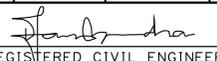
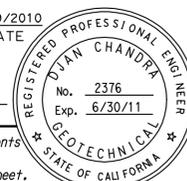


| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 501 | 527 |


 REGISTERED CIVIL ENGINEER DATE 8/9/2010
 PLANS APPROVAL DATE 4-18-11

 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863
 LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

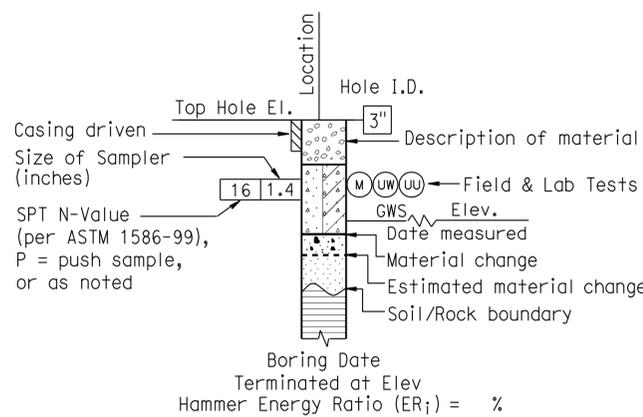
| CEMENTATION | |
|-------------|---|
| Description | Criteria |
| Weak | Crumbles or breaks with handling or little finger pressure. |
| Moderate | Crumbles or breaks with considerable finger pressure. |
| Strong | Will not crumble or break with finger pressure. |

| CONSISTENCY OF COHESIVE SOILS | | | | |
|-------------------------------|---------------------------------------|---------------------------------------|---------------------------|---|
| Description | Unconfined Compressive Strength (tsf) | Pocket Penetrometer Measurement (tsf) | Torvane Measurement (tsf) | Field Approximation |
| Very Soft | < 0.25 | < 0.25 | < 0.12 | Easily penetrated several inches by fist |
| Soft | 0.25 to 0.50 | 0.25 to 0.50 | 0.12 to 0.25 | Easily penetrated several inches by thumb |
| Medium Stiff | 0.50 to 1.0 | 0.50 to 1.0 | 0.25 to 0.50 | Penetrated several inches by thumb with moderate effort |
| Stiff | 1 to 2 | 1 to 2 | 0.50 to 1.0 | Readily indented by thumb but penetrated only with great effort |
| Very Stiff | 2 to 4 | 2 to 4 | 1.0 to 2.0 | Readily indented by thumbnail |
| Hard | > 4.0 | > 4.0 | > 2.0 | Indented by thumbnail with difficulty |

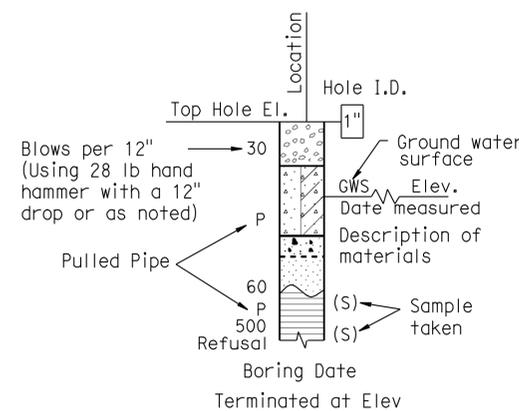
| BOREHOLE IDENTIFICATION | | |
|---|-----------|--|
| Symbol | Hole Type | Description |
|  | A | Auger Boring |
|  | R | Rotary drilled boring |
|  | P | Rotary percussion boring (air) |
|  | R | Rotary drilled diamond core |
|  | HD | Hand driven (1-inch soil tube) |
|  | HA | Hand Auger |
|  | D | Dynamic Cone Penetration Boring |
|  | CPT | Cone Penetration Test (ASTM D 5778-95) |
|  | O | Other |

Note: Size in inches.

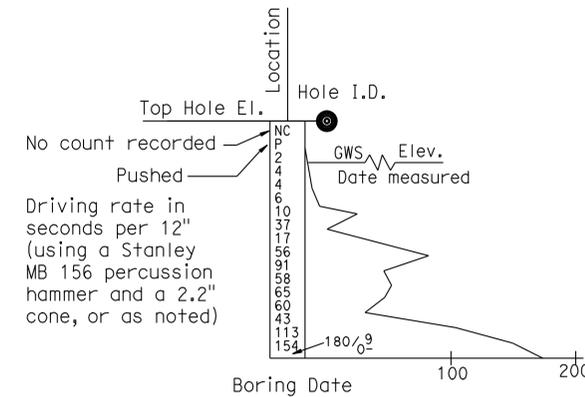
| PLASTICITY OF FINE-GRAINED SOILS | |
|----------------------------------|--|
| Description | Criteria |
| Nonplastic | A 1/8-inch thread cannot be rolled at any water content. |
| Low | The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit. |
| Medium | The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit. |
| High | It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit. |



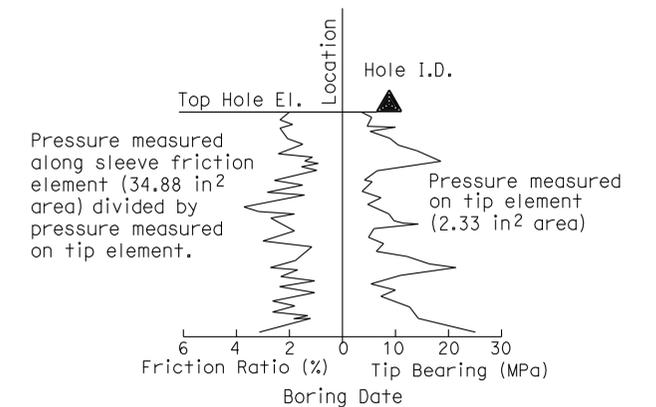
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING


 DESIGN OVERSIGHT
 Sudhakar Vatti
 8-10-10
 SIGN OFF DATE

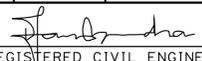
DRAWN BY Buu Tran
 CHECKED BY Taekuk Kim

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 Amit Bakane
 FIELD INVESTIGATION BY:
 DATE: 2/25/09

BRIDGE NO. 55E0111
 POST MILES 13.4
 Djan Chandra
 PROJECT ENGINEER

BALL ROAD OC-RET WALL
LOG OF TEST BORINGS 2 OF 4

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 502 | 527 |


 REGISTERED CIVIL ENGINEER DATE 8/9/2010
 4-18-11
 PLANS APPROVAL DATE
 No. 2376
 Exp. 6/30/11
 REGISTERED PROFESSIONAL ENGINEER
 GEOTECHNICAL
 STATE OF CALIFORNIA

ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863
 LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

| GROUP SYMBOLS AND NAMES | | | |
|-------------------------|--|----------------|---|
| Graphic/Symbol | Group Names | Graphic/Symbol | Group Names |
| | Well-graded GRAVEL | | Lean CLAY |
| | Well-graded GRAVEL with SAND | | Lean CLAY with SAND |
| | Poorly graded GRAVEL | | Lean CLAY with GRAVEL |
| | Poorly graded GRAVEL with SAND | | SANDY lean CLAY |
| | Well-graded GRAVEL with SILT | | SANDY lean CLAY with GRAVEL |
| | Well-graded GRAVEL with SILT and SAND | | GRAVELLY lean CLAY |
| | Well-graded GRAVEL with CLAY (or SILTY CLAY) | | GRAVELLY lean CLAY with SAND |
| | Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND) | | SILTY CLAY |
| | Poorly graded GRAVEL with SILT | | SILTY CLAY with SAND |
| | Poorly graded GRAVEL with SILT and SAND | | SILTY CLAY with GRAVEL |
| | Poorly graded GRAVEL with CLAY (or SILTY CLAY) | | SANDY SILTY CLAY |
| | Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND) | | SANDY SILTY CLAY with GRAVEL |
| | SILTY GRAVEL | | GRAVELLY SILTY CLAY |
| | SILTY GRAVEL with SAND | | GRAVELLY SILTY CLAY with SAND |
| | CLAYEY GRAVEL | | SILT |
| | CLAYEY GRAVEL with SAND | | SILT with SAND |
| | SILTY, CLAYEY GRAVEL | | SILT with GRAVEL |
| | SILTY, CLAYEY GRAVEL with SAND | | SANDY SILT |
| | Well-graded SAND | | SANDY SILT with GRAVEL |
| | Well-graded SAND with GRAVEL | | GRAVELLY SILT |
| | Poorly graded SAND | | GRAVELLY SILT with SAND |
| | Poorly graded SAND with GRAVEL | | ORGANIC lean CLAY |
| | Well-graded SAND with SILT | | ORGANIC lean CLAY with SAND |
| | Well-graded SAND with SILT and GRAVEL | | ORGANIC lean CLAY with GRAVEL |
| | Well-graded SAND with CLAY (or SILTY CLAY) | | SANDY ORGANIC lean CLAY |
| | Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL) | | SANDY ORGANIC lean CLAY with GRAVEL |
| | Poorly graded SAND with SILT | | GRAVELLY ORGANIC lean CLAY |
| | Poorly graded SAND with SILT and GRAVEL | | GRAVELLY ORGANIC lean CLAY with SAND |
| | Poorly graded SAND with CLAY (or SILTY CLAY) | | ORGANIC elastic SILT |
| | Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL) | | ORGANIC elastic SILT with SAND |
| | SILTY SAND | | ORGANIC elastic SILT with GRAVEL |
| | SILTY SAND with GRAVEL | | SANDY ORGANIC elastic SILT |
| | CLAYEY SAND | | SANDY ORGANIC elastic SILT with GRAVEL |
| | CLAYEY SAND with GRAVEL | | GRAVELLY ORGANIC elastic SILT |
| | SILTY, CLAYEY SAND | | GRAVELLY ORGANIC elastic SILT with SAND |
| | SILTY, CLAYEY SAND with GRAVEL | | ORGANIC SOIL |
| | PEAT | | ORGANIC SOIL with SAND |
| | COBBLES | | ORGANIC SOIL with GRAVEL |
| | COBBLES and BOULDERS | | SANDY ORGANIC SOIL |
| | BOULDERS | | SANDY ORGANIC SOIL with GRAVEL |
| | | | GRAVELLY ORGANIC SOIL |
| | | | GRAVELLY ORGANIC SOIL with SAND |

| FIELD AND LABORATORY TESTING | |
|------------------------------|---|
| (C) | Consolidation (ASTM D 2435) |
| (CL) | Collapse Potential (ASTM D 5333) |
| (CP) | Compaction Curve (CTM 216) |
| (CR) | Corrosivity Testing (CTM 643, CTM 422, CTM 417) |
| (CU) | Consolidated Undrained Triaxial (ASTM D 4767) |
| (DS) | Direct Shear (ASTM D 3080) |
| (EI) | Expansion Index (ASTM D 4829) |
| (M) | Moisture Content (ASTM D 2216) |
| (OC) | Organic Content-% (ASTM D 2974) |
| (P) | Permeability (CTM 220) |
| (PA) | Particle Size Analysis (ASTM D 422) |
| (PI) | Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89) |
| (PL) | Point Load Index (ASTM D 5731) |
| (PM) | Pressure Meter |
| (PP) | Pocket Penetrometer |
| (R) | R-Value (CTM 301) |
| (SE) | Sand Equivalent (CTM 217) |
| (SG) | Specific Gravity (AASHTO T 100) |
| (SL) | Shrinkage Limit (ASTM D 427) |
| (SW) | Swell Potential (ASTM D 4546) |
| (TV) | Pocket Torvane |
| (UC) | Unconfined Compression-Soil (ASTM D 2166) |
| | Unconfined Compression-Rock (ASTM D 2938) |
| (UU) | Unconsolidated Undrained Triaxial (ASTM D 2850) |
| (UW) | Unit Weight (ASTM D 4767) |
| (VS) | Vane Shear (AASHTO T 223) |

| APPARENT DENSITY OF COHESIONLESS SOILS | |
|--|---|
| Description | SPT N ₆₀ (Blows / 12 inches) |
| Very loose | 0 - 4 |
| Loose | 5 - 10 |
| Medium Dense | 11 - 30 |
| Dense | 31 - 50 |
| Very Dense | > 50 |

| MOISTURE | |
|-------------|---|
| Description | Criteria |
| Dry | Absence of moisture, dusty, dry to the touch |
| Moist | Damp but no visible water |
| Wet | Visible free water, usually soil is below water table |

| PERCENT OR PROPORTION OF SOILS | |
|--------------------------------|--|
| Description | Criteria |
| Trace | Particles are present but estimated to be less than 5% |
| Few | 5 to 10% |
| Little | 15 to 25% |
| Some | 30 to 45% |
| Mostly | 50 to 100% |

| PARTICLE SIZE | | |
|---------------|-----------|-------------------|
| Description | Size | |
| Boulder | > 12" | |
| Cobble | 3" to 12" | |
| Gravel | Coarse | 3/4" to 3" |
| | Fine | No. 4 to 3/4" |
| Sand | Coarse | No. 10 to No. 4 |
| | Medium | No. 40 to No. 10 |
| | Fine | No. 200 to No. 40 |


 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

DRAWN BY Buu Tran
 CHECKED BY Taekuk Kim

Amit Bakane
 FIELD INVESTIGATION BY:
 DATE: 2/25/09

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Djan Chandra
 PROJECT ENGINEER

BRIDGE No.
 55E0111
 POST MILES
 13.4

BALL ROAD OC-RET WALL
LOG OF TEST BORINGS 3 OF 4

DATE PLOTTED => 19-APR-2011 USERNAME => htlm

| DIST. | COUNTY | ROUTE | POST MILES-TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|-------|--------|-------|--------------------------|-----------|--------------|
| 07 | ORA | 57.01 | 12.2/15.2 | 31 | 44 |

A. E. Bachu
 REGISTERED CIVIL ENGINEER NO. 6556
 DATE APPROVED December 18, 1972

NO GROUND WATER ENCOUNTERED
 DURING THIS INVESTIGATION BY
 BRIDGE DEPT. GEOLOGY SECTION
 DATE FEBRUARY, 1962...

BENCH MARK
 BM# J40-ANA-6J Elev 180.59
 Pd city of Anaheim brass cap in south curb, 1 ft. east of end of curb return at southeast corner of Sunkist and Wagner No. 2700A.

To convert to current datum NAVD83, approximately 1.84 feet should be added to the as-built elevations.

TO ACCOMPANY PLANS DATED 4-18-11

OFFICE OF STRUCTURE FOUNDATIONS-ENGINEERING SERVICES CENTER

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, licence number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

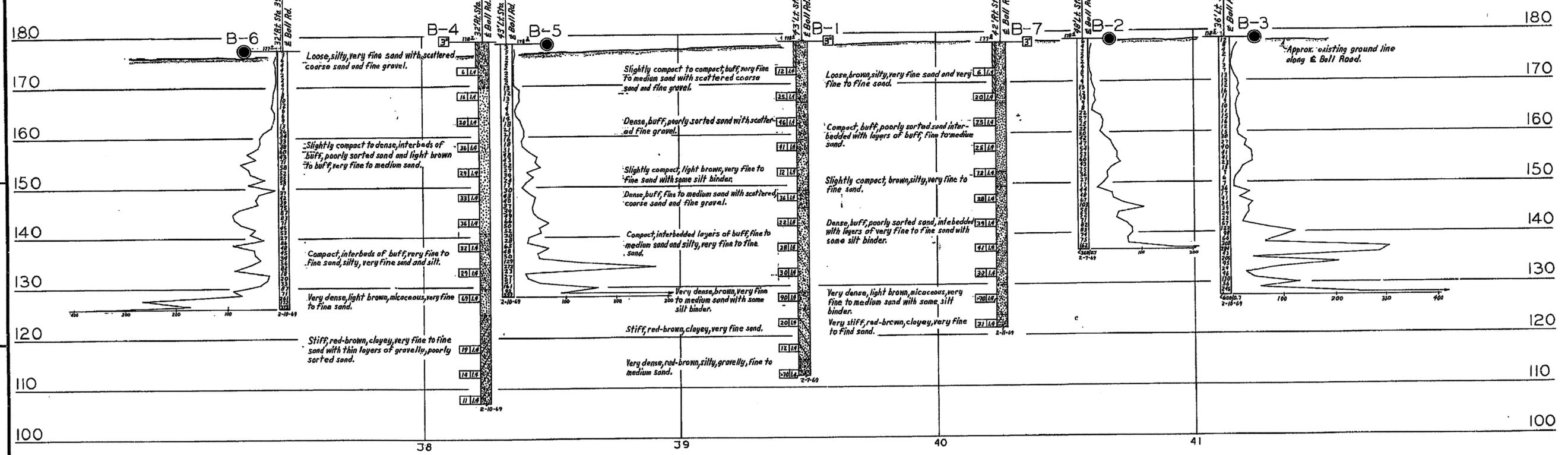
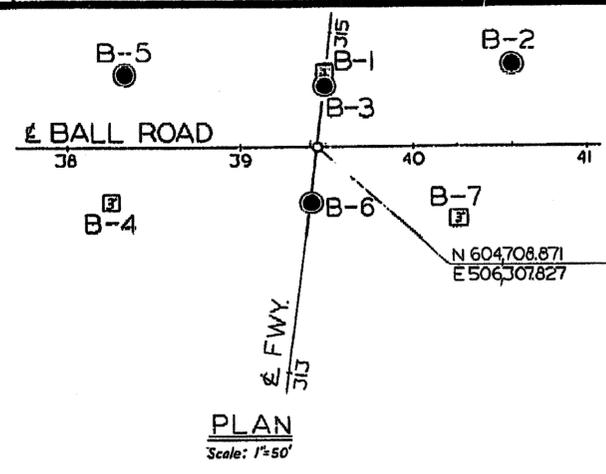
| DIST. | COUNTY | ROUTE | MILE POST-TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|-------|--------|-------|-------------------------|-----------|--------------|
| 12 | Orca | 57 | 12.2/15.2 | 503 | 527 |

8/9/10
 REGISTERED ENGINEER-GEOTECHNICAL DATE

BALL ROAD OC-RET WALL
 LOG OF TEST BORINGS 4 OF 4

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 12231 BRIDGE NO. 55E0111
 EA: 0F0401



PROFILE
 Scale: Vert. 1"=10'
 Horiz. 1"=20'

NO AS BUILT CHANGES
 CORRECTIONS BY R. STRINGS
 CONTRACT NO. 032021
 DATE 10-10-74

AS BUILT PLANS
 Contract No. 07-032024
 Date Completed 07/06/73
 Document No. 07006373

STATE OF CALIFORNIA
 TRANSPORTATION AGENCY
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF HIGHWAYS

BALL ROAD OVERROSSING
 LOG OF TEST BORINGS

| | | | | |
|-------------------|----------------|-------------|--------------------------|-------|
| BRIDGE No. 55-524 | POST MILE 13.4 | DRAWING NO. | SHEET 11 | OF 11 |
| REVISION DATES | | | (PRELIMINARY STAGE ONLY) | |

FIELD STUDY BY WCCM 2-7-69
 DRAWN BY W.M. MARTIN 3-1-69
 CHECKED BY R.F. GARDNER 3-22-69
 Approved by [Signature]

LEGEND OF EARTH MATERIALS

| | |
|---------------------------|---------------------------|
| Gravel | Silty Clay or Clayey silt |
| Sand | Organic Material |
| Silt | Fill Material |
| Clay | Igneous Rock |
| Sandy Clay or Clayey Sand | Sedimentary Rock |
| Sandy Silt or Silty Sand | Metamorphic Rock |

Division showing the base for estimates...
 CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.

55E0111r-z-1tb04ob.tif

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Orca | 57 | 12.2/15.2 | 504 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 ERIC A. JOHNSON
 No. C57355
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

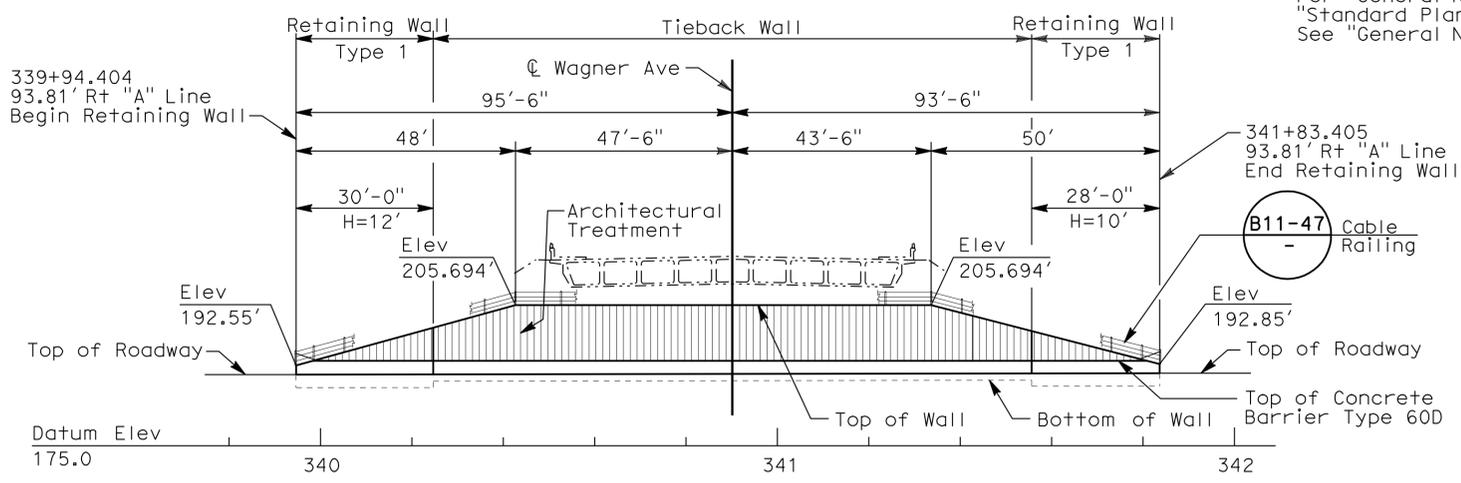
OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377

NOTES:

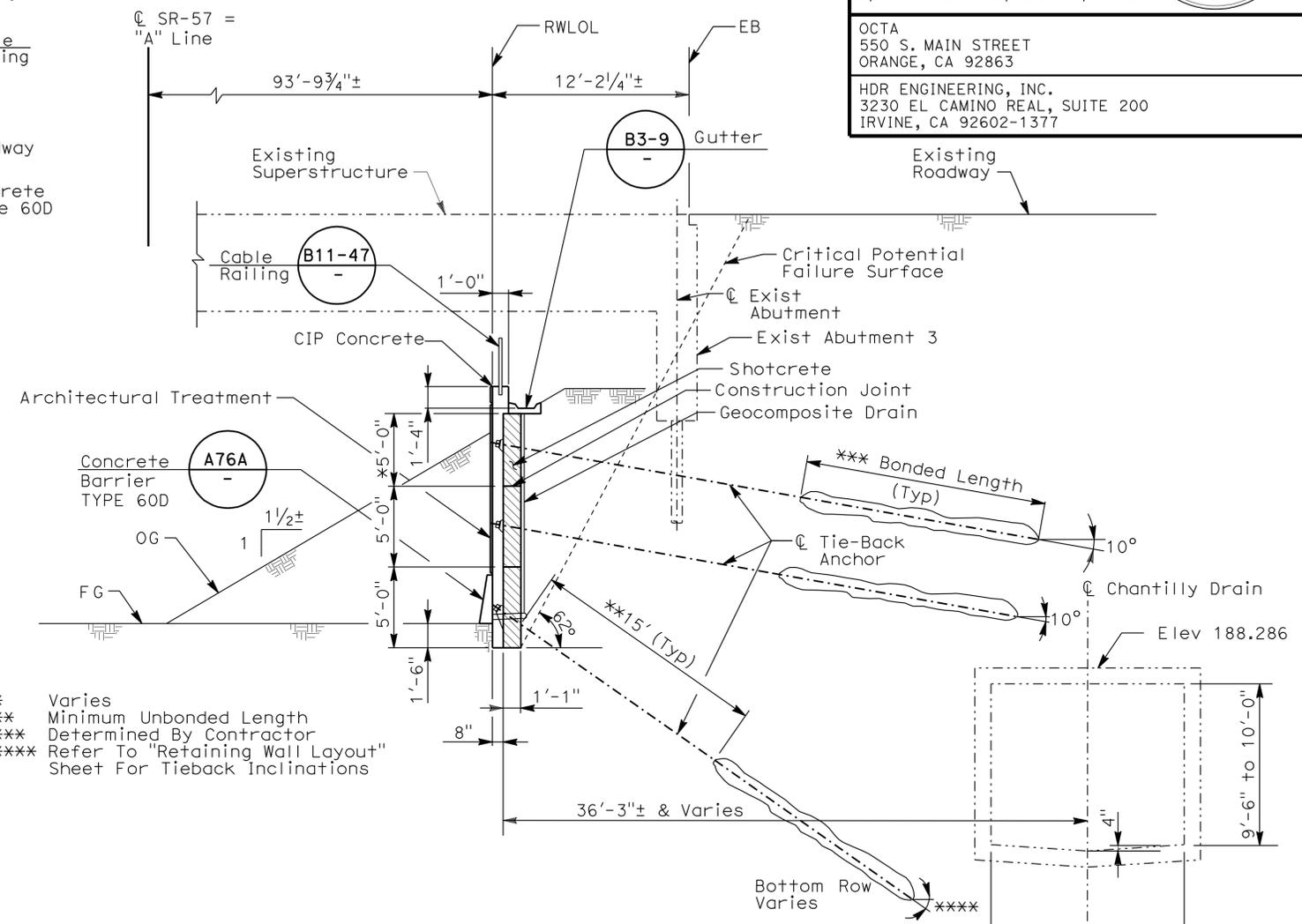
For "General Notes" And
 "Standard Plans List"
 See "General Notes" Sheet.

