

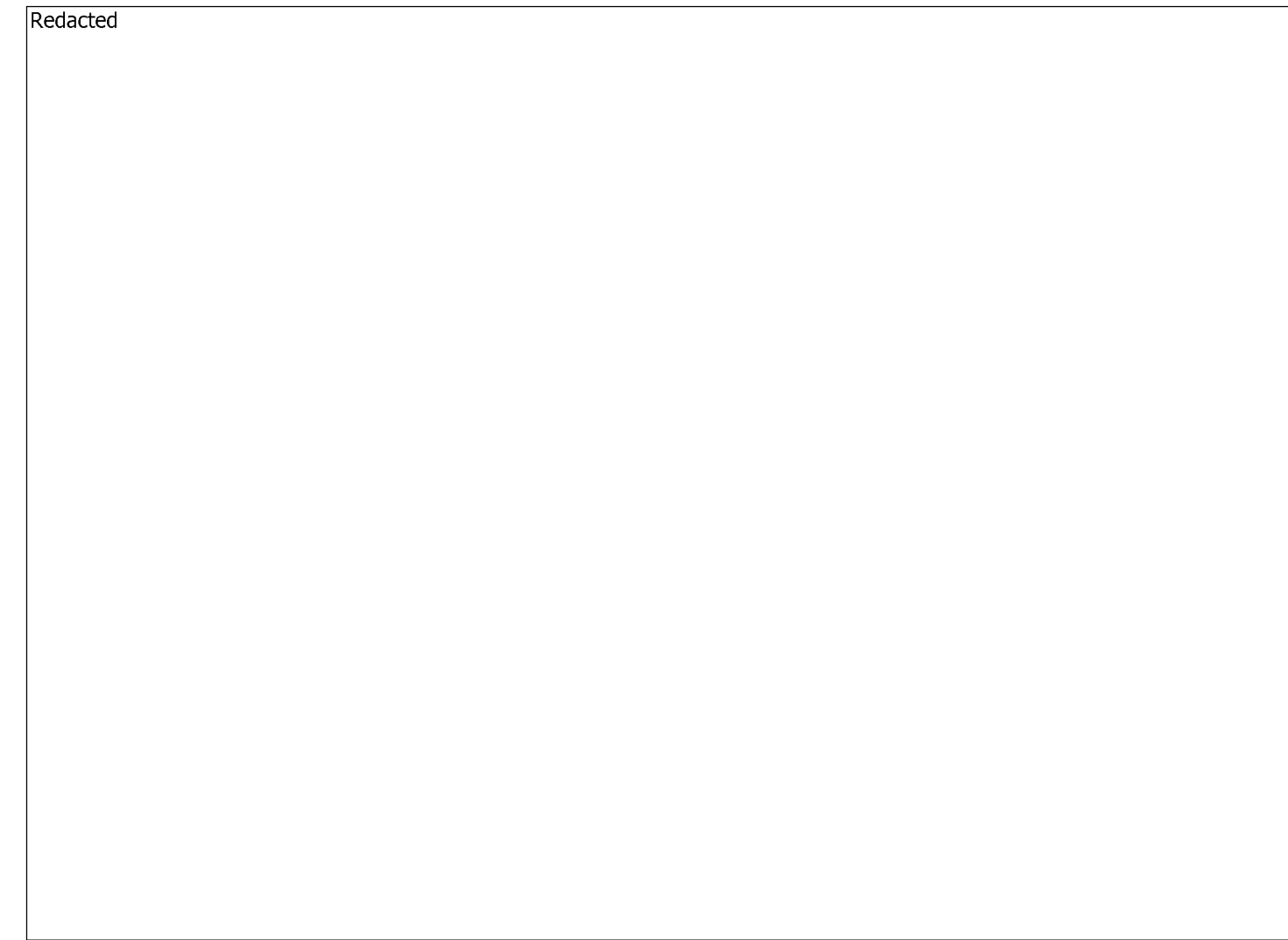
7/17/2012 3:02:15 PM, cctbn

CP AREA # L-132, SF SECTIONS A & B
WALL MAP [Redacted]
PLAT [Redacted]
[Redacted]

HYDROTEST TIM-037-11 L-132, MP 43.6131 - 46.57 ORDER # 41497358

SCHEDULE OF SHEETS

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



VICINITY SKETCH
NOT TO SCALE

SUMMARY OF PROPOSED WORK:

EXPENSE ORDER #41497358

- HYDROSTATICALLY TEST 30" L-132 FROM MP 43.6131 TO MP 46.57 PER DRAWINGS AND STRENGTH TEST PRESSURE REPORTS (#41497358) AND MATERIAL OF RECORD DRAWING #41497358 SHEET 7 OF 7.
- INSTALL 65'-0" OF 30.00" OD x 0.375" WT, API 5L X-65, SAWL, FBE COATED PIPE.
- INSTALL 8'-0" OF 1.050" OD x 0.154" WT, API 5L GR B, SMLS, BARE PIPE.
- REMOVE 17'-0" OF 30.00" OD x 0.375" WT, API 5L X-52, DSAW PIPE INSTALLED ON 124756 (1953).
- REMOVE 30'-0" OF 30.00" OD x 0.375" WT, API 5L X-52, DSAW PIPE INSTALLED ON 98015 (1948).
- REMOVE 8'-0" OF 30.00" OD x 0.375" WT, API 5L GR B PIPE INSTALLED ON 4007282 (1992).
- REMOVE 22'-0" OF 30.00" OD x 0.312" WT, API 5L X-52, DSAW PIPE INSTALLED ON 170283 (1968).

CAPITAL ORDER #30763087

- ABANDON 93'-6" OF 30.00" OD x 0.375" WT, API 5L X-52, DSAW PIPE INSTALLED ON 98015 (1948).
- ABANDON 17'-9" OF 24.00" OD x 0.3125" WT, 30000 SMYS, SMLS PIPE INSTALLED ON 98015 (1948).

CONSTRUCTION NOTES:

- WELDING REQUIREMENTS:
ALL ARC WELDING IS TO BE PERFORMED IN ACCORDANCE WITH GAS STANDARD D-22. 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 AND SITE SPECIFIC TEST PROCEDURE.
- 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.
- CALL USA AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION (811). 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. 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. ALL ANGLES SHOWN IN THE PLAN AND PROFILE ARE APPROXIMATE AND SHALL BE CUT TO SUIT FIELD CONDITION.
- THIS PIPELINE MUST BE INSTALLED WITH AT LEAST 12 INCHES OF CLEARANCE FROM ANY OTHER UNDERGROUND STRUCTURE NOT ASSOCIATED WITH THE PIPELINE.
- 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.
- BONDING CABLES TO BE INSTALLED ACROSS PIPELINE CUT-OUTS 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.
- 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.
- ALL EXCAVATIONS WITHIN EXISTING STATIONS SHALL BE HAND DUG OR EXCAVATED USING SOFT DIG METHODS (e.g. VACUUM EXCAVATIONS OR SIMILAR).
- COPIES OF REFERENCE DRAWINGS ARE AVAILABLE TO FIELD PERSONNEL (PG&E, INSPECTION OR CONTRACTOR) ON AN AS NEEDED BASIS. CONTACT THE ASSIGNED ENGINEER IDENTIFIED IN CONTACTS TO OBTAIN COPIES OF ANY REFERENCE DRAWINGS.

GENERAL NOTES:

- 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.
- "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.
- 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.

CONTACT INFORMATION:

CONSTRUCTION MANAGER ----- [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]

CONTRACTOR

WELDING INSPECTED PER
PG&E GAS STANDARD D-40
VISUAL _____
MAGNETIC PARTICLE _____
INSPECTOR _____
DATE _____

G.C. GAS

WELDING INSPECTED PER
PG&E GAS STANDARD D-40
VISUAL _____
MAGNETIC PARTICLE _____
INSPECTOR _____
DATE _____

DESIGN & CONSTRUCTION REVIEW FOR INTERNAL CORROSION

DESCRIPTION	ACTION SELECTED	INITIAL	DATE
CORROSION ENGINEER HAS REVIEWED THIS LOCATION AND THERE IS NO KNOWN THREAT OF INTERNAL CORROSION. NO INTERNAL CORROSION DESIGN OR CONSTRUCTION CONSIDERATIONS ARE NECESSARY.	X	JR	7/17/12
INTERNAL CORROSION MAY BE A THREAT AND THE CONSTRUCTION DESIGNS HAVE BEEN REVIEWED WITH CORROSION ENGINEERING. DOCUMENTATION OF THE REVIEW AND ACTIONS TAKEN ARE IN THE JOB PACKAGE AND INCORPORATED IN THIS DESIGN.			

NOTIFIED U.S.A.

DATE _____
TICKET NUMBER _____
BY _____

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

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 BODY FITTINGS	PROTAL 7200 FLANGE WAX TAPE
TIE-INS/COATING TRANSITIONS	PROTAL 7200, WAXTAPE, POLYKEN TAPE

BORED COATING SELECTIONS

LISTED IN ORDER OF PREFERENCE

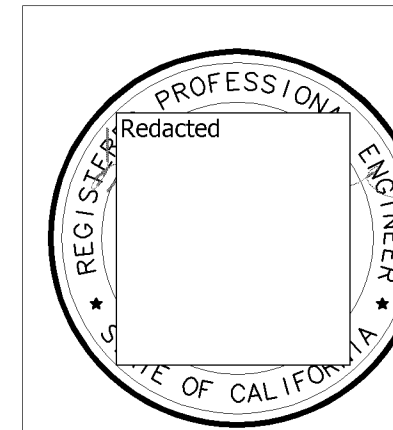
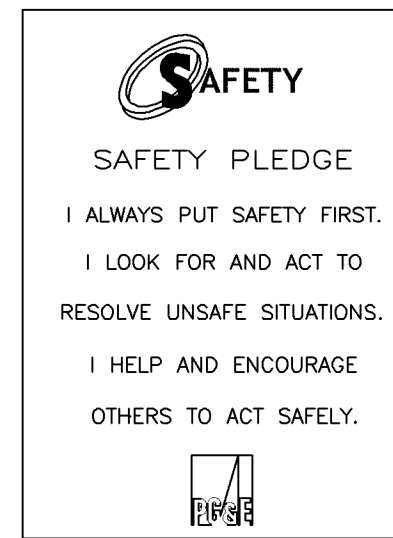
MAIN LINE COATING	ARC APPLIED OVER FBE
MINOR REPAIRS	PROTAL 7200, POWERCRETE J
GIRTH WELDS	PROTAL 7200, POWERCRETE J

NOTES:

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

REFERENCE DRAWINGS:

- 384523 - OPERATING MAP, L-132 [Redacted]
SHEET 1 OF 2
- 081628 - OPERATING DIAGRAM [Redacted]
- 382586 - 30" GAS TRANSMISSION LINE 132 [Redacted]
- 385703 - LOWERING OF 30" L-132 IN [Redacted]
- 383722 - RELOCATION - 30" LINE 132 [Redacted]
- 4801342R, REV. 1 - PIPING-PLAN [Redacted] REGULATOR STATION



COPY



NO.	DATE	DESCRIPTION	CM/SPEC	DWN	CHKD	SUPV	APVD BY
1	7/16/12	ISSUED FOR CONSTRUCTION-2012 UPDATE	41497358	CMB	LMK	KJC	MAC
0	9/12/11	ISSUED FOR CONSTRUCTION	41497358	RML	LMK	KJC	MAC P-13-T

APPROVED BY	DATE	SCALE
CM 41497358	09/12/11	AS SHOWN

HYDROTEST TIM-037-11
L-132
MP 43.6131 - 46.57
SAN FRANCISCO, CALIFORNIA

PACIFIC GAS AND ELECTRIC COMPANY
WALNUT CREEK, CALIFORNIA

BILL OF MATL SHEET 07	DWG LIST	SUPSDS	SUPSD BY	SHEET NO.	01 OF 07	SHEETS
				41497358		1

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E
D
C
B
A

E
D
C
B
A

PLAN VIEW
(SCALE: 1" = 60')



ESTIMATED GALLONS OF WATER
REQUIRED LOCATION A TO B TEST:
172,614 GALLONS.

ESTIMATED GALLONS OF WATER
REQUIRED LOCATION B TO C TEST:
152,930 GALLONS.

ESTIMATED GALLONS OF WATER
REQUIRED LOCATION C TO D TEST:
223,391 GALLONS.

