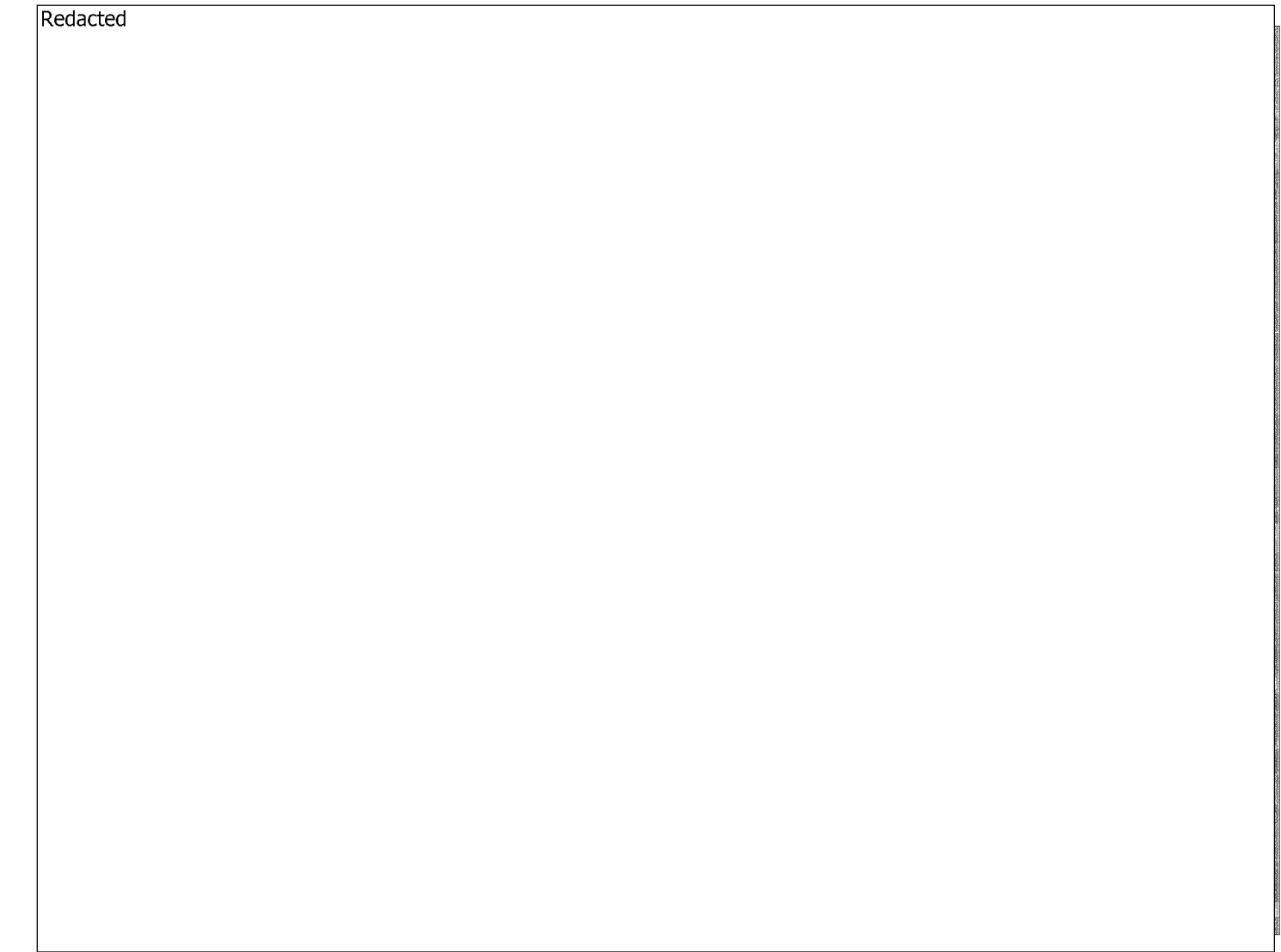


# HYDROTEST 097-12 L-148, MP 0.00 - 6.06

## ORDER # 41617948

### SCHEDULE OF SHEETS

- SHEET 1 -- GENERAL / CONSTRUCTION NOTES
- SHEET 2 -- HYDROTEST PLAN VIEW / TEST & TAP LOCATIONS
- SHEET 3 -- TEST LOCATIONS
- SHEET 4 -- TAP LOCATIONS
- SHEET 5 -- HYDROTEST PROFILE VIEW / PIPELINE FEATURES
- SHEET 6 -- CONSTRUCTION DETAILS
- SHEET 7 -- MATERIAL OF RECORD / BILL OF MATERIALS



VICINITY SKETCH  
NOT TO SCALE

### △ SUMMARY OF PROPOSED WORK:

- EXPENSE ORDER #41617948
1. HYDROSTATICALLY TEST 8" LINE 148 FROM [Redacted] PER DRAWINGS AND STRENGTH TEST PRESSURE REPORTS (#41617948) AND MATERIAL OF RECORD DRAWING #41617948 SHEET 6 OF 6.
  2. STRENGTH TEST 8" LINE 148 FROM [Redacted] PER DRAWING AND STRENGTH TEST PRESSURE REPORT (#41617948) TEST 2 SHEET 1 OF 1.
  3. INSTALL 32'-3 1/2" OF 8.625"OD x 0.322"WT, API 5L, GR B, SMLS, FBE COATED PIPE.
  4. INSTALL 6'-6" OF 6.625"OD x 0.280"WT, API 5L, GR B, SMLS PIPE.
  5. REMOVE 32'-6" OF 8.625"OD x 0.277"WT, GR B, SMLS PIPE INSTALLED ON GM 91931 (1947).
  6. REMOVE 8'-9" OF 8.625"OD x 0.322"WT, GR B, SMLS PIPE INSTALLED ON ORDER# 7041125 (2002).
  7. REMOVE 6'-6" OF 6.625"OD x 0.380"WT, GR B, SMLS PIPE INSTALLED ON ORDER# 7041125 (2002).
  8. REMOVE 0'-6" OF 3.500"OD x 0.188"WT, GR B, SMLS PIPE INSTALLED ON GM 91931 (1947).
  9. REMOVE 0'-6" OF 2.375"OD x 0.154"WT, GR B, SMLS PIPE INSTALLED ON GM 91931 (1947).

### CAPITAL ORDER #30905851 [PSRS# 26429]

1. INSTALL 1 EACH 8.625"OD, BALL VALVE, ANSI 300, ENDS BEVELED TO MATCH 0.322"WT, X42, WE; AND 2 EACH 4.500"OD, BALL VALVES, ANSI 300, FE, VALVES.
2. INSTALL 17' OF 8.625"OD x 0.322"WT, API 5L, GR B, SMLS PIPE.
3. INSTALL 4' OF 4.500"OD x 0.237"WT, API 5L, GR B, SMLS, BARE PIPE.
4. INSTALL 12' OF 1.050"OD x 0.154"WT, API 5L, GR B, SMLS PIPE.
5. REMOVE 1 EACH 8.625"OD, PLUG VALVE, AND 2 EACH 3.500"OD, PLUG VALVES INSTALLED ON GM 91931 (1947).
6. REMOVE 18'-6" OF 8.625"OD x 0.277"WT, GR B, SMLS PIPE INSTALLED ON GM 91931 (1947).
7. REMOVE 2' OF 3.500"OD x 0.188"WT, GR B, SMLS PIPE INSTALLED ON GM 91931 (1947).
8. REMOVE 1 EACH 8.625"OD, PLUG VALVE, 1 EACH 3.500"OD, PLUG VALVE, AND 1 EACH 2.375"OD, PLUG VALVE INSTALLED ON GM 91931 (1947).
9. REMOVE 8" CHECK VALVE INSTALLED ON GM 91931 (1947).

### SEQUENCE OF OPERATIONS:

1. PRIOR TO TAKING PIPELINE CLEARANCE THE FOLLOWING MUST BE PERFORMED:
  - A. PG&E T&R TO CHECK ANY DRIPS IN SHUT-IN SEGMENT FOR PRESENCE OF PIPELINE LIQUIDS.
  - B. CONTRACTOR TO REMOVE 2' OF PIPE WRAP AT EACH END OF CUT OUT SECTIONS AND SANDBLAST TO NEAR WHITE WHERE DESIGNATED ON DRAWINGS FOR H-FORM INSPECTION.
  - C. H-FORM INSPECTION TO BE PERFORMED ON PIPELINE BY PG&E APPROVED VENDOR. PERFORM H-FORM INSPECTION PRIOR TO REMOVAL OF CUT-OUT SECTION.
  - D. PERFORM H-FORM INSPECTION AS DESIGNATED ON DRAWINGS. IF UT W.T. MEASUREMENTS IN SECTION 2.5 DO NOT MATCH EXISTING PIPE SPECIFICATIONS AS SHOWN ON DRAWINGS, IMMEDIATELY NOTIFY ENGINEER.
  - E. COMPLETE A-FORMS ON ALL EXPOSED PIPE AND INCLUDE IN AS-BUILT PACKAGE.
  - F. G.C. GAS TO INSTALL SAVE-A-VALVES FOR OIL TESTING AND SNIFF HOLES WHERE DESIGNATED IN THE TIE-IN PROCEDURE. G.C. GAS FOREMAN TO CONFIRM LOCATION AND NUMBER OF SAVE-A-VALVE LOCATIONS AND ENSURE WELD PRESSURE CALCULATIONS ARE PROVIDED BY ENGINEERING PRIOR TO WELDING SAVE-A-VALVES ON PIPELINE.
2. AFTER CLEARANCE CONTRACTOR TO TRANSPORT H-FORM TESTED PIPE SEGMENTS TO 2000 CROWS LANDING RD., MODESTO. UTILIZE CHAIN OF CUSTODY PROCESS FOR ALL SHIPMENTS.
3. UPON ARRIVAL AT MODESTO CUT OFF 2' OF PIPE AND TRANSPORT TO ATS FOR FURTHER ANALYSIS. UTILIZE CHAIN OF CUSTODY FOR ALL SHIPMENTS.
4. SEE T-097-12 HYDROSTATIC TEST PLAN FOR SEQUENCING OF HYDROSTATIC TEST TASKS.

