

## **CEEn-2016CPST-003**

# **LID APPROACH EFFECTIVENESS & FUNCTIONALITY STUDY**

## **Team LID**

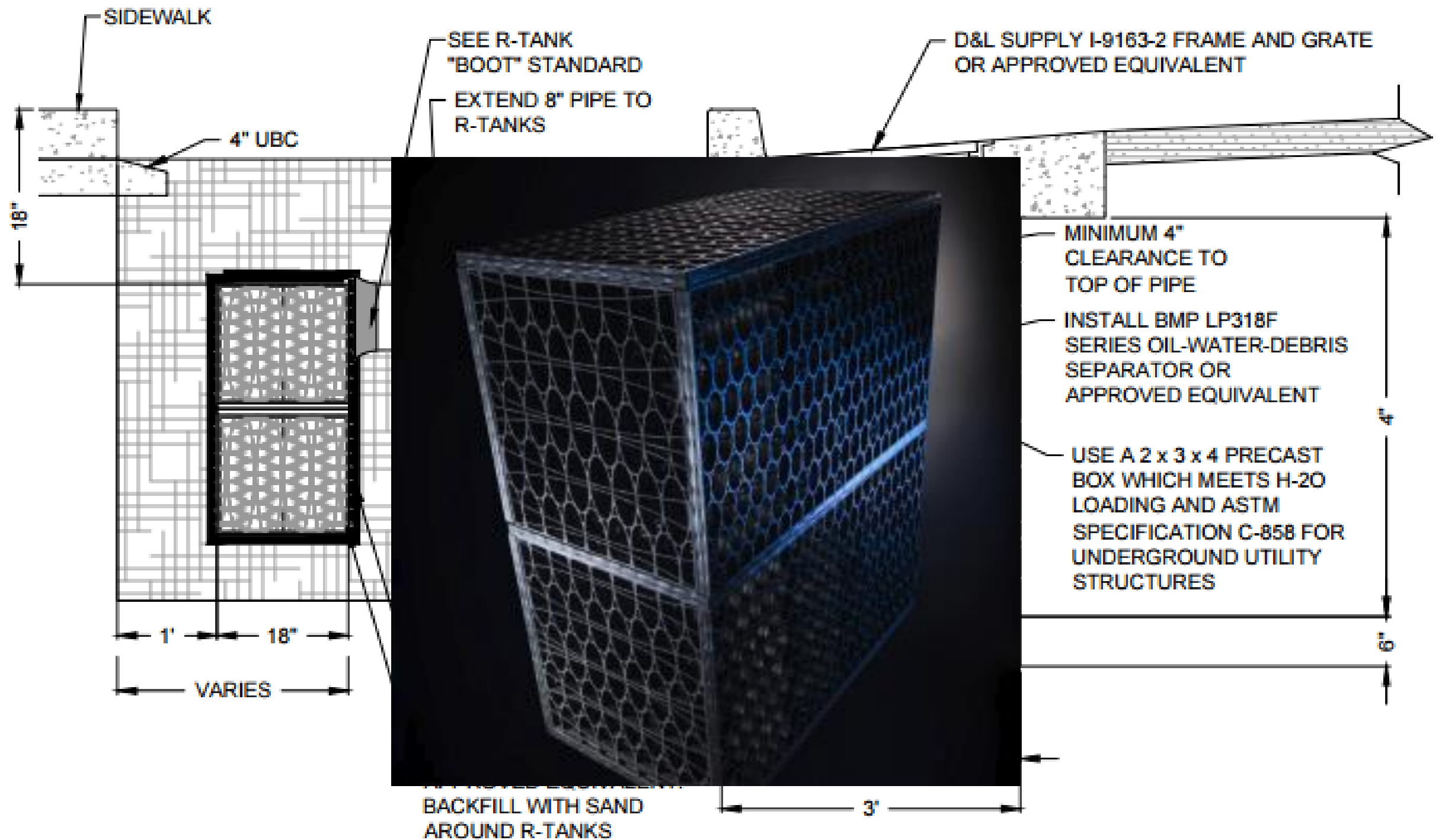
**Mentor: John De Leon**

**Treyton Moore**

**Jingwen He**

**Kevin Liang**

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## Design, Analysis & Results

