Work Variance Request Form

Groundwater Remedy Construction, PG&E Topock Compressor Station, Needles, California

PG&E TOPOCK GROUNDWATER REMEDIATION PROJECT

Work Variance Request #10 – Revised Alignment for Pipelines C18 (East Ravine) and I1 (Bat Cave Wash), and Consolidation of Pipes/Conduits in the Southernmost Area of TCS

Request Prepared By: PG&E	Request Approval From: DTSC and DOI
Date Submitted: 12/1/21	Date Approval Required: 12/24/21
Variance Request No.: 10	Map Area: N/A
Location: In the vicinity of and within PG&E TCS	

Landowner/Land Manager: PG&E and HNWR (managed by USFWS)

Current Vegetative Cover: None on the access routes where C18/I1 are proposed, none inside TCS

Existing Sensitive Resource? ☐ No ☒ Yes, Specify: Mature mesquite trees in East Ravine

Variance From: ☐ Mitigation Measure ☐ Work Plan/Procedure ☐ Response to Comments ☒ Drawing ☐ Permit Condition ☐ Other

Detailed Description of Variance and Justification (Attach additional information if necessary):

Attachments: ☐ Photo ☐ Construction Drawing ☐ Aerial Photo Mark-Up ☐ Correspondence ☒ Other

Potential Impacts of Variance:

☒ Air Quality	☒ Hazardous Materials	☐ Aesthetic
☒ Biological Resources	☐ Noise	☐ Water Resources
☒ Soils	☐ Paleo Resources	
☐ Cultural Resources	☐ Hydrology and Water Quality	

Description and Justification:

As part of planning for Phase 2A remedy construction, PG&E proposes the following revisions as depicted in the attached drawings and explained below:

Revise the alignment of Pipeline C18 in the East Ravine – The revised alignment is necessary for connection to the revised Pipeline F alignment (approved by agencies in May 2019 and constructed in Phase 1). The revised alignment eliminated the portion of C18 located on the steep northern slope of the East Ravine, and instead routed pipes/ conduits to the east, along the existing access route in the East Ravine. The estimated net change in the excavated soil volumes and pipelines/conduits/trench lengths are:

1. Soil disturbance: an increase of 131 cubic yards.
2. Linear footage of liquid conveyance piping/conduits: an increase of 944 feet.
3. Linear footage of trench: an increase of 236 feet.

Revise the alignment of Pipeline I1 in Bat Cave Wash – This revised alignment moves portion of Pipeline I1 that is on an unimproved area west of the access road to Bat Cave Wash onto the access road. This revision improves pipeline constructability and minimizes vegetation removal during construction. In addition, it will minimize disturbance during future pipeline maintenance activities. The estimated net change in the excavated soil volumes and pipelines/ conduits/trench lengths are:

4. Soil disturbance: an increase of 74 cubic yards.
5. Linear footage of liquid conveyance piping/conduits: an increase of 1,072 feet.
6. Linear footage of trench: an increase of 134 feet.

Work Variance Request Form

Groundwater Remedy Construction, PG&E Topock Compressor Station, Needles, California

PG&E TOPOCK GROUNDWATER REMEDIATION PROJECT

Work Variance Request #10 – Revised Alignment for Pipelines C18 (East Ravine) and I1 (Bat Cave Wash), and Consolidation of Pipes/Conduits in the Southernmost Area of TCS

Description and Justification (Continued):

Consolidation of pipes/conduits in southernmost area of TCS into a central utility corridor – The two main revisions are 1) move all pipes/conduits from Pipelines D1, D2, L1, and L2 that are located south of the future remedy-produced water conditioning plant to the expanded M1 and M2 trenches, and 2) realign Pipeline L3 to connect with Pipeline K. Essentially, this move consolidates remedy piping/conduits in the southernmost area of TCS into a central utility corridor for a safer/easier construction (further away from PG&E's 300A gas pipeline and out of the rocky area) as well as ease of future maintenance (inside a common trench and utility corridor).

The estimated net change in the excavated soil volumes and pipelines/conduits/trench lengths are:

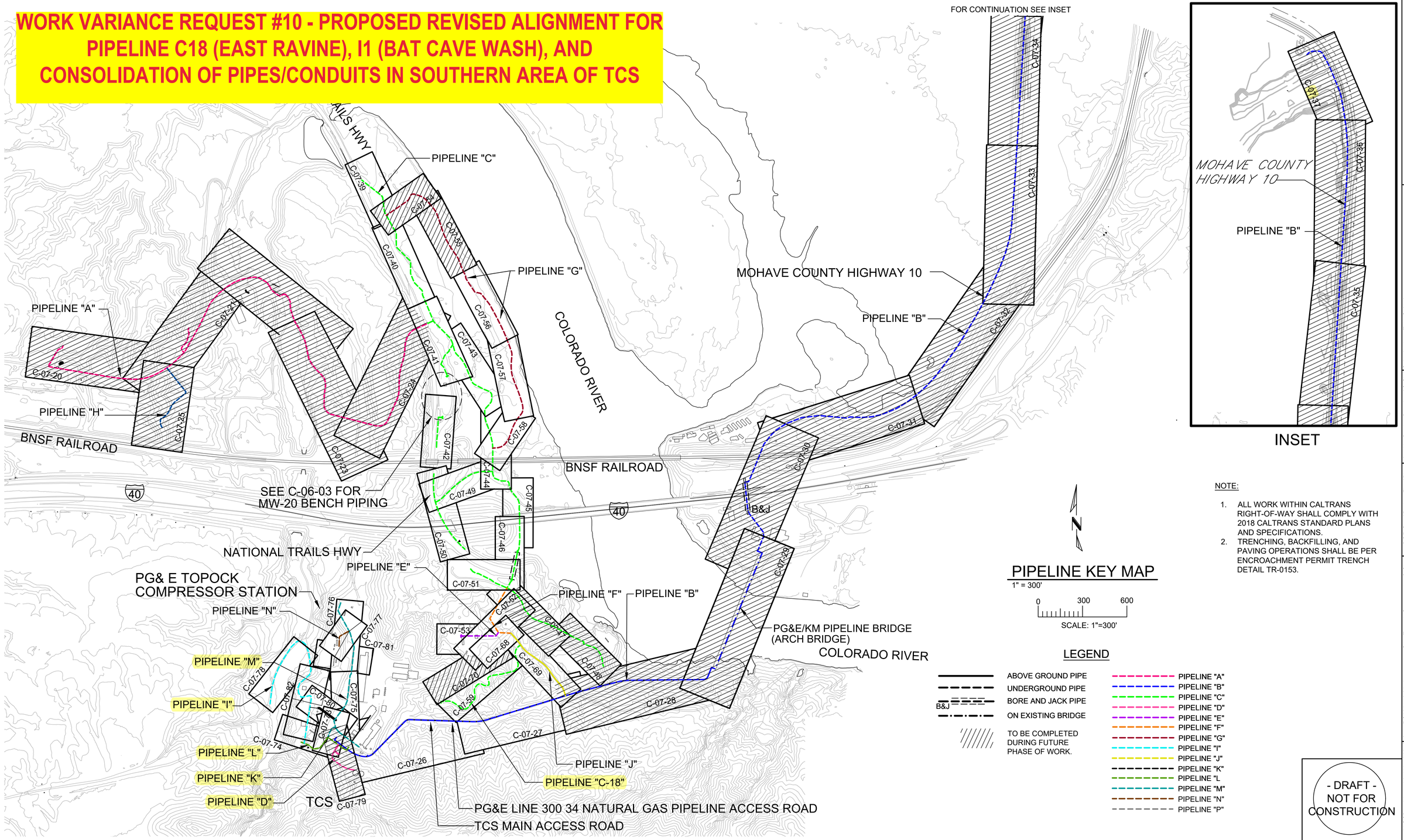
7. Soil disturbance: an increase of 6 cubic yards.
8. Linear footage of liquid conveyance piping/conduits: 0 feet.
9. Linear footage of trench: an increase of 48 feet.

There are no additional impacts to biology, historical, and cultural resources not already evaluated.

Approval Signatures:

12/1/21		1/6/2022		
PG&E Construction Manager	Date	Approving Agency		Date
12/1/21		Pamela Innis	DOI	01/07/2022
PG&E QA Manager	Date	Approving Agency		Date

WORK VARIANCE REQUEST #10 - PROPOSED REVISED ALIGNMENT FOR PIPELINE C18 (EAST RAVINE), I1 (BAT CAVE WASH), AND CONSOLIDATION OF PIPES/CONDUITS IN SOUTHERN AREA OF TCS



NOTE:

1. ALL WORK WITHIN CALTRANS RIGHT-OF-WAY SHALL COMPLY WITH 2018 CALTRANS STANDARD PLANS AND SPECIFICATIONS.
2. TRENCHING, BACKFILLING, AND PAVING OPERATIONS SHALL BE PER ENCROACHMENT PERMIT TRENCH DETAIL TR-0153.

PIPELINE KEY MAP

1" = 300'

0 300 600

SCALE: 1"=300'

LEGEND

- ABOVE GROUND PIPE
- UNDERGROUND PIPE
- B&J — BORE AND JACK PIPE
- ON EXISTING BRIDGE
- TO BE COMPLETED DURING FUTURE PHASE OF WORK.

- PIPELINE "A"
- PIPELINE "B"
- PIPELINE "C"
- PIPELINE "D"
- PIPELINE "E"
- PIPELINE "F"
- PIPELINE "G"
- PIPELINE "I"
- PIPELINE "J"
- PIPELINE "K"
- PIPELINE "L
- PIPELINE "M"
- PIPELINE "N"
- PIPELINE "P"

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
9	10/29/21	PHASE 2A DESIGN IFB		CDB	JPB	BLP	RAO
8	01/24/19	CALTRANS ENCROACHMENT PACKAGE		DMM	JPB	MAG	RAO
7	11/16/18	ISSUED FOR CONSTRUCTION		DMM	JPB	MAG	RAO
6	11/02/18	CALTRANS ENCROACHMENT PACKAGE		NAK	JPB	MAG	RAO

REVISIONS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
5	6/16/17	ISSUED FOR BID		AJW	JPB	BW	RAO
4	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
3	12/30/14	SUPPLEMENTAL PRE-FINAL (90%) DESIGN		MD	VMB	VMB	VMB
2	9/8/14	PRE-FINAL (90%) DESIGN		PH	VMB	VMB	VMB
1	4/5/13	INTERMEDIATE (60%) DESIGN		PH	VMB	VMB	VMB
0	11/11/11	PRELIMINARY (30%) DESIGN		PC	VMB	VMB	VMB

REVISIONS

APPROVED BY	
RAO	ISO
	SUPV
	DSGN
	DWN
	CHKD
	OK
	DATE
	SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PIPELINE KEY MAP

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

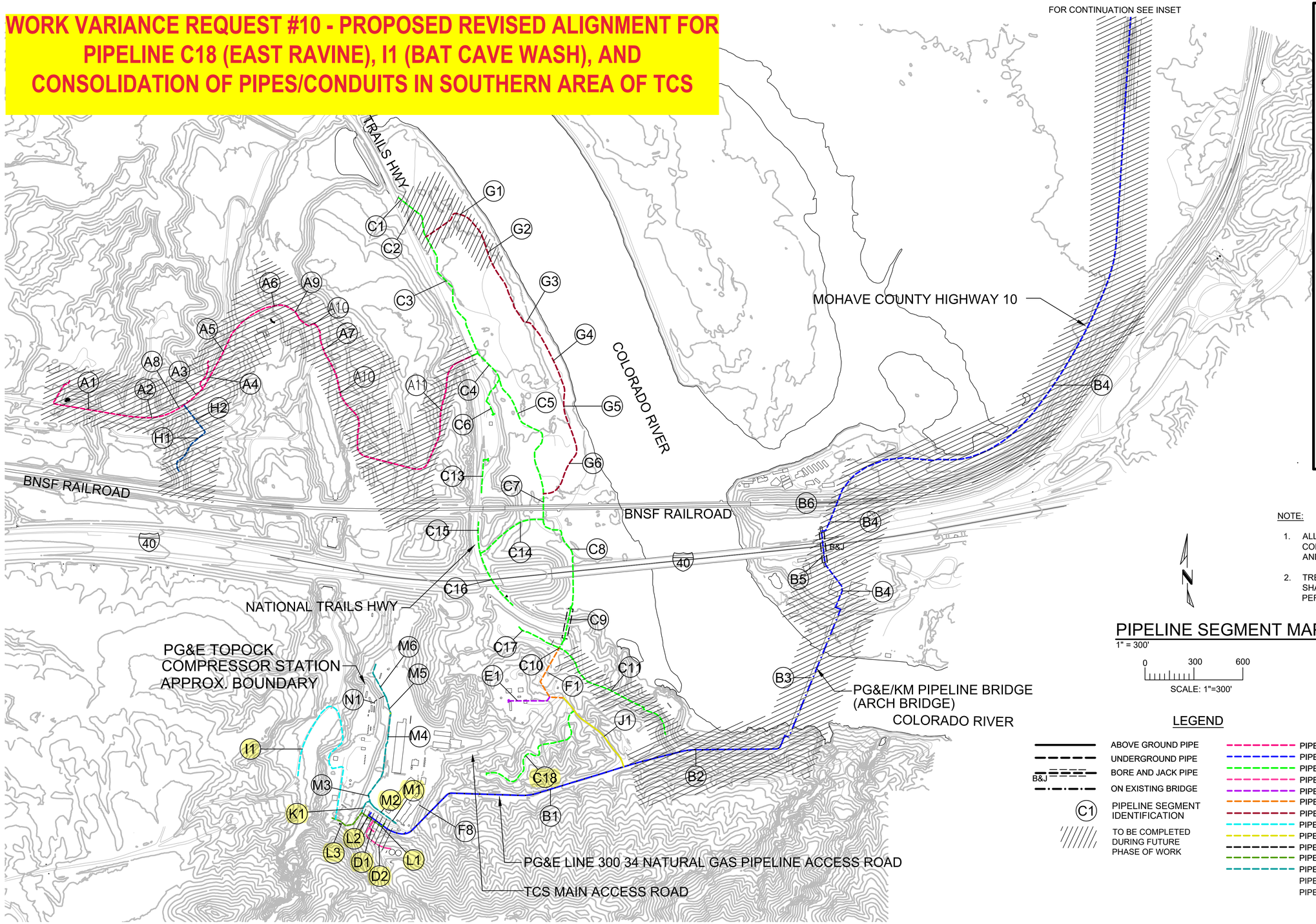
MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. of SHEETS	
C-07-01	REV 9

