SAN FRANCISCO
PLANNING DEPARTMENT

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Certificate of Appropriateness Case Report

Consent Calendar

HEARING DATE: APRIL 7, 2010

Filing Date:	March 9, 2010
Case No.:	**2010.0160A**
Project Address:	**2727 Pierce Street**
Historic Landmark:	No. 51 – Casebolt House
Zoning:	RH-1 (Residential, House, Single-Family) 40-X Height and Bulk District
Block/Lot:	0560 / 005
Applicant:	Louise Bea 2727 Pierce Street San Francisco, CA 94123
Staff Contact	Shelley Caltagirone - (415) 558-6625 shelley.caltagirone@sfgov.org
Reviewed By	Tina Tam – (415) 558-6325 tina.tam@sfgov.org

PROPERTY DESCRIPTION

2727 PIERCE STREET, west side between Vallejo and Green Streets. Assessor's Block 0560, Lot 005. The Italianate-style, 3-story, single-family residence was built in 1865 by Henry Casebolt. The wood-framed building has a rusticated exterior originally flecked with black paint to suggest stone and a prominent centrally located front porch flanked by stairways. It is located in a RH-1 (Residential, House, Single-Family) Zoning District and a 40-X Height and Bulk District.

PROJECT DESCRIPTION

The proposed project involves removing and replacing failed portions of the retaining wall that surrounds three sides of the historic house. The work would repair and restore the north and south walls to their original appearance and would provide lateral support to the 15 foot arched back (west) wall. The work would include replacing the entire north wall and approximately 28 feet of the south wall with reinforced concrete slabs to be clad in brick. The wall would be clad primarily with salvaged brick from the historic wall. New brick matching the pattern, color, texture, and size of the historic brick would be used as needed. The project also includes adding drainage to the wall. Please see photographs and plans for details.

OTHER ACTIONS REQUIRED

None.

COMPLIANCE WITH THE PLANNING CODE PROVISIONS

The proposed project is in compliance with all other provisions of the Planning Code.

APPLICABLE PRESERVATION STANDARDS

ARTICLE 10
A Certificate of Appropriateness is required for any construction, alteration, removal, or demolition of a designated Landmark for which a City permit is required. In appraising a proposal for a Certificate of Appropriateness, the Historic Preservation Commission should consider the factors of architectural style, design, arrangement, texture, materials, color, and other pertinent factors. Section 1006.7 of the Planning Code provides in relevant part as follows:

The proposed work shall be appropriate for and consistent with the effectuation of the purposes of Article 10.

The proposed work shall be compatible with the historic structure in terms of design, materials, form, scale, and location. The proposed project will not detract from the site's architectural character as described in the designating ordinance. For all of the exterior and interior work proposed, reasonable efforts have been made to preserve, enhance or restore, and not to damage or destroy, the exterior architectural features of the subject property which contribute to its significance.

THE SECRETARY OF THE INTERIOR'S STANDARDS
Rehabilitation is the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values. The Rehabilitation Standards provide, in relevant part(s):

Standard 2.
The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

Standard 6.
Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

PUBLIC/NEIGHBORHOOD INPUT

The Department has received no public input on the project at the date of this report.

ISSUES & OTHER CONSIDERATIONS

The Project Sponsor applied for a building permit (Application No. 2009.10.15.9068) for the subject project on October 15, 2009. On November 24, 2009, the Planning Department disapproved the permit application due to the Sponsor's refusal to file for a Certificate of Appropriateness as required by Section

1006 of the Planning Code. The disapproval was appealed to the Board of Appeals on December 7, 2009. At the February 10, 2010 hearing the Department's decision to deny the permit was upheld and the case was continued to the call of the Chair in order to allow the Sponsor to apply for the Certificate of Appropriateness.

STAFF ANAYLSIS

Based on the requirements of Article 10 and the Secretary of Interior's Standards, staff has determined that the proposed work will not adversely affect the subject landmark site.

Staff finds that the historic character of the property will be retained and preserved by the careful removal of the failed portions of the historic retaining wall and the replacement with a new concrete wall clad in brick to match the appearance of the historic wall.

Staff finds that the project will only remove historic features that are deteriorated beyond repair and that the new portions of the wall will match the old in design, color, texture, and, where possible, materials.

ENVIRONMENTAL REVIEW STATUS

The Planning Department has determined that the proposed project is exempt/excluded from environmental review, pursuant to CEQA Guideline Section 15301 (Class One-Minor Alteration of Existing facility) because the project is a minor alteration of an existing structure and meets the *Secretary of the Interior's Standards*.

PLANNING DEPARTMENT RECOMMENDATION

Planning Department staff recommends APPROVAL of the proposed project as it appears to meet the Secretary of the Interior Standards for Rehabilitation.

ATTACHMENTS

Draft Motion
Photographs
Plans
Specifications

SC: G:\DOCUMENTS\Cases\COFA\Case Reports\2727 Pierce_CofA_Case Report.doc

SAN FRANCISCO
PLANNING DEPARTMENT

Historic Preservation Commission
Draft Motion No. XXXX

HEARING DATE: APRIL 7, 2010

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ADOPTING FINDINGS FOR A CERTIFICATE OF APPROPRIATENESS FOR PROPOSED WORK DETERMINED TO BE APPROPRIATE FOR AND CONSISTENT WITH THE PURPOSES OF ARTICLE 10, TO MEET THE STANDARDS OF ARTICLE 10 AND TO MEET THE SECRETARY OF INTERIOR'S STANDARDS FOR REHABILITATION, FOR THE PROPERTY LOCATED ON LOT 005 IN ASSESSOR'S BLOCK 0560, WITHIN AN RH-1 (RESIDENTIAL, HOUSE, SINGLE-FAMILY) ZONING DISTRICT AND A 40-X HEIGHT AND BULK DISTRICT.

PREAMBLE

WHEREAS, on March 9, 2010, Louise Bea (Project Sponsor) filed an application with the San Francisco Planning Department (hereinafter "Department") for a Certificate of Appropriateness to remove and replace failed portions of the retaining wall that surrounds three sides of the historic house. The work would repair and restore the north and south walls to their original appearance and would provide lateral support to the 15 foot arched back (west) wall. The work would include replacing the entire north wall and approximately 28 feet of the south wall with reinforced concrete slabs to be clad in brick. The wall would be clad primarily with salvaged brick from the historic wall. New brick matching the pattern, color, texture, and size of the historic brick would be used as needed. The project also includes adding drainage to the wall.

WHEREAS, the Project was determined by the Department to be categorically exempt from environmental review. The Historic Preservation Commission (hereinafter "Commission") has reviewed and concurs with said determination.

WHEREAS, on April 7, 2010, the Commission conducted a duly noticed public hearing on the current project, Case No. 2010.0160A ("Project") for its appropriateness.

WHEREAS, in reviewing the Application, the Commission has had available for its review and consideration case reports, plans, and other materials pertaining to the Project contained in the Department's case files, has reviewed and heard testimony and received materials from interested parties during the public hearing on the Project.

MOVED, that the Commission hereby grants the Certificate of Appropriateness, in conformance with the architectural plans dated February 28, 2010 and specifications dated September 23, 2009, all labeled Exhibit A on file in the docket for Case No. 2010.0160A based on the following findings:

FINDINGS

Having reviewed all the materials identified in the recitals above and having heard oral testimony and arguments, this Commission finds, concludes, and determines as follows:

1. The above recitals are accurate and also constitute findings of the Commission.

2. Findings pursuant to Article 10:

   The Historical Preservation Commission has determined that the proposed work is compatible with the character of the landmark as described in the designation report.

   - That the historic character of the property will be retained and preserved by the careful removal of the failed portions of the historic retaining wall and the replacement with a new concrete wall clad in brick to match the appearance of the historic wall.

   - That the project will only remove historic features that are deteriorated beyond repair and that the new portions of the wall will match the old in design, color, texture, and, where possible, materials.

