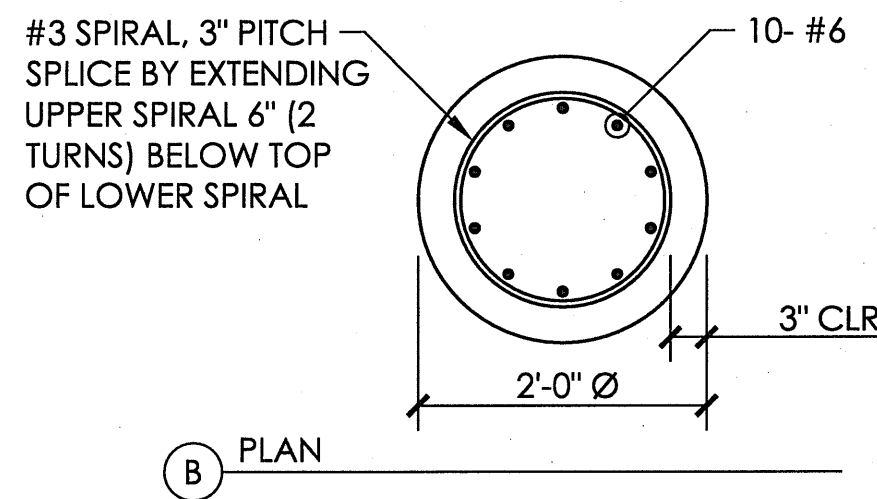
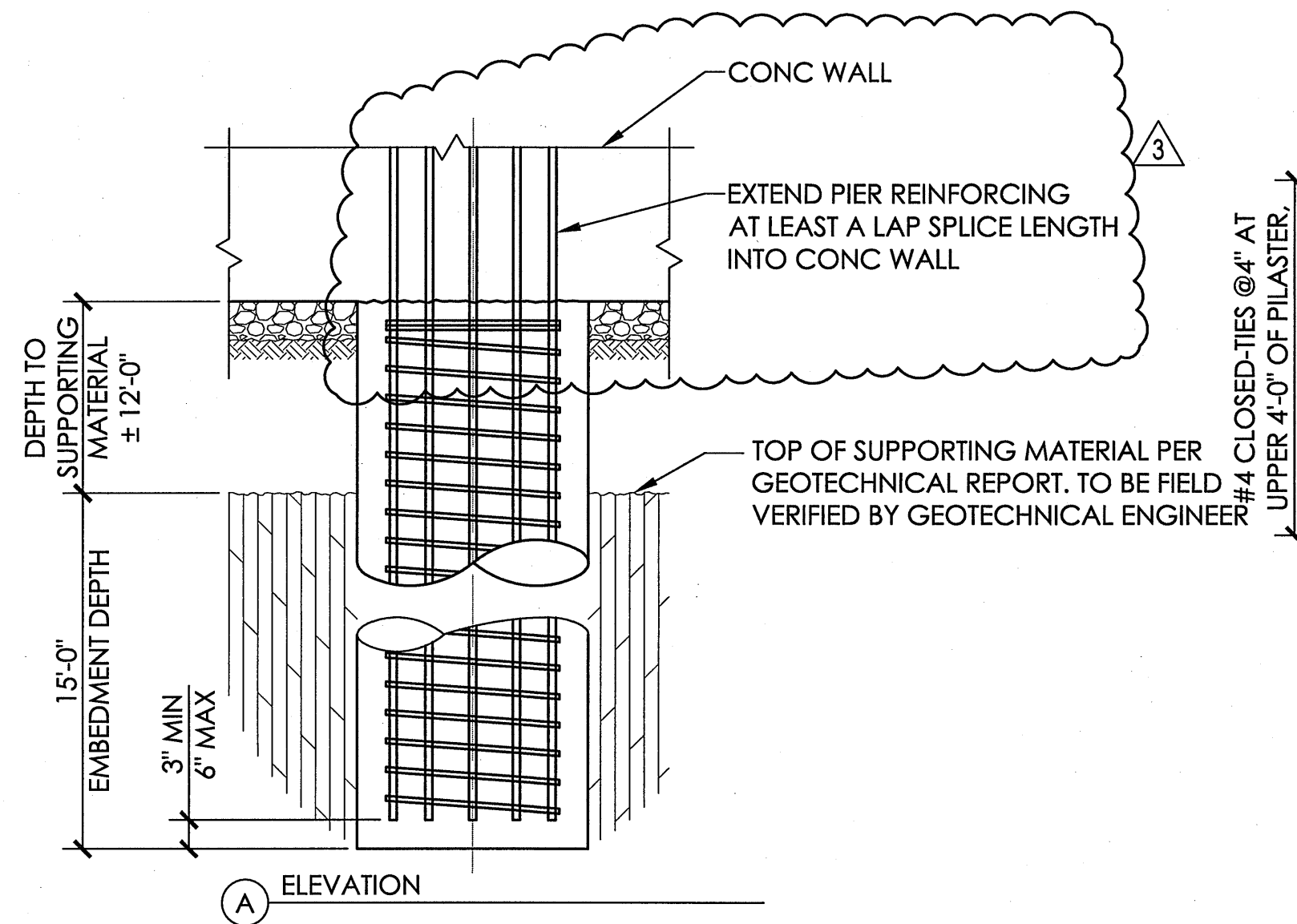


