

STRONG-MOTION RECORDS
RECOVERED FROM THE
TRINIDAD-OFFSHORE, CALIFORNIA EARTHQUAKE
OF
8 NOVEMBER 1980

Richard D. McJunkin

Charles D. Turpen

19 November 1980

California Division of Mines and Geology

PRELIMINARY

Subject to Revision

California Division of Mines and Geology

Office of Strong-Motion Studies

2811 O Street

Sacramento, California 95816

Telephone: (916) 322-3105
ATSS 492-3105
FTS 552-3105

INTRODUCTION

The $M_L=7.0$ (University California Berkeley Seismographic Station) Trinidad-offshore earthquake occurred in the ocean approximately 72 km west-northwest of Eureka, California at 0227 Pacific Standard Time (PST) on 8 November 1980. The earthquake epicenter is located at approximately latitude 41.1°N and 125.4°W by using arrival times from sensitive seismographs owned by the University California Berkeley and Pacific Gas and Electric Company and strong-motion accelerographs owned by the California Division of Mines and Geology (CDMG), Office of Strong-Motion Studies (OSMS).

Nine CDMG-OSMS accelerograph stations were triggered and recorded the 8 November 1980 earthquake (Figure 1, Table 1). Six of these stations recorded peak ground accelerations that were 0.05 g or greater which is determined by CDMG to be significant.

All CDMG-OSMS accelerograms recording the Trinidad-offshore earthquake are presented. Maximum acceleration and respective peak with the azimuth or structural reference orientation that generates upward (positive) trace movement are noted on each significant earthquake record.

