

ภาคผนวกที่ 7
รายการคำนวณปริมาณดินชุด-ดินถม รายการ
คำนวณระบบป้องกันดินพัง
และรายการคำนวณการออกแบบ
อาคารต้านแผ่นดินไหว

ส่วนที่ 1 : รายการคำนวณปริมาณดินชุด-ดินถม

ส่วนที่ 2 : รายการคำนวณระบบป้องกันดินพัง

ส่วนที่ 3 : รายการคำนวณการออกแบบอาคารต้านแผ่นดินไหว

ส่วนที่ 1

รายการคำนวณปริมาณดินชุด-ดินถม

0 4 11พ. 2562

ปริมาณดินขุดและดินถมโครงการ สิ้นแพะฝายสิด

| ลำดับที่ | รายการ | ปริมาณดินขุด(ม3) | ปริมาณดินถม(ม3) | หมายเหตุ |
|----------|---|------------------|-----------------|----------|
| 1 | งานเสาเข็มเจาะขนาด Dia.0.60x32m.จำนวน 491 ต้น | 4,444 | | |
| 2 | งานล้างเก็บน้ำใต้ดิน | 1,455 | | |
| 3 | งานฐานรากและพื้นชั้นใต้ดิน | 14,094 | | |
| 4 | งานถนนรอบตัวอาคาร | - | | |
| | รวมปริมาณดินขุดและดินถมทั้งหมด | 19,993 | 8,224 | |
| | | | | |

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ส่วนที่ 2
รายการคำนวณระบบป้องกันดินพัง

รายการคำนวณโครงสร้าง

ระบบป้องกันดินพัง
โรงพยาบาลสินแพทย์ รังสิต

อ.ธัญบุรี จ.ปทุมธานี

DESIGN CRITERIA

SOIL (CLAY)

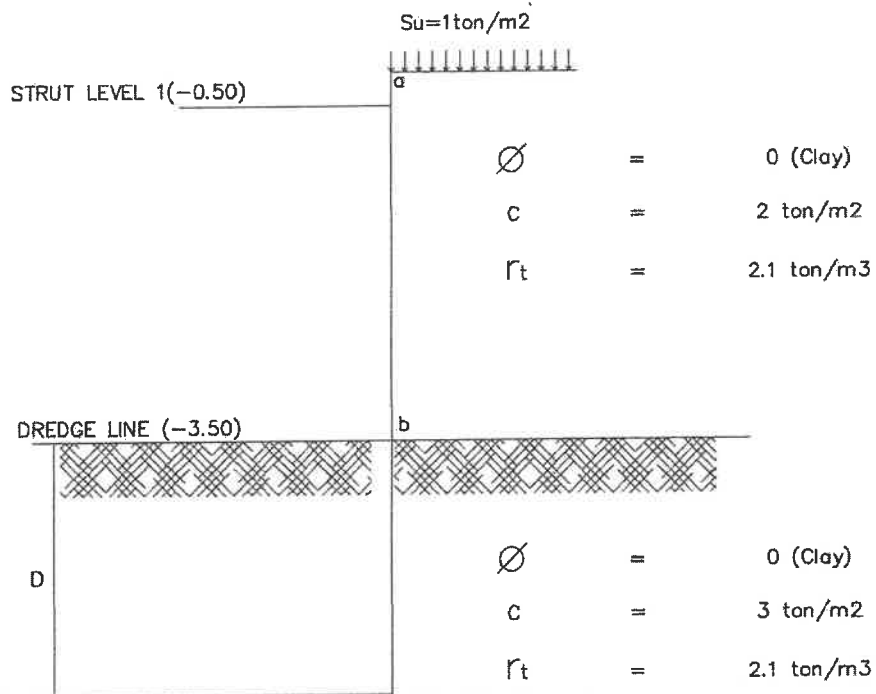
| | | |
|------------|---|---|
| SURCHARGE | = | 1 ton/m ² |
| ϕ | = | 0 (Clay) |
| c | = | 2 ton/m ² , 3 ton/m ² |
| γ_t | = | 2.1 ton/m ³ |

STEEL STRUCTURE

| | | |
|------------|---|-----------------------|
| $F_y(A36)$ | = | 2,500 ksc |
| F_b | = | 0.6 F_y = 1,500 ksc |
| F_v | = | 0.4 F_y = 1,000 ksc |

The design

CASE 2(ระบบป้องกันดินรอบอาคาร)



From TERZAGHI & PECK

For Soft clay to Medium clay ($N > 5-6$)

$$\begin{aligned} \sigma_h &= \sigma_{hA} + \Delta \sigma_h \\ \sigma_{hA} &= K_a \sigma_H \\ K_a &= 1 - (4/N) \\ N &= \gamma_t H / c = (2.1 \times 3.50) / 2 = 3.675 \text{ use } 5.00 \\ K_a &= 1 - (4/5.00) = 0.20 \\ \sigma_h &= 0.20 \times 2.1 \times 3.50 + 1 = 2.47 \text{ ton/m}^2 \end{aligned}$$

The answer

SHEET PILE

$$H_{\max} = 3.50\text{m}$$

$$\begin{aligned} +M_{\max} &= \frac{(6 H_{\max}^2)}{8} = \frac{(2.47 \times 3.50^2)}{8} \\ &= 3.782 \text{ t-m} \\ S_x &= \frac{M_{\max}}{F_b} = \frac{(3,782 \times 100)}{1,500} \\ &= 252.14 \text{ cm}^3 \end{aligned}$$

Find Sheet pile length (prevent heave effect)

Find Shear resistance S

$$S = 0.5 Q_u (H - Q_u / r)$$

Q_u = unconfined compressive strength = $2S_u$

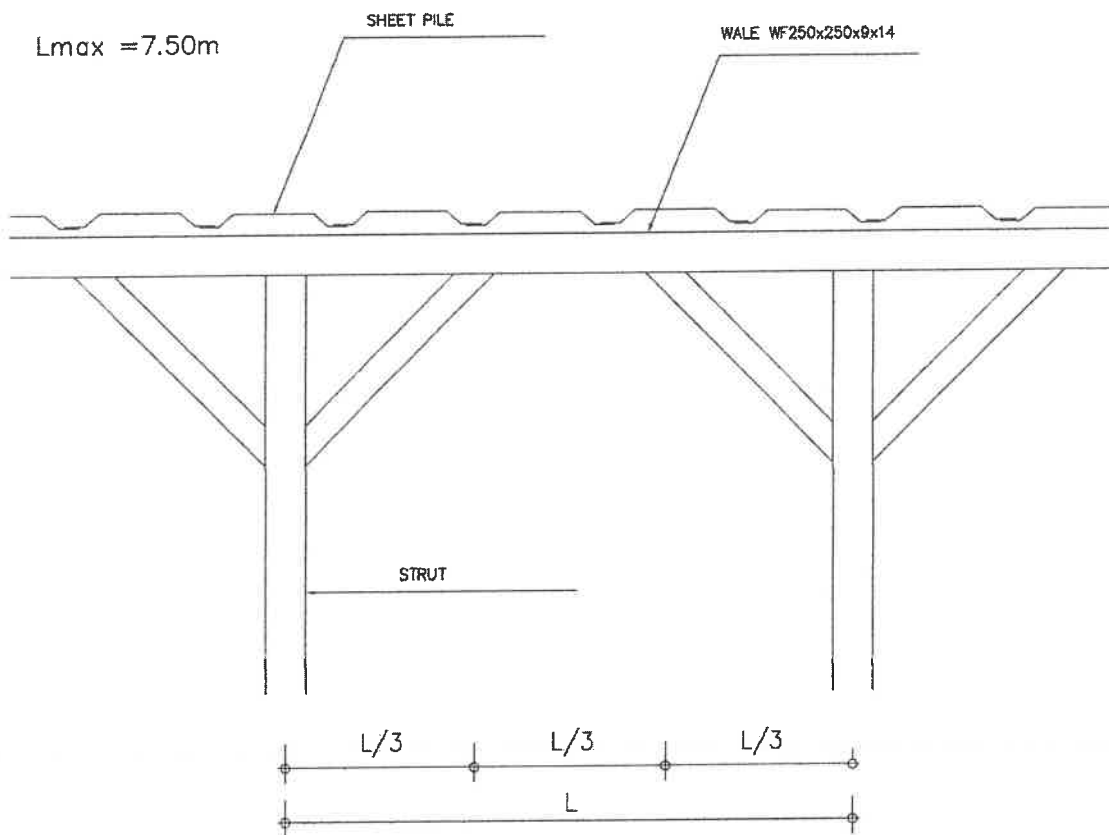
$$\begin{aligned} S &= 3((3.50 + D) - (6/2.1)) \\ &= 3D + 1.929 \end{aligned}$$

take moment at b

$$\begin{aligned} (\gamma H + q)B_1 - 2S - (0.5 \gamma B_1 Q_u) &= Q_u D \\ (2.1 \times (3.50 + D) + 1)D - 2S - (1.571 \times D \times 6) &= 6 \times D \\ 2.1D^2 - 13D - 3.85 &= 0 \\ D &= 6.45 \\ \text{Pile length max} &= 3.50 + 2D/3 \\ &= 3.50 + 2 \times 6.45/3 = 7.80 \text{ m} \end{aligned}$$

use 9.00m

The solution

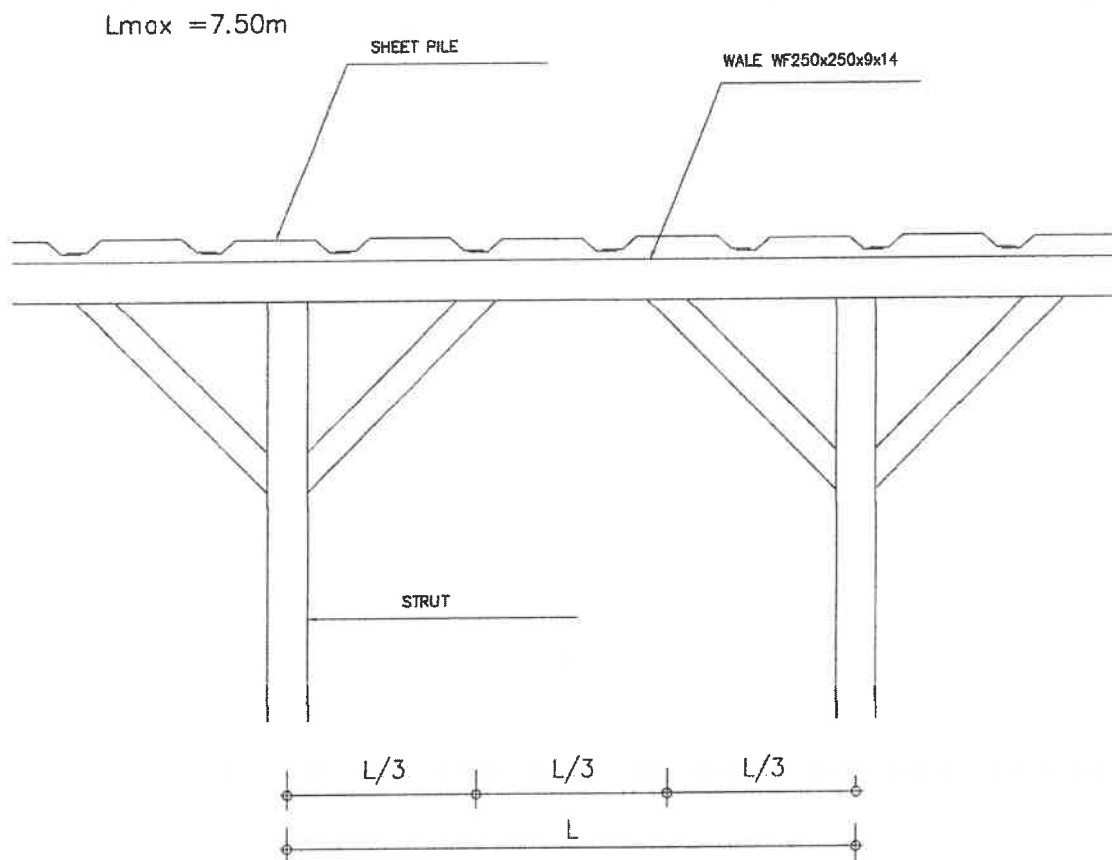
WALE $L_{max} = 7.50\text{m}$ 

$$\begin{aligned}
 W &= 2.47 \times 2.00 = 4.94 \text{ t/m} \\
 +M_{max} &= \frac{W \times (L_{max}/3)^2}{10} \\
 &= 3.08 \text{ t-m} \\
 S_x &= \frac{M_{max}}{F_b} = \frac{(3.08 \times 100)}{1,500} \\
 &= 205.83 \text{ cm}^3
 \end{aligned}$$

use WF 250x250x9x14 ($S_x = 867 \text{ cm}^3$)

The 15th Nov

STRUT



$$\text{Load on STRUT max} = 2.47 \times 2.00 \times 7.50 = 37.05 \text{ tons}$$

$$\text{try WF 250x250x9x14 } r_{min} = 6.29 \text{ cm.}$$

$$KL/r_{min} = 119.23$$

$$P(\text{allowable}) = 582 \text{ ksc}$$

$$P = 582 \times 82.06 = 47.75 \text{ tons}$$

$$> 37.05 \text{ tons ok}$$

the answer

ส่วนที่ 3

รายการคำนวณการออกแบบอาคาร
ด้านแผ่นดินไหว

**รายการคำนวณโครงสร้าง
ผลกระทบจากแรงแผ่นดินไหว**

อาคารโรงพยาบาลสินแพทย์รังสิต สูง 10 ชั้น

คลองสี จ.ปทุมธานี

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การออกแบบอาคารแผ่นดินไหวโดยวิธีเชิงพลศาสตร์

อาคารโรงพยาบาลสินแพทย์รังสิต คลองสี่

EARTHQUAKE DESIGN CRITERIA(มาตรฐาน มยผ 1302)

กฎบังคับ

- : นื่อกำหนดมาตรฐานการออกแบบด้านการสั่นสะเทือนของแผ่นดินไหว มยผ.1302 พ.ศ.2552
- : อาคารประเภทความสำคัญ IV (สูงมาก) ตัวประกอบความสำคัญ($I=1.5$)
- : ความสูงอาคาร 10 ชั้น จำนวน 1 อาคาร
- : ระบบโครงสร้าง Dual Systems Concrete Shear Walls with Concrete frame
- : สถานที่ก่อสร้าง ถ.รังสิต-นครนายก อ.ธัญบุรี จ.ปทุมธานี
- : โครงสร้างตั้งอยู่บนชั้นดินแบบ D แล่งกรุงเทพ โซน5
- : S_a 0.1 sec = 0.079
- : S_a 1 sec = 0.158
- : Response Modification Factor $R = 5.5$
- : Function Damping Ratio = 0.05
- : การเคลื่อนตัวสัมพัทธ์ระหว่างชั้นที่ยอมให้ 0.02h
- : สัมประสิทธิ์เสถียรภาพ(Stability Coefficient) < 0.25
- : ค่าความปลอดภัยต่อการพลิกคว่ำ >1.5

มาตรฐานแรงลม

- : มาตรฐานการคำนวณแรงลมและการตอบสนองของอาคาร มยผ.1311-50 พ.ศ.2550

The person

การออกแบบอาคารต้านแผ่นดินไหวโดยวิธีเชิงพลศาสตร์
อาคารโรงพยาบาลสินแพทย์รังสิต คลองสี่

กฎข้อบังคับ

- : ข้อกำหนดมาตรฐานการออกแบบต้านทานการสั่นสะเทือนของแผ่นดินไหว มยพ.1302 พ.ศ.2552
- : อาคารประเภทความสำคัญ IV (สูงมาก) ตัวประกอบความสำคัญ($I=1.5$)
- : ความสูงอาคาร 10 ชั้น จำนวน 1 อาคาร
- : ระบบโครงสร้าง Dual Systems Concrete Shear Walls with Concrete frame
- : สถานที่ก่อสร้าง อ.ลำลูกกา จ.ปทุมธานี
- : โครงสร้างตั้งอยู่บนชั้นดินแบบ D กรุงเทพมหานคร โซน 5
- : S_a 0.1 sec = 0.079
- : S_a 1 sec = 0.158
- : Response Modification Factor $R = 5.5$
- : Function Damping Ratio = 0.05
- : การเคลื่อนตัวสัมพัทธ์ระหว่างชั้นที่ยอมให้ 0.02h
- : สัมประสิทธิ์เสถียรภาพ (Stability Coefficient) < 0.25
- : ค่าความปลอดภัยต่อการพลิกคว่ำ > 1.5

โดย

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Response Spectrum Function Definition

- Function Name

BKK1302

Function Damping Ratio

0.05

- Define Function

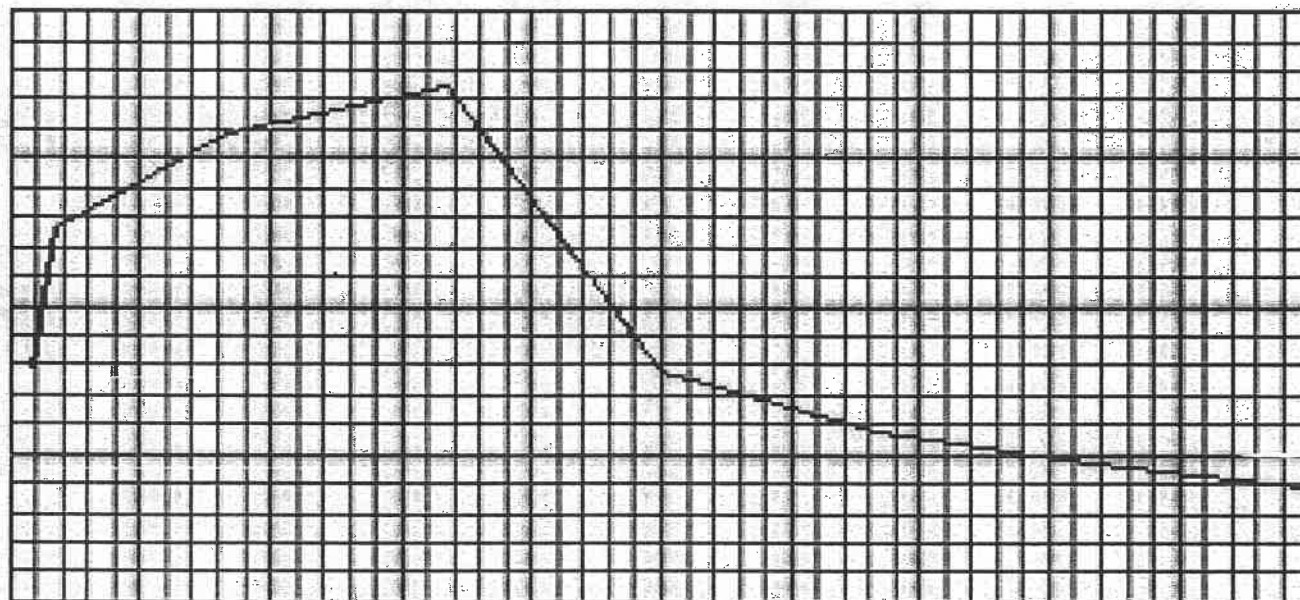
| Period | Acceleration |
|--------|--------------|
| 0.1 | 0.079 |
| 0.1 | 0.079 |
| 0.2 | 0.126 |
| 1. | 0.158 |
| 2. | 0.174 |
| 3. | 0.078 |
| 4. | 0.058 |
| 5. | 0.047 |
| 6. | 0.039 |

Add

Modify

Delete

- Function Graph



Display Graph

OK

W7-15

Cancel

7/10 15:55:15

PROJECT : โรงพยาบาลสินแพทย์รังสิต

Response Spectrum Scale Factor Calculation (UBC-97)

| Story | load | P | V _x | V _y |
|--------|-------|---|----------------|----------------|
| STORY1 | EQX | | 1534.97 | 0 |
| STORY1 | EQY | | | 1730.74 |
| STORY1 | EQXRS | | 2416.00 | 0 |
| STORY1 | EQYRS | | 0 | 2230.00 |

EQX (Equivalent Static Load Case) = 1534.97 Ton

EQY (Equivalent Static Load Case) = 1730.74 Ton

$V_{static} = \sqrt{EQX^2 + EQY^2} = 2313.35 \text{ Ton}$

EQX (Equivalent Spectrum Case) = 2416 Ton

EQY (Equivalent Spectrum Case) = 2230 Ton

$V_{Rs} = \sqrt{EQX^2 + EQY^2} = 3287.85 \text{ Ton}$

Scale Factor = $V_{static}/V_{RS} = 0.704$

The acceleration is in terms of g, (9.81)

