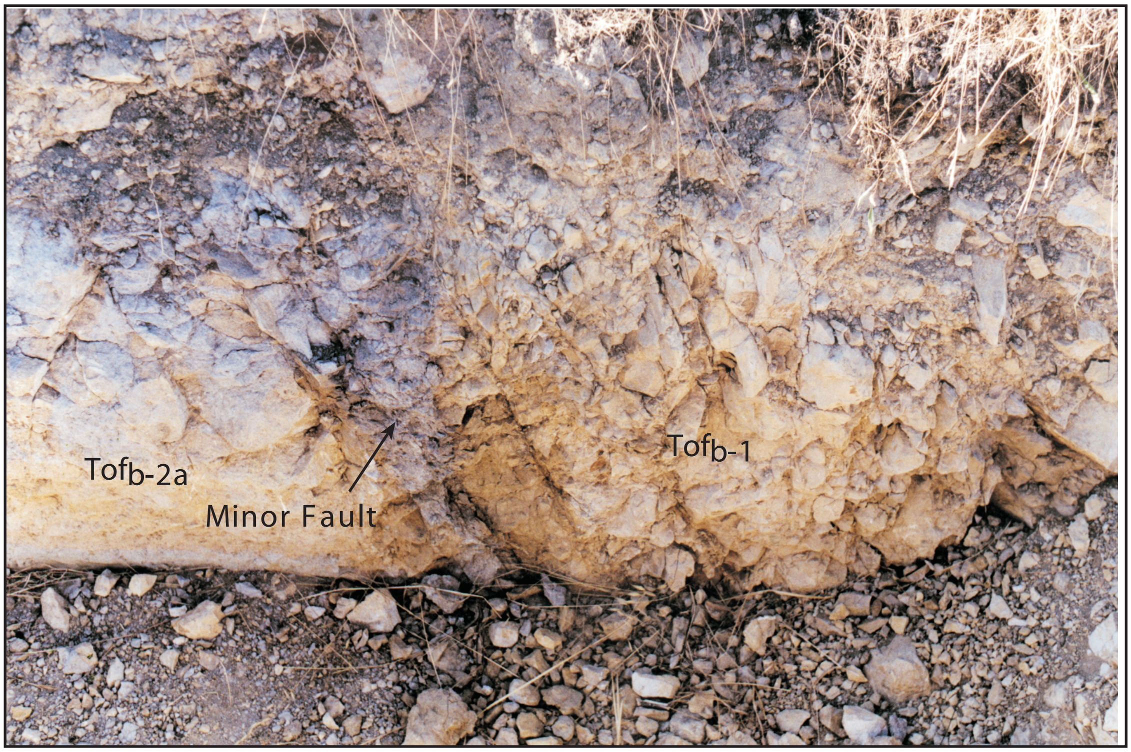
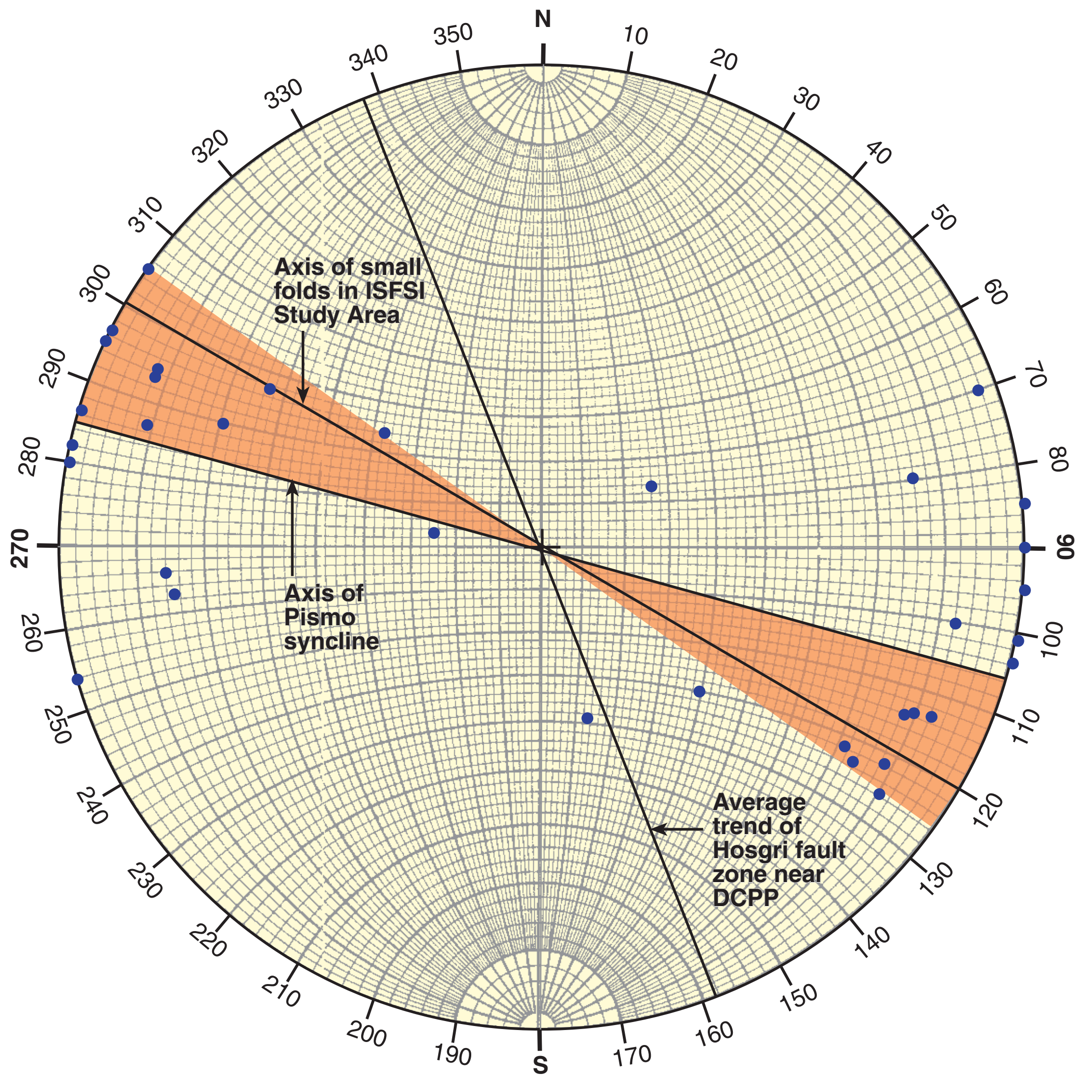


Minor fault in trench T-1 juxtaposing friable sandstone (Tof_{b-2a}) on left against dolomite (Tof_{b-1}). Photo roll JLB-2.

FSAR UPDATE

DIABLO CANYON ISFSI

FIGURE 2.6-28
MINOR FAULT IN TRENCH T-1

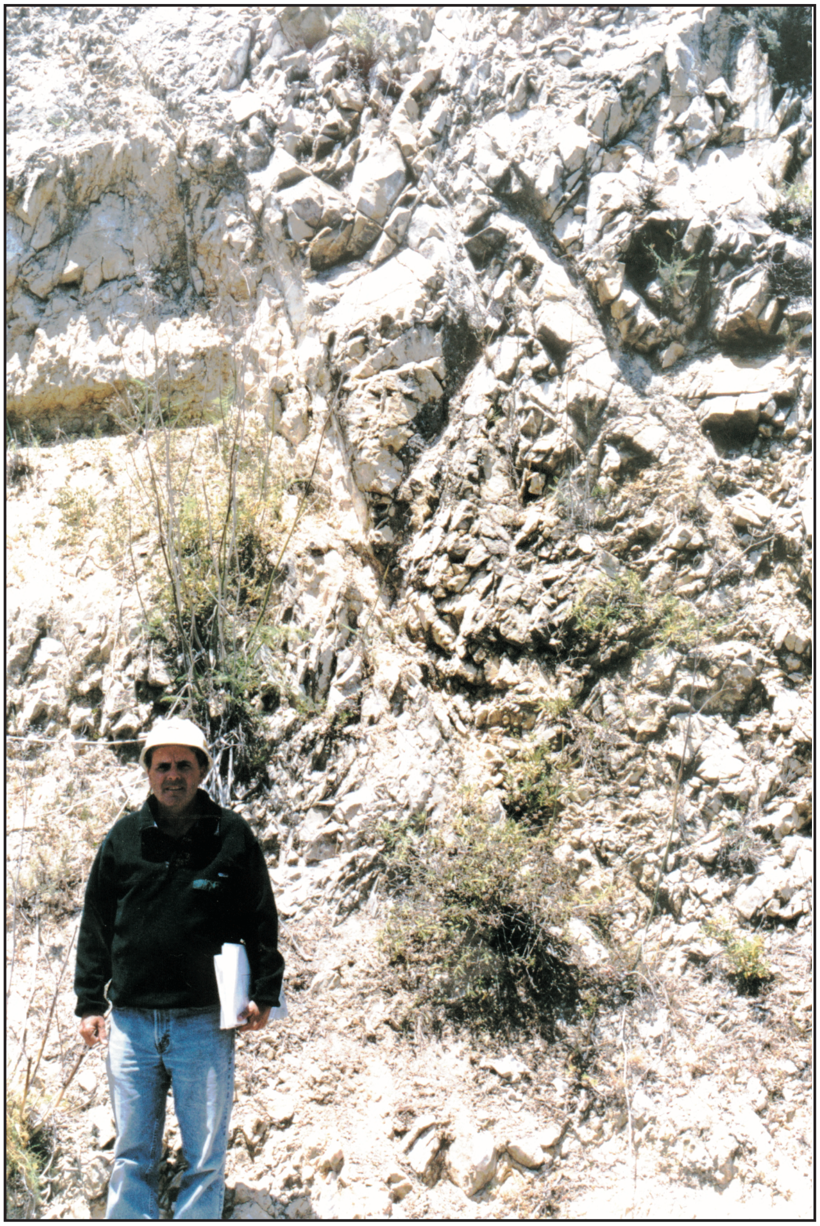


Explanation

- General range in strike of zone of minor faults.
- Rake of slickenside on fault plane of minor faults

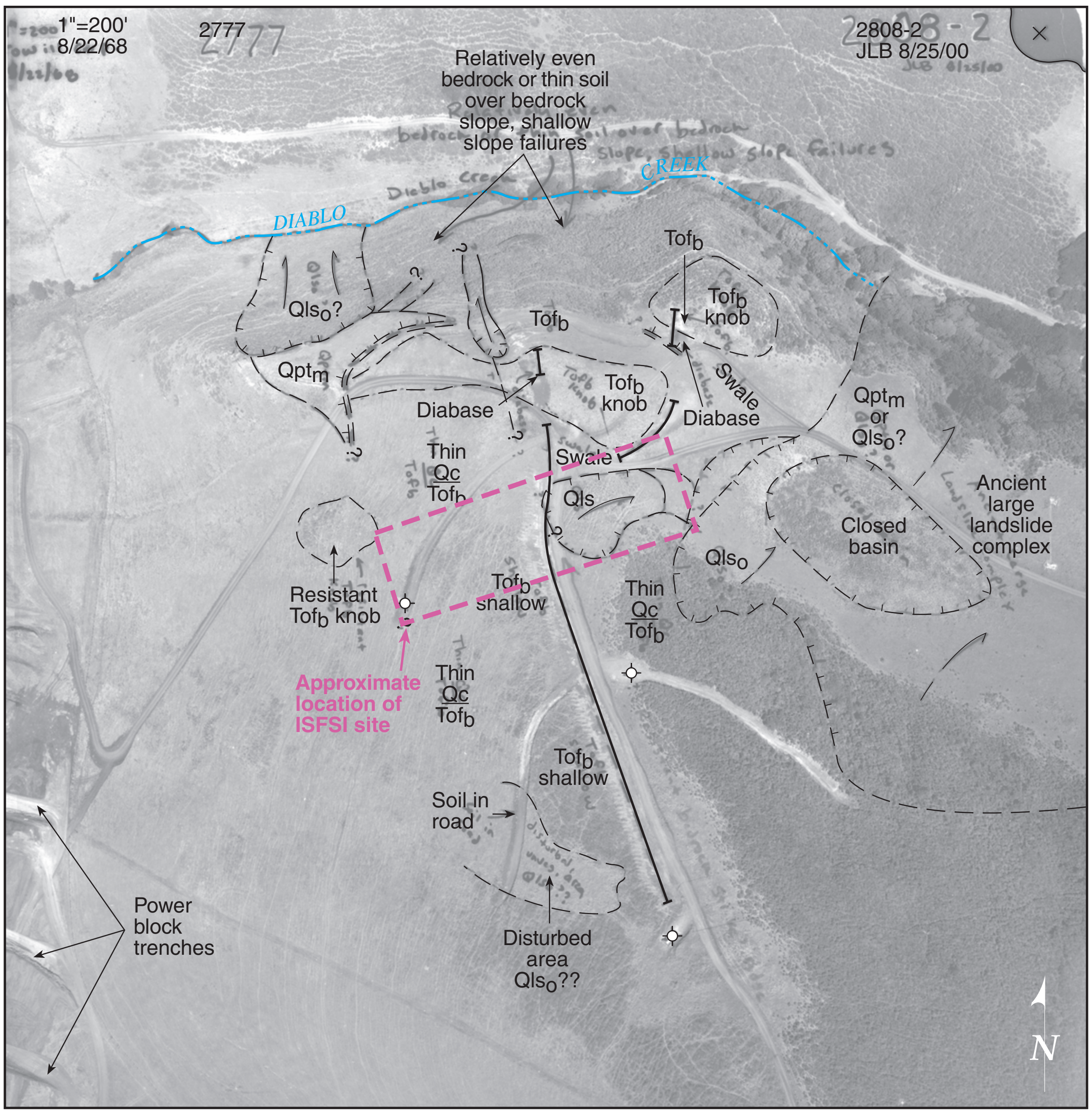
Equal-angle lower hemisphere plot.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-29 COMPARISON OF ORIENTATIONS OF MINOR FAULTS AND FOLDS IN THE ISFSI STUDY AREA WITH OTHER STRUCTURES

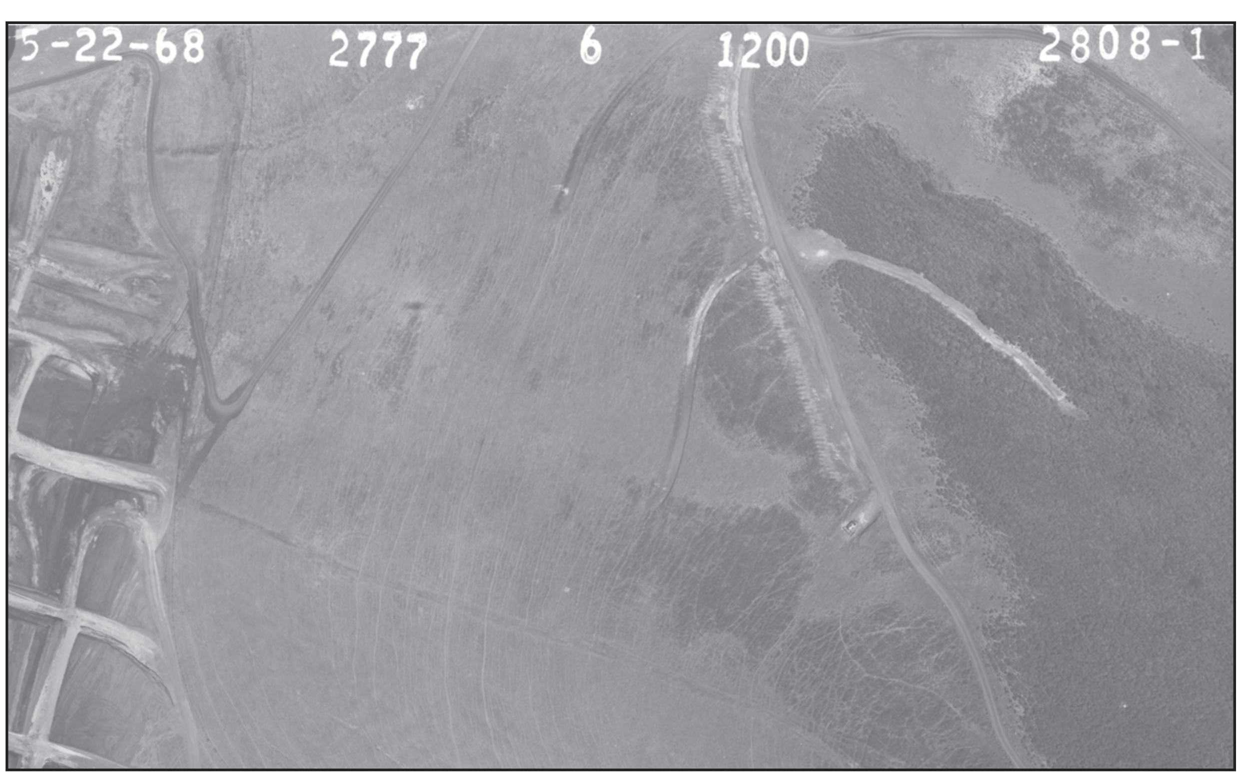


Northward view of Diablo Creek Road cut showing steeply dipping minor faults in dolomite of unit Tof_{b-1}. Slickensides and mullions on the fault plane indicate primarily strike-slip displacement, but bedding also suggests a component of down-to-the- east vertical separation of approximately 3 to 6 feet. These faults are located along projection of faults exposed in trenches at the ISFSI, approximately 800 feet to the southeast, that have similar strike and slickenside/mullion rakes. Photo roll JLB 5/16-1.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-30 MINOR FAULTS ALONG DIABLO CREEK ROAD



1968 stereo air photos (2777; 2808-1 and 2808-2) of ISFSI study area prior to the 1971 excavation of the borrow site. Diablo Creek traverses the upper (northern) part of the photo. Trenches for the power block are evident in the lower left. The road that follows the ridge crest in center of photo was removed during 1971 excavation of the borrow area. No features indicating deep seated landslides are present at the site; large landslides are evident to the east, however. The small landslide south of the word "swale" is shallow and was removed in the 1971 excavations. See Figure 2.6-7 for unit descriptions. To view with a stereoscope, fold and adjust the photos as necessary.



