

ATTACHMENT M
FIGURES

DISCLAIMER

The figures presented in this attachment are illustrations and are for information purposes only.
These figures are not to scale.

ATTACHMENT M

FIGURES

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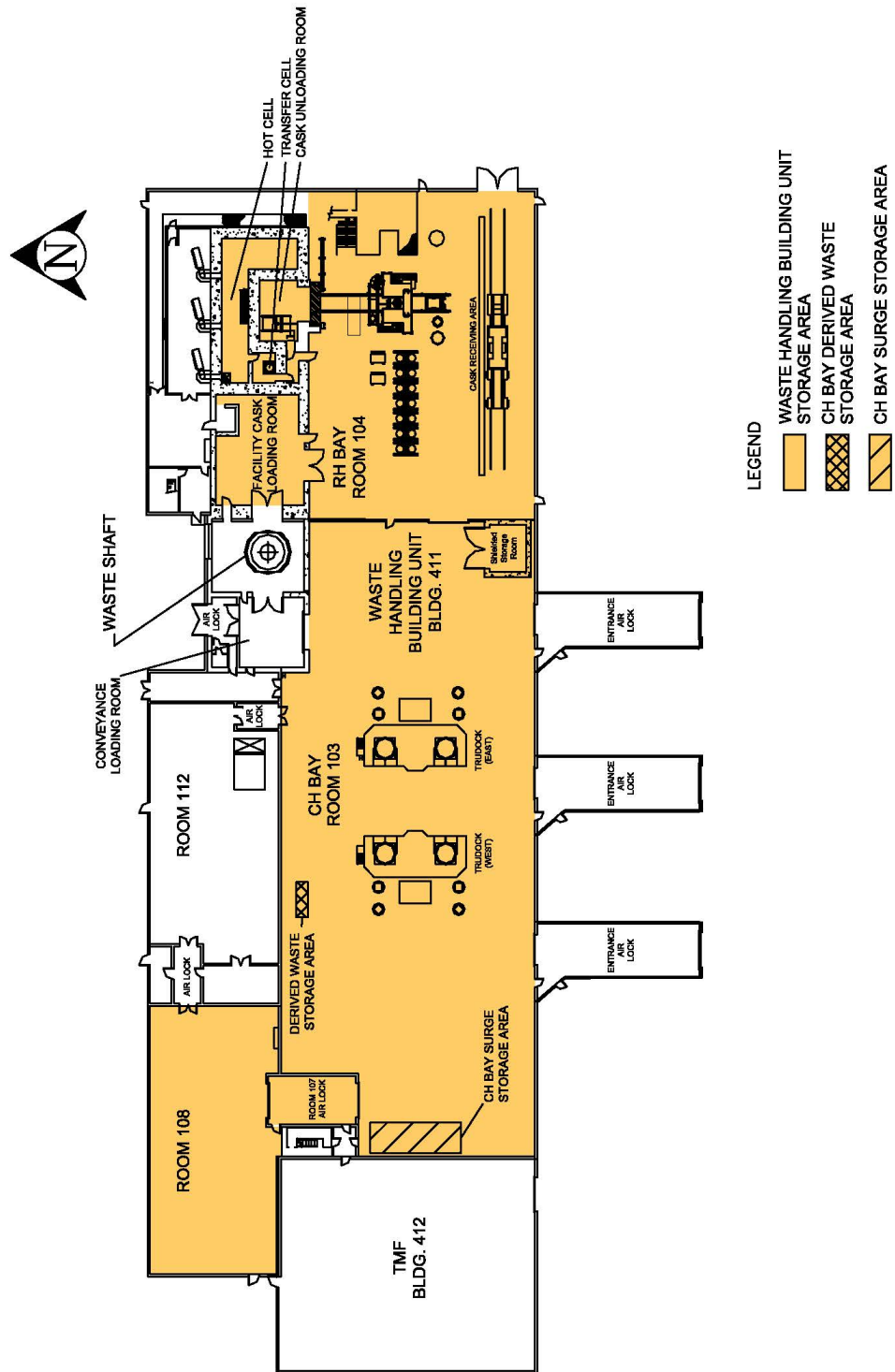


Figure M-1
Waste Handling Building Unit – TRU Mixed Waste Container Storage and Surge Areas

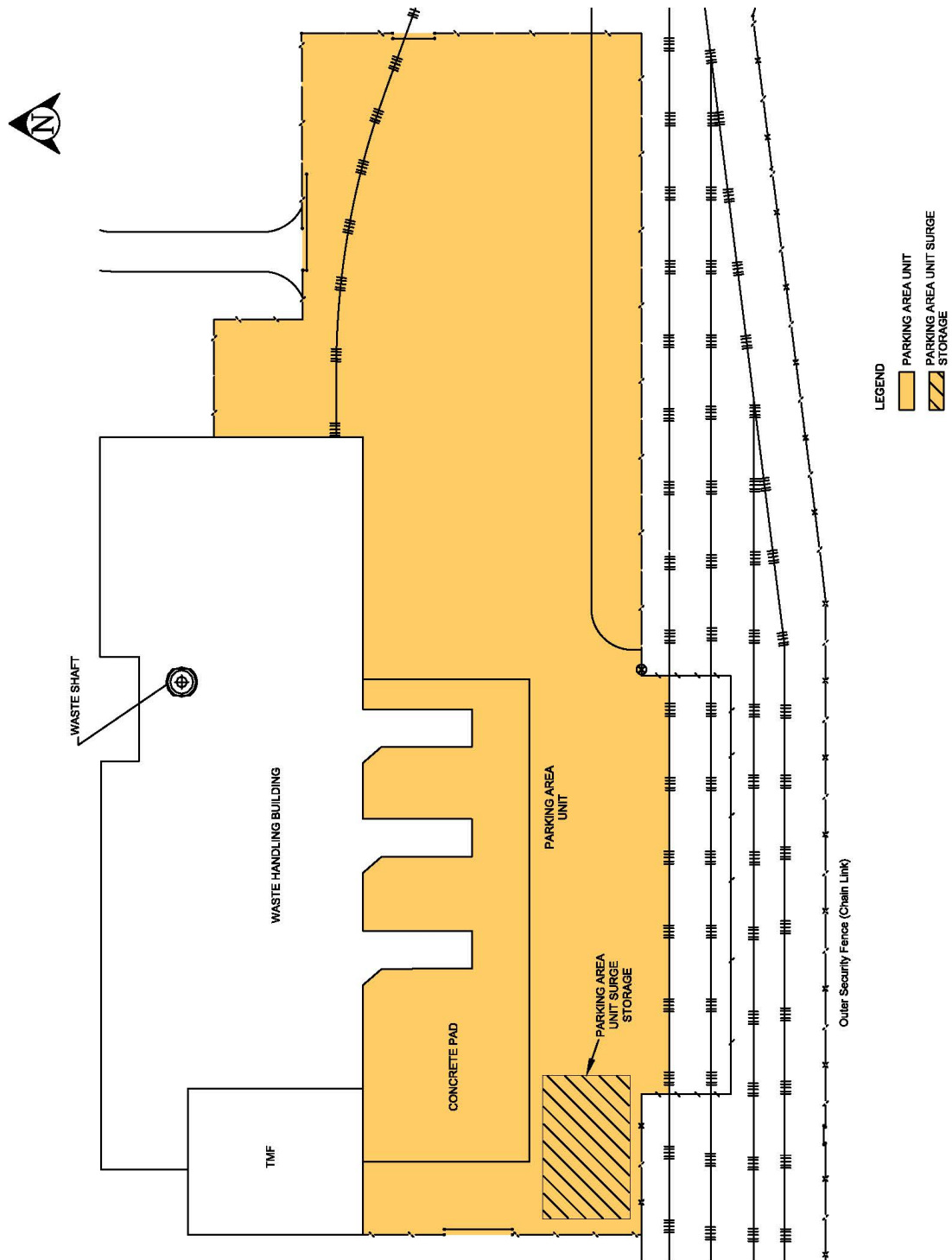


Figure M-2
Parking Area Unit – TRU Mixed Waste Container Storage and Surge Areas

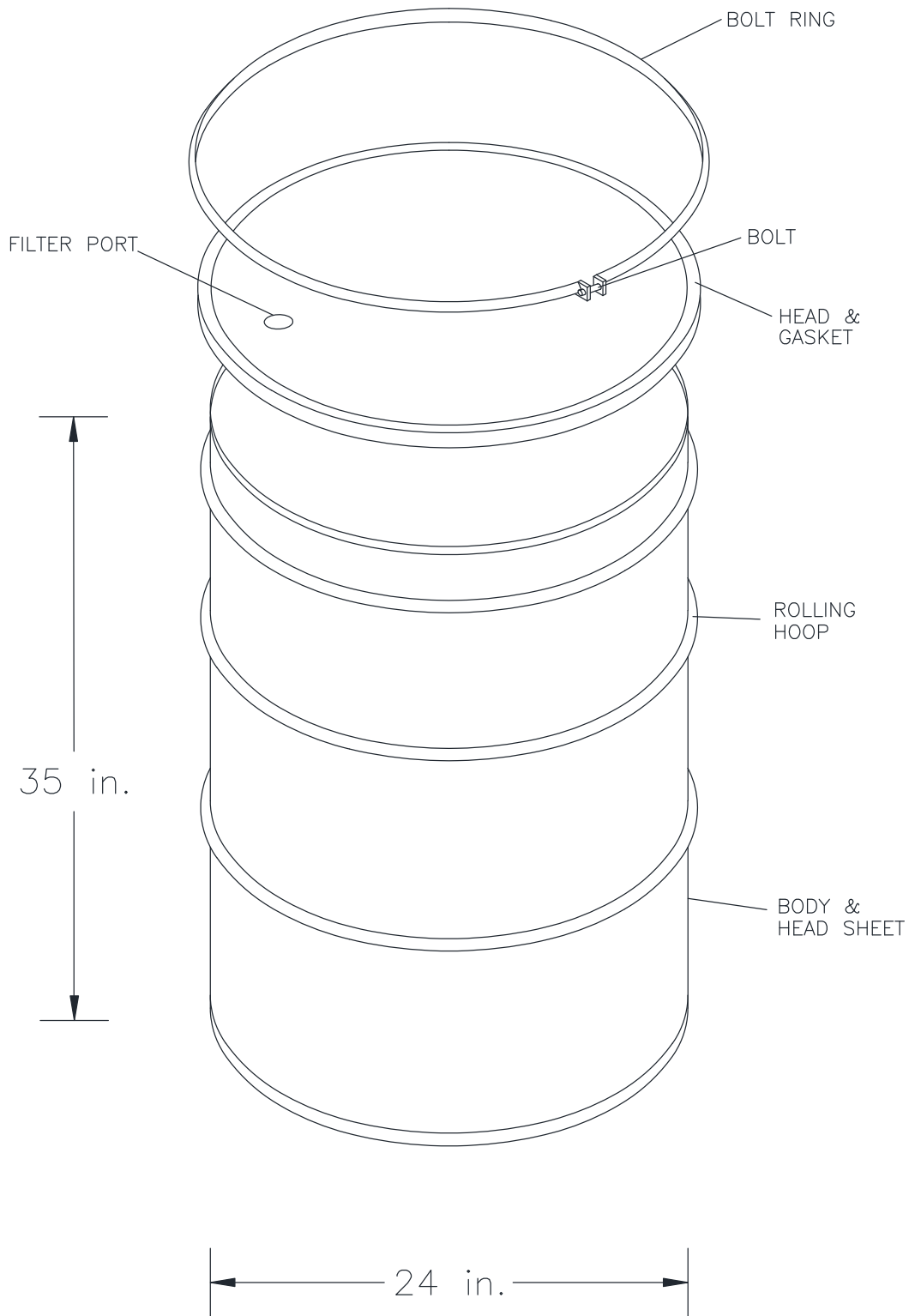


Figure M-3
Standard 55-Gallon Drum (Typical)

