CITY OF OAKLAND
AGENDA REPORT

TO: Finance and Management and Community & Economic Development Committees
FROM: Council Member Jean Quan and Council Member Jane Brunner
DATE: June 12, 2007

RE: An Ordinance Adopting Oakland Municipal Code Chapter 15.30 to Establish a Voluntary Seismic Strengthening Reimbursement Incentive Program for Residential Buildings and Amending the Master Fee Schedule to Establish a Voluntary Seismic Strengthening Permit Fee; and a Resolution Authorizing Creation of a Reserved Account in the General Fund to Provide Funding for the Voluntary Seismic Strengthening Reimbursement Incentive Program with a Portion of the Annual Receipts from the Real Property Transfer Tax (Oakland Municipal Code Title 4, Chapter 4.20) in an Amount Not to Exceed $500,000 for the 2007-2008 Fiscal Year and $1,000,000 for Each Fiscal Year Thereafter.

SUMMARY

The Association of Bay Area Governments (ABAG) predicts that a future 6.9 earthquake on the Hayward Fault would result in 36,500 uninhabitable housing units in the city of Oakland alone—about one-third of our housing stock.. Experts estimate that only 20% of Oakland's residential housing has been retrofitted to date. Taking steps to encourage home owners to retrofit their buildings according to the most recent seismic retrofitting standards will significantly improve Oakland's ability to survive a future seismic disaster.

This report describes a Voluntary Seismic Strengthening Incentive Program for the City of Oakland that has three elements:

1. A seismic strengthening standard for wood-framed, one-and two-story, one- and two-family residential buildings (Group R, Division3 occupancy).

2. A flat **$250 Retrofit Permit Fee** for seismic strengthening of R-3 occupancies based on an engineer-prepared (non-prescriptive) design or a prescriptive seismic strengthening plan as described in the attached ordinance.; and

3. A **New Homeowner Voluntary Seismic Strengthening Reimbursement Incentive Program** that would reimburse

homeowners the lesser of: .5% of the purchase price of their home **or** $5,000 provided they retrofit their homes within one year of purchase, using an engineer-prepared design or a prescriptive seismic strengthening plan set as described in the attached ordinance.

We intend to return to City Council in the fall with a resolution that incorporates new State Building Codes for seismic strengthening, along with additional prescriptive standards for seismic strengthening of residential housing and requirements for installing automatic gas shut off valves or gas flow interrupt valves for new construction and remodeled buildings. However, because of the cost implications of the proposed New Homeowner Seismic Strengthening Reimbursement Incentive Program and the immediate benefits of a flat permit fee for remodeled houses undergoing retrofitting, we are presenting this segment now so that it can be incorporated in the budget, should it be approved.

FISCAL IMPACT

More than 85% of the City of Berkeley's houses have been retrofitted, due in part to a 10-year rebate program using a real estate transfer tax seismic reduction program (Berkeley Municipal Code (BMC) Section 7.52.060.K.W). Using the Berkeley experience as a model, Oakland could expect 8% of houses sold each year to actually be retrofitted within one year of the sale of the house. The average cost of retrofitting a house in Oakland using a custom engineered (non-prescriptive) design in existing residential buildings that braces cripple walls and fastens sill plates to the foundation runs between $7000 and $30,000. Combining the reimbursement program with the option of using prescriptive designs, as described in the ordinance, will greatly reduce the cost of installation and encourage more homeowners to take steps to seismically strengthen their older homes.

While there are currently no estimates reflecting how many homeowners will actually take advantage of this, we can assume that at least 100 new homeowners will complete the incentive process within a year of purchasing their home (just below 8%). This would result in a program cost of at least $500,000 a year. We propose setting aside $500,000 from the Real Estate Transfer Tax during the first year and $1 million in future fiscal years with the ability to make adjustments in future years.

Recognizing that a major earthquake on the Hayward Fault will cost the City thousands of lives and millions of dollars in terms of lost housing and tax base, the benefits of retrofitting far outweigh the potential cost of $1 million a year. The cost of a flat permit fee is neutral.

BACKGROUND

Recent disasters—most notably Hurricane Katrina—demonstrate that the loss and devastation to human life and a community's sustainability can be catastrophic. Low income families and neighborhoods will be particularly hard hit. While Oakland is not subject to hurricanes, it is highly susceptible to the hazards of earthquakes.

Based on research conducted since the 1989 Loma Prieta Earthquake, the U.S. Geological Survey (USGS) predicted as recently as 2003 a 62% probability of at least one magnitude 6.7 or larger earthquake capable of causing widespread damage in the San Francisco Bay area before 2032. Such an event would cause social and economic disruption equal to or greater than the 1989 magnitude 6.9 Loma Prieta earthquake. Furthermore, the ABAG predicts that a future 6.9 earthquake on the Hayward Fault would result in up to 5,000 or more fatalities and 36,500 uninhabitable housing units in the city of Oakland alone—about one-third of our housing stock.

Making Oakland's houses more seismically secure through retrofitting could provide residents the extra margin of safety during and following a major disaster—giving them enough time to survive a major earthquake. A 1999 ABAG report noted that only 15% of Oakland homeowners have only done a minimally adequate job of seismically strengthening their residences.

There is sufficient research to demonstrate that efforts to improve seismic safety prior to a major earthquake can save lives, safeguard structures and help sustain a community's economic viability. However, few Oakland homeowners have made these improvements, which are relatively easy. It is as simple as anchoring the home to the foundation with bolts; bracing the cripple wall (the area between the foundation and the first floor) with plywood and nails and then connecting the floor to the braced cripple wall with brackets, so the house then moves as one piece. A low cost prescriptive design for minimally strengthening unbraced cripple walls and unfastened sill plates has been developed by a committee representing the East Bay, Peninsula, and Monterey Bay Chapters of the International Code Council (ICC) with additional committee representation by other governmental organizations. This design, known as Plan Set A, has been approved by the three chapters of the ICC, the Association of Bay Area Governments (ABAG), the California Building Officials (CALBO) the Structural Engineers Association of Northern California, and the Earthquake Engineering Research Institute of Northern California. (Attachment A.)

KEY ISSUES AND IMPACTS

The Incentive Program conceptually has three elements:

1. **Establishing seismic strengthening standards for wood–framed, one- and two-story, one- and two-family residential buildings (Group R, Division 3 occupancy) to strengthen the structural resistance to seismically induced lateral loads through a minimal level of strengthening.** These standards may be met by the homeowner through a non-prescriptive (engineered) design or a prescriptive retrofit design. Plan Set A, as developed by the East Bay, Peninsula and Monterey Bay Chapters of the International Code Council (ICC) and approved by the three chapters of ICC, the Association of Bay Area Governments (BAG), the California Building Officials (CALBO), the Structural Engineers Association of Northern California, and the Earthquake Engineering Research Institute of Northern California would be acceptable as an alternative prescriptive design for voluntary seismic retrofitting. The standards will be included as part of the addition of a new chapter (15.30) to the Oakland Municipal Code

2. **Adopting Oakland Municipal Code Chapter 15.30 to establish a Voluntary Seismic Strengthening Incentive Program that addresses the Voluntary Seismic Strengthening *Reimbursement* Incentive Program.** This reimbursement program would encourage new homeowners of residences requiring cripple wall enhancements and floor tie downs that have not been seismically upgraded to receive a refund of retrofit expenses based on the lesser of .5% of the purchase price of the house or $5,000. In order to qualify for this program, the new homeowner will need to submit to the Oakland Building Official the following items within 60 calendar days following recording of a transfer of ownership of the real property by the Alameda County Clerk-Recorder:

   a. A certified copy of the recorded instrument of ownership transfer, and

   b. Approved instrument establishing the purchase price of the residential building.

   c. A statement of intent to retrofit the residence

   Within one year following approval of the permit application for issuance, the new homeowner will need to receive a Certificate of Completion of the work from the Oakland Building Official;

   Within 30-calendar days following the issuance of the Certificate of Completion, the new homeowner will need to submit an approved instrument to the Building Official establishing continuing ownership of the real property.

3. **Amending the Master Fee Schedule to establish a flat Voluntary Seismic Strengthening Permit Fee of $250.** Currently, a homeowner seeking a permit to retrofit a residential structure is charged a percentage of the cost of construction as the permit fee. Implementation of a custom engineered retrofit design costs between $7,000 and $30,000 for a typical single family home (R-3 occupancy), but can increase if the house is built on a hill or has other unusual features. Using a prescriptive approach can significantly reduce the cost of implementation, where applicable. Depending on the cost of the effort, the fee may become a significant barrier to either seeking a permit or to doing the work. Without a permit, the City cannot assure that the work is up to code and the latest seismic safety standards. Establishing a flat $250 retrofitting permit fee represents the minimum cost of processing the permit, including pre- and post- inspection, and would encourage more homeowners to proceed with retrofitting their homes. It would also promote the use of the plan sets, which provide assurance of a certain standard of quality in retrofitting work.

