

NOTE: LOCATE SG ON CENTER OF FLANGE OR UNDERSIDE OF FLANGE 50mm FROM EDGE AS NECESSARY.

STRAIN GAUGE LAYOUT
SCALE: 1mm = 50mm









NCBF-INV-4	
NEESR NCREE BRACED FRAME TEST	
DRAWN BY: MAC, ADS DESIGNED BY: MAC DATE: 1/13/2014 CONTACT: mclarke3@uw.edu	
DWG:	IN-1

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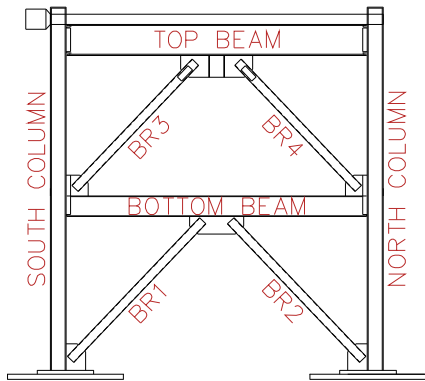
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KEY

-  STEEL UNIAXIAL STRAIN GAUGE
-  CONCRETE UNIAXIAL STRAIN GAUGE
-  TRIAXIAL STRAIN GAUGE

	LABEL	LOCATION		LABEL	LOCATION
1	SG 1	S COLUMN	24	SG 24	N COLUMN
2	SG 2	S COLUMN	25	SG 25	N COLUMN
3	SG 3	S COLUMN	26	SG 26	N COLUMN
4	SG 4	S COLUMN	27	SG 27	N COLUMN
5	SG 5	S COLUMN	28	SG 28	N COLUMN
6	SG 6	S COLUMN	29	SG 29	N COLUMN
7	SG 7	S COLUMN	30	SG 30	N COLUMN
8	SG 8	S COLUMN	31	SG 31	N COLUMN
9	SG 9	S TOP BEAM	32	SG 32	N TOP BEAM
10	SG 10	S TOP BEAM	33	SG 33	N TOP BEAM
11	SG 11	S TOP BEAM*	34	SG 34	N TOP BEAM*
12	SG 12	S TOP BEAM*	35	SG 35	N TOP BEAM*
13	SG 13	S TOP BEAM*	36	SG 36	N TOP BEAM*
14	SG 14	S TOP BEAM*	37	SG 37	N TOP BEAM*
					
15	SG 15	S TOP SLAB	38	SG 38	N TOP SLAB
16	SG 16	S TOP SLAB	39	SG 39	N TOP SLAB
17	SG 17	S TOP SLAB	40	SG 40	N TOP SLAB
					
18	SG 18	S COL BOT 0°	41	SG 41	N COL BOT 0°
19	SG 19	S COL BOT 45°	42	SG 42	N COL BOT 45°
20	SG 20	S COL BOT 90°	43	SG 43	N COL BOT 90°
21	SG 21	S COL TOP 0°	44	SG 44	N COL TOP 0°
22	SG 22	S COL TOP 45°	45	SG 45	N COL TOP 45°
23	SG 23	S COL TOP 90°	46	SG 46	N COL TOP 90°
//					
	LABEL	LOCATION		LABEL	LOCATION
47	SG 47	S BOT BRACE L	78	SG 78	N BOT BRACE L
48	SG 48	S BOT BRACE L	79	SG 79	N BOT BRACE L
49	SG 49	S BOT BRACE L	80	SG 80	N BOT BRACE L
50	SG 50	S BOT BRACE L	81	SG 81	N BOT BRACE L
51	SG 51	S BOT BRACE U	82	SG 82	N BOT BRACE U
52	SG 52	S BOT BRACE U	83	SG 83	N BOT BRACE U
53	SG 53	S BOT BRACE U	84	SG 84	N BOT BRACE U
54	SG 54	S BOT BRACE U	85	SG 85	N BOT BRACE U
55	SG 55	S BOT BEAM	86	SG 86	N BOT BEAM
56	SG 56	S BOT BEAM*	87	SG 87	N BOT BEAM*
57	SG 57	S BOT BEAM*	88	SG 88	N BOT BEAM*
58	SG 58	S BOT BEAM**	89	SG 89	N BOT BEAM**
59	SG 59	S BOT BEAM**	90	SG 90	N BOT BEAM**
60	SG 60	S BOT BEAM	91	SG 91	N BOT BEAM
61	SG 61	S BOT BEAM*	92	SG 92	N BOT BEAM*
62	SG 62	S BOT BEAM*	93	SG 93	N BOT BEAM*
63	SG 63	S BOT BEAM**	94	SG 94	N BOT BEAM**
64	SG 64	S BOT BEAM**	95	SG 95	N BOT BEAM**
65	SG 65	S BOT BEAM	96	SG 96	N BOT BEAM
66	SG 66	S BOT BEAM*	97	SG 97	N BOT BEAM*
67	SG 67	S BOT BEAM*	98	SG 98	N BOT BEAM*
68	SG 68	S BOT BEAM**	99	SG 99	N BOT BEAM**
69	SG 69	S BOT BEAM**	100	SG 100	N BOT BEAM**
70	SG 70	S TOP BRACE L	101	SG 101	N TOP BRACE L
71	SG 71	S TOP BRACE L	102	SG 102	N TOP BRACE L
72	SG 72	S TOP BRACE L	103	SG 103	N TOP BRACE L
73	SG 73	S TOP BRACE L	104	SG 104	N TOP BRACE L
74	SG 74	S TOP BRACE U	105	SG 105	N TOP BRACE U
75	SG 75	S TOP BRACE U	106	SG 106	N TOP BRACE U
76	SG 76	S TOP BRACE U	107	SG 107	N TOP BRACE U
77	SG 77	S TOP BRACE U	108	SG 108	N TOP BRACE U