### CONSTRUCTION NOTES:

1. WELDING REQUIREMENTS:  
ALL ARC WELDING IS TO BE PERFORMED IN ACCORDANCE WITH GAS STANDARD D-22.
2. HYDROSTATIC TEST REQUIREMENTS:  
HYDROSTATIC TESTING SHALL MEET PRESSURE AND DURATION REQUIREMENTS OF GAS STANDARD A-34 AND SHALL BE CONDUCTED IN ACCORDANCE WITH GAS STANDARD A-37. SEE ATTACHED STPR.
3. PAINTING AND COATING REQUIREMENTS:  
ALL EXPOSED PIPE AND FITTINGS ARE TO BE PAINTED IN ACCORDANCE WITH GAS STANDARD E-30. ALL COATING ON BURIED PIPE AND FITTINGS ARE TO BE APPLIED IN ACCORDANCE WITH GAS STANDARD E-35. FOR COATING SELECTIONS ON BURIED PIPE SEE DIRECT BURIAL SELECTIONS TABLE.
4. CALL USA AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION (811).
5. LOCATION OF EXISTING SUBSTRUCTURES ARE APPROXIMATE. BEFORE POWER OR HEAVY EQUIPMENT IS USED FOR EXCAVATION, THE EXACT DEPTH AND LOCATION OF SUBSTRUCTURES SHALL FIRST BE DETERMINED BY HAND EXCAVATION, IF NECESSARY.
6. ALL BENDS ARE SMOOTH FIELD BENDS EXCEPT WHERE ELBOWS ARE NOTED. FIELD BEND SHALL BE MADE IN ACCORDANCE WITH GAS STANDARD A-36 SECTION 4-D.
7. ALL ANGLES SHOWN IN THE PLAN AND PROFILE ARE APPROXIMATE AND SHALL BE CUT TO SUIT FIELD CONDITION.
8. THIS PIPELINE MUST BE INSTALLED WITH AT LEAST 12 INCHES OF CLEARANCE FROM ANY OTHER UNDERGROUND STRUCTURE NOT ASSOCIATED WITH THE PIPELINE.
9. COATING REMOVAL:  
BEFORE REMOVING THE PIPE COATING ON PRE-1972 PIPE (DOES NOT INCLUDE PLASTIC TAPE OR FUSION BONDED EPOXY COATINGS) THE FOLLOWING STEPS SHALL BE TAKEN:  
-FOR ALL NON-EMERGENCY WORK, PRE-1972 PIPE WRAP MUST BE EVALUATED TO DETERMINE IF IT CONTAINS ASBESTOS PRIOR TO REMOVAL.  
-FOR EMERGENCY WORK ON PRE-1972 PIPE, ASSUME THE WRAP CONTAINS > 1% ASBESTOS UNTIL THE WRAP CAN BE TESTED.  
-OBTAIN SAMPLES OF THE WRAP, AND HAVE SAMPLES TESTED FOR ASBESTOS IN ACCORDANCE WITH RP 4711.  
-TEST RESULTS ARE TO BE INCLUDED WITH AS-BUILTS.  
-FOLLOW PROCEDURE IN RP 4711 FOR REMOVAL OF PIPE WRAP.
10. BONDING CABLES TO BE INSTALLED ACROSS PIPELINE CUT-OUTS PRIOR TO REMOVAL AT ALL LOCATIONS THE PIPELINE IS SEVERED TO INSTALL TEST HEADS PRIOR TO REMOVAL. CHAIN CLAMPS, MAGNETIC CLAMPS, OR OTHER CONSTRUCTION MANAGEMENT APPROVED CLAMPS AND #6 (MIN.) STRANDED COPPER CABLE SHALL BE UTILIZED.
11. ALL BALL VALVES USED FOR TAPS IN HYDROTEST SECTION ARE TO BE CLOSED 50% FROM FULL OPEN POSITION PRIOR TO FILL AND FOR DURATION OF HYDROTEST. ALL PLUG VALVES USED FOR TAPS/BLOWOFFS IN HYDROTEST SECTION ARE TO BE IN FULL OPEN POSITION PRIOR TO FILL AND FOR DURATION OF HYDROTEST UNLESS SPECIFICALLY CALLED OUT TO BE IN CLOSED POSITION ON DRAWING.

### CONTACT INFORMATION:

CONSTRUCTION SUPERVISOR	[Redacted]
T&R SUPERVISOR	[Redacted]
CLEARANCE SUPERVISOR	[Redacted]
PROJECT COORDINATOR	[Redacted]
LEAD ENGINEER	[Redacted]
ENGINEER	[Redacted]
H-FORM	[Redacted]
MATERIALS (PIPE)	[Redacted]
MATERIALS (FITTINGS)	[Redacted]
MATERIALS CHAIN OF CUSTODY	[Redacted]

### △ GENERAL NOTES:

1. THIS DRAWING HAS BEEN CREATED BY REVIEW OF THE AS-BUILT DRAWINGS & RECORDS. ACCURACY IS DEPENDENT UPON THE SOURCE DOCUMENTS LISTED ON THE REFERENCE DRAWINGS.
2. "R" STATIONING ON THIS DRAWING DENOTES "REFERENCE" STATIONING AND IS A RESULT OF PG&E GIS SHAPEFILE OVERLAID UPON GOOGLE EARTH IMAGERY AND MIGHT NOT ACCURATELY DEPICT EXACT DISTANCES. FIELD VERIFY ALL DISTANCES.
3. DISTANCES TO ALL UTILITIES SHOWN ON DRAWING ARE APPROXIMATE BASED UPON REVIEW OF PG&E & OTHER UTILITY/AGENCY DRAWINGS & AS-BUILTS. CONTRACTOR TO CALL USA TO HAVE LOCATION OF THESE FACILITIES MARKED AND POTHOLE TO EXPOSE/VERIFY LOCATION.

### DIRECT BURIAL COATING SELECTIONS

LISTED IN ORDER OF PREFERENCE

MAIN LINE COATING	FBE
MINOR REPAIRS	PROTAL 7200, POWERCRETE J, DEVGRIP 238
TIE-IN WELDS	PROTAL 7200, POWERCRETE J, DEVGRIP 238
GIRTH WELDS	PROTAL 7200, POWERCRETE J, DEVGRIP 238
BUTT WELDED FITTINGS	PROTAL 7200, POWERCRETE J, DEVGRIP 238
VALVE ASSEMBLIES	DEVGRIP 238
SHORT SEGMENTS OF PIPE	PROTAL 7200, POWERCRETE J, DEVGRIP 238
AIR-TO-SOIL TRANSITIONS	DEVGRIP 238, POWERCRETE J
PRESSURE CONTROL FITTINGS	
BODY	PROTAL 7200
FLANGE	WAX TAPE
TIE-INS/COATING TRANSITIONS	PROTAL 7200, WAXTAPE, POLYKEN TAPE

### BORED COATING SELECTIONS

LISTED IN ORDER OF PREFERENCE

MAIN LINE COATING	ARC APPLIED OVER FBE
MINOR REPAIRS	PROTAL 7200, POWERCRETE J
GIRTH WELDS	PROTAL 7200, POWERCRETE J

### NOTES:

- 1) CONTACT THE RESPONSIBLE PIPELINE ENGINEER TO REQUEST A VARIANCE FROM THE ABOVE COATING SELECTIONS
- 2) ALL COATINGS ARE TO BE APPLIED IN ACCORDANCE WITH GS&S E-30 AND E-35

Installation Tested or Inspected and Noted on Drawing. All Levels Satisfactory per PG&E GS&S 0-16

Qualified Employee \_\_\_\_\_ Date \_\_\_\_\_

Corrosion mechanic's signature is required when a CPA boundary is within the scope of the project



NOTIFIED  
U.S.A.

DATE \_\_\_\_\_

TICKET NUMBER \_\_\_\_\_

BY \_\_\_\_\_

### G.C. GAS

WELDING INSPECTED PER PG&E GAS STANDARD D-40

VISUAL \_\_\_\_\_

MAGNETIC PARTICLE \_\_\_\_\_

INSPECTOR \_\_\_\_\_

DATE \_\_\_\_\_

### CONTRACTOR

WELDING INSPECTED PER PG&E GAS STANDARD D-40

VISUAL \_\_\_\_\_

MAGNETIC PARTICLE \_\_\_\_\_

INSPECTOR \_\_\_\_\_

DATE \_\_\_\_\_

### REFERENCE DRAWINGS:

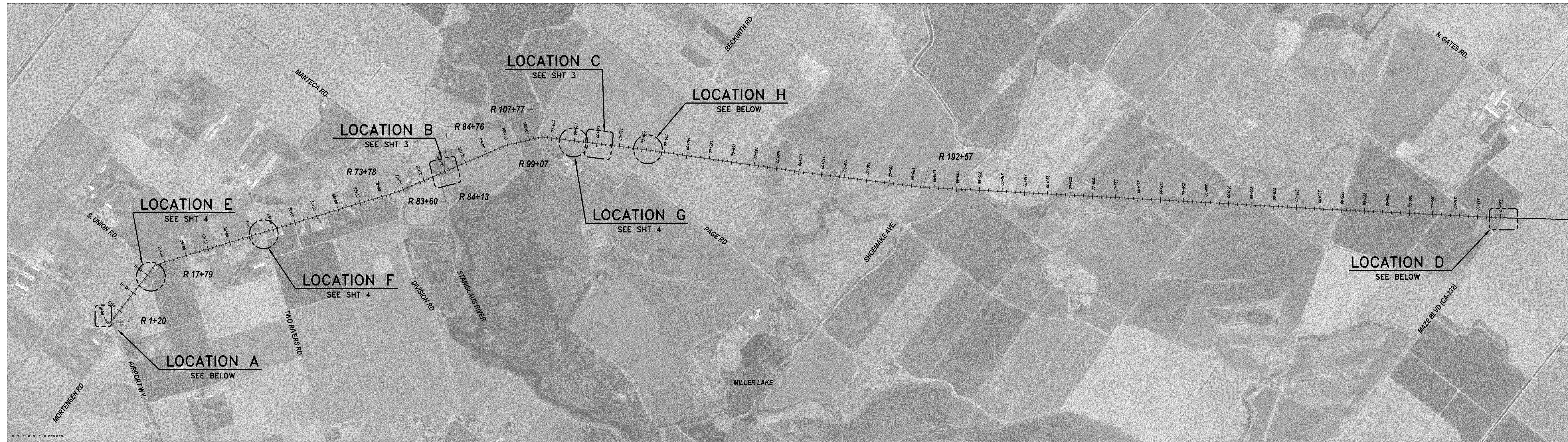
- 385162 - - - - OPERATING MAP
- 081792 - - - - OPERATING DIAGRAM
- 382776 - - - - TRANSMISSION PLAT (SHT 1&2)
- MAHP-41 - - - - [Redacted]
- 4800142, - - - - AS BUILT STATION [Redacted]
- 4800143 - - - - [Redacted]
- L.E. 2960 - - - - [Redacted]
- GM 137000 - - - - CROSSING REPLACEMENT



COPY

EXPENSE PSRS# 25892 CAPITAL PSRS# 26429		APPROVED BY [Redacted]	GM 41617948
REVISIONS		HYDROTEST 097-12 L-148	
1 3/7/12 REVISED SUMMARY OF PROPOSED WORK AND MOVED NITROGEN TEST LOCATIONS 41617948 [Redacted]		MANTECA & MODESTO, CALIFORNIA	
0 2/27/12 ISSUED FOR CONSTRUCTION 41617948 [Redacted]		PACIFIC GAS AND ELECTRIC COMPANY WALNUT CREEK, CALIFORNIA	
NO. DATE DESCRIPTION GM/SPEC DWN CHKD SUPV APVD BY		SHEET NO. 01 OF 07 SHEETS	
		41617948 1	

PLAN VIEW  
(SCALE: 1" = 1200')



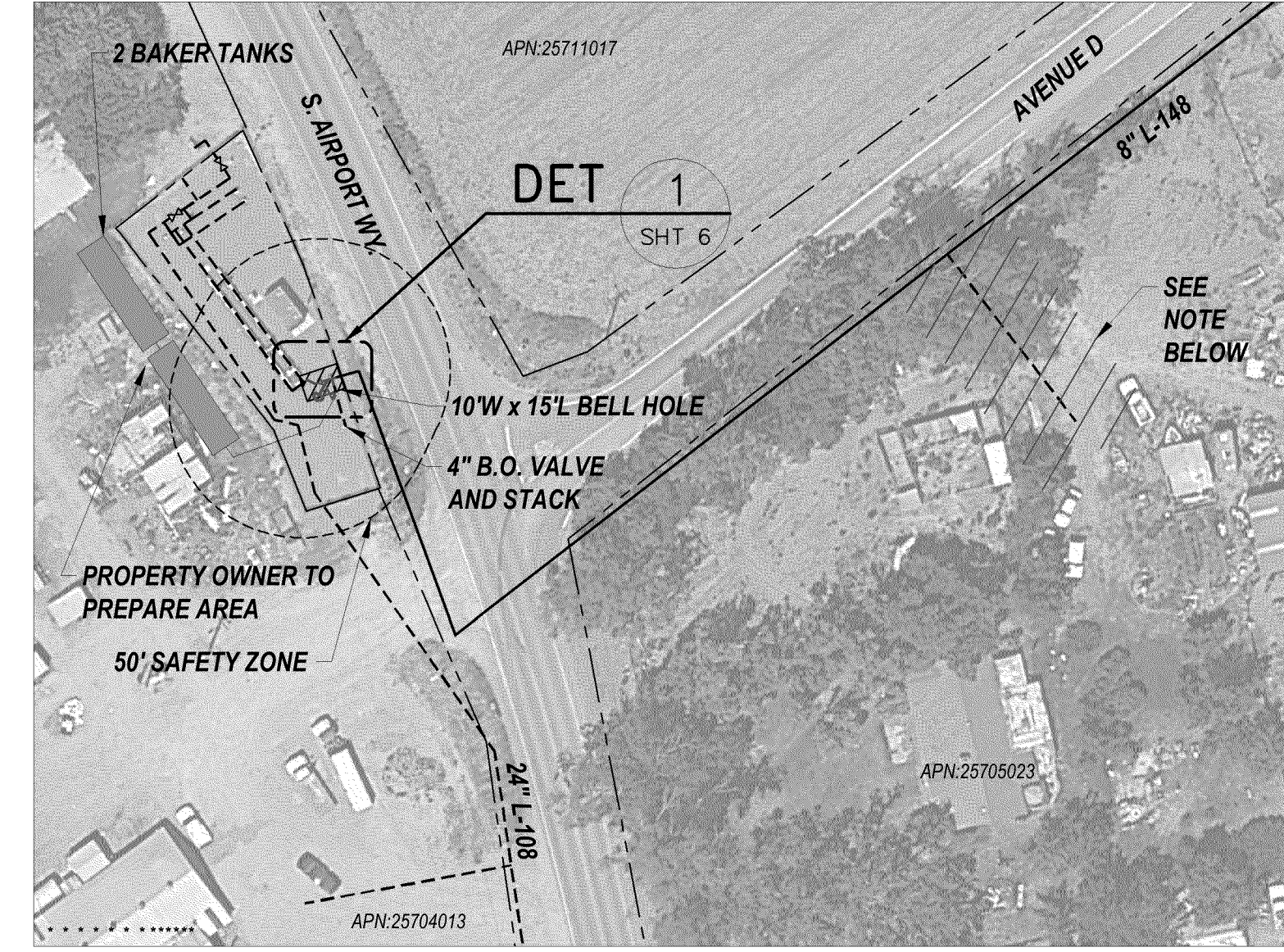
**LOCATION A**  
MCMULLIN RANCH STATION  
S AIRPORT WY & AVE D  
WALL MAP-3173; PLAT-C07; BLOCK-3; MP-0.00  
(SCALE: 1" = 60')

ESTIMATED GALLONS OF WATER  
REQUIRED LOCATION A TO B TEST:  
21,871 GALLONS.