FSAR UPDATE

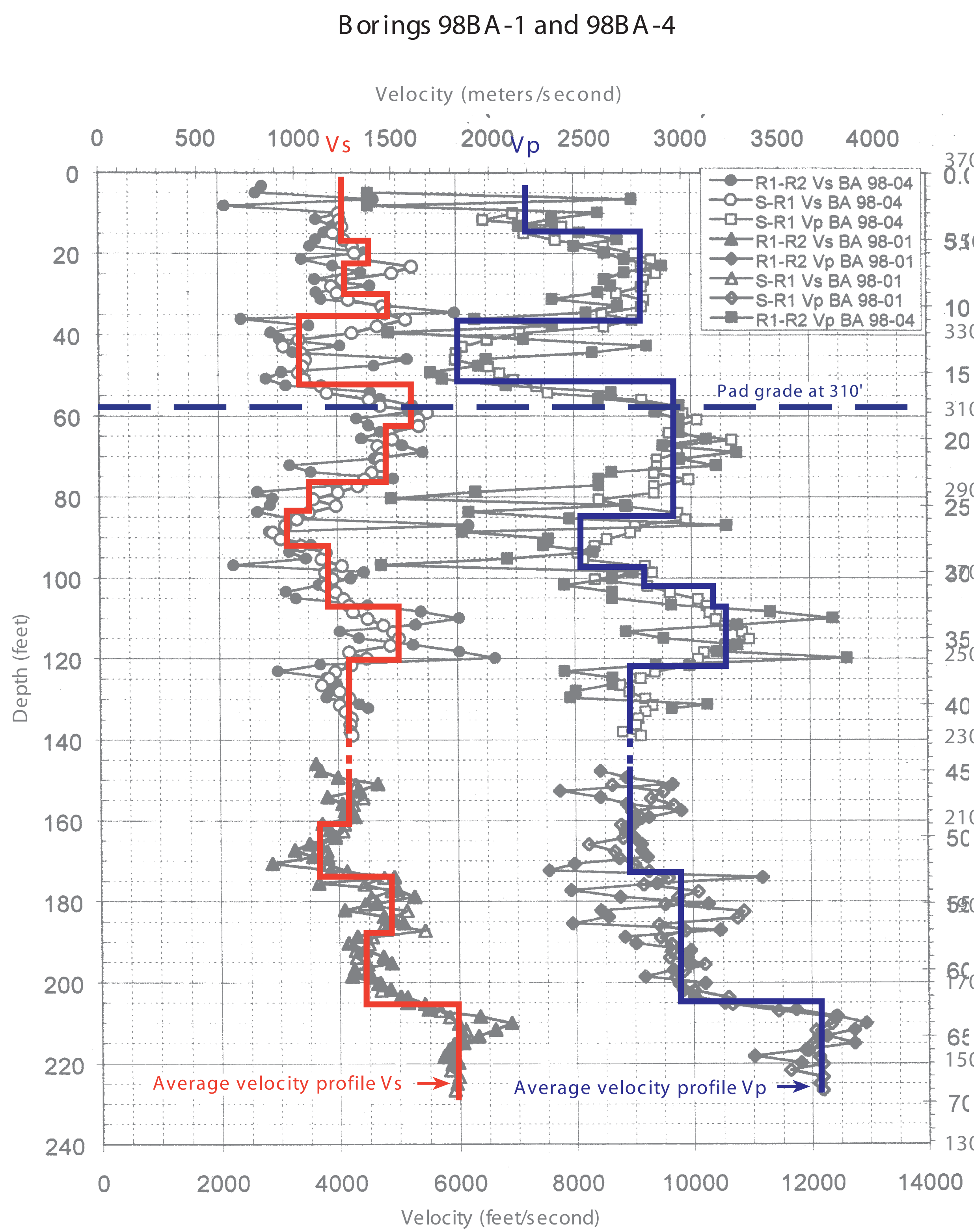
DIABLO CANYON ISFSI

FIGURE 2.6-31
1968 AERIAL STEREO PHOTOGRAPHY OF ISFSI STUDY AREA

Security-Related Information Figure Withheld Under 10 CFR 2.390.

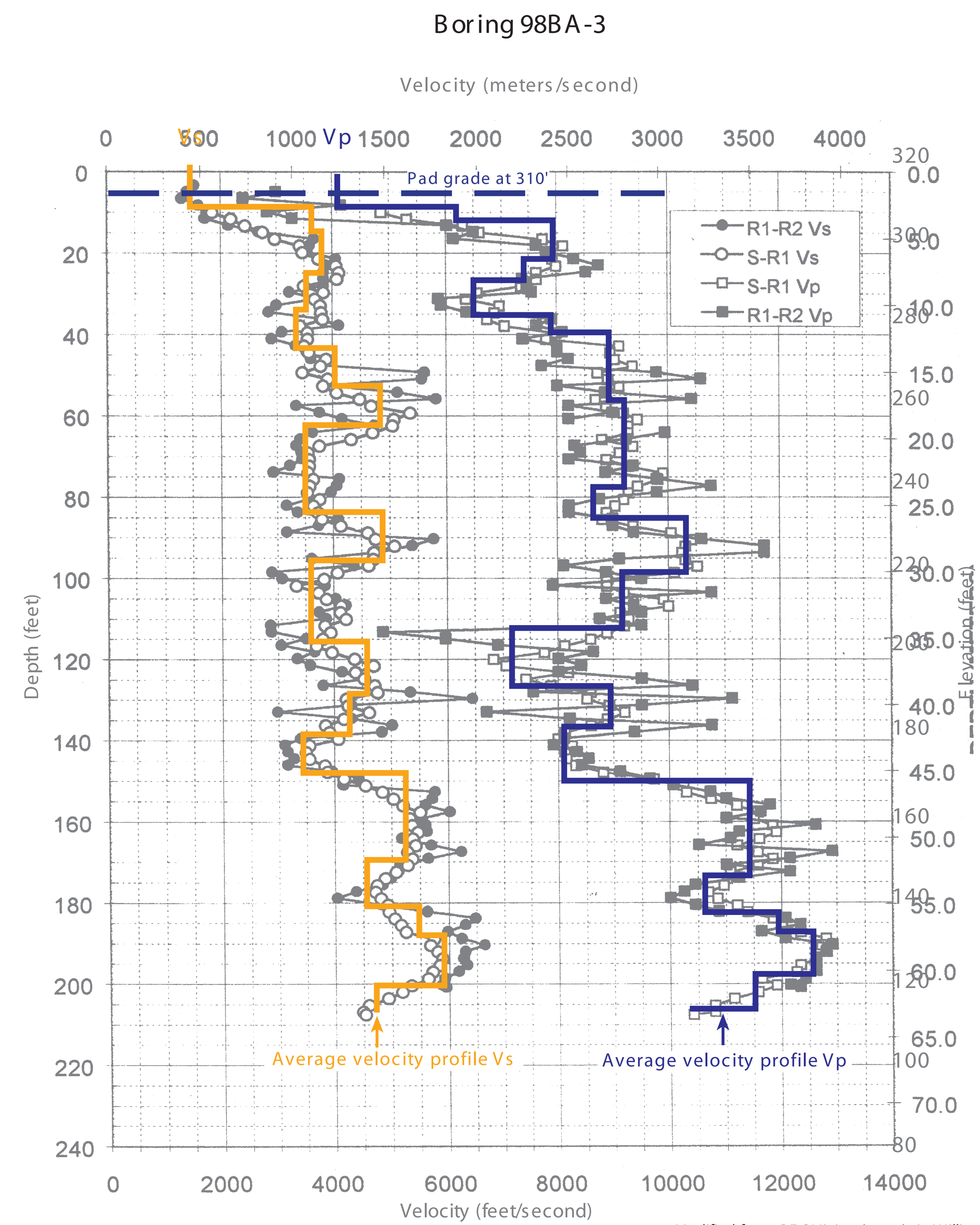
FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-32 GEOLOGY OF ISFSI AND CTF SITES AT PROPOSED FINAL GRADES

Revision 0 June 2004



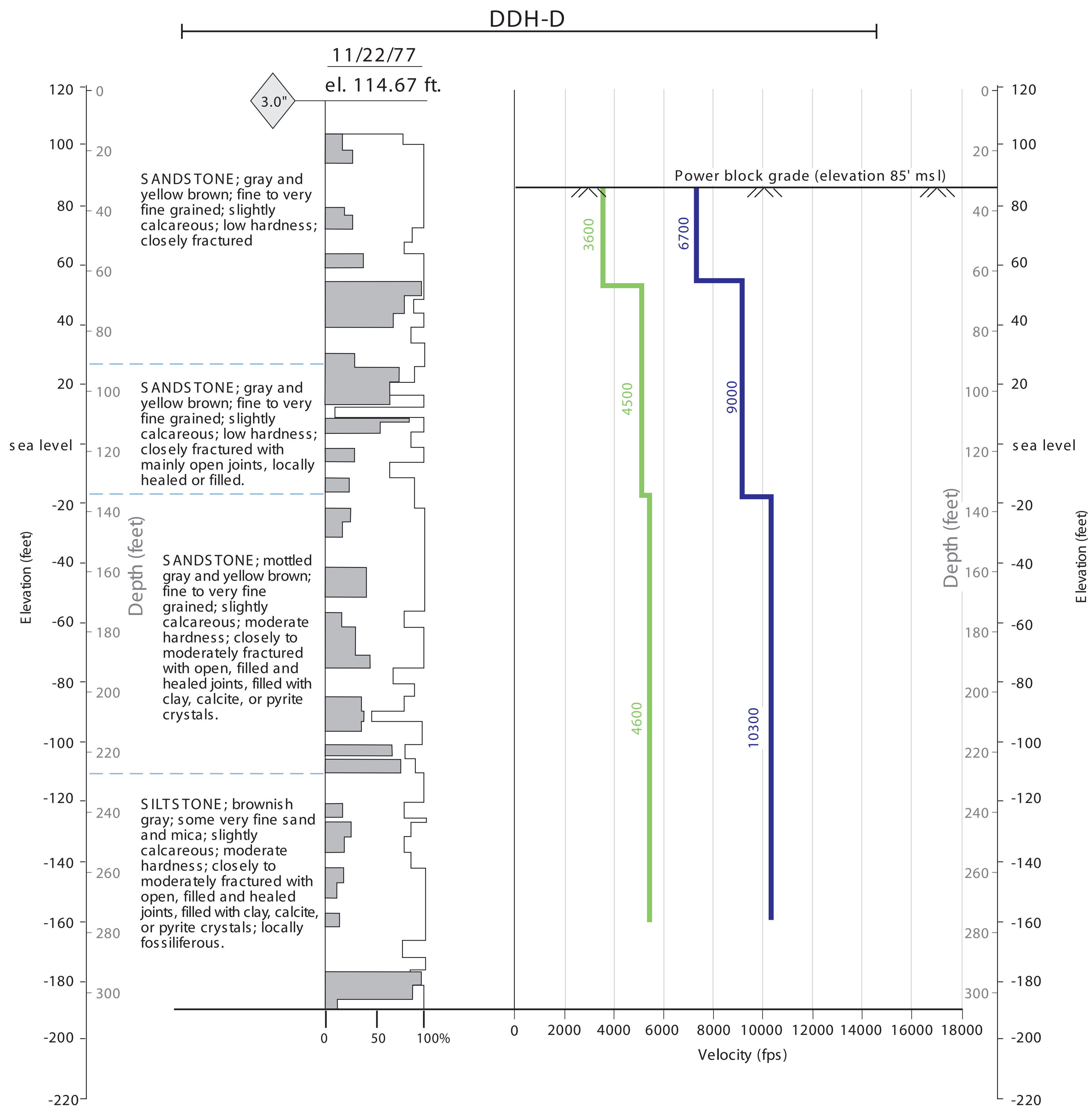
Note: Average velocity profiles interpreted from data

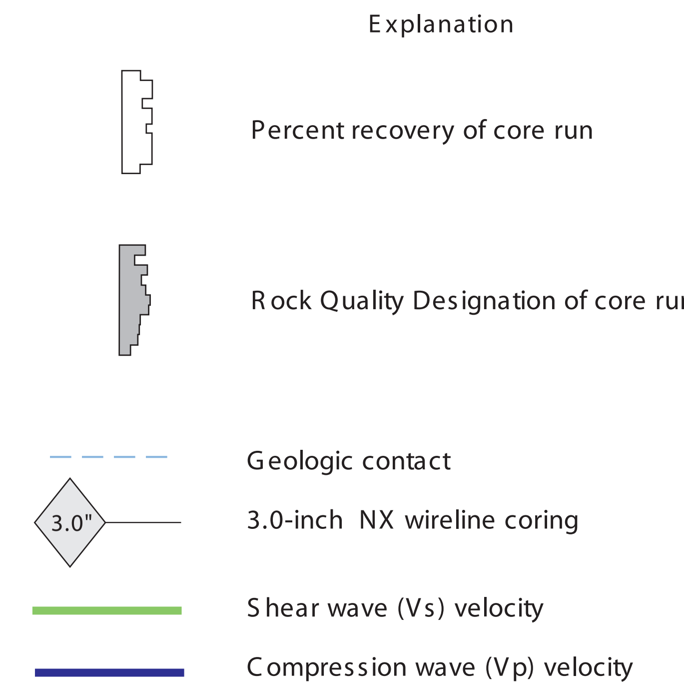
R1 - R2 = Receiver-to-receiver velocity (3.3-foot spacing)
S-R1 = Source-to-receiver velocity (10.3-foot spacing)



Modified from GEOVision (1998), in William Lettis & Assoc. Inc., 2001, DCPP ISFSI Data Report C.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-33 ISFSI SITE SUSPENSION LOGS AND INTERPRETED AVERAGE SEISMIC VELOCITIES





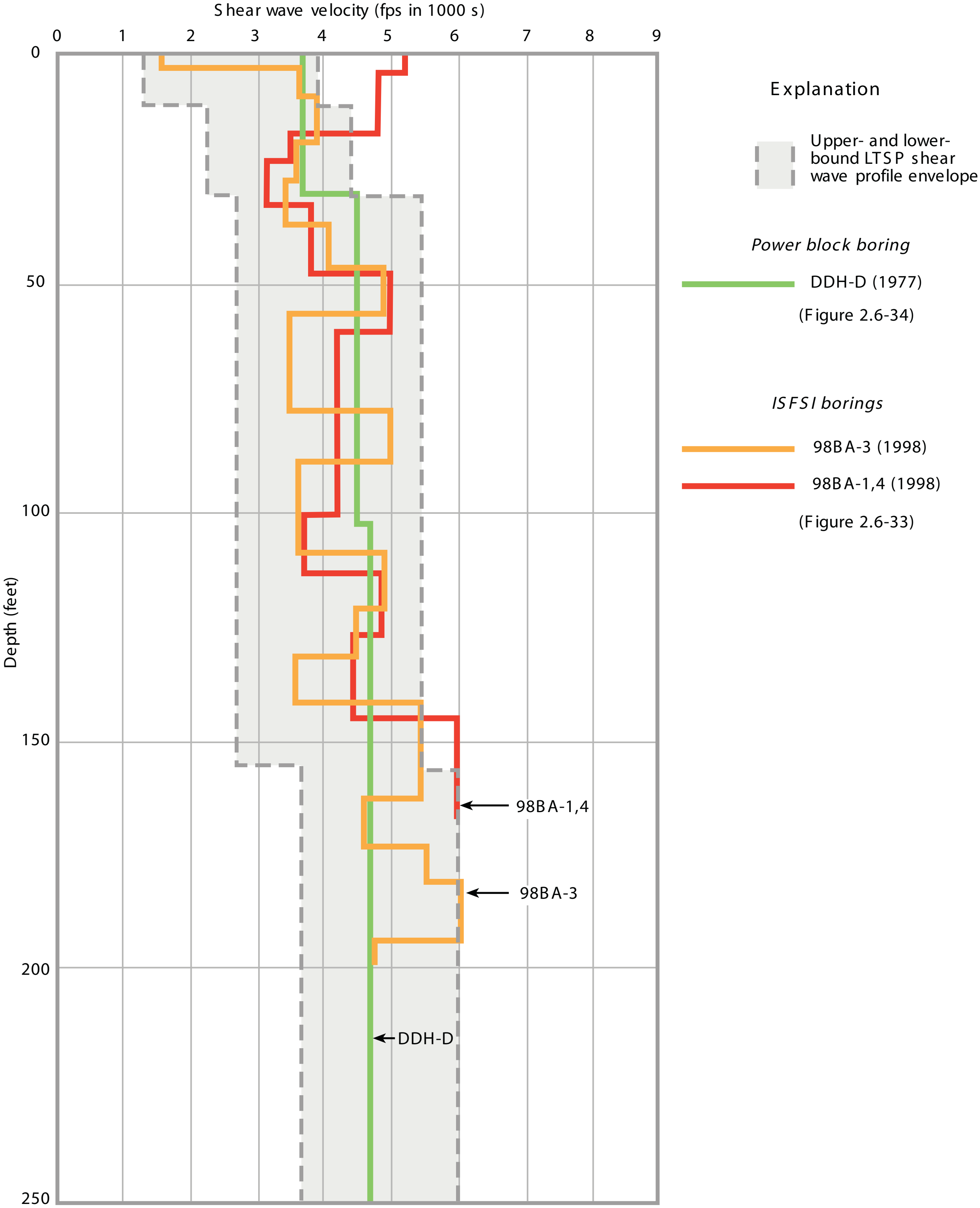
Note: Boring logged in 1977 by D.W. Frames.
Casing used for the upper 18.5 feet.
Downhole logging performed by Bruce Redpath.