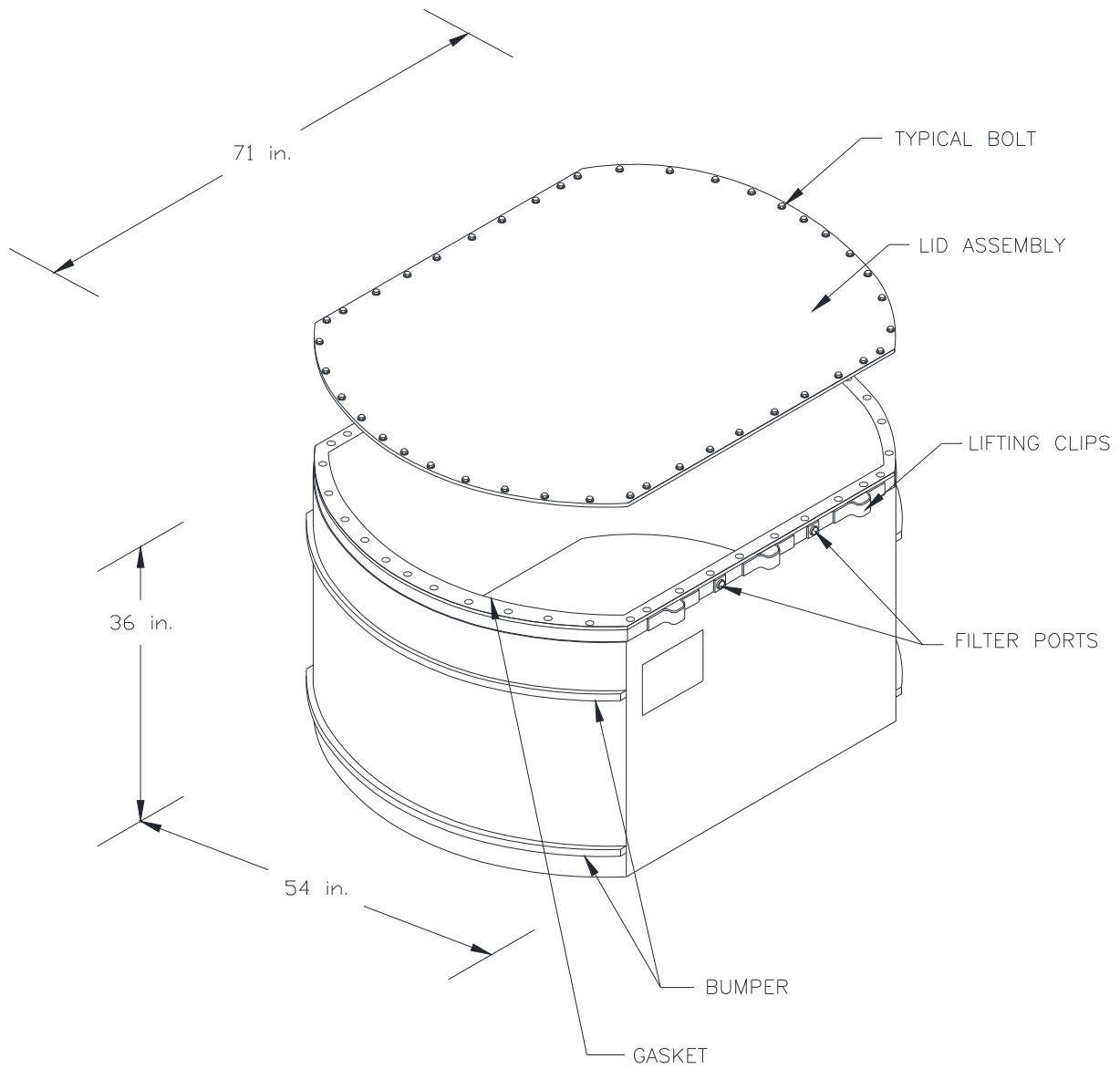


Figure M-4
Standard Waste Box

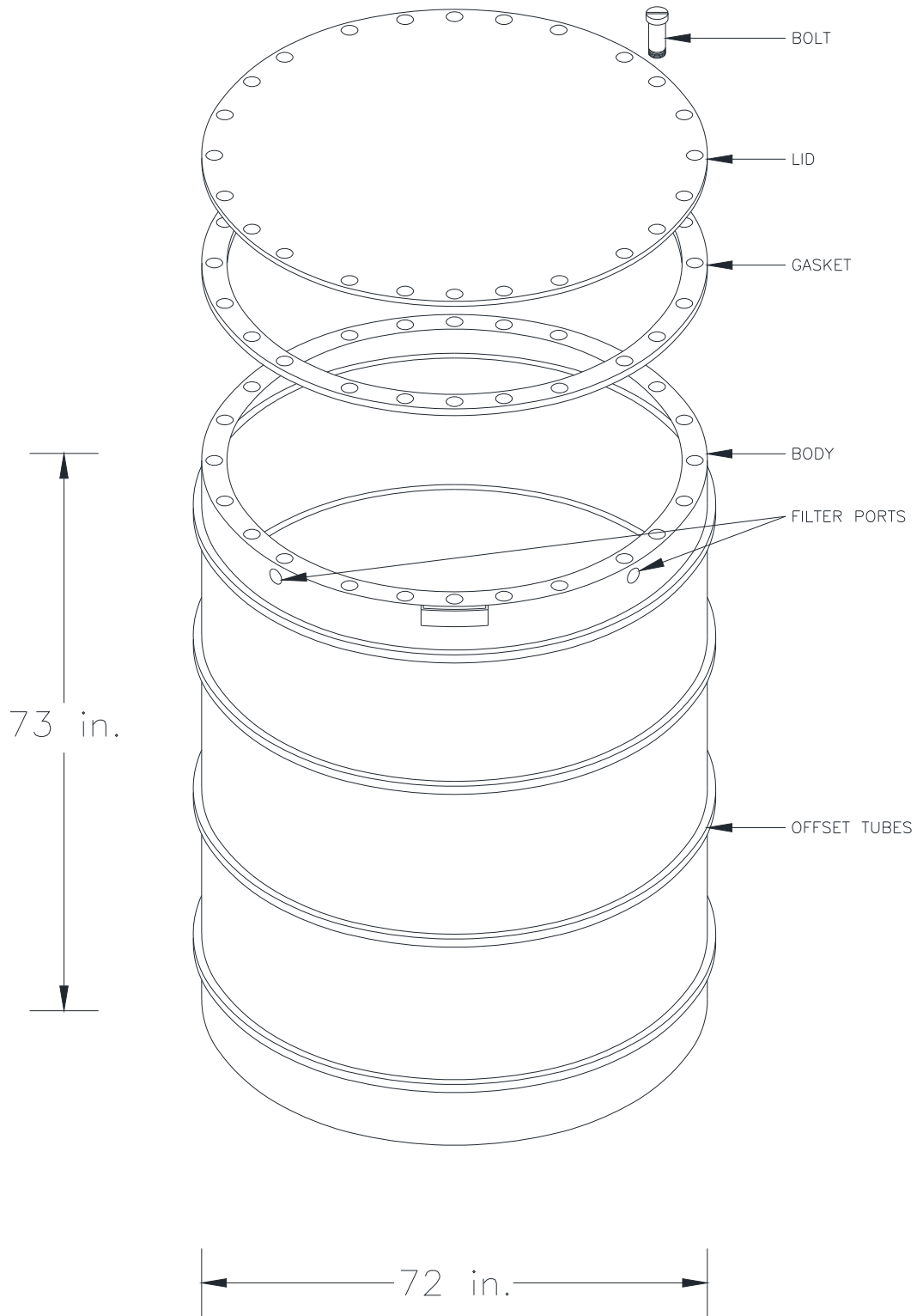


Figure M-5
Ten-Drum Overpack

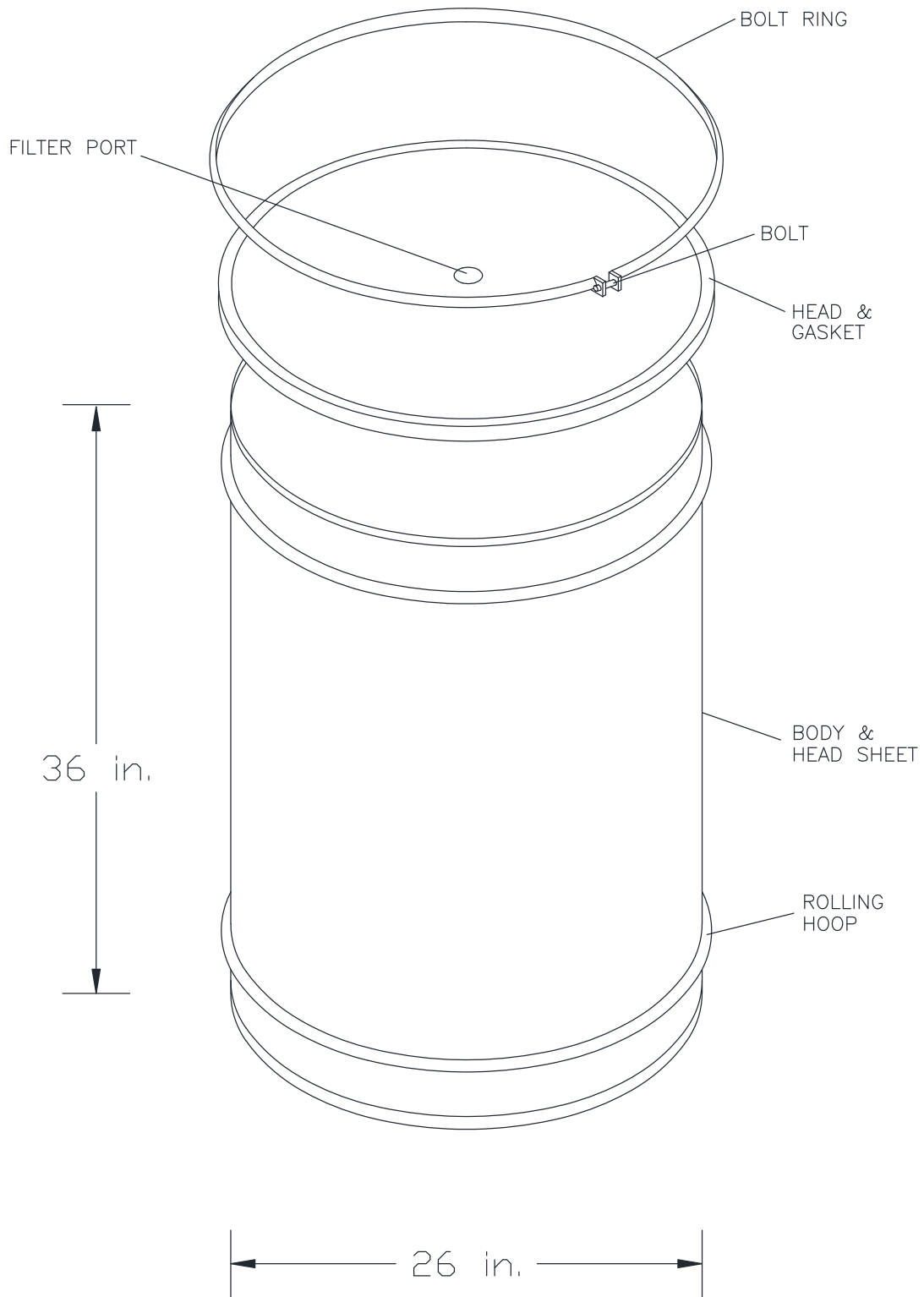


Figure M-6
85-Gallon Drum

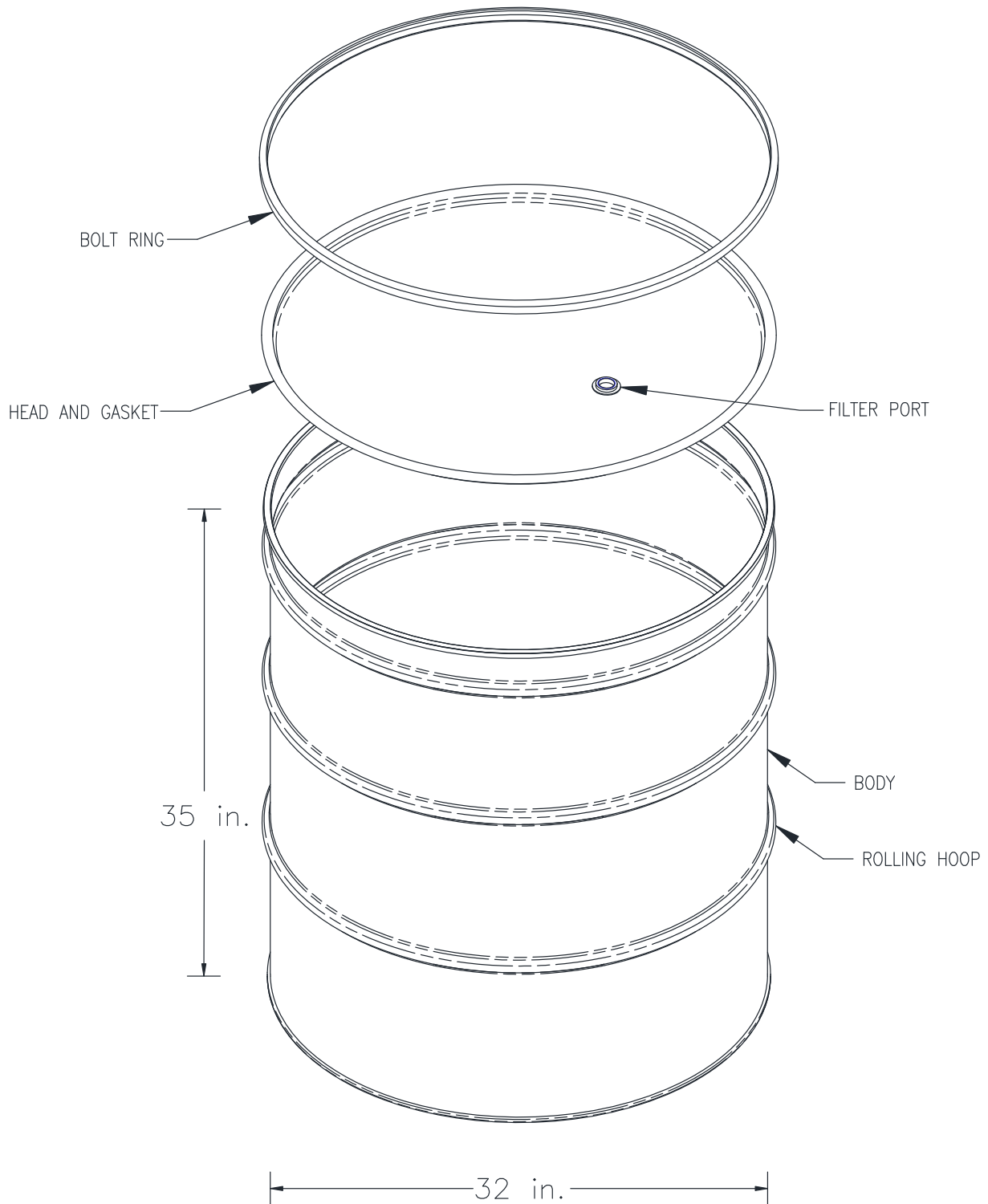


Figure M-7
100-Gallon Drum

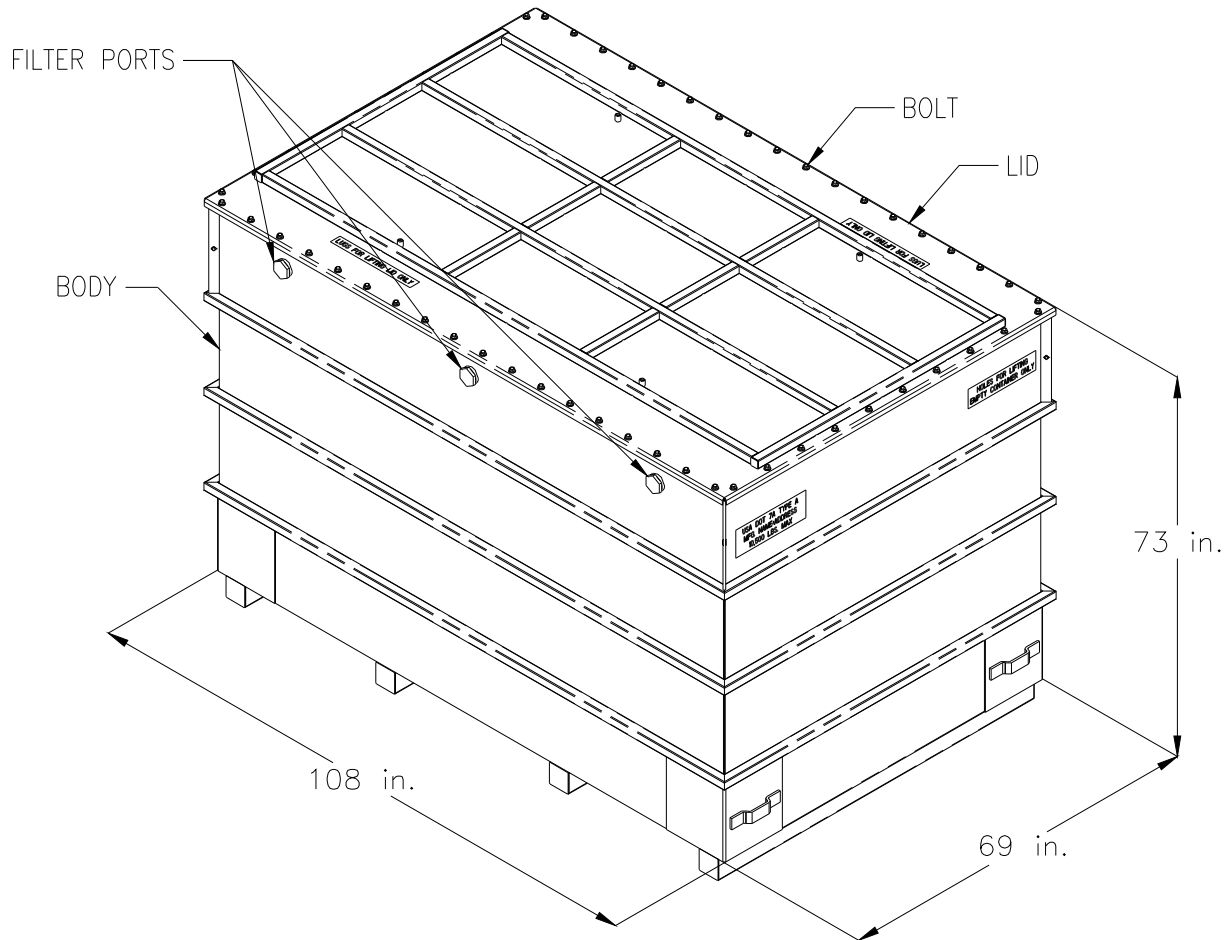


Figure M-8
Typical Standard Large Box 2