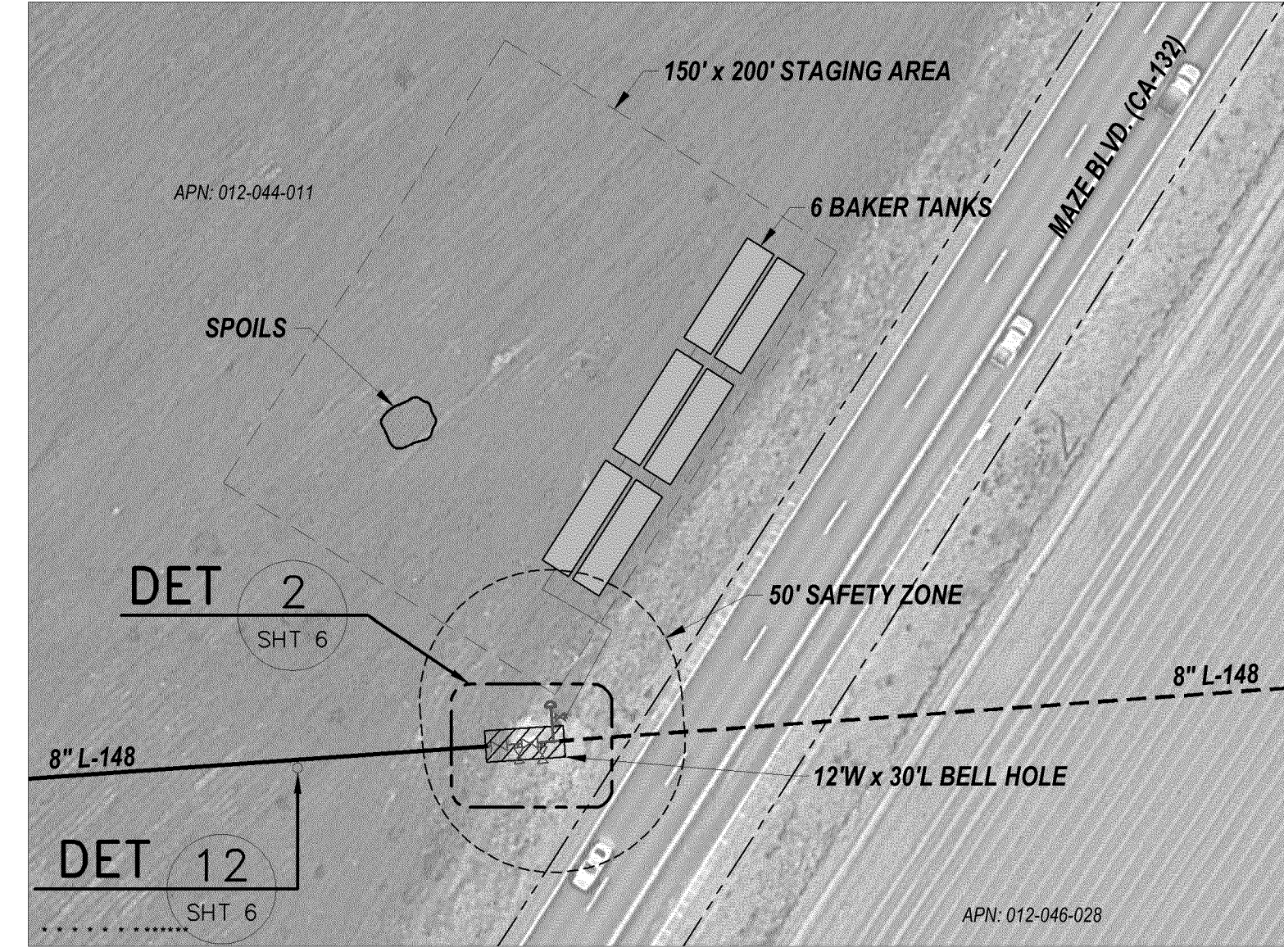
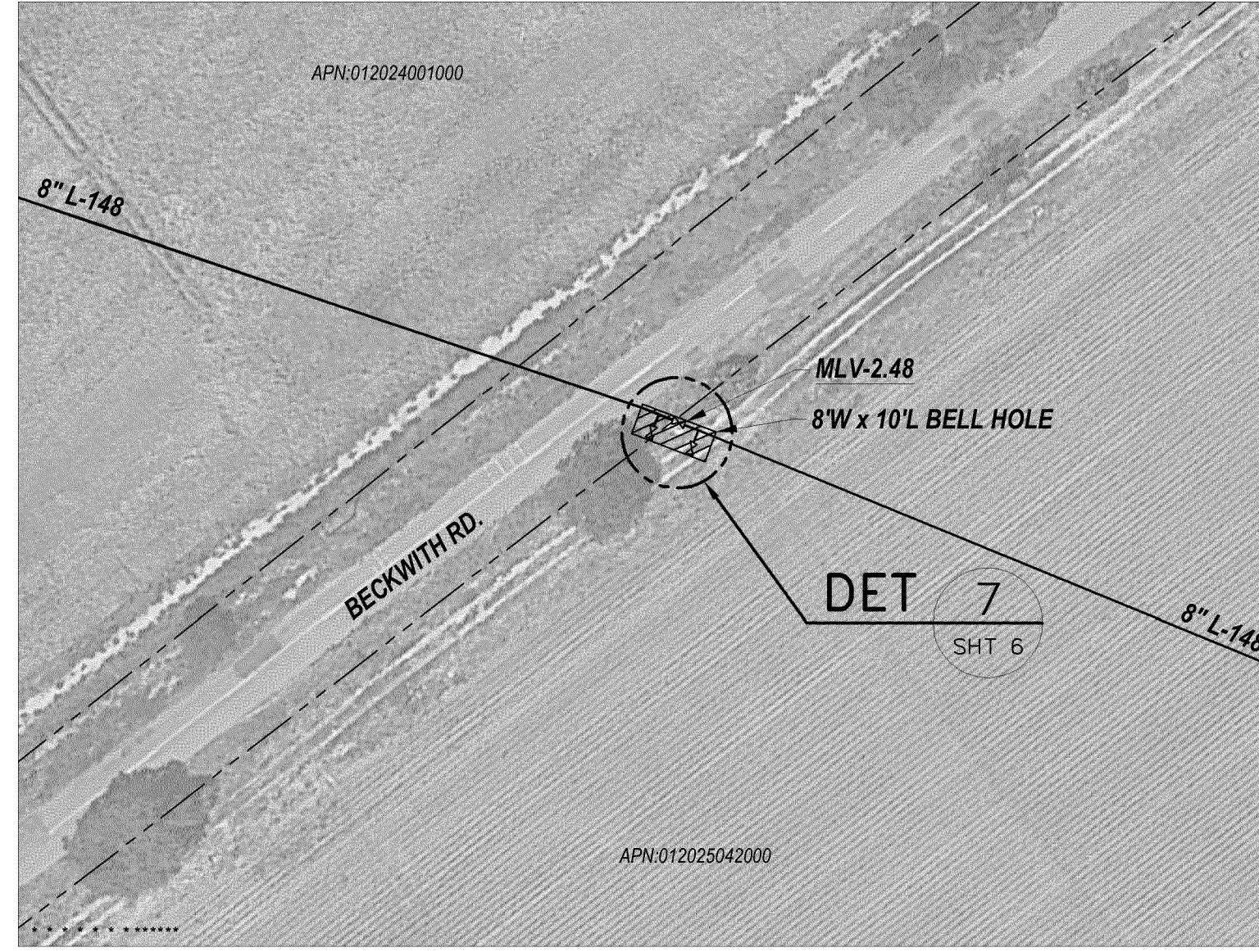
**LOCATION H**  
BECKWITH RD  
WALL MAP-3174; PLAT-E03; BLOCK-1; MP-2.48  
(SCALE: 1" = 60')

ESTIMATED GALLONS OF WATER  
REQUIRED LOCATION C TO D TEST:  
49,255 GALLONS.

**LOCATION D**  
MAZE BLVD  
WALL MAP-3174; PLAT-J08; BLOCK-1; MP-6.06  
(SCALE: 1" = 60')



NOTE: SERVICE SHOWN WAS TRANSFERRED ON GM 30850388  
IN FEBRUARY 2012. LOCATION SHOWN FOR INFORMATION AND  
MONITORING DURING HYDROTEST ONLY.



