P.G. DURING THE HDD PIPELINE INSTALLATION FOR VERTICAL AND/OR HORIZONTAL DISPLACEMENTS AT BOTH THE EMBANKMENT CROWN AND TOES.
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LINE / CURVE DATA			
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L1	387.7'		
C1	418.9'	2,400'	10°
L2	5669.1'		
C2	418.9'	2,400'	10°
L3	398.3'		

DRILL DATA				
POINT	LATITUDE	LONGITUDE	H STATION	ELEVATION
ENTRY	37.4494	-121.0481	04+75.33	57.22'
PC-1	37.4494	-121.0469	08+57.18	-10.11'
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DESIGN RADIUS: 2,400'
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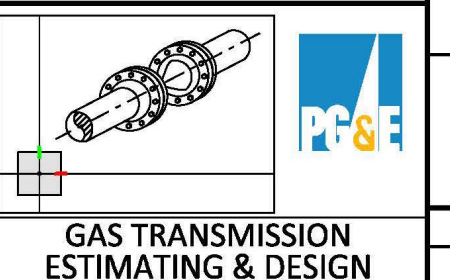
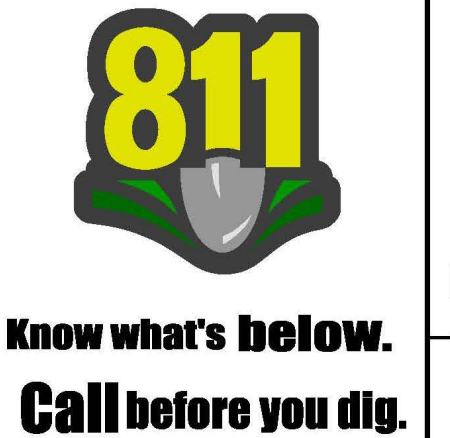
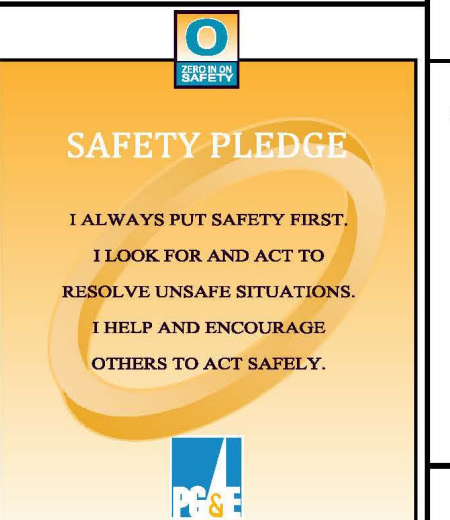
NOTE: REFER TO GEOTECHNICAL REPORT PREPARED BY KLEINFELDER, DATED 05-29-2018.

BORE PROFILE LEGEND (FOR REFERENCE ONLY)

CL	LEAN CLAY	SP	POORLY GRADED SAND
SM	SILTY SAND	ML	SANDY SILT
SP-SM	POORLY GRADED SAND WITH SILT		

BORING LOCATIONS			
BORING #	LATITUDE	LONGITUDE	DEPTH
MW-2	37.44993	-121.04901	23'
-			'
-			'

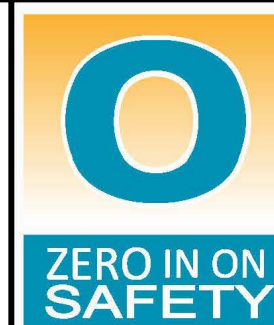
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90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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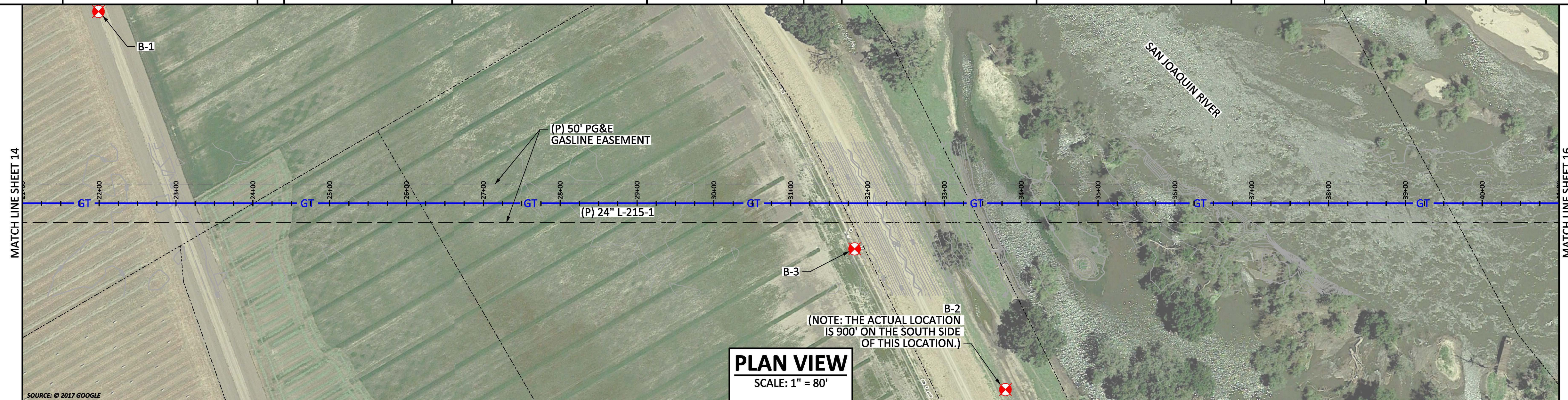


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		90% DESIGN REVIEW								

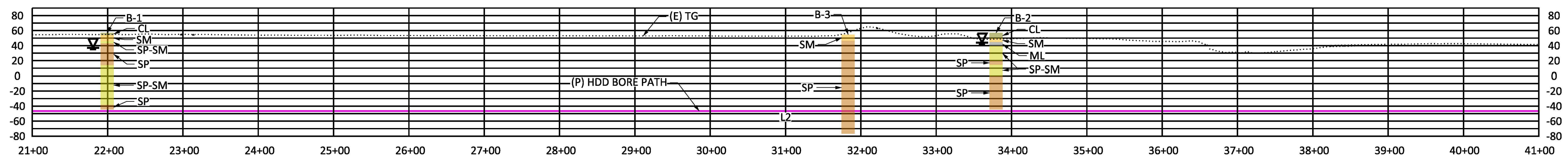
APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - HDD PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	13 OF 28 SHEETS
74004060	A



PLAN VIEW
SCALE: 1" = 80'



PROFILE
SCALE: 1" = 80'

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SM	SILTY SAND	ML	SANDY SILT
SP-SM	POORLY GRADED SAND WITH SILT		

BORING LOCATIONS			
BORING #	LATITUDE	LONGITUDE	DEPTH
B-1	37.45009	-121.04231	101.5'
B-2	37.44629	-121.03825	101.5'
B-3	37.44921	-121.03891	131.5'

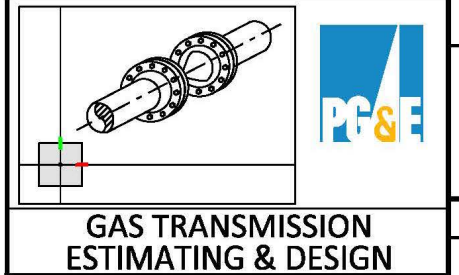
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APPROVED BY		DATE		DESCRIPTION		NO.	
PSRS	74004060	E1A4	MDGR	90% DESIGN REVIEW	1		
SUPV		PM/SPEC	DWN				
DSGN E1A4		CHKD	SUPV				
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CHKD MDGR							
OK							
DATE							
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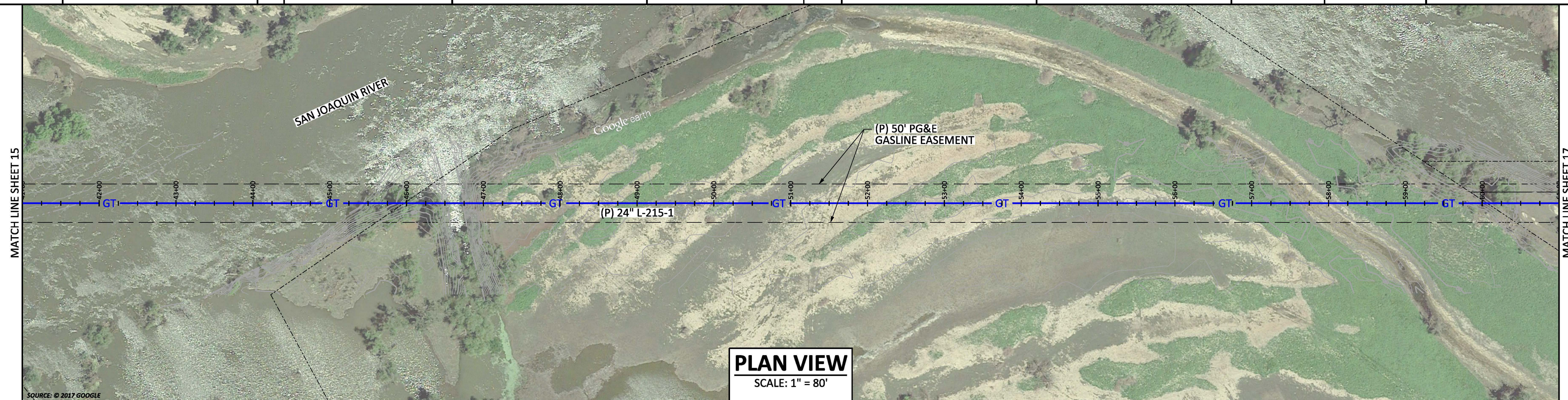
PIPELINE - HDD PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

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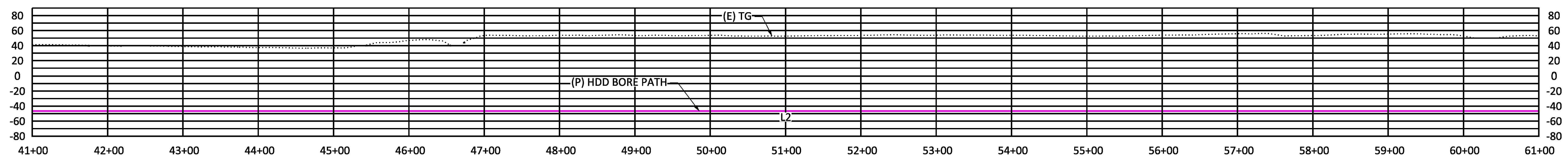


90% DESIGN REVIEW
PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	14 OF 28 SHEETS
74004060	A



PLAN VIEW
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PROFILE
SCALE: 1" = 80'

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SM SILTY SAND	ML SANDY SILT
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BORING LOCATIONS			
BORING #	LATITUDE	LONGITUDE	DEPTH
-			'
-			'
-			'

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SAFETY PLEDGE

I ALWAYS PUT SAFETY FIRST.
I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.

811

Know what's below.
Call before you dig.

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

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ZERO IN ON SAFETY

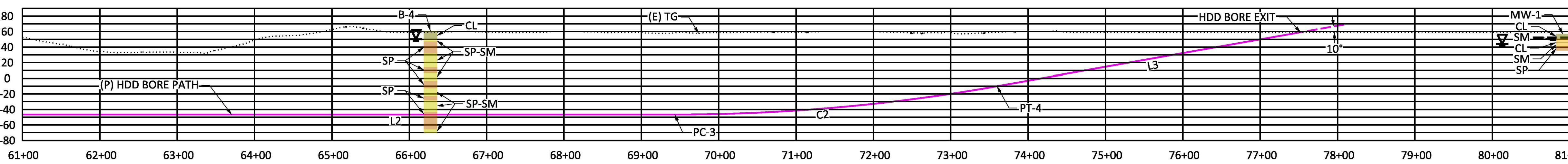
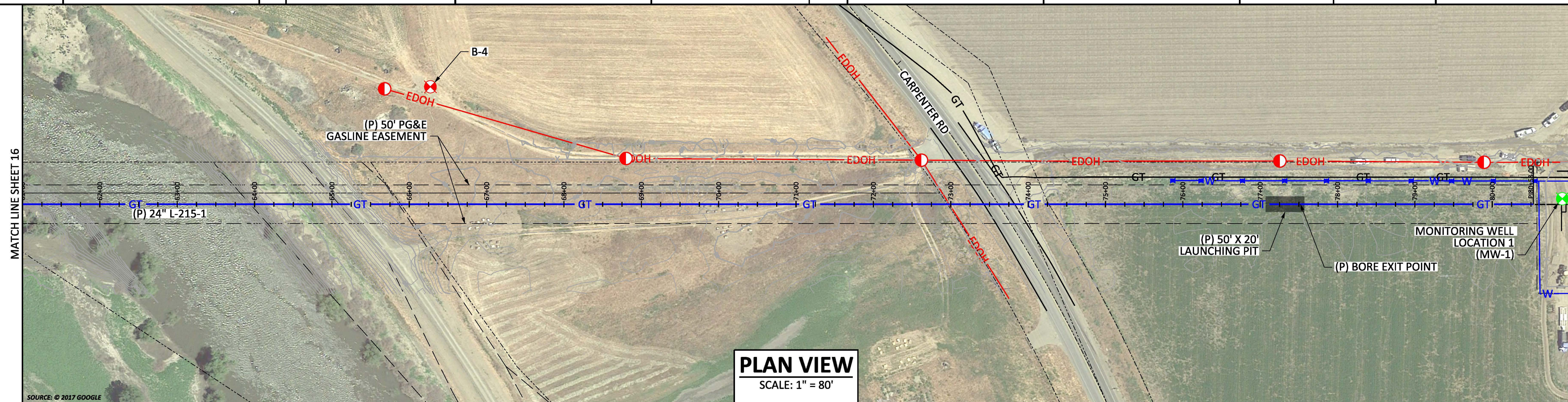
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APPROVED BY	PSRS
	SUPV
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PIPELINE - HDD PROFILE
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	15 OF 28 SHEETS
74004060	A



HDD NOTES:

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 MIN. COMPOUND RADIUS: 1,400'
 ALLOWABLE HORIZONTAL DRIFT +/- 10'

NOTE: REFER TO GEOTECHNICAL REPORT PREPARED BY KLEINFELDER, DATED 05-29-2018.

BORE PROFILE LEGEND (FOR REFERENCE ONLY)

CL LEAN CLAY	SP POORLY GRADED SAND
SM SILTY SAND	ML SANDY SILT
SP-SM POORLY GRADED SAND WITH SILT	

BORING LOCATIONS			
BORING #	LATITUDE	LONGITUDE	DEPTH
B-4	37.44977	-121.02705	131.5'
MW-1	37.44936	-121.02200	21.5'
-			

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REVISIONS		APPROVED BY	
NO.	DATE	DESCRIPTION	DATE

APPROVED BY: PSRS SUPV, DSGN E1A4, DWN E1A4, CHKD MDGR, OK, DATE, SCALES

PIPELINE - HDD PROFILE
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA

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SAFETY PLEDGE

I ALWAYS PUT SAFETY FIRST.
 I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
 I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.

811

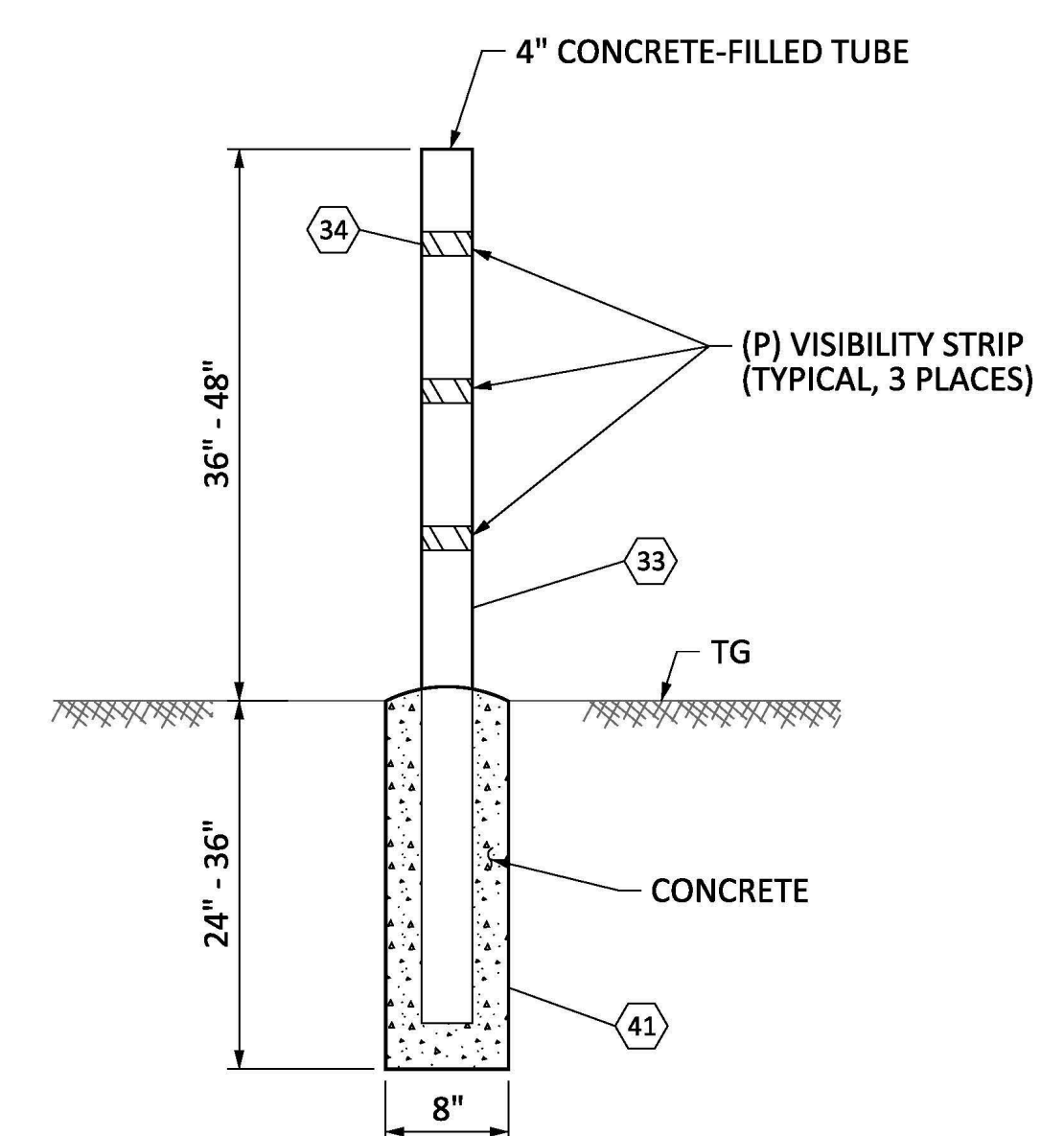
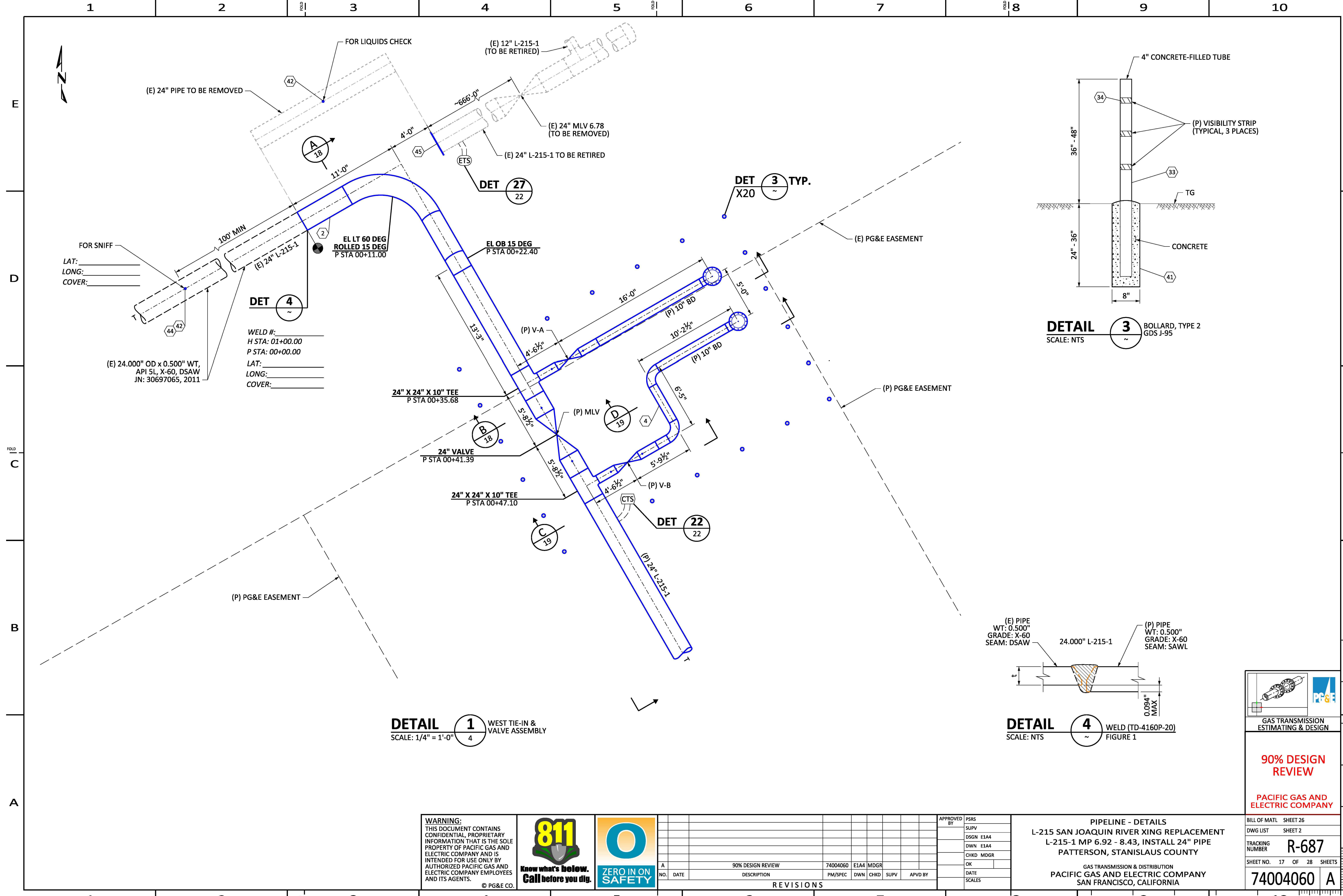
Know what's below.
 Call before you dig.

