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These drawings and calculations, and the ideas and designs incorporated therein, as instruments of professional service, are the property of LAWRENCE B. KARP and are not to be used, in whole or in part, for any other project without the express written authority of LAWRENCE B. KARP

27 SEP 2020
23 NOV 2020

PUBLIC WORKS DEPARTMENT

THESE PLANS AND DETAILS ARE **APPROVED**
By The Building Division Of The Community Development Department
CITY OF BRISBANE
THE APPROVAL OF THESE PLANS SHALL NOT BE CONSTRUED TO BE A PERMIT FOR ANY VIOLATION OF CODE OR ORDINANCE.
By *Lawrence B. Karp*
Date 12/17/20
THESE PLANS SHALL BE ON THE JOB FOR ALL REQUESTED INSPECTIONS.

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By *Lawrence B. Karp*
Date 12/18/2020
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Grading may not commence until 4/16/21

Grading shown hereon is permitted by permit issued to 172 Sierra Pt.

- ☒ Approved for construction
- ☐ As submitted
- ☐ With noted required corrections
- ☐ Make corrections noted and resubmit final file copy

Review was conducted for general conformance and compliance with City requirements existing regulations, and provisions of agreements between City and Applicant. Approval for construction shall not be construed as a waiver of any requirements, regulations or provisions. Applicant is solely responsible for complying with all requirements of the Brisbane Municipal Code, state and federal regulations, and agreement provisions.

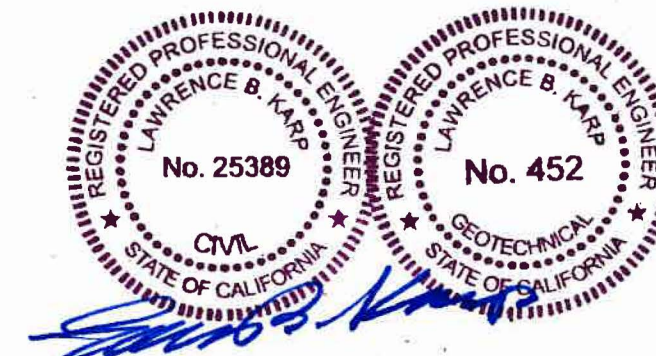
BY: *R. B. Smith* DATE: 12/21/20

CITY OF BRISBANE
BRISBANE, CALIFORNIA

BUILDING PERMIT
178 Sierra Point Road, Brisbane CA 94005

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1	Site & Retaining Wall Location Plan
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5	Topographic Survey (APN 007-193-220)
6	Approval Certificates - General Arrangement