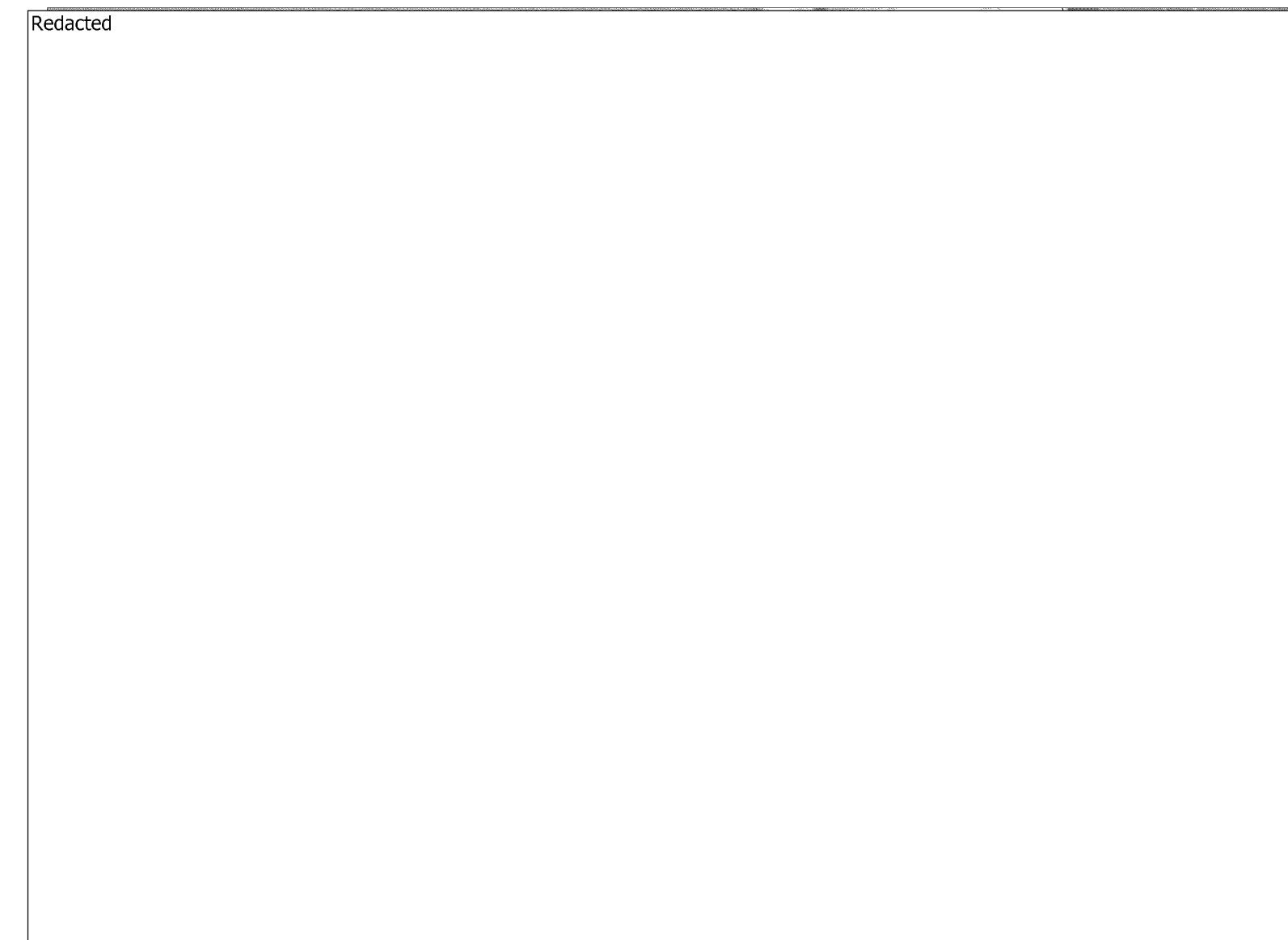
LOCATION A

Redacted
(SCALE: 1" = 40')



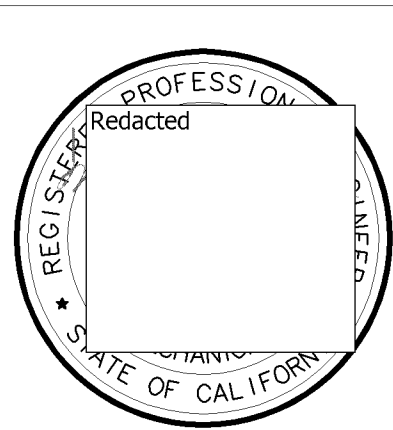
LOCATION D

Redacted
(SCALE: 1" = 60')



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.



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0	9/12/11	ISSUED FOR CONSTRUCTION	41497358	RML	LMK	KJC	MAC p-13-11

APPROVED BY: [Redacted]
 SUPV: [Redacted]
 DSCN: [Redacted]
 DWN RML: [Redacted]
 CHKD LMK: [Redacted]
 DATE: 09/12/11
 SCALES AS SHOWN

HYDROTEST TIM-037-11
 L-132
 MP 43.6131 - 46.57
 SAN FRANCISCO, CALIFORNIA
 PACIFIC GAS AND ELECTRIC COMPANY
 WALNUT CREEK, CALIFORNIA

MICROFILM	
BILL OF MATL SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 02 OF 07 SHEETS	
41497358	1

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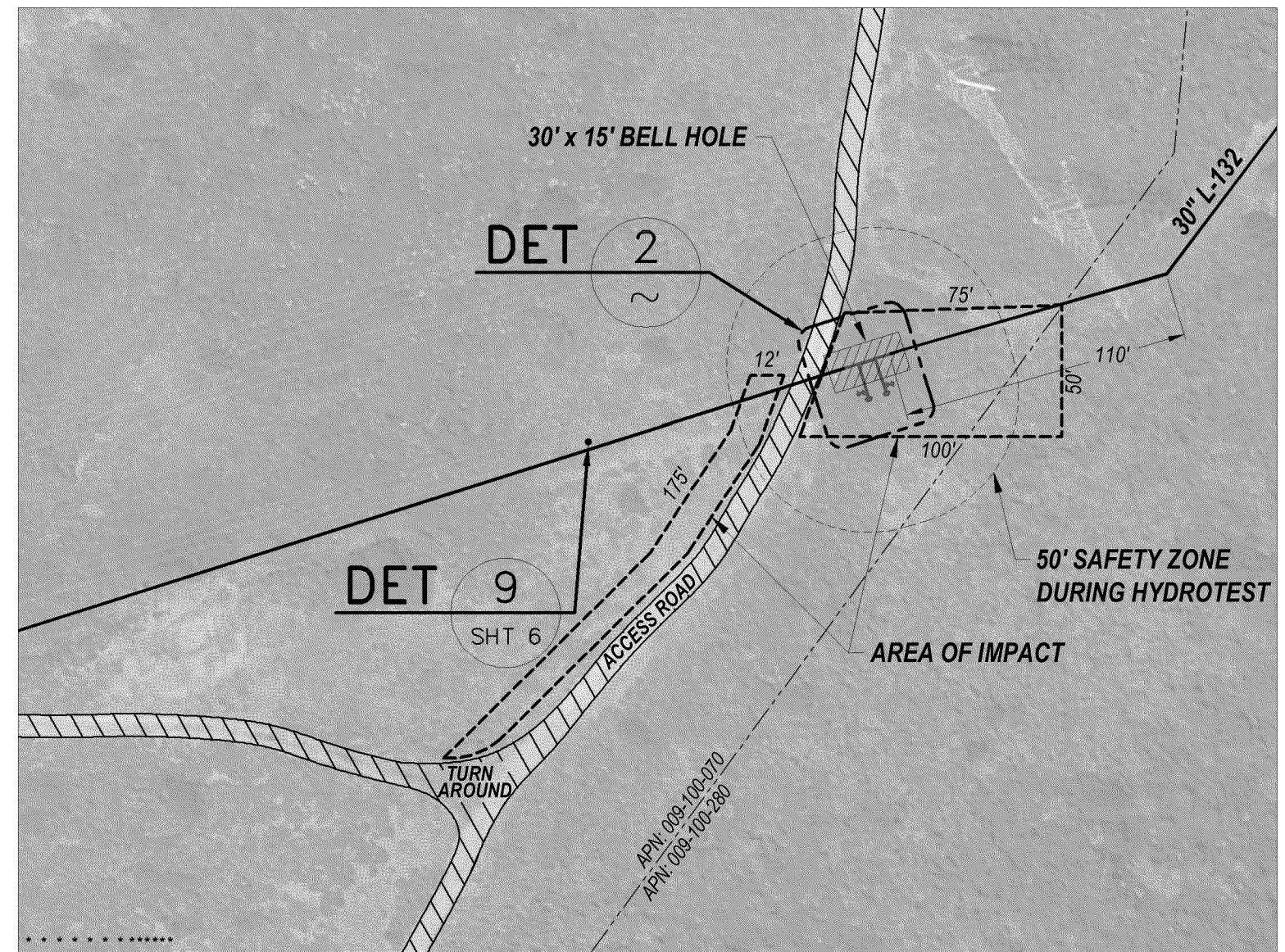
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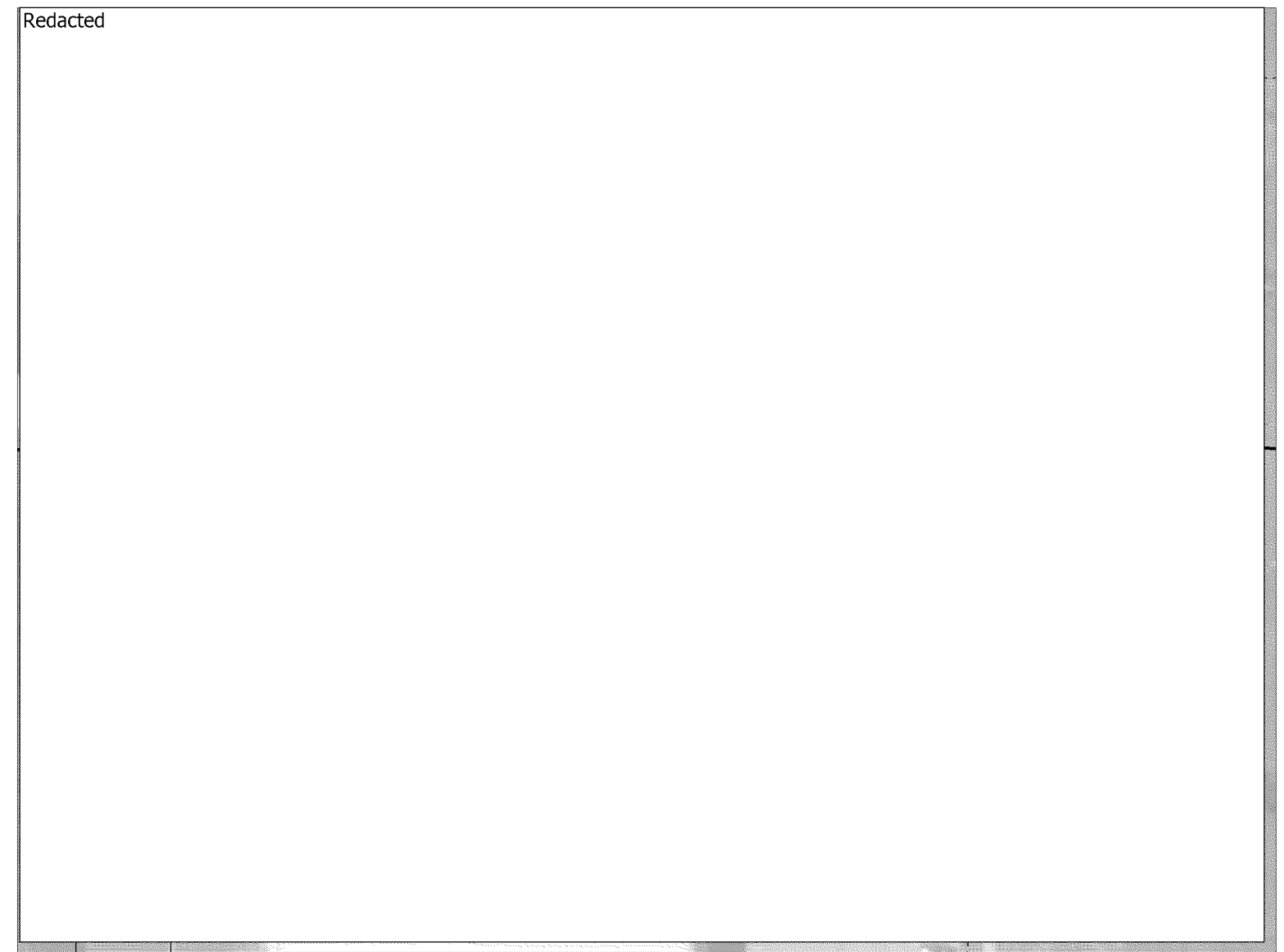
LOCATION B

Redacted
(SCALE: 1" = 60')



