ONE ~ FRAME ~ A6
REPLACE DAMAGED 2nd STORY BRACES AND GUSSETS WITH SAME SECTIONS, WELDS AND SIZES AS NCBF-B-1 TEST

2nd STORY NET SECTION REINFORCEMENT, typ. PL3-1/2"x3/8"x12", FRONT & BACK ASTM A572-50

PL1/2" GUSSET ASTM A572-50

1st STORY NET SECTION REINFORCEMENT, typ. PL4-1/2"x3/8"x15", FRONT & BACK ASTM A572-50

NOTE 1: ALL FOUR BRACES FILLED WITH CONCRETE FROM END TO END, NOMINAL STRENGTH, f'c, OF 2000psi.

NOTE 2: REPAIR DONE UNDER FIELD CONDITIONS.

Collaborative Developments for Seismic Rehabilitation of Vulnerable Braced Frames

Drawn by Barb Simpson

Date 11/20/2013

Sheet E2

Frame Repair
### BILL OF MATERIAL

<table>
<thead>
<tr>
<th>ABR</th>
<th>NATO DVT</th>
<th>DESCRIPTION</th>
<th>NOTE</th>
<th>WEIGHT</th>
<th>MATERIAL</th>
<th>REMARKS</th>
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<tr>
<td>103A52</td>
<td>PL8880-10</td>
<td>PLATE_WASHER</td>
<td>0-3 V/12</td>
<td>88</td>
<td>ASTM-A6</td>
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### SHOP NOTES

1. BARS AND COLUMNS THAT BECOME BEAT OR DISTORTED DURING SHIPPI NG, HANDLING, MACHINING, WELDING, ETC. MUST BE STRAIGHTENED.
2. THREADS OF BARS TO BE PROVIDED ON THE BOTTOM OF THE BASE AND ON THE SAME COLUMN FACING THE DIRECTION WHERE THE COLUMN FACE.
3. INDICATE POINT OF INSTALLATION SD. MARK IN AREA NEAR CONNECTION FOR FIELD USE.
4. ALL FULL PENETRATION WELDS SHALL BE UT TESTED IN ACCORDANCE WITH ASME SECTIONS D, E, F, G, H, AND I. UNLESS DIRECTED OTHERWISE BY CONTRACT SPECIFICATIONS.
5. WELDING TO COMPLY TO AND SPECIFICATIONS. ELECTRODES: E6013 – LOW-HYDROGEN.
6. COATING ALL HOLES U N D W.

---

**ALL ERECTION THIS DRAWING IS CODE:**

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<thead>
<tr>
<th>ABR</th>
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<th>DESCRIPTION</th>
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<tr>
<td>103A52</td>
<td>08/21/2014</td>
<td>FOR APPROVAL</td>
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<tbody>
<tr>
<td>103A52</td>
<td>1215 CON</td>
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**EVERY DETAIL TO BE SHOWN AS LAYED OUT:**

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<th>DRAWING</th>
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<tbody>
<tr>
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<td>1215 CON</td>
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**FAB-NAME:**

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**DETAILS OF:**

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<th>C</th>
<th>H</th>
<th>SEQ</th>
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<td>1</td>
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52 - PLATE_WASHERS - 103A
**BILL OF MATERIAL**

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<th>NOTE</th>
<th>WEIGHT</th>
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<tbody>
<tr>
<td>PLA</td>
<td>2</td>
<td>1</td>
<td>PL 138 x 1'4</td>
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<td>54</td>
<td>M20 DG</td>
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**SHOP NOTES**

1. BARS AND COLUMNS THAT BECOME GENTLY DISTORTED DURING SHIPPING HANDLING MUST BE STRAIGHTENED.
2. REBAR MARK LEFT AS DETAILED ON REBAR PLATE.
3. COLUMN FLD's MARK TO APPEAR ON THE BOTTOM OF THE BASE AND ON THE SAME COLUMN FACE AS THE DIRECTION MARK NEAR THE COLUMN BASE.
4. INDICATE PART NUMBER SIDE MARK 24 IN. ADJACENT TO CONNECTION FOR FIELD USE.
5. ALL JUNCTIONS SHALL BE CUT AND EMBEDDED IN CONCRETE IN ACCORDANCE WITH ANSI 319 UNLESS DIRECTED OTHERWISE BY CONTRACTOR SPECIFICATION.
6. WELDING TO COMPLY WITH WELD SPECIFICATIONS ELECTRODES: E6013 – LOW HYDROGEN.