Velocity profile from PG&E, 1989, Response to NRC Question 19 dated December 13, 1988.

FSAR UPDATE

DIABLO CANYON ISFSI

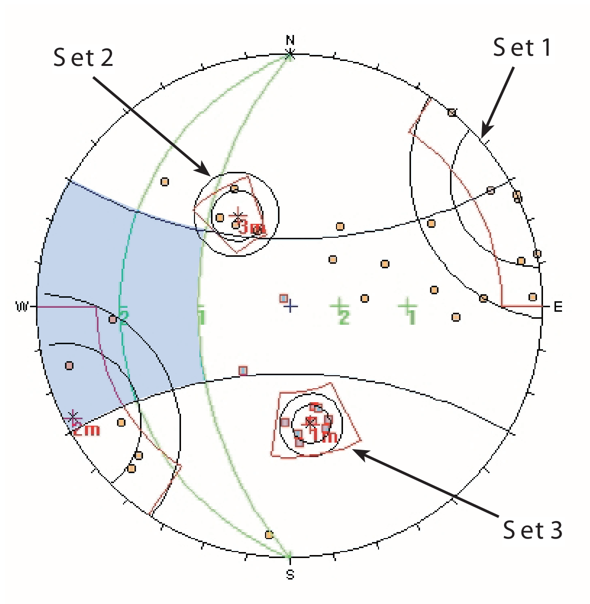
FIGURE 2.6-34
SUMMARY LOG OF
1977 POWER BLOCK BORING DDH-D



FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-35 COMPARISON OF SEISMIC SHEAR-WAVE VELOCITIES AT THE POWER BLOCK AND ISFSI SITES

Security-Related Information Figure Withheld Under 10 CFR 2.390.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-36 TRANSPORT ROUTE NEAR PATTON COVE LANDSLIDE



A. Topple hazard (moderate hazard)

Explanation

Poles

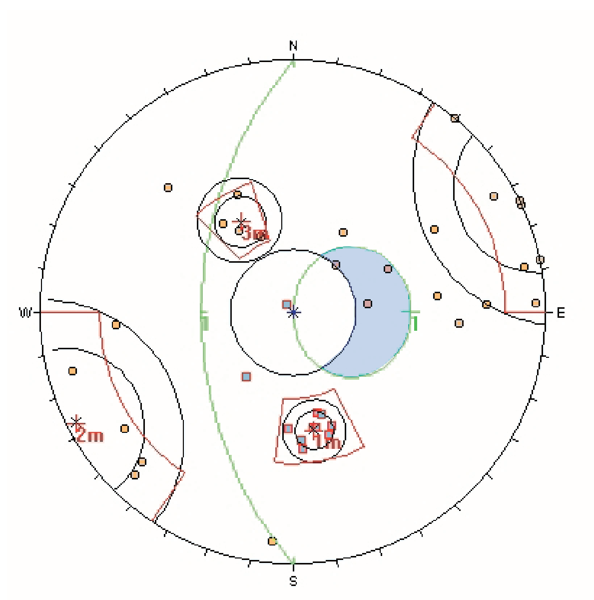
Joint

Bedding

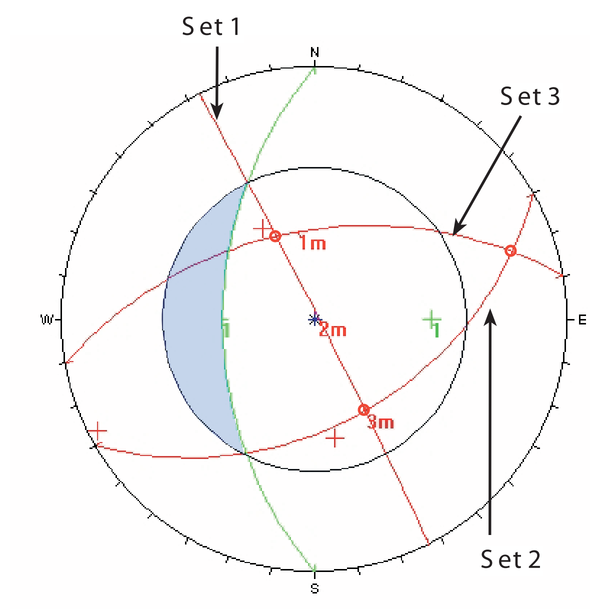
Failure envelope (based on 28 friction angle)

Failure envelope for topple and planar sliding without poles indicates stable conditions.

Failure envelope for wedge sliding without great circle intersections indicates stable conditions.



B. Planar sliding hazard (low hazard)



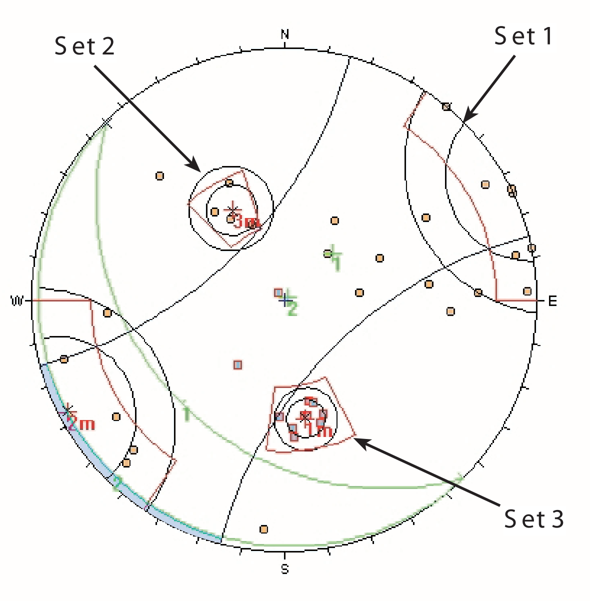
C. Wedge sliding hazard (very low hazard)

Notes

Analysis performed using computer program DIPS (Rocscience, 1999, DIPS: Plotting analysis, and presentation of structural data using spherical projection techniques, version 5.041, Toronto, 86p).

Fracture data from stations 38+00 to 45+00 applied to north-trending cutslope above Reservoir Road from stations 43+00 to 46+00.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-37 KINEMATIC ANALYSES OF NORTH-TRENDING CUTSLOPE OF TRANSPORT ROUTE (STATIONS 43+00 TO 46+00



A. Topple hazard (low hazard)

Explanation

Poles

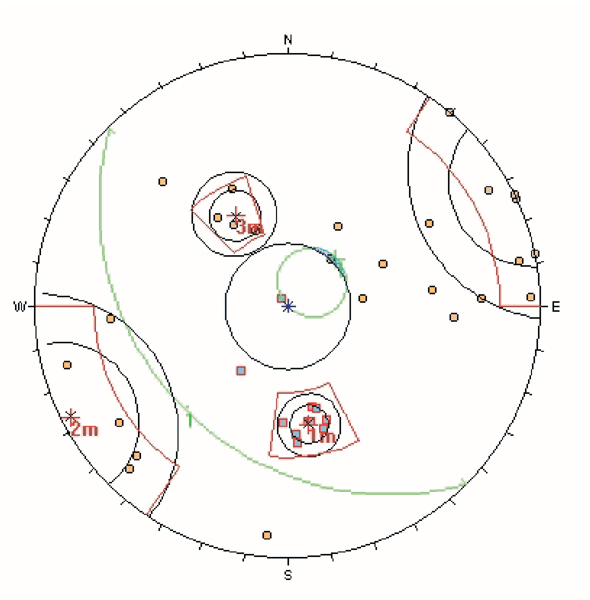
Joint

Bedding

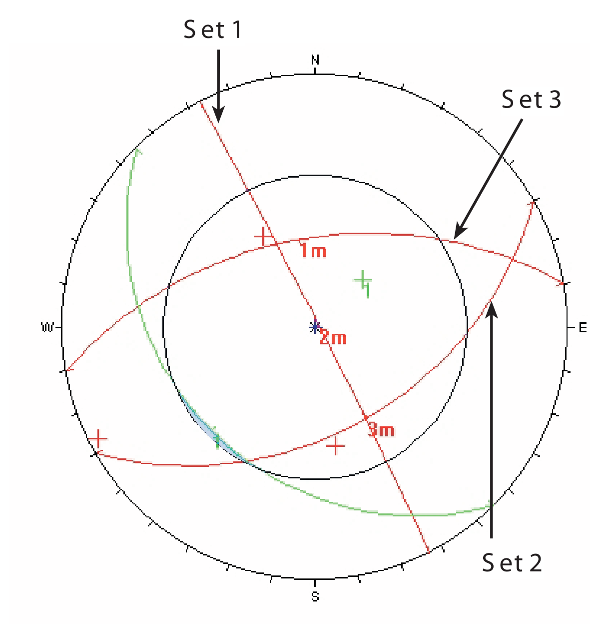
Failure envelope (based on 28 friction angle)

Failure envelope for topple and planar sliding without poles indicates stable conditions.

Failure envelope for wedge sliding without great circle intersections indicates stable conditions.



B. Planar sliding hazard (very low hazard)



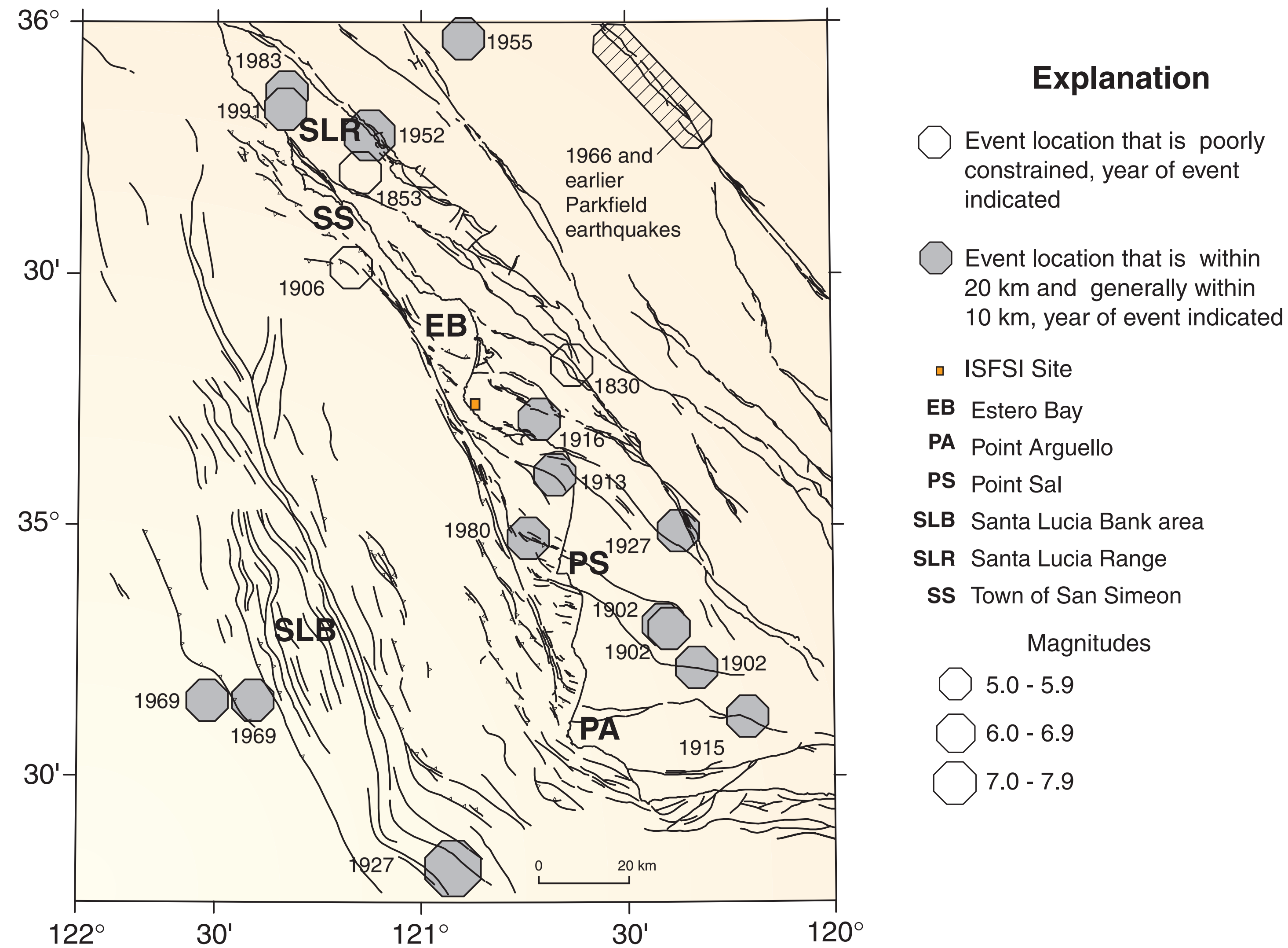
C. Wedge sliding hazard (very low hazard)

Notes

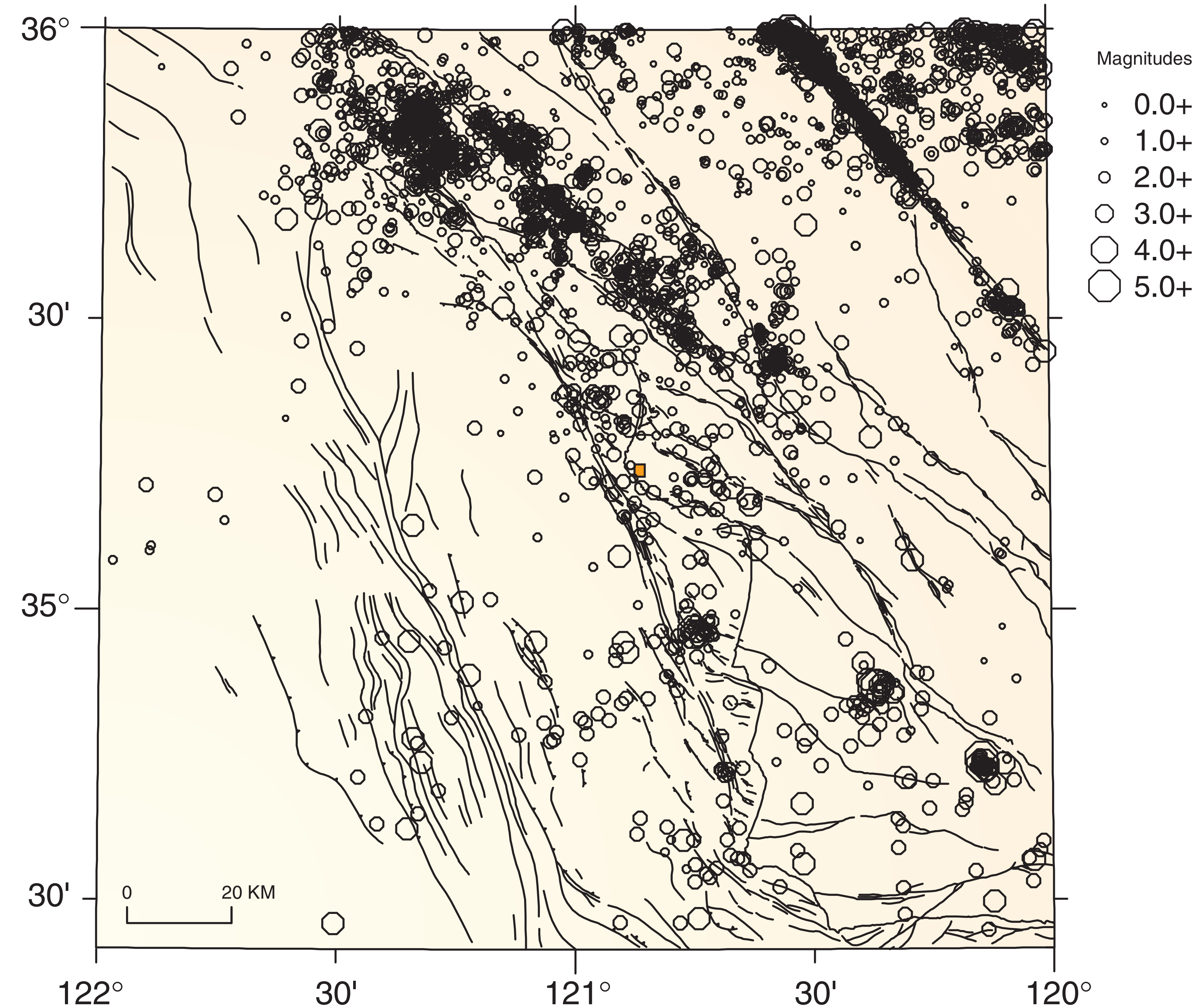
Analysis performed using computer program DIPS (Rocscience, 1999, DIPS: Plotting analysis, and presentation of structural data using spherical projection techniques, version 5.041, Toronto, 86p).