GAS TRANSMISSION ESTIMATING & DESIGN

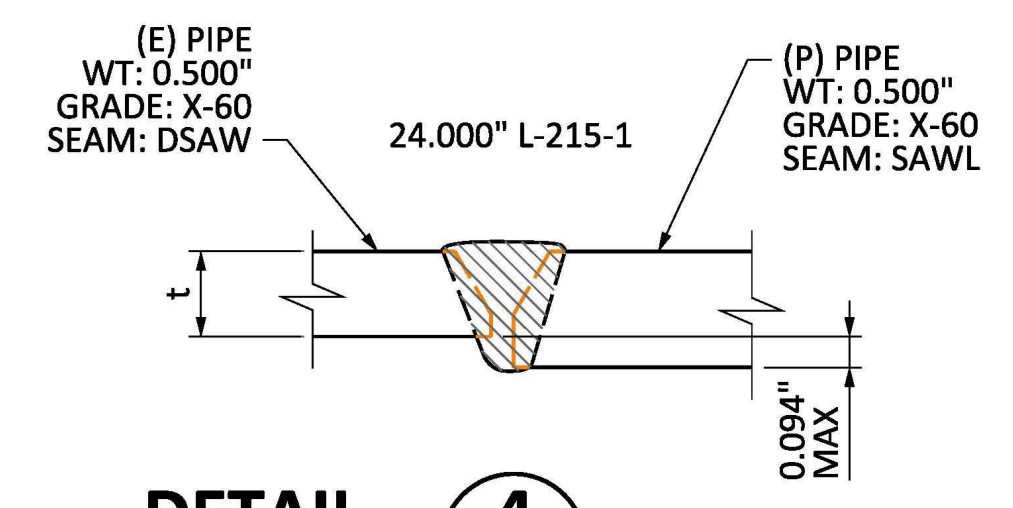
90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 26	DWG LIST SHEET 2
TRACKING NUMBER R-687	SHEET NO. 16 OF 28 SHEETS
74004060 A	1 10 0 INCH



DETAIL 3 BOLLARD, TYPE 2
GDS J-95
SCALE: NTS



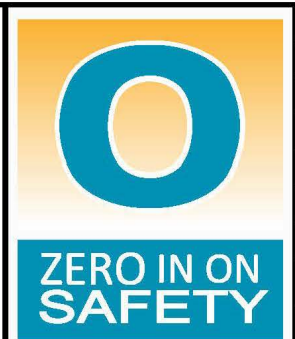
DETAIL 4 WELD (TD-4160P-20)
SCALE: NTS
FIGURE 1

DET 4

WELD #:
H STA: 01+00.00
P STA: 00+00.00
LAT:
LONG:
COVER:

DETAIL 1 WEST TIE-IN & VALVE ASSEMBLY
SCALE: 1/4" = 1'-0"

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1		90% DESIGN REVIEW	74004060	E1A4	MDGR		

APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
DATE	
SCALE	

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

PG&E

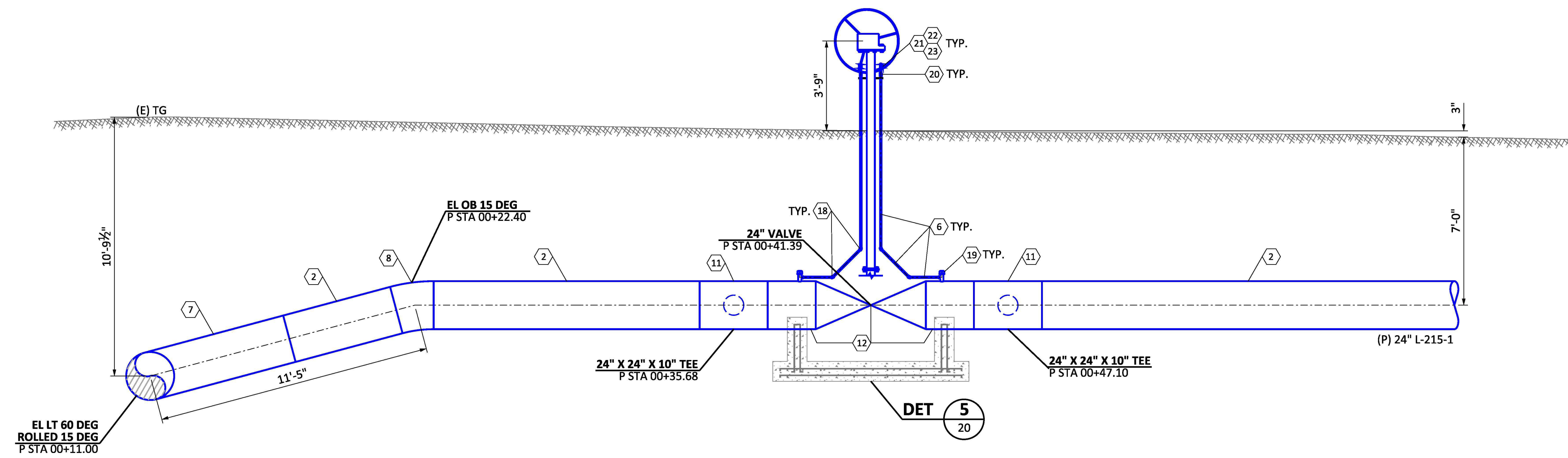
GAS TRANSMISSION
ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

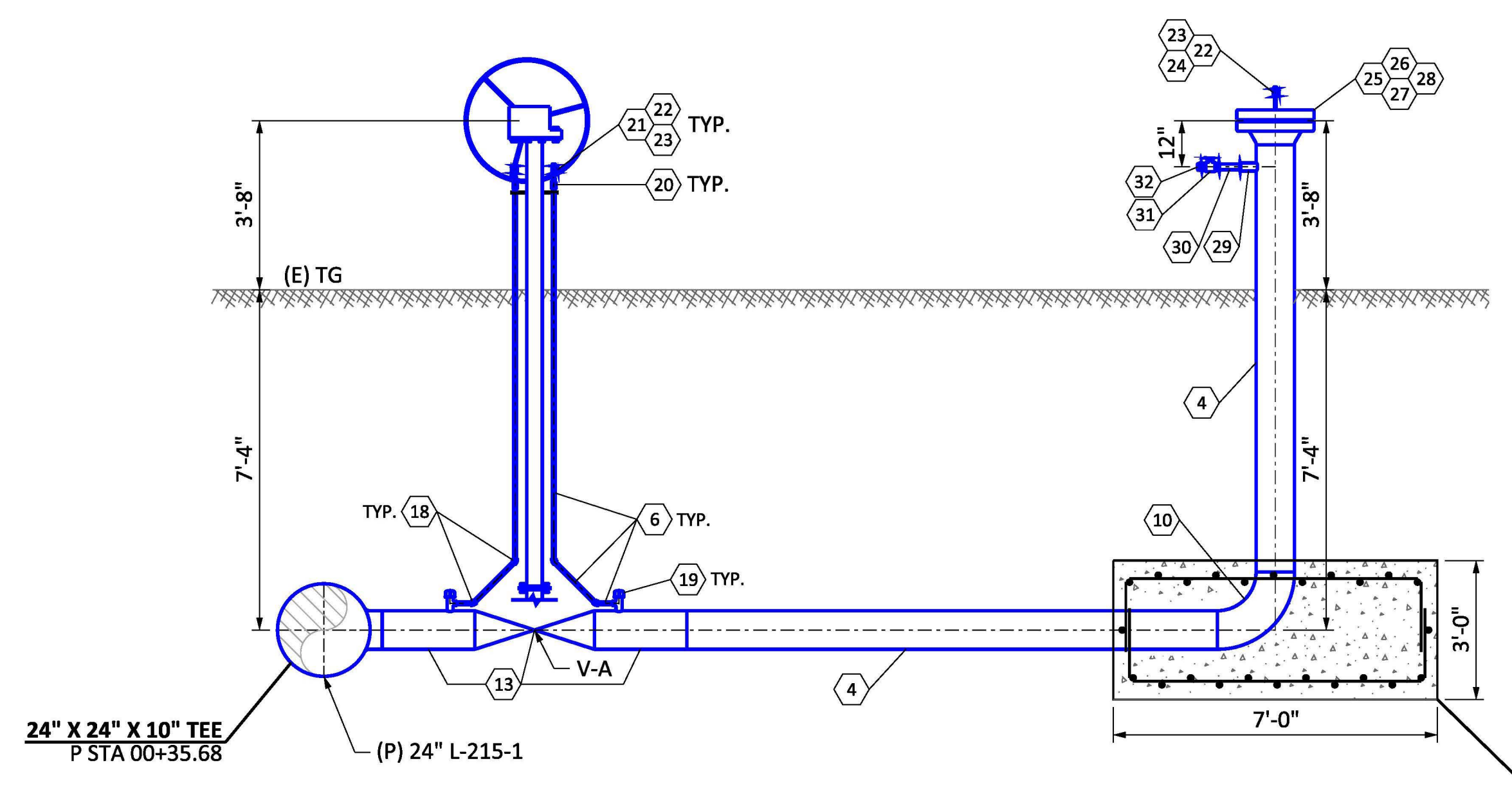
BILL OF MATL SHEET 26
DWG LIST SHEET 2
TRACKING NUMBER **R-687**
SHEET NO. 17 OF 28 SHEETS
74004060 A

VALVE DATA STAMP	
BOM#	12 VALVE SIZE 24"
TECH ID (VALVE #)	
VALVE TYPE	BALL, ANSI 600
MANUFACTURER	
MODEL/FIGURE #	
SERIAL#	
CRITICAL VALVE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
CRITICAL VALVES ARE TO BE COMMISSIONED PER TD-4520P-01	
COMMISSIONING	
VALVE TO BE COMMISSIONED BY GAS PIPELINE OPERATION & MAINTENANCE (GPO&M) AND DIVISION OR DISTRICT PERSONNEL PRIOR TO PLACING VALVE IN SERVICE.	
COMMISSIONED BY:	
LAN ID	
DATE	
NUMBER OF TURNS OF HANDWHEEL (IF APPROPRIATE)	



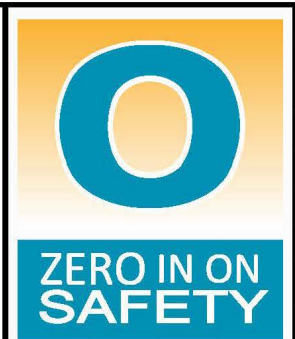
ELEVATION A 24" VALVE
SCALE: 3/8" = 1'-0"

VALVE DATA STAMP	
BOM#	13 VALVE SIZE 10"
TECH ID (VALVE #)	V-A
VALVE TYPE	BALL, ANSI 600
MANUFACTURER	
MODEL/FIGURE #	
SERIAL#	
CRITICAL VALVE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
CRITICAL VALVES ARE TO BE COMMISSIONED PER TD-4520P-01	
COMMISSIONING	
VALVE TO BE COMMISSIONED BY GAS PIPELINE OPERATION & MAINTENANCE (GPO&M) AND DIVISION OR DISTRICT PERSONNEL PRIOR TO PLACING VALVE IN SERVICE.	
COMMISSIONED BY:	
LAN ID	
DATE	
NUMBER OF TURNS OF HANDWHEEL (IF APPROPRIATE)	



ELEVATION B 10" VALVE & BD
SCALE: 3/8" = 1'-0"

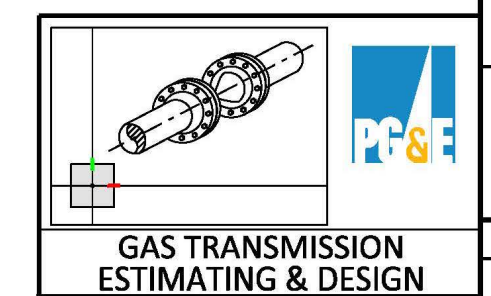
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A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

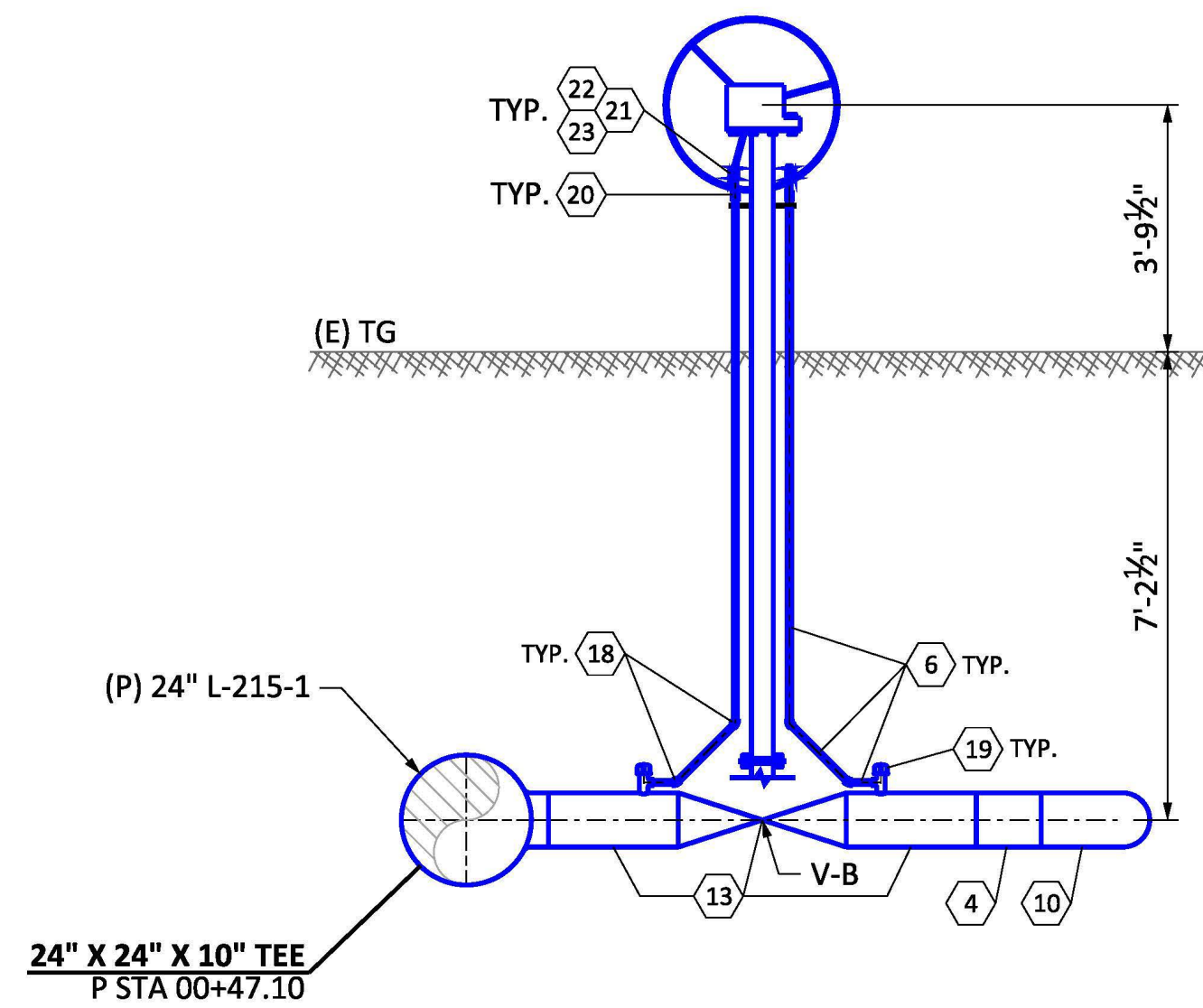
APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
DATE	
SCALES	

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

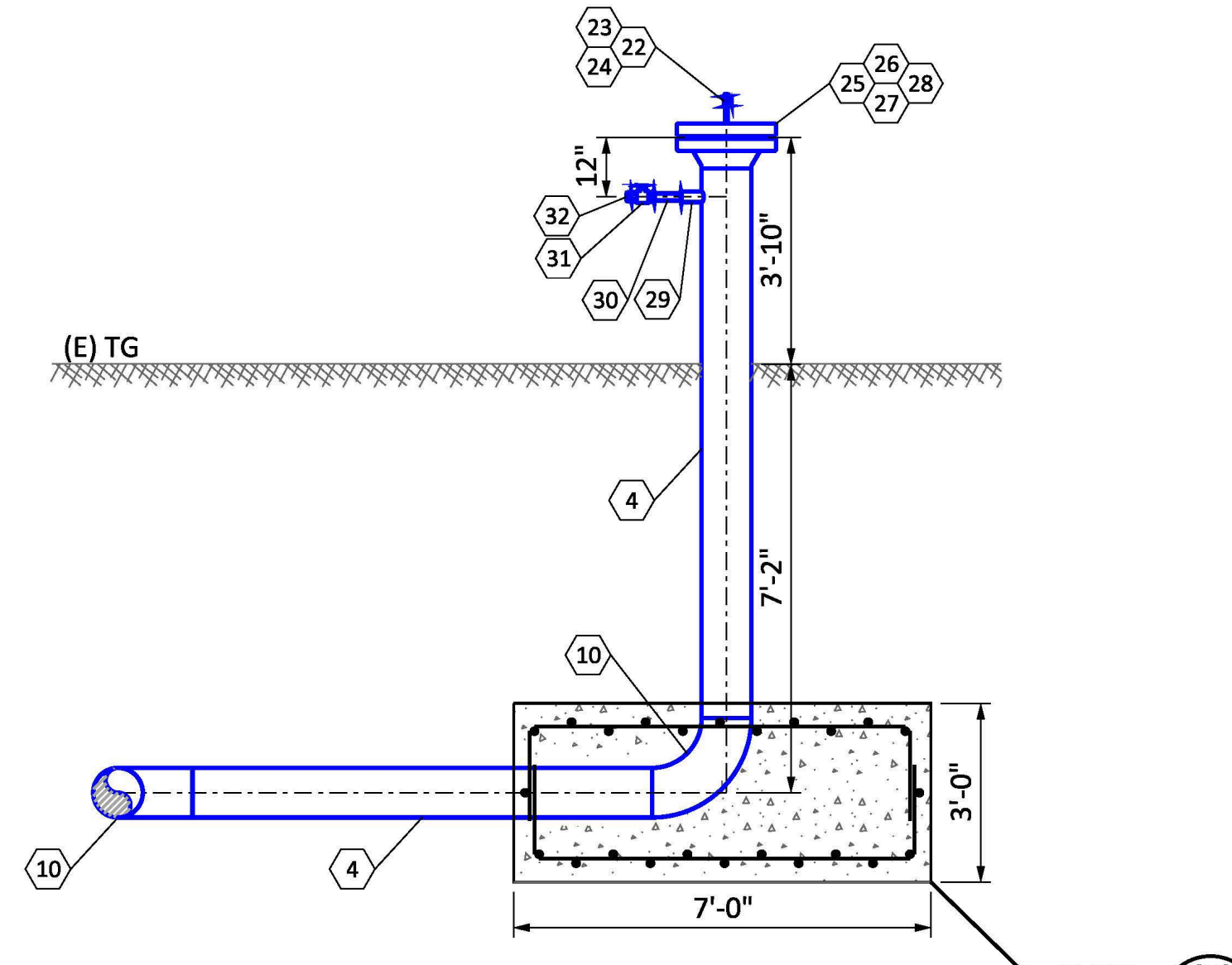


90% DESIGN REVIEW
PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	18 OF 28 SHEETS
74004060	A

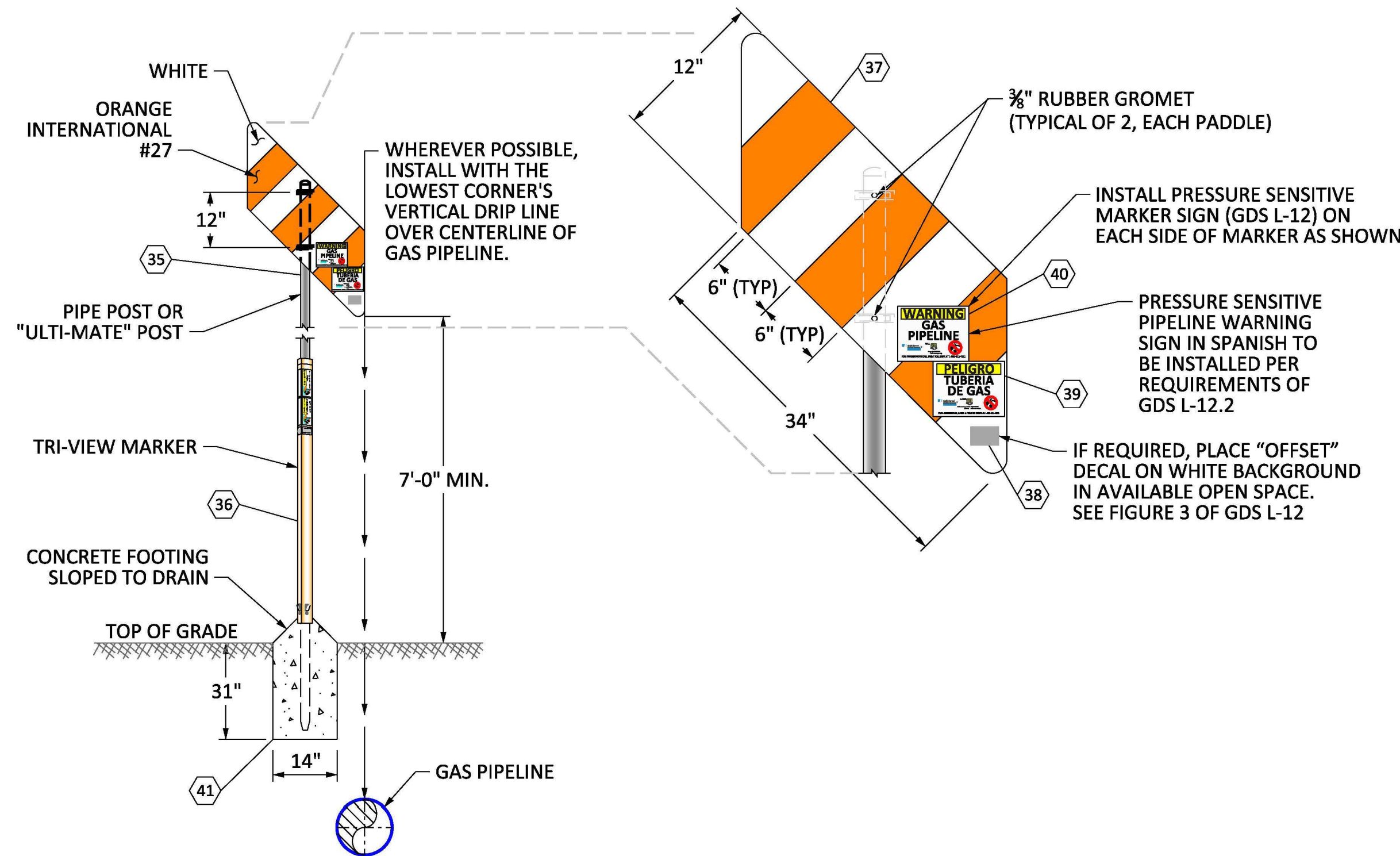


ELEVATION C 10" VALVE V-B
SCALE: 3/8" = 1'-0"