* LOCATE STRAIN GAUGE AT UNDERSIDE OF BEAM FLANGE
 ** LOCATE STRAIN GAUGE AT UNDERSIDE OF METAL DECK



NCBF-INV-4	
NEESR NCREE BRACED FRAME TEST	
DRAWN BY: MAC, ADS DESIGNED BY: MAC DATE: 1/13/2014 CONTACT: mclarke3@uw.edu	DWG: IN-2

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KEY

- POTENTIOMETER PERPENDICULAR TO PLANE
- ➔ POTENTIOMETER IN DIRECTION OF ARROW
- TILTMETER (T)
- NDI OPTOTRAK LED TARGET (N)

ABBREVIATIONS

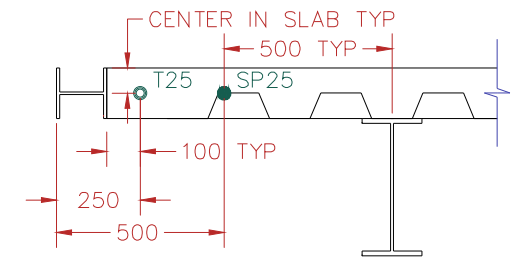
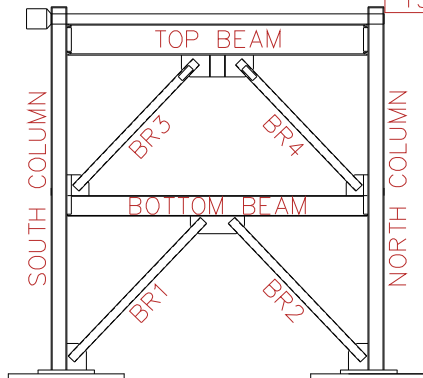
- N NORTH
- S SOUTH
- E EAST
- W WEST
- BOT BOTTOM
- MID MIDDLE
- COL COLUMN
- BR BRACE
- PL PLATE
- OOP OUT OF PLANE
- IP IN PLANE
- DIAG DIAGONAL
- DISP DISPLACEMENT
- ROT ROTATION
- PT POINT
- WP WORK POINT
- L LOWER
- U UPPER

TILTMETER DESIGNATIONS

○	DESCRIPTION	RANGE +/-
T1	S COL BASE ROT	5°
T2	S COL BASE ROT	10°
T3	S COL FLANGE AT BOT BEAM	10°
T4	S COL MID ROT	10°
T5	S COL MID ROT	10°
T6	TOP BEAM ROT MID S SIDE	3°
T7	TOP BEAM ROT MID S SIDE	3°
T8	BOT BEAM ROT S SIDE	5°
T9	BOT BEAM ROT S SIDE	10°
T10	BOT BEAM ROT MID S SIDE	14.5°
T11	BOT BEAM ROT MID S SIDE	10°
T12	BOT SLAB ROT S SIDE E	5°
T13	BOT SLAB ROT S SIDE W	5°
T14	N COL BASE ROT	5°
T15	N COL BASE ROT	10°
T16	N COL FLANGE AT BOT BEAM	10°
T17	N COL MID ROT	10°
T18	N COL MID ROT	10°
T19	TOP BEAM ROT MID N SIDE	3°
T20	TOP BEAM ROT MID N SIDE	3°
T21	BOT BEAM ROT N SIDE	5°
T22	BOT BEAM ROT N SIDE	10°
T23	BOT BEAM ROT MID N SIDE	14.5°
T24	BOT BEAM ROT MID N SIDE	10°
T25	BOT SLAB ROT N SIDE E	5°
T26	BOT SLAB ROT N SIDE W	5°
T27	BOT SLAB ROT MID E	10°
T28	BOT SLAB ROT MID W	10°
T29	TOP SLAB ROT N SIDE E	5°
T30	TOP SLAB ROT N SIDE W	5°
T31	BOT BEAM TORSIONAL ROT	5°

