

| | | | | |
|---|------------------------|--|---|--|
| LOGGED BY S. McLandrich | BEGIN DATE 12-27-07 | COMPLETION DATE 12-27-07 | BOREHOLE LOCATION (Lat/Long or North/East and Datum) N2120801.405 / E5997604.763 (NAD83) | HOLE ID DSB-R5 |
| DRILLING CONTRACTOR Gregg Drilling and Testing, Inc. | | BOREHOLE LOCATION (Offset, Station, Line) Offset 8ft L Sta 50+20 SB Alignment | | SURFACE ELEVATION 9.871 ft (NAVD88) |
| DRILLING METHOD Mud Rotary | | DRILL RIG Failing 1500 | | BOREHOLE DIAMETER 5 in. |
| SAMPLER TYPE(S) AND SIZE(S) (ID) MC (2.4"), SPT (1.4"), Grab, Shelby (2.87") | | SPT HAMMER TYPE Automatic, 140 lbs., 30-inch drop | | HAMMER EFFICIENCY, ERI 72.8% |
| BOREHOLE BACKFILL AND COMPLETION Neat Cement Grout backfill | | GROUNDWATER DURING DRILLING AFTER DRILLING (DATE) READINGS 1.8 | | TOTAL DEPTH OF BORING 99 ft |

| ELEVATION (ft) | DEPTH (ft) | Material Graphics | Description | Sample Location | Sample Number | Blows per 6 In | Blows per Foot | Recovery (%) | RQD (%) | Moisture Content (%) | Dry Unit Weight (pcf) | Shear Strength (tsf) | Drilling Method | Casing Depth | Remarks |
|----------------|------------|-------------------|--|-----------------|---------------|----------------|----------------|--------------|---------|----------------------|-----------------------|----------------------|-----------------|--------------|---------|
| 0 | 0 | | Reddish brown Poorly graded GRAVEL (GP), reddish brown, moist, with fine to coarse SAND. [FILL] | | S1 | | | | | | | | | | |
| 7.87 | 2 | | 1.83', with large pieces of chert (up to 5"). [BASEROCK] | | S2 | | | | | | | | | | |
| | 3 | | SANDY lean CLAY with GRAVEL (CL), dark greenish gray, very moist to wet, GRAVEL is brick fragments, SAND is fine. | | | | | | | | | | | | |
| 5.87 | 4 | | Grades dark gray, wet, GRAVEL is fine to medium. | | | | | | | | | | | | |
| | 5 | | Fat CLAY with SAND (CH), soft, bluish gray, wet, with decayed vegetation and organics. [SANDY BAY MUD] | | U3 | | 100 | 88 | | | | | | | |
| | 6 | | Poorly graded SAND with CLAY (SP-SC), dark bluish gray, wet, with decayed vegetation, SAND is fine to medium, organic odor, with lenses of fat CLAY. [MARINE SAND] | | | | | | | | | | | | |
| 3.87 | 7 | | | | | | | | | | | | | | |
| 1.87 | 8 | | | | | | | | | | | | | | |
| | 9 | | CLAY zone in cuttings from auger. [BAY MUD] | | | | | | | | | | | | |
| | 10 | | CLAYEY SAND (SC), dark bluish gray, wet, fine to medium, with CLAY lenses, with shells. [MARINE SAND] | | U4 | | 100 | 25 | | | | | | | |
| -2.13 | 12 | | Grades increased CLAY. | | | | | | | | | | | | |
| | 13 | | | | S5 | 1 | 37 | 100 | | | | | | | |
| | 14 | | Poorly graded SAND (SP), medium dense, grayish brown, very moist, fine to medium, clean. 14.0', grades with trace fines. | | S7 | 1 | 20 | 100 | | | | | | | |
| | 15 | | | | | 8 | | | | | | | | | |
| | 16 | | | | | 12 | | | | | | | | | |
| -6.13 | 18 | | Grades with frequent shell fragments up to 1/16" diameter. | | S8 | 9 | 11 | 67 | | | | | | | |
| | 19 | | | | | 7 | | | | | | | | | |
| | 20 | | SANDY fat CLAY (CH), soft, bluish gray to gray, wet, SAND is fine, with lenses of CLAYEY SAND, with shells up to 1/2" diameter. [BAY MUD] | | S9 | 0 | 0 | 100 | | | | | | | |
| -10.13 | 21 | | | | | 0 | | | | | | | | | |
| | 22 | | Poorly graded SAND (SP), medium dense, yellowish brown, wet, fine to medium, with trace fines. [COLMA SAND] | | | | | | | | | | | | |
| -12.13 | 23 | | | | S10 | 8 | 19 | 100 | | | | | | | |
| | 24 | | Poorly graded SAND with CLAY (SP-SC), loose, wet, fine to medium, with shell fragments up to 1/16" diameter, occasional coarse SAND. | | | 9 | | | | | | | | | |
| | 25 | | | | S11 | 10 | 17 | 100 | | | | | | | |