   - The proposed project meets the following Secretary of the Interior's Standards for Rehabilitation:

     Standard 2.
     The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

     Standard 6.
     Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

3. **General Plan Compliance.** The proposed Certificate of Appropriateness is, on balance, consistent with the following Objectives and Policies of the General Plan:

I. URBAN DESIGN ELEMENT

THE URBAN DESIGN ELEMENT CONCERNS THE PHYSICAL CHARACTER AND ORDER OF THE CITY, AND THE RELATIONSHIP BETWEEN PEOPLE AND THEIR ENVIRONMENT.

GOALS

The Urban Design Element is concerned both with development and with preservation. It is a concerted effort to recognize the positive attributes of the city, to enhance and conserve those attributes, and to improve the living environment where it is less than satisfactory. The Plan is a definition of quality, a definition based upon human needs.

OBJECTIVE 1

EMPHASIS OF THE CHARACTERISTIC PATTERN WHICH GIVES TO THE CITY AND ITS NEIGHBORHOODS AN IMAGE, A SENSE OF PURPOSE, AND A MEANS OF ORIENTATION.

POLICY 1.3

Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts.

OBJECTIVE 2

CONSERVATION OF RESOURCES WHICH PROVIDE A SENSE OF NATURE, CONTINUITY WITH THE PAST, AND FREEDOM FROM OVERCROWDING.

POLICY 2.4

Preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development.

POLICY 2.5

Use care in remodeling of older buildings, in order to enhance rather than weaken the original character of such buildings.

POLICY 2.7

Recognize and protect outstanding and unique areas that contribute in an extraordinary degree to San Francisco's visual form and character.

The goal of a Certificate of Appropriateness is to provide additional oversight for buildings and districts that are architecturally or culturally significant to the City in order to protect the qualities that are associated with that significance.

The proposed project qualifies for a Certificate of Appropriateness and therefore furthers these policies and objectives by maintaining and preserving the character-defining features of the landmark for the future enjoyment and education of San Francisco residents and visitors.

4. The proposed project is generally consistent with the eight General Plan priority policies set forth in Section 101.1 in that:

   A) The existing neighborhood-serving retail uses will be preserved and enhanced and future opportunities for resident employment in and ownership of such businesses will be enhanced:

   The proposed project is for the restoration of a residential property and will not have any impact on neighborhood serving retail uses.

   B) The existing housing and neighborhood character will be conserved and protected in order to preserve the cultural and economic diversity of our neighborhoods:

   The proposed project will strengthen neighborhood character by respecting the character-defining features of the landmark in conformance with the Secretary of the Interior's Standards.

   C) The City's supply of affordable housing will be preserved and enhanced:

   The project will not reduce the affordable housing supply.

   D) The commuter traffic will not impede MUNI transit service or overburden our streets or neighborhood parking:

   The proposed project will not result in commuter traffic impeding MUNI transit service or overburdening the streets or neighborhood parking.

   E) A diverse economic base will be maintained by protecting our industrial and service sectors from displacement due to commercial office development. And future opportunities for resident employment and ownership in these sectors will be enhanced:

   The proposed will not have any impact on industrial and service sector jobs.

   F) The City will achieve the greatest possible preparedness to protect against injury and loss of life in an earthquake.

   Preparedness against injury and loss of life in an earthquake is improved by the proposed work. The work will eliminate unsafe conditions at the site and all construction will be executed in compliance with all applicable construction and safety measures.

   G) That landmark and historic buildings will be preserved:

   The proposed project is in conformance with Article 10 of the Planning Code and the Secretary of the Interior's Standards.

H) Parks and open space and their access to sunlight and vistas will be protected from development:

The proposed project will not impact the access to sunlight or vistas for the parks and open space.

5. For these reasons, the proposal overall, is appropriate for and consistent with the purposes of Article 10, meets the standards of Article 10, and the Secretary of Interior's Standards for Rehabilitation, General Plan and Prop M findings of the Planning Code.

DECISION

That based upon the Record, the submissions by the Applicant, the staff of the Department and other interested parties, the oral testimony presented to this Commission at the public hearings, and all other written materials submitted by all parties, the Commission hereby **GRANTS a Certificate of Appropriateness** for the property located at Lot 005 in Assessor's Block 0560 for proposed work in conformance with the renderings and architectural sketches dated February 28, 2010 and labeled Exhibit A on file in the docket for Case No. 2010.0160A.

APPEAL AND EFFECTIVE DATE OF MOTION: APPEAL: Any aggrieved person may appeal this Motion to the Board of Appeals within fifteen (15) days after the date of this Motion No. XXXX. The effective date of this Motion shall be the date of this Motion. For further information, please contact the Board of Appeals in person at 1650 Mission Street, (Room 304) or call 575-6880.

Duration of this Certificate of Appropriateness: This Certificate of Appropriateness is issued pursuant to Article 10 of the Planning Code and is valid for a period of three (3) years from the effective date of approval by the Historic Preservation Commission. The authorization and right vested by virtue of this action shall be deemed void and canceled if, within 3 years of the date of this Motion, a site permit or building permit for the Project has not been secured by Project Sponsor.

THIS IS NOT A PERMIT TO COMMENCE ANY WORK OR CHANGE OF OCCUPANCY UNLESS NO BUILDING PERMIT IS REQUIRED. PERMITS FROM THE DEPARTMENT OF BUILDING INSPECTION (and any other appropriate agencies) MUST BE SECURED BEFORE WORK IS STARTED OR OCCUPANCY IS CHANGED.

I hereby certify that the Historical Preservation Commission ADOPTED the foregoing Motion on April 7, 2010.