4. **A *Resolution Authorizing Creation of* a Reserved Account *in the* General Fund to Provide Funding for the Voluntary Seismic Strengthening Reimbursement Incentive Program with a Portion *of the* Annual Receipts from the Real Property Transfer Tax (Oakland Municipal Code Title 4, Chapter 4.20) in an Amount Not to Exceed $500,000 for the 2007-2008 Fiscal Year and $1,000,000 for Each Fiscal Year Thereafter.**

SUSTAINABLE OPPORTUNITIES

Economic: Should a large earthquake hit, and a large number of homes be destroyed, the tax base in the City would be significantly compromised, as in the case of New Orleans post Katrina. Experts estimates that a 6.9 or greater earthquake on the northern portion of the Hayward Fault, running through Oakland, would result more than 155,000 uninhabitable units including 36,500 uninhabitable housing units in the city of Oakland alone, and a $100 billion dollar or higher economic loss to the region, half of which would be loss in damaged housing (based on 1994 dollars).

Environmental: Retrofitting a significant proportion of housing in Oakland would greatly reduce the potential risk to the environment because there would be fewer fallen structures or buildings needing to be demolished.

Social Equity: The proposed reimbursement program will provide incentives to homeowners throughout the City and make retrofitting much more affordable.

DISABILITY AND SENIOR CITIZEN ACCESS
Retrofitting our houses significantly enhances the safety for disabled and senior residents, who may be less able to evacuate their homes quickly.

ACTION REQUESTED OF THE CITY COUNCIL
We request that the City Council approve an ordinance adopting Oakland Municipal Code Chapter 15.30 to establish a Voluntary Seismic Strengthening Reimbursement Incentive Program for Residential Buildings and Amending the Master Fee Schedule to Establish a Voluntary Seismic Strengthening Permit Fee.

We also request that the City Council approve a resolution authorizing creation of a reserved account in the general fund to provide funding for the Voluntary Seismic Strengthening Reimbursement Incentive Program with a portion of the annual receipts from the real property transfer tax (Oakland Municipal Code Title 4, Chapter 4.20) in an amount not to exceed $500,000 for the 2007-2008 fiscal year and $1,000,000 for each fiscal year thereafter.

Respectfully submitted,

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Council Member District 4

Jane Brunner
Council Member District 1

Prepared by
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Policy Analyst, District 4

Item _____
Finance and Community and Economic Development Committees
June 12, 2007

STANDARD PLAN A SCHEDULE

MINIMUM NUMBER OF BOLTS & ANCHORS

-SILL BOLT OR FOUNDATION ANCHOR SPACING AT BRACED PANELS SHALL BE:
- ONE BOLT OR FOUNDATION ANCHOR AT EACH END BAY (MINIMUM).
- *ADDITIONAL BOLTS AT 32" ON CENTER OR LESS.*
- ADDITIONAL FOUNDATION BOLTS OR ANCHORS AS REQUIRED BY THE CHART (ON RIGHT)

-SILL BOLT SPACING OUTSIDE BRACED PANELS SHALL BE:
- 1/2" DIA (MINIMUM) AT 6'-0" ON CENTER OR LESS.
- OTHER ANCHORS EQUIVALENT TO 1/2" DIA. MAY BE USED

BRACING BOLTING & SHEAR TRANSFER REQUIREMENTS FOR **1-STORY** HOUSE
Using 15/32" rated plywood sheathing with 8d @ 4" o.c.

TOTAL FLOOR AREA (SF) (1)	HEAVY OR LIGHT CONSTRUCTION	TOTAL BRACING LENGTH ALONG EACH WALL LINE 8d @ 4" NAILING	MINIMUM SILL ANCHORS ALONG EACH WALL LINE			MINIMUM NO. OF ANGLES (3) (4) ALONG EACH WALL LINE	
			UFP10 (2)	1/2" DIA. BOLT	5/8" DIA. BOLT	NO. OF L70	NO. OF L90
1200	HEAVY	20'	6	9	7	17	13
1200	LIGHT	14'-8"	5	7	5	13	10
1500	HEAVY	22'-8"	7	11	8	19	15
1500	LIGHT	17'-4"	5	8	6	15	11
2000	HEAVY	28'	8	13	9	24	18
2000	LIGHT	21'-4"	6	10	7	18	14

BRACING BOLTING & SHEAR TRANSFER REQUIREMENTS FOR **2-STORY** HOUSE
Using 15/32" rated plywood sheathing with 8d @ 4" o.c.

1800	HEAVY	24'-0"	7	12	8	21	16
1800	LIGHT	18'-8"	6	9	7	16	12
2400	HEAVY	29'-4"	9	14	10	25	19
2400	LIGHT	22'-8"	7	11	8	20	15
3000	HEAVY	N/A		N/A	N/A	N/A	N/A
3000	LIGHT	26'-8"	8	13	9	23	17

PLYWOOD PANEL INSTALLATION REQUIREMENTS

- INSTALL PLYWOOD SHEAR PANELS AT EACH END OF EACH WALL LINE AND SPACE ADDITIONAL PANELS, AS NEEDED, ALONG EACH WALL LINE
- BRACED PANELS CLOSEST TO THE ENDS OF WALL LINES SHALL BE LOCATED AS NEAR TO THE ENDS AS POSSIBLE PANELS MAY BE LOCATED AWAY FROM THE ENDS OF A WALL LINE WHEN EXISTING OBSTRUCTIONS OR LIMITED CLEARANCE NECESSITATES SUCH RELOCATION
- BRACED PANELS SHOULD BE NEARLY EQUAL IN LENGTH AND SHOULD BE NEARLY EQUAL IN SPACING ALONG THE LENGTH OF THE WALL WHERE POSSIBLE.
- THE LENGTH OF EACH INDIVIDUAL PANEL MUST BE TWICE THE HEIGHT OF THE CRIPPLE WALL BEING BRACED, BUT NEVER LESS THAN 48 INCHES.
- NAILS SHALL BE 8d COMMON WITH A MINIMUM SHANK DIAMETER OF .131 INCHES
- PLYWOOD SHEAR PANEL SHALL BE **5-PLY** 15/32" (1/2") CDX (3-PLY 15/32" IS NOT ACCEPTABLE) AND SHALL BE INSTALLED IN ACCORDANCE WITH THE SIZE, SPACING AND *HARDWARE SPECS IN DETAILS.*
- WALL LINE-- SEE SAMPLE PLAN.
- MIN. EDGE DISTANCE OF NAILS IS 3/8"
- **DO NOT OVERDRIVE NAILS.**
- **DO NOT SPACE NAILS CLOSER THAN 3-1/2" IN PLYWOOD.**

DEFINITIONS- LIGHT AND HEAVY CONSTRUCTION

HEAVY CONSTRUCTION IS ANY BUILDING CONSTRUCTED USING ANY OF THE FOLLOWING
- STUCCO EXTERIOR WALL FINISH
- HEAVY ROOFING CONSISTING OF CONCRETE OR CLAY TILES (WEIGHING UP TO 11 POUNDS PER SQUARE FOOT)

NOTE: CLAY TILE WEIGHING MORE THAN 11 POUNDS PER SQUARE FOOT MAY BE CONSIDERED ON AN INDIVIDUAL BASIS. CHECK W/ YOUR LOCAL BUILDING DEPARTMENT

LIGHT CONSTRUCTION IS ANY BUILDING CONSTRUCTED USING ONLY THE FOLLOWING

ROOFING MATERIALS:
- WOOD SHAKES OR SHINGLES
- COMPOSITION OR ASPHALT SHINGLES
- METAL ROOFING (WEIGHING 5 POUNDS PER SQUARE FOOT OR LESS)

EXTERIOR WALL FINISHES:
- WOOD PANEL SHEATHING
- WOOD BOARD SIDING
- SIMILAR LIGHT WEIGHT BOARD SIDING

INTERIOR WALL FINISHES:
- GYPSUM BOARD
- GYPSUM OR PLASTER LATH

NOTE: NEW BOLTS OR ANCHORS SHALL BE INSTALLED WHERE PLYWOOD PANELS OCCUR

ALL NEW MUD SILL BOLTS SHALL HAVE A 3" X 3" X 1/4" PLATE WASHER INSTALLED BETWEEN THE MUD SILL (OR BLOCKING) AND THE NUT

NEW BOLTS SHALL BE 1-1/2" INCHES MINIMUM FROM THE EDGES OF THE MUD SILL AND 4-3/8" FROM THE ENDS.

EXISTING BOLTS MAY BE USED ALONG PORTIONS OF MUD SILLS LOCATED OUTSIDE OF A BRACED WALL PANEL AND ALONG WALL LINES WITHOUT A CRIPPLE WALL, WHEN THEY MEET THE FOLLOWING REQUIREMENTS
- BOLTS SHALL BE 1 INCH MINIMUM FROM THE EDGES OF THE MUD SILL (MEASURED FROM THE CENTER OF THE BOLT TO THE EDGE OF THE MUD SILL)
- BOLTS MUST NOT BE SEVERELY RUSTED, DAMAGED, OR DETERIORATED SUCH THAT THEIR ORIGINAL CAPACITY IS SIGNIFICANTLY REDUCED.
- MUD SILL BOLT HOLES MUST NOT BE OVERSIZED SUCH THAT THE EFFECTIVENESS OF THE WASHER AND NUT IS SIGNIFICANTLY REDUCED

FOOTNOTES FROM TABLE:

(1) SEE TOTAL FLOOR AREA FROM RETROFIT CONSTRUCTION DATA.