So the final Scale factor is = 6.90

Apply 30% in other orthogonal direction = 2.07

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New Reportโรงพยาบาลสินแพทย์รังสิต

ETABS v9.7.0 File:โรงพยาบาลสินแพทย์รังสิต Units:Ton-m ตุลาคม 31,2560 23:37 PAGE 1

PROJECT INFORMATION

Company Name = 59 DESIGN CO.,LTD.
 Project Name = โรงพยาบาลสินแพทย์รังสิต
 Revision Number = 0
 Design Code = ACI 318 - 99 , มยพ.1302

ETABS v9.7.0 File:โรงพยาบาลสินแพทย์รังสิต Units:Ton-m ตุลาคม 31,2560 23:37 PAGE 2

S T O R Y D A T A

| STORY | SIMILAR TO | HEIGHT | ELEVATION |
|------------|------------|--------|-----------|
| TANKROOF | STORY1 | 5.000 | 56.200 |
| TANK FLOOR | STORY1 | 1.700 | 51.200 |
| TOP-ROOF | STORY1 | 3.000 | 49.500 |
| ROOF | STORY1 | 3.500 | 46.500 |
| STORY10 | STORY1 | 3.500 | 43.000 |
| STORY9 | STORY1 | 3.500 | 39.500 |
| STORY8 | STORY1 | 3.500 | 36.000 |
| STORY7 | STORY1 | 4.500 | 32.500 |
| STORY6 | STORY1 | 4.500 | 28.000 |
| STORY5 | STORY1 | 5.200 | 23.500 |
| STORY4 | STORY1 | 5.200 | 18.300 |
| STORY3 | STORY1 | 5.200 | 13.100 |
| STORY2 | STORY1 | 5.200 | 7.900 |
| STORY1 | None | 2.700 | 2.700 |
| BASE | None | | 0.000 |

ETABS v9.7.0 File:โรงพยาบาลสินแพทย์รังสิต Units:Ton-m ตุลาคม 31,2560 23:37 PAGE 3

S T A T I C L O A D C A S E S

| STATIC CASE | CASE TYPE | AUTO LAT LOAD | SELF WT MULTIPLIER | NOTIONAL FACTOR | NOTIONAL DIRECTION |
|-------------|------------|---------------|--------------------|-----------------|--------------------|
| DEAD | DEAD | N/A | 1.0000 | | |
| LIVE | LIVE | N/A | 0.0000 | | |
| SDL | SUPER DEAD | N/A | 0.0000 | | |
| WX | WIND | UBC97 | 0.0000 | | |
| WY | WIND | UBC97 | 0.0000 | | |
| EQX | QUAKE | UBC97 | 0.0000 | | |
| EQNX | QUAKE | UBC97 | 0.0000 | | |
| EQY | QUAKE | UBC97 | 0.0000 | | |
| EQNY | QUAKE | UBC97 | 0.0000 | | |

File 15550116

ETABS v9.7.0 File:โรงพยาบาลสินแพทย์รังสิต Units:Ton-m ตุลาคม 31, 2560 23:37 PAGE 4

R E S P O N S E S P E C T R U M C A S E S

RESP SPEC CASE: EQXRS

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|----------------|--------------------|------------------|-------------------|------------------|
| SRSS | SRSS | 0.0500 | 0.0000 | 0.0500 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | BKK1302 | 6.9000 |
| U2 | BKK1302 | 2.0700 |
| UZ | ---- | N/A |

RESP SPEC CASE: EQYRS

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|----------------|--------------------|------------------|-------------------|------------------|
| SRSS | SRSS | 0.0500 | 0.0000 | 0.0500 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | BKK1302 | 2.0700 |
| U2 | BKK1302 | 6.9000 |
| UZ | ---- | N/A |

ETABS v9.7.0 File:โรงพยาบาลสินแพทย์รังสิต Units:Ton-m ตุลาคม 31, 2560 23:37 PAGE 5

A U T O W I N D U B C 9 7
Case: WX

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AUTO WIND INPUT DATA

Exposure From: Rigid diaphragm extents

Direction Angle = 0 degrees

Windward Cq = .8

Leeward Cq = .5

Top Story: TANKROOF

Bottom Story: BASE

No parapet is included

Basic Wind Speed, V = 70 mph

Exposure Type = B

Importance Factor, Iw = 1.5

AUTO WIND EXPOSURE WIDTH INFORMATION (Exposure widths are from diaphragm extents)

| STORY | DIAPHRAGM | WIDTH | X | Y |
|------------|-----------|--------|--------|--------|
| TANKROOF | D1 | 7.410 | 56.335 | 23.545 |
| TANK FLOOR | D1 | 8.600 | 76.335 | 22.950 |
| TOP-ROOF | D1 | 22.500 | 56.125 | 16.000 |
| ROOF | D1 | 31.544 | 52.129 | 12.766 |
| STORY10 | D1 | 31.544 | 52.129 | 12.766 |
| STORY9 | D1 | 31.544 | 52.129 | 12.766 |
| STORY8 | D1 | 31.544 | 52.129 | 12.766 |
| STORY7 | D1 | 31.544 | 52.129 | 12.766 |
| STORY6 | D1 | 31.544 | 52.129 | 12.766 |
| STORY5 | D1 | 32.767 | 57.175 | 13.352 |
| STORY4 | D1 | 32.767 | 57.175 | 13.352 |
| STORY3 | D1 | 32.767 | 57.175 | 13.352 |
| STORY2 | D1 | 29.762 | 57.167 | 14.854 |
| STORY1 | D1 | 29.725 | 56.015 | 14.863 |

AUTO WIND CALCULATION FORMULAS

P = wind pressure = SUM(Ce Cq qs Iw) -- Method 1

Ce, the combined height, exposure and gust factor coefficient, is from UBC97 Table 16-G

qs is the wind stagnation pressure at the standard height of 33 feet
 $qs = 0.00256 V^2 \geq 10 \text{ psf}$

The Designer

AUTO WIND CALCULATION RESULTS

qs = 12.5440 psf

AUTO WIND STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|-------|------|------|-------|-------|
| TANKROOF | 3.14 | 0.00 | 0.00 | 0.000 | 0.000 |
| 0.778 | | | | | |
| TANK FLOOR | 4.89 | 0.00 | 0.00 | 0.000 | 0.000 |
| 3.833 | | | | | |
| TOP-ROOF | 8.81 | 0.00 | 0.00 | 0.000 | 0.000 |
| 54.786 | | | | | |
| ROOF | 16.58 | 0.00 | 0.00 | 0.000 | 0.000 |
| 128.479 | | | | | |
| STORY10 | 17.83 | 0.00 | 0.00 | 0.000 | 0.000 |
| 128.354 | | | | | |
| STORY9 | 17.82 | 0.00 | 0.00 | 0.000 | 0.000 |
| 128.281 | | | | | |
| STORY8 | 17.26 | 0.00 | 0.00 | 0.000 | 0.000 |
| 124.250 | | | | | |
| STORY7 | 19.25 | 0.00 | 0.00 | 0.000 | 0.000 |
| 138.687 | | | | | |
| STORY6 | 21.10 | 0.00 | 0.00 | 0.000 | 0.000 |
| 152.543 | | | | | |
| STORY5 | 22.82 | 0.00 | 0.00 | 0.000 | 0.000 |
| 130.305 | | | | | |
| STORY4 | 23.57 | 0.00 | 0.00 | 0.000 | 0.000 |
| 117.672 | | | | | |
| STORY3 | 22.48 | 0.00 | 0.00 | 0.000 | 0.000 |
| 112.475 | | | | | |
| STORY2 | 18.65 | 0.00 | 0.00 | 0.000 | 0.000 |
| 63.208 | | | | | |
| STORY1 | 13.16 | 0.00 | 0.00 | 0.000 | 0.000 |
| 44.595 | | | | | |

ETABS v9.7.0 File:โรงพยาบาลสินแพทย์รังสิต Units:Ton-m ตุลาคม 31, 2560 23:37 PAGE 6

A U T O W I N D U B C 9 7
Case: WY

AUTO WIND INPUT DATA

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New Reportโรงพยาบาลสินแพทย์รังสิต

Exposure From: Rigid diaphragm extents

Direction Angle = 90 degrees

Windward Cq = .8

Leeward Cq = .5

Top Story: TANKROOF

Bottom Story: BASE

No parapet is included

Basic Wind Speed, V = 70 mph

Exposure Type = B

Importance Factor, Iw = 1.5

AUTO WIND EXPOSURE WIDTH INFORMATION (Exposure widths are from diaphragm extents)

| STORY | DIAPHRAGM | WIDTH | X | Y |
|------------|-----------|---------|--------|--------|
| TANKROOF | D1 | 15.830 | 56.335 | 23.545 |
| TANK FLOOR | D1 | 55.830 | 76.335 | 22.950 |
| TOP-ROOF | D1 | 96.250 | 56.125 | 16.000 |
| ROOF | D1 | 104.258 | 52.129 | 12.766 |
| STORY10 | D1 | 104.258 | 52.129 | 12.766 |
| STORY9 | D1 | 104.258 | 52.129 | 12.766 |
| STORY8 | D1 | 104.258 | 52.129 | 12.766 |
| STORY7 | D1 | 104.258 | 52.129 | 12.766 |
| STORY6 | D1 | 104.258 | 52.129 | 12.766 |
| STORY5 | D1 | 114.349 | 57.175 | 13.352 |
| STORY4 | D1 | 114.349 | 57.175 | 13.352 |
| STORY3 | D1 | 114.349 | 57.175 | 13.352 |
| STORY2 | D1 | 114.334 | 57.167 | 14.854 |
| STORY1 | D1 | 112.030 | 56.015 | 14.863 |

AUTO WIND CALCULATION FORMULAS

P = wind pressure = SUM(Ce Cq qs Iw) -- Method 1

Ce, the combined height, exposure and gust factor coefficient, is from UBC97 Table 16-G

qs is the wind stagnation pressure at the standard height of 33 feet

qs = 0.00256 V² ≥ 10 psf

AUTO WIND CALCULATION RESULTS

File 15550112

New Reportโรงพยาบาลสินแพทย์รังสิต

qs = 12.5440 psf

AUTO WIND STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|------|-------|------|-------|-------|
| TANKROOF | 0.00 | 6.71 | 0.00 | 0.000 | 0.000 |
| 3.081 | | | | | |
| TANK FLOOR | 0.00 | 31.72 | 0.00 | 0.000 | 0.000 |
| 416.902 | | | | | |
| TOP-ROOF | 0.00 | 37.70 | 0.00 | 0.000 | 0.000 |
| -71.008 | | | | | |
| ROOF | 0.00 | 54.80 | 0.00 | 0.000 | 0.000 |
| -117.543 | | | | | |
| STORY10 | 0.00 | 58.93 | 0.00 | 0.000 | 0.000 |
| -131.303 | | | | | |
| STORY9 | 0.00 | 58.90 | 0.00 | 0.000 | 0.000 |
| -131.230 | | | | | |
| STORY8 | 0.00 | 57.05 | 0.00 | 0.000 | 0.000 |
| -127.105 | | | | | |
| STORY7 | 0.00 | 63.62 | 0.00 | 0.000 | 0.000 |
| -141.695 | | | | | |
| STORY6 | 0.00 | 69.75 | 0.00 | 0.000 | 0.000 |
| -156.324 | | | | | |
| STORY5 | 0.00 | 79.65 | 0.00 | 0.000 | 0.000 |
| 215.016 | | | | | |
| STORY4 | 0.00 | 82.27 | 0.00 | 0.000 | 0.000 |
| 191.413 | | | | | |
| STORY3 | 0.00 | 78.45 | 0.00 | 0.000 | 0.000 |
| 181.819 | | | | | |
| STORY2 | 0.00 | 71.64 | 0.00 | 0.000 | 0.000 |
| 120.011 | | | | | |
| STORY1 | 0.00 | 49.61 | 0.00 | 0.000 | 0.000 |
| 21.455 | | | | | |

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AUTO SEISMIC UBC 97
Case: EQX

AUTO SEISMIC INPUT DATA

Direction: X + EccY
Typical Eccentricity = 5%

File 1550115

Eccentricity Overrides: No

Period Calculation: Program Calculated

Ct = .02 (in feet units)

Top Story: TANKROOF

Bottom Story: BASE

R = 5.5

I = 1.5

hn = 56.200 (Building Height)

Soil Profile Type = SD

Z = .15

Ca = 0.2200

Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z >= 0.35 (Zone 4) then: If Tetabs <= 1.30 T_a then T = Tetabs, else
T = 1.30 T_a

If Z < 0.35 (Zone 1, 2 or 3) then: If Tetabs <= 1.40 T_a then T = Tetabs, else
T = 1.40 T_a

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If T <= 0.7 sec, then F_t = 0

If T > 0.7 sec, then F_t = 0.07 T V <= 0.25 V

AUTO SEISMIC CALCULATION RESULTS

T_a = 1.0007 sec

T Used = 1.4010 sec

W Used = 24641.63

V (Eqn 1) = 0.0623W

V (Eqn 2) = 0.1500W

V (Eqn 3) = 0.0363W

V (Eqn 4) = 0.0524W

V Used = 0.0623W = 1534.97

Ft Used = 150.54

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|--------|------|------|-------|-------|
| TANKROOF | 166.48 | 0.00 | 0.00 | 0.000 | 0.000 |
| -53.803 | | | | | |
| TANK FLOOR | 22.34 | 0.00 | 0.00 | 0.000 | 0.000 |
| -5.371 | | | | | |
| TOP-ROOF | 51.37 | 0.00 | 0.00 | 0.000 | 0.000 |
| 279.088 | | | | | |
| ROOF | 180.76 | 0.00 | 0.00 | 0.000 | 0.000 |
| 716.127 | | | | | |
| STORY10 | 167.53 | 0.00 | 0.00 | 0.000 | 0.000 |
| 534.353 | | | | | |
| STORY9 | 153.90 | 0.00 | 0.00 | 0.000 | 0.000 |
| 490.859 | | | | | |
| STORY8 | 140.26 | 0.00 | 0.00 | 0.000 | 0.000 |
| 447.365 | | | | | |
| STORY7 | 135.47 | 0.00 | 0.00 | 0.000 | 0.000 |
| 424.323 | | | | | |
| STORY6 | 120.57 | 0.00 | 0.00 | 0.000 | 0.000 |
| 361.416 | | | | | |
| STORY5 | 143.62 | 0.00 | 0.00 | 0.000 | 0.000 |
| 604.452 | | | | | |
| STORY4 | 115.32 | 0.00 | 0.00 | 0.000 | 0.000 |
| 404.993 | | | | | |
| STORY3 | 82.54 | 0.00 | 0.00 | 0.000 | 0.000 |
| 290.619 | | | | | |
| STORY2 | 41.43 | 0.00 | 0.00 | 0.000 | 0.000 |
| 50.892 | | | | | |
| STORY1 | 13.39 | 0.00 | 0.00 | 0.000 | 0.000 |
| 31.214 | | | | | |

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A U T O S E I S M I C U B C 9 7
Case: EQNX

AUTO SEISMIC INPUT DATA

Direction: X - EccY
Typical Eccentricity = 5%
Eccentricity Overrides: No

The 15/10/2015

Period Calculation: Program Calculated
Ct = .02 (in feet units)

Top Story: TANKROOF
Bottom Story: BASE

R = 5.5
I = 1.5
hn = 56.200 (Building Height)

Soil Profile Type = SD
Z = .15
Ca = 0.2200
Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z >= 0.35 (Zone 4) then: If Tetabs <= 1.30 T_a then T = Tetabs, else
T = 1.30 T_a

If Z < 0.35 (Zone 1, 2 or 3) then: If Tetabs <= 1.40 T_a then T = Tetabs, else
T = 1.40 T_a

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If T <= 0.7 sec, then F_t = 0

If T > 0.7 sec, then F_t = 0.07 T V <= 0.25 V

AUTO SEISMIC CALCULATION RESULTS

T_a = 1.0007 sec
T Used = 1.4010 sec
W Used = 24641.63

V (Eqn 1) = 0.0623W
V (Eqn 2) = 0.1500W
V (Eqn 3) = 0.0363W
V (Eqn 4) = 0.0524W

V Used = 0.0623W = 1534.97

F_t Used = 150.54

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|--------|------|------|-------|-------|
| TANKROOF | 166.48 | 0.00 | 0.00 | 0.000 | 0.000 |
| 23.579 | | | | | |
| TANK FLOOR | 22.34 | 0.00 | 0.00 | 0.000 | 0.000 |
| 6.785 | | | | | |
| TOP-ROOF | 51.37 | 0.00 | 0.00 | 0.000 | 0.000 |
| 323.623 | | | | | |
| ROOF | 180.76 | 0.00 | 0.00 | 0.000 | 0.000 |
| 843.700 | | | | | |
| STORY10 | 167.53 | 0.00 | 0.00 | 0.000 | 0.000 |
| 678.754 | | | | | |
| STORY9 | 153.90 | 0.00 | 0.00 | 0.000 | 0.000 |
| 623.507 | | | | | |
| STORY8 | 140.26 | 0.00 | 0.00 | 0.000 | 0.000 |
| 568.259 | | | | | |
| STORY7 | 135.47 | 0.00 | 0.00 | 0.000 | 0.000 |
| 547.567 | | | | | |
| STORY6 | 120.57 | 0.00 | 0.00 | 0.000 | 0.000 |
| 479.761 | | | | | |
| STORY5 | 143.62 | 0.00 | 0.00 | 0.000 | 0.000 |
| 723.028 | | | | | |
| STORY4 | 115.32 | 0.00 | 0.00 | 0.000 | 0.000 |
| 508.724 | | | | | |
| STORY3 | 82.54 | 0.00 | 0.00 | 0.000 | 0.000 |
| 364.828 | | | | | |
| STORY2 | 41.43 | 0.00 | 0.00 | 0.000 | 0.000 |
| 92.016 | | | | | |
| STORY1 | 13.39 | 0.00 | 0.00 | 0.000 | 0.000 |
| 42.022 | | | | | |

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A U T O S E I S M I C U B C 9 7

Case: EQY

AUTO SEISMIC INPUT DATA

Direction: Y + EccX

Typical Eccentricity = 5%

Eccentricity Overrides: No

7/6 15/10/2560

Period Calculation: Program Calculated

Ct = .02 (in feet units)

Top Story: TANKROOF

Bottom Story: BASE

R = 5.5

I = 1.5

hn = 56.200 (Building Height)

Soil Profile Type = SD

Z = .15

Ca = 0.2200

Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z >= 0.35 (Zone 4) then: If $T_{etabs} \leq 1.30 T_a$ then $T = T_{etabs}$, else
 $T = 1.30 T_a$

If Z < 0.35 (Zone 1, 2 or 3) then: If $T_{etabs} \leq 1.40 T_a$ then $T = T_{etabs}$, else
 $T = 1.40 T_a$

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If $T \leq 0.7$ sec, then $F_t = 0$

If $T > 0.7$ sec, then $F_t = 0.07 T V \leq 0.25 V$

AUTO SEISMIC CALCULATION RESULTS

$T_a = 1.0007$ sec

$T_{Used} = 1.2426$ sec

$W_{Used} = 24641.63$

$V (\text{Eqn 1}) = 0.0702W$

$V (\text{Eqn 2}) = 0.1500W$

$V (\text{Eqn 3}) = 0.0363W$

$V (\text{Eqn 4}) = 0.0524W$

$V_{Used} = 0.0702W = 1730.74$

$F_t_{Used} = 150.54$

File 150N0115

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|------|--------|------|-------|-------|
| TANKROOF | 0.00 | 168.74 | 0.00 | 0.000 | 0.000 |
| 101.431 | | | | | |
| TANK FLOOR | 0.00 | 25.50 | 0.00 | 0.000 | 0.000 |
| 123.306 | | | | | |
| TOP-ROOF | 0.00 | 58.63 | 0.00 | 0.000 | 0.000 |
| -705.482 | | | | | |
| ROOF | 0.00 | 206.32 | 0.00 | 0.000 | 0.000 |
| 745.310 | | | | | |
| STORY10 | 0.00 | 191.22 | 0.00 | 0.000 | 0.000 |
| 486.301 | | | | | |
| STORY9 | 0.00 | 175.66 | 0.00 | 0.000 | 0.000 |
| 446.718 | | | | | |
| STORY8 | 0.00 | 160.09 | 0.00 | 0.000 | 0.000 |
| 407.136 | | | | | |
| STORY7 | 0.00 | 154.62 | 0.00 | 0.000 | 0.000 |
| 548.582 | | | | | |
| STORY6 | 0.00 | 137.61 | 0.00 | 0.000 | 0.000 |
| 494.249 | | | | | |
| STORY5 | 0.00 | 163.93 | 0.00 | 0.000 | 0.000 |
| 796.762 | | | | | |
| STORY4 | 0.00 | 131.63 | 0.00 | 0.000 | 0.000 |
| 607.558 | | | | | |
| STORY3 | 0.00 | 94.21 | 0.00 | 0.000 | 0.000 |
| 434.196 | | | | | |
| STORY2 | 0.00 | 47.29 | 0.00 | 0.000 | 0.000 |
| 333.261 | | | | | |
| STORY1 | 0.00 | 15.29 | 0.00 | 0.000 | 0.000 |
| 94.785 | | | | | |