Fracture data from stations 38+00 to 45+00 applied to northwest-trending cutslope above Reservoir Road from stations 35+00 to 43+00.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-38 KINEMATIC ANALYSES OF NORTHWEST-TRENDING CUTSLOPE OF TRANSPORT ROUTE (STATIONS 35+00 TO 43+00

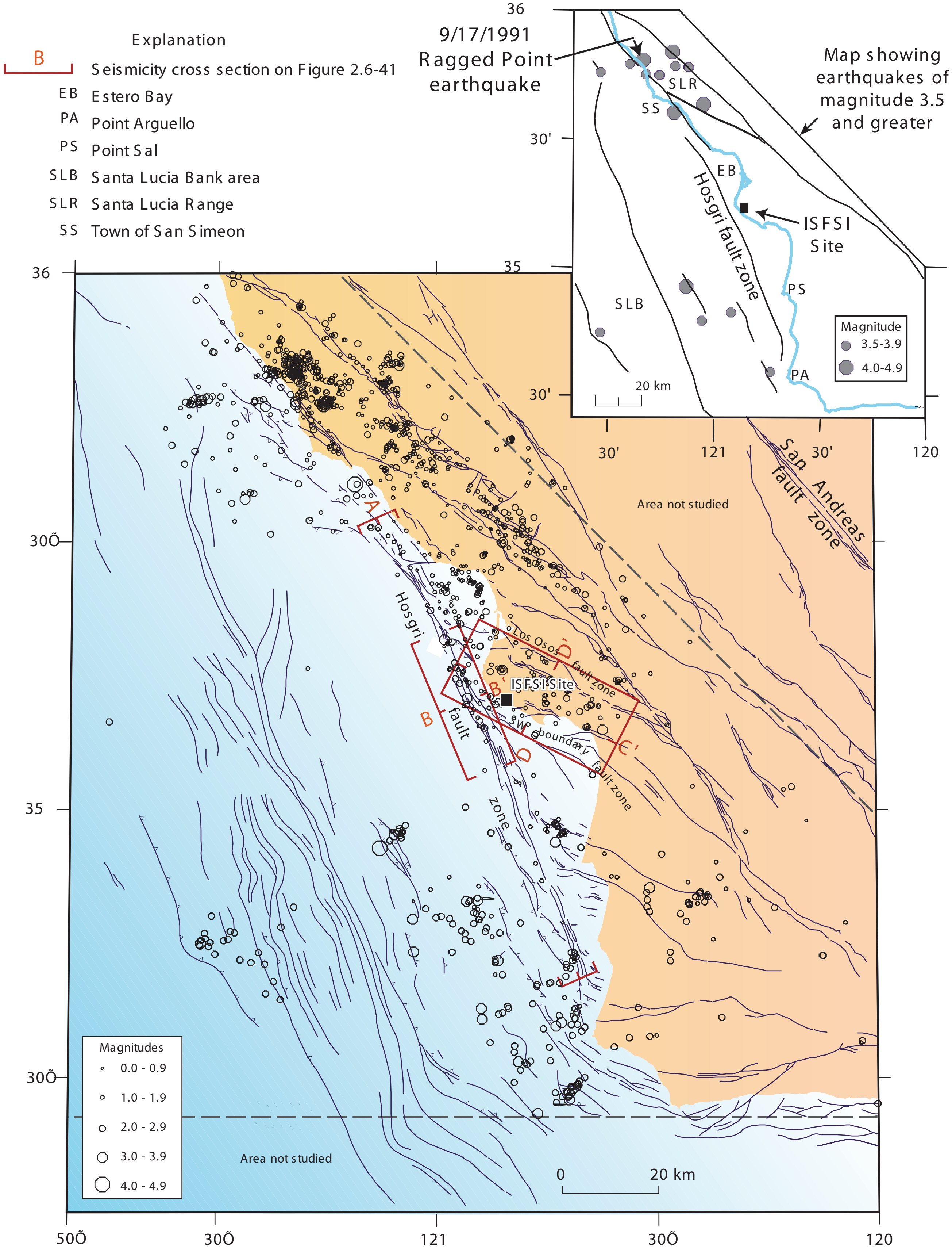


A. Historical earthquakes of magnitude 5 and greater since 1830 (PG&E, Final Report of the Diablo Canyon Long Term Seismic Program, 1988.)



B. Instrumentally recorded seismicity from 1973 through September 1987 (PG&E, Final Report of the Diablo Canyon Long Term Seismic Program, 1988.)

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-39 HISTORICAL EARTHQUAKES OF MAGNITUDE 5 AND GREATER SINCE 1830 AND INSTRUMENTALLY RECORDED SEISMICITY FROM 1973 THROUGH SEPTEMBER 1987

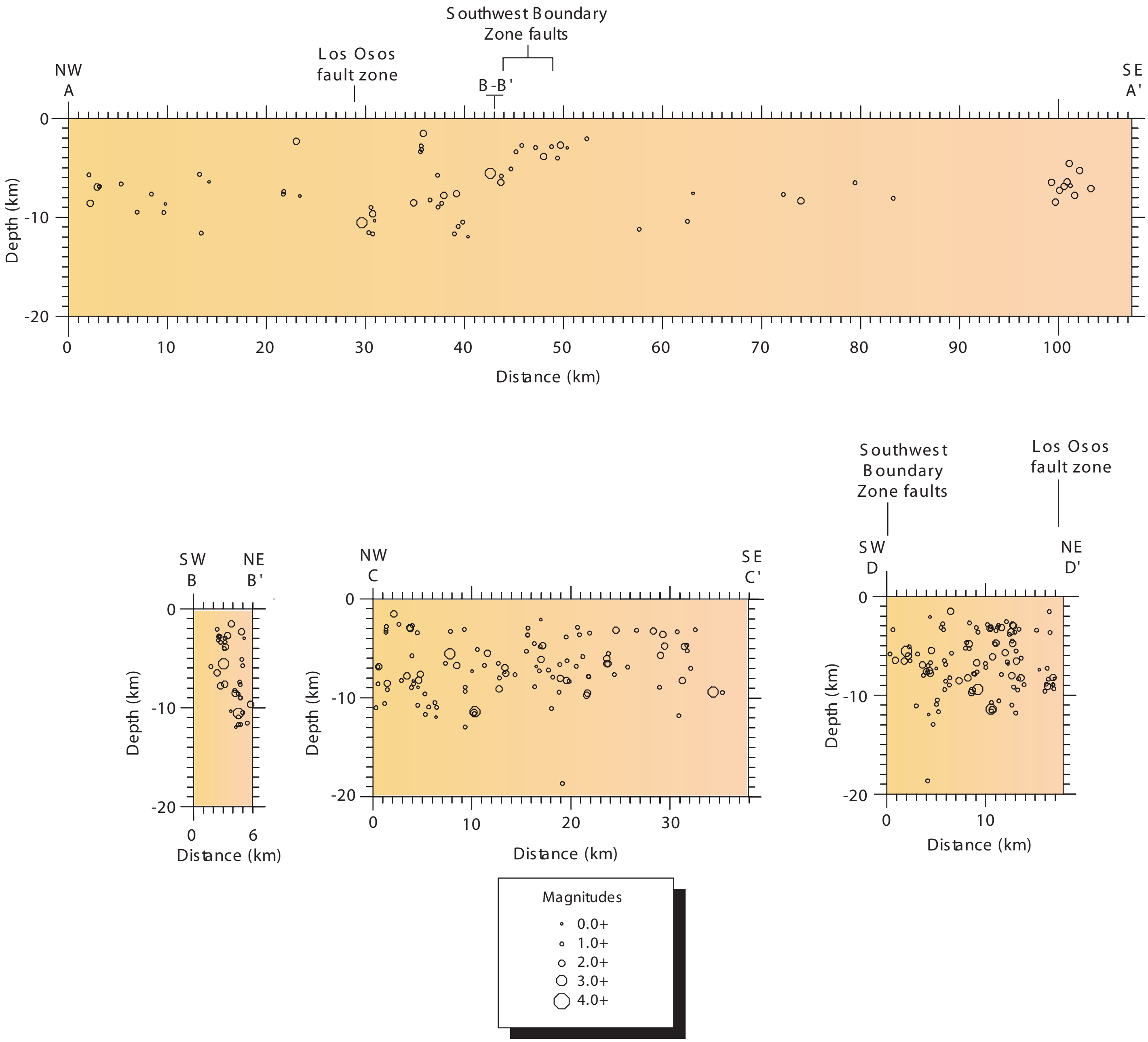


(From M.K. Mc Laren and W.U. Savage, Seismicity of south-central coastal California, October 1987 through January 1997, Bulletin of the Seismological Society of America, in press)

FSAR UPDATE

DIABLO CANYON ISFSI

FIGURE 2.6-40
QUATERNARY FAULTS AND SEISMICITY FROM OCTOBER 1987 THROUGH JANUARY 1997

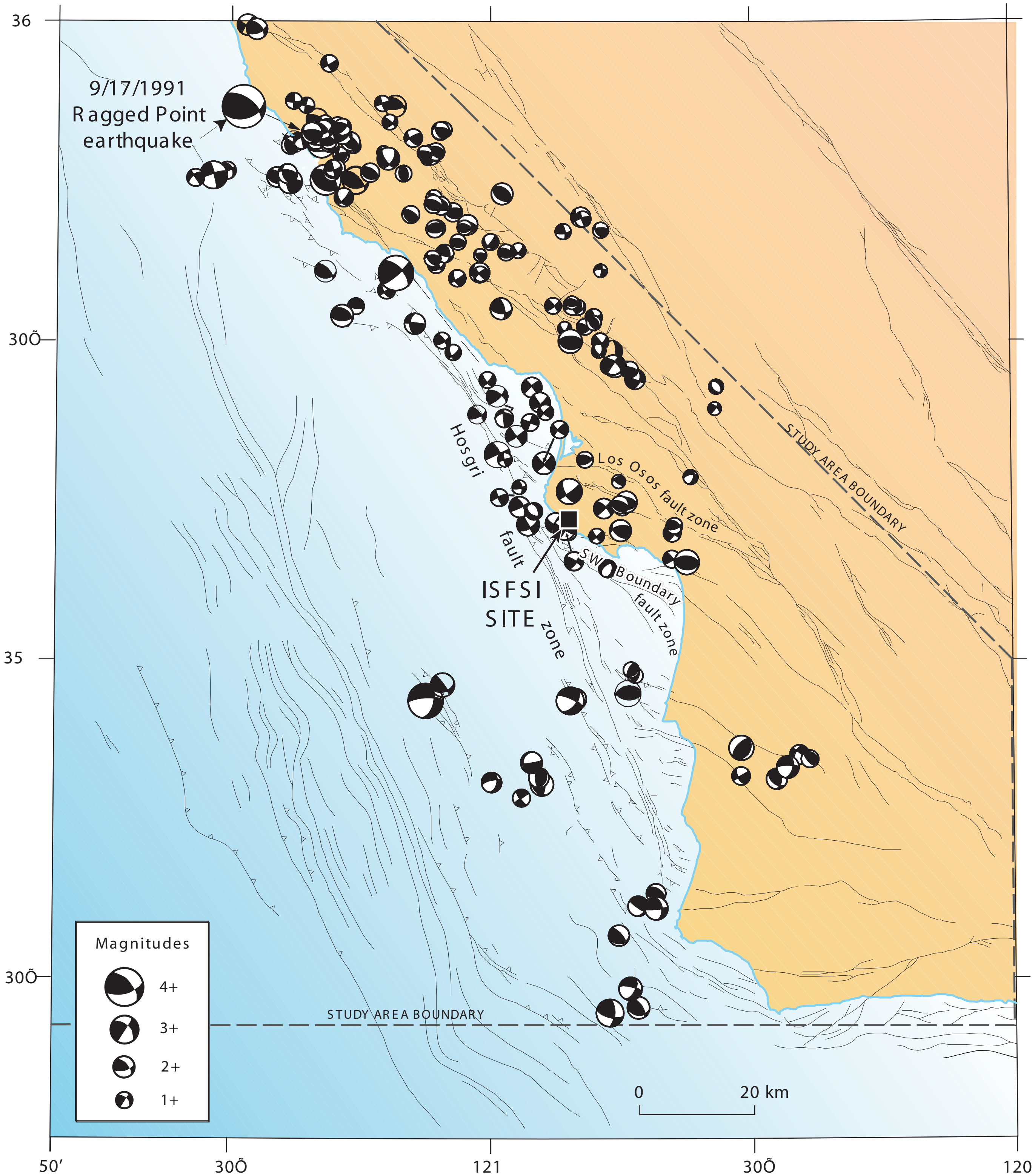


(From M.K. Mc Laren and W.U. Savage, Seismicity of south-central coastal California, October 1987 through January 1997, Bulletin of the Seismological Society of America, in press)

FSAR UPDATE

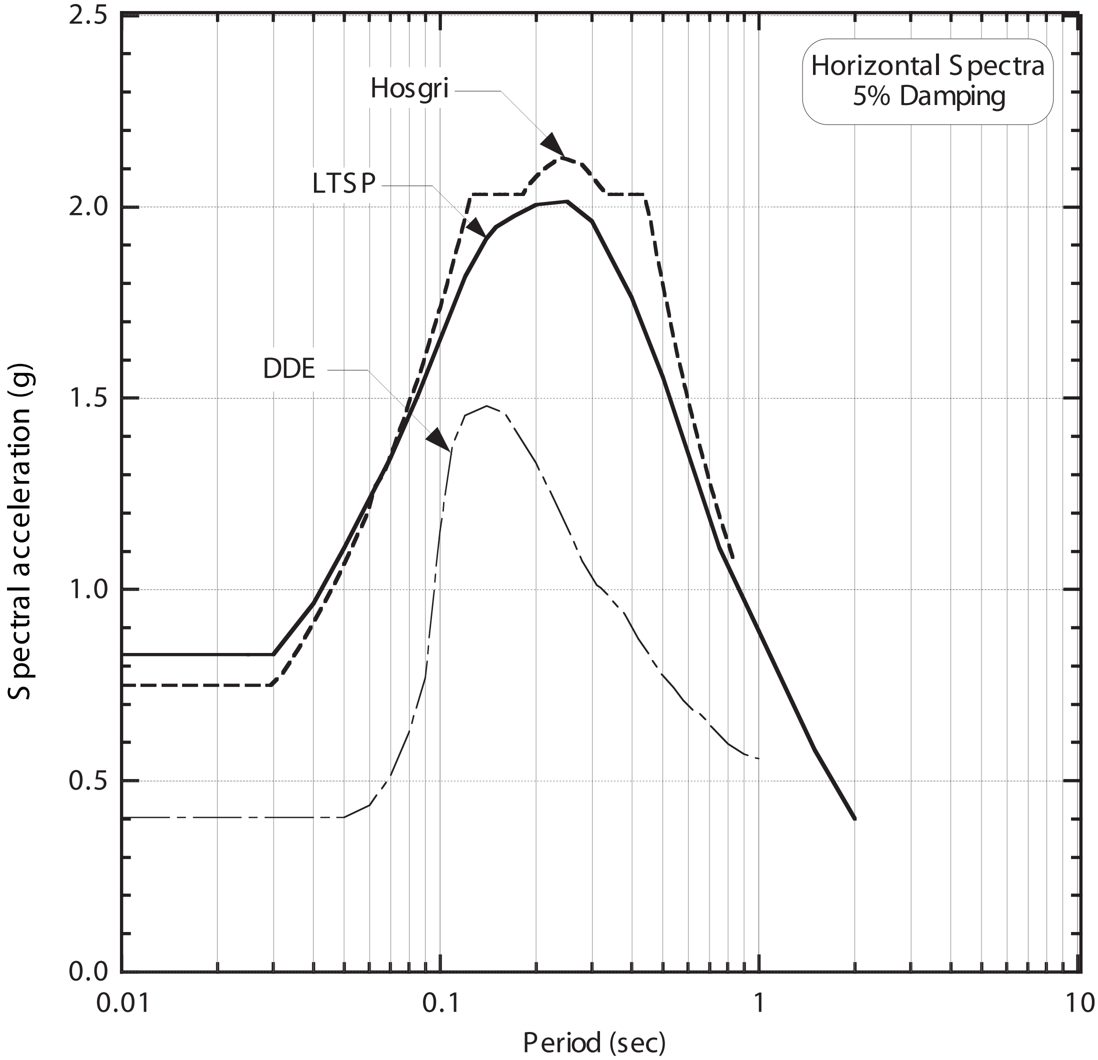
DIABLO CANYON ISFSI

FIGURE 2.6-41
SEISMICITY CROSS SECTION A-A' THROUGH D-D' FOR EARTHQUAKES FROM OCTOBER 1987 THROUGH JANUARY 1997



(From M.K. Mc Laren and W.U. Savage, Seismicity of south-central coastal California, October 1987 through January 1997, Bulletin of the Seismological Society of America, in press)

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-42 LOWER HEMISPHERE, P-WAVE, FIRST-MOTION FOCAL MECHANISM PLOTS OF EARTHQUAKES FROM OCTOBER 1987 THROUGH JANUARY 1997



