

CONSTRUCTION LENDING AGENCY

I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ.C).

Lenders Name _____
Lenders Address _____

LICENSED CONTRACTORS DECLARATION

I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class B/E Lic. Number 160399
Date 7-8-97 Contractor Ayala Design Build
(Signature)

OWNER - BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00):

I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his or her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he or she did not build or improve for the purpose of sale.)

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

I am exempt under Sec. _____ B & P C for this reason _____
Date _____ Owner _____
(Signature)

In issuing this building permit, the applicant represents, and the City relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and hereby authorize representative of this city to enter upon the abovementioned property for inspection purposes.

Date 7-8-97 Signature of Applicant or Agent [Signature]

BUILDING SITE ADDRESS

2114 - 16th St.

SUITE

INSP. AREA

IC

PLAN CHECK NO. **CCP**

ASSESSOR PARCEL NO. 009-0152-012		COMMUNITY PLAN NO.	
NAME OF APPLICANT		ADDRESS	ZIP CODE
LICENSED CONTRACTOR ED AYALA		1545 30th St	95816
PROPERTY OWNER		PHONE NO.	
Dr. Ron Chao		625 Spark Hawk Dr.	739 449
ARCH. ENGR.		ZIP CODE	PHONE NO.
Hoi Wong		95037	(408)779-7018
NO. OF STORIES		NO. OF ROOMS	ROOF COVERING
AREA 1ST FLOOR		TOTAL AREA	GARAGE AREA
PATIO AREA		USE ZONE	STREET WIDTH
		R1B	

THIS PERMIT IS FOR: BUILDING MECHANICAL PLUMBING ELECTRICAL SITE FIRE

NATURE OF WORK IN DETAIL: **Xx** Wood staircase replacement- R-1

All work to match existing per Des. Review

FLOOD STATUS (Exempt-cost) SPECIAL CONDITIONS ATTACHMENTS: DBA: Apartments V-Nnon

CITY OF SACRAMENTO PERMIT SERVICES
BUILDING INSPECTION DIVISION 264-7619

WORKER'S COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier State Fund
Policy Number 1A7048-97
66-28

(This section need not be completed if the permit is for one hundred dollars (\$100) or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date: 7-8-97 Applicant [Signature]
(Signature)

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000) IN ADDITION TO THE COST OF COMPENSATION. DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEES.

VALUATION	\$ 5,000.00	PERMIT NO. 97
ISSUED BY:	<u>[Signature]</u>	
DATE ISSUED	<u>6/27/97</u>	
BUILDING PERMIT FEE	\$ 211.00	
PLAN CHECK/PROC. FEE	\$ pd. n/a	
S.M.I. FEE	\$ 1.26	
CONST. EXCISE TAX	\$	
CITY BUS LICENSE	\$ FBA <u>2nd</u>	
TECH. FEE	\$ 15.37	
WATER DEV. FEE	\$	
CITY SEWER DEV. FEE	\$	
REG. SEWER FEE	\$	
RESIDENTIAL CONST. TAX	\$	2
		1
		7
TOTAL FEES	\$ <u>229.63</u> 227.63	C

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK AUTHORIZED IS NOT COMMENCED WITHIN 180 DAYS.

CITY OF SACRAMENTO
APPLICATION FOR BUILDING PERMIT
DEPARTMENT OF PLANNING AND DEVELOPMENT
BUILDING INSPECTION DIVISION

1231 I Street, Room 200
 Sacramento, CA 95814
 (916) 264-7619 FAX 264-7046

WICKETS Comp Policy # _____
 COMPANY _____
 EXP. DATE _____

ADDRESS 2114-16th Street P.C. # 5199
 PARCEL # 009-0152-012 SUITE # _____
 AREA # 77

CONTACT
 NAME Hoi Wong LICENSED CONTRACTOR
 ADDRESS 2015 Q Street NAME Pending
Sacto ZIP 95814 ADDRESS _____
 PHONE (916) 447-8588 FAX: (916) 447-8588 PHONE _____ ZIP _____

ARCH./ENG. OWNER/~~OWNER~~
 NAME Hoi Wong NAME Dr. Ron Clao
 ADDRESS 2015 Q Street ADDRESS 625 Sparhawk Dr.
Sacto ZIP 95814 Morgan Hill ZIP 95037
 PHONE (916) 447-8588 PHONE (408) 779-7018

WILL THE PERMITEE HAVE ANY EMPLOYEE'S ON THE JOBSITE? YES NO
 NATURE OF WORK IN DETAIL: Wood staircase replacement

All work to match existing per Des. Rev.

D.B.A. APTS. VALUATION \$5000~~00~~(±)

FLOOD STATUS cont y S.C.A.T.

JOB DESCR. BLDG SHEL APT TI() REM() SW FIRE ADD OTH

INSP. DISCIPLINES BLDG MECH PLUMB ELEC SITE FIRE

# OF STORIES	AREA 1ST FL.	TOTAL AREA	USE ZONE	OCCUP. GROUP	CONST. TYPE	FIRE SPRINK.	FED CODE	VIO. FILE
			<u>RN</u>	<u>R1</u>	<u>V-N</u>	<u>No</u>	<u>04</u>	<u>OK</u>
<u>(B)</u>	<u>(L)</u>	<u>P</u>	<u>M</u>	<u>E</u>	<u>F</u>	<u>S</u>	<u>(D)</u>	<u>R</u>
<u>J. TANG J. TANG</u>							<u>10BN</u>	
COMMENTS: <u>(3) (3)</u>							<u>(B2)</u>	

Planning Division COMMERCIAL PRELIMINARY Information Request

BUILDING CHECK ONE:

- Over the counter review and issue permit _____
- Will be taken in and reviewed for site conditions _____
- Will be taken in but not reviewed for site conditions _____
- Information only, pre-submittal information _____

Customer Name: _____ Phone Number: _____

Project address: 2114 16th St

APN: 009-0152-012 Current site use: _____

INITIAL

Need to verify NO Proposed Site use: _____

Describe what is being requested: APPROVAL & COMMENTS

Replace exit stairs

RECEIVED

JUL 25 1997

Building Inspection Division

Requested by: RR Date: 6-25-97

Zone R-1B Overlay / SPD / PUD / R-review _____

- Planning staff Review required _____
- Planning Hearing required _____
- Design Review required _____
- No Planning Issues _____
- Counter ok review by site cond. _____

Prior Applications on site P# _____ Z# _____

DR# _____ PB# _____ IR# _____

Comments: Replace stairs same as existing. DR OK.