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A U T O S E I S M I C U B C 9 7

Case: EQNY

AUTO SEISMIC INPUT DATA

Direction: Y - EccX

Typical Eccentricity = 5%

Eccentricity Overrides: No

Period Calculation: Program Calculated

The Designer

Ct = .02 (in feet units)

Top Story: TANKROOF

Bottom Story: BASE

R = 5.5

I = 1.5

hn = 56.200 (Building Height)

Soil Profile Type = SD

Z = .15

Ca = 0.2200

Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z >= 0.35 (Zone 4) then: If $T_{etabs} \leq 1.30 T_a$ then $T = T_{etabs}$, else $T = 1.30 T_a$

If Z < 0.35 (Zone 1, 2 or 3) then: If $T_{etabs} \leq 1.40 T_a$ then $T = T_{etabs}$, else $T = 1.40 T_a$

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If $T \leq 0.7$ sec, then $F_t = 0$

If $T > 0.7$ sec, then $F_t = 0.07 T V \leq 0.25 V$

AUTO SEISMIC CALCULATION RESULTS

$T_a = 1.0007$ sec

$T_{Used} = 1.2426$ sec

$W_{Used} = 24641.63$

$V (\text{Eqn 1}) = 0.0702W$

$V (\text{Eqn 2}) = 0.1500W$

$V (\text{Eqn 3}) = 0.0363W$

$V (\text{Eqn 4}) = 0.0524W$

$V_{Used} = 0.0702W = 1730.74$

$F_t_{Used} = 150.54$

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|------|--------|------|-------|-------|
| TANKROOF | 0.00 | 168.74 | 0.00 | 0.000 | 0.000 |
| -66.119 | | | | | |
| TANK FLOOR | 0.00 | 25.50 | 0.00 | 0.000 | 0.000 |
| 33.229 | | | | | |
| TOP-ROOF | 0.00 | 58.63 | 0.00 | 0.000 | 0.000 |
| -922.935 | | | | | |
| ROOF | 0.00 | 206.32 | 0.00 | 0.000 | 0.000 |
| 264.032 | | | | | |
| STORY10 | 0.00 | 191.22 | 0.00 | 0.000 | 0.000 |
| -58.459 | | | | | |
| STORY9 | 0.00 | 175.66 | 0.00 | 0.000 | 0.000 |
| -53.701 | | | | | |
| STORY8 | 0.00 | 160.09 | 0.00 | 0.000 | 0.000 |
| -48.943 | | | | | |
| STORY7 | 0.00 | 154.62 | 0.00 | 0.000 | 0.000 |
| 83.636 | | | | | |
| STORY6 | 0.00 | 137.61 | 0.00 | 0.000 | 0.000 |
| 47.785 | | | | | |
| STORY5 | 0.00 | 163.93 | 0.00 | 0.000 | 0.000 |
| 324.445 | | | | | |
| STORY4 | 0.00 | 131.63 | 0.00 | 0.000 | 0.000 |
| 194.375 | | | | | |
| STORY3 | 0.00 | 94.21 | 0.00 | 0.000 | 0.000 |
| 138.604 | | | | | |
| STORY2 | 0.00 | 47.29 | 0.00 | 0.000 | 0.000 |
| 152.938 | | | | | |
| STORY1 | 0.00 | 15.29 | 0.00 | 0.000 | 0.000 |
| 48.291 | | | | | |

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MASS SOURCE DATA

MASS LATERAL LUMP MASS
FROM MASS ONLY AT STORIES

Masses Yes Yes

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DIAPHRAGM MASS DATA

STORY DIAPHRAGM MASS-X MASS-Y MMI X-M

The Engineer

New Reportโรงพยาบาลสินแพทย์รังสิต

Y-M

| | | | | | |
|------------|----|-----------|-----------|-----------|--------|
| TANKROOF | D1 | 8.171E+00 | 8.171E+00 | 3.055E+02 | 55.876 |
| 23.793 | | | | | |
| TANK FLOOR | D1 | 1.268E+01 | 1.268E+01 | 3.995E+03 | 63.191 |
| 23.734 | | | | | |
| TOP-ROOF | D1 | 1.836E+01 | 1.836E+01 | 1.569E+04 | 58.008 |
| 22.216 | | | | | |
| ROOF | D1 | 3.993E+01 | 3.993E+01 | 3.969E+04 | 54.274 |
| 20.515 | | | | | |
| STORY10 | D1 | 4.888E+01 | 4.888E+01 | 5.127E+04 | 54.357 |
| 19.965 | | | | | |
| STORY9 | D1 | 4.888E+01 | 4.888E+01 | 5.127E+04 | 54.357 |
| 19.965 | | | | | |
| STORY8 | D1 | 4.888E+01 | 4.888E+01 | 5.127E+04 | 54.357 |
| 19.965 | | | | | |
| STORY7 | D1 | 5.520E+01 | 5.520E+01 | 5.790E+04 | 54.356 |
| 19.972 | | | | | |
| STORY6 | D1 | 6.152E+01 | 6.152E+01 | 6.456E+04 | 54.370 |
| 19.995 | | | | | |
| STORY5 | D1 | 7.070E+01 | 7.070E+01 | 7.969E+04 | 54.475 |
| 19.061 | | | | | |
| STORY4 | D1 | 7.943E+01 | 7.943E+01 | 9.221E+04 | 54.848 |
| 18.343 | | | | | |
| STORY3 | D1 | 7.938E+01 | 7.938E+01 | 9.219E+04 | 54.857 |
| 18.355 | | | | | |
| STORY2 | D1 | 8.031E+01 | 8.031E+01 | 9.136E+04 | 55.492 |
| 18.244 | | | | | |
| STORY1 | D1 | 6.183E+01 | 6.183E+01 | 7.011E+04 | 55.583 |
| 18.250 | | | | | |

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A S S E M B L E D P O I N T M A S S E S

| STORY RZ | UX | UY | UZ | RX | RY |
|-------------|-----------|-----------|-----------|-----------|-----------|
| TANKROOF | 1.303E+01 | 1.303E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 3.055E+02 | | | | | |
| TANK FLOOR | 2.003E+01 | 2.003E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 3.995E+03 | | | | | |
| TOP-ROOF | 4.765E+01 | 4.765E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 1.569E+04 | | | | | |
| ROOF | 1.785E+02 | 1.785E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 3.969E+04 | | | | | |
| STORY10 | 1.789E+02 | 1.789E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 5.127E+04 | | | | | |

7/10 15/10/2017

| New Reportโรงพยาบาลสินแพทย์รังสิต | | | | | |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|
| STORY9 | 1.789E+02 | 1.789E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 5.127E+04 | | | | | |
| STORY8 | 1.789E+02 | 1.789E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 5.127E+04 | | | | | |
| STORY7 | 1.914E+02 | 1.914E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 5.790E+04 | | | | | |
| STORY6 | 1.977E+02 | 1.977E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 6.456E+04 | | | | | |
| STORY5 | 2.806E+02 | 2.806E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 7.969E+04 | | | | | |
| STORY4 | 2.893E+02 | 2.893E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 9.221E+04 | | | | | |
| STORY3 | 2.893E+02 | 2.893E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 9.219E+04 | | | | | |
| STORY2 | 2.408E+02 | 2.408E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 9.136E+04 | | | | | |
| STORY1 | 2.277E+02 | 2.277E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 7.011E+04 | | | | | |
| BASE | 1.914E+02 | 1.914E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 5.198E+05 | | | | | |
| Totals | 2.704E+03 | 2.704E+03 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| 1.281E+06 | | | | | |

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C E N T E R S O F C U M U L A T I V E M A S S & C E N T E R S O F
R I G I D I T Y

| STORY RIGIDITY--/ LEVEL ORDINATE-Y | DIAPHRAGM NAME | /-----CENTER OF MASS-----//--CENTER OF | | | |
|---|-------------------|--|------------|------------|------------|
| | | MASS | ORDINATE-X | ORDINATE-Y | ORDINATE-X |
| TANKROOF | D1 | 8.171E+00 | 55.876 | 23.793 | 53.875 |
| 23.999 | | | | | |
| TANK FLOOR | D1 | 2.085E+01 | 60.324 | 23.757 | 50.462 |
| 24.352 | | | | | |
| TOP-ROOF | D1 | 3.921E+01 | 59.240 | 23.036 | 50.253 |
| 24.364 | | | | | |
| ROOF | D1 | 7.914E+01 | 56.734 | 21.764 | 50.283 |
| 24.432 | | | | | |
| STORY10 | D1 | 1.280E+02 | 55.826 | 21.077 | 50.341 |
| 24.518 | | | | | |
| STORY9 | D1 | 1.769E+02 | 55.420 | 20.770 | 50.421 |
| 24.619 | | | | | |
| STORY8 | D1 | 2.258E+02 | 55.190 | 20.595 | 50.521 |
| 24.737 | | | | | |
| STORY7 | D1 | 2.810E+02 | 55.026 | 20.473 | 50.647 |

File 1590115

New Reportโรงพยาบาลสินแพทย์รังสิต

| | | | | | |
|--------|----|-----------|--------|--------|--------|
| 24.863 | | | | | |
| STORY6 | D1 | 3.425E+02 | 54.909 | 20.387 | 50.865 |
| 25.020 | | | | | |
| STORY5 | D1 | 4.132E+02 | 54.834 | 20.160 | 51.188 |
| 25.153 | | | | | |
| STORY4 | D1 | 4.926E+02 | 54.837 | 19.867 | 51.796 |
| 25.221 | | | | | |
| STORY3 | D1 | 5.720E+02 | 54.839 | 19.657 | 52.898 |
| 25.057 | | | | | |
| STORY2 | D1 | 6.523E+02 | 54.920 | 19.483 | 54.798 |
| 24.372 | | | | | |
| STORY1 | D1 | 7.142E+02 | 54.977 | 19.377 | 56.231 |
| 22.778 | | | | | |

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MODAL PERIODS AND FREQUENCIES

| MODE FREQ NUMBER (RADIANS/TIME) | PERIOD (TIME) | FREQUENCY (CYCLES/TIME) | CIRCULAR |
|--|------------------|----------------------------|----------|
| Mode 1 4.20688 | 1.49355 | 0.66955 | |
| Mode 2 5.05667 | 1.24255 | 0.80479 | |
| Mode 3 6.11868 | 1.02689 | 0.97382 | |
| Mode 4 18.74675 | 0.33516 | 2.98364 | |
| Mode 5 24.97777 | 0.25155 | 3.97534 | |
| Mode 6 29.56182 | 0.21254 | 4.70491 | |
| Mode 7 43.55844 | 0.14425 | 6.93254 | |
| Mode 8 58.76743 | 0.10692 | 9.35313 | |

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MODAL PARTICIPATING MASS RATIOS

| MODE RY-ROTN NUMBER %MASS <SUM> | X-TRANS RZ-ROTN %MASS <SUM> | Y-TRANS %MASS <SUM> | Z-TRANS %MASS <SUM> | RX-ROTN %MASS <SUM> |
|--|-----------------------------------|------------------------|------------------------|------------------------|
|--|-----------------------------------|------------------------|------------------------|------------------------|

7/16 15/10/2015

New Reportโรงพยาบาลสินแพทย์รังสิต

| | | | | |
|-------------|-------------|-------------|-----------|-------------|
| Mode 1 | 56.76 < 57> | 2.09 < 2> | 0.00 < 0> | 3.08 < 3> |
| 84.65 < 85> | 5.96 < 6> | | | |
| Mode 2 | 5.13 < 62> | 52.87 < 55> | 0.00 < 0> | 80.59 < 84> |
| 7.86 < 93> | 4.73 < 11> | | | |
| Mode 3 | 3.66 < 66> | 8.80 < 64> | 0.00 < 0> | 14.03 < 98> |
| 5.85 < 98> | 52.82 < 64> | | | |
| Mode 4 | 17.50 < 83> | 0.28 < 64> | 0.00 < 0> | 0.03 < 98> |
| 1.24 <100> | 1.46 < 65> | | | |
| Mode 5 | 0.73 < 84> | 18.24 < 82> | 0.00 < 0> | 1.80 <100> |
| 0.06 <100> | 2.39 < 67> | | | |
| Mode 6 | 0.60 < 84> | 2.56 < 85> | 0.00 < 0> | 0.23 <100> |
| 0.05 <100> | 18.30 < 86> | | | |
| Mode 7 | 5.47 < 90> | 0.06 < 85> | 0.00 < 0> | 0.00 <100> |
| 0.22 <100> | 0.09 < 86> | | | |
| Mode 8 | 0.06 < 90> | 5.58 < 90> | 0.00 < 0> | 0.18 <100> |
| 0.00 <100> | 0.40 < 86> | | | |

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MODAL LOAD PARTICIPATION RATIOS
(STATIC AND DYNAMIC RATIOS ARE IN PERCENT)

| TYPE | NAME | STATIC | DYNAMIC |
|-------|------|---------|---------|
| Load | DEAD | 0.6187 | 0.0000 |
| Load | LIVE | 0.5641 | 0.0000 |
| Load | SDL | 0.5996 | 0.0000 |
| Load | WX | 99.9767 | 26.5559 |
| Load | WY | 99.9740 | 26.1798 |
| Load | EQX | 99.8764 | 51.3467 |
| Load | EQNX | 99.8780 | 51.2940 |
| Load | EQY | 99.8593 | 56.0883 |
| Load | EQNY | 99.8441 | 55.9745 |
| Accel | UX | 99.9731 | 89.9330 |
| Accel | UY | 99.9762 | 90.4811 |
| Accel | UZ | 0.0000 | 0.0000 |
| Accel | RX | 99.9998 | 99.9353 |
| Accel | RY | 99.9998 | 99.9248 |
| Accel | RZ | 90.4630 | 86.1488 |

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TOTAL REACTIVE FORCES (RECOVERED LOADS) AT ORIGIN

| LOAD | FX | FY | FZ | MX | MY |
|------|----|----|----|----|----|
| MZ | | | | | |

File 1502222

New Reportโรงพยาบาลสินแพทย์รังสิต

| | | | | | |
|------------|------------|------------|------------|------------|------------|
| DEAD | -1.274E-01 | -5.009E-01 | 2.654E+04 | 4.142E+05 | -1.526E+06 |
| -3.367E+01 | | | | | |
| LIVE | -7.520E-02 | -3.101E-01 | 1.298E+04 | 1.884E+05 | -7.540E+05 |
| -2.110E+01 | | | | | |
| SDL | -4.413E-02 | -1.565E-01 | 5.740E+03 | 8.208E+04 | -3.352E+05 |
| -1.051E+01 | | | | | |
| WX | -2.271E+02 | 4.073E-02 | -1.703E-03 | -1.414E+00 | -6.377E+03 |
| 3.122E+03 | | | | | |
| WY | 2.671E-02 | -7.998E+02 | 2.635E-03 | 2.243E+04 | 7.591E-01 |
| -4.439E+04 | | | | | |
| EQX | -1.533E+03 | 2.302E-01 | -1.712E-02 | -8.115E+00 | -5.440E+04 |
| 2.645E+04 | | | | | |
| EQNX | -1.533E+03 | 2.544E-01 | -1.705E-02 | -8.960E+00 | -5.440E+04 |
| 2.520E+04 | | | | | |
| EQY | 9.478E-02 | -1.728E+03 | 7.872E-03 | 6.092E+04 | 2.769E+00 |
| -9.968E+04 | | | | | |
| EQNY | 6.394E-02 | -1.728E+03 | 7.605E-03 | 6.092E+04 | 1.738E+00 |
| -9.491E+04 | | | | | |
| EQXRS | 1.699E+03 | 7.507E+02 | 1.584E-02 | 2.626E+04 | 5.848E+04 |
| 4.986E+04 | | | | | |
| EQYRS | 7.762E+02 | 1.569E+03 | 1.391E-02 | 5.432E+04 | 2.710E+04 |
| 1.142E+05 | | | | | |

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S T O R Y F O R C E S

| STORY MX | LOAD MY | P | VX | VY | T |
|-------------|------------|------------|------------|-----------|-----------|
| TANKROOF | WX | -3.812E-04 | -3.132E+00 | 4.596E-09 | 7.375E+01 |
| -9.051E-03 | -1.564E+01 | | | | |
| TANK FLOOR | WX | -1.148E-03 | -8.005E+00 | 2.389E-08 | 1.856E+02 |
| -2.724E-02 | -2.921E+01 | | | | |
| TOP-ROOF | WX | -1.213E-03 | -1.681E+01 | 3.054E-08 | 3.263E+02 |
| -2.879E-02 | -7.963E+01 | | | | |
| ROOF | WX | -1.720E-03 | -3.333E+01 | 1.512E-02 | 5.388E+02 |
| -9.374E-02 | -1.963E+02 | | | | |
| STORY10 | WX | -1.720E-03 | -5.111E+01 | 1.813E-02 | 7.656E+02 |
| -1.572E-01 | -3.752E+02 | | | | |
| STORY9 | WX | -1.720E-03 | -6.891E+01 | 1.872E-02 | 9.927E+02 |
| -2.227E-01 | -6.163E+02 | | | | |
| STORY8 | WX | -1.719E-03 | -8.616E+01 | 1.995E-02 | 1.213E+03 |
| -2.925E-01 | -9.179E+02 | | | | |
| STORY7 | WX | -1.720E-03 | -1.054E+02 | 2.451E-02 | 1.459E+03 |
| -4.028E-01 | -1.392E+03 | | | | |
| STORY6 | WX | -1.721E-03 | -1.265E+02 | 2.530E-02 | 1.728E+03 |