FSAR UPDATE

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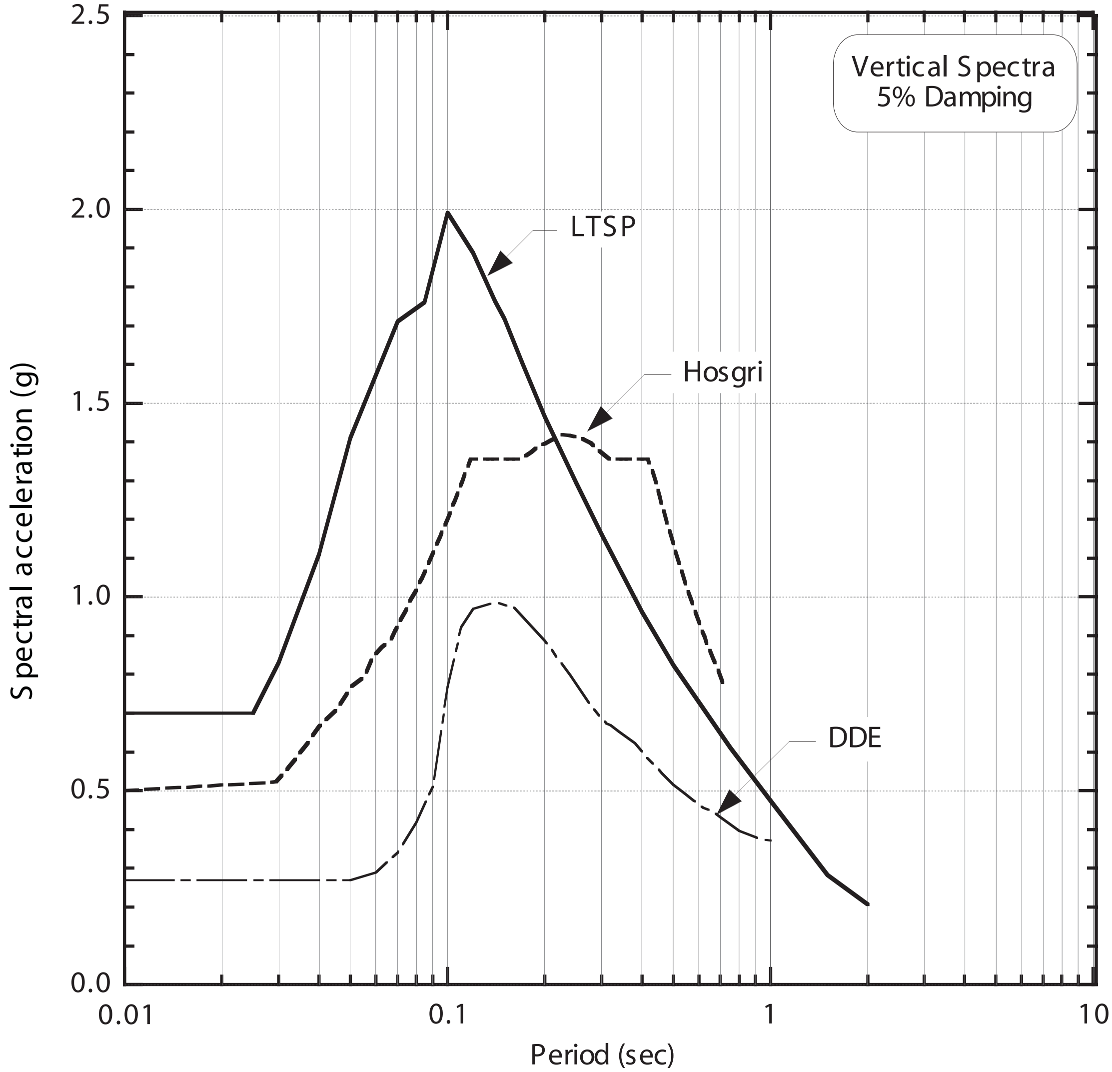
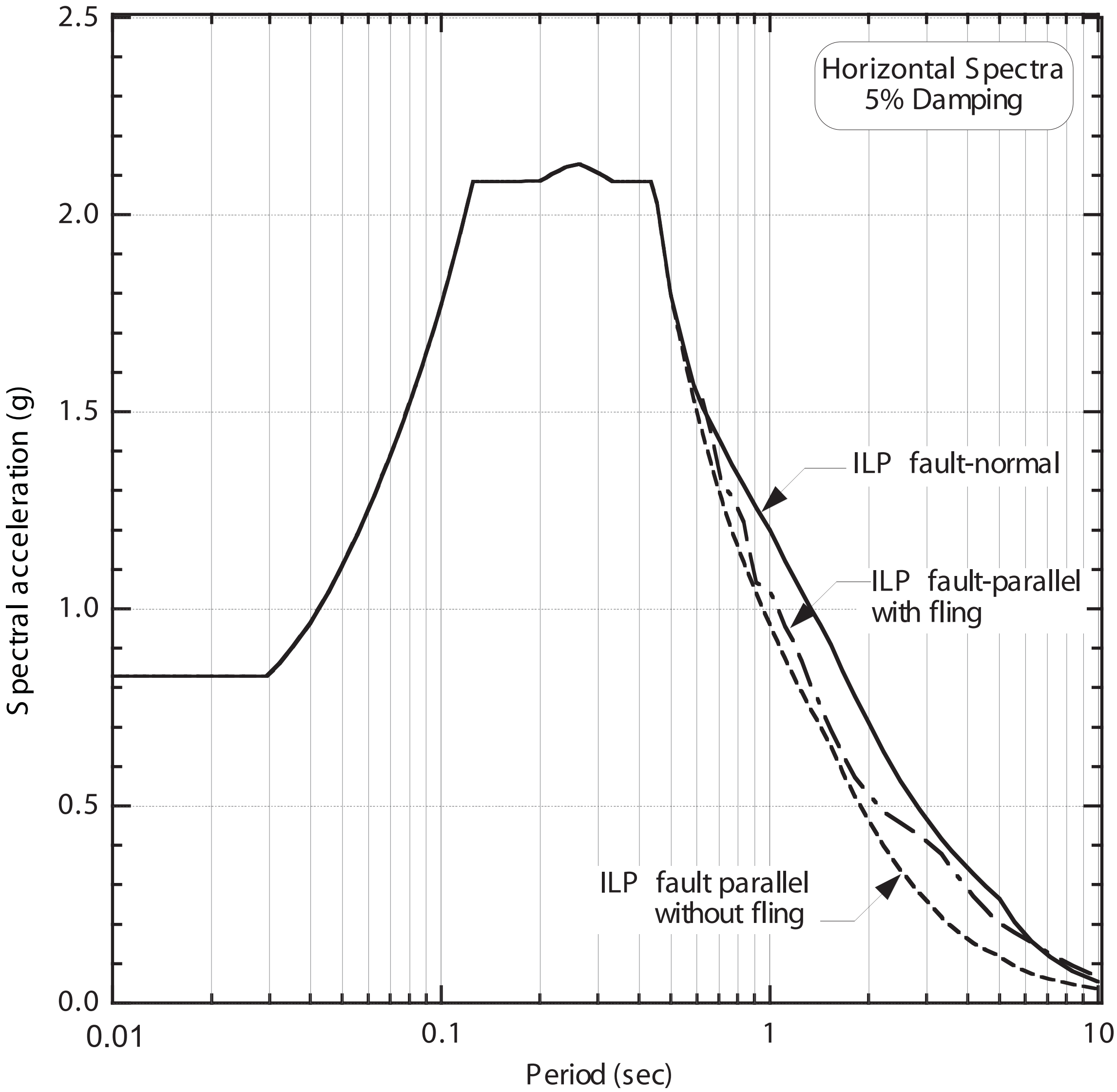
FIGURE 2.6-43
DDE, HOSGRI, AND LTSP
HORIZONTAL SPECTRA

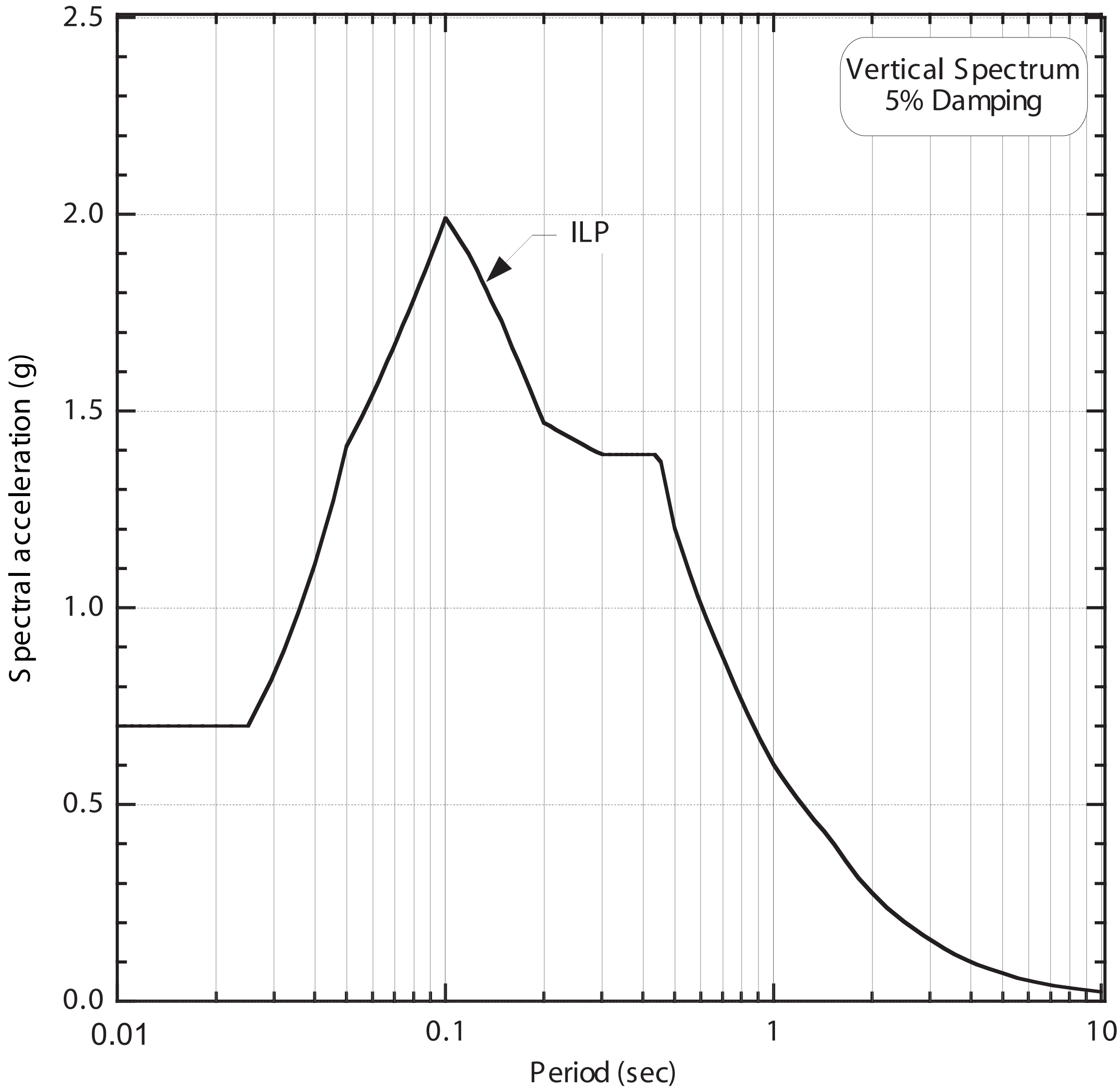


FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-44 DDE, HOSGRI, AND LTSP VERTICAL SPECTRA

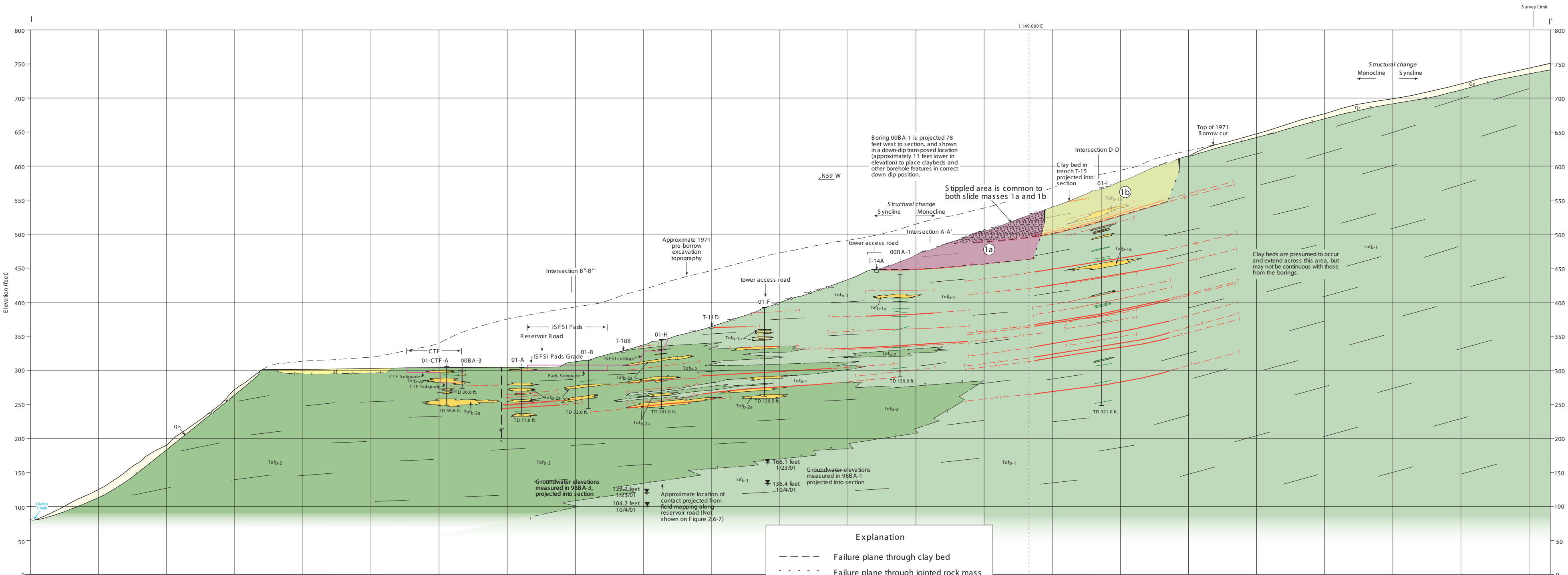
Revision 0 June 2004



FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-45 ILP HORIZONTAL SPECTRA



FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-46 **ILP VERTICAL SPECTRUM**



Notes
1. Location of cross section shown on Figures 2.6-7 and 2.6-8. Nearby borings are projected to cross section.
2. See Figure 2.6-9 for explanation of geologic units.
3. Horizontal scale = vertical scale.

Explanation

- Failure plane through clay bed
- Failure plane through jointed rock mass
- Assumed 20-foot high tension crack at top of slide mass

Alternative Slide Mass Models

- 1a
- 1b

0 25 50 75 100 feet
Scale

FSAR UPDATE

DIABLO CANYON ISFSI

FIGURE 2.6-47
SLIDE MASS MODEL 1

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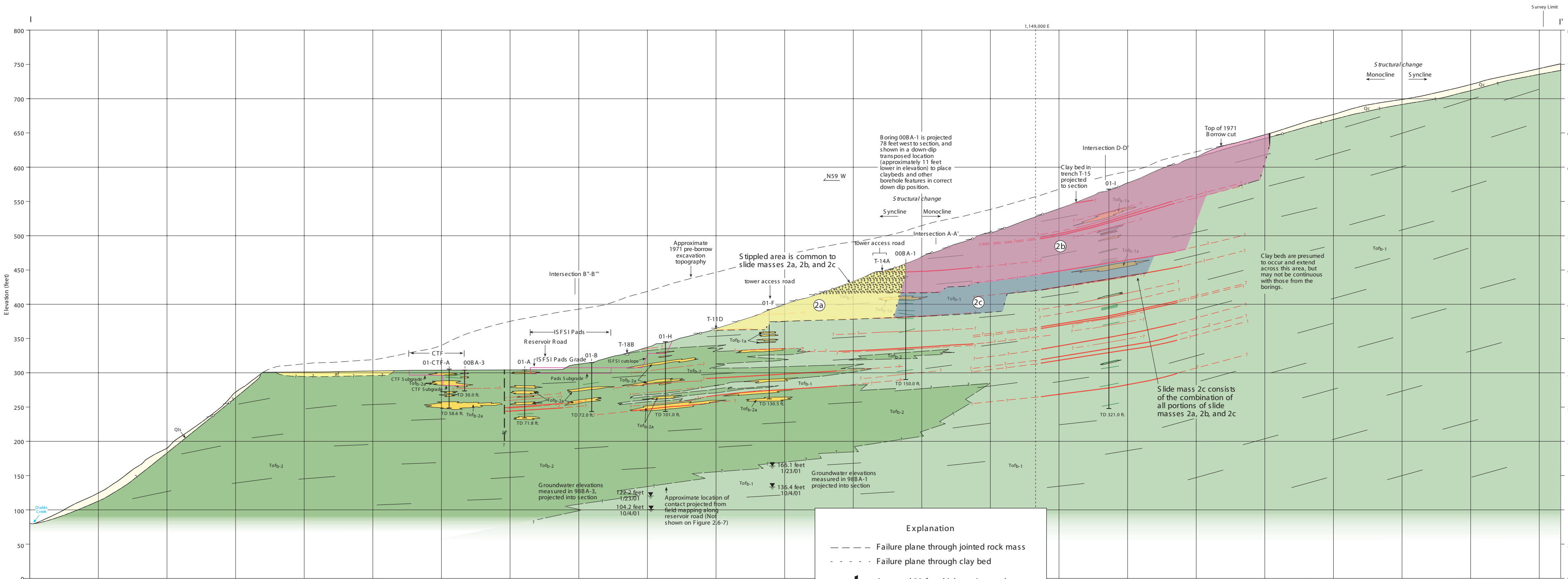


Explanation

— — — Failure plane through jointed rock mass

- - - - Failure plane through clay bed

Assumed 20-foot high tension crack at top of slide mass

Alternative Slide Mass Models

2a

2b

2c

Notes

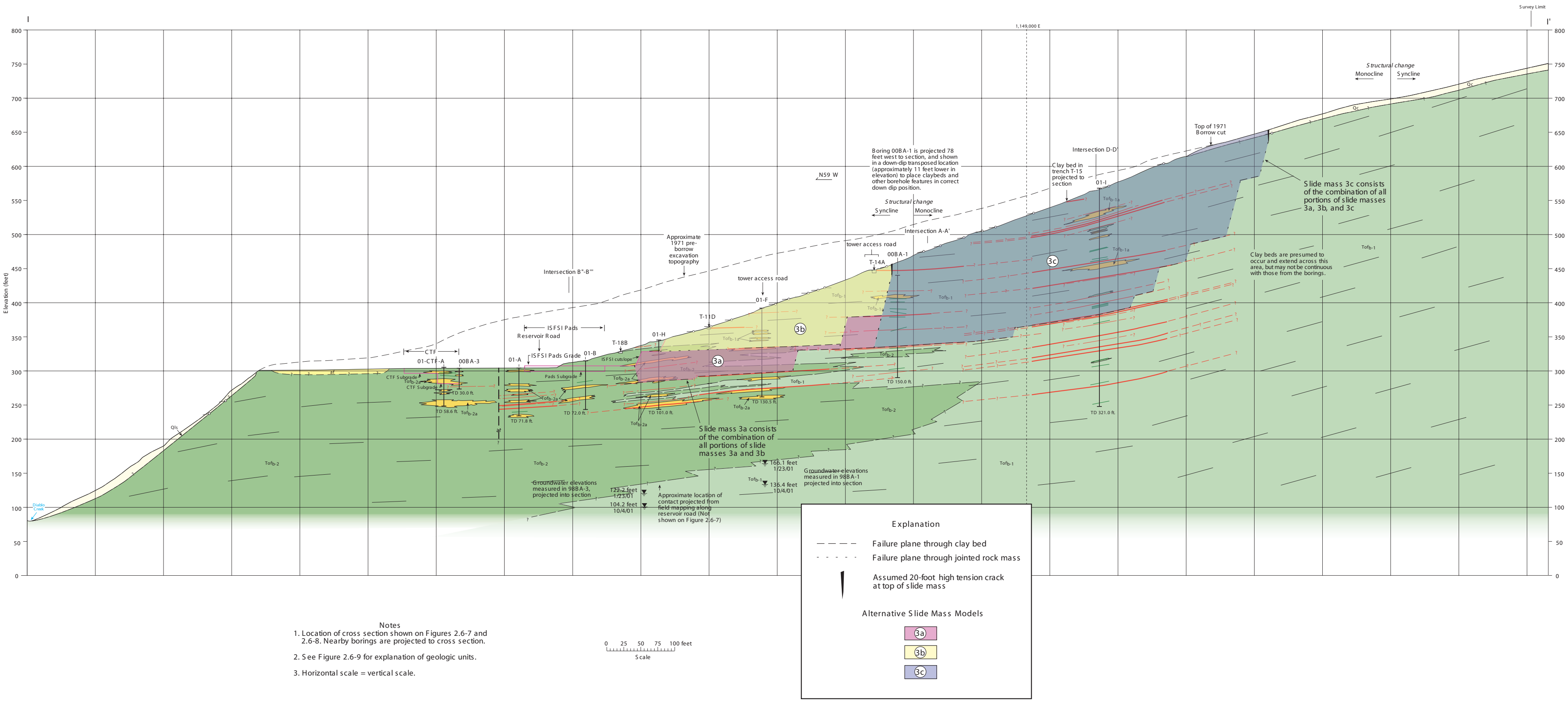
1. Location of cross section shown on Figures 2.6-7 and 2.6-8. Nearby borings are projected to cross section.
2. See Figure 2.6-9 for explanation of geologic units.
3. Horizontal scale = vertical scale.