NDI OPTOTRAK LED DESIGNATIONS

●	DESCRIPTION	●	DESCRIPTION
N1	BR1 OOP QUARTER PT	N25	BR2 OOP QUARTER PT
N2	BR1 OOP QUARTER PT	N26	BR2 OOP QUARTER PT
N3	BR1 OOP	N27	BR2 OOP
N4	BR1 OOP	N28	BR2 OOP
N5	BR1 OOP	N29	BR2 OOP
N6	BR1 OOP	N30	BR2 OOP
N7	BR1 OOP	N31	BR2 OOP
N8	BR1 OOP	N32	BR2 OOP
N9	BOT BEAM MID GP GRID	N33	BOT BEAM MID GP GRID
N10	BOT BEAM MID GP GRID	N34	BOT BEAM MID GP GRID
N11	BOT BEAM MID GP GRID	N35	BOT BEAM MID GP GRID
N12	BOT BEAM MID GP GRID	N36	BOT BEAM MID WEB GRID
N13	BOT BEAM MID GP GRID	N37	BOT BEAM MID WEB GRID
N14	BOT BEAM MID GP GRID	N38	BOT BEAM MID WEB GRID
N15	BOT BEAM MID WEB GRID	N39	BOT BEAM MID WEB GRID
N16	BOT BEAM MID WEB GRID	N40	BOT BEAM MID WEB GRID
N17	BOT BEAM MID WEB GRID	N41	BOT BEAM MID WEB GRID
N18	BOT BEAM MID WEB GRID	N42	BOT BEAM MID WEB GRID
N19	BOT BEAM MID WEB GRID	N43	BOT BEAM MID WEB GRID
N20	BOT BEAM MID WEB GRID	N44	BOT BEAM MID WEB GRID
N21	BOT BEAM MID WEB GRID	N45	BOT BEAM MID WEB GRID
N22	BOT BEAM MID WEB GRID	N46	BOT BEAM MID WEB GRID
N23	BOT BEAM MID WEB GRID	N47	BOT BEAM MID WEB GRID
N24	BOT BEAM MID WEB GRID	N48	BOT BEAM MID WEB GRID



TYPICAL SLAB END INSTRUMENTATION DETAIL

NOTE: LOCATE TILTMETERS ON OUTSIDE EDGE OF EACH SLAB

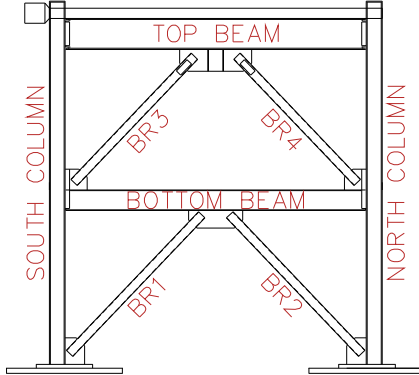
NCBF-INV-4	
NEESR NCREE BRACED FRAME TEST	
DRAWN BY: MAC, ADS DESIGNED BY: MAC DATE: 1/13/2014 CONTACT: mclarke3@uw.edu	DWG: IN-3