LEGEND:

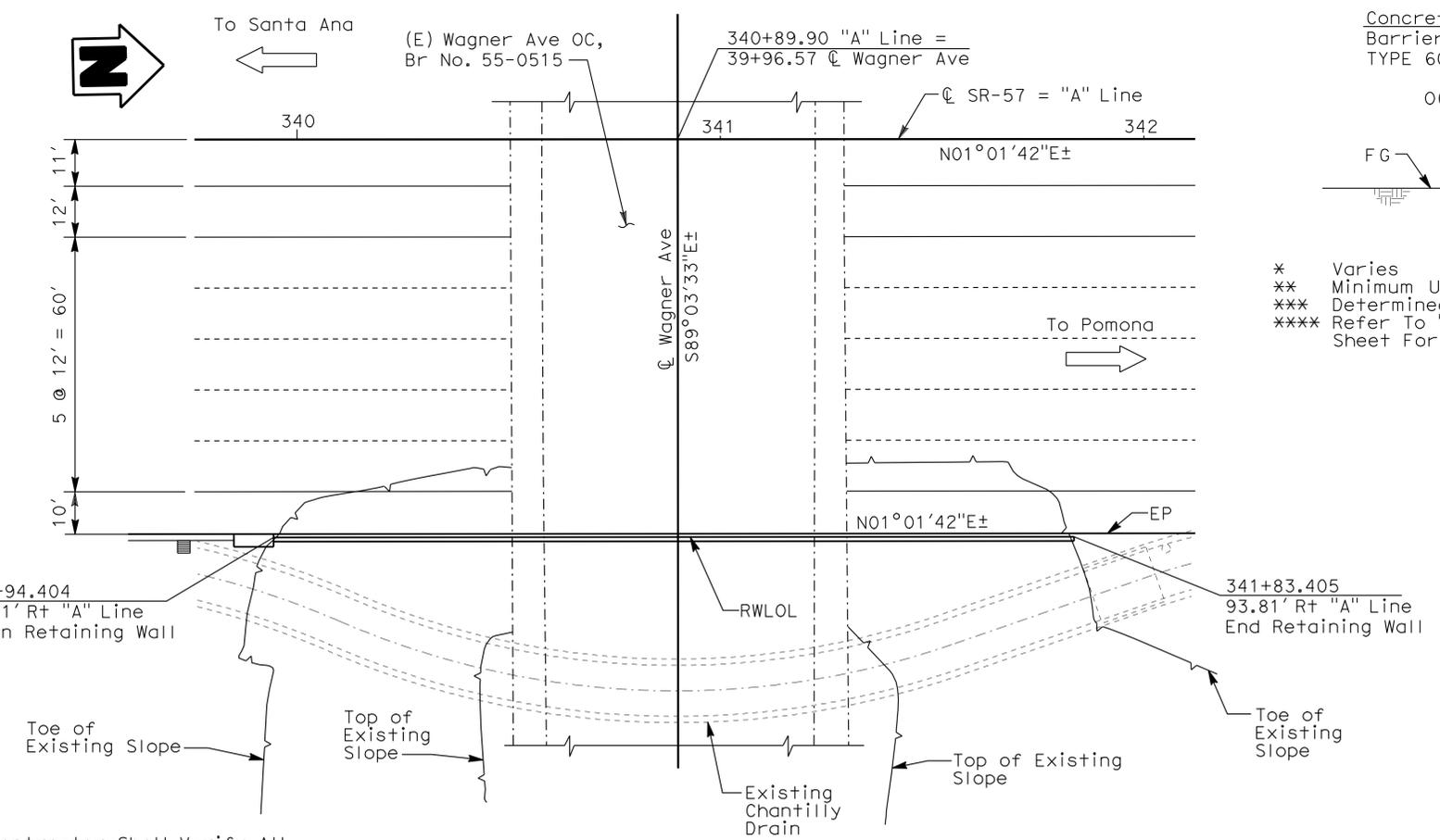
- Indicates Limits of Shotcrete
- Indicates New Construction
- Indicates Foundation or Hidden Lines
- Indicates Existing Structure
- RWLOL Indicates Retaining Wall Layout Line



MIRROR ELEVATION
SCALE 1"=20'



TYPICAL WALL SECTION
SCALE: 1"=5'



PLAN
SCALE 1"=20'

NOTE:
 The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

WAGNER Ave OC (RETAINING WALL) No. 55E0112 QUANTITIES

| | | |
|--|--------|------|
| STRUCTURE EXCAVATION (RETAINING WALL) | 150 | CY |
| STRUCTURE EXCAVATION (TIEBACK WALL) | 200 | CY |
| STRUCTURE BACKFILL (RETAINING WALL) | 78 | CY |
| STRUCTURE BACKFILL (TIEBACK WALL) | 7 | CY |
| LEAN CONCRETE BACKFILL | 20 | CY |
| TIEBACK ANCHOR | 31 | EA |
| STRUCTURAL CONCRETE, RETAINING WALL | 100 | CY |
| ARCHITECTURAL TREATMENT (FLOWER PATTERN) | 1,660 | SQFT |
| BAR REINFORCING STEEL (RETAINING WALL) | 22,900 | LB |
| SHOTCRETE | 75 | CY |
| MINOR CONCRETE (GUTTER) | 192 | LF |
| CABLE RAILING | 192 | LF |
| CONCRETE BARRIER (TYPE 60D) | 189 | LF |

Suddakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | | | |
|------------|--------------|--------------------|---------------------------------|---|
| DESIGN | BY D. Peavey | CHECKED E. Johnson | LOAD & RESISTANCE FACTOR DESIGN | LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE |
| DETAILS | BY E. Gray | CHECKED E. Johnson | LAYOUT | BY D. Peavey |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson | SPECIFICATIONS | BY E. Johnson |

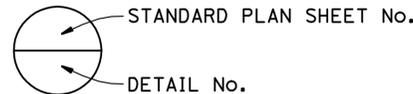
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 ERIC A. JOHNSON
 PROJECT ENGINEER

| | |
|------------|---------|
| BRIDGE NO. | 55E0112 |
| POST MILES | 13.9 |

WAGNER AVE OC - RET WALL GENERAL PLAN

STANDARD PLANS DATED MAY, 2006

| SHEET No. | TITLE |
|-----------|---|
| A10A | ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2) |
| A10B | ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2) |
| A10C | SYMBOLS (SHEET 1 OF 2) |
| A10D | SYMBOLS (SHEET 2 OF 2) |
| A76A | CONCRETE BARRIER TYPE 60 |
| B0-3 | BRIDGE DETAILS |
| B3-9 | RETAINING WALL DETAILS No. 2 |
| B11-47 | CABLE RAILING |



INDEX TO PLANS

| SHEET No. | TITLE |
|-----------|---------------------------------|
| 1 | GENERAL PLAN |
| 2 | GENERAL NOTES |
| 3 | FOUNDATION PLAN |
| 4 | RETAINING WALL LAYOUT |
| 5 | RETAINING WALL SECTIONS |
| 6 | TIEBACK DETAILS |
| 7 | ARCHITECTURAL TREATMENT |
| 8 | ARCHITECTURAL TREATMENT DETAILS |
| 9 - 11 | LOG OF TEST BORINGS |
| 12 | LOG OF TEST BORINGS (AS-BUILT) |

**GENERAL NOTES
SERVICE LOAD DESIGN**

Design: Caltrans Bridge Design Specifications - May 2006

Reinforced Concrete For Cast-In-Place: $f_y = 60,000$ Ksi
 $f'_c = 3,600$ Psi

Shotcrete: $f_y = 60,000$ Ksi
 $f'_c = 4,000$ Psi
 $f_{ci} = 4,000$ Psi At Stressing

Structural Steel Bearing Plate: ASTM Designation
A36, $f_y = 36$ Ksi

Prestressing Steel (Tieback): Strands = ASTM A416
T (Design Force For Tieback) = See Table On "Retaining Wall Layout" Sheet
 $f_{pu} =$ Min Tensile Strength Of Prestressing Steel
 A_s (Min) = Min Cross Sectional Area Of Prestressing Steel
 A_s (Min) = $1.5T/0.75 f_{pu}$

SOIL PARAMETERS

| TIE BACK ROWS | UPPER AND MIDDLE | LOWER |
|--|------------------|-------|
| Soil Density, γ (pcf) | 120 | 115 |
| Internal Friction Angle, ϕ (degree) | 28 | 32 |
| Cohesion, C (psf) | 500 | 0 |
| Bearing Capacity, (Psf) | 2500 | |

BENCHMARK

BASIS OF BEARINGS

The Bearings Shown Hereon Are Based Upon The Bearing Between OCS Horizontal Control Station GPS No. 0560 And Station 0111 Being North $4^\circ 59' 28''$ East, Per Records On File In The Office Of The County Surveyor.

DATUM STATEMENT

Coordinates Shown Are Based On The California Coordinate System (CCS83), Zone VI, 1983 NAD, (1991.35 Epoch OCS GPS Adjustment). All Coordinates Shown Are Grid, Unless Otherwise Noted. The Average Combination Factor Of The Two Stations Listed Above Is 0.99999204.

BENCHMARK

Elevations Shown Hereon Are Based On OCS Vertical Control Data Sheet Designation 1K-29-80 As Elevation 202.237' NAVD 88 (OCS 2006 Adjustment), Per Records On File In The Office Of The County Surveyor.

Designation: 1B-99-99

Elevation: 158.271 (NAVD 88; Year Leveled-2006)

Description:

Described By OCS 2002 - Found $3\frac{3}{4}''$ OCS Aluminum Benchmark Disk Stamped "1B-99-99", Set In The Southeast Corner Of A 4' By 22' Concrete Catch Basin. Monument Is Located In The Northwesterly Corner Of The Intersection Of Katella Avenue And Howell Street, 48' Northerly Of The Centerline Of Katella Avenue And 125' Westerly Of The Centerline Of Howell Street. Monument Is Set Level With The Sidewalk.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 505 | 527 |

Eric A. Johnson 08-09-10
REGISTERED CIVIL ENGINEER DATE

4-18-11
PLANS APPROVAL DATE

ERIC A. JOHNSON
No. C57355
Exp. 12/31/11
CIVIL
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

OCTA
550 S. MAIN STREET
ORANGE, CA 92863

HDR ENGINEERING, INC.
3230 EL CAMINO REAL, SUITE 200
IRVINE, CA 92602-1377

Sudhakar Vatti
DESIGN OVERSIGHT
Sudhakar Vatti
8-10-10
SIGN OFF DATE

| DESIGN | BY | CHECKED |
|------------|-----------|------------|
| | D. Peavey | E. Johnson |
| DETAILS | BY | CHECKED |
| | E. Gray | E. Johnson |
| QUANTITIES | BY | CHECKED |
| | D. Peavey | E. Johnson |

**PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

ERIC A. JOHNSON
PROJECT ENGINEER

BRIDGE NO. 55E0112
POST MILE 13.9

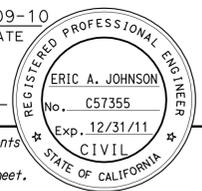
WAGNER AVE OC - RET WALL

GENERAL NOTES

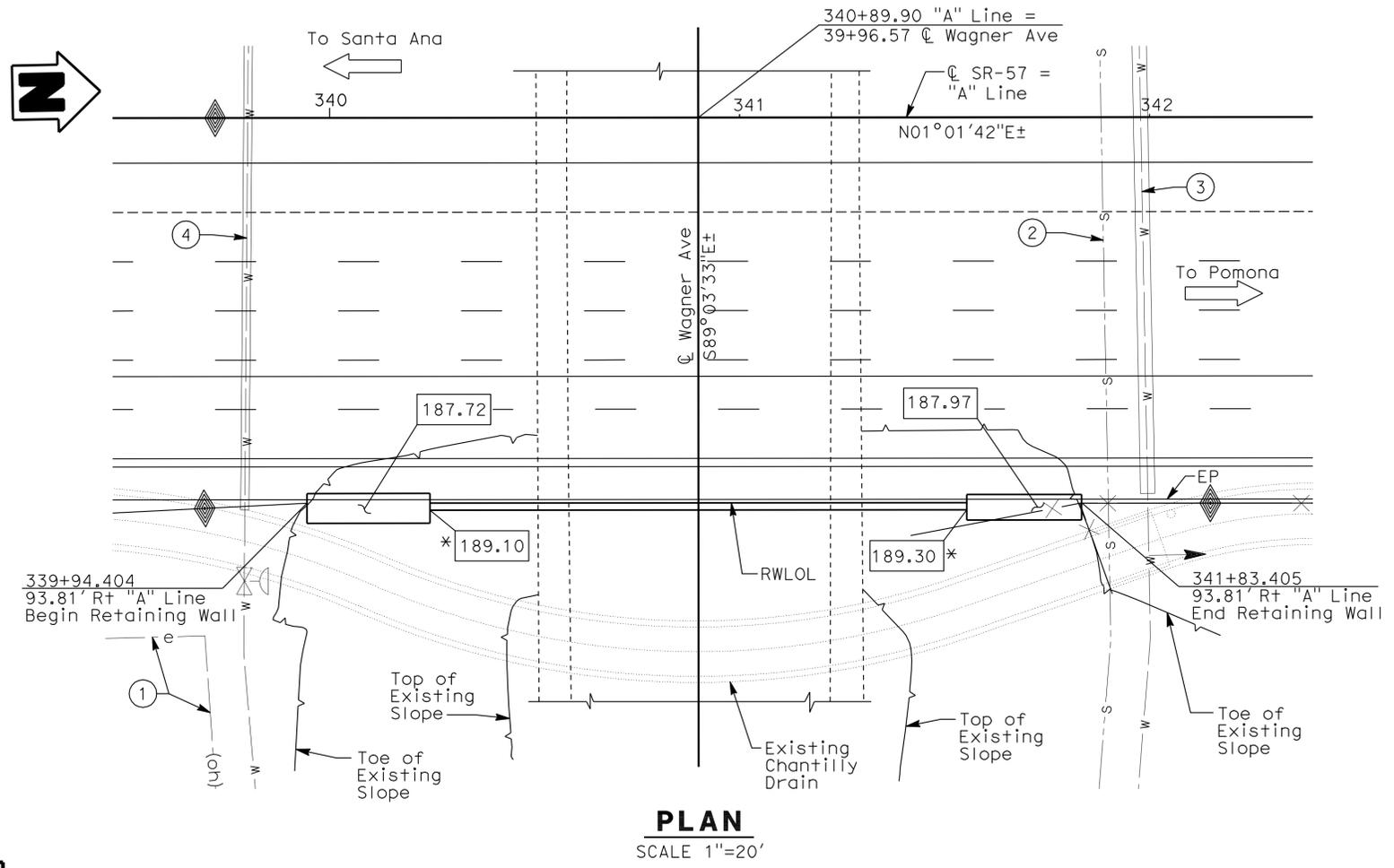
USERNAME => hmgpct1n DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:17

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 506 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
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OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377



| No. | UTILITY | OWNER | ACTION |
|-----|----------|-----------------|-----------------------------|
| ① | 12 Kv OH | City Of Anaheim | Overhead - Protect In Place |
| ② | 15" VCP | City Of Anaheim | Protect In Place |
| ③ | 21" CCP | City Of Anaheim | Protect In Place |
| ④ | 12" CIP | City Of Anaheim | Protect In Place |

- LEGEND:**
- Indicates New Construction
 - Indicates Existing
 - xxx.xx Denotes Bottom of Footing Elevation @ Type 1 Retaining Wall
 - * xxx.xx Denotes Bottom of Wall Elevation @ Tieback Wall

NOTE:
The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

GEOTECHNICAL PROFESSIONAL APPROVAL DATE
Sudhakar Vatti

| | | | | | |
|--|----------------|----------------------------|--------------------------|------------------------|--------------------------|
| DESIGN OVERSIGHT 8-10-10 SIGN OFF DATE | SCALE: 1"=20' | VERT. DATUM | HORZ. DATUM | DESIGN BY D. Peavey | CHECKED BY E. Johnson |
| PHOTOGRAMMETRY AS OF: | ALIGNMENT TIES | SURVEYED BY E. Martinez | DRAFTED BY | DETAILS BY E. Gray | CHECKED BY E. Johnson |
| FIELD CHECKED BY D. Williams | CHECKED BY | QUANTITIES BY D. Peavey | CHECKED BY E. Johnson | | |

PREPARED FOR THE STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 ERIC A. JOHNSON
 PROJECT ENGINEER

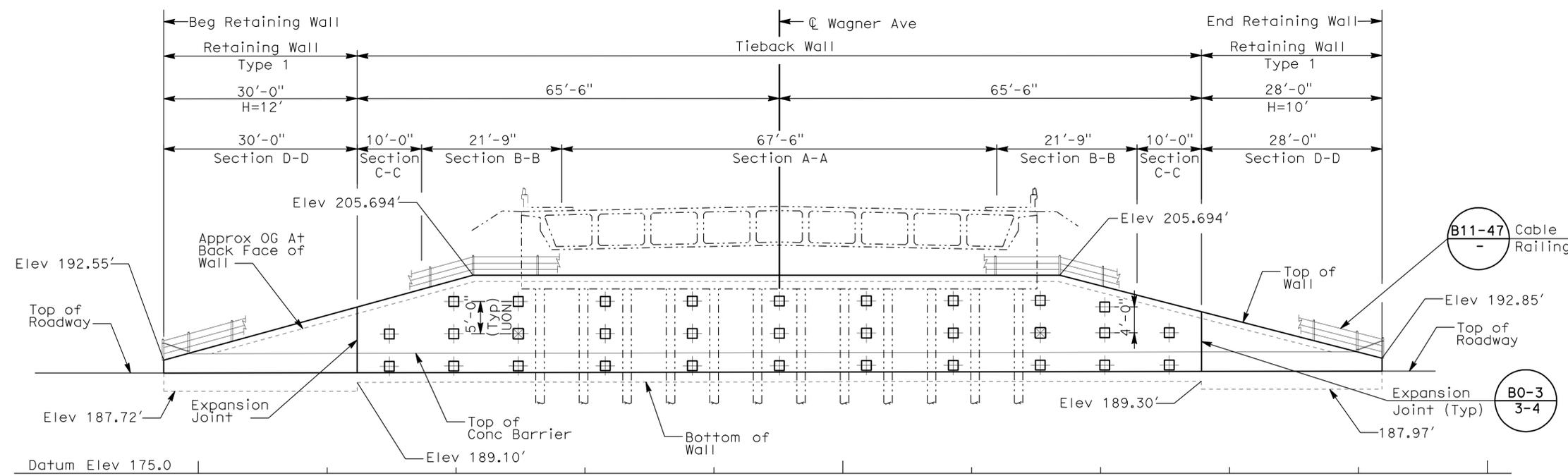
| | |
|------------------------|---------------------------------|
| BRIDGE NO. 55E0112 | WAGNER AVE OC - RET WALL |
| POST MILE 13.9 | |
| FOUNDATION PLAN | |

| | | | | | |
|------|--------|-------|--------------------------|----------|--------------|
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
| 12 | Orca | 57 | 12.2/15.2 | 507 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
 ERIC A. JOHNSON
 No. C57355
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

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 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377



ELEVATION
SCALE 1"=10'

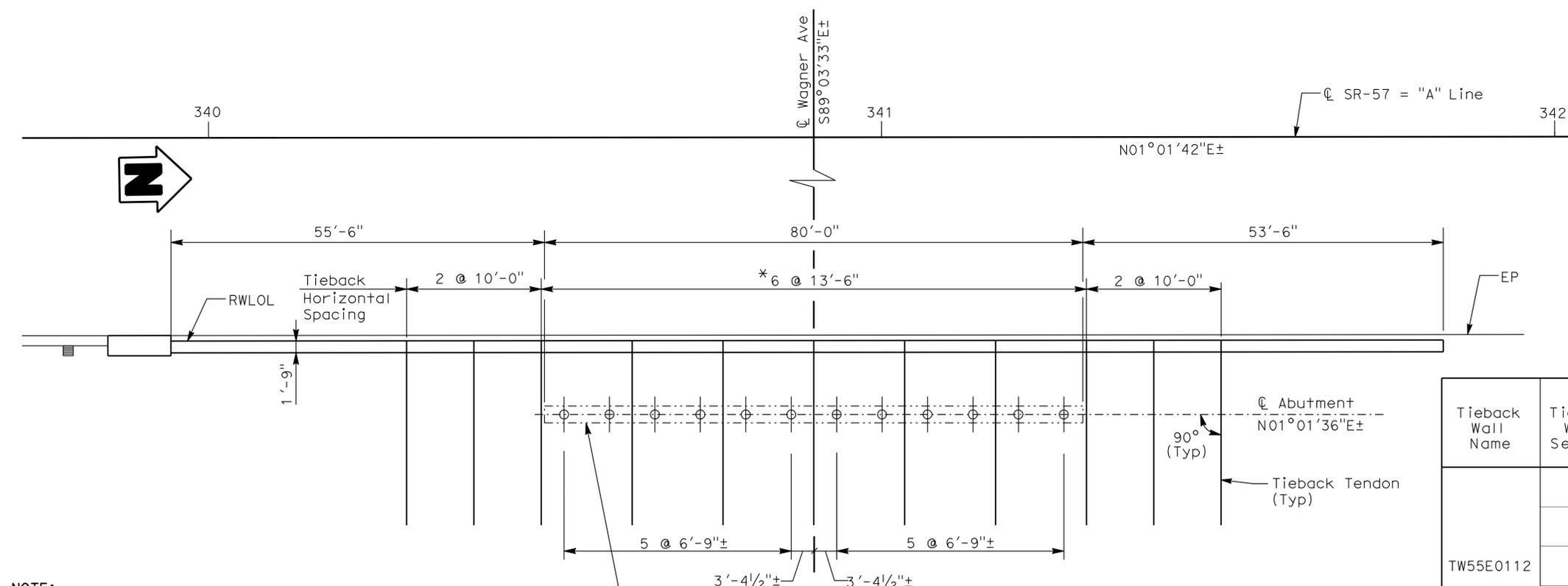
NOTE: For Sections A-A, B-B, C-C And D-D, See "Retaining Wall Section" Sheet

LEGEND:

- ⊕ Indicates Existing 16" CIDH Piles.
- ⊞ Indicates Location Of Tieback Assembly Or As Directed By The Engineer.
- Tiebacks # 1-9 Top Row (10° Inclination)
- Tiebacks # 10-20 Middle Row (10° Inclination)
- Tiebacks # 21-31 Bottom Row
- Tiebacks # 21, 30, 31 Drilled At 45°
- Tiebacks # 22, 23, 29 Drilled At 40°
- Tiebacks # 24 - 28 Drilled At 35°
- ⊞ Indicates Location Of Tieback Assembly Requiring Performance Test Or As Directed By The Engineer.

NOTE:

1. Prior To Installing Tiebacks, Contractor Shall Verify The Existing Footing And Pile Locations By Exposing, By Hand, One Pile At Each End Of Each Abutment.



PLAN
SCALE 1"=10'

NOTE:
The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

* These Dimensions Are Approximate. After Contractor Verification Of Existing Pile Locations, The Tieback Shall Be Placed Centered Between The Adjacent Piles.

TIEBACK DESIGN FORCE TABLE

| Tieback Wall Name | Tieback Wall Section | Tieback Location (Station) | Lift Ht (Ft) / T (Kip) | | Lift Ht (Ft) / T (Kip) | | Lift Ht (Ft) / T (Kip) | |
|-------------------|----------------------|----------------------------|------------------------|----------|------------------------|--------------|------------------------|----------|
| | | | Upper | Middle | Lower | Upper | Middle | Lower |
| TW55E0112 | A-A | 340+56.40 To 341+23.90 | 5.167 / 55.6 | 5 / 33.8 | 5 / 33.8 | 5.167 / 21.4 | 5 / 25.0 | 5 / 26.8 |
| | B-B | 340+34.65 To 340+56.40 | 5.167 / 21.4 | 5 / 25.0 | 5 / 26.8 | 5.167 / 21.4 | 5 / 25.0 | 5 / 26.8 |
| | B-B | 341+23.90 To 341+45.65 | 5.167 / 21.4 | 5 / 25.0 | 5 / 26.8 | 5.75 / 17.2 | NA | 5 / 23.1 |
| | C-C | 340+24.65 To 340+34.65 | 5.75 / 17.2 | NA | 5 / 23.1 | 5.75 / 17.2 | NA | 5 / 23.1 |
| | C-C | 341+45.65 To 341+55.65 | 5.75 / 17.2 | NA | 5 / 23.1 | | | |

Sushakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

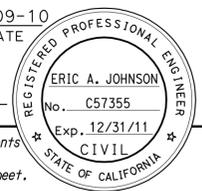
ERIC A. JOHNSON
 PROJECT ENGINEER
 BRIDGE NO. 55E0112
 POST MILE 13.9

