

# EXTRACTING LANDFILL GAS FROM DEVELOPED SITES WHILE MAXIMIZING PUBLIC SAFETY AND MINIMIZING VISUAL IMPACTS

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# TYPES OF WELLHEADS

- **“Typical” Landfill Gas Wellheads (Undeveloped Sites)**
  - Above Ground Surface
  - Unprotected Above Ground Access
- **Hidden Landfill Gas Wellheads (Developed Sites)**
  - Below Ground Surface
  - Protected Above Ground Access



# **UNDEVELOPED SITES**



**Typical Above Ground LFG Wellheads**



**Typical Above Ground Wellheads**



# **DEVELOPED SITES**

# Choices of Protective Enclosures

- Flush With Ground Surface
- “Flip Top”
- Lift Off

# Flush With Ground Surface

- Can Get Overgrown and “Lost” (GPS Locate)
- Bulky Covers – Rectangular Can Fall in Hole
- Fall Hazard
- Confined Space Entry
- Mower Damage to Covers and Rims
- Nearly Invisible To View





**Ground Surface Flush Polymer Concrete Vault  
(Round)**



**Ground Surface Flush Polymer Concrete  
(Rectangular)**



**Wellhead Damage  
Flooding**



**Limited Space**  
**Bulky & Heavy Cover**

# Flip Top

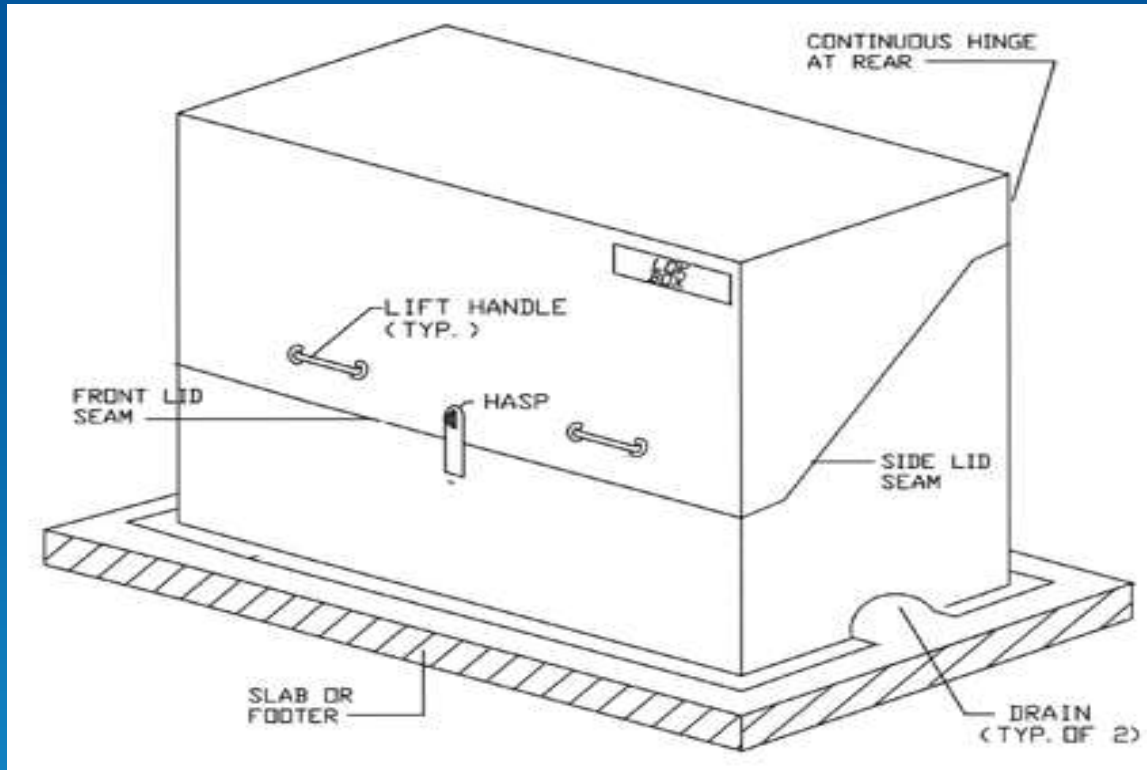
- Easy to Locate
- Easy Access
- Easily Secured
- Target For Vandals
- Confined Space Entry
- Coordinates With Surroundings



