BLAST REPORT **BLAST REPORT #** WS 22

☐ Sanders Construction, Inc. ☒ Western States Drilling & Blasting, Inc.

DATE: Aug 17, 2010 EXACT TIME OF SHOT: 7:41 PM 8:06 RESHOOT

CUSTOMER: KLB JOB NO.: WS 21005

SHOT LOCATION WITH GPS COORDINATES: 1318+25 - 1319+75 TICKET NO.:

PRESPLIT & PRODUCTION CHECK LIST COMPLETED: (YES) NO

TYPE OF ROCK: BASALT FACE HEIGHT: 24 FT. POUNDS PER DELAY: 55

TOTAL HOLES:

NUMBER OF HOLES: ~~34~~ PRODUCTION HOLE DIA: 3½ BxS 8 x 8 STEMMING: 7 DEPTH: 18.6 AVG

NUMBER OF HOLES: 60 PRESPLIT HOLE DIA: 3½ BxS 30"o/c STEMMING: 5 DEPTH: AVG 20'

POWDER FACTOR: .85 LBS. OF EXPLOSIVES: ~~37~~ 2134 YARDS OF ROCK: ≈ 2500

WEATHER: CLEAR WIND: CALM

EXACT MONITOR LOCATION(GPS): NA DIRECTION OF BLAST: MONITOR TYPE:

MONITOR: L/R T V PVS Db MONITOR SERIAL NO.:

DISTANCE TO BLAST: AVERAGE POUNDS PER HOLE: OPERATOR:

EXACT MONITOR LOCATION(GPS): DIRECTION OF BLAST: MONITOR TYPE:

MONITOR: L/R T V PVS Db MONITOR SERIAL NO.:

DISTANCE TO BLAST: AVERAGE POUNDS PER HOLE: OPERATOR:

EXPLOSIVES

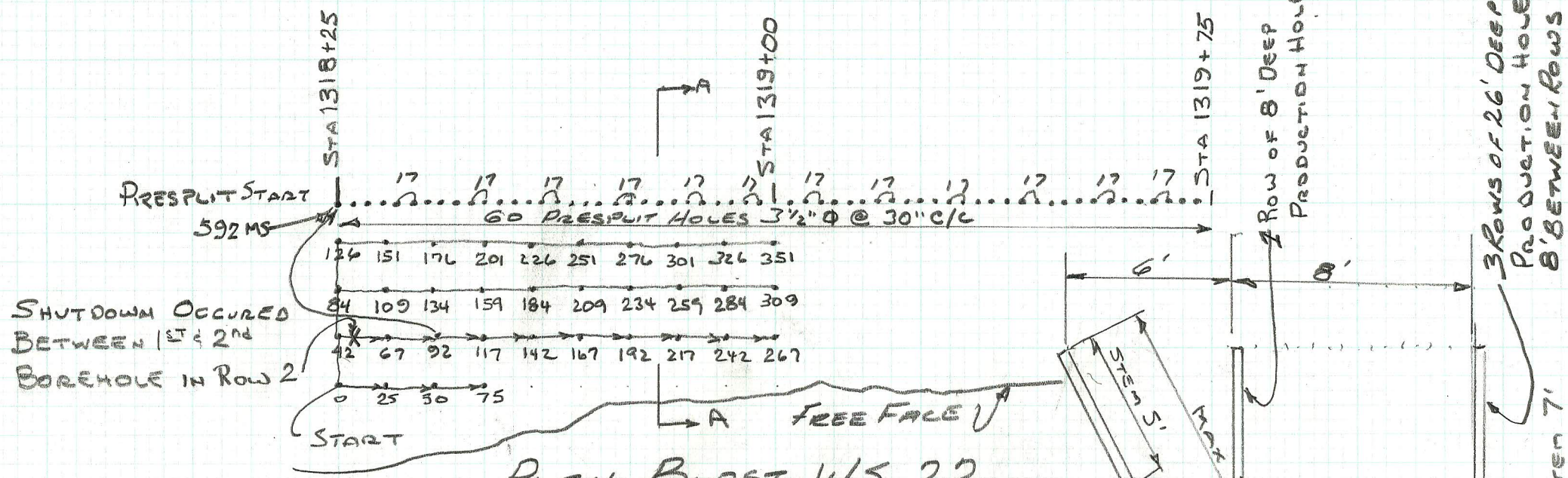
DESCRIPTION	QUANTITY USED	DATE CODE	MAGAZINE	REMOVED	RETURNED
LOCATION:					
BULK A/N	Lbs	~~JU3010~~			
BAG ANFO	37.0 Bags	JU3010			
POWDER	1¼x8 34 ea.	061128			
POWDER POWERSPLIT	5.5Cs ea.	10/01/20			
lb. BOOSTER	ea.				
lb. BOOSTER	ea.				
40 ft. HANDLOAD	34 ~~50~~ ea.	01MA10B4			
ft.	ea.				
ft.	ea.				
ft.	ea.				
ft.	ea.				
ft.	ea.				
ft. ms	ea.				
~~POWERSPLIT~~	ft.	~~10/01/20~~			
25 GRAIN CORD	250 ft.	09NO09T4			
50 GRAIN CORD	300 ft.	16FE09T4			
MISCELLANEOUS					
~~[illegible]~~ LIL	1 RL	8MA10B4			
MSC 17	3	12JA09B4			