ELEVATION D 10" BD
SCALE: 3/8" = 1'-0"

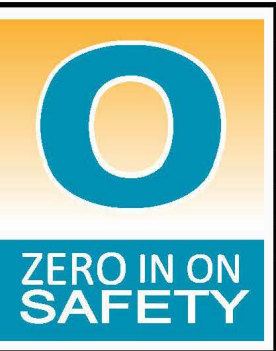
VALVE DATA STAMP	
BOM#	13 VALVE SIZE 10"
TECH ID (VALVE #)	V-B
VALVE TYPE	BALL, ANSI 600
MANUFACTURER	
MODEL/FIGURE #	
SERIAL#	
CRITICAL VALVE	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
CRITICAL VALVES ARE TO BE COMMISSIONED PER TD-4520P-01	
COMMISSIONING	
VALVE TO BE COMMISSIONED BY GAS PIPELINE OPERATION & MAINTENANCE (GPO&M) AND DIVISION OR DISTRICT PERSONNEL PRIOR TO PLACING VALVE IN SERVICE.	
COMMISSIONED BY:	
LAN ID	
DATE	
NUMBER OF TURNS OF HANDWHEEL (IF APPROPRIATE)	



DETAIL 2 PIPELINE PADDLE MARKER
INSTALL PER GDS L-11.1 AND TD-4412P-09
SCALE: NTS

PIPELINE MARKER TABLE				
LOCATION	TYPE	OTHER INFO	LINE/DFM	SHEET
H STA 01+11.00	PADDLE	DUAL PADDLE	L-215-1	5
H STA 03+48.54	PADDLE	DUAL PADDLE	L-215-1	5
H STA 13+50.00	PADDLE	SINGLE PADDLE	L-215-1	6
H STA 15+25.00	PADDLE	SINGLE PADDLE	L-215-1	7
H STA 22+50.00	PADDLE	SINGLE PADDLE	L-215-1	7
H STA 31+50.00	PADDLE	SINGLE PADDLE	L-215-1	8
H STA 64+50.00	PADDLE	SINGLE PADDLE	L-215-1	11
H STA 65+75.00	PADDLE	SINGLE PADDLE	L-215-1	12
H STA 73+25.00	PADDLE	SINGLE PADDLE	L-215-1	12
H STA 80+50.00	PADDLE	SINGLE PADDLE	L-215-1	13

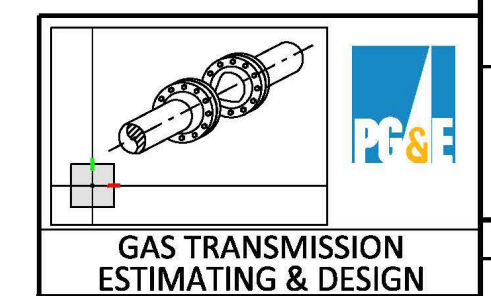
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A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

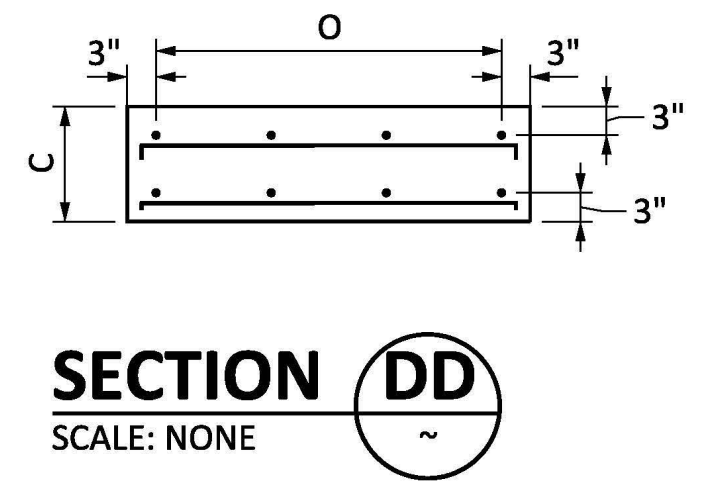
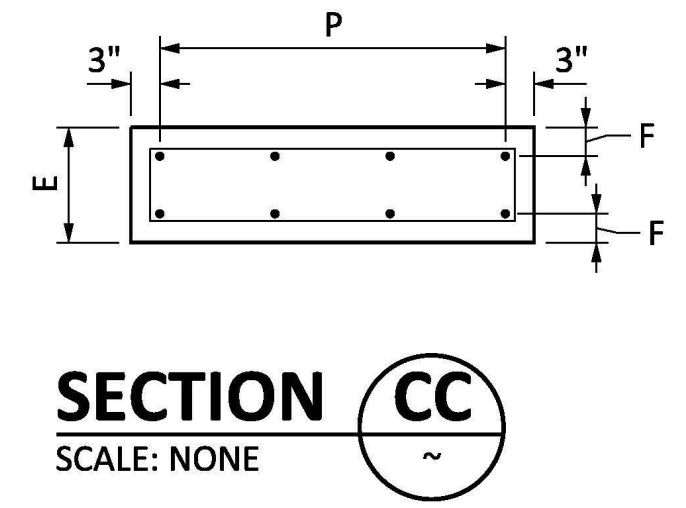
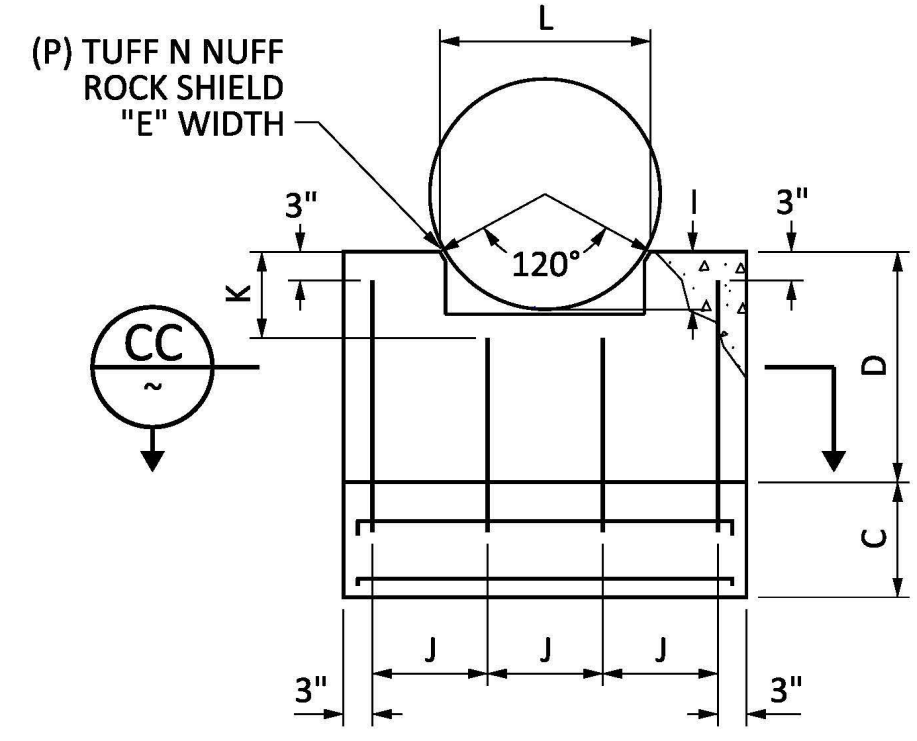
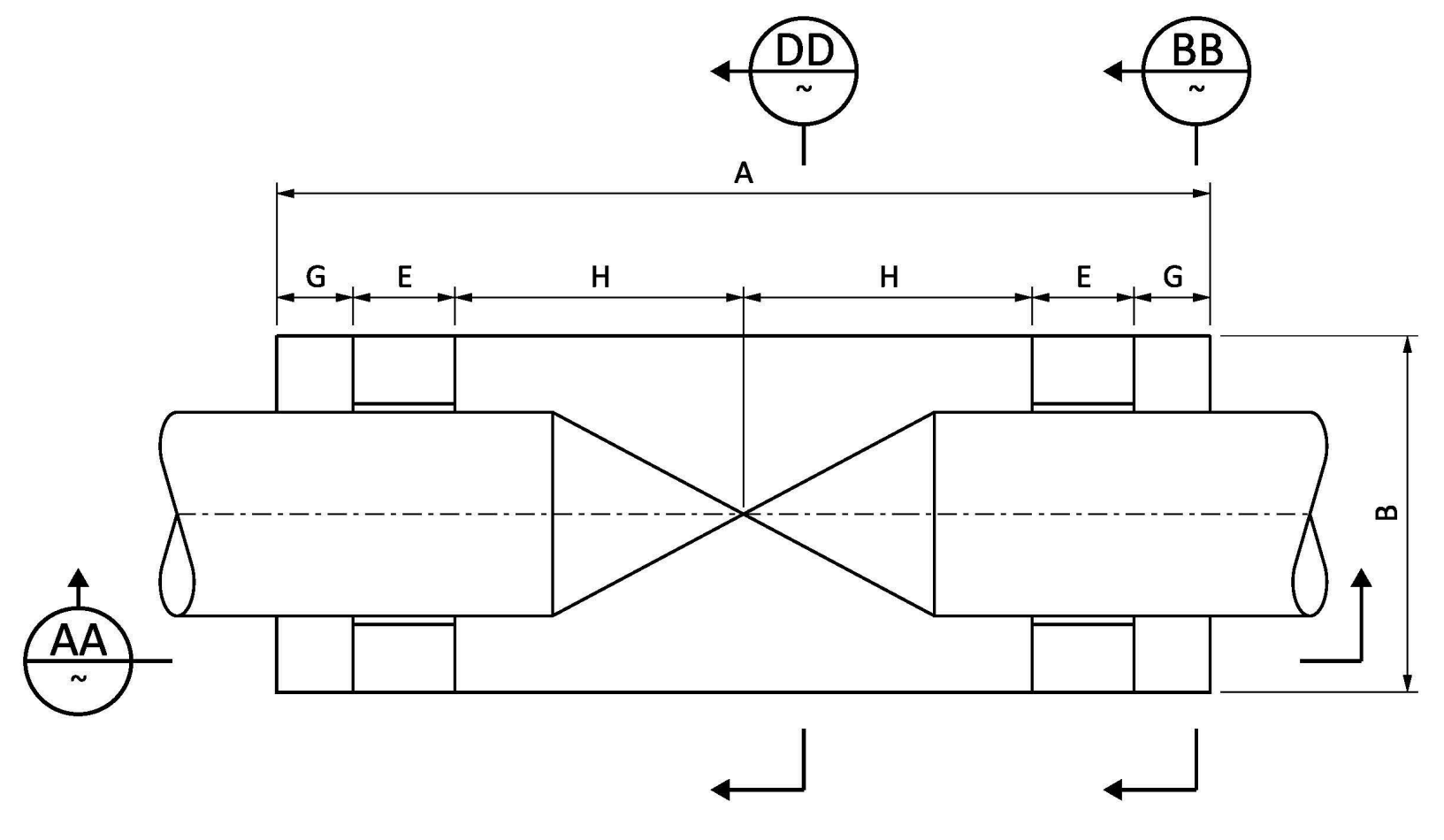
APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA



90% DESIGN REVIEW
PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	19 OF 28 SHEETS
74004060	A

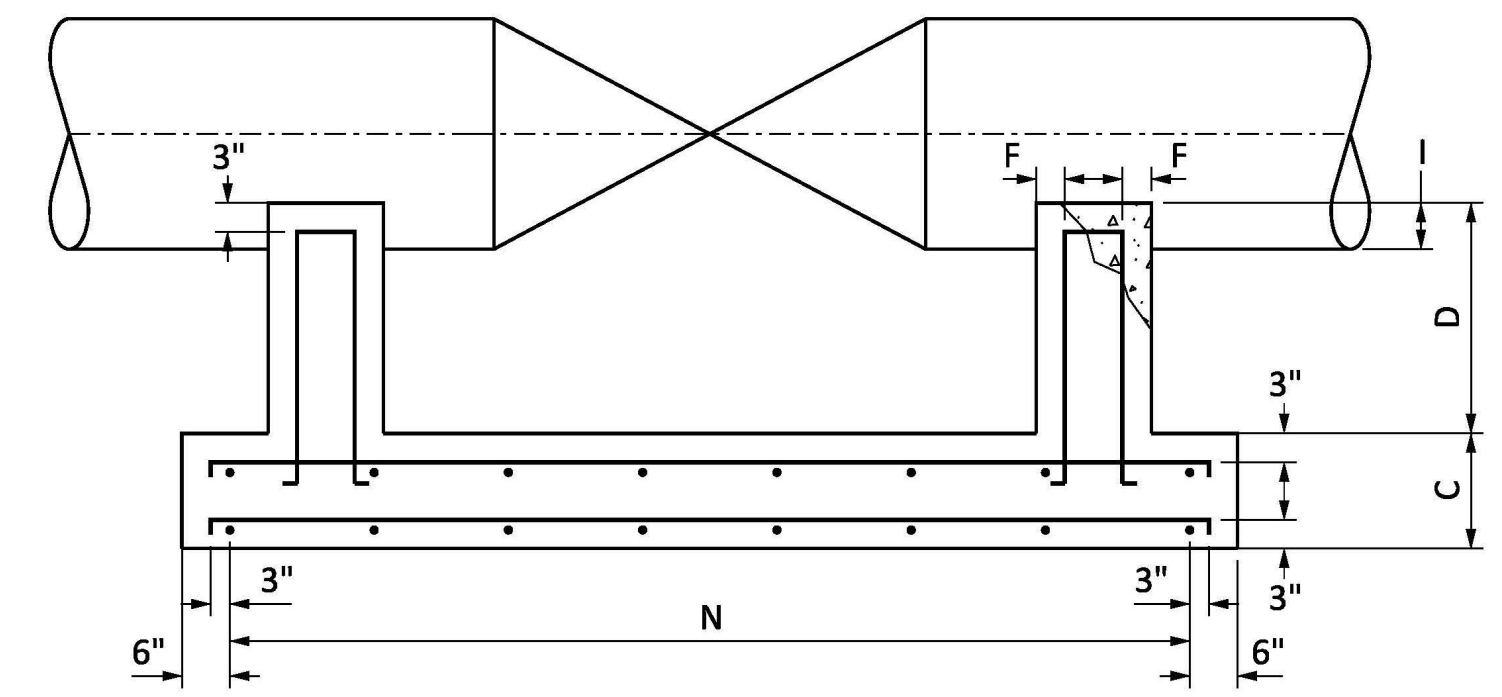


DETAIL 5
SCALE: NONE
BURIED VALVE SUPPORT
PER GDS F-12

SECTION BB
SCALE: NONE

SECTION CC
SCALE: NONE

SECTION DD
SCALE: NONE



SECTION AA
SCALE: NONE

VALVE SIZE	CONCRETE FOUNDATION DIMENSION													REBARS, EQUALLY SPACED		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
42"	14'-0"	5'-0"	1'-0"	3'-0"	1'-3"	0'-3"	1'-0"	4'-9"	0'-10 1/4"	1'-6"	1'-2"	3'-0 3/8"	1'-9"	12 #6	8 #6	5 #6
36"	12'-3"	4'-6"	1'-0"	3'-0"	1'-3"	0'-3"	0'-10 1/4"	4'-0"	0'-9"	1'-4"	1'-0"	3'-0 3/8"	1'-6"	12 #6	7 #6	4 #6
32"	11'-3"	4'-3"	1'-0"	2'-9"	1'-3"	0'-3"	0'-10 1/4"	3'-6"	0'-8"	1'-3"	1'-0"	3'-0 3/8"	1'-4"	8 #6	6 #6	4 #6
30"	10'-9"	4'-0"	1'-0"	2'-7"	1'-3"	0'-3"	0'-10 1/4"	3'-3"	0'-7 1/2"	1'-2"	1'-0"	3'-0 3/8"	1'-3"	8 #6	5 #6	4 #6
24"	9'-2"	3'-6"	1'-0"	2'-4"	1'-0"	0'-3"	0'-9"	2'-10"	0'-6"	1'-0"	0'-9"	3'-0 3/8"	1'-0"	8 #4	5 #4	4 #4
20"	7'-11"	3'-0"	1'-0"	2'-0"	0'-9"	0'-3"	0'-8 1/2"	2'-6"	0'-5"	0'-10"	0'-8"	3'-0 3/8"	0'-10"	8 #4	4 #4	4 #4
16"	6'-8"	2'-6"	0'-9"	1'-8"	0'-8"	0'-2 1/2"	0'-6"	2'-2"	0'-4"	0'-8"	0'-6"	3'-0 3/8"	0'-8"	6 #5	3 #5	4 #5

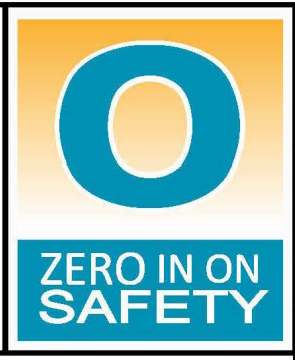
GENERAL INFORMATION

1. THE VALVE SUPPORTS SHOWN IN THIS DOCUMENT MUST BE USED FOR BURIED PLUG, BALL AND CHECK VALVE INSTALLATIONS
2. CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318-83.
3. CONCRETE SHALL DEVELOP AN $f_c \geq 4,000$ psi IN 28 DAYS.
4. REINFORCING BARS SHALL BE ASTM A-615 GRADE 40.
5. SOIL UNDER THE FOUNDATION SHALL BE COMPACTED TO A MINIMUM RELATIVE DENSITY OF 95% OF MAXIMUM DENSITY. SOFT MATERIAL IN ORIGINAL GROUND THAT WILL NOT COMPACT TO THIS MINIMUM SHALL BE REMOVED AND REPLACED WITH SUITABLE COMPACTIBLE MATERIAL. BACKFILL SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" IN THICKNESS BEFORE COMPACTION.
6. CHAMFER ALL EXPOSED EDGES OF CONCRETE TO 3/4".

NOTES:

THE SPACING FOR PEDASTALS (SECTION C) IS #4 REBAR AT 12" WITH AN EXTRA TIE AT THE TOP OF THE PEDASTAL, 3" DOWN FROM THE TOP TIE.