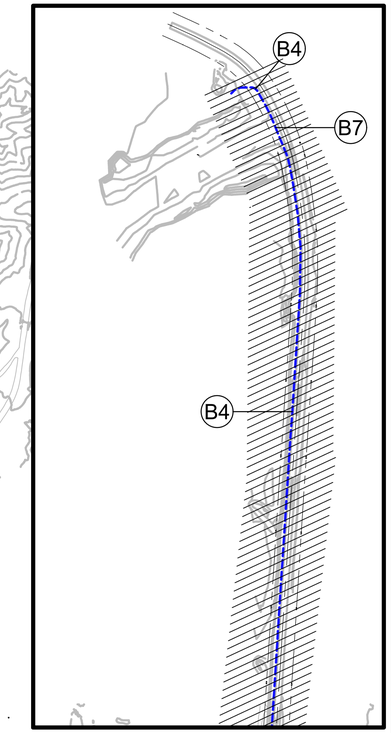
CALTRANS PERMIT NUMBER: 08-18-6-MW-0533

N1808

10/31/2021, 12:08, C:\Users\jbaxter\ACCDocs\Arcadis\ANA - 30019125 – RC0007753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-01.dwg, Tab: C-07-01

WORK VARIANCE REQUEST #10 - PROPOSED REVISED ALIGNMENT FOR PIPELINE C18 (EAST RAVINE), I1 (BAT CAVE WASH), AND CONSOLIDATION OF PIPES/CONDUITS IN SOUTHERN AREA OF TCS





INSET

NOTE:

1. ALL WORK WITHIN CALTRANS RIGHT-OF-WAY SHALL COMPLY WITH 2018 CALTRANS STANDARD PLANS AND SPECIFICATIONS.
2. TRENCHING, BACKFILLING, AND PAVING OPERATIONS SHALL BE PER ENCROACHMENT PERMIT TRENCH DETAIL TR-0153.

PIPELINE SEGMENT MAP

1" = 300'

0 300 600

SCALE: 1"=300'

LEGEND

- ABOVE GROUND PIPE
- UNDERGROUND PIPE
- BORE AND JACK PIPE (B&J)
- ON EXISTING BRIDGE
- C1 PIPELINE SEGMENT IDENTIFICATION
- TO BE COMPLETED DURING FUTURE PHASE OF WORK
- PIPELINE "A"
- PIPELINE "B"
- PIPELINE "C"
- PIPELINE "D"
- PIPELINE "E"
- PIPELINE "F"
- PIPELINE "G"
- PIPELINE "I"
- PIPELINE "J"
- PIPELINE "K"
- PIPELINE "L
- PIPELINE "M"
- PIPELINE "N"
- PIPELINE "P"

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
12	10/29/21	PHASE 2A DESIGN IFB		CDB	JPB	BLP	RAO	
11	06/21/21	ASBUILT CALTRANS ENCROACHMENT PACKAGE		CDB	VJM	BLP	RAO	
10	01/24/19	CALTRANS ENCROACHMENT PACKAGE		DMM	JPB	MAG	RAO	
9	12/07/18	ISSUED FOR CONSTRUCTION		NAK	JPB	MAG	RAO	
8	11/02/18	CALTRANS ENCROACHMENT PACKAGE		NAK	JPB	MAG	RAO	
7	6/16/17	ISSUED FOR BID		AJW	WLM	BW	RAO	

REVISIONS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
6	11/9/16	100% BOD ERRATA INFO PACKAGE		AJW	WLM	BW	RAO	
5	10/28/16	PIPELINE LABELS REVISION		AJW	JPB	BW	RAO	
4	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO	
3	12/30/14	SUPPLEMENTAL PRE-FINAL (90%) DESIGN		MD	VMB	VMB	VMB	
2	9/8/14	PRE-FINAL (90%) DESIGN		PH	VMB	VMB	VMB	
1	4/5/13	INTERMEDIATE (60%) DESIGN		PH	VMB	VMB	VMB	

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PIPELINE SEGMENT MAP

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

MICROFILM / BILL OF MATL / DWG LIST / SUPSDS / SUPSD BY

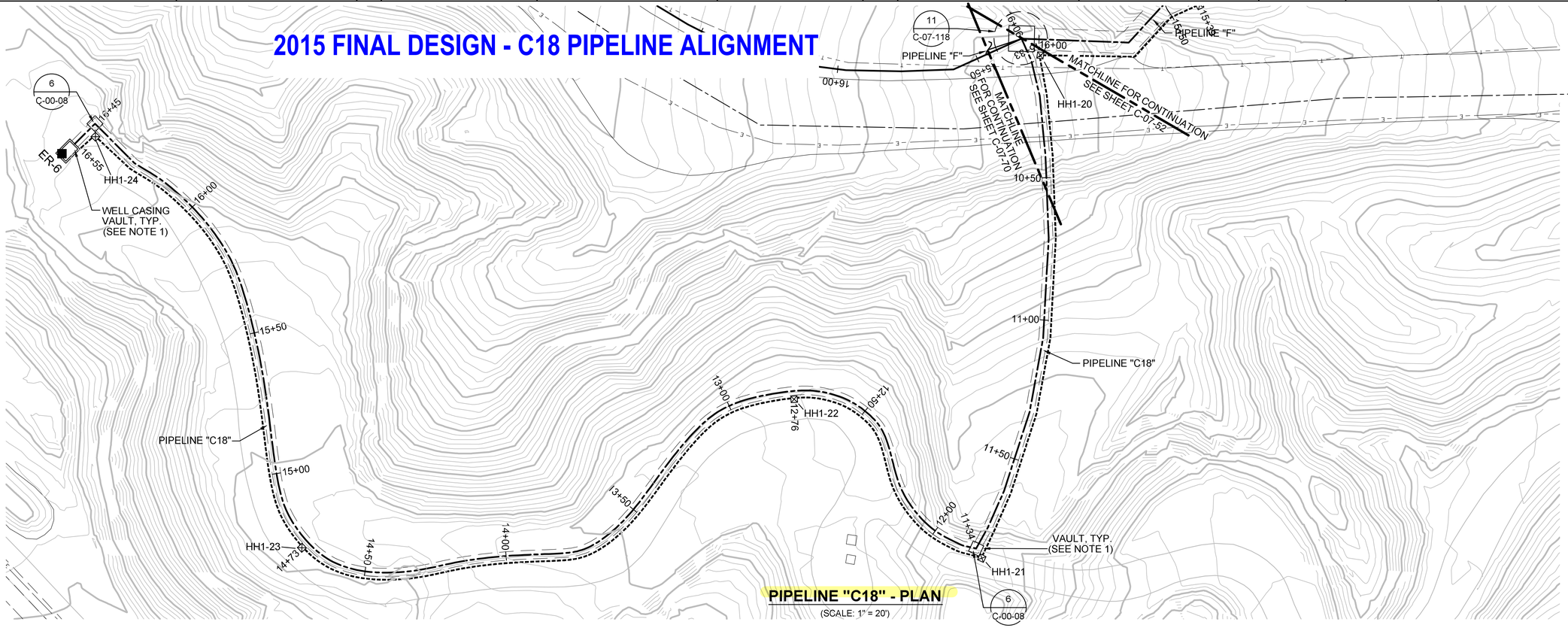
SHEET NO. C-07-02 of SHEETS / REV 12

CALTRANS PERMIT NUMBER: 08-18-6-MW-0533

N1808

10/31/2021, 12:20, C:\Users\jbaxter\ACCDocs\Arcadis\ANA - 30019125 – RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-02.dwg, Tab: C-07-02

2015 FINAL DESIGN - C18 PIPELINE ALIGNMENT



PIPELINE "C18" - PLAN

(SCALE: 1" = 20')

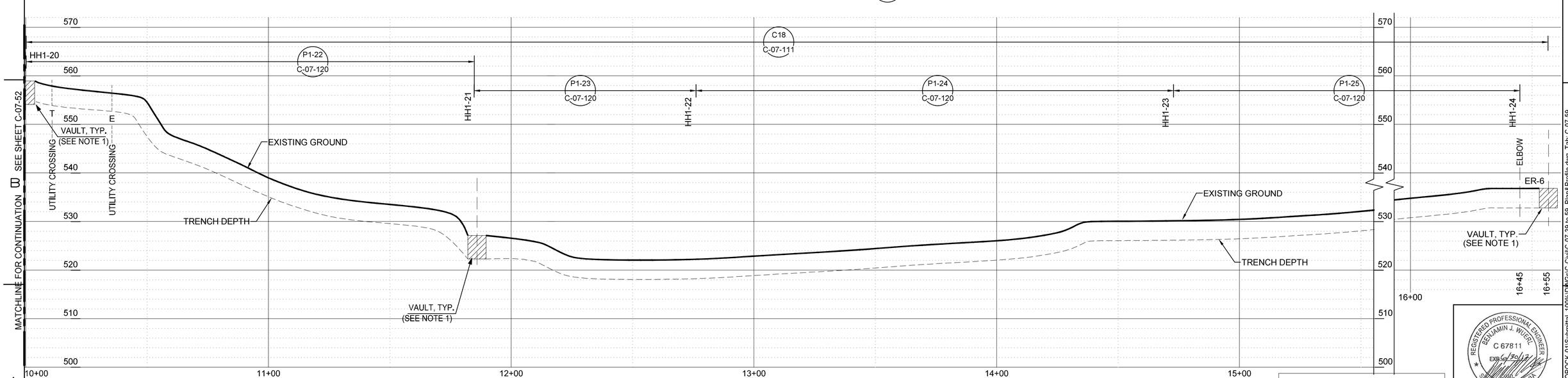
NOTES:

1. VAULT DETAILS SHOWN IN AREA 5 OF THE MECHANICAL AND STRUCTURAL DRAWINGS.
2. SEE CONDUIT AND CABLE SCHEDULES AND SINGLE LINE DIAGRAMS ON SHEETS E-00-12 THRU E-00-20.
3. CLEANOUT LOCATIONS PROVIDE CLEANOUT PIPING FOR ALL INJECTION, EXTRACTION, BACKWASH, AND REMEDY-PRODUCED WATER LINES AT INDICATED LOCATIONS (SEE DETAIL C-00-08).