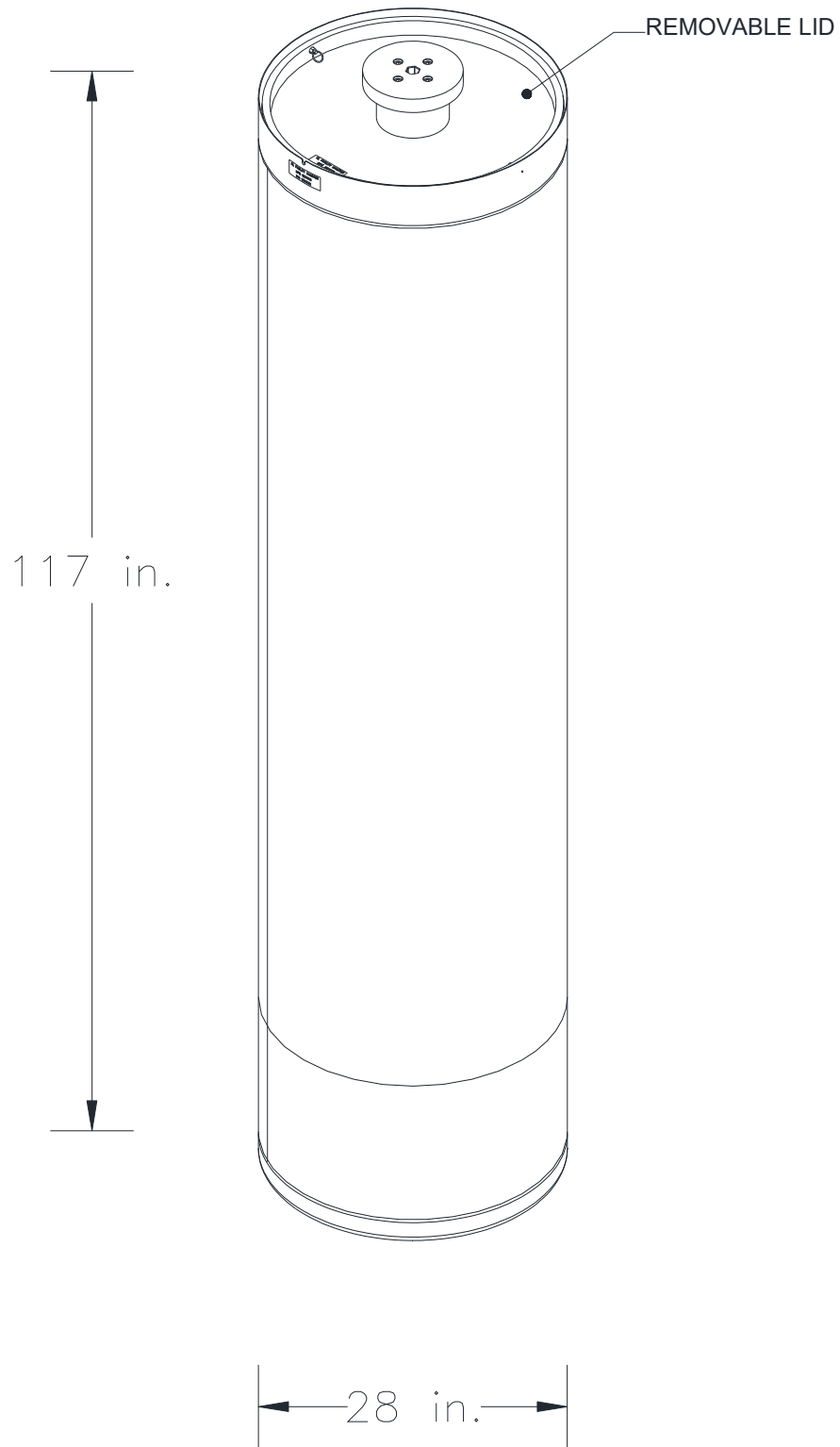


Figure M-9
Facility Canister Assembly

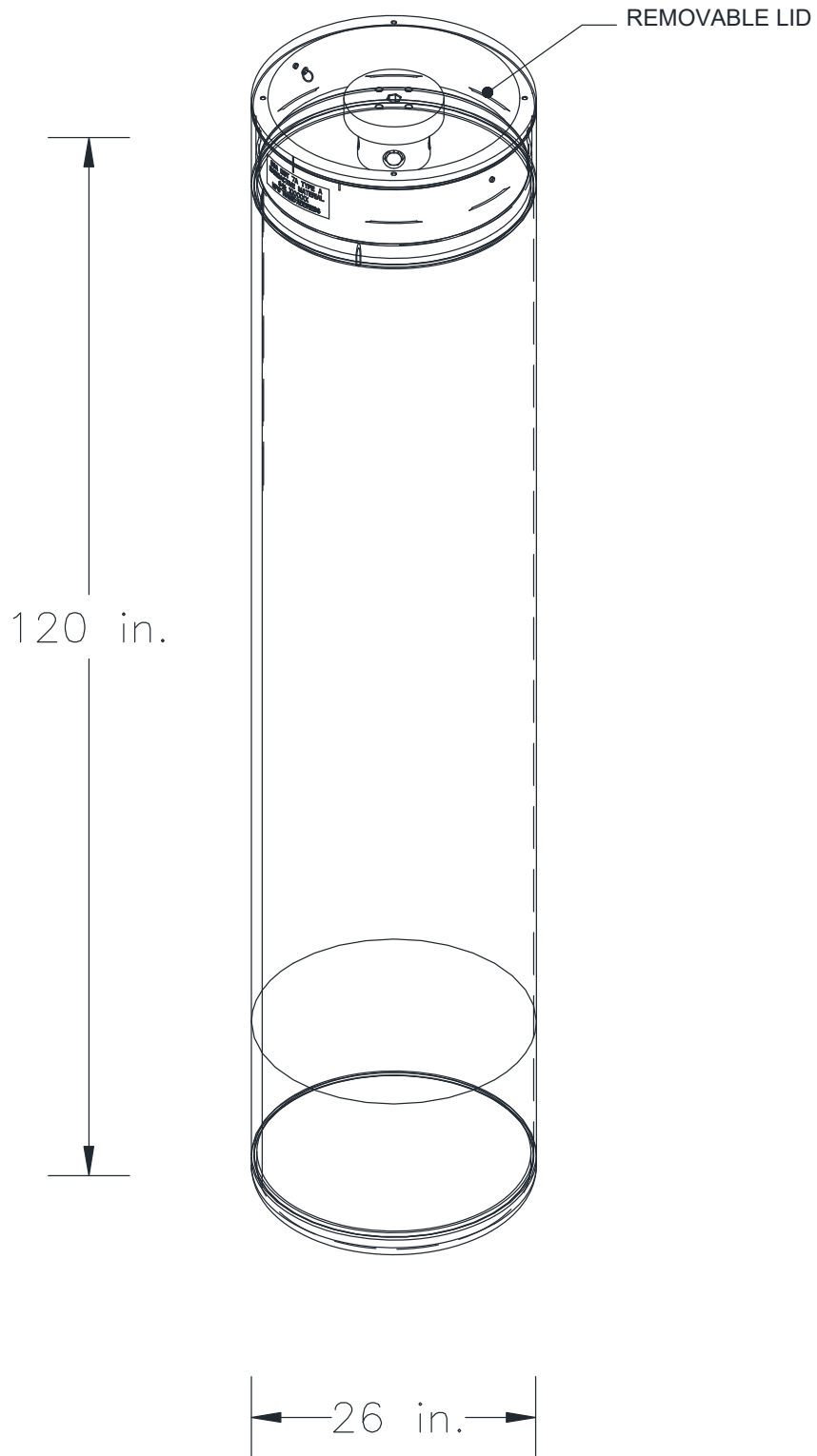


Figure M-10
RH-TRU 72-B Canister Assembly

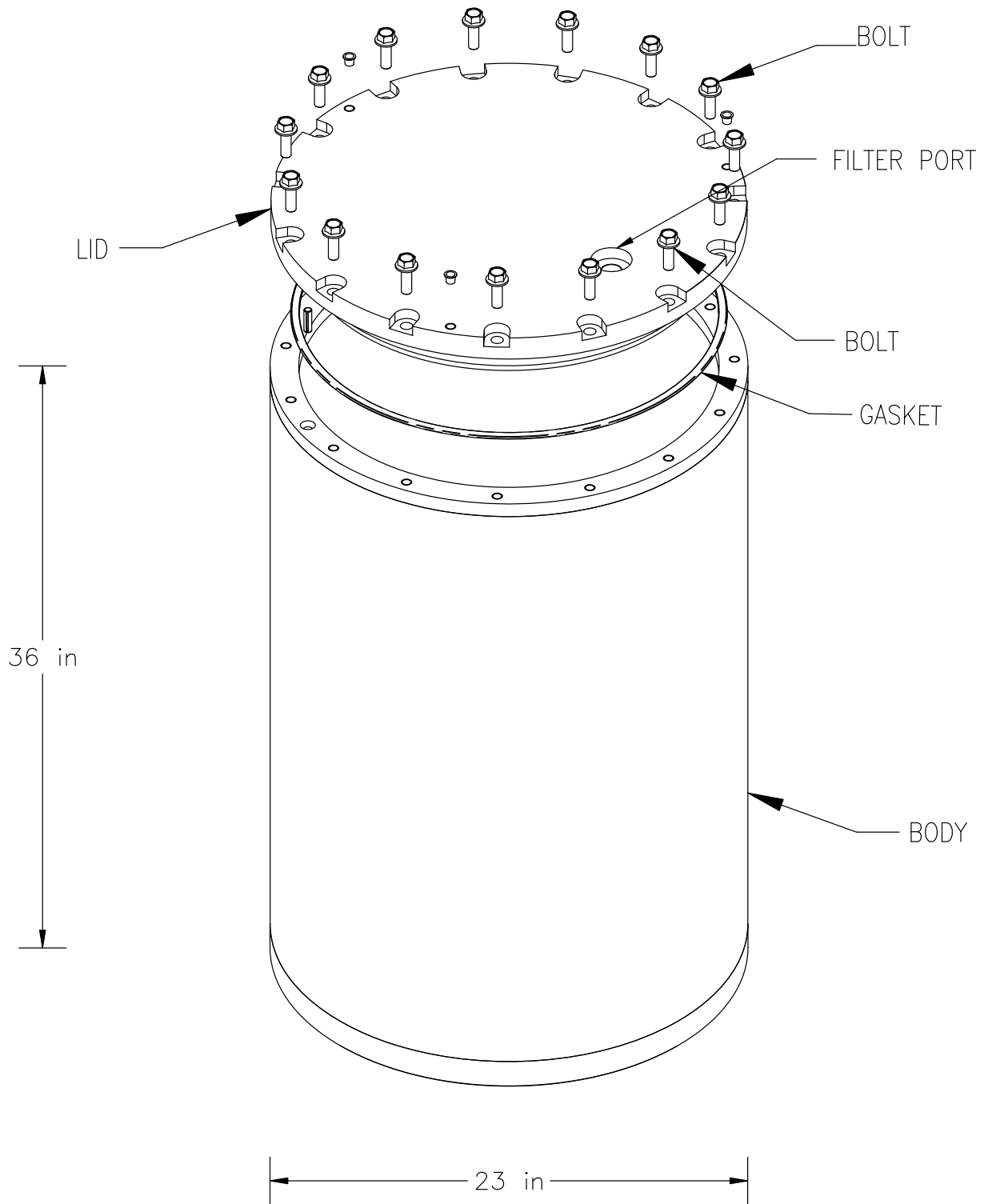


Figure M-11
Typical Shielded Container

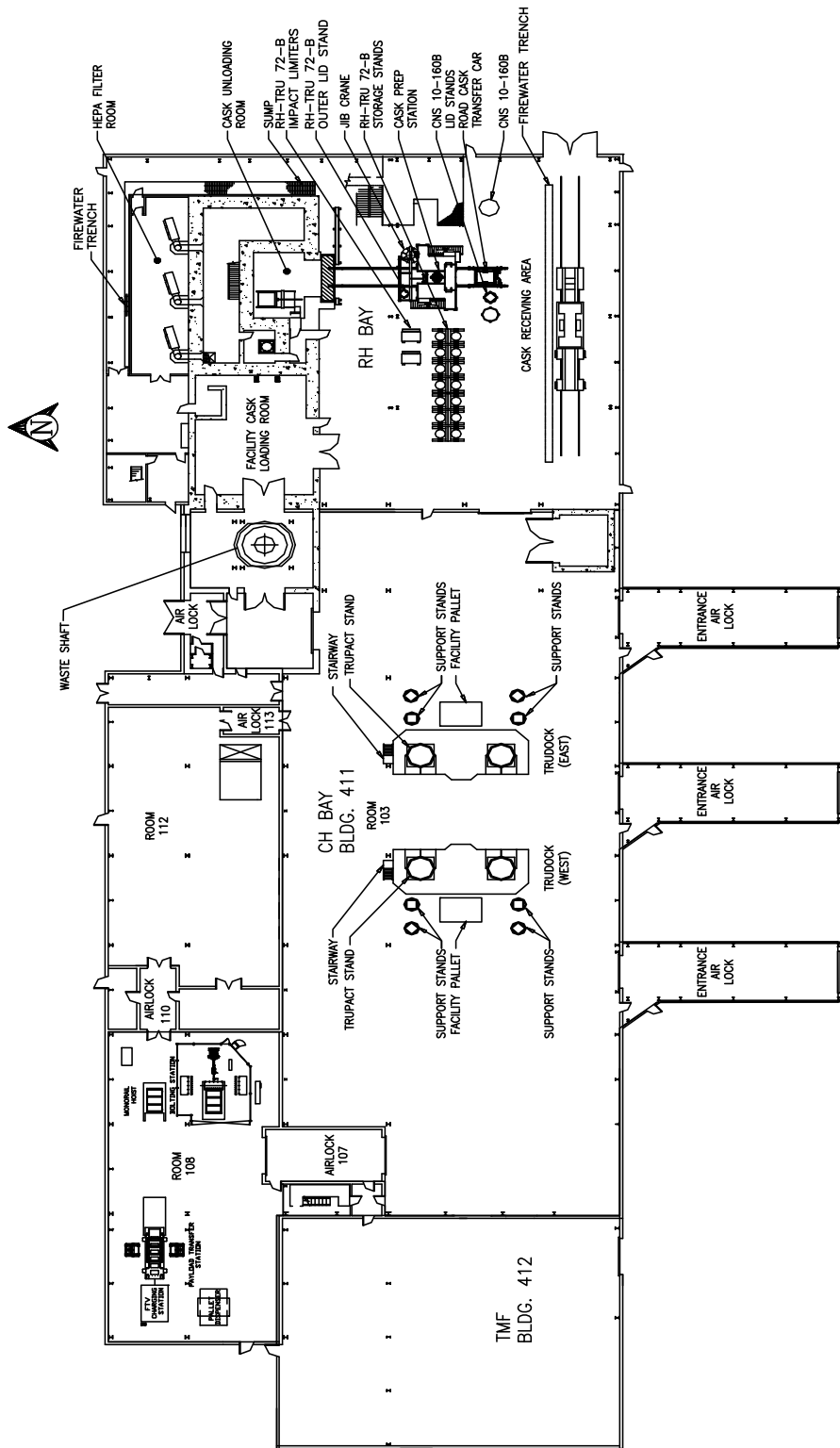
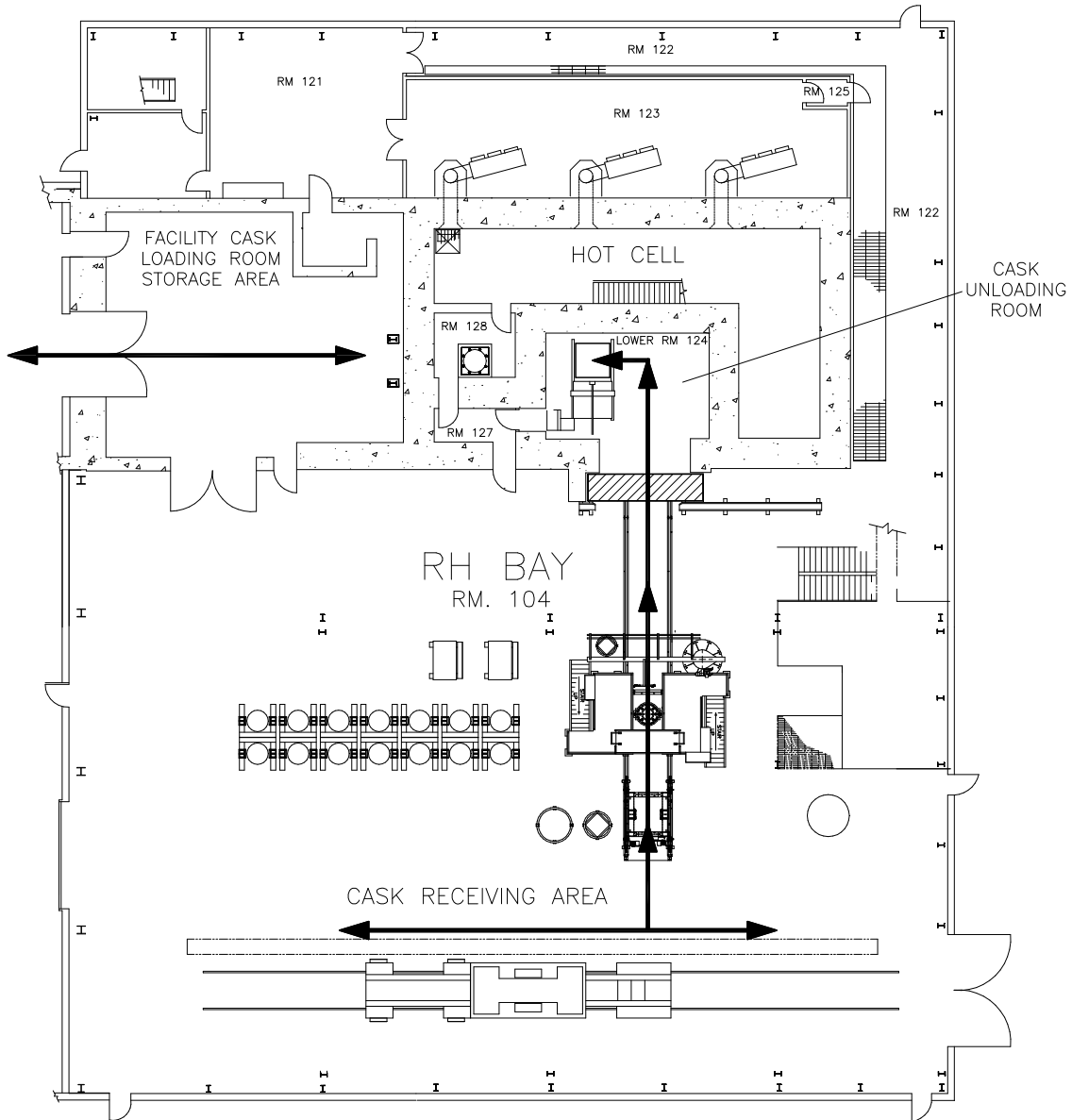


Figure M-12
Waste Handling Building Plan (Ground Floor)