Planning review by: R. Soyars Date: 6-25-97

- MUST BE REVIEWED BY PLANNING
- | | | |
|-----------------|----------------------|---------------|
| Care Facilities | Anything Residential | Restaurants |
| Churches | Day care | Sidewalk Cafe |
| Drive-through | Lot Line adjustments | |
| Medical Offices | Bars | |

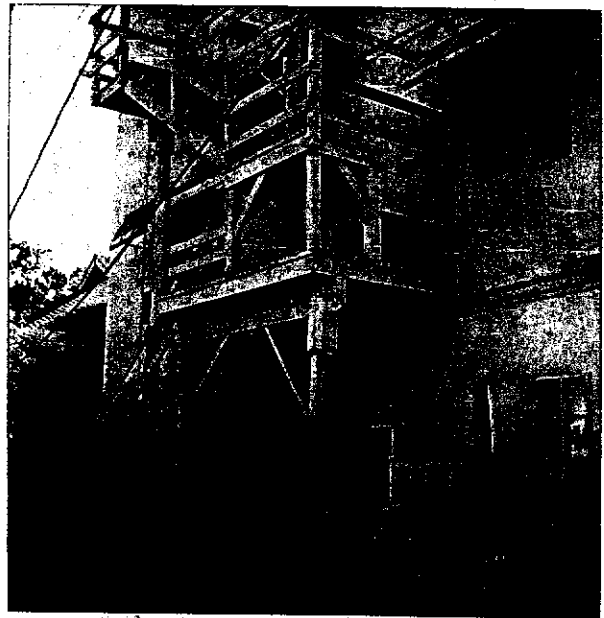
Security Cams
CELLULAR COMMUNICATION FACILITIES

2114 16th St.

RECEIVED

0125 1997

Building Inspection Division



SYNOPSIS OF PROCEEDINGS

SACRAMENTO CONSTRUCTION CODES ADVISORY AND APPEALS

BOARD

FEBRUARY 17, 1998

Members Present: Abrahams, Brown, Conover, Cox, Kwan, Menard, Tinseth
Members Absent: Herrera, Nguyen
Staff Present: Boehm, Brown, Dumford, Lau, McAleer

- I. ROLL CALL
- II. THE BOARD APPROVED THE SYNOPSIS' OF THE OCTOBER 21, 1997, AND NOVEMBER 18, 1997 MEETINGS.
- III. BRAD BOEHM INTRODUCED THE NEW BOARD MEMBER, GEORGE TINSETH
- IV. THE BOARD NOMINATED AND ELECTED PAUL MENARD AS CCAAB CHAIRPERSON FOR 1998.
- V. ACTION OF THE BOARD

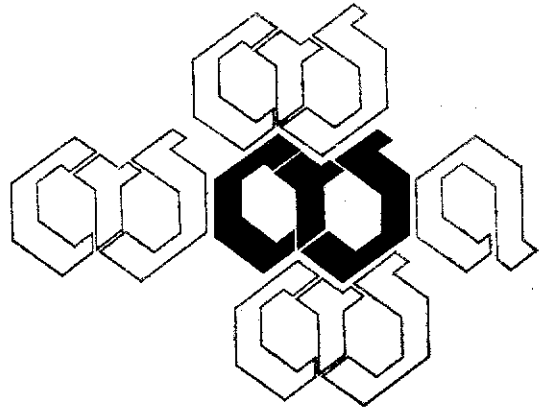
1. **Staff member Gerry Lau, Senior Engineer, presented Building Code Interpretations relating to fire, life-safety issues for tenant improvements. Members approved the interpretations with minor modifications.**
2. **Ed A. Ayala, Contractor - Appeal of the Decision of the Building Official for property located at 2114 16th Street (Building Permit No. 97-10217)**

The Board determined that the stairs must comply with current City Building Codes and the conditions A and B, except for Board approved minor variances described in items C and D.

- A. **Applicant shall retain the services of a registered civil or structural engineer to perform a structural assessment of the stair, subject to staff approval.**
- B. **Applicant will provide vehicular protection for the vertical support columns. The method of protection is subject to staff approval.**
- C. **The Board will approve for this building only, located at 2114 16th Street) stair risers which exceed 7 inches, but not more than, 7-1/2 inches.**
- D. **The Board will approve for this building only, located at 2114 16th Street) an exterior stair width of 31 inches minimum.**

April 9, 1998

Mr. Ed Ayala
Ayala Design Build
1545 36th St.
Sacramento, CA 95816



Subject: **2114 16th Street Stairway Evaluation**
CYS Job # 98041

Dear Ed,

The subject exterior stairway has been evaluated for vertical and lateral loads in areas deemed critical for support and transfer of load. The following is a list of items that were evaluated and the results of the evaluation (see attached calculations):

- The cantilevered joists to ledger connection at the upper landing was evaluated for the case of dead + live loading on the stair and cantilevered portion of the joists. The hold down capacity of the joist connection to the wall was determined to be adequate for the applied loads.
- The 4x6 post from ground to underside of upper landing was evaluated for axial loading. The column was determined to be adequate for the maximum applied axial load.
- The connection of the stair stringer ledger from the lower landing to the ground level was evaluated. The allowable value of the existing nailing is uncertain so additional anchorage of the stringer to the wall was prescribed (see below for details). All remaining ledgers were determined to be adequate to resist vertical and lateral loads.
- Due to the lack of weight of the structure, wind pressures governed the lateral loading. It was determined that the lateral loads are transferred from the upper landing to the lower landing through the stair stringers. Once into the lower landing, all shears will be transferred into the wall ledgers and stair stringers leading to the ground. Additional anchorage and bracing was prescribed at the lower landing and at the post to beam connections to prevent rotation and horizontal deflection.
- It was noted that bollards are needed to protect the staircase from being struck by automobiles and refuse trucks.

COLE/YEE/SCHUBERT & ASSOCIATES Structural Engineers, Inc.

2500 Venture Oaks Way, Suite 300 • Sacramento, California 95833-3287 • 916-920-2020 Fax 920-1556

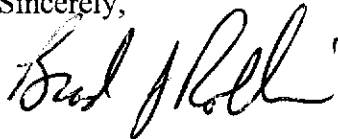
- The new footings were evaluated for maximum applied loading and were found to be adequate using the code minimum allowable soil pressures.
- At the post to beam connection at the lower landing level, a bolt in the post cap connection was located too close to the end of the beam. This bolt was relocated to provide adequate end distance.
- Connections from stair stringers to upper and lower landings were evaluated and determined to be adequate for transfer of loads induced by wind pressure and vertical loads.