**WAGNER AVE OC - RET WALL
 RETAINING WALL LAYOUT**

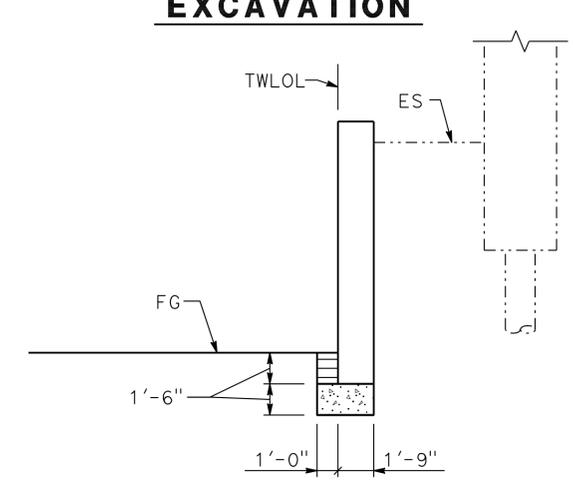
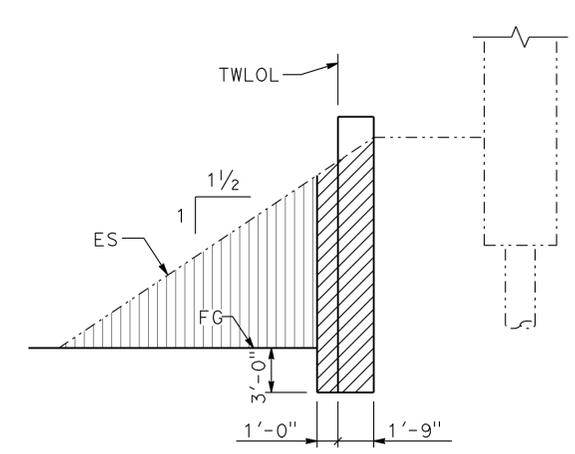
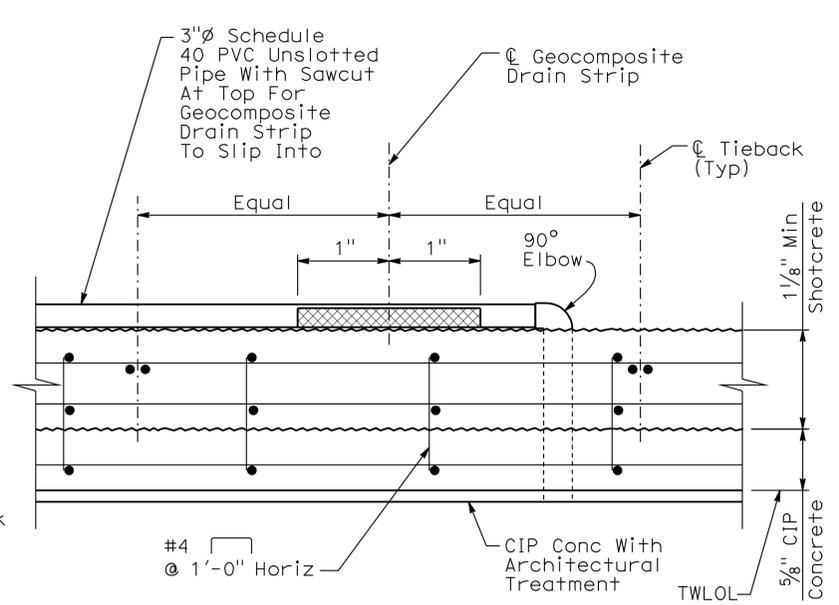
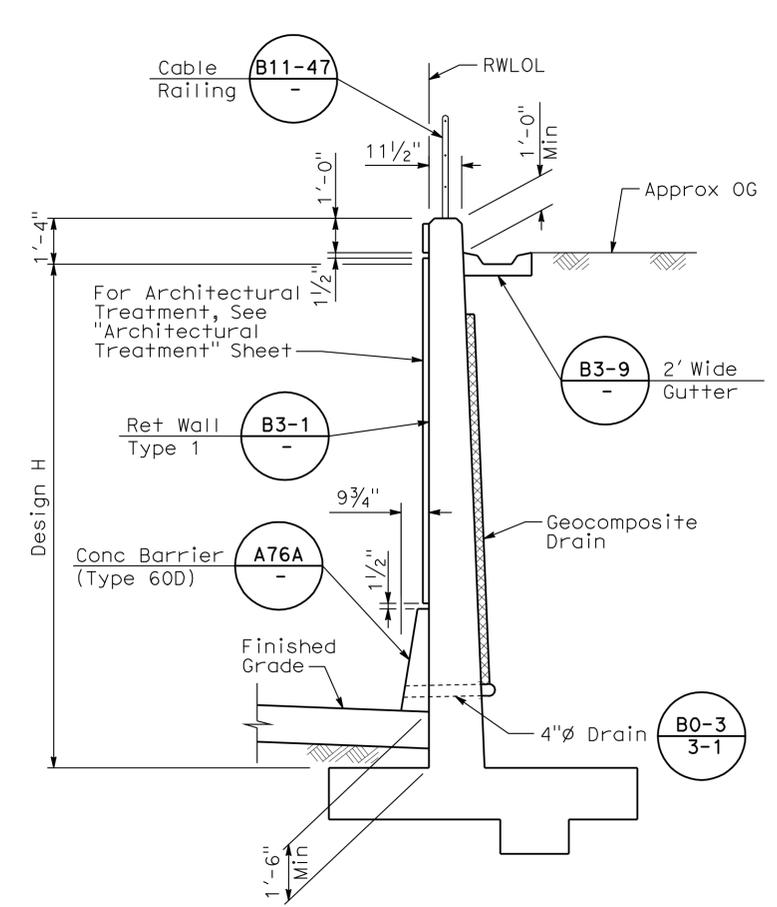
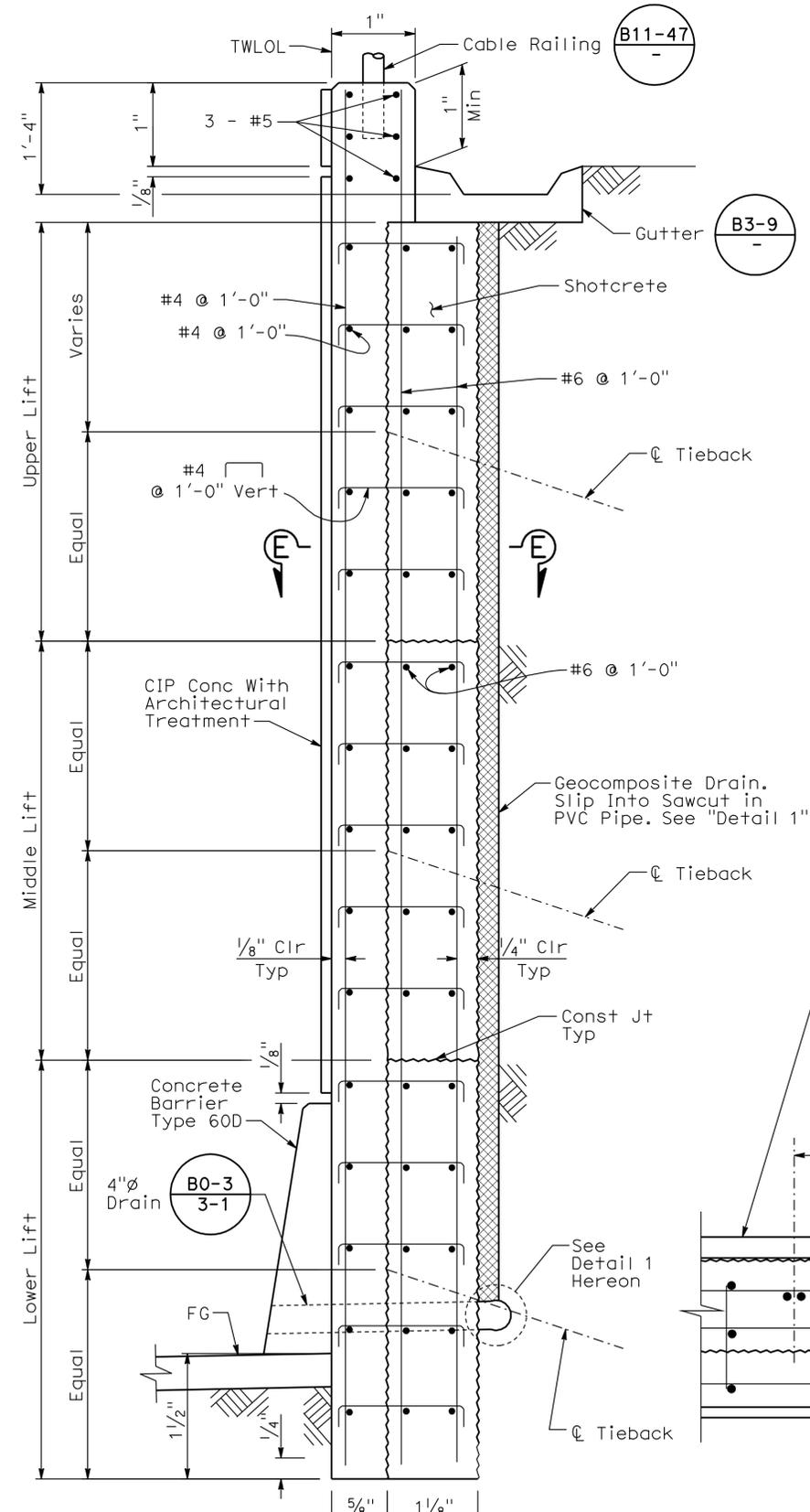
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| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 508 | 527 |

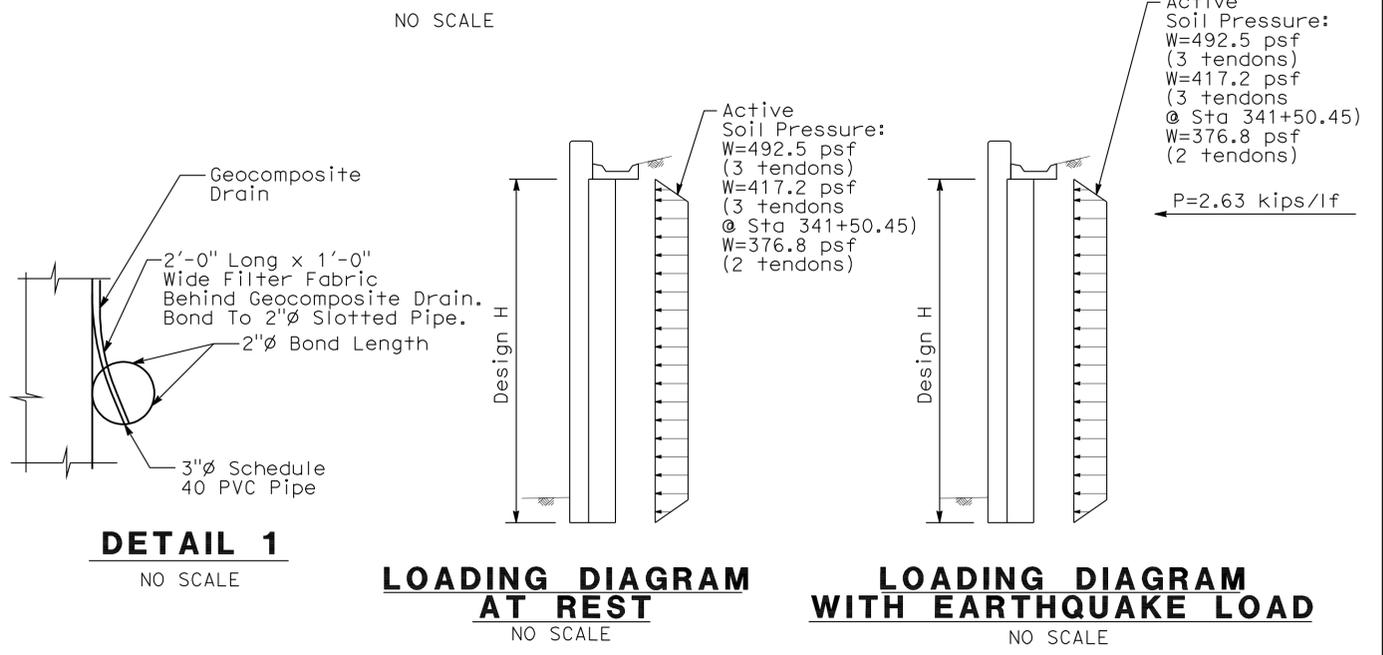
Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
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LIMITS OF PAYMENT FOR TIEBACK WALL EXCAVATION AND BACKFILL



Sudhakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ERIC A. JOHNSON
 PROJECT ENGINEER
 BRIDGE NO. 55E0112
 POST MILE 13.9

**WAGNER AVE OC - RET WALL
 RETAINING WALL SECTIONS**

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 12231
 EA OF0401

| | | |
|---|---------|-------|
| REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET 5 | OF 12 |
|---|---------|-------|

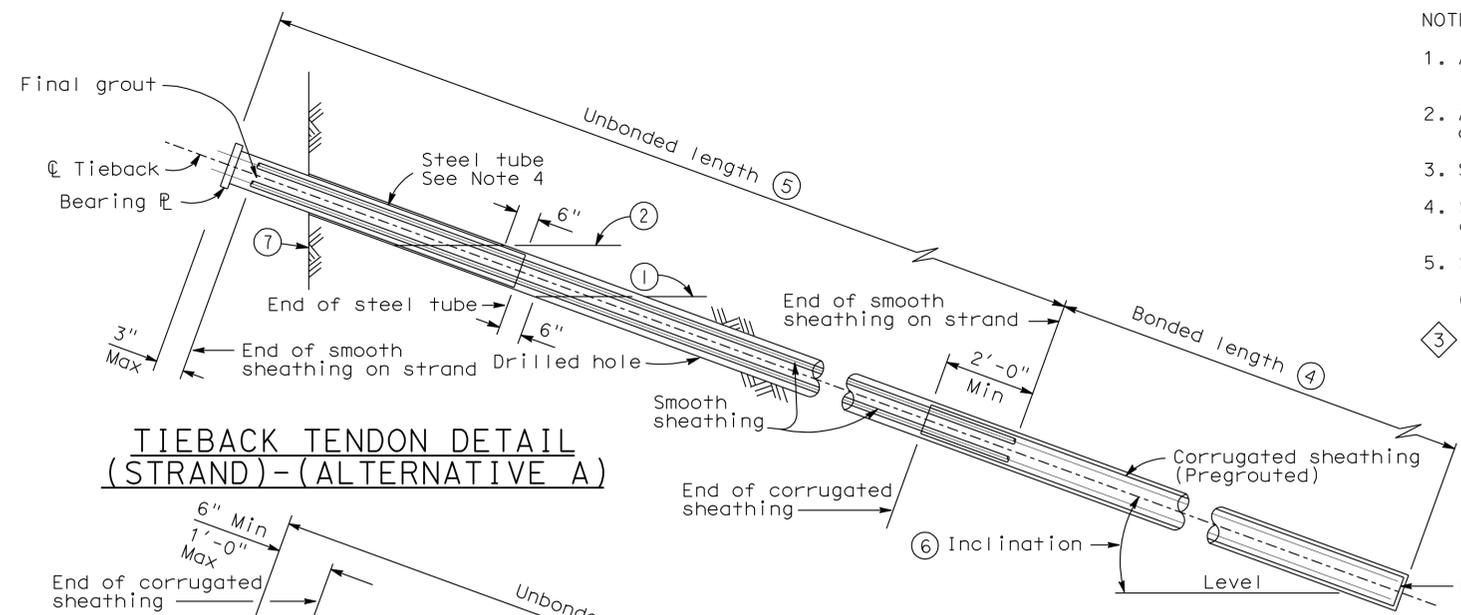
USERNAME => F:\PROJECT\in DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:17

| DIST. | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|-------|--------|-------|--------------------------|-----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 509 | 527 |

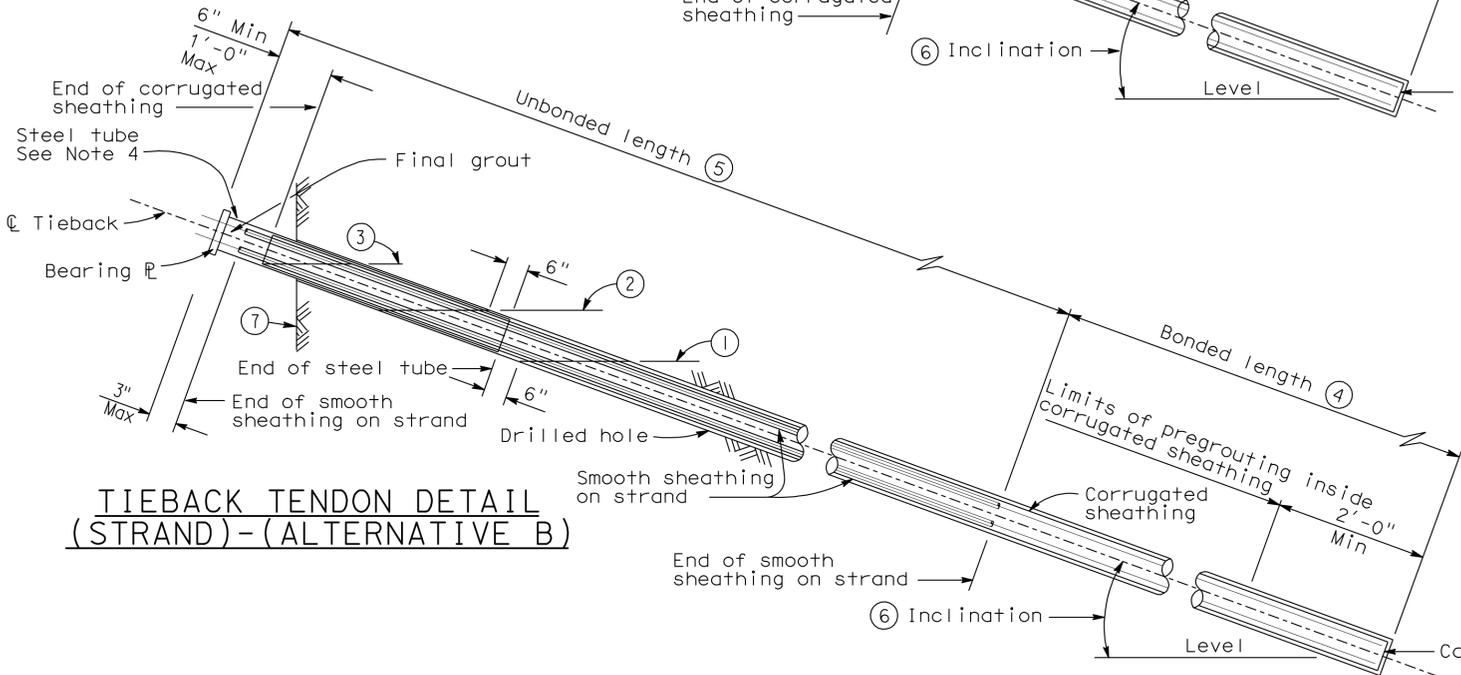
08-09-10
 REGISTERED ENGINEER - CIVIL
 4-18-11
 PLANS APPROVAL DATE
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 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377

NOTES:

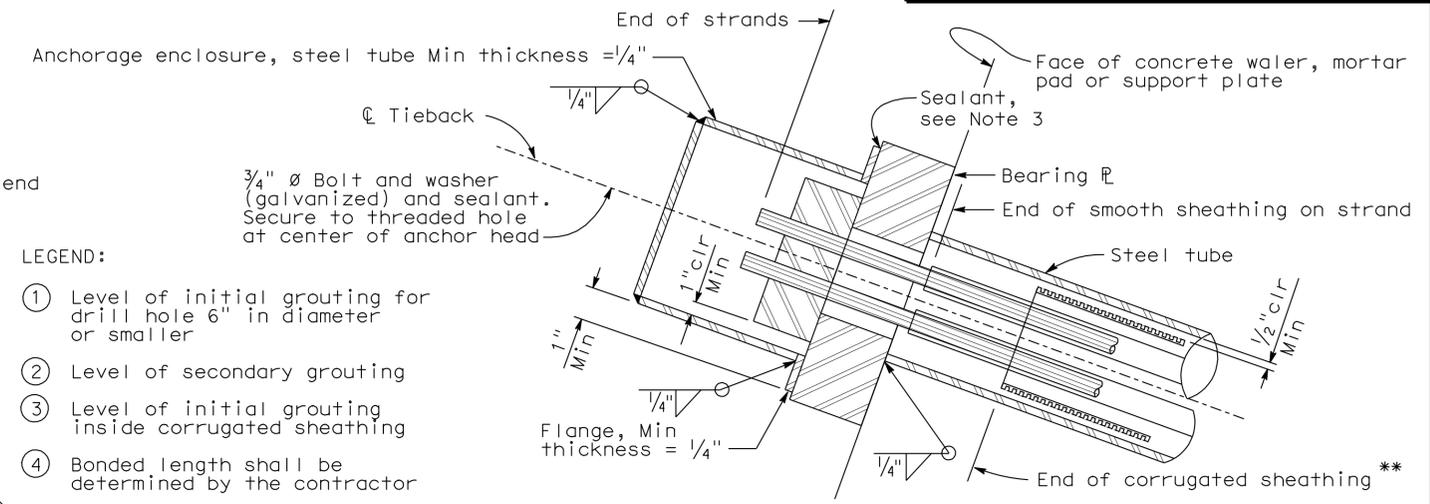
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
3. Silicone sealant to cover full width of flange.
4. Steel tube welded to bearing plate (Min thickness = 1/4"). Galvanize assembly after fabrication
5. Steel tube welded to bearing plate inside diameter of steel tube to be 1" greater than outside diameter of smooth sheathing (Min thickness = 1/4") Galvanize assembly after fabrication.



TIEBACK TENDON DETAIL (STRAND) - (ALTERNATIVE A)



TIEBACK TENDON DETAIL (STRAND) - (ALTERNATIVE B)

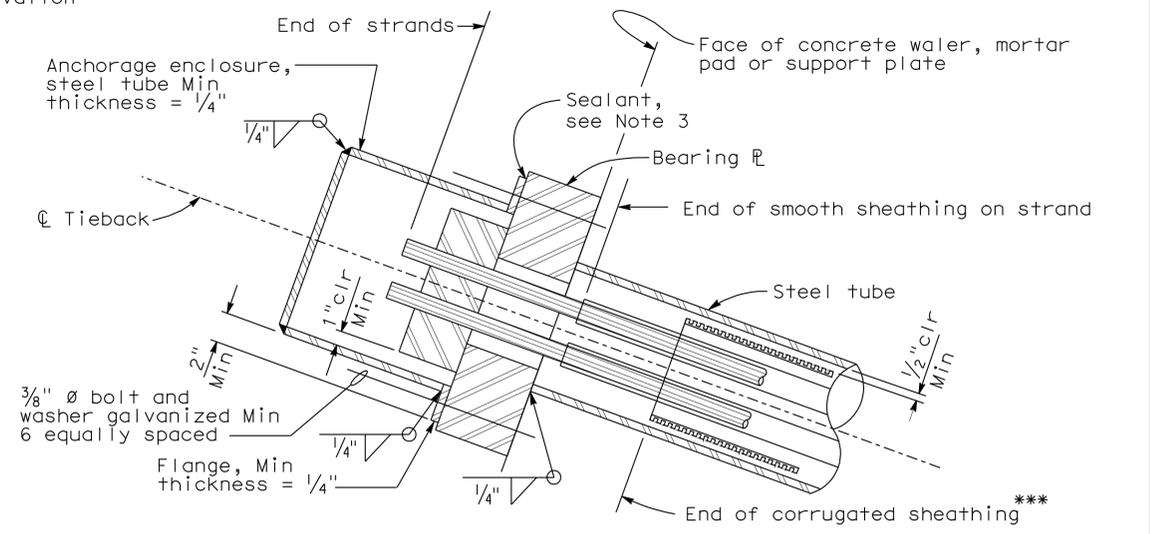


ALTERNATIVE X

** Alternative B tendon only

LEGEND:

- ① Level of initial grouting for drill hole 6" in diameter or smaller
- ② Level of secondary grouting
- ③ Level of initial grouting inside corrugated sheathing
- ④ Bonded length shall be determined by the contractor
- ⑤ For unbonded length, see "General Plan" sheet
- ⑥ For inclination, see "General Plan" sheet
- ⑦ Face of Wall Excavation



ALTERNATIVE Y

*** Alternative B tendon only

ANCHORAGE ENCLOSURE DETAILS

| STANDARD DRAWING | | |
|---------------------------|--|--|
| FILE NO. xs12-040e | APPROVED BY <u>G. WANG</u> RESPONSIBLE TECHNICAL SPECIALIST | RELEASED BY <u>ROBERTO LACALLE</u> RESPONSIBLE OFFICE CHIEF |
| | APPROVAL DATE <u>REVISED</u> | RELEASE DATE <u>REVISED</u> |

- ① "Tieback Tendon Detail (Bars)" Deleted
- ② Revised Notes 5 and 6
- ③ Deleted Note 6

| | |
|---|----------------------------------|
| STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION | DIVISION OF ENGINEERING SERVICES |
|---|----------------------------------|

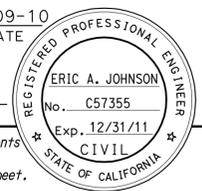
| |
|-----------------------|
| BRIDGE NO. 55E0112 |
| POST MILE 13.9 |

| SPECIAL DETAILS | |
|--------------------------|--|
| WAGNER AVE OC - RET WALL | |
| TIEBACK DETAILS | |

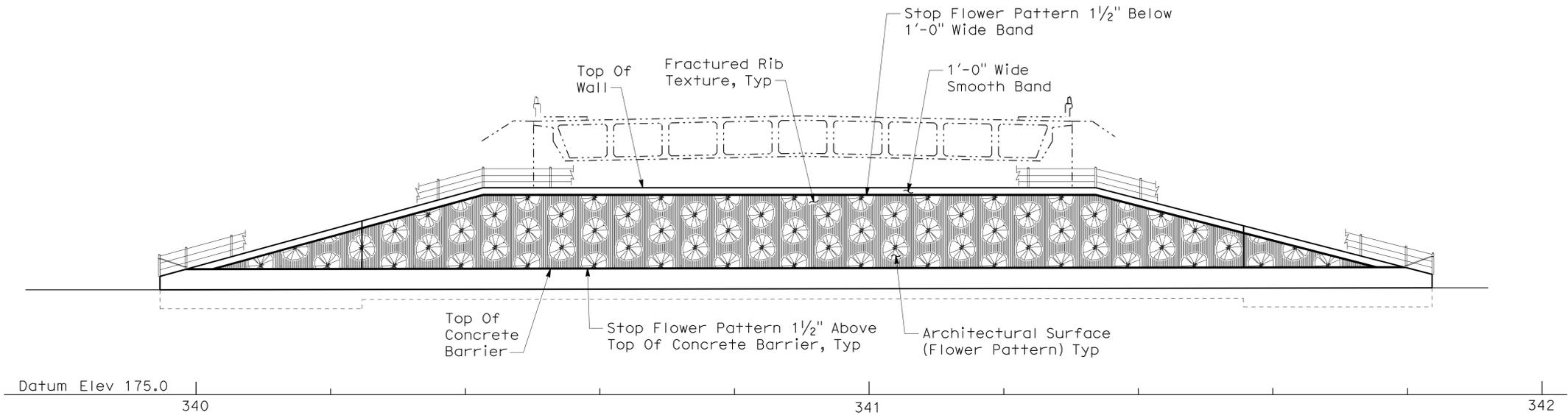
DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:18

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 510 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
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 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377



WAGNER AVENUE OC RETAINING WALL
 SCALE 1"=10'

NOTE:
 The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

Sudhakar Vatti
 DESIGN OVERSIGHT Sudhakar Vatti
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

**PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION**

ERIC A. JOHNSON
 PROJECT ENGINEER

| | |
|------------|---------|
| BRIDGE NO. | 55E0112 |
| POST MILE | 13.9 |

**WAGNER AVE OC - RET WALL
 ARCHITECTURAL TREATMENT**

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 12231
 EA 0F0401

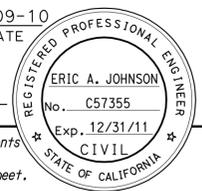
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|---|---|---------|-------|
| DISREGARD PRINTS BEARING EARLIER REVISION DATES | REVISION DATES (PRELIMINARY STAGE ONLY) 10/09 2/10 5/10 8/10 | SHEET 7 | OF 12 |
|---|---|---------|-------|