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Brisbane, CA 94005

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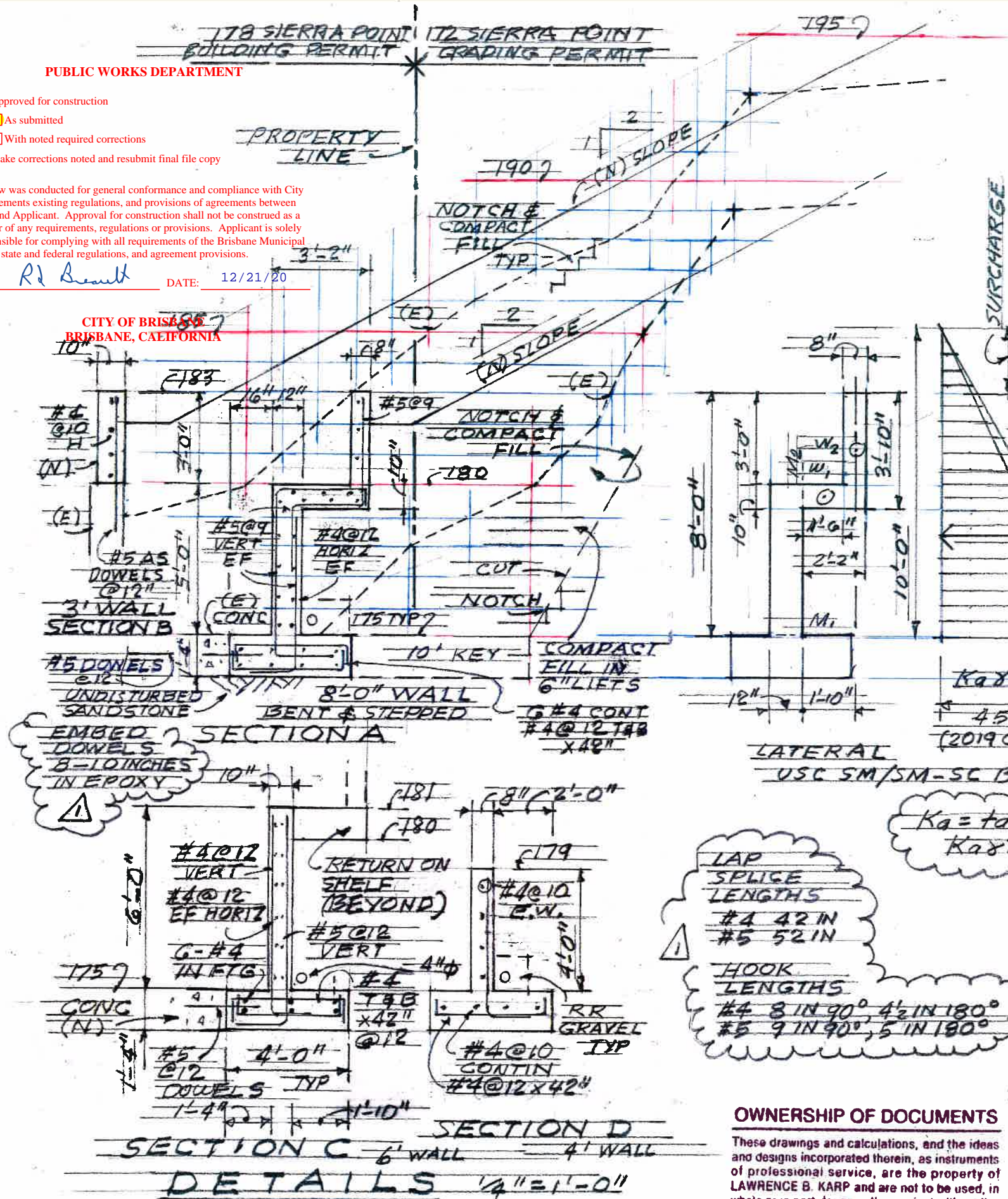
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BY: RJ Beault DATE: 12/21/20

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LAP SPLICE LENGTHS
#4 42 IN
#5 52 IN

HOOK LENGTHS
#4 8 IN 90°, 4 1/2 IN 180°
#5 9 IN 90°, 5 IN 180°

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CONCRETE DESIGN

DEMAND @ BASE

$$\text{LOAD } P = \frac{(54H)(1)}{2} = \frac{54H^2}{2} = \frac{54(10)^2}{2} = 2700 \text{ LB/PLF}$$

$$\text{MOMENT } M_1 = 2700 \left(\frac{H}{3} \right) = 9000 \text{ FT-LB} = 108 \text{ IN-K}$$

$$M_u = 1.7(108) = 184 \text{ IN-K}$$

STEEL RATIO

$$\rho_{\max} = 0.75 \rho_b = 0.75(0.85) \left(\frac{2.5}{60} \right) \left(\frac{87}{1.47} \right) = 0.0134$$

$$\#5 @ 9 \text{ } A_s = 0.413 \text{ in}^2$$

$$\rho = \frac{A_s}{bd} = \frac{0.413}{12(10)} = 0.0034 < 0.0134 \text{ OK}$$

STRESS BLOCK

$$a = \frac{A_s f_y}{0.85 f'_c b} = \frac{0.413(60)}{0.85(2.5)(12)} = 0.9718 \text{ inch}$$

DESIGN STRENGTH

$$M_o = \phi A_s f_y \left(d - \frac{a}{2} \right) = 0.90(0.413)(60) \left(10 - \frac{0.97}{2} \right) = 212 \text{ in-k}$$

$$M_1 = 212 > 184 \text{ OK}$$

DEMAND AT STEP

$$W_1 = 150(1.5)(0.83) = 187 \text{ } W_2 = 150(0.67)(3.83) = 385$$

$$M_{W_1} = 187(0.75) = 140 \text{ FT-LB } M_{W_2} = 385(1.83) = 705 \text{ FT-LB}$$

$$M_{W \text{ TOTAL}} = 845 \text{ FT-LB} = 10.4 \text{ in-k}$$

$$M_{u_w} = 1.4(10.4) = 14.6 \text{ in-k}$$

$$a = 0.9718 \text{ IN}$$

$$M_o(w) = (0.90)(0.413)(60) \left(8 - \frac{0.9718}{2} \right) = 168 \text{ in-k}$$

$$M_o(w) = 168 > 14.6 \text{ OK}$$

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Outline Specifications - Building

