PROPOSED BLASTING PLAN

Hyak Wa. I 90

Company WESTERN STATES Date SEPT 24, 2010 Shot # 45

Location of Blast PRODUCTION & PRESPLIT 1325+75 - 1327+25

Date of Blast Planned SEPT 27, Time of Blast 6:00 Rock Type BASALT

Name of Blaster CHARLES MURPHY License Number UP 21262

Direction NORTH Distance ≈ 75' Feet From I 90 WESTBOUND

# of Pre-Split Holes 61 Spacing 30" Depth 27 Slope .5/1 Charge WT 7# LF Drilled 1647

Holes 61 Burden P.S. ft Spacing 30" ft Depth 27 Diameter 3½" Stemming 5'

Holes 16 Burden 8 ft Spacing 10 ft Depth 12 Diameter 4 Stemming 7'

Holes 112 Burden 8 ft Spacing 10 ft Depth 26 Diameter 4 Stemming 7'

Rows 8 Bench Height 24 ft Yield 9196 cu/yds Subdrilling 2'

Type Stemming 5/8" CRUSHED STONE Max Weight of Explosives per Delay 80

Explosives Type and Estimated Quantity's

Anfo 9406 lbs Primer's 3/4 lbs/ea Pre-Split Powder 550 lbs

Stick Powder Type _____ Amount _____ lbs

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Hole to Hole Delay 25 MS Row to Row Delay 67 MS

Total Weight of Explosives _____ lbs Estimated Powder Factor 1.02 lbs cu/yd

Method of Initation NON ELECTRIC Type of Detonator & Delay 25/500 HANDLOET

Notes: SEE ATTACHED STANDARD BLAST COMPENENTS D, C, & B

Plan Submitted By [signature] Date SEPT 24, 2010

Note: Production blast holes will only be fired if pre-split line is blasted in combination or prior to the blast for a distance of 30 feet at the beginning and end of production blasting.

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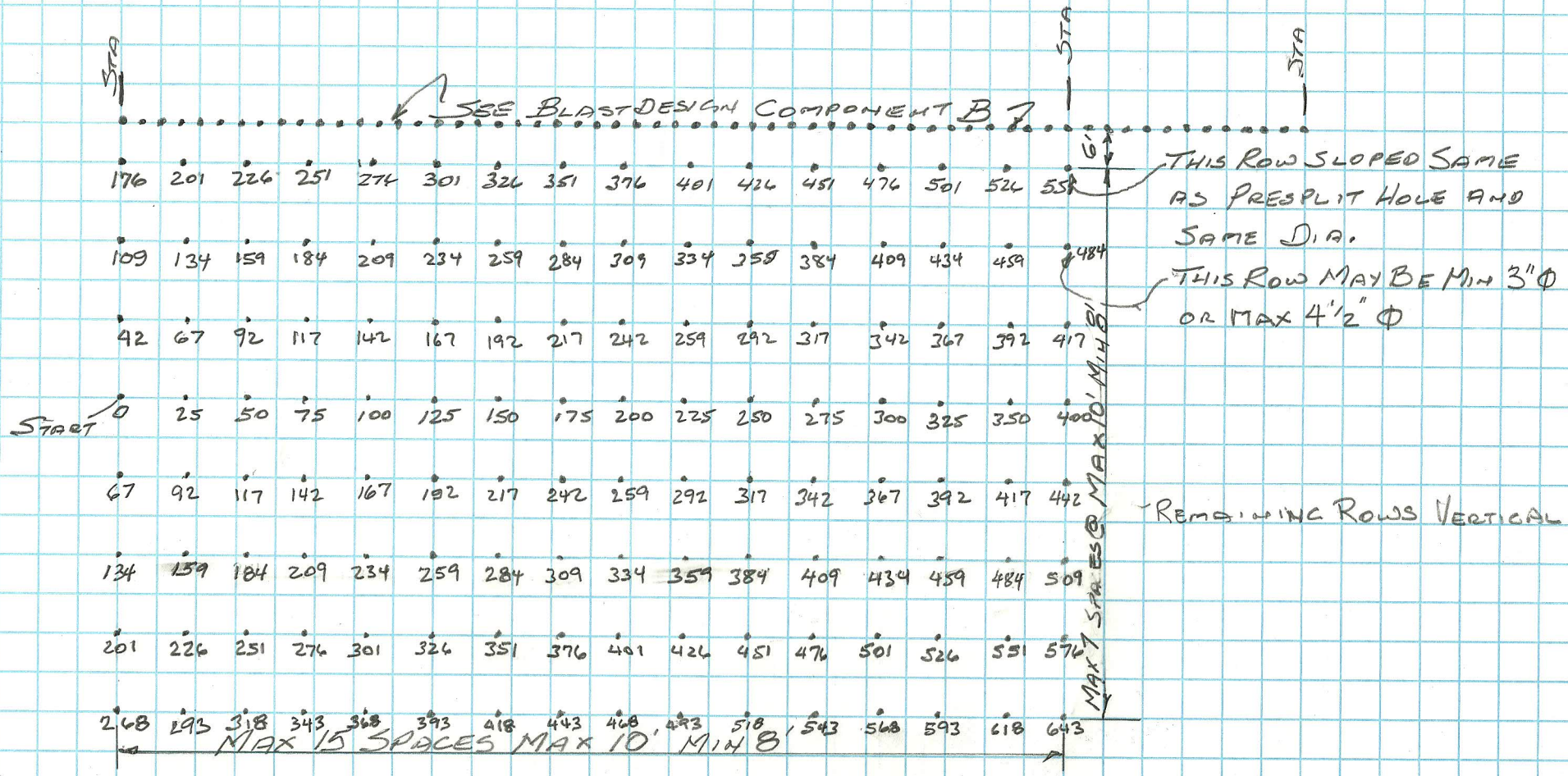
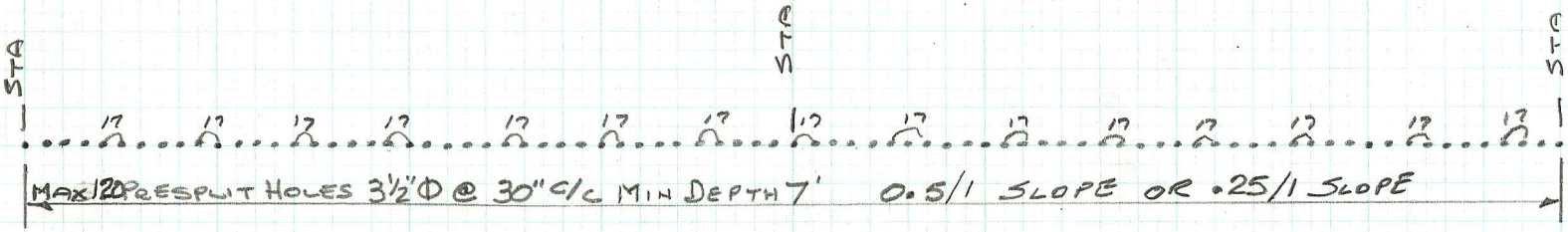