**COPY**

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



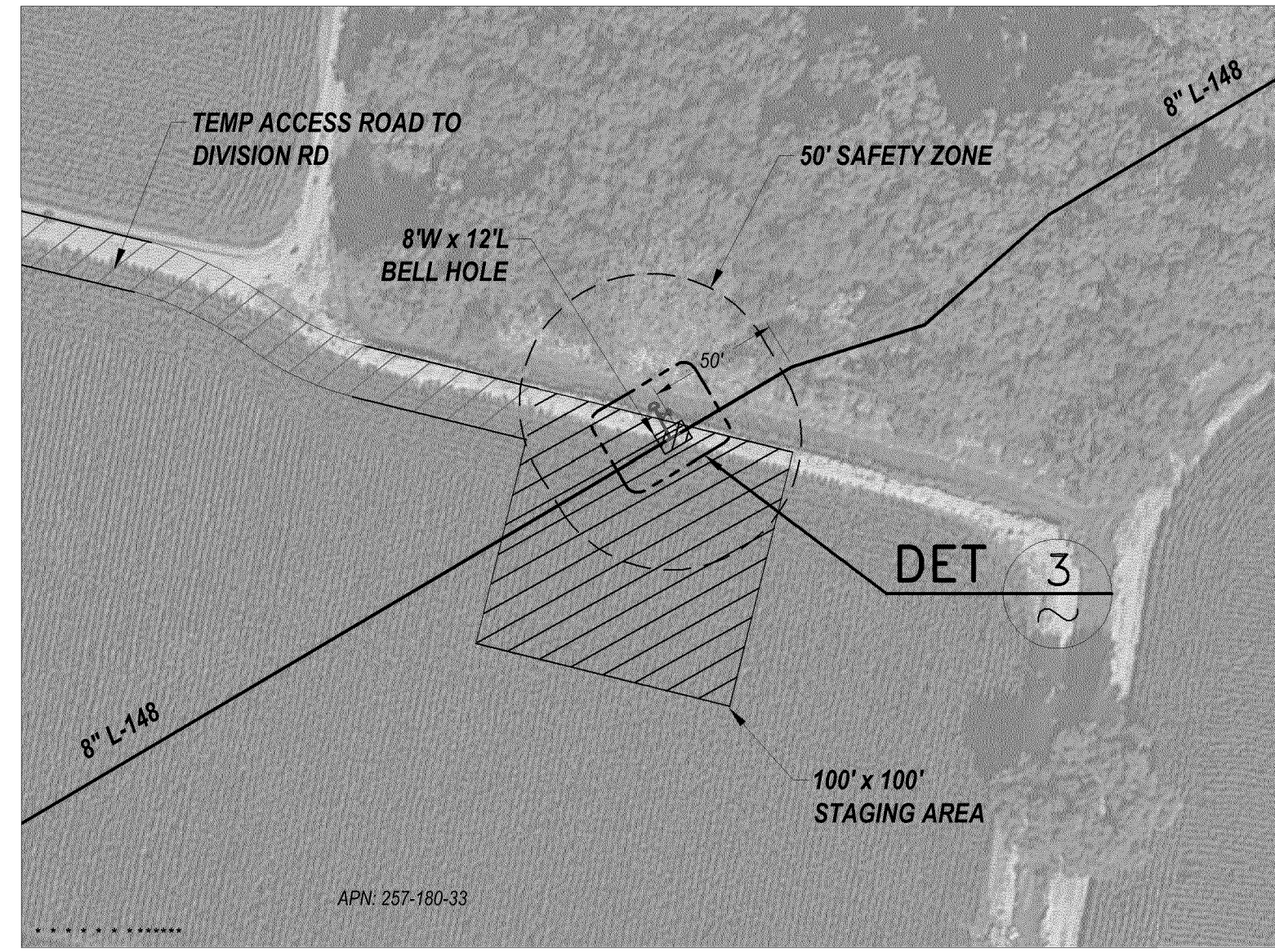
NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
1	3/7/12	REVISED SUMMARY OF PROPOSED WORK AND MOVED NITROGEN TEST LOCATIONS	41617948	PRC	AG	CCS	MAC
0	2/27/12	ISSUED FOR CONSTRUCTION	41617948	PRC	AG	CCS	MAC

APPROVED BY	GM 41617948
BY	SUPV
PRC	DSCN
AG	DWN PRC
CCS	CHKD AG
MAC	OK CCS CCS
	DATE 2-27-12
	SCALE AS SHOWN

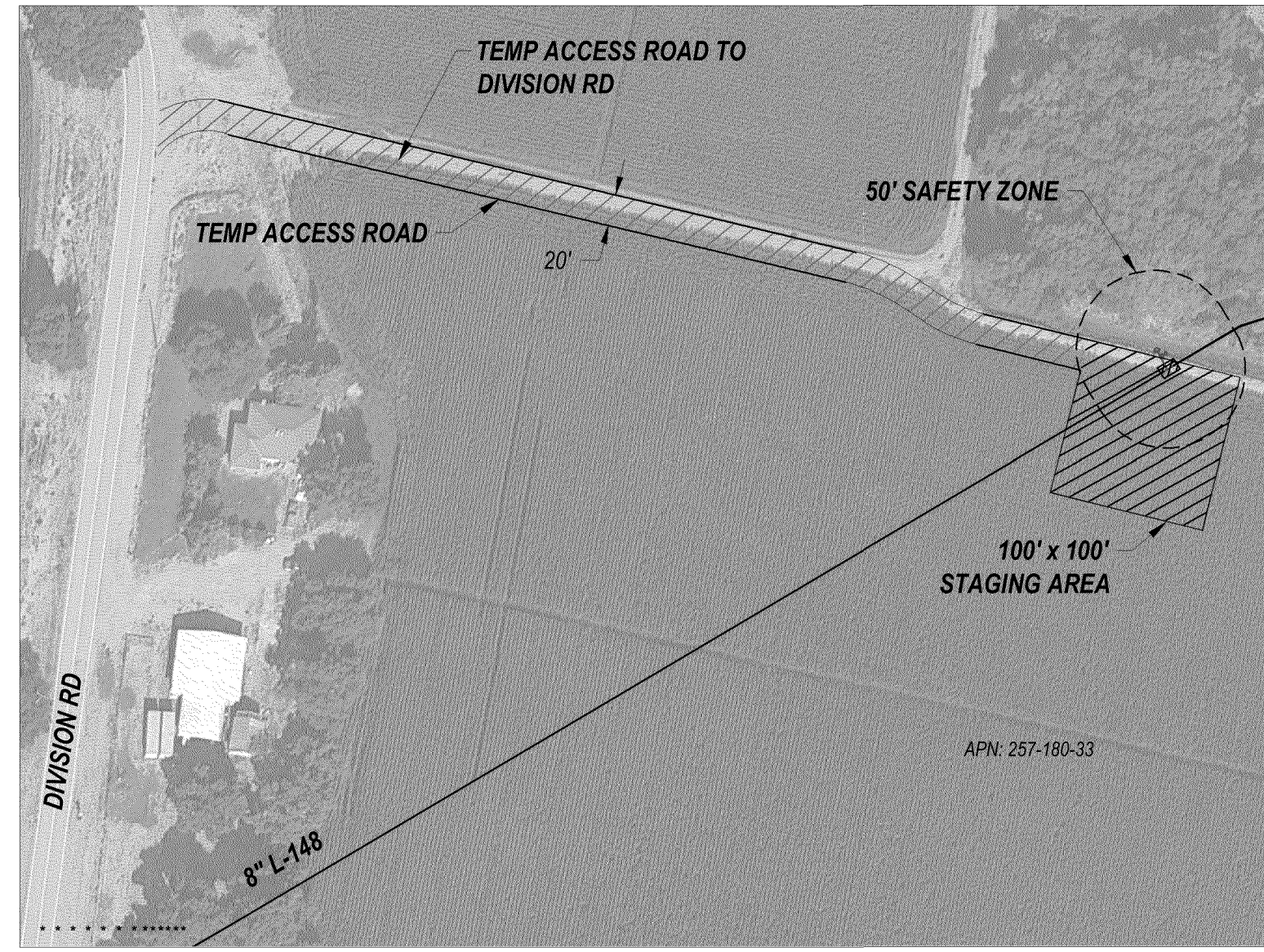
HYDROTEST 097-12  
L-148  
MP 0.00 - 6.06  
MANTECA & MODESTO, CALIFORNIA  
PACIFIC GAS AND ELECTRIC COMPANY  
WALNUT CREEK, CALIFORNIA

MICROFILM	
BILL OF MAT'L SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 02 OF 07 SHEETS	
41617948	1

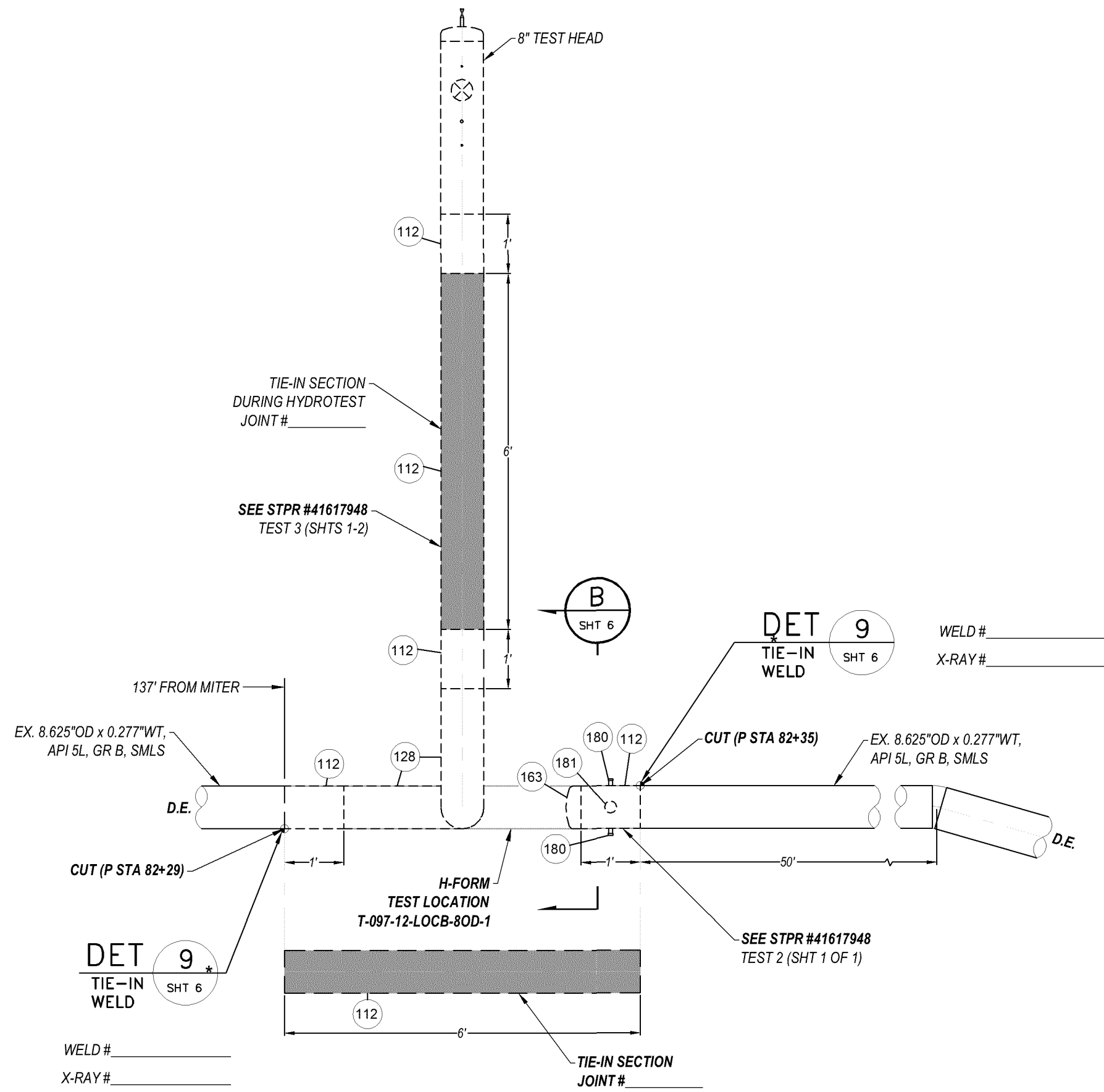
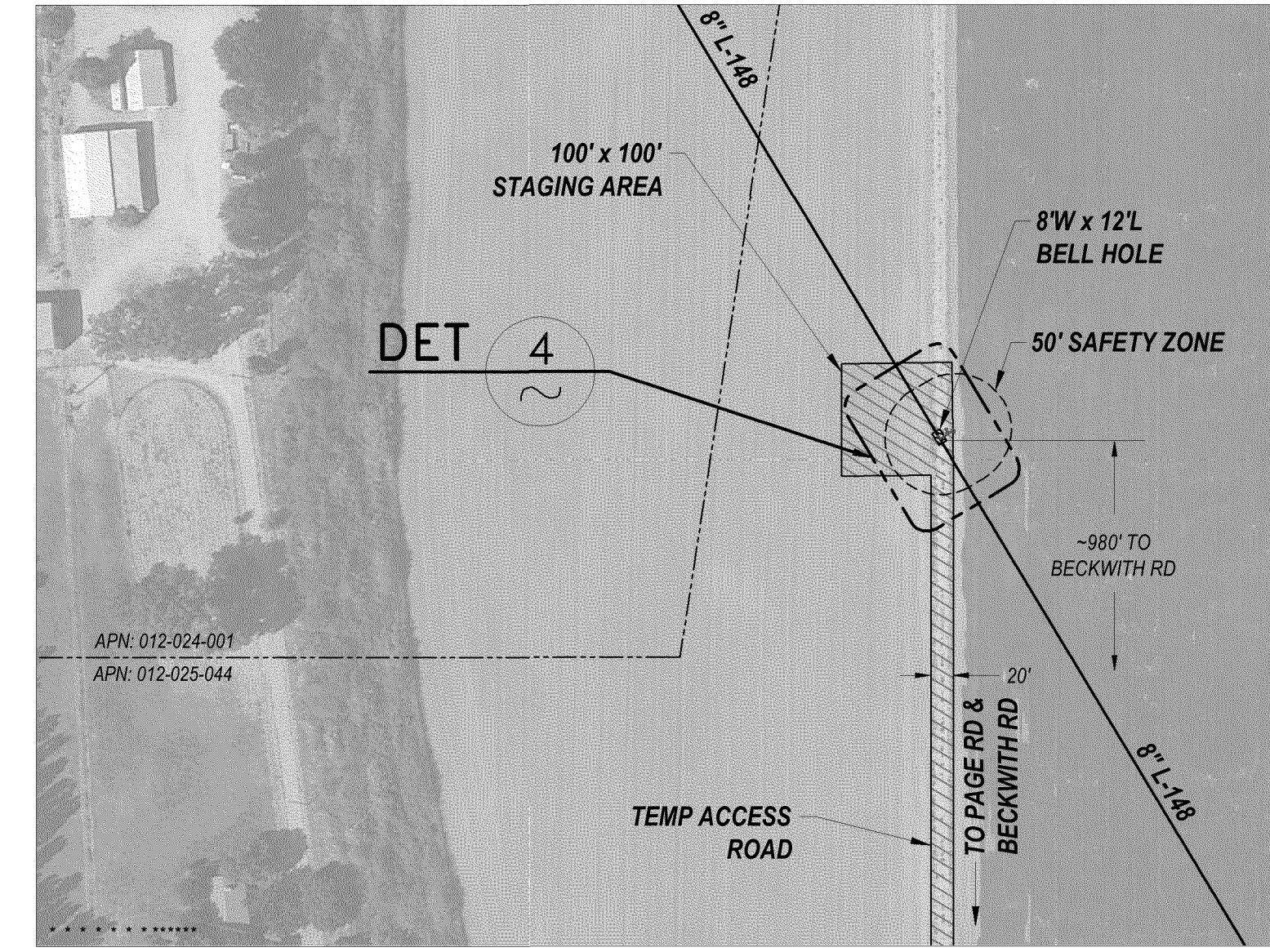
**LOCATION B**  
 E/O DIVISION RD & MANTECA RD  
 WALL MAP-3174; PLAT-D2; BLOCK-1; MP-1.59  
 (SCALE: 1" = 60')