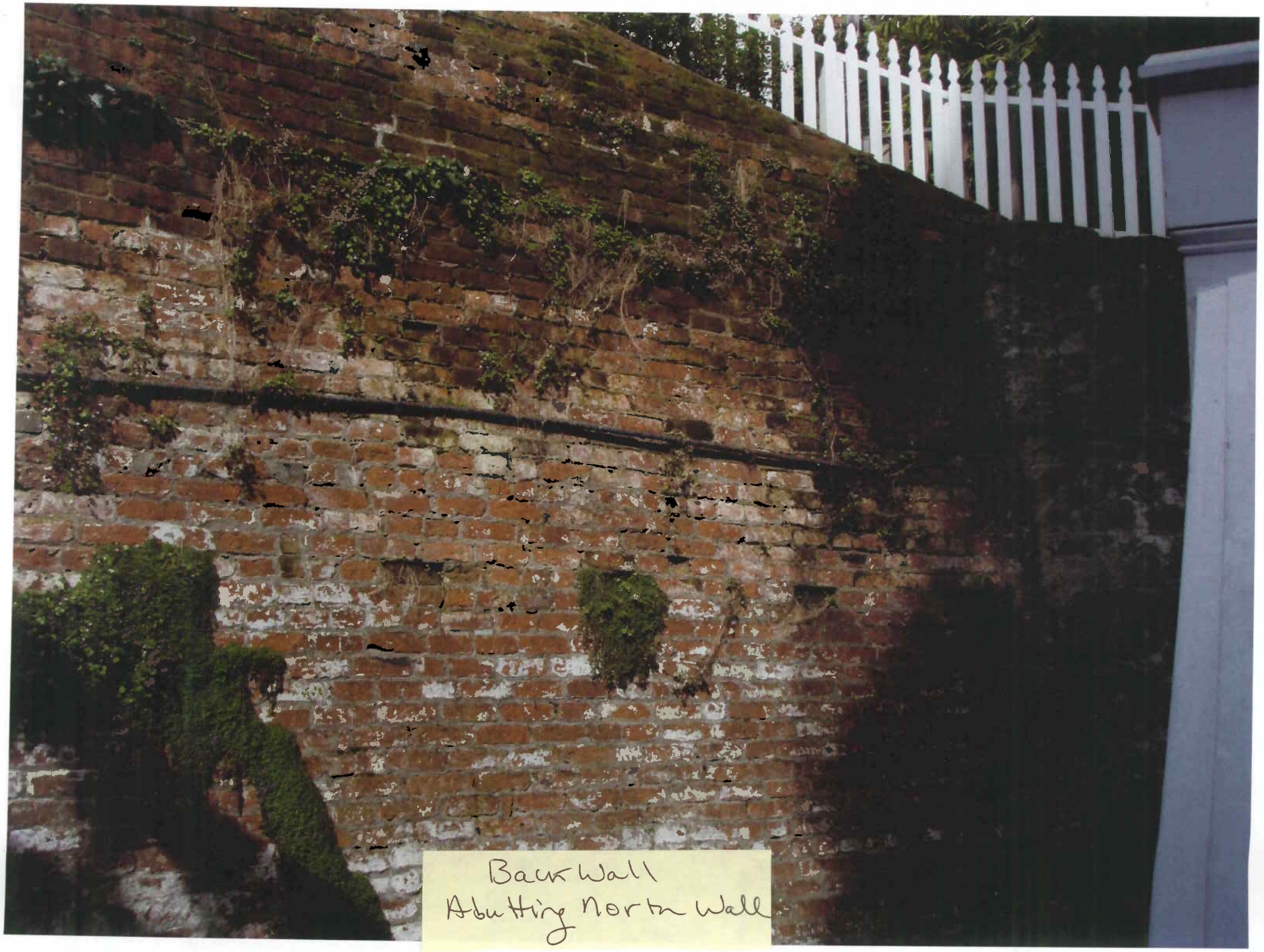
Linda D. Avery
Commission Secretary

AYES: X

NAYS: X

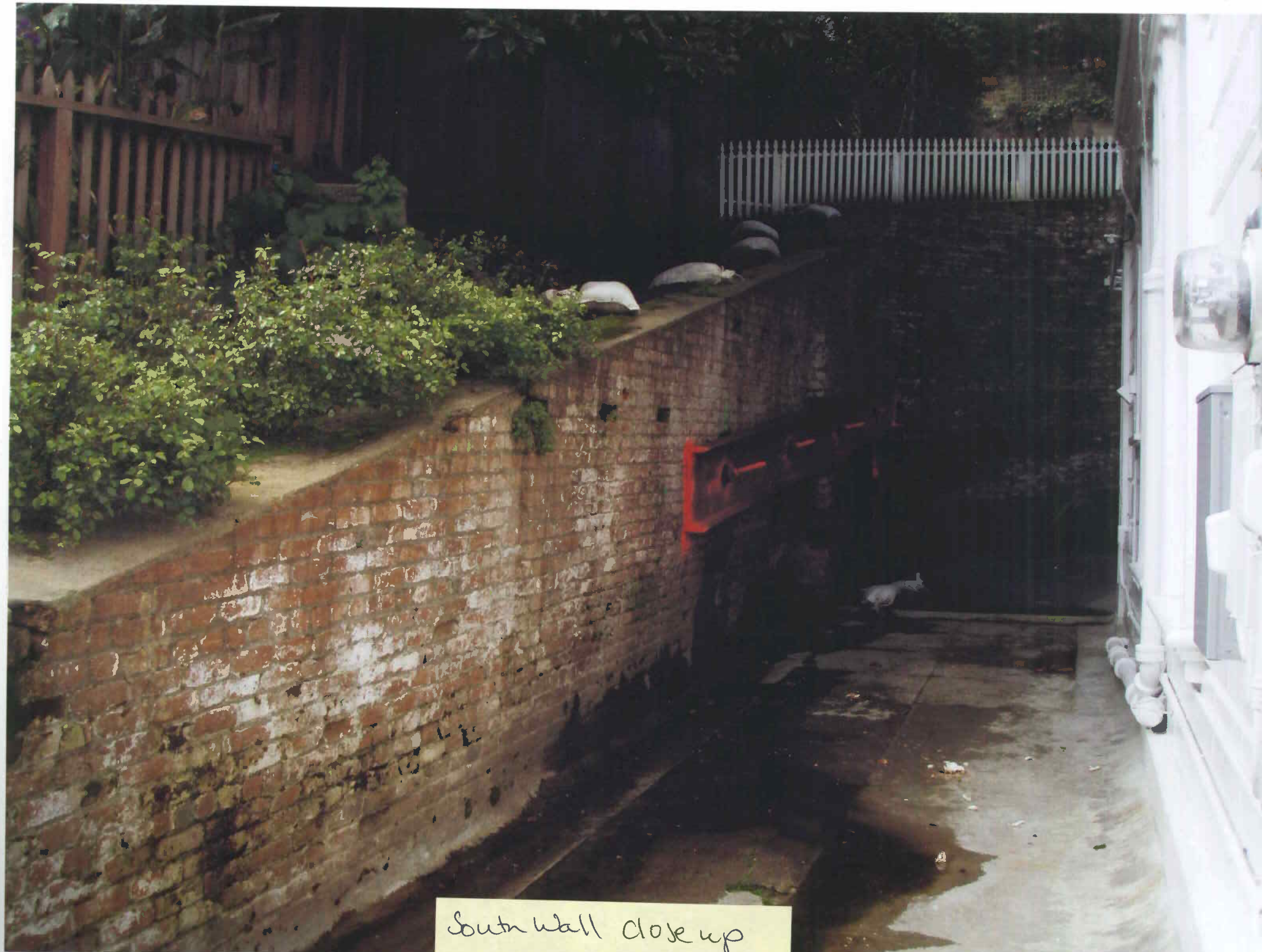
ABSENT: X

ADOPTED: April 7, 2010


Back Wall
Abutting North Wall

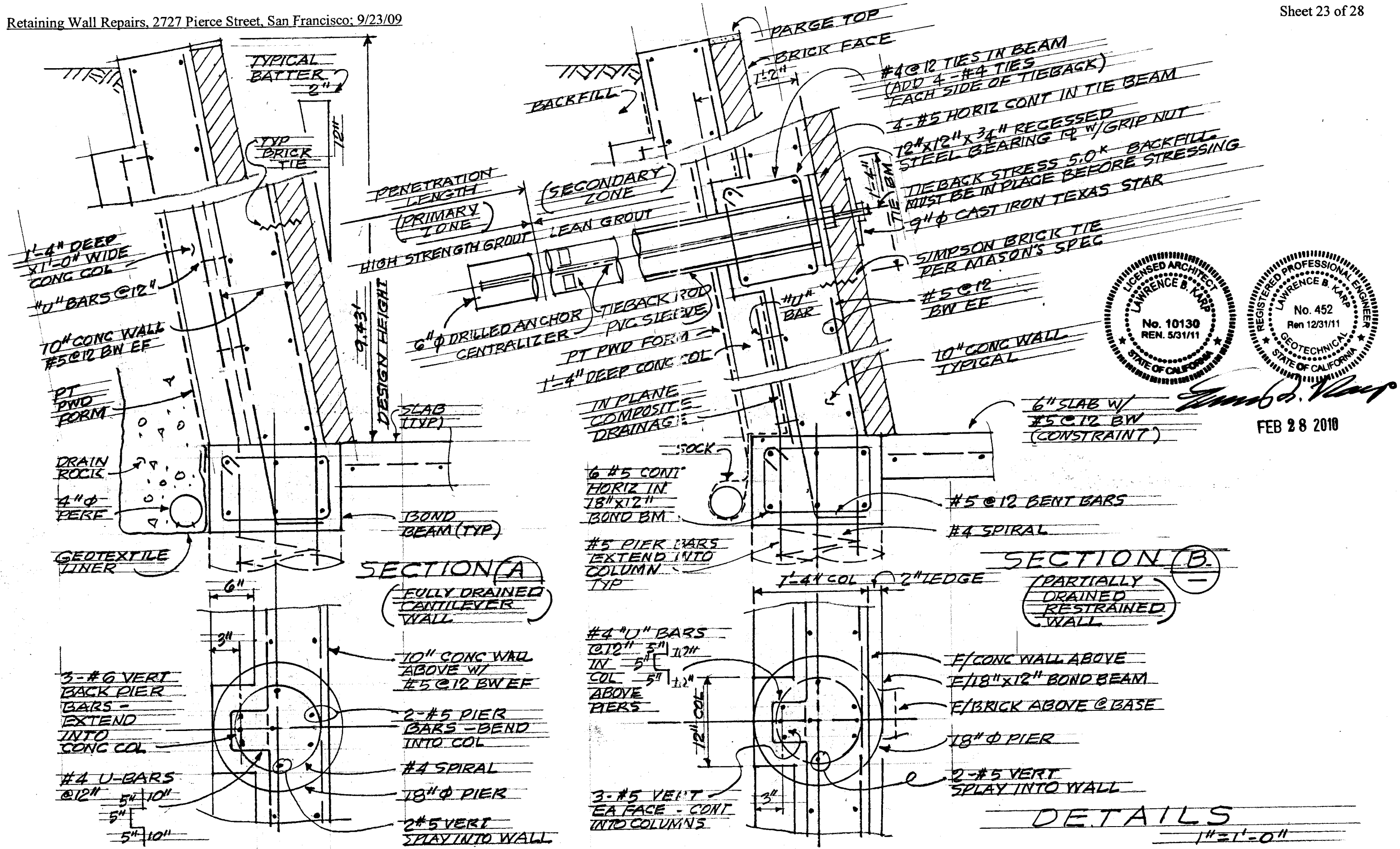
North Wall


Back Wall
Abutting South Wall



South Wall close up

South Wall

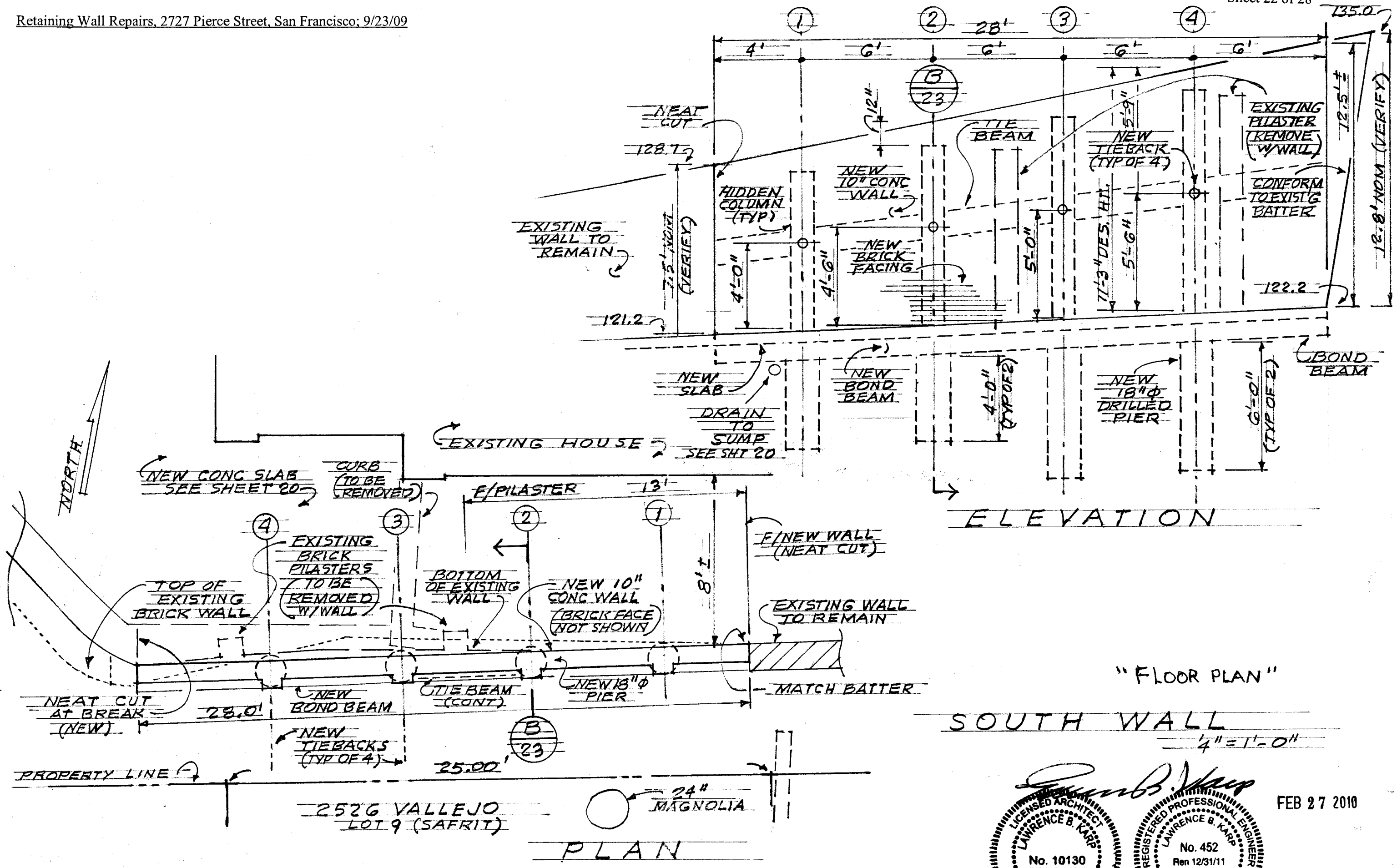