← RH BAY WASTE TRANSPORT ROUTES

NOTE: RH BAY FLOOR, HOT CELL – LOWER FLOOR, AND CASK LOADING ROOM CONSIDERED 0 FOOT ELEVATION

Figure M-13
RH Bay Ground Floor and Waste Transport Routes

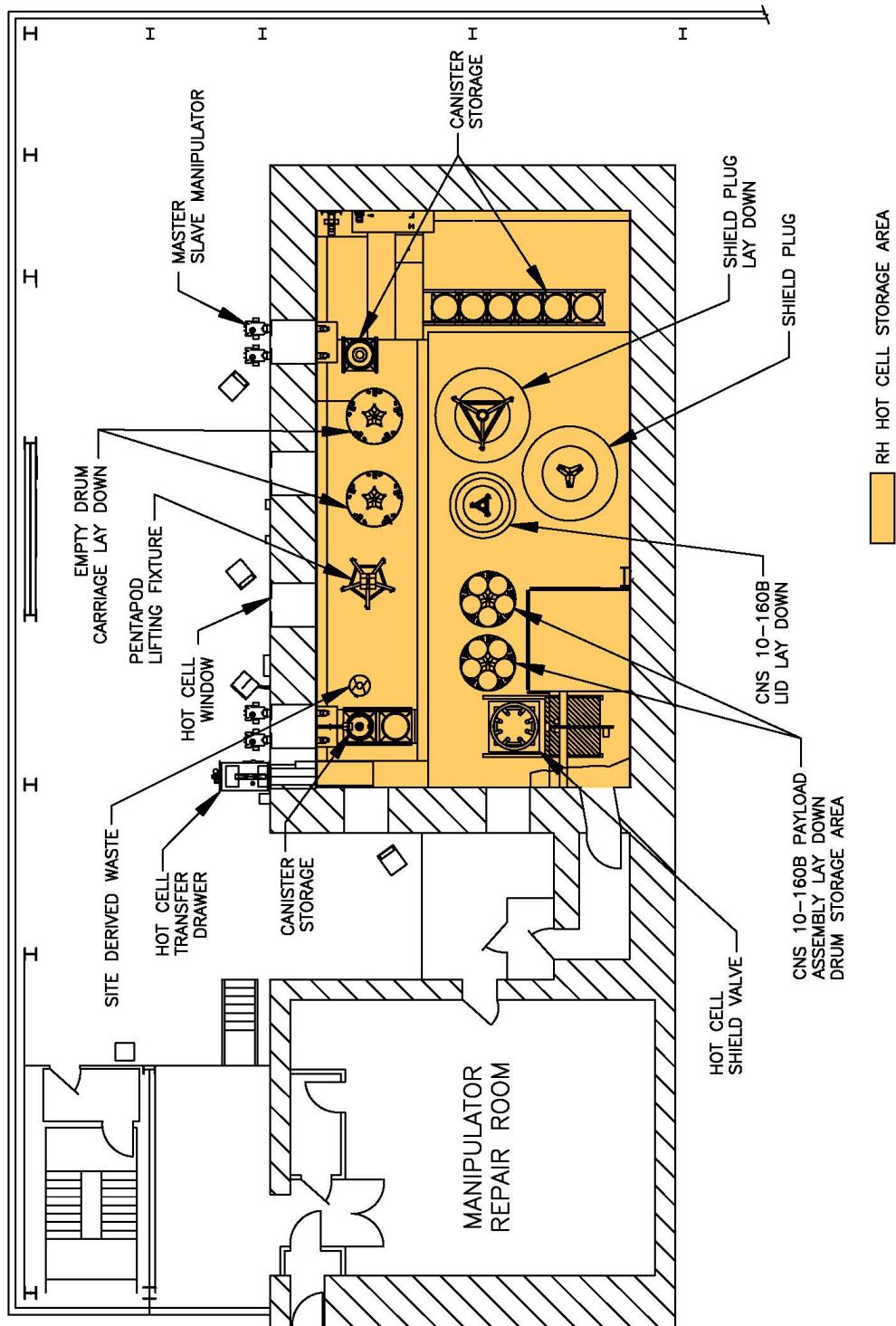


Figure M-14
RH Hot Cell Storage Area

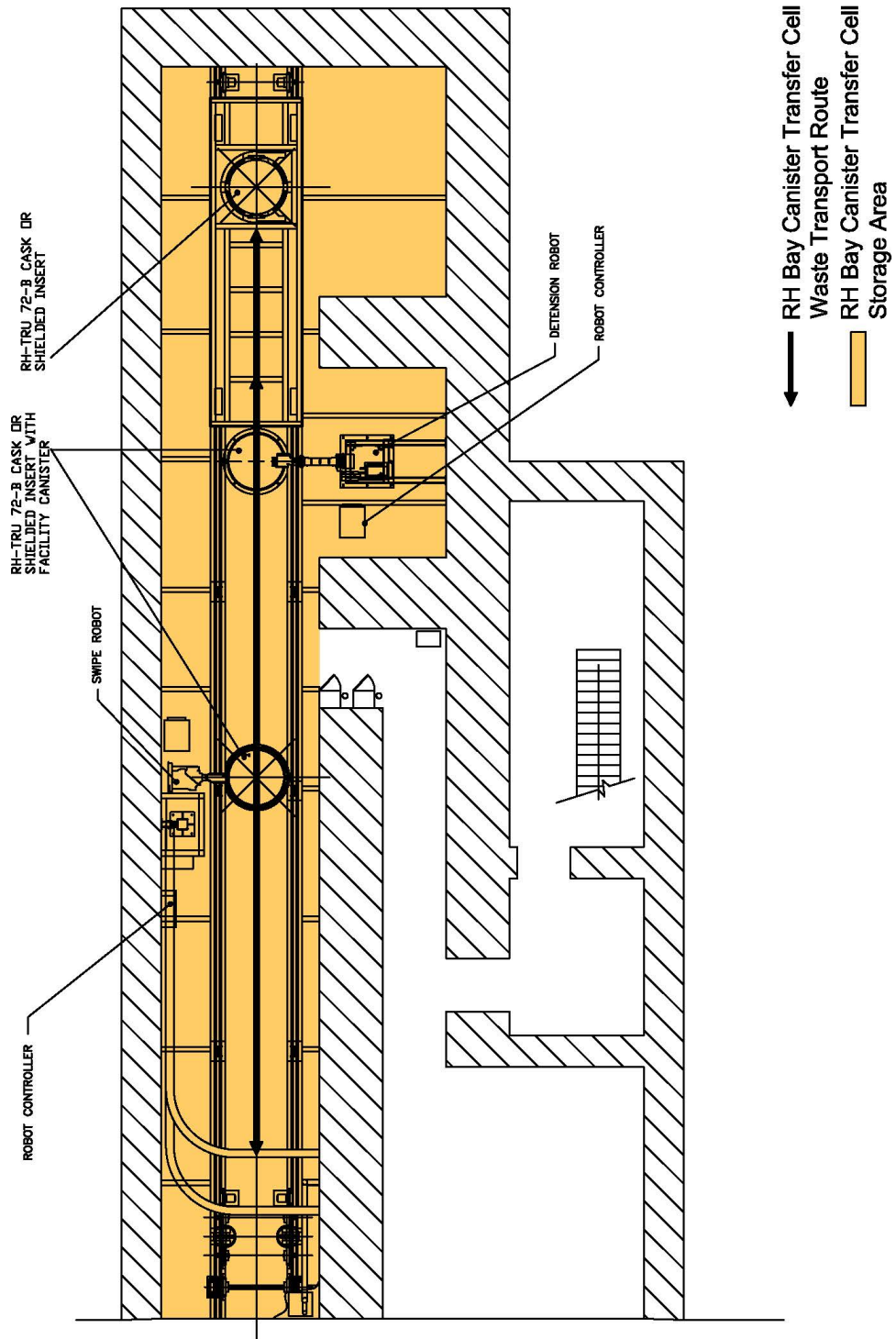


Figure M-15
RH Canister Transfer Cell Storage Area and Waste Transport Route

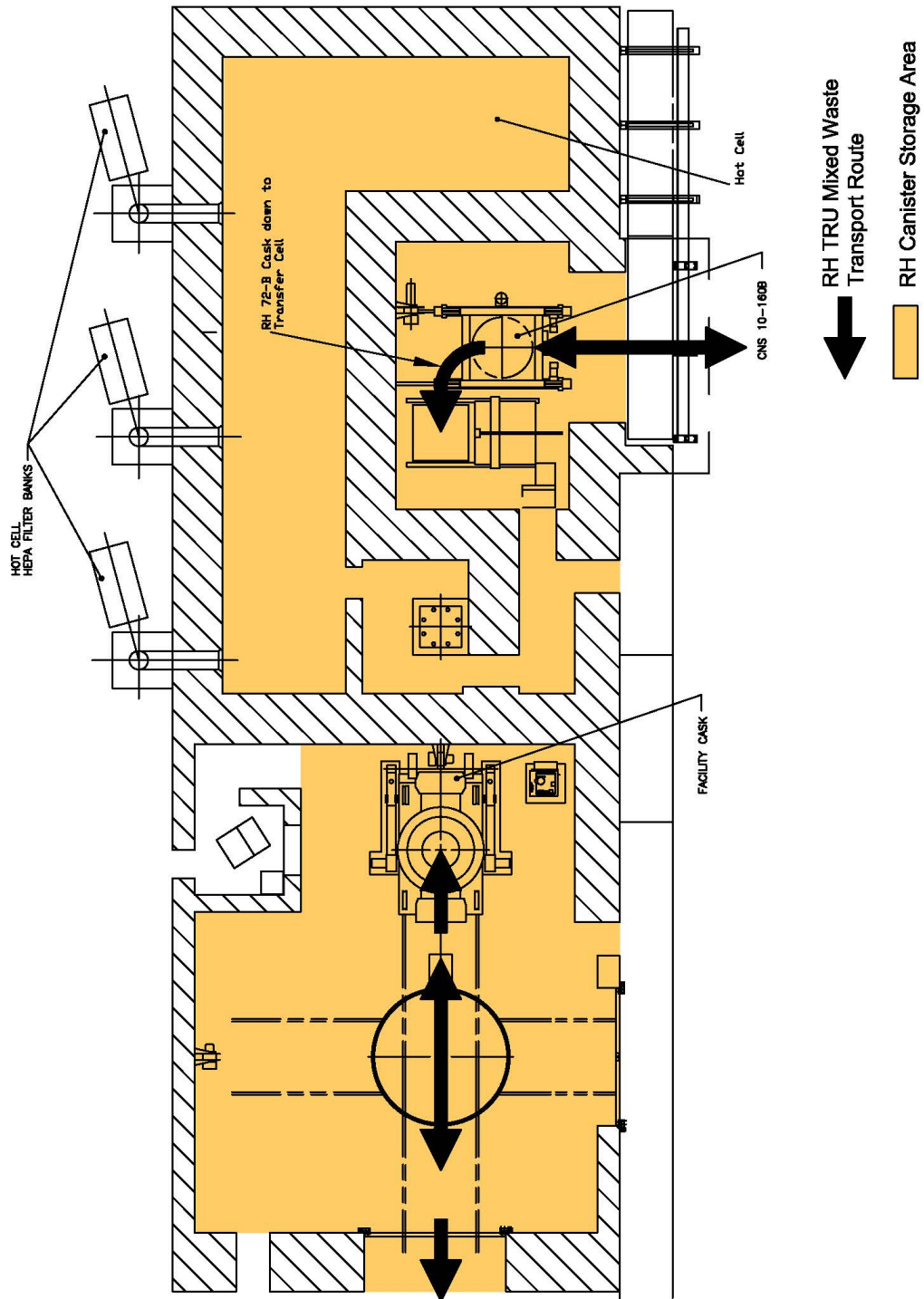


Figure M-16
RH Facility Cask Loading Room and Cask Unloading Storage Area and Waste Transport Route