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General

- 1. Outline Specifications are for the purpose of supplementing information in the form of geotechnical related requirements shown on the drawings approved for the Project by the City of Brisbane. Conflicts, if any, shall be resolved by the Contractor after consultations with the Engineer-of-Record.
- 2. Construction shall conform to, at least, the minimum requirements of the 2019 California Building Code ("2019 CBC") as adopted and amended by the City of Brisbane. Construction shall also comply with the field directions by the Engineer-of-Record.
- 3. Existing dimensions and grades shown on the drawings are approximate. Contractor shall verify actual existing conditions and inform the Engineer-of-Record if important conditions differ substantially from conditions shown on the drawings approved by the City of Brisbane.
- 4. The Contractor, and not the engineer or any Owner, shall be solely 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 following construction reviews are "Structural Observation" as defined in 2019 CBC §1702.1, and are required per 2019 CBC §1704.

- A. Forms and placement of reinforcing steel for concrete.
- B. Placement of concrete for all structural concrete.

Reviews must occur with sufficient time in advance of the above construction to make any changes required by the Engineer-of-Record.

Concrete

- 6. 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 2,500 psi. Portland 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 C-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.
- 7. Concrete aggregate shall conform to ASTM C33. Aggregate shall be free of alkali reactivity. Coarse aggregate nominal size shall not exceed 3/4 inch.



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BY: [Signature] DATE: 12/21/20

CITY OF BRISBANE
BRISBANE, CALIFORNIA

- 8. 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). Reinforcing steel shall not be welded.
- 9. Reinforcing steel and all bolts and other embeds shall be securely tied and held in place with 16 gauge annealed wire and spacers (concrete "dobeers" or steel chairs) must be installed prior to placing concrete to maintain critical clearances and dimensions.
- 10. 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 structural drawings.
- 11. Epoxy grout for dowels into existing concrete shall be applied with proprietary dispensing guns equipped with mixing nozzles. Glass-encapsulated adhesives shall not be used.
- 12. 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 to the surface in order to avoid air pockets.
- 13. 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 ("poured neat") may be used as forms if the 3 inch mandatory clearance is maintained between earth and steel reinforcing.
- 14. 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 tremie as required to prevent segregation of aggregates. Concrete shall not be dropped from a height of 3 feet or higher.
- 15. 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.
- 16. Control joints, where shown on the plans or otherwise directed by the Engineer-of-Record, shall be tooled into fresh concrete to a depth of one and one half inches. Saw cut joints in hardened concrete are not acceptable for this Project.
- 17. Construction joints: Horizontal construction joints shall be roughened, exposing clean aggregate to 3/8 inch depth, solidly embedded in mortar matrix. Vertical construction joints shall include shear keys. Construction joints shall be coated with epoxy bonding agent. Before epoxying and subsequent pours, construction joints shall be cleaned and free of debris.

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Outline Specifications - Building (Continued)

- 18. 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 is attained.
- 19. 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 appearance and function of surrounding surfaces.
- 20. All snap-ties and form bolt holes shall be broken back and patched with with cement mortar and rubbed to match appearance and function of surrounding surfaces.
- 21 Backfilling of any concrete that retains earth shall only occur after the new concrete reaches its specified design strength.

Shotcrete

- 22. Shotcrete (pneumatically placed concrete, as an alternative to formed concrete for possible future concrete shear walls or pony walls that may be designed to support wood framing) materials and application shall conform to ACI 506.2-77, "Specification for Materials, Proportioning and Application of Shotcrete", and with 2016 CBC §1913, "Shotcrete". Materials and procedures shall also comply with ACI 506R-85, "Guide to Shotcrete".
- 23. Shotcrete shall attain a minimum compressive strength of 2,500 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 aggregate size is larger than 3/8", specimens shall consist of not less than three 3-inch-diameter cores or 3-inch cubes. Where aggregate size 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.
- 24. Where maximum size aggregate is larger than 3/8", the test panels shall have a minimum dimension of 18 inches by 18 inches. Where aggregate size 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 conditions under which the panels are cured shall be the same as will occur during the work.
- 25. 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.
- 26. In accordance with 2019 CBC §1913.4.3, lap splices in reinforcing bars shall be by the non-contact lap splice method with clearance of at least 2 inches between bars.
- 27. 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 in new concrete.

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- 28. 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.
- 29. 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.
- 30. Shotcrete shall be moist-cured for at least 7 days after application.
- 31. Per 2019 CBC 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.