LICENSED ARCHITECT LAWRENCE B. KARP No. 10130 REN. 5/31/11 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER LAWRENCE B. KARP No. 452 Ren 12/31/11 GEOTECHNICAL STATE OF CALIFORNIA

FEB 28 2010

Section + Detail



ELEVATION

PLAN

"FLOOR PLAN"

SOUTH WALL

4"=1'-0"

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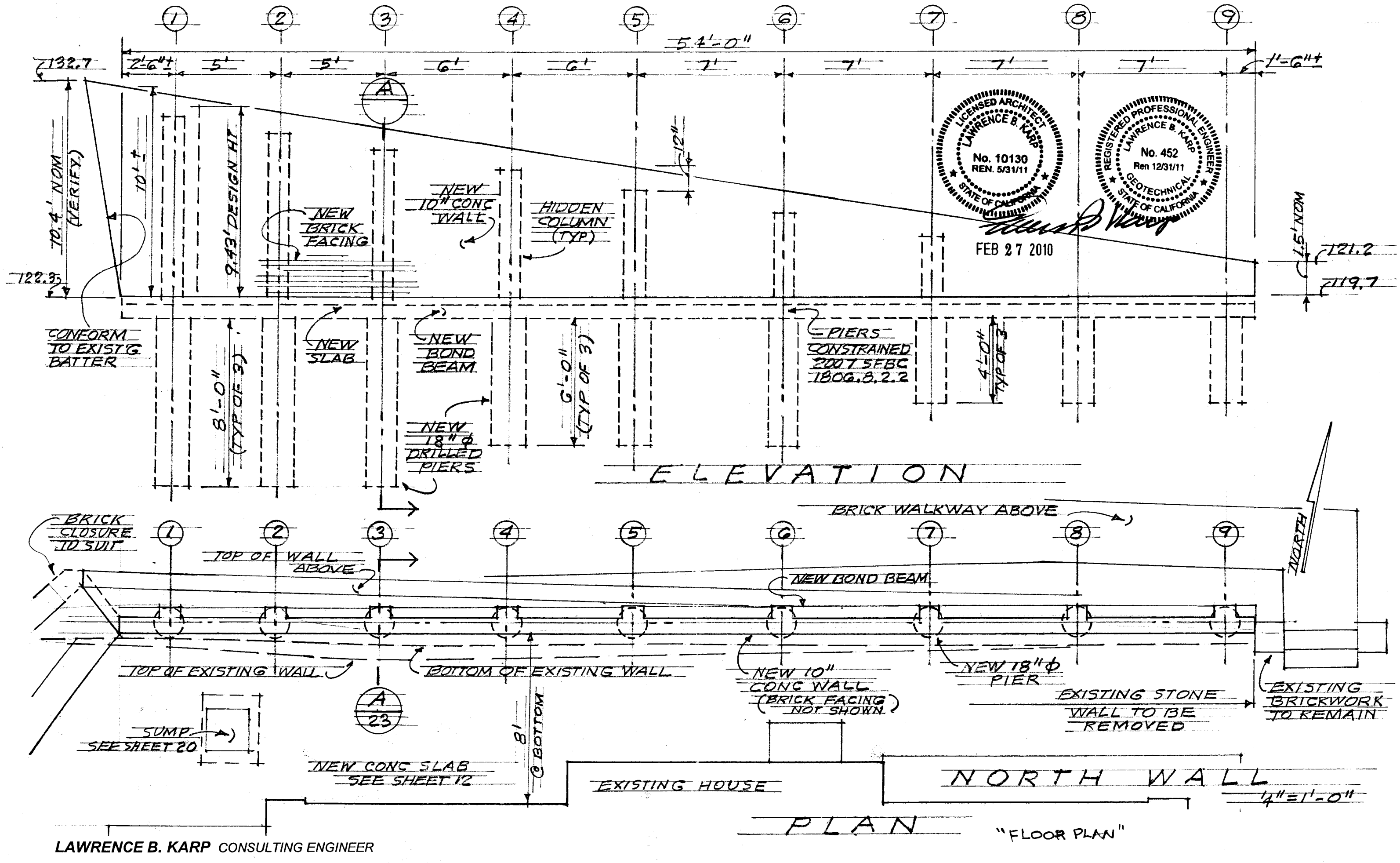
FEB 27 2010