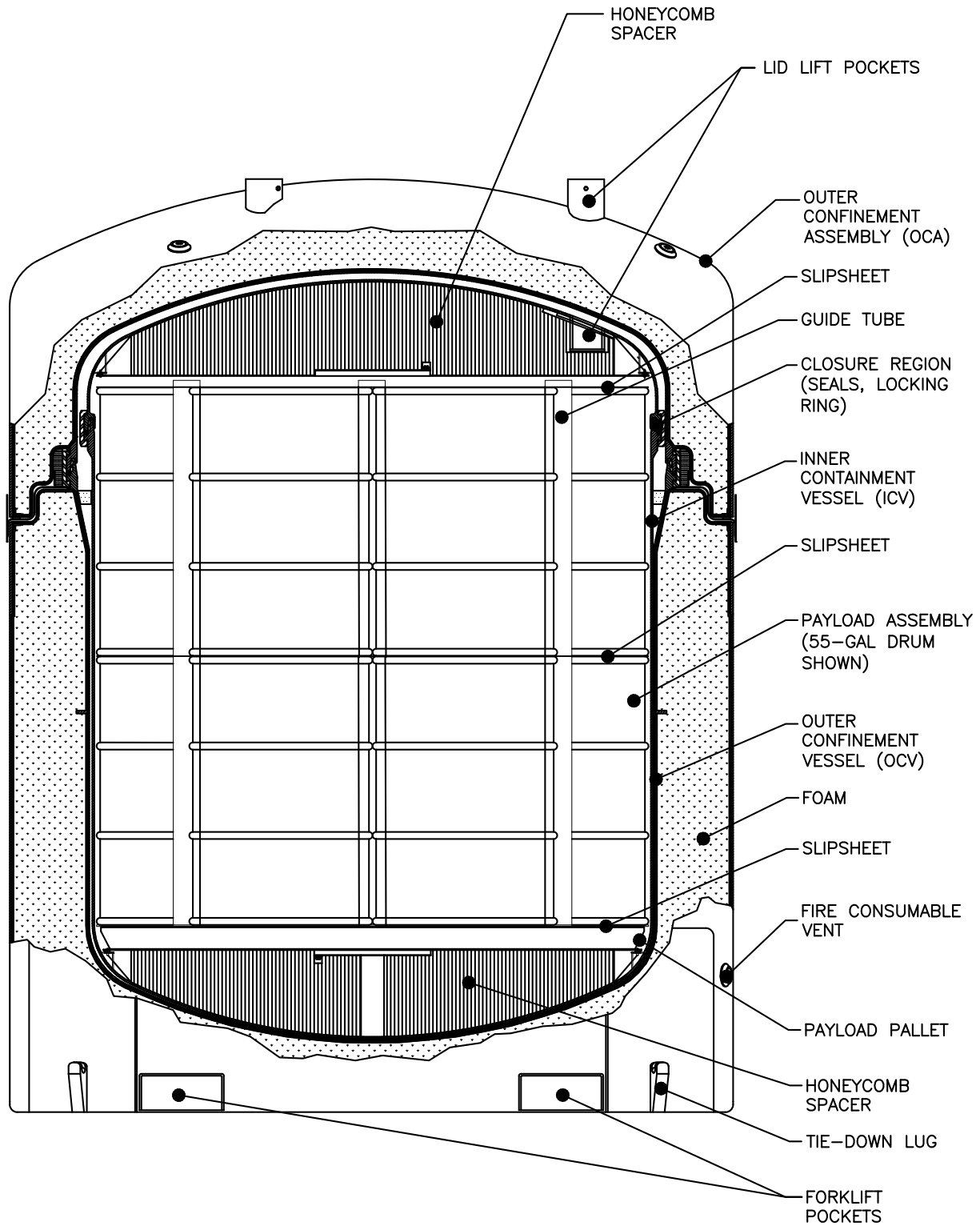


Figure M-17
TRUPACT-II Type B Shipping Container

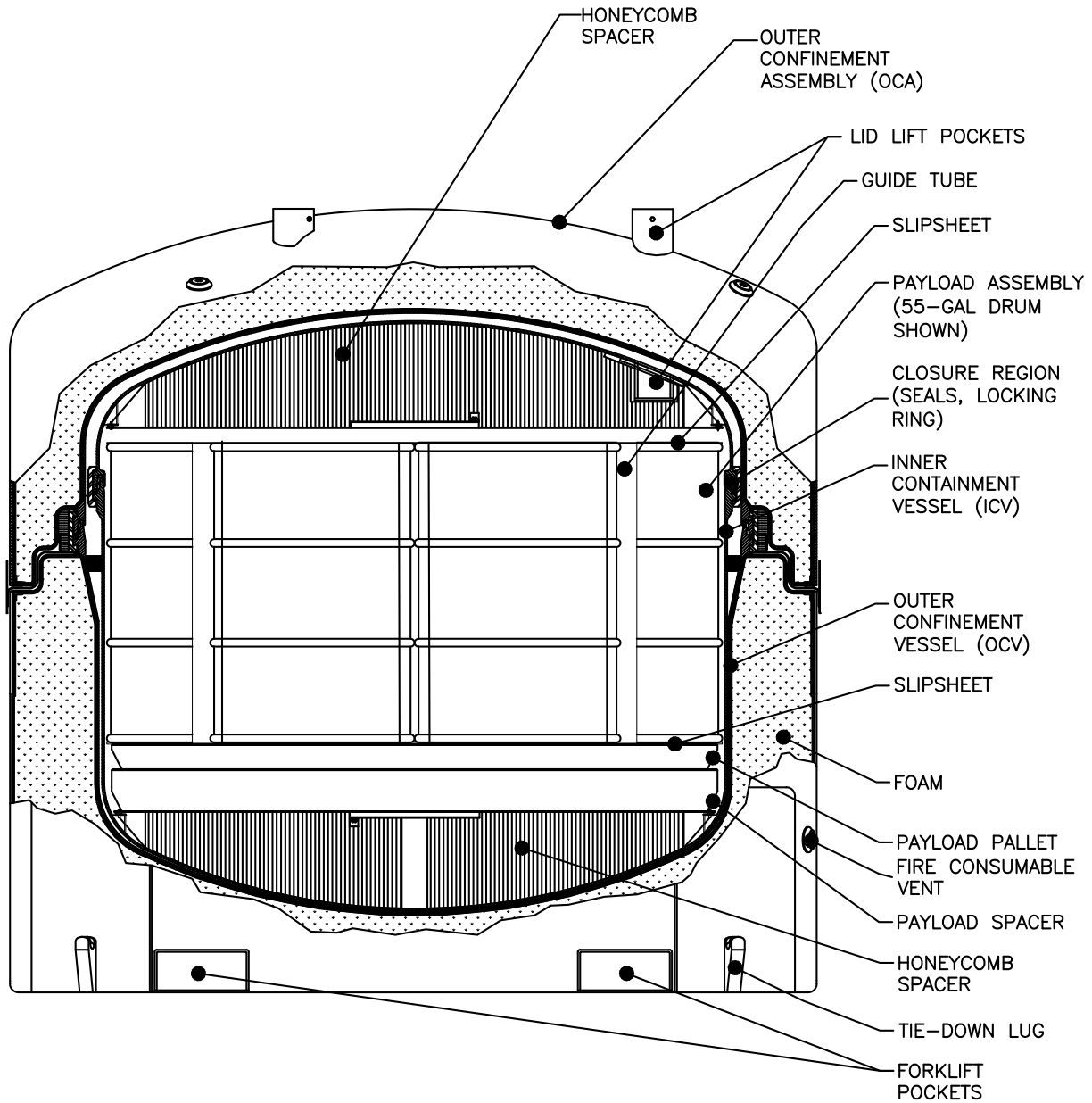


Figure M-18
Typical HalfPACT Type B Shipping Container

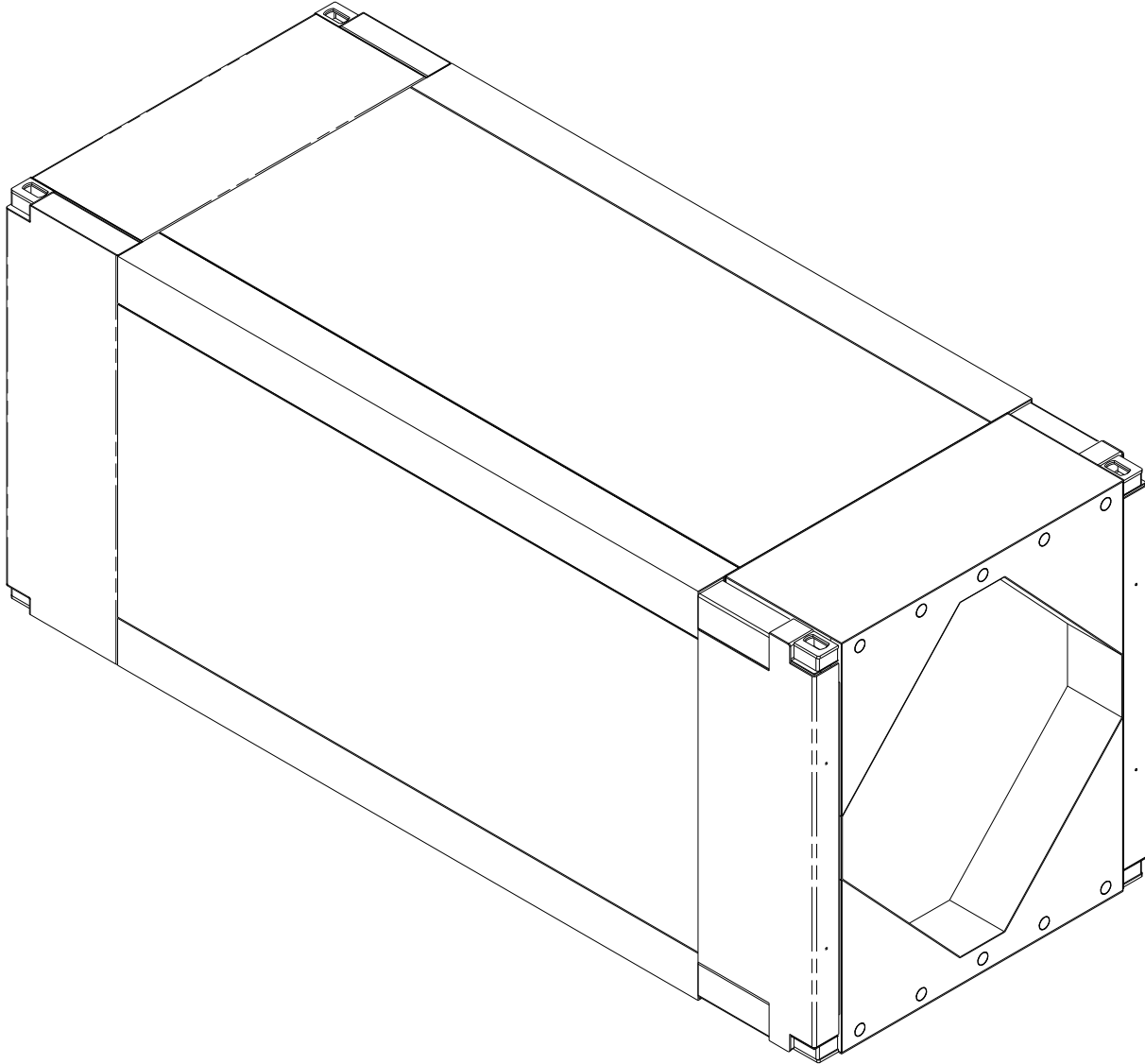


Figure M-19
Typical TRUPACT-III Type B Shipping Container

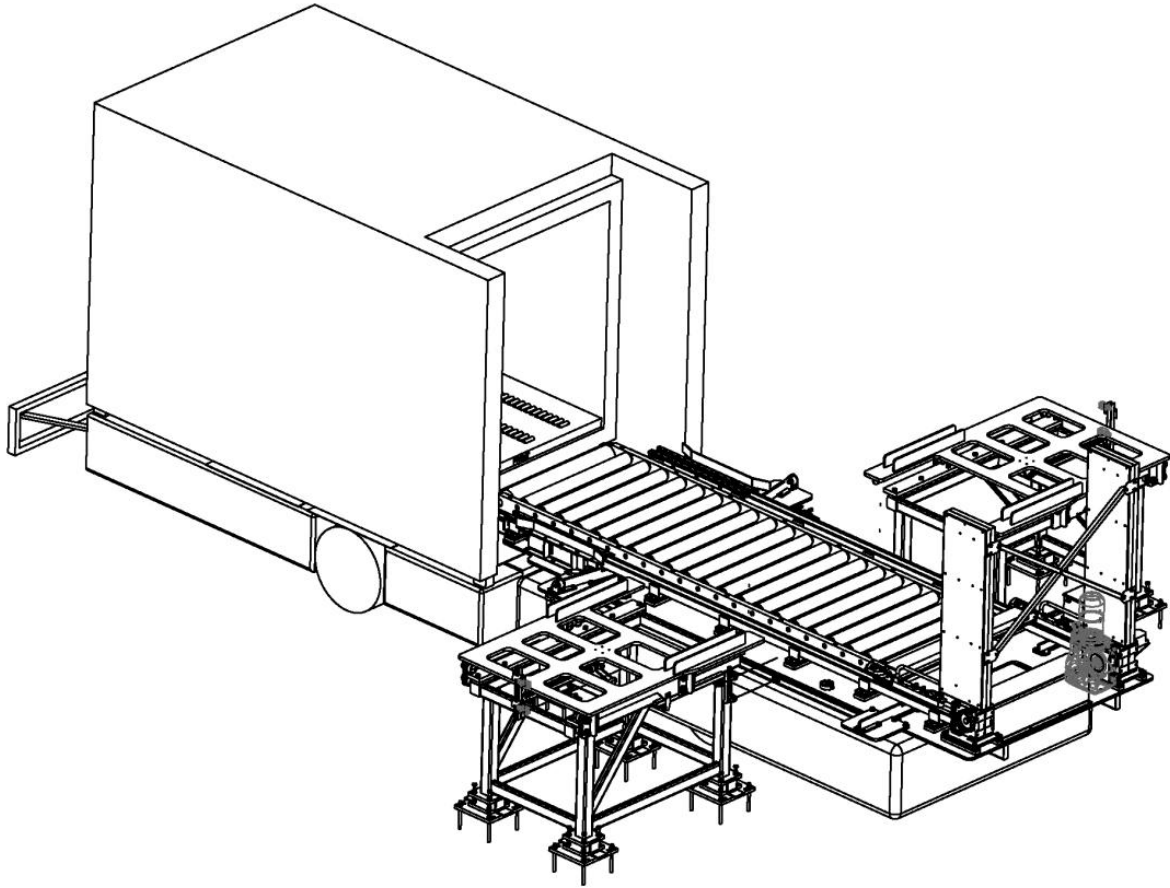


Figure M-20
Payload Transfer Station

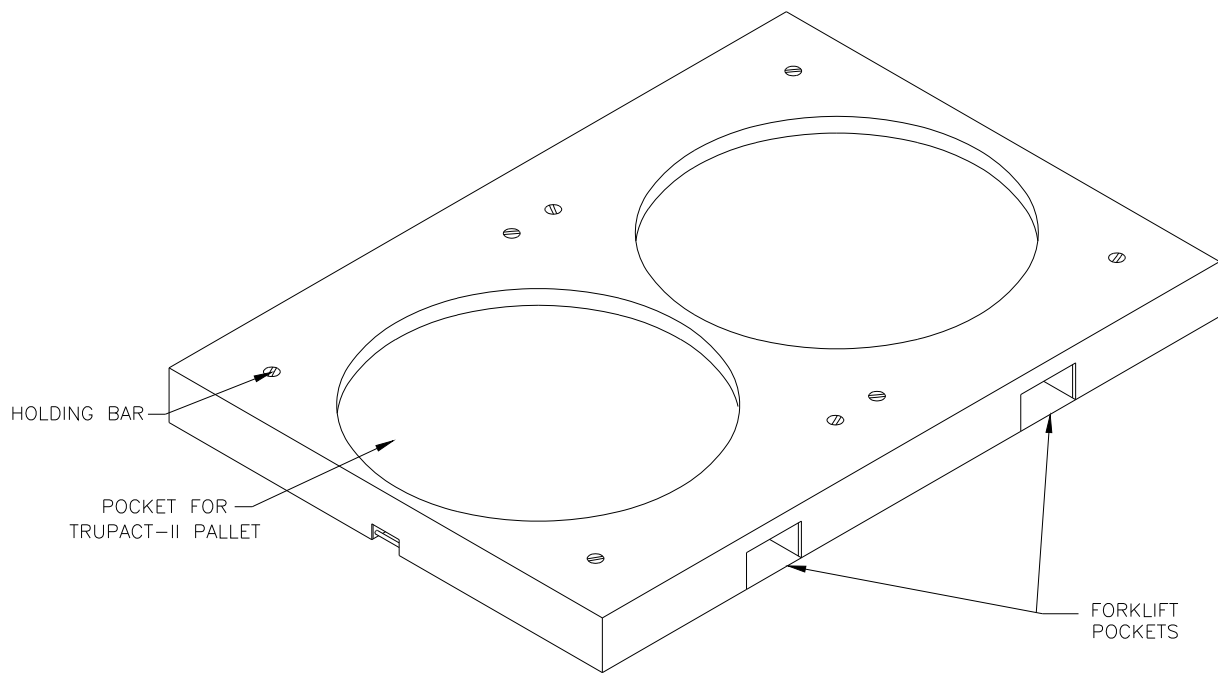


Figure M-21
Facility Pallet

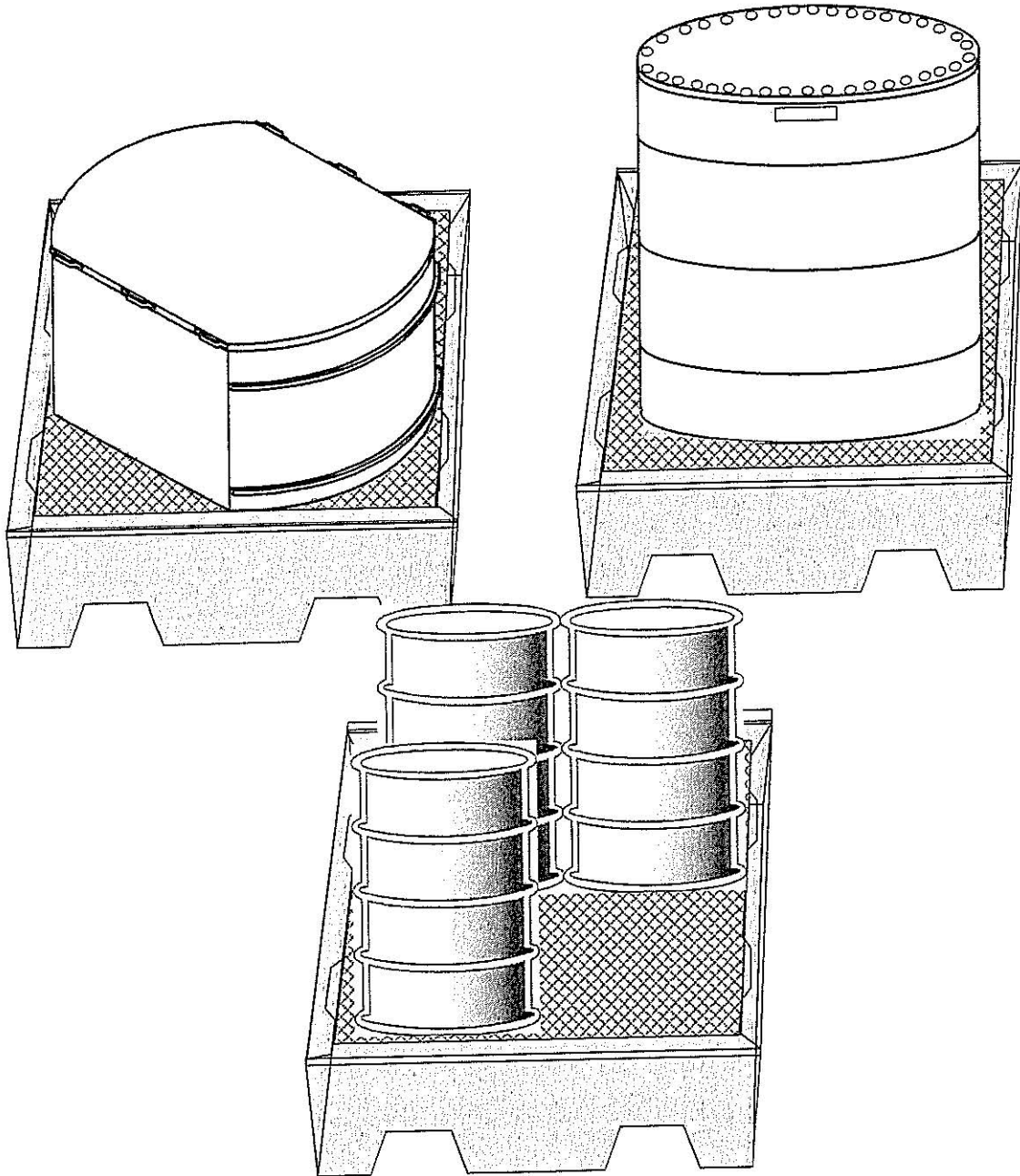


Figure M-22
Typical Containment Pallet

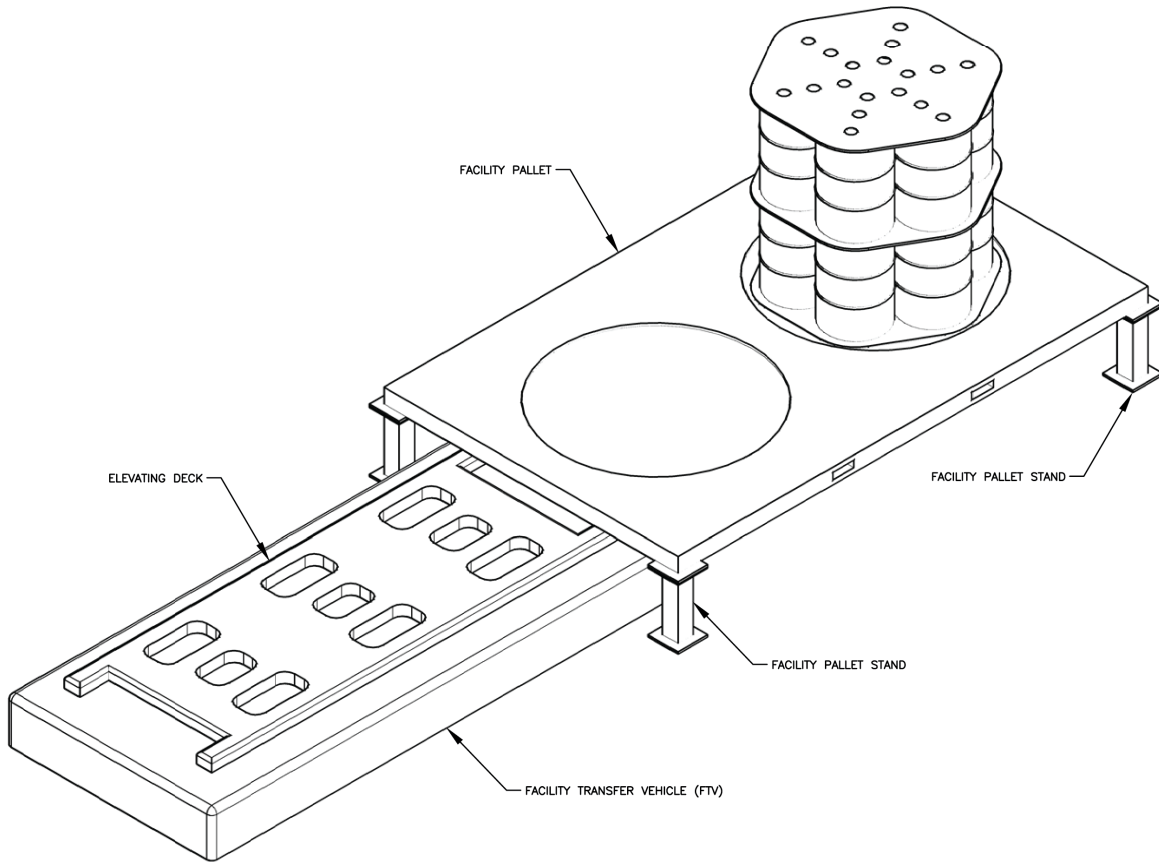