(2) WHEN UFP ANCHORS AND BOLTS ARE USED IN A SINGLE WALL LINE, UFP ANCHORS MAYBE SUBSTITUTED FOR THE NUMBER OF BOLTS.

(3) NOT MORE THAN ONE ANGLE PER JOIST BAY UNLESS JOISTS ARE SPACED 24 INCHES ON CENTER. WHERE PRACTICABLE INSTALL ANGLES BETWEEN JOISTS ABOVE PLYWOOD PANEL LOCATIONS

(4) INSTALL L70 & L90 W/ 10d X 1-1/2" NAILS

Attachment A

RETROFIT CONSTRUCTION DATA
(fill in all applicable areas)

No. of stories above cripple wall/mud sill: _____
Approximate 1st floor area over crawl space: _____ sf
(Do not include areas above garage slab)
Approximate 2nd floor area over crawl space: _____ sf
(Do not include areas above garage slab)
Total floor area: _____ sf

Clay tile or concrete tile roof? ☐ YES ☐ NO

Stucco (cement plaster) finish on exterior walls? ☐ YES ☐ NO

Exterior brick or stone veneer (ignoring the brick chimney)? ☐ YES ☐ NO

Height of veneer above foundation _____

Continuous rim joist/blocking (ignoring the immediate area around the chimney)? ☐ YES ☐ NO

Maximum height of cripple wall, ____ ft. ____ in.

MUD SILL ANCHORAGE

Existing

☐ BOLTS: Diameter _____ Spacing _____

New

☐ BOLTS: Diameter _____ Spacing _____

Type: ☐ Chemical ☐ Expansion/Mechanical

☐ ANCHOR PLATE: Manufacturer _____

Part No. _____

Bolt Type: ☐ Chemical ☐ Expansion/Mechanical

Floor Framing Connection to Mudsill or Top Plate

☐ FRAMING CLIP: _____

Manufacturer _____

Part No. _____

Load Value parallel to cripple wall and/or mud sill _____

Connector Capacity (Pounds)	Description
458 lbs	L70 is 16 ga X 7" long uses 8 – 10d X 1-1/2" minimum
600 lbs	L90 is 16 ga X 9" long uses 10 – 10d X 1-1/2" minimum
820 lbs	1/2" dia. bolt
1170 lbs	5/8" dia. bolt
1340 lbs	UFP10- Universal plate anchor

TECHNICAL NOTES

1. THIS PRESCRIPTIVE PLAN ADDRESSES ONLY SEISMIC STRENGTHENING WORK. ALTERNATIVE DESIGNS WILL BE CONSIDERED ON A CASE-BY-CASE BASIS. WORK DONE UNDER PERMIT PURSUANT TO THIS PRESCRIPTIVE PLAN DOES NOT LEGALIZE ANY PREVIOUS WORK DONE WITHOUT A PERMIT.

2. ALL EXISTING CONCRETE AND WOOD MATERIAL WHICH WILL BE PART OF THE STRENGTHENING WORK SHALL BE IN SOUND CONDITION AND FREE FROM DEFECTS WHICH WOULD SUBSTANTIALLY REDUCE THE CAPACITY OF THE MATERIAL. ANY SUBSTANDARD MATERIAL SHALL BE REPAIRED OR REPLACED TO MEET MINIMUM BUILDING CODE REQUIREMENTS.

NO

3. NEW FOUNDATIONS SHALL MEET CURRENT CALIFORNIA BUILDING CODE REQUIREMENTS.

4. NEW MUD SILL PLATES SHALL BE PRESSURE-TREATED DOUGLAS-FIR OR FOUNDATION-GRADE REDWOOD.

5. AN EXISTING SINGLE TOP PLATE MAY BE USED WHEN A 16 GA. METAL STRAP IS PROVIDED WITH 14 8d COMMON NAILS ON EACH SIDE OF THE JOINT.

6. IF SPLICES IN DOUBLE TOP PLATES DO NOT HAVE A MINIMUM 48" LAP, PROVIDE MINIMUM 4' STRAP AS ABOVE.

7. WHERE PLATE STRAPS OCCUR WITHIN A BRACED PANEL, THE STRAP SHALL BE PLACED OVER THE PLYWOOD AND THE PLYWOOD NAILS OMITTED WHERE THE STRAP IS INSTALLED.

8. NEW STEEL BOLTS SHALL CONFORM TO ASTM A307. EPOXY BOLTS AND EXPANSION BOLTS SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS AND IN ACCORDANCE WITH THE PROVISIONS OF AN APPROVED NATIONALLY RECOGNIZED TESTING AGENCY. NO THIRD PARTY SPECIAL INSPECTIONS ARE REQUIRED. EXPANSION BOLTS SHALL NOT BE USED WHEN THE INSTALLATION CAUSES CRACKING OF THE FOUNDATION WALL AT THE LOCATION OF THE BOLT.

9. ALL METAL CONNECTORS AND HARDWARE SHALL MEET AN APPROVED STANDARD FOR ITS INTENDED USE AND BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS, AND IN ACCORDANCE WITH THE REQUIREMENTS OF THESE STANDARDS. ALTERNATE DETAILS MAY BE APPROVED BY THE BUILDING OFFICIAL PROVIDED DETAILED INFORMATION AND CALCULATIONS ARE SUBMITTED AND APPROVED.

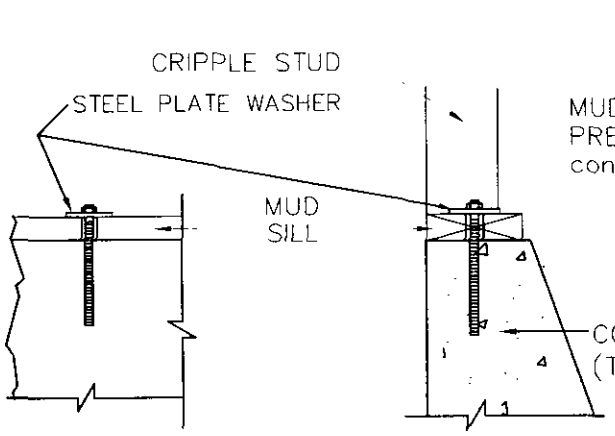
10. WHERE AN EXISTING CONTINUOUS RIM JOIST, END JOIST, OR SOLID BLOCKING BETWEEN JOISTS, DOES NOT EXIST ABOVE THE PERIMETER CRIPPLE WALL OR MUD SILL, NEW BLOCKING AND/OR SUPPLEMENTAL CONNECTIONS SHALL BE PROVIDED AND SUBJECT TO APPROVAL BY THE BUILDING OFFICIAL.

11. UNDERFLOOR VENTILATION SHALL BE MAINTAINED.

12. DUE TO THE CORROSIVE NATURE OF NEW PRESSURE TREATED WOOD USED AFTER 1-1-04 AND TO PREVENT PREMATURE FAILURE OF THE METAL HARDWARE, FASTENERS IN NEW PRESSURE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED FASTENERS (MEETING ASTM A 153) AND CONNECTORS (ASTM A 653 CLASS G185 SHEET), OR BETTER.

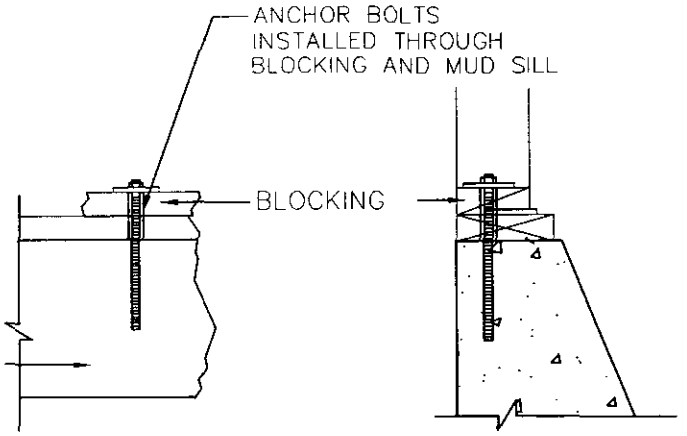
STEP 1

(1a) TYPICAL FOUNDATION ANCHORS



FRONT VIEW SIDE VIEW

ANCHOR BOLT THROUGH MUD SILL ONLY

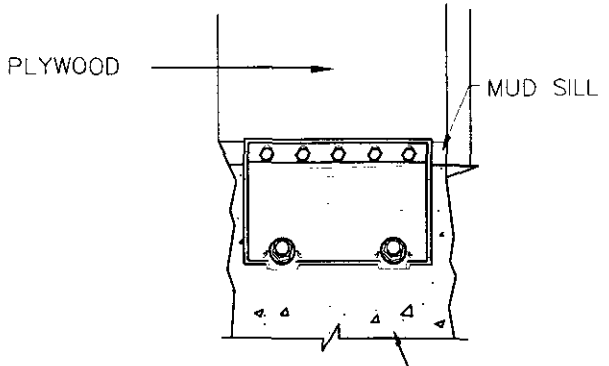


FRONT VIEW SIDE VIEW

ANCHOR BOLT THROUGH BLOCKING AND MUD SILL

NOTE: MINIMUM BOLT EMBEDMENT IN CONCRETE IS 4 INCHES OR PER MANUFACTURER'S SPECS

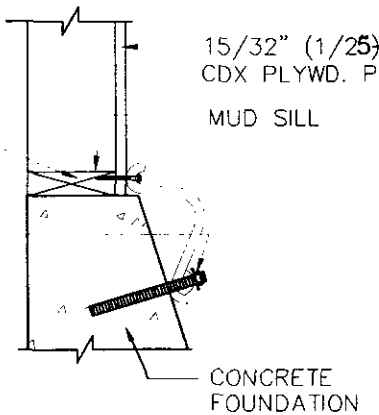
(1b) MUD SILL ADJUSTABLE ANCHOR PLATE– OPTION 2



FRONT VIEW

MIN. LAG SCREW DIA. & EMBEDMENT IN MUD SILL AND LAG SCREW SPECS PER Mfger's REQ'TS.