0 25 50 75 100 feet
Scale

FSAR UPDATE

DIABLO CANYON ISFSI

FIGURE 2.6-48
SLIDE MASS MODEL 2

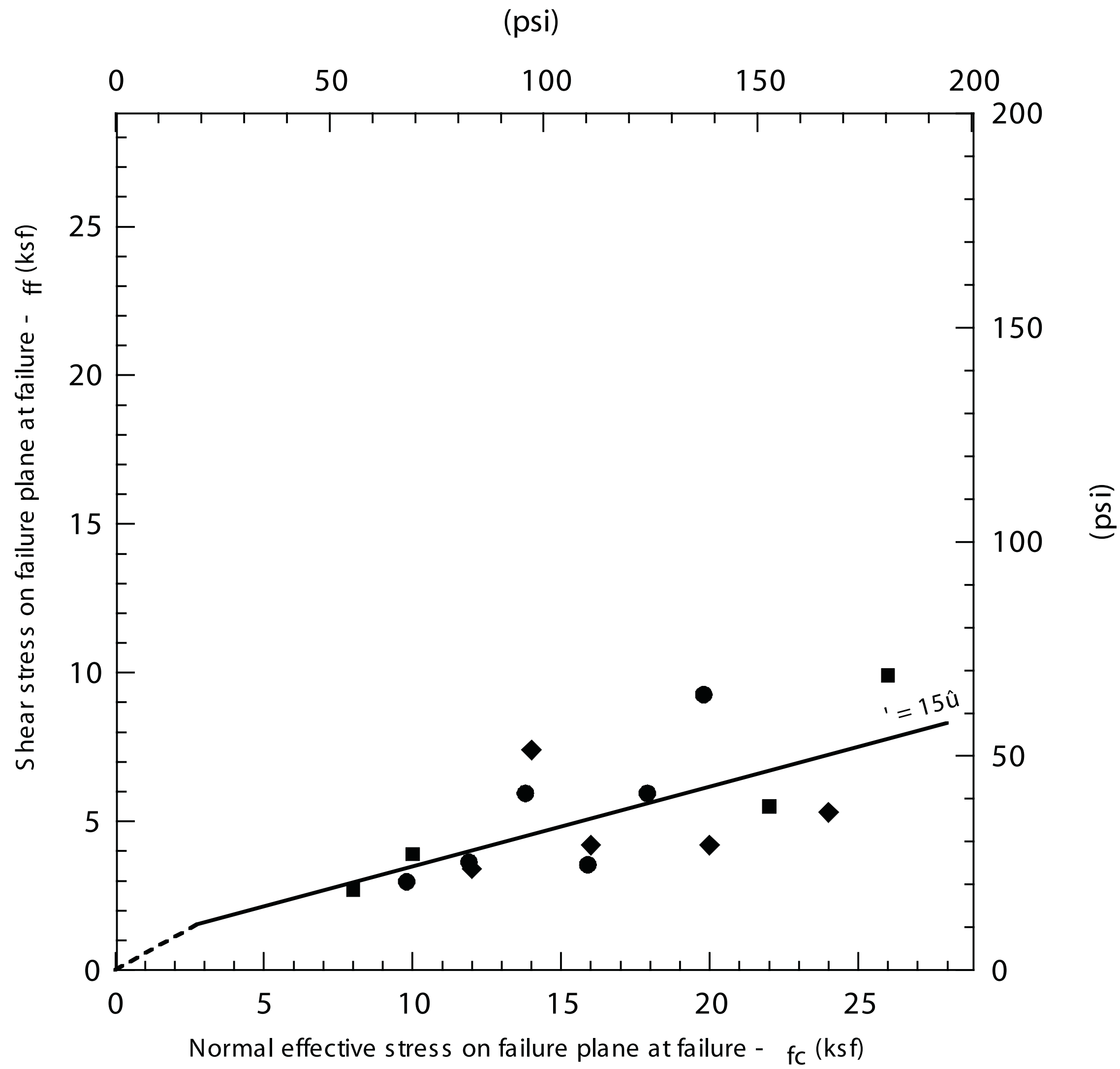


FSAR UPDATE

DIABLO CANYON ISFSI

FIGURE 2.6-49
SLIDE MASS MODEL 3

Revision 0 June 2004

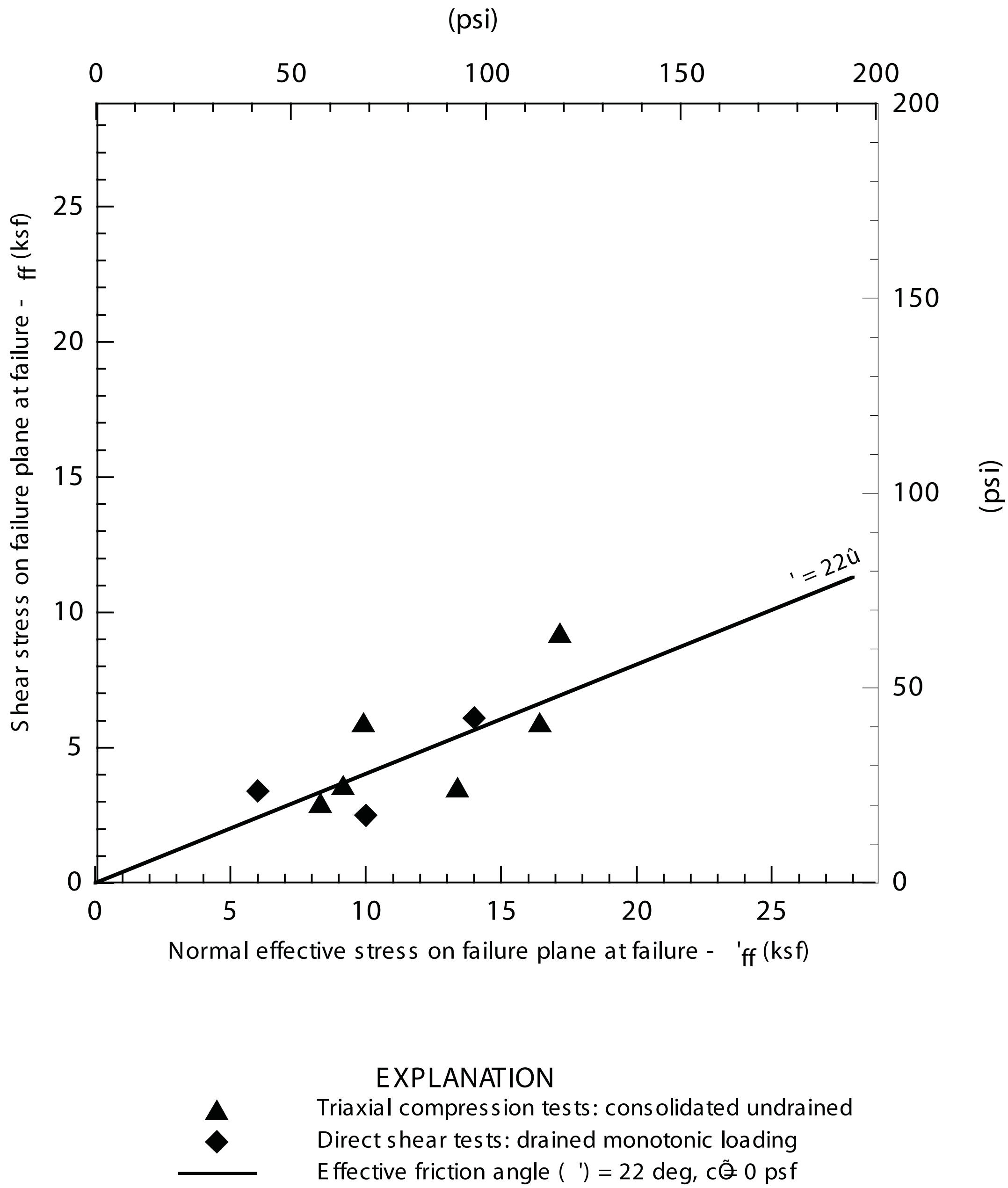


EXPLANATION

- ● Triaxial compression tests: consolidated undrained
- ◆ Direct shear tests: monotonic loading
- ■ Direct shear tests: cyclic loading
- - - - - Undrained shear strength envelope ff = fc ¥ tan(29û)
- —— Undrained shear strength envelope ff = 0.8 ksf + fc ¥ tan(15û)

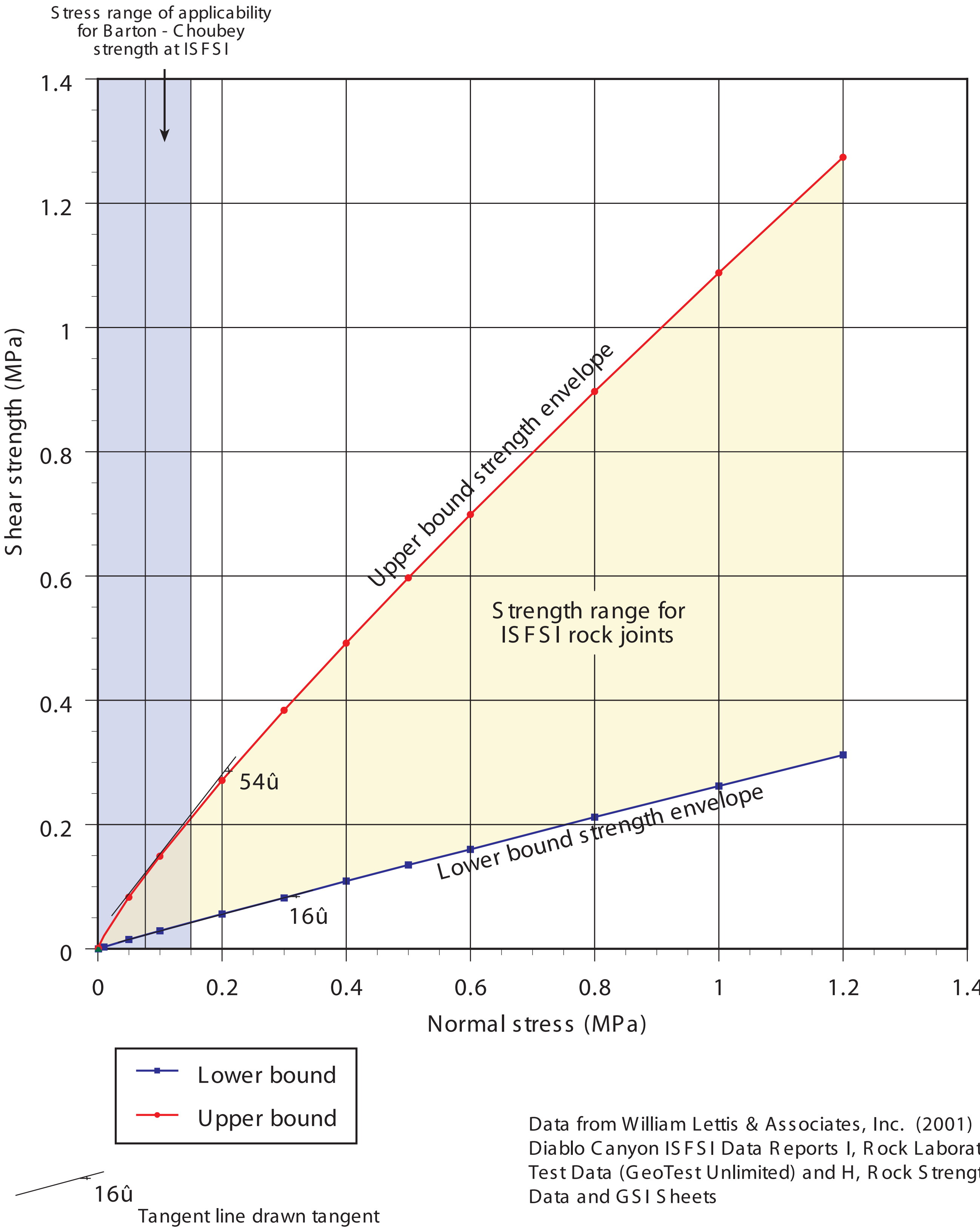
Data from William Lettis & Associates, 2001, Diablo Canyon ISFSI Data Report G, Soil Laboratory Test Data, Cooper Testing Laboratory

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-50 DESIGN UNDRAINED STRENGTH OF CLAY BEDS



Data from William Lettis & Associates, 2001, Diablo Canyon ISFSI Data Report G, Soil Laboratory Test Data, Cooper Testing Laboratory

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-51 DESIGN DRAINED STRENGTH OF CLAY BEDS



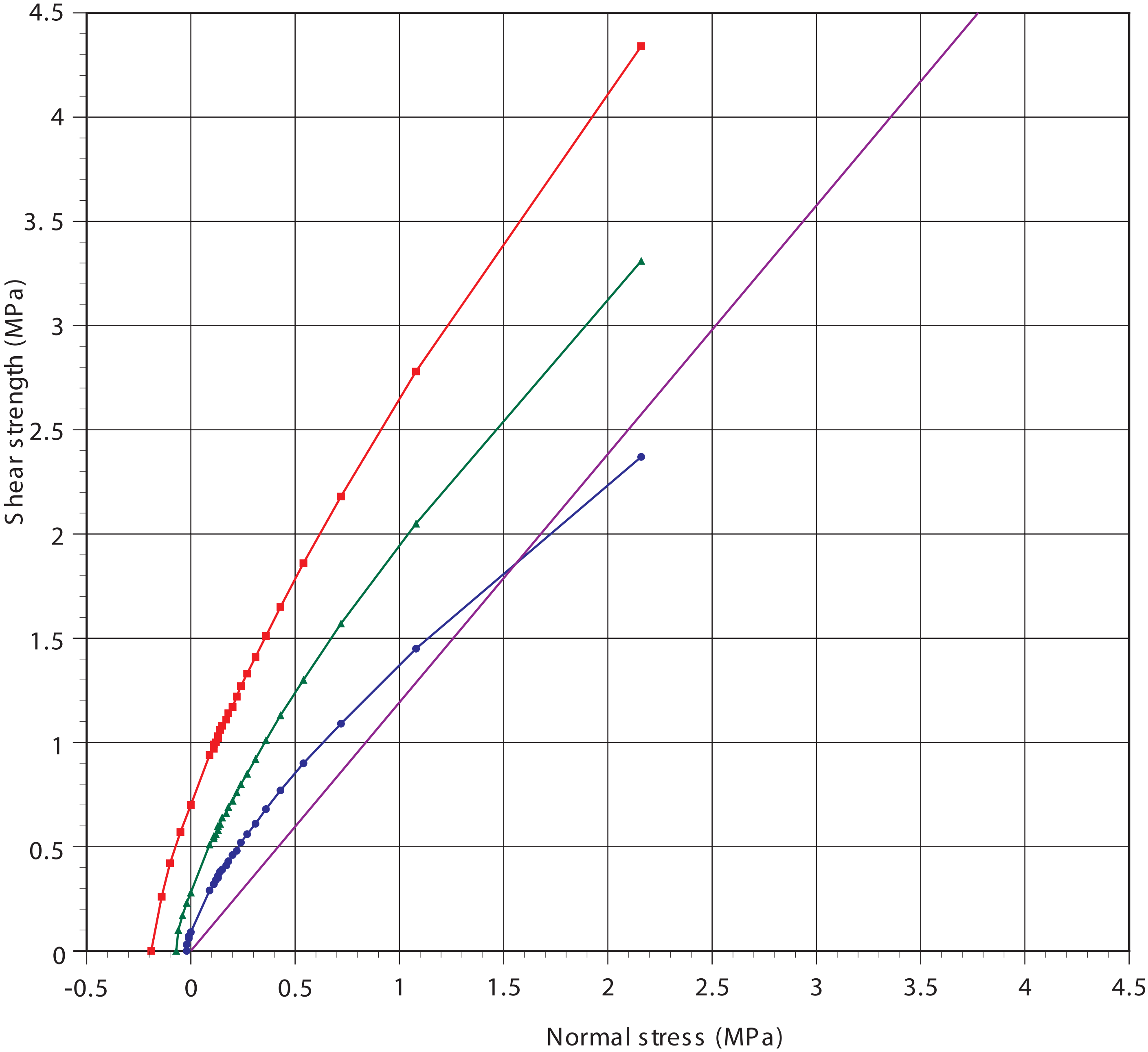
Tangent line drawn tangent to the curve at the midpoint of normal stress range (0 to 0.15 MPa).