Figure M-23
Facility Transfer Vehicle, Facility Pallet, and Typical Pallet Stand

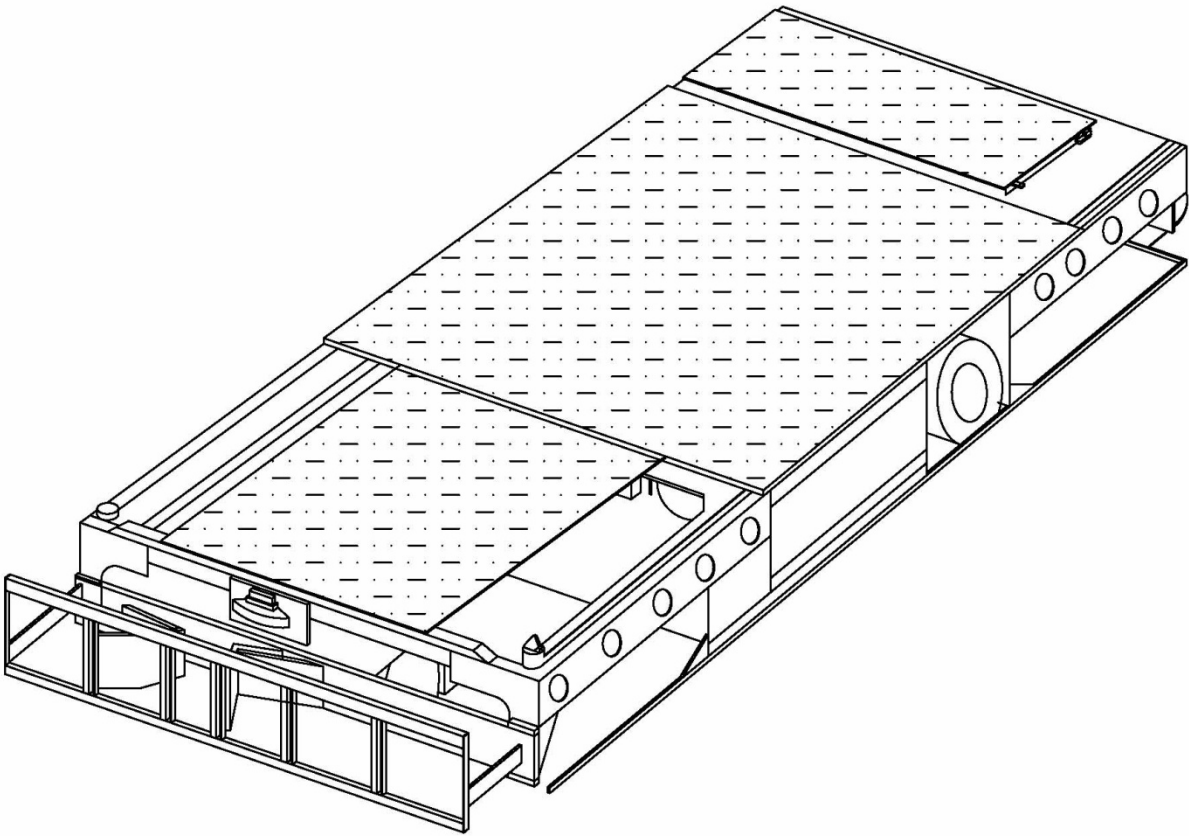


Figure M-24
Typical Yard Transfer Vehicle

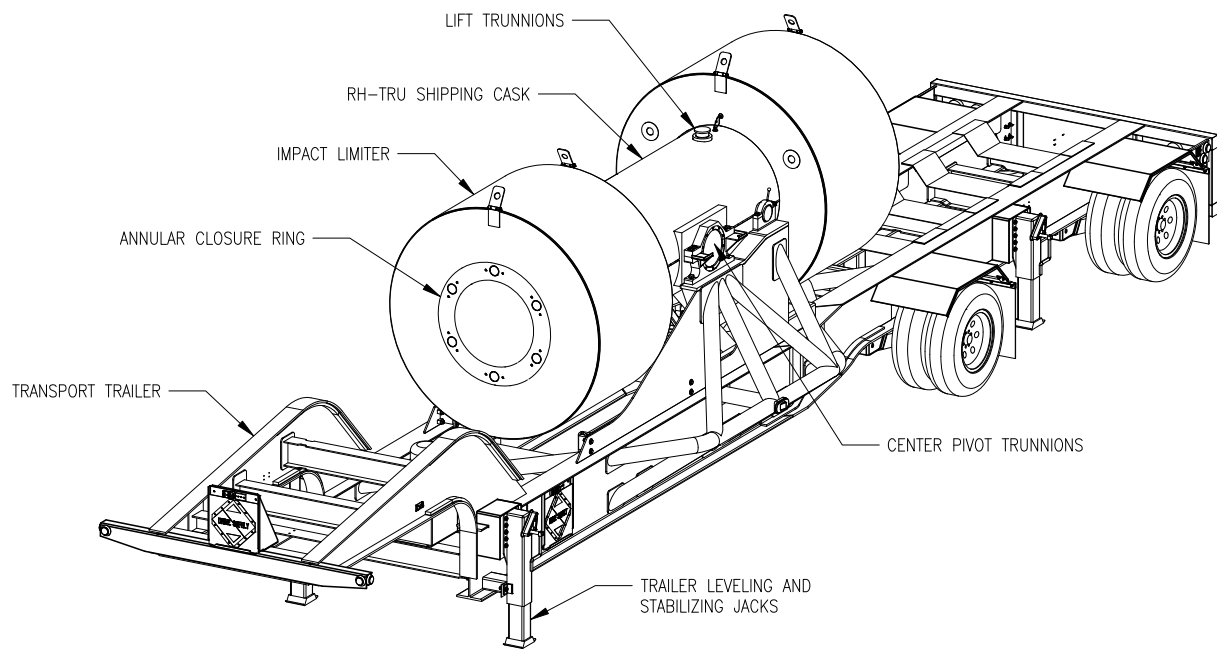


Figure M-25
RH TRU 72-B Shipping Cask on Trailer

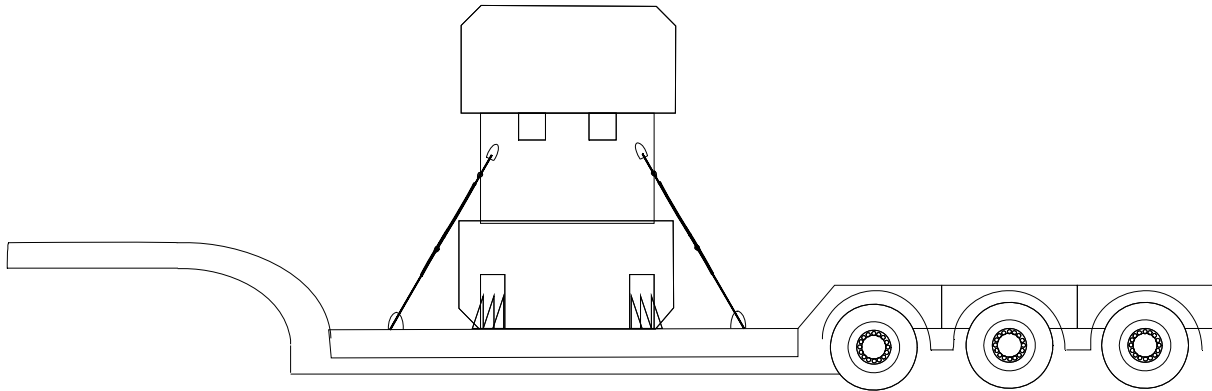


Figure M-26
CNS 10-160B Shipping Cask on Trailer

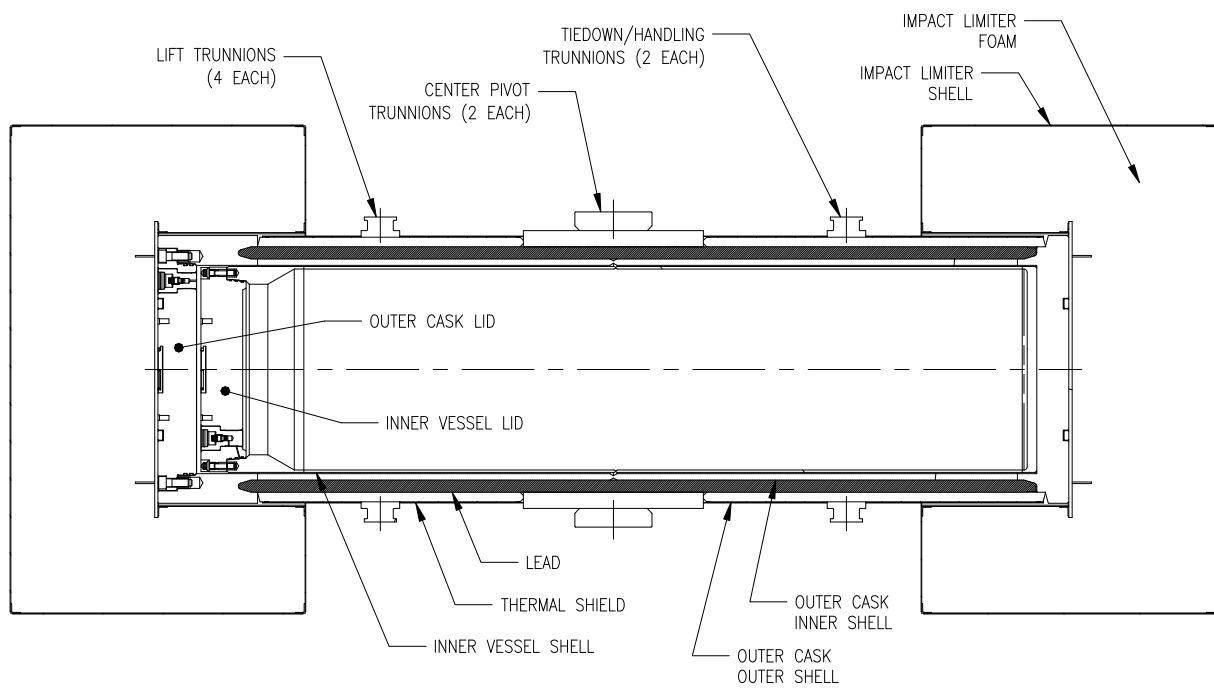


Figure M-27
RH-TRU 72-B Type B Shipping Cask

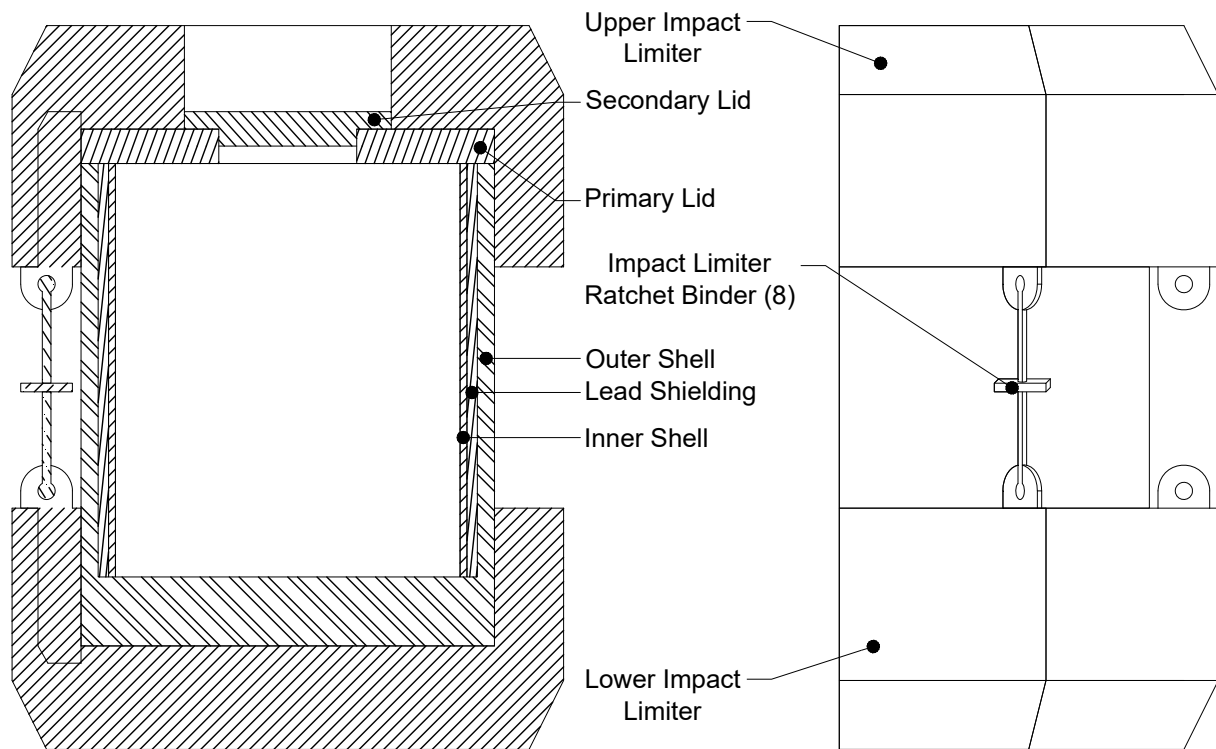


Figure M-28
CNS 10-160B Type B Shipping Cask