PLATE HARDWARE SPECS AND BOLT, WASHER AND NUT SPECS PER Mfger's REQ'TS

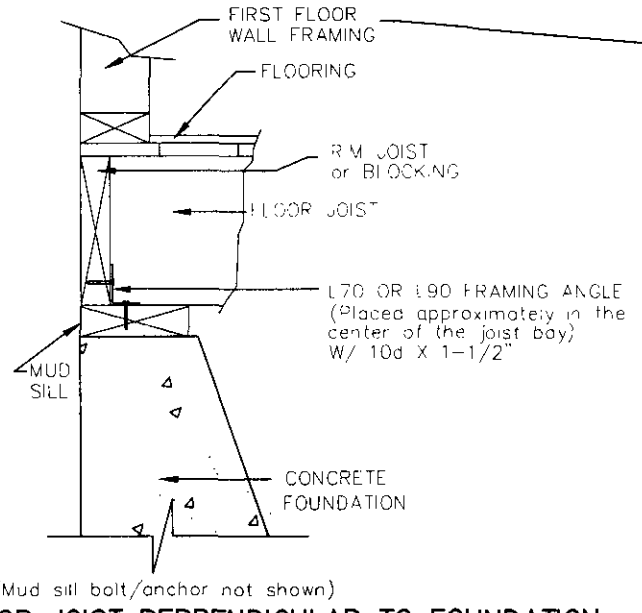


SIDE VIEW

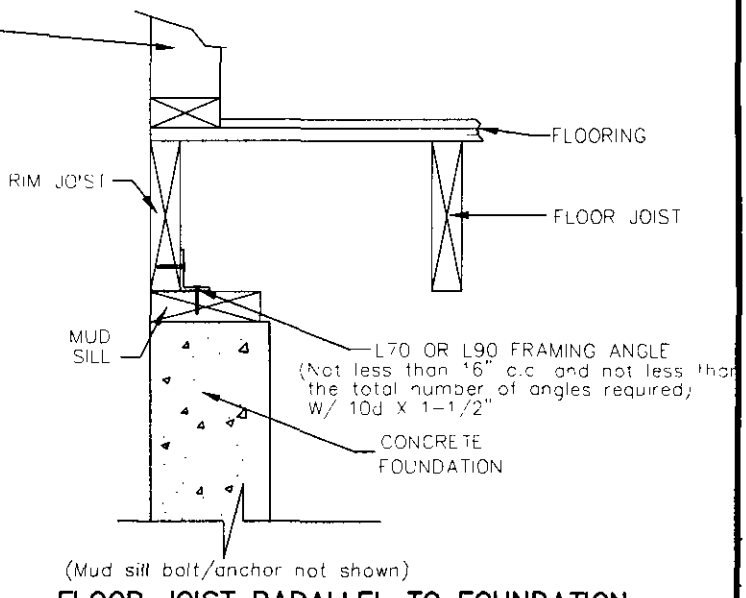
NOTE: MINIMUM BOLT EMBEDMENT IN CONCRETE IS 4 INCHES OR PER MANUFACTURER'S SPECS

STEP 2

(2a) TYPICAL FLOOR–TO–MUD SILL CONNECTIONS

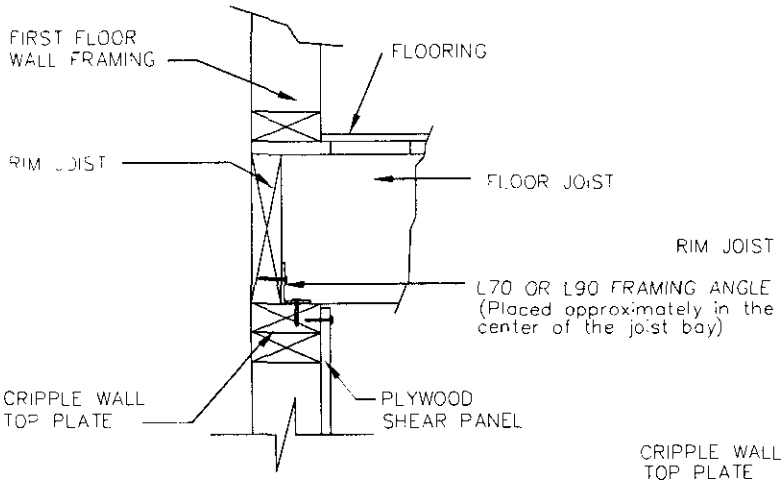


FLOOR JOIST PERPENDICULAR TO FOUNDATION

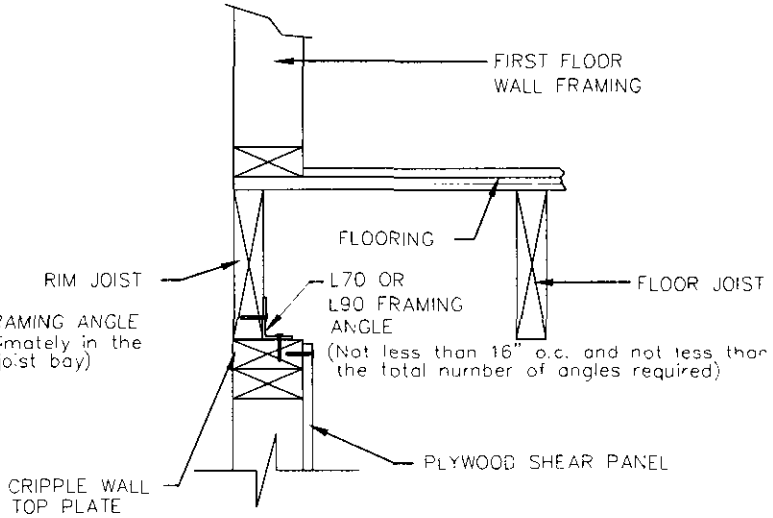


FLOOR JOIST PARALLEL TO FOUNDATION

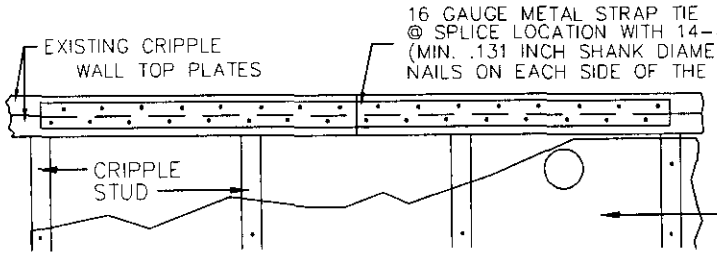
(2b) TYPICAL FLOOR–TO–CRIPPLE WALL CONNECTIONS



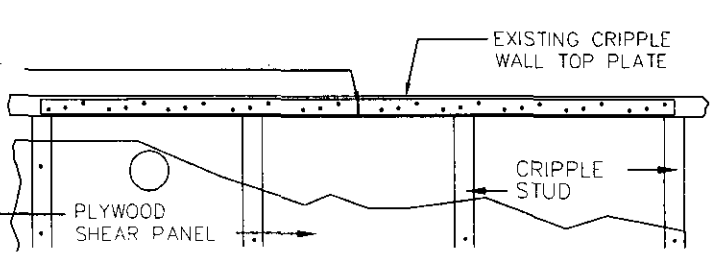
FLOOR JOIST PERPENDICULAR TO CRIPPLE WALL