We have prescribed the contractor to make the following additions to the exterior stair for improved performance under lateral, vertical and impact loads (see the attached details for work completed):

- 2x6 knee braces added to lower landing at post to beam connection to provide resistance to any joint movement at top of 4x post. Also, move the bolt at the post cap connection 2" minimum toward the interior of beam from the current location (see detail B/-).
- Provide two(2) Simpson LTT20B tension ties at the underside of the lower landing to prevent any rotation of the landing diaphragm during lateral loading and to prevent any bending force application to the 4x post(see detail D/-).
- Install ½" diameter lag screws through stair stringer into wall from lower landing level to ground level for increased withdrawal and shear capacity(see detail E/-).
- Install 6" diameter bollards on alley side of stair posts to prevent automobiles and refuse trucks from striking or damaging posts(see detail A/-). 5" diameter bollards may be used at other locations.

If there are any further questions or any additional information is needed, please do not hesitate to call me.

Sincerely,



Brad J. Rollins, S.E.
Vice President
H:\98041\stair.doc



PROJECT: 16th St. Stairway Evaluation

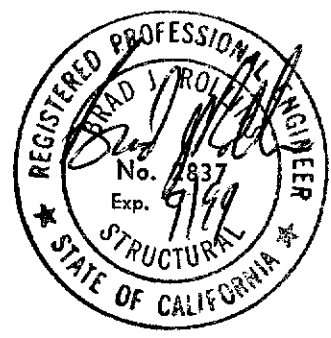
LOCATION: 2114 16th SACRAMENTO, CA

CLIENT: RON AND GILLIAN CHAO

CYS PROJECT MANAGER: BRAD ROLLINS

CYS PROJECT ENGINEER: CHAD GUPTIL

CYS JOB NO.: 98041



**VOLUME 1
 STRUCTURAL CALCULATION INDEX**

Description	Page Number	
	From	To
Structural Design Criteria	1	2
Vertical Design	V1	V4
Foundation Design	FD1	FD1
Lateral Design	L 1	L3

STRUCTURAL MATERIALS (CONT'D)

WOOD

a. Sawn Lumber: UBC Standard 23-1, Standard Grading Rules WWPA, Douglas Fir

Size Classification	Grade	Fb	Ft	Fv	Fcp	Fc	E x 10 ⁶
2" to 4" thick x 2" and wider	No. 1 & Better	1150	775	95	625	1500	1.8
	No. 1	1000	675	95	625	1450	1.7
	No. 2	875	575	95	625	1300	1.6
	Stud	675	450	95	625	825	1.4
Beams & Stringers	No. 1	1350	675	85	625	925	1.6
Posts & Timbers	No. 1	1200	825	85	625	1000	1.6

Beams & Stringers: Any piece of rectangular cross-section with a nominal thickness of 5" or more and width more than 2" greater than thickness.

Posts & Timbers: Any piece of square cross-section 5"x5" and larger with the nominal width not more than 2" greater than thickness.

b. Sill Plates: AWPB
Pressure Treated Douglas Fir No. 1

c. Structural Glued-Laminated Timber: AITC 117 & AITC 119

Grade	Fbt	Fbc	Ft	Fv	Fcp	Fc	E x 10 ⁶
24F-V4	2400	1200	1150	165	650	1650	1.8
24F-V8	2400	2400	1100	165	650	1650	1.8

VERTICAL LOAD ANALYSIS

• CHECK UPLIFT @ UPPER LANDING CONNECTION TO WALL.

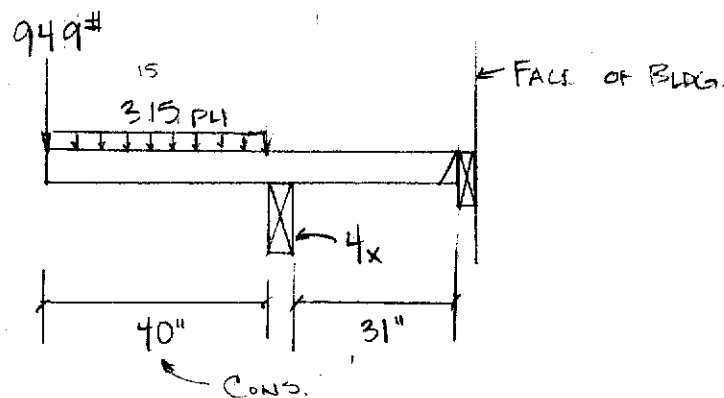
EXT. STAIR LL = 100 psf

STAIR DL = 5 psf

$$W = \frac{36''}{12} (105 \text{ psf}) = 315 \text{ PLF}$$

$$\text{STAIR STRINGER LOAD } P_{uc} \\ = 7' \left(\frac{31''}{12} \right) (105) / 2 = 949 \#$$

$$\text{UPLIFT @ FACE OF BLDG} \\ U = \left[949 + 315 \left(\frac{41.75}{12} \right) \left(\frac{20.88}{12} \right) \right] / 31 / 12'' \\ = 1106 \# \text{ UPLIFT}$$



EXISTING HANGERS AND CLIPS TO RESIST UPLIFT: 3- A35
1- LUS26

A35 G.F. 450#/ANGLE @ F1 LOADING (1.00 DURATION)
3(450) = 1350#

LUS26 G.F. 930/1.33 = 699#

TOTAL UPLIFT CAPACITY OF (E) ANCHORS: 1350# + 699# = 2049#

$$\text{F.S. } \frac{2049}{1106} = 1.85 \checkmark$$

UPLIFT CAPACITY OF LEDGER TO WALL.
CHECK 2- 1/2" ϕ L.S. w/ 1/2" SIDE MEMBER, 3X MAIN.

Per 1991 NDS

$$Z_L = 380 \# \times 3 = 1140 \# > 1106 \#$$

(E) ANCHORS O.K. FOR
UPLIFT w/o NAILING
INCLUDED.

VERTICAL ANALYSIS (CONT.)