(continued)

CALTRANS FORMAT ARUPLOGS 11-2-08.GPJ ARUP LIBRARY CALTRANS FORMAT.GLB 11/3/08



Department of Transportation
Division of Engineering Services
Geotechnical Services

| | | | | | |
|---|----------------|---------------------------|---------------------|-------------------|-----------------|
| REPORT TITLE BORING RECORD | | | | HOLE ID DSB-R5 | |
| DIST. 4 | COUNTY S.F. | ROUTE 101 | POSTMILE 8.3/9.4 | EA 163701 | |
| PROJECT OR BRIDGE NAME Doyle Drive Replacement Project | | | | | |
| BRIDGE NUMBER 34-164L | | PREPARED BY T. Carroll | | DATE 11-3-08 | SHEET 1 of 4 |

Figure

| ELEVATION (ft) | DEPTH (ft) | Material Graphics | Description | Sample Location | Sample Number | Blows per 6 in | Blows per Foot | Recovery (%) | RQD (%) | Moisture Content (%) | Dry Unit Weight (pcf) | Shear Strength (tsf) | Drilling Method | Casing Depth | Remarks |
|----------------|------------|---|---|-----------------|---------------|----------------|----------------|--------------|---------|----------------------|-----------------------|----------------------|-------------------------------------|----------------------------------|---------|
| -16.13 | 25 | [Material Graphic: Poorly graded SAND (SP), medium dense, yellowish brown, wet, fine, trace fines. Grades olive brown.] | Poorly graded SAND (SP), medium dense, yellowish brown, wet, fine, trace fines. Grades olive brown. | X | 3 | 5 | 12 | | | | | | | | |
| | | | | | | | | | | | | | | | |
| -18.13 | 28 | [Material Graphic: Grades dark olive brown, very dense, with increase in fines content. Grades with iron-oxide staining.] | Grades dark olive brown, very dense, with increase in fines content. Grades with iron-oxide staining. | X | S12 | 16 | 50/6" | 100 | | | | | [Material Graphic: Drilling Method] | [Material Graphic: Casing Depth] | |
| | 29 | | | | S13 | 17 | 25 | 36 | 61 | 100 | | | | | |
| -20.13 | 30 | | | | | | | | | | | | | | |
| -22.13 | 32 | [Material Graphic: Grades dark gray. 48.4' - 48.7', heavily iron-oxidized.] | Grades dark gray. 48.4' - 48.7', heavily iron-oxidized. | X | S14 | 26 | 50/6" | 100 | | | | | [Material Graphic: Drilling Method] | [Material Graphic: Casing Depth] | |
| | 33 | | | | S15 | 17 | 27 | 30 | 57 | 100 | | | | | |
| -24.13 | 34 | | | | | | | | | | | | | | |
| -26.13 | 36 | [Material Graphic: Grades dark gray. 48.4' - 48.7', heavily iron-oxidized.] | Grades dark gray. 48.4' - 48.7', heavily iron-oxidized. | X | S16 | 50/6" | 50/6" | 100 | | | | | [Material Graphic: Drilling Method] | [Material Graphic: Casing Depth] | |
| | 37 | | | | S17 | 16 | 36 | 24 | 60 | 100 | | | | | |
| -28.13 | 38 | | | | | | | | | | | | | | |
| -30.13 | 40 | [Material Graphic: Grades dark gray. 48.4' - 48.7', heavily iron-oxidized.] | Grades dark gray. 48.4' - 48.7', heavily iron-oxidized. | X | S18 | 50/6" | 50/6" | 100 | | | | | [Material Graphic: Drilling Method] | [Material Graphic: Casing Depth] | |
| | 41 | | | | S19 | 20 | 24 | 38 | 62 | 100 | | | | | |
| -32.13 | 42 | | | | | | | | | | | | | | |
| -34.13 | 44 | [Material Graphic: Grades dark gray. 48.4' - 48.7', heavily iron-oxidized.] | Grades dark gray. 48.4' - 48.7', heavily iron-oxidized. | X | S20 | 50/6" | 50/6" | 100 | | | | | [Material Graphic: Drilling Method] | [Material Graphic: Casing Depth] | |
| | 45 | | | | S21 | 26 | 50/6" | 100 | | | | | | | |
| -36.13 | 46 | | | | | | | | | | | | | | |
| -38.13 | 48 | [Material Graphic: Grades dark gray. 48.4' - 48.7', heavily iron-oxidized.] | Grades dark gray. 48.4' - 48.7', heavily iron-oxidized. | X | S22 | 16 | 19 | 30 | 49 | 100 | | | [Material Graphic: Drilling Method] | [Material Graphic: Casing Depth] | |
| | 49 | | | | | | | | | | | | | | |
| -40.13 | 50 | | | | | | | | | | | | | | |
| -42.13 | 52 | [Material Graphic: Poorly graded SAND with SILT (SP-SM), dense, grayish brown and reddish brown, wet, fine, mottled.] | Poorly graded SAND with SILT (SP-SM), dense, grayish brown and reddish brown, wet, fine, mottled. | X | S22 | 16 | 19 | 30 | 49 | 100 | | | | | |
| -44.13 | 54 | | | | | | | | | | | | | | |
| | 55 | | | | | | | | | | | | | | |