FLOOR JOIST PARALLEL TO CRIPPLE WALL



TYPICAL DOUBLE TOP PLATE SPLICE DETAIL



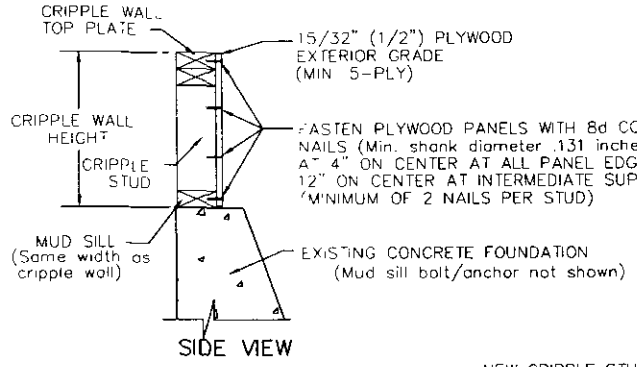
TYPICAL SINGLE TOP PLATE SPLICE DETAIL

STEP 3

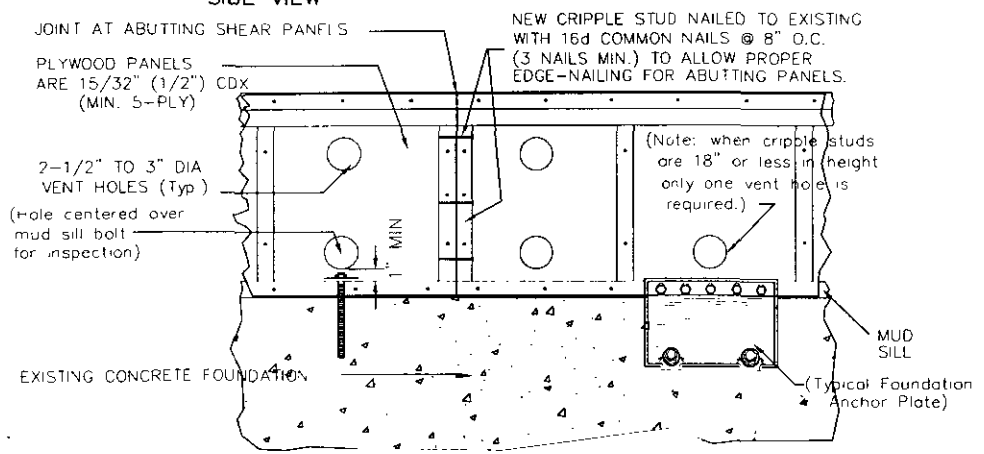
CRIPPLE WALL BRACING DETAILS

(All plywood panel installation shall conform to these specifications)

3a MUD SILL SAME WIDTH AS CRIPPLE WALL

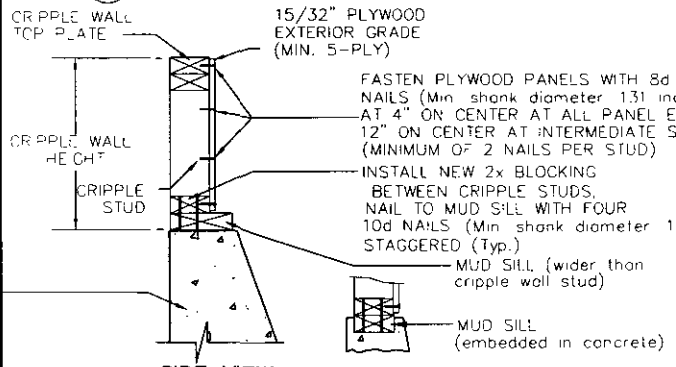


SIDE VIEW

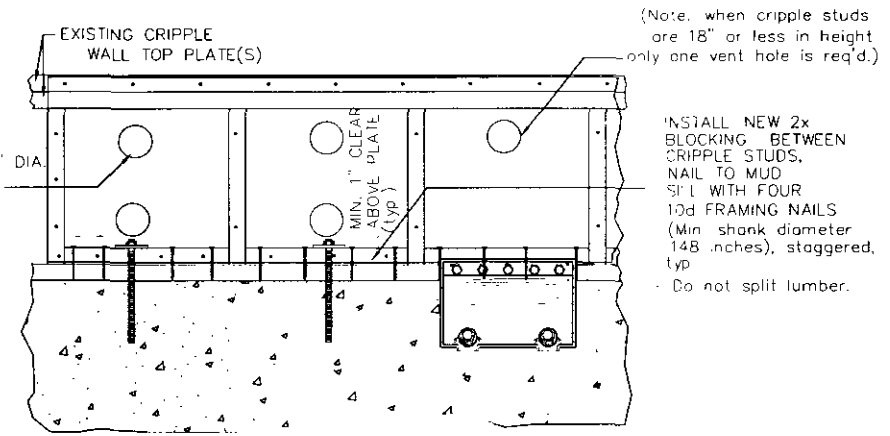


FRONT VIEW

3b MUD SILL WIDER THAN CRIPPLE WALL

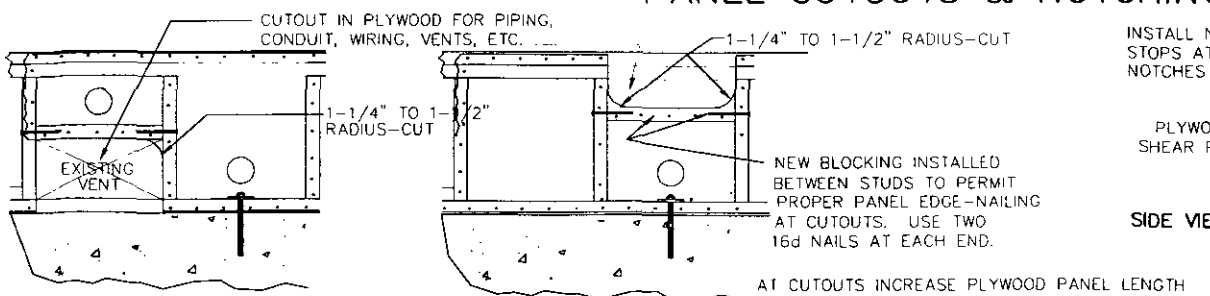


SIDE VIEW

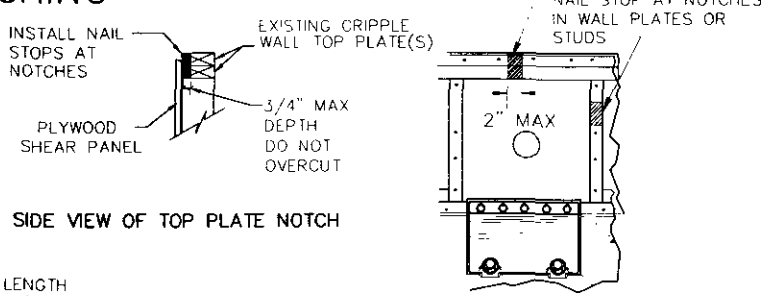


FRONT VIEW

PANEL CUTOUTS & NOTCHING



CUTOUTS IN PLYWOOD PANELS



SIDE VIEW OF TOP PLATE NOTCH

NOTCHING OF WALL PLATES OR STUDS

ACKNOWLEDGEMENTS

THIS PRESCRIPTIVE PLAN SET AND THE PROVISIONS FOR VOLUNTARY SEISMIC RETROFIT OF WOOD-FRAME HOMES WERE DEVELOPED BY A COMMITTEE REPRESENTING THE EAST BAY AND PENINSULA CHAPTERS OF THE INTERNATIONAL CODE COUNCIL (ICC). IN ADDITION, THE PLAN DEVELOPMENT COMMITTEE CONSISTED OF REPRESENTATIVES FROM THE FOLLOWING ORGANIZATIONS WHO PROVIDED CONTRIBUTIONS AND PEER REVIEW:

- ASSOCIATION OF BAY AREA GOVERNMENTS (ABAG) EARTHQUAKE PROGRAM
- BUILDING CONTRACTORS SPECIALIZING IN HOME RETROFITTING
- CALIFORNIA BUILDING OFFICIALS (CALBO) EMERGENCY PREPAREDNESS COMMITTEE
- CALIFORNIA BUILDING OFFICIALS (CALBO) SEISMIC SAFETY COMMITTEE
- EARTHQUAKE ENGINEERING RESEARCH INSTITUTE, NORTHERN CALIFORNIA CHAPTER (EERI-NC)
- ICC, TRI-CHAPTER (EAST BAY, PENINSULA, MONTEREY BAY) PLAN CHECK STANDARDS COMMITTEE
- STRUCTURAL ENGINEERS ASSOCIATION OF NORTHERN CALIFORNIA (SEAONC), EXISTING BUILDINGS COMMITTEE
- STRUCTURAL ENGINEERS ASSOCIATION OF NORTHERN CALIFORNIA (SEAONC), SEISMOLOGY & STRUCTURAL STANDARDS COMMITTEE- LIGHT-FRAME SUBCOMMITTEE

DATE: 10-20-2004

07 MAY 3 PM 3:52

APPROVED AS TO FORM AND LEGALITY

City Attorney

OAKLAND CITY COUNCIL

RESOLUTION NO. _____ C.M.S.

A RESOLUTION AUTHORIZING CREATION OF A RESERVED ACCOUNT IN THE GENERAL FUND TO PROVIDE FUNDING FOR THE VOLUNTARY SEISMIC STRENGTHENING REIMBURSEMENT INCENTIVE PROGRAM WITH A PORTION OF THE ANNUAL RECEIPTS FROM THE REAL PROPERTY TRANSFER TAX (OAKLAND MUNICIPAL CODE TITLE 4, CHAPTER 4.20) IN AN AMOUNT NOT TO EXCEED $500,000 FOR THE 2007-2008 FISCAL YEAR AND $1,000,000 FOR EACH FISCAL YEAR THEREAFTER.