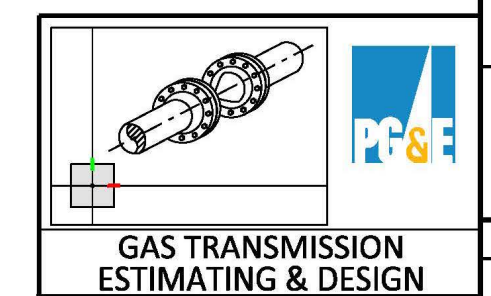
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NO.	DATE	DESCRIPTION	74004060	E1A4	MDGR	PM/SPEC	DWN	CHKD	SUPV	APVD BY
REVISIONS										

APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

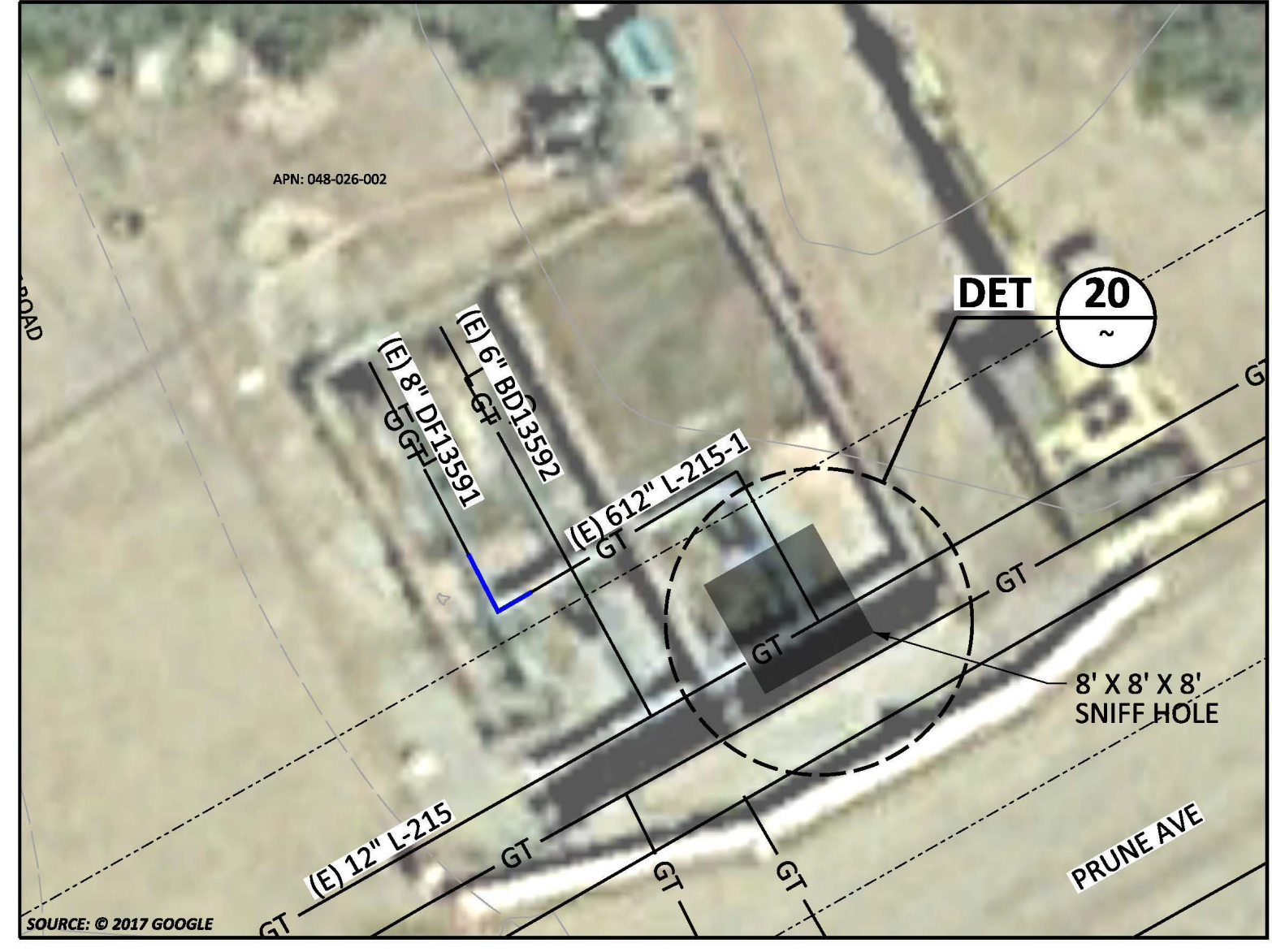


90% DESIGN REVIEW
PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	20 OF 28 SHEETS
74004060	A

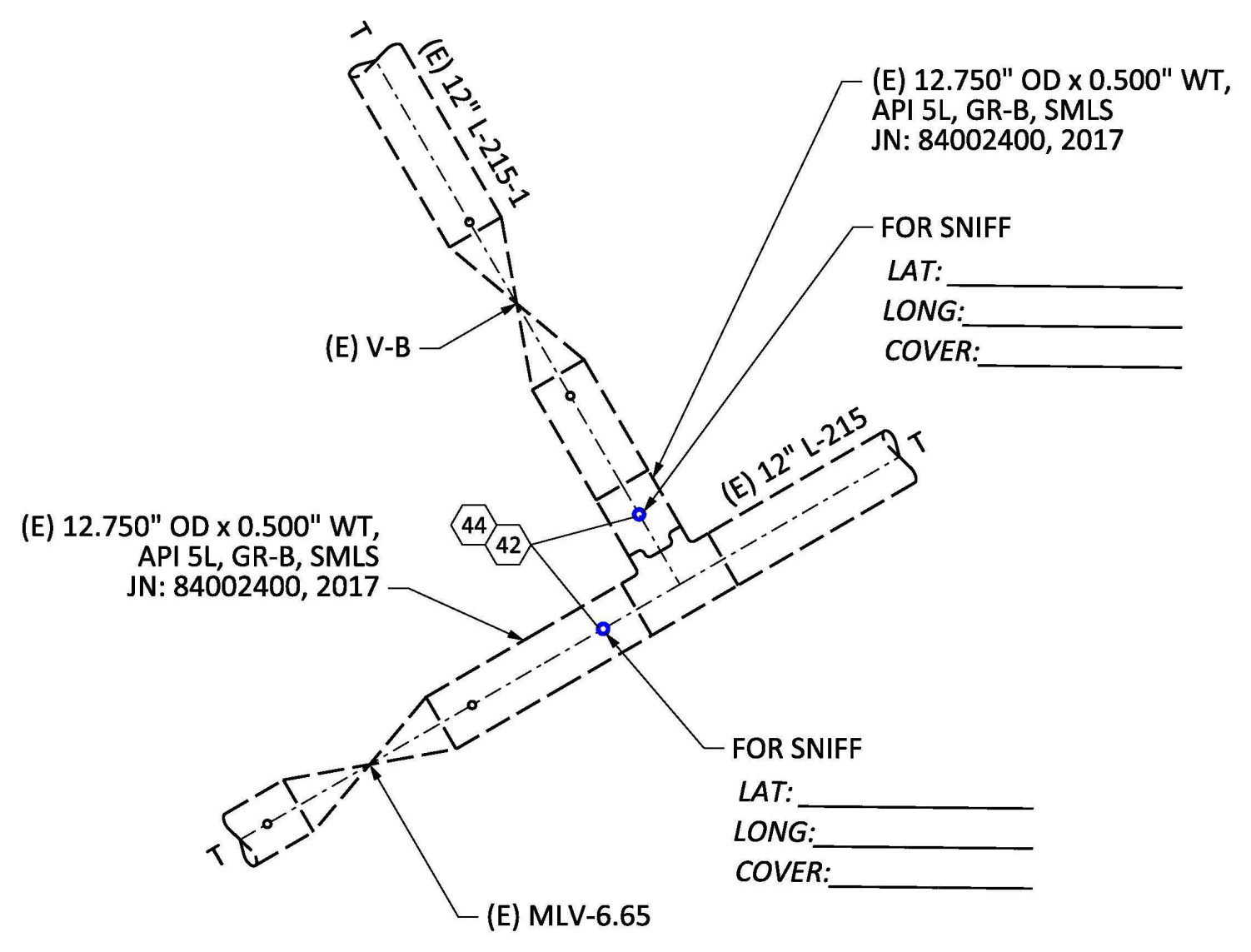
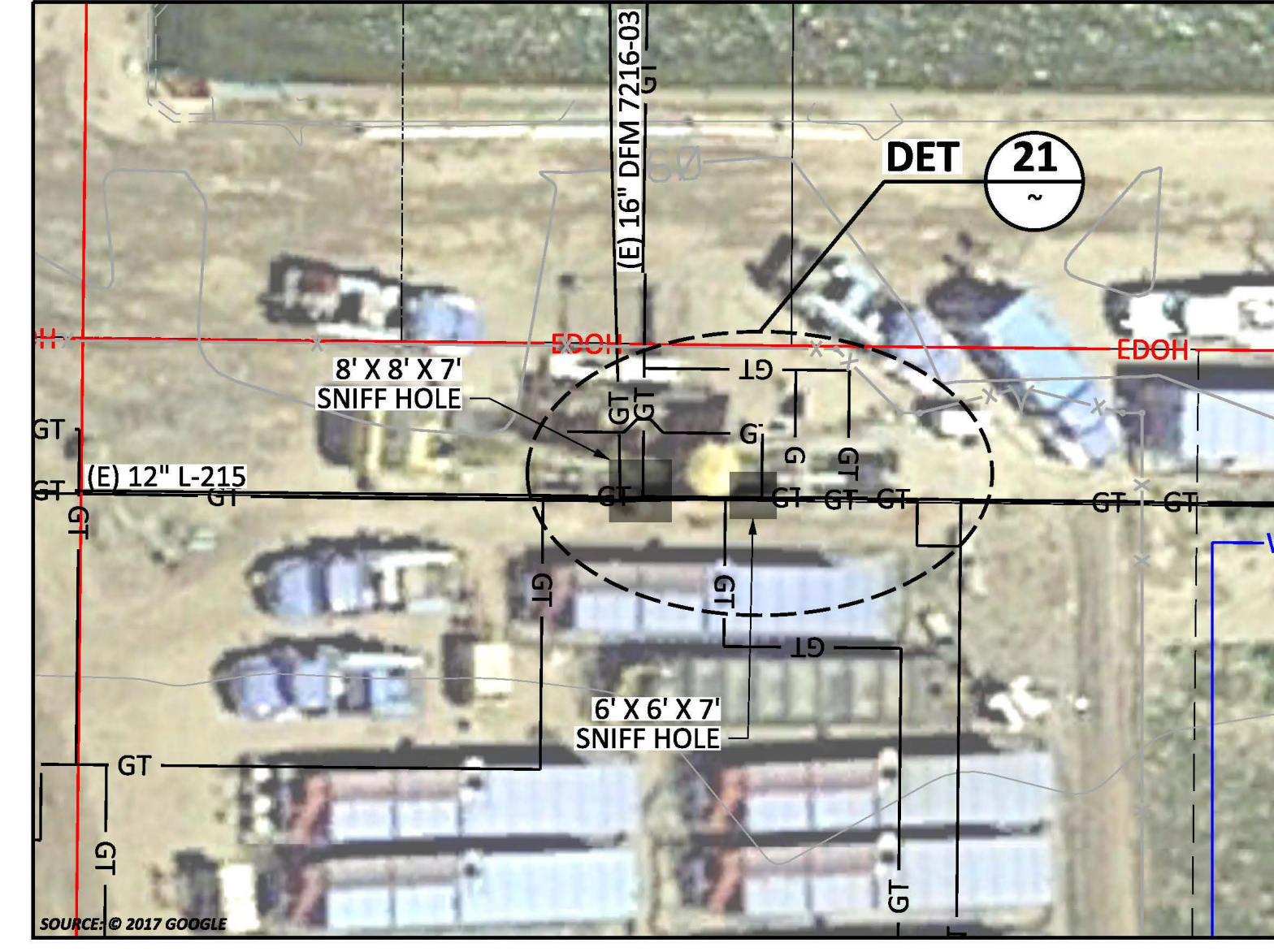
LOCATION A

2951-3159 PRUNE AVE
 WALL MAP - 3365; PLAT - A7; L - 215; MP - 6.65
 (SCALE: 1" = 10')

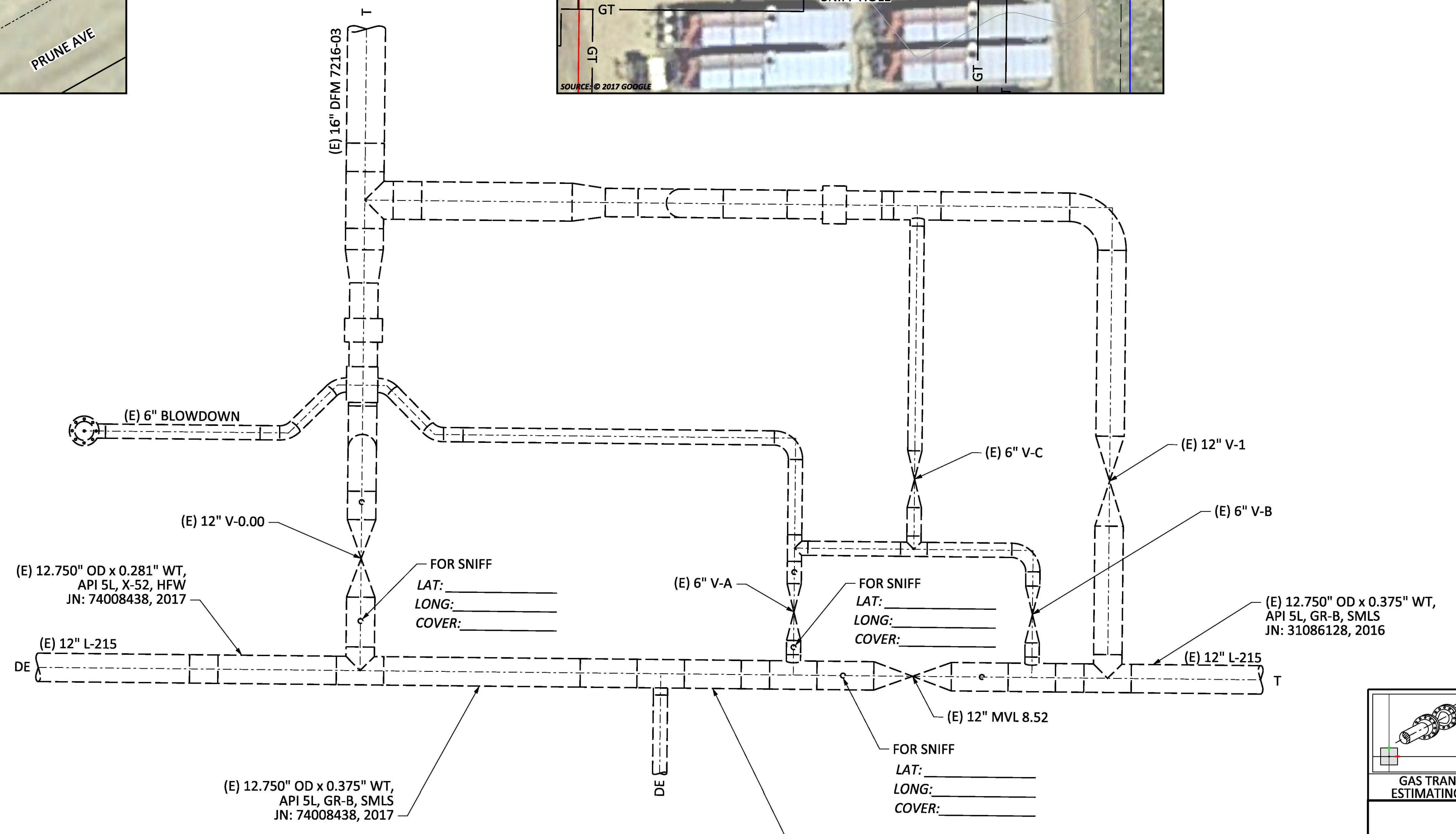


LOCATION B

1098 W BRADBURY RD
 WALL MAP - 3366; PLAT - B2; L - 215; MP - 8.52
 (SCALE: 1" = 20')

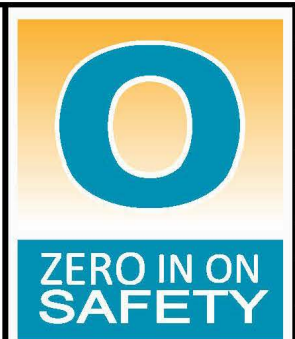


DETAIL 20 SNIFF HOLE
 SCALE: 3/8" = 1'-0"



DETAIL 21 SNIFF HOLES
 SCALE: 3/8" = 1'-0"

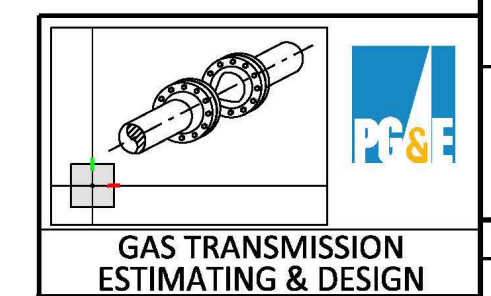
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A		90% DESIGN REVIEW	74004060	E1A4	MDGR			

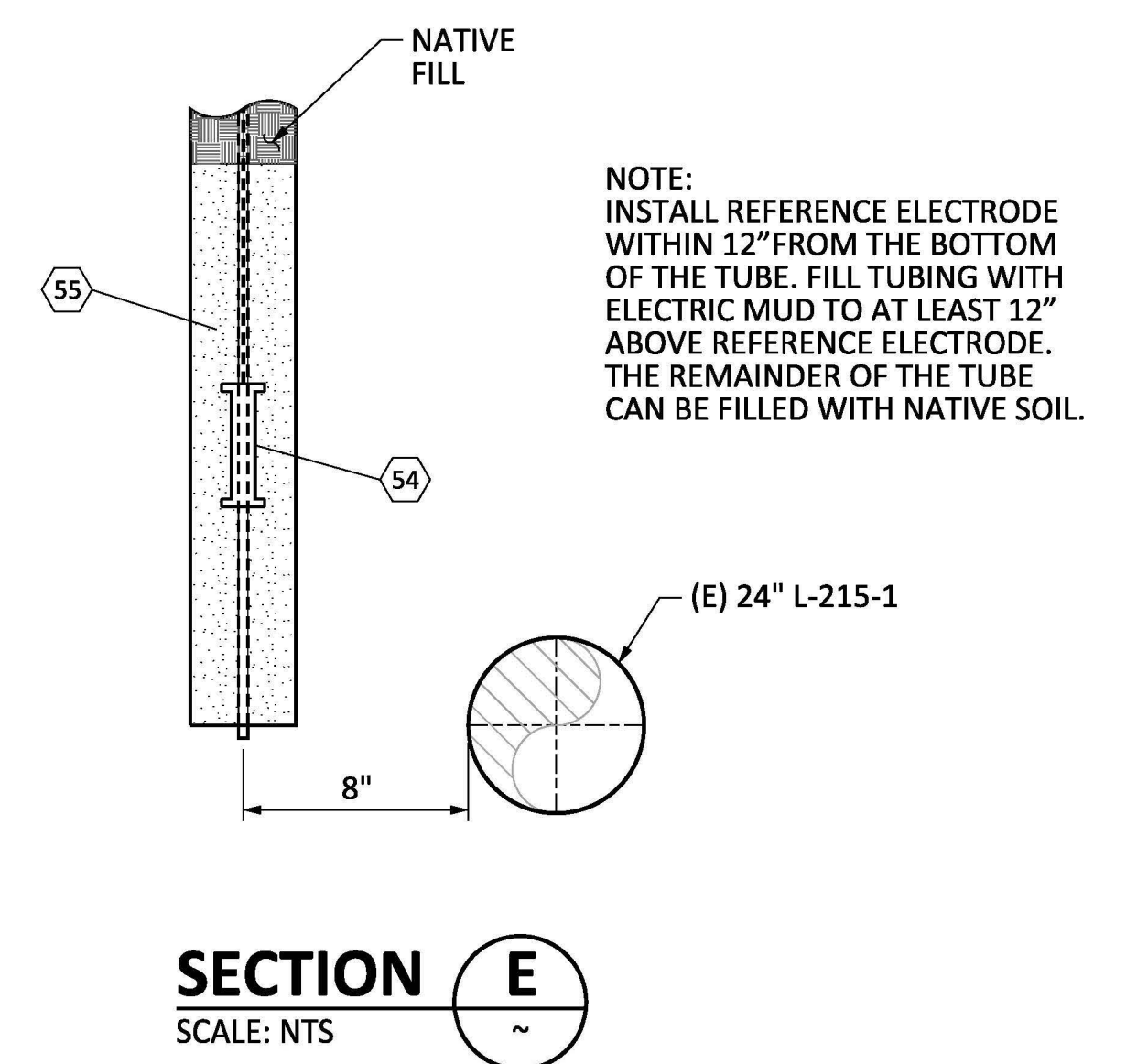
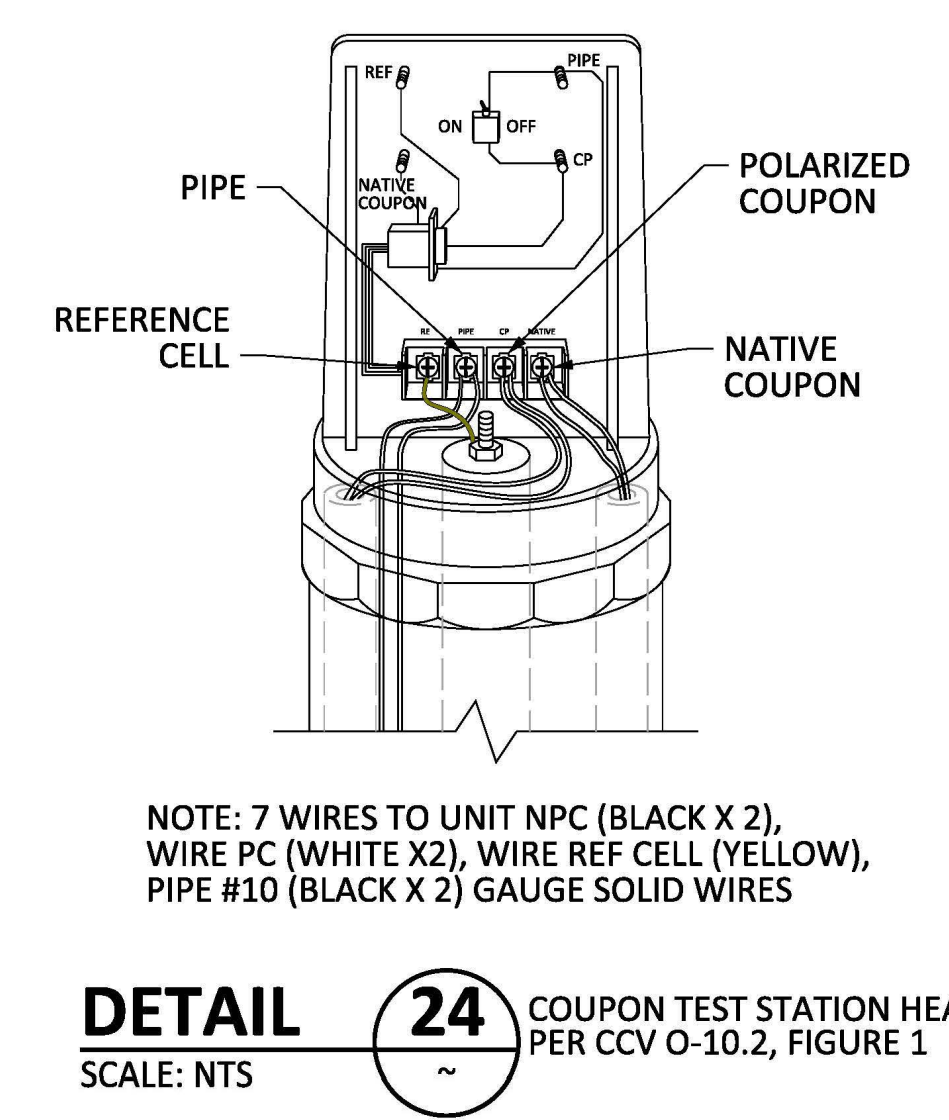
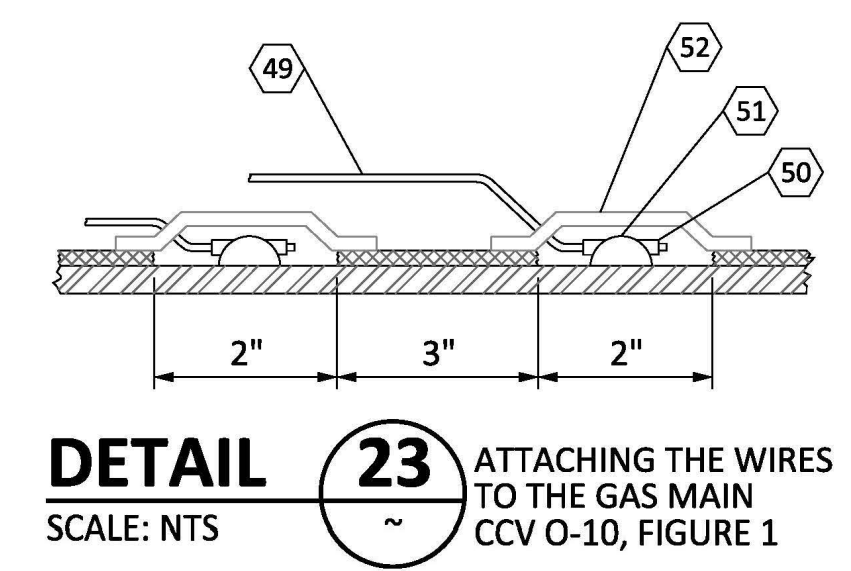
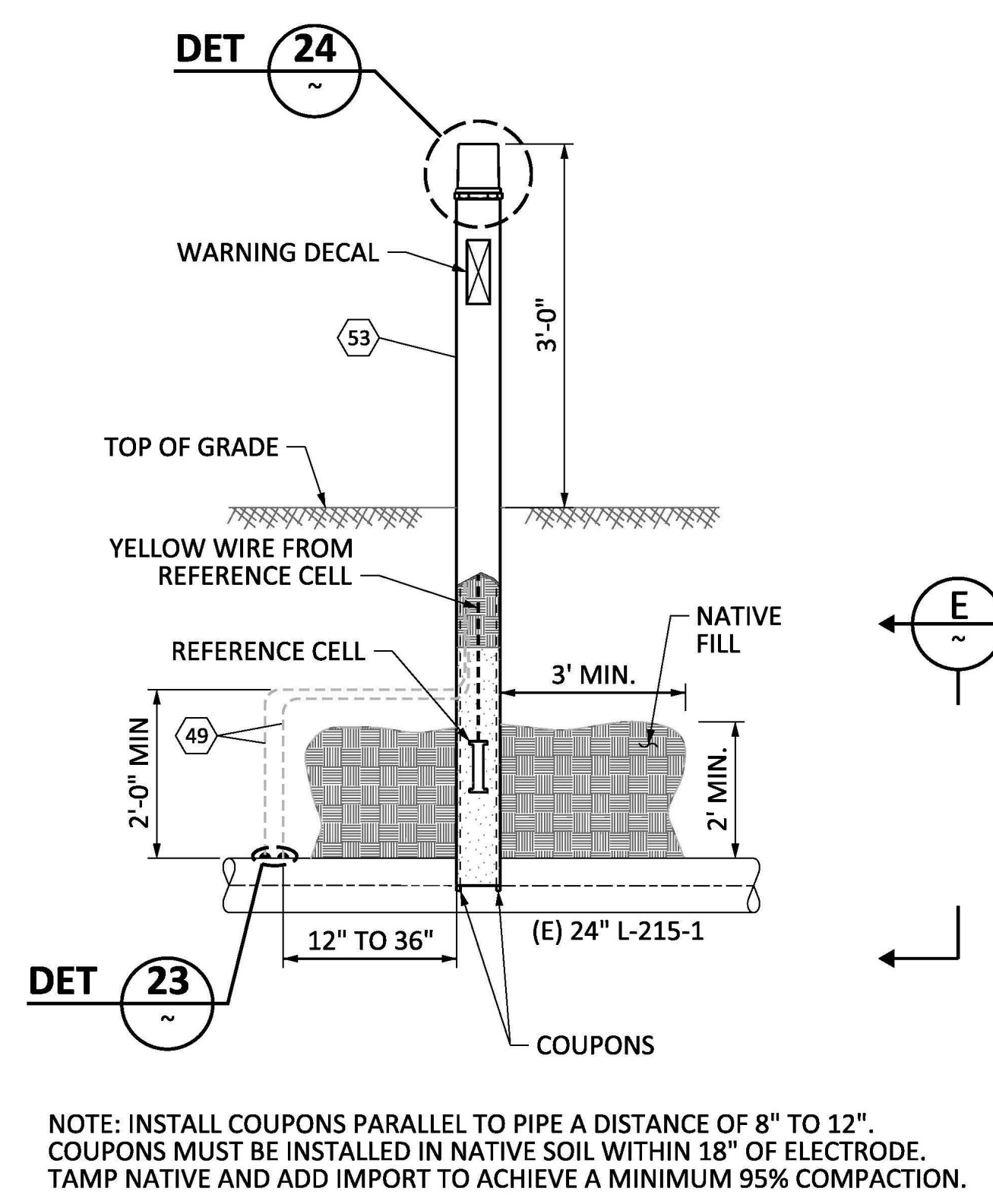
APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
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DATE	
SCALES	