BLAST DESIGN COMPONENT D

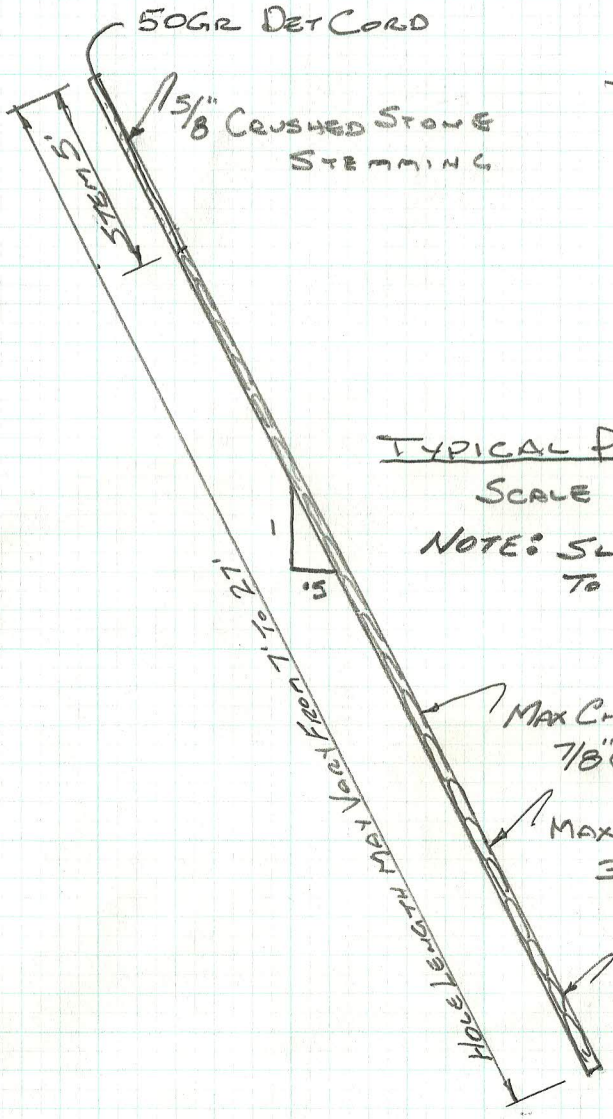
SCALE 1" = 20'