WHEREAS, the City of Oakland is committed to the health and public safety of its residents; and

WHEREAS, experts predict that a major earthquake of magnitude 6.7 or higher has a 62% chance of occurring in the Bay Area in the next 30 years, and would result in 36,480 uninhabitable housing units in the City of Oakland alone—about one-third of Oakland's housing stock; and

WHEREAS, making Oakland's R-3 occupancies (single family residences and duplexes) more seismically secure through retrofitting and other measures could provide Oakland residents the extra margin of safety during and following a major earthquake: and

WHEREAS, experts have estimated that only 15% of Oakland's R-3 occupancies have been retrofitted; and

WHEREAS, in order to encourage homeowners to make their homes more seismically safe, the City of Oakland will establish a Voluntary Seismic Strengthening Reimbursement Incentive Program for new homeowners of houses; and

WHEREAS, funds needed to implement the Voluntary Seismic Strengthening Reimbursement Incentive Program for new homeowners of existing houses are available from the annual transfer tax, **now, therefore, be it**

RESOLVED: that the City Council hereby authorizes creation of a reserved account in the general fund and allocation of such funds in an amount not to exceed $500,000 for the 2007-2008 fiscal year and $1,000,000 for each fiscal year thereafter, subject to modification by resolution of the City Council, to fund the Voluntary Seismic Strengthening Reimbursement incentive program for new homeowners with a portion of the annual receipts from the Real Property Transfer Tax (Oakland Municipal Code Title 4, Chapter 4.20); and be it.

FURTHER RESOLVED: that the Agency Administrator or his or her designee is hereby authorized to take whatever other action is necessary with respect to the Voluntary Seismic Strengthening Reimbursement Incentive Program for new homeowners and this funding consistent with this Resolution and its basic purposes.

IN COUNCIL, OAKLAND, CALIFORNIA, _____, 2007

PASSED BY THE FOLLOWING VOTE:

AYES - BROOKS, BRUNNER, CHANG, KERNIGHAN, NADEL, QUAN, REID, and PRESIDENT DE LA FUENTE

NOES -

ABSENT -

ABSTENTION -

ATTEST:_____
LaTonda Simmons
City Clerk and Clerk of the Council
of the City of Oakland, California

INTRODUCED BY

COUNCILMEMBER

APPROVED FOR FORM AND LEGALITY

DRAFT

DEPUTY CITY ATTORNEY

OAKLAND CITY COUNCIL

Ordinance No. _____ C.M.S.

ORDINANCE ADOPTING OAKLAND MUNICIPAL CODE CHAPTER 15.30 TO ESTABLISH A VOLUNTARY SEISMIC STRENGTHENING REIMBURSEMENT INCENTIVE PROGRAM FOR RESIDENTIAL BUILDINGS AND AMENDING THE MASTER FEE SCHEDULE TO ESTABLISH A VOLUNTARY SEISMIC STRENGTHENING PERMIT FEE

WHEREAS, the United States Geological Service has forecasted with a probability of sixty-two percent (62%) that a magnitude 6.7 (Richter scale) or larger seismic event will occur along an earthquake fault in the San Francisco Bay Area before the year 2032; and

WHEREAS, an earthquake of this magnitude would cause social and economic disruption in the San Francisco Bay Area equal to or greater than the 1989 Loma Prieta earthquake (magnitude 6.9); and

WHEREAS, an earthquake of this magnitude would cause an estimated tens of billions of dollars of economic loss in the San Francisco Bay Area, half of which would be loss in damaged residences; and

WHEREAS, an earthquake of this magnitude would cause an estimated 36,000 uninhabitable housing units in Oakland, which is approximately one-third of Oakland's existing housing stock; and

WHEREAS, enhancing the structural resistance of wood-framed, one- and two-story, one- and two-family residential buildings (Group R, Division 3 occupancy) to seismically induced lateral loads through a minimal level of strengthening would provide Oakland property owners, financial lenders, property insurers, and residents an additional margin of safety against detrimental damage during and following an earthquake of this magnitude; and

WHEREAS, an estimated eighty-five percent (85%) of Oakland's existing residential buildings constructed before modern earthquake codes were adopted have not been even minimally strengthened for seismic-induced lateral loads; and

WHEREAS, the average construction cost for installing seismic strengthening based on a non-prescriptive engineered design for existing residential buildings that braces cripple walls and fastens sill plates to the foundation is estimated between $7,000 and $30,000; and

WHEREAS, there is an immediate need to develop a low-cost seismic strengthening prescriptive (non-engineered) design for residential buildings that provides a minimum level of life-safety performance for property owners, financial lenders, insurers, and residents; and

WHEREAS, the current edition of the California Building Code does not provide a prescriptive design method to strengthen residential buildings with unbraced cripple walls and unfastened foundation sill plates to resist earthquakes; and

WHEREAS, a low-cost prescriptive design for minimally strengthening unbraced cripple walls and unfastened sill plates has been developed by a committee representing the East Bay, Peninsula, and Monterey Bay Chapters of the International Code Council (ICC) with additional committee representation by other governmental organizations that have been approved by the three chapters of ICC, the Association of Bay Area Governments (ABAG), the California Building Officials (CALBO), the Structural Engineers Association of Northern California, and the Earthquake Engineering Research Institute of Northern California; and

WHEREAS, establishing financial incentives for property owners to strengthen existing residential dwellings with unbraced cripple walls and unfastened sill plates either with a non-prescriptive (engineered) design or a prescriptive design would significantly reduce the risk of damage to buildings and injury to the occupants and general public during and after an earthquake of this magnitude; and

WHEREAS, establishing determinate permit fees for the installation of seismic strengthening methods would expand the financial incentives for property owners to retrofit existing residential buildings and enhance the opportunities for the public to benefit from a reduction of the seismic hazard to the housing stock in Oakland; now, therefore,

THE COUNCIL OF THE CITY OF THE OAKLAND DOES ORDAIN AS FOLLOWS:

SECTION 1. Oakland Municipal Code Amendment

A new chapter 15.30 within Title 15, Buildings and Construction, of the Oakland Municipal Code is hereby adopted as follows:

Chapter 15.30

Article I - Scope

Section 15.30.010 Title

This chapter shall be known as "Voluntary Seismic Strengthening For Residential Buildings".

Section 15.30.020 Purpose

This chapter is intended to promote public safety and welfare and safeguard life and limb, health, and property through a voluntary program for structurally strengthening the portions of wood framed residential buildings that are most vulnerable to earthquake damage. The prescriptive

structural strengthening standards set forth herein will reduce the risk of seismically-induced damage by improving the structural resistance of these buildings.

This chapter is not intended to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms set forth herein, and these standards are not intended to endorse, authorize, or approve any prior work accomplished without required permits, inspections, fees, or final approvals.

Section 15.30.030 Intent

A. Prescriptive Design

1. This chapter establishes voluntary prescriptive design standards for the structural strengthening of underfloor enclosures to resist seismic loads without requiring plans or calculations prepared by a licensed professional or in accordance with the Oakland Building Construction Code. These standards are not intended to be the only acceptable prescriptive seismic strengthening methods.

2. Alternate details and methods are permitted when approved by the Building Official. When the Building Official determines that existing conditions are beyond the scope of these prescriptive standards, analysis and documentation shall be prepared by a licensed professional.

B. Non-Prescriptive Design

1. This chapter also allows voluntary non-prescriptive designs equivalent to or exceeding the prescriptive design standards in this chapter. Seismic strengthening calculations, plans, and specifications for associated permits shall be prepared by professionals licensed for this work. Analysis and documentation with respect to lateral strength, deflection, and soil capacity shall be in accordance with the Oakland Building Construction Code.

2. Non-prescriptive designs for Sections 15.30.200.A.1 through A.4(inclusive) may incorporate the prescriptive design standards set forth in the Oakland Building Construction Code. The Building Official may require that sufficient evidence be submitted to substantiate such equivalence.

Section 15.30.040 Application

A. Exclusions

This chapter shall apply solely to existing, wood-framed, one- and two-story residential buildings classified either as a Group R, Division 3 occupancy or as a Group R, Division 3 occupancy with an attached Group U, Division 1 occupancy. This chapter shall not apply to buildings, or portions thereof, with any of the following structural elements or features:

1. Lateral force resisting system using or containing poles or columns embedded in the ground or using unreinforced concrete or assembled masonry.
2. Cripple wall exceeding 48-inches in height, as measured vertically at any point.

3. Building exceeding 2-stories in height, as defined in the Oakland Building Construction Code.
4. Building erected on a concrete slab-on-grade.
5. Building erected on or into sloping ground with a surface gradient exceeding 3-units horizontally to 1-unit vertically, as measured at any point.
6. Building with existing unreinforced concrete or assembled masonry foundation system.

B. Historic Buildings

Residential buildings that have been qualified as historic shall be permitted to use alternate building regulations, as set forth in the State Historical Building Code, to preserve their original or restored architectural elements and features.