Drainage

- 32. Retaining walls shall be backdrained. All piping must be **RIGID** ABS or PVC; corrugated tubing is prohibited on this project. Backdrainage should be installed in a rockfilled (open graded filter rock e.g. river run gravel) trench against the back of the concrete wall made at an inclination of about 60°, lined with geotextile (filter fabric) and containing perforated **RIGID** piping (pipe having one half inch round holes spaced at 5 inch centers, staggered, in rows 120° apart) to extend along the lower backs of the concrete retaining walls. As cuts in fill may occur, plywood as temporary support should be used against the cut, moved up as filter rock is placed.
- 33. About 6 inches of drain rock should be placed in the cleaned and lined trench (bottom set about 12 inches below the level of adjacent slabs), and then perforated **RIGID** pipe laid over the rock (pipe placed with perforations facing down). Lengths of pipe from a drain assembly to discharge points should form a "tight line" (solid walled **RIGID** pipe, no perforations) to join with existing drainage piping nearby. Drain rock should fill the trench to about one foot from the surface, with a plug of native clayey soil placed and tamped over the folded geotextile to complete the assembly and bring the grade up with the high point necessary for adequate surface drainage. All drain pipe, perforated and "tight" line, should be fitted with cleanout risers at the high-point of each line and tested for operation efficiency.
- 34. The perforated pipe in the bottom of the trench will act as a subdrain to stabilize nearby ground water levels at the "invert" (lowest point inside the pipe); the pipe should slope to drain about one quarter inch per foot (2½ inches in 10 feet). Before fully filling the trench, the upper part of the trench may carry a separate **RIGID** "tight" line (solid walled pipe, no perforations) which may be used to transport subdrainage installed with grading.
- 35. The filter rock bed should 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, installation shall follow the guidelines of ASTM Designation D2774, except compaction of the filter material in the trench shall not be required.

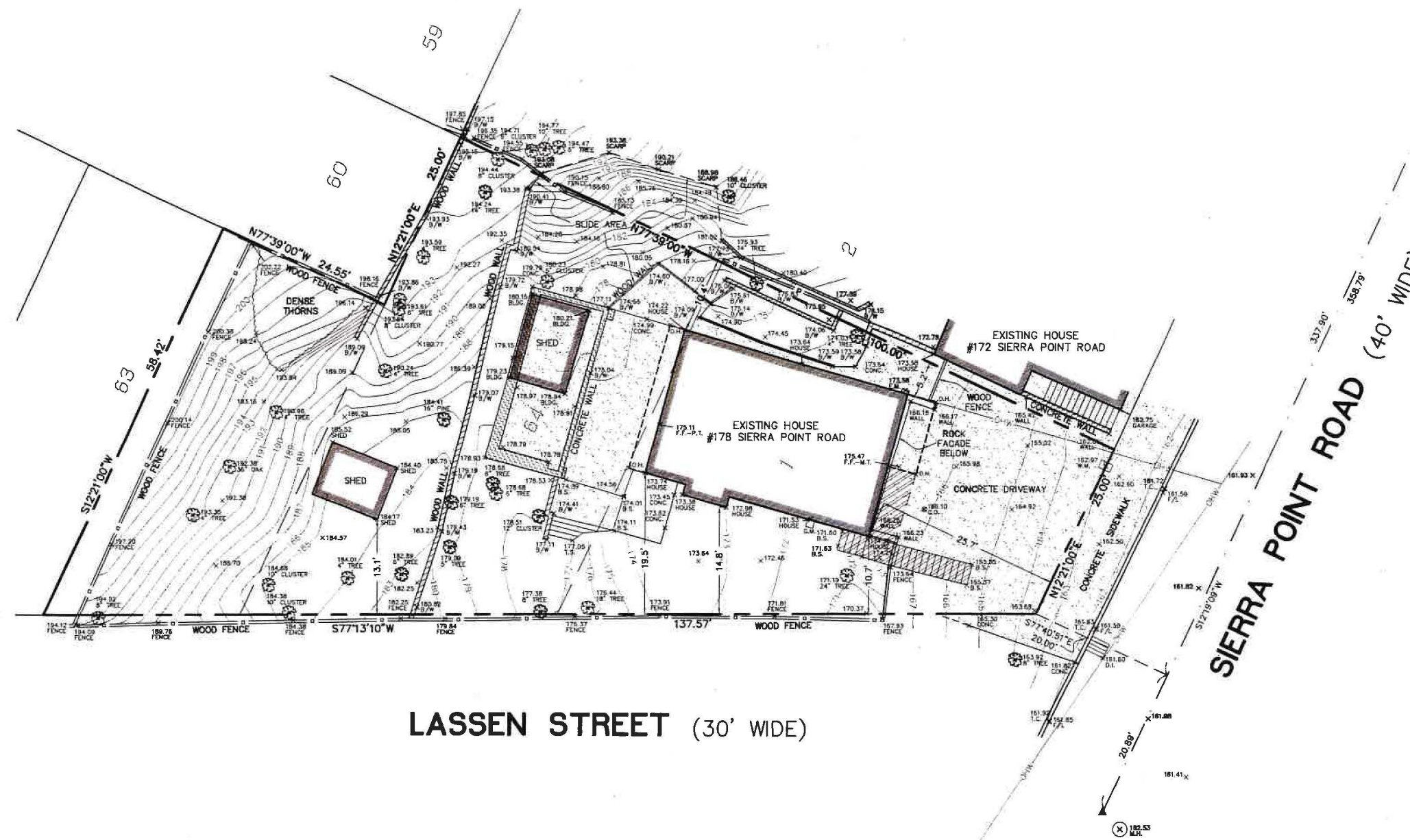
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BRISBANE, CALIFORNIA