1
2
3
4
5
6
7
8
9
54'-0"
2'-6"±
5'
5'
6'
6'
7'
7'
7'
7'
1'-6"±
132.7
10.4' NOM (VERIFY)
10'±
8.43' DESIGN HT
122.3
12"
NEW 10" CONC WALL
HIDDEN COLUMN (TYP)
NEW BRICK FACING
CONFORM TO EXIST'G BATTER
NEW SLAB
NEW BOND BEAM
NEW 18" ϕ DRILLED PIERS
8'-0" (TYP OF 3)
6'-0" (TYP OF 3)
PIERS CONSTRAINED 2007 SFBC 1806.8.2.2
4'-0" TYP OF 3
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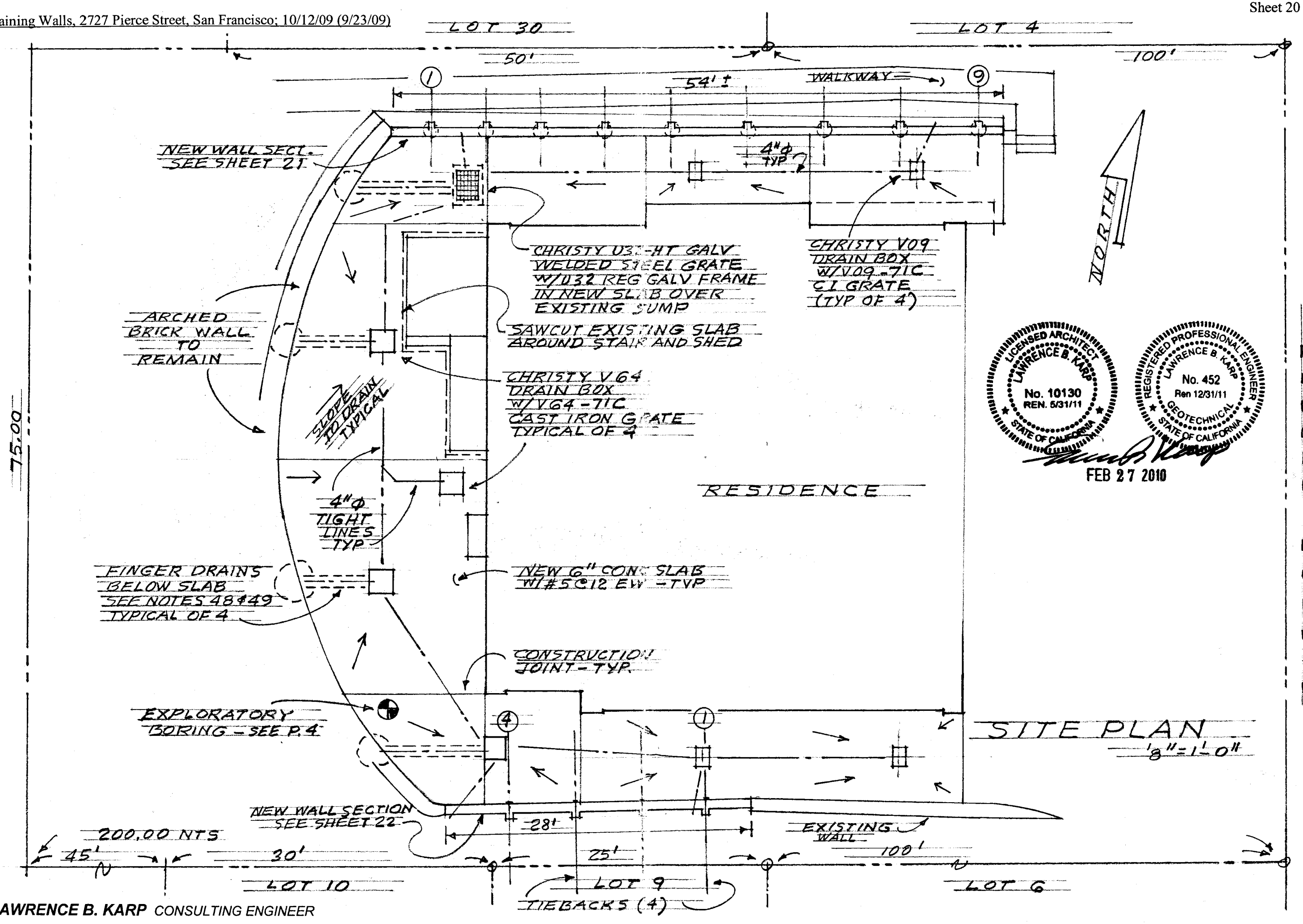
REGISTERED PROFESSIONAL ENGINEER LAWRENCE B. KARP No. 452 Ren 12/31/11 GEOTECHNICAL STATE OF CALIFORNIA
FEB 27 2010
NORTH
121.2
119.7
ELEVATION
BRICK CLOSURE TO SUIT
TOP OF WALL ABOVE
BRICK WALKWAY ABOVE
NEW BOND BEAM
NORTH
TOP OF EXISTING WALL
BOTTOM OF EXISTING WALL
A
23
SUMP SEE SHEET 20
NEW CONC SLAB SEE SHEET 12
8' @ BOTTOM
NEW 10" CONC WALL (BRICK FACING NOT SHOWN)
NEW 18" ϕ PIER
EXISTING STONE WALL TO BE REMOVED
EXISTING BRICKWORK TO REMAIN
EXISTING HOUSE
NORTH WALL
1/4"=1'-0"
PLAN
"FLOOR PLAN"



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FEB 27 2010

Specifications & Notes

General

1. These Specifications & Notes apply and are part of drawings in the design report "Repair of Retaining Walls -2727 Pierce Street, San Francisco, CA" prepared by Lawrence B. Karp, Consulting Engineer.

2. Construction shall conform to the 2007 San Francisco Building Code ("2007 SFBC") which is the 2007 California Building Code as adopted and amended by the City & County of San Francisco. Construction shall also comply with the field direction of the Engineer-of-Record, Lawrence B. Karp, 100 Tres Mesas, Orinda CA 94563, (925) 254-1222 & fax (925) 253-0101, or the Owner.