POTENTIOMETER DESIGNATIONS

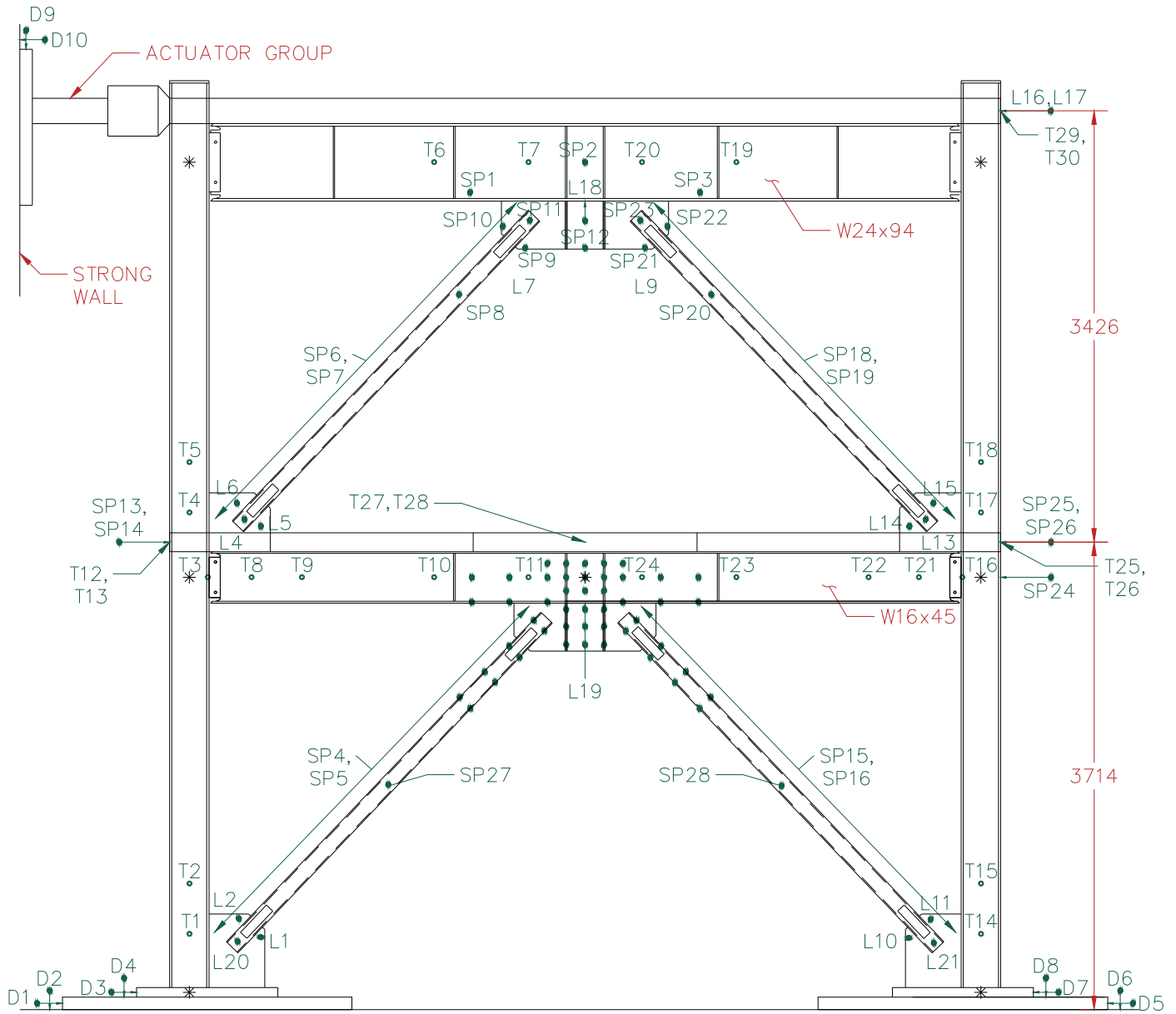
ABBREVIATIONS

- N NORTH
- S SOUTH
- E EAST
- W WEST
- BOT BOTTOM
- MID MIDDLE
- COL COLUMN
- BR BRACE
- PL PLATE
- OOP OUT OF PLANE
- IP IN PLANE
- DIAG DIAGONAL
- DISP DISPLACEMENT
- ROT ROTATION
- PT POINT
- WP WORK POINT
- L LOWER
- U UPPER