- CHECK COLUMN CAPACITY @ UNDERSIDE OF UPPER LANDING

LOAD FROM LANDING:

$$\frac{3/12(105)6' + 40(8')(105\text{psf})}{2}$$

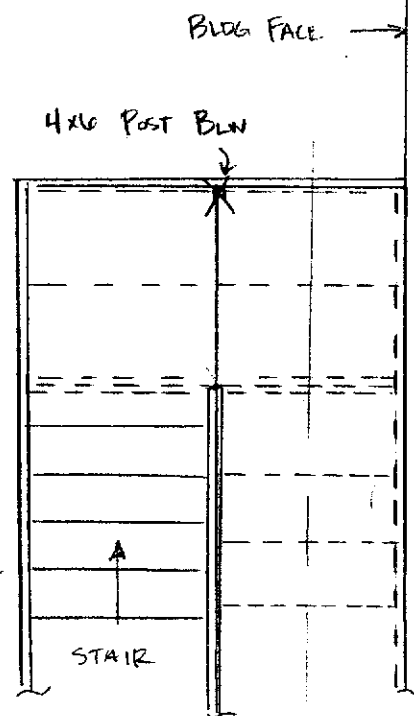
$$= 3613\#$$

CHECK 4x6 COLUMN.

$$K = 1.0$$

$$\frac{KL}{r} = \frac{(1.0)(12' \times 12)}{\sqrt{\frac{19.65}{19.25}}}$$

$$= 142.5$$



$$F'_c = F_c^* \left[\frac{1 + F_{ce}/F_c^*}{2c} - \sqrt{\left(\frac{1 + F_{ce}/F_c^*}{2c} \right)^2 - \frac{F_{ce}/F_c^*}{c}} \right]$$

$$c = .8$$

$$F_c^* = 1300(1.00)(1.10) = 1430 \text{ psi}$$

$$F_{ce} = K_{ce} E / (l_e/d)^2 \quad K_{ce} = .3$$

$$E = 1.6 E_0$$

$$l_e = K_e L = (1.0)(12)(12) = 144$$

$$F_{ce} = .3(1.6 E_0) / (144/3.5)^2 = 283 \text{ psi}$$

$$F_{ce}/F_c^* = \frac{283}{1430} = .197$$

$$F'_c = 1430 \left[\frac{1 + .197}{.8 \times 2} - \sqrt{\left(\frac{1 + .197}{1.6} \right)^2 - \frac{.197}{.8}} \right]$$

$$= 268 \text{ psi}$$

$$P_{all} = 268 \text{ psi} (19.25) = 5172\# > 3613\#$$

Job 16" ST. STAIR

Job No.

COLE, YEE, SCHUBERT & ASSOCIATES
STRUCTURAL ENGINEERS, INC.
2500 VENTURE OAKS WAY, SUITE 300
SACRAMENTO, CALIFORNIA 95833-3287
916/920-2020 FAX 916/920-1556

Client CHAO

98041

Designed by CAG Date 4/1/98 Page 13 of

VERTICAL ANALYSIS (CONT)

· CHECK LEDGER CONNECTION @ LOWER STAIR STRINGER

$$W_{LEDGER} = 105 \text{ psf} \left(\frac{31" / 12}{2} \right) = 1310 \text{ PLF}$$

(E) NAILING IS APPROX 16d @ 8" o.c.

PER 1991 NDS, 16d G.F. 141# / NAIL @ 1.0 DURATION / SINGLE SHEAR
NOT CERTAIN OF SIZE ↗ 40# WITHDRAWAL

$$141 (12/8) = 211 \text{ PLF O.K.}$$

→ ADVISE TO INSTALL 1/2" ϕ L.S. @ 24" o.c. MAX INTO STUD.

VERTICAL ANALYSIS (CONT.)

CHECK LEDGER CONNECTION @ LOWER LANDING

$$T.A. \text{ TO SINGLE BOLT} = \frac{63 \frac{1}{2}}{2} \times 2 = 5.25 \text{ ft}^2$$

$$LL + DL = 100 \text{ psf} + 5 \text{ psf} = 105 \text{ psf.}$$

↑
PER UBC

$$\text{APPLIED SHEAR} = 5.25 (105) = 552 \# + 949 \frac{1}{4} (\frac{1}{3}) = 631 \#$$

ALLOWABLE BOLT SHEAR FOR $\frac{3}{8}$ " ϕ LAG SCREW INTO 3X SIDE.

$$Z_{\perp m} = 630 \#$$

$$Z_{L_s} = 730 \#$$

$$2\text{-16d NAILS G.F. } 2 \times 141 \# = 282 \#$$

→ 1.00 LOAD DURATION USED.

TOTAL ALLOWABLE SHEAR FROM BOLTS AND NAILS.
 $630 + 282 = 912 \# > 631 \# \checkmark$

$$F.S. = \frac{912 \#}{631 \#} = 1.45$$

Job 16 TH ST. STAIR	Job No.	COLE, YEE, SCHUBERT & ASSOCIATES STRUCTURAL ENGINEERS, INC. 2500 VENTURE OAKS WAY, SUITE 300 SACRAMENTO, CALIFORNIA 95833-3287 916/920-2020 FAX 916/920-1556
Client CHAO	98041	
Designed by CAG Date 4/1/98 Page FDI of		

FOUNDATION ANALYSIS

3 NEW FOUNDATIONS - 18-24" ϕ FTGS.

ASSUME 1000 psf (CODE MINIMUM) BEARING PRESSURE.

$$\text{AREA} \cdot q_u = P_{\text{ALL}}$$

$$3 \left(\frac{\pi (20/12)^2}{4} \right) (1000) = 6541 > \text{APPLIED, FULLY LOADED STAIR}$$

LATERAL ANALYSIS

- SEISMIC NEGLIGIBLE DUE TO MINIMAL WEIGHT W/O LL
- ASSUME WIND TO ACT ON $\frac{1}{2}$ SOLID VERT. PROJECTED AREA

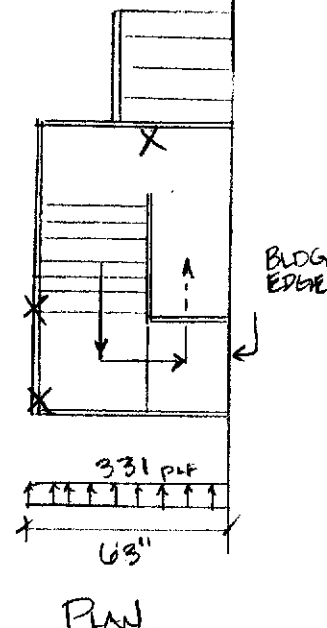
$$P = C_e C_q q_s I$$

$$= (1.19)(1.6)(145)(1.0) = 276 \text{ psf}$$

$$\frac{1}{2} \text{ OF PROJECTED VERTICAL AREA} = \frac{20'}{2} = 10'$$

$$(10.0') \times (6') \times (27.6 \text{ psf}) = 1656 \#$$

- LOWER STAIR STRINGER TO PROVIDE SHEAR RESISTANCE
- LANDING 2x DIAPHRAGM ACTION TO TRANSFER SHEAR TO WALL LEDGER
- KNEE BRACES FROM MIDDLE LANDING TO LOWER LANDING TRANSFER SHEAR FROM ABOVE TO COLUMNS AND DIAPHRAGM @ LOWER LANDING
- PROVIDE ROTATION RESISTANCE @ LOWER LANDING
- PROVIDE KNEE BRACES @ LOWER COLUMNS

CHECK T-C COUPLE @ LOWER LANDING

$$\text{LOWER LANDING LENGTH} = 7'$$

$$T-C = 1435 \# \left(\frac{6'}{2} \right) / 6.75 = 637 \#$$

PROVIDE HOLDOWN FOR 637#

USE LTT20B G.F. 1750# (FOR A.B. INTO CONCRETE)

$\frac{1}{2}$ " ϕ L.S. G.F. 502# WITHDRAWAL: $502 \times 1.33 = 668$

(E) A35 ANGLE w/ 8d IN WITHDRAWAL G.F. $(4 \times 32 \times 1.33) = 170 \#$

TOTAL WITHDRAWAL @ WORST CASE END = $668 + 170 = 838 > 637 \#$

Job 16th ST. STAIR

Job No.