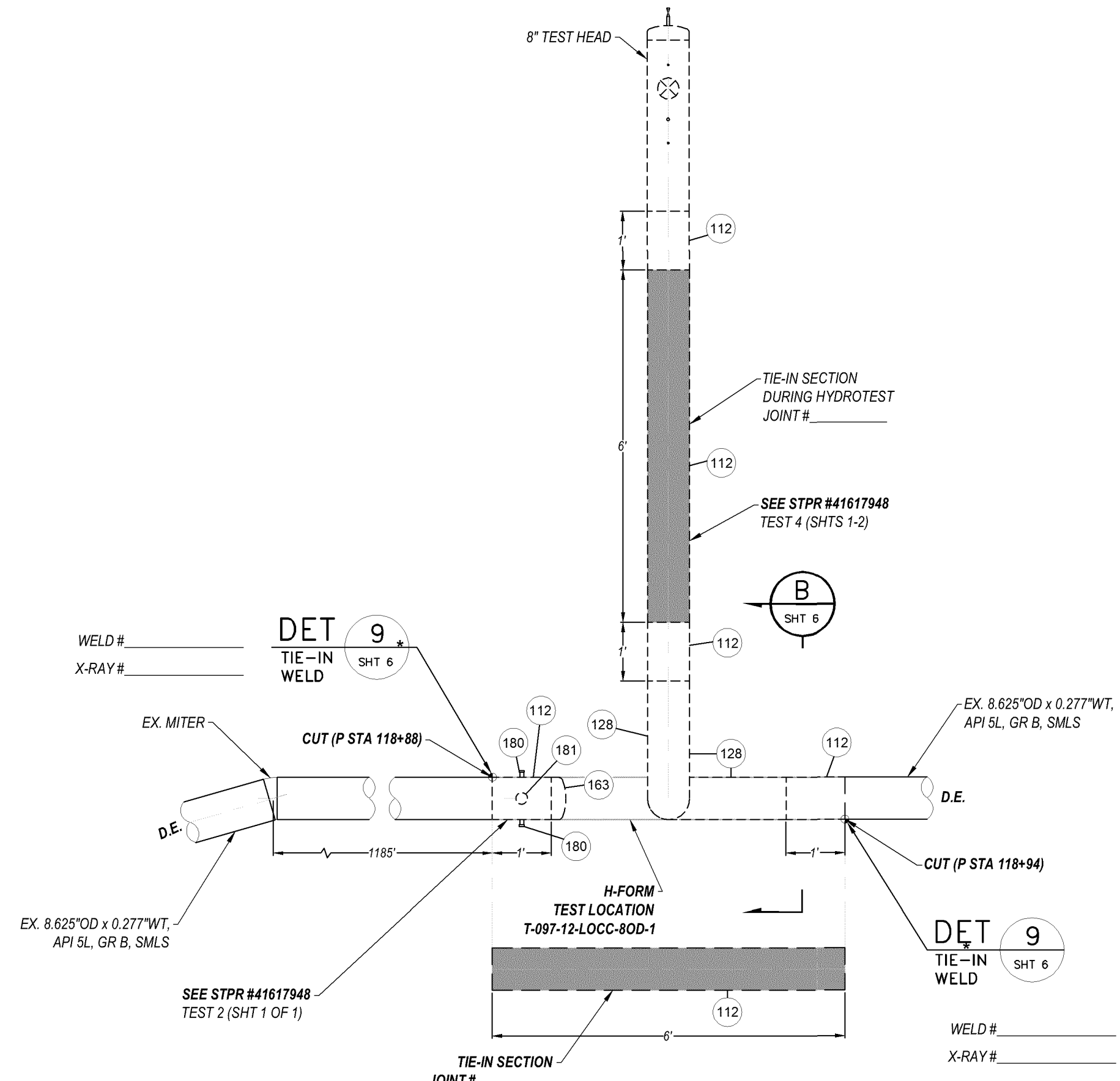
**LOCATION B**  
 ACCESS ROAD  
 WALL MAP-3174; PLAT-D2; BLOCK-1; MP-1.59  
 (SCALE: 1" = 100')



**LOCATION C**  
 STANISLAUS RIVER  
 WALL MAP-3174; PLAT-E3; BLOCK-1; MP-2.29  
 (SCALE: 1" = 140')



**DETAIL 3**  
 SCALE: 1/2" = 1'  
 LOCATION B  
 STANISLAUS RIVER



**DETAIL 4**  
 SCALE: 1/2" = 1'  
 LOCATION C  
 STANISLAUS RIVER

JOB NO.	41617948
BOM #	112
DESIGN CRITERIA	
LOCATION CLASS	1
DESIGN FACTOR	0.5
FDP	.720 PSIG 27.55 % SMYS
MAOP	.408 PSIG 15.61 % SMYS
STRENGTH TEST PRESSURE	
MAX.	.790 PSIG 30.23 % SMYS
MIN.	.694 PSIG 26.56 % SMYS
	2352 PSIG=90% SMYS
TEST MEDIUM	NITROGEN
PIPE SPEC	API 5L, GR B, SMLS
O.D.	8.625"
W.T.	0.322"
WELD INSPECTION (GAS STD.D-40)*	
<input checked="" type="checkbox"/> RADIOGRAPHIC:	
<input type="checkbox"/> 20% MIN. (% OF WELDER'S	
<input checked="" type="checkbox"/> 100% DAILY WORK)	
*VISUALLY INSPECT 100% OF ALL WELDS	
THAT ARE NOT RADIOGRAPHICALLY	
INSPECTED. (THIS REQUIREMENT APPLIES	
EVEN IF NO RADIOGRAPHIC INSPECTION	
IS REQUIRED.)	

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



**COPY**



NO.	DATE	DESCRIPTION	CM/SPEC	DWN	CHKD	SUPV	APVD BY
1	3/7/12	REVISED SUMMARY OF PROPOSED WORK AND MOVED NITROGEN TEST LOCATIONS	41617948	PRC	AG	CCS	MAC
0	2/27/12	ISSUED FOR CONSTRUCTION	41617948	PRC	AG	CCS	MAC

APPROVED	CM 41617948
BY	SUPV
PRC	DSCN
AG	DWN PRC
CHKD	AG
CCS	OK CCS CCS
MAC	DATE 2-27-12
	SCALES AS SHOWN

HYDROTEST 097-12  
 L-148  
 MP 0.00 - 6.06  
 MANTECA & MODESTO, CALIFORNIA  
 PACIFIC GAS AND ELECTRIC COMPANY  
 WALNUT CREEK, CALIFORNIA

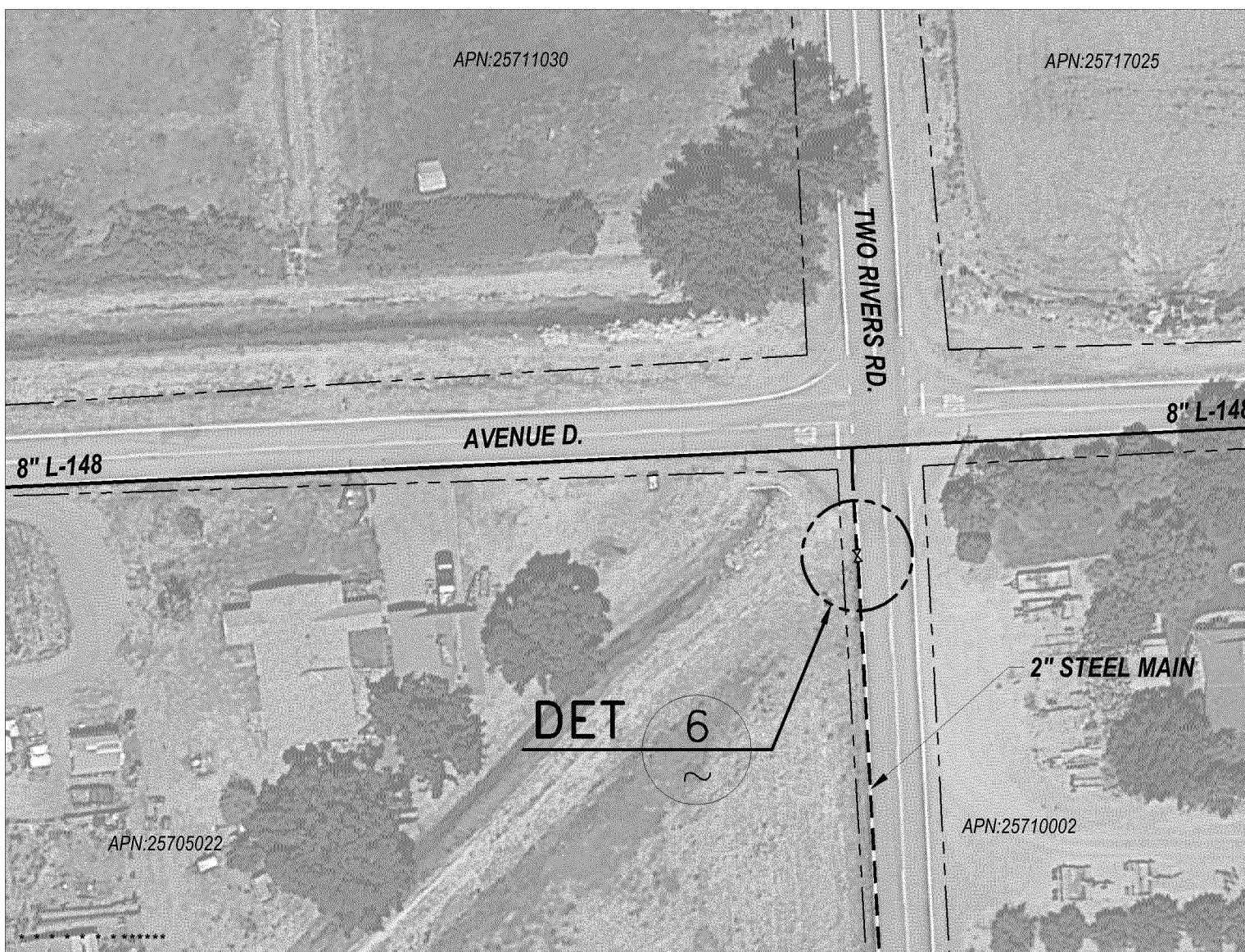
BILL OF MATL SHEET 07
DWG LIST
SUPSDS
SUPSD BY
SHEET NO. 03 OF 07 SHEETS
41617948
1