3. Existing and new dimensions and grades shown on the drawings are approximate. Dimensions should not be scaled from the drawings. Contractor shall verify actual existing conditions and inform the Engineer-of-Record if actual conditions differ from previously measured or assumed conditions shown on the drawings.

4. Shoring and bracing of portions of existing structures may be necessary during the construction of the Project. Shoring and bracing of the ground and portions of the existing and new structures, shall be installed where necessary to adequately support the imposed vertical and lateral loads, and shall be maintained until the retrofitted structures can independently support the anticipated loads. The Contractor, and not the Engineer or Owner, shall be responsible for all means, methods, techniques and sequences of construction. The Contractor shall also be solely responsible for all safety programs and procedures during construction.

5. The Project requires excavations adjacent to, and to elevations below the base of, existing foundations. These excavations, and any others closer than a 1h:1v slope (45 degree slope angle) to the bottom edge of existing, new or temporary foundations, shall be considered to undermine such foundations. Adequate shoring and underpinning, and bracing using the new permanent tiebacks for the south wall, if Contractor chooses, shall be installed before removal of portions of structures and before excavation work.

6. The Contractor shall hold a preconstruction meeting with the Owner and the Engineer-of-Record to discuss the Contractor's plans to accomplish the work described in the construction documents. As the work proceeds, the Contractor is encouraged to contact the Engineer if any questions arise regarding the interpretation of the construction or permit documents.

7. The Contractor shall follow all instructions, recommendations and safety precautions provided by the supplier or manufacturer of any material or product called out in these specifications or shown on the drawings.

8. The contractor shall notify the Engineer-of-Record at least three days in advance of any construction review. The following construction review is a "Structural Observation" as defined in 2007 SFBC §1702.1 and is required per 2007 SFBC §1704:

   A. Placement of reinforcing steel for concrete. The review must occur with sufficient time in advance of the concrete placement to make any changes required by the Engineer.

9. The Owner has employed or shall employ, accordance with Section 1704.1 of the 2007 SFBC, and the Contractor shall coordinate, one or more Special Inspectors who shall provide inspections during construction on the following types of work:

   A. Excavations for drilled piers, bond beams, and drainage: By the project's geotechnical engineer; and

   B. Concrete compressive strength (see Note 10): By a Testing Laboratory.

   All testing laboratories or inspection agencies shall be approved by the Engineer-of-Record and retained by the Owner. Written reports shall be sent to the Contractor, the Engineer-of-Record, and the Owner.

Concrete

10. Concrete work shall conform to the requirements of ACI 301, "Specifications for Structural Concrete for Buildings" as modified below. Concrete shall attain a minimum compressive strength at 28 days of 3,000 psi. Cement shall be Type II, and shall conform to ASTM C150 and ASTM C595. Slump of concrete without workability admixtures shall not exceed 4 inches, and the water/cement ratio by weight shall not exceed 50%. Acid soluble chloride content of the concrete shall not exceed 0.2 percent of cement weight, per ASTM G-1152. Admixtures and plasticizers for workability shall be used in order to achieve the specified water/cement ratio, rather than additional cement. Because excess water reduces concrete strength and durability, adding water at the site is strongly discouraged and shall not exceed one gallon per cubic yard. The Contractor shall schedule the testing laboratory's visits to the site. Sampling and testing shall be in accordance with ASTM C31, ASTM C39, ASTM C172, and ASTM C143. Slump tests and cylinder samples shall be taken where the concrete is to be placed, after any pumping or transit operations. A minimum of one set of three cylinders shall be taken and tested for each concrete pour.

11. Concrete aggregate shall conform to ASTM C33. Aggregate shall be free of alkali reactivity. Coarse aggregate nominal size shall not exceed 3/4 inch.

12. Reinforcing steel shall be new, deformed bars, Grade 60, identified by a third longitudinal rib or the number "60". Reinforcing steel shall conform to ASTM A615 (nonweldable).

13. Reinforcing steel and all bolts and other embedments shall be securely tied and held in place with 16 gauge annealed wire and spacers (concrete "dobees" or steel chairs) must be installed prior to placing concrete, to maintain critical clearances and dimensions. Splices and intersections shall be wired with 16 gauge annealed wire unless noted otherwise. Concrete cover over reinforcing shall be a minimum of 3 inches where concrete is cast against earth, 1-1/2 inches where formed concrete is exposed to weather or backfilled earth, and 3/4 inch elsewhere, unless otherwise noted on the drawings.

14. Reinforcing steel shall not be welded unless specifically designated to be welded on the drawings.

15. Epoxy grout for dowels and bolts, which hardware shall be located by the Engineer-of-Record during construction, shall be applied with proprietary dispensing guns equipped with mixing nozzles. Glass-encapsulated adhesives shall not be used. The following epoxy systems may be used:

   A. Adhesives Technology Corporation (ATC) HS-200 Solidbond (available from Concrete Tie & Faster 13992 Catalina St., San Leandro, CA 94577, telephone (510) 357-1630);

   C. Sika Sikadur AnchorFix-3 Epoxy Injection Gel System (available from D. M. Figley Company, 10 K Court, Menlo Park, CA 94025, telephone (800) 292-9919);

   D. Simpson Epoxy-Tie ET (available from Simpson Strong-Tie, 5956 W. Las Positas Blvd., Pleasanton, CA 94588, telephones (925) 560-9000 & (800) 925-5099, & fax (925) 847-1597).

   E. Unitex Pro-poxy Dispensing System with Pro-Poxy 200 (available from D. M. Figley Company, 10 Kelly Court, Menlo Park, CA 94025, telephone (800) 292-9919).

// Specifications //

16. Dowel and bolt holes in concrete shall be dry and cleared of all debris and dust before epoxy grouting. The hole diameter shall be 1/8 inch greater than the dowel or bolt diameter unless otherwise required by the epoxy manufacturer. Embedment depths unless otherwise noted on the drawings shall be ten bar or bolt diameters. Epoxy shall be applied from the back of the hole forward in order to avoid air pockets.

17. Surface bonding agent between existing and new concrete, and at construction joints: Rezi-Weld 1000 Multi-Purpose Construction Epoxy, or other epoxy bonding agent approved by the Engineer-of-Record. Bonding agent shall be applied immediately before the concrete pour and shall be wet or tacky during the pour.

18. The structural adequacy of the design and construction of all shoring and concrete formwork is the responsibility of the Contractor. All concrete formwork shall comply with ACI Standard 347R "Recommended Practice for Concrete Formwork". Excavations capable of safely holding a vertical slope may be used as forms if a 3 inch clearance is maintained between earth and reinforcing

19. Concrete placement and consolidation shall conform to ACI 304 and ACI 309. The inner surfaces of all forms and conveying equipment shall be clean and free of all foreign materials. Concrete shall be placed using trunks or tremies as required to prevent segregation of aggregates. Concrete shall not be dropped from a height of 3 feet or higher. Concrete shall be deposited continuously, or in layers only if no hardening occurs that might cause the formation of seams or planes of weakness. Concrete which has partially hardened or has been contaminated by foreign materials shall not be deposited. All concrete shall be consolidated by mechanical vibration, spading, rodding or forking so that the concrete is thoroughly worked around the reinforcement, around embedded items, and into corners of forms, eliminating all air or stone pockets which may cause honey-combing, pitting, or planes of weakness.

20. Control joints, where shown on the plans, shall be tooled into fresh concrete to one quarter of the slab thickness. Saw cut joints in hardened concrete are not acceptable for this project.

21. Construction joints: Horizontal construction joints shall be roughened, exposing clean aggregate to 1/4 inch depth, solidly embedded in mortar matrix. Vertical construction joints shall include a shear key. Construction joints shall be coated with epoxy bonding agent. Before epoxying and subsequent pours, construction joints shall be cleaned and free of debris.

22. Slab concrete shall be wet-cured with wet burlap, plastic sheeting, or a double application of an approved curing membrane. Curing shall commence shortly after finishing the slab, and shall continue for 7 days. Concrete slab to be finished by washing the aggregate as directed by Engineer-of-Record and the Owner.