COLE, YEE, SCHUBERT & ASSOCIATES

Client CHAO

98041

STRUCTURAL ENGINEERS, INC.
2500 VENTURE OAKS WAY, SUITE 300
SACRAMENTO, CALIFORNIA 95833-3287

Designed by CAG Date 4/1/98 Page L2 of

916/920-2020 FAX 916/920-1556

LATERAL ANALYSIS

100 psf LL NOT INCLUDED IN LATERAL ANALYSIS.
DL = 3 psf, NEGLIGIBLE FOR SEISMIC.

WIND FORCES BECOME NEGLIGIBLE DUE TO OPEN NATURE OF STRUCTURE.

- DIAPHRAM ACTION @ LOWER STAIR STRINGER WILL TRANSFER SHEARS TO GROUND @ LEDGER.

ADVISED TO ADD THE FOLLOWING COMPONENTS FOR LATERAL STABILITY.

1. SIMPSON PA STRAPS @ LOWER LANDING TO CONTROL ROTATION OF LOWER LANDING
2. KNEE BRACES @ LOWER COLUMN, 2x6 TO BOTH SIDES OF BEAM/COLUMN.

LATERAL ANALYSIS (CONT.)

CHECK LEDGER CONNECTION OF UPPER/LOWER LANDINGS TO BLDG.

APPLY FULL LATERAL LOAD @ UPPER AND LOWER LANDINGS.

$$F_{max} = 1056\# \text{ (HORIZONTAL)}$$

$$\text{FOR } 5/8" \phi \text{ LAG. SCREW, } Z_{11} = 1120\# (1.33) = 1490\#/\text{BOLT.}$$

$\therefore V_R > V_A$ @ UPPER AND LOWER LANDINGS.

COMBINED VERTICAL + LATERAL

$$V_A = 52.63\# \text{ UPLIFT W/ 5 psf DL @ UPPER LANDING.}$$

$$CSI_{UPPER} = \frac{53}{630(1.33)} + \frac{1056/4}{1490} \cdot .341 \checkmark \text{ @ UPPER LANDING.}$$

4 BOLTS USED

$$V_A = 5.25(5) + 45/4 \times (1/3) = 30\#$$

$$CSI_{LOWER} = \frac{30}{630 \times 1.33} + \frac{1056/4}{1490} = .313 \checkmark \text{ @ LOWER LANDING.}$$

LEDGER CONN. O.K.

Job 2114 16TH ST. STAIR

Job No.