●	DESCRIPTION	TYPE	RANGE +/-	FREEDOM
L1	S BASE GP OOP BOT	TML	100mm	
L2	S BASE GP OOP TOP	TML	100mm	
L3	S BASE GP OOP CENTER	TML	50mm	
L4	S MID GP OOP CENTER	TML	50mm	HORIZ
L5	S MID GP OOP N EDGE	TML	100mm	HORIZ
L6	S MID GP OOP TOP EDGE	TML	100mm	HORIZ
L7	ALUMINUM PL OOP S	TML	25mm	
<hr/>				
L9	ALUMINUM PL OOP N	TML	25mm	
L10	N BASE GP OOP BOT	TML	100mm	
L11	N BASE GP OOP TOP	TML	100mm	
L12	N BASE GP OOP CENTER	TML	50mm	HORIZ
L13	N MID GP OOP CENTER	TML	50mm	HORIZ
L14	N MID GP OOP S EDGE	TML	100mm	HORIZ
L15	N MID GP OOP TOP EDGE	TML	100mm	HORIZ
L16	TOP BEAM DRIFT E SIDE	TEMPO	250mm	
L17	TOP BEAM DRIFT W SIDE	TEMPO	250mm	
L18	TOP BEAM VERT DISP	TML	150mm	HORIZ
L19	BOT BEAM VERT DISP	TML	150mm	HORIZ
<hr/>				
●	DESCRIPTION	TYPE	RANGE +/-	FREEDOM
SP1	TOP BEAM S OOP ROT	STRING	125mm	HORIZ
SP2	TOP BEAM MID OOP	STRING	125mm	HORIZ
SP3	TOP BEAM N OOP ROT	STRING	125mm	HORIZ
SP4	S BOT BRACE DIAG/OOP	STRING	250mm	HORIZ
SP5	S BOT BRACE DIAG/OOP	STRING	250mm	HORIZ
SP6	S TOP BRACE DIAG/OOP	STRING	250mm	HORIZ
SP7	S TOP BRACE DIAG/OOP	STRING	250mm	HORIZ
SP8	S TOP BRACE QUARTER PT	STRING	250mm	HORIZ
SP9	S TOP GP OOP BOT EDGE	STRING	125mm	HORIZ
SP10	S TOP GP OOP S EDGE	STRING	125mm	HORIZ
SP11	S TOP GP OOP CENTER	STRING	125mm	HORIZ
SP12	MID TOP GP OOP	STRING	125mm	HORIZ
SP13	S BOT BEAM DRIFT E SIDE	STRING	250mm	
SP14	S BOT BEAM DRIFT W SIDE	STRING	250mm	
SP15	N BOT BRACE DIAG/IP	STRING	250mm	HORIZ
SP16	N BOT BRACE DIAG/IP	STRING	250mm	HORIZ
<hr/>				
SP18	N TOP BRACE DIAG/OOP	STRING	250mm	HORIZ
SP19	N TOP BRACE DIAG/OOP	STRING	250mm	HORIZ
SP20	N TOP BRACE QUARTER PT	STRING	250mm	HORIZ
SP21	N TOP GP OOP BOT EDGE	STRING	125mm	HORIZ
SP22	N TOP GP OOP N EDGE	STRING	125mm	HORIZ
SP23	N TOP GP OOP CENTER	STRING	125mm	HORIZ
SP24	N BOT BEAM DRIFT WP	STRING	250mm	
SP25	N BOT BEAM DRIFT E SIDE	STRING	250mm	
SP26	N BOT BEAM DRIFT W SIDE	STRING	250mm	
SP27	S BOT BRACE OOP	STRING	250mm	
SP28	N BOT BRACE OOP	STRING	250mm	
<hr/>				
●	DESCRIPTION	TYPE	RANGE +/-	FREEDOM
D1	S ANCHOR PL SLIP	DIAL	25mm	
D2	S ANCHOR PL UPLIFT	DIAL	25mm	
D3	S BASE PL SLIP	DIAL	25mm	
D4	S BASE PL UPLIFT	DIAL	25mm	
D5	N ANCHOR PL SLIP	DIAL	25mm	
D6	N ANCHOR PL UPLIFT	DIAL	25mm	
D7	N BASE PL SLIP	DIAL	25mm	
D8	N BASE PL UPLIFT	DIAL	25mm	
D9	ACTUATOR BASE PL SLIP	DIAL	25mm	
D10	ACTUATOR BASE PL UPLIFT	DIAL	25mm	