COMMENTS:
SHOT SHUT DOWN AT SECOND HOLE IN SECOND ROW. PRESPLIT WAS CONNECTED TO SECOND ROW. PRESPLIT & SECOND ROW WERE RECONNECTED AND DETONATED SUCESSFULLY. NO LIVE HOLES WERE FOUND DURING OUR INVESTIGATION EXCAVATION

BLASTER'S SIGNATURE: [signature] LICENSE NO.: UP 21262

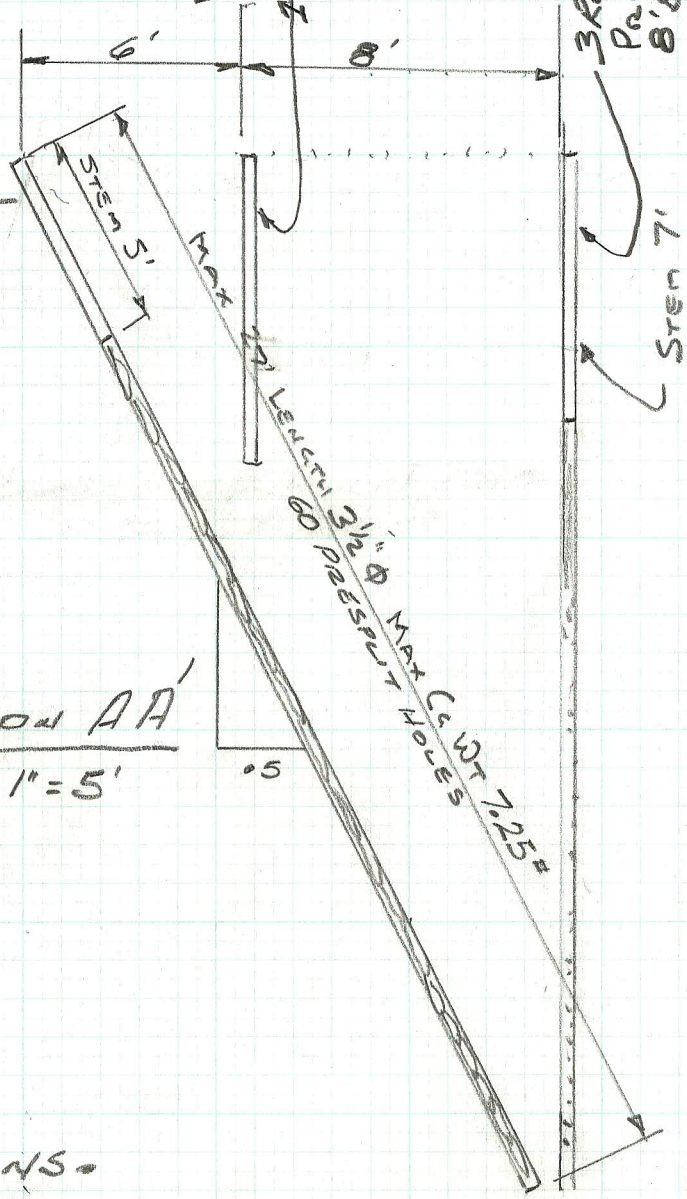
ATTACH SKETCH OF SHOT

Revised 03/04 THIS FORM MUST BE FILLED OUT COMPLETELY



PLAN BLAST WS 22

SCALE 1" = 25'



SECTION AA'

SCALE 1" = 5'

BLAST DATE: AUG 17, 2010

TIME: 7:41

NOTE: SURFACE DELAYS RECONNECTED USING NEW 25MS SURFACE DELAYS CONNECTED TO THE ORIGINAL NONEL DOWN LINES. NO LIVE DOWNHOLE CHARGES HAVE BEEN FOUND DURING POST BLAST INVESTIGATIONS.