PIPELINE - DETAILS
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 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY
 GAS TRANSMISSION & DISTRIBUTION
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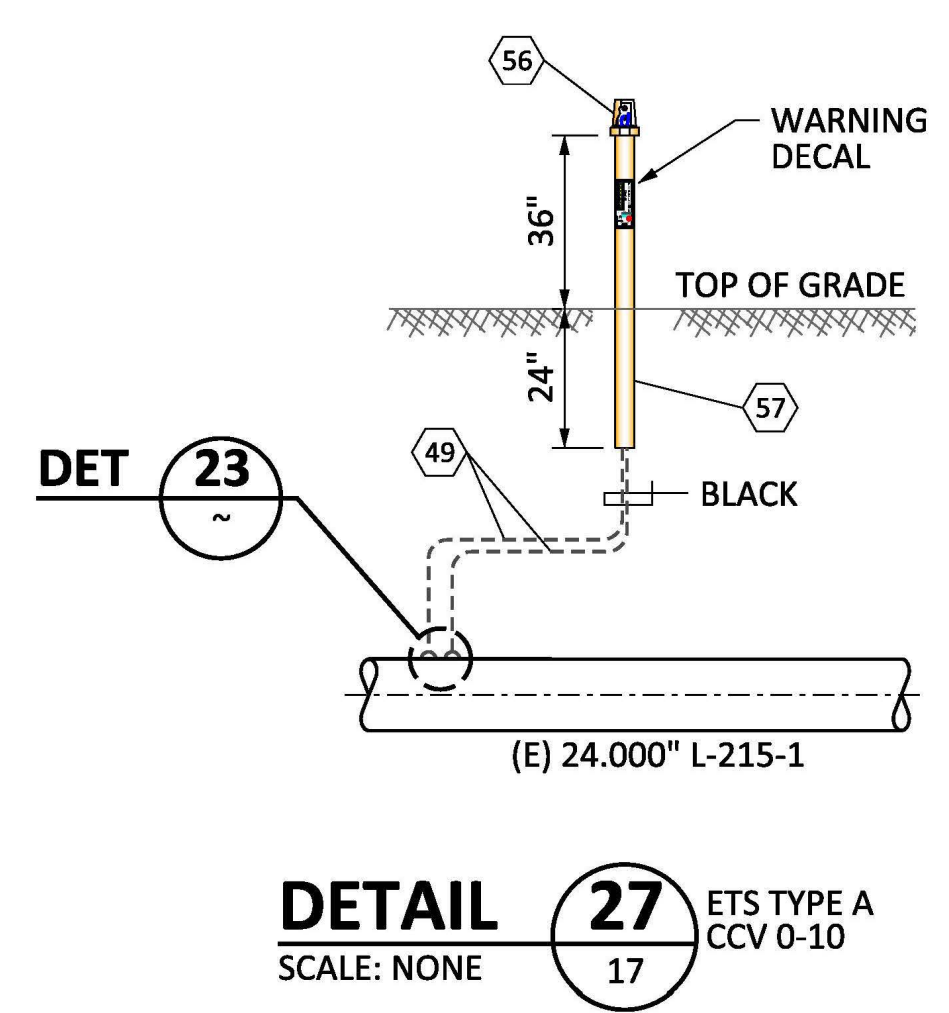


90% DESIGN REVIEW
 PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	21 OF 28 SHEETS
74004060	A



DETAIL 22 COUPON TEST STATION INSTALLATION
SCALE: NONE
17 PER CCV O-10.2, FIGURE 2



CATHODIC PROTECTION LOCATION TABLE					
LOCATION	CP TYPE	OTHER INFO	LINE/DFM	SHEET	S/N (RECORD IN FIELD)
H00+50.00	CTS	ABOVE GROUND	L-215-1	18	

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REVISIONS		APPROVED BY	PSRS
A	90% DESIGN REVIEW	74004060	E1A4 MDGR
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APPROVED BY	PSRS
	SUPV
	DSGN E1A4
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	CHKD MDGR
	OK
	DATE
	SCALE

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

GAS TRANSMISSION ESTIMATING & DESIGN

90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 26
DWG LIST SHEET 2
TRACKING NUMBER **R-687**
SHEET NO. 22 OF 28 SHEETS
74004060 A

PG&E GENERAL GUIDELINES FOR CONCRETE WORK REVISION:

PURPOSE AND SCOPE

THE REQUIREMENTS SET FORTH IN THIS DOCUMENT ARE INTENDED FOR CAST-IN-PLACE CONCRETE WORK FOR THE FOLLOWING PG&E FACILITIES: THRUST BLOCKS, BURIED VALVE SUPPORTS, SHALLOW FOOTINGS FOR GAS PIPELINE SUPPORTS (ISOLATED/SPREAD FOOTINGS, STRIP FOOTINGS, COMBINED FOOTINGS AND PAD/MAT FOUNDATIONS FOR SMALL NON ROTATING EQUIPMENT).

FOR OTHER PROJECT SPECIFIC CONCRETE WORK, THIS GUIDELINE DOCUMENT MAY BE USED IN CONJUNCTION WITH ADDITIONAL REQUIREMENTS SET BY THE ENGINEER-OF-RECORD OR AS REQUIRED BY A JURISDICTIONAL AGENCY IN A SPECIFIC BUILDING PERMIT.

ACRONYMS

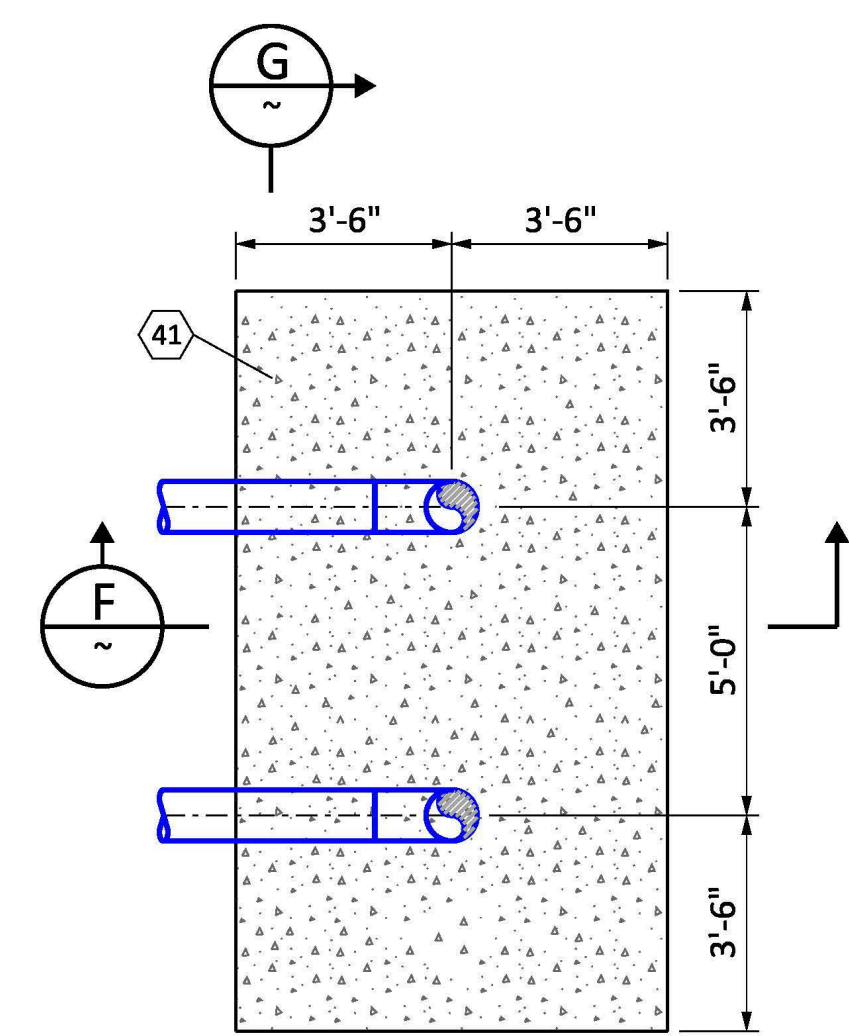
CBC CALIFORNIA BUILDING CODE
 ACI AMERICAN CONCRETE INSTITUTE
 OSHA OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
 ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS
 CALTRANS CALIFORNIA DEPARTMENT OF TRANSPORTATION

GENERAL REQUIREMENTS

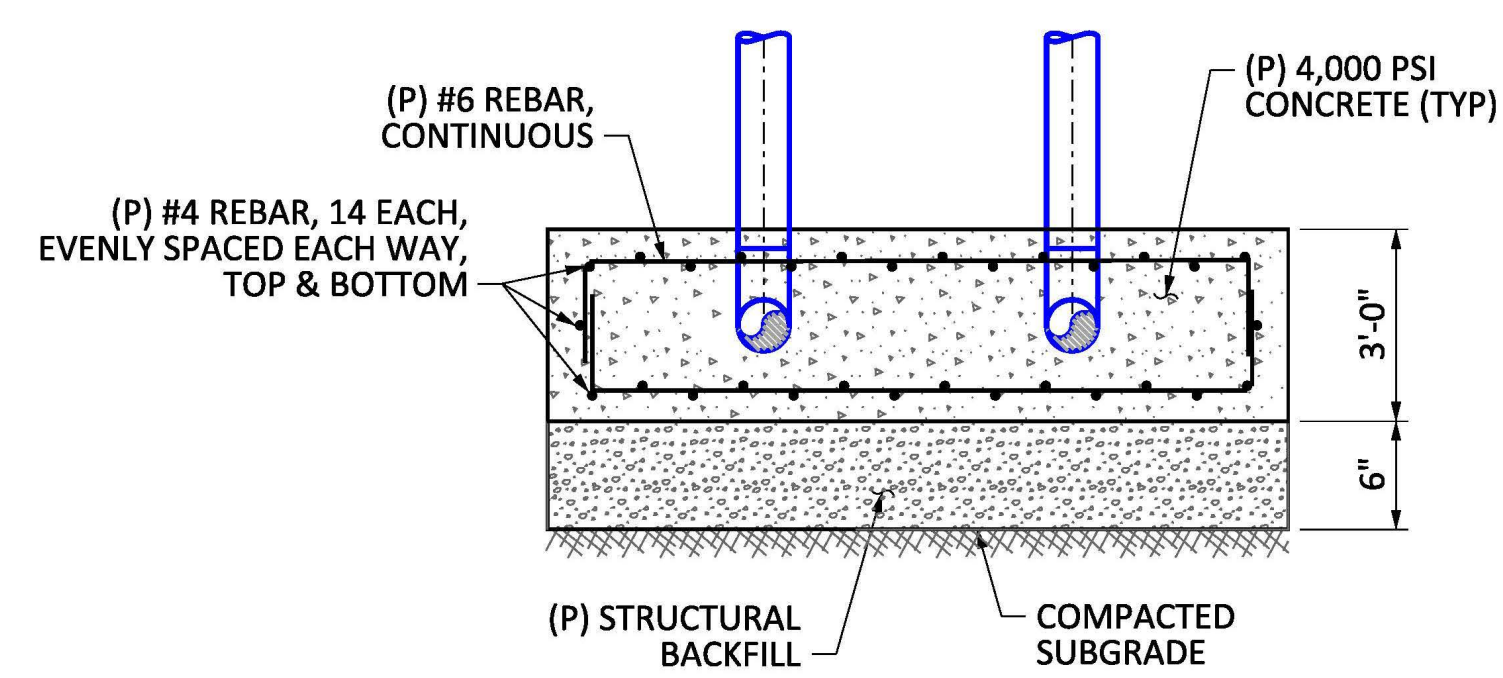
1. ALL EXCAVATION WORK AND SHORING MUST BE CONDUCTED IN COMPLIANCE WITH TD-4621M, EXCAVATION SAFETY MANUAL.
2. ALL WORK PLATFORMS SHALL BE ADEQUATELY SHORED, BRACED AND SUPPORTED IN COMPLIANCE WITH LATEST OSHA STANDARDS AND REGULATIONS.
3. PRIOR TO PLACEMENT OF CONCRETE, ALL EXCAVATIONS SHALL BE CLEANED OF ALL FOREIGN MATERIALS, DEWATERED AND COMPACTED.
4. EXCAVATED SUBGRADE SHALL BE COMPACTED TO MINIMUM 90% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D1557, PRIOR TO STRUCTURAL OR COMMON BACKFILL. MINIMUM 1 (ONE) IN-SITU DENSITY TEST SHALL BE CONDUCTED PER CONCRETE STRUCTURE, UNLESS DEEMED OTHERWISE BY THE FIELD GEOTECHNICAL PROFESSIONAL.
5. REQUIREMENT FOR COMPACTING EXCAVATED SUBGRADE MAY BE WAIVED IF FIELD TESTING DEMONSTRATES THAT THE IN-SITU DENSITY OF SUBGRADE IS ABOVE 90% OF MAXIMUM DRY DENSITY.
6. STRUCTURAL BACKFILL AND COMMON BACKFILL SHALL BE COMPACTED IN 6" TO 9" LIFTS TO ACHIEVE MINIMUM 90% DENSITY IN ACCORDANCE WITH ASTM D1557. STRUCTURAL BACKFILL SHALL CONFORM TO CALTRANS CLASS II AGGREGATE BASE.
7. PROJECT ENGINEER SHALL BE NOTIFIED IF UNEXPECTED SOIL CONDITIONS ARE ENCOUNTERED.
8. ALL CONCRETE WORK SHALL CONFORM TO LATEST EDITION OF ACI-318.
9. READY-MIXED CONCRETE SHALL CONFORM TO ASTM C94.
10. ALL CONCRETE WORK SHALL CONSIST OF REINFORCED CONCRETE, UNLESS SPECIFIED OTHERWISE BY THE ENGINEER.
11. ALL DIMENSIONS SHALL BE VERIFIED PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
12. ALL CONCRETE SHALL DEVELOP COMPRESSIVE STRENGTH OF MINIMUM 4,000 PSI AT 28 DAYS, UNLESS SPECIFIED OTHERWISE.
13. TYPE II PORTLAND CEMENT SHALL BE USED IN MANUFACTURING OF CONCRETE. TYPE II PORTLAND CEMENT SHALL CONFORM TO ASTM C150.
14. REINFORCING REBAR AND TIES SHALL BE OF GRADE 60 CONFORMING TO ASTM A615 OR ASTM A706.
15. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH ACI 318 IN CONJUNCTION WITH REBAR ARRANGEMENT SHOWN ON THE CONSTRUCTION DRAWINGS.
16. REINFORCING REBAR SHALL BE FABRICATED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DEVIATIONS FROM CONSTRUCTION DRAWINGS, IN REINFORCING REBAR ARRANGEMENT, SHALL BE APPROVED BY THE ENGINEER. SKETCH SHOWING SUCH DEVIATIONS SHALL BE MAINTAINED AS A PART OF AS-BUILT RECORD FOR THE PROJECT.
17. CONCRETE PRODUCTION FACILITY SHALL PROVIDE CONCRETE DESIGN MIX WITH AT LEAST 30 CONSECUTIVE TESTS RECORDS (NO MORE THAN 24 MONTHS OLD) DEMONSTRATING MINIMUM COMPRESSING STRENGTH REQUIREMENTS, IN ACCORDANCE WITH CHAPTER 5 OF ACI-318. THIS DOCUMENT SHALL BE MAINTAINED AS A PART OF AS-BUILT RECORD FOR THE PROJECT.
18. ADMIXTURES SUCH AS ACCELERATORS AND PLASTICIZERS SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
19. CONCRETE SLUMP SHALL NOT BE MORE THAN 4 INCHES.
20. CONCRETE SHALL BE CONSOLIDATED BY MEANS OF MECHANICAL VIBRATING EQUIPMENT, UNLESS APPROVED OTHERWISE BY THE ENGINEER.
21. CONCRETE SHALL BE PLACED MONOLITHICALLY, UNLESS SPECIFIED OTHERWISE.
22. MINIMUM CLEAR COVER OF 3 INCHES SHALL BE MAINTAINED FOR ALL REBAR, UNLESS SPECIFIED OTHERWISE.
23. WHEN CONCRETE IS DIRECTLY PLACED AGAINST GAS PIPELINE, A MINIMUM CLEAR SPACING OF 6 INCHES SHALL BE MAINTAINED BETWEEN REBAR AND GAS PIPELINE, ALL AROUND THE PIPE. REBAR SHALL BE CUT AND BENT ACCORDINGLY TO ACHIEVE THIS CLEAR SPACING.
24. WHERE FBE COATED GAS PIPELINE IS BURIED AND IS ENCASED IN CONCRETE (I.E. THRUST BLOCKS, ANCHOR BLOCKS, ETC.); AN ABRASION-RESISTANT COATING (PROTAL 7200, POWERCETE J OR DEVGRIP 238) SHALL BE APPLIED OVER THE FBE COATED PIPE WHICH WILL BE IN DIRECT CONTACT WITH CONCRETE.
25. WHERE GAS PIPELINE IS ABOVE GROUND AND SUPPORTED OVER CONCRETE SUPPORTS, A NON-ABRASIVE DIELECTRIC MATERIAL (FRP, DELRIN OR APPROVED OTHER) SHALL BE PLACED BETWEEN THE CONCRETE SUPPORT AND GAS PIPELINE.
26. IF REINFORCEMENT SPLICES ARE USED, THE MINIMUM LAP FOR THE SPLICES SHALL BE 50 TIMES THE DIAMETER OF THE REBAR.
27. ALL EXTERNALLY EXPOSED EDGES OF CONCRETE SHALL HAVE A CHAMFER OF 0.75 INCH, UNLESS SPECIFIED OTHERWISE.
28. CEMENT BASED GROUT SHALL BE NON-SHRINK AND NON-METALLIC. CEMENT BASED GROUT SHALL DEVELOP MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS, UNLESS SPECIFIED OTHERWISE.
29. FOR UNDERGROUND PORTION OF THE CONCRETE WORK THE REQUIREMENT FOR HAVING FORMWORK MAY BE WAIVED BASED ON AREA OF EXCAVATION. THIS WAIVER SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE CONCRETE WORK. IN SUCH CASES, A SKETCH SHOWING THE FINAL PLACEMENT OF CONCRETE SHALL BE MAINTAINED AS A PART OF AS-BUILT.
30. FORMWORK FOR CONCRETE SHALL NOT BE REMOVED BEFORE 3 DAYS (72 HOURS) OF PLACING OF CONCRETE, UNLESS SPECIFIED OTHERWISE.
31. CONCRETE SHALL BE CURED, BY KEEPING ALL CONCRETE SURFACES MOIST WITH WATER, FOR A MINIMUM OF 10 DAYS AFTER PLACING OF CONCRETE. DURING ENTIRE CURING PERIOD USING WATER, CONCRETE SURFACES CAN BE KEPT MOIST BY PONDING OR BY USING WATER ABSORBENT MATERIALS LIKE BURLAPS/COTTON MATS.
32. REQUIREMENT FOR DURATION OF CURING WITH WATER MAY BE RELIEVED IN CASE OF WET SOIL CONDITIONS DUE TO HIGH WATER TABLE OR MOIST CONDITIONS DUE TO RAIN, UPON APPROVAL OF THE ENGINEER.
33. WATER-BASED, ACRYLIC CONCRETE CURING COMPOUNDS MAY BE USED FOR CURING IN LIEU OF CURING WITH WATER. CURING COMPOUNDS SHALL CONFORM TO ASTM C309. VOCOMP® WATER-BASED, ACRYLIC CONCRETE CURING COMPOUND FROM W.R. MEADOWS OR EQUAL SHALL BE USED. CURING COMPOUND SHALL BE APPLIED UNIFORMLY OVER ALL EXPOSED CONCRETE SURFACES, IMMEDIATELY AFTER FINAL FINISHING AND IMMEDIATELY AFTER REMOVAL OF FORMWORK FOR VERTICAL SURFACES. PRIOR TO REMOVING FORMWORK FROM VERTICAL SURFACES AND APPLYING A CURING COMPOUND TO THESE SURFACES, FORMWORK SHALL BE KEPT MOIST WITH WATER. MANUFACTURERS' RECOMMENDATION FOR PREPARATION, MIXING, APPLICATION METHOD, COVERAGE, DRYING TIME AND CLEANING OF THE CURING COMPOUNDS SHALL BE FOLLOWED.
34. WHETHER CONCRETE IS CURED UTILIZING WATER OR A CURING COMPOUND, THE CONCRETE STRUCTURE SHALL NOT BE LOADED UNTIL A MINIMUM OF 10 DAYS AFTER CONCRETE PLACEMENT, UNLESS SPECIFIED OTHERWISE IN THE DRAWINGS OR BY THE RESPONSIBLE ENGINEER.
35. ALL CONCRETE SHALL BE PROTECTED DURING CURING FROM DAMAGE DUE TO WEATHER AND CONSTRUCTION ACTIVITIES.