Section 15.30.050 Amendments

Where any section, subsection, sentence, clause, phrase, or other part of the Oakland Building Construction Code recited in this chapter is amended subsequently, all provision of the original section not so specifically amended shall remain in full force and effect and all amended provisions shall be considered as added thereto.

Article II - Administrative

Section 15.30.100 Definitions

As used in this chapter, the following terms shall have the meanings set forth hereto:

Adhesive Anchor is a fastener placed in hardened concrete or masonry that derives its holding strength from a chemical adhesive compound placed between the wall of the hole and the embedded portion of the anchor.

Anchor Side Plate is an approved metal plate or plates used to connect a wood sill plate to the side of a concrete or masonry foundation.

Assembled Masonry includes adobe, burned clay, concrete or sand-lime brink, hollow clay or concrete block, hollow clay tile, rubble, cut stone, and unburned clay masonry walls in which the area of reinforcement is less that fifty percent (50%) of the minimum steel ratios required for reinforced masonry by the Oakland Building Construction.

Building Official is the Building Official of the City of Oakland, as identified in the Oakland Building Construction Code, or his or her designee, and successors in title.

City is the City of Oakland, a municipal corporation.

City Administrator is the City Administrator of the City of Oakland or his or her designee, and successors in title.

Cripple Wall is a wood-framed wall extending from the top of the foundation to the underside of the lowest floor framing.

Expansion Anchor is a mechanical fastener placed in hardened concrete or masonry that is designed to expand in a self-drilled or pre-drilled hole of a specified diameter and depth and engage the sides of the hole in one or more locations to develop shear and/ or tension resistance to applied loads without grout or chemical adhesive.

Group R, Division 3 occupancy is a residential building, as defined and used in the Oakland Building Construction Code.

Group U, Division 1 occupancy is a private garage or carport, as defined and used in the *Oakland Building Construction Code.*

Licensed Professional is an architect or engineer possessing a valid license issued by the State of California to perform civil, structural, soil, or geotechnical related design, material analysis, and construction observation.

Non-Prescriptive (Engineered) Design is a seismic strengthening method in accordance with the Oakland Building Construction Code that is prepared under the responsible charge of a licensed professional.

Oakland Building Construction Code is the most current edition of the California Building Code with amendments adopted by the City of Oakland, as set forth in Oakland Municipal Code, Title 15, Chapter 15.04, and successors in title.

Perimeter Foundation is a foundation system that is located under the exterior walls of a building or structure.

Purchaser is an individual, group of individuals, limited partnership, limited liability company, corporation, or other entity who by recorded instrument acquires title through assignment, transfer, or other conveyance to real property located within the corporate limits of the City of Oakland that has been previously improved with a residential building.

Residential Building is a habitable structure for which a Certificate of Occupancy has not been revoked that is classified by the Building Official solely as a Group R, Division 3 occupancy or as a Group R, Division 3 occupancy with an attached Group U, Division 1 occupancy.

Seismic Strengthening is an approved improvement of the lateral force resisting system of the structure by an alteration of existing or addition of new structural elements.

Unreinforced Concrete is concrete in which the area of reinforcement is less that fifty percent (50%) of the minimum steel ratios required for reinforced concrete by the Oakland Building Construction.

Section 15.30.110 Rule, Regulations, and Interpretations

A. The Building Official may adopt administrative rules and regulations as required to implement this chapter and may make non-administrative interpretations as required to achieve the purposes of this chapter.

B. The City Administrator may adopt administrative rules and regulations as required to implement the financial incentives of this chapter.

Article III – Non-Administrative

Section 15.30.200 Structural Weaknesses

A. Structural weaknesses shall include the following:

1. Sill plates or floor framing supported directly on the ground without an approved foundation system.
2. Perimeter foundation constructed of wood posts supported by isolated footings.
3. Perimeter foundation that is not continuous.

   Exception: existing porches, storage rooms, and similar spaces that do not contain fuel-burning appliances.
4. Perimeter foundation constructed of unreinforced concrete or assembled masonry.
5. Sill plates not connected to the foundation in accordance with this chapter.
6. Cripple walls not braced in accordance with this chapter.

B. Whenever structural weaknesses set forth in Sections 15.30.200.A.1 through A.4, (inclusive) exist, a separate structural strengthening permit shall be required as a condition of issuance of a structural strengthening permit for structural weaknesses set forth in Sections 15.30.200.A.5 and A.6.

Section 15.30.210 Seismic Strengthening - General

A. Scope

1. The structural weaknesses set forth in this chapter shall be seismically strengthened in accordance with this chapter. Seismic strengthening of existing residential buildings shall apply to both newly installed construction and alteration of existing construction. Alternate prescriptive and non-prescriptive designs for seismic strengthening shall be equivalent to or exceed the performance levels of this chapter and be approved by the Building Official.

2. Alternative prescriptive designs with provisions for voluntary seismic retrofitting of wood-framed cripple walls have been developed by a committee representing the East Bay, Peninsula, and Monterey Bay Chapters of the International Code Council (ICC) with additional committee representation by other governmental organizations. Alternative prescriptive designs include those that were approved by the three chapters of ICC, the Association Of Bay Area Governments (ABAG), the California Building Officials (CALBO), the Structural Engineers Association of Northern California, and the Earthquake Engineering Research Institute of Northern California in October 2004, with later amendments, and are considered equivalent to this chapter.

B. Wood Materials

Wood materials that are part of the seismic strengthening system shall be free of defects which substantially reduce the structural capacity of the member. Wood material that is infested with fungus or insects or damaged by insects shall be replaced with new material that provides an

equivalent original dimension and structural capacity of the existing member. Newly installed material in contact with concrete or masonry shall be approved preservative treated wood or foundation-grade redwood in accordance with the Oakland Building Construction Code. Fasteners shall not split wood members. Fasteners, anchors, washers, plates, connectors, and similar metal attachments shall be corrosion resistant metal and shall not be detrimentally affected by wood preservative coatings or impregnations in accordance with the Oakland Building Construction Code.

Section 15.30.220 Seismic Strengthening - Quality Control

A. Permits and Inspections

Permits, fees, and inspection approvals shall be required and shall be in accordance with the Oakland Building Construction Code.

B. Special Inspection

Special inspection for a prescriptive design shall not be required, unless otherwise determined to be necessary by the Building Official. Special inspection for a non-prescriptive design shall be in accordance with the Oakland Building Construction Code and the requirements of the licensed professional in responsible charge of the design.

C. Structural Observation

Structural observation shall not be required for a prescriptive design. Structural observation for a non-prescriptive design shall be in accordance with the Oakland Building Construction Code.

Section 15.30.230 Prescriptive Design - Framing

A. Floor Joists - End Bearing

End bearing of floor joists shall be restrained by a continuous rim joist (2-inch nominal thickness), or tightly-fitting, full-depth, lumber blocking (2-inch nominal thickness) or structural wood panel sheathing (1-1/8-inch thickness). Edge fasteners from rim joist and blocking to the foundation sill plate or the cripple wall top plate shall be either 8d common angled ("toe") nails spaced apart 4-inches or supplemental connectors. Foundation blocking shall be installed between alternate joists. Cripple wall blocking shall be installed between each joist, except for obstructions (piping, underfloor ventilation and access, conduits, ducts, etc.). The perimeter of supplemental blocking shall be fastened to adjoining members.

B. Floor Joists - Parallel Span

Floor joists that are parallel to a perimeter foundation shall have a parallel rim joist fully supported by the foundation sill plate or cripple wall top plate. The bottom edge of the rim joist shall be fastened to the foundation sill plate or the cripple wall top plate either by 8d angled ("toe") nails spaced apart 4-inches or supplemental connectors.

Section 15.30.240 Prescriptive Design - Foundations DRAFT

A. Continuous

1. Replacement or new perimeter foundations shall be constructed in accordance with the Oakland Building Construction Code. Soil investigations or geotechnical studies shall not be required unless the building has structural distress from soil movement.
2. Residential buildings with structural weaknesses set forth in Sections 15.30.200.A.1 or 15.30.200.A.2 shall have continuous perimeter foundations.

B. Non-Continuous, Unreinforced Concrete, Assembled Masonry

Non-continuous, unreinforced concrete, and assembled masonry perimeter foundations shall be either

1. replaced with a continuous perimeter foundation in accordance with the Oakland Building Construction Code, or
2. analyzed for structural adequacy by a licensed professional for force levels determined by the formula

   $V = 0.1375\,W$, where V = base shear and W = tributary weight,

   and approved by the Building Official. Test reports to determine existing foundation material strengths, quality, and condition shall be submitted for review.

Section 15.30.250 Prescriptive Design - Sill Plates

A. Connection

Sill plates shall be connected to foundations in accordance with the Oakland Building Construction Code, or as otherwise approved by the Building Official. Anchors within braced panels of cripple walls shall be spaced apart not more than 32-inches (2-anchors minimum per continuous sill plate). Fasteners and washers shall not be detrimentally affected by wood preservative coatings or impregnations. Sill plates shall be pre-drilled for fasteners used with anchor side plates.