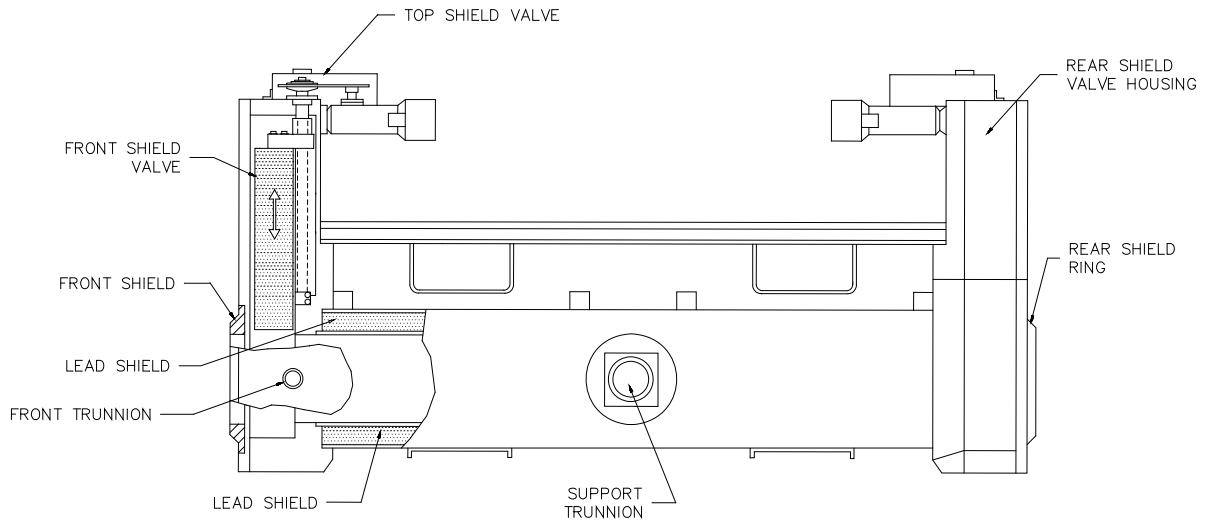


Figure M-29
RH Transuranic Waste Facility Cask and Light Weight Facility Cask

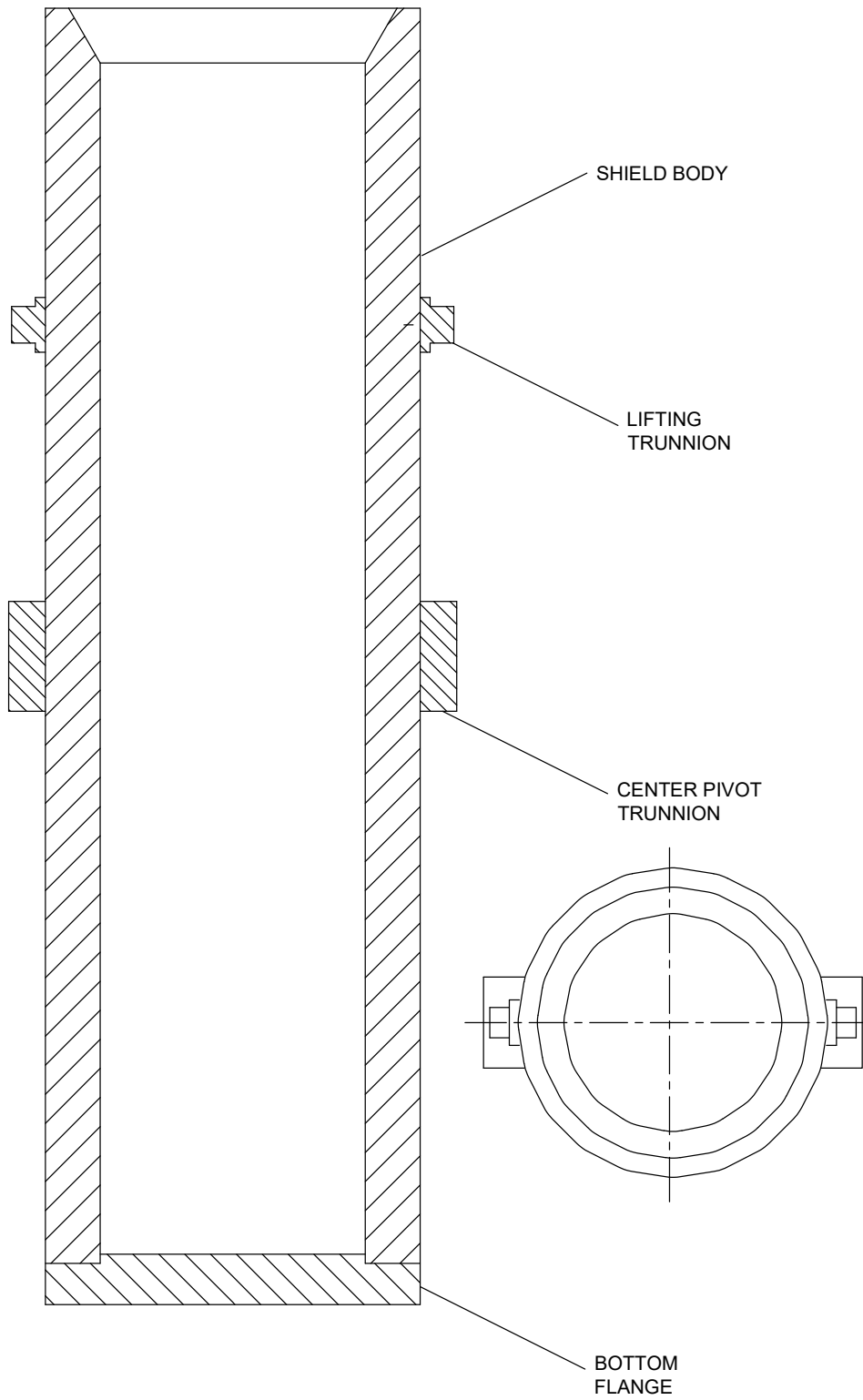


Figure M-30
RH Shielded Insert Assembly

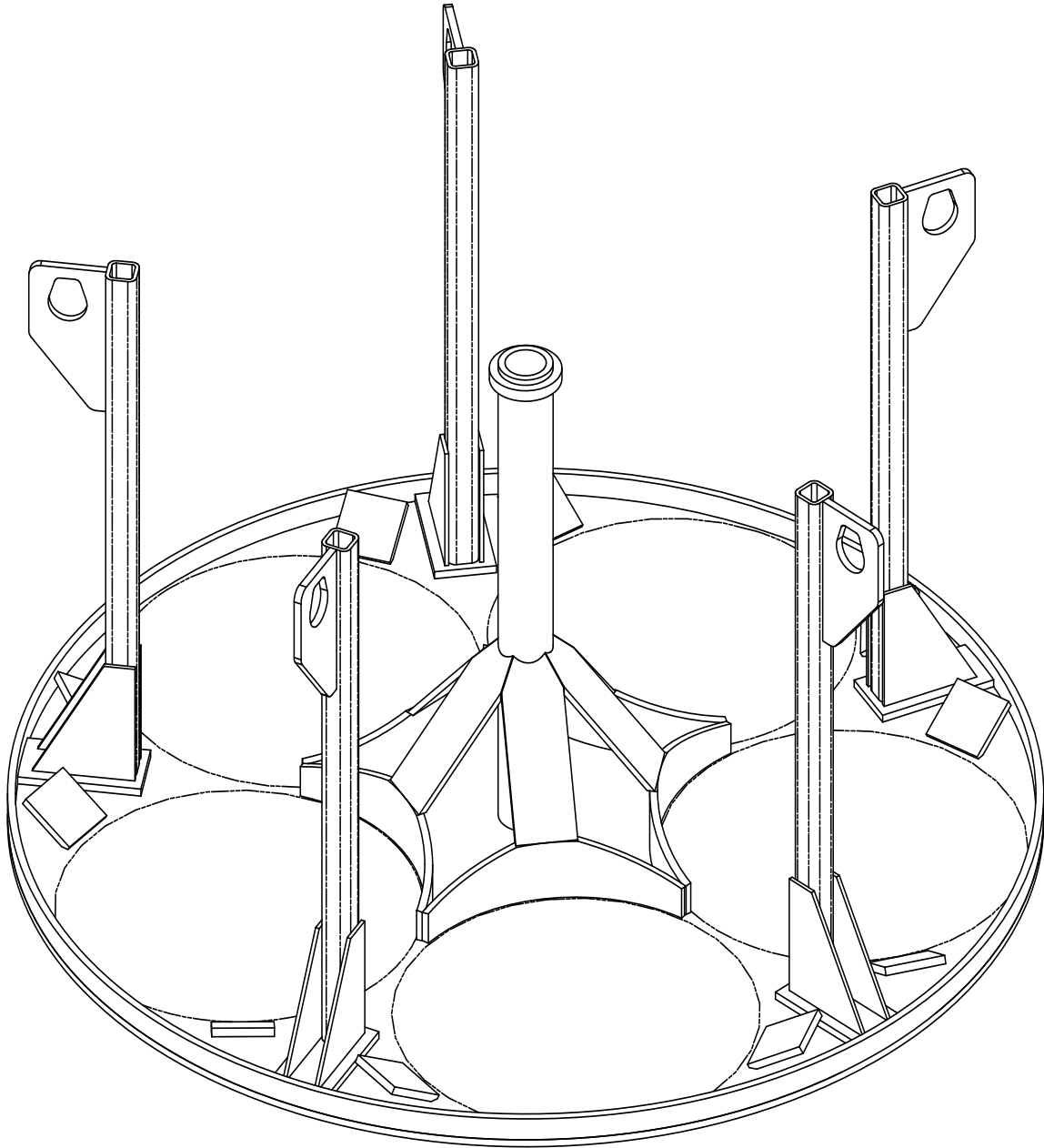


Figure M-31
CNS 10-160B Drum Carriage

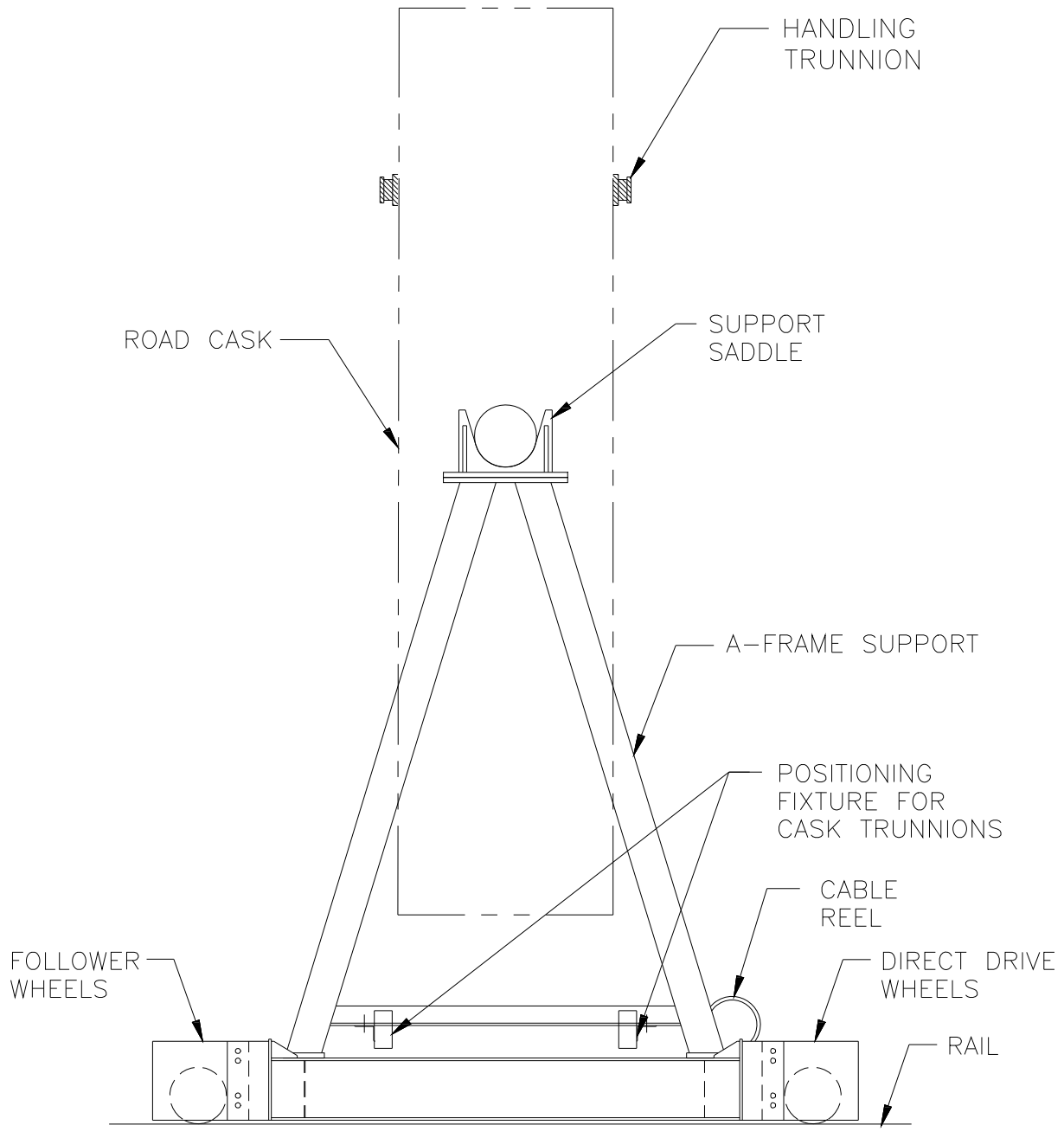


Figure M-32
RH-TRU 72-B Cask Transfer Car

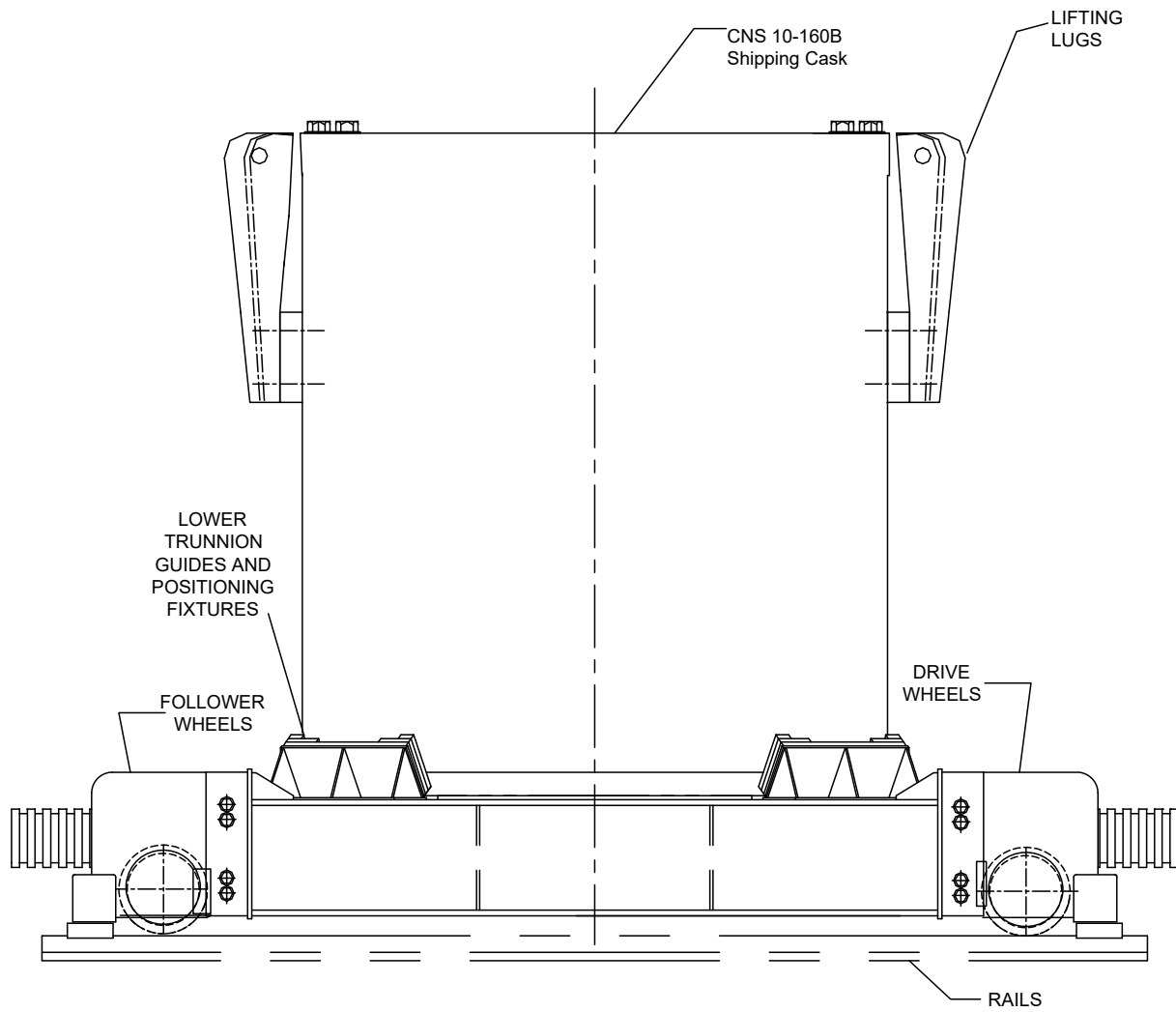


Figure M-33
CNS 10-160B Cask Transfer Car

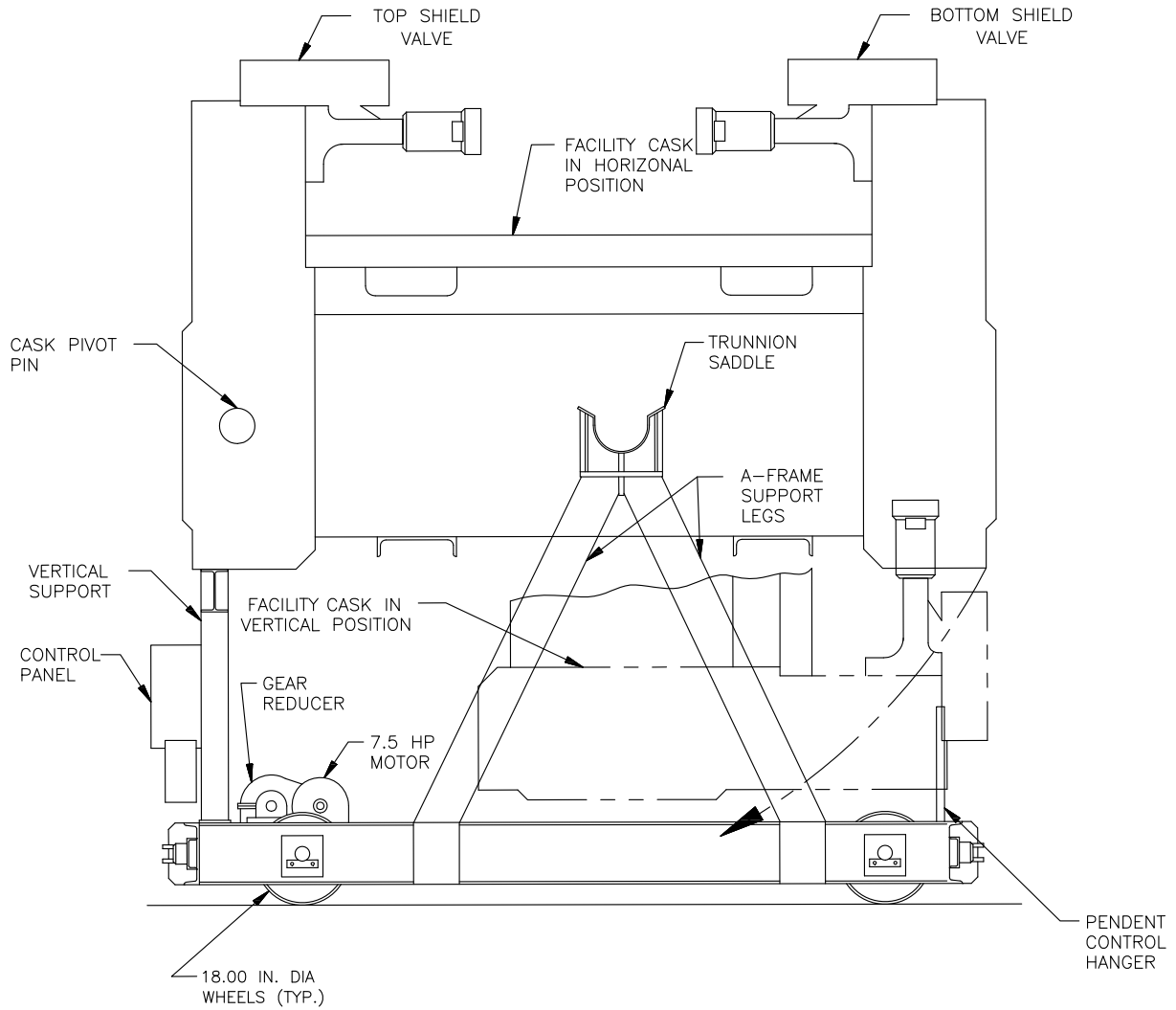


Figure M-34
RH Facility Cask Transfer Car (Side View)