DOCUMENTATION REQUIREMENTS

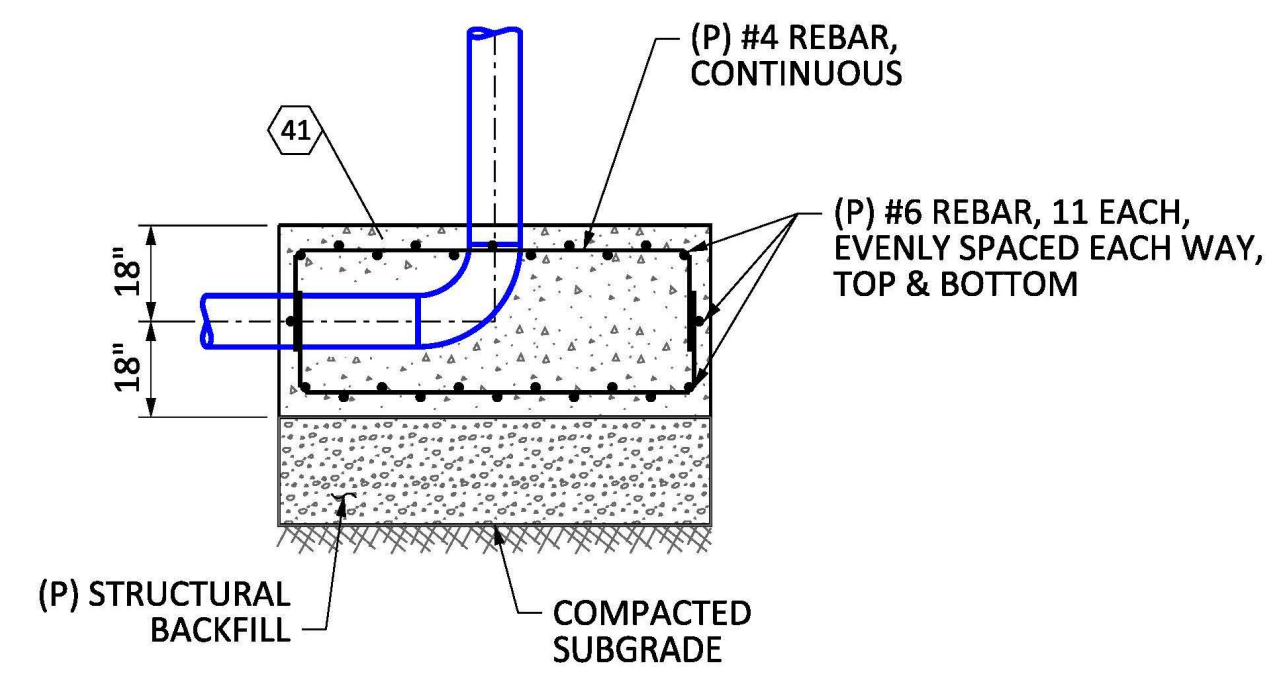
1. DOCUMENTATION/SKETCH/REDLINED DRAWINGS SHOWING ANY DEVIATIONS FROM CONSTRUCTION DRAWINGS/DOCUMENTS (AS APPLICABLE);
2. DOCUMENTATION CONFIRMING MINIMUM COMPRESSIVE STRENGTH (CONCRETE MIX DESIGN DOCUMENT AND TICKETS FROM BATCH PLANT) OF CONCRETE DESIGN MIX;
3. IN-SITU SOIL DENSITY TEST RESULTS FOR FOUNDATION SUBGRADE COMPACTION (AS APPLICABLE)



DETAIL 26 THRUST BLOCK
 SCALE: NTS
 18,19

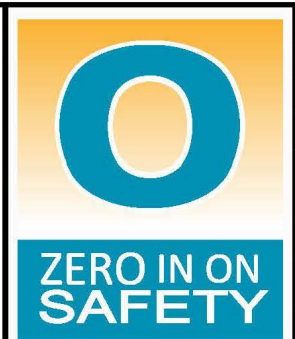


SECTION G
 SCALE: NTS



SECTION F
 SCALE: NTS

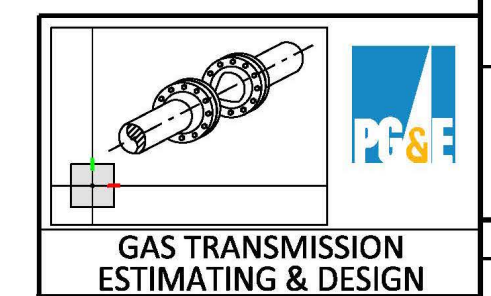
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A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

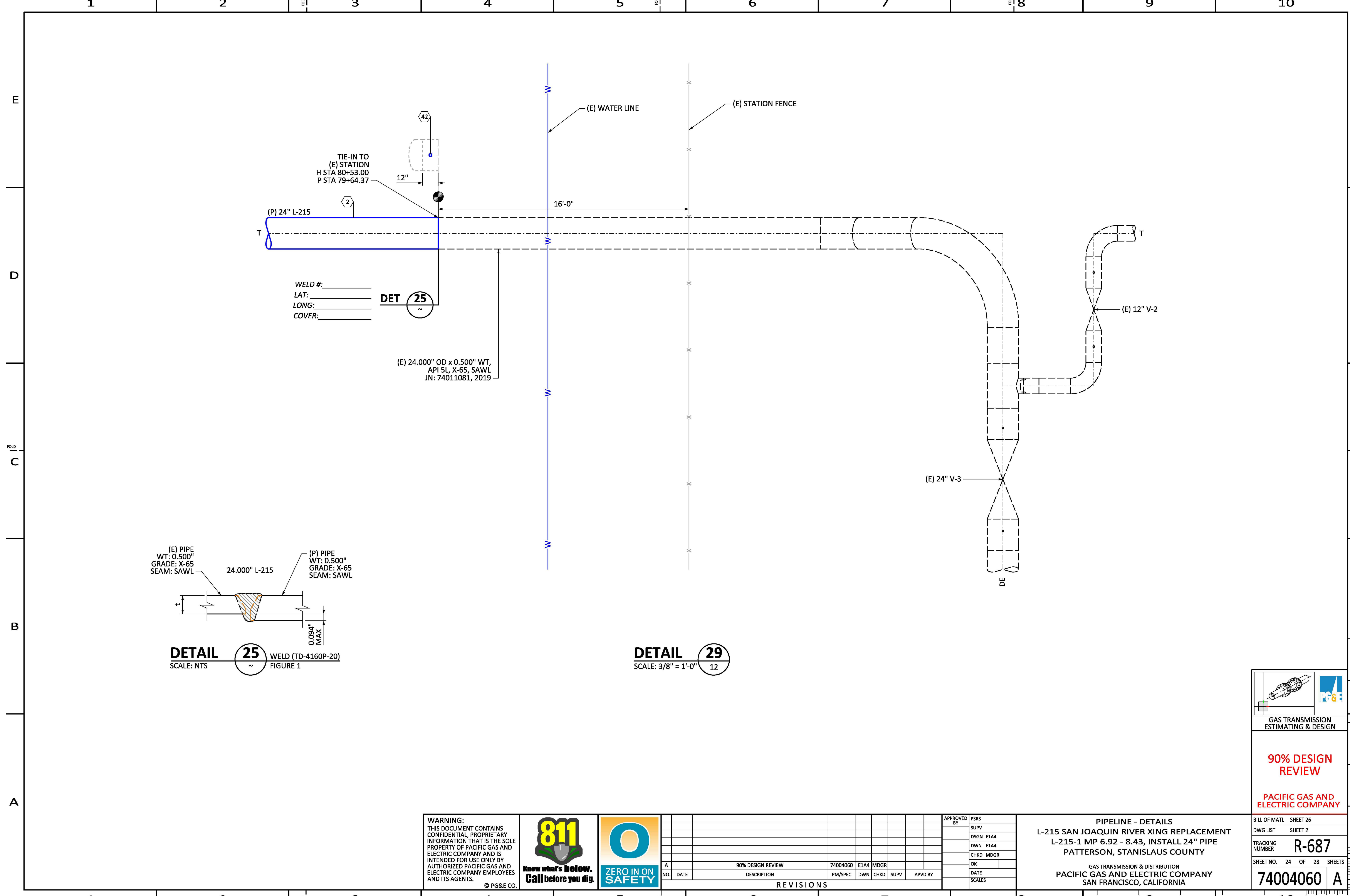
APPROVED BY	PSRS
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	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
DATE	
SCALE	

PIPELINE - DETAILS
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY
 GAS TRANSMISSION & DISTRIBUTION
 PACIFIC GAS AND ELECTRIC COMPANY
 SAN FRANCISCO, CALIFORNIA



90% DESIGN REVIEW
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BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	23 OF 28 SHEETS
74004060	A



TIE-IN TO
(E) STATION
H STA 80+53.00
P STA 79+64.37

(P) 24" L-215

(E) WATER LINE

(E) STATION FENCE

WELD #:
LAT:
LONG:
COVER:

DET 25

(E) 24.000" OD x 0.500" WT,
API 5L, X-65, SAWL
JN: 74011081, 2019

(E) 24" V-3

(E) 12" V-2

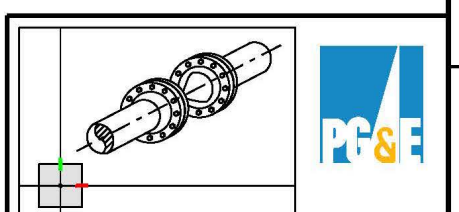
(E) PIPE
WT: 0.500"
GRADE: X-65
SEAM: SAWL

24.000" L-215

(P) PIPE
WT: 0.500"
GRADE: X-65
SEAM: SAWL

DETAIL 25
WELD (TD-4160P-20)
SCALE: NTS
FIGURE 1

DETAIL 29
SCALE: 3/8" = 1'-0"
FIGURE 12

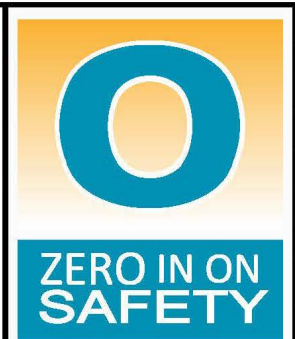


GAS TRANSMISSION
ESTIMATING & DESIGN

**90% DESIGN
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	SUPV
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	SCALES

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

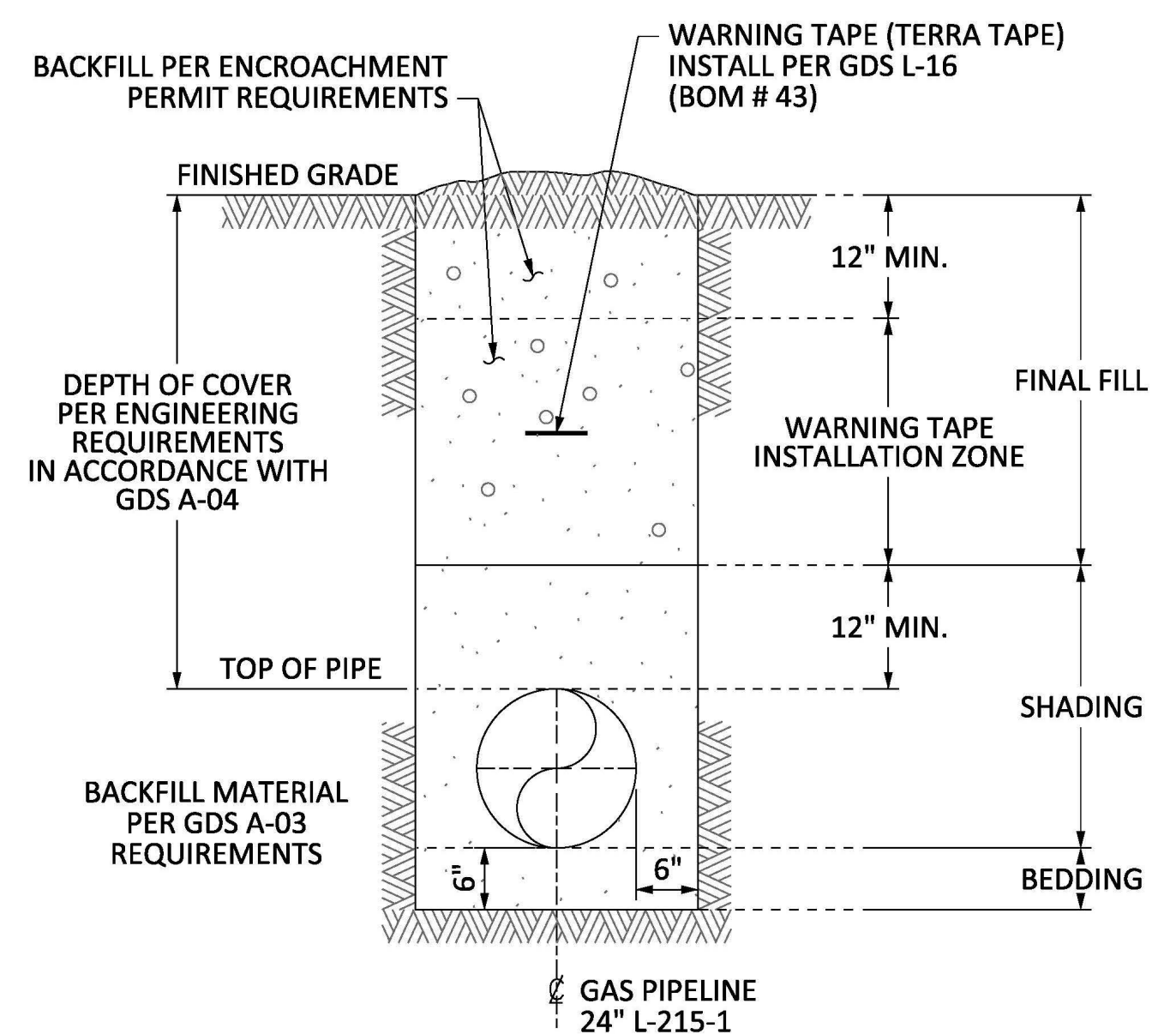
BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
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74004060	A

PIPE INSPECTION TABLE

UNIQUE IDENTIFIER						EXISTING PIPE SPECIFICATIONS (* = ASSUMED)				INSPECTIONS REQUIRED				PIPE WRAP		COMMENTS						
TASK # (1A)	JOB # (1B)	LINE # (1C)	MILE POINT (1D)	DIG SITE # (1E)	COC UNIQUE IDENTIFIER		DRAWING SHEET (1H)	DRAWING P STATION (1I)	INSTALL JOB # (2A)	INSTALL YEAR (2B)	OD (in.) (2C)	WT (in.) (2D)	PIPE GRADE (2E)	PIPE SEAM TYPE (2F)	H-FORM (3A)		LSC (3B)	CUT-OUT (3C)	DESTRUCTIVE TEST COUPON (3D)	PIPE TO SOIL READ (3E)	TEST REQUIRED (4A)	RESULTS (4B)
					SAMPLE (1F)	CUT TEST SAMPLE																
1	74004060	L-215-1	6.92	A			5, 18	0+00.0	30697065.000	7/3/1905	24"	0.500	X60	DSAW	FULL	Yes	No	No	Yes			

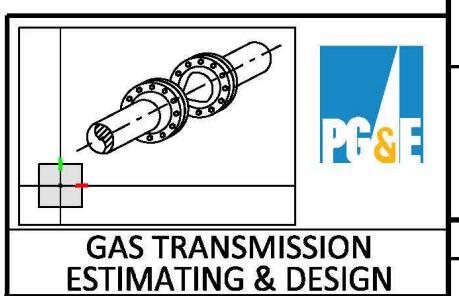
NOTES:

- PERFORM PIPE TO SOIL READING ON ALL EXCAVATIONS SITES ONCE TOP OF PIPE IS EXPOSE AND IS SAFE TO ENTER THE EXCAVATION. CONSTRUCTION MANAGER OR FIELD ENGINEER TO COORDINATE AHEAD OF TIME (2-3 WEEKS) WITH CORROSION MECHANICS SUPERVISOR OF THE AREA TO SCHEDULE PIPE TO SOIL READS. THIS IS A TEMPORARY PROCESS.
 - IF A LOW READ (LESS THAN -1600 MV) OR HIGH READ (GREATER THAN -850 MV) IS TAKEN, CONSTRUCTION MANAGER/LEAD INSPECTOR TO CONTACT THE LOCAL CORROSION SUPERVISOR TO HAVE A CORROSION MECHANIC ON SITE AND DETERMINE WHAT THE ISSUE IS.
 - IF NEITHER THE LEAD INSPECTOR (OQ) NOR CORROSION MECHANIC IS AVAILABLE, THEN THE READ WILL BE TAKEN LATER WHEN THE H-FORM IS PERFORMED OR THE BELL HOLE IS FULLY EXCAVATED. DOCUMENT ON BOTH THE A-FORM AND H-FORM WHEN THE READ(S) ARE TAKEN.
 - COMPARE ANY INFORMATION ON A-FORM WITH INFORMATION ON H-FORM AND LONG SEAM CHARACTERIZATION.
 - CHECK WALL THICKNESS AT LOCATIONS PERFORMING HOT WELDING, CUTS, AND INSTALLING SAVE-A-VALVE ON MAINLINE PIPE. IF WALL THICKNESS IS DIFFERENT FROM DESIGN PIPE SPECIFICATIONS, CONTACT THE ENGINEER TO SCHEDULE A LONG SEAM CHARACTERIZATION.
 - ALL ASPHALTIC PIPE WRAP CONTAINS POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS), WHICH ARE ALSO HAZARDOUS. FOR MORE INFORMATION REFERRED TO TD-4711P-01
 - IF PIPE WRAP SAMPLE IS REQUIRE TO BE SEND FOR TESTING AND/OR HAS TO VERIFIED IN THE FIELD ("VIF"), THEN FIELD ENGINEER/LEAD INSPECTOR/CONSTRUCTION MANAGEMENT RESPONSIBLE TO OBTAIN A SAMPLE OF THE PIPE WRAP AND SENT FOR TESTING PRIOR TO REMOVING THE COATING AND RECORD THE TEST RESULTS ON THE PIPE INSPECTION TABLE.
- FOR MORE INFORMATION REFER TO TD-4711P-01



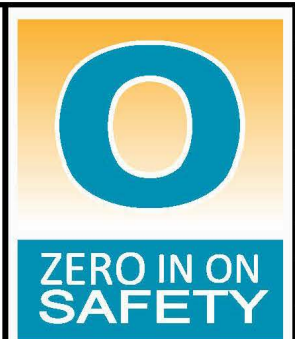
SEE TD-4621M FOR SHORING REQUIREMENTS

DETAIL TYP TRENCH NON-PAVED AREA
SCALE: NTS



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	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
	DATE
	SCALES

PIPELINE - DETAILS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL	SHEET 26
DWG LIST	SHEET 2
TRACKING NUMBER	R-687
SHEET NO.	25 OF 28 SHEETS
74004060	A

