



Wet Well Concrete Base Ring Design

Version 1.0 Last Revised 8/7/2015

| | |
|-----------------|---|
| Customer | |
| Project | |
| Date | |
| Revision | 0 |

DESIGN INPUTS

| | | | |
|--------------------------------------|------|------|--------------------|
| Wet Well (W.W.) Outside Diameter | D | 120 | in |
| Wet Well Height(bot. to top of head) | H | 190 | in |
| Water Table Above W.W. Top Head | hwt | 0 | in |
| Concrete Base Ring O.D. | Dcr | 173 | in |
| Concrete Base Ring Thk. | tcr | 12 | in |
| Backfill Density | ρfil | 60 | lb/ft ³ |
| Water Density | ρw | 62.4 | lb/ft ³ |
| Concrete Density | ρc | 150 | lb/ft ³ |

CALCULATION

| | | | |
|---|--------|--------|-----------------|
| Volume of Water Displaced | Vw | 1244 | ft ³ |
| Weight of Water Displaced | Ww | 77,597 | lb |
| Concrete Ring Area | Acr | 85 | ft ² |
| Concrete Ring Volume | Vcr | 85 | ft ³ |
| Concrete Ring Weight | Wcr | 12705 | lb |
| Weight of FRP Used to Resist Buoyancy | Wfrp | 1000 | lb |
| Buoyancy Design Safety Factor | SF | 1.2 | - |
| Design Buoyancy Force | Fu | 93,117 | lb |
| Weight of Backfill Req'd | Wfil_r | 79,412 | lb |
| Actual Weight of Backfill | Wfil | 80,463 | lb |
| Actual Backfill - Req'd Backfill | ΔWfil | 1,051 | lb |
| Is Backfill Adequate to Resist Buoyancy | OK | | |

DESIGN SUMMARY

| | | | |
|--------------------------|-----|------|----|
| Concrete Base Ring Width | bcr | 26.5 | in |
| Concrete Ring Depth | tcr | 12 | in |

NOTE

1. Yellow cells require user inputs.
2. Pay attention to units.