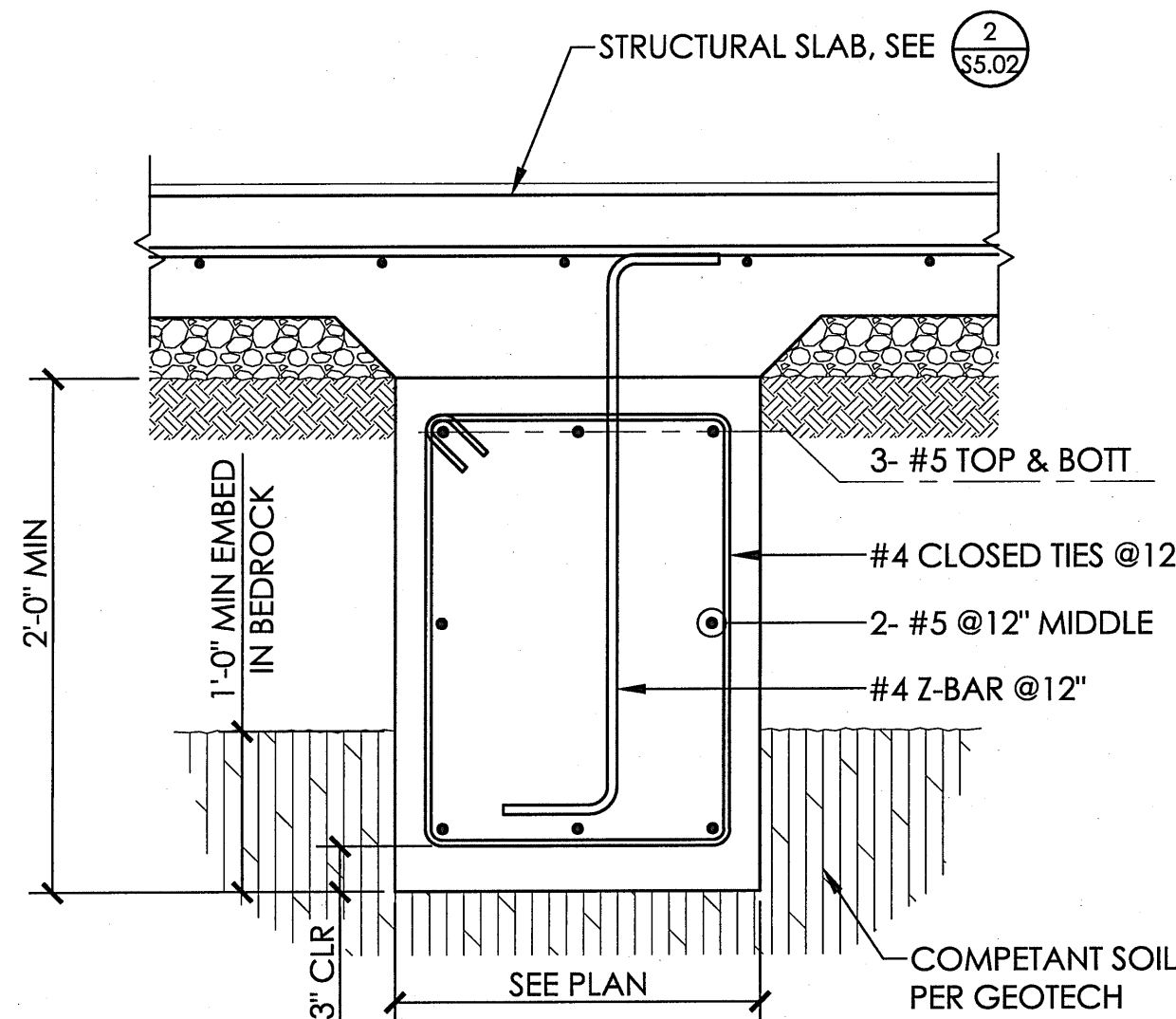
Robert Reed, 11/10/2021 9:38:48 PM, S:\2021 Folder\18009.00 870 El Camino Del Mar\wg, Larry Karp Design\503.dwg, Page Setup: GFDS.ctb, Plot Scale: 1:1, _DWG To PDF.pc3