7/10/2017

New Reportโรงพยาบาลสินแพทย์รังสิต

| | | | | | |
|------------|------------|------------|------------|------------|------------|
| -5.167E-01 | -1.961E+03 | -1.654E-03 | -1.493E+02 | 3.268E-02 | 2.034E+03 |
| STORY5 | WX | | | | |
| -6.854E-01 | -2.737E+03 | -1.673E-03 | -1.728E+02 | 3.766E-02 | 2.349E+03 |
| STORY4 | WX | | | | |
| -8.818E-01 | -3.636E+03 | -1.695E-03 | -1.953E+02 | 4.056E-02 | 2.649E+03 |
| STORY3 | WX | | | | |
| -1.093E+00 | -4.652E+03 | -1.695E-03 | -2.139E+02 | 4.061E-02 | 2.926E+03 |
| STORY2 | WX | | | | |
| -1.304E+00 | -5.764E+03 | -1.703E-03 | -2.271E+02 | 4.073E-02 | 3.122E+03 |
| STORY1 | WX | | | | |
| -1.414E+00 | -6.377E+03 | -3.924E-06 | 2.008E-04 | -6.711E+00 | -3.781E+02 |
| TANKROOF | WY | | | | |
| 3.356E+01 | 1.102E-03 | -9.695E-05 | 5.343E-04 | -3.843E+01 | -2.799E+03 |
| TANK FLOOR | WY | | | | |
| 9.889E+01 | 7.549E-03 | =1.147E=04 | 9.079E=04 | =7.613E=01 | =4.915E=03 |
| TOP=ROOF | WY | | | | |
| 3.273E+02 | 1.132E-02 | -7.269E-05 | 8.214E-03 | -1.307E+02 | -7.754E+03 |
| ROOF | WY | | | | |
| 7.848E+02 | 2.585E-02 | -9.847E-06 | 1.125E-02 | -1.896E+02 | -1.082E+04 |
| STORY10 | WY | | | | |
| 1.448E+03 | 5.883E-02 | 5.248E-05 | 1.231E-02 | -2.485E+02 | -1.389E+04 |
| STORY9 | WY | | | | |
| 2.318E+03 | 9.560E-02 | 1.139E-04 | 1.245E-02 | -3.056E+02 | -1.687E+04 |
| STORY8 | WY | | | | |
| 3.388E+03 | 1.329E-01 | 1.328E-04 | 1.623E-02 | -3.691E+02 | -2.018E+04 |
| STORY7 | WY | | | | |
| 5.049E+03 | 2.041E-01 | 1.394E-04 | 1.946E-02 | -4.389E+02 | -2.381E+04 |
| STORY6 | WY | | | | |
| 7.024E+03 | 2.911E-01 | 1.192E-03 | 2.309E-02 | -5.182E+02 | -2.835E+04 |
| STORY5 | WY | | | | |
| 9.718E+03 | 3.563E-01 | 1.989E-03 | 2.540E-02 | -6.002E+02 | -3.304E+04 |
| STORY4 | WY | | | | |
| 1.284E+04 | 4.447E-01 | 2.621E-03 | 2.671E-02 | -6.786E+02 | -3.752E+04 |
| STORY3 | WY | | | | |
| 1.637E+04 | 5.490E-01 | 2.623E-03 | 2.671E-02 | -7.502E+02 | -4.161E+04 |
| STORY2 | WY | | | | |
| 2.027E+04 | 6.877E-01 | 2.635E-03 | 2.671E-02 | -7.998E+02 | -4.439E+04 |
| STORY1 | WY | | | | |
| 2.243E+04 | 7.591E-01 | =3.806E=03 | =1.664E=02 | 2.605E=08 | 4.013E=03 |
| TANKROOF | EQX | | | | |
| -9.037E-02 | -8.318E+02 | -1.145E-02 | -1.886E+02 | 1.348E-07 | 4.545E+03 |
| TANK FLOOR | EQX | | | | |
| -2.718E-01 | -1.152E+03 | -1.209E-02 | -2.399E+02 | 1.730E-07 | 5.405E+03 |
| TOP-ROOF | EQX | | | | |
| -2.871E-01 | -1.872E+03 | -1.712E-02 | -4.201E+02 | 8.413E-02 | 8.399E+03 |
| ROOF | EQX | | | | |
| -7.000E-01 | -3.342E+03 | -1.714E-02 | -5.872E+02 | 1.007E-01 | 1.120E+04 |
| STORY10 | EQX | | | | |

7/4 15/5/2565

New Reportโรงพยาบาลสินแพทย์รังสิต

| | | | | | |
|------------|------------|------------|------------|------------|------------|
| -1.053E+00 | -5.397E+03 | -1.717E-02 | -7.409E+02 | 1.038E-01 | 1.378E+04 |
| STORY9 | EQX | | | | |
| -1.416E+00 | -7.990E+03 | -1.719E-02 | -8.811E+02 | 1.106E-01 | 1.613E+04 |
| STORY8 | EQX | | | | |
| -1.804E+00 | -1.107E+04 | -1.720E-02 | -1.016E+03 | 1.358E-01 | 1.841E+04 |
| STORY7 | EQX | | | | |
| -2.415E+00 | -1.565E+04 | -1.721E-02 | -1.137E+03 | 1.402E-01 | 2.046E+04 |
| STORY6 | EQX | | | | |
| -3.046E+00 | -2.076E+04 | -1.663E-02 | -1.280E+03 | 1.837E-01 | 2.260E+04 |
| STORY5 | EQX | | | | |
| -3.990E+00 | -2.742E+04 | -1.684E-02 | -1.395E+03 | 2.125E-01 | 2.431E+04 |
| STORY4 | EQX | | | | |
| -5.101E+00 | -3.467E+04 | -1.706E-02 | -1.478E+03 | 2.293E-01 | 2.553E+04 |
| STORY3 | EQX | | | | |
| -6.298E+00 | -4.236E+04 | -1.706E-02 | -1.519E+03 | 2.296E-01 | 2.624E+04 |
| STORY2 | EQX | | | | |
| -7.492E+00 | -5.026E+04 | -1.712E-02 | -1.533E+03 | 2.302E-01 | 2.645E+04 |
| STORY1 | EQX | | | | |
| -8.115E+00 | -5.440E+04 | -3.800E-03 | -1.664E+02 | 2.886E-08 | 3.935E+03 |
| TANKROOF | EQNX | | | | |
| -9.023E-02 | -8.318E+02 | -1.143E-02 | -1.886E+02 | 1.500E-07 | 4.456E+03 |
| TANK FLOOR | EQNX | | | | |
| -2.713E-01 | -1.152E+03 | -1.207E-02 | -2.399E+02 | 1.923E-07 | 5.271E+03 |
| TOP-ROOF | EQNX | | | | |
| -2.866E-01 | -1.872E+03 | -1.707E-02 | -4.201E+02 | 9.397E-02 | 8.138E+03 |
| ROOF | EQNX | | | | |
| -7.335E-01 | -3.342E+03 | -1.710E-02 | -5.872E+02 | 1.125E-01 | 1.080E+04 |
| STORY10 | EQNX | | | | |
| -1.127E+00 | -5.397E+03 | -1.711E-02 | -7.409E+02 | 1.160E-01 | 1.324E+04 |
| STORY9 | EQNX | | | | |
| -1.534E+00 | -7.990E+03 | -1.713E-02 | -8.811E+02 | 1.236E-01 | 1.547E+04 |
| STORY8 | EQNX | | | | |
| -1.966E+00 | -1.107E+04 | -1.714E-02 | -1.016E+03 | 1.516E-01 | 1.763E+04 |
| STORY7 | EQNX | | | | |
| -2.649E+00 | -1.565E+04 | -1.716E-02 | -1.137E+03 | 1.565E-01 | 1.956E+04 |
| STORY6 | EQNX | | | | |
| -3.354E+00 | -2.076E+04 | -1.657E-02 | -1.280E+03 | 2.037E-01 | 2.158E+04 |
| STORY5 | EQNX | | | | |
| -4.402E+00 | -2.742E+04 | -1.677E-02 | -1.395E+03 | 2.351E-01 | 2.319E+04 |
| STORY4 | EQNX | | | | |
| -5.630E+00 | -3.467E+04 | -1.699E-02 | -1.478E+03 | 2.534E-01 | 2.434E+04 |
| STORY3 | EQNX | | | | |
| -6.952E+00 | -4.236E+04 | -1.698E-02 | -1.519E+03 | 2.537E-01 | 2.500E+04 |
| STORY2 | EQNX | | | | |
| -8.271E+00 | -5.026E+04 | -1.705E-02 | -1.533E+03 | 2.544E-01 | 2.520E+04 |
| STORY1 | EQNX | | | | |
| -8.960E+00 | -5.440E+04 | 3.771E-05 | 5.885E-04 | -1.687E+02 | -9.530E+03 |
| TANKROOF | EQY | | | | |

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| | | | | | |
|------------|-----------|------------|-----------|------------|------------|
| 8.437E+02 | 3.703E-04 | | | | |
| TANK FLOOR | EQY | -1.917E-04 | 1.561E-03 | -1.942E+02 | -1.126E+04 |
| 1.174E+03 | 1.680E-02 | | | | |
| TOP-ROOF | EQY | -2.441E-04 | 2.750E-03 | -2.529E+02 | -1.396E+04 |
| 1.932E+03 | 2.816E-02 | | | | |
| ROOF | EQY | -6.567E-05 | 2.913E-02 | -4.585E+02 | -2.585E+04 |
| 3.537E+03 | 8.461E-02 | | | | |
| STORY10 | EQY | 1.326E-04 | 3.942E-02 | -6.496E+02 | -3.672E+04 |
| 5.811E+03 | 2.025E-01 | | | | |
| STORY9 | EQY | 3.291E-04 | 4.292E-02 | -8.253E+02 | -4.671E+04 |
| 8.700E+03 | 3.327E-01 | | | | |
| STORY8 | EQY | 5.225E-04 | 4.323E-02 | -9.854E+02 | -5.582E+04 |
| 1.215E+04 | 4.644E-01 | | | | |
| STORY7 | EQY | 5.815E-04 | 5.715E-02 | -1.140E+03 | -6.476E+04 |
| 1.728E+04 | 7.159E-01 | | | | |
| STORY6 | EQY | 6.022E-04 | 6.893E-02 | -1.277E+03 | -7.273E+04 |
| 2.303E+04 | 1.024E+00 | | | | |
| STORY5 | EQY | 3.704E-03 | 8.194E-02 | -1.440E+03 | -8.240E+04 |
| 3.052E+04 | 1.288E+00 | | | | |
| STORY4 | EQY | 6.023E-03 | 9.015E-02 | -1.571E+03 | -9.020E+04 |
| 3.869E+04 | 1.629E+00 | | | | |
| STORY3 | EQY | 7.832E-03 | 9.478E-02 | -1.665E+03 | -9.578E+04 |
| 4.735E+04 | 2.023E+00 | | | | |
| STORY2 | EQY | 7.840E-03 | 9.478E-02 | -1.713E+03 | -9.874E+04 |
| 5.625E+04 | 2.515E+00 | | | | |
| STORY1 | EQY | 7.872E-03 | 9.478E-02 | -1.728E+03 | -9.968E+04 |
| 6.092E+04 | 2.769E+00 | | | | |
| TANKROOF | EQNY | 1.855E-05 | 5.019E-04 | -1.687E+02 | -9.362E+03 |
| 8.437E+02 | 9.883E-04 | | | | |
| TANK FLOOR | EQNY | -2.473E-04 | 1.319E-03 | -1.942E+02 | -1.101E+04 |
| 1.174E+03 | 1.897E-02 | | | | |
| TOP-ROOF | EQNY | -3.017E-04 | 2.225E-03 | -2.529E+02 | -1.348E+04 |
| 1.932E+03 | 2.887E-02 | | | | |
| ROOF | EQNY | -2.130E-04 | 1.964E-02 | -4.586E+02 | -2.490E+04 |
| 3.537E+03 | 5.687E-02 | | | | |
| STORY10 | EQNY | -3.129E-05 | 2.695E-02 | -6.497E+02 | -3.522E+04 |
| 5.811E+03 | 1.327E-01 | | | | |
| STORY9 | EQNY | 1.487E-04 | 2.952E-02 | -8.254E+02 | -4.472E+04 |
| 8.700E+03 | 2.178E-01 | | | | |
| STORY8 | EQNY | 3.258E-04 | 2.985E-02 | -9.854E+02 | -5.337E+04 |
| 1.215E+04 | 3.043E-01 | | | | |
| STORY7 | EQNY | 3.801E-04 | 3.893E-02 | -1.140E+03 | -6.184E+04 |
| 1.728E+04 | 4.742E-01 | | | | |
| STORY6 | EQNY | 3.988E-04 | 4.668E-02 | -1.277E+03 | -6.937E+04 |
| 2.303E+04 | 6.825E-01 | | | | |
| STORY5 | EQNY | 3.480E-03 | 5.538E-02 | -1.440E+03 | -7.857E+04 |
| 3.052E+04 | 8.102E-01 | | | | |
| STORY4 | EQNY | 5.774E-03 | 6.086E-02 | -1.572E+03 | -8.595E+04 |

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|------------|-----------|-----------|-----------|------------|------------|
| 3.869E+04 | 1.001E+00 | 7.567E-03 | 6.394E-02 | -1.665E+03 | -9.124E+04 |
| STORY3 | EQNY | | | | |
| 4.735E+04 | 1.236E+00 | 7.574E-03 | 6.394E-02 | -1.713E+03 | -9.402E+04 |
| STORY2 | EQNY | | | | |
| 5.626E+04 | 1.568E+00 | 7.605E-03 | 6.394E-02 | -1.728E+03 | -9.491E+04 |
| STORY1 | EQNY | | | | |
| 6.092E+04 | 1.738E+00 | 3.799E-03 | 2.527E+01 | 1.188E+01 | 7.743E+02 |
| TANKROOF | EQXRS | | | | |
| 5.939E+01 | 1.262E+02 | 1.147E-02 | 5.788E+01 | 3.037E+01 | 1.965E+03 |
| TANK FLOOR | EQXRS | | | | |
| 1.106E+02 | 2.241E+02 | 1.213E-02 | 1.367E+02 | 5.953E+01 | 3.669E+03 |
| TOP-ROOF | EQXRS | | | | |
| 2.877E+02 | 6.331E+02 | 1.701E-02 | 4.010E+02 | 1.796E+02 | 1.148E+04 |
| ROOF | EQXRS | | | | |
| 9.152E+02 | 2.032E+03 | 1.695E-02 | 6.313E+02 | 2.837E+02 | 1.833E+04 |
| STORY10 | EQXRS | | | | |
| 1.906E+03 | 4.235E+03 | 1.688E-02 | 8.310E+02 | 3.742E+02 | 2.427E+04 |
| STORY9 | EQXRS | | | | |
| 3.213E+03 | 7.129E+03 | 1.682E-02 | 1.004E+03 | 4.522E+02 | 2.939E+04 |
| STORY8 | EQXRS | | | | |
| 4.789E+03 | 1.062E+04 | 1.680E-02 | 1.165E+03 | 5.247E+02 | 3.420E+04 |
| STORY7 | EQXRS | | | | |
| 7.135E+03 | 1.580E+04 | 1.681E-02 | 1.300E+03 | 5.847E+02 | 3.819E+04 |
| STORY6 | EQXRS | | | | |
| 9.743E+03 | 2.157E+04 | 1.576E-02 | 1.458E+03 | 6.529E+02 | 4.294E+04 |
| STORY5 | EQXRS | | | | |
| 1.309E+04 | 2.899E+04 | 1.571E-02 | 1.580E+03 | 7.034E+02 | 4.649E+04 |
| STORY4 | EQXRS | | | | |
| 1.668E+04 | 3.700E+04 | 1.578E-02 | 1.661E+03 | 7.353E+02 | 4.874E+04 |
| STORY3 | EQXRS | | | | |
| 2.044E+04 | 4.539E+04 | 1.577E-02 | 1.693E+03 | 7.483E+02 | 4.970E+04 |
| STORY2 | EQXRS | | | | |
| 2.426E+04 | 5.399E+04 | 1.584E-02 | 1.699E+03 | 7.507E+02 | 4.986E+04 |
| STORY1 | EQXRS | | | | |
| 2.626E+04 | 5.848E+04 | 1.832E-03 | 1.356E+01 | 2.614E+01 | 1.693E+03 |
| TANKROOF | EQYRS | | | | |
| 1.307E+02 | 6.769E+01 | 5.391E-03 | 3.123E+01 | 6.333E+01 | 4.649E+03 |
| TANK FLOOR | EQYRS | | | | |
| 2.381E+02 | 1.206E+02 | 5.677E-03 | 6.628E+01 | 1.303E+02 | 8.520E+03 |
| TOP-ROOF | EQYRS | | | | |
| 6.279E+02 | 3.185E+02 | 8.405E-03 | 1.857E+02 | 3.826E+02 | 2.691E+04 |
| ROOF | EQYRS | | | | |
| 1.964E+03 | 9.655E+02 | 8.552E-03 | 2.916E+02 | 5.989E+02 | 4.252E+04 |
| STORY10 | EQYRS | | | | |
| 4.054E+03 | 1.983E+03 | 8.702E-03 | 3.844E+02 | 7.841E+02 | 5.590E+04 |
| STORY9 | EQYRS | | | | |
| 6.786E+03 | 3.322E+03 | 8.853E-03 | 4.653E+02 | 9.424E+02 | 6.734E+04 |
| STORY8 | EQYRS | | | | |

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| | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 1.006E+04 | 4.942E+03 | | | | |
| STORY7 | EQYRS | 8.902E-03 | 5.405E+02 | 1.089E+03 | 7.803E+04 |
| 1.491E+04 | 7.354E+03 | | | | |
| STORY6 | EQYRS | 8.925E-03 | 6.039E+02 | 1.211E+03 | 8.699E+04 |
| 2.028E+04 | 1.004E+04 | | | | |
| STORY5 | EQYRS | 1.056E-02 | 6.740E+02 | 1.351E+03 | 9.760E+04 |
| 2.715E+04 | 1.350E+04 | | | | |
| STORY4 | EQYRS | 1.235E-02 | 7.266E+02 | 1.460E+03 | 1.058E+05 |
| 3.453E+04 | 1.721E+04 | | | | |
| STORY3 | EQYRS | 1.384E-02 | 7.602E+02 | 1.532E+03 | 1.113E+05 |
| 4.226E+04 | 2.108E+04 | | | | |
| STORY2 | EQYRS | 1.385E-02 | 7.738E+02 | 1.563E+03 | 1.138E+05 |
| 5.017E+04 | 2.504E+04 | | | | |
| STORY1 | EQYRS | 1.391E-02 | 7.762E+02 | 1.569E+03 | 1.142E+05 |
| 5.432E+04 | 2.710E+04 | | | | |

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STORY DRIFTS

| STORY | DIRECTION | LOAD | MAX DRIFT |
|------------|-----------|------|-----------|
| TANKROOF | X | WX | 1/5428 |
| TANK FLOOR | X | WX | 1/5382 |
| TOP-ROOF | X | WX | 1/5047 |
| ROOF | X | WX | 1/4601 |
| STORY10 | X | WX | 1/4509 |
| STORY9 | X | WX | 1/4432 |
| STORY8 | X | WX | 1/4375 |
| STORY7 | X | WX | 1/4354 |
| STORY6 | X | WX | 1/4501 |
| STORY5 | X | WX | 1/4662 |
| STORY4 | X | WX | 1/5215 |
| STORY3 | X | WX | 1/6589 |
| STORY2 | X | WX | 1/10361 |
| STORY1 | X | WX | 1/26137 |
| TANKROOF | Y | WY | 1/1802 |
| TANK FLOOR | Y | WY | 1/1478 |
| TOP-ROOF | Y | WY | 1/1480 |
| ROOF | Y | WY | 1/1481 |
| STORY10 | Y | WY | 1/1482 |
| STORY9 | Y | WY | 1/1494 |
| STORY8 | Y | WY | 1/1517 |
| STORY7 | Y | WY | 1/1563 |
| STORY6 | Y | WY | 1/1649 |
| STORY5 | Y | WY | 1/1744 |
| STORY4 | Y | WY | 1/2035 |
| STORY3 | Y | WY | 1/2644 |

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| | | | |
|------------|---|------|---------|
| STORY2 | Y | WY | 1/4385 |
| STORY1 | Y | WY | 1/11479 |
| TANKROOF | X | EQX | 1/536 |
| TANK FLOOR | X | EQX | 1/539 |
| TOP-ROOF | X | EQX | 1/526 |
| ROOF | X | EQX | 1/501 |
| STORY10 | X | EQX | 1/495 |
| STORY9 | X | EQX | 1/491 |
| STORY8 | X | EQX | 1/490 |
| STORY7 | X | EQX | 1/495 |
| STORY6 | X | EQX | 1/519 |
| STORY5 | X | EQX | 1/552 |
| STORY4 | X | EQX | 1/633 |
| STORY3 | X | EQX | 1/819 |
| STORY2 | X | EQX | 1/1337 |
| STORY1 | X | EQX | 1/3593 |
| TANKROOF | X | EQNX | 1/534 |
| TANK FLOOR | X | EQNX | 1/537 |
| TOP-ROOF | X | EQNX | 1/522 |
| ROOF | X | EQNX | 1/495 |
| STORY10 | X | EQNX | 1/489 |
| STORY9 | X | EQNX | 1/485 |
| STORY8 | X | EQNX | 1/484 |
| STORY7 | X | EQNX | 1/489 |
| STORY6 | X | EQNX | 1/513 |
| STORY5 | X | EQNX | 1/546 |
| STORY4 | X | EQNX | 1/626 |
| STORY3 | X | EQNX | 1/811 |
| STORY2 | X | EQNX | 1/1324 |
| STORY1 | X | EQNX | 1/3558 |
| TANKROOF | Y | EQY | 1/559 |
| TANK FLOOR | Y | EQY | 1/469 |
| TOP-ROOF | Y | EQY | 1/467 |
| ROOF | Y | EQY | 1/468 |
| STORY10 | Y | EQY | 1/468 |
| STORY9 | Y | EQY | 1/472 |
| STORY8 | Y | EQY | 1/480 |
| STORY7 | Y | EQY | 1/497 |
| STORY6 | Y | EQY | 1/529 |
| STORY5 | Y | EQY | 1/561 |
| STORY4 | Y | EQY | 1/665 |
| STORY3 | Y | EQY | 1/883 |
| STORY2 | Y | EQY | 1/1516 |
| STORY1 | Y | EQY | 1/4230 |
| TANKROOF | Y | EQNY | 1/578 |
| TANK FLOOR | Y | EQNY | 1/516 |
| TOP-ROOF | Y | EQNY | 1/513 |
| ROOF | Y | EQNY | 1/513 |