**LOCATION E**  
 AVE D & S UNION RD  
 (SCALE: 1" = 80')

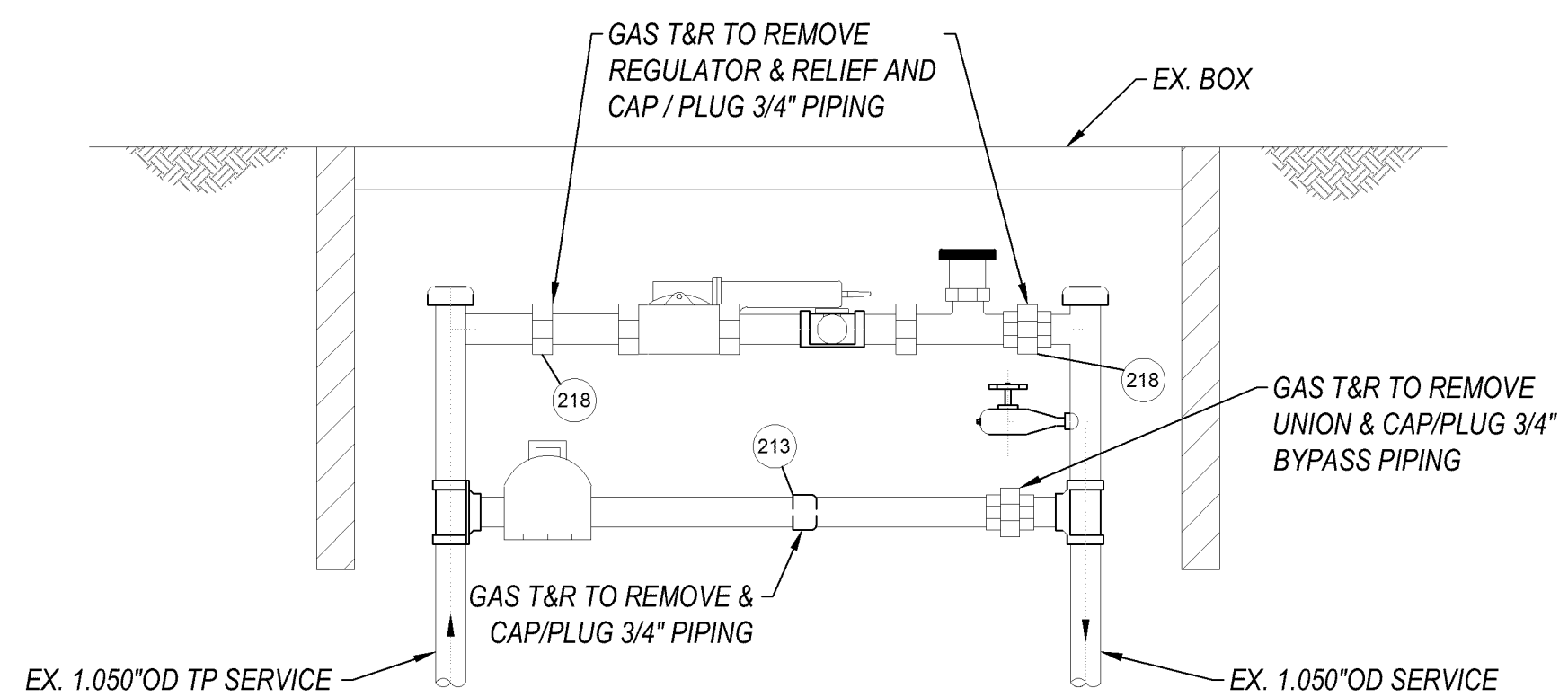
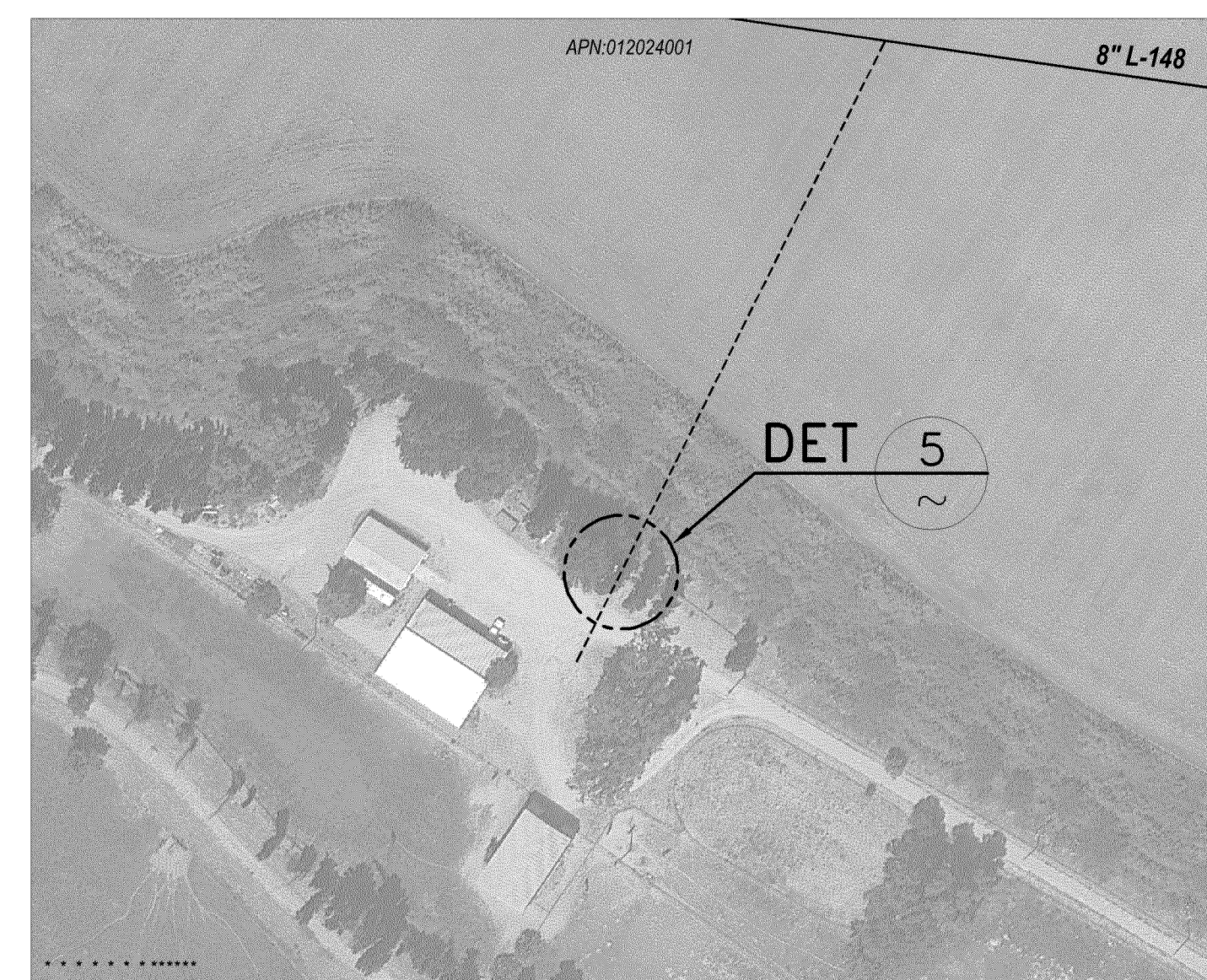


NOTE: SERVICE SHOWN WAS TRANSFERRED ON GM 30850388 IN FEBRUARY 2012. LOCATION SHOWN FOR INFORMATION AND MONITORING DURING HYDROTEST ONLY.

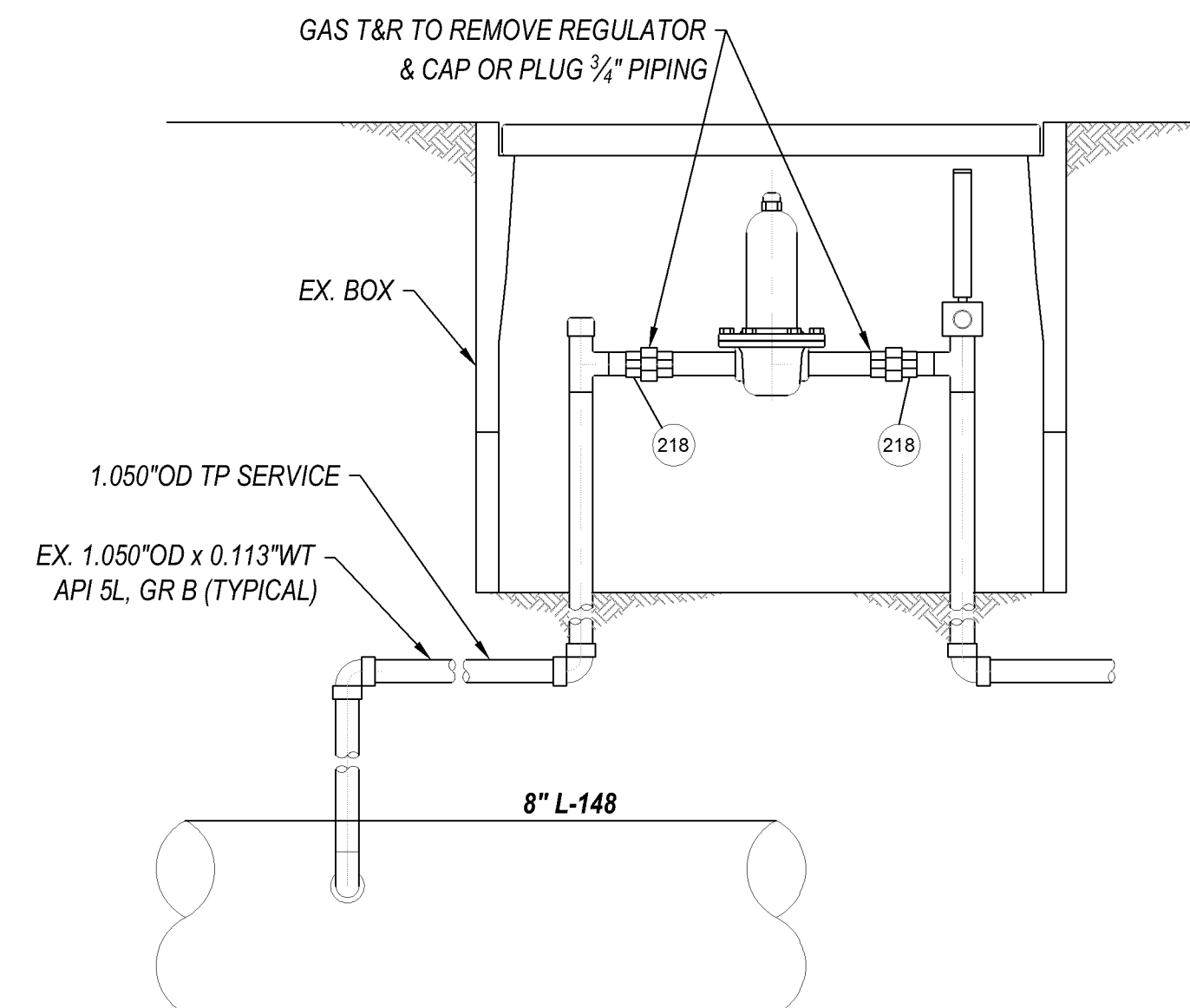
**LOCATION F**  
 AVE D & TWO RIVERS RD  
 WALL MAP-3173; PLAT-D08; BLOCK-1; MP-0.82  
 (SCALE: 1" = 100')



**LOCATION G**  
 LOCATION DESCRIPTION  
 WALL MAP-3174; PLAT-E03; BLOCK-2; MP-2.08  
 (SCALE: 1" = 100')



**DETAIL 6**  
 NOT TO SCALE  
 LOCATION F  
 3/4" DREG 4815 (MAHP 41)  
 TWO RIVERS RD.



**DETAIL 5**  
 NOT TO SCALE  
 LOCATION G  
 BURIED HPR SET

**SAFETY**  
 SAFETY PLEDGE  
 I ALWAYS PUT SAFETY FIRST.  
 I LOOK FOR AND ACT TO  
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 OTHERS TO ACT SAFELY.