**ALL MATERIALS THIS DRAWING IS CODE:**

**ERECTION DRAWING REFERENCE:**

**DESIGN DRAWING REFERENCE:**

- DRAWING NUMBER:
- ISSUE:

**SPECIFY:**

- MATERIAL TO BE ASTM:
- AS FOLLOWS:

- CLEAN:
- N/A
- OPEN HOLES:
- 1/2" N/A

- PAINT:
- 1/4" N/A
- 12.9 N/A

- FABRICATOR:

- CHECKED BY:

- DATE:

- DRAWN BY:

- DATE:

- MATERIAL:
- PLATE
- STRUCTURE:
- UDG Test Frame
- LOCATION:

- M C H:

- REV:

- JOB NUMBER:

- FAB NAME:

- FAB NUMBER:

- REV:

- FAB NUMBER:

- FAB NAME:

- FAB NUMBER:

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- FAB NUMBER:

- REV:
BILL OF MATERIAL

1 STRAND PLATE s252-1

NO. PCS. DESCRIPTION | LENGTH FT. IN. | MARK | REMARKS |
--- | --- | --- | --- |
1 | STRAND PLATE | s252-1 | A36-LY |
1 | FB 1 x 10 | 12 | 2 9/16 | s252-1 | Heat# 910-1216 |

Fyc = 39.93 ksi

SUBJECT: s252-1
PROJECT: UC Berkeley Test Brace
LOCATION: Strongback Frame
CUSTOMER: UC Berkeley

DRAWN BY: TN CHECKED BY: DATE: 6/16/14

MANUFACTURE

6/25/14

6/16/14

Approval

DESCRIPTION OF REVISION

6300 N. SAGEWOOD DR
SUITE H #511
PARK CITY UT 84098

WWW.STARSEISMIC.NET
PHONE: 1-435-949-9222
FAX: 1-435-655-0073

JOB NO.: 140623 DWG NO.: s252-1

Shop Note: Deburr all cut edges

Spacer mark: f442a
Lyz=75.6 in
Total Brace Asc= 5.00 in²

12/16
1. **STAR BRB TO COLUMN Conn.**

   (B COLUMN FLANGE)

   - **WIDE FLANGE COLUMN**
   - **STAR Seismic**
   - **Buckling Restrained Wildcat BRB Brace Single Module**
   - **WORK POINT**
   - **ERECTING LUGS**
   - **Erection Lugs (by others)**
   - **L4x4x1/4 Erection L with 7/16" x 3/4" Slots (EA. Leg) (2) Bolt Conn. Optional (Erector Preference)**
   - **3/8" Dia. Erection Bolts (L & Bolts by others) (Typ @ All Brace Connection Und.)**

2. **TOP VIEW**

   - **WF COL.**
   - **GUSSET PLATE**
   - **Collar Assembly to Core Plate**
     - (See Note B)
   - **Field Note: Re-bar Stop to be removed prior to sliding the collars into position.**
   - **Collar Assy. Shipped Loose (Not Welded) With BRB. (See Field Note)**

3. **ELEVATION VIEW**

   - **(SINGLE TUBE)**
   - **Collar Assembly to Gusset Plate**
     - (See Note A)
   - **Collar Assy. Shipped Loose (Not Welded) With BRB. (See Field Note)**

4. **TYPICAL COLLAR ASSY FIT-UP**

   - **NOTES:**
   - A. This weld can be at the near or far side of the Gusset Plate at the Erector's option.
   - B. This weld can be at the top or bottom side of the Core Plate at the Erector's option.