N

0 20 40 60
HORIZ: SCALE: 1"=20'

0 10 20 30
VERT: SCALE: 1"=10'



PIPELINE "C18" - PROFILE

(SCALE: 1" = 20' H; 1" = 10' V)

- FINAL DESIGN -
FOR AGENCY APPROVAL ONLY

REGISTERED PROFESSIONAL ENGINEER BENJAMIN J. WUSZEL C 67811 EXP 6/30/17 STATE OF CALIFORNIA

ETIC ENGINEERING

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO	
1	09/08/14	PRE-FINAL (90%) DESIGN		AJW	BAS	JPB	JEF	
0	04/05/13	INTERMEDIATE (60%) DESIGN		AJW	KLD	JPB	JEF	

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PIPELINE - PLAN AND PROFILE
PIPELINE "C18"
STA 10+00 TO STA 16+55

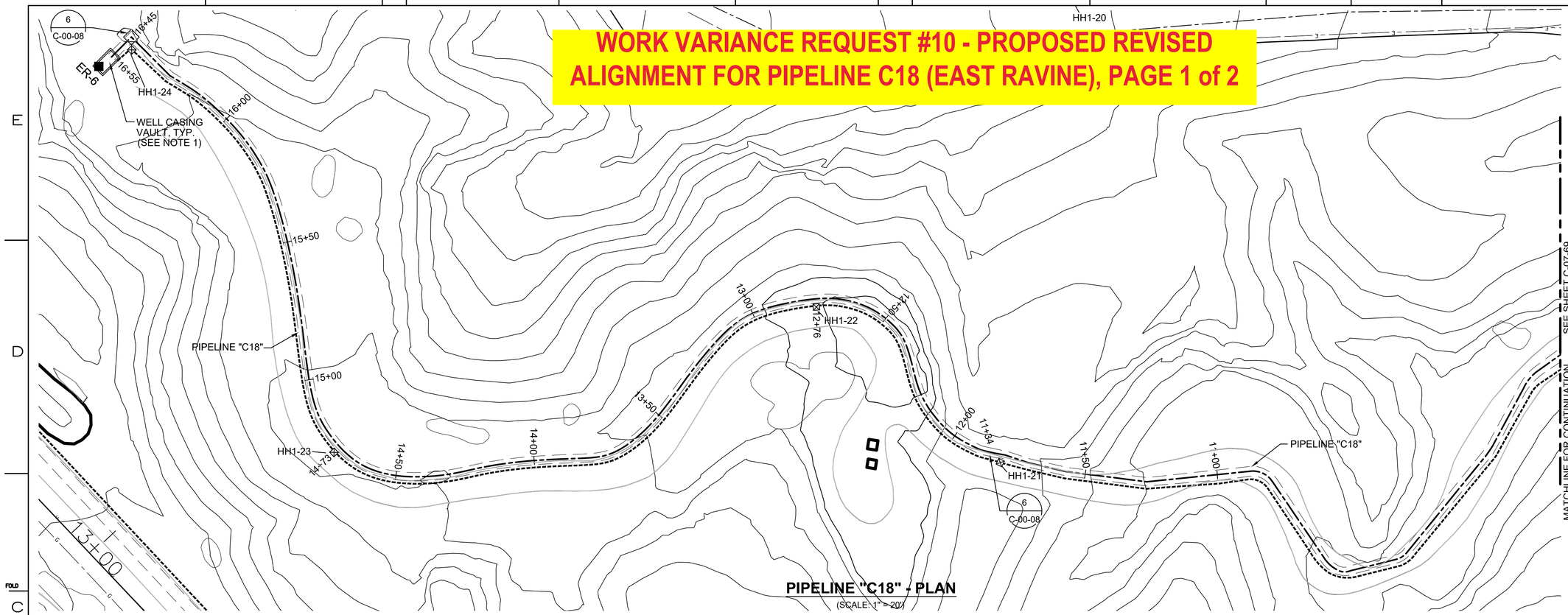
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. of SHEETS: C-07-59
REV: 2

N1808

11/02/2015, 15:41, G:\Graphics\ARI\TOPOCK-01\Submittal_100%\DWGs\C-Civil\C-07-39 to 59_Plan&Profile.dwg, Tab: C-07-59

WORK VARIANCE REQUEST #10 - PROPOSED REVISED ALIGNMENT FOR PIPELINE C18 (EAST RAVINE), PAGE 1 of 2



PIPELINE "C18" - PLAN

(SCALE: 1" = 20')

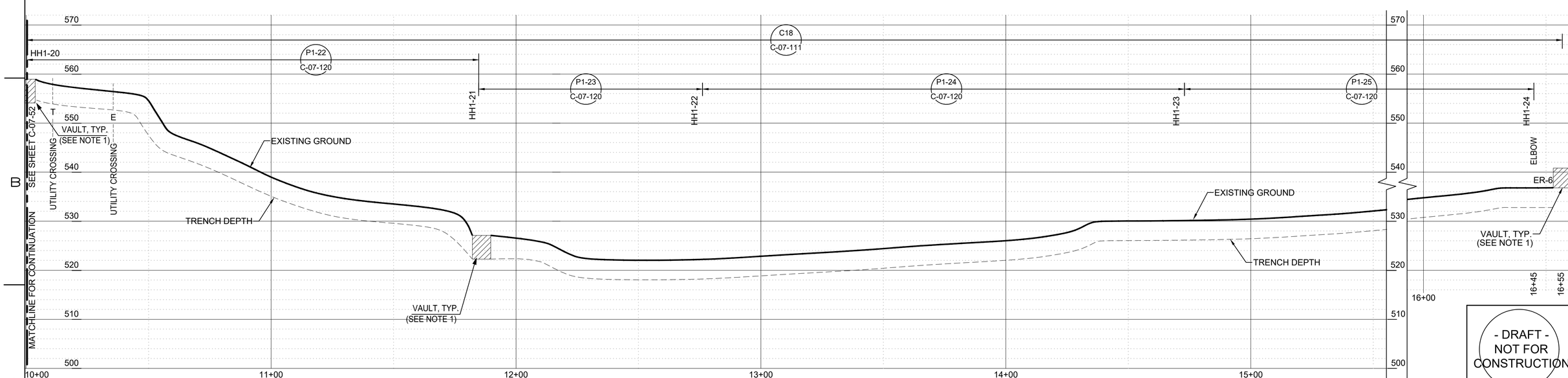
NOTES:

1. VAULT DETAILS SHOWN IN AREA 5 OF THE MECHANICAL AND STRUCTURAL DRAWINGS.
2. SEE CONDUIT AND CABLE SCHEDULES AND SINGLE LINE DIAGRAMS ON SHEETS E-00-12 THRU E-00-20.
3. CLEANOUT LOCATIONS PROVIDE CLEANOUT PIPING FOR ALL INJECTION, EXTRACTION, BACKWASH, AND REMEDY-PRODUCED WATER LINES AT INDICATED LOCATIONS (SEE DETAIL C-00-08).

N

0 20 40 60
HORIZ: SCALE: 1"=20'

0 10 20 30
VERT: SCALE: 1"=10'



PIPELINE "C18" - PROFILE

(SCALE: 1" = 20' H; 1" = 10' V)

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
4	10/29/21	PHASE 2A DESIGN IFB		CDB	JPB	BLP	RAO
3	6/16/17	ISSUED FOR BID		AJW	JPB	BW	RAO
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
1	09/08/14	PRE-FINAL (90%) DESIGN		AJW	BAS	JPB	JEF
0	04/05/13	INTERMEDIATE (60%) DESIGN		AJW	KLD	JPB	JEF

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PIPELINE - PLAN AND PROFILE
PIPELINE "C18"
STA 10+00 TO STA 16+55

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

MICROFILM / BILL OF MATL / DWG LIST / SUPSDS / SUPSD BY

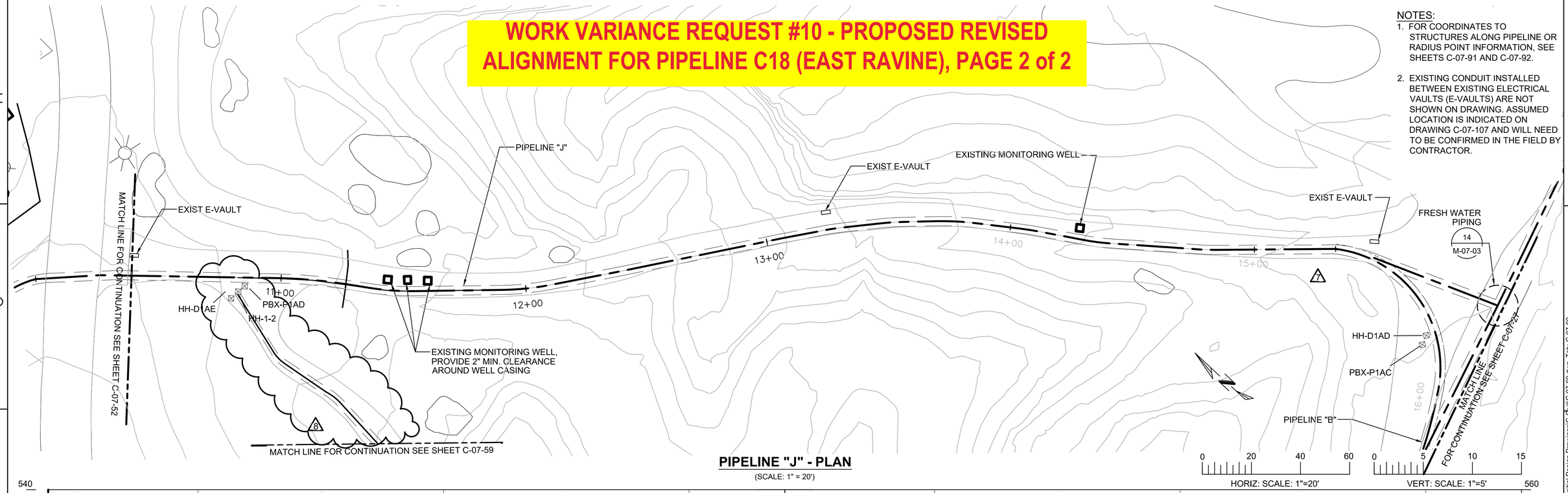
SHEET NO. C-07-59 of SHEETS / REV 4

N1808

11/01/2021, 15:21, C:\Users\vmorasko\ACCDocs\Arcadis\ANA - 30019125 - RC000753.0050 - Needles CA - Topock Construction & Cipseout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-39 to 59_Plan&Profile.dwg, Tab: C-07-59

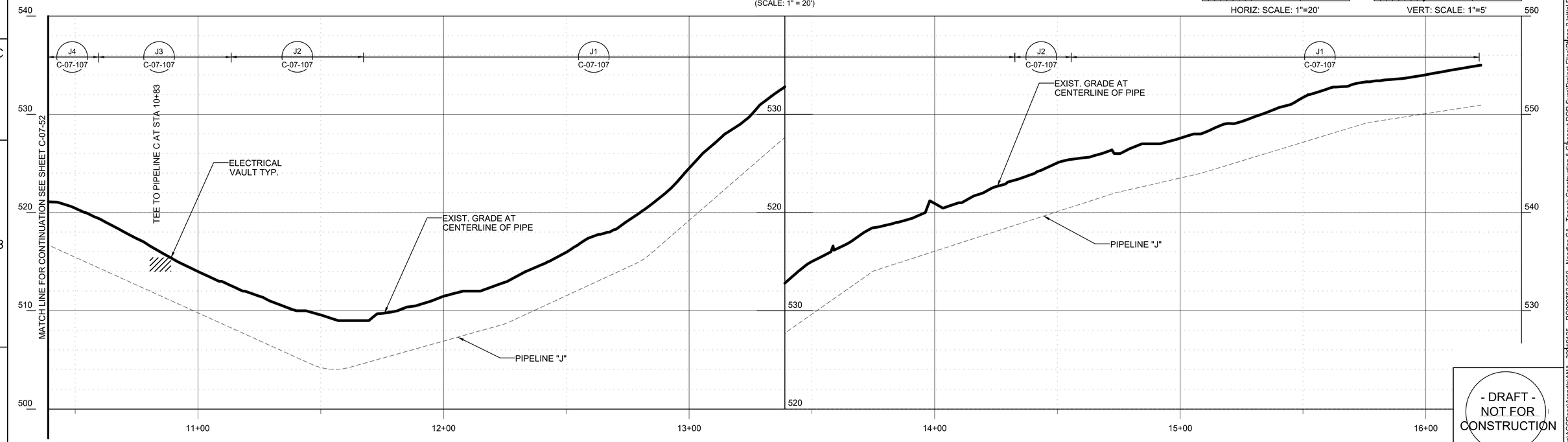
WORK VARIANCE REQUEST #10 - PROPOSED REVISED ALIGNMENT FOR PIPELINE C18 (EAST RAVINE), PAGE 2 of 2

NOTES:
1. FOR COORDINATES TO STRUCTURES ALONG PIPELINE OR RADIUS POINT INFORMATION, SEE SHEETS C-07-91 AND C-07-92.
2. EXISTING CONDUIT INSTALLED BETWEEN EXISTING ELECTRICAL VAULTS (E-VAULTS) ARE NOT SHOWN ON DRAWING. ASSUMED LOCATION IS INDICATED ON DRAWING C-07-107 AND WILL NEED TO BE CONFIRMED IN THE FIELD BY CONTRACTOR.