**COPY**



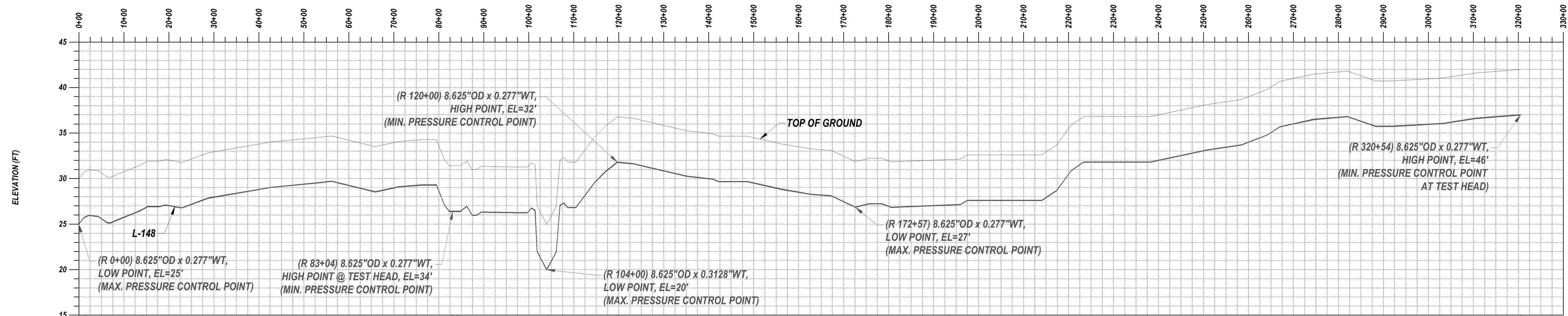
NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
1	3/7/12	REVISED SUMMARY OF PROPOSED WORK AND MOVED NITROGEN TEST LOCATIONS	41617948	PRC	AG	CCS	MAC
0	2/27/12	ISSUED FOR CONSTRUCTION	41617948	PRC	AG	CCS	MAC

APPROVED BY	GM 41617948
BY	SUPV
PRC	DSCN
AG	DWN PRC
CCS	CHKD AG
MAC	OK CCS
	DATE 2-27-12
	SCALE AS SHOWN

HYDROTEST 097-12  
 L-148  
 MP 0.00 - 6.06  
 MANTECA & MODESTO, CALIFORNIA  
 PACIFIC GAS AND ELECTRIC COMPANY  
 WALNUT CREEK, CALIFORNIA

MICROFILM	
BILL OF MATL SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 04 OF 07 SHEETS	
41617948	1

△ PROFILE VIEW  
(SCALE: 1" = 1400')



NOTE:  
FIELD TO VERIFY WITH  
GPS LAT./LONG. WHERE  
SPECIFIED.

P STATION
FITTING (MATERIAL OF RECORD)
PIPE (MATERIAL OF RECORD)
GM NUMBER
YEAR INSTALLED (LENGTH)
R STATION

CUT OUT FOR  
HYDROTEST PIPING

LOCATION A

LOCATION B

LOCATION C

LOCATION H

LOCATION D

PIPELINE FEATURES  
SEE MATERIAL OF RECORD ON  
SHEET 7 OF 7  
(NOT TO SCALE)

TEST A-B					
LOCATION	R STA.	ELEV.	RAMP PRESSURE	MIN. PRESS	MAX. PRESS
MIN. PRESSURE CONTROL POINT	83+04	35'	764 psig	694 psig	
MAX. PRESSURE CONTROL POINT	0+00	25'	769 psig		730 psig
<b>LOCATION A (TEST STATION)</b>	<b>0+00</b>	<b>34'</b>	<b>765 psig</b>	<b>695 psig</b>	<b>726 psig</b>
LOCATION B	83+04	36'	764 psig	694 psig	725 psig

NOTE: ELEVATIONS AT TEST LOCATIONS ASSUME TOP OF HYDROTEST PIPING IS 4' ABOVE GROUND ELEVATION

TEST B-C					
LOCATION	R STA.	ELEV.	RAMP PRESSURE	MIN. PRESS	MAX. PRESS
MIN. PRESSURE CONTROL POINT	---	---	764 psig	694 psig	
MAX. PRESSURE CONTROL POINT	---	---	764 psig		725 psig
LOCATION B	83+10	27'	764 psig	694 psig	725 psig
<b>LOCATION C (TEST STATION)</b>	<b>120+00</b>	<b>32'</b>	<b>764 psig</b>	<b>694 psig</b>	<b>725 psig</b>

NITROGEN TEST OF STANISLAUS RIVER CROSSING

TEST C-D					
LOCATION	R STA.	ELEV.	RAMP PRESSURE	MIN. PRESS	MAX. PRESS
MIN. PRESSURE CONTROL POINT	320+54	46'	764 psig	694 psig	
MAX. PRESSURE CONTROL POINT	172+57	27'	773 psig		734 psig
LOCATION C	120+06	41'	767 psig	697 psig	727 psig
<b>LOCATION D (TEST STATION)</b>	<b>320+54</b>	<b>46'</b>	<b>764 psig</b>	<b>694 psig</b>	<b>725 psig</b>

NOTE: ELEVATIONS AT TEST LOCATIONS ASSUME TOP OF HYDROTEST PIPING IS 4' ABOVE GROUND ELEVATION



NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
1	3/7/12	REVISED SUMMARY OF PROPOSED WORK AND MOVED NITROGEN TEST LOCATIONS	41617948	PRC	AG	CCS	MAC
2	2/27/12	ISSUED FOR CONSTRUCTION	41617948	PRC	AG	CCS	MAC

APPROVED BY	GM 41617948
BY	SUPV
PRC	DSCN
AG	DWN PRC
CCS	CHKD AG
MAC	OK CCS
	DATE 2-27-12
	SCALE AS SHOWN

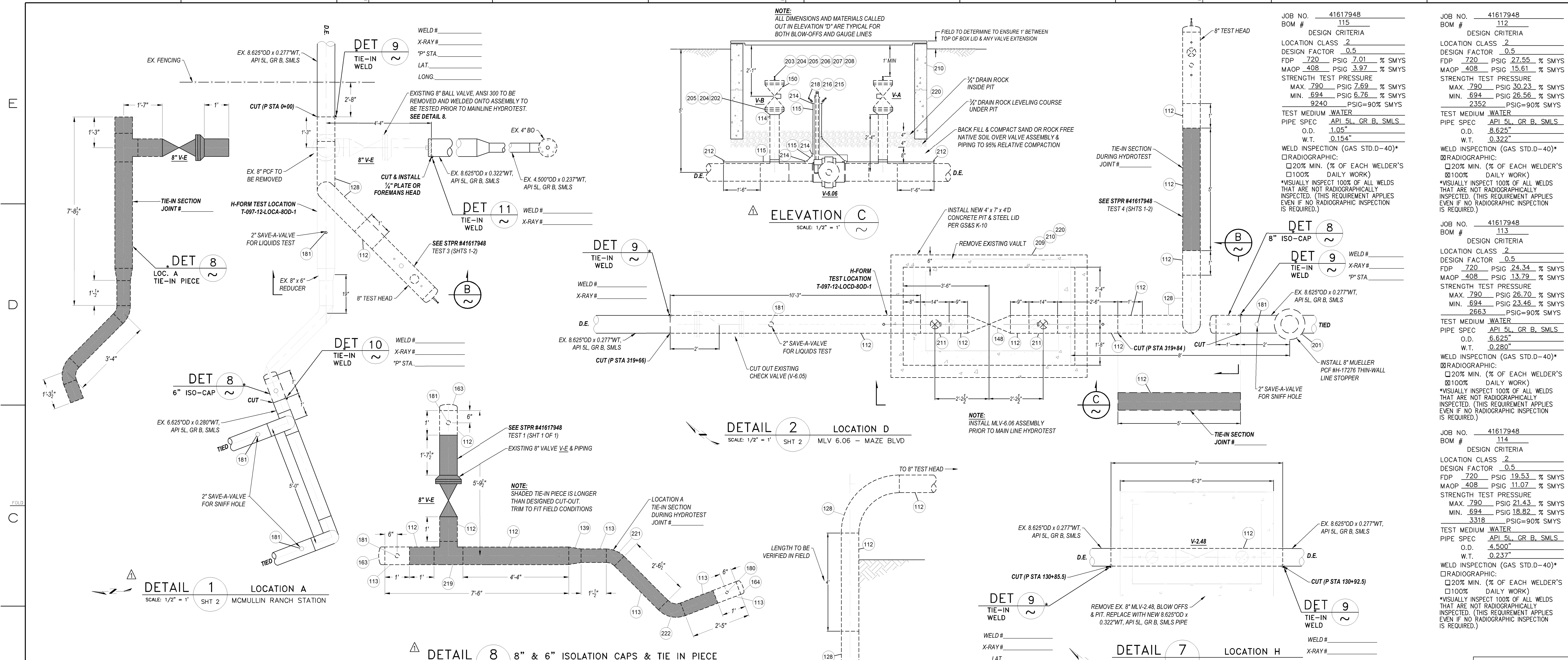
HYDROTEST 097-12  
L-148  
MP 0.00 - 6.06  
MANTECA & MODESTO, CALIFORNIA  
PACIFIC GAS AND ELECTRIC COMPANY  
WALNUT CREEK, CALIFORNIA

**SAFETY**  
SAFETY PLEDGE  
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RESOLVE UNSAFE SITUATIONS.  
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OTHERS TO ACT SAFELY.



**COPY**

MICROFILM	
BILL OF MATL SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 05 OF 07 SHEETS	
41617948	1



JOB NO. 41617948 BOM # 115	JOB NO. 41617948 BOM # 112
DESIGN CRITERIA	DESIGN CRITERIA
LOCATION CLASS 2	LOCATION CLASS 2
DESIGN FACTOR 0.5	DESIGN FACTOR 0.5
FDP 720 PSIG 7.01 % SMYS	FDP 720 PSIG 27.55 % SMYS
MAOP 408 PSIG 3.97 % SMYS	MAOP 408 PSIG 15.61 % SMYS
STRENGTH TEST PRESSURE	STRENGTH TEST PRESSURE
MAX. 790 PSIG 30.23 % SMYS	MAX. 790 PSIG 30.23 % SMYS
MIN. 694 PSIG 6.76 % SMYS	MIN. 694 PSIG 26.56 % SMYS
9240 PSIG=90% SMYS	2352 PSIG=90% SMYS
TEST MEDIUM WATER	TEST MEDIUM WATER
PIPE SPEC API 5L, GR B, SMLS	PIPE SPEC API 5L, GR B, SMLS
O.D. 1.05"	O.D. 8.625"
W.T. 0.154"	W.T. 0.322"
WELD INSPECTION (GAS STD.-40)*	WELD INSPECTION (GAS STD.-40)*
□ RADIOGRAPHIC:	□ RADIOGRAPHIC:
□ 20% MIN. (% OF EACH WELDER'S	□ 20% MIN. (% OF EACH WELDER'S
□ 100% DAILY WORK)	□ 100% DAILY WORK)
*VISUALLY INSPECT 100% OF ALL WELDS THAT ARE NOT RADIOGRAPHICALLY INSPECTED. (THIS REQUIREMENT APPLIES EVEN IF NO RADIOGRAPHIC INSPECTION IS REQUIRED.)	*VISUALLY INSPECT 100% OF ALL WELDS THAT ARE NOT RADIOGRAPHICALLY INSPECTED. (THIS REQUIREMENT APPLIES EVEN IF NO RADIOGRAPHIC INSPECTION IS REQUIRED.)
JOB NO. 41617948 BOM # 113	JOB NO. 41617948 BOM # 114
DESIGN CRITERIA	DESIGN CRITERIA
LOCATION CLASS 2	LOCATION CLASS 2
DESIGN FACTOR 0.5	DESIGN FACTOR 0.5
FDP 720 PSIG 24.34 % SMYS	FDP 720 PSIG 19.53 % SMYS
MAOP 408 PSIG 13.79 % SMYS	MAOP 408 PSIG 11.07 % SMYS
STRENGTH TEST PRESSURE	STRENGTH TEST PRESSURE
MAX. 790 PSIG 26.70 % SMYS	MAX. 790 PSIG 21.43 % SMYS
MIN. 694 PSIG 23.46 % SMYS	MIN. 694 PSIG 18.82 % SMYS
2663 PSIG=90% SMYS	3318 PSIG=90% SMYS
TEST MEDIUM WATER	TEST MEDIUM WATER
PIPE SPEC API 5L, GR B, SMLS	PIPE SPEC API 5L, GR B, SMLS
O.D. 6.625"	O.D. 4.500"
W.T. 0.280"	W.T. 0.237"
WELD INSPECTION (GAS STD.-40)*	WELD INSPECTION (GAS STD.-40)*
□ RADIOGRAPHIC:	□ RADIOGRAPHIC:
□ 20% MIN. (% OF EACH WELDER'S	□ 20% MIN. (% OF EACH WELDER'S
□ 100% DAILY WORK)	□ 100% DAILY WORK)
*VISUALLY INSPECT 100% OF ALL WELDS THAT ARE NOT RADIOGRAPHICALLY INSPECTED. (THIS REQUIREMENT APPLIES EVEN IF NO RADIOGRAPHIC INSPECTION IS REQUIRED.)	*VISUALLY INSPECT 100% OF ALL WELDS THAT ARE NOT RADIOGRAPHICALLY INSPECTED. (THIS REQUIREMENT APPLIES EVEN IF NO RADIOGRAPHIC INSPECTION IS REQUIRED.)