NOTE: WHEN LESS THAN 8 ROWS OF HOLES ARE USED ROWS NEAREST SHOULD BE DROPPED FROM THE TIMING PATTERN FIRST



PLAN VIEW STANDARD BLAST COMPONENT C

SCALE: 1" = 25'



TYPICAL PRESPLIT HOLE

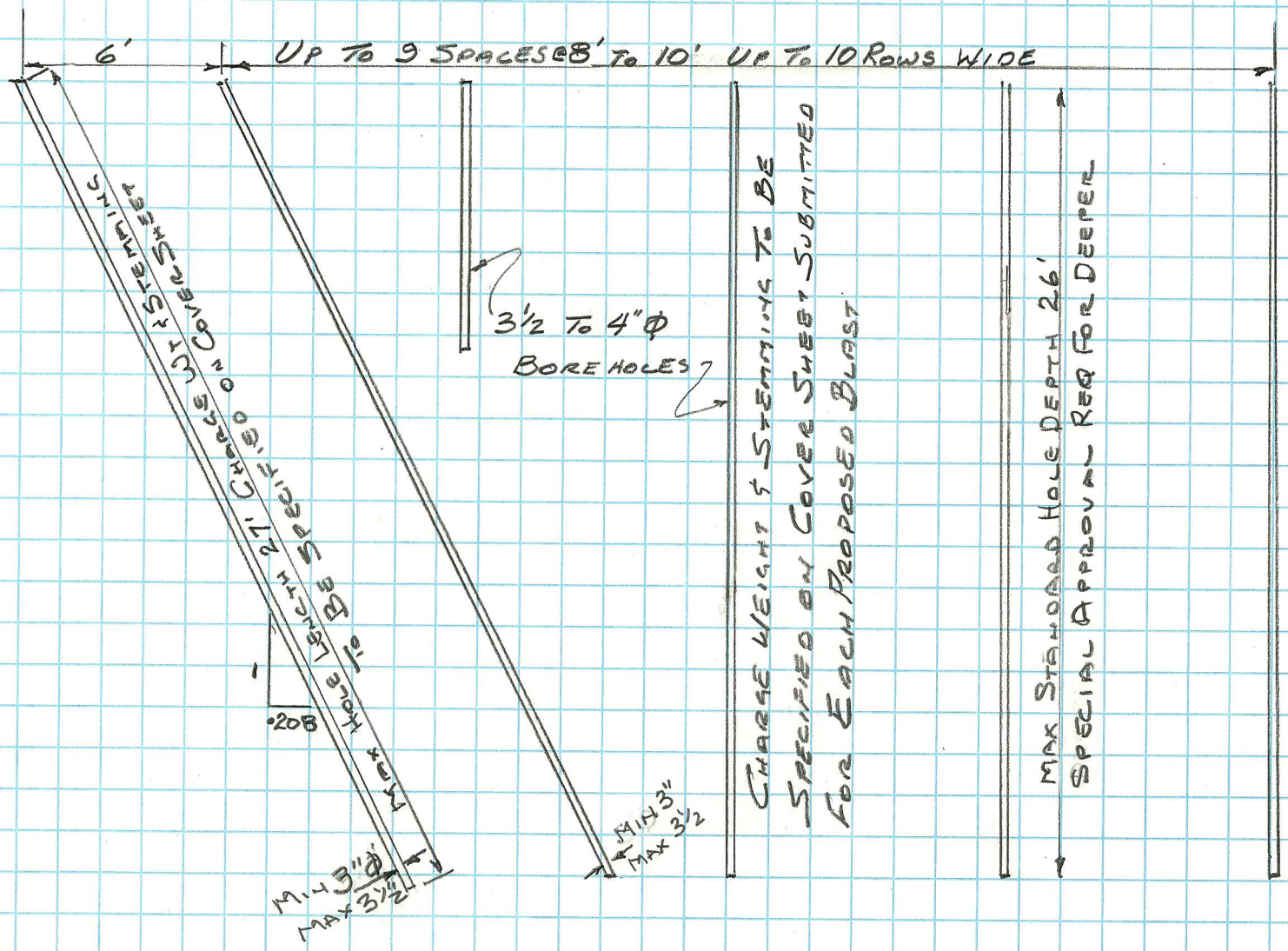
SCALE 1" = 5'

NOTE: SLOPE MAY VARY FROM .25/1 TO .5/1 (SHOWN AS .5/1)

MAX CHARGE W/T 7.1# SENETEL POWERSPLIT 7/8"Φ × 16" L

MAX 5 HOLES PER 17ms DELAY 35.6# DELAY MAX

HOLE DIA MAY BE 3"Φ IN LAPILLI TUFF OR 3½" IN WEAK BASALT



STANDARD BLAST DESIGN COMPONENT B

SCALE 1" = 5'