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| | | | |
|------------|---|-------|--------|
| STORY10 | Y | EQNY | 1/514 |
| STORY9 | Y | EQNY | 1/519 |
| STORY8 | Y | EQNY | 1/528 |
| STORY7 | Y | EQNY | 1/547 |
| STORY6 | Y | EQNY | 1/582 |
| STORY5 | Y | EQNY | 1/626 |
| STORY4 | Y | EQNY | 1/743 |
| STORY3 | Y | EQNY | 1/988 |
| STORY2 | Y | EQNY | 1/1692 |
| STORY1 | Y | EQNY | 1/4735 |
| TANKROOF | X | EQXRS | 1/526 |
| TANK FLOOR | X | EQXRS | 1/518 |
| TANK FLOOR | Y | EQXRS | 1/499 |
| TOP-ROOF | X | EQXRS | 1/461 |
| TOP-ROOF | Y | EQXRS | 1/501 |
| ROOF | X | EQXRS | 1/393 |
| ROOF | Y | EQXRS | 1/497 |
| STORY10 | X | EQXRS | 1/385 |
| STORY10 | Y | EQXRS | 1/494 |
| STORY9 | X | EQXRS | 1/379 |
| STORY9 | Y | EQXRS | 1/493 |
| STORY8 | X | EQXRS | 1/376 |
| STORY8 | Y | EQXRS | 1/497 |
| STORY7 | X | EQXRS | 1/379 |
| STORY7 | Y | EQXRS | 1/509 |
| STORY6 | X | EQXRS | 1/403 |
| STORY6 | Y | EQXRS | 1/536 |
| STORY5 | X | EQXRS | 1/421 |
| STORY5 | Y | EQXRS | 1/517 |
| STORY4 | X | EQXRS | 1/484 |
| STORY4 | Y | EQXRS | 1/607 |
| STORY3 | X | EQXRS | 1/639 |
| STORY3 | Y | EQXRS | 1/800 |
| STORY2 | X | EQXRS | 1/1047 |
| STORY2 | Y | EQXRS | 1/1394 |
| STORY1 | X | EQXRS | 1/2827 |
| STORY1 | Y | EQXRS | 1/3912 |
| TANKROOF | X | EQYRS | 1/1143 |
| TANKROOF | Y | EQYRS | 1/616 |
| TANK FLOOR | Y | EQYRS | 1/401 |
| TOP-ROOF | Y | EQYRS | 1/401 |
| ROOF | Y | EQYRS | 1/399 |
| STORY10 | Y | EQYRS | 1/398 |
| STORY9 | Y | EQYRS | 1/399 |
| STORY8 | Y | EQYRS | 1/404 |
| STORY7 | Y | EQYRS | 1/417 |
| STORY6 | Y | EQYRS | 1/442 |
| STORY5 | Y | EQYRS | 1/448 |

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| | | | |
|--------|---|-------|--------|
| STORY4 | Y | EQYRS | 1/531 |
| STORY3 | Y | EQYRS | 1/705 |
| STORY2 | Y | EQYRS | 1/1221 |
| STORY1 | Y | EQYRS | 1/3371 |

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DISPLACEMENTS AT DIAPHRAGM CENTER OF MASS

| STORY | DIAPHRAGM | LOAD | UX | UY | RZ |
|------------|-----------|------|--------|--------|---------|
| TANKROOF | D1 | WX | 0.0091 | 0.0004 | 0.00006 |
| TANK FLOOR | D1 | WX | 0.0082 | 0.0008 | 0.00006 |
| TOP-ROOF | D1 | WX | 0.0080 | 0.0005 | 0.00005 |
| ROOF | D1 | WX | 0.0075 | 0.0002 | 0.00005 |
| STORY10 | D1 | WX | 0.0069 | 0.0002 | 0.00005 |
| STORY9 | D1 | WX | 0.0062 | 0.0002 | 0.00004 |
| STORY8 | D1 | WX | 0.0056 | 0.0002 | 0.00004 |
| STORY7 | D1 | WX | 0.0049 | 0.0002 | 0.00003 |
| STORY6 | D1 | WX | 0.0040 | 0.0001 | 0.00003 |
| STORY5 | D1 | WX | 0.0031 | 0.0001 | 0.00002 |
| STORY4 | D1 | WX | 0.0021 | 0.0001 | 0.00001 |
| STORY3 | D1 | WX | 0.0013 | 0.0000 | 0.00001 |
| STORY2 | D1 | WX | 0.0005 | 0.0000 | 0.00000 |
| STORY1 | D1 | WX | 0.0001 | 0.0000 | 0.00000 |
| BASE | D1 | WX | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | WY | 0.0002 | 0.0246 | 0.00012 |
| TANK FLOOR | D1 | WY | 0.0002 | 0.0227 | 0.00010 |
| TOP-ROOF | D1 | WY | 0.0003 | 0.0213 | 0.00009 |
| ROOF | D1 | WY | 0.0005 | 0.0193 | 0.00009 |
| STORY10 | D1 | WY | 0.0005 | 0.0174 | 0.00008 |
| STORY9 | D1 | WY | 0.0005 | 0.0155 | 0.00007 |
| STORY8 | D1 | WY | 0.0004 | 0.0137 | 0.00006 |
| STORY7 | D1 | WY | 0.0004 | 0.0118 | 0.00005 |
| STORY6 | D1 | WY | 0.0003 | 0.0095 | 0.00004 |
| STORY5 | D1 | WY | 0.0003 | 0.0072 | 0.00003 |
| STORY4 | D1 | WY | 0.0002 | 0.0049 | 0.00002 |
| STORY3 | D1 | WY | 0.0001 | 0.0028 | 0.00001 |
| STORY2 | D1 | WY | 0.0000 | 0.0012 | 0.00000 |
| STORY1 | D1 | WY | 0.0000 | 0.0002 | 0.00000 |
| BASE | D1 | WY | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | EQX | 0.0853 | 0.0021 | 0.00034 |
| TANK FLOOR | D1 | EQX | 0.0761 | 0.0043 | 0.00031 |
| TOP-ROOF | D1 | EQX | 0.0735 | 0.0026 | 0.00029 |
| ROOF | D1 | EQX | 0.0685 | 0.0014 | 0.00027 |
| STORY10 | D1 | EQX | 0.0622 | 0.0013 | 0.00025 |
| STORY9 | D1 | EQX | 0.0558 | 0.0012 | 0.00022 |
| STORY8 | D1 | EQX | 0.0492 | 0.0011 | 0.00020 |

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| | | | | | |
|------------|----|------|--------|--------|---------|
| STORY7 | D1 | EQX | 0.0427 | 0.0009 | 0.00017 |
| STORY6 | D1 | EQX | 0.0344 | 0.0008 | 0.00014 |
| STORY5 | D1 | EQX | 0.0264 | 0.0006 | 0.00010 |
| STORY4 | D1 | EQX | 0.0178 | 0.0004 | 0.00007 |
| STORY3 | D1 | EQX | 0.0103 | 0.0003 | 0.00004 |
| STORY2 | D1 | EQX | 0.0043 | 0.0001 | 0.00002 |
| STORY1 | D1 | EQX | 0.0007 | 0.0000 | 0.00000 |
| BASE | D1 | EQX | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | EQNX | 0.0853 | 0.0023 | 0.00039 |
| TANK FLOOR | D1 | EQNX | 0.0761 | 0.0047 | 0.00034 |
| TOP-ROOF | D1 | EQNX | 0.0736 | 0.0029 | 0.00033 |
| ROOF | D1 | EQNX | 0.0686 | 0.0016 | 0.00031 |
| STORY10 | D1 | EQNX | 0.0624 | 0.0014 | 0.00028 |
| STORY9 | D1 | EQNX | 0.0559 | 0.0013 | 0.00025 |
| STORY8 | D1 | EQNX | 0.0493 | 0.0012 | 0.00022 |
| STORY7 | D1 | EQNX | 0.0428 | 0.0010 | 0.00019 |
| STORY6 | D1 | EQNX | 0.0344 | 0.0008 | 0.00015 |
| STORY5 | D1 | EQNX | 0.0265 | 0.0007 | 0.00012 |
| STORY4 | D1 | EQNX | 0.0179 | 0.0005 | 0.00008 |
| STORY3 | D1 | EQNX | 0.0103 | 0.0003 | 0.00004 |
| STORY2 | D1 | EQNX | 0.0044 | 0.0001 | 0.00002 |
| STORY1 | D1 | EQNX | 0.0007 | 0.0000 | 0.00000 |
| BASE | D1 | EQNX | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | EQY | 0.0006 | 0.0738 | 0.00042 |
| TANK FLOOR | D1 | EQY | 0.0006 | 0.0680 | 0.00037 |
| TOP-ROOF | D1 | EQY | 0.0011 | 0.0631 | 0.00036 |
| ROOF | D1 | EQY | 0.0017 | 0.0568 | 0.00033 |
| STORY10 | D1 | EQY | 0.0017 | 0.0511 | 0.00029 |
| STORY9 | D1 | EQY | 0.0016 | 0.0453 | 0.00026 |
| STORY8 | D1 | EQY | 0.0014 | 0.0396 | 0.00022 |
| STORY7 | D1 | EQY | 0.0012 | 0.0340 | 0.00019 |
| STORY6 | D1 | EQY | 0.0010 | 0.0269 | 0.00015 |
| STORY5 | D1 | EQY | 0.0009 | 0.0204 | 0.00011 |
| STORY4 | D1 | EQY | 0.0007 | 0.0135 | 0.00007 |
| STORY3 | D1 | EQY | 0.0004 | 0.0076 | 0.00004 |
| STORY2 | D1 | EQY | 0.0002 | 0.0032 | 0.00002 |
| STORY1 | D1 | EQY | 0.0000 | 0.0005 | 0.00000 |
| BASE | D1 | EQY | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | EQNY | 0.0005 | 0.0730 | 0.00025 |
| TANK FLOOR | D1 | EQNY | 0.0005 | 0.0662 | 0.00023 |
| TOP-ROOF | D1 | EQNY | 0.0008 | 0.0621 | 0.00022 |
| ROOF | D1 | EQNY | 0.0012 | 0.0563 | 0.00020 |
| STORY10 | D1 | EQNY | 0.0012 | 0.0506 | 0.00018 |
| STORY9 | D1 | EQNY | 0.0011 | 0.0449 | 0.00016 |
| STORY8 | D1 | EQNY | 0.0010 | 0.0392 | 0.00014 |
| STORY7 | D1 | EQNY | 0.0009 | 0.0337 | 0.00012 |
| STORY6 | D1 | EQNY | 0.0007 | 0.0267 | 0.00009 |
| STORY5 | D1 | EQNY | 0.0006 | 0.0202 | 0.00007 |

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| | | | | | |
|------------|----|-------|--------|--------|---------|
| STORY4 | D1 | EQNY | 0.0005 | 0.0134 | 0.00004 |
| STORY3 | D1 | EQNY | 0.0003 | 0.0076 | 0.00002 |
| STORY2 | D1 | EQNY | 0.0001 | 0.0032 | 0.00001 |
| STORY1 | D1 | EQNY | 0.0000 | 0.0005 | 0.00000 |
| BASE | D1 | EQNY | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | EQXRS | 0.0899 | 0.0347 | 0.00131 |
| TANK FLOOR | D1 | EQXRS | 0.0810 | 0.0374 | 0.00117 |
| TOP-ROOF | D1 | EQXRS | 0.0794 | 0.0315 | 0.00112 |
| ROOF | D1 | EQXRS | 0.0754 | 0.0264 | 0.00103 |
| STORY10 | D1 | EQXRS | 0.0691 | 0.0238 | 0.00093 |
| STORY9 | D1 | EQXRS | 0.0621 | 0.0212 | 0.00083 |
| STORY8 | D1 | EQXRS | 0.0550 | 0.0185 | 0.00073 |
| STORY7 | D1 | EQXRS | 0.0478 | 0.0159 | 0.00063 |
| STORY6 | D1 | EQXRS | 0.0386 | 0.0126 | 0.00050 |
| STORY5 | D1 | EQXRS | 0.0300 | 0.0096 | 0.00038 |
| STORY4 | D1 | EQXRS | 0.0203 | 0.0064 | 0.00025 |
| STORY3 | D1 | EQXRS | 0.0117 | 0.0036 | 0.00014 |
| STORY2 | D1 | EQXRS | 0.0050 | 0.0015 | 0.00006 |
| STORY1 | D1 | EQXRS | 0.0008 | 0.0002 | 0.00001 |
| BASE | D1 | EQXRS | 0.0000 | 0.0000 | 0.00000 |
| TANKROOF | D1 | EQYRS | 0.0412 | 0.0667 | 0.00110 |
| TANK FLOOR | D1 | EQYRS | 0.0370 | 0.0647 | 0.00098 |
| TOP-ROOF | D1 | EQYRS | 0.0354 | 0.0583 | 0.00094 |
| ROOF | D1 | EQYRS | 0.0328 | 0.0515 | 0.00086 |
| STORY10 | D1 | EQYRS | 0.0298 | 0.0464 | 0.00078 |
| STORY9 | D1 | EQYRS | 0.0268 | 0.0412 | 0.00069 |
| STORY8 | D1 | EQYRS | 0.0237 | 0.0360 | 0.00060 |
| STORY7 | D1 | EQYRS | 0.0206 | 0.0309 | 0.00052 |
| STORY6 | D1 | EQYRS | 0.0166 | 0.0245 | 0.00041 |
| STORY5 | D1 | EQYRS | 0.0127 | 0.0186 | 0.00031 |
| STORY4 | D1 | EQYRS | 0.0086 | 0.0123 | 0.00020 |
| STORY3 | D1 | EQYRS | 0.0049 | 0.0070 | 0.00011 |
| STORY2 | D1 | EQYRS | 0.0021 | 0.0029 | 0.00005 |
| STORY1 | D1 | EQYRS | 0.0003 | 0.0005 | 0.00001 |
| BASE | D1 | EQYRS | 0.0000 | 0.0000 | 0.00000 |

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STORY MAXIMUM AND AVERAGE LATERAL DISPLACEMENTS

| STORY | LOAD | DIR | MAXIMUM | AVERAGE | RATIO |
|------------|------|-----|---------|---------|-------|
| TANKROOF | WX | X | 0.0094 | 0.0091 | 1.025 |
| TANK FLOOR | WX | X | 0.0085 | 0.0083 | 1.029 |
| TOP-ROOF | WX | X | 0.0087 | 0.0082 | 1.058 |
| ROOF | WX | X | 0.0086 | 0.0079 | 1.086 |
| STORY10 | WX | X | 0.0078 | 0.0072 | 1.086 |
| STORY9 | WX | X | 0.0070 | 0.0065 | 1.085 |

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| | | | | | |
|------------|------|---|--------|--------|-------|
| STORY8 | WX | X | 0.0063 | 0.0058 | 1.084 |
| STORY7 | WX | X | 0.0055 | 0.0051 | 1.084 |
| STORY6 | WX | X | 0.0045 | 0.0041 | 1.083 |
| STORY5 | WX | X | 0.0035 | 0.0032 | 1.082 |
| STORY4 | WX | X | 0.0024 | 0.0022 | 1.081 |
| STORY3 | WX | X | 0.0014 | 0.0013 | 1.079 |
| STORY2 | WX | X | 0.0006 | 0.0006 | 1.077 |
| STORY1 | WX | X | 0.0001 | 0.0001 | 1.073 |
| TANKROOF | WY | Y | 0.0256 | 0.0247 | 1.037 |
| TANK FLOOR | WY | Y | 0.0268 | 0.0240 | 1.116 |
| TOP-ROOF | WY | Y | 0.0257 | 0.0211 | 1.215 |
| ROOF | WY | Y | 0.0236 | 0.0191 | 1.235 |
| STORY10 | WY | Y | 0.0213 | 0.0173 | 1.231 |
| STORY9 | WY | Y | 0.0189 | 0.0154 | 1.228 |
| STORY8 | WY | Y | 0.0166 | 0.0135 | 1.224 |
| STORY7 | WY | Y | 0.0143 | 0.0117 | 1.220 |
| STORY6 | WY | Y | 0.0114 | 0.0094 | 1.214 |
| STORY5 | WY | Y | 0.0089 | 0.0073 | 1.219 |
| STORY4 | WY | Y | 0.0059 | 0.0049 | 1.209 |
| STORY3 | WY | Y | 0.0034 | 0.0028 | 1.193 |
| STORY2 | WY | Y | 0.0014 | 0.0012 | 1.164 |
| STORY1 | WY | Y | 0.0002 | 0.0002 | 1.101 |
| TANKROOF | EQX | X | 0.0866 | 0.0854 | 1.015 |
| TANK FLOOR | EQX | X | 0.0777 | 0.0764 | 1.017 |
| TOP-ROOF | EQX | X | 0.0772 | 0.0746 | 1.035 |
| ROOF | EQX | X | 0.0741 | 0.0704 | 1.053 |
| STORY10 | EQX | X | 0.0672 | 0.0638 | 1.053 |
| STORY9 | EQX | X | 0.0602 | 0.0572 | 1.053 |
| STORY8 | EQX | X | 0.0531 | 0.0505 | 1.053 |
| STORY7 | EQX | X | 0.0461 | 0.0438 | 1.053 |
| STORY6 | EQX | X | 0.0371 | 0.0352 | 1.053 |
| STORY5 | EQX | X | 0.0284 | 0.0270 | 1.053 |
| STORY4 | EQX | X | 0.0191 | 0.0182 | 1.053 |
| STORY3 | EQX | X | 0.0110 | 0.0104 | 1.052 |
| STORY2 | EQX | X | 0.0046 | 0.0044 | 1.051 |
| STORY1 | EQX | X | 0.0008 | 0.0007 | 1.048 |
| TANKROOF | EQNX | X | 0.0868 | 0.0854 | 1.017 |
| TANK FLOOR | EQNX | X | 0.0779 | 0.0764 | 1.019 |
| TOP-ROOF | EQNX | X | 0.0777 | 0.0748 | 1.039 |
| ROOF | EQNX | X | 0.0749 | 0.0707 | 1.059 |
| STORY10 | EQNX | X | 0.0679 | 0.0641 | 1.059 |
| STORY9 | EQNX | X | 0.0608 | 0.0575 | 1.059 |
| STORY8 | EQNX | X | 0.0537 | 0.0507 | 1.059 |
| STORY7 | EQNX | X | 0.0466 | 0.0440 | 1.059 |
| STORY6 | EQNX | X | 0.0375 | 0.0354 | 1.059 |
| STORY5 | EQNX | X | 0.0287 | 0.0271 | 1.059 |
| STORY4 | EQNX | X | 0.0193 | 0.0182 | 1.058 |
| STORY3 | EQNX | X | 0.0111 | 0.0105 | 1.058 |

