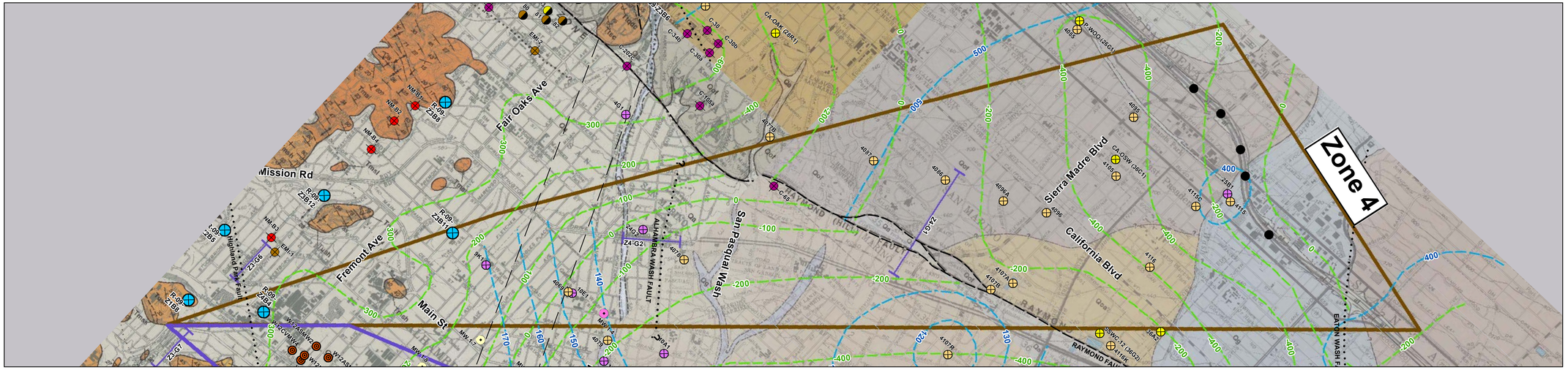
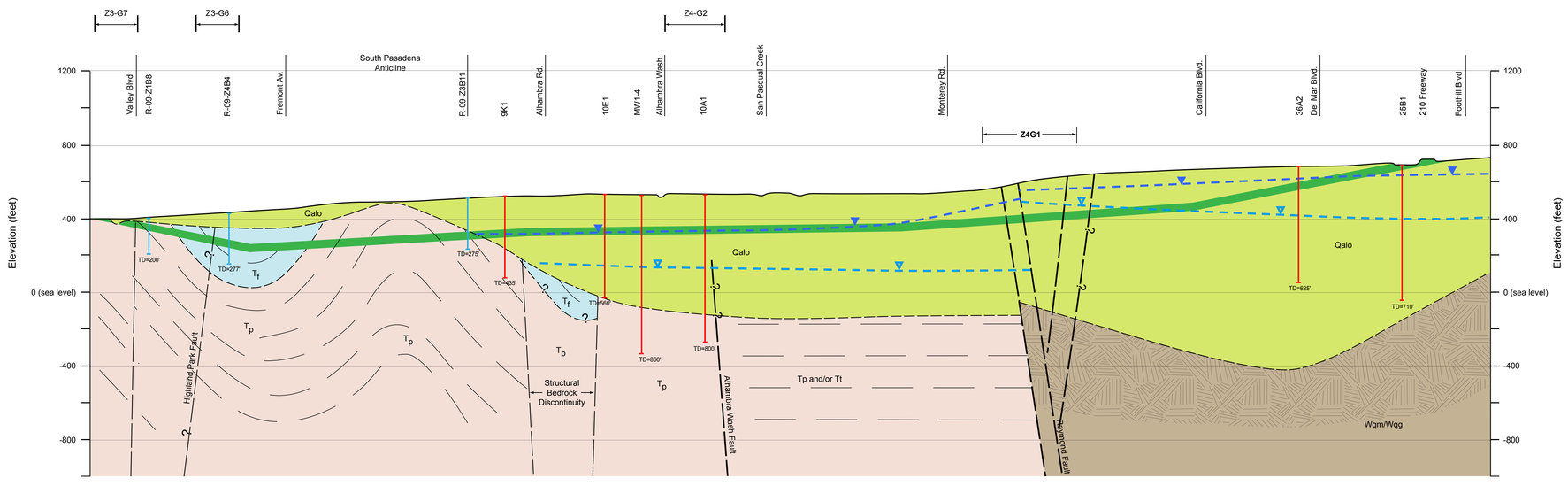
Geotechnical Map