12
S5.03 24" PIER - PLAN & ELEVATION
SEISMIC DESIGN CATEGORY D



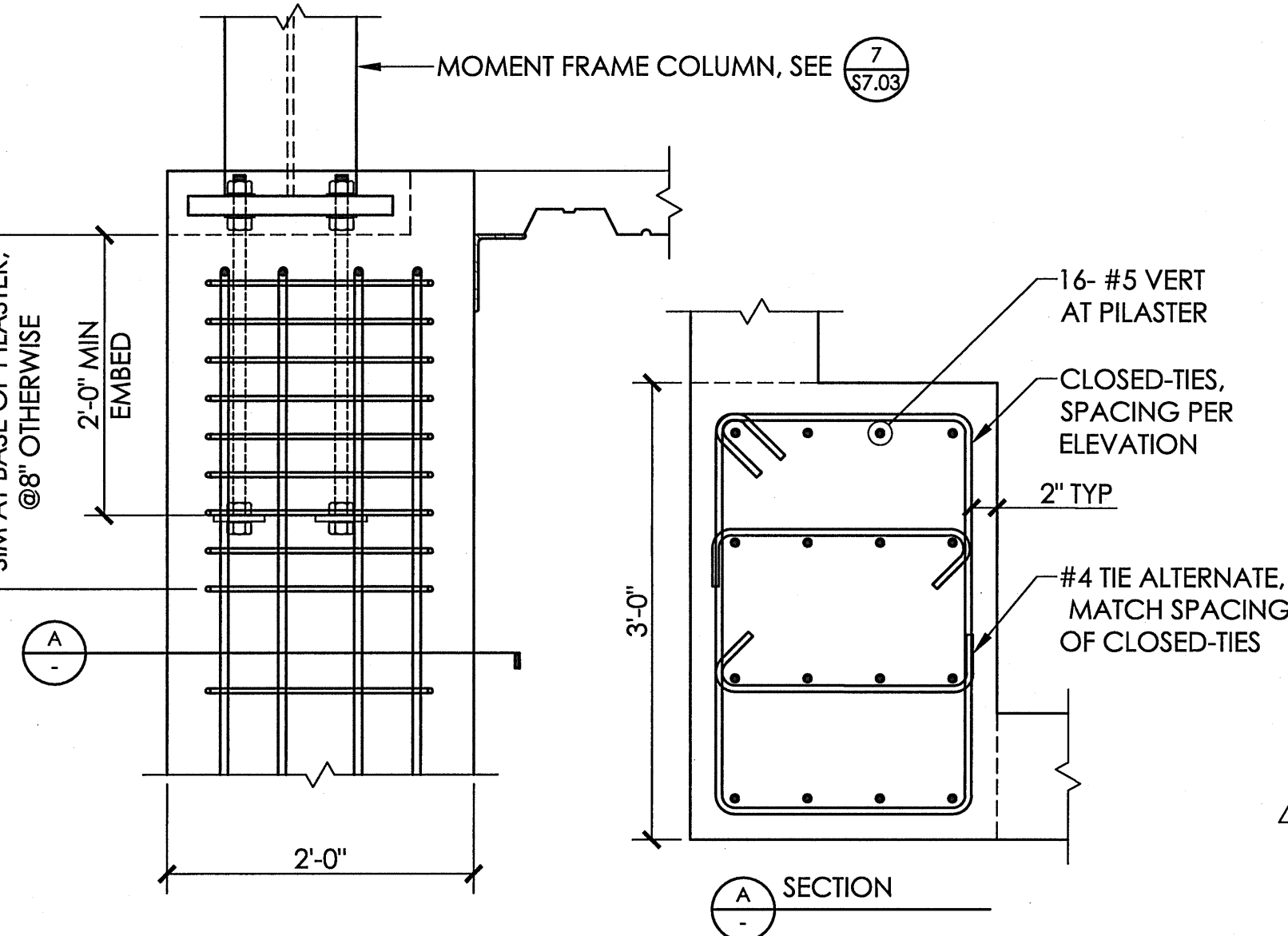
11
S5.03 2FT X 8FT MIN CONCRETE WALL AT TIEBACK