PIPELINE "J" - PLAN

(SCALE: 1" = 20')



PIPELINE "J" - PROFILE

(SCALE: 1" = 20' H; 1" = 5' V)

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
8	10/29/21	PHASE 2A DESIGN IFB		CDB	JPB	BLP	RAO
7	06/13/19	REVISED PIPELINE F/J/B ALIGNMENT		DMM	JPB	RDL	RAO
6	04/17/19	PIPELINE J REVISION		VJM	JPB	MAG	RAO
5	11/16/18	ISSUED FOR CONSTRUCTION		EME	JPB	MAG	RAO
4	6/16/17	ISSUED FOR BID		AJW	JPB	BW	RAO
3	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
2	8/5/15	90% RTC RESOLUTION		AJW	KLD	WLM	BJW
1	9/8/14	PRE-FINAL (90%) DESIGN					
0	4/5/13	INTERMEDIATE (60%) DESIGN					

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT
PLAN AND PROFILE
PIPELINE "J"
STA 10+04 TO STA 15+83
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM / BILL OF MATL / DWG LIST / SUPSDS / SUPSD BY

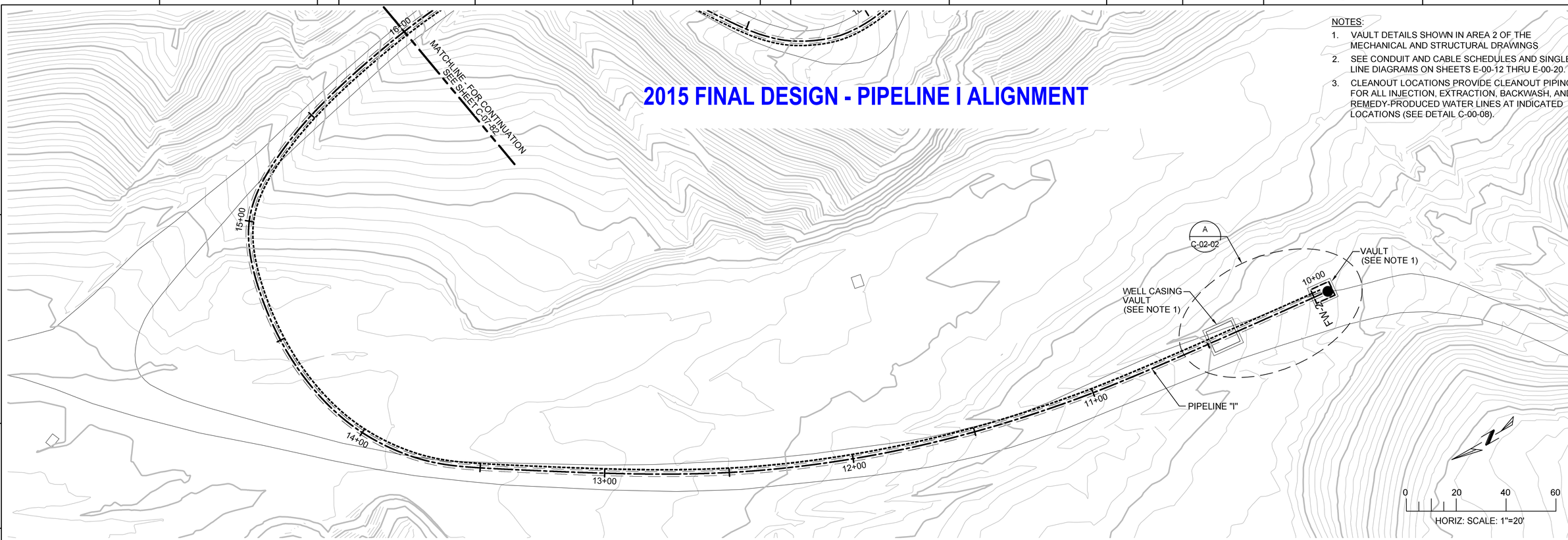
SHEET NO. C-07-69 of SHEETS / REV 8

N1808

11/01/2021, 15:51, C:\Users\vmorasko\ACCDocs\Arcadis\ANA - 30019125 – RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-69.dwg, Tab: C-07-69

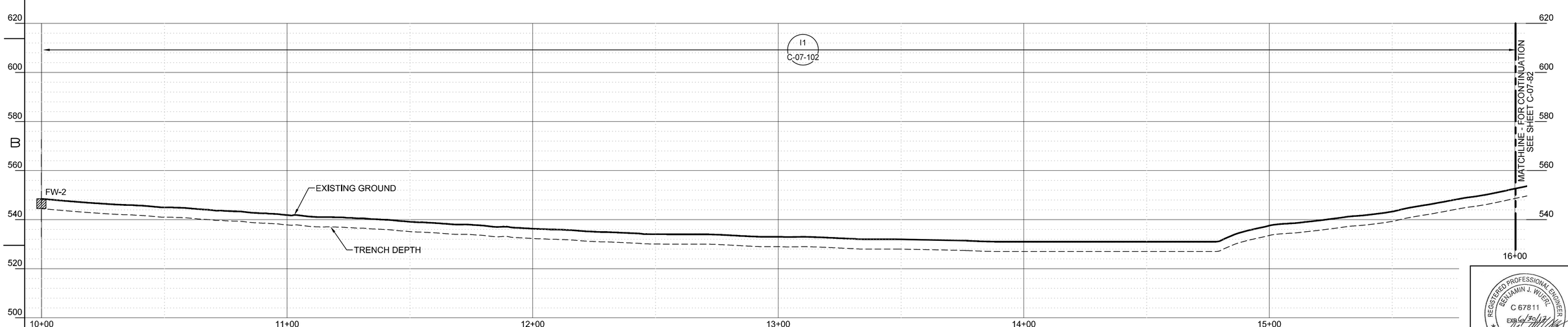
2015 FINAL DESIGN - PIPELINE I ALIGNMENT

NOTES:
1. VAULT DETAILS SHOWN IN AREA 2 OF THE MECHANICAL AND STRUCTURAL DRAWINGS
2. SEE CONDUIT AND CABLE SCHEDULES AND SINGLE LINE DIAGRAMS ON SHEETS E-00-12 THRU E-00-20.
3. CLEANOUT LOCATIONS PROVIDE CLEANOUT PIPING FOR ALL INJECTION, EXTRACTION, BACKWASH, AND REMEDY-PRODUCED WATER LINES AT INDICATED LOCATIONS (SEE DETAIL C-00-08).



PIPELINE "I" - PLAN

(SCALE: 1" = 20')



PIPELINE "I" - PROFILE

(SCALE: 1" = 20' H; 1" = 10' V)

- FINAL DESIGN -
FOR AGENCY APPROVAL ONLY

REGISTERED PROFESSIONAL ENGINEER BENJAMIN J. WUSRL C 67811 EXP. 6/30/17 STATE OF CALIFORNIA

ETIC ENGINEERING

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
1	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
0	8/5/15	90% RTC RESOLUTION		AJW	KLD	WLM	BJW

REVISIONS

APPROVED BY: RAO

SO, SUPV, DSGN, DWN, CHKD, OK, DATE, SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

BATCAVE WASH-
PLAN AND PROFILE - PIPELINE "I"
STA 10+00 TO STA 16+00

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

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY

SHEET NO. of SHEETS: C-07-78
REV: 1

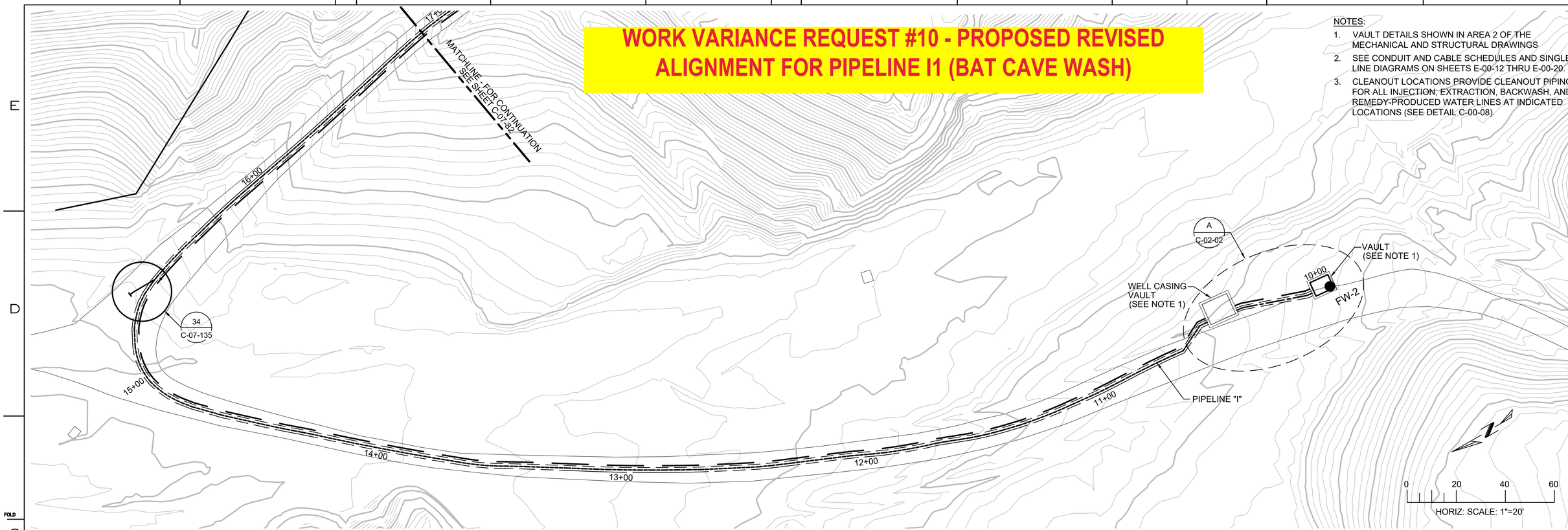
N1808

11/02/2015, 16:45, G:\Graphics\ARTOPOCK-01\Submittal_100%\DWGs\C-Civil\C-07-78.dwg, Tab: C-07-78

WORK VARIANCE REQUEST #10 - PROPOSED REVISED ALIGNMENT FOR PIPELINE I1 (BAT CAVE WASH)

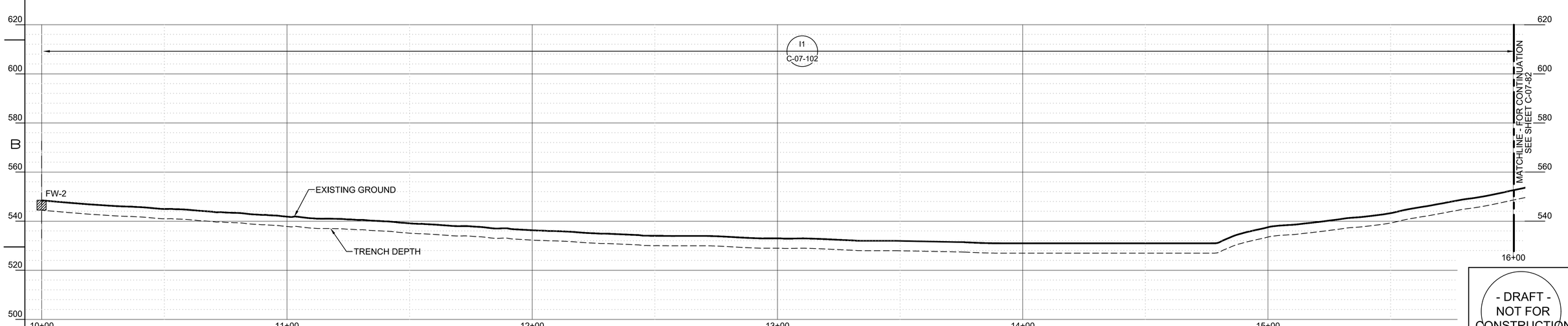
NOTES:

1. VAULT DETAILS SHOWN IN AREA 2 OF THE MECHANICAL AND STRUCTURAL DRAWINGS
2. SEE CONDUIT AND CABLE SCHEDULES AND SINGLE LINE DIAGRAMS ON SHEETS E-00-12 THRU E-00-20.
3. CLEANOUT LOCATIONS PROVIDE CLEANOUT PIPING FOR ALL INJECTION, EXTRACTION, BACKWASH, AND REMEDY-PRODUCED WATER LINES AT INDICATED LOCATIONS (SEE DETAIL C-00-08).