7/4 15/10/15

New Reportโรงพยาบาลสินแพทย์รังสิต

| | | | | | |
|------------|-------|---|--------|--------|-------|
| STORY2 | EQNX | X | 0.0047 | 0.0044 | 1.057 |
| STORY1 | EQNX | X | 0.0008 | 0.0007 | 1.054 |
| TANKROOF | EQY | Y | 0.0773 | 0.0740 | 1.044 |
| TANK FLOOR | EQY | Y | 0.0832 | 0.0728 | 1.142 |
| TOP-ROOF | EQY | Y | 0.0796 | 0.0624 | 1.275 |
| ROOF | EQY | Y | 0.0732 | 0.0561 | 1.304 |
| STORY10 | EQY | Y | 0.0657 | 0.0504 | 1.303 |
| STORY9 | EQY | Y | 0.0582 | 0.0447 | 1.301 |
| STORY8 | EQY | Y | 0.0508 | 0.0391 | 1.300 |
| STORY7 | EQY | Y | 0.0435 | 0.0335 | 1.298 |
| STORY6 | EQY | Y | 0.0345 | 0.0266 | 1.295 |
| STORY5 | EQY | Y | 0.0268 | 0.0205 | 1.306 |
| STORY4 | EQY | Y | 0.0176 | 0.0136 | 1.299 |
| STORY3 | EQY | Y | 0.0099 | 0.0077 | 1.287 |
| STORY2 | EQY | Y | 0.0041 | 0.0032 | 1.264 |
| STORY1 | EQY | Y | 0.0006 | 0.0005 | 1.208 |
| TANKROOF | EQNY | Y | 0.0751 | 0.0731 | 1.027 |
| TANK FLOOR | EQNY | Y | 0.0757 | 0.0692 | 1.093 |
| TOP-ROOF | EQNY | Y | 0.0724 | 0.0616 | 1.174 |
| ROOF | EQNY | Y | 0.0665 | 0.0559 | 1.190 |
| STORY10 | EQNY | Y | 0.0597 | 0.0502 | 1.189 |
| STORY9 | EQNY | Y | 0.0529 | 0.0446 | 1.187 |
| STORY8 | EQNY | Y | 0.0461 | 0.0389 | 1.185 |
| STORY7 | EQNY | Y | 0.0395 | 0.0334 | 1.183 |
| STORY6 | EQNY | Y | 0.0313 | 0.0265 | 1.180 |
| STORY5 | EQNY | Y | 0.0241 | 0.0203 | 1.186 |
| STORY4 | EQNY | Y | 0.0158 | 0.0134 | 1.179 |
| STORY3 | EQNY | Y | 0.0089 | 0.0076 | 1.166 |
| STORY2 | EQNY | Y | 0.0036 | 0.0032 | 1.143 |
| STORY1 | EQNY | Y | 0.0006 | 0.0005 | 1.087 |
| TANKROOF | EQXRS | X | 0.0944 | 0.0903 | 1.045 |
| TANK FLOOR | EQXRS | X | 0.0862 | 0.0819 | 1.052 |
| TOP-ROOF | EQXRS | X | 0.0920 | 0.0834 | 1.104 |
| ROOF | EQXRS | X | 0.0944 | 0.0820 | 1.152 |
| STORY10 | EQXRS | X | 0.0858 | 0.0746 | 1.151 |
| STORY9 | EQXRS | X | 0.0770 | 0.0670 | 1.149 |
| STORY8 | EQXRS | X | 0.0681 | 0.0593 | 1.148 |
| STORY7 | EQXRS | X | 0.0591 | 0.0516 | 1.147 |
| STORY6 | EQXRS | X | 0.0476 | 0.0416 | 1.145 |
| STORY5 | EQXRS | X | 0.0365 | 0.0319 | 1.144 |
| STORY4 | EQXRS | X | 0.0245 | 0.0215 | 1.141 |
| STORY3 | EQXRS | X | 0.0141 | 0.0123 | 1.139 |
| STORY2 | EQXRS | X | 0.0059 | 0.0052 | 1.136 |
| STORY1 | EQXRS | X | 0.0010 | 0.0008 | 1.131 |
| TANKROOF | EQXRS | Y | 0.0430 | 0.0360 | 1.192 |
| TANK FLOOR | EQXRS | Y | 0.0808 | 0.0534 | 1.513 |
| TOP-ROOF | EQXRS | Y | 0.0774 | 0.0499 | 1.551 |
| ROOF | EQXRS | Y | 0.0714 | 0.0461 | 1.551 |

716 5550115

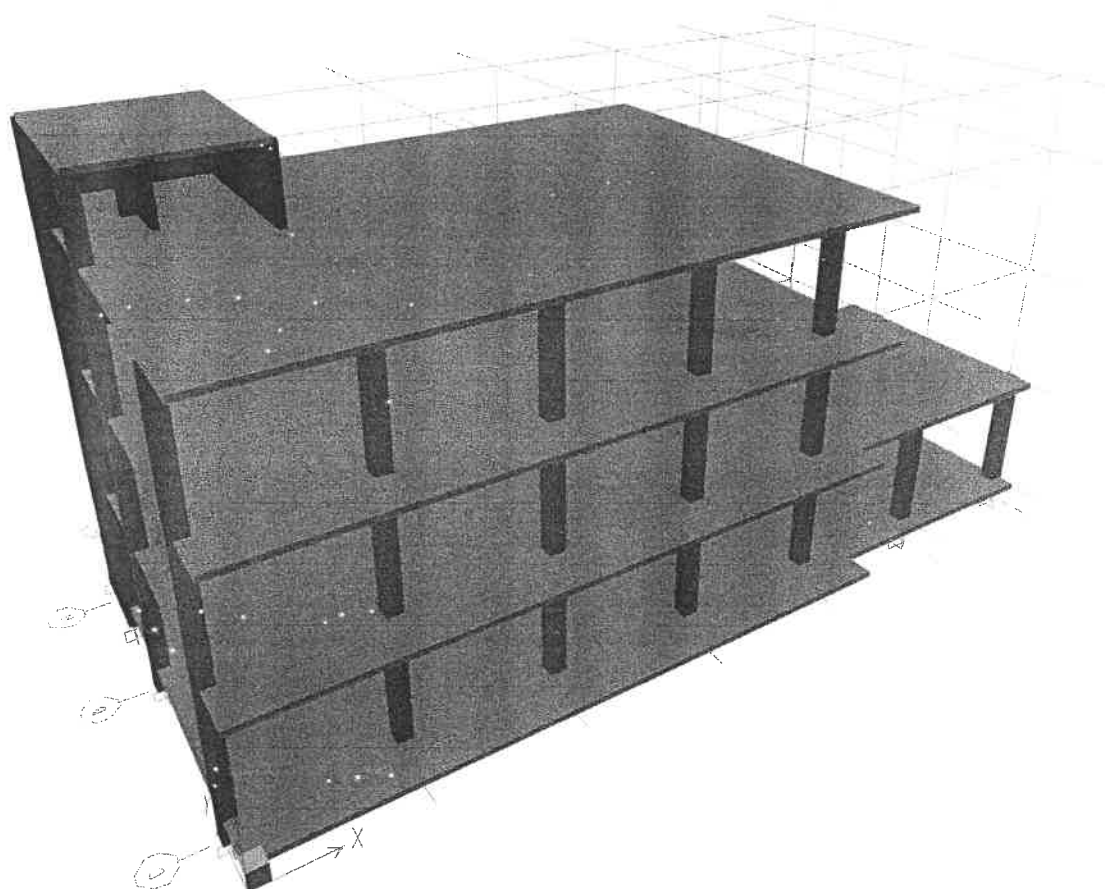
| New Reportโรงพยาบาลสินแพทย์รังสิต | | | | | | |
|-----------------------------------|-------|---|--------|--------|-------|--|
| STORY10 | EQXRS | Y | 0.0644 | 0.0415 | 1.551 | |
| STORY9 | EQXRS | Y | 0.0573 | 0.0369 | 1.551 | |
| STORY8 | EQXRS | Y | 0.0502 | 0.0324 | 1.552 | |
| STORY7 | EQXRS | Y | 0.0432 | 0.0278 | 1.552 | |
| STORY6 | EQXRS | Y | 0.0344 | 0.0221 | 1.552 | |
| STORY5 | EQXRS | Y | 0.0288 | 0.0182 | 1.587 | |
| STORY4 | EQXRS | Y | 0.0190 | 0.0120 | 1.586 | |
| STORY3 | EQXRS | Y | 0.0107 | 0.0068 | 1.583 | |
| STORY2 | EQXRS | Y | 0.0044 | 0.0028 | 1.575 | |
| STORY1 | EQXRS | Y | 0.0007 | 0.0004 | 1.552 | |
| TANKROOF | EQYRS | X | 0.0424 | 0.0416 | 1.020 | |
| TANK FLOOR | EQYRS | X | 0.0381 | 0.0373 | 1.020 | |
| TOP-ROOF | EQYRS | X | 0.0366 | 0.0359 | 1.019 | |
| ROOF | EQYRS | X | 0.0357 | 0.0342 | 1.043 | |
| STORY10 | EQYRS | X | 0.0324 | 0.0311 | 1.043 | |
| STORY9 | EQYRS | X | 0.0291 | 0.0279 | 1.043 | |
| STORY8 | EQYRS | X | 0.0258 | 0.0247 | 1.042 | |
| STORY7 | EQYRS | X | 0.0224 | 0.0215 | 1.042 | |
| STORY6 | EQYRS | X | 0.0180 | 0.0173 | 1.041 | |
| STORY5 | EQYRS | X | 0.0138 | 0.0133 | 1.041 | |
| STORY4 | EQYRS | X | 0.0093 | 0.0089 | 1.040 | |
| STORY3 | EQYRS | X | 0.0053 | 0.0051 | 1.039 | |
| STORY2 | EQYRS | X | 0.0023 | 0.0022 | 1.038 | |
| STORY1 | EQYRS | X | 0.0004 | 0.0004 | 1.036 | |
| TANKROOF | EQYRS | Y | 0.0736 | 0.0675 | 1.091 | |
| TANK FLOOR | EQYRS | Y | 0.0987 | 0.0767 | 1.287 | |
| TOP-ROOF | EQYRS | Y | 0.0944 | 0.0690 | 1.368 | |
| ROOF | EQYRS | Y | 0.0870 | 0.0636 | 1.367 | |
| STORY10 | EQYRS | Y | 0.0782 | 0.0573 | 1.366 | |
| STORY9 | EQYRS | Y | 0.0694 | 0.0509 | 1.365 | |
| STORY8 | EQYRS | Y | 0.0607 | 0.0445 | 1.363 | |
| STORY7 | EQYRS | Y | 0.0520 | 0.0382 | 1.362 | |
| STORY6 | EQYRS | Y | 0.0413 | 0.0303 | 1.360 | |
| STORY5 | EQYRS | Y | 0.0333 | 0.0240 | 1.386 | |
| STORY4 | EQYRS | Y | 0.0219 | 0.0159 | 1.381 | |
| STORY3 | EQYRS | Y | 0.0123 | 0.0090 | 1.373 | |
| STORY2 | EQYRS | Y | 0.0051 | 0.0037 | 1.358 | |
| STORY1 | EQYRS | Y | 0.0008 | 0.0006 | 1.324 | |

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**รายการคำนวณโครงสร้าง
ผลกระทบจากแรงแผ่นดินไหว**

อาคารโกชนาการ โรงพยาบาลสินแพทย์รังสิต สูง 3 ชั้น

คดองสี จ.ปทุมธานี



ETABS v9.7.0 - File: 10=0AaA*0iOA A%.E0'a%.AiANgEOμ - %AE'0iOA' 1,2560 17:46
3-D View - Ton-m Units

7/6 12/20/2015

การออกแบบอาคารต้านแผ่นดินไหวโดยวิธีเชิงพลศาสตร์
อาคารโภชนาการ โรงพยาบาลสินแพทย์รังสิต คลองสี่

กฎข้อบังคับ

- : ข้อกำหนดมาตรฐานการออกแบบต้านทานการสั่นสะเทือนของแผ่นดินไหว มยผ.1302 พ.ศ.2552
- : อาคารประเภทความสำคัญ IV (สูงมาก) ตัวประกอบความสำคัญ($I=1.5$)
- : ความสูงอาคาร 3 ชั้น จำนวน 1 อาคาร
- : ระบบโครงสร้าง Dual Systems Concrete Shear Walls with Concrete frame
- : สถานที่ก่อสร้าง คลองสี่ จ.ปทุมธานี
- : โครงสร้างตั้งอยู่บนชั้นดินแบบ D กรุงเทพมหานคร โซน5
- : S_a 0.1 sec = 0.079
- : S_a 1 sec = 0.158
- : Response Modification Factor $R = 5.5$
- : Function Damping Ratio = 0.05
- : การเคลื่อนตัวสัมพัทธ์ระหว่างชั้นที่ยอมให้ 0.02h
- : สัมประสิทธิ์เสถียรภาพ(Stability Coefficient) < 0.25
- : ค่าความปลอดภัยต่อการพลิกคว่ำ >1.5

0.079

7/12/2552

Response Spectrum Function Definition

Function Name

BKK1302

Function Damping Ratio

0.05

Define Function

Period

Acceleration

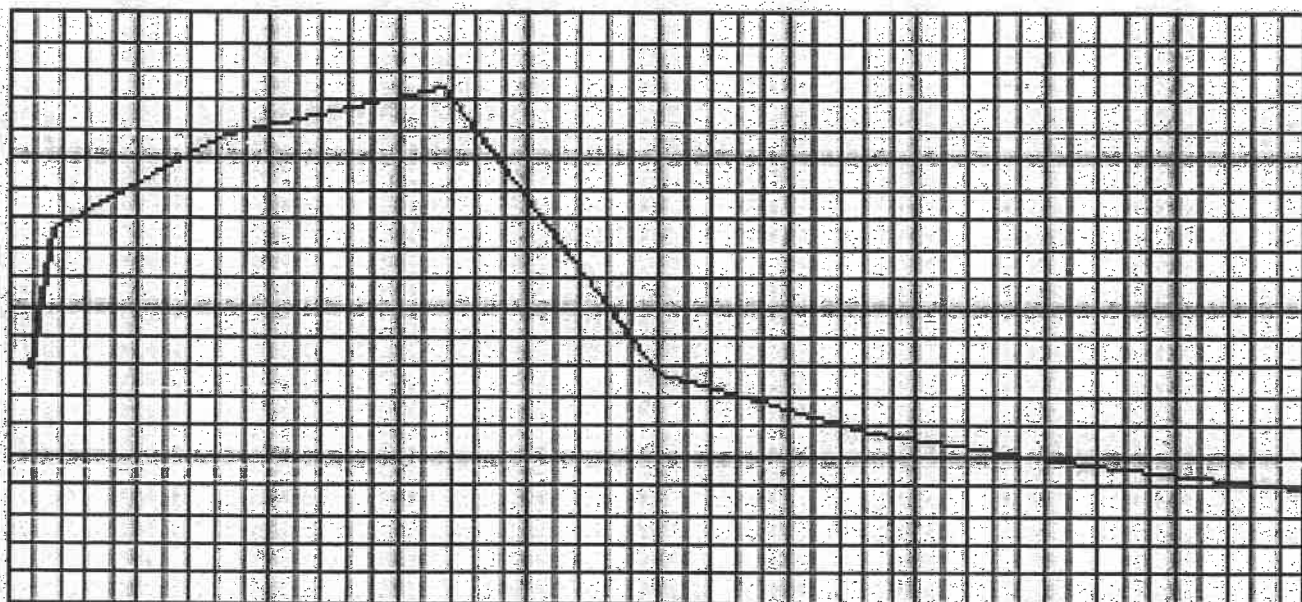
| | |
|-----|-------|
| 0.1 | 0.079 |
| 0.1 | 0.079 |
| 0.2 | 0.126 |
| 1. | 0.158 |
| 2. | 0.174 |
| 3. | 0.078 |
| 4. | 0.058 |
| 5. | 0.047 |
| 6. | 0.039 |

Add

Modify

Delete

Function Graph



Display Graph

OK

W7-52

Cancel

File Systems

PROJECT : อาคารโภชนาการ รพ.สินแพทย์รังสิต

Response Spectrum Scale Factor Calculation (UBC-97)

| Story | load | P | Vx | Vy |
|--------|-------|---|--------|--------|
| STORY1 | EQX | | 257.88 | 0 |
| STORY1 | EQY | | | 257.88 |
| STORY1 | EQXRS | | 96.90 | 0 |
| STORY1 | EQYRS | | 0 | 82.80 |

EQX (Equivalent Static Load Case) = 257.88 Ton

EQY (Equivalent Static Load Case) = 257.88 Ton

$V_{static} = \sqrt{EQX^2 + EQY^2} = 364.70 \text{ Ton}$

EQX (Equivalent Spectrum Case) = 96.9 Ton

EQY (Equivalent Spectrum Case) = 82.8 Ton

$V_{Rs} = \sqrt{EQX^2 + EQY^2} = 127.46 \text{ Ton}$

Scale Factor = $V_{static}/V_{RS} = 2.861$

The acceleration is in terms of g, (9.81)

So the final Scale factor is = 28.07

Apply 30% in other orthogonal direction = 8.42

8/12/2561

New Report อาคารโชนนาการ รพ.สินแพทย์รังสิต

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 1

PROJECT INFORMATION

| | |
|-----------------|-----------------------------------|
| Company Name | = 59 DESIGN CO.,LTD. |
| Project Name | = อาคารโชนนาการ รพ.สินแพทย์รังสิต |
| Revision Number | = 0 |
| Design Code | = ACI 318 - 99 , มยพ.1302 |

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 2

S T O R Y D A T A

| STORY | SIMILAR TO | HEIGHT | ELEVATION |
|----------|------------|--------|-----------|
| TOP-ROOF | STORY1 | 3.000 | 19.600 |
| ROOF | STORY1 | 5.200 | 16.600 |
| STORY3 | STORY1 | 5.200 | 11.400 |
| STORY2 | STORY1 | 5.200 | 6.200 |
| STORY1 | None | 1.000 | 1.000 |
| BASE | None | | 0.000 |

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 3

S T A T I C L O A D C A S E S

| STATIC CASE | CASE TYPE | AUTO LAT LOAD | SELF WT MULTIPLIER | NOTIONAL FACTOR | NOTIONAL DIRECTION |
|-------------|------------|---------------|--------------------|-----------------|--------------------|
| DEAD | DEAD | N/A | 1.0000 | | |
| LIVE | LIVE | N/A | 0.0000 | | |
| SDL | SUPER DEAD | N/A | 0.0000 | | |
| WX | WIND | UBC97 | 0.0000 | | |
| WY | WIND | UBC97 | 0.0000 | | |
| EQX | QUAKE | UBC97 | 0.0000 | | |
| EQNX | QUAKE | UBC97 | 0.0000 | | |
| EQY | QUAKE | UBC97 | 0.0000 | | |
| EQNY | QUAKE | UBC97 | 0.0000 | | |

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 4

R E S P O N S E S P E C T R U M C A S E S

RESP SPEC CASE: EQXRS

BASIC RESPONSE SPECTRUM DATA

File 1/25/60

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|----------------|--------------------|------------------|-------------------|------------------|
| SRSS | SRSS | 0.0500 | 0.0000 | 0.0500 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | BKK1302 | 28.0700 |
| U2 | BKK1302 | 8.4200 |
| UZ | ---- | N/A |

RESP SPEC CASE: EQYRS

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|----------------|--------------------|------------------|-------------------|------------------|
| SRSS | SRSS | 0.0500 | 0.0000 | 0.0500 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | BKK1302 | 8.4200 |
| U2 | BKK1302 | 28.0700 |
| UZ | ---- | N/A |

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 5

A U T O W I N D U B C 9 7

Case: WX

AUTO WIND INPUT DATA

Exposure From: Rigid diaphragm extents
 Direction Angle = 0 degrees
 Windward Cq = .8
 Leeward Cq = .5

Top Story: TOP-ROOF

Bottom Story: BASE

File 1/1/2560

No parapet is included

Basic Wind Speed, $V = 70$ mph

Exposure Type $\equiv B$

Importance Factor, $I_w = 1.5$

AUTO WIND EXPOSURE WIDTH INFORMATION (Exposure widths are from diaphragm extents)

| STORY | DIAPHRAGM | WIDTH | X | Y |
|----------|-----------|--------|--------|--------|
| TOP-ROOF | D1 | 15.580 | 18.085 | 10.090 |
| ROOF | D1 | 17.880 | 18.085 | 8.940 |
| STORY3 | D1 | 17.880 | 18.085 | 8.940 |
| STORY2 | D1 | 17.880 | 18.085 | 8.940 |
| STORY1 | D1 | 17.880 | 18.085 | 8.940 |

AUTO WIND CALCULATION FORMULAS

$P = \text{wind pressure} = \text{SUM}(C_e C_q q_s I_w) \quad \text{-- Method 1}$

C_e , the combined height, exposure and gust factor coefficient, is from UBC97 Table 16-G

q_s is the wind stagnation pressure at the standard height of 33 feet

$q_s \equiv 0.00256 V^2 \geq 10 \text{ psf}$

AUTO WIND CALCULATION RESULTS

$q_s = 12.5440 \text{ psf}$

AUTO WIND STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|--------------------|-------|------|------|-------|-------|
| TOP-ROOF 10.392 | 2.86 | 0.00 | 0.00 | 0.000 | 0.000 |
| ROOF 28.988 | 8.65 | 0.00 | 0.00 | 0.000 | 0.000 |
| STORY3 30.011 | 10.36 | 0.00 | 0.00 | 0.000 | 0.000 |
| STORY2 | 9.24 | 0.00 | 0.00 | 0.000 | 0.000 |