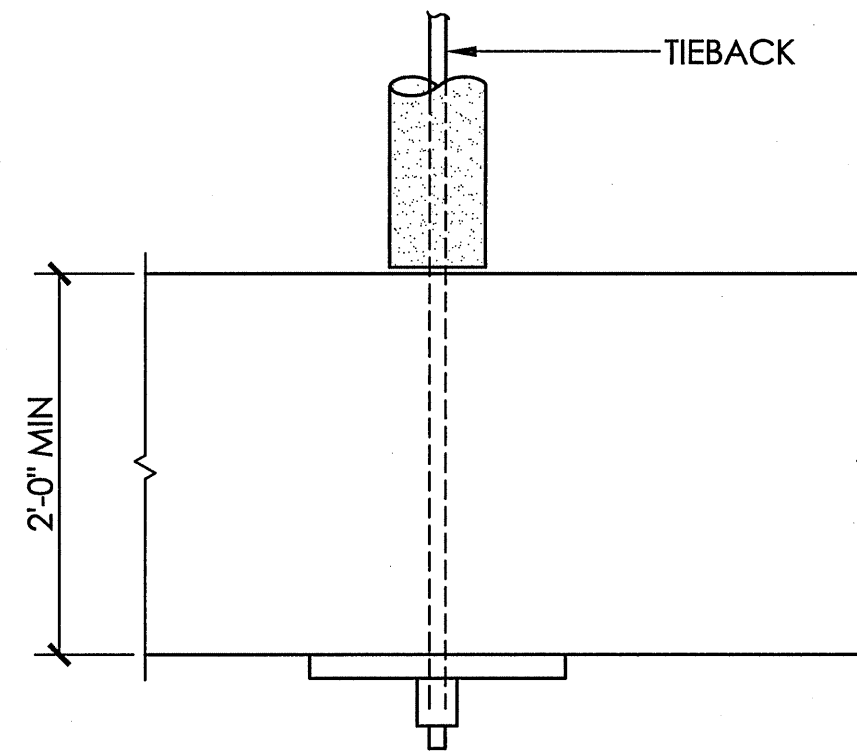
10
S5.03 TYPICAL INTERIOR GRADE BEAM
SOUTH OF LINE 5