Data from William Lettis & Associates, Inc. (2001) Diablo Canyon ISFSI Data Reports I, Rock Laboratory Test Data (GeoTest Unlimited) and H, Rock Strength Data and GSI Sheets

FSAR UPDATE

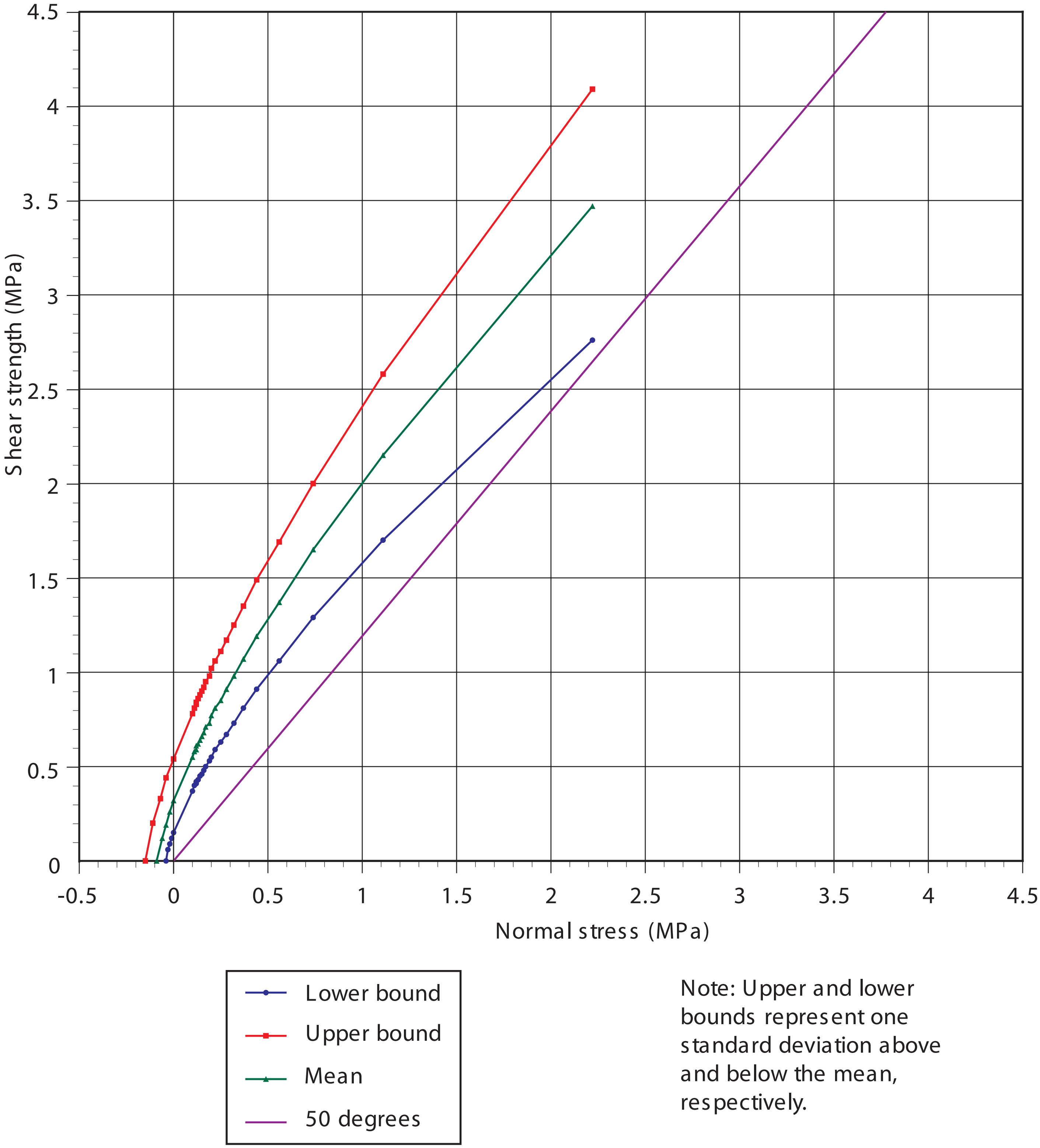
DIABLO CANYON ISFSI

FIGURE 2.6-52
RANGE OF SHEAR STRENGTHS FOR IN SITU DOLOMITE AND SANDSTONE ROCK JOINTS USING THE BARTON-CHOUBEY METHOD



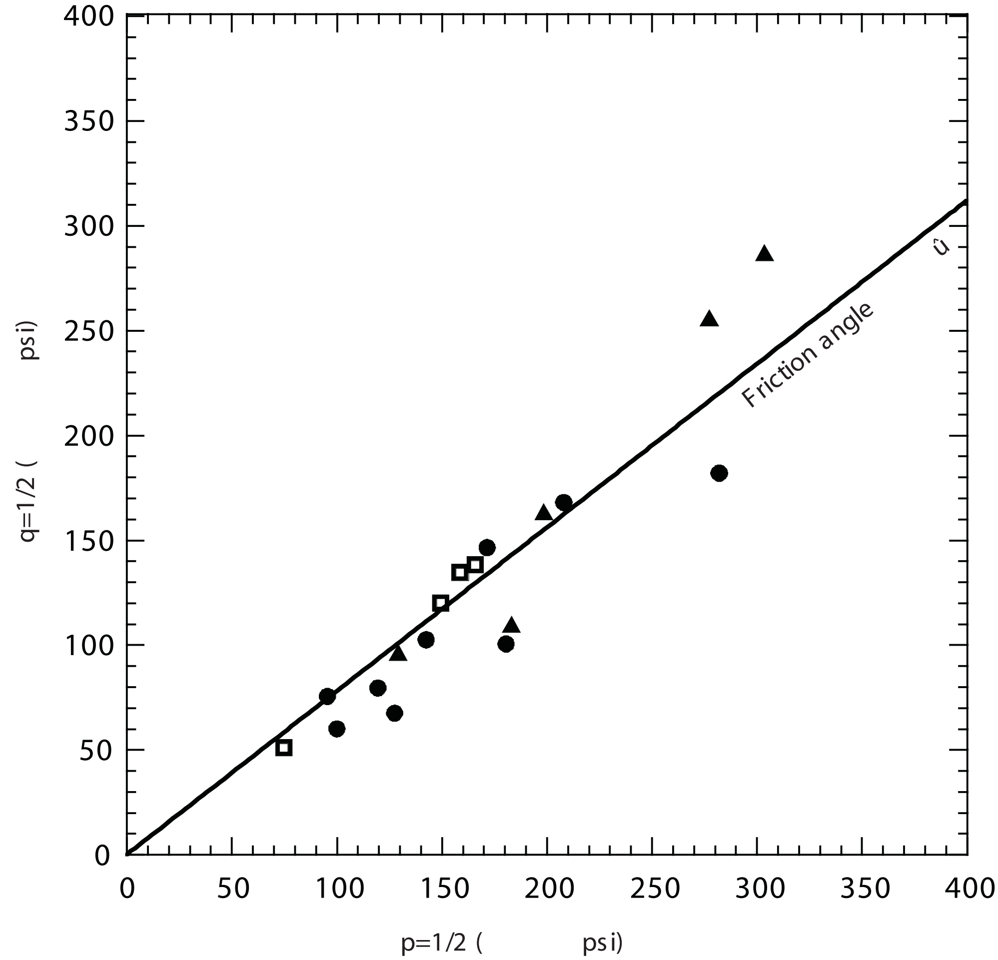
Note: Upper and lower bounds represent one standard deviation above and below the mean, respectively.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-53 COMPARISON OF HOEK-BROWN ENVELOPE FOR DOLOMITE WITH DESIGN STRENGTH OF 50 DEGREES



Note: Upper and lower bounds represent one standard deviation above and below the mean, respectively.

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-54 COMPARISON OF HOEK-BROWN ENVELOPE FOR SANDSTONE WITH DESIGN STRENGTH OF 50 DEGREES



EXPLANATION

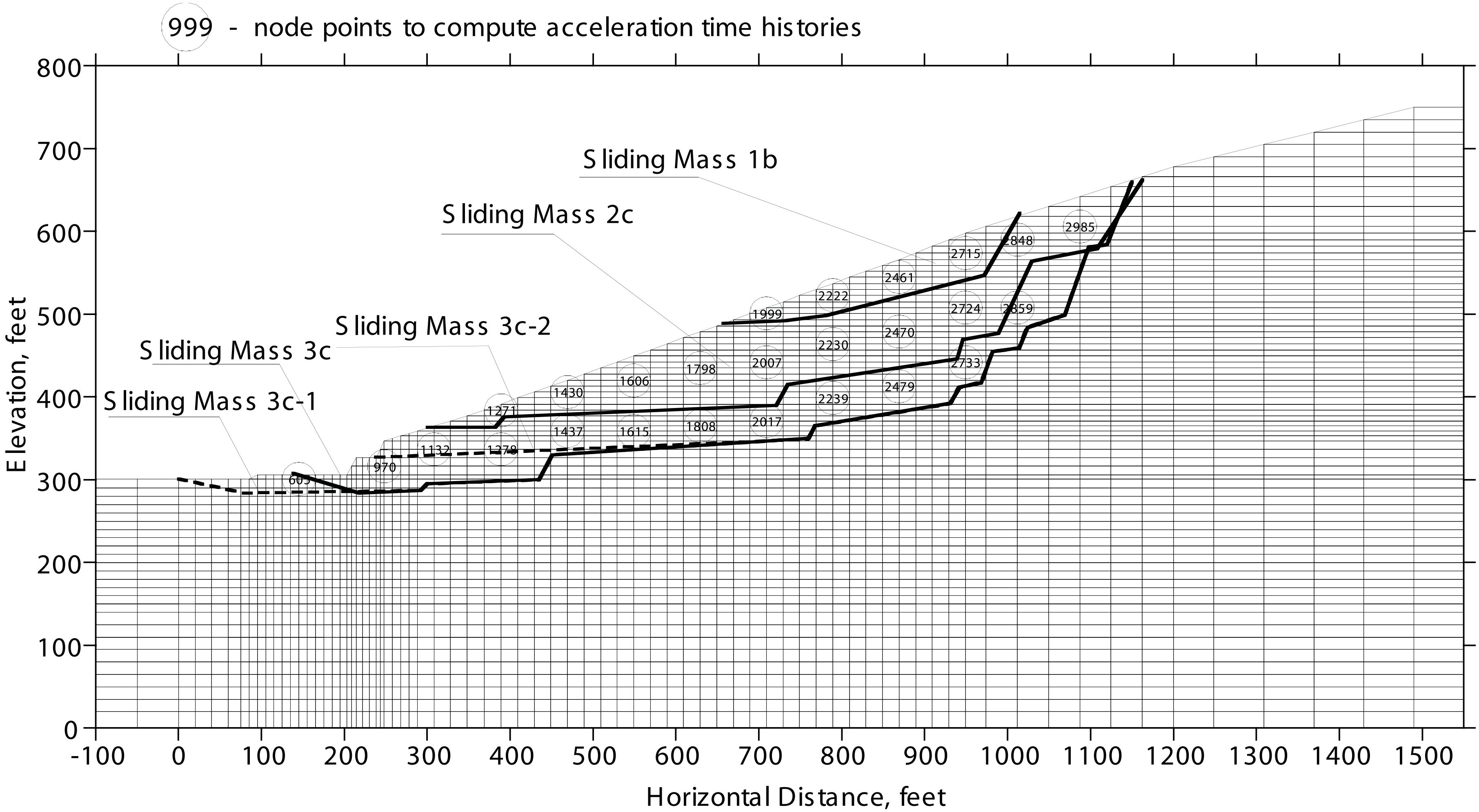
● Multi-stage triaxial tests with pore-water pressure measurements (pad + slope)

▲ Multi-stage triaxial tests without pore-water presure measurements (pad + slope)

□ Multi-stage triaxial tests without pore-water pressure measurements from boring (00BA-2)

Data from William Lettis & Associates, 2001, Diablo Canyon ISFSI Data Report G, Soil Laboratory Test Data, Cooper Testing Laboratory

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-55 TOTAL STRENGTH ANALYSIS OF FRIABLE SANDSTONE BASED ON TRIAXIAL TESTS



FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-56 POTENTIAL SLIDING MASSES AND NODE POINTS FOR COMPUTED ACCELERATION TIME HISTORIES

Revision 0 June 2004

Explanation

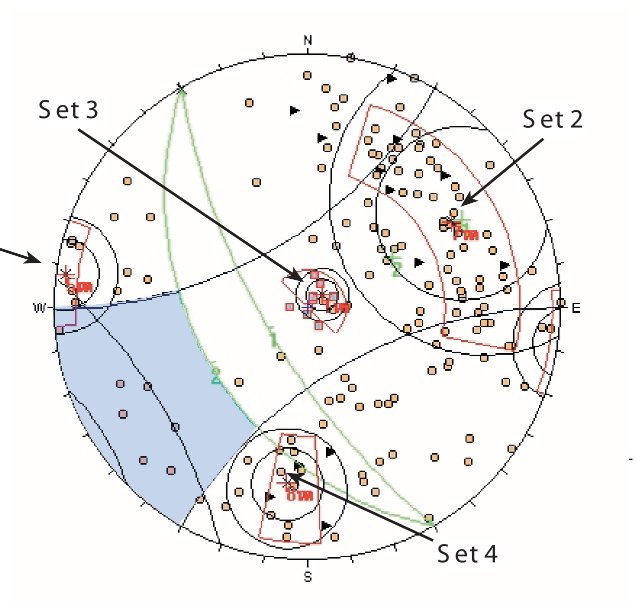
Poles

- Bedding
- Fault
- Joint

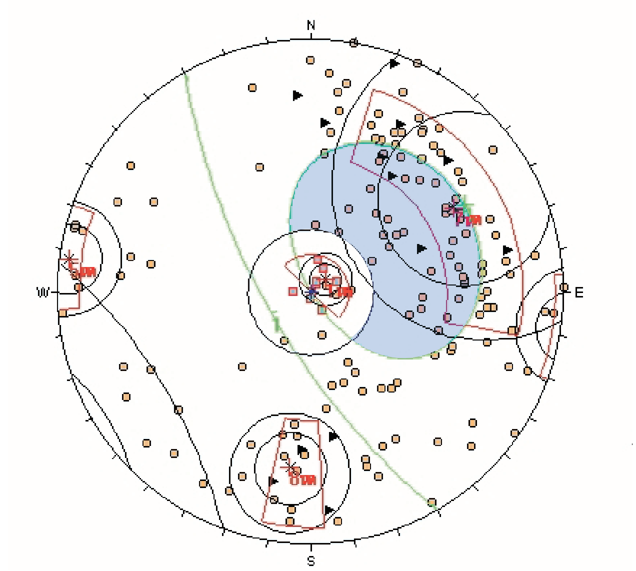
Failure envelope (based on 28 friction angle)

Failure envelope for topple and planar sliding without poles indicates stable conditions.

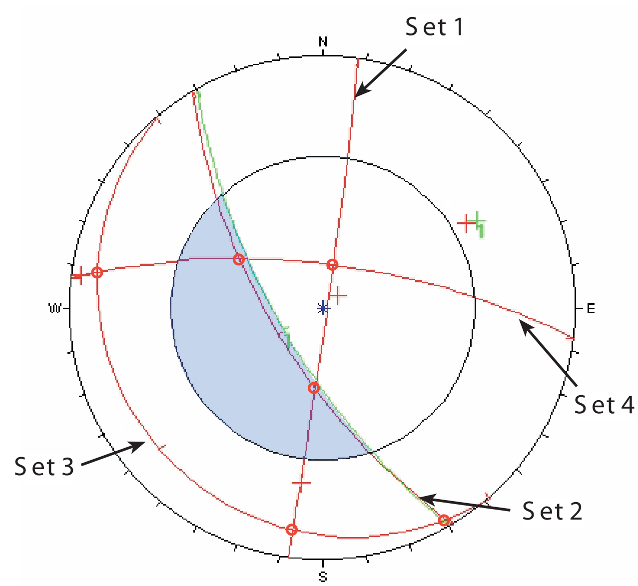
Failure envelope for wedge sliding without great circle intersections indicates stable conditions.



A. Topple hazard (low hazard)



B. Planar sliding hazard (moderate to high hazard)



C. Wedge sliding hazard (moderate to high hazard)

Notes

Analysis performed using computer program DIPS (Rocscience, 1999, DIPS: Plotting analysis, and presentation of structural data using spherical projection techniques, version 5.041, Toronto, 86p).