Client CHAO

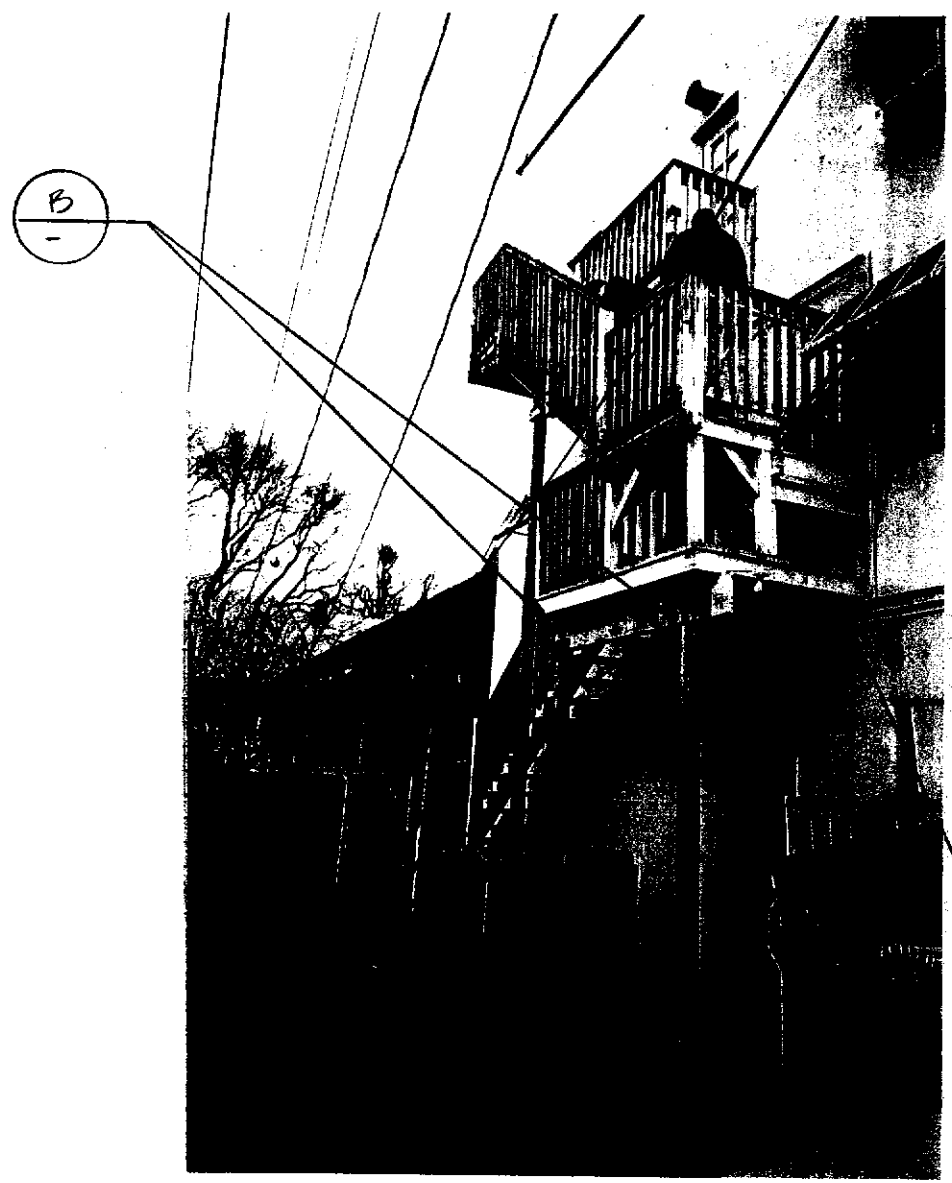
98041

Designed by CAG

Date 4/1/99

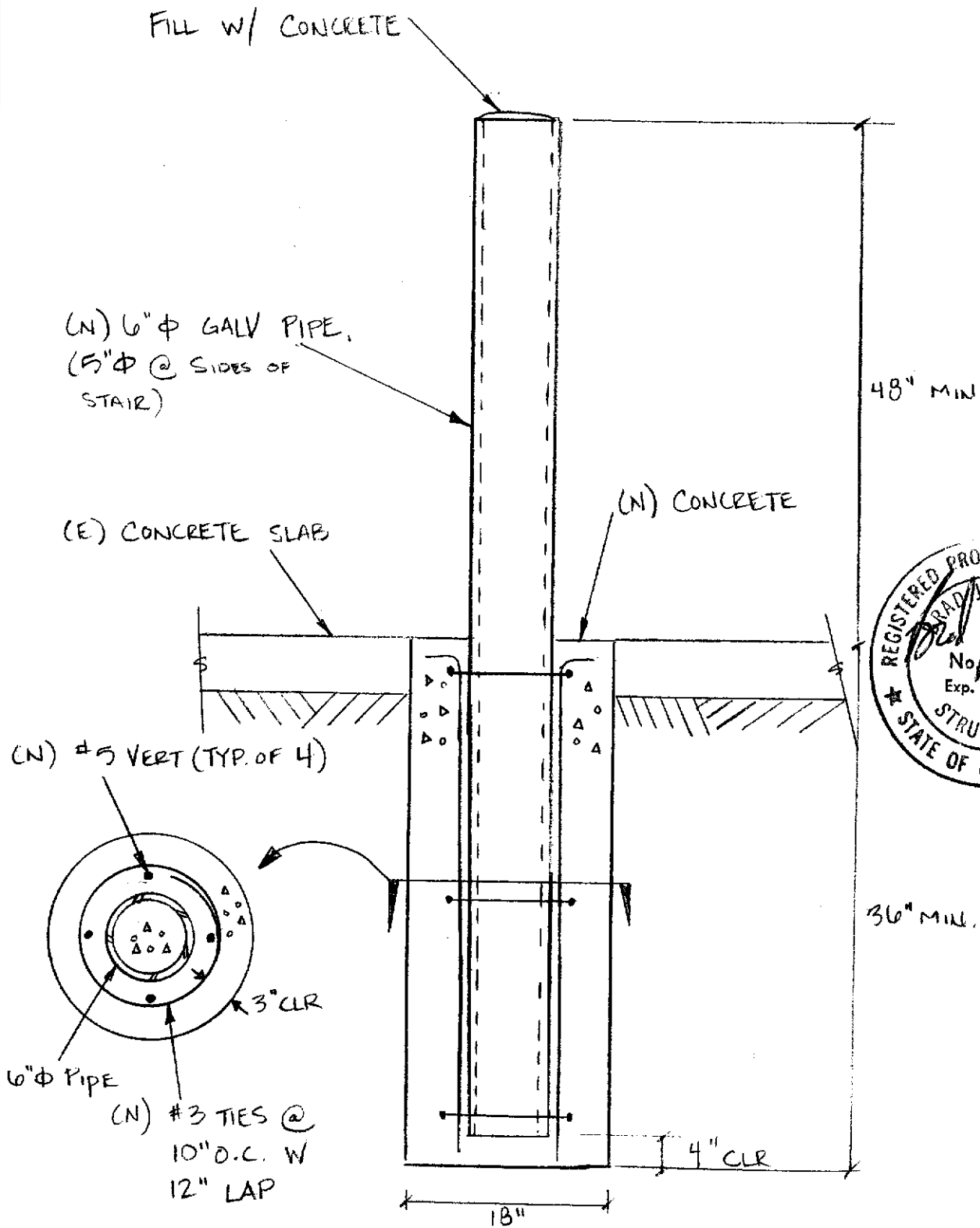
Page of

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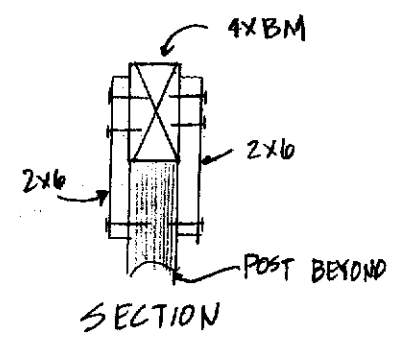
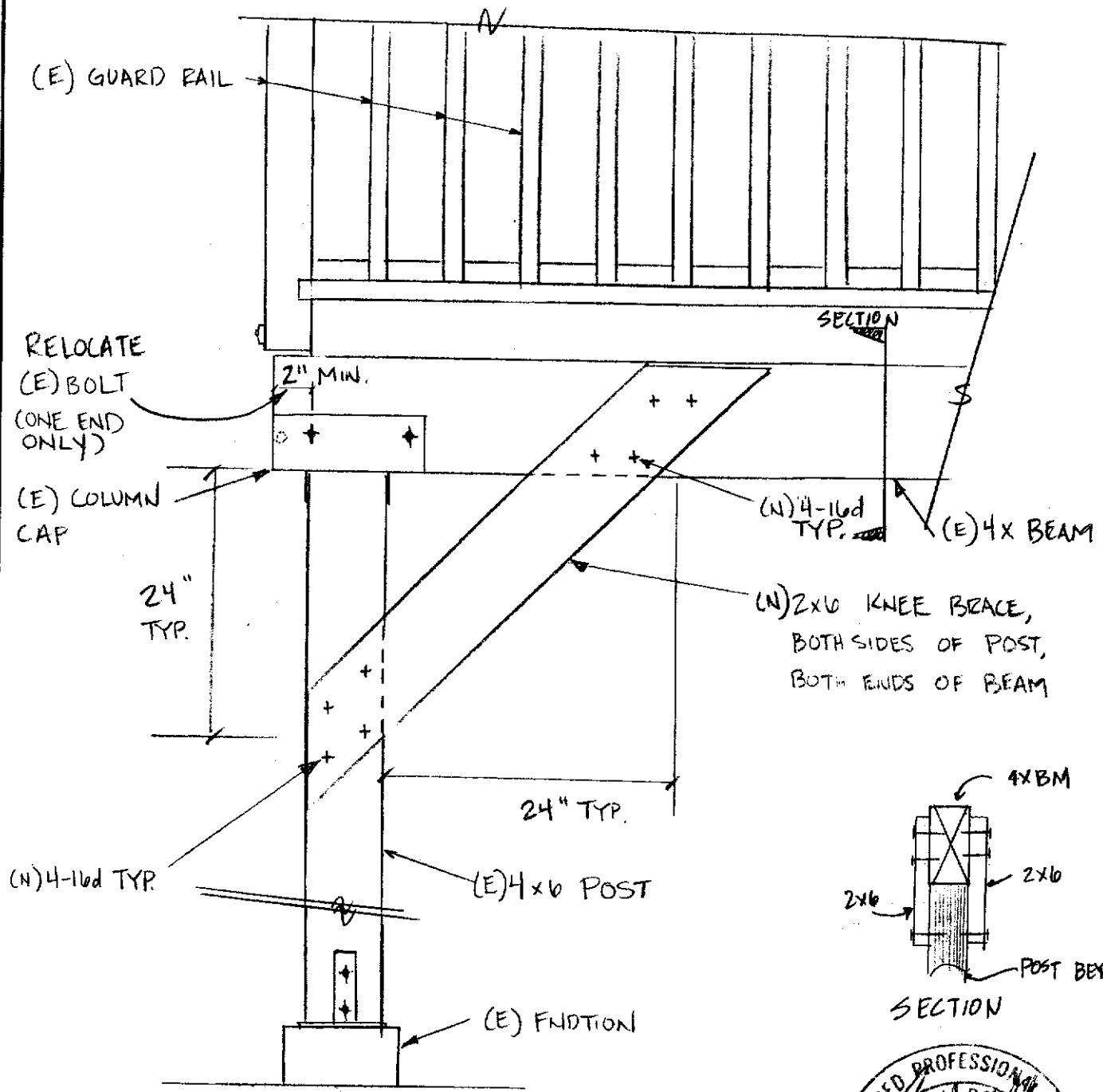
* SEE (A) FOR TYPICAL BOLLARD DETAIL