The Wilson

New Report อาคารโขนนาการ รพ.สินแพทย์รังสิต

26.638
STORY1 5.19 0.00 0.00 0.000 0.000
14.728

ETABS v9.7.0 File:อาคารโขนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 6

A U T O W I N D U B C 9 7
Case: WY

AUTO WIND INPUT DATA

Exposure From: Rigid diaphragm extents
Direction Angle = 90 degrees
Windward Cq = .8
Leeward Cq = .5

Top Story: TOP-ROOF
Bottom Story: BASE

No parapet is included

Basic Wind Speed, V = 70 mph
Exposure Type = B
Importance Factor, Iw = 1.5

AUTO WIND EXPOSURE WIDTH INFORMATION (Exposure widths are from diaphragm extents)

| STORY | DIAPHRAGM | WIDTH | X | Y |
|----------|-----------|--------|--------|--------|
| TOP-ROOF | D1 | 36.170 | 18.085 | 10.090 |
| ROOF | D1 | 36.170 | 18.085 | 8.940 |
| STORY3 | D1 | 36.170 | 18.085 | 8.940 |
| STORY2 | D1 | 36.170 | 18.085 | 8.940 |
| STORY1 | D1 | 36.170 | 18.085 | 8.940 |

AUTO WIND CALCULATION FORMULAS

P = wind pressure = SUM(Ce Cq qs Iw) -- Method 1

Ce, the combined height, exposure and gust factor coefficient, is from UBC97 Table 16-G

qs is the wind stagnation pressure at the standard height of 33 feet
qs = 0.00256 V² >= 10 psf

File 15550115

AUTO WIND CALCULATION RESULTS

qs = 12.5440 psf

AUTO WIND STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|------|-------|------|-------|-------|
| TOP-ROOF | 0.00 | 6.63 | 0.00 | 0.000 | 0.000 |
| 63.494 | | | | | |
| ROOF | 0.00 | 17.49 | 0.00 | 0.000 | 0.000 |
| 132.094 | | | | | |
| STORY3 | 0.00 | 20.96 | 0.00 | 0.000 | 0.000 |
| 147.314 | | | | | |
| STORY2 | 0.00 | 18.69 | 0.00 | 0.000 | 0.000 |
| 127.008 | | | | | |
| STORY1 | 0.00 | 10.50 | 0.00 | 0.000 | 0.000 |
| 69.290 | | | | | |

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 7

A U T O S E I S M I C U B C 9 7

Case: EQX

AUTO SEISMIC INPUT DATA

Direction: X + EccY
Typical Eccentricity = 5%
Eccentricity Overrides: No

Period Calculation: Program Calculated
Ct = .02 (in feet units)

Top Story: TOP-ROOF
Bottom Story: BASE

R = 5.5
I = 1.5
hn = 19.600 (Building Height)

Soil Profile Type = SD
Z = .15
Ca = 0.2200

File 1/1/2021

$$C_v = 0.3200$$

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If $Z \geq 0.35$ (Zone 4) then: If $T_{etabs} \leq 1.30 T_a$ then $T = T_{etabs}$, else $T = 1.30 T_a$

If $Z < 0.35$ (Zone 1, 2 or 3) then: If $T_{etabs} \leq 1.40 T_a$ then $T = T_{etabs}$, else $T = 1.40 T_a$

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If $T \leq 0.7$ sec, then $F_t = 0$

If $T > 0.7$ sec, then $F_t = 0.07 T V \leq 0.25 V$

AUTO SEISMIC CALCULATION RESULTS

$$T_a = 0.4542 \text{ sec}$$

$$T \text{ Used} = 0.2224 \text{ sec}$$

$$W \text{ Used} = 1719.22$$

$$V (\text{Eqn 1}) = 0.3924W$$

$$V (\text{Eqn 2}) = 0.1500W$$

$$V (\text{Eqn 3}) = 0.0363W$$

$$V (\text{Eqn 4}) = 0.0524W$$

$$V \text{ Used} = 0.1500W = 257.88$$

$$F_t \text{ Used} = 0.00$$

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|--------|------|------|-------|-------|
| TOP-ROOF | 19.89 | 0.00 | 0.00 | 0.000 | 0.000 |
| -9.396 | | | | | |
| ROOF | 102.15 | 0.00 | 0.00 | 0.000 | 0.000 |
| 248.231 | | | | | |
| STORY3 | 79.02 | 0.00 | 0.00 | 0.000 | 0.000 |
| 140.086 | | | | | |
| STORY2 | 49.82 | 0.00 | 0.00 | 0.000 | 0.000 |

File 00000000

New Report อาคารโชนนาการ รพ.สินแพทย์รังสิต

112.222
STORY1 7.01 0.00 0.00 0.000 0.000
18.774

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AUTO SEISMIC UBC 97
Case: EQNX

AUTO SEISMIC INPUT DATA

Direction: X - EccY
Typical Eccentricity = 5%
Eccentricity Overrides: No

Period Calculation: Program Calculated
Ct = .02 (in feet units)

Top Story: TOP-ROOF
Bottom Story: BASE

R = 5.5
I = 1.5
hn = 19.600 (Building Height)

Soil Profile Type = SD
Z = .15
Ca = 0.2200
Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z >= 0.35 (Zone 4) then: If $T_{etabs} \leq 1.30 T_a$ then $T = T_{etabs}$, else
 $T = 1.30 T_a$

If Z < 0.35 (Zone 1, 2 or 3) then: If $T_{etabs} \leq 1.40 T_a$ then $T = T_{etabs}$, else
 $T = 1.40 T_a$

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If $T \leq 0.7$ sec, then $F_t = 0$

If $T > 0.7$ sec, then $F_t = 0.07 T V \leq 0.25 V$

The Wansell

AUTO SEISMIC CALCULATION RESULTS

Ta = 0.4542 sec

T Used = 0.2224 sec

W Used = 1719.22

V (Eqn 1) = 0.3924W

V (Eqn 2) = 0.1500W

V (Eqn 3) = 0.0363W

V (Eqn 4) = 0.0524W

V Used = 0.1500W = 257.88

Ft Used = 0.00

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------------|--------|------|------|-------|-------|
| TOP-ROOF | 19.89 | 0.00 | 0.00 | 0.000 | 0.000 |
| 6.301 ROOF | 102.15 | 0.00 | 0.00 | 0.000 | 0.000 |
| 302.362 STORY3 | 79.02 | 0.00 | 0.00 | 0.000 | 0.000 |
| 192.899 STORY2 | 49.82 | 0.00 | 0.00 | 0.000 | 0.000 |
| 141.205 STORY1 | 7.01 | 0.00 | 0.00 | 0.000 | 0.000 |
| 21.616 | | | | | |

ETABS v9.7.0 File:อาคารโชนนาการ รพ.สินแพทย์รังสิต Units:Ton-m พฤศจิกายน 1, 2560 17:30 PAGE 9

A U T O S E I S M I C U B C 9 7

Case: EQY

AUTO SEISMIC INPUT DATA

Direction: Y + EccX

Typical Eccentricity = 5%

Eccentricity Overrides: No

Period Calculation: Program Calculated

Ct = .02 (in feet units)

File 17/11/2560

Top Story: TOP-ROOF

Bottom Story: BASE

R = 5.5

I = 1.5

hn = 19.600 (Building Height)

Soil Profile Type = SD

Z = .15

Ca = 0.2200

Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z \geq 0.35 (Zone 4) then: If $T_{etabs} \leq 1.30 T_a$ then $T = T_{etabs}$, else $T = 1.30 T_a$

If Z < 0.35 (Zone 1, 2 or 3) then: If $T_{etabs} \leq 1.40 T_a$ then $T = T_{etabs}$, else $T = 1.40 T_a$

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If $T \leq 0.7$ sec, then $F_t = 0$

If $T > 0.7$ sec, then $F_t = 0.07 T V \leq 0.25 V$

AUTO SEISMIC CALCULATION RESULTS

$T_a = 0.4542$ sec

$T_{Used} = 0.2224$ sec

$W_{Used} = 1719.22$

$V (\text{Eqn 1}) = 0.3924W$

$V (\text{Eqn 2}) = 0.1500W$

$V (\text{Eqn 3}) = 0.0363W$

$V (\text{Eqn 4}) = 0.0524W$

$V_{Used} = 0.1500W = 257.88$

$F_t_{Used} = 0.00$

AUTO SEISMIC STORY FORCES

| STORY MZ | New Report อาคารโชนนาการ รพ.สินแพทย์รังสิต | | | | |
|-------------|--|--------|------|-------|-------|
| | FX | FY | FZ | MX | MY |
| TOP-ROOF | 0.00 | 19.89 | 0.00 | 0.000 | 0.000 |
| -32.890 | | | | | |
| ROOF | 0.00 | 102.15 | 0.00 | 0.000 | 0.000 |
| 273.418 | | | | | |
| STORY3 | 0.00 | 79.02 | 0.00 | 0.000 | 0.000 |
| 178.571 | | | | | |
| STORY2 | 0.00 | 49.82 | 0.00 | 0.000 | 0.000 |
| 222.326 | | | | | |
| STORY1 | 0.00 | 7.01 | 0.00 | 0.000 | 0.000 |
| 32.952 | | | | | |

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A U T O S E I S M I C U B C 9 7

Case: EQNY

AUTO SEISMIC INPUT DATA

Direction: Y - EccX
 Typical Eccentricity = 5%
 Eccentricity Overrides: No

Period Calculation: Program Calculated
 Ct = .02 (in feet units)

Top Story: TOP-ROOF
 Bottom Story: BASE

R = 5.5
 I = 1.5
 hn = 19.600 (Building Height)

Soil Profile Type = SD
 Z = .15
 Ca = 0.2200
 Cv = 0.3200

AUTO SEISMIC CALCULATION FORMULAS

$$T_a = C_t (h_n^{3/4})$$

If Z >= 0.35 (Zone 4) then:
 T = 1.30 T_a

If T_{etabs} <= 1.30 T_a then T = T_{etabs}, else

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If $Z < 0.35$ (Zone 1, 2 or 3) then: If $T_{etabs} \leq 1.40 T_a$ then $T = T_{etabs}$, else $T = 1.40 T_a$

$$V = (C_v I W) / (R T) \quad (\text{Eqn. 1})$$

$$V \leq 2.5 C_a I W / R \quad (\text{Eqn. 2})$$

$$V \geq 0.11 C_a I W \quad (\text{Eqn. 3})$$

If $T \leq 0.7$ sec, then $F_t = 0$

If $T > 0.7$ sec, then $F_t = 0.07 T V \leq 0.25 V$

AUTO SEISMIC CALCULATION RESULTS

$T_a = 0.4542$ sec

$T_{Used} = 0.2224$ sec

$W_{Used} = 1719.22$

$V (\text{Eqn 1}) = 0.3924W$

$V (\text{Eqn 2}) = 0.1500W$

$V (\text{Eqn 3}) = 0.0363W$

$V (\text{Eqn 4}) = 0.0524W$

$V_{Used} = 0.1500W = 257.88$

$F_t_{Used} = 0.00$

AUTO SEISMIC STORY FORCES

| STORY MZ | FX | FY | FZ | MX | MY |
|-------------|------|--------|------|-------|-------|
| TOP-ROOF | 0.00 | 19.89 | 0.00 | 0.000 | 0.000 |
| -69.331 | | | | | |
| ROOF | 0.00 | 102.15 | 0.00 | 0.000 | 0.000 |
| 163.914 | | | | | |
| STORY3 | 0.00 | 79.02 | 0.00 | 0.000 | 0.000 |
| 71.732 | | | | | |
| STORY2 | 0.00 | 49.82 | 0.00 | 0.000 | 0.000 |
| 163.696 | | | | | |
| STORY1 | 0.00 | 7.01 | 0.00 | 0.000 | 0.000 |
| 27.203 | | | | | |

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MASS SOURCE DATA

MASS LATERAL LUMP MASS

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FROM MASS ONLY AT STORIES

Masses Yes Yes

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DIAPHRAGM MASS DATA

| STORY Y-M | DIAPHRAGM | MASS-X | MASS-Y | MMI | X-M |
|--------------------|-----------|-----------|-----------|-----------|--------|
| TOP-ROOF 13.729 | D1 | 3.092E+00 | 3.092E+00 | 4.827E+02 | 8.509 |
| ROOF 12.292 | D1 | 1.097E+01 | 1.097E+01 | 1.716E+03 | 10.534 |
| STORY3 11.836 | D1 | 1.559E+01 | 1.559E+01 | 2.396E+03 | 11.057 |
| STORY2 11.823 | D1 | 1.573E+01 | 1.573E+01 | 2.471E+03 | 11.290 |
| STORY1 11.778 | D1 | 9.561E+00 | 9.561E+00 | 1.522E+03 | 11.484 |

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ASSEMBLED POINT MASSES

| STORY RZ | UX | UY | UZ | RX | RY |
|-----------------------|-----------|-----------|-----------|-----------|-----------|
| TOP-ROOF 4.827E+02 | 6.103E+00 | 6.103E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| ROOF 1.716E+03 | 3.701E+01 | 3.701E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| STORY3 2.396E+03 | 4.170E+01 | 4.170E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| STORY2 2.471E+03 | 4.833E+01 | 4.833E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| STORY1 1.522E+03 | 4.217E+01 | 4.217E+01 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| BASE 2.257E+02 | 1.468E+00 | 1.468E+00 | 0.000E+00 | 0.000E+00 | 0.000E+00 |
| Totals 8.813E+03 | 1.768E+02 | 1.768E+02 | 0.000E+00 | 0.000E+00 | 0.000E+00 |

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CENTERS OF CUMULATIVE MASS & CENTERS OF RIGIDITY

the system

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| STORY RIGIDITY--/ LEVEL ORDINATE-Y | DIAPHRAGM NAME | /-----CENTER OF MASS-----//--CENTER OF | | | |
|---|-------------------|--|------------|------------|------------|
| | | MASS | ORDINATE-X | ORDINATE-Y | ORDINATE-X |
| TOP-ROOF 19.422 | D1 | 3.092E+00 | 8.509 | 13.729 | 5.037 |
| ROOF 19.338 | D1 | 1.406E+01 | 10.089 | 12.608 | 5.015 |
| STORY3 19.064 | D1 | 2.965E+01 | 10.598 | 12.202 | 4.871 |
| STORY2 18.394 | D1 | 4.537E+01 | 10.838 | 12.071 | 4.646 |
| STORY1 14.689 | D1 | 5.494E+01 | 10.950 | 12.020 | 6.411 |

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MODAL PERIODS AND FREQUENCIES

| MODE FREQ NUMBER (RADIANS/TIME) | PERIOD (TIME) | FREQUENCY (CYCLES/TIME) | CIRCULAR |
|--|------------------|----------------------------|----------|
| Mode 1 6.54606 | 0.95984 | 1.04184 | |
| Mode 2 24.28966 | 0.25868 | 3.86582 | |
| Mode 3 28.25420 | 0.22238 | 4.49680 | |
| Mode 4 33.83340 | 0.18571 | 5.38475 | |
| Mode 5 55.61480 | 0.11298 | 8.85137 | |
| Mode 6 93.78858 | 0.06699 | 14.92692 | |
| Mode 7 126.22564 | 0.04978 | 20.08944 | |
| Mode 8 147.15983 | 0.04270 | 23.42121 | |

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MODAL PARTICIPATING MASS RATIOS

| MODE | X-TRANS | Y-TRANS | Z-TRANS | RX-ROTN |
|------|---------|---------|---------|---------|
|------|---------|---------|---------|---------|

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| RY-ROTN NUMBER %MASS <SUM> | RZ-ROTN %MASS <SUM> %MASS <SUM> | %MASS <SUM> | %MASS <SUM> | %MASS <SUM> |
|----------------------------------|---------------------------------------|-------------|-------------|-------------|
| Mode 1 36.40 < 36> | 22.87 < 23> 18.24 < 18> | 14.63 < 15> | 0.00 < 0> | 21.24 < 21> |
| Mode 2 6.04 < 42> | 0.11 < 23> 9.07 < 27> | 17.07 < 32> | 0.00 < 0> | 9.89 < 31> |
| Mode 3 31.69 < 74> | 27.25 < 50> 2.72 < 30> | 24.38 < 56> | 0.00 < 0> | 51.53 < 83> |
| Mode 4 25.51 <100> | 17.52 < 68> 34.43 < 64> | 8.68 < 65> | 0.00 < 0> | 16.12 < 99> |
| Mode 5 0.03 <100> | 0.14 < 68> 1.59 < 66> | 1.38 < 66> | 0.00 < 0> | 0.09 < 99> |
| Mode 6 0.19 <100> | 10.62 < 78> 0.50 < 67> | 4.19 < 70> | 0.00 < 0> | 0.17 < 99> |
| Mode 7 0.00 <100> | 0.49 < 79> 0.79 < 67> | 0.01 < 70> | 0.00 < 0> | 0.03 < 99> |
| Mode 8 0.04 <100> | 0.81 < 80> 9.42 < 77> | 8.55 < 79> | 0.00 < 0> | 0.80 <100> |

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MODAL LOAD PARTICIPATION RATIOS
(STATIC AND DYNAMIC RATIOS ARE IN PERCENT)

| TYPE | NAME | STATIC | DYNAMIC |
|-------|------|---------|---------|
| Load | DEAD | 0.4654 | 0.0000 |
| Load | LIVE | 0.5342 | 0.0000 |
| Load | SDL | 0.2761 | 0.0000 |
| Load | WX | 99.9759 | 30.6183 |
| Load | WY | 99.9733 | 33.5647 |
| Load | EQX | 99.9997 | 99.8182 |
| Load | EQNX | 99.9998 | 99.8200 |
| Load | EQY | 99.9995 | 99.5077 |
| Load | EQNY | 99.9995 | 99.5466 |
| Accel | UX | 99.9452 | 79.7996 |
| Accel | UY | 99.9208 | 78.8757 |
| Accel | UZ | 0.0000 | 0.0000 |
| Accel | RX | 99.9996 | 99.8690 |
| Accel | RY | 99.9998 | 99.9022 |
| Accel | RZ | 87.0090 | 76.7602 |

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TOTAL REACTIVE FORCES (RECOVERED LOADS) AT ORIGIN

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| LOAD MZ | FX | FY | FZ | MX | MY |
|------------|------------|------------|------------|-----------|------------|
| DEAD | 1.173E-07 | 5.885E-08 | 1.735E+03 | 1.655E+04 | -2.402E+04 |
| 3.805E-07 | | | | | |
| LIVE | 4.786E-08 | 4.382E-08 | 7.414E+02 | 6.813E+03 | -1.118E+04 |
| 3.878E-07 | | | | | |
| SDL | 4.163E-08 | 1.159E-08 | 3.076E+02 | 2.549E+03 | -4.885E+03 |
| 2.363E-08 | | | | | |
| WX | -3.629E+01 | -1.540E-07 | -1.378E-09 | 3.142E-06 | -3.801E+02 |
| 3.277E+02 | | | | | |
| WY | 1.060E-05 | -7.427E+01 | 1.049E-08 | 7.857E+02 | 1.524E-04 |
| -1.343E+03 | | | | | |
| EQX | -2.579E+02 | -1.238E-06 | -1.104E-08 | 2.515E-05 | -3.302E+03 |
| 2.626E+03 | | | | | |
| EQNX | -2.579E+02 | -1.317E-06 | -1.195E-08 | 2.675E-05 | -3.302E+03 |
| 2.471E+03 | | | | | |
| EQY | 2.700E-05 | -2.579E+02 | 5.546E-08 | 3.302E+03 | 3.882E-04 |
| -3.436E+03 | | | | | |
| EQNY | 2.269E-05 | -2.579E+02 | 5.731E-08 | 3.302E+03 | 3.259E-04 |
| -3.119E+03 | | | | | |
| EQXRS | 2.773E+02 | 2.376E+02 | 6.775E-08 | 3.374E+03 | 3.450E+03 |
| 4.608E+03 | | | | | |
| EQYRS | 2.415E+02 | 2.369E+02 | 6.284E-08 | 3.148E+03 | 3.053E+03 |
| 4.787E+03 | | | | | |