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- LEGEND**
- B.S. BASE OF STEPS
 - B/W BASE OF WALL
 - BLDG. BUILDING
 - C.O. CLEAN OUT
 - CONC. CONCRETE
 - D.I. DRAIN INLET
 - E.M. ELECTRIC FLOOR
 - F.F. FINISHED FLOOR
 - F/L FLOW LINE
 - G.M. GAS METER
 - M.H. MANHOLE
 - M.T. METAL THRESHOLD
 - P.T. PLASTIC THRESHOLD
 - O.H. OVER HANG
 - T.C. TOP OF CURB
 - T.S. TOP OF STEPS
 - W.M. WATER METER
 - BUILDING LINE
 - CONCRETE SURFACE
 - CONCRETE WALL
 - WOOD SURFACE
 - WOOD WALL
 - WOOD FENCE
 - FOUND CITY MONUMENT IN WELL, AS NOTED
 - FOUND RAIL ROAD SPIKE, IN WELL
 - PER AMENDED RECORD OF SURVEY (13 LLS 74)

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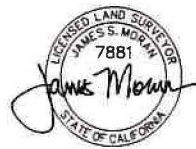
GENERAL NOTE:
DIMENSIONS ARE IN FEET AND DECIMAL FEET.

BASIS OF BEARINGS:
THE MONUMENT LINE IN SIERRA POINT ROAD WAS TAKEN AS SOUTH 12°19'09" WEST AS SHOWN ON AMENDED RECORD OF SURVEY (13 LLS 74).

BENCHMARK:
ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988.

BOUNDARY NOTES:
THE BOUNDARY FOR 178 SIERRA POINT ROAD IS DEFINED BY GRANT DEED TO BRISBANE DOWNTOWN DEVELOPMENT LLC (2019-053580). NO TITLE REPORT WAS PROVIDED FOR THIS PROPERTY, EASEMENTS MAY EXIST.

DUE TO APPARENT LAND MOTION IN THIS AREA NEARBY SURVEY MONUMENTS VARY FROM THEIR RECORD POSITIONS. THE PROPERTY BOUNDARIES SHOWN HEREON COULD VARY BASED ON THE CONSIDERATION OF ALTERNATE SURVEY MONUMENTS. THE MAGNITUDE OF THIS VARIANCE IS IN THE APPROXIMATE RANGE OF 0.3 FEET.



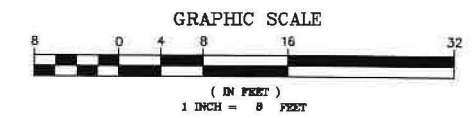
TOPOGRAPHIC SURVEY

LOTS 1 AND 64, BLOCK 23, AMENDED MAP OF SUBDIVISION NOS. 1, 2, AND 3 OF CITY OF VISITACION (6 M 45) AND A PORTION OF PARCEL B AFTER LLA (2010-011130).
LOCATED AT 178 SIERRA POINT ROAD
CITY OF BRISBANE, COUNTY OF SAN MATEO, CALIFORNIA

FEBRUARY 6, 2020 SCALE: 1" = 8'

MORAN ENGINEERING, INC.
CIVIL ENGINEERS \ LAND SURVEYORS
1930 SHATTUCK AVENUE, SUITE A
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F.B. NO. 1753 SIERRA POINT #178-TOPQ.DWG JOB NO. 19-10378



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