8
S5.03 NOT USED

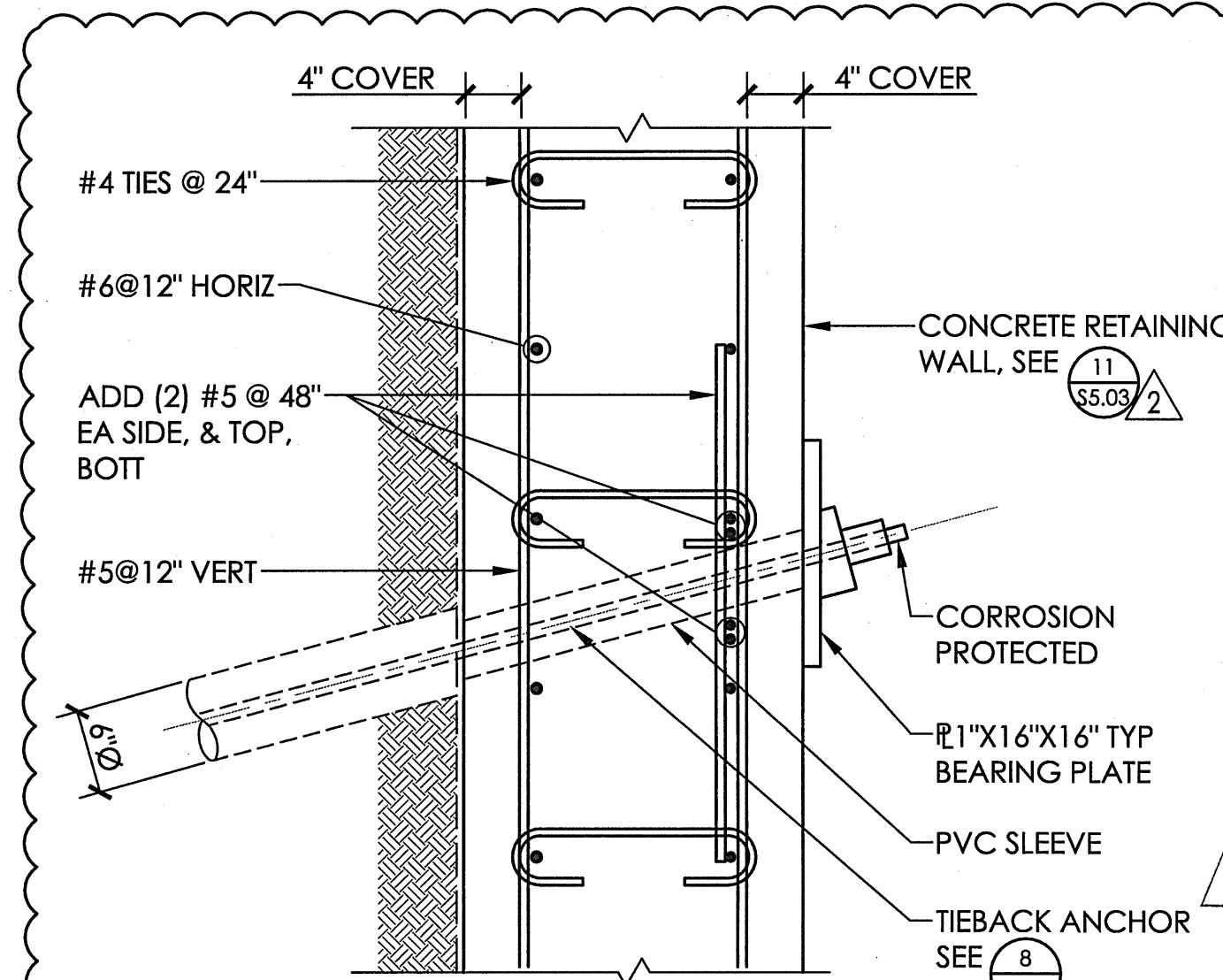
7
S5.03 NOT USED



6
S5.03 PILASTER AT MOMENT FRAME



5
S5.03 GRADE BEAM & TIEBACK
PLAN



4
S5.03 FOUNDATION RETAINING WALL
& TIEBACK ANCHOR - SECTION

PERMANENT TIEBACK ANCHOR NOTES

TIEBACK ALLOWABLE CAPACITY WILL DEPEND UPON THE DRILLING METHOD, HOLE DIAMETER, GROUT PRESSURE, AND WORKMANSHIP. THE TIEBACK CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ACTUAL LENGTH OF TIEBACKS REQUIRED TO RESIST THE LATERAL EARTH AND WATER PRESSURES IMPOSED ON THE RETAINING SYSTEM. THE COMPUTED BOND LENGTH SHOULD BE CONFIRMED BY A PERFORMANCE AND PROOF TESTING PROGRAM UNDER THE OBSERVATION OF AN ENGINEER (NOT GFDS) EXPERIENCED IN THIS TYPE OF WORK.

THE TIEBACK CONTRACTOR SHALL BE RESPONSIBLE FOR THE METHOD OF DOUBLE CORROSION PROTECTION OF THE THREADBARS.