B. Proprietary Anchors

Adhesive and expansion anchors shall be installed with a metal plate washer between the nut and the sill plate or supplemental block. Washers shall be 2-inch x 2-inch x 3/16-inch. Expansion anchors shall not be used in assembled masonry or unreinforced concrete foundations. Adhesive anchors shall be used where expansion anchors cause surface cracking of the foundation or cannot be tightened as required by the manufacturer's recommendations. Supplemental blocks for through-anchor installation, when installed, shall be 2-inch nominal thickness lumber and fastened to sill plates with four 10d common nails.

Section 15.30.260 Prescriptive Design - Supplemental Connector

Supplemental connectors are metal framing connections approved by the Building Official that provide a capacity equivalent to or exceeding the capacity of the substituted fasteners.

Exception:

1. Structural wood panel sheathing that extends from the foundation sill plate to the rim joist or blocking above.
2. Floor sheathing that is nailed directly into the foundation sill plate or cripple wall top plate.

Section 15.30.270 Prescriptive Design - Cripple Walls

A. Wall Sheathing

1. Cripple walls shall be braced with structural wood panel sheathing shall be not less than 15/32-inch thickness. Plywood sheathing shall be exterior grade and not less than five (5) plies or equivalent.
2. Sheathing shall be fastened to cripple wall studs, top plate, and sill plate with 8d common nails. Fasteners shall be spaced apart not more than 4-inches at sheathing edges and not more than 12-inches at intermediate supports and shall be installed not less than 3/8-inch from sheathing edges.
3. Sheathing horizontal joints shall be continuously supported between studs by full-width and full-depth, 2-inch nominal thickness lumber blocking. Sheathing vertical joints shall continuously supported by stud framing.
4. "Sistered" studs shall be full-depth and full-height and fastened to existing studs with 16d common nails spaced apart not more than 8-inches in a vertically staggered pattern (3-nails minimum).
5. Fasteners shall not be detrimentally affected by wood preservative coatings or impregnations
6. Top plates shall be lapped and fastened in accordance with the Oakland Building Construction Code or spliced with a supplemental connector installed on the sheathing face. Exception 1 in Section 15.30.260 shall not apply.
7. Supplemental blocking for sheathing bottom edge-nailing shall be full-width and full-depth between studs, 2x nominal thickness lumber, and fastened to sill plates with 10d common nails spaced apart not more than 8-inches in an alternating pattern (4-nails minimum).
8. Cutouts in sheathing, notches in top plates, sill plates, and existing studs, and reinforcement with supplemental connectors for obstructions (piping, underfloor ventilation and access, ducts, etc.) shall be approved by the Building Official.

B. Bracing Distribution

Cripple walls shall be braced at each end of the wall line, or as otherwise approved by the Building Official. The horizontal length of a braced end-panel shall be not less than 8-feet, measured at any point. The horizontal length of an unbraced section of wall line shall be not more than 16-feet, measured at any point, for wood exterior building surfaces and not more than 12-feet, measured at any point, for portland cement plaster exterior building surfaces or concrete tile or clay tile roofing. The horizontal length of an intermediate braced panel, when installed, shall be not less than 4-feet, measured at any point.

C. Ventilation

1. Underfloor ventilation shall not be reduced.
2. Sheathed stud cavities shall be individually ventilated with 2-inch diameter holes drilled through the bracing sheathing, and centered within the stud cavity, and located not less than 1-inch below the top plate, and 1-inch above the sill plate, and 1-inch above and below horizontal blocking. Cavities with stud height less than 18-inches shall have a single ventilation hole.

Section 15.30.280 Prescriptive Design - Deviations

Substantive deviations from the prescriptive design requirements in this chapter shall be analyzed by a licensed professional and approved by the Building Official. Calculations, plans, and specifications shall be prepared by a licensed professional in accordance with the Oakland Building Construction Code.

Article IV – Financial Incentives

Section 15.30.300 Financial Incentives - Qualifications

A. From time to time, the City may provide opportunities for purchasers and current owners of existing residential buildings to apply for financial incentives to voluntarily strengthen their residences against earthquake damage. To qualify, purchasers and current owners shall complete either a prescriptive or non-prescriptive seismic strengthening upgrade in full conformance with the approved design and all conditions of the issued permit.

B. Purchasers and current owners shall not be eligible for financial incentives for work previously completed, with or without required permits, fees, and inspection approvals, which conforms with or exceeds either a prescriptive or non-prescriptive seismic strengthening design. Inspection of residential buildings by the Building Official to confirm the extent of previously installed work shall be a condition of permit issuance.

Section 15.30.310 Financial Incentives - Program

Financial incentives, as may be available, shall include the following:

A. A determinate permit fee, as established in the Master Fee Schedule.

B. A portion of the real estate transfer tax for a newly purchased residential building, not to exceed one-half of one percent (0.5 %) of the purchase price of the residential building, as verified by the Building Official, or $5,000.00, whichever is the lesser amount.

Section 15.30.320 Financial Incentives - Requirements

A. To qualify for a determinate permit fee incentive, as may be available, the purchaser or current owner shall:

1. Submit a certified copy of the recorded instrument of ownership with a permit application to the Building Official.

2. Within 1-year following approval of the permit application for issuance, receive a Certificate of Completion of the work from the Building Official.
3. Within 30-calendar days following issuance of a Certificate of Completion, submit an instrument approved by the Building Official establishing continuing ownership of the real property.

B. To qualify for a real estate transfer tax incentive, as may be available, the purchaser shall:

1. Within 60-calendar days following recordation by the Alameda County Clerk-Recorder of a transfer of ownership of the real property to the purchaser, submit the following documentation with a complete permit application to the Building Official:
   a. certified copy of the recorded instrument of ownership transfer, and
   b. approved instrument establishing the purchase price of the residential building.
2. Within 1-year following approval of the permit application for issuance, receive a Certificate of Completion of the work from the Building Official.
3. Within 30-calendar days following issuance of a Certificate of Completion, submit an approved instrument to the Building Official establishing continuing ownership of the real property.

SECTION 2. Findings

The recitals contained in this Ordinance are true and correct and are an integral part of the Council's decision, and are hereby adopted as findings.

SECTION 3. Severability

The provisions of this Ordinance are severable, and if any clause, sentence, paragraph, provision, or part of this Ordinance, or the application of this Ordinance to any person, is held to be invalid or preempted by state or federal law, such holding shall not impair or invalidate the remainder of this Ordinance. If any provision of this Ordinance is held to be inapplicable, the provisions of this Ordinance shall nonetheless continue to apply with respect to all other covered development projects and applicants. It is hereby declared to be the legislative intent of the City Council that this Ordinance would have been adopted had such provisions not been included or such persons or circumstances been expressly excluded from its coverage.

SECTION 4. California Environmental Quality Act

The Council of the City of Oakland finds and determines that this Ordinance complies with the California Environmental Quality Act (CEQA), based on the following, each of which provides a separate and independent basis:

1. CEQA Guidelines Section 15061(B)(3); and
2. CEQA Guidelines Section 150301 (existing facilities); and
3. CEQA Guidelines Section 150302 (replacement or reconstruction).

SECTION 5. Master Fee Schedule Amendment

The Master Fee Schedule of the City of Oakland is hereby amended to establish a determinate reduced building permit fee for the voluntary seismic strengthening of applicable residential buildings set forth herein, in the amount of two-hundred fifty dollars ($250.00), or as increased, decreased, or otherwise modified or deleted by subsequent ordinance amending the Master Fee Schedule. Such amendments by ordinance of the Master Fee Schedule shall not also require amendments to this ordinance.

SECTION 6. Effective Date

This Ordinance shall be effective on and after its adoption by sufficient affirmative votes of the Council of the City of Oakland, as provided in the Charter of the City of Oakland, Section 216.

IN COUNCIL, OAKLAND, CALIFORNIA, _____, 2007

PASSED BY THE FOLLOWING VOTE:

AYES- BROOKS, BRUNNER, CHANG, KERNIGHAN, NADEL, QUAN, REID, AND PRESIDENT DE LA FUENTE

NOES -

ABSENT –

ABSTENTION -

DRAFT

ATTEST: _____
LATONDA SIMMONS
City Clerk and Clerk of the Council
of the City of Oakland, California

DRAFT

NOTICE AND DIGEST

AN ORDINANCE ADOPTING OAKLAND MUNICIPAL CODE CHAPTER 15.30 TO ESTABLISH A VOLUNTARY SEISMIC STRENGTHENING REIMBURSEMENT INCENTIVE PROGRAM FOR RESIDENTIAL BUILDINGS AND AMENDING THE MASTER FEE SCHEDULE TO ESTABLISH A VOLUNTARY SEISMIC STRENGTHENING PERMIT FEE

This Ordinance will add Chapter 15.30, Voluntary Seismic Strengthening Of Residential Buildings, to the Oakland Municipal Code to establish the following:

- minimum design standards for structurally upgrading one and two-family residential buildings to survive earthquakes; and
- standards for property owners to apply for financial incentives from the City for structurally upgrading one-and two-family residential buildings; and a
- reduced fee for permits to structurally upgrade one and two-family residential buildings to survive earthquakes.