23. Forms may be removed when the concrete has hardened sufficiently to avoid damage from removal operations. No loads shall be placed on new concrete until two-thirds of design strength has been attained.

24. Consolidation methods should be rigorous enough to avoid all blow holes and rock pockets. If any blow holes or rock pockets occur, they shall be broken back, patched with cement mortar and rubbed to match surrounding surfaces. Break back and patch all snap-ties and form bolt holes.

25. Backfilling of retaining walls shall only occur after the new concrete reaches its design strength.

26. Locating and protection of existing utilities is the responsibility of the Contractor. The Contractor shall notify the Engineer if utility pipes run through, or are underground within 12 inches of any lateral support for new concrete construction. The Engineer shall provide the Contractor with supplemental design details where such proximity or any interferring conditions are encountered during construction.

27. Stay-Form® by Amico, or equivalent, shall be used for forming voids in concrete. *Stay-Form® is available from White Cap Industries, 1140 Beecher Street, San Leandro CA, telephone (510) 729-6464 or Muller Construction Supply, 6565 32nd Street, Richmond CA, telephone (510) 307-9971.*

Shotcrete

28. Shotcrete (pneumatically placed concrete, as an alternative to formed concrete) materials and application shall conform to ACI 506.2-77, "Specification for Materials, Proportioning and Application of Shotcrete", and with 2007 SFBC §1913, "Shotcrete". Materials and procedures shall also comply with ACI 506R-85, "Guide to Shotcrete".

29. Shotcrete shall attain a minimum compressive strength of 3,000 psi at 28 days. Strength tests shall be made on specimens which are representative of work and which have been water soaked for at least 24 hours prior to testing. Where maximum size aggregate is larger than 3/8", specimens shall consist of not less than three 3-inch-diameter cores or 3-inch cubes. Where maximum size aggregate is 3/8 inch or smaller, specimens shall consist of not less than three 2-inch-diameter cores or 2-inch cubes. Specimens shall be taken from test panels; made not less than once each shift or not less than one for each 50 cubic yards of shotcrete placed. Where maximum size aggregate is larger than 3/8", the test panels shall have a minimum dimension of 18 inches by 18 inches. Where maximum size aggregate is 3/8 inch or smaller, the test panels shall have a minimum dimension of 12 inches by 12 inches. Panels shall be shot in the same position as the work, during the course of the work, and by the same persons that will operate the nozzles during the work. The condition under which the panels are cured shall be the same as will occur during the work.

30. The average of three cores from a single panel shall be equal to or exceed $0.85 f'_c$ with no single core less than $0.75 f'_c$. The average of three cubes taken from a single panel must equal or exceed f'_c with no individual cube less than $0.88 f'_c$. To check testing accuracy, locations represented by erratic core strengths may be retested.

31. In accordance with 2007 SFBC §1913.4.3, lap splices in reinforcing bars shall be by the noncontact lap splice method with clearance of at least 2 inches between bars.

32. Any rebound or accumulated loose aggregate shall be removed from surfaces to be covered prior to placing the initial or any succeeding layers of shotcrete. Rebound shall not be reused as aggregate.

33. Unfinished work shall not be allowed to stand for more than 30 minutes unless all edges are sloped to a thin edge. Before placing additional material adjacent to previously applied work, sloping and square edges shall be cleaned and wetted.

34. In-place shotcrete which exhibits sags or sloughs, segregation, honeycombing, sand pockets or other obvious defects shall be removed and replaced at the Contractor's expense. Shotcrete above sags and sloughs shall be removed and replaced while still plastic.

35. Preparation of all existing concrete surfaces that shall be in contact with shotcrete shall be thoroughly cleaned by sandblasting. All excess sand and loose debris shall be removed by vacuum or compressed air. Particular care should be taken to remove such debris around anchors and reinforcing bars. Existing concrete surfaces shall be moistened for at least two hours prior to shotcreting, and such surfaces shall remain damp during shotcrete application.

36. Shotcrete shall be moist-cured for at least 7 days after application.

37. Per 2007 SFBC Table 1704.4, a Special Inspector is required for verification and inspection of shotcreting, and during the taking of test specimens, who shall submit a statement indicating the Contractor's compliance with the plans and specifications. Also, the building official may require continuous inspection of reinforcing steel.

Wood

38. Lumber left-in-place, lagging, cleats and any other wood components, and all wood in contact with concrete, masonry, or soil shall be Douglas Fir, Grade #1 or better. All left in place lumber and plywood shall be pressure treated for ground contact (2007 SFBC §3304.1). "Treated Wood" is as defined in 2007 SFBC §2302 using EPA approved preservatives. Recommended treatment is with ACQ (alkaline copper quat) to a minimum of 0.60 pcf retention per American Wood Preservers Association (AWPA) Standards (upgrade from 0.40 pcf retention for standard ground contact end use). Each piece of lumber shall be clearly branded or stamped to indicate treatment and grade in strict accordance with 2001 CBC §2303.1, and each piece shall bear (AWPA) markings showing preservative and retention that clearly indicate the member is suitable for use in contact with the ground in accordance with AWPA Standards. Verification of suitability of material brands or stamps may be obtained from AWPA, 100 Chase Park South, Suite 116, Birmingham, AL 35244, telephone (205) 733-4077 & fax (205) 733-4075.

    Cuts in lumber and plywood should be avoided by lapping, but if necessary all cut or drilled surfaces in pressure treated members shall be soaked with copper napthanate, minimum 2% strength solution, or otherwise protected to the satisfaction of the Engineer-of-Record. *Pressure treated wood for ground contact use is available from M&M Builders Supply, 8111 East 11th Street, Tracy CA 95376, telephone (209) 835-4172 & fax (209) 835-4305.*

Tieback Rods

39. High strength steel rods (post-tensioned soil anchors) shall be Dywidag Threadbars conforming to the requirements of ASTM A-722 (steel, pretested) and ASTM A-615 (deformations), having an ultimate stress level (f_{pu}) of 150 ksi, an ultimate strength ($f_{pu}A_{ps}$) of 127.5 kips, an ultimate allowable temporary jacking strength of 102.0 kips (80% of ultimate strength), an allowable transfer (lock-off) strength of 89.3 kips (70% of ultimate strength), and an allowable effective (working) prestress strength of 76.5 kips (60% of ultimate strength). Couplers shall be 2 inch diameter by 5½ inches long. Anchorages shall be capable of developing the actual ultimate strength of the rods without excessive deformations.

    Rods and anchorages shall be DOUBLE CORROSION PROTECTED ("DCP System") Dywidag Threadbars, or equivalent; 1 inch nominal diameter size as supplied by Dywidag Systems International (DSI), USA, Inc., 320 Marmon Drive, Bolingbrook IL 60440, telephone (800) 473-4374 & fax (630) 739-1405. DSI California representative is Dywidag Systems International, 2154 East South St., Long Beach CA 90805, telephone (562) 531-6161 & fax (562) 531-2667. DSI Local representative is Lee Vigent, 2116 Walsh Avenue, Suite C-4, Santa Clara, CA 95050, telephone (408) 654-9326 & fax (408) 654 9579

Grout

40. Grout (high-strength) for use in the primary (bond) zones of tieback anchorages shall be neat cement consisting of 7 sacks of Portland Cement Type I-II per cubic yard of mix (Type III-High Early Strength may be used upon approval of the Engineer-of-Record) conforming to ASTM C150 and shall have a minimum compressive strength f'_c prior to any loading, of 3,000 psi at 28 days. Upon approval of the Engineer or the Special Inspector, grout shall contain a 1% (of cementitious material) grouting aid. Cylinder samples will be taken and tested under the direction of the Engineer and at the Contractor's expense or as otherwise noted in the contract.