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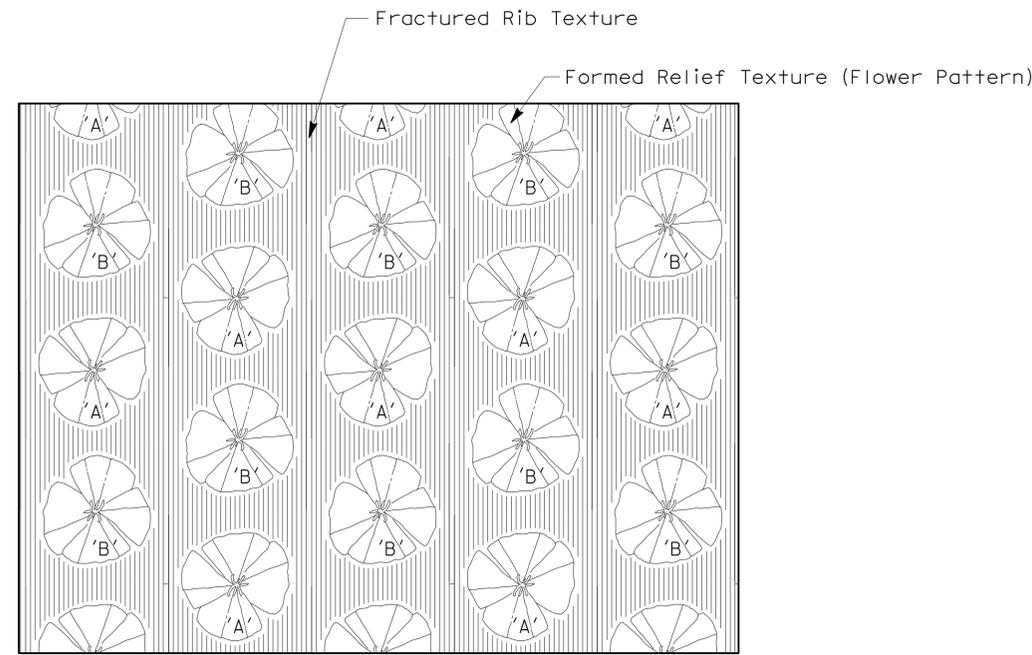
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| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 511 | 527 |

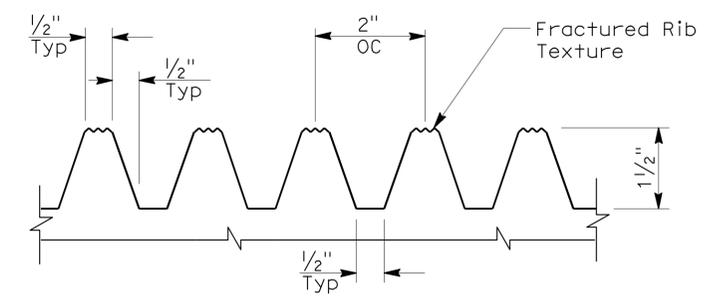
Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
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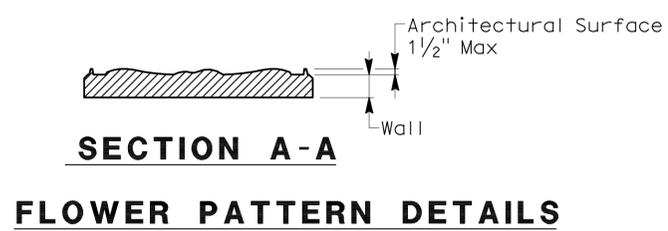
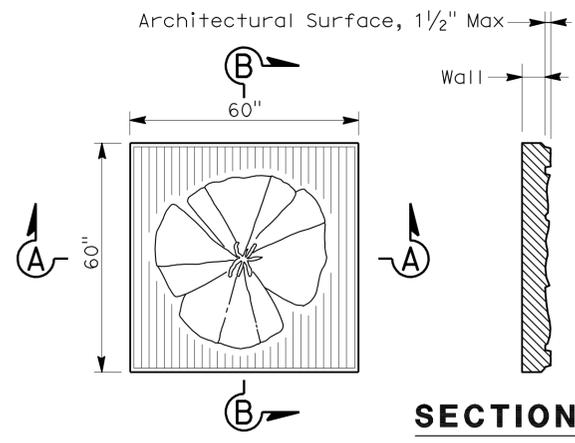
OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377



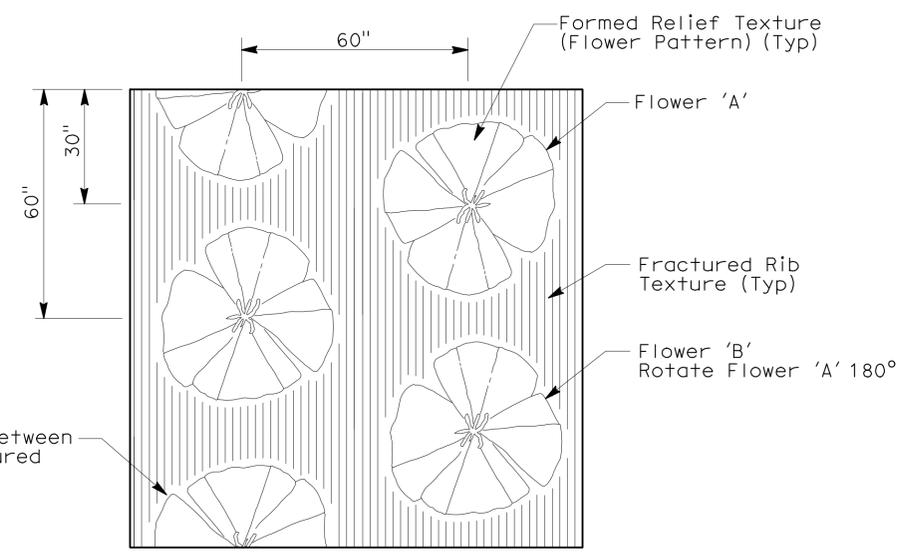
ARCHITECTURAL TREATMENT (FLOWER PATTERN) ELEVATION



FRACTURED RIB TEXTURE DETAIL
(Elastomer Formliner)



FLOWER PATTERN DETAILS



ARCHITECTURAL TREATMENT (FLOWER PATTERN) PATTERN

- NOTES:**
- Identical Flower Images, Scale And Spacing Shall Be Used For Flower Pattern.
 - Within a Vertical Column, Flower Images Shall Alternate Between Flowers 'A' And 'B'. Vertical Columns Shall Be Offset 30" From Adjacent Columns.
 - Where Placed On Walls Bounded By Concrete Barriers, Finished Grade Or Top Of Wall, Flower Pattern Shall Be Continued Without Concern For Partial Flower Images, Except As Noted.

Sudhakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

| | | |
|---|--|-----------------------|
| PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION | | BRIDGE NO. 55E0112 |
| ERIC A. JOHNSON PROJECT ENGINEER | | POST MILE 13.9 |

WAGNER AVE OC - RET WALL
ARCHITECTURAL TREATMENT DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

CU 12231
EA 0F0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

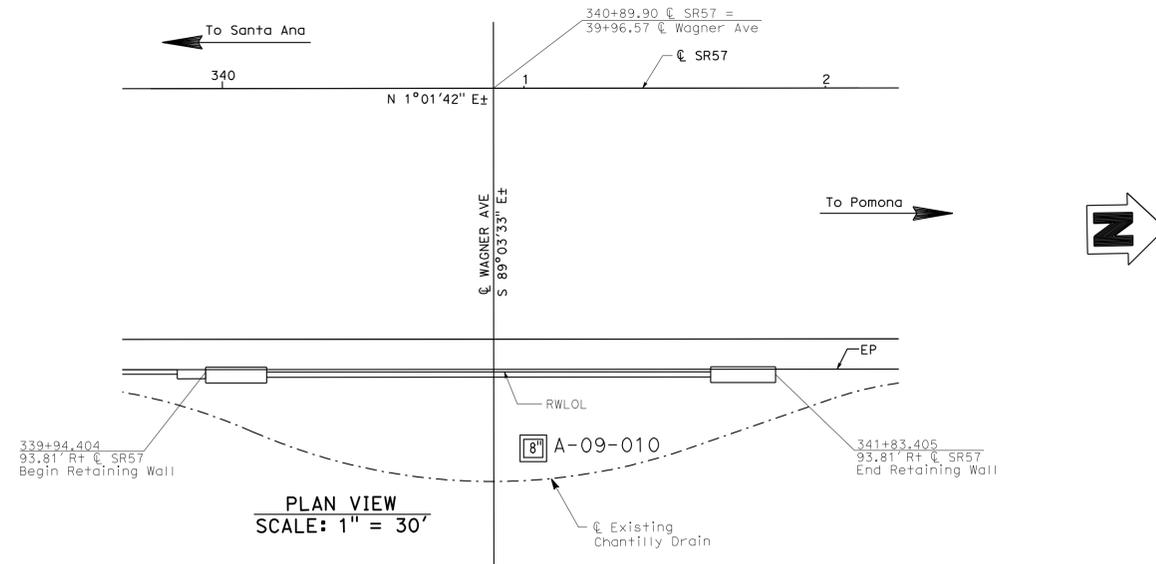
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|---|------|------|------|------|--|-------|----|
| 10/09 | 2/10 | 5/10 | 6/10 | 8/10 | | 8 | 12 |

FILE => 55E0112r-1-rw_dt01.dgn

USERNAME => P:\PROJECT\in DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:18

BENCH MARK

ELEVATIONS SHOWN HEREON ARE BASED ON O.C.S. VERTICAL CONTROL DATA SHEET DESIGNATION 1K-29-80 AS ELEVATION 202.237 NAVD 88 (O.C.S. 2006 ADJUSTMENT), PER RECORDS ON FILE IN THE OFFICE OF THE COUNTY SURVEYOR.



| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 512 | 527 |

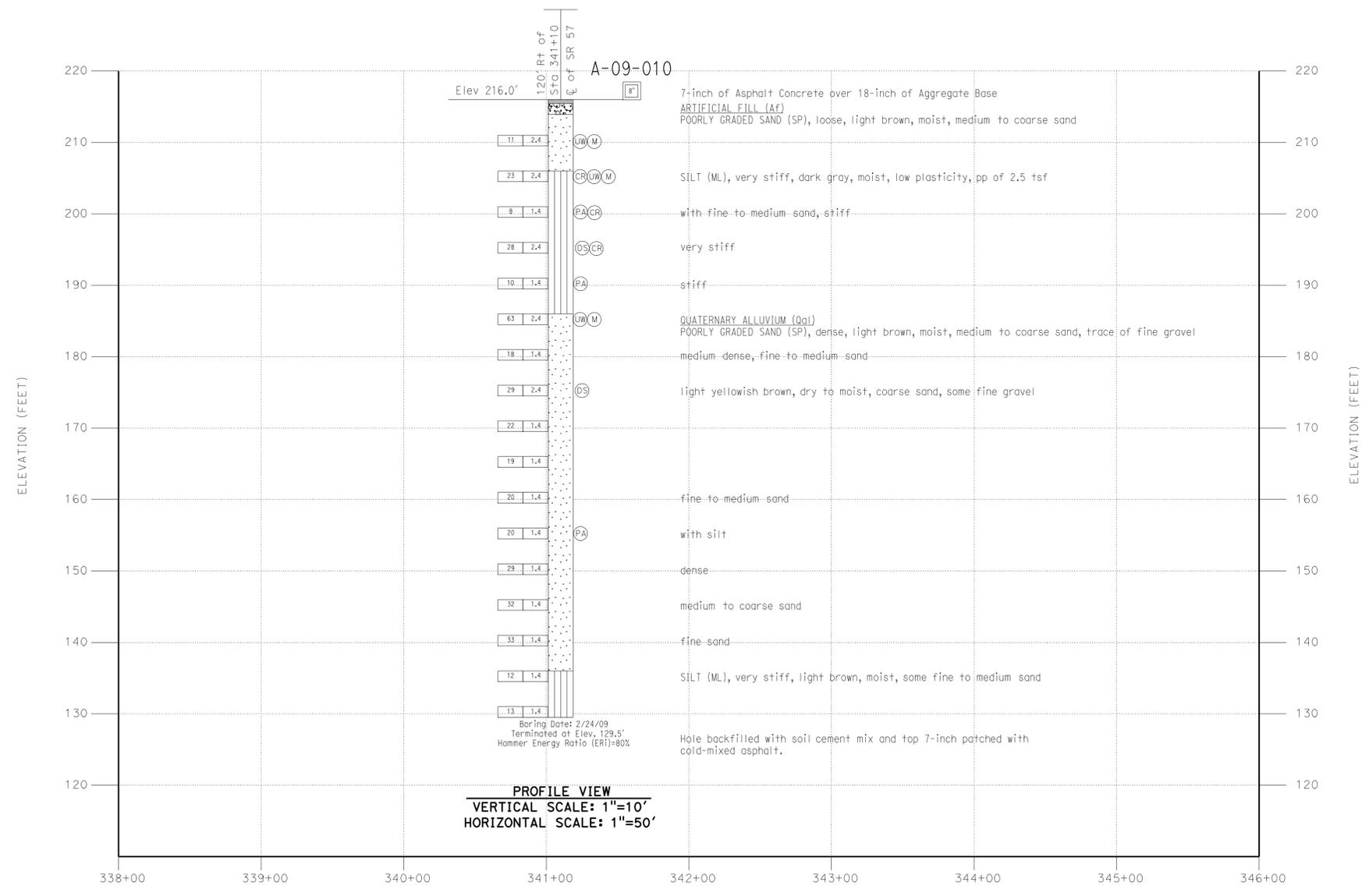
8/9/2010
 GEOTECHNICAL PROFESSIONAL DATE
 4-18-11
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 DJAN CHANDRA
 No. 2376
 Exp. 6/30/11
 GEOTECHNICAL
 STATE OF CALIFORNIA

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ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863

LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614



This LOTB sheet was prepared in accordance with the Caltrans Soil and Rock Logging Classification and Presentation Manual. 2.4-inch diameter modified California Ring sampler and 1.4-inch diameter SPT sampler were used for field sampling.

Conversion factor of 2.4-inch diameter sampler blow count to SPT blow count may be taken as 0.6 for cohesionless soils and 0.65 for cohesive soils.

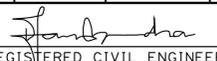
| | | | | | | |
|--|--------------------------|---|--|-----------------------------------|--|--|
| DESIGN OVERSIGHT Sudhakar Vatti 8-10-10 SIGN OFF DATE | DRAWN BY Buu Tran | AMIT BAKANE FIELD INVESTIGATION BY: DATE: 2/24/09 | PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION | DJAN CHANDRA PROJECT ENGINEER | BRIDGE NO. 55E0112 POST MILES 13.92 | WAGNER AVE OC-RET WALL LOG OF TEST BORINGS 1 OF 4 |
| | CHECKED BY Taekuk Kim | CU EA 12231 OF0401 | DISREGARD PRINTS BEARING EARLIER REVISION DATES | REVISION DATES 10/09 2/10 5/10 | SHEET OF 9 12 | |

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 FILE => 55E0112r-z-1fb01.dgn

USERNAME => PTH00110 DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:18

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007).

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 513 | 527 |


 REGISTERED CIVIL ENGINEER DATE 8/9/2010
 PLANS APPROVAL DATE 4-18-11

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ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863
 LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

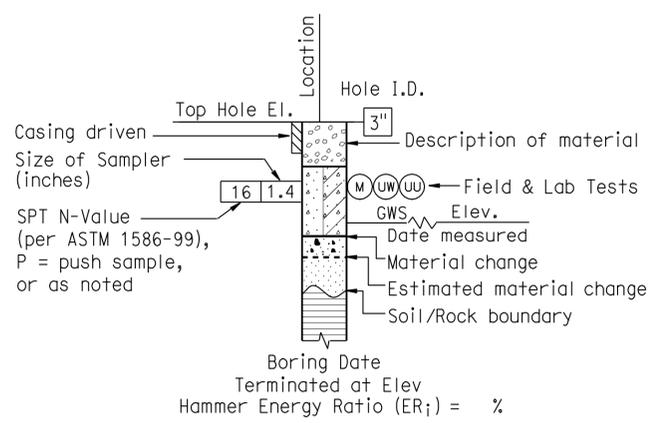
| CEMENTATION | |
|-------------|---|
| Description | Criteria |
| Weak | Crumbles or breaks with handling or little finger pressure. |
| Moderate | Crumbles or breaks with considerable finger pressure. |
| Strong | Will not crumble or break with finger pressure. |

| CONSISTENCY OF COHESIVE SOILS | | | | |
|-------------------------------|---------------------------------------|---------------------------------------|---------------------------|---|
| Description | Unconfined Compressive Strength (tsf) | Pocket Penetrometer Measurement (tsf) | Torvane Measurement (tsf) | Field Approximation |
| Very Soft | < 0.25 | < 0.25 | < 0.12 | Easily penetrated several inches by fist |
| Soft | 0.25 to 0.50 | 0.25 to 0.50 | 0.12 to 0.25 | Easily penetrated several inches by thumb |
| Medium Stiff | 0.50 to 1.0 | 0.50 to 1.0 | 0.25 to 0.50 | Penetrated several inches by thumb with moderate effort |
| Stiff | 1 to 2 | 1 to 2 | 0.50 to 1.0 | Readily indented by thumb but penetrated only with great effort |
| Very Stiff | 2 to 4 | 2 to 4 | 1.0 to 2.0 | Readily indented by thumbnail |
| Hard | > 4.0 | > 4.0 | > 2.0 | Indented by thumbnail with difficulty |

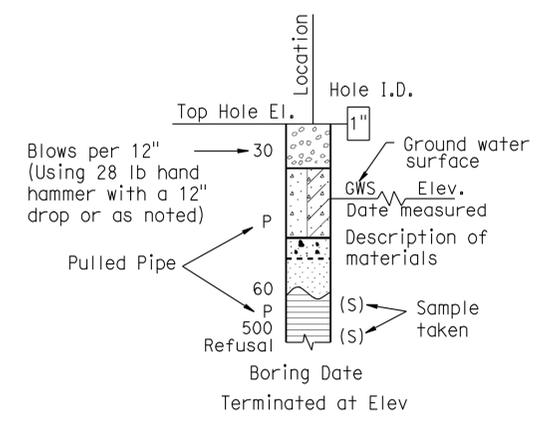
| BOREHOLE IDENTIFICATION | | |
|---|-----------|--|
| Symbol | Hole Type | Description |
|  | A | Auger Boring |
|  | R | Rotary drilled boring |
|  | P | Rotary percussion boring (air) |
|  | R | Rotary drilled diamond core |
|  | HD | Hand driven (1-inch soil tube) |
|  | HA | Hand Auger |
|  | D | Dynamic Cone Penetration Boring |
|  | CPT | Cone Penetration Test (ASTM D 5778-95) |
|  | O | Other |

NOTE: Size in inches.

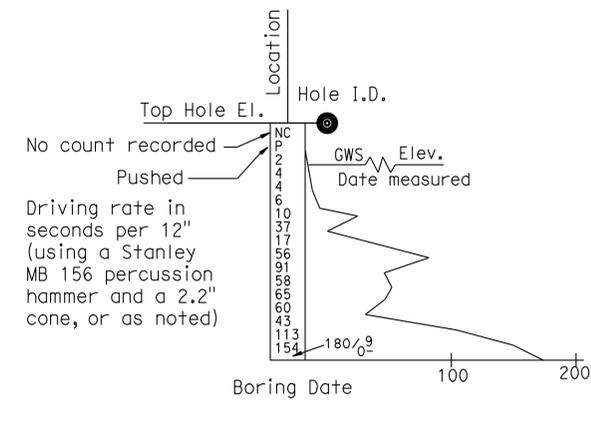
| PLASTICITY OF FINE-GRAINED SOILS | |
|----------------------------------|--|
| Description | Criteria |
| Nonplastic | A 1/8-inch thread cannot be rolled at any water content. |
| Low | The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit. |
| Medium | The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit. |
| High | It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit. |



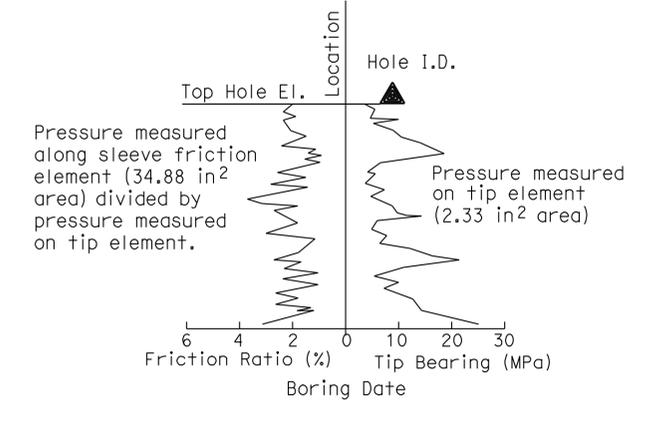
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

| | | | | | | |
|--|--|---|--|----------------------------------|---|--|
|  DESIGN OVERSIGHT 8-10-10 SIGN OFF DATE | DRAWN BY Buu Tran CHECKED BY Taekuk Kim | Amit Bakane FIELD INVESTIGATION BY: DATE: 2/24/09 | PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION | Dhan Chandra PROJECT ENGINEER | BRIDGE NO. 55E0112 POST MILES 13.92 | WAGNER AVE OC-RET WALL LOG OF TEST BORINGS 2 OF 4 |
| | ORIGINAL SCALE IN INCHES FOR REDUCED PLANS | | | CU 12231 EA OF 0401 | DISREGARD PRINTS BEARING EARLIER REVISION DATES | REVISION DATES 10/09 2/10 5/10 |

FILE => 55E0112r-z-1fb02.dgn

| GROUP SYMBOLS AND NAMES | | | | | |
|-------------------------|-------------|--|-------------|----------------|---|
| Graphic/Symbol | Group Names | Graphic/Symbol | Group Names | Graphic/Symbol | Group Names |
| | GW | Well-graded GRAVEL | | CL | Lean CLAY |
| | | Well-graded GRAVEL with SAND | | | Lean CLAY with SAND |
| | GP | Poorly graded GRAVEL | | CL | Lean CLAY with GRAVEL |
| | | Poorly graded GRAVEL with SAND | | | SANDY lean CLAY |
| | GW-GM | Well-graded GRAVEL with SILT | | CL-ML | SILTY CLAY |
| | | Well-graded GRAVEL with SILT and SAND | | | SILTY CLAY with SAND |
| | GW-GC | Well-graded GRAVEL with CLAY (or SILTY CLAY) | | CL-ML | SANDY SILTY CLAY |
| | | Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND) | | | SANDY SILTY CLAY with GRAVEL |
| | GP-GM | Poorly graded GRAVEL with SILT | | CL-ML | GRAVELLY SILTY CLAY |
| | | Poorly graded GRAVEL with SILT and SAND | | | GRAVELLY SILTY CLAY with SAND |
| | GP-GC | Poorly graded GRAVEL with CLAY (or SILTY CLAY) | | ML | SILT |
| | | Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND) | | | SILT with SAND |
| | GM | SILTY GRAVEL | | ML | SILT with GRAVEL |
| | | SILTY GRAVEL with SAND | | | SANDY SILT |
| | GC | CLAYEY GRAVEL | | ML | SANDY SILT with GRAVEL |
| | | CLAYEY GRAVEL with SAND | | | GRAVELLY SILT |
| | GC-GM | SILTY, CLAYEY GRAVEL | | ML | GRAVELLY SILT with SAND |
| | | SILTY, CLAYEY GRAVEL with SAND | | | ORGANIC lean CLAY |
| | SW | Well-graded SAND | | OL | ORGANIC lean CLAY with SAND |
| | | Well-graded SAND with GRAVEL | | | ORGANIC lean CLAY with GRAVEL |
| | SP | Poorly graded SAND | | OL | SANDY ORGANIC lean CLAY |
| | | Poorly graded SAND with GRAVEL | | | GRAVELLY ORGANIC lean CLAY |
| | SW-SM | Well-graded SAND with SILT | | OL | GRAVELLY ORGANIC lean CLAY with SAND |
| | | Well-graded SAND with SILT and GRAVEL | | | ORGANIC SILT |
| | SW-SC | Well-graded SAND with CLAY (or SILTY CLAY) | | OL | ORGANIC SILT with SAND |
| | | Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL) | | | ORGANIC SILT with GRAVEL |
| | SP-SM | Poorly graded SAND with SILT | | OL | SANDY ORGANIC SILT |
| | | Poorly graded SAND with SILT and GRAVEL | | | SANDY ORGANIC SILT with GRAVEL |
| | SP-SC | Poorly graded SAND with CLAY (or SILTY CLAY) | | OL | GRAVELLY ORGANIC SILT |
| | | Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL) | | | GRAVELLY ORGANIC SILT with SAND |
| | SM | SILTY SAND | | CH | Fat CLAY |
| | | SILTY SAND with GRAVEL | | | Fat CLAY with SAND |
| | SC | CLAYEY SAND | | CH | Fat CLAY with GRAVEL |
| | | CLAYEY SAND with GRAVEL | | | SANDY fat CLAY |
| | SC-SM | SILTY, CLAYEY SAND | | CH | SANDY fat CLAY with GRAVEL |
| | | SILTY, CLAYEY SAND with GRAVEL | | | GRAVELLY fat CLAY |
| | PT | PEAT | | CH | GRAVELLY fat CLAY with SAND |
| | | COBBLES | | | Elastic SILT |
| | | COBBLES and BOULDERS | | MH | Elastic SILT with SAND |
| | | BOULDERS | | | Elastic SILT with GRAVEL |
| | | | | OH | SANDY elastic SILT |
| | | | | | |
| | | | | OH | SANDY ORGANIC elastic SILT |
| | | | | | |
| | | | | OH | GRAVELLY ORGANIC elastic SILT with SAND |
| | | | | | |
| | | | | OL/OH | ORGANIC SOIL with GRAVEL |
| | | | | | |
| | | | | OL/OH | GRAVELLY ORGANIC SOIL |
| | | | | | |

| FIELD AND LABORATORY TESTING | |
|------------------------------|---|
| (C) | Consolidation (ASTM D 2435) |
| (CL) | Collapse Potential (ASTM D 5333) |
| (CP) | Compaction Curve (CTM 216) |
| (CR) | Corrosivity Testing (CTM 643, CTM 422, CTM 417) |
| (CU) | Consolidated Undrained Triaxial (ASTM D 4767) |
| (DS) | Direct Shear (ASTM D 3080) |
| (EI) | Expansion Index (ASTM D 4829) |
| (M) | Moisture Content (ASTM D 2216) |
| (OC) | Organic Content-% (ASTM D 2974) |
| (P) | Permeability (CTM 220) |
| (PA) | Particle Size Analysis (ASTM D 422) |
| (PI) | Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89) |
| (PL) | Point Load Index (ASTM D 5731) |
| (PM) | Pressure Meter |
| (PP) | Pocket Penetrometer |
| (R) | R-Value (CTM 301) |
| (SE) | Sand Equivalent (CTM 217) |
| (SG) | Specific Gravity (AASHTO T 100) |
| (SL) | Shrinkage Limit (ASTM D 427) |
| (SW) | Swell Potential (ASTM D 4546) |
| (TV) | Pocket Torvane |
| (UC) | Unconfined Compression-Soil (ASTM D 2166) |
| | Unconfined Compression-Rock (ASTM D 2938) |
| (UU) | Unconsolidated Undrained Triaxial (ASTM D 2850) |
| (UW) | Unit Weight (ASTM D 4767) |
| (VS) | Vane Shear (AASHTO T 223) |