Representative Geologic Profile for Zone 4



EXPLANATION

HORIZONTAL GRAPHIC SCALE

2,000 0 1,000 2,000

Data Sources:

CDMG (1998b)	Dibblee (1999)
CDMG (1998d)	Geoscience (2004)
CDWR (1966)	Lamar (1970)
CH2M HILL (2003)	MSGW (2006)
CH2M HILL (2006)	Yeats (2004)
CH2M HILL (2009)	Tan (2000b)
Dibblee (1989b)	Yerkes and Campbell (2005)
EMI (2006)	

UNITS (from Lamar, 1970)

Quaternary Deposits

- Qalo — Old Alluvium, Silt, clay, sand and gravel, fan and valley-fill deposits in poorly bedded, discontinous lenses

Fernando Formation (Pliocene)

- Tf — Siltstone, massive, very dark gray to black

Puente Formation (Late Miocene)

- Tp — Siltstone, claystone, mudstone, and fine sandstone; well bedded, brown, gray, black

Topanga Formation (Middle Miocene)

- Tt — Primarily Sandstone and conglomerate with abundant siltstone and mudstone interbeds; brown, gray, black

Crystalline Basement Rocks (Mesozoic)

- Wqm Wqg — Primarily Diorite and gneiss; generally highly fractured

SYMBOLS (All locations are approximate)

- Typical Tunnel Profile
- Historically Highest Groundwater Level (CDMG, 1998a, 1998b, 1998d)
- 2006 Groundwater Level (MSGW, 2006 and RBMB, 2006)
- Inactive Fault
- Active Fault
- Geologic Contact, dashed where infered or indefinite
- Z4-B4 — Continuous Core Boring (CH2M HILL, this study)
- 9k1 — Water Production Well (CDWR, 1966)
- MW1-4 — Groundwater Monitoring Well (CH2M HILL, 2003)
- Z5-G2 — Seismic Reflection Line (CH2M HILL, this study)

Legend

(All Locations are Approximate)

- R-09-Z1B8 — Continuous Core Boring (CH2M HILL, this study)
- W12ASMW2 — Facility Monitoring Well (CH2M HILL, 2009)
- 4077B — Water Production Well; Location for which only Groundwater Data is Available (LACDPW, 2009)
- Caltrans As-built LOTB's, (Various Locations)
- ERP-15 — Groundwater Monitoring Well (CDM, 2008a)
- ERP-16 — Groundwater Monitoring Well (CDM, 2008b)
- EMI-1 — Continuous Core Boring (EMI, 2006)
- ERP-14 — Groundwater Monitoring Well (CDM, 2006)
- MW-17 — Groundwater Monitoring Well (CH2M HILL, 2006)
- CDEM-5 — Groundwater Monitoring Well (Geosyntec, 2006b)
- DCMW-1 — Monitoring Well (Geosyntec, 2006a)
- CA-DSW — Water Production Well (Geoscience, 2004)
- MW 1-6 — Groundwater Monitoring Well (CH2M HILL, 2003)
- NM-B1 — Boring (Ninyo and Moore, 1999)
- MW2-02 — Groundwater Monitoring Well (CDM, 1998)
- 90 — Geotechnical Boring (Law/Crandall, 1993)
- C-65/C-23f — Boring (Caltrans, 1974a)
- ES-1 — Geotechnical Boring (Caltrans, 1974b
- 9D2 — Water Production Well (CDWR, 1966)
- -1400- — Structural Contour Line, Elevation at Top of Bedrock in Feet (MSL) (CDWR, 1966 and Geoscience, 2004)
- ~220~ — Groundwater Elevation in Feet (MSL) (San Gabriel Basin - MSGW, 2006 and Raymond Basin - RBMB, 2006 and 2007)
- Z2-G2 — Seismic Reflection Line (CH2M HILL, this study)
- Zone 4 Limits
- Zone 5 Limits

Source of Base Map: Dibblee, 1989b, 1989c, 1998, 1999

North

0 2,000 4,000 Feet

0 750 1,500 Meters

DRAFT

PLATE 8
Representative Geologic Profile and Geotechnical Map for Zone 4
SR-710 Tunnel Technical Study
Los Angeles County, California

CH2MHILL

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