LOCATION C

Redacted



Redacted

WELD# _____
X-RAY# _____
LAT. _____
LONG _____
"P" STA _____

WELD# _____
X-RAY# _____
LAT. _____
LONG _____
"P" STA _____

DETAIL 5 LOCATION C

SCALE: 1/4" = 1'-0" REMOVE 2" DRIP

WELD# _____
X-RAY# _____
"P" STA _____
LAT. _____
LONG _____

D# _____
Y# _____
TA _____
G _____

WELD# _____
X-RAY# _____
"P" STA _____
LAT. _____
LONG _____

WELD# _____
X-RAY# _____
"P" STA _____
LAT. _____
LONG _____

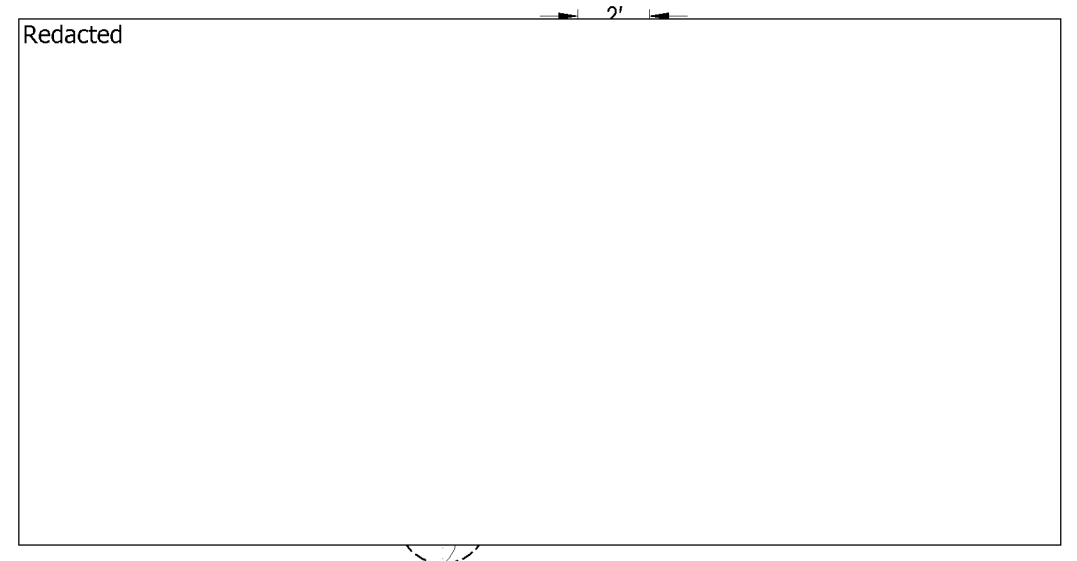
A _____

NOTE: AS-BUILT INFORMATION INDICATES 2' PUPS OF 30.00"OD x 0.375"WT, GR B, SMLS PIPE WELDED TO INSULATING FITTING. EXPOSE PIPE AND PERFORM 4-POINT UT INSPECTION AND DETERMINE IF LONG SEAM IS PRESENT. COMMUNICATE FINDINGS TO ENGINEERING PRIOR TO CUTTING OUT INSULATING JOINT.

IF INVESTIGATION PER NOTE ABOVE CONFIRMS AS-BUILT INFORMATION, EX. INSULATING JOINT TO BE REMOVED AND ALL 0.375"WT GR B PIPE TO BE CUT OFF OF EACH END OF INSULATING JOINT. WHEN CUTTING OFF PUPS CUT OFF 1" OF INSULATING JOINT EACH END TO REMOVE HEAT AFFECTED ZONE AND INSTALL 30.00"OD x 0.375"WT, API 5L X-65 TO SUIT PRIOR TO HYDROTEST.

DETAIL 2 LOCATION B

SCALE: 3/16" = 1'-0"



DETAIL 8 LOCATION C

SCALE: 3/16" = 1'-0" PIPE REPLACEMENT

DETAIL 3 LOCATION C

SCALE: 3/16" = 1'-0"

ELEVATION A HYDROTEST PIPING RISER (TYP.)

SCALE: 3/16" = 1'-0" HYDROTEST CONFIGURATION

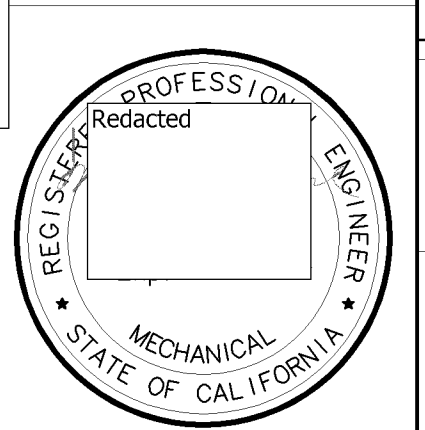


NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
1	7/16/12	ISSUED FOR CONSTRUCTION-2012 UPDATE	41497358	CMB	LMK	KJC	MAC
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APPROVED BY: GM 41497358
 SUPV
 DSCN
 DWN RML
 CHKD LMK
 DATE 09/12/11
 SCALES AS SHOWN

HYDROTEST TIM-037-11
 L-132
 MP 43.6131 - 46.57
 SAN FRANCISCO, CALIFORNIA
 PACIFIC GAS AND ELECTRIC COMPANY
 WALNUT CREEK, CALIFORNIA

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



COPY

MICROFILM	
BILL OF MATL SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 03 OF 07 SHEETS	
41497358	1

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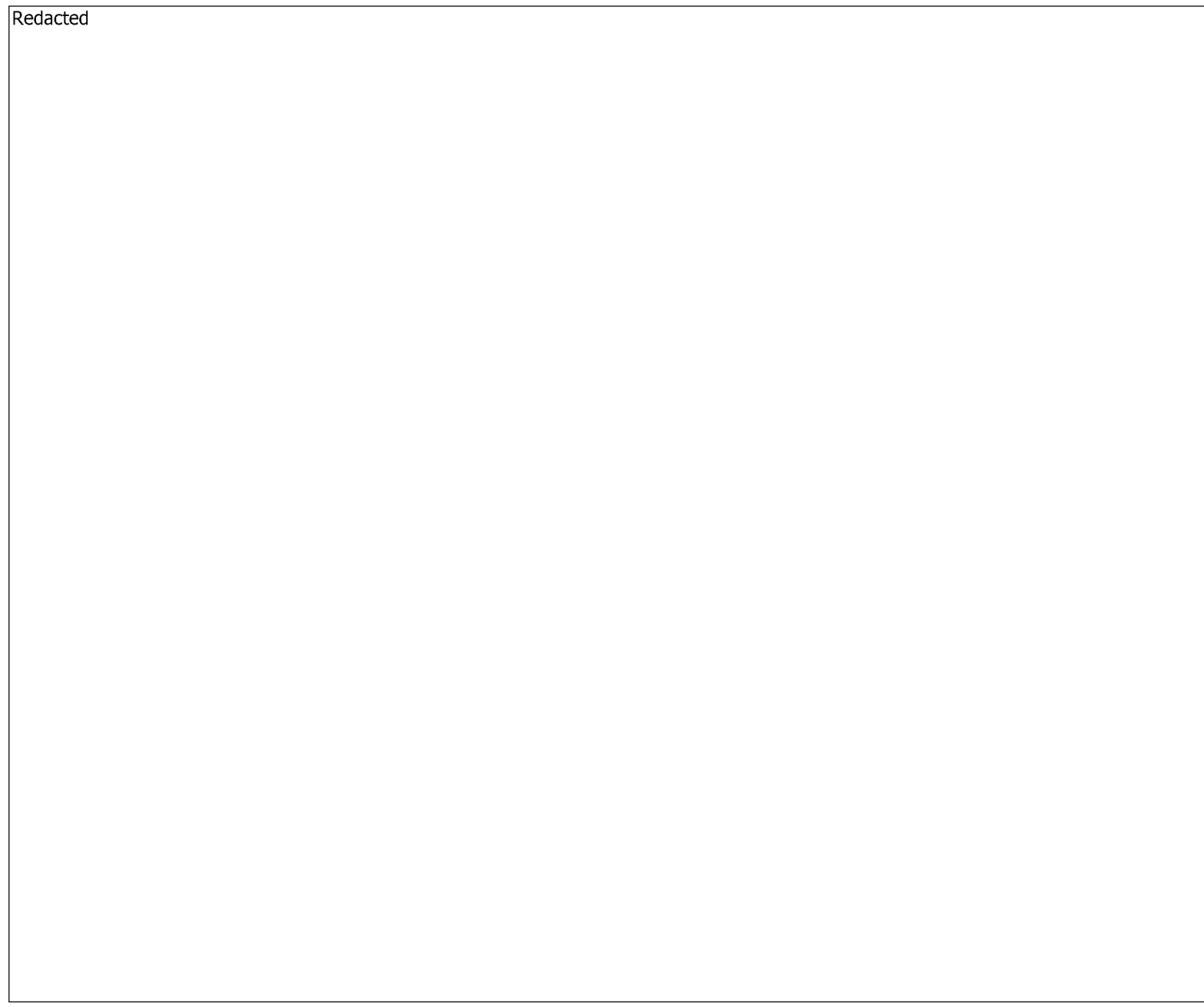
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E
D
C
B
A

E
D
C
B
A

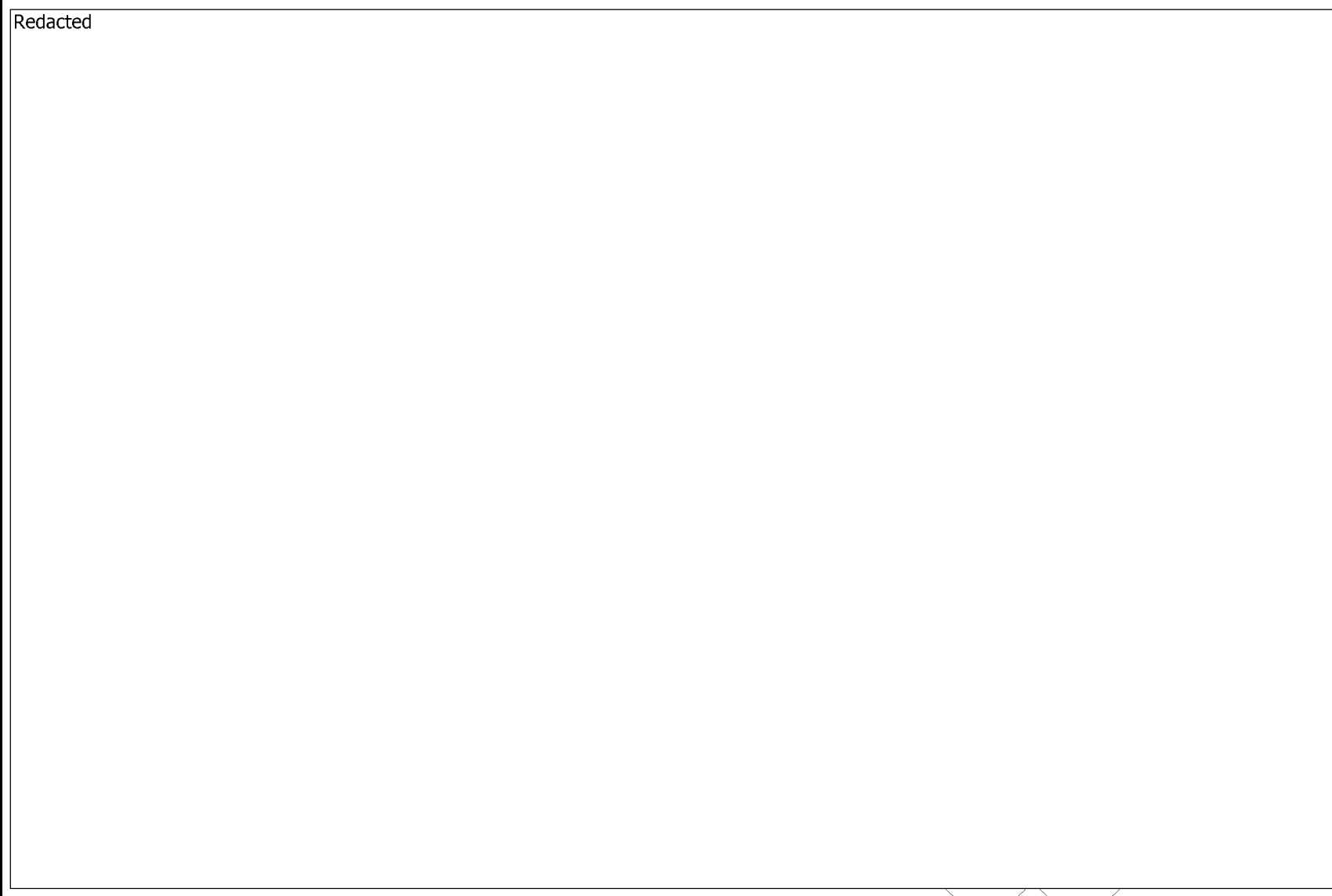
LOCATION E
2" REGULATOR STATION TAP
WALL MAP - [Redacted]
(SCALE: 1" = 60')