FSAR UPDATE
DIABLO CANYON ISFSI
FIGURE 2.6-57 KINEMATIC ANALYSES OF EAST CUTSLOPE

Explanation

Poles

Bedding

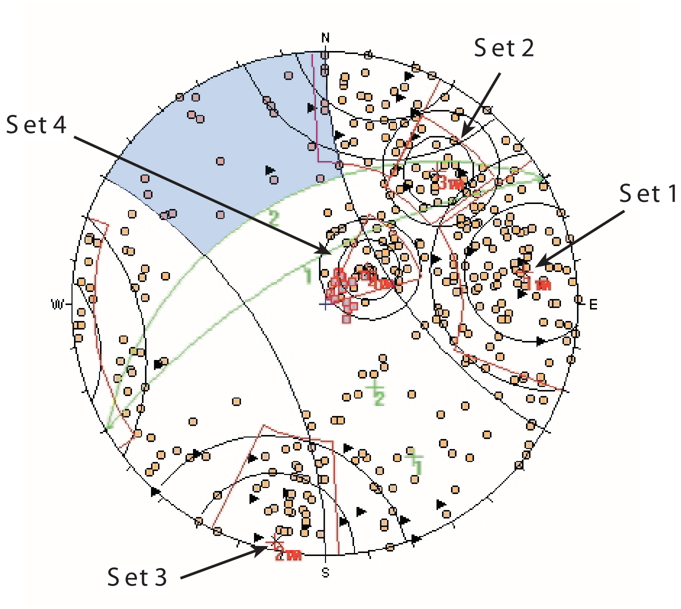
Fault

Joint

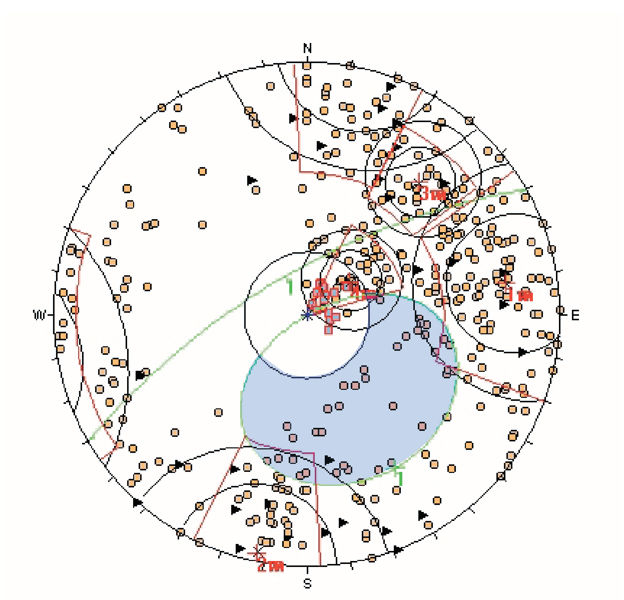
Failure envelope (based on 28 friction angle)

Failure envelope for topple and planar sliding without poles indicates stable conditions.

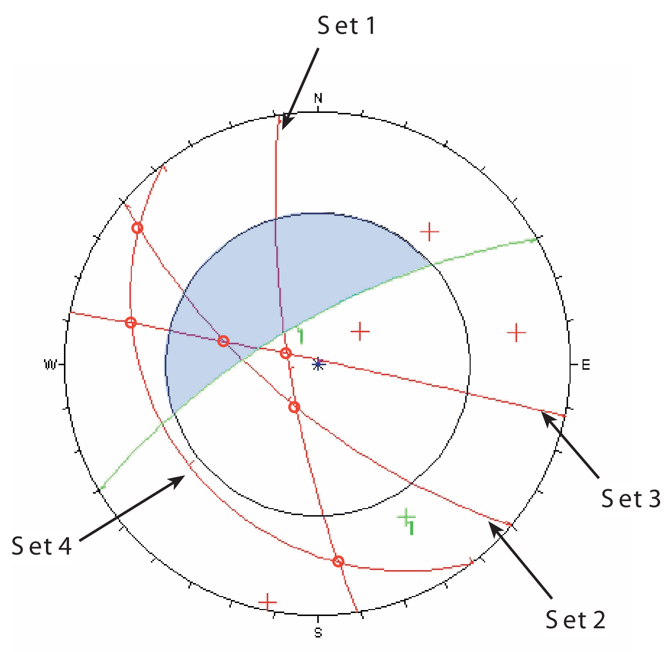
Failure envelope for wedge sliding without great circle intersections indicates stable conditions.



A. Topple hazard (low hazard)



B. Planar sliding hazard (low to moderate hazard)



C. Wedge sliding hazard (high hazard)

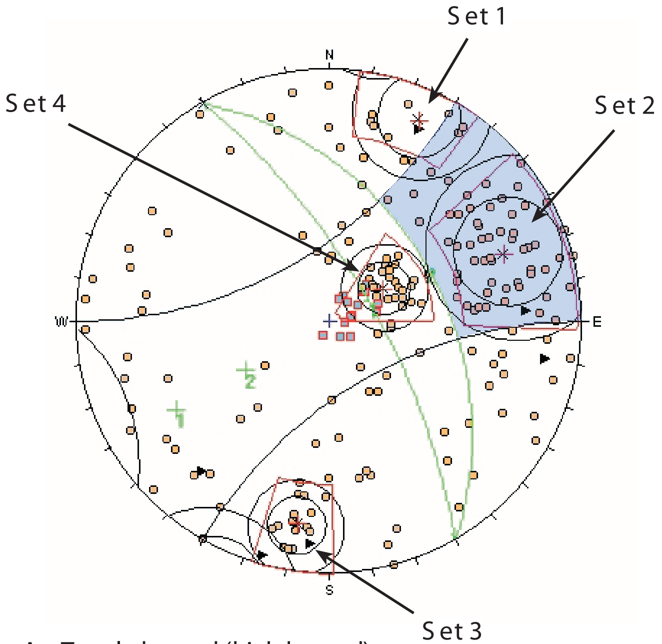
Notes

Analysis performed using computer program DIPS (Rocscience, 1999, DIPS: Plotting analysis, and presentation of structural data using spherical projection techniques, version 5.041, Toronto, 86p).

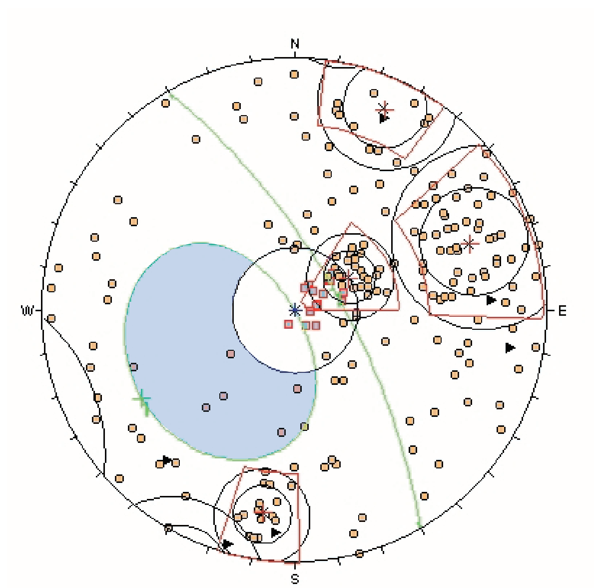
FSAR UPDATE

DIABLO CANYON ISFSI

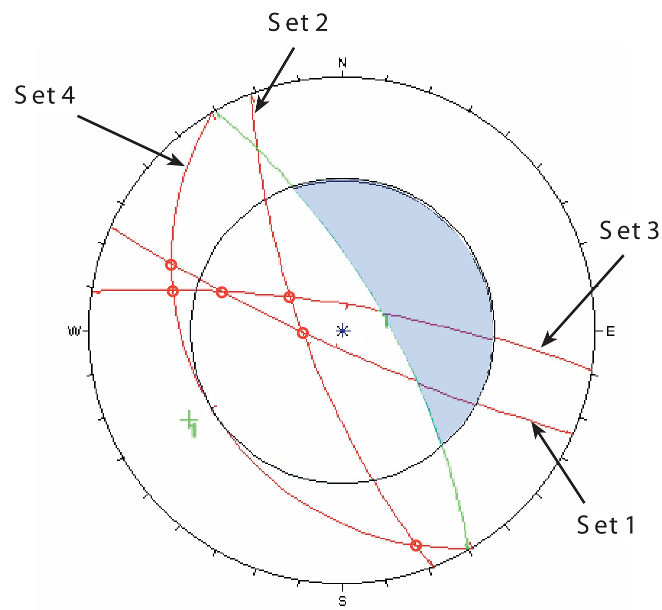
FIGURE 2.6-58
KINEMATIC ANALYSES OF BACK CUTSLOPE



A. Topple hazard (high hazard)



B. Planar sliding hazard (low hazard)



C. Wedge sliding hazard (very low hazard)

Explanation

Poles

- Bedding
- Fault
- Joint

Failure envelope (based on 28 friction angle)

Failure envelope for topple and planar sliding without poles indicates stable conditions.

Failure envelope for wedge sliding without great circle intersections indicates stable conditions.

Notes

Analysis performed using computer program DIPS (Rocscience, 1999, DIPS: Plotting analysis, and presentation of structural data using spherical projection techniques, version 5.041, Toronto, 86p).

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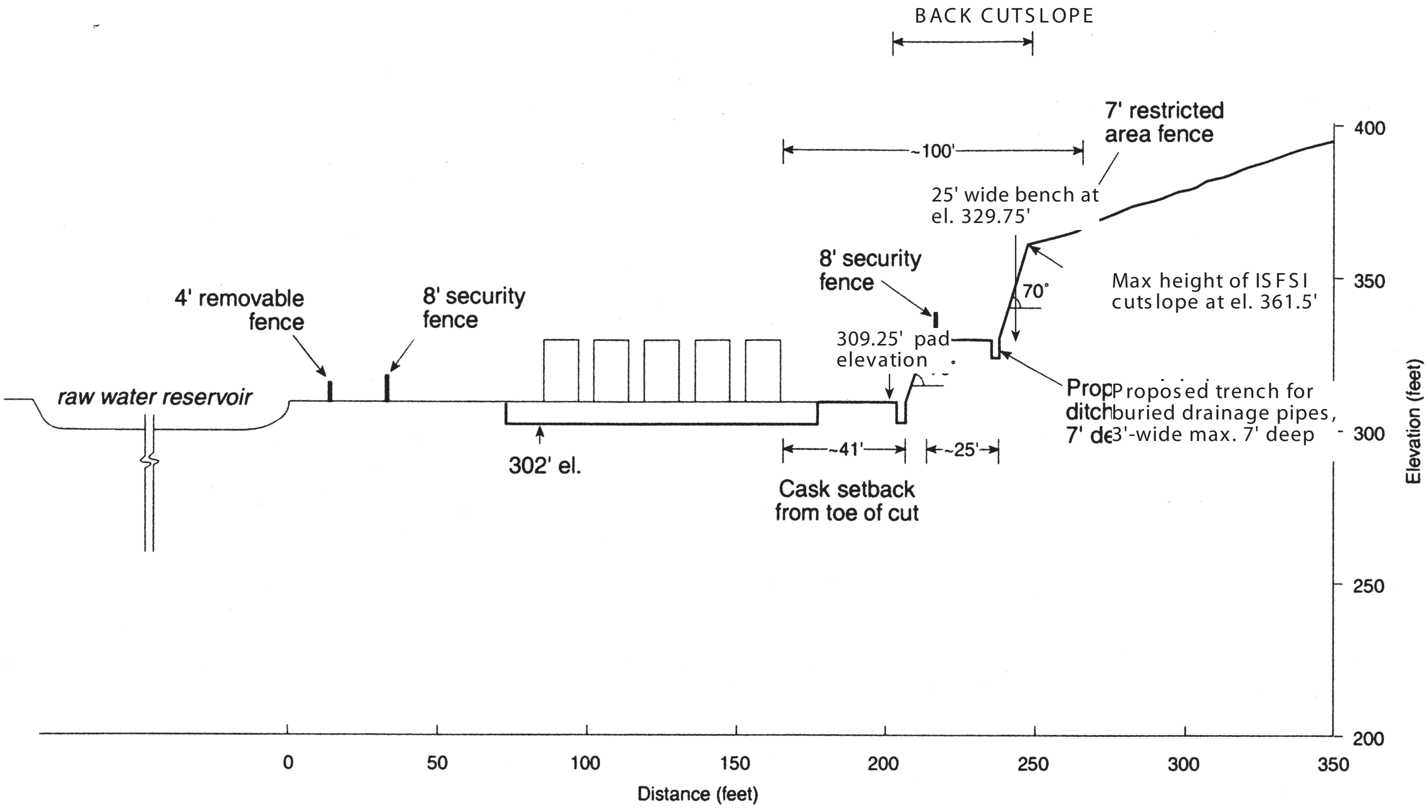
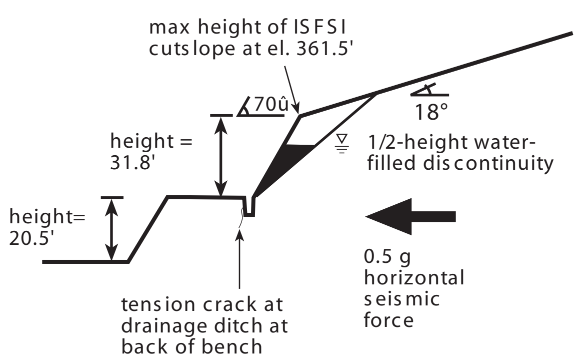
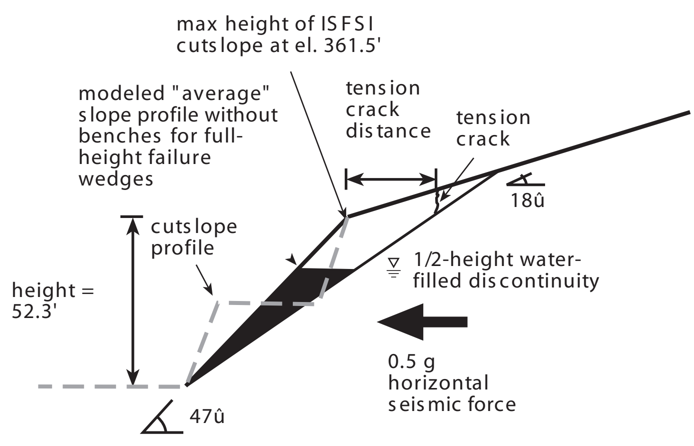
FIGURE 2.6-59 KINEMATIC ANALYSES OF WEST CUTSLOPE



A. Cross section through ISFSI pad and back cut, looking east



Example of riser-height (single bench) wedge



Example of total cut-height wedge as modeled by SWEDGE program

B. SWEDGE analysis cut configurations

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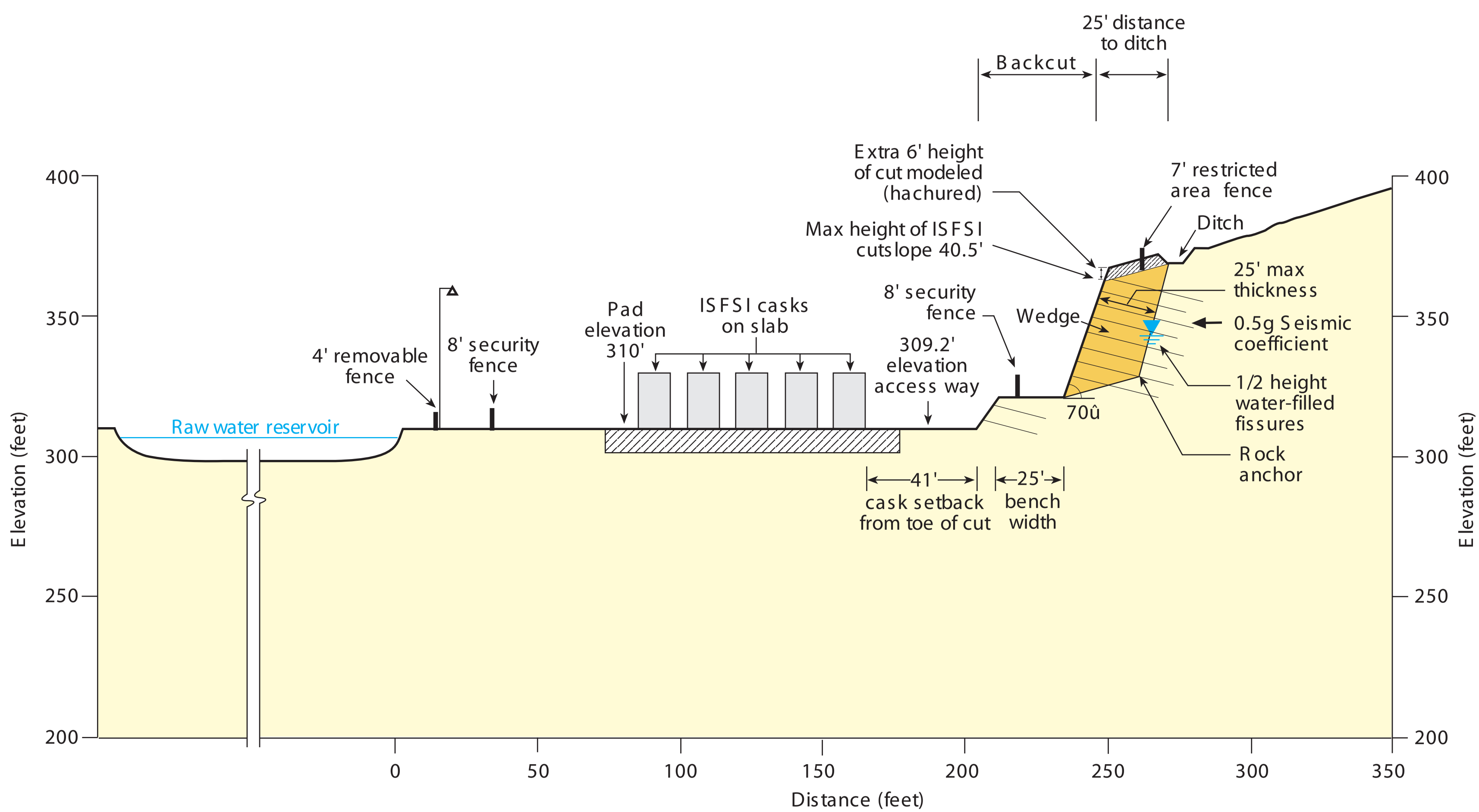
FIGURE 2.6-60 CUTSLOPE CONFIGURATION USED IN SWEDGE ANALYSES



Wedge, loading conditions, and example pattern rock anchors.

Note: cutslope geometry is based on PG&E Cannon Associates drawings, numbers CE41240EX1/EX2, 1/26/05.

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FIGURE 2.6-61 REVISED CUTSLOPE CONFIGURATION USED IN SWEDGE ANALYSES