1. **RWFD - Check in on topic groups**
   a. Topic 2 Orthogonal Directions - SDII Group
   b. **Topic 4 Plan Configurations - Lawson, Cobeen**
      i. **IT9 needs to choose to focus efforts on (please collect your thoughts on this prior to the meeting):** Discussion of this topic will continue at May in-person meeting.
         1. A way to include non-rectangular and short-span diaphragm plans in the methodology, or
         2. Identifying research that is needed to develop or validate a methodology
      ii. **Dave McCormick raises cautions regarding increased wall anchorage forces if the response is to strengthen (and therefore stiffen) diaphragms.** A disconnect between existing code provisions that lower wall anchorage forces for shorter span and rigid diaphragms and the results of P-1026 analyses was noted. John identified a just-published EERI article that he and Maria authored. John noted that anchorage force from their study were fairly uniform up to the diaphragm corners where they spiked, possibly due to the in-phase coupling of response at the wall top and bottom. S.K. asked for confirmation that the wall anchorage pattern observed is at odds with ASCE 7 requirements, and this was confirmed. Dave asked about the difference between P-1026 analytical results and previous analytical studies, and John suggested the difference might be related to the discreet modeling of the wall and the modeling of a link between the wall and diaphragm as an important difference. He noted differences in loads in the wall and anchorage that might be affected by higher-mode response.
      iii. **Attached example problem looks at impact on diaphragm shears for P-1026 vs. ASCE 7-10. For diaphragms with periods less than 0.6 sec, the diaphragm shears (without 1.5 increase) are within 12% between P-1026 and ASCE 7. So P-1026 might be fine?** John noted
that $R$ of vertical system would change with different systems, while 4 is common for intermediate precast. Intent of strengthened zones is to move inelastic response away from very end of diaphragms. In P-1026 studies, shorter span diaphragms, had most difficulty meeting P-695 criteria, and is where strengthened diaphragms are most needed.

iv. **Pat Bodwell provided diagram showing strengthened diaphragm along collectors in reentrant corner building.** General concept shown was confirmed.

v. **Other -** Matt noted that design of two-span diaphragms using a flexible structure on stiff base approach is pushing into a new realm. John related it to one- and two-story structures sitting next to each other on a common base. Discussed what behavior was most critical for reentrant corner, whether it is the wings moving out of phase, or that is less of a concern because the diaphragms are shear-dominated.

c. **Topic 7 Rigid But Light Vertical Systems - Lawson, Koliou**
   i. Maria and John have an update on analytical studies they have been conducting. The objective was to determine whether the P-1026 design methodology (developed based on heavier concrete tilt-up walls) is equally valid for light wall buildings. They have taken the 200x400 foot building used for P-1026 studies and created a matching design with 10 psf used for exterior wall weight, and diaphragm design using the P-1026 methodology. IDA analyses and probability of collapse were then developed using the FEMA P-695 methodology. In the transverse load direction, the collapse margin ratio for the light wall building was about 10 percent less than for the heavy wall building. In the longitudinal load direction it was slightly more. **See slide set in attachment.**

d. Topic 9 Interaction of Inelasticity in Vertical System and Diaphragm - Schafer

e. Topic 10 Period Data From Tremblay's Work - Eatherton

f. Topic 11 Diaphragm Deflections - Cobeen

g. Topic 12 Commentary on Diaphragm Zoning - Schafer

h. Topics 13 & 14 Transition to ASCE 7 - Holmes, LaPlante, Manley, Line

i. Topic 15 Nail Penetration Effects - Lawson, Koliou, Cobeen

4. **Next web meeting**
   j. Second week April? Will primarily be Steel RWFD and SDII research update.

5. **Next in-person meeting**
   k. May 4, 2017 San Francisco

7. **New topic -** Is diaphragm deflection intended to be included in story drift calculation per ASCE 7 - this comes from steel deck researcher discussion with Rafael Sabelli, who indicated his opinion that diaphragm deflection should be included. This would prohibit construction of long-span flexible diaphragm buildings. Bill and John both noted some discussion of this in the P-1026 project, but related more to the ability of the structure to
accommodate calculated deflections, rather than limits imposed by ASCE 7. Ron La Plante indicated that this had been discussed at some length by ASCE 7 seismic IT2 last cycle, but no clarification had been approved. See attachment with IT2 discussion. This can be discussed by IT9 if of interest, will also be noted to PUC. Some discussion of impact of high diaphragm deflection on nonstructural components that are attached.