BILL OF MATERIALS (CAPITAL ORDER # 74004060)						
BOM #	MATERIAL DESCRIPTION	MATERIAL CODE #	UNIT	QTY	STANDARD	NOTES
1	PIPE, STEEL, 24", 0.500" WT, API 5L, GRADE X65, SAWL, FBE/ARC	M011765	FT	7240	GS&S A-15	
2	PIPE, STEEL, 24", 0.500" WT, API 5L, GRADE X65, SAWL, FBE	M011762	FT	800	GS&S A-15	
3	PIPE, STEEL, 12", 0.375" WT, API 5L, GRADE B, SEAMLESS, FBE	M010037	FT	10	GS&S A-15	
4	PIPE, STEEL, 10", 0.365" WT, API 5L, GRADE B, SEAMLESS, FBE	M010034	FT	80	GS&S A-15	
5	PIPE, STEEL, 8", 0.322" WT, API 5L, GRADE B, SEAMLESS, FBE	M010029	FT	5	GS&S A-15	
6	PIPE, STEEL, 3/4", 0.154" WT, API 5L, GRADE B, SEAMLESS, PLAIN ENDS, BARE	M011951	FT	80	GS&S A-15	
7	ELBOW, 24", 90 DEG, 0.500" WT, STANDARD, 3R RADIUS, CARBON STEEL, GRADE Y60	M022261	EA	2	GS&S B-20.2	
8	ELBOW, 24", 45 DEG, 0.500" WT, STANDARD, 3R RADIUS, CARBON STEEL, GRADE Y60	M023984	EA	3	GS&S B-20.2	
9	ELBOW, 12", 90 DEG, 0.375" WT, LONG RADIUS, BUTT WELD, CARBON STEEL, SCH 40, ASTM A234, GRADE B	M022104	EA	1	GS&S B-20	
10	ELBOW, 10", 90 DEG, 0.365" WT, LONG RADIUS, BUTT WELD, CARBON STEEL, SCH 40, ASTM A234, GRADE B	M022041	EA	4	GS&S B-20	
11	TEE, REDUCING, 24" X 24" X 10", 0.500" WT X 0.365 WT	M024988	EA	2	GS&S B-20.2	
12	VALVE BALL, 24" ANSI 600, WELD END, 24" PUP LENGTH X60 SAWL, 0.500" WT, BEVEL TO MATCH ASME B16.25 FIG 5, SPEC API 6D FOR BURIED SERVICE, PER EMS 4125 EFFECTIVE 7/3/17 (REFERENCE F-21.1 REV 7, PRIOR TO 7/3/17 FOR HISTORICAL REQ), FIG 1 STUB UP (SU)	M038121	EA	1	GS&S F-21.1	
13	VALVE BALL, 10" ANSI 600, WELD END, 24" PUP LENGTH X42 SMLS, 0.365" WT, BEVEL TO MATCH ASME B16.25 FIG 4	M037112	EA	2	GS&S F-21.1	
14	CAP METAL PIPE 24", 0.500" WALL THICKNESS, GRADE Y-60	M022207	EA	8	GS&S B-20.2	
15	CAP, CARBON STEEL, 12", BUTT WELD, 0.375" WT, ASTM A-234, GRADE B	M022081	EA	2	GS&S B-20	FOR HYDROTEST
16	CAP, CARBON STEEL, 10", BUTT WELD, 0.365" WT, ASTM A-234, GRADE B	M022120	EA	4	GS&S B-20	FOR HYDROTEST
17	CAP, CARBON STEEL, 8", BUTT WELD, 0.322" WT, ASTM A-234, GRADE B	M022080	EA	1	GS&S B-20	FOR HYDROTEST
18	ELBOW, SOCKET WELD, VOGT # SW-2000 OR EQUAL, FORGED STEEL, 3/4", 45 DEG, 3000 PSI	M022587	EA	12	GS&S B-21	
19	VALVE TEE, WELDING INLET, 1", MUELLER # H-17656, 1440 PSI	M022445	EA	6	GS&S C-11	
20	COUPLING, FORGED STEEL, SOCKET WELD, VOGT # SW-2324 OR EQUAL, 3/4", 3000 PSI	M022553	EA	6	GS&S B-21	
21	NIPPLE, CONCENTRIC, 3/4" X 1/2", BUTT WELD X THREAD, EXTRA HEAVY, BLACK, FORGED STEEL, 2160 PSI, ASTM A234, GRADE WPB	M022616	EA	6	GS&S B-13.3	
22	VALVE BALL, 1/2", CARBON STEEL, APOLLO # 72-103-19P, 1000 PSI, TEFLON SEAL/SEAT, FPT ENDS, WITH LOCKING DEVICE	M034638	EA	8	GS&S F-20	
23	PLUG, 1/2", HEX HEAD, VOGT # 2580 OR EQUAL, THREADED, FORGED STEEL, 6000 PSI	M021249	EA	8	GS&S B-10.1	
24	NIPPLE, 1/2" X 4", THREADED, BLACK STEEL, SEAMLESS, EXTRA HEAVY	M020681	EA	2	GS&S B-13.1	
25	FLANGE, WELD NECK, 10", ANSI CLASS 600, FORGED STEEL, 1/4" RAISED FACE, ID TO BE SPECIFIED	M024018	EA	2	GS&S B-43	
26	GASKET, PYROX, ANSI CLASS 600, 10", PSI LINEBACKER, TYPE F, NITRILE SEALING ELEMENT, RING GASKET	M016654	EA	4	GS&S B-45.1	
27	FLANGE, BLIND, 10", ANSI CLASS 600, FORGED STEEL, 1/4" RAISED FACE, TAP FOR 1/2" NPT	M020897	EA	2	GS&S B-43.2	
28	BOLT, STUD, 1-1/4" X 8-1/2", WITH 2 NUTS, STEEL, ALL THREAD, ASTM A193-B7 HEX NUTS A194-2H, ASSEMBLED	M192828	EA	32	GS&S B-46	
29	THREDOLET, 1-1/2", BONNEY FORGE OR EQUAL, USE ON 8" - 12" PIPE, 3000 PSI, CARBON STEEL, ASTM A105	M014813	EA	2	GS&S B-23	
30	NIPPLE, 1-1/2" X 6", THREADED, BLACK STEEL, SEAMLESS, EXTRA HEAVY	M020718	EA	2	GS&S B-13.1	
31	VALVE BALL, 1-1/2", CARBON STEEL, WKM # B136-CS-03-CS, 2500 PSI, DELRIN OR HYDRIN SEAT, FPT, WITH LOCKING DEVICE	M034456	EA	2	GS&S F-20	
32	PLUG, 1-1/2", HEX HEAD, VOGT # 2580 OR EQUAL, THREADED, FORGED STEEL, 6000 PSI	M021265	EA	2	GS&S B-10.1	
33	POST PIPE REMOVABLE GALVANIZED STEEL 4" X 80" WITH 5" X 3" GALVANIZED SLEEVE WITH CAP 15-5120, ES 051122 TBL 2	M155105	EA	24	-	
34	VISIBILITY STRIP, REFLECTIVE YELLOW ADHESIVE SHEET, 2" X 12"	M013163	EA	72	GS&S J-95	
35	MARKER, SIGN, PIPELINE, COMPLETE ASSEMBLY, ULTI-MATE ASSEMBLY, COMES WITH: M018294 COATED ALUMINUM MARKER SIGN M376892 ULTI-MATE SQ. POST # 8UM2002204HG4 10' LONG M376893 PENETRATOR ANCHOR # 8UM225-30250-12 WITH FOUR UM-38A RIVETS AND ONE CORNER BOLT UM-SQCBL	M377179	EA	10	GS&S L-11.1	
36	MARKER, TRIVIEW, 6' X 3"	M379965	EA	10	GS&S L-10	
37	SIGN, PADDLE MARKER ONLY, COATED ALUMINUM, NO HARDWARE OR POST, 0.08" THICK ALUMINUM W/2 MIL CORROSION RESISTANT WHITE COATING FOR PIPELINE MARKER POST	M379959	EA	2	GS&S L-11.1	
38	DECAL, OFFSET ARROW, PRESSURE SENSITIVE, SELF-ADHESIVE	M379960	EA	24	GS&S L-12	
39	SIGN, "WARNING GAS PIPELINE", IN SPANISH, PELIGRO TUBERIA DE GAS (800) 811-4111, SELF-ADHESIVE DECAL STYLE	M379961	EA	24	GS&S L-12	
40	SIGN, "WARNING GAS PIPELINE", IN ENGLISH, (800) 811-4111, SELF-ADHESIVE, DECAL STYLE	M379962	EA	24	GS&S L-12	
41	CONCRETE, 4000 PSIG	N/A	CU FT	100	N/A	
42	NIPPLE, SAVE-A-VALVE, 2", WELD, STEEL, MUELLER # H-17491, STEEL CAP, DRILLING 1200 PSI MAXIMUM, 1440 PSI MAXIMUM	M022289	EA	20	GS&S C-14	
43	TAPE, WARNING, PIPELINE, GAS UNDERGROUND, REEF INDUSTRIES # 42-0084, YELLOW WITH BLACK WRITING, "CAUTION GAS LINE BURIED BELOW", 8 MILS THICK, 6" WIDE X 1000' LONG	M379947	EA	1	GS&S L-16	
44	MARKER, EXTENDED RANGE BALL, EMS TYPE, YELLOW, 3M # 1405-XR, FOR MARKING BURIED GAS FACILITIES, MAXIMUM INSTALLED DEPTH IS 5'	M374944	EA	15	GS&S M-60	
45	STEEL PLATE	N/A	EA	20	-	

BILL OF MATERIALS (CAPITAL ORDER # 74004060)						
BOM #	MATERIAL DESCRIPTION	MATERIAL CODE #	UNIT	QTY	STANDARD	NOTES
46	REDUCER, 12" (0.375" WT) X 8" (0.322" WT), BUTT WELD, STANDARD, CONCENTRIC, CARBON STEEL, ASTM A234, GRADE B	M022167	EA	1	GS&S B-20	
47	CAP, STEEL, 12", 0.281" WT, GRADE Y52	M022223	EA	2	GS&S B-20.2	
48	PIPE, STEEL, 12", 0.281" WT, API 5L, GRADE X52, HFW, FBE	M010935	FT	5	GS&S A-15	
49	WIRE, ELECTRICAL, INSULATED, COPPER, 10 AWG, 600 V, 47 MIL PVC, SOLID 1 CONDUCTOR, BLACK	M294991	FT	50	CCV O-10	
50	SLEEVE, COPPER SPLICING, #14 TO #10, CADWELD # CAB-133-1H, THERMOWELD # A-200	M303755	EA	2	CCV O-10	
51	CARTRIDGE, BRAZING, CADWELD # CA-15, THERMOWELD # 15P	M159260	EA	1	CCV O-10	
52	TAPE, HANDY CAP, 4" X 4", ROYSTON W/ INTEGRATED PRIMER	M562324	EA	2	GS&S E-27	
53	STATION, TEST COUPON, CC TECHNOLOGIES # CS3100, SMALL PLASTIC CONDUIT AND TERMINAL TEST HEAD CONSTRUCTION, 3" OD X 10' LONG	M560691	EA	1	CCV O-10.2	
54	ELECTRODE, REFERENCE, STEALTH 2, COPPER-COPPER SULFATE, BORIN MANUFACTURING # SRE-007-CUV, WITH 50' OF WIRE	M241423	EA	1	CCV O-71	
55	ELECTRODE, REFERENCE, GELATIN, BACKFILL, BORIN MANUFACTURING # EMB-001-CUS, ELECTRIC MUD, GELATIN BACKFILL, CUCUSO4, SINGLE UNIT, FOR ONE INSTALLATION	M041192	EA	1	CCV O-71	
56	STATION, TEST, CATHODIC PROTECTION, COTT MFG # 3005S, ORANGE, BIG FINK, 5 TERMINALS, WITHOUT CONDENSER	M569390	EA	1	CCV O-10.1	
57	PIPE, PVC, 3" IPS, 0.300" WT, SCH 80	M016071	FT	1	0	
58	BODY, CONCRETE, VALVE FRAME, CHRISTY # G05, W/O COVER, 10-3/8" DIA X 12" HIGH	M043271	EA	5	GS&S K-41	
59	COVER, VALVE, CAST IRON, YELLOW, CHRISTY # G05CY, FULL TRAFFIC, 11-1/8", TRAFFIC YELLOW WITH EXPOXY CLEAR COAT, MARKED "PG&E GAS"	M446213	EA	5	GS&S K-41	
60	VALVE BOX, EXTENSION, PLASTIC, 8" IPS, BRANDON SUPPLY # 851, BLACK ABS, CORRUGATED, 10 FT LENGTH	M016063	EA	5	GS&S K-41	
61	RING, GRADE, CAST IRON, 2" HIGH, CHRISTY # G05-2333	M043274	EA	5	GS&S K-41	

DESIGN CRITERIA										
BOM #	OD (IN)	WT (IN)	SMYS (PSI)	CURRENT CLASS LOCATION	DESIGN FACTOR	FDP (PSIG)	(% SMYS)	MAOP (PSIG)	(% SMYS)	PSIG @ 90% SMYS
1,2	24.000	0.500	65000	3	0.50	890	32.86	890	32.86	2438
7,8,11,12,14	24.000	0.500	60000	3	0.50	890	35.60	890	35.60	2250
3,9,15,46	12.750	0.375	35000	3	0.50	890	43.23	890	43.23	1853
4,10,11,16	10.750	0.365	35000	3	0.50	890	37.45	890	37.45	2140
5,17,46	8.625	0.322	35000	3	0.50	890	34.06	890	34.06	2352
47,48	8.625	0.281	52000	3	0.50	890	26.27	890	26.27	3050
6	1.050	0.154	35000	3	0.50	890	8.67	890	8.67	9240

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NO.	DATE	DESCRIPTION	PM/SPEC	DWN	CHKD	SUPV	APVD BY
		90% DESIGN REVIEW	74004060	E1A4	MDGR		

APPROVED BY: PSRS SUPV DSGN E1A4 DWN E1A4 CHKD MDGR OK DATE SCALES

PIPELINE - BILL OF MATERIALS
L-215 SAN JOAQUIN RIVER XING REPLACEMENT
L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

GAS TRANSMISSION ESTIMATING & DESIGN

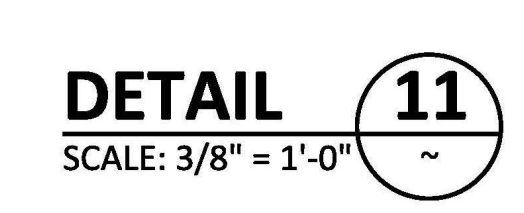
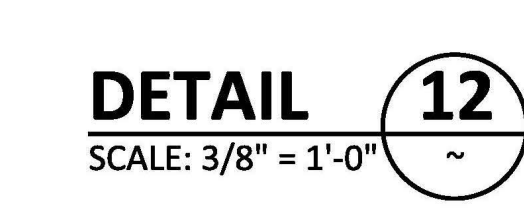
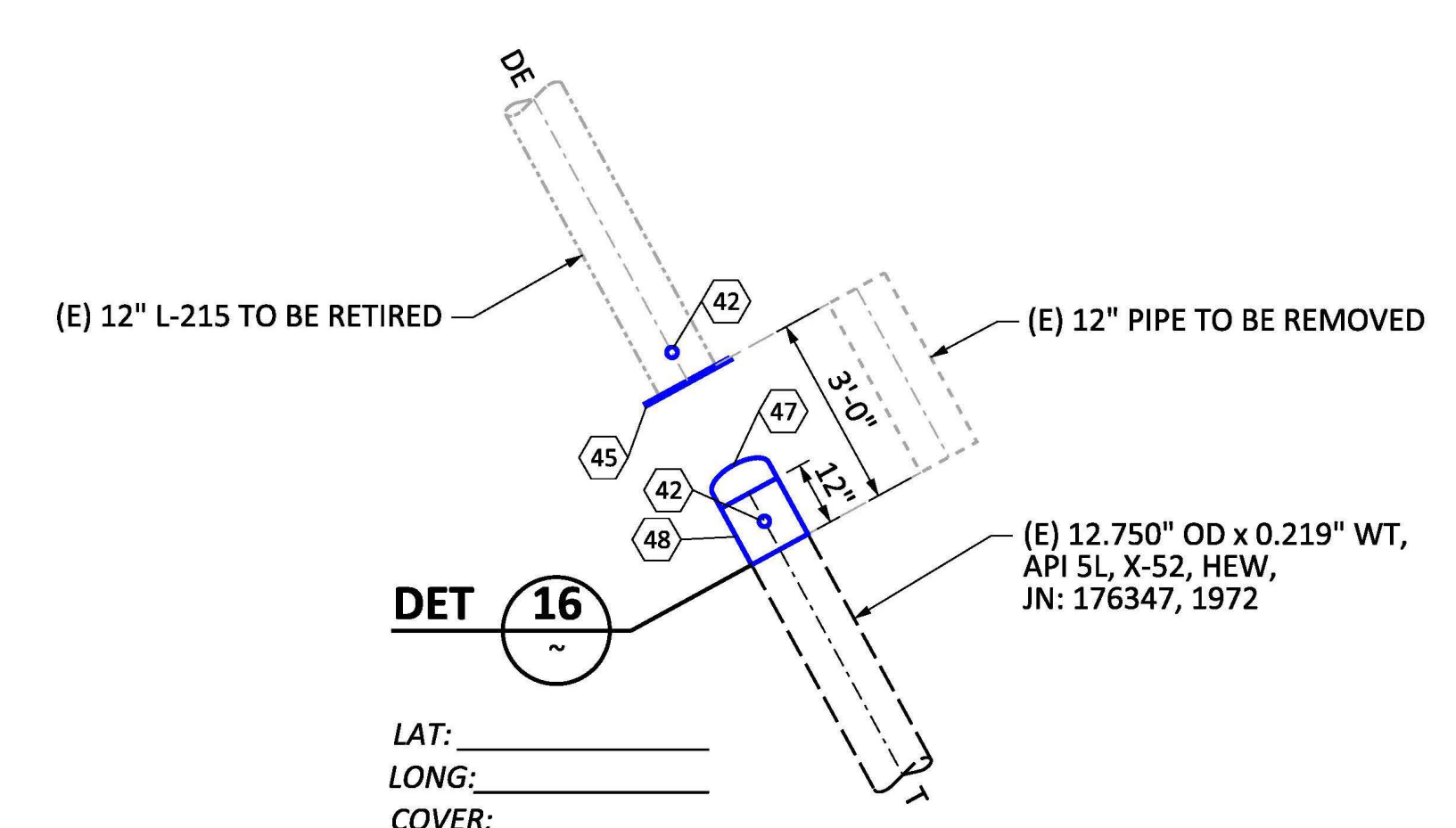
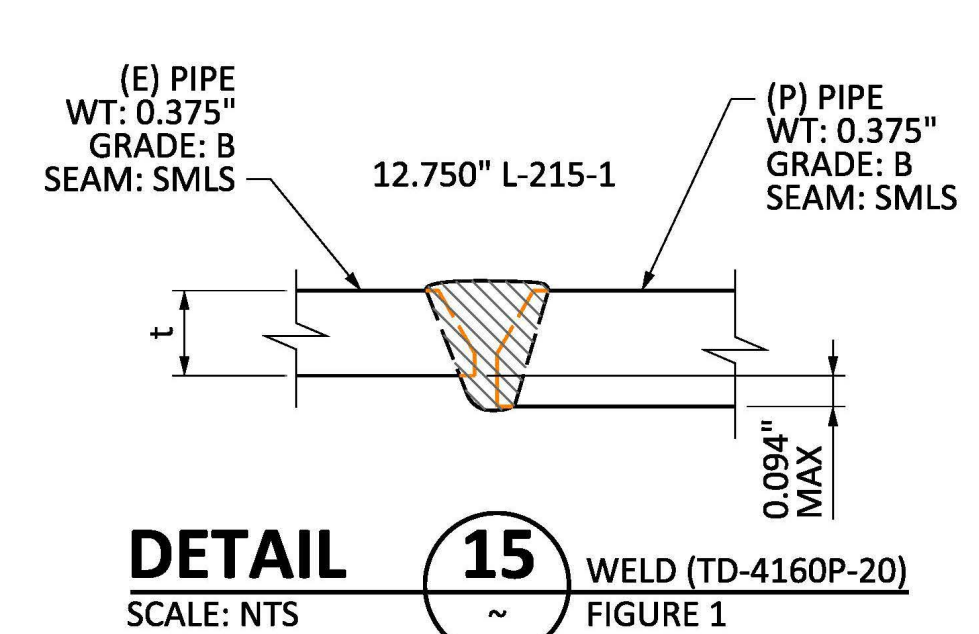
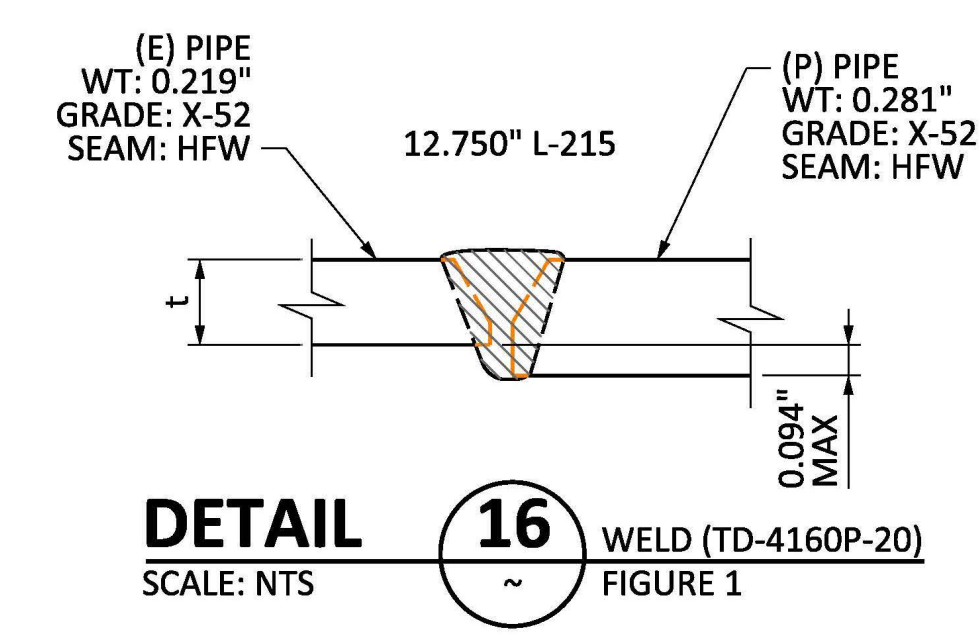
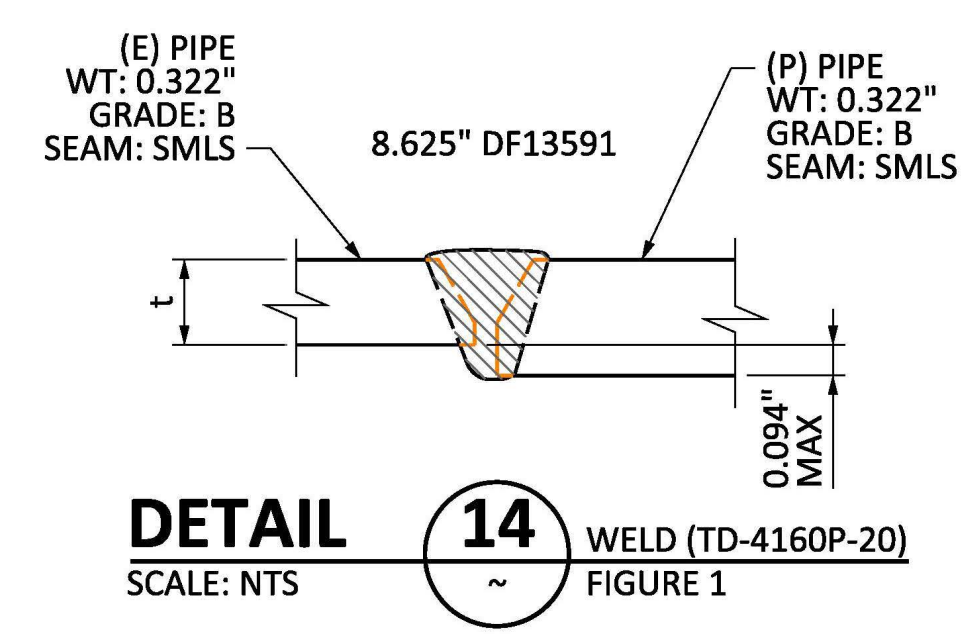
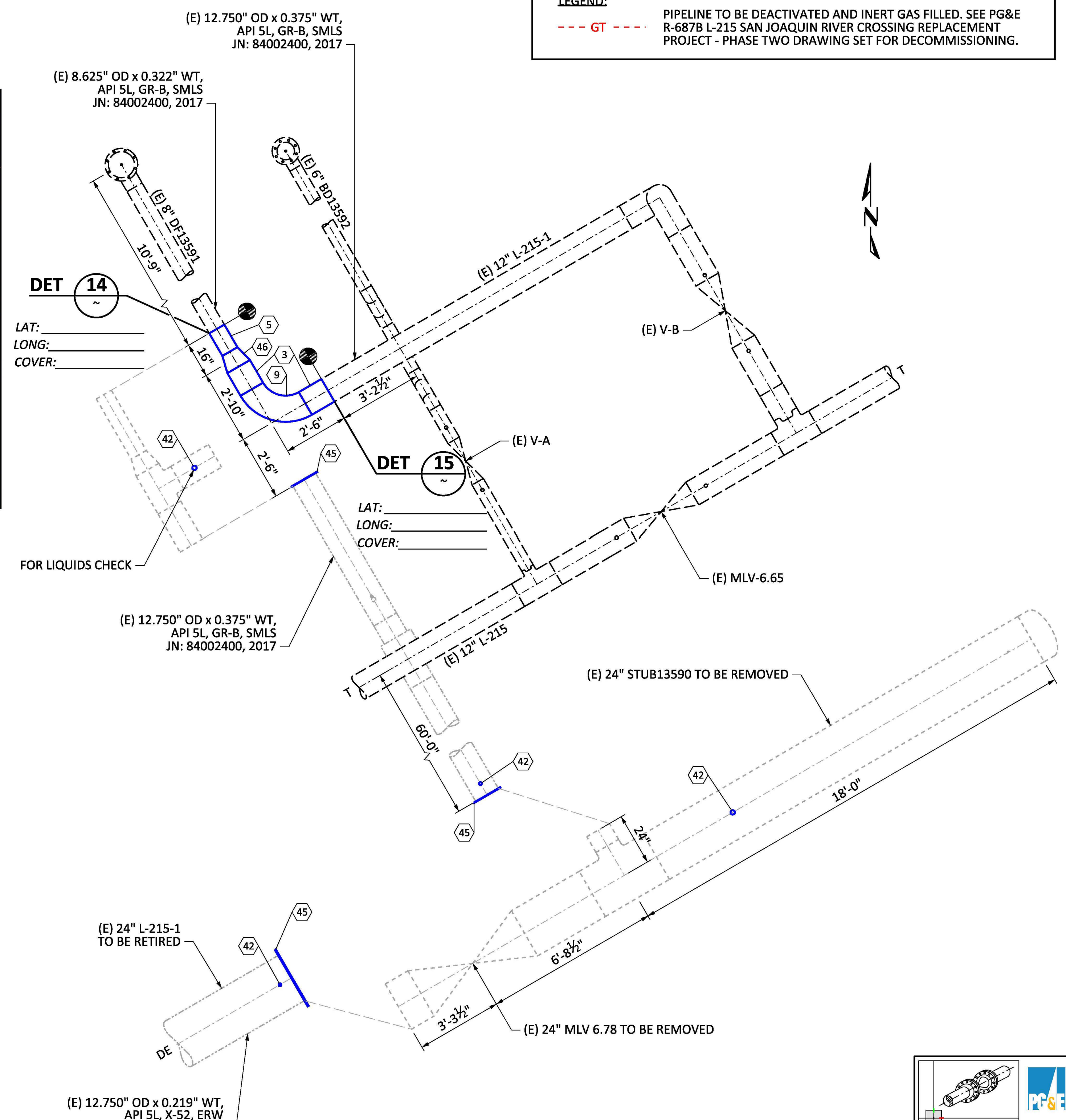
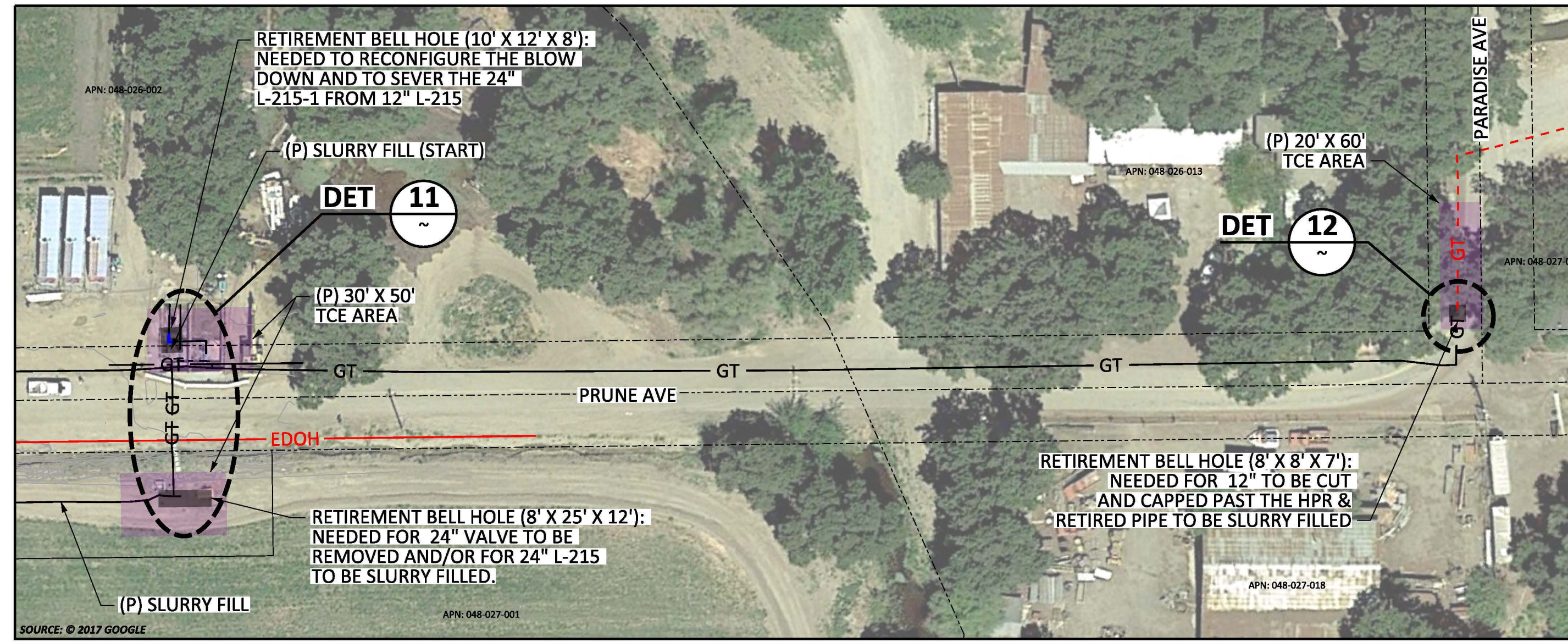
90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATL SHEET 26
DWG LIST SHEET 2
TRACKING NUMBER **R-687**
SHEET NO. 26 OF 28 SHEETS
74004060 A