(B) EXTERIOR STAIR
NTS

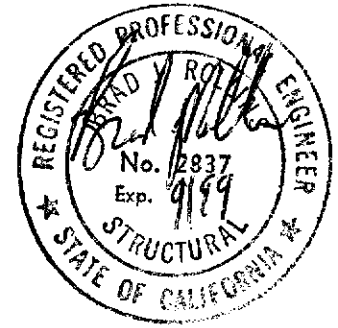


(A) BOLLARD DETAIL (TYP. OF 7)

NTS



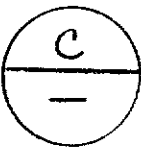
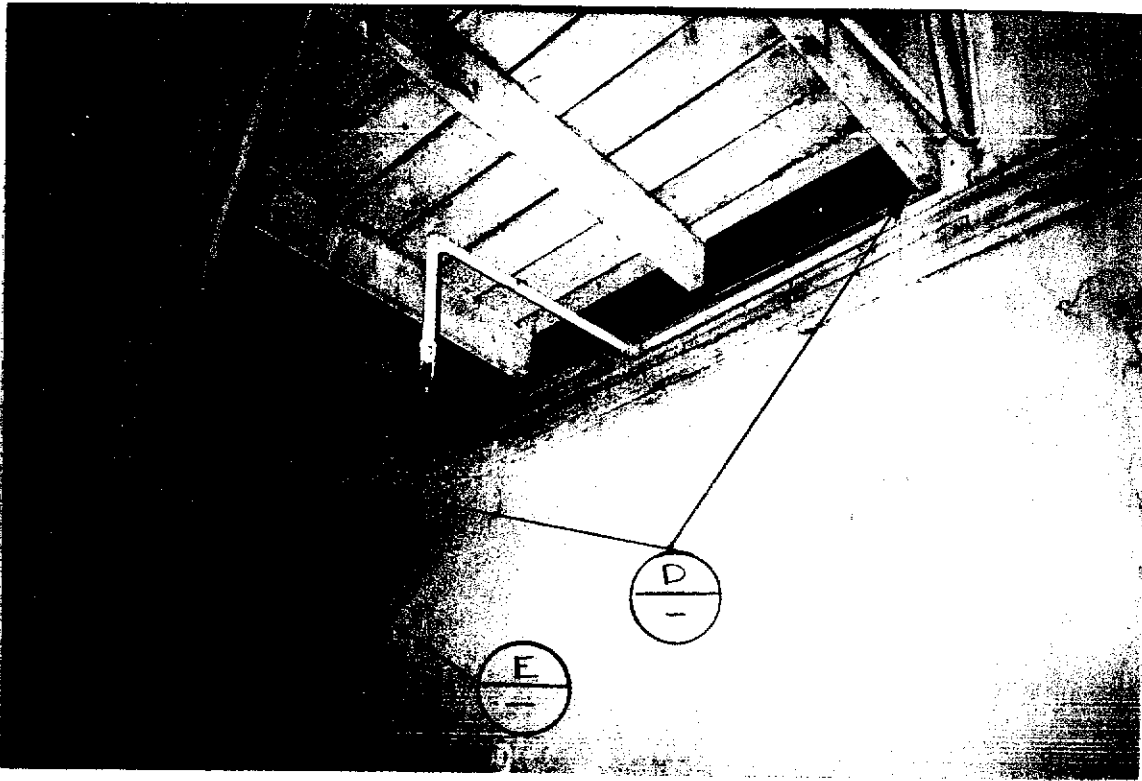
(B) KNEE BRACE DETAIL
NTS