PIPELINE "I" - PLAN

(SCALE: 1" = 20')



PIPELINE "I" - PROFILE

(SCALE: 1" = 20' H; 1" = 10' V)

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
2	10/19/21	PHASE 2A DESIGN IFB		MJS	JPB	BLP	RAO
1	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
0	8/5/15	90% RTC RESOLUTION		AJW	KLD	WLM	BJW

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

BATCAVE WASH-
PLAN AND PROFILE - PIPELINE "I"
STA 10+00 TO STA 16+00

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

MICROFILM / BILL OF MATL / DWG LIST / SUPSDS / SUPSD BY

SHEET NO. C-07-78 of SHEETS

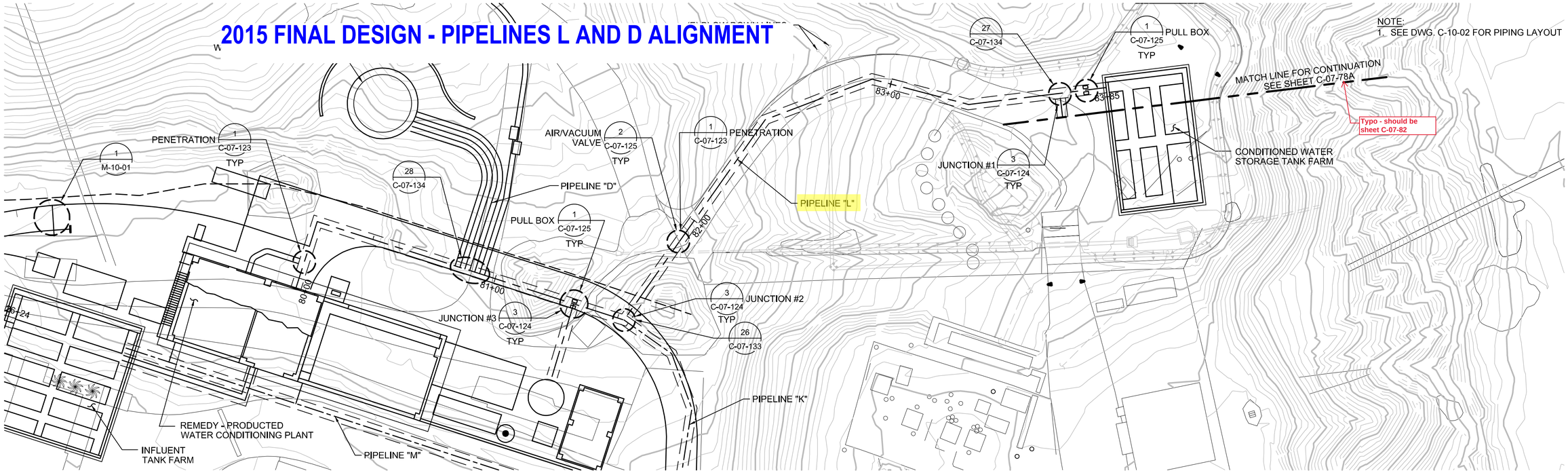
REV 2

N1808

11/02/2021, 21:07, C:\Users\vmoraskv\ACCDocs\Arcadis\ANA - 30019125 – RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-78.dwg, Tab: C-07-78

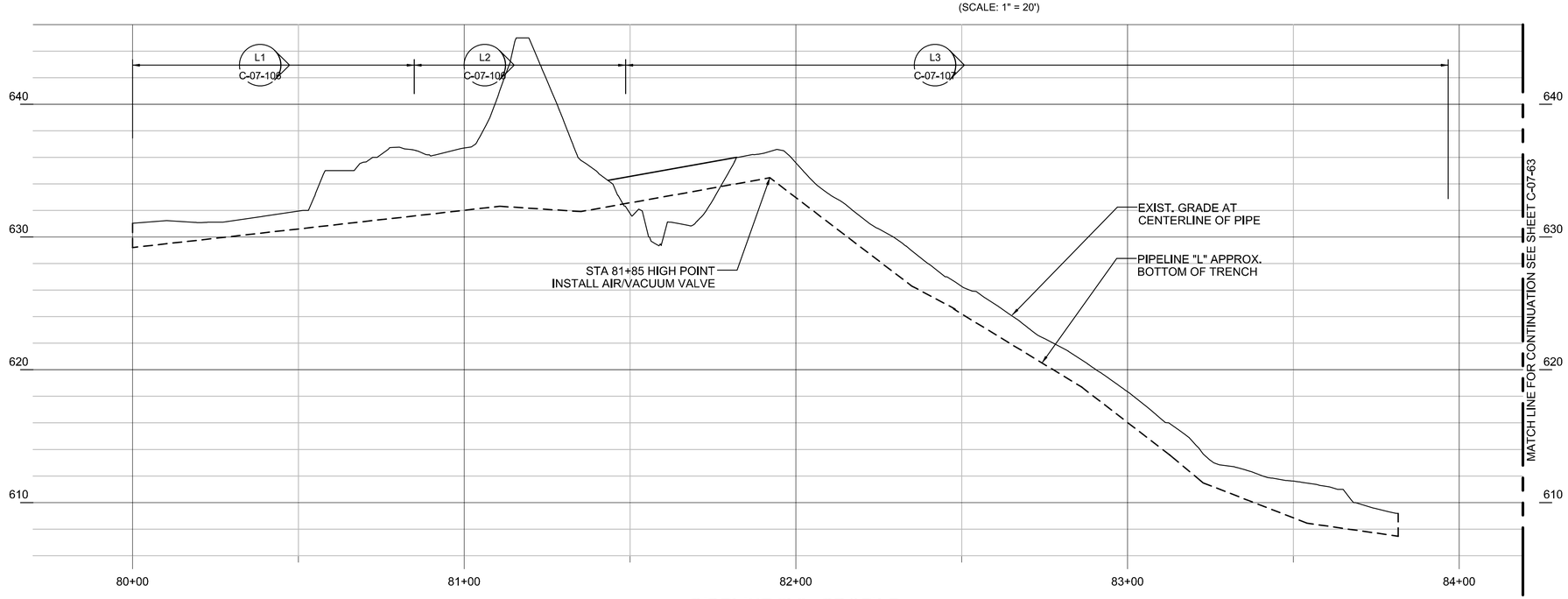
2015 FINAL DESIGN - PIPELINES L AND D ALIGNMENT

NOTE:
1. SEE DWG. C-10-02 FOR PIPING LAYOUT



PIPELINE "L" - PLAN

(SCALE: 1" = 20')



PIPELINE "L" - PROFILE

(SCALE: 1" = 20' H; 1" = 5' V)

HORIZ: SCALE: 1"=20' (0, 20, 40, 60)

VERT: SCALE: 1"=5' (0, 5, 10, 15)

- FINAL DESIGN - FOR AGENCY APPROVAL ONLY

REGISTERED PROFESSIONAL ENGINEER BENJAMIN J. WUSZEL C 67811 EXP 6/30/17 STATE OF CALIFORNIA

ETIC ENGINEERING

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO	
1	9/8/14	PRE-FINAL (90%) DESIGN						
0	4/5/13	INTERMEDIATE (60%) DESIGN						

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

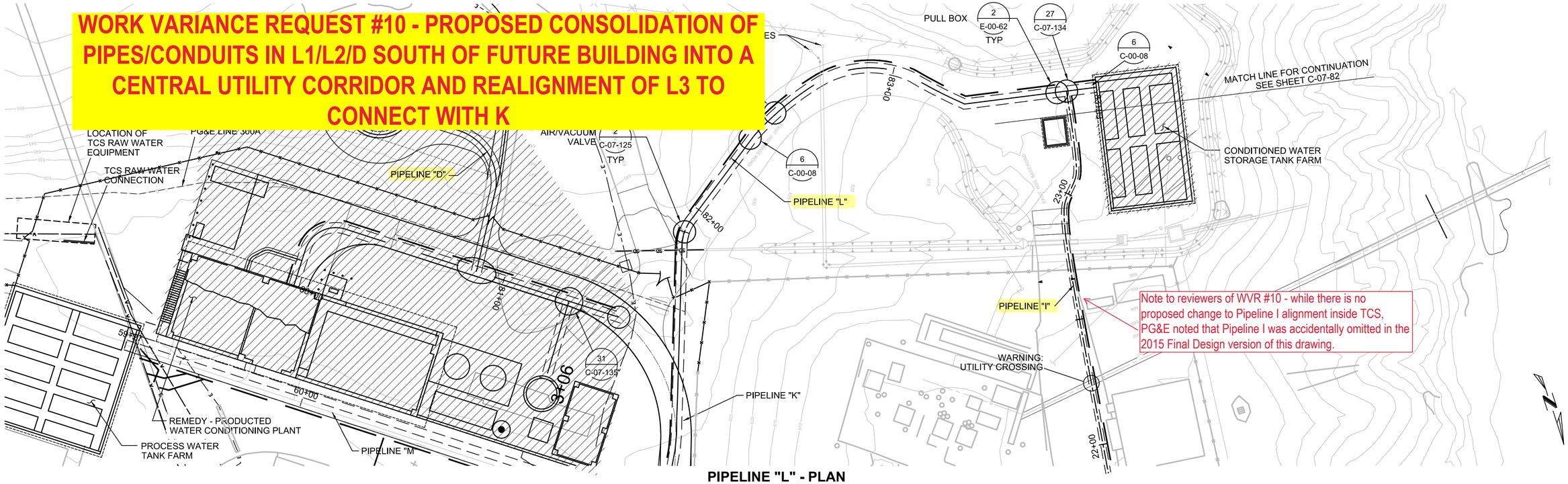
TOPOCK GROUNDWATER REMEDIATION PROJECT

PLAN AND PROFILE
PIPELINE "L"
STA 80+00 TO STA 83+90

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

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. of SHEETS: C-07-74
REV: 2

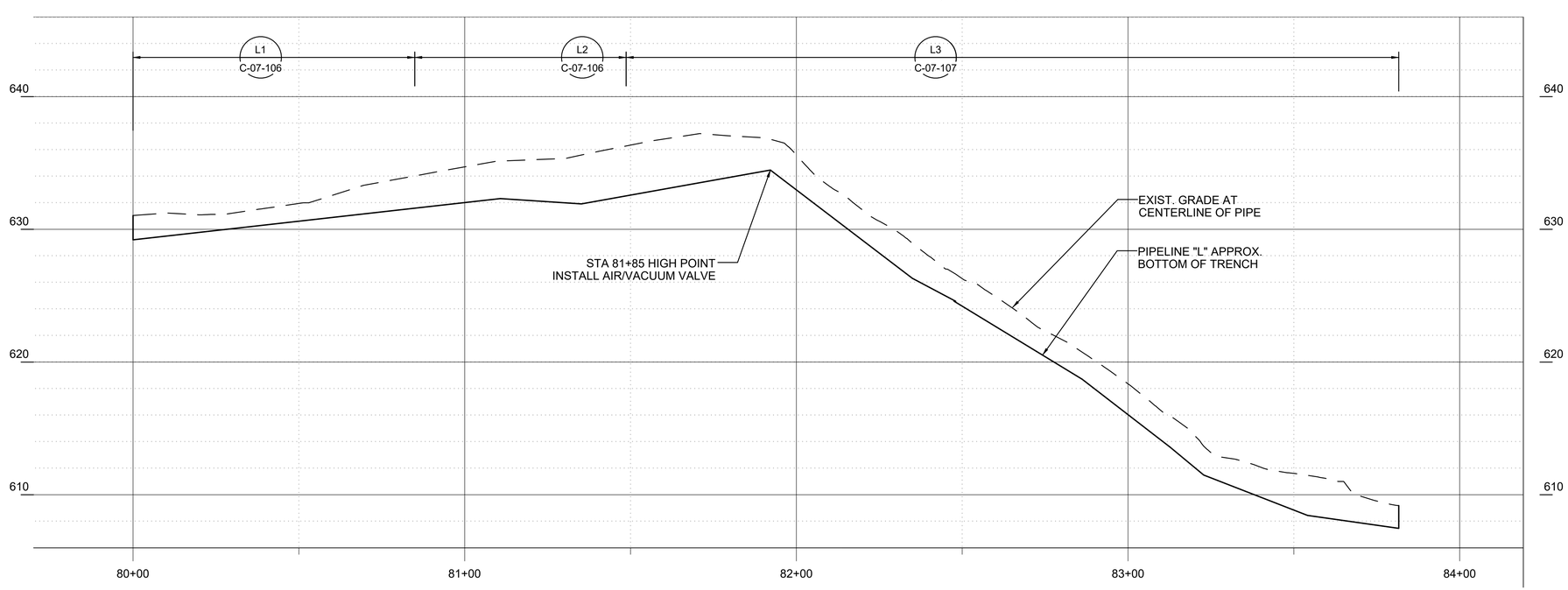
WORK VARIANCE REQUEST #10 - PROPOSED CONSOLIDATION OF PIPES/CONDUITS IN L1/L2/D SOUTH OF FUTURE BUILDING INTO A CENTRAL UTILITY CORRIDOR AND REALIGNMENT OF L3 TO CONNECT WITH K



Note to reviewers of WVR #10 - while there is no proposed change to Pipeline I alignment inside TCS, PG&E noted that Pipeline I was accidentally omitted in the 2015 Final Design version of this drawing.