**GM 7041125 (2004)**

EXIST PIPE SPECS
HEADER SIZE: 6.625
PIPE SPECS: API 5L, GR B, SMLS
WALL THICKNESS: 0.280
PRESENT MAOP: 408
% SMYS @ MAOP: 13.79
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (G.S. & D-22)
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING
A) (408 PSIG) WHEN WELDING ON BODY UNLESS:
B) (591 PSIG) WHEN WELDING WITHIN 3" OF THE DISCONTINUOUS SEAM (EXCEPT OS&W BARE), THE CIRCUMFERENTIAL AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (CORROSION, LAMINATIONS, ETC.) THE MINIMUM WHICH EXCEEDS THE NORMAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NORMAL PIPE DIAMETER IN LENGTH.

**GM 91931 (1947)**

EXIST PIPE SPECS
HEADER SIZE: 8.625
PIPE SPECS: API 5L, GR B, SMLS
WALL THICKNESS: 0.277
PRESENT MAOP: 408
% SMYS @ MAOP: 18.15
MAXIMUM ALLOWABLE PRESSURE DURING WELDING (G.S. & D-22)
EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING
A) (408 PSIG) WHEN WELDING ON BODY UNLESS:
B) (449 PSIG) WHEN WELDING WITHIN 3" OF THE DISCONTINUOUS SEAM (EXCEPT OS&W BARE), THE CIRCUMFERENTIAL AND ANY BRANCH WELD, OR WITHIN 3" OF ANY DEFECT (CORROSION, LAMINATIONS, ETC.) THE MINIMUM WHICH EXCEEDS THE NORMAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NORMAL PIPE DIAMETER IN LENGTH.

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**MANUALLY OPERATED VALVE DATA STAMP**

BOM# 148

TECH ID (VALVE #) V-6.06

VALVE TYPE 8" ANSI 300 BALL VALVE

MANUFACTURE

MODEL #

SERIAL #

COMMISSIONING

VALVE TO BE COMMISSIONED BY GAS BAR OR DISTRICT PRIOR TO ANYTHING BEING WELDED OR BOLTED TO THE VALVE ASSEMBLY

COMMISSIONED BY

DATE

NUMBER OF TURNS

**MANUALLY OPERATED VALVE DATA STAMP**

BOM# 151

TECH ID (VALVE #) V-B

VALVE TYPE 4" ANSI 300 BALL VALVE

MANUFACTURE

MODEL #

SERIAL #

COMMISSIONING

VALVE TO BE COMMISSIONED BY GAS BAR OR DISTRICT PRIOR TO ANYTHING BEING WELDED OR BOLTED TO THE VALVE ASSEMBLY

COMMISSIONED BY

DATE

NUMBER OF TURNS

**MANUALLY OPERATED VALVE DATA STAMP**

BOM# 151

TECH ID (VALVE #) V-A

VALVE TYPE 4" ANSI 300 BALL VALVE

MANUFACTURE

MODEL #

SERIAL #

COMMISSIONING

VALVE TO BE COMMISSIONED BY GAS BAR OR DISTRICT PRIOR TO ANYTHING BEING WELDED OR BOLTED TO THE VALVE ASSEMBLY

COMMISSIONED BY

DATE

NUMBER OF TURNS

**REGISTERED PROFESSIONAL ENGINEER**

MARK A. CABRAL

No. M26602

Exp. 9-20-12

MECHANICAL

STATE OF CALIFORNIA

**REVISIONS**

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD
1	3/7/12	REVISED SUMMARY OF PROPOSED WORK AND MOVED NITROGEN TEST LOCATIONS	41617948	PRC	AG	CCS	MAC
0	2/27/12	ISSUED FOR CONSTRUCTION	41617948	PRC	AG	CCS	MAC

APPROVED BY: GM 41617948

BY: SUPV

PRC

AG

DWN

CHKD

AG

CCS

CCS

CCS

MAC

DATE 2-27-12

SCALE: AS SHOWN

**HYDROTEST 097-12**

L-148

MP 0.00 - 6.06

MANTECA & MODESTO, CALIFORNIA

PACIFIC GAS AND ELECTRIC COMPANY

WALNUT CREEK, CALIFORNIA

41617948

1

CALL: 811

MATERIAL OF RECORD			
Item Number	Description	Units	Quantity
<b>TEST A-B</b>			
3	Pipe, 8.625" OD x 0.277" WT, API 5L, GR B, SMLS	Ft.	8229
4	Elbow, 8.625" OD, 0.322 WT, GR B, LR	Ea.	4
6	Tap, 1.315" OD (1 Each)	Ft.	1
7	Tap, 1.050" OD (14 Each)	Ft.	53
8	Tap, 0.840" OD (1 Each)	Ft.	1
<b>TEST B-C</b>			
2	Pipe, 8.625" OD x 0.312" WT, GR Unk	Ft.	425
3	Pipe, 8.625" OD x 0.277" WT, API 5L, GR B, SMLS	Ft.	3228
4	Elbow, 8.625" OD, 0.322 WT, GR B, LR	Ea.	6
5	Tap, 4.500" OD (2 Each)	Ft.	10
7	Tap, 1.050" OD (1 Each)	Ft.	421
9	8" Pressure Control Fitting, ANSI 300	Ea.	2
<b>TEST C-D</b>			
1	Pipe, 8.625" OD x 0.322" WT, API 5L, GR B, SMLS	Ft.	53
3	Pipe, 8.625" OD x 0.277" WT, API 5L, GR B, SMLS	Ft.	20012

BILLS OF MATERIAL						
Item Number	Description	PG&E Material Code	Units	Quantity	Heat Number (As-Built for pipe & HY fittings)	Serial Number (As-Built for pipe & HY fittings)
<b>EXPENSE ITEMS ORDER #41617948</b>						
112	Pipe, 8.625" OD x 0.322" WT, API 5L, GR B, SMLS, FBE Coated	M010029	Ft.	63		
113	Pipe, 6.625" OD x 0.280" WT, API 5L, GR B, SMLS, FBE Coated	M010014	Ft.	6		
128	Elbow, 8.625" OD, 0.322" WT, GR B, 90 Deg, 3R	-	Ea.	8		
139	Reducer, 8.625" OD x 6.625" OD, STD Wall, GR B, Concentric	M022042	Ea.	1		
163	Cap, 8.625" OD, 0.322" WT, GR B	M022080	Ea.	4		
164	Cap, 6.625" OD, 0.280" WT, GR B	M022038	Ea.	1		
180	Save-A-Valve Nipple, 1"	M022287	Ea.	5		
181	Save-A-Valve Nipple, 2"	M022289	Ea.	9		
213	Cap, 1.000" Socket Weld, 3000#	-	Ea.	1		
218	Cap, 0.75" Threaded, Forged Steel	M021464	Ea.	8		
219	Tee, 8.625" OD x 0.322" WT, GR B, Straight Outlet	M022210	Ea.	1		
221	Elbow, 6.625" OD, 0.280" WT, GR B, 45 Deg, LR	M022158	Ea.	1		
222	Elbow, 6.625" OD, 0.280" WT, GR B, 90 Deg, LR	M022091	Ea.	1		
<b>CAPITAL ITEMS ORDER # 30905851</b>						
112	Pipe, 8.625" OD x 0.322" WT, API 5L, GR B, SMLS, FBE Coated	M010029	Ft.	17		
114	Pipe, 4.500" OD x 0.237" WT, API 5L, GR B, SMLS, Bare	M011693	Ft.	4		
115	Pipe, 1.050" OD (3/4"), 0.154" WT, API 5L, GR B, SMLS Bare	M011951	Ft.	12		
148	Valve, Ball, 8.625" OD, ANSI 300, Weld Ends, 0.322" WT, API 5L, X42, Gear Operated For Buried Service, A=3.5', Fig 3, F21.1	M031124	Ea.	1		
150	Valve, Ball, 4.500" OD, ANSI 300, FE, Lever Operated	M034522	Ea.	2		
201	Line Stopper Fitting, Mueller H-17276, 8" Thin Wall	M022875	Ea.	1		
202	Flange, Weldneck, ANSI 300, RF, 4"	M025242	Ea.	2		
203	Flange, Blind, ANSI 300, RF, with 1/2" Tap, 4"	M020862	Ea.	2		
204	Gasket, PSI Linerbacker Type F, ANSI 300, 4"	M016688	Ea.	4		
205	Botl 0.750" x 4.000", With Matching Nut, ANSI 300, for 4" Flange	M192696	Ea.	32		
206	Plug, 1/2", Hex Head, Threaded	M021249	Ea.	2		
207	Valve, 1/2", Standard Ball, 1000#	M013836	Ea.	2		
208	Nipple, 1/2"x2", API 5L, GR B, SMLS, EH, Black, Threaded	M020680	Ea.	2		
209	Precast Concrete Pit Body, 4x7x2D	M043248	Ea.	1		
210	Cover 4x7x2D, Checkered Plate	M043252	Ea.	1		
211	Tee, Reducing, STD Wall, 8.625" OD x 4.50" OD, Branch, GR B	M022447	Ea.	2		
212	Valve Tee, 1" Mueller H-17656	M022445	Ea.	2		
214	Elbow, 3/4" Socket Weld, FS, 45 Deg 3000#	M022587	Ea.	6		
215	Nipple, 3/4"x3", API 5L, GR B, SMLS, EH, Black, Threaded	M020687	Ea.	2		
216	Valve, Ball, 3/4", 2000# MWP, Threaded, KF, Contramatics	M034405	Ea.	2		
217	Plug, 3/4" Forged Steel, Hex Head, 6000#	M021250	Ea.	2		
220	Precast Concrete Pit Extension, 4x7x2D	M043250	Ea.	1		
<b>CONTINGENCY ITEMS ORDER #41617948</b>						
112	Pipe, 8.625" OD x 0.322" WT, API 5L, GR B, SMLS, FBE Coated	M010029	Ft.	80		
127	Elbow, 8.625" OD, 0.322" WT, GR B, 90 deg, LR	M022083	Ea.	2		

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APPROVED BY	DATE	DESCRIPTION
MAC	2-27-12	ISSUED FOR CONSTRUCTION

HYDROTEST 097-12  
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 MANTECA & MODESTO, CALIFORNIA  
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 WALNUT CREEK, CALIFORNIA

MICROFILM	
BILL OF MATL SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 07 OF 07 SHEETS	
41617948	1