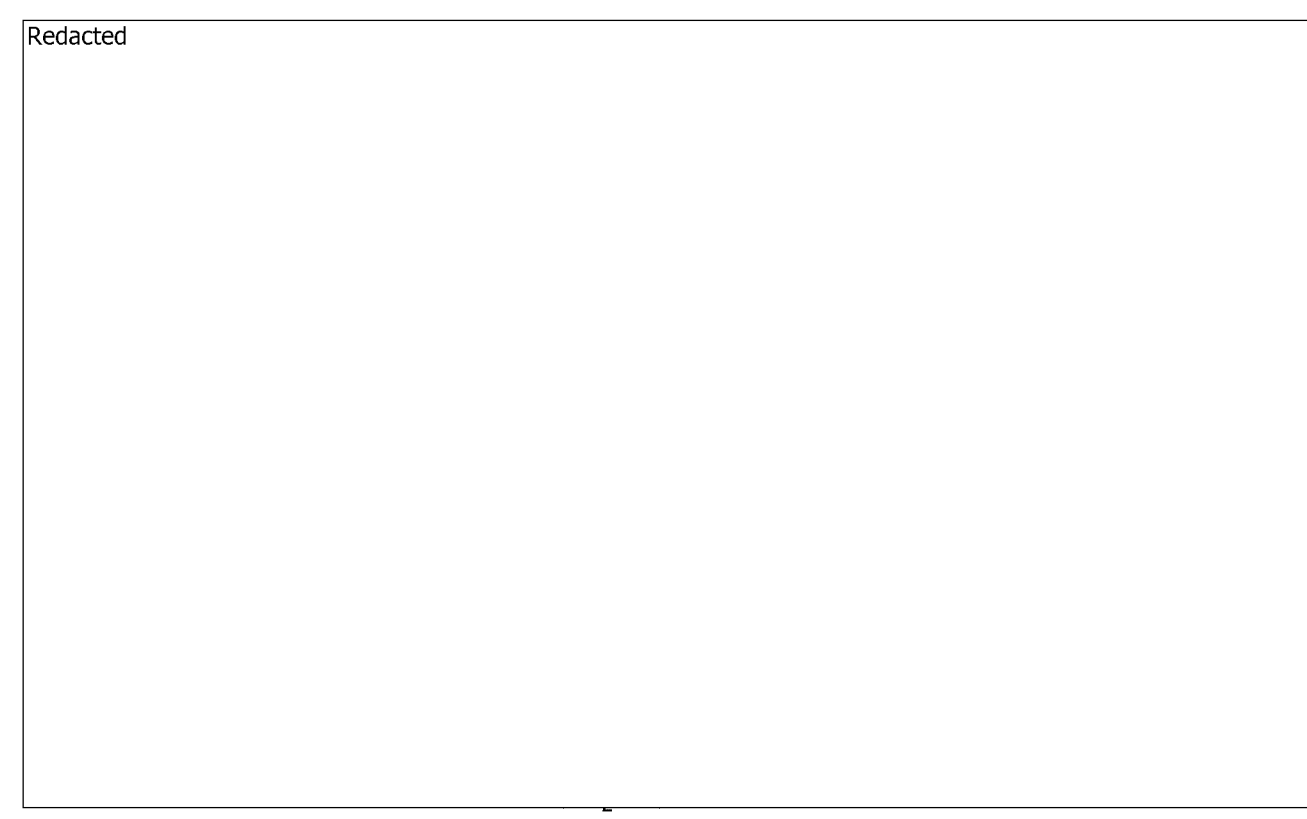
LOCATION F
[Redacted] - REMOVE 2" DRIP
WALL MAP - [Redacted]
(SCALE: 1" = 40')



LOCATION G
[Redacted] - 6" BLOW-OFF
WALL MAP [Redacted]
(SCALE: 1" = 50')

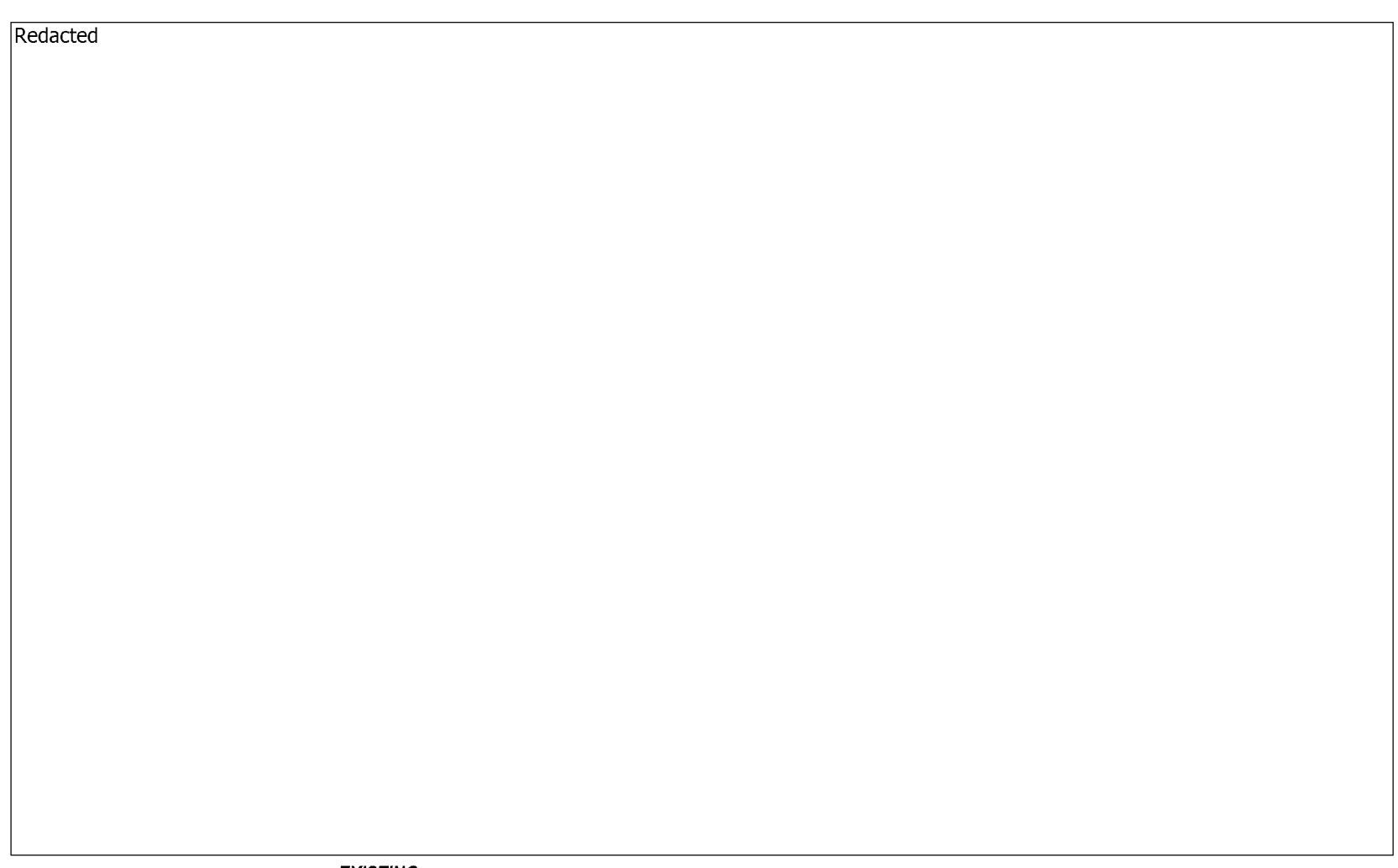


DETAIL 6 LOCATION E
SCALE: 1/2" = 1'-0" REG. STATION

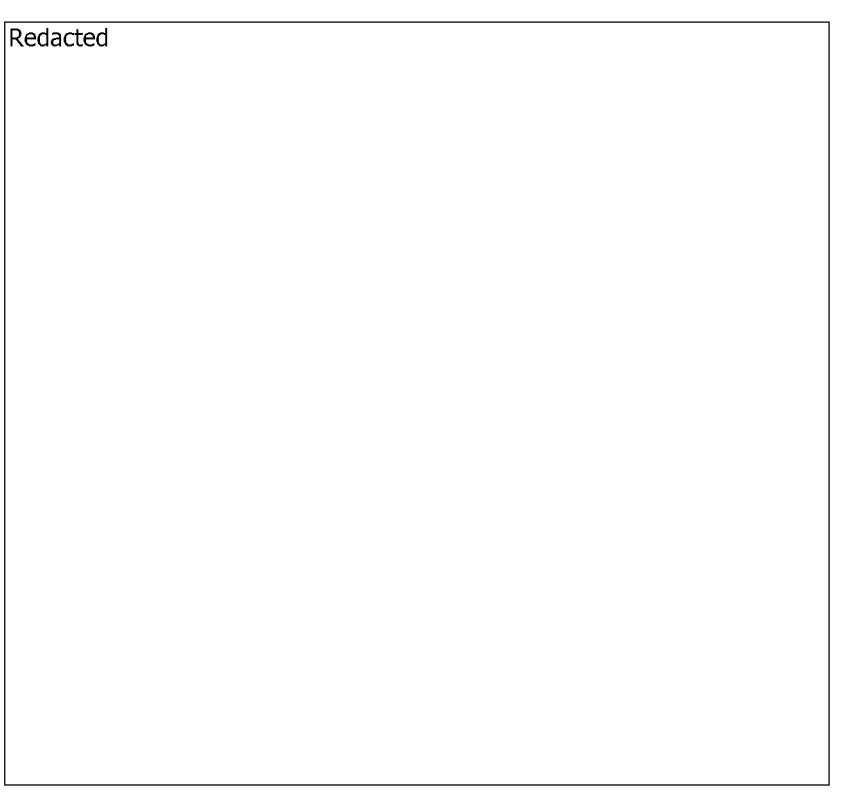


DETAIL 7 LOCATION F
NOT TO SCALE [Redacted] - REMOVE 2" DRIP

WELD # _____
X-RAY # _____
LAT. _____
LONG _____
"P" STA. _____
WELD # _____
X-RAY # _____
LAT. _____
LONG _____
"P" STA. _____

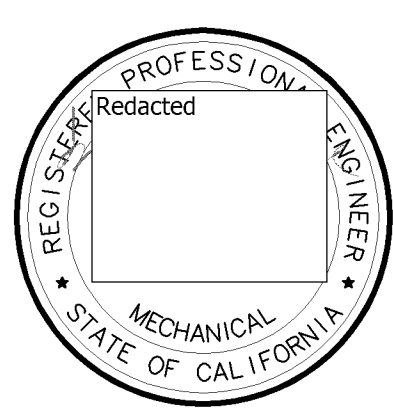


ELEVATION B LOCATION C
NOT TO SCALE SHT 3 [Redacted] - REMOVE 2" DRIP



ELEVATION D LOCATION G
SCALE: 1/4" = 1'-0" 6" BLOW-OFF

SAFETY
SAFETY PLEDGE
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OTHERS TO ACT SAFELY.



