

## Homework #2 – Code Familiarity

CVEN 4359: Dr. Lamanna

The purpose of this homework is for you to become more familiar with ACI 318-08.

1. Concrete is required for a loading dock slab that will be exposed to moisture in a severe freeze-thaw climate, but not subject to deicers. A specified compressive strength  $f'_c$  of 3,000 psi is used for structural design. Type 1 cement with  $\frac{3}{4}$  in. maximum size normal weight aggregate is specified.
  - i. Determine the required minimum strength and maximum w/c ratio for the proposed concrete work to satisfy both design strength and exposure requirements.
  - ii. Select a w/c ratio to satisfy the governing required strength found from #1.
2. The following table lists strength test data from 5 trucks loads (batches) of concrete delivered to the job site. For each batch, two cylinders were cast and tested at 28 days. The specified strength of the concrete  $f'_c$  is 4000 psi. Determine the acceptability of the concrete based on the strength criteria of 5.6.3.3.

Test No.	Cylinder #1	Cylinder #2	Test Average	Average of 3 Consecutive Tests
1	4110	4260	4185	-
2	3840	4080	3960	-
3	4420	4450	4435	4193
4	3670	3820	3745	4047
5	4620	4570	4595	4258

3. What are the appendices of ACI 318-05? What does each cover? (Give a short description of each appendix.) Why do you think each appendix is included in the code?