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S T O R Y F O R C E S

| STORY MX | LOAD MY | P | VX | VY | T |
|-------------|------------|------------|------------|------------|------------|
| TOP-ROOF | WX | -2.086E-12 | -2.856E+00 | -3.643E-10 | 2.882E+01 |
| 1.088E-09 | -8.568E+00 | | | | |
| ROOF | WX | 9.742E-10 | -1.150E+01 | -2.668E-07 | 1.061E+02 |
| 1.418E-06 | -6.839E+01 | | | | |
| STORY3 | WX | 4.396E-10 | -2.187E+01 | -1.500E-07 | 1.988E+02 |
| 2.191E-06 | -1.821E+02 | | | | |
| STORY2 | WX | -2.367E-09 | -3.110E+01 | -1.539E-07 | 2.814E+02 |
| 2.988E-06 | -3.438E+02 | | | | |
| STORY1 | WX | -1.378E-09 | -3.629E+01 | -1.540E-07 | 3.277E+02 |
| 3.142E-06 | -3.801E+02 | | | | |
| TOP-ROOF | WY | 7.399E-13 | -1.985E-08 | -6.630E+00 | -1.199E+02 |
| 1.989E+01 | -5.957E-08 | | | | |
| ROOF | WY | 1.505E-08 | 8.430E-06 | -2.412E+01 | -4.363E+02 |
| 1.453E+02 | 4.371E+05 | | | | |

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| | | | | | |
|-----------|------------|------------|------------|------------|------------|
| STORY3 | WY | 1.359E-08 | 8.505E-06 | -4.509E+01 | -8.154E+02 |
| 3.798E+02 | 8.794E-05 | | | | |
| STORY2 | WY | 1.006E-08 | 1.039E-05 | -6.378E+01 | -1.153E+03 |
| 7.114E+02 | 1.418E-04 | | | | |
| STORY1 | WY | 1.049E-08 | 1.060E-05 | -7.427E+01 | -1.343E+03 |
| 7.857E+02 | 1.524E-04 | | | | |
| TOP-ROOF | EQX | -1.481E-11 | -1.989E+01 | -2.834E-09 | 2.824E+02 |
| 8.486E-09 | -5.966E+01 | | | | |
| ROOF | EQX | 5.320E-09 | -1.220E+02 | -2.117E-06 | 1.290E+03 |
| 1.125E-05 | -6.942E+02 | | | | |
| STORY3 | EQX | 1.208E-09 | -2.011E+02 | -1.208E-06 | 2.085E+03 |
| 1.747E-05 | -1.740E+03 | | | | |
| STORY2 | EQX | -1.824E-08 | -2.509E+02 | -1.237E-06 | 2.562E+03 |
| 2.392E-05 | -3.044E+03 | | | | |
| STORY1 | EQX | -1.104E-08 | -2.579E+02 | -1.238E-06 | 2.626E+03 |
| 2.515E-05 | -3.302E+03 | | | | |
| TOP-ROOF | EQNX | -1.504E-11 | -1.989E+01 | -3.052E-09 | 2.667E+02 |
| 9.153E-09 | -5.966E+01 | | | | |
| ROOF | EQNX | 6.275E-09 | -1.220E+02 | -2.255E-06 | 1.220E+03 |
| 1.198E-05 | -6.942E+02 | | | | |
| STORY3 | EQNX | 1.804E-09 | -2.011E+02 | -1.285E-06 | 1.962E+03 |
| 1.860E-05 | -1.740E+03 | | | | |
| STORY2 | EQNX | -1.947E-08 | -2.509E+02 | -1.316E-06 | 2.410E+03 |
| 2.544E-05 | -3.044E+03 | | | | |
| STORY1 | EQNX | -1.195E-08 | -2.579E+02 | -1.317E-06 | 2.471E+03 |
| 2.675E-05 | -3.302E+03 | | | | |
| TOP-ROOF | EQY | 1.683E-11 | -5.125E-08 | -1.989E+01 | -1.363E+02 |
| 5.966E+01 | -1.538E-07 | | | | |
| ROOF | EQY | 5.572E-08 | 2.149E-05 | -1.220E+02 | -1.486E+03 |
| 6.942E+02 | 1.113E-04 | | | | |
| STORY3 | EQY | 5.262E-08 | 2.168E-05 | -2.011E+02 | -2.538E+03 |
| 1.740E+03 | 2.241E-04 | | | | |
| STORY2 | EQY | 5.504E-08 | 2.647E-05 | -2.509E+02 | -3.323E+03 |
| 3.044E+03 | 3.612E-04 | | | | |
| STORY1 | EQY | 5.546E-08 | 2.700E-05 | -2.579E+02 | -3.436E+03 |
| 3.302E+03 | 3.882E-04 | | | | |
| TOP-ROOF | EQNY | 2.258E-11 | -4.328E-08 | -1.989E+01 | -9.988E+01 |
| 5.966E+01 | -1.299E-07 | | | | |
| ROOF | EQNY | 5.375E-08 | 1.803E-05 | -1.220E+02 | -1.340E+03 |
| 6.942E+02 | 9.336E-05 | | | | |
| STORY3 | EQNY | 5.139E-08 | 1.819E-05 | -2.011E+02 | -2.285E+03 |
| 1.740E+03 | 1.880E-04 | | | | |
| STORY2 | EQNY | 5.754E-08 | 2.225E-05 | -2.509E+02 | -3.011E+03 |
| 3.044E+03 | 3.032E-04 | | | | |
| STORY1 | EQNY | 5.731E-08 | 2.269E-05 | -2.579E+02 | -3.119E+03 |
| 3.302E+03 | 3.259E-04 | | | | |
| TOP-ROOF | EQXRS | 3.834E-11 | 1.984E+01 | 2.444E+01 | 3.800E+02 |
| 7.331E+01 | 5.952E+01 | | | | |

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|-----------|-----------|-----------|-----------|-----------|-----------|
| ROOF | EQXRS | 6.374E-08 | 1.235E+02 | 1.466E+02 | 2.661E+03 |
| 8.275E+02 | 6.973E+02 | | | | |
| STORY3 | EQXRS | 5.684E-08 | 2.117E+02 | 2.142E+02 | 3.963E+03 |
| 1.933E+03 | 1.788E+03 | | | | |
| STORY2 | EQXRS | 7.100E-08 | 2.732E+02 | 2.362E+02 | 4.555E+03 |
| 3.139E+03 | 3.176E+03 | | | | |
| STORY1 | EQXRS | 6.775E-08 | 2.773E+02 | 2.376E+02 | 4.608E+03 |
| 3.374E+03 | 3.450E+03 | | | | |
| TOP-ROOF | EQYRS | 3.443E-11 | 1.964E+01 | 2.281E+01 | 3.415E+02 |
| 6.844E+01 | 5.892E+01 | | | | |
| ROOF | EQYRS | 5.797E-08 | 1.205E+02 | 1.340E+02 | 2.433E+03 |
| 7.578E+02 | 6.818E+02 | | | | |
| STORY3 | EQYRS | 5.284E-08 | 1.889E+02 | 1.974E+02 | 3.776E+03 |
| 1.764E+03 | 1.641E+03 | | | | |
| STORY2 | EQYRS | 6.625E-08 | 2.380E+02 | 2.341E+02 | 4.716E+03 |
| 2.919E+03 | 2.819E+03 | | | | |
| STORY1 | EQYRS | 6.284E-08 | 2.415E+02 | 2.369E+02 | 4.787E+03 |
| 3.148E+03 | 3.053E+03 | | | | |

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STORY DRIFTS

| STORY | DIRECTION | LOAD | MAX DRIFT |
|----------|-----------|------|-----------|
| TOP-ROOF | X | WX | 1/2637 |
| TOP-ROOF | Y | WX | 1/1572 |
| ROOF | X | WX | 1/2252 |
| ROOF | Y | WX | 1/1520 |
| STORY3 | X | WX | 1/2238 |
| STORY3 | Y | WX | 1/1498 |
| STORY2 | X | WX | 1/3378 |
| STORY2 | Y | WX | 1/2264 |
| STORY1 | X | WX | 1/17060 |
| STORY1 | Y | WX | 1/11564 |
| TOP-ROOF | X | WY | 1/1092 |
| TOP-ROOF | Y | WY | 1/593 |
| ROOF | X | WY | 1/922 |
| ROOF | Y | WY | 1/566 |
| STORY3 | X | WY | 1/907 |
| STORY3 | Y | WY | 1/549 |
| STORY2 | X | WY | 1/1346 |
| STORY2 | Y | WY | 1/792 |
| STORY1 | Y | WY | 1/3602 |
| TOP-ROOF | X | EQX | 1/326 |
| TOP-ROOF | Y | EQX | 1/197 |
| ROOF | X | EQX | 1/274 |
| ROOF | Y | EQX | 1/187 |

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| | | | |
|----------|---|-------|--------|
| STORY3 | X | EQX | 1/279 |
| STORY3 | Y | EQX | 1/189 |
| STORY2 | X | EQX | 1/441 |
| STORY2 | Y | EQX | 1/300 |
| STORY1 | X | EQX | 1/2336 |
| STORY1 | Y | EQX | 1/1610 |
| TOP-ROOF | X | EQNX | 1/308 |
| TOP-ROOF | Y | EQNX | 1/185 |
| ROOF | X | EQNX | 1/259 |
| ROOF | Y | EQNX | 1/176 |
| STORY3 | X | EQNX | 1/263 |
| STORY3 | Y | EQNX | 1/177 |
| STORY2 | X | EQNX | 1/416 |
| STORY2 | Y | EQNX | 1/280 |
| STORY1 | X | EQNX | 1/2210 |
| STORY1 | Y | EQNX | 1/1495 |
| TOP-ROOF | X | EQY | 1/452 |
| TOP-ROOF | Y | EQY | 1/242 |
| ROOF | X | EQY | 1/364 |
| ROOF | Y | EQY | 1/218 |
| STORY3 | X | EQY | 1/354 |
| STORY3 | Y | EQY | 1/210 |
| STORY2 | X | EQY | 1/530 |
| STORY2 | Y | EQY | 1/307 |
| STORY1 | Y | EQY | 1/1437 |
| TOP-ROOF | X | EQNY | 1/549 |
| TOP-ROOF | Y | EQNY | 1/292 |
| ROOF | X | EQNY | 1/437 |
| ROOF | Y | EQNY | 1/260 |
| STORY3 | X | EQNY | 1/422 |
| STORY3 | Y | EQNY | 1/249 |
| STORY2 | X | EQNY | 1/626 |
| STORY2 | Y | EQNY | 1/359 |
| STORY1 | Y | EQNY | 1/1674 |
| TOP-ROOF | X | EQXRS | 1/159 |
| TOP-ROOF | Y | EQXRS | 1/90 |
| ROOF | X | EQXRS | 1/131 |
| ROOF | Y | EQXRS | 1/84 |
| STORY3 | X | EQXRS | 1/132 |
| STORY3 | Y | EQXRS | 1/84 |
| STORY2 | X | EQXRS | 1/208 |
| STORY2 | Y | EQXRS | 1/130 |
| STORY1 | X | EQXRS | 1/1164 |
| STORY1 | Y | EQXRS | 1/647 |
| TOP-ROOF | X | EQYRS | 1/187 |
| TOP-ROOF | Y | EQYRS | 1/106 |
| ROOF | X | EQYRS | 1/155 |
| ROOF | Y | EQYRS | 1/99 |

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| | | | |
|--------|---|-------|--------|
| STORY3 | X | EQYRS | 1/158 |
| STORY3 | Y | EQYRS | 1/100 |
| STORY2 | X | EQYRS | 1/246 |
| STORY2 | Y | EQYRS | 1/153 |
| STORY1 | X | EQYRS | 1/1357 |
| STORY1 | Y | EQYRS | 1/746 |

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DISPLACEMENTS AT DIAPHRAGM CENTER OF MASS

| STORY | DIAPHRAGM | LOAD | UX | UY | RZ |
|----------|-----------|------|--------|--------|---------|
| TOP-ROOF | D1 | WX | 0.0026 | 0.0014 | 0.00035 |
| ROOF | D1 | WX | 0.0026 | 0.0017 | 0.00029 |
| STORY3 | D1 | WX | 0.0017 | 0.0012 | 0.00019 |
| STORY2 | D1 | WX | 0.0007 | 0.0005 | 0.00008 |
| STORY1 | D1 | WX | 0.0000 | 0.0000 | 0.00000 |
| BASE | D1 | WX | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | WY | 0.0056 | 0.0045 | 0.00094 |
| ROOF | D1 | WY | 0.0057 | 0.0054 | 0.00079 |
| STORY3 | D1 | WY | 0.0038 | 0.0037 | 0.00050 |
| STORY2 | D1 | WY | 0.0015 | 0.0016 | 0.00021 |
| STORY1 | D1 | WY | 0.0001 | 0.0001 | 0.00001 |
| BASE | D1 | WY | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | EQX | 0.0216 | 0.0109 | 0.00280 |
| ROOF | D1 | EQX | 0.0213 | 0.0138 | 0.00232 |
| STORY3 | D1 | EQX | 0.0138 | 0.0093 | 0.00144 |
| STORY2 | D1 | EQX | 0.0055 | 0.0038 | 0.00057 |
| STORY1 | D1 | EQX | 0.0002 | 0.0001 | 0.00002 |
| BASE | D1 | EQX | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | EQNX | 0.0227 | 0.0116 | 0.00300 |
| ROOF | D1 | EQNX | 0.0224 | 0.0146 | 0.00248 |
| STORY3 | D1 | EQNX | 0.0146 | 0.0099 | 0.00154 |
| STORY2 | D1 | EQNX | 0.0058 | 0.0041 | 0.00061 |
| STORY1 | D1 | EQNX | 0.0003 | 0.0001 | 0.00002 |
| BASE | D1 | EQNX | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | EQY | 0.0144 | 0.0135 | 0.00235 |
| ROOF | D1 | EQY | 0.0148 | 0.0154 | 0.00198 |
| STORY3 | D1 | EQY | 0.0098 | 0.0104 | 0.00127 |
| STORY2 | D1 | EQY | 0.0039 | 0.0045 | 0.00053 |
| STORY1 | D1 | EQY | 0.0001 | 0.0002 | 0.00002 |
| BASE | D1 | EQY | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | EQNY | 0.0121 | 0.0122 | 0.00196 |
| ROOF | D1 | EQNY | 0.0125 | 0.0135 | 0.00166 |
| STORY3 | D1 | EQNY | 0.0083 | 0.0092 | 0.00107 |
| STORY2 | D1 | EQNY | 0.0033 | 0.0039 | 0.00045 |
| STORY1 | D1 | EQNY | 0.0001 | 0.0002 | 0.00002 |

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| | | | | | |
|----------|----|-------|--------|--------|---------|
| BASE | D1 | EQNY | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | EQXRS | 0.0403 | 0.0260 | 0.00627 |
| ROOF | D1 | EQXRS | 0.0409 | 0.0322 | 0.00522 |
| STORY3 | D1 | EQXRS | 0.0267 | 0.0219 | 0.00326 |
| STORY2 | D1 | EQXRS | 0.0106 | 0.0091 | 0.00131 |
| STORY1 | D1 | EQXRS | 0.0004 | 0.0004 | 0.00005 |
| BASE | D1 | EQXRS | 0.0000 | 0.0000 | 0.00000 |
| TOP-ROOF | D1 | EQYRS | 0.0338 | 0.0218 | 0.00524 |
| ROOF | D1 | EQYRS | 0.0342 | 0.0269 | 0.00436 |
| STORY3 | D1 | EQYRS | 0.0223 | 0.0183 | 0.00273 |
| STORY2 | D1 | EQYRS | 0.0089 | 0.0078 | 0.00111 |
| STORY1 | D1 | EQYRS | 0.0003 | 0.0003 | 0.00004 |
| BASE | D1 | EQYRS | 0.0000 | 0.0000 | 0.00000 |

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STORY MAXIMUM AND AVERAGE LATERAL DISPLACEMENTS

| STORY | LOAD | DIR | MAXIMUM | AVERAGE | RATIO |
|----------|------|-----|---------|---------|-------|
| TOP-ROOF | WX | Y | 0.0112 | 0.0048 | 2.347 |
| ROOF | WX | Y | 0.0093 | 0.0040 | 2.347 |
| STORY3 | WX | Y | 0.0059 | 0.0025 | 2.345 |
| STORY2 | WX | Y | 0.0024 | 0.0010 | 2.341 |
| STORY1 | WX | X | 0.0001 | 0.0000 | 1.579 |
| TOP-ROOF | WY | Y | 0.0306 | 0.0135 | 2.259 |
| ROOF | WY | Y | 0.0255 | 0.0113 | 2.260 |
| STORY3 | WY | Y | 0.0163 | 0.0072 | 2.259 |
| STORY2 | WY | Y | 0.0068 | 0.0030 | 2.252 |
| STORY1 | WY | Y | 0.0003 | 0.0001 | 2.194 |
| TOP-ROOF | EQX | Y | 0.0885 | 0.0378 | 2.342 |
| ROOF | EQX | Y | 0.0733 | 0.0313 | 2.342 |
| STORY3 | EQX | Y | 0.0455 | 0.0194 | 2.340 |
| STORY2 | EQX | Y | 0.0180 | 0.0077 | 2.338 |
| STORY1 | EQX | X | 0.0004 | 0.0003 | 1.561 |
| TOP-ROOF | EQNX | Y | 0.0945 | 0.0403 | 2.344 |
| ROOF | EQNX | Y | 0.0782 | 0.0334 | 2.344 |
| STORY3 | EQNX | Y | 0.0486 | 0.0207 | 2.343 |
| STORY2 | EQNX | Y | 0.0192 | 0.0082 | 2.340 |
| STORY1 | EQNX | X | 0.0005 | 0.0003 | 1.579 |
| TOP-ROOF | EQY | Y | 0.0786 | 0.0361 | 2.179 |
| ROOF | EQY | Y | 0.0662 | 0.0303 | 2.182 |
| STORY3 | EQY | Y | 0.0424 | 0.0194 | 2.188 |
| STORY2 | EQY | Y | 0.0177 | 0.0081 | 2.189 |
| STORY1 | EQY | Y | 0.0007 | 0.0003 | 2.104 |
| TOP-ROOF | EQNY | Y | 0.0663 | 0.0309 | 2.145 |
| ROOF | EQNY | Y | 0.0560 | 0.0260 | 2.149 |
| STORY3 | EQNY | Y | 0.0360 | 0.0167 | 2.158 |

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|--|-------|---|--------|--------|-------|
| STORY2 | EQNY | Y | 0.0151 | 0.0070 | 2.161 |
| STORY1 | EQNY | Y | 0.0006 | 0.0003 | 2.062 |
| TOP-ROOF | EQXRS | X | 0.1118 | 0.0632 | 1.769 |
| ROOF | EQXRS | X | 0.0929 | 0.0525 | 1.770 |
| STORY3 | EQXRS | X | 0.0577 | 0.0325 | 1.777 |
| STORY2 | EQXRS | X | 0.0230 | 0.0129 | 1.784 |
| STORY1 | EQXRS | X | 0.0009 | 0.0005 | 1.736 |
| TOP-ROOF | EQXRS | Y | 0.1990 | 0.1048 | 1.899 |
| ROOF | EQXRS | Y | 0.1657 | 0.0872 | 1.900 |
| STORY3 | EQXRS | Y | 0.1036 | 0.0545 | 1.902 |
| STORY2 | EQXRS | Y | 0.0416 | 0.0219 | 1.905 |
| STORY1 | EQXRS | Y | 0.0015 | 0.0008 | 1.894 |
| TOP-ROOF | EQYRS | X | 0.0936 | 0.0530 | 1.767 |
| ROOF | EQYRS | X | 0.0777 | 0.0439 | 1.768 |
| STORY3 | EQYRS | X | 0.0483 | 0.0272 | 1.776 |
| STORY2 | EQYRS | X | 0.0194 | 0.0109 | 1.785 |
| STORY1 | EQYRS | X | 0.0007 | 0.0004 | 1.736 |
| TOP-ROOF | EQYRS | Y | 0.1664 | 0.0878 | 1.897 |
| ROOF | EQYRS | Y | 0.1385 | 0.0730 | 1.898 |
| STORY3 | EQYRS | Y | 0.0868 | 0.0457 | 1.900 |
| STORY2 | EQYRS | Y | 0.0353 | 0.0185 | 1.905 |
| STORY1 | EQYRS | Y | 0.0013 | 0.0007 | 1.893 |

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ใบอนุญาตประกอบวิชาชีพ
(ข้อมูลส่วนบุคคล ได้รับการคุ้มครองไม่ต้องเปิดเผยตามกฎหมาย)