

Good Samaritan Medical Center

High Density Concrete
Placement





Walls

- Blockouts around door for borated polyethylene and lead plates
- Physics port
 - Allows staff to check radiation levels in the vault before entering
 - Sleeve through wall at 45 degrees vertical: Location was critical to prevent radiation leak





- Lid shoring
 - Wet weight of lid = over 1.6 million pounds
 - Designed by engineer; installation checked by engineer
- Fireproofing of beams
 - Before placement of lid
 - Use of HD fireproofing to prevent damage by forming and reinforcing activities: No addit'l patching required
 - OFI – sheet metal cap detail
 - Allowed for fireproofing of beams before deck was placed





Test run: Checked maximum free-fall of aggregate





Placement
High Density Concrete supplied by Central Concrete





Placement continued...

- 187.5 CY placed total
- 4.5 CY of concrete batched in each 12 CY truck
- Rate of placement
 - Started at 30 minutes per truck or more
 - Ended at 12-15 minutes per truck





Placement continued

Central concrete quality control manager onsite: Only person allowed to add chemicals to the mix





Placement continued...
Placement of high density concrete required normal size crew





Finished vault

- Due to high density, concrete finished with few imperfections, even with minimal vibrating
- Maximum deflection of the lid measured at 3/16"
- 12.5 hour pour
- 14 hour day