NCBF-INV-4	
NEESR NCREE BRACED FRAME TEST	
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NCBF-INV-4

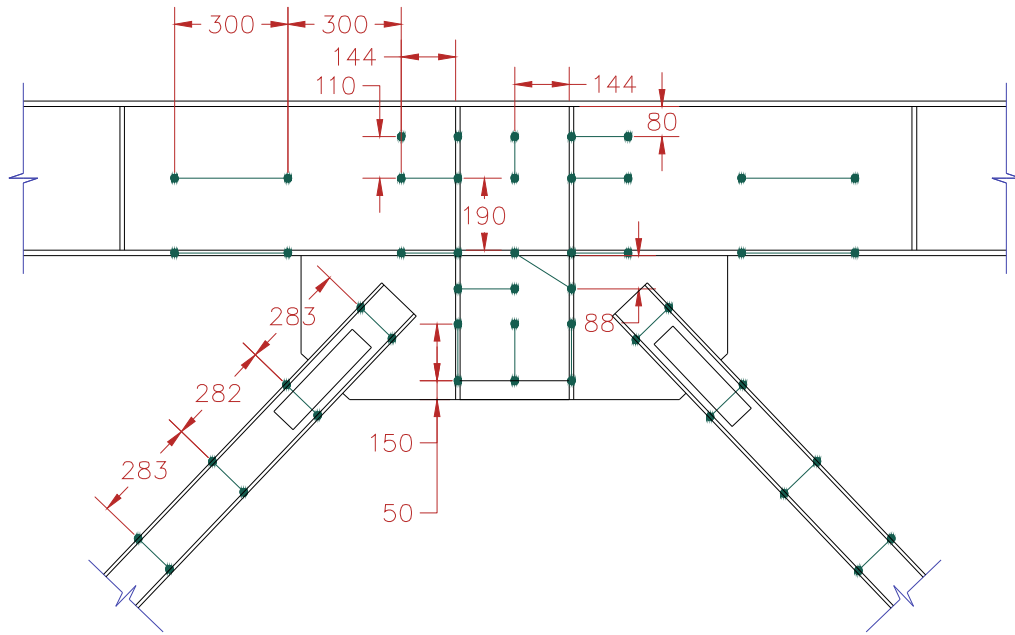
NEESR NCREE BRACED FRAME TEST

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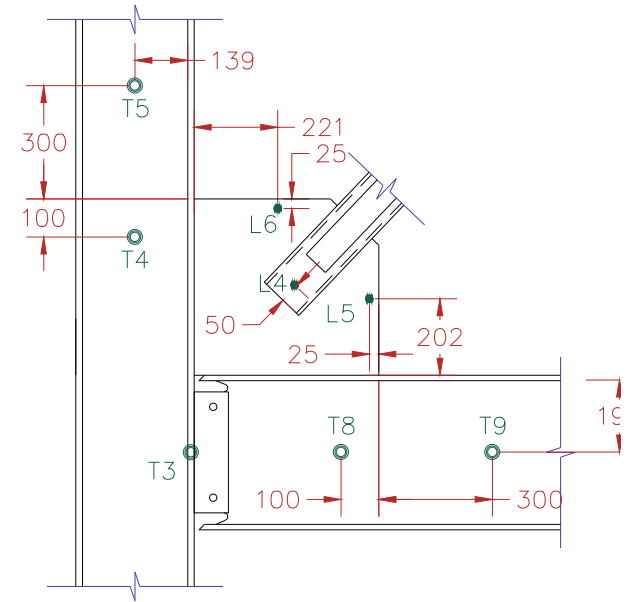
SCALE: 1mm = 50mm