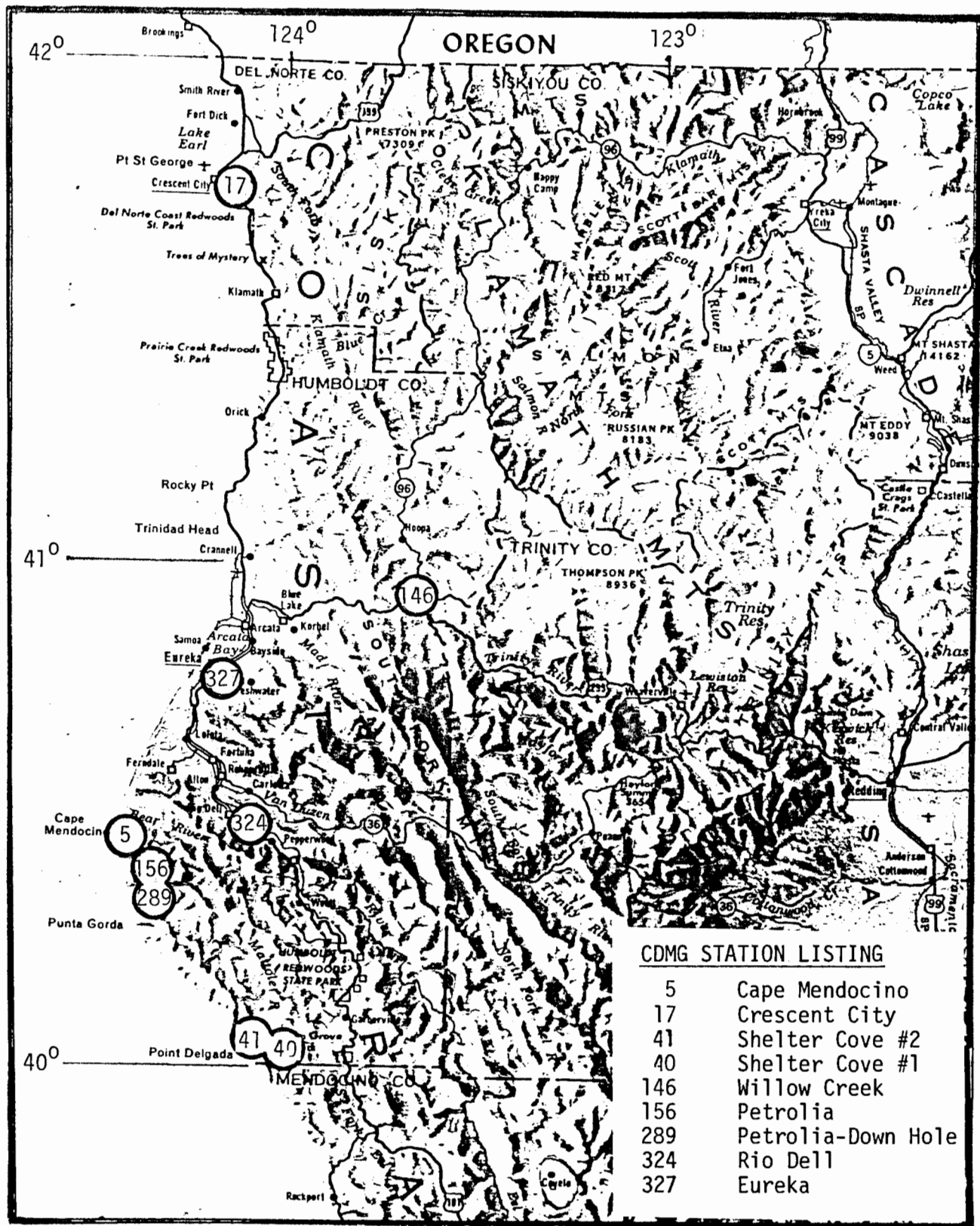


Figure 1. Locations of CDMG strong-motion accelerograph stations that were triggered by and recorded the $M_L=7.0$ Trinidad-offshore earthquake of 8 November 1980.

TABLE 1

Alphabetical listing of CDMG accelerograph stations that were triggered and recorded the 8 November 1980 $M_L=7.0$ Trinidad-offshore earthquake. A starred symbol (*) indicates that ground acceleration was less than significant.

STATION (Instrument)	ACCELERATION Azimuth/Ref. Orient. ¹	Max (g)
Cape Mendocino-T hut and Dome CDMG 5 SMA-1T (#1828; #2596)	*	*
Crescent City CDMG 17 SMA-1T (#1834)	*	*
Eureka CDMG 324 RFT-250 (#437)	78 Up 348	0.12 0.05 0.10
Petrolia CDMG 156 SMA-1T (#2597)	98 Up 08	0.07 0.02 0.06
Petrolia-Down Hole CDMG 289 CRA-1T (#116)	90 Up 180	0.07 0.01 0.07
Rio Dell-Painter Street Overpass CDMG 324 CRA-1T (#161; #138)	W Up N	0.15 0.03 0.06
Shelter Cove #1-Water Tank CDMG 40 SMA-1T (#1845)	298 Up 208	0.06 0.04 0.04
Shelter Cove #2-Power Plant CDMG 41 SMA-1T (#1848)	226 Up 136	0.11 0.04 0.16
Willow Creek CDMG 146 SMA-1 (#1703)	*	*

¹ Azimuthal or structural reference direction for upward (positive) trace deflection on accelerogram.

Cape Mendocino (T-Hut) CDING 5
SMA-1T (#2596)

Cape Mendocino (Dome) CDING 5
SMA-1T (#1828)

Crescent City CD'IG 17
SIM-1T (#1834)

EUREKA NIFA

Eureka CD'IG 327
RFT-250 (#437)

1 73

← 0.12 g

2 Up ← 0.05 g

3 348

← 0.10 g

Petrolia CD/IG 156
SMA-1T (#2597)

1 98 0.07 g

0.07 g

1 98

2 Up

0.02 g

3 08 0.06 g

3 08

0.06 g

Petrolia (Down Hole) CDMG 289
CRA-IT (#116)

1 90

← 0.07 g

2 Up

← 0.01 g

3 180

← 0.07 g

4 90 (non operational)

5 Up

6 180

7 90

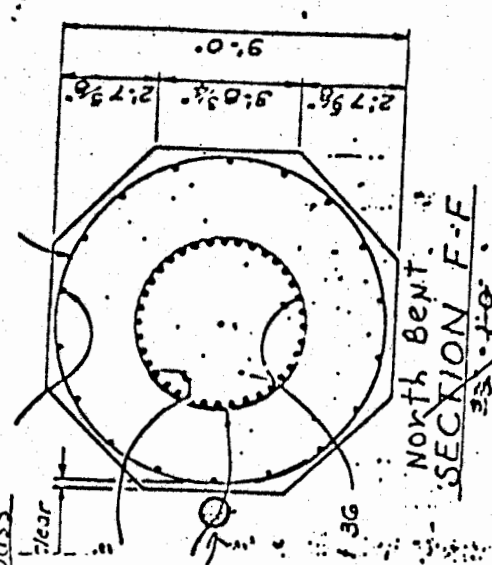
8 Up

9 180 (non operational)

Grade paving

Slope paving

North side of Overpass
(Not to scale)



1 1/2" Conduit

PVC conduit (underground approx. 1ft.)

Freeway Median

Note: Freefield inst.

200ft.

22'-0.977 ROC E Line
20'-0.000 POT FINISH

Sketch
33'-5.5' 25' Lt

Top of cul

Top of cul

Top of fill

Top of fill

Note (1)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

Note (4)

- Notes:
- (1) Ground vaults (26"x13 1/2") Fiberglass, all vaults are sealed with FBA-3 Pak. Inside (Triaxial accelerometers) - vaults set with concrete ground
 - (2) Armco type Building, with door to East, Located inside
 - is 2 - CR-1's (Recorders), 1 - FBA-3, 1 - VS-1 (vertical starter)
 - 1 - interconnect Box pnd, 1 - CS-60 (W WVB Receive)
 - (3) Conduit outlet Boxes (sealed)
 - (4) used 1 1/2" EMT Conduit

Rio Dell (Painter Street Overpass) CDMG 324
CRA-1T (#161)

Note: Orientations refer to structural reference where North=1°37'.