COPY



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0	9/12/11	ISSUED FOR CONSTRUCTION	41497358	RML	LMK	KJC	MAC p-13-11

APPROVED BY: [Redacted]
 SUPV: [Redacted]
 DSCN: [Redacted]
 DWN: RML
 CHKD: LMK
 DATE: 09/12/11
 SCALES: AS SHOWN

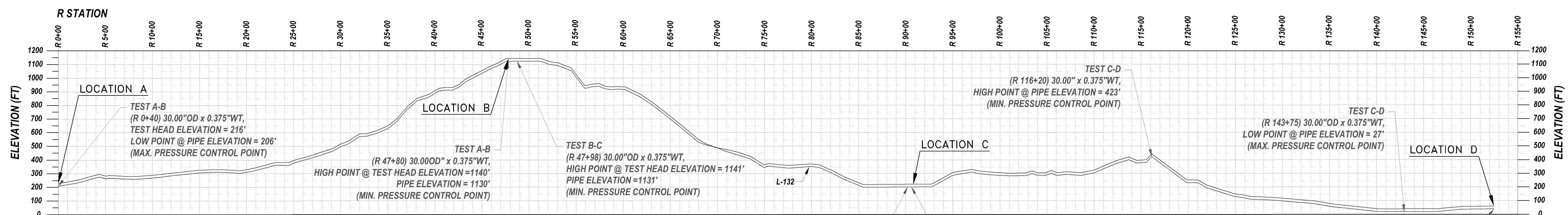
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 SAN FRANCISCO, CALIFORNIA
 PACIFIC GAS AND ELECTRIC COMPANY
 WALNUT CREEK, CALIFORNIA

MICROFILM	
BILL OF MATL SHEET 07	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO. 04 OF 07 SHEETS	
41497358	1

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PROFILE VIEW
(NOT TO SCALE)



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 STA 0+40	4	1	124756	1953 (87)
R STA 0+46	4	1	409015	1960 (81)
R STA 0+76	4	1	409015	1960 (81)
R STA 0+97	4	1	409015	1960 (81)
R STA 0+98	4	1	409015	1960 (81)
R STA 1+05	4	1	409015	1960 (81)
R STA 1+07	4	1	409015	1960 (81)
R STA 1+47	4	1	409015	1960 (81)
R STA 1+65	4	1	409015	1960 (81)
R STA 1+68	4	1	409015	1960 (81)
R STA 6+07	5	1	98015	1948 (478)
R STA 18+34	5	1	98015	1948 (478)
R STA 49+49	5	1	98015	1948 (478)
R STA 49+67	5	1	98015	1948 (478)
R STA 50+77	5	1	98015	1948 (478)
R STA 54+86	5	1	98015	1948 (478)
R STA 57+88	5	1	98015	1948 (478)
R STA 63+43	5	1	98015	1948 (478)
R STA 66+74	5	1	98015	1948 (478)
R STA 72+23 - BEGN 34' SPAN	11	3	41457365	2012 (12)
R STA 72+57 - END 34' SPAN	11	3	41457365	2012 (12)
R STA 84+82 - 2.375' OD TP MANH	8	3	170283	1968 (400)
R STA 86+22	8	3	170283	1968 (400)
R STA 86+38	8	3	170283	1968 (400)
R STA 87+07	8	3	170283	1968 (400)
R STA 88+09	8	3	170283	1968 (400)
R STA 90+22	8	3	170283	1968 (400)
R STA 90+23 - REMOVE 2" DRIP	105	3	41457365	2012 (12)
R STA 90+24	105	3	41457365	2012 (12)
R STA 91+85	105	3	41457365	2012 (12)
R STA 92+56	105	3	41457365	2012 (12)
R STA 92+58	105	3	41457365	2012 (12)
R STA 92+60 - 30' INSULATING JOINT	14	3	4007382	1993 (4)
R STA 92+62	14	3	4007382	1993 (4)
R STA 92+64	14	3	4007382	1993 (4)
R STA 93+42	14	3	4007382	1993 (4)
R STA 93+44	14	3	4007382	1993 (4)
R STA 93+46	14	3	4007382	1993 (4)
R STA 93+49	14	3	4007382	1993 (4)
R STA 94+00 - REPLACE 3/4" DRIP	105	3	41457365	2012 (12)
R STA 94+01	105	3	41457365	2012 (12)
R STA 94+52	105	3	41457365	2012 (12)
R STA 96+01	6	3	170283	1968 (285)
R STA 96+50	6	3	170283	1968 (285)
R STA 96+56	6	3	170283	1968 (285)
R STA 106+43 - 6.625' OD BLOW-OFF	12	10	166040	1987 (389)
R STA 106+53	12	10	166040	1987 (389)
R STA 106+65	12	10	166040	1987 (389)
R STA 117+24	6	10	166040	1987 (389)
R STA 118+08	6	6	166040	1987 (389)
R STA 118+25	6	6	166040	1987 (389)
R STA 119+50	6	6	166040	1987 (389)
R STA 119+63	6	6	166040	1987 (389)
R STA 120+10	6	6	166040	1987 (389)
R STA 120+22	6	6	166040	1987 (389)
R STA 122+70	10	5	98015	1948 (3636)
R STA 130+82	5	5	98015	1948 (3636)
R STA 139+05	5	5	98015	1948 (3636)
R STA 151+46	5	5	98015	1948 (3636)

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

TEST 2

	TEST A - B			
LOCATION	R STA.	ELEV.	MIN. PRESS.	MAX. PRESS.
MIN. PRESSURE CONTROL POINT	47+80	1140'	450 psig	
MAX. PRESSURE CONTROL POINT	0+40	206'		875 psig
LOCATION A (TEST STATION)	0+40	216'	851 psig	871 psig
LOCATION B	47+80	1140'	450 psig	470 psig

NOTE: ELEVATIONS AT TEST LOCATIONS ASSUME TOP OF HYDROTEST PIPING IS 5' ABOVE GROUND ELEVATION

TEST 3

	TEST B - C				
LOCATION	R STA.	ELEV.	RAMP PRESSURE	MIN. PRESS.	MAX. PRESS.
MIN. PRESSURE CONTROL POINT	51+84	1141'	518 psig	450 psig	
MAX. PRESSURE CONTROL POINT	90+75	200'	926 psig		879 psig
LOCATION B (TEST STATION)	47+98	1141'	518 psig	450 psig	471 psig
LOCATION C (TEST STATION)	90+75	210'	921 psig	853 psig	874 psig

NOTE: ELEVATIONS AT TEST LOCATIONS ASSUME TOP OF HYDROTEST PIPING IS 5' ABOVE GROUND ELEVATION

TEST 4

	TEST C - D				
LOCATION	R STA.	ELEV.	RAMP PRESSURE	MIN. PRESS.	MAX. PRESS.
MIN. PRESSURE CONTROL POINT	116+20	423'	518 psig	450 psig	
MAX. PRESSURE CONTROL POINT	143+75	27'	690 psig		655 psig
LOCATION C (TEST STATION)	90+93	210'	611 psig	543 psig	576 psig
LOCATION D	151+46	56'	677 psig	609 psig	642 psig

NOTE: ELEVATIONS AT TEST LOCATIONS ASSUME TOP OF HYDROTEST PIPING IS 5' ABOVE GROUND ELEVATION



REVISIONS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
1	7/16/12	ISSUED FOR CONSTRUCTION-2012 UPDATE	41497358	CMB	LMK	KJC	MAC
0	9/12/11	ISSUED FOR CONSTRUCTION	41497358	RML	LMK	KJC	MAC

APPROVED BY: [Signature] CM: 41497358
 SUPV: [Signature] DSCN: [Signature] DWN: RML
 CHKD: LMK DATE: 09/12/11
 SCALES: AS SHOWN

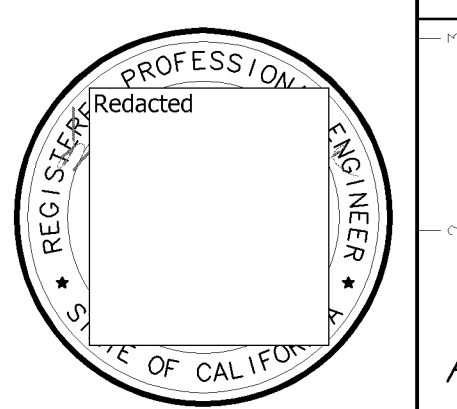
HYDROTEST TIM-037-11
 L-132
 MP 43.6131 - 46.57
 SAN FRANCISCO, CALIFORNIA

PACIFIC GAS AND ELECTRIC COMPANY
 WALNUT CREEK, CALIFORNIA

COPY

MICROFILM
 BILL OF MATL SHEET 07
 DWG LIST
 SUPSDS
 SUPSDS BY
 SHEET NO. 05 OF 07 SHEETS
 41497358 1

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.