Check List

Date Aug 17, 2010

Job Number WS 21005

Shot Number WS 22 & 23

1. BEFORE BLASTING

NOTIFICATION

- [x] Fire Department
- [x] Utilities
- [x] Businesses & Home Owners
- [NA] Seismograph Tech

Other (List)

MATERIAL & EQUIPMENT

- [x] Adequate Stemming Material
- [x] Warning Signs
- [x] Warning Signals
- [x] Safe Amount of Lead Line
- [x] Seismograph Paper, Pens, etc.
- [x] Fire Extinguishers (charged)
- [x] Adequate Blasting Shelter
- [NA] Mats (If Applicable)

SHOT DESIGN

- [x] Pattern OK for Area
- [x] Sufficient Burden to Face
- [x] Reviewed drill logs
- [x] Measured Depth, Burden & & Spacing
- [x] Shot Area Posted & Secure
- [x] Shot Diagramed on Back

2. DURING LOADING

CONSTANT CHECKS

- [x] Explosives
- [x] Running Inventory
- [x] Access Row Empty
- [x] Drills & Traffic 50' Away
- [x] Shot can be fired in case of emergency

All Holes to be checked & approved

- [CAM] Blaster initial
- [x] Supt initial

3. DETONATION

HOOK - UP

- [x] All Unnecessary Crew Cleared
- [x] All Holes Loaded & Stemmed
- [x] Hand Check tubing Before Each Connection
- [x] Visually Insured That Each Connection is Snapped

SECURE AREA

- [NA] Set up Seismograph
- [x] Est. Checkpoints at Each Access
- [x] Radio Communication with Checkpoints.
- [x] Cleared People, Vehicles & Equipment
- [x] Visual Coverage of Entire Site
- [x] Five Minute Warning
- [x] One Minute Warning

4. AFTER DETONATION

POST BLAST CHECK

- [x] Waited for Dust & Funes to Dissipate
- [x] Walked Entire Area of Shot
- [x] Insured that tail Surface Delays Fired at the End of Each Row
- [x] Sounded All Clear Signal

LEGAL DOCUMENTATION

- [x] Completed Shot Report
- [x] Diagramed Shot w/ Seismograph Location (Direction & Distance)
- [x] Recorded Seismic Results on Blast Report
- [x] Final Inventory of Explosives Recorded
- [x] Ticket Number Assigned By Job Supervisor
- [x] Signed Blast Report w/ License No.

Supt has checked and verified that all has been completed and shot area is ready for loading

[CAM] **Supt initial**

BLAST REPORT **BLAST REPORT #** WS 23

☐ Sanders Construction, Inc. ☒ Western States Drilling & Blasting, Inc.

DATE: Aug 17, 2010 EXACT TIME OF SHOT: 7:41 PM

CUSTOMER: JOB NO.: WS 21005

SHOT LOCATION WITH GPS COORDINATES: 1321+00 - 1321+75 TICKET NO.:

CHECK LIST COMPLETED: YES NO

TYPE OF ROCK: BASALT FACE HEIGHT: 10' FT. POUNDS PER DELAY: 26

TOTAL HOLES: 26

NUMBER OF HOLES: ~~26~~ HOLE DIA: ~~8~~ BxS ~~8~~ x ~~3.25~~ STEMMING: X DEPTH:

NUMBER OF HOLES: 26 HOLE DIA: 3½ BxS 8 x 8 STEMMING: 7' DEPTH: Avg 9'

POWDER FACTOR: .91 LBS. OF EXPLOSIVES: 683 YARDS OF ROCK: ≈ 750

WEATHER: CLEAR WIND: Calm

EXACT MONITOR LOCATION(GPS): DIRECTION OF BLAST: MONITOR TYPE:

MONITOR: L/R T V PVS Db MONITOR SERIAL NO.:

DISTANCE TO BLAST: AVERAGE POUNDS PER HOLE: 26.26 OPERATOR:

EXACT MONITOR LOCATION(GPS): DIRECTION OF BLAST: MONITOR TYPE:

MONITOR: L/R T V PVS Db MONITOR SERIAL NO.:

DISTANCE TO BLAST: AVERAGE POUNDS PER HOLE: OPERATOR:

EXPLOSIVES

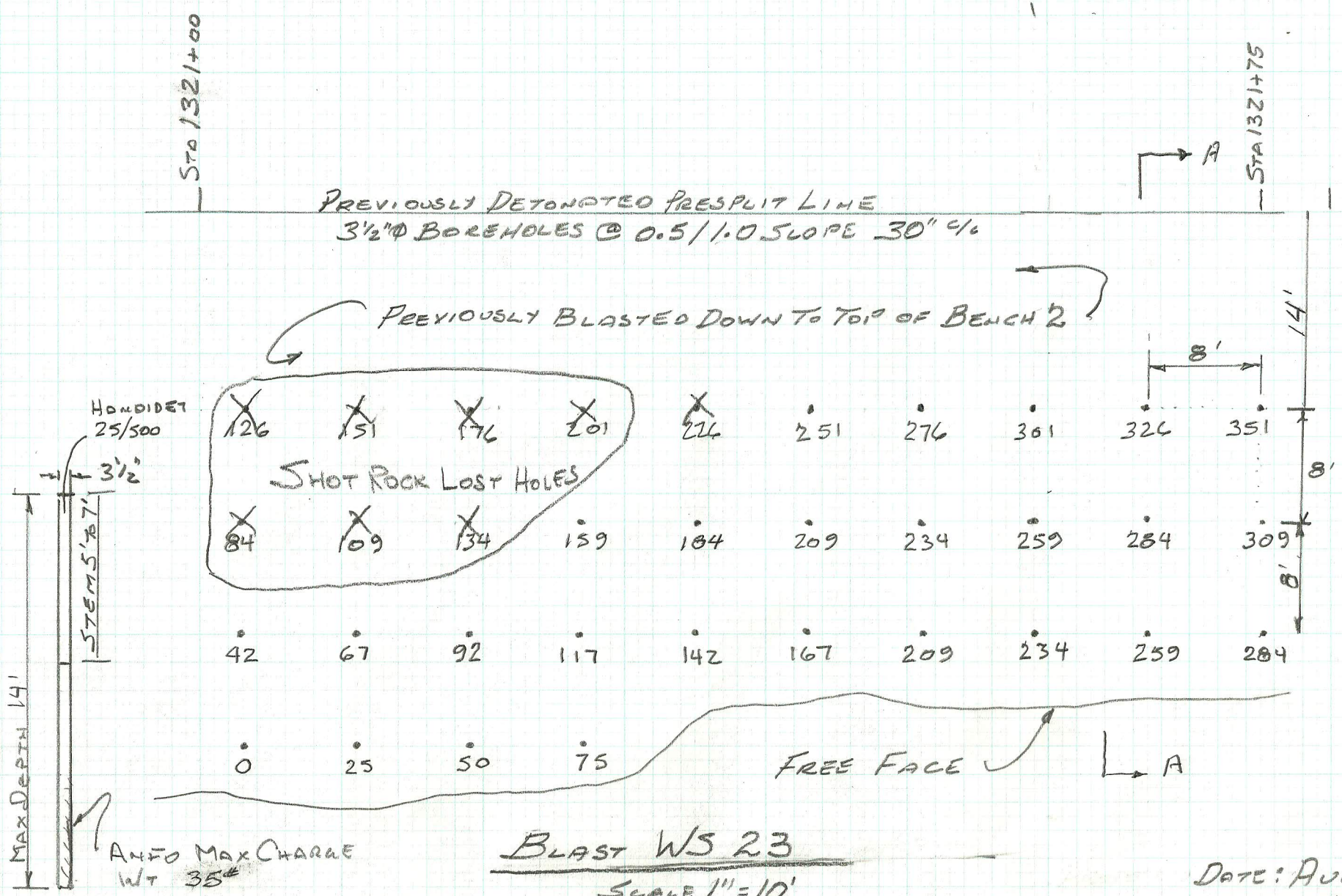
DESCRIPTION	QUANTITY USED	DATE CODE	MAGAZINE	REMOVED	RETURNED
LOCATION:					
BULK A/N	Lbs				
BAG ANFO	675# Bags	JUL 3010			
POWDER 1¼x8	26 ea.	061128			
POWDER	ea.				
lb. BOOSTER	ea.				
lb. BOOSTER	ea.				
30 ft. Hand Det	12 ea.	01MA10B4			
40 ft. " "	14 ea.	050CB4			
ft.	ea.				
ft.	ea.				
ft.	ea.				
ft.	ea.				
ft. ms	ea.				
	ft.				
GRAIN CORD	ft.				
GRAIN CORD	ft.				
MISCELLANEOUS					

COMMENTS: NOTE: SHOT WS 22 DETONATED @ SAME TIME.

BLASTER'S SIGNATURE: [signature] LICENSE NO.: UP21262

ATTACH SKETCH OF SHOT

Revised 03/04 THIS FORM MUST BE FILLED OUT COMPLETELY



TYPICAL PRODUCTION BOREHOLE

BLAST WS 23

SCALE 1" = 10'

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