DRAWN BY: MAC, ADS
 DESIGNED BY: MAC
 DATE: 1/13/2014
 CONTACT: mclarke3@uw.edu

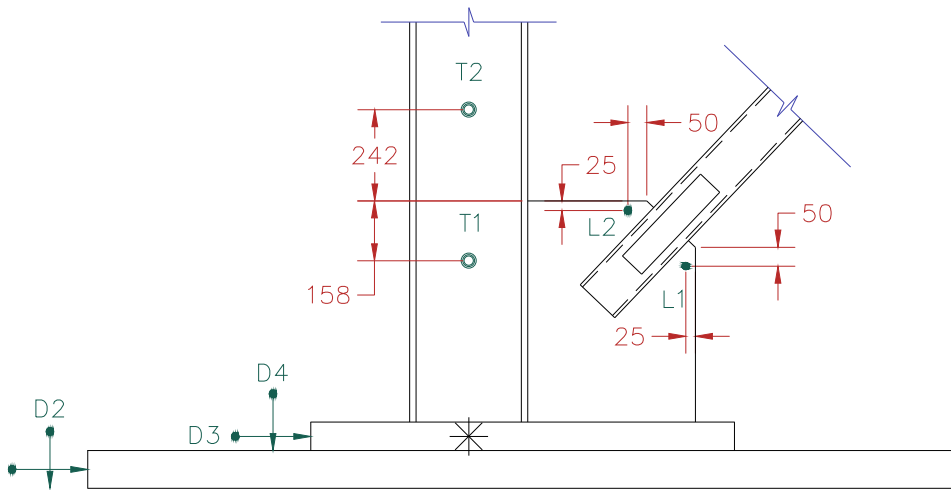
IN-5



BOTTOM BEAM GUSSET PLATE LED LOCATION DETAIL

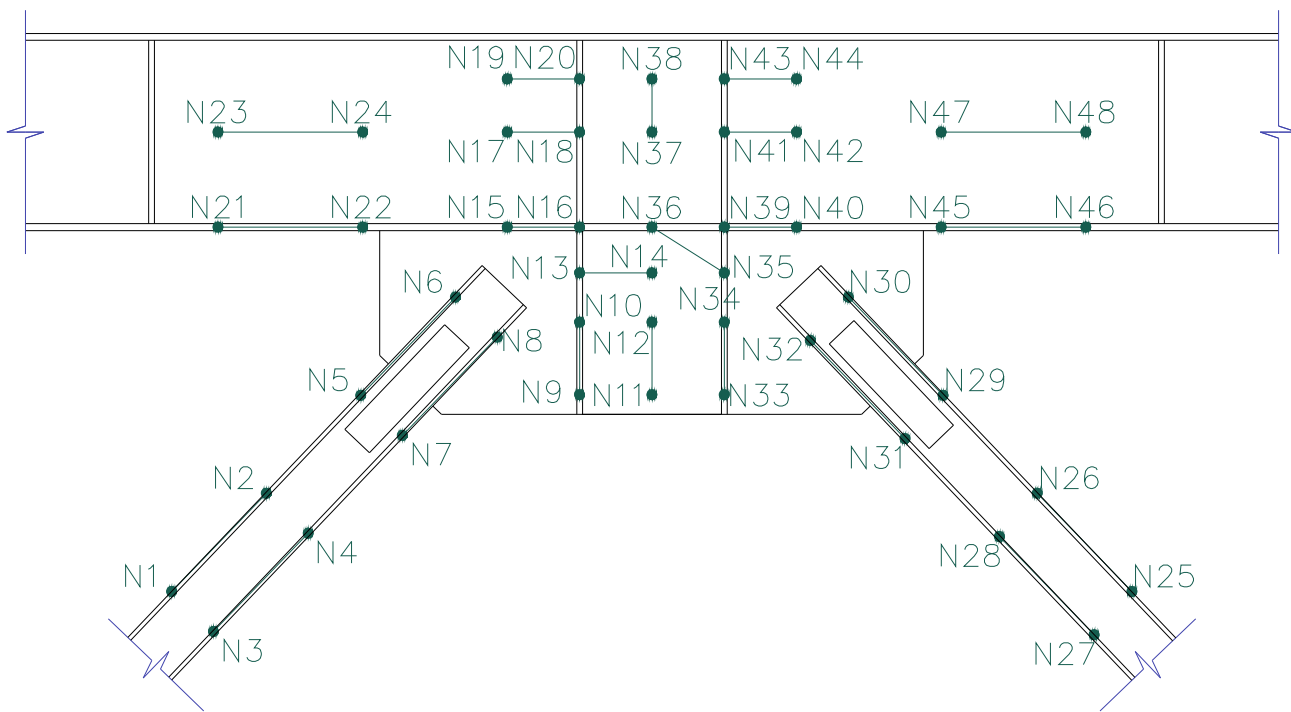


TYPICAL BEAM/COLUMN GUSSET PLATE INSTRUMENTATION DETAIL



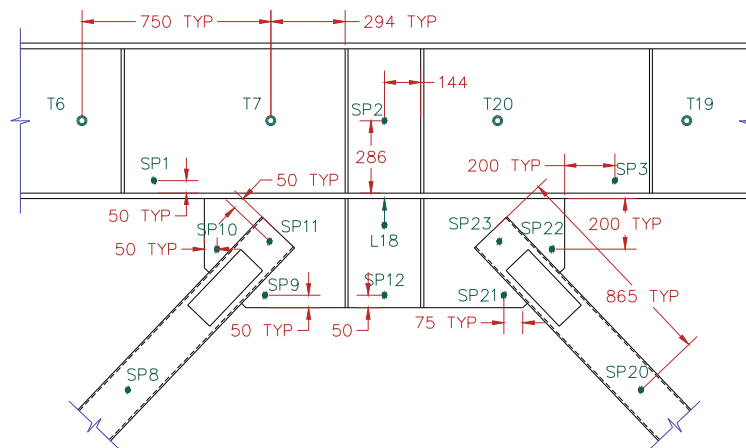
TYPICAL BASE GUSSET PLATE INSTRUMENTATION DETAIL

NCBF-INV-4	
NEESR NCREE BRACED FRAME TEST	
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DWG:	IN-6

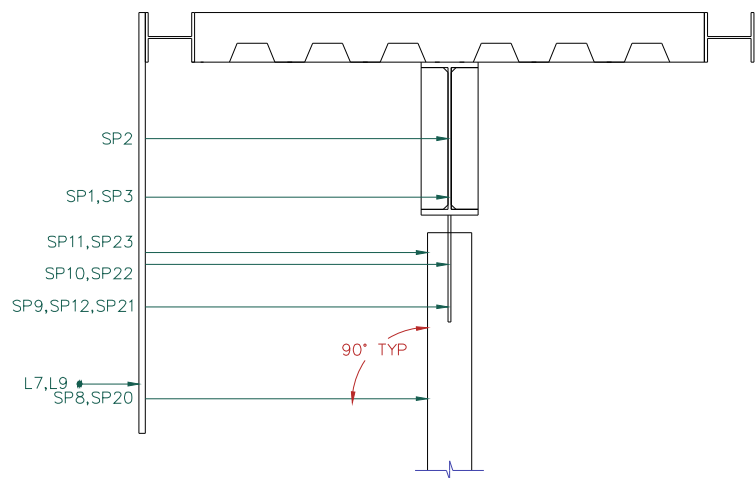


BOTTOM BEAM GUSSET PLATE LED NUMBERING

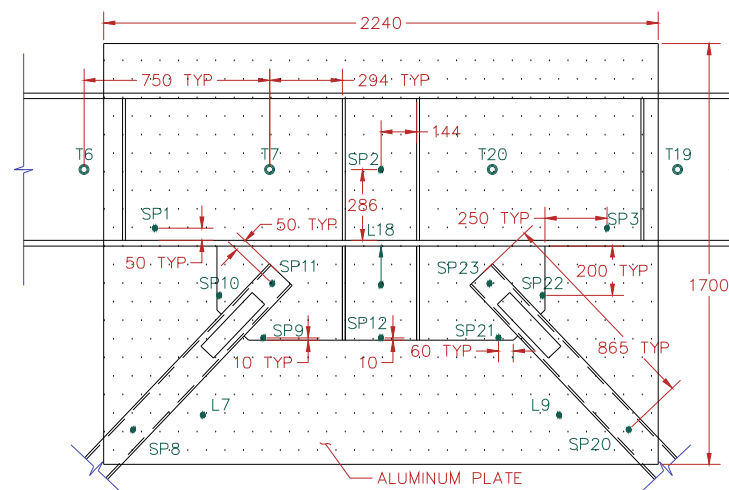
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DWG:	IN-7