PIPELINE "L" - PLAN

(SCALE: 1" = 20')



PIPELINE "L" - PROFILE

(SCALE: 1" = 20' H; 1" = 5' V)

LEGEND:

TO BE COMPLETED DURING FUTURE PHASE OF WORK.

0 20 40 60
HORIZ: SCALE: 1"=20'

0 5 10 15
VERT: SCALE: 1"=5'

- DRAFT -
NOT FOR
CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
6	10/29/21	PHASE 2A DESIGN IFB		MJS	JPB	BLP	RAO
5	12/09/19	WVR #5 RPW CONSOLIDATION		VJM	JPB	BLP	RAO
4	12/11/18	ISSUED FOR CONSTRUCTION		NAK	JPB	MAG	RAO
3	6/16/17	ISSUED FOR BID		AJW	JPB	BW	RAO
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
1	9/8/14	PRE-FINAL (90%) DESIGN					
0	4/5/13	INTERMEDIATE (60%) DESIGN					

REVISIONS

APPROVED BY: RAO

SO
SUPV
DSGN
DWN
CHKD
OK
DATE
SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PLAN AND PROFILE
PIPELINE "L"
STA 80+00 TO STA 83+90

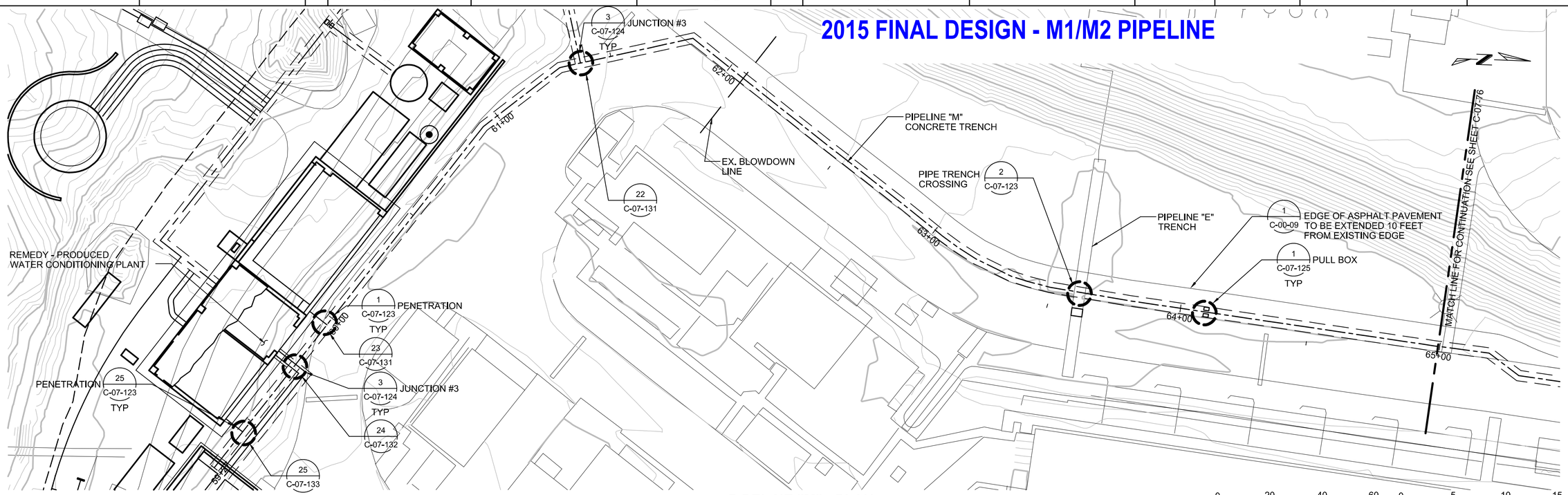
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. of SHEETS
C-07-74
REV 6

N1808

10/30/2021, 11:29, C:\Users\MSiverling\BIM 360\Arcadis\ANA - 30091125 – RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-74_JB.dwg, Tab: C-07-74

2015 FINAL DESIGN - M1/M2 PIPELINE

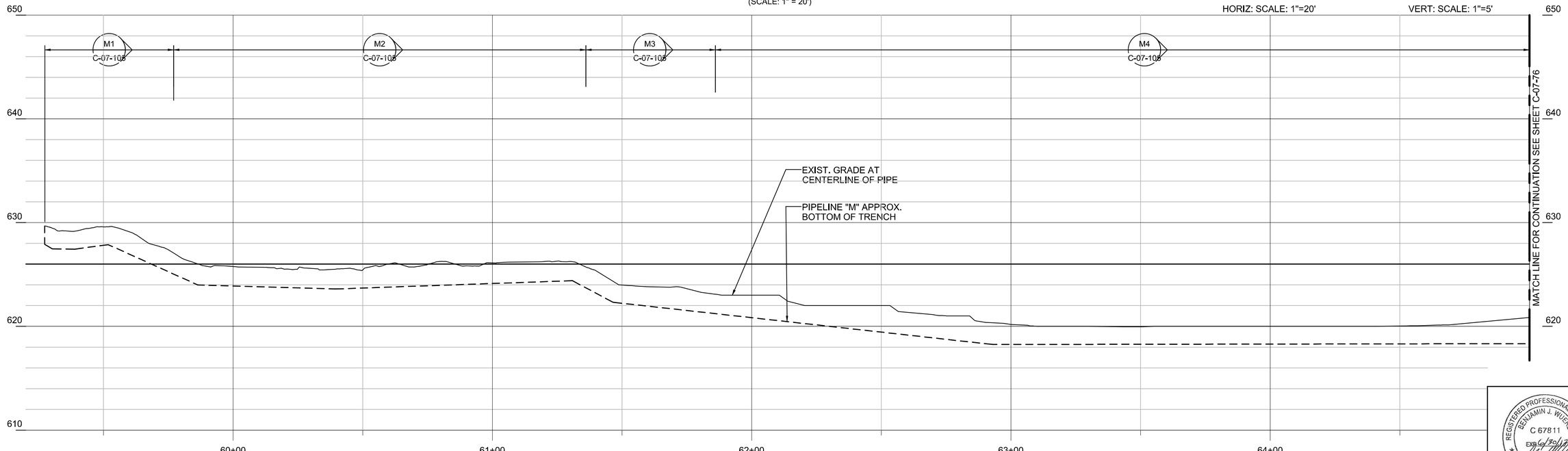


PIPELINE "M" - PLAN

(SCALE: 1" = 20')

HORIZ: SCALE: 1"=20'

VERT: SCALE: 1"=5'



PIPELINE "M" - PROFILE

(SCALE: 1" = 20' H; 1" = 5' V)

- FINAL DESIGN -
FOR AGENCY APPROVAL ONLY

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN J. WUSKL
C 67811
EXP 6/30/17
CIVIL
STATE OF CALIFORNIA

ETIC ENGINEERING

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO
1	9/8/14	PRE-FINAL (90%) DESIGN					
0	4/5/13	INTERMEDIATE (60%) DESIGN					

REVISIONS

APPROVED BY	
RAO	SO
	SUPV
	DSGN
	DWN
	CHKD
	OK
	DATE
	SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

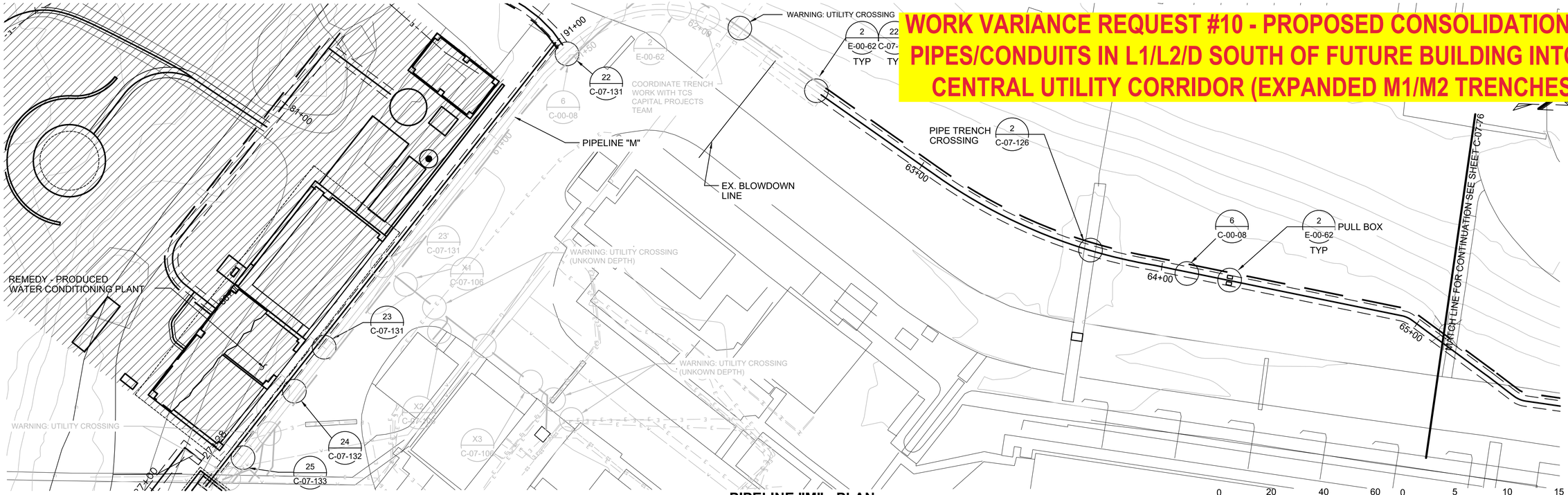
PLAN AND PROFILE
PIPELINE "M"
STA 60+00 TO STA 65+00

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

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. of SHEETS	
C-07-75	REV 2

N1808

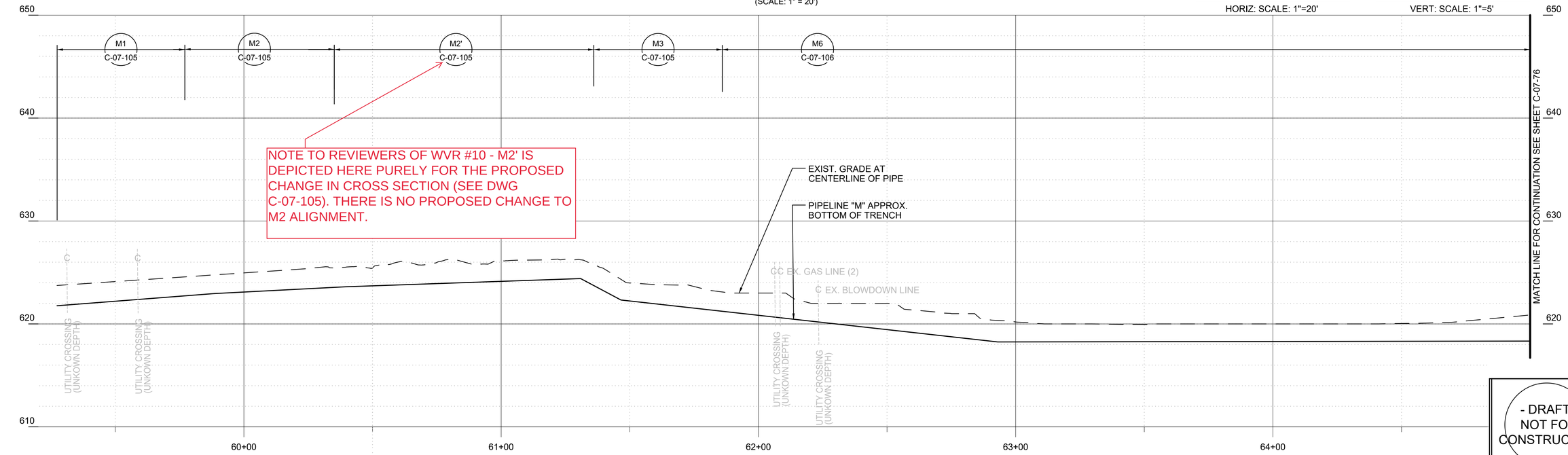
WORK VARIANCE REQUEST #10 - PROPOSED CONSOLIDATION OF PIPES/CONDUITS IN L1/L2/D SOUTH OF FUTURE BUILDING INTO A CENTRAL UTILITY CORRIDOR (EXPANDED M1/M2 TRENCHES)



PIPELINE "M" - PLAN

(SCALE: 1" = 20')

HORIZ: SCALE: 1"=20' VERT: SCALE: 1"=5'



PIPELINE "M" - PROFILE

(SCALE: 1" = 20' H; 1" = 5' V)

- DRAFT - NOT FOR CONSTRUCTION

LEGEND:

TO BE COMPLETED DURING FUTURE PHASE OF WORK.