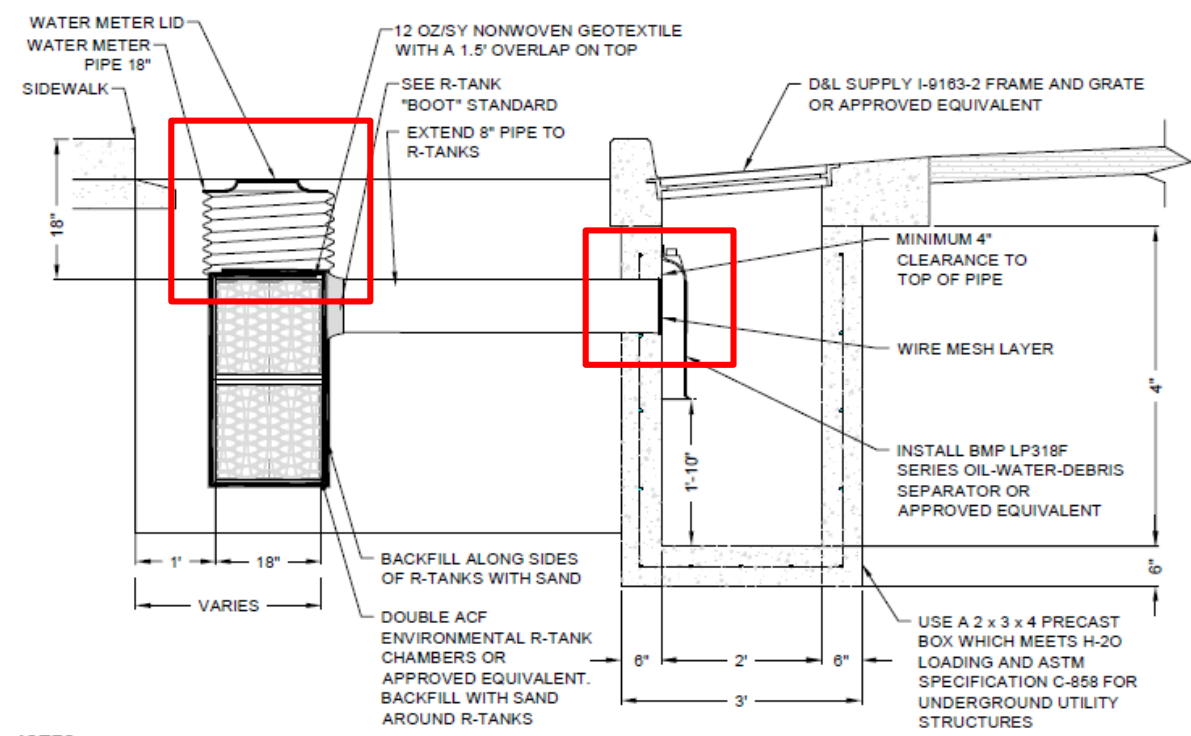
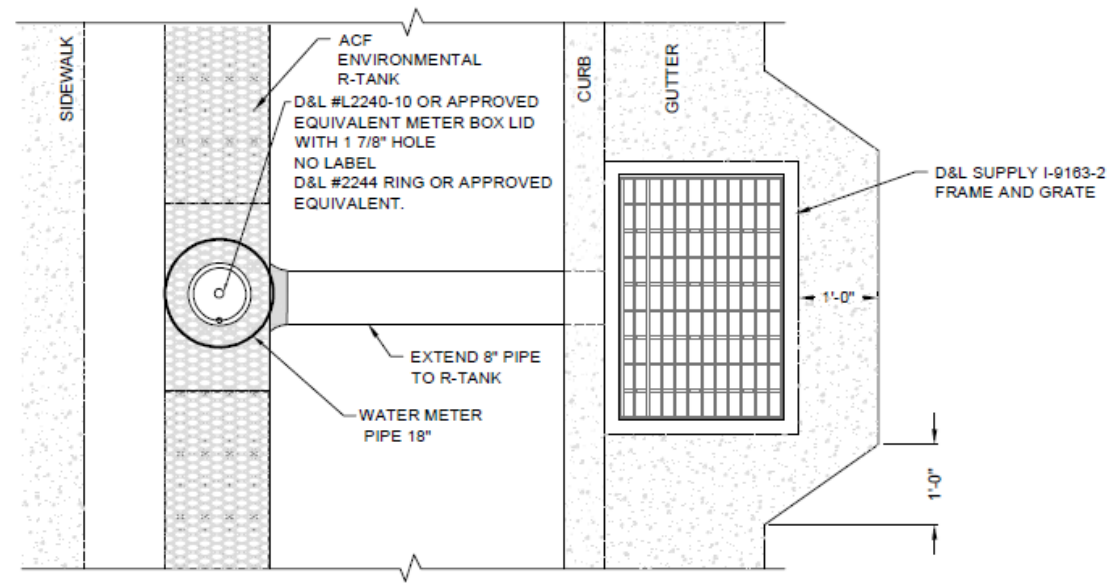
- **90<sup>th</sup> percentile storm = 0.54in**
- **LID systems exceeded EPA standards in Spanish Fork**
  - **Total runoff volume = 2301 ft<sup>3</sup>**
  - **Total system volume = 4635 ft<sup>3</sup>**
- **LID performance varied for the 5, 10, 25, 50, and 100 year storms depending on soil quality.**
  - **Poor soil drainage caused R-tanks to overtop in these cases analyzed**
- **Leaf build up in entrance R-tank**
- **Poor initial layout of R-tanks by contractors resulting in complications**

<b>Storm Intensities</b>	<b>Runoff Volume (pcf)</b>	<b>Drainage Time (hrs)</b>
<b>100 years storm</b>	<b>28002</b>	<b>0.306</b>
<b>50 years storm</b>	<b>23727</b>	<b>0.259</b>
<b>25 years storm</b>	<b>19608</b>	<b>0.214</b>
<b>10 years storm</b>	<b>14730</b>	<b>0.161</b>
<b>5 years storm</b>	<b>11274</b>	<b>0.123</b>
<b>90th percentile storm</b>	<b>2301</b>	<b>0.025</b>



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- Use water meter out silt build up
- For future system entrance and “fill”
- Improve inspection
- For sites with po stacked deeper t



- NOTES:**
- 1. DETAILED ENGINEERING SHALL BE SUBMITTED TO THE CITY FOR APPROVAL ON ALL CAST IN PLACE BOXES.
  - 2. "SNOUT" OIL-WATER-DEBRIS SEPARATOR SHALL BE INSTALLED TO MANUFACTURER'S SPECIFICATIONS.
  - 3. ALL PLANTER AREAS BETWEEN THE CURB AND SIDEWALK SHALL BE LANDSCAPED WITH PERVIOUS MATERIALS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER OR DESIGNEE.



**CAPSTONE**

**IS**

systems to clean  
to cover the

R-tanks could be