(continued)



Department of Transportation
 Division of Engineering Services
 Geotechnical Services

| | | | | |
|---|---------------------------|-----------------|---------------------|-------------------|
| REPORT TITLE BORING RECORD | | | | HOLE ID DSB-R5 |
| DIST. 4 | COUNTY S.F. | ROUTE 101 | POSTMILE 8.3/9.4 | EA 163701 |
| PROJECT OR BRIDGE NAME Doyle Drive Replacement Project | | | | |
| BRIDGE NUMBER 34-164L | PREPARED BY T. Carroll | DATE 11-3-08 | SHEET 2 of 4 | |

Figure

| ELEVATION (ft) | DEPTH (ft) | Material Graphics | Description | Sample Location | Sample Number | Blows per 6 in | Blows per Foot | Recovery (%) | RQD (%) | Moisture Content (%) | Dry Unit Weight (pcf) | Shear Strength (tsf) | Drilling Method | Casing Depth | Remarks |
|----------------|------------|-------------------|--|-----------------|----------------|----------------|----------------|--------------|---------|----------------------|-----------------------|----------------------|-----------------|--------------|---------|
| -46.13 | 56 | | Poorly graded SAND with SILT (SP-SM), dense, grayish brown and reddish brown, wet, fine, mottled. 56.0', bluish gray CLAYEY SAND in cutting. | | | | | | | | | | | | |
| -48.13 | 58 | | Poorly graded SAND with CLAY (SP-SC), dense, bluish gray, wet, fine. | S23 | 12 15 16 | 31 | 100 | | | | | | | | |
| -54.13 | 64 | | Piece of fine GRAVEL (subrounded). | S24 | 17 24 28 | 52 | 100 | | | | | | | | |
| -58.13 | 68 | | Lean CLAY with SAND (CL), hard, greenish gray, moist, with lenses of CLAYEY SAND, SAND is fine. [OLD BAY CLAY] | S25 | 13 24 35 | 59 | 100 | | | | | PP = >2.25 | | | |
| -62.13 | 72 | | 71.5', grades gravelly based on drill cuttings. Grades light yellowish brown and gray, mottled, with light gray clayey streaks. | S26 | 6 12 22 | 34 | 100 | | | | | | | | |
| -68.13 | 78 | | Grades light bluish gray and light yellowish brown with rootlets, decayed vegetation-mottled. | S27 | 10 15 18 | 33 | 100 | | | | | | | | |
| -72.13 | 82 | | SILT (ML), hard, orangish brown, moist, trace SAND, with slight brown mottling. [ALLUVIUM] | S28 | 16 28 31 | 59 | 100 | | | | | | | | |