8/9/2010
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE

ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863

LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

| APPARENT DENSITY OF COHESIONLESS SOILS | |
|--|---|
| Description | SPT N ₆₀ (Blows / 12 inches) |
| Very loose | 0 - 4 |
| Loose | 5 - 10 |
| Medium Dense | 11 - 30 |
| Dense | 31 - 50 |
| Very Dense | > 50 |

| MOISTURE | |
|-------------|---|
| Description | Criteria |
| Dry | Absence of moisture, dusty, dry to the touch |
| Moist | Damp but no visible water |
| Wet | Visible free water, usually soil is below water table |

| PERCENT OR PROPORTION OF SOILS | |
|--------------------------------|--|
| Description | Criteria |
| Trace | Particles are present but estimated to be less than 5% |
| Few | 5 to 10% |
| Little | 15 to 25% |
| Some | 30 to 45% |
| Mostly | 50 to 100% |

| PARTICLE SIZE | | |
|---------------|-----------|-------------------|
| Description | Size | |
| Boulder | > 12" | |
| Cobble | 3" to 12" | |
| Gravel | Coarse | 3/4" to 3" |
| | Fine | No. 4 to 3/4" |
| Sand | Coarse | No. 10 to No. 4 |
| | Medium | No. 40 to No. 10 |
| | Fine | No. 200 to No. 40 |

| DIST. | COUNTY | ROUTE | POST MILES-TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|-------|--------|--------|--------------------------|-----------|--------------|
| 41 | ORA | 57, 91 | 12.2/15.2, 4.9/1.0 | 322 | 443 |

A.E. Bach
REGISTERED CIVIL ENGINEER NO. 8091
DATE ISSUED: December 18, 1972



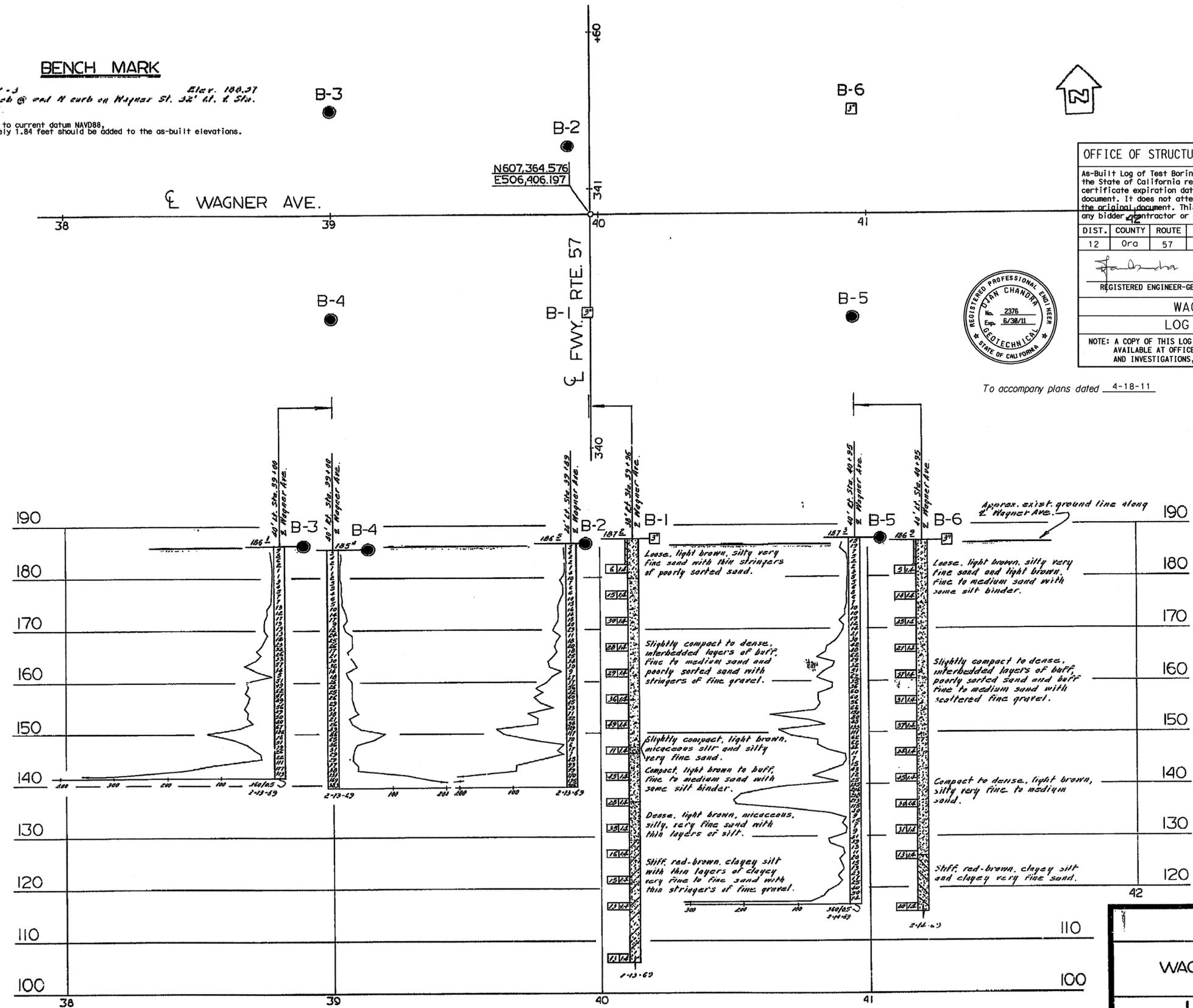
| | | | |
|--|--------|-------------------------|------------------------------|
| OFFICE OF STRUCTURE FOUNDATIONS-ENGINEERING SERVICES CENTER | | | |
| As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, licence number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available for presentation only for the convenience of any bidder, contractor or other interested party. | | | |
| DIST. | COUNTY | ROUTE | MILE POST-TOTAL PROJECT = 20 |
| 12 | Ora | 57 | 12.2/15.2 |
| SHEET NO. | | TOTAL SHEETS | |
| 515 | | 527 | |
| REGISTERED ENGINEER-GEOTECHNICAL | | DATE 8/9/10 | |
| WAGNER AVE OC - RET WALL | | | |
| LOG OF TEST BORINGS 4 OF 4 | | | |
| NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA | | CU: 12231 EA: OF0401 | BRIDGE NO. 55E0112 |
| | | 12 | 12 |



To accompany plans dated 4-18-11

PROFILE

Scale: Vert. 1" = 10'
Horiz. 1" = 20'



NO GROUND WATER ENCOUNTERED DURING THIS INVESTIGATION BY BRIDGE TEST, GEOLOGY SECTION DATE February 1969

No AS BUILT changes
CORRECTIONS BY R. Strungs
CONTRACT NO. 032021
DATE 10-10-74

| | | | |
|--|----------------|--------------------------|----------------|
| STATE OF CALIFORNIA TRANSPORTATION AGENCY DEPARTMENT OF PUBLIC WORKS DIVISION OF HIGHWAYS | | | |
| WAGNER AVENUE OVERCROSSING | | | |
| LOG OF TEST BORINGS | | | |
| BRIDGE No. 51 513 | POST MILE 11.9 | DRAWING NO. | SHEET 11 OF 11 |
| REVISION DATES | | (PRELIMINARY STAGE ONLY) | |

AS BUILT PLANS
Contract No. 07-032024
Date Completed
Document No. 070006373

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.
DATE 1/10/10 BY [Signature]

55E0112r-z-1tb04ab.tif

LEGEND OF BORING OPERATIONS

PENETRATOR RECORD

SOIL TUBE

TEST PIT

LEGEND OF EARTH MATERIALS

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

DRAWN BY J. Lan 2-20-69
CHECKED BY H. Cochran 3-21-69
Approved & Recommended by [Signature]

BRIDGE DEPARTMENT
ENGINEERING GEOLOGY SECTION

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 516 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE

4-18-11
 PLANS APPROVAL DATE

Eric A. Johnson
 No. C57355
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863

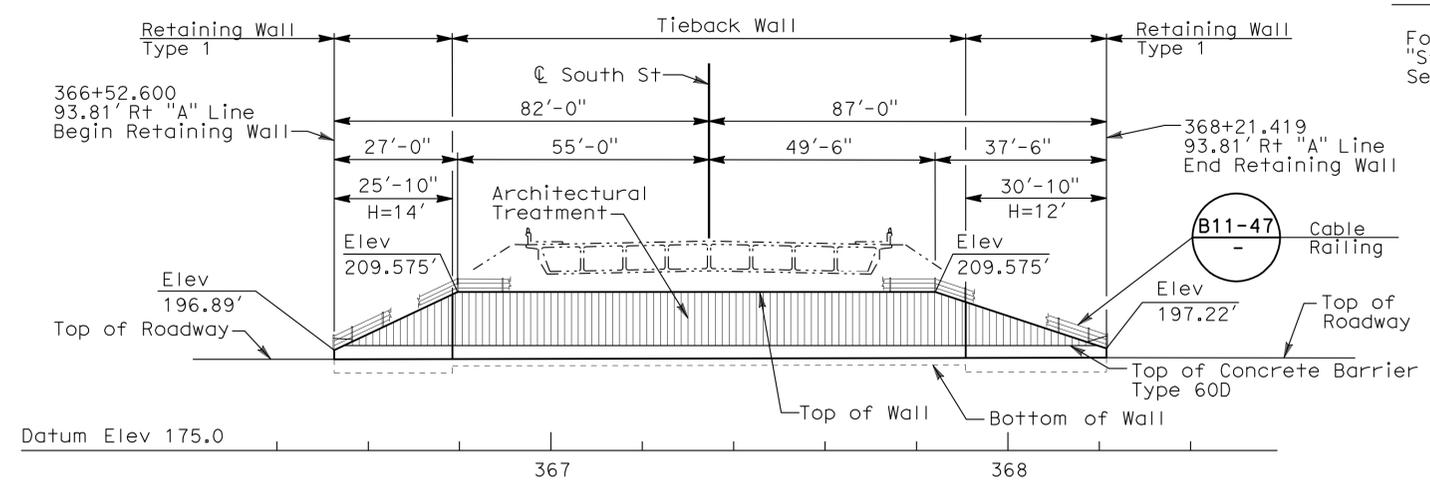
HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377

NOTES:

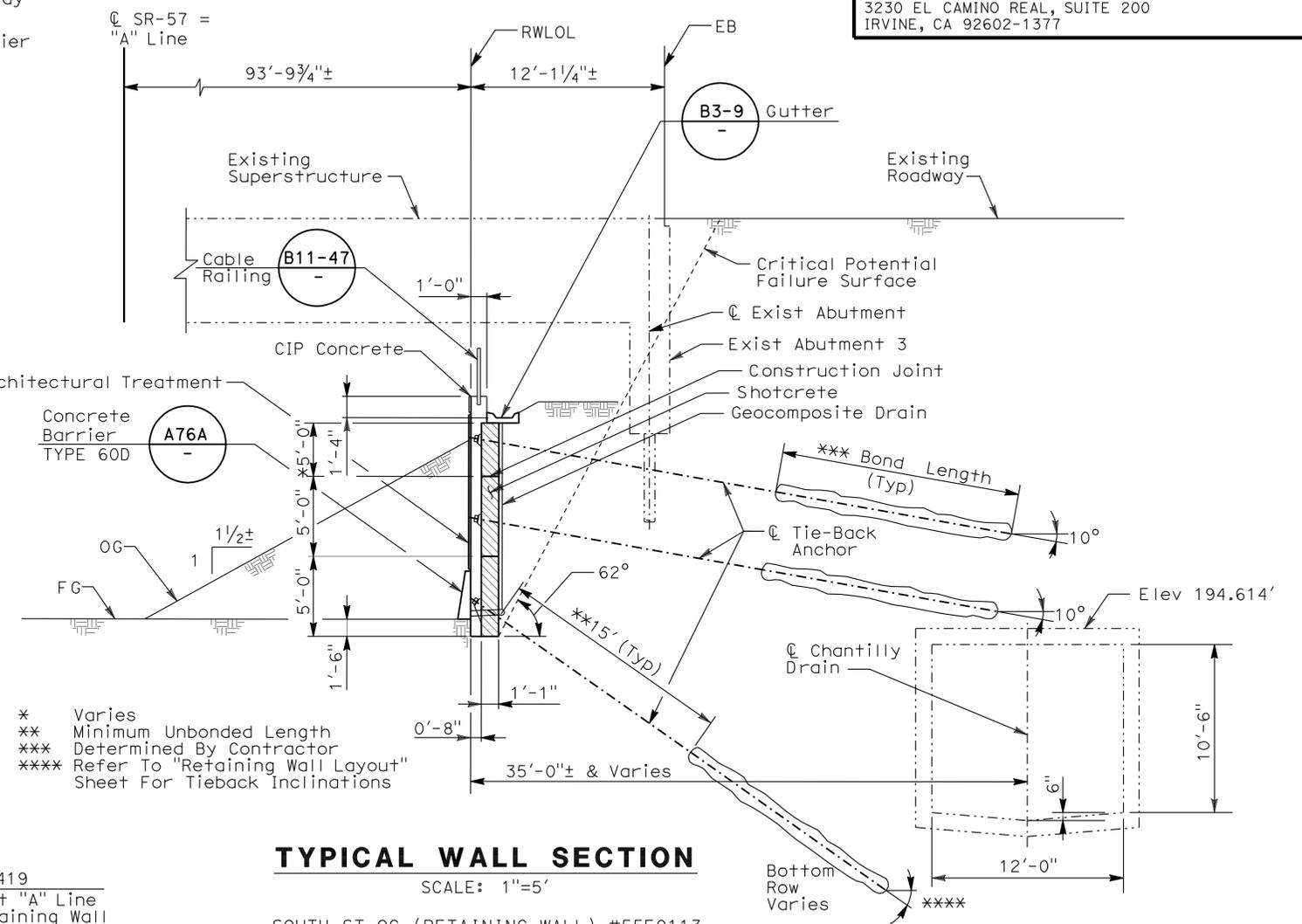
For "General Notes" And "Standard Plans List" See "General Notes" Sheet.

LEGEND

- Indicates Limits of Shotcrete
- Indicates New Construction
- Indicates Foundation or Hidden Lines
- Indicates Existing Structure
- RWLOL Indicates Retaining Wall Layout Line



MIRROR ELEVATION
 SCALE 1"=20'

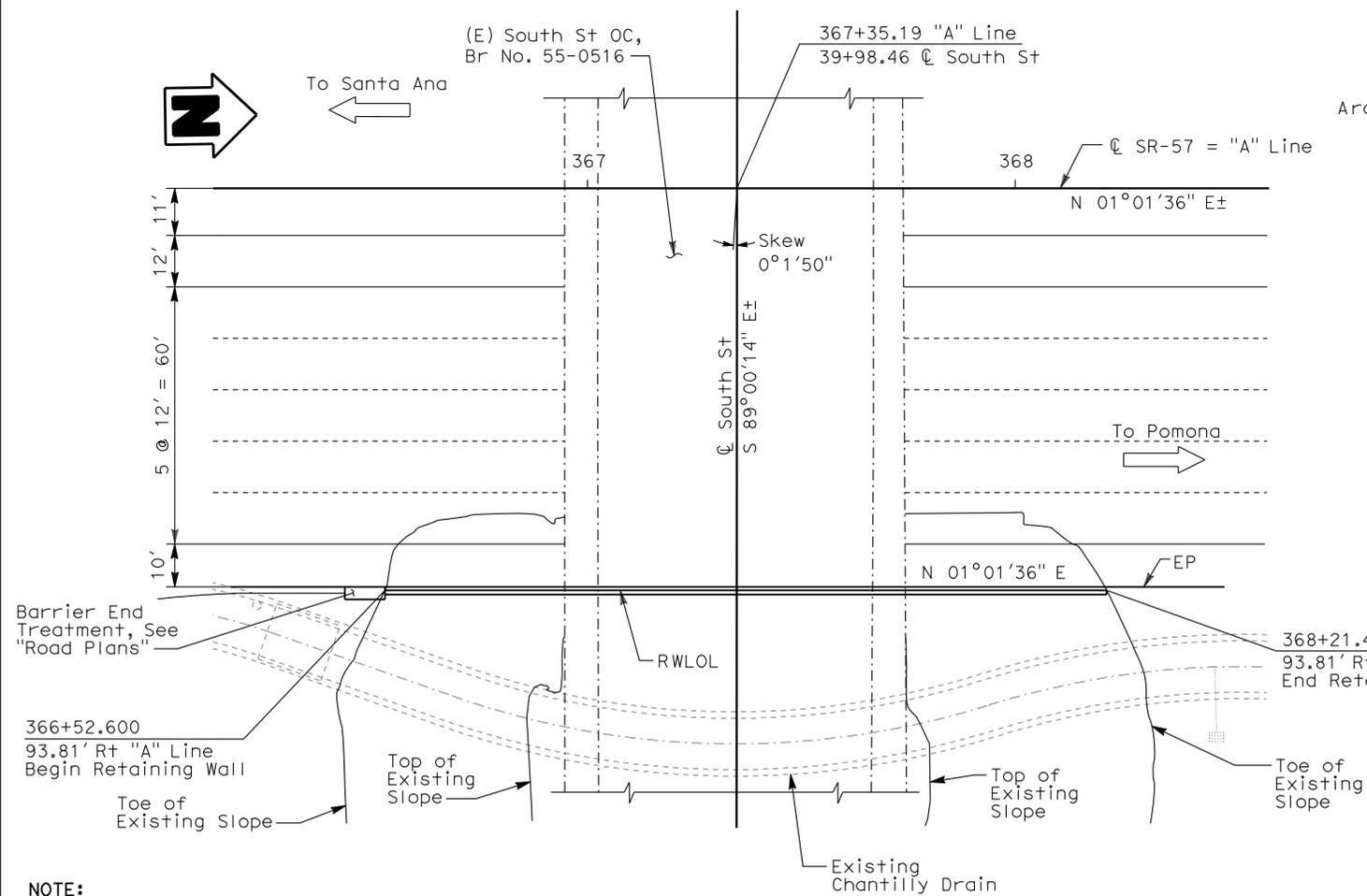


TYPICAL WALL SECTION
 SCALE: 1"=5'

- * Varies
- ** Minimum Unbonded Length Determined By Contractor
- *** Refer To "Retaining Wall Layout" Sheet For Tieback Inclinations

SOUTH ST OC (RETAINING WALL) #55E0113 QUANTITIES

| | | |
|--|--------|------|
| STRUCTURE EXCAVATION (RETAINING WALL) | 180 | CY |
| STRUCTURE EXCAVATION (TIEBACK WALL) | 180 | CY |
| STRUCTURE BACKFILL (RETAINING WALL) | 92 | CY |
| STRUCTURE BACKFILL (TIEBACK WALL) | 6 | CY |
| LEAN CONCRETE BACKFILL | 18 | CY |
| TIEBACK ANCHOR | 30 | EA |
| STRUCTURAL CONCRETE, RETAINING WALL | 100 | CY |
| ARCHITECTURAL TREATMENT (FLOWER PATTERN) | 1,550 | SQFT |
| BAR REINFORCING STEEL (RETAINING WALL) | 21,900 | LB |
| SHOTCRETE | 65 | CY |
| MINOR CONCRETE (GUTTER) | 173 | LF |
| CABLE RAILING | 173 | LF |
| CONCRETE BARRIER (TYPE 60D) | 169 | LF |



PLAN
 SCALE 1"=20'

NOTE:
 The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

Sudhakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

| | |
|---------------------------------|---|
| LOAD & RESISTANCE FACTOR DESIGN | LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE |
| LAYOUT | BY D. Peavey |
| SPECIFICATIONS | BY E. Johnson |

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

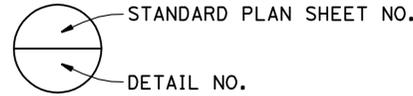
ERIC A. JOHNSON
 PROJECT ENGINEER

| | |
|------------|---------|
| BRIDGE NO. | 55E0113 |
| POST MILES | 14.4 |

SOUTH ST OC - RET WALL
GENERAL PLAN

STANDARD PLANS DATED MAY, 2006

| SHEET NO. | TITLE |
|-----------|---|
| A10A | ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2) |
| A10B | ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2) |
| A10C | SYMBOLS (SHEET 1 OF 2) |
| A10D | SYMBOLS (SHEET 2 OF 2) |
| A76A | CONCRETE BARRIER TYPE 60 |
| B0-3 | BRIDGE DETAILS |
| B3-9 | RETAINING WALL DETAILS NO. 2 |
| B11-47 | CABLE RAILING |



INDEX TO PLANS

| SHEET NO. | TITLE |
|-----------|---------------------------------|
| 1 | GENERAL PLAN |
| 2 | GENERAL NOTES |
| 3 | FOUNDATION PLAN |
| 4 | RETAINING WALL LAYOUT |
| 5 | RETAINING WALL SECTIONS |
| 6 | TIEBACK DETAILS |
| 7 | ARCHITECTURAL TREATMENT |
| 8 | ARCHITECTURAL TREATMENT DETAILS |
| 9 - 11 | LOG OF TEST BORINGS |
| 12 | LOG OF TEST BORINGS (AS-BUILT) |

**GENERAL NOTES
SERVICE LOAD DESIGN**

Design: Caltrans Bridge Design Specifications - May 2006

Reinforced Concrete For Cast-In-Place: $f_y = 60,000$ Ksi
 $f'_c = 3,600$ Psi

Shotcrete: $f_y = 60,000$ Ksi
 $f'_c = 4,000$ Psi
 $f_{ci} = 4,000$ Psi At Stressing

Structural Steel Bearing Plate: ASTM Designation
A36, $f_y = 36$ Ksi

Prestressing Steel (Tieback): Strands = ASTM A416
T (Design Force For Tieback) = See Table On "Retaining Wall Layout" Sheet
 $f_{pu} =$ Min Tensile Strength Of Prestressing Steel
 A_s (Min) = Min Cross Sectional Area Of Prestressing Steel
 A_s (Min) = $1.5T/0.75 f_{pu}$

SOIL PARAMETERS

| TIE BACK ROWS | UPPER AND MIDDLE | LOWER |
|--|------------------|-------|
| Soil Density, γ (pcf) | 120 | 115 |
| Internal Friction Angle, ϕ (degree) | 28 | 34 |
| Cohesion, C (psf) | 1000 | 0 |
| Bearing Capacity, (Psf) | 2500 | |

BENCHMARK

BASIS OF BEARINGS

The Bearings Shown Hereon Are Based Upon The Bearing Between OCS Horizontal Control Station GPS No. 0560 And Station 0111 Being North $4^\circ 59' 28''$ East, Per Records On File In The Office Of The County Surveyor.

DATUM STATEMENT

Coordinates Shown Are Based On The California Coordinate System (CCS83), Zone VI, 1983 NAD, (1991.35 Epoch OCS GPS Adjustment). All Coordinates Shown Are Grid, Unless Otherwise Noted. The Average Combination Factor Of The Two Stations Listed Above Is 0.99999204.

BENCHMARK

Elevations Shown Hereon Are Based On OCS Vertical Control Data Sheet Designation 1K-29-80 As Elevation 202.237' NAVD 88 (OCS 2006 Adjustment), Per Records On File In The Office Of The County Surveyor.

Designation: 1B-99-99

Elevation: 158.271 (NAVD 88; Year Leveled-2006)

Description:

Described By OCS 2002 - Found $3\frac{3}{4}$ " OCS Aluminum Benchmark Disk Stamped "1B-99-99", Set In The Southeast Corner Of A 4' By 22' Concrete Catch Basin. Monument Is Located In The Northwesterly Corner Of The Intersection Of Katella Avenue And Howell Street, 48' Northerly Of The Centerline Of Katella Avenue And 125' Westerly Of The Centerline Of Howell Street. Monument Is Set Level With The Sidewalk.