LOCATION C
 PRUNE AVE & PARADISE AVE
 WALL MAP - 3365; PLAT - A7; L - 215; MP - 6.65
 (SCALE: 1" = 50')

LEGEND:
 --- GT --- PIPELINE TO BE DEACTIVATED AND INERT GAS FILLED. SEE PG&E R-687B L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT - PHASE TWO DRAWING SET FOR DECOMMISSIONING.



- DEACTIVATION PROCEDURE FOR EXISTING PIPE:**
- GT&D UTILITY WORK PROCEDURE TD 9500P-16, "DEACTIVATION AND/OR RETIREMENT OF UNDERGROUND GAS FACILITIES," SHALL BE FOLLOWED.
 - THE EXISTING PIPE SECTIONS SHALL HAVE FREE LIQUIDS REMOVED AND BE 100% PURGED PER GAS DESIGN STANDARD A-38, "PROCEDURES FOR PURGING GAS FACILITIES."
 - THE PIPE SHALL BE SECTIONALIZED AT INTERVALS AS SPECIFIED IN THE RETIREMENT PLAN. THE LOCATIONS CALLED OUT ARE APPROXIMATE AND ARE SUBJECT TO FIELD VERIFICATION TO IDENTIFY THE MOST OPTIMUM LOCATION IN THAT VICINITY. ACCURATE SURVEY DATA MAY NOT BE AVAILABLE FOR THESE LOCATIONS SO USE CAUTION DURING EXCAVATION AND WHEN IDENTIFYING THE PIPELINE TO BE RETIRED. OTHER ACTIVE PIPELINES MAY BE IN THE AREA.
 - AT EACH SUCH LOCATION NOTED ABOVE, A PIECE OF PIPE AT LEAST 24" LONG SHALL BE REMOVED. INSTALL A 1" HIGH PRESSURE SAVE-A-VALVE (H-17491, M022287) TO CHECK FOR PRODUCT AND PRESSURE PRIOR TO CUTTING INTO THE PIPELINE. THE OPEN ENDS OF THE RETIRED PIPE SHALL BE SEALED BY THE MOST APPROPRIATE METHOD OUTLINED IN GT&D UTILITY WORK PROCEDURE TD-9500P-16. BACKFILL MUST BE THOROUGHLY COMPACTED IN PLACE OF THE REMOVED SECTION OF PIPE.

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811
 Know what's below. Call before you dig.

ZERO IN ON SAFETY

NO.	DATE	DESCRIPTION	PM/SPEC	DWN	CHRD	SUPV	APVD BY
A		90% DESIGN REVIEW	74004060	E1A4	MDGR		

PIPELINE - RETIREMENT DETAILS
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY

GAS TRANSMISSION & DISTRIBUTION
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 SAN FRANCISCO, CALIFORNIA

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 GAS TRANSMISSION ESTIMATING & DESIGN

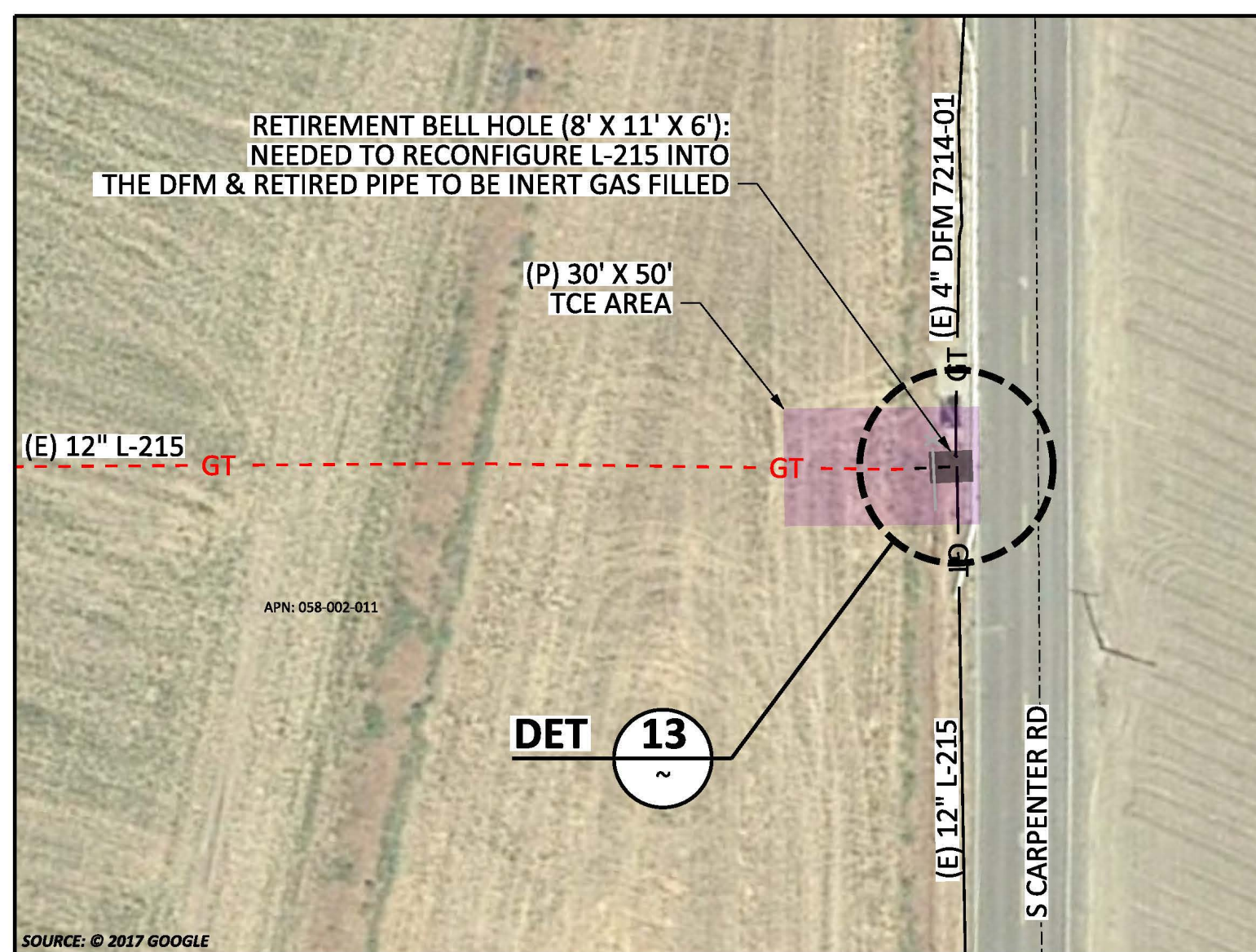
90% DESIGN REVIEW

PACIFIC GAS AND ELECTRIC COMPANY

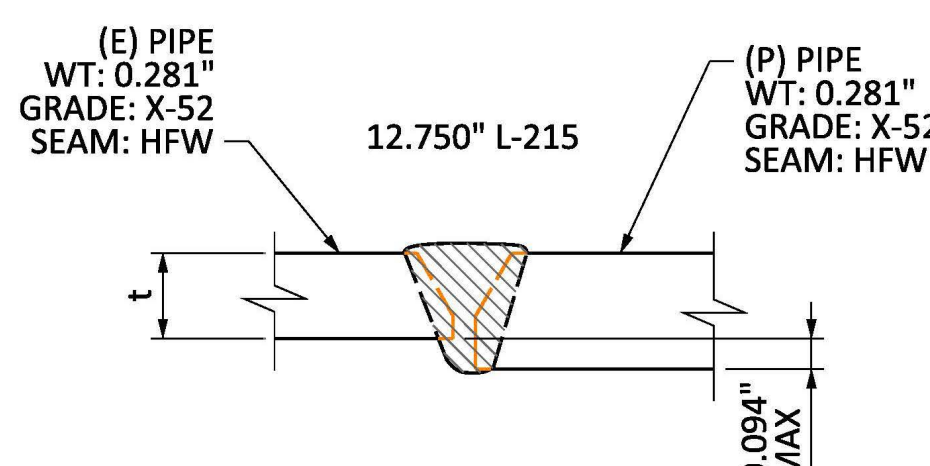
BILL OF MATL SHEET 26
 DWG LIST SHEET 2
 TRACKING NUMBER **R-687**
 SHEET NO. 27 OF 28 SHEETS
74004060 A

LOCATION D

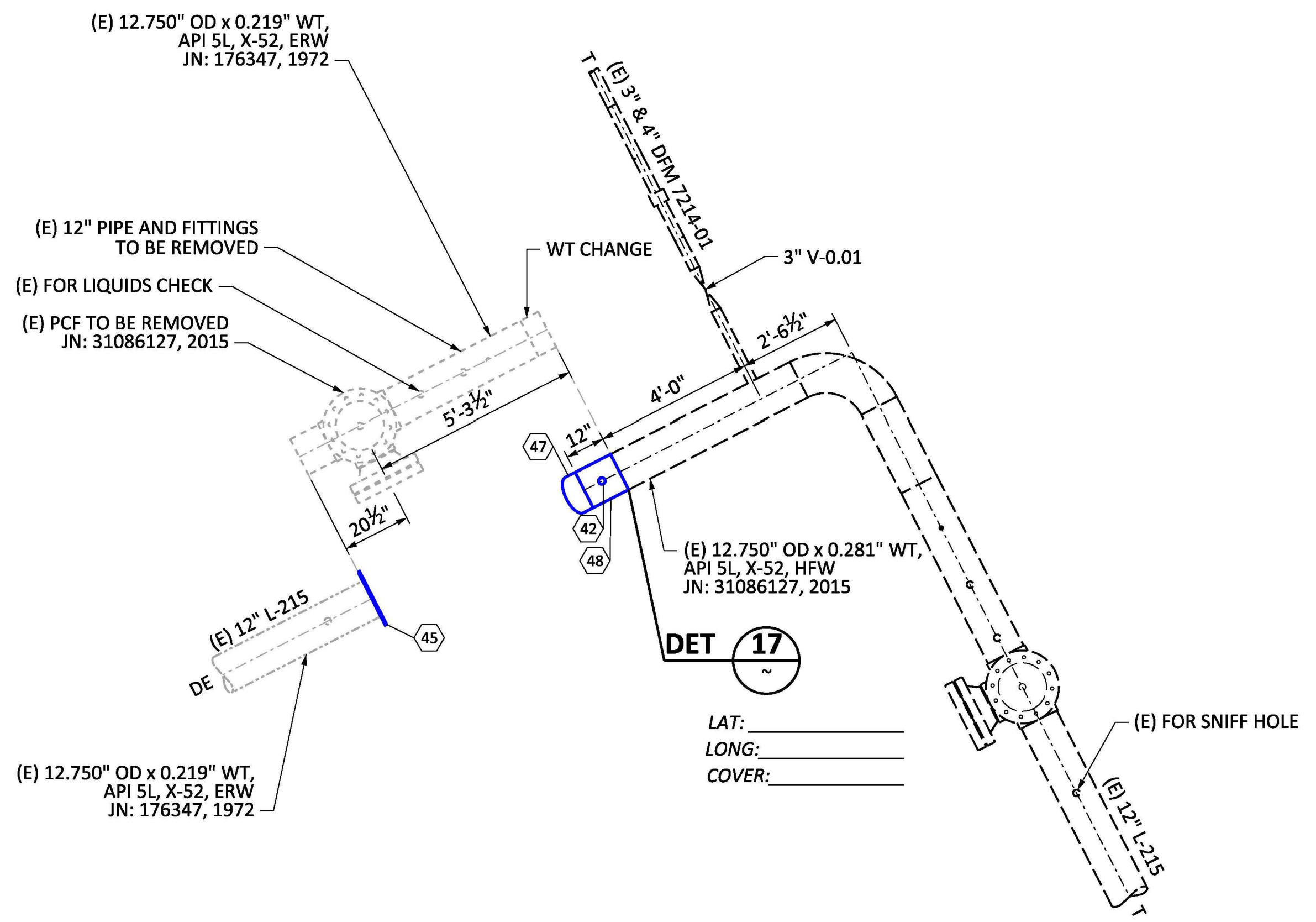
LAT: 37.453075, LONG: -121.027528
 WALL MAP - 3366; PLAT - B2; L - 215; MP - 8.31
 (SCALE: 1" = 40')



LEGEND:
 - - - GT - - - PIPELINE TO BE DEACTIVATED AND INERT GAS FILLED. SEE PG&E R-687B L-215 SAN JOAQUIN RIVER CROSSING REPLACEMENT PROJECT - PHASE TWO DRAWING SET FOR DECOMMISSIONING.



DETAIL 17 WELD (TD-4160P-20)
 SCALE: NTS

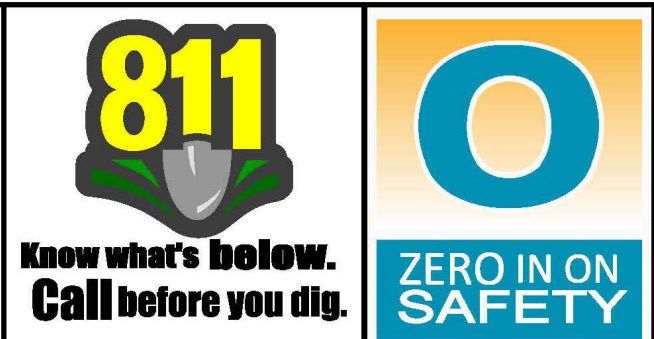


DETAIL 13
 SCALE: 3/8" = 1'-0"

DEACTIVATION PROCEDURE FOR EXISTING PIPE:

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APPROVED BY	PSRS
	SUPV
	DSGN E1A4
	DWN E1A4
	CHKD MDGR
	OK
DATE	
SCALES	

PIPELINE - RETIREMENT DETAILS
 L-215 SAN JOAQUIN RIVER XING REPLACEMENT
 L-215-1 MP 6.92 - 8.43, INSTALL 24" PIPE
 PATTERSON, STANISLAUS COUNTY
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