Job 2114 16TH ST. STAIR
Client CHAD
Designed by CAG Date 4/11/98 Page of

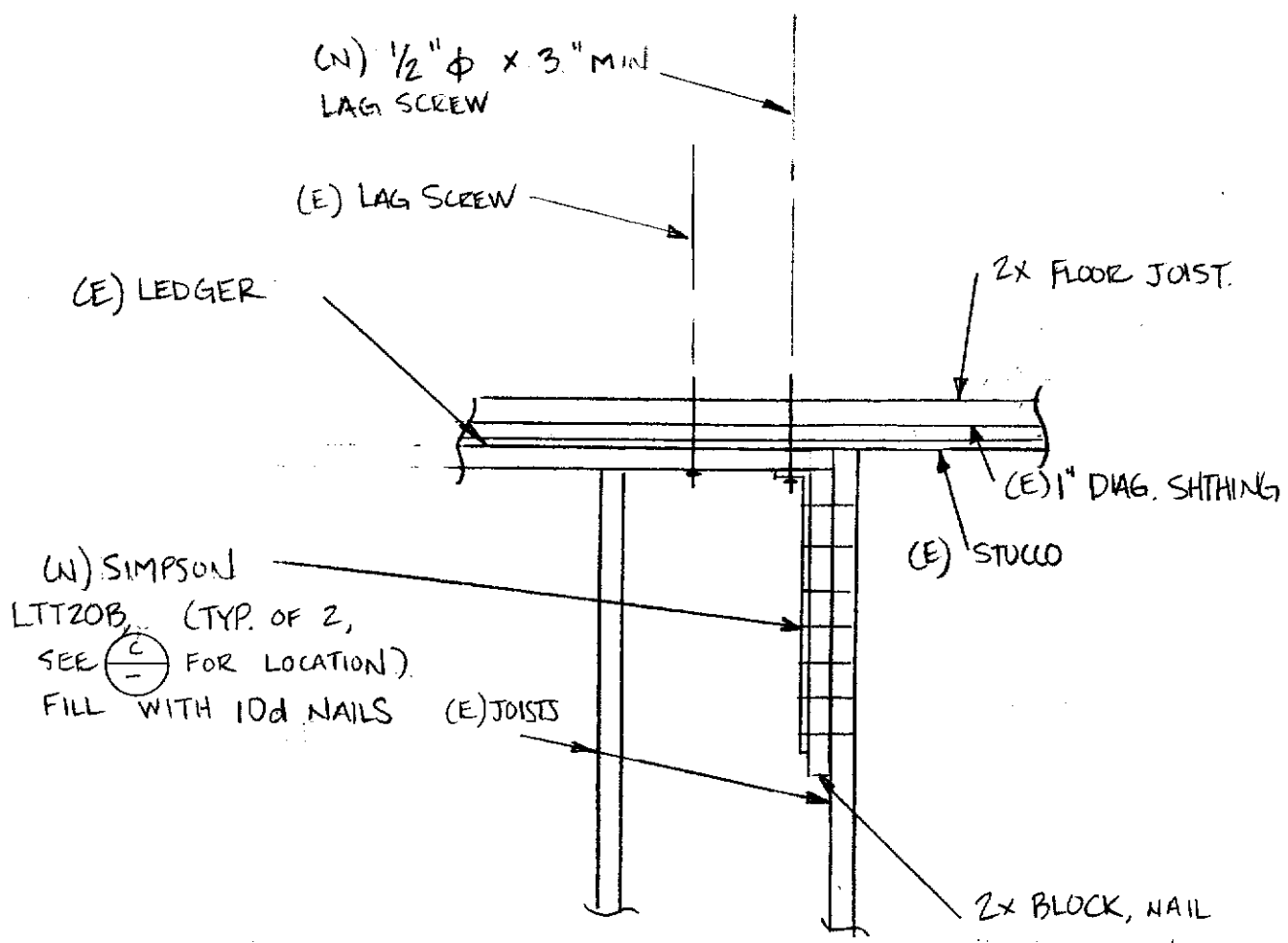
Job No. 98041

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UNDER LOWER LANDING





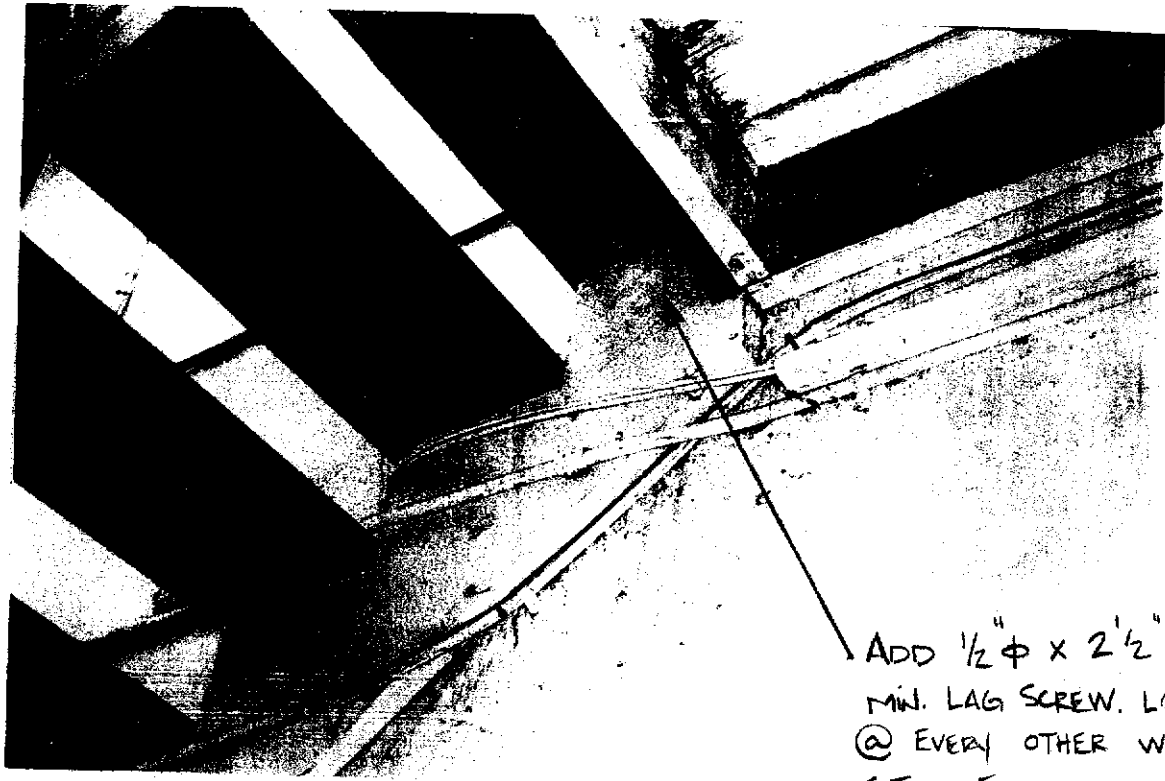
$\text{\textcircled{D}}$ PLAN
DETAIL (TYP. OF 2)

NTS



Job 2114 10" ST. STAIR Job No. 98041
Client CHAO
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ADD 1/2" ϕ X 2 1/2"
MIN. LAG SCREW. LOCATE
@ EVERY OTHER WALL
STUD, FROM TOP OF
STRINGER TO GROUND.

E
—

STAIR LEDGER DETAIL

NTS