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 517 | 527 |

Eric A. Johnson 08-09-10
REGISTERED CIVIL ENGINEER DATE

4-18-11
PLANS APPROVAL DATE

ERIC A. JOHNSON
No. C57355
Exp. 12/31/11
CIVIL
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

OCTA
550 S. MAIN STREET
ORANGE, CA 92863

HDR ENGINEERING, INC.
3230 EL CAMINO REAL, SUITE 200
IRVINE, CA 92602-1377

Sudhakar Vatti
DESIGN OVERSIGHT
Sudhakar Vatti
8-10-10
SIGN OFF DATE

| DESIGN | BY | CHECKED |
|------------|-----------|------------|
| | D. Peavey | E. Johnson |
| DETAILS | BY | CHECKED |
| | E. Gray | E. Johnson |
| QUANTITIES | BY | CHECKED |
| | D. Peavey | E. Johnson |

**PREPARED FOR THE
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION**

ERIC A. JOHNSON
PROJECT ENGINEER

| BRIDGE NO. |
|------------|
| 55E0113 |
| POST MILE |
| 14.4 |

**SOUTH ST OC - RET WALL
GENERAL NOTES**

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

| | | | |
|---|---|---|---|
| 0 | 1 | 2 | 3 |
|---|---|---|---|

CU 12231
EA 0F0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

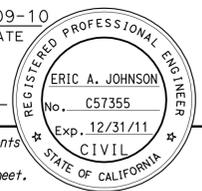
| REVISION DATES (PRELIMINARY STAGE ONLY) | | | | | | | SHEET | OF |
|---|------|------|------|------|--|--|-------|----|
| 10/09 | 2/10 | 5/10 | 6/10 | 8/10 | | | 2 | 12 |

FILE => 55E0113r-b-gn01.dgn

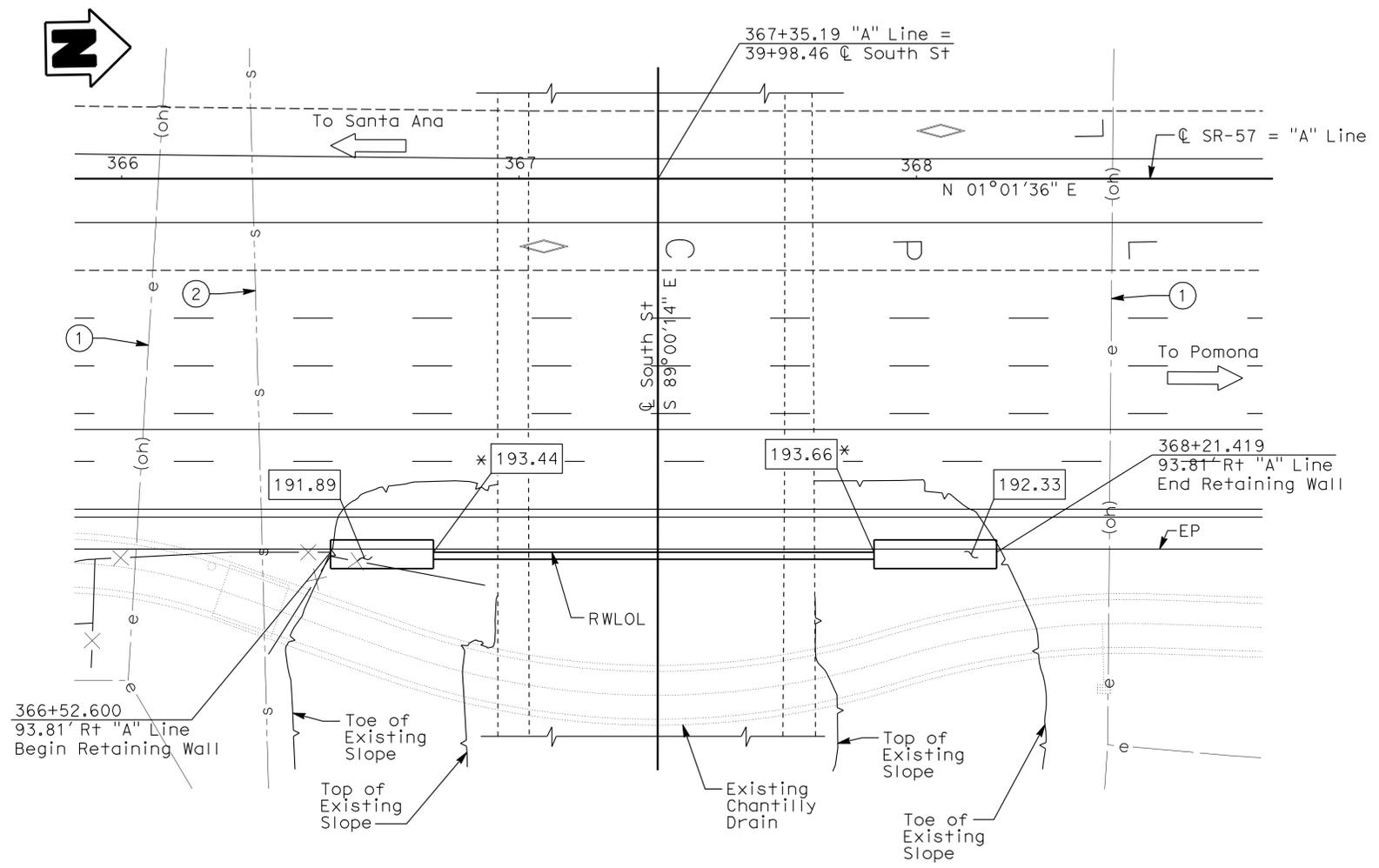
USERNAME => hrmguys DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:03

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 518 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377



PLAN

SCALE 1"=20'
 Note: Tiebacks Not Shown For Clarity.

| NO. | UTILITY | OWNER | ACTION |
|-----|----------|-----------------|-----------------------------|
| ① | 12 Kv OH | City Of Anaheim | Overhead - Protect In Place |
| ② | 8" VCP | City Of Anaheim | Protect In Place |

LEGEND

- Indicates New Construction
- - - - - Indicates Existing
- xxx.xx Denotes Bottom of Footing Elevation @ Type 1 Retaining Wall
- * xxx.xx Denotes Bottom of Wall Elevation @ Tieback Wall

GEO TECHNICAL PROFESSIONAL APPROVAL DATE
Sudhakar Vatt1

NOTE:
 The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

| | | | | | |
|--|------------------------------|----------------|-------------------------|---------------------|--------------------|
| DESIGN OVERSIGHT 8-10-10 SIGN OFF DATE | SCALE: 1"=20' | VERT. DATUM | HORZ. DATUM | DESIGN BY D. Peavey | CHECKED E. Johnson |
| | PHOTOGRAMMETRY AS OF: | ALIGNMENT TIES | DETAILS BY E. Gray | CHECKED E. Johnson | |
| | SURVEYED BY E. Martinez | DRAFTED BY | QUANTITIES BY D. Peavey | CHECKED E. Johnson | |
| | FIELD CHECKED BY D. Williams | CHECKED BY | | | |

PREPARED FOR THE
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 ERIC A. JOHNSON
 PROJECT ENGINEER

| | |
|------------|-------------------------------|
| BRIDGE NO. | SOUTH ST OC - RET WALL |
| 55E0113 | |
| POST MILE | FOUNDATION PLAN |
| 14.4 | |

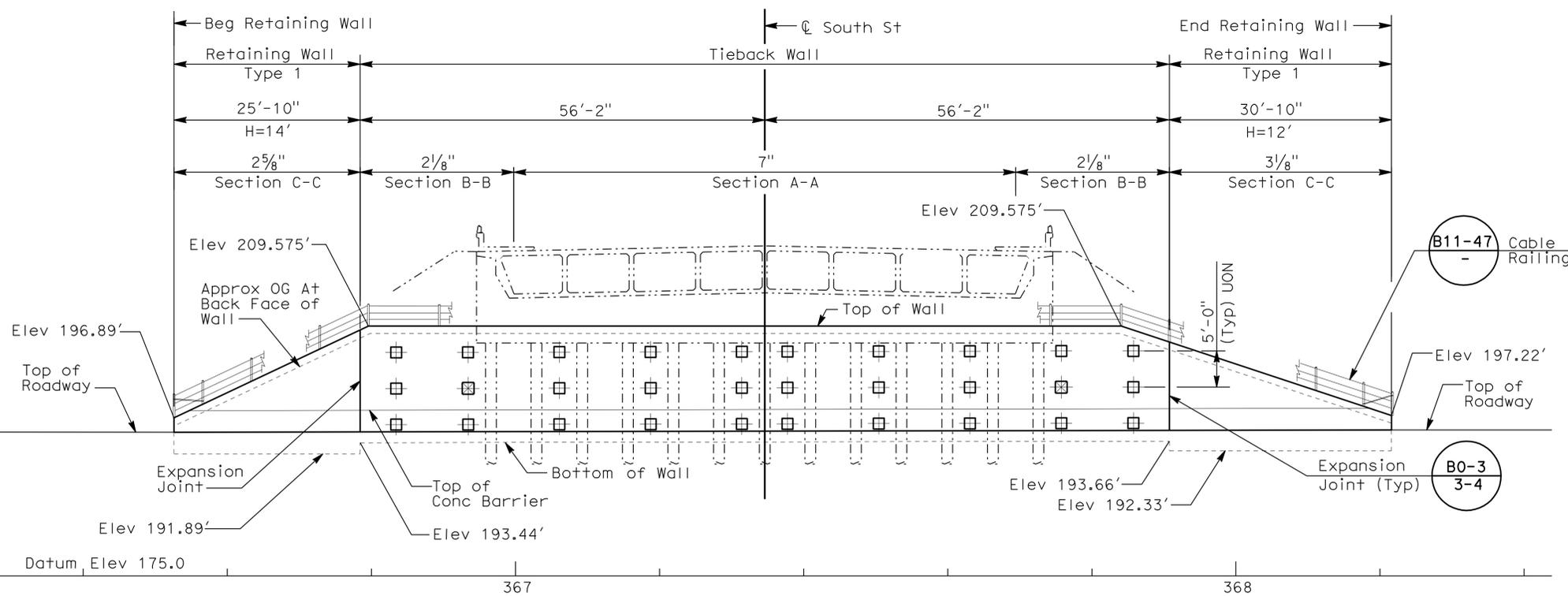
USERNAME => hrmnguy DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:03

| | | | | | |
|------|--------|-------|--------------------------|----------|--------------|
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
| 12 | Ora | 57 | 12.2/15.2 | 519 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
 No. C57355
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

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OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377



ELEVATION

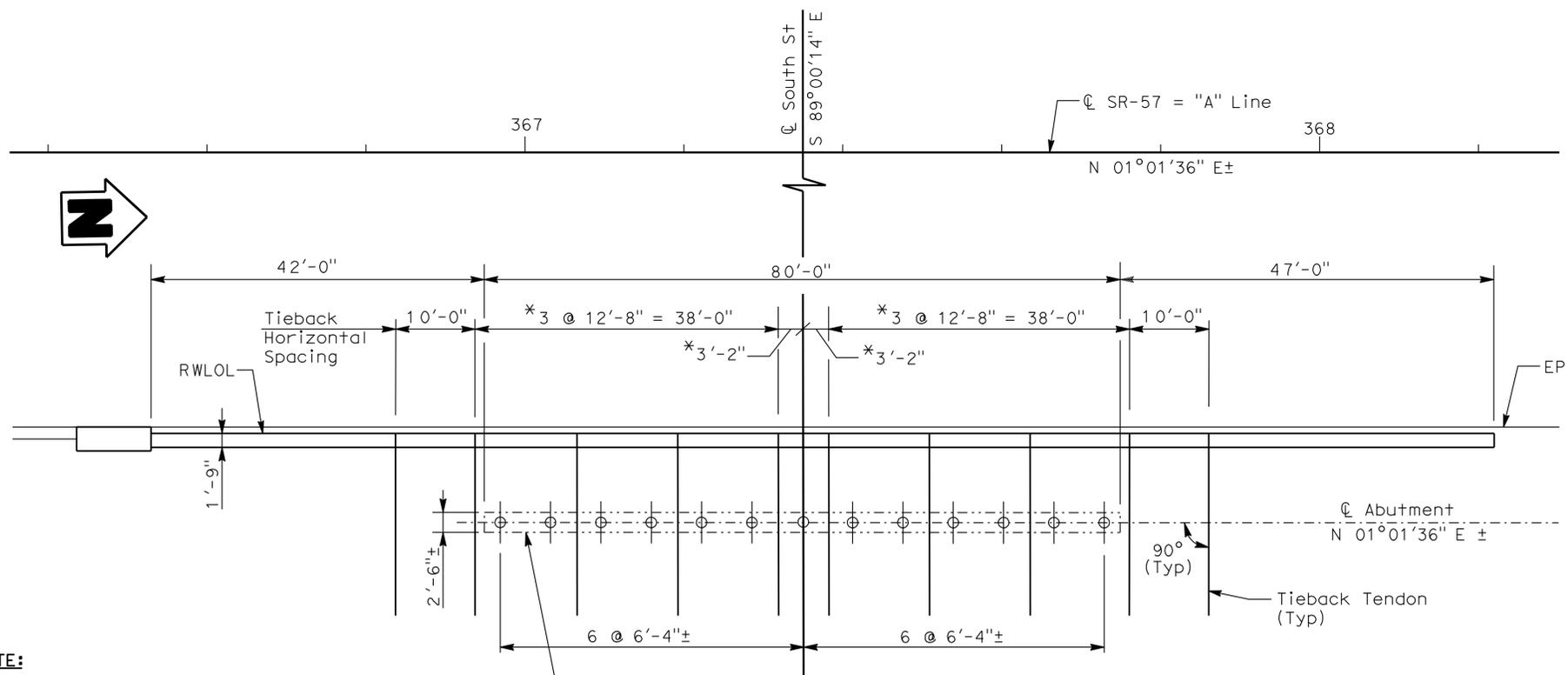
SCALE 1"=10'
 Note: For Sections A-A, B-B, And C-C, See "Retaining Wall Section" Sheet

LEGEND

- ⊕ Indicates Existing 16" CIDH Piles.
- ⊠ Indicates Location Of Tieback Assembly Or As Directed By The Engineer.
- Tiebacks # 1-10 Top Row (10° Inclination)
 Tiebacks # 11-20 Middle Row (10° Inclination)
 Tiebacks # 21-30 Bottom Row
 Tiebacks # 21, 22, 29, 30 Drilled At 45°
 Tiebacks # 23-28 Drilled At 35°
- ⊠ Indicates Location Of Tieback Assembly Requiring Performance Test Or As Directed By The Engineer.

NOTES:

1. Prior To Installing Tiebacks, Contractor Shall Verify The Existing Footing And Pile Locations By Exposing, By Hand, One Pile At Each End Of Each Abutment.



PLAN

SCALE 1"=10'
 *These Dimensions Are Approximate. After Contractor Verification Of Existing Pile Locations, The Tieback Shall Be Placed Centered Between The Adjacent Piles.

NOTE:
 The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

TIEBACK DESIGN FORCE TABLE

| Tieback Wall Name | Tieback Wall Section | Tieback Location (Station) | Lift Ht (Ft) / T (Kip) | | Lift Ht (Ft) / T (Kip) | | Lift Ht (Ft) / T (Kip) | |
|-------------------|----------------------|----------------------------|------------------------|------|------------------------|------|------------------------|------|
| | | | Upper | | Middle | | Lower | |
| | | | | | | | | |
| 55E0113 | A-A | 366+99.75 To 367+69.42 | 4.7 | 47.7 | 5 | 25.8 | 5 | 25.9 |
| | B-B | 366+78.42 To 366+99.75 | 4.7 | 16.2 | 5 | 20.4 | 5 | 23.7 |
| | B-B | 367+69.42 To 367+90.75 | 4.7 | 16.2 | 5 | 20.4 | 5 | 23.7 |

SUDHAKAR VATHI
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

PREPARED FOR THE STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 ERIC A. JOHNSON
 PROJECT ENGINEER

BRIDGE NO. 55E0113
 POST MILE 14.4
SOUTH ST OC - RET WALL
RETAINING WALL LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

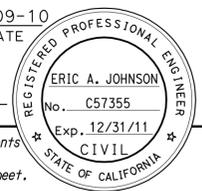
CU 12231
EA 0F0401

| | | | |
|---|---|---------|-------|
| DISREGARD PRINTS BEARING EARLIER REVISION DATES | REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET 4 | OF 12 |
|---|---|---------|-------|

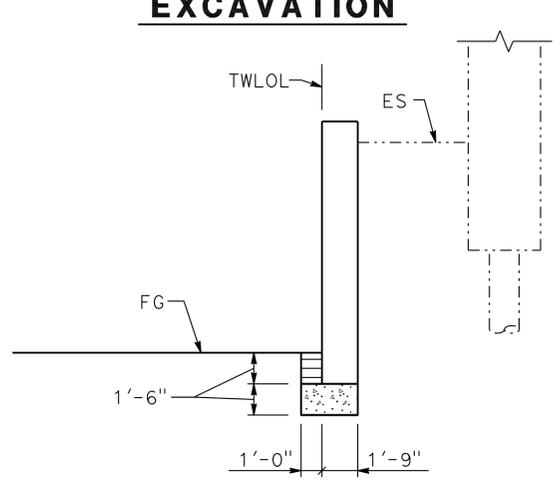
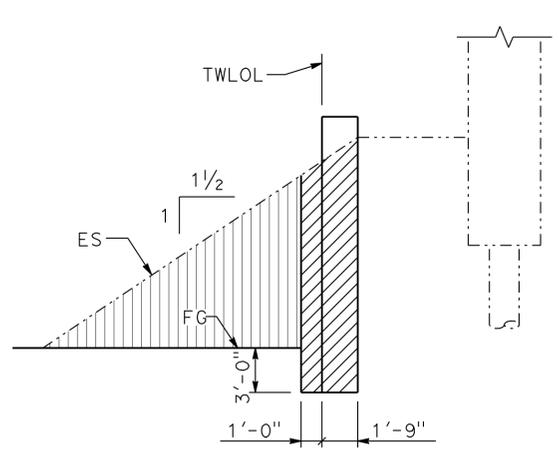
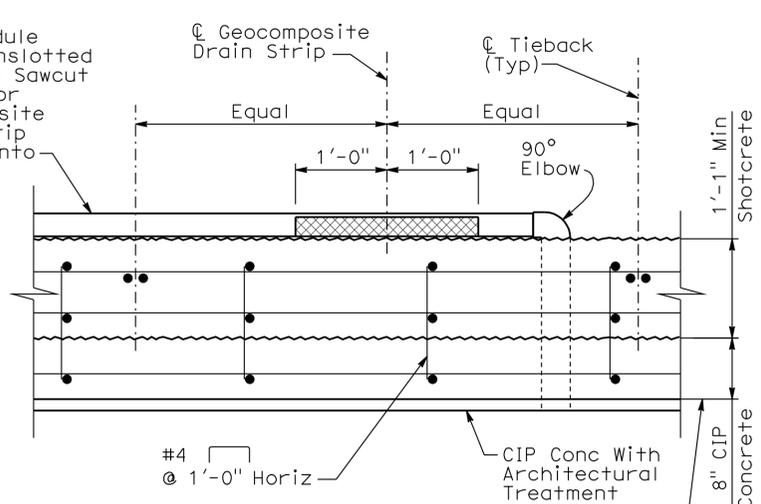
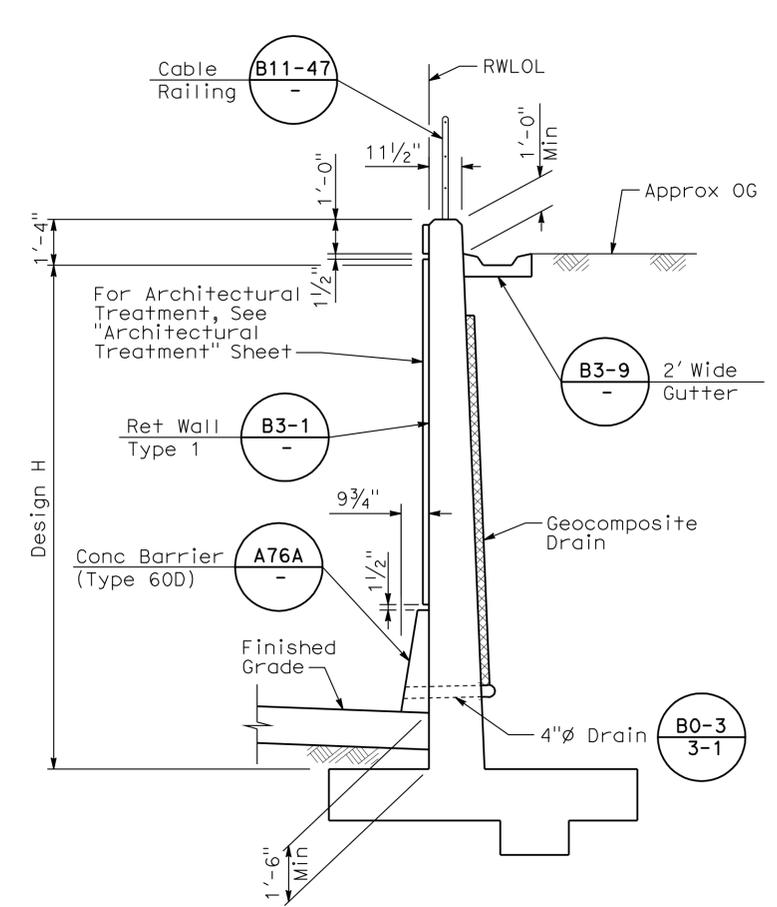
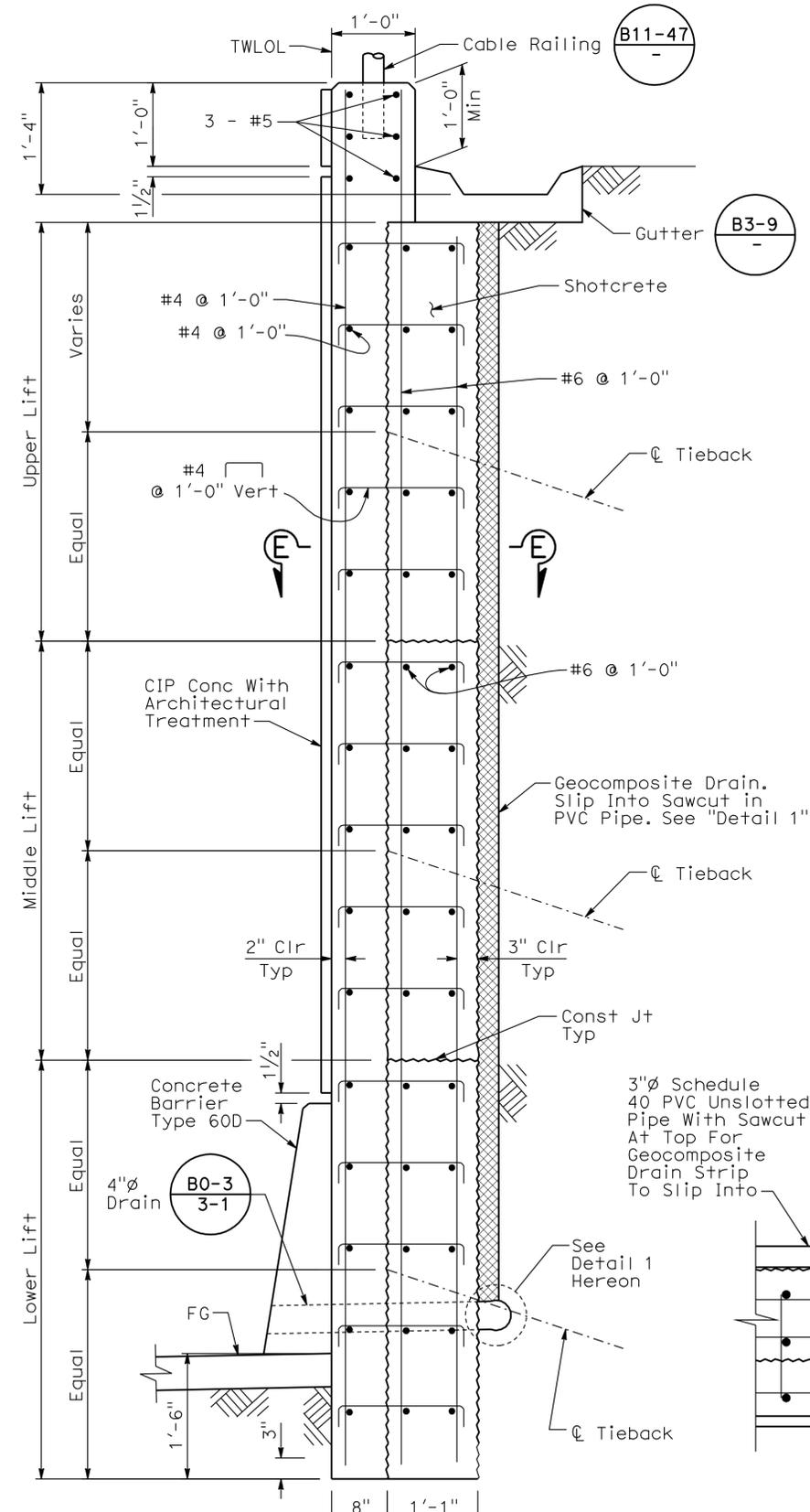
USERNAME => hrmjguy DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:03

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 520 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
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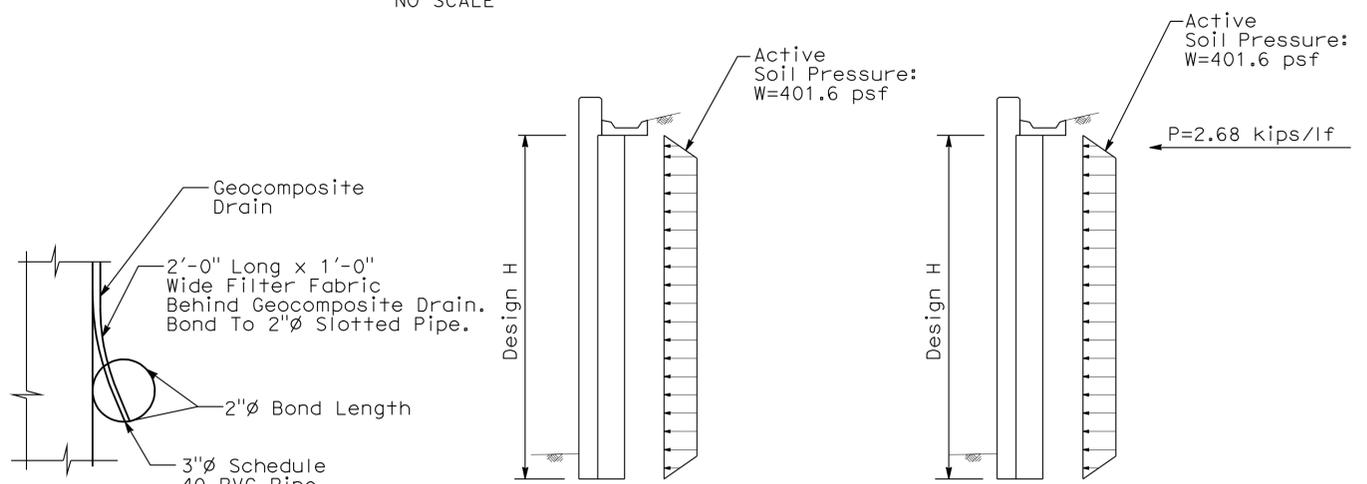


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LIMITS OF PAYMENT FOR TIEBACK WALL EXCAVATION AND BACKFILL

NO SCALE



DETAIL 1
NO SCALE

LOADING DIAGRAM AT REST
NO SCALE

LOADING DIAGRAM WITH EARTHQUAKE LOAD
NO SCALE

DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

| | |
|------------|---------|
| BRIDGE NO. | 55E0113 |
| POST MILE | 14.4 |

SOUTH ST OC - RET WALL RETAINING WALL SECTIONS

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 12231 EA 0F0401

FILE => 55E0113r-f-rw_lo02.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

| | | | | | | | | | |
|---|-------|------|------|------|------|--|--|--|--|
| REVISION DATES (PRELIMINARY STAGE ONLY) | 10/09 | 2/10 | 5/10 | 6/10 | 8/10 | | | | |
| SHEET | 5 | | | | | | | | |
| OF | 12 | | | | | | | | |