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7/17/2012 3:05:14 PM, cdbn

1 2 3 4 5 6 7 8 9 10

E

D

C

B

A

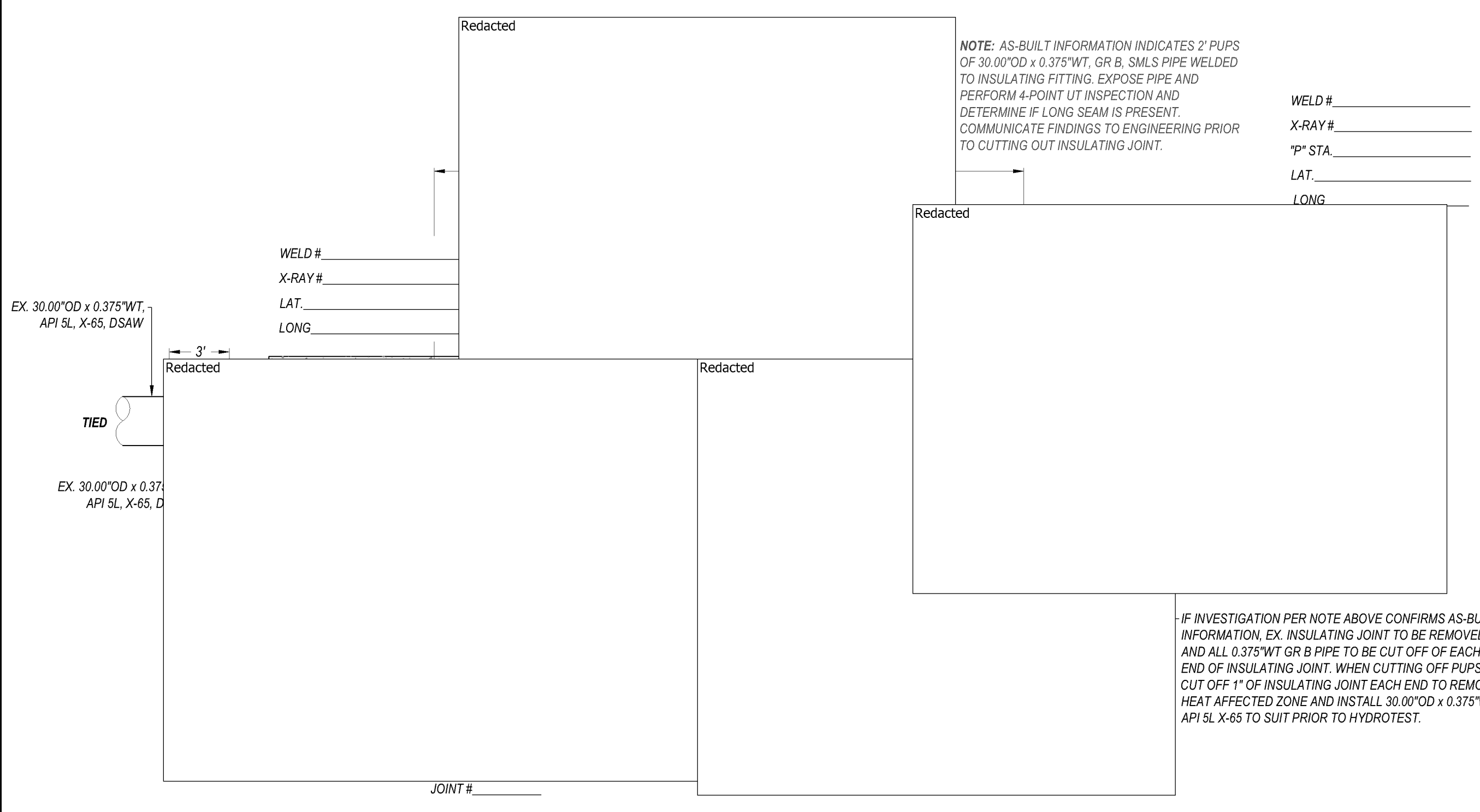
E

D

C

B

A

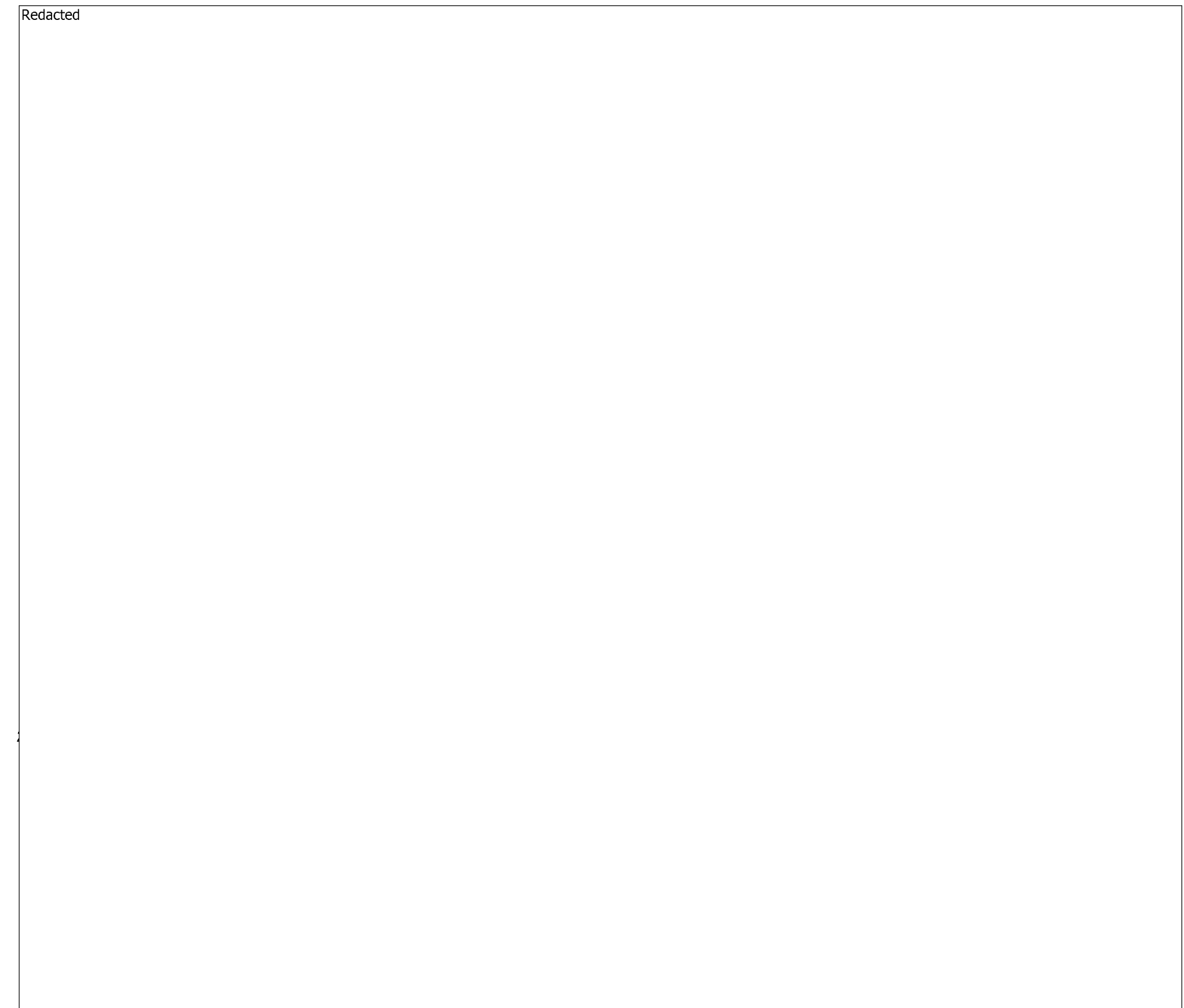


NOTE: AS-BUILT INFORMATION INDICATES 2 PUPS OF 30.00\"/>

WELD # _____
 X-RAY # _____
 P* STA. _____
 LAT. _____
 LONG. _____

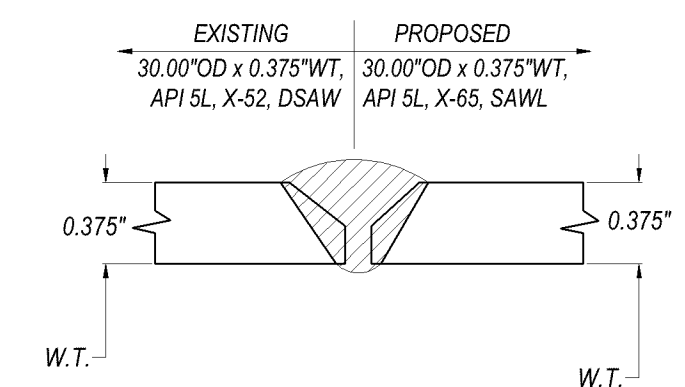
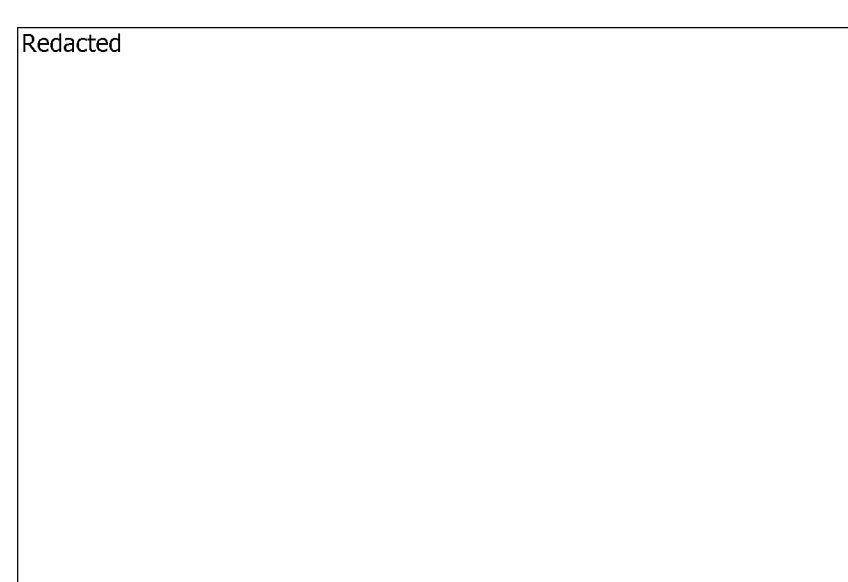
WELD # _____
 X-RAY # _____
 LAT. _____
 LONG. _____

DETAIL 1 LOCATION A
 SCALE: 3/16" = 1'-0"
 SHT 2

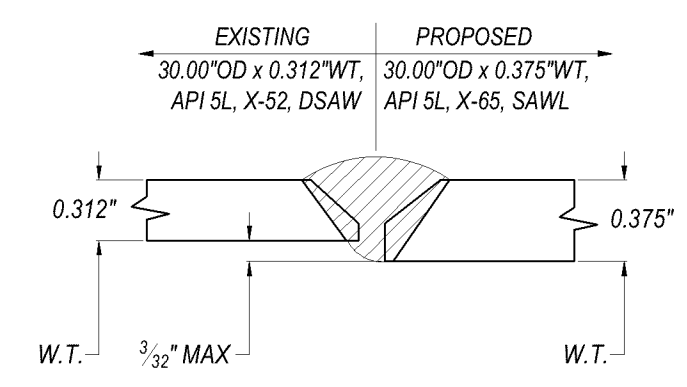


IF INVESTIGATION PER NOTE ABOVE CONFIRMS AS-BUILT INFORMATION, EX. INSULATING JOINT TO BE REMOVED AND ALL 0.375\"/>

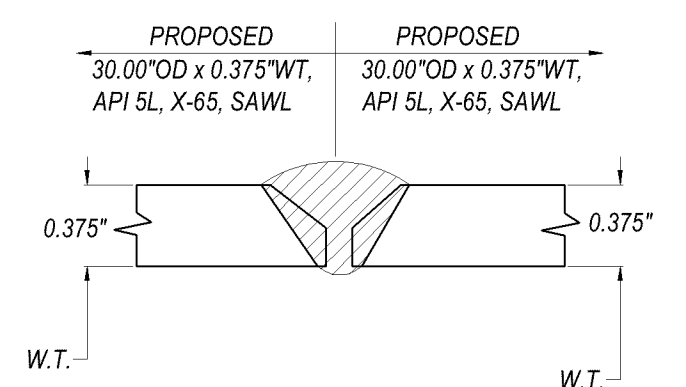
DETAIL 4 LOCATION D
 SCALE: 1/8" = 1'-0"
 SHT 2



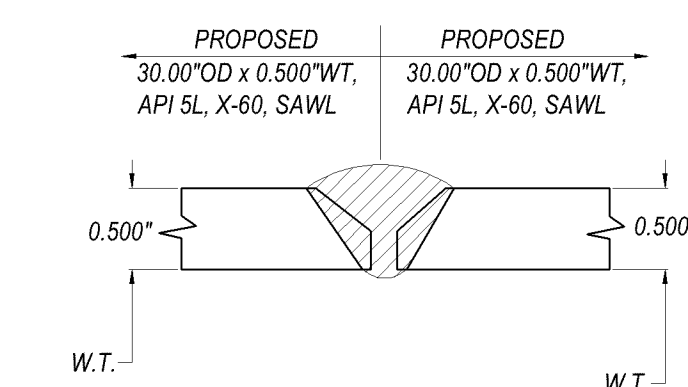
DETAIL 10A WELD DETAIL
 NOT TO SCALE SHTS 3&6 GS&S D-22, FIG. 2



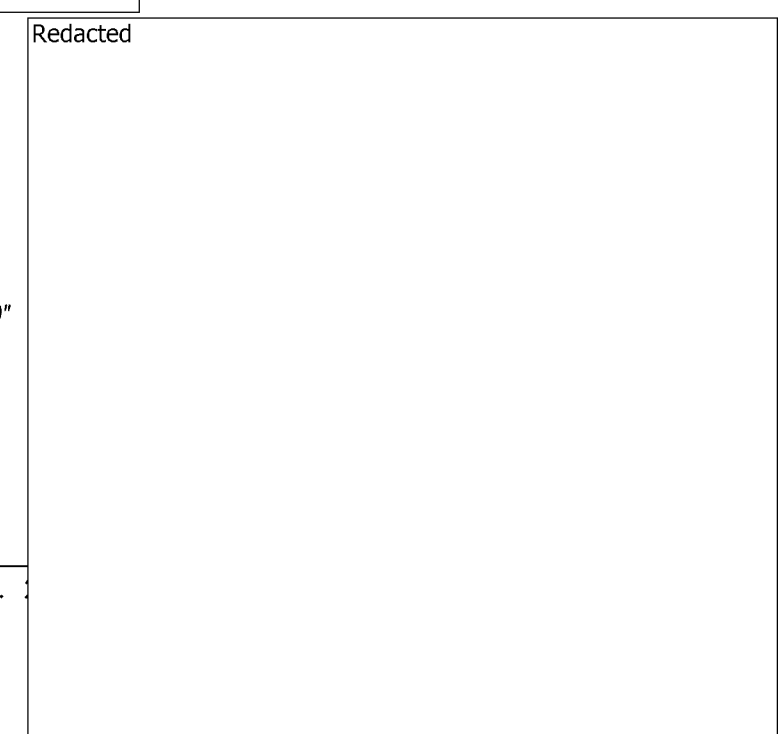
DETAIL 10B WELD DETAIL
 NOT TO SCALE SHTS 3&4 GS&S D-22, FIG. 2



DETAIL 10C WELD DETAIL
 NOT TO SCALE SHTS 3&4 GS&S D-22, FIG. 2

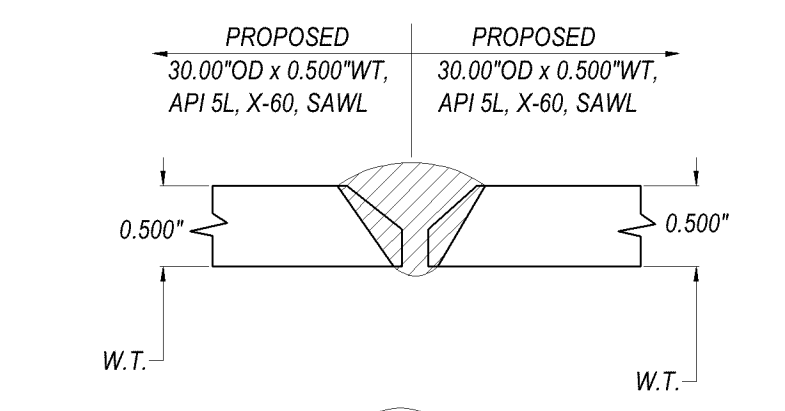


DETAIL 10D WELD DETAIL
 NOT TO SCALE SHTS 3&4 GS&S D-22, FIG. 2



DETAIL 11 ROAD CROSSING / BELL HOLES
 NOT TO SCALE TYPICAL

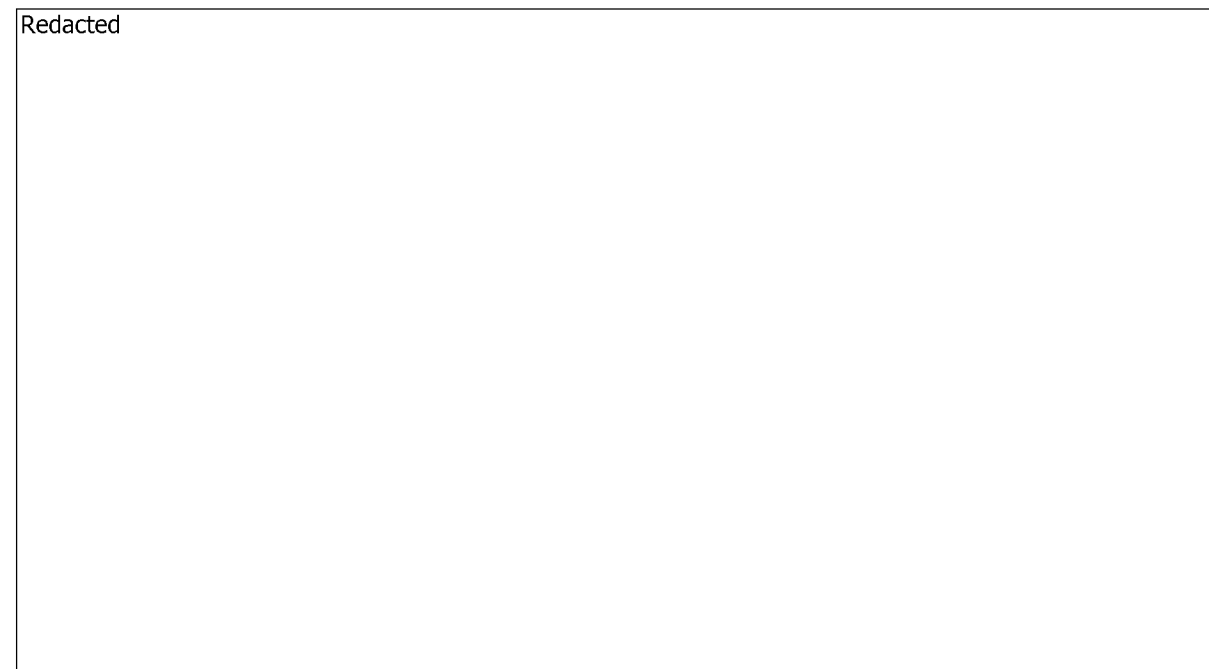
DETAIL 9 TEMPERATURE PROBE
 NOT TO SCALE SHTS 2,3 MIN. 100' FROM TEST STATION