(continued)



Department of Transportation
Division of Engineering Services
Geotechnical Services

REPORT TITLE
BORING RECORD

HOLE ID
DSB-R5

| | | | | |
|------------|----------------|--------------|---------------------|--------------|
| DIST. 4 | COUNTY S.F. | ROUTE 101 | POSTMILE 8.3/9.4 | EA 163701 |
|------------|----------------|--------------|---------------------|--------------|

PROJECT OR BRIDGE NAME
Doyle Drive Replacement Project

| | | | |
|--------------------------|---------------------------|-----------------|-----------------|
| BRIDGE NUMBER 34-164L | PREPARED BY T. Carroll | DATE 11-3-08 | SHEET 3 of 4 |
|--------------------------|---------------------------|-----------------|-----------------|

Figure

| ELEVATION (ft) | DEPTH (ft) | Material Graphics | Description | Sample Location | Sample Number | Blows per 6 in | Blows per Foot | Recovery (%) | RQD (%) | Moisture Content (%) | Dry Unit Weight (pcf) | Shear Strength (tsf) | Drilling Method | Casing Depth | Remarks |
|----------------|------------|-------------------|---|-----------------|---------------|----------------|----------------|--------------|---------|----------------------|-----------------------|----------------------|-----------------|--------------|---------|
| -76.13 | 86 | | SILT (ML), hard, orangish brown, moist, trace SAND, with slight brown mottling. [ALLUVIUM] | | | | | | | | | | | | |
| -78.13 | 88 | | Poorly graded SAND with SILT (SP-SM), dense, reddish brown, moist, fine. | | S29 | 26 50/6" | 50/6" | 100 | | | | | | | |
| -80.13 | 90 | | SILT with SAND (ML), hard, grayish brown and reddish brown, mottled, with frequent pockets of iron-oxide staining (up to 1/4" diameter). | | | | | | | | | | | | |
| -84.13 | 94 | | Grades orangish brown, with black specks, and fine, rounded GRAVEL. | | S30 | 13 26 33 | 59 | 100 | | | | | | | |
| -88.13 | 98 | | Grades to SANDY SILT, dark reddish brown. | | S31 | 7 21 35 | 56 | 100 | | | | | | | |
| -90.13 | 100 | | Borehole terminated at a depth of 99 feet on 12/27/2007. See Boring Record Legend for soil classification chart and key to test data and sampler type. | | | | | | | | | | | | |



Department of Transportation
Division of Engineering Services
Geotechnical Services

REPORT TITLE
BORING RECORD

HOLE ID
DSB-R5

| | | | | |
|------------|----------------|--------------|---------------------|--------------|
| DIST. 4 | COUNTY S.F. | ROUTE 101 | POSTMILE 8.3/9.4 | EA 163701 |
|------------|----------------|--------------|---------------------|--------------|

PROJECT OR BRIDGE NAME
Doyle Drive Replacement Project

| | | | |
|--------------------------|---------------------------|-----------------|-----------------|
| BRIDGE NUMBER 34-164L | PREPARED BY T. Carroll | DATE 11-3-08 | SHEET 4 of 4 |
|--------------------------|---------------------------|-----------------|-----------------|

Figure