USERNAME => hrmjguy DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:03

| | | | | | |
|-------|--------|-------|--------------------------|-----------|--------------|
| DIST. | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
| 12 | Oran | 57 | 12.2/15.2 | 521 | 527 |

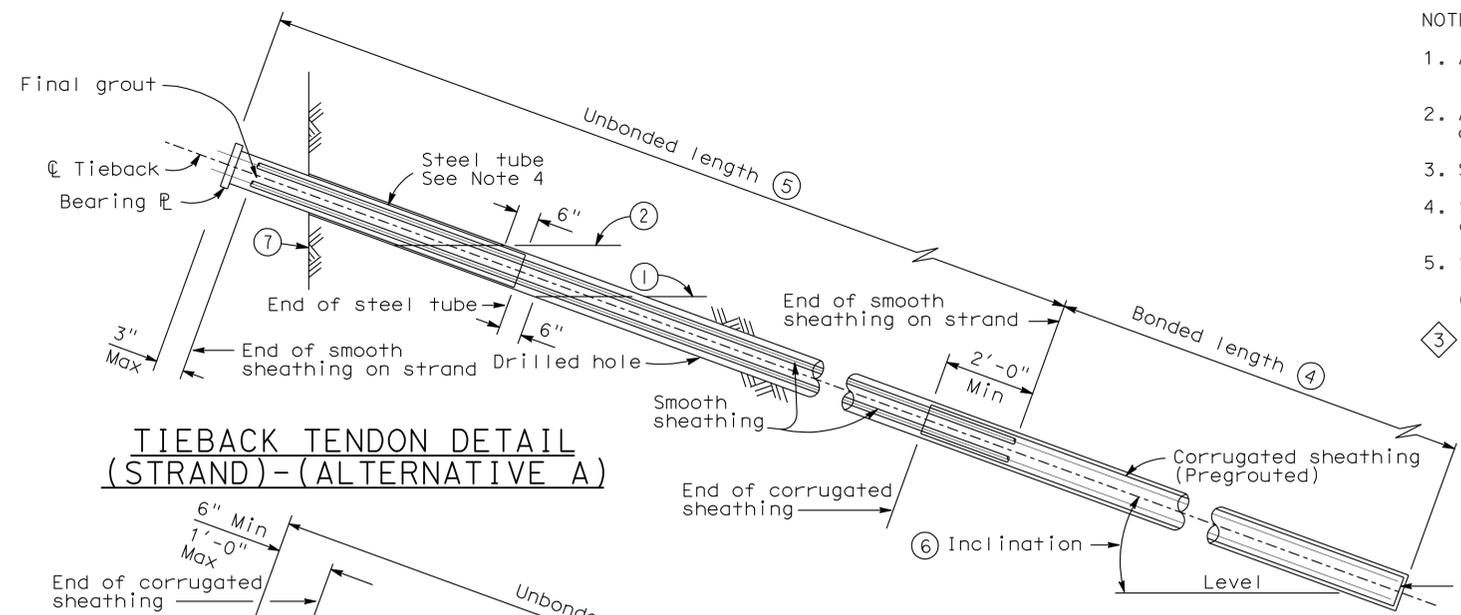
Eric A. Johnson 08-09-10
 REGISTERED ENGINEER - CIVIL
 No. C57355
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE: 4-18-11
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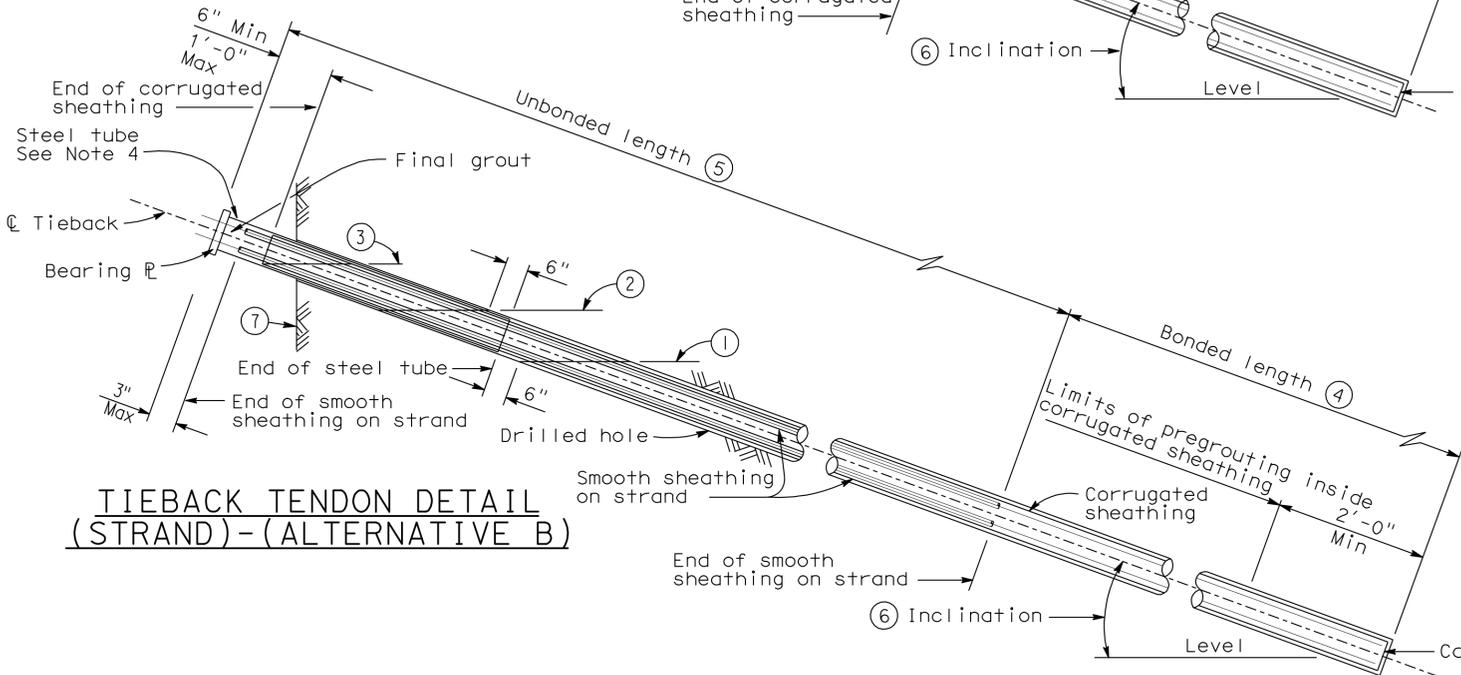
OCTA
 550 S. MAIN STREET
 ORANGE, CA 92863
 HDR ENGINEERING, INC.
 3230 EL CAMINO REAL, SUITE 200
 IRVINE, CA 92602-1377

NOTES:

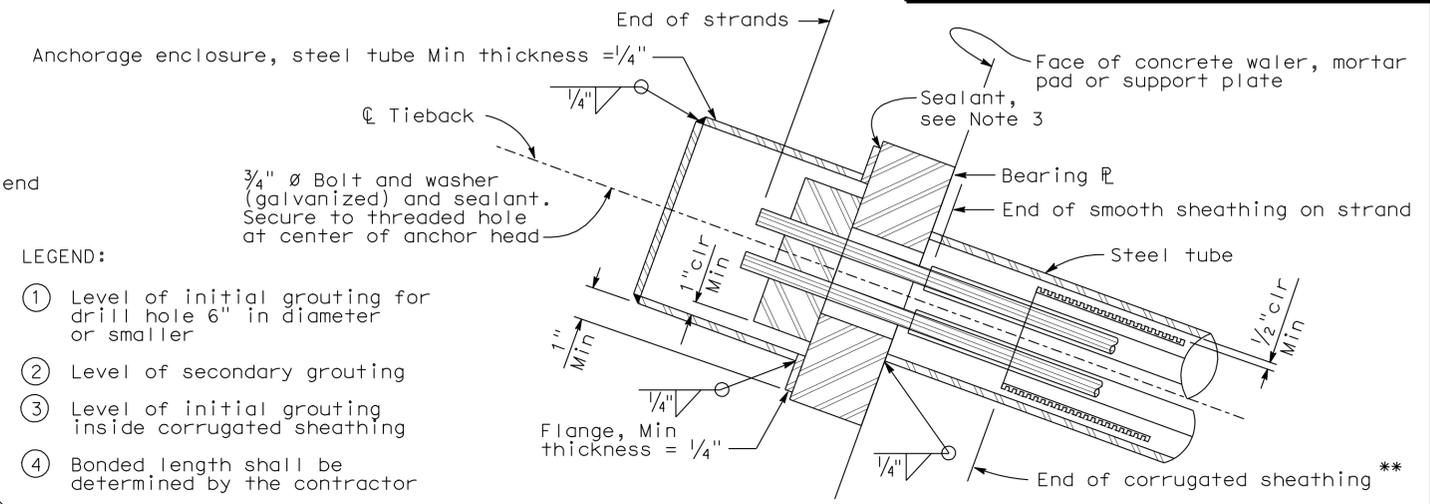
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
3. Silicone sealant to cover full width of flange.
4. Steel tube welded to bearing plate (Min thickness = 1/4"). Galvanize assembly after fabrication
5. Steel tube welded to bearing plate inside diameter of steel tube to be 1" greater than outside diameter of smooth sheathing (Min thickness = 1/4") Galvanize assembly after fabrication.



TIEBACK TENDON DETAIL (STRAND) - (ALTERNATIVE A)



TIEBACK TENDON DETAIL (STRAND) - (ALTERNATIVE B)

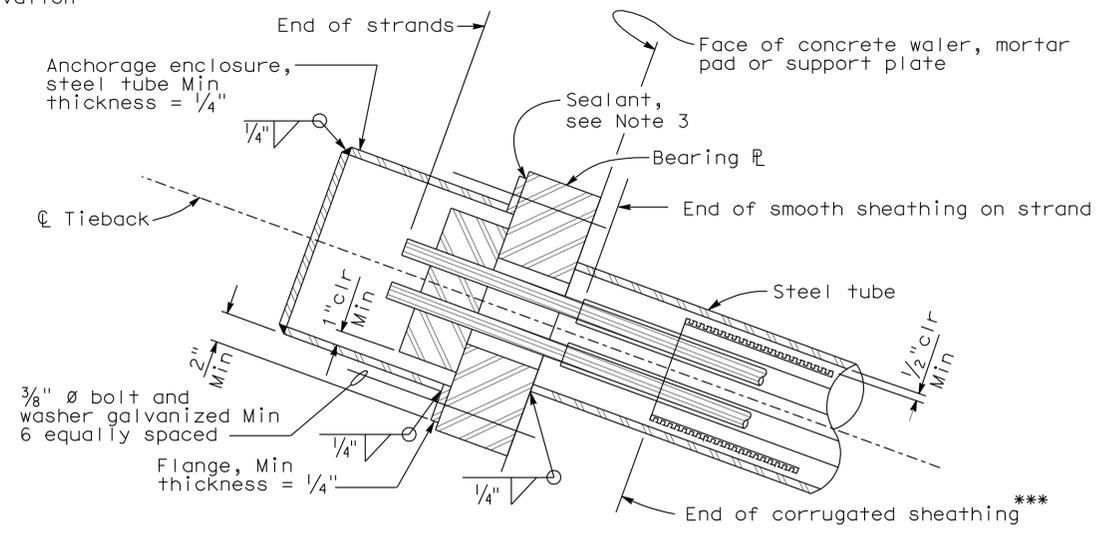


ALTERNATIVE X

** Alternative B tendon only

LEGEND:

- ① Level of initial grouting for drill hole 6" in diameter or smaller
- ② Level of secondary grouting
- ③ Level of initial grouting inside corrugated sheathing
- ④ Bonded length shall be determined by the contractor
- ⑤ For unbonded length, see "General Plan" sheet
- ⑥ For inclination, see "General Plan" sheet
- ⑦ Face of Wall Excavation



ALTERNATIVE Y

*** Alternative B tendon only

ANCHORAGE ENCLOSURE DETAILS

| | | |
|------------------------------|--|--|
| STANDARD DRAWING | | |
| FILE NO. xs12-040e | APPROVED BY <u>G. WANG</u> RESPONSIBLE TECHNICAL SPECIALIST | RELEASED BY <u>ROBERTO LACALLE</u> RESPONSIBLE OFFICE CHIEF |
| APPROVAL DATE <u>REVISED</u> | RELEASE DATE <u>REVISED</u> | |

- ① "Tieback Tendon Detail (Bars)" Deleted
- ② Revised Notes 5 and 6
- ③ Deleted Note 6

| | |
|---|----------------------------------|
| STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION | DIVISION OF ENGINEERING SERVICES |
| BRIDGE NO. 55E0113 | POST MILE 14.4 |

| | |
|---|---------------|
| SPECIAL DETAILS | |
| SOUTH ST OC - RET WALL | |
| TIEBACK DETAILS | |
| REVISION DATES (PRELIMINARY STAGE ONLY) | SHEET 6 OF 12 |

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 522 | 527 |

Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE

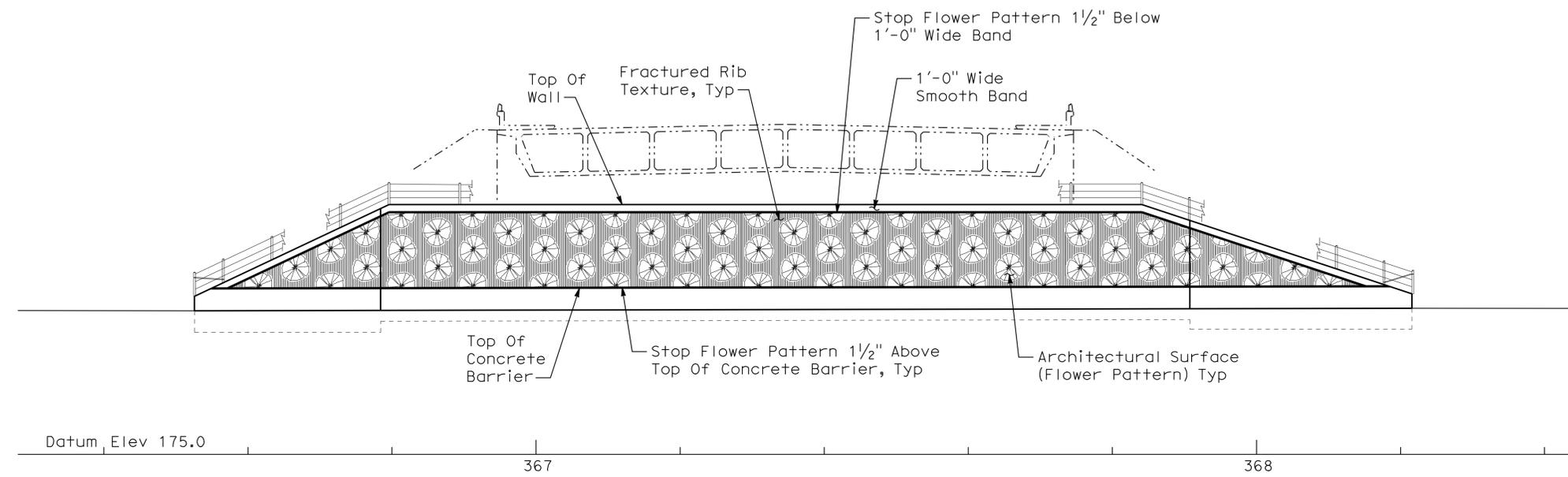
4-18-11
 PLANS APPROVAL DATE

ERIC A. JOHNSON
 No. C57355
 Exp. 12/31/11
 CIVIL
 STATE OF CALIFORNIA

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 IRVINE, CA 92602-1377



SOUTH ST OC RETAINING WALL
 SCALE 1"=10'

NOTE:
 The Contractor Shall Verify All Controlling Field Dimensions Before Ordering Or Fabricating Any Materials.

Sudhakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

ERIC A. JOHNSON
 PROJECT ENGINEER

| | |
|------------|---------|
| BRIDGE NO. | 55E0113 |
| POST MILE | 14.4 |

SOUTH ST OC - RET WALL ARCHITECTURAL TREATMENT

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

CU 12231
 EA 0F0401

DISREGARD PRINTS BEARING EARLIER REVISION DATES

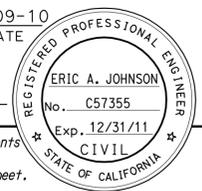
| | | | | | | | |
|---|------|------|------|------|--|-------|----|
| REVISION DATES (PRELIMINARY STAGE ONLY) | | | | | | SHEET | OF |
| 10/09 | 2/10 | 5/10 | 6/10 | 8/10 | | 7 | 12 |

FILE => 55E0113r-h-rw_1o01.dgn

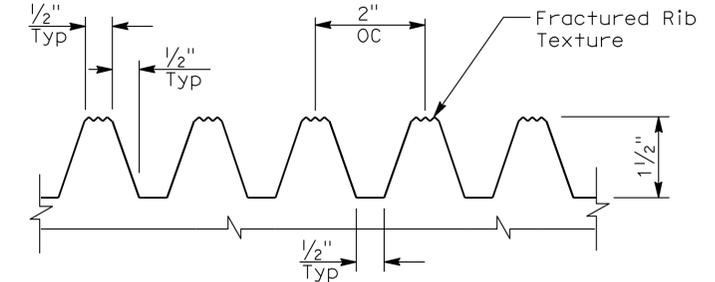
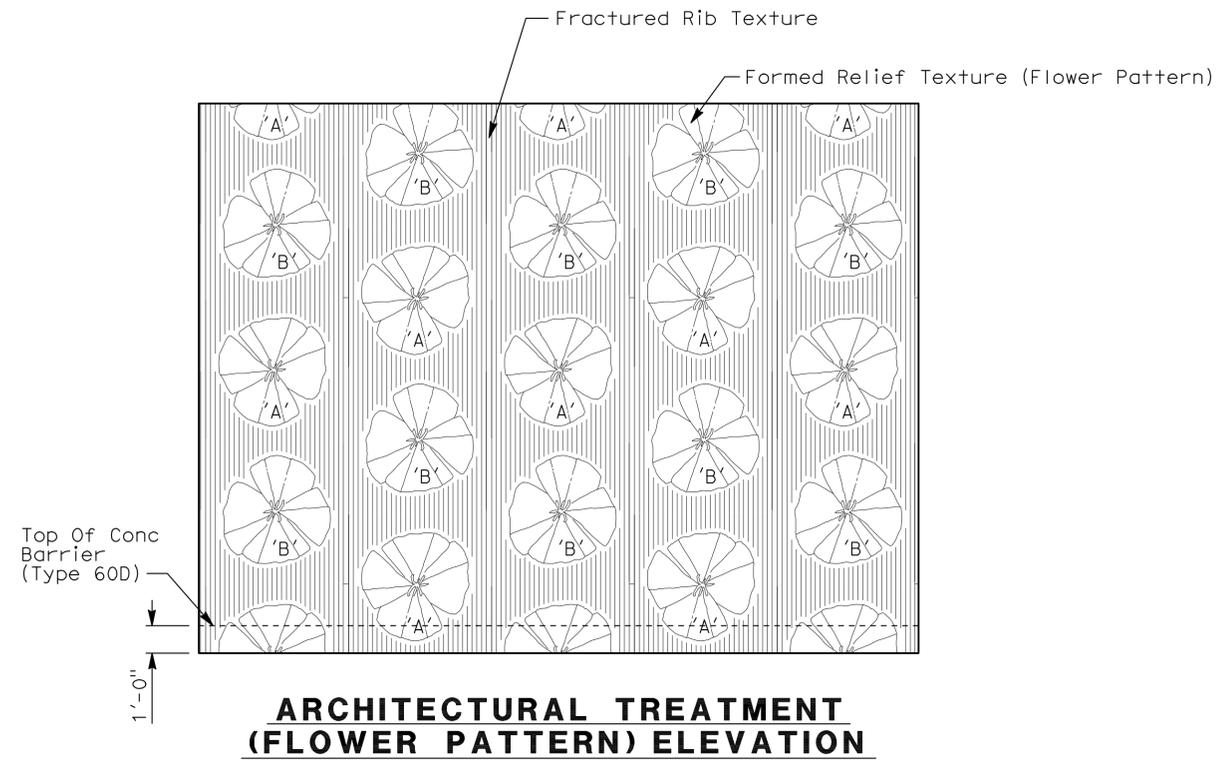
USERNAME => hrmnguy DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:39

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Ora | 57 | 12.2/15.2 | 523 | 527 |

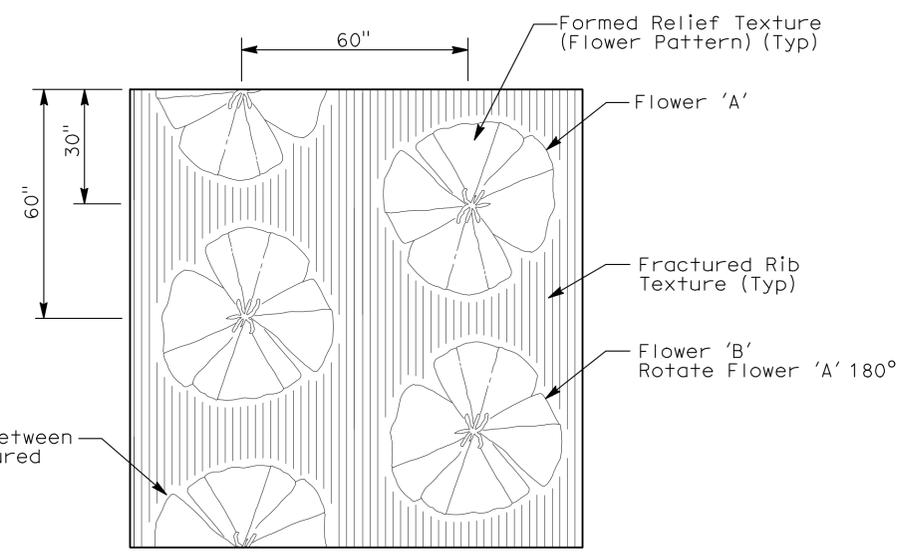
Eric A. Johnson 08-09-10
 REGISTERED CIVIL ENGINEER DATE
 4-18-11
 PLANS APPROVAL DATE
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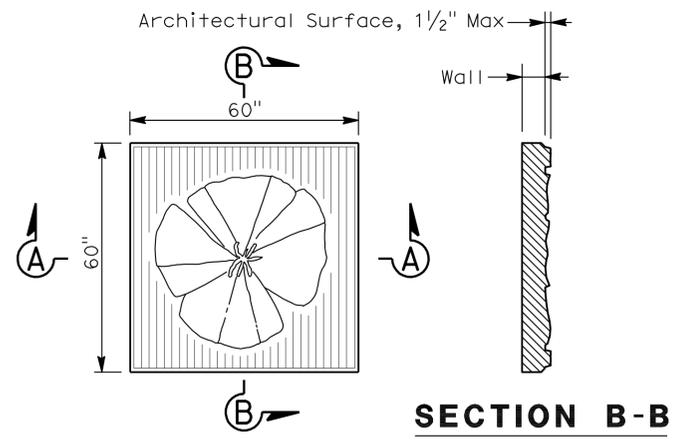


FRACTURED RIB TEXTURE DETAIL
(Elastomer Formliner)

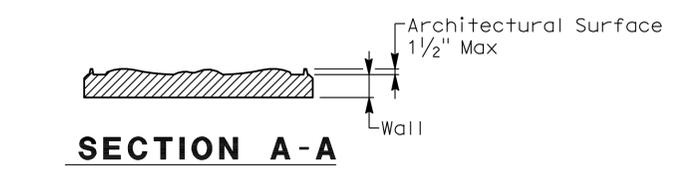


ARCHITECTURAL TREATMENT (FLOWER PATTERN) PATTERN

ARCHITECTURAL TREATMENT (FLOWER PATTERN) ELEVATION



SECTION B-B



SECTION A-A
FLOWER PATTERN DETAILS

NOTES:

1. Identical Flower Images, Scale And Spacing Shall Be Used For Flower Pattern.
2. Within a Vertical Column, Flower Images Shall Alternate Between Flowers 'A' And 'B'. Vertical Columns Shall Be Offset 30" From Adjacent Columns.
3. Where Placed On Walls Bounded By Concrete Barriers, Finished Grade Or Top Of Wall, Flower Pattern Shall Be Continued Without Concern For Partial Flower Images, Except As Noted.

Sudhakar Vatti
 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

| | | |
|------------|--------------|--------------------|
| DESIGN | BY D. Peavey | CHECKED E. Johnson |
| DETAILS | BY E. Gray | CHECKED E. Johnson |
| QUANTITIES | BY D. Peavey | CHECKED E. Johnson |

PREPARED FOR THE STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ERIC A. JOHNSON
 PROJECT ENGINEER

| | |
|------------|---------|
| BRIDGE NO. | 55E0113 |
| POST MILE | 14.4 |

SOUTH ST OC - RET WALL
ARCHITECTURAL TREATMENT DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

| | | | |
|---|---|---|---|
| 0 | 1 | 2 | 3 |
|---|---|---|---|

CU 12231
 EA 0F0401

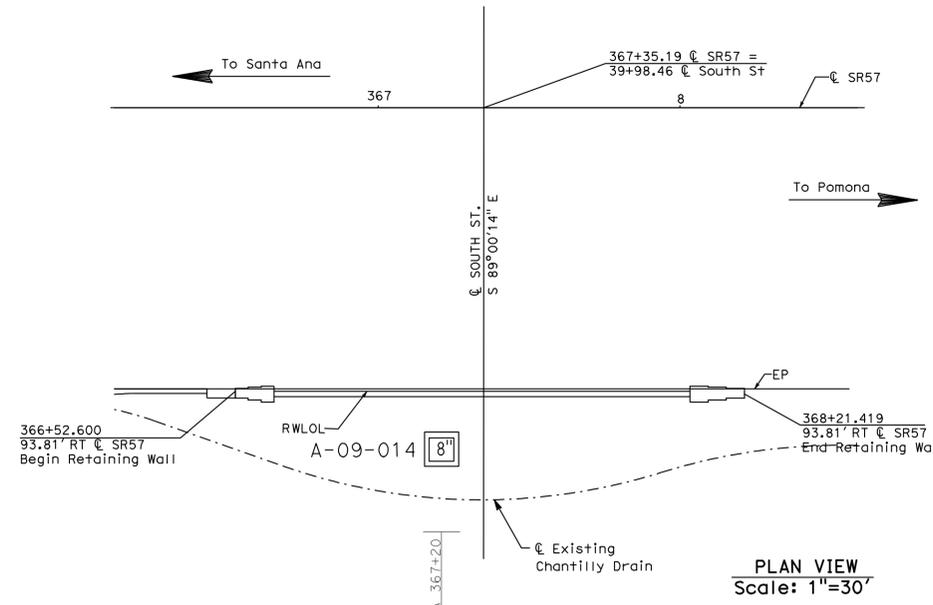
DISREGARD PRINTS BEARING EARLIER REVISION DATES

| REVISION DATES (PRELIMINARY STAGE ONLY) | | | | | | SHEET | OF |
|---|------|------|------|------|--|-------|----|
| 10/09 | 2/10 | 5/10 | 6/10 | 8/10 | | 8 | 12 |

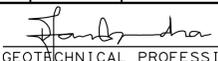
This LOTB sheet was prepared in accordance with the Caltrans Soil and Rock Logging Classification and Presentation Manual. 2.4-inch diameter modified California Ring sampler and 1.4-inch diameter SPT sampler were used for field sampling.