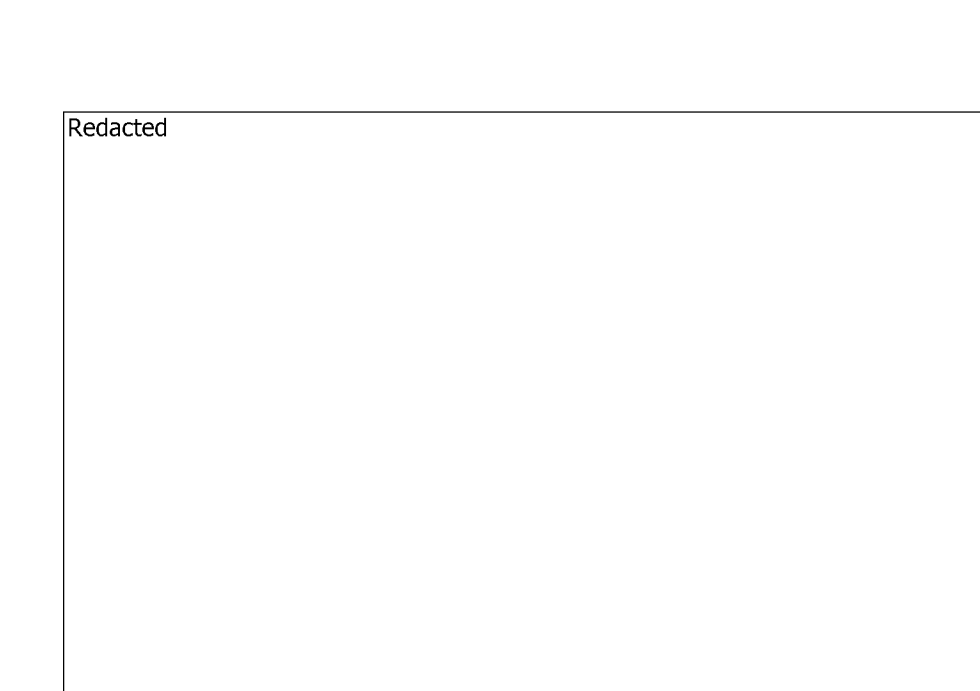
DETAIL 10D WELD DETAIL
 NOT TO SCALE SHTS 3&4 GS&S D-22, FIG. 2



DETAIL 12 GS&S K-41
 NOT TO SCALE SHT 3,6



DETAIL 13 ETS LEADS
 NOT TO SCALE SHTS 3&6 GS&S 0-10, FIG.1 (TYPE A)



DETAIL 14 FILL LINE STREET CROSSING
 SCALE: 3/4" = 1'-0" SHT 2 TYPICAL

DETAIL 15 R/W TRENCH
 NOT TO SCALE TYPICAL

TEST A-B

JOB NO. 41497358
 BOM # 103

DESIGN CRITERIA

LOCATION CLASS 3

DESIGN FACTOR 0.50

FDP 300 PSIG 18.46 % SMYS
 MAOP 300 PSIG 18.46 % SMYS

STRENGTH TEST PRESSURE

MAX. 875 PSIG 53.85 % SMYS
 MIN. 450 PSIG 27.69 % SMYS
 1463 PSIG=90% SMYS

TEST MEDIUM WATER

PIPE SPEC API 5L X-65, SAWL
 O.D. 30.00"
 W.T. 0.375"

WELD INSPECTION (GAS STD.D-40)*

RADIOGRAPHIC:

20% MIN. (% OF EACH WELDER'S 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.)

TEST B-C

JOB NO. 41497358
 BOM # 103

DESIGN CRITERIA

LOCATION CLASS 3

DESIGN FACTOR 0.50

FDP 300 PSIG 18.46 % SMYS
 MAOP 300 PSIG 18.46 % SMYS

STRENGTH TEST PRESSURE

MAX. 930 PSIG 57.23 % SMYS
 MIN. 450 PSIG 27.69 % SMYS
 1463 PSIG=90% SMYS

TEST MEDIUM WATER

PIPE SPEC API 5L X-65, SAWL
 O.D. 30.00"
 W.T. 0.375"

WELD INSPECTION (GAS STD.D-40)*

RADIOGRAPHIC:

20% MIN. (% OF EACH WELDER'S 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.)

TEST C-D

JOB NO. 41497358
 BOM # 103

DESIGN CRITERIA

LOCATION CLASS 3

DESIGN FACTOR 0.50

FDP 300 PSIG 18.46 % SMYS
 MAOP 300 PSIG 18.46 % SMYS

STRENGTH TEST PRESSURE

MAX. 700 PSIG 43.08 % SMYS
 MIN. 450 PSIG 27.69 % SMYS
 1463 PSIG=90% SMYS

TEST MEDIUM WATER

PIPE SPEC API 5L X-65, SAWL
 O.D. 30.00"
 W.T. 0.375"

WELD INSPECTION (GAS STD.D-40)*

RADIOGRAPHIC:

20% MIN. (% OF EACH WELDER'S 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.)

JOB NO. 41497358
 BOM # 216

DESIGN CRITERIA

LOCATION CLASS 3

DESIGN FACTOR 0.50

FDP 300 PSIG 2.92 % SMYS
 MAOP 300 PSIG 2.92 % SMYS

STRENGTH TEST PRESSURE

MAX. 930 PSIG 9.06 % SMYS
 MIN. 450 PSIG 4.38 % SMYS
 9240 PSIG=90% SMYS

TEST MEDIUM WATER

PIPE SPEC API 5L, GR. B, SMLS
 O.D. 1.050"
 W.T. 0.154"

WELD INSPECTION (GAS STD.D-40)*

RADIOGRAPHIC:

20% MIN. (% OF EACH WELDER'S 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.)

QM 98015 (1948)
GM 124756 (1953)

EXIST PIPE SPECS

HEADER SIZE: 30.00"

PIPE SPECS: API 5L X-52, DSAW

WALL THICKNESS: 0.375"

PRESENT MAOP: 300

% SMYS @ MAOP: 23.08

MAXIMUM ALLOWABLE PRESSURE DURING WELDING (G.S.&S. D-22)

EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.

A) (300 PSIG) WHEN WELDING ON BODY OF THE PIPE UNLESS:

B) (260 PSIG) WHEN WELDING WITHIN 3" OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE "CIRCUMFERENTIAL" AND ANY BRANCH WELD OR JOINT, OR OF LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/2 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.

QM 170283 (1968)

EXIST PIPE SPECS

HEADER SIZE: 30.00"

PIPE SPECS: API 5L X-52, DSAW

WALL THICKNESS: 0.312"

PRESENT MAOP: 300

% SMYS @ MAOP: 27.74

MAXIMUM ALLOWABLE PRESSURE DURING WELDING (G.S.&S. D-22)

EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.

A) (300 PSIG) WHEN WELDING ON BODY OF THE PIPE UNLESS:

B) (156 PSIG) WHEN WELDING WITHIN 3" OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE "CIRCUMFERENTIAL" AND ANY BRANCH WELD OR JOINT, OR OF LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/2 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.

QM 98015 (1948)

EXIST PIPE SPECS

HEADER SIZE: 24.00"

PIPE SPECS: API 5L 30000 SMYS, SMLS

WALL THICKNESS: 0.3125"

PRESENT MAOP: 300

% SMYS @ MAOP: 38.40

MAXIMUM ALLOWABLE PRESSURE DURING WELDING (G.S.&S. D-22)

EVALUATE THE FOLLOWING OPERATING PRESSURE LIMITATIONS TO DETERMINE THE MAXIMUM OPERATING PRESSURE PERMITTED DURING WELDING.

A) (300 PSIG) WHEN WELDING ON BODY OF THE PIPE UNLESS:

B) (156 PSIG) WHEN WELDING WITHIN 3" OF THE LONGITUDINAL SEAM (EXCEPT DSAW PIPE), THE "CIRCUMFERENTIAL" AND ANY BRANCH WELD OR JOINT, OR OF LAMINATIONS, ETC.) IN THE PIPE WHICH EXCEEDS 1/2 OF THE NOMINAL WALL THICKNESS IN DEPTH AND/OR 1/4 OF THE NOMINAL PIPE DIAMETER IN LENGTH.

SAFETY

SAFETY PLEDGE

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 I LOOK FOR AND ACT TO RESOLVE UNSAFE SITUATIONS.
 I HELP AND ENCOURAGE OTHERS TO ACT SAFELY.



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1	7/16/12	ISSUED FOR CONSTRUCTION-2012 UPDATE	41497358	CMB	LMK	KJC	MAC
0	9/12/11	ISSUED FOR CONSTRUCTION	41497358	RML	LMK	KJC	MAC P-13-T