TOP BEAM GUSSET PLATE
INSTRUMENTATION DETAIL



SECTION B-B



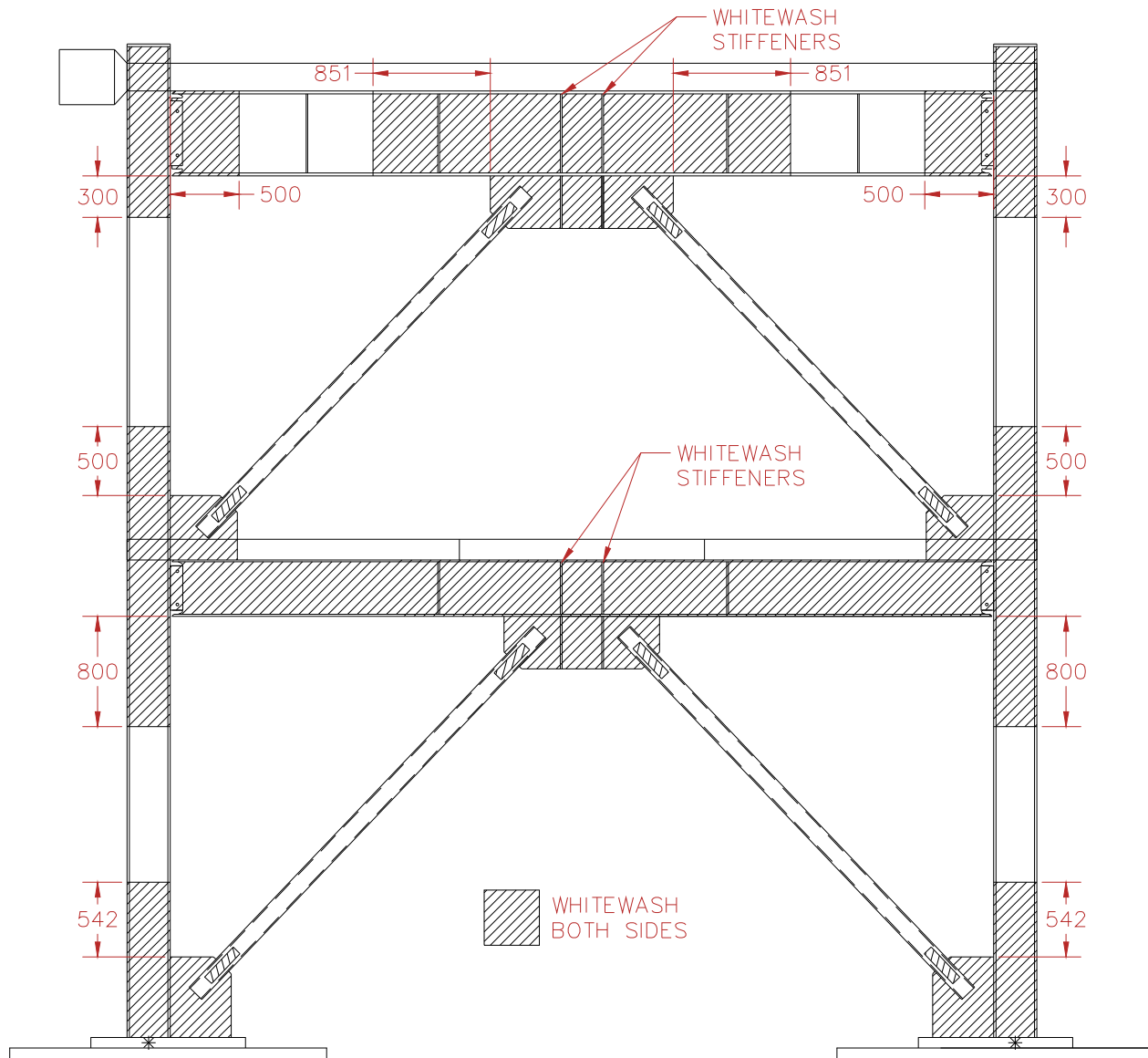
NCBF-INV-4

NEESR NCREE BRACED FRAME TEST

DWG:

DRAWN BY: MAC, ADS
DESIGNED BY: MAC
DATE: 1/13/2014
CONTACT: mclarke3@uw.edu

IN-8



WHITEWASH PLAN
 SCALE: 1mm = 50mm

NCBF-INV-4	
NEESR NCREE BRACED FRAME TEST	
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