BENCH MARK

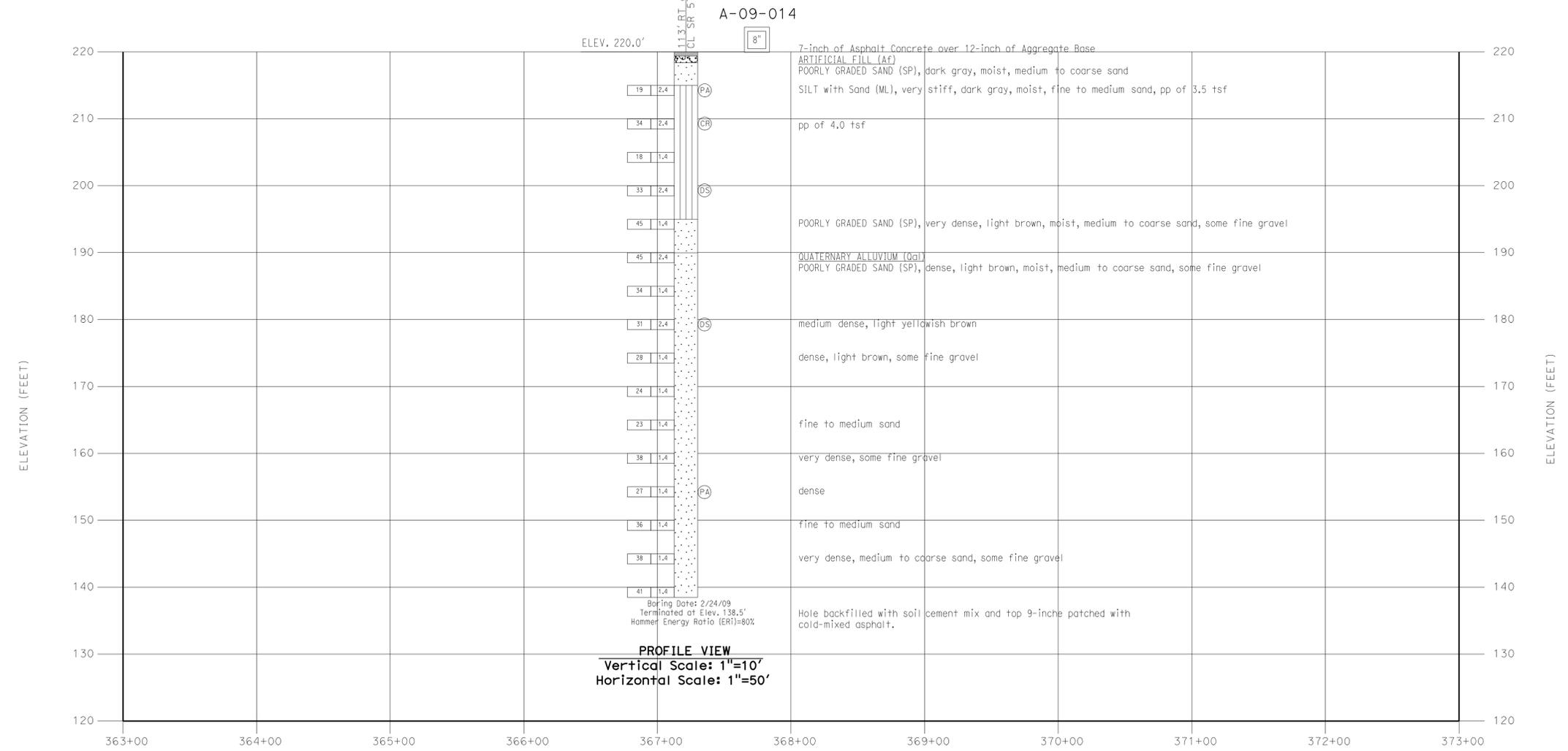
ELEVATIONS SHOWN HEREON ARE BASED ON O.C.S. VERTICAL CONTROL DATA SHEET DESIGNATION 1K-29-80 AS ELEVATION 202.237 NAVD 88 (O.C.S. 2006 ADJUSTMENT), PER RECORDS ON FILE IN THE OFFICE OF THE COUNTY SURVEYOR.



| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 524 | 527 |


 GEOTECHNICAL PROFESSIONAL DATE 8/9/2010
 4-18-11
 PLANS APPROVAL DATE
 REGISTERED PROFESSIONAL ENGINEER
 DUJAN CHANDRA
 No. 2376
 Exp. 6/30/11
 GEOTECHNICAL
 STATE OF CALIFORNIA
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ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863
 LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

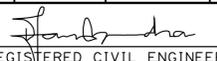


Conversion factor of 2.4-inch diameter sampler blow count to SPT blow count may be taken as 0.6 for cohesionless soils and 0.65 for cohesive soils.

| | | | | | |
|---|--------------------------|---|--|--|--|
|  DESIGN OVERSIGHT 8-10-10 SIGN OFF DATE | DRAWN BY Buu Tran | AMIT BAKANE FIELD INVESTIGATION BY: DATE: 2/24/09 | PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION | BRIDGE NO. 55E0113 POST MILES 14.42 | SOUTH ST OC-RET WALL LOG OF TEST BORINGS 1 OF 4 |
| | CHECKED BY Taekuk Kim | CU EA | 12231 OF0401 | DISREGARD PRINTS BEARING EARLIER REVISION DATES | |
| 065 GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09) | | | | | |

USERNAME => hrmnguye DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:39

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 525 | 527 |


 REGISTERED CIVIL ENGINEER DATE 8/9/2010
 PLANS APPROVAL DATE 4-18-11
 No. 2376 Exp. 6/30/11
 REGISTERED PROFESSIONAL ENGINEER
 GEOTECHNICAL
 STATE OF CALIFORNIA

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ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863
 LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

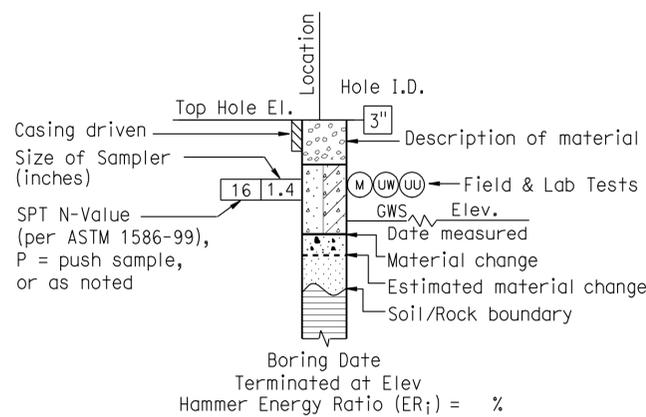
| CEMENTATION | |
|-------------|---|
| Description | Criteria |
| Weak | Crumbles or breaks with handling or little finger pressure. |
| Moderate | Crumbles or breaks with considerable finger pressure. |
| Strong | Will not crumble or break with finger pressure. |

| CONSISTENCY OF COHESIVE SOILS | | | | |
|-------------------------------|---------------------------------------|---------------------------------------|---------------------------|---|
| Description | Unconfined Compressive Strength (tsf) | Pocket Penetrometer Measurement (tsf) | Torvane Measurement (tsf) | Field Approximation |
| Very Soft | < 0.25 | < 0.25 | < 0.12 | Easily penetrated several inches by fist |
| Soft | 0.25 to 0.50 | 0.25 to 0.50 | 0.12 to 0.25 | Easily penetrated several inches by thumb |
| Medium Stiff | 0.50 to 1.0 | 0.50 to 1.0 | 0.25 to 0.50 | Penetrated several inches by thumb with moderate effort |
| Stiff | 1 to 2 | 1 to 2 | 0.50 to 1.0 | Readily indented by thumb but penetrated only with great effort |
| Very Stiff | 2 to 4 | 2 to 4 | 1.0 to 2.0 | Readily indented by thumbnail |
| Hard | > 4.0 | > 4.0 | > 2.0 | Indented by thumbnail with difficulty |

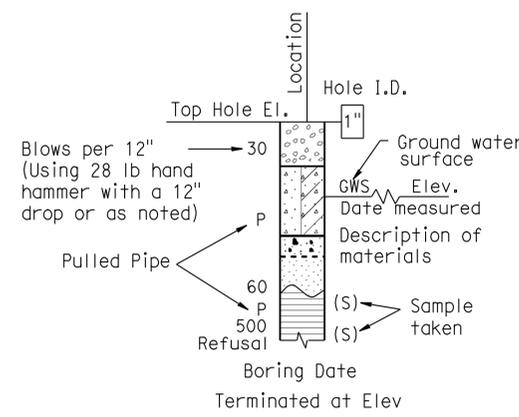
| BOREHOLE IDENTIFICATION | | |
|---|-----------|--|
| Symbol | Hole Type | Description |
|  | A | Auger Boring |
|  | R | Rotary drilled boring |
|  | P | Rotary percussion boring (air) |
|  | R | Rotary drilled diamond core |
|  | HD | Hand driven (1-inch soil tube) |
|  | HA | Hand Auger |
|  | D | Dynamic Cone Penetration Boring |
|  | CPT | Cone Penetration Test (ASTM D 5778-95) |
|  | O | Other |

Note: Size in inches.

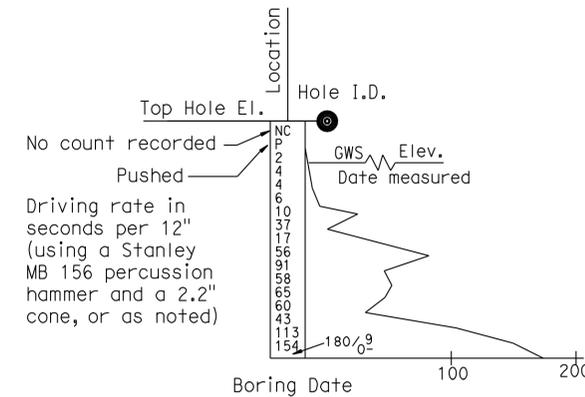
| PLASTICITY OF FINE-GRAINED SOILS | |
|----------------------------------|--|
| Description | Criteria |
| Nonplastic | A 1/8-inch thread cannot be rolled at any water content. |
| Low | The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit. |
| Medium | The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit. |
| High | It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit. |



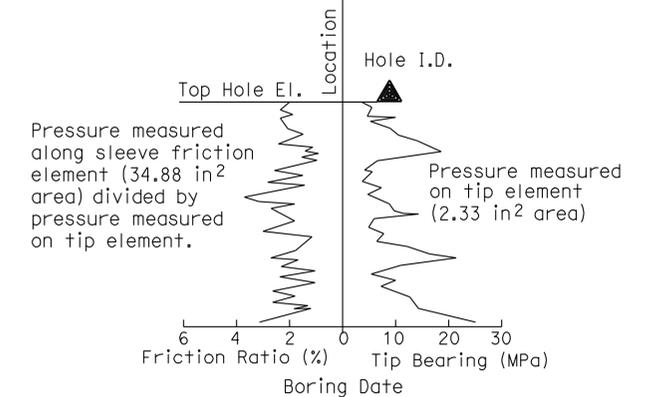
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING


 DESIGN OVERSIGHT
 Sudhakar Vatti
 8-10-10
 SIGN OFF DATE

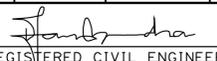
DRAWN BY Buu Tran
 CHECKED BY Taekuk Kim

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 Amit Bakane
 FIELD INVESTIGATION BY:
 DATE: 2/24/09

BRIDGE NO. 55E0113
 POST MILES 14.42
 Djan Chandra
 PROJECT ENGINEER

SOUTH STE OC-RET WALL
LOG OF TEST BORINGS 2 OF 4

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No | TOTAL SHEETS |
|------|--------|-------|--------------------------|----------|--------------|
| 12 | Oran | 57 | 12.2/15.2 | 526 | 527 |


 REGISTERED CIVIL ENGINEER DATE 8/9/2010
 4-18-11
 PLANS APPROVAL DATE

 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

ORANGE COUNTY TRANSPORTATION AUTHORITY
 550 SOUTH MAIN STREET
 ORANGE, CA 92863
 LEIGHTON CONSULTING INC.
 17781 COWAN
 IRVINE, CA 92614

| GROUP SYMBOLS AND NAMES | | | |
|-------------------------|--|----------------|---|
| Graphic/Symbol | Group Names | Graphic/Symbol | Group Names |
| | Well-graded GRAVEL | | Lean CLAY |
| | Well-graded GRAVEL with SAND | | Lean CLAY with SAND |
| | Poorly graded GRAVEL | | Lean CLAY with GRAVEL |
| | Poorly graded GRAVEL with SAND | | SANDY lean CLAY |
| | Well-graded GRAVEL with SILT | | SANDY lean CLAY with GRAVEL |
| | Well-graded GRAVEL with SILT and SAND | | GRAVELLY lean CLAY |
| | Well-graded GRAVEL with CLAY (or SILTY CLAY) | | GRAVELLY lean CLAY with SAND |
| | Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND) | | SILTY CLAY |
| | Poorly graded GRAVEL with SILT | | SILTY CLAY with SAND |
| | Poorly graded GRAVEL with SILT and SAND | | SILTY CLAY with GRAVEL |
| | Poorly graded GRAVEL with CLAY (or SILTY CLAY) | | SANDY SILTY CLAY |
| | Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND) | | SANDY SILTY CLAY with GRAVEL |
| | SILTY GRAVEL | | GRAVELLY SILTY CLAY |
| | SILTY GRAVEL with SAND | | GRAVELLY SILTY CLAY with SAND |
| | CLAYEY GRAVEL | | SILT |
| | CLAYEY GRAVEL with SAND | | SILT with SAND |
| | SILTY, CLAYEY GRAVEL | | SILT with GRAVEL |
| | SILTY, CLAYEY GRAVEL with SAND | | SANDY SILT |
| | Well-graded SAND | | SANDY SILT with GRAVEL |
| | Well-graded SAND with GRAVEL | | GRAVELLY SILT |
| | Poorly graded SAND | | GRAVELLY SILT with SAND |
| | Poorly graded SAND with GRAVEL | | ORGANIC lean CLAY |
| | Well-graded SAND with SILT | | ORGANIC lean CLAY with SAND |
| | Well-graded SAND with SILT and GRAVEL | | ORGANIC lean CLAY with GRAVEL |
| | Well-graded SAND with CLAY (or SILTY CLAY) | | SANDY ORGANIC lean CLAY |
| | Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL) | | SANDY ORGANIC lean CLAY with GRAVEL |
| | Poorly graded SAND with SILT | | GRAVELLY ORGANIC lean CLAY |
| | Poorly graded SAND with SILT and GRAVEL | | GRAVELLY ORGANIC lean CLAY with SAND |
| | Poorly graded SAND with CLAY (or SILTY CLAY) | | ORGANIC elastic SILT |
| | Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL) | | ORGANIC elastic SILT with SAND |
| | SILTY SAND | | ORGANIC elastic SILT with GRAVEL |
| | SILTY SAND with GRAVEL | | SANDY ORGANIC elastic SILT |
| | CLAYEY SAND | | SANDY ORGANIC elastic SILT with GRAVEL |
| | CLAYEY SAND with GRAVEL | | GRAVELLY ORGANIC elastic SILT |
| | SILTY, CLAYEY SAND | | GRAVELLY ORGANIC elastic SILT with SAND |
| | SILTY, CLAYEY SAND with GRAVEL | | ORGANIC SOIL |
| | PEAT | | ORGANIC SOIL with SAND |
| | COBBLES | | ORGANIC SOIL with GRAVEL |
| | COBBLES and BOULDERS | | SANDY ORGANIC SOIL |
| | BOULDERS | | SANDY ORGANIC SOIL with GRAVEL |
| | | | GRAVELLY ORGANIC SOIL |
| | | | GRAVELLY ORGANIC SOIL with SAND |

| FIELD AND LABORATORY TESTING | |
|------------------------------|---|
| (C) | Consolidation (ASTM D 2435) |
| (CL) | Collapse Potential (ASTM D 5333) |
| (CP) | Compaction Curve (CTM 216) |
| (CR) | Corrosivity Testing (CTM 643, CTM 422, CTM 417) |
| (CU) | Consolidated Undrained Triaxial (ASTM D 4767) |
| (DS) | Direct Shear (ASTM D 3080) |
| (EI) | Expansion Index (ASTM D 4829) |
| (M) | Moisture Content (ASTM D 2216) |
| (OC) | Organic Content-% (ASTM D 2974) |
| (P) | Permeability (CTM 220) |
| (PA) | Particle Size Analysis (ASTM D 422) |
| (PI) | Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89) |
| (PL) | Point Load Index (ASTM D 5731) |
| (PM) | Pressure Meter |
| (PP) | Pocket Penetrometer |
| (R) | R-Value (CTM 301) |
| (SE) | Sand Equivalent (CTM 217) |
| (SG) | Specific Gravity (AASHTO T 100) |
| (SL) | Shrinkage Limit (ASTM D 427) |
| (SW) | Swell Potential (ASTM D 4546) |
| (TV) | Pocket Torvane |
| (UC) | Unconfined Compression-Soil (ASTM D 2166) |
| | Unconfined Compression-Rock (ASTM D 2938) |
| (UU) | Unconsolidated Undrained Triaxial (ASTM D 2850) |
| (UW) | Unit Weight (ASTM D 4767) |
| (VS) | Vane Shear (AASHTO T 223) |

| APPARENT DENSITY OF COHESIONLESS SOILS | |
|--|---|
| Description | SPT N ₆₀ (Blows / 12 inches) |
| Very loose | 0 - 4 |
| Loose | 5 - 10 |
| Medium Dense | 11 - 30 |
| Dense | 31 - 50 |
| Very Dense | > 50 |

| MOISTURE | |
|-------------|---|
| Description | Criteria |
| Dry | Absence of moisture, dusty, dry to the touch |
| Moist | Damp but no visible water |
| Wet | Visible free water, usually soil is below water table |

| PERCENT OR PROPORTION OF SOILS | |
|--------------------------------|--|
| Description | Criteria |
| Trace | Particles are present but estimated to be less than 5% |
| Few | 5 to 10% |
| Little | 15 to 25% |
| Some | 30 to 45% |
| Mostly | 50 to 100% |

| PARTICLE SIZE | | |
|---------------|-----------|-------------------|
| Description | Size | |
| Boulder | > 12" | |
| Cobble | 3" to 12" | |
| Gravel | Coarse | 3/4" to 3" |
| | Fine | No. 4 to 3/4" |
| Sand | Coarse | No. 10 to No. 4 |
| | Medium | No. 40 to No. 10 |
| | Fine | No. 200 to No. 40 |


 DESIGN OVERSIGHT
 8-10-10
 SIGN OFF DATE

DRAWN BY Buu Tran
 CHECKED BY Taekuk Kim

Amit Bakane
 FIELD INVESTIGATION BY:
 DATE: 2/24/09

PREPARED FOR THE
 STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

Djan Chandra
 PROJECT ENGINEER

BRIDGE NO. 55E0113
 POST MILES 14.42

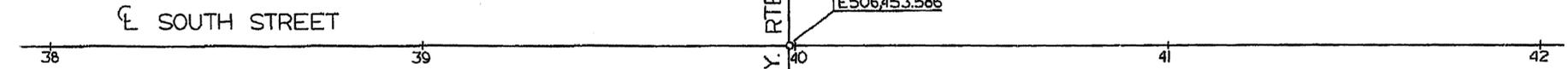
SOUTH ST OC-RET WALL
LOG OF TEST BORINGS 3 OF 4

USERNAME => hrmnguy DATE PLOTTED => 20-APR-2011 TIME PLOTTED => 08:40

| DIST. | COUNTY | ROUTE | POST MILES-TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|-------|--------|--------|--------------------------|-----------|--------------|
| 27 | 02-A | 57, 21 | 12.2/15.2 | 333 | 443 |

U.E. Bush
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL ENGINEER NO. 8888
 DATE APPROVED: December 18, 1972

BENCH MARK
 BM # 21-5 Elev 194.65
 Brass cap in SW M.P.C. of each return of South St.
 Rio Vista Sts.
 To convert to current datum NAVD83,
 approximately 1.84 feet should be added to the as-built elevations.



PLAN
 Scale: 1" = 20'

OFFICE OF STRUCTURE FOUNDATIONS-ENGINEERING SERVICES CENTER

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, licence number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

| DIST. | COUNTY | ROUTE | MILE POST-TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|-------|--------|-------|-------------------------|-----------|--------------|
| 12 | 02-A | 57 | 12.2/15.2 | 527 | 527 |

REGISTERED ENGINEER-GEOTECHNICAL DATE 8/9/10

SOUTH ST OC - RET WALL

LOG OF TEST BORINGS 4 OF 4

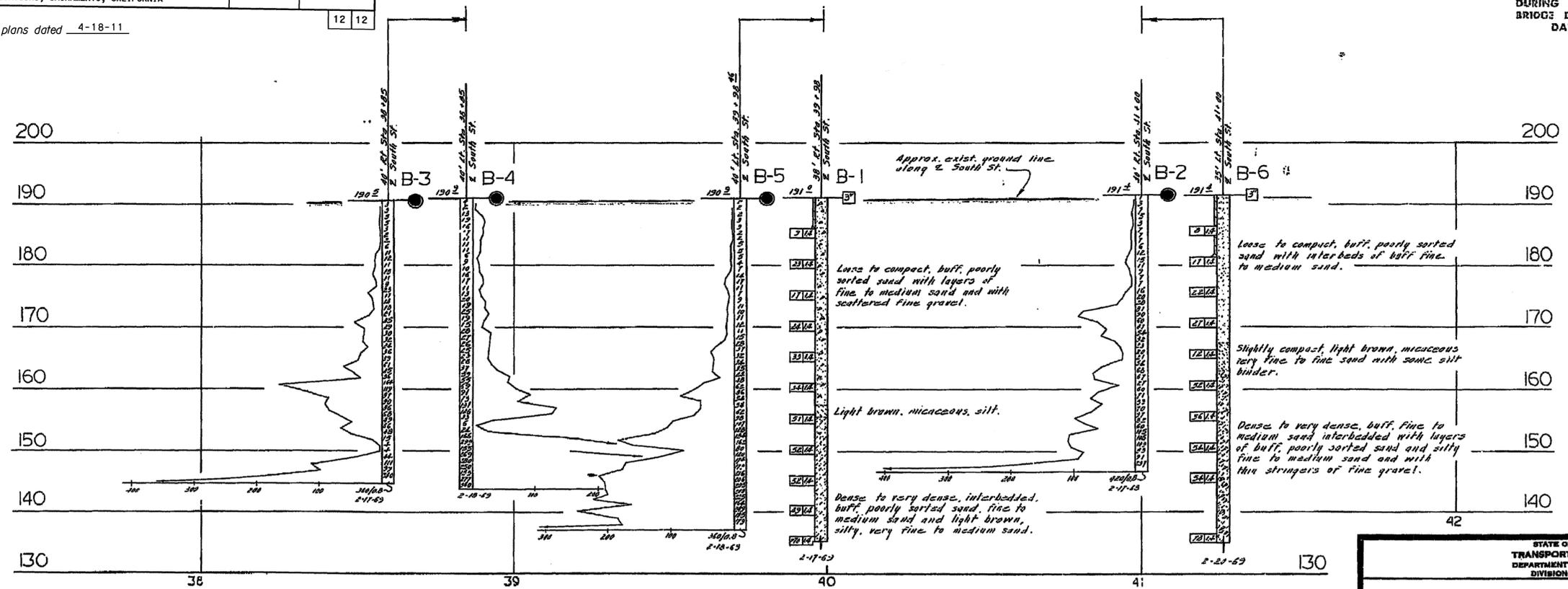
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 12231 EA: 0F0401 BRIDGE NO. 55E0113

To accompany plans dated 4-18-11

NO AS BUILT changes
 CORRECTIONS BY R. Strungs
 CONTRACT NO. 032021
 DATE 10-11-74

NO GROUND WATER ENCOUNTERED DURING THIS INVESTIGATION BY BRIDGE DEPT. GEOLOGY SECTION
 DATE February 1969



LEGEND OF EARTH MATERIALS

| | | | |
|--------|----------------------------|---------------------------|------------------|
| GRAVEL | SILT CLAY OR CLAYEY SILT | STONY SAND | METAMORPHIC ROCK |
| SAND | PEAT AND/OR ORGANIC MATTER | SILT OR SILTY SAND | |
| SILT | FILL MATERIAL | CLAY | |
| CLAY | IGNEOUS ROCK | SANDY CLAY OR CLAYEY SAND | |
| | SEDIMENTARY ROCK | | |

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

Diagrams showing sieve sizes and material classification.

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

AS BUILT PLANS
 Contract No. 07-032024
 Date Completed
 Document No. 07006373

STATE OF CALIFORNIA
 TRANSPORTATION AGENCY
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF HIGHWAYS

SOUTH STREET OVERCROSSING

LOG OF TEST BORINGS

| | | | |
|-------------------|----------------|--------------------------|----------------|
| BRIDGE NO. 55-516 | POST MILE 11.1 | DRAWING NO. | SHEET 11 OF 11 |
| REVISION DATES | | (PRELIMINARY STAGE ONLY) | |

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF TRANSPORTATION.

DATE 1/25/75 BY Dick W. ...

WO 032021
 CU 07008

Discard prints box on 11-11-11 date

55E0113r-z-1+040b.tif

FIELD STUDY BY H.C. Cain 2-20-69
 DRAWN BY J. Law 2-24-69
 CHECKED BY R. Cochran 3-20-69

BRIDGE DEPARTMENT
 ENGINEERING GEOLOGY SECTION