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
7	10/29/21	PHASE 2A DESIGN IFB		JPB	JPB	BLP	RAO	
6	08/07/20	STATION COMMUNICATION CONNECTION		VJM	JPB	BLP	RAO	

REVISIONS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
5	12/09/19	WVR #5 RPW CONSOLIDATION		DMM	JPB	BLP	RAO	
4	12/11/18	ISSUED FOR CONSTRUCTION		NAK	JPB	MAG	RAO	
3	6/16/17	ISSUED FOR BID		AJW	JPB	BW	RAO	
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO	
1	9/8/14	PRE-FINAL (90%) DESIGN						
0	4/5/13	INTERMEDIATE (60%) DESIGN						

REVISIONS

APPROVED BY: RAO

SO / SUPV / DSGN / DWN / CHKD / OK / DATE / SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PLAN AND PROFILE
PIPELINE "M"
STA 60+00 TO STA 65+00

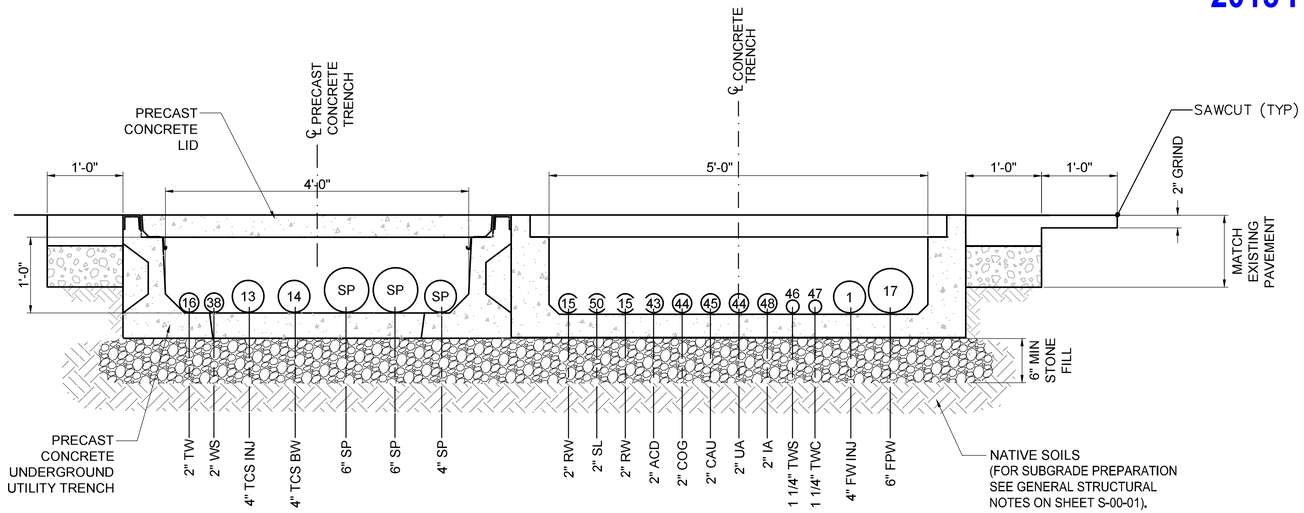
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. C-07-75 of SHEETS
REV 7

11/09/2021, 01:17, C:\Users\jbaxter\ACCDocs\Arcadis\ANA - 30018125 – RC000733.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-75.dwg, Tab: C-07-75

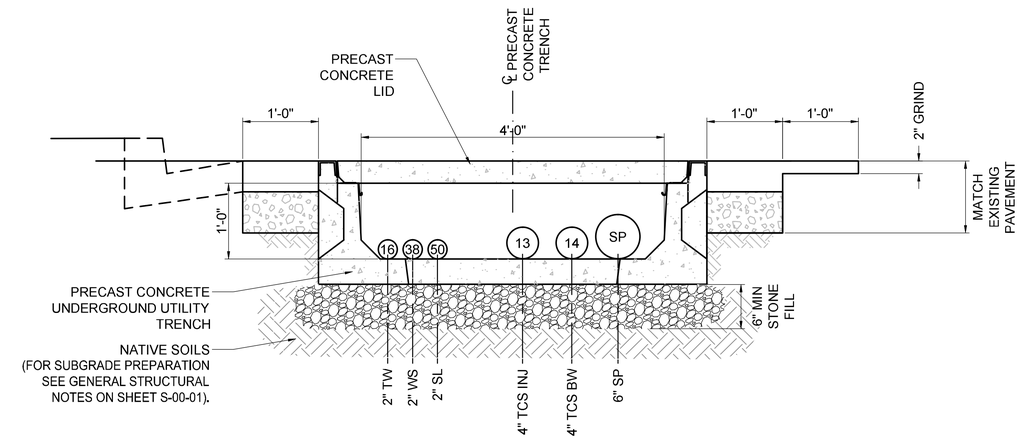
N1806

2015 FINAL DESIGN - CROSS SECTIONS FOR PIPELINES M1/M2



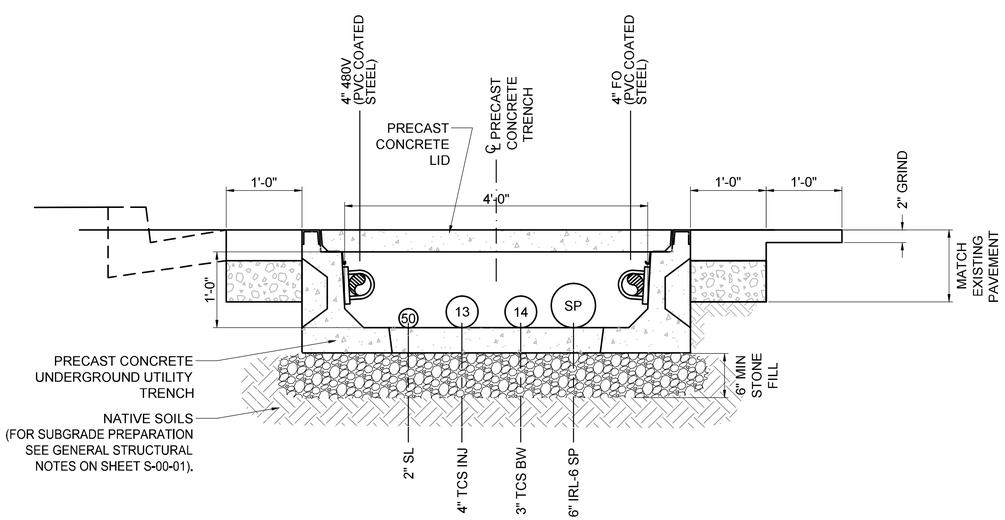
PIPELINE M

M1 SECTION
1"=1'-0"
C-07-75



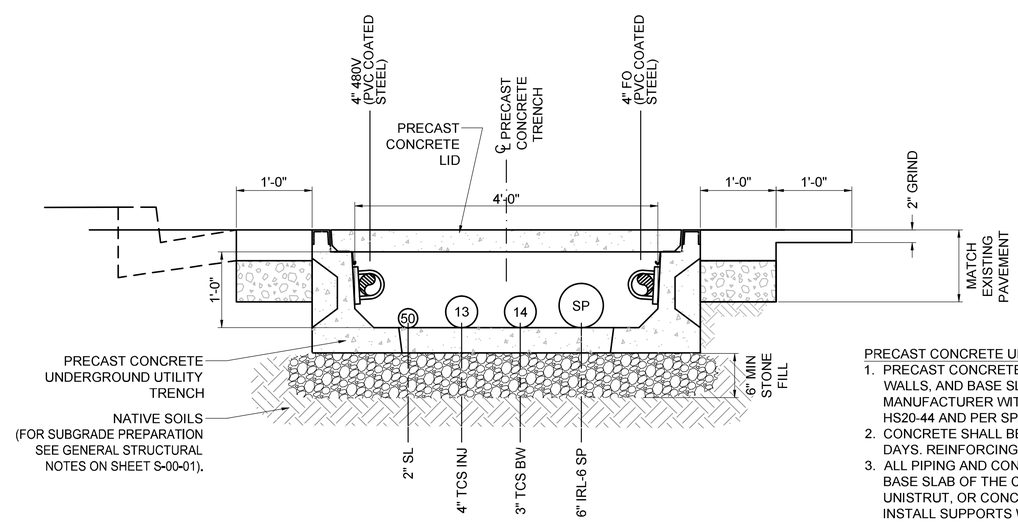
PIPELINE M

M2 SECTION
1"=1'-0"
C-07-75



PIPELINE M

M3 SECTION
1"=1'-0"
C-07-75



PIPELINE M

M4 SECTION
1"=1'-0"
C-07-75
C-07-76

PRECAST CONCRETE UNDERGROUND UTILITY TRENCH NOTES :

1. PRECAST CONCRETE UTILITY TRENCH COMPONENTS (I.E. LIDS, WALLS, AND BASE SLAB) SHALL BE DESIGNED BY PRECAST MANUFACTURER WITH LOADING IN ACCORDANCE WITH AASHTO HS20-44 AND PER SPECIFICATION SECTION 03 40 00.
2. CONCRETE SHALL BE 5,000 P.S.I. COMPRESSIVE STRENGTH @ 28 DAYS. REINFORCING STEEL SHALL BE ASTM A-615.
3. ALL PIPING AND CONDUIT SHALL BE SECURED TO THE WALLS OR BASE SLAB OF THE CONCRETE TRENCH WITH ANCHOR BOLTS, UNISTRUT, OR CONCRETE PIPE SUPPORTS. CONTRACTOR SHALL INSTALL SUPPORTS WHEREVER NECESSARY TO PROPERLY SUPPORT PIPING AND CONDUIT PER SPECIFICATION 40 05 15.
4. CONTRACTOR RESPONSIBLE FOR LOCATING AND VERIFYING LOCATION OF ALL UTILITIES LOCATED WITHIN AREAS TO BE AFFECTED BY CONSTRUCTION.
5. ALL PIPE PENETRATIONS SHALL BE LINK SEALED IN ACCORDANCE WITH SPECIFICATIONS.
6. SEE MECHANICAL DRAWINGS FOR ALL PIPE PENETRATIONS.

REGISTERED PROFESSIONAL ENGINEER BENJAMIN J. WUEBL C 67811 Exp 6/30/17 CIVIL STATE OF CALIFORNIA

- FINAL DESIGN -
FOR AGENCY APPROVAL ONLY

ETIC ENGINEERING

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO	
1	9/8/14	PRE-FINAL (90%) DESIGN						
0	4/5/13	INTERMEDIATE (60%) DESIGN						

REVISIONS

APPROVED BY	
RAO	SO
	SUPV
	DSGN
	DWN
	CHKD
	OK
	DATE
	SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PIPELINE SECTIONS

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

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. of SHEETS	
C-07-105	REV 2

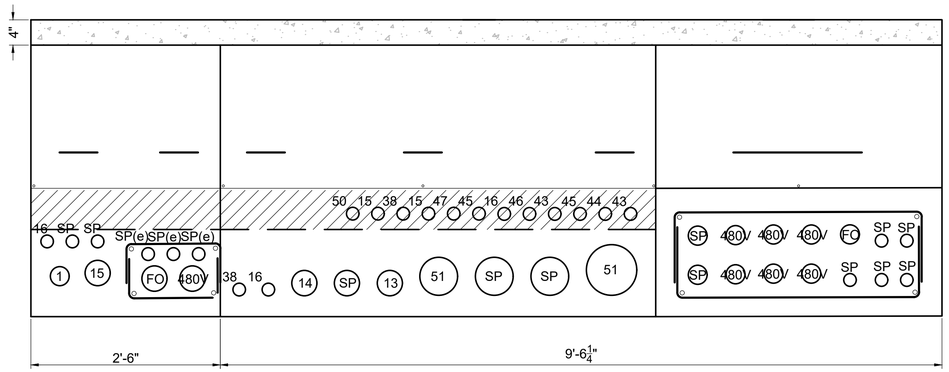
N1808

11/02/2015, 15:05, G:\Graphics\AR\TOPOCK-01\Submittal_100%\DWGs\C-Civil\C-07-100 to 106_PipeTrenchDetails.dwg, Tab: C-07-105

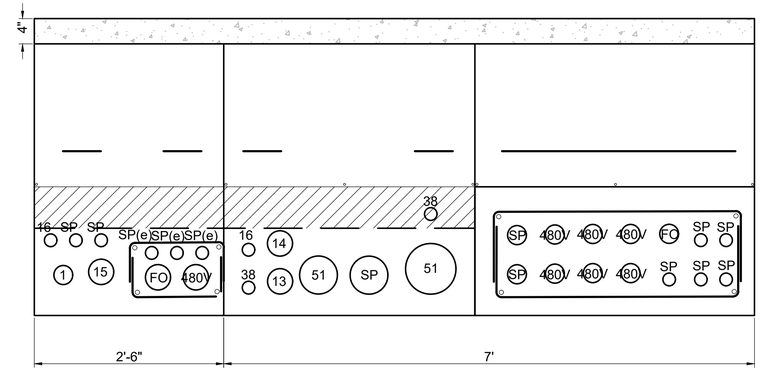
WORK VARIANCE REQUEST #10 - PROPOSED REVISED CROSS SECTIONS FOR PIPELINES M1/M2/M2' (INSIDE TCS) RESULTING FROM CONSOLIDATION

NOTE:
1. REFER TO DETAIL 1 ON SHEET C-07-102 FOR CONSTRUCTION DETAIL.
2. SURFACE CONDITION TO MATCH EXISTING CONDITIONS, INCLUDING ASPHALTIC CONCRETE PAVEMENT, GRAVEL, AND/ OR SUB-BASE.