THE TIEBACK CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES AND PROTECT FROM HARM AS REQUIRED TO PREVENT DAMAGE AND TO MAINTAIN THEIR USE. CONSULT THE ENGINEER IF UTILITY LINES OR PIPING ARE ENCOUNTERED DURING DRILLING OF ANCHORS. ABNORMAL RESISTANCE TO DRILLING AND FOREIGN MATTER PULLED FROM THE HOLE ARE INDICATORS OF POTENTIAL DAMAGE.

THE TIEBACK CONTRACTOR SHALL NOT EXTEND TIEBACKS ANY FURTHER SOUTH THAN THE SOUTH PROPERTY LINE OF 870 EL CAMINO DEL MAR. IF THE TIEBACK CONTRACTOR DETERMINES THAT THE PROVIDED HOLE DEPTHS WILL EXTEND PAST THE SOUTH PROPERTY LINE OF 870 EL CAMINO DEL MAR, THE CONTRACTOR IS TO REPORT BACK TO THE ENGINEERS AND PROVIDE THE ACTUAL BOND LENGTH. LENGTHS OF TIEBACKS MAY BE RE-EVALUATED, WITH THE ENGINEER'S APPROVAL, BASED ON ACTUAL FIELD TESTS AS CONSTRUCTION PROCEEDS.

THE TIEBACK CONTRACTOR SHALL SUBMIT TO THE ENGINEERS FOR REVIEW AND APPROVAL ALL INFORMATION REGARDING TIEBACK INSTALLATION SYSTEMS.

SEQUENCE OF INSTALLATION IS AS FOLLOWS:

1. DRILL TIEBACK HOLES TO ACHIEVE MIN BOND LENGTHS. INSTALL DOUBLE CORROSION PROTECTION STEEL ROD, INJECT GROUT ALONG PENETRATION LENGTH, AND BACKFILL REMAINDER OF HOLE WITH CORROSION INHIBITING COMPOUND OR GROUT.
2. CAST GRADE BEAM WITH A PVC SLEEVE AROUND TIEBACK. FILL SLEEVE WITH CORROSION INHIBITING COMPOUND OR GROUT.
3. WHEN THE GRADE BEAM AND GROUT HAVE ATTAINED MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, PERFORMANCE TEST OR PROOF TEST ANCHORS AS DESCRIBED BELOW, THEN REDUCE TO THE DESIGN LOAD AND SET LOCK NUT.

ANGLE OF TIEBACKS MAY BE INCREASED OR DECREASED BY APPROXIMATELY 5 DEGREES IF DEEMED NECESSARY BY THE TIEBACK CONTRACTOR TO MEET CONDITIONS IN THE FIELD WITH THE PRIOR APPROVAL OF THE ENGINEERS.

IN THE EVENT A TIEBACK FAILS TO ACHIEVE THE TEST LOAD, THE ULTIMATE LOAD SHALL BE RECORDED. THIS PARTICULAR TIE SHALL BE ASSIGNED A VALUE OF 50% AND LOCKED AT THIS 50% LOAD. AN ADDITIONAL TIE SHALL BE DRILLED, THE LOCATION OF THE NEW TIE TO BE DETERMINED BY THE TIEBACK CONTRACTOR. THE DRILLING WILL INVOLVE CORE DRILLING THROUGH THE GRADE BEAM. WHEN CORE DRILLING THE GRADE BEAM, THE CONTRACTOR SHALL TAKE NECESSARY STEPS TO AVOID SEVERING THE REINFORCING. THE ADDITIONAL TIE SHALL ATTAIN THE BALANCE OF THE REQUIRED LOAD PLUS A 40% TEST LOAD.

GFDS WILL NOT BE HELD RESPONSIBLE FOR RE-DRILLS OR REPLACEMENT OF TIEBACKS WHICH FAIL TO MEET TEST LOADS.

TIEBACK CONTRACTOR SHALL INSTALL WEDGE WASHERS AS REQUIRED TO CORRECT MISALIGNMENT OF ANCHOR ROD WITH THE ANGLE SEAT.

TESTING:

PROOF TESTING - THE FIRST TWO TIEBACKS AND THEN THE REMAINING TIEBACKS SHALL BE STRESS TESTED. THE TIEBACKS SHALL BE TENSIONED GRADUALLY IN SEVERAL CYCLES OF LOADING AND UNLOADING UP TO 140% OF THE DESIGN LOAD. THE MAXIMUM LOAD SHALL BE HELD FOR A MINIMUM OF 10 MINUTES WITH READINGS ON MOVEMENTS TAKEN AT INTERVALS OF 1, 2, 3, 6, AND 10 MINUTES. IF THE DIFFERENCE BETWEEN THE 1 AND 10 MINUTE READING IS LESS THAN .04" DURING THE LOADING, THE TEST IS COMPLETE. IF THE DIFFERENCE IS MORE THAN .04" THE HOLDING PERIOD SHALL BE EXTENDED TO 60 MINUTES AND THE MOVEMENTS RECORDED AT 15, 20, 25, 30, 45, AND 60 MINUTES. THE PERFORMANCE-TESTED TIEBACKS SHOULD BE CHECKED 24 HOURS AFTER INITIAL LOCK OFF TO CONFIRM STRESS RELAXATION HAS NOT OCCURRED. THE GEOTECHNICAL ENGINEER SHOULD EVALUATE THE RESULTS OF THE PERFORMANCE TESTS AND DETERMINE IF ADDITIONAL CREEP TESTING IS REQUIRED.

ACCEPTABILITY - A TESTED TIEBACK WITH A 10 MINUTE HOLD IS ACCEPTABLE IF THE TIEBACK CARRIES THE MAXIMUM TEST LOAD WITH LESS THAN .04" MOVEMENT BETWEEN 1 AND 10 MINUTES, AND THE TOTAL MOVEMENT AT MAXIMUM TEST LOAD EXCEEDS 80% OF THE THEORETICAL ELASTIC ELONGATION OF THE UNBONDED LENGTH. A TESTED TIEBACK WITH A 60 MINUTE HOLD IS ACCEPTABLE IF THE TIEBACK CARRIES THE MAXIMUM TEST LOAD WITH LESS THAN .08" MOVEMENT, AND THE TOTAL MOVEMENT AT THE AT THE MAXIMUM TEST LOAD EXCEEDS 80% OF THE THEORETICAL ELASTIC ELONGATION OF THE UNBONDED LENGTH.

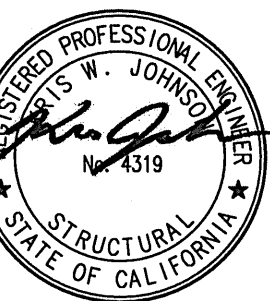
APPROVED
Chu Liu, DBI
JAN - 6 2022
Dept. of Building Insp.
- San Francisco -

JAN 06 2022

PATRICK O'ROURKE
INTERIM DIRECTOR
DEPT. OF BUILDING INSPECTION

1
S5.03 GENERAL TIEBACK NOTES

RECEIVED
NOV 12 2021
DEPT. OF BUILDING INSPECTION
THIS PLAN MEETS THE QUALITY
STANDARDS FOR REPRODUCTION



HART HOWERTON
NEW YORK - SAN FRANCISCO
One Union Street, San Francisco, CA 94111
Tel : 415 439 2200 Fax : 415 439 2201
Email : SF@hartowerton.com

Structural
design for fine
architecture
GFDS
ENGINEERS
20 Green Street, Third Floor
San Francisco, California 94111
415 612 1301

APN 019-013-12

Reilly Residence
Sea Cliff

870 El Camino Del Mar
San Francisco, CA

© Hart Howerton 2017
The designs and concepts shown are the sole
property of Hart Howerton and may not be used
without the prior written consent of Hart
Howerton.

SCALE : AS NOTED
NOTE: THIS DRAWING IS 3D. DO NOT
SCALE DRAWINGS. THE PROVIDED DIMENSIONS
ONLY, OR BEAR CLARIFICATION FROM
ARCHITECT FOR MEASUREMENTS THAT ARE
NOT INDICATED.

DATE	ISSUE
10/04/2019	PERMIT ADDENDUM

REVISIONS		
NO	DATE	ISSUE
1	1/10/20	SAC REVS
2	6/18/20	PLAN CHECK
3	11/09/21	FDN REVISION

DRAWING TITLE:
CONCRETE
DETAILS

PROJECT #:
18009
DRAWN BY:
RJR
CHECKED BY:
RWR

DRAWING NO.:
S5.03