**Above Ground Latched Fiberglass Enclosure**

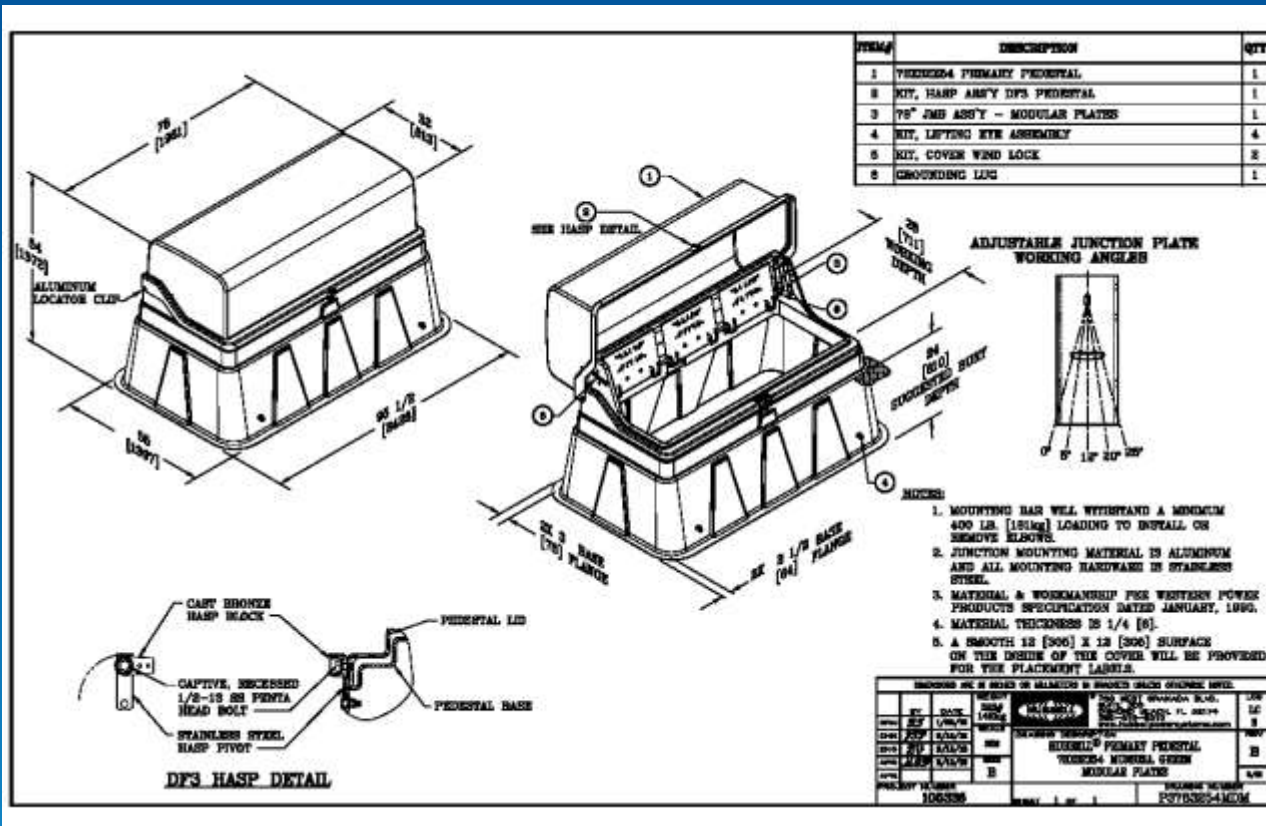


**Above Ground Locking Fiberglass Enclosure**



Large “Flip Top” Fiberglass Enclosure (Closed)





Large "Flip Top" Fiberglass Enclosure (Open)

# Lift Off

- Easy to Locate
- Bulky to Lift
- Not Readily Secured
- Target For Vandals
- Not A Confined Space Entry
- Blends Into Surroundings



“Mock Rock”

# CONCLUSIONS

- Many Options For Wellhead Protection And Blending With Surroundings At Developed Sites Exist
- Consider Degree Of Security Needed
- Consider Public Use At Site
- Consider Field Crew Accessibility