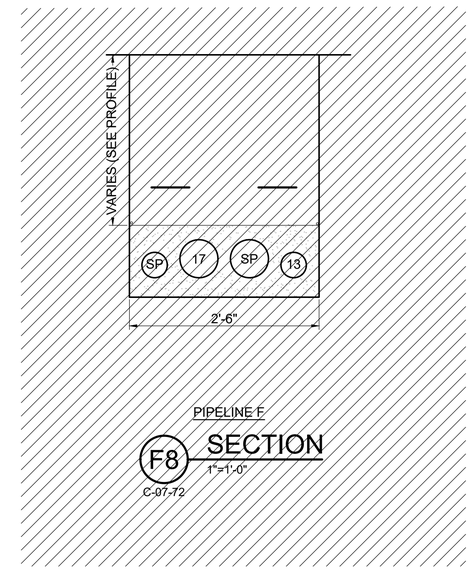
LEGEND:
TO BE COMPLETED DURING FUTURE PHASE OF WORK.



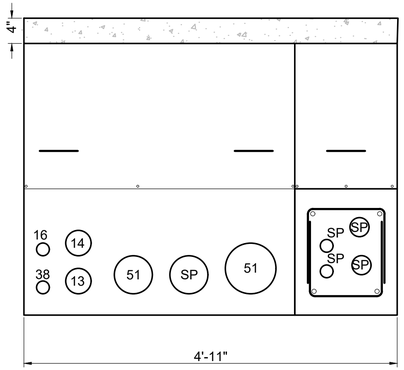
PIPELINE M
M1 SECTION
1"=1'-0"
C-07-75



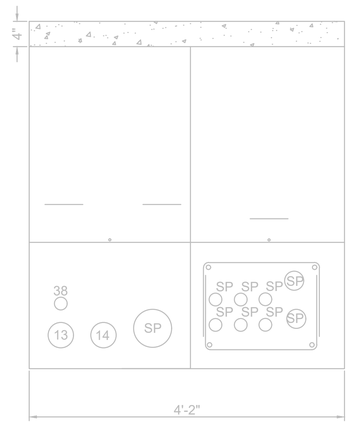
PIPELINE M
M2 SECTION
1"=1'-0"
C-07-75



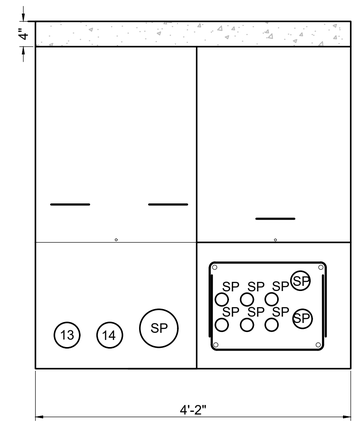
PIPELINE F
F8 SECTION
1"=1'-0"
C-07-72



PIPELINE M
M2' SECTION
1"=1'-0"
C-07-75



PIPELINE M
M3 SECTION
1"=1'-0"
C-07-75



PIPELINE M
M6 SECTION
1"=1'-0"
C-07-75

- DRAFT - NOT FOR CONSTRUCTION

ARCADIS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
6	10/29/21	PHASE 2A DESIGN IFB		CDB	JPB	BLP	RAO	

REVISIONS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD	BY
5	05/11/20	TCS FACILITIES ISSUED FOR CONSTRUCTION		VJM	JPB	BLP	RAO	
4	12/07/18	ISSUED FOR CONSTRUCTION		NAK	JPB	MAG	RAO	
3	6/16/17	ISSUED FOR BID		AJW	JPB	BW	RAO	
2	11/18/15	FINAL DESIGN		AJW	WLM	BW	RAO	
1	9/8/14	PRE-FINAL (90%) DESIGN						
0	4/5/13	INTERMEDIATE (60%) DESIGN						

REVISIONS

APPROVED BY: RAO
SO
SUPV
DSGN
DWN
CHKD
OK
DATE
SCALES

TOPOCK GROUNDWATER REMEDIATION PROJECT

PIPELINE SECTIONS

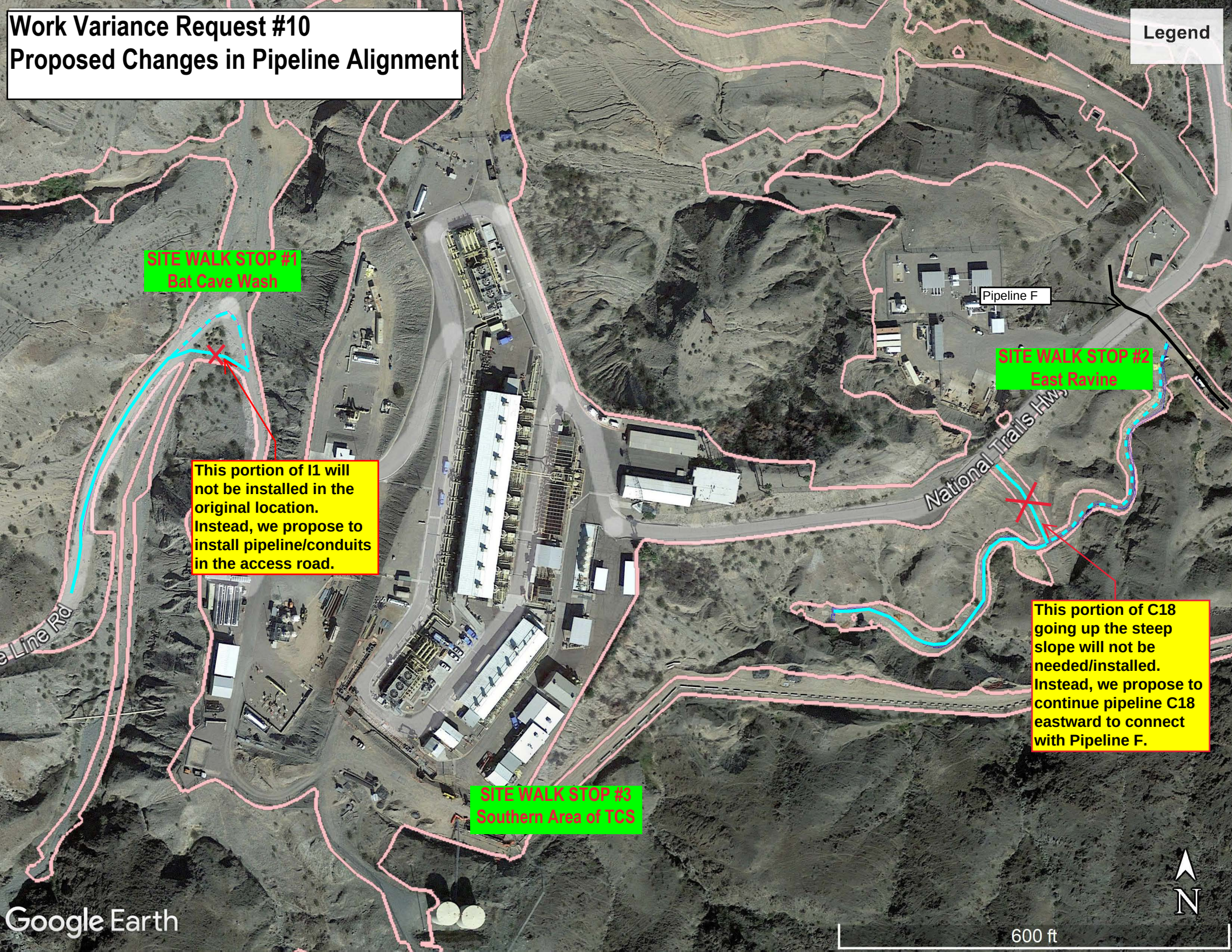
GAS TRANSMISSION & DISTRIBUTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. C-07-105 of SHEETS
REV 6

11/08/2021, 14:20, C:\Users\vmorasko\ACCDocs\Arcadis\ANA - 30019125 - RC000753.0050 - Needles CA - Topock Construction & Closeout DOR Svcs\Project Files\Phase 2 Initial Design Drawings\C-Civil\C-07-102 to 106.dwg, Tab: C-07-105

N1808

Work Variance Request #10
Proposed Changes in Pipeline Alignment



Future Activity Allowance Determination Matrix for Work Variance Request (WVR)

Work Variance Request No. 10 Date: 1/6/2022

Future Activity Allowance is an activity that is not considered in the remedy design but necessary to support the project objectives. Future Activity Allowance is a Material Deviation which is defined in the final groundwater remedy design as: Material Deviation means a change or correction required to prevent a condition that would (1) render the approved design non-compliant with codes, regulations, and /or engineering standard of practices, (2) render planned well locations and/or constructions fail to meet the project objectives, (3) cause significant schedule delay, and/or (4) cause a significant increase in costs. (CH2M Hill, 2015)

According to the SEIR Project Description, "The inclusion of the Future Activity Allowance is not intended to account for minor adjustments (work variances) of the remedy design during construction resulting from field conditions. DTSC's objective for the inclusion of the Future Activity Allowance is to consider the potential impacts of needing to take additional but previously unforeseen activities that were not contemplated as part of the Final Remedy Design but are activities that would improve the performance of the remedy, or are necessary to gather additional information on the remedy performance, and/or aid in the transition of the active remedy to monitored natural attenuation." (ESA, 2017)

---

1. Are all components of the WVR in the approved final design as reviewed in the SEIR?
   ☒ Yes ☐ No

2. Are all components of the WVR staying within an infrastructure alignment in the approved final design?
   ☐ Yes ☒ No

If answers to both 1 and 2 are Yes, STOP – action is not Future Activity Allowance

3. For components not in approved final design, will the WVR require new access not identified for use in the final design and create new ground disturbance beyond those anticipated in final design?
   ☒ Yes ☐ No

If answer is No, STOP – action is not Future Activity Allowance. If Yes, proceed…

4. For components not in approved final design and require new access or new ground disturbance, will the ground disturbing activity be outside the 2018 SEIR project boundary?
   ☐ Yes ☒ No

If answer is Yes, STOP – action is subject to additional CEQA evaluation. WVR approval will be considered after DTSC completes CEQA determination.

5. For WVR requiring new access and/or new ground disturbance, but project components are in approved final design and within the 2018 SEIR project boundary, is the variance necessitated by field conditions which are outside the control of the operator (e.g. refusal during drilling, unstable ground, existing design jeopardizes health and safety, modification to avoid archaeological resource, existing design does not conform to engineering standards, etc.)?
   ☒ Yes ☐ No

If answer is No or otherwise explained in Section 7 below, action is Future Activity Allowance, follow Communication Protocol for Future Activities Allowance, Exhibit 3 to the Statement of Decision and Resolution of Approval. If the answer is Yes, action is Future Activity Allowance, and DTSC will work with

Tribes to meet the time sensitivity of the WVR. Regardless of response, because of new access and/or new ground disturbance, WVR action may be subject to Federal Consultation. Inquire with BLM to determine whether there is a need to follow Consultation during Construction protocol.

6. Does the addition of WVR cause an exceedance from infrastructure limits specified in the 2018 certified Final SEIR (Table 3-1 for well boreholes; Table 3-2 for pipeline trenches, electrical/ communication conduit, roadway improvements, or sizes of buildings and structures; Table 3-4 for volume of soil disturbance and Table 3-5 for water usage)?
   ☐ Yes ☒ No

If answer is Yes, STOP – action is subject to additional CEQA evaluation. WVR approval will be considered after DTSC completes a CEQA checklist to determine if there are new or substantially more significant environmental impacts than disclosed in the 2018 SEIR.

7. Other extenuating circumstances or information for FAA considerations: ☒ No
   ☐ Yes – provide information and/or justification

Conclusion: WVR No. 10 ☒ is not a FAA ☐ is a FAA

Signature of DTSC reviewer: Date: 1/6/2022