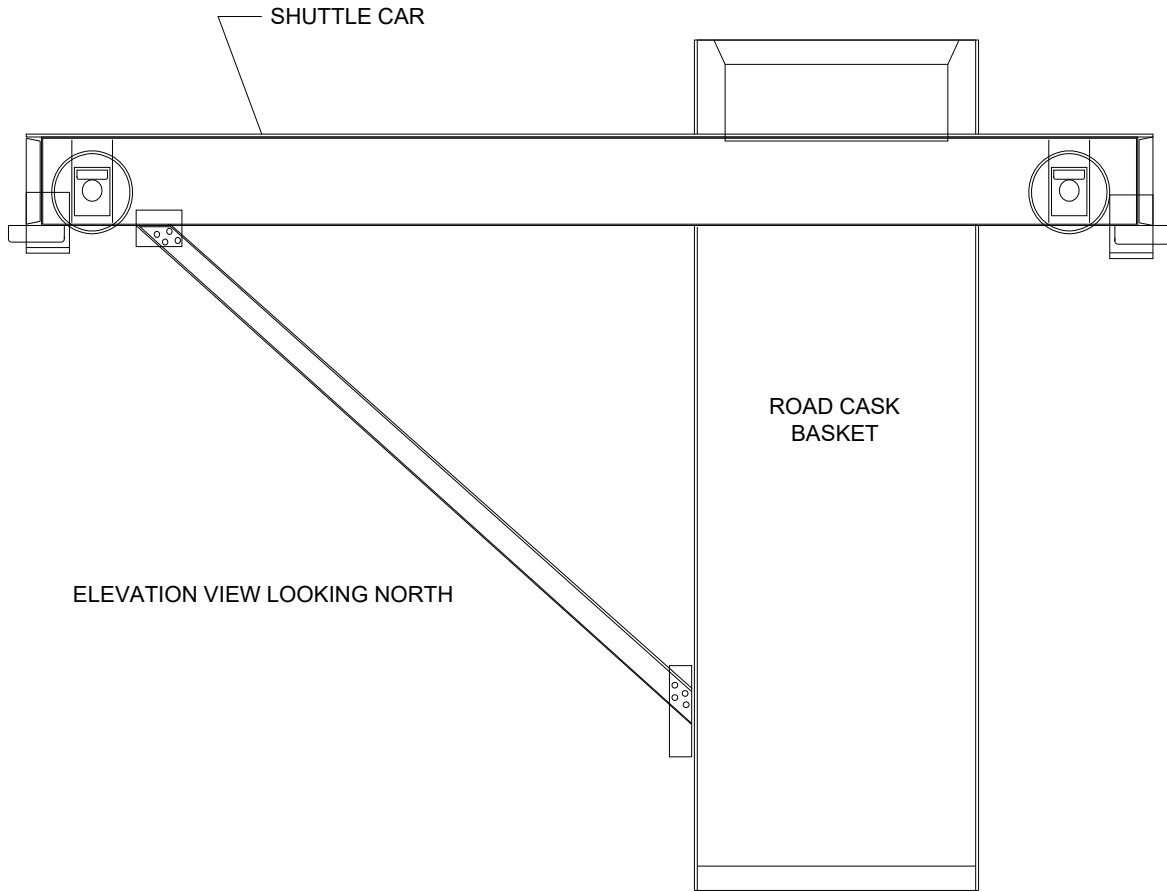
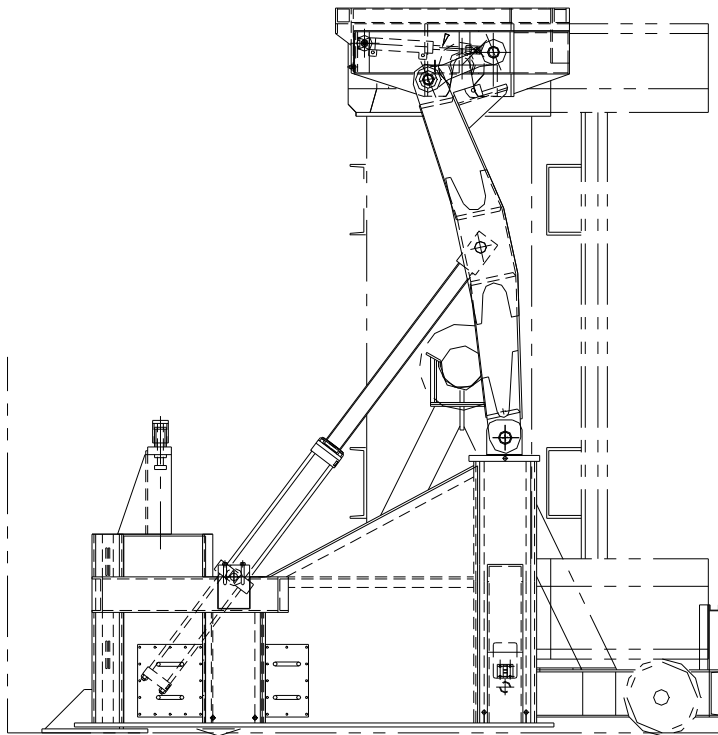
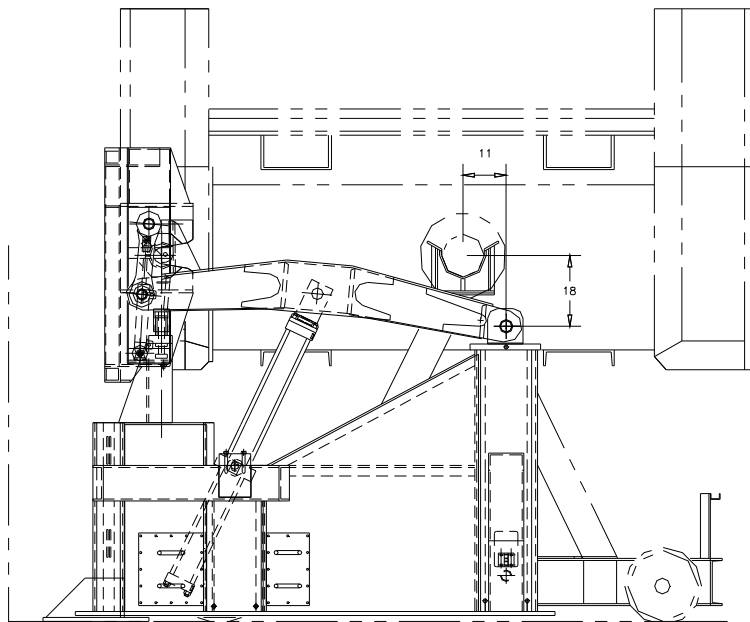


Figure M-35
Transfer Cell Shuttle Car



FRONT ELEVATION
CASK VERTICAL



FRONT ELEVATION
CASK HORIZONTAL

Figure M-36
Facility Cask Rotating Device

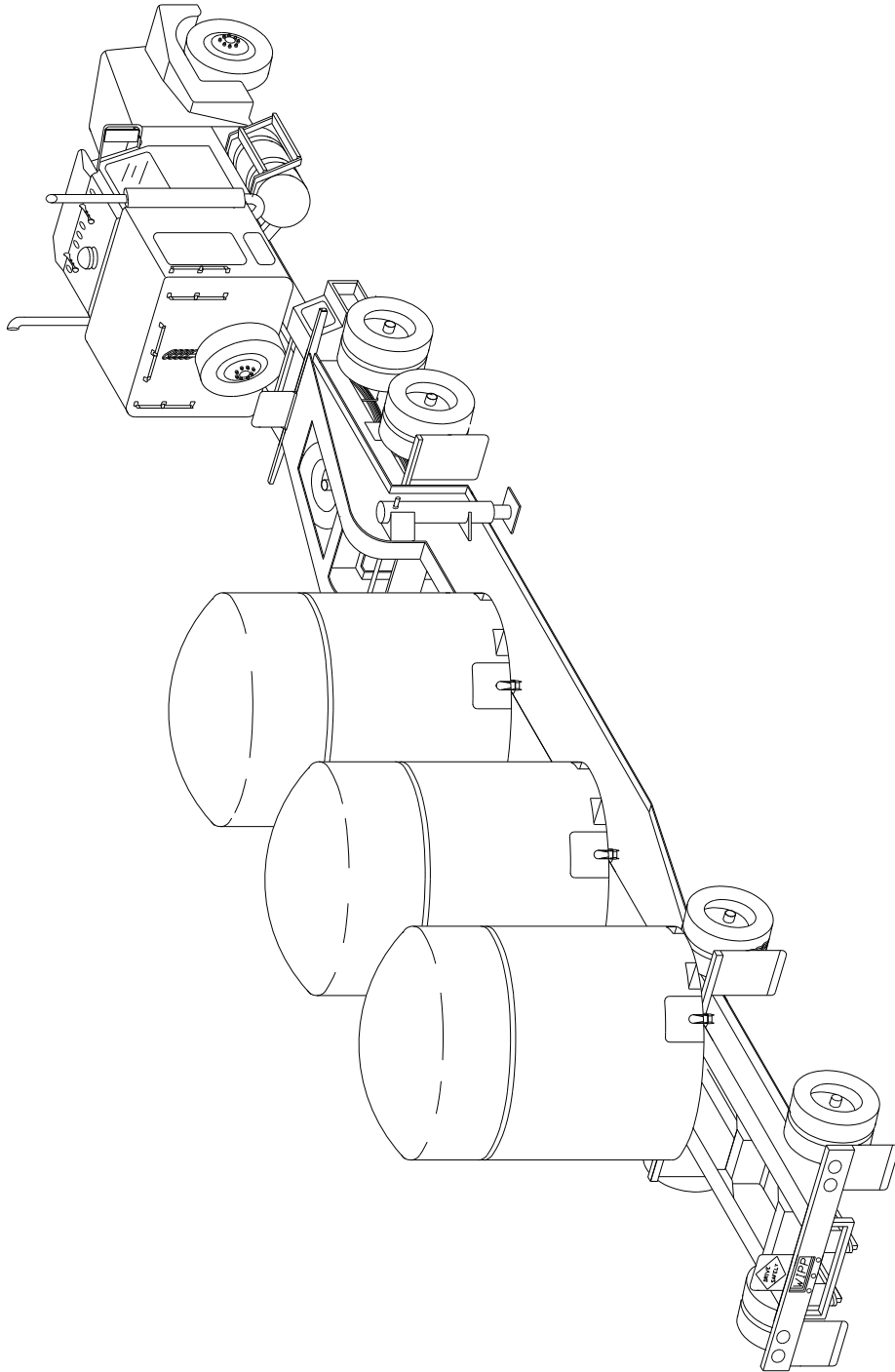


Figure M-37
TRUPACT-II Containers on Trailer

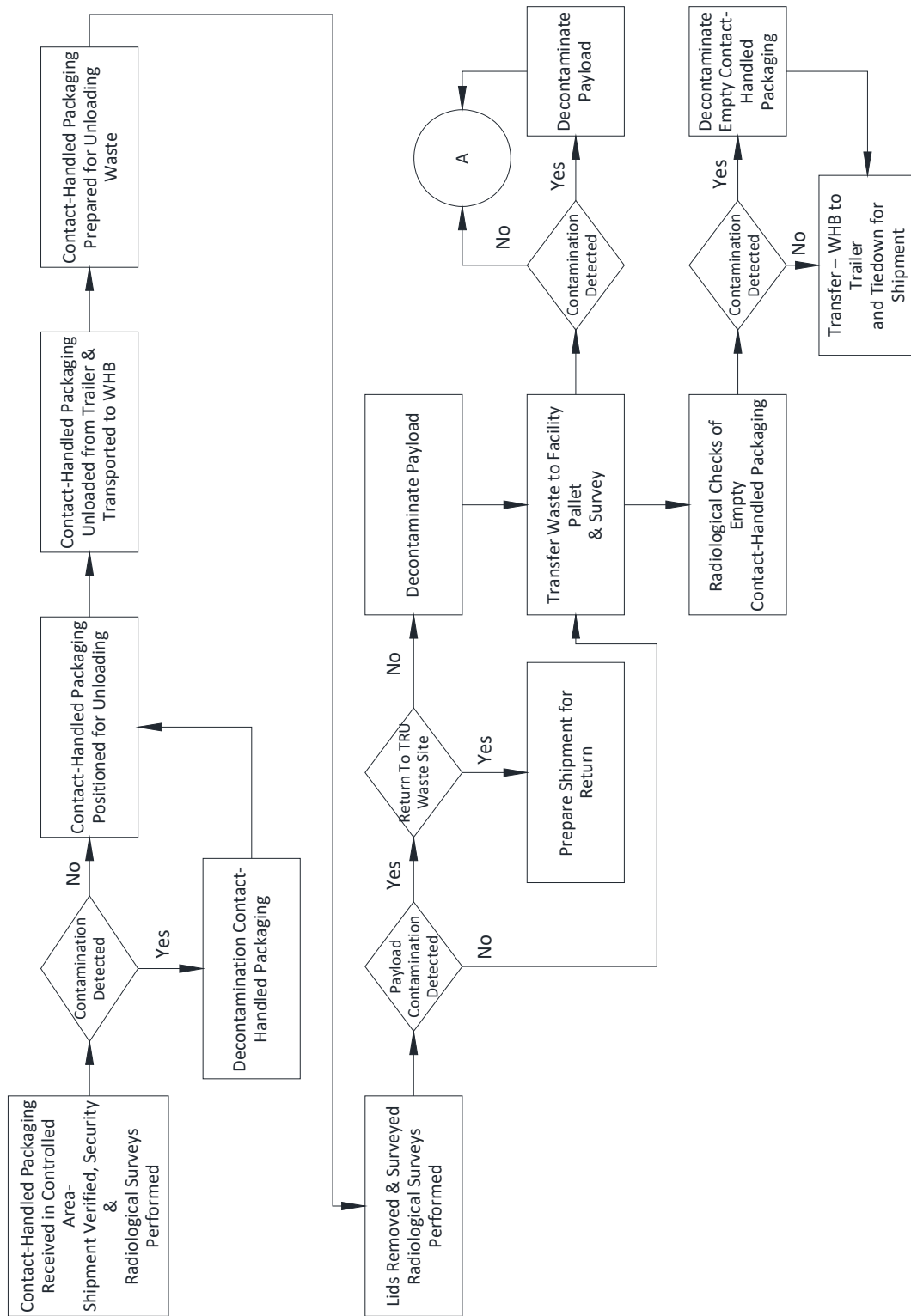


Figure M-38
WIPP Facility Surface and Underground CH Transuranic Mixed Waste Process Flow Diagram

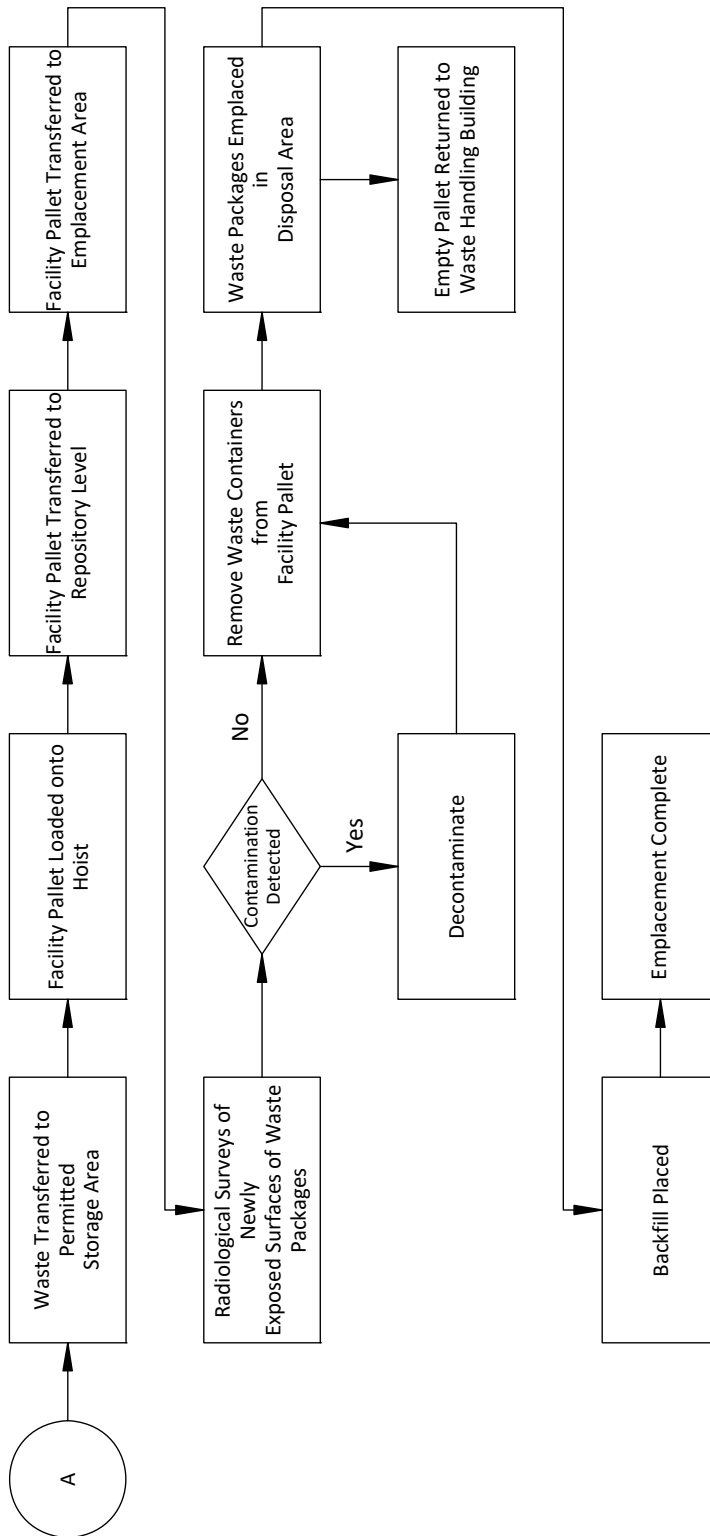


Figure M-39
WIPP Facility Surface and Underground CH Transuranic Mixed Waste Process Flow Diagram
(Continued)