APPROVED BY: QM 41497358

SUPV: DSCN

DWN: RML

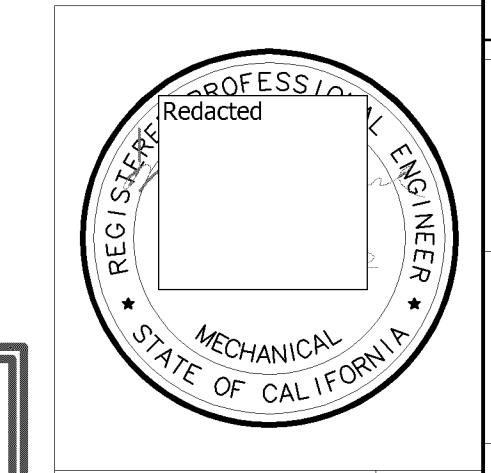
CHKD: LMK

DATE: 09/12/11

SCALE: AS SHOWN

HYDROTEST TIM-037-11
 L-132
 MP 43.6131 - 46.57
 SAN FRANCISCO, CALIFORNIA

PACIFIC GAS AND ELECTRIC COMPANY
 WALNUT CREEK, CALIFORNIA



COPY

MICROFILM

BILL OF MATL SHEET 07

DWG LIST

SUPDS

SUPSD BY

SHEET NO. 06 OF 07 SHEETS

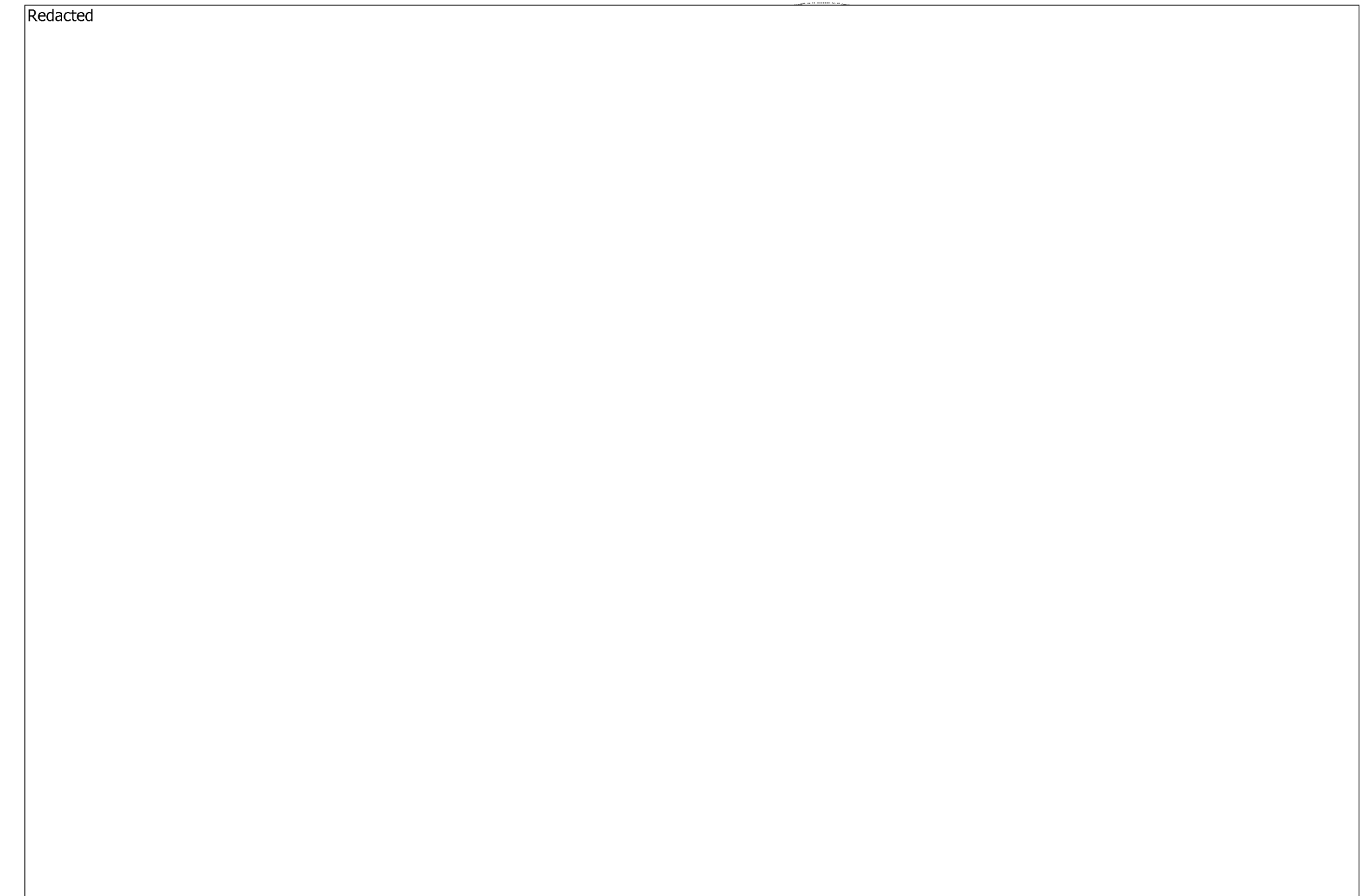
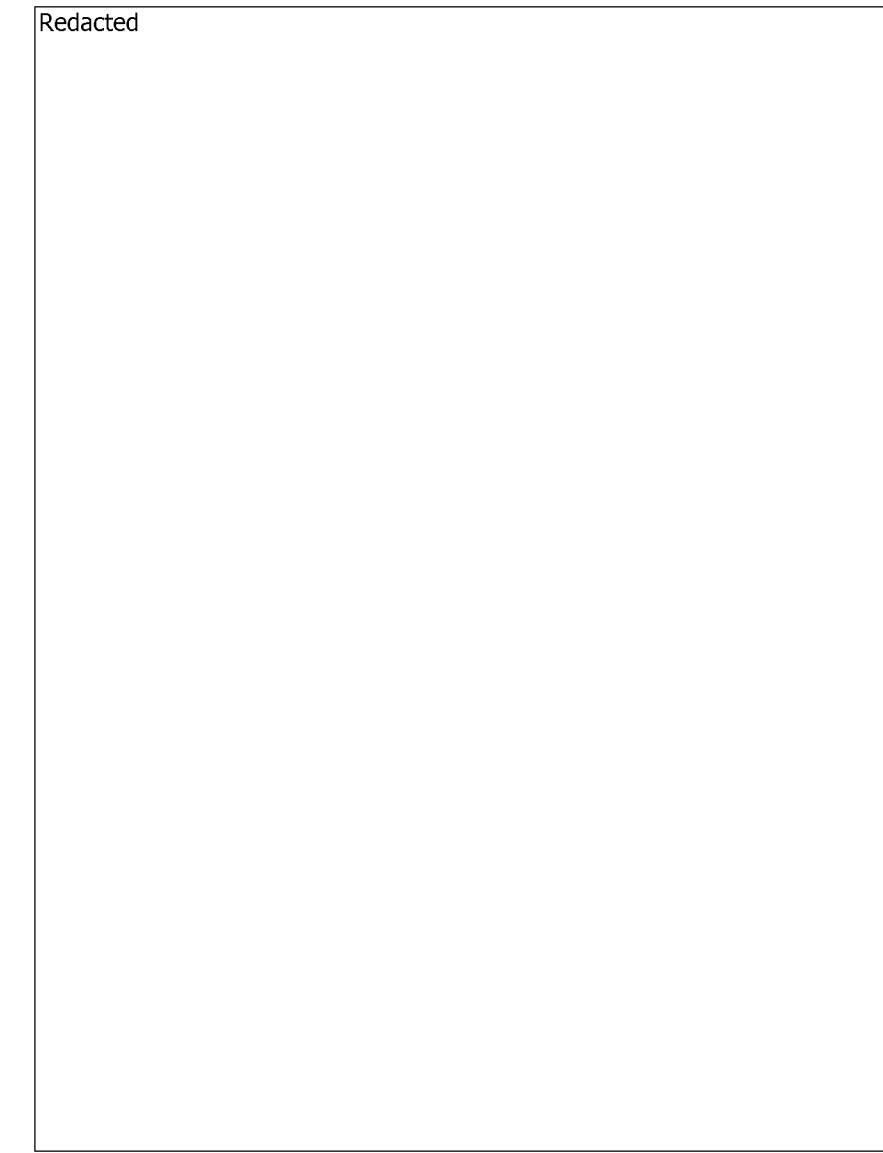
41497358 1

1 2 3 4 5 6 7 8 9 10

7/17/2012 3:03:18 PM, c4bn

MATERIAL OF RECORD			
Item Number	Description	Units	Quantity
1	Pipe, 30.00" OD x 0.375" WT, API 5L, X-52, DSAW	Ft.	14556
2	Item Removed		
3	Pipe, 30.00" OD x 0.312" WT, API 5L, X-52, DSAW	Ft.	1014
4	Elbow, 30.00" OD x 0.375" WT, GR B*, LR	Ea.	6
5	Elbow, 30.00" OD x 0.500" WT, 30000 SMYS*, SR	Ea.	10
6	Elbow, 30.00" OD x 0.375" WT, Y-52, LR	Ea.	10
7	Item Removed		
8	Sleeve, 30.75" OD x 0.375" WT, X-52	Ea.	5
9	Sleeve, 31.00" OD x 0.500" WT, X-52, Type B	Ea.	2
10	Sleeve, 30.624" OD x 0.312" WT, X-52, Type B	Ea.	4
11	Tap, 2.375" OD x 0.218" WT, 28000 SMYS*, Furnace Butt Welded* (E=0.6) (1 Each)	Ft.	8
12	Tap, 6.625" OD x 0.432" WT, Gr B, SMLS (1 Each)	Ft.	6
13	Item Removed		
14	Pipe, 30.00" OD x 0.375" WT, API 5L X-52, SMLS	Ft.	8
15	Insulating Joint, 30.00" OD ANSI 300	Ft.	2

AN ASTERISK (*) INDICATES THAT VALUES ARE TAKEN FROM THE PG&E TECHNICAL GUIDANCE SPECIFICATION FOR RESOLVING UNKNOWN PIPELINE FEATURES, PUBLISHED 08/01/11



DETAIL 15 ETS TYPE A - FRAME & COVER
NOT TO SCALE SHT 4 GS&S 0-10 FIG. 1 & K-41

DETAIL 16 COUPON TEST STATION
NOT TO SCALE SHT 3 GAS STD 0-10.2

BILL OF MATERIALS						
Item Number	Description	PG&E Material Code	Units	Quantity	Catalog or Drawing Reference	Serial Number (As Built for Pipe & HY Fittings)
103	Pipe, 30.00" OD x 0.375" WT, API 5L X-65, SAWL, FBE Coated	M011002	Ft.	100		
104	Pipe, 30.00" OD x 0.500" WT, API 5L X-60, SAWL, FBE Coated	M010869	Ft.	2	Gas STD A-15	
119	Elbow, 30.00" OD x 0.375" WT, Y-60, 90 deg, LR, per PG&E Specification 4121	M020661	Ea.	10	Gas STD B-20.2	
181	Save-A-Valve Nipple, 2"	M022289	Ea.	7	Gas STD C-14	
200	Plug, 1/2", Forged Steel, Hex Head, Threaded	M021249	Ea.	4	Gas STD B-10.1	
201	Valve, Ball, 1/2", 2000 psig MWP, Threaded Ends	M034638	Ea.	2		
202	Nipple, 1/2" x 4", API 5L GR B, SMLS, EH	M020681	Ea.	2	Gas STD B-13.1	
203	Bolt 5/8" x 3.5" Long, With Matching Nut, ANSI 300, for 2" Flange	M192684	Ea.	32	Gas STD B-46	
204	Flange, 2", RF, Blind, ANSI 300, with 1/2" Tap	M020858	Ea.	4	Gas STD B-43.2	
205	Gasket, 2", PSI Linebacker Type F, ANSI 300	M016686	Ea.	8	Gas STD B-45.1	
206	Cover, Cast Iron	M043225	Ea.	3	Gas STD K-41	
207	Valve Box Head, Concrete	M043271	Ea.	3	Gas STD K-41	
208	Valve Box Extension, Corrugated Plastic	M016063	Ea.	3	Gas STD K-41	
209	Wire, 500' Coil, #10, HMWPE With 47 Mil Thickness, 600 Volts, Solid Copper, White Insulation	M294107	Ea.	1	Gas STD O-10	
210	Wire, 500' Coil, #10, HMWPE With 47 Mil Thickness, 600 Volts, Solid Copper, Black Insulation	M294991	Ea.	1	Gas STD O-10	
211	Cartridge, Cadweld CA-15, or Thermoweld 15P, 15-Gram, 20 per Box	M159260	Ea.	1	Gas STD O-10	
212	Sleeve, Copper, Thermoweld A200 or Equivalent	M303755	Ea.	12	Gas STD O-10	
213	Tape, Royston Handy Cap, 4" x 4", 20 per Box	M562324	Ea.	1	Gas STD E-27	
214	Liquid Adhesive, Royston Roybond, 16 ounce spray can, 12 per Box	M130850	Ea.	1	Gas STD E-27	
215	1" Mueller, Valve Tee, #H-17656	M022445	Ea.	1	Gas STD C-11	
216	Pipe, 1.050" OD x 0.154" WT, API 5L GR B, SMLS, Bare	M011951	Ft.	8	Gas STD A-15	
217	Elbow, 3/4" Socket Weld, FS, 45 Deg 3000#	M022588	Ea.	1	Gas STD B-21	
218	Street Elbow, 3/4", 90 deg, 3000#, Threaded	M021353	Ea.	1	Gas STD B-12.2	
219	Valve, Ball, 3/4", 3000 psig MWP, Threaded Ends	M034282	Ea.	1	Gas STD F-20	
220	Nipple, 3/4" x 4" Long, API 5L GR B, SMLS, EH	M020688	Ea.	1	Gas STD B-13.1	
221	Needle Valve, AGCO, HIC-6		Ea.	1		
222	Plug, 3/4", 3000# Steel	M021250	Ea.	1	Gas STD B-10.1	
223	Box, 13" x 24" x 26", with Extension and Cover	M040935	Ea.	1	Gas STD K-42.1	

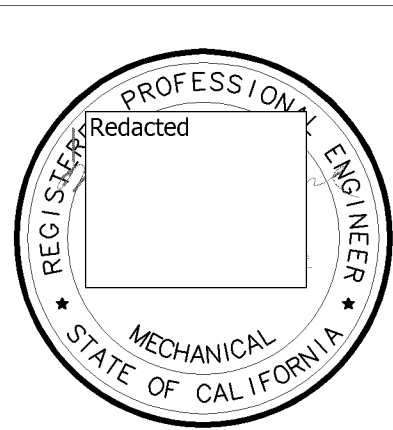
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APPROVED BY: [Signature]

DATE: 09/12/11

SCALE: AS SHOWN

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BILL OF MATL SHEET 07
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SUPSD BY
SHEET NO. 07 OF 07 SHEETS
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1