1 N

2 Up

3 N

4 N

5 Up

6 Up

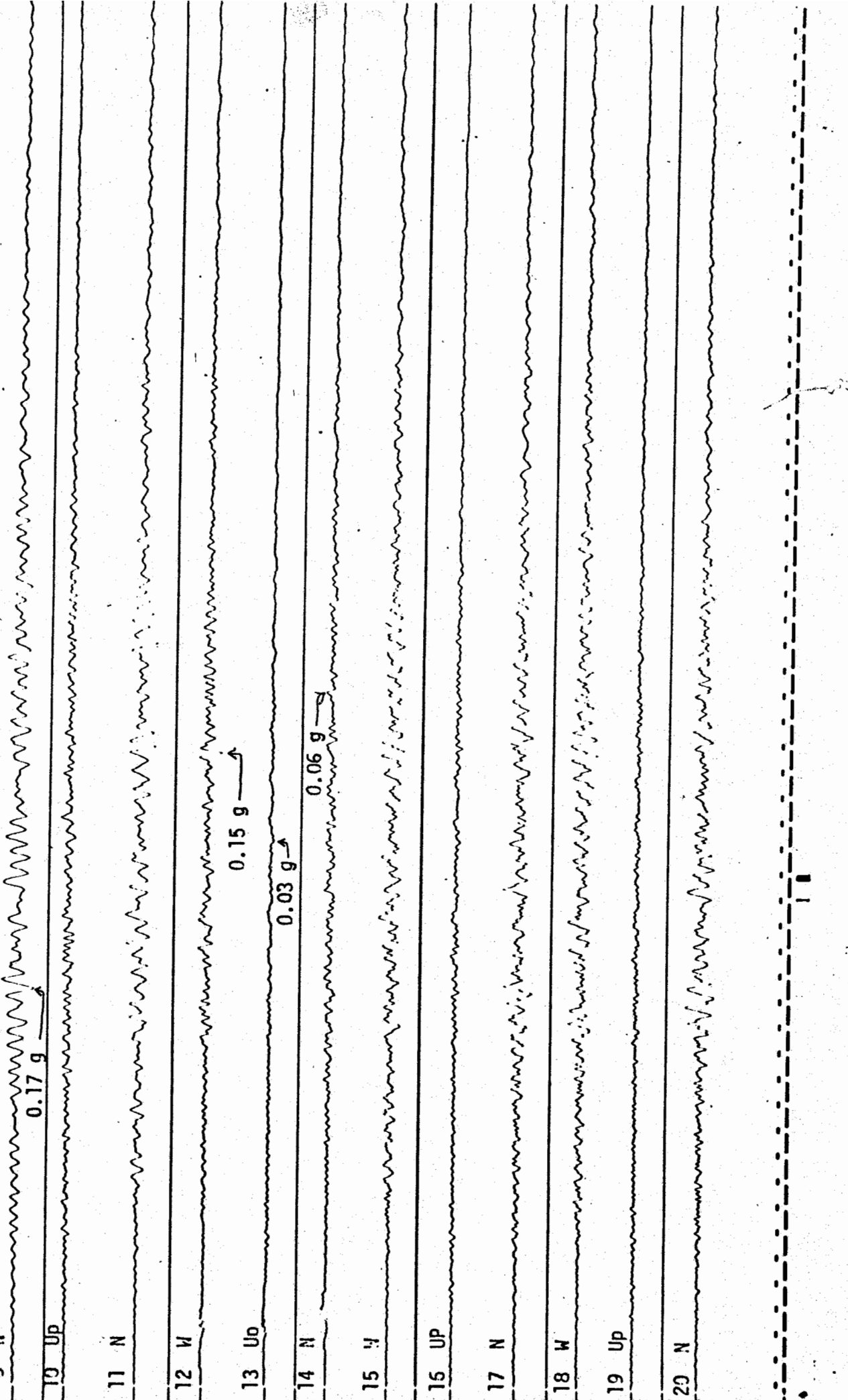
7 N (non operational)

0.32 g →

8 Up

Rio Dell (Painter Street Overpass), CDIG 324
CRA-IT (#138)

Note: Orientations refer to structural reference where North=1°37'



Shelter Cove #1 (Water Tank) CD#G 40
SMA-1T (#1845)

1 298

0.06 g

2 Up

0.04 g

3 208

0.04 g

Shelter Cove #2 (Power Plant) CD#G 41
SMA-1T (#1843)

1 225

0.11 g

2 Up

0.04 g

3 136

0.16 g

Willow Creek CDMG 146
SMA-1 (#1703)

1 1 2011