    Grouting aid (expanding/fluidifying/water-reducing) shall be "Interplast-N" as manufactured by Sika Construction Products manufactured by Sika Construction Products, 201 Polito Avenue, Lyndhurst NJ 07071, telephone (800) 933-7452. Western Region representative is Sika Construction Products, 12767 East Imperial Highway, Santa Fe Springs CA 90670; telephone (582) 941-0231 & fax (562) 941-4762.

41. Grout (lean) for use in the secondary zones of tieback holes shall contain 1½ sacks of Portland cement per cubic yard of mix.

Masonry

42. Brick shall be genuine used brick selected to match the existing brick of walls that will remain, and shall be approved by Owner prior to acquisition and delivery to jobsite. Running bond and grout pointing shall match existing original walls to the extent possible.

43. Brick ties shall be corrugated, galvanized, and wet set. *Quantity shall be sufficient to retain the brick face from dislodging. Ties shall be Simpson "BT", as manufactured by Simpson Strong-Tie, 5956 W. Las Positas Blvd., Pleasanton, CA 94588, telephones (925) 560-9000 & (800) 925-5099, & fax (925) 847-1597.*

44. Mortar shall be proportioned by volume, consisting of 1 part Portland Cement, 1/4 part hydrated lime, and 3 parts aggregate (measured in a damp, loose condition). Water to be sufficient to produce workable mixture.

Pipe

45. Pipe used for subdrains and drains, clean-outs, risers, caps and discharge lines shall be perforated or non-perforated Schedule 40 ABS or PVC pipe as specified below. Caps shall be fitted with threaded plugs. Pipe supplied shall have been manufactured in accordance with the following requirements:

    A. Acrylonitrile-butadiene-styrene (ABS) plastic pipe shall conform to the specifications for ABS plastic pipe given in ASTM Designation D2282 and ASTM Designation D2751. Minimum pipe stiffness for ABS pipe shall be 45 psi at 5% deflection when measured in accordance with ASTM Method D2412.

    B. Polyvinyl chloride (PVC) pipe shall conform to AASHTO Designation M278. PVC pipe shall have a minimum pipe stiffness of 50 psi at 5% deflection when measured in accordance with ASTM Method D2412. Schedule 40 PVC pipe shall be suitable.

    Perforations in PVC or ABS pipe shall be one half inch diameter holes spaced at 5 inch centers, staggered, in rows 120° apart. Subterranean ("subdrainage") pipe shall be installed in accordance with the Section 68-1.03 of the Standard Specifications (Caltrans 2006).

    Perforations shall be turned downward. Subdrain pipe shall not be covered until inspected and approved by the engineer. All elbows shall be at angles of 45 degrees or less. Cleanouts shall be provided at pipe ends and at junctions and connections of pipelines; their location must be approved by the Engineer. Junction angles should be no steeper than 45 degrees where cleanout pipes connect to the subdrain pipes. Each clean-out shall be visible and capped with threaded plugs.

    Pipe to be as manufactured by Contech Construction Products Inc., 1110 Adlai Stevenson Drive, Springfield IL 62703; telephone (217) 529-5461. Local distributor is Contech Construction Products, 2950 Camino Diablo, Suite 205, Walnut Creek CA 94596; telephone (925) 945-7200. Sales representative is ATCO, 4025 Nelson Avenue, Concord CA 94520; telephone (925) 686-4430 & fax (925) 825-1397.

46. The Contractor shall, at no expense to Owner, replace piping damaged during the installation of drains or those not placed at satisfactory lines and grades, or determined to be defective by the Engineer-of-Record.

Drain Rock

47. Filter (drain) rock ("permeable material") used for blanket drains and wall backfill where specified on the drawings shall be Class 2 conforming to Section 68 of the Standard Specifications (Caltrans 2006). At the Contractor's option and with the prior approval of the Engineer, Class 1A material (pea gravel) may be used for contiguous complete sections of drain, provided that all Class 1A material is completely enclosed in filter fabric. Perforated drain pipe shall be wrapped in geotextile to prevent fine aggregate from entering the perforations.

In lieu of Class 2 drain rock, permeable material for use in backfilling trenches around and over subdrain pipes shall consist of clean coarse sand and gravel or crushed rock conforming to the following grading requirements:

Sieve Size	% Passing Sieve
2"	100
3/4"	70 to 100
3/8"	40 to 100
#4	25 to 50
#8	15 to 45
#30	5 to 25
#50	0 to 20
#200	0 to 3

In lieu of Class 1A drain rock, gravel for use in pervious blankets and finger drains, and in backfilling trenches wrapped in geotextile meeting the requirements in these outline specifications shall consist of clean rounded fresh rock conforming to the following grading requirements:

Sieve Size	% Passing Sieve
1"	100
1/2"	50 to 100
#4	40 to 100
#8	0 to 40
#30	0 to 40
#50	0 to 5
#200	0 to 3

48. After excavating any subsurface drain trench or below slab finger or area drain trench but before placing the drain pipe, a minimum of 6 inches of filter material shall be placed on the trench bottom. The filter material shall be rounded to conform to the curvature of the pipe so that the pipe is carefully bedded. After installing piping, the trench shall then be backfilled to the top of the pipe; the backfill must be mechanically tamped or hand wedged into place to provide firm support at the sides of the pipe. In general, the installation shall follow the guidelines of ASTM Designation D2774, except that compaction of the filter material in the trench shall not be required.

Geotextile

49. Geotextile (filter fabric) for use in subdrains or in locations directed by the Engineer shall conform to Standard Specification 88-1 (Caltrans 2006), or shall be of nonwoven, needlepunch construction and consist of long chain polymeric fibers composed of polypropylene, polyethylene, or polyamide. The fibers shall be oriented into a multidirectional, stable network. Geotextile shall be furnished in a protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion due to shipping and handling. Geotextile shall be covered with permeable material within two weeks of its placement. Should the fabric be damaged during construction, the torn or punctured section shall be repaired by covering it with a piece of fabric that is large enough to cover the damaged area and to meet the overlap requirements. Adjacent borders of the geotextile shall be overlapped a minimum of 12 inches or sewn. The preceding roll shall overlap the following roll in the direction of the material being placed.

Geotextile should be "Trevira Spunbond" Type 011/140, 4 ounces per square yard (140 grams per square meter) material as manufactured by Hoechst Celanese Corporation, Technical Fibers Group, P. O. Box 5887, Spartanburg SC 29304; telephone (800) 845-7597. Main local distributor is Contech Construction Products, 2950 Camino Diablo, Suite 205, Walnut Creek CA 94596, telephone (510) 945-7200 & fax (510) 9450793. Sales representative is ATCO, 4025 Nelson Avenue, Concord CA 94520, telephone (925) 686-4430 & fax (925) 825-1397.

Catch Basins

50. Catch basins, either shown on the design drawings or not shown on the design drawings but specified during construction, will be designated by size. Final location of catchments shall be as shown on the drawings subject to adjustments made in the field by the Engineer-of-Record during construction based on conditions encountered. Rims of catch basins shall be level with the top of the surrounding concrete slab and shall be integral with the slab except a one-half inch radius rolled edge shall terminate all concrete poured in place against catch basin rims. Products and components suitable for use may be obtained from manufacturers as follows:

Catch basins to be precast concrete, as manufactured by Christy Concrete Products, 44100 Christy Avenue, Fremont CA 95438; phone (800) 486-7070 or (510) 657-7070 & fax (800) 486-6804 OR *as manufactured by Santa Rosa Cast Products Company, 471 West College Avenue, Santa Rosa CA 95401, telephone (707) 546-5016 & fax (707) 571-7768,* OR *as manufactured by Western Concrete Products, 3600 Boulder Street, Pleasanton CA 94566, telephone (510) 462-6802 & fax (510) 462-0176.*

Unless specifically noted otherwise on the drawings, all catch basins shall be fitted with cast iron grates as manufactured by AB&I, 7825 San Leandro Street, Oakland CA 94621, telephone (510) 632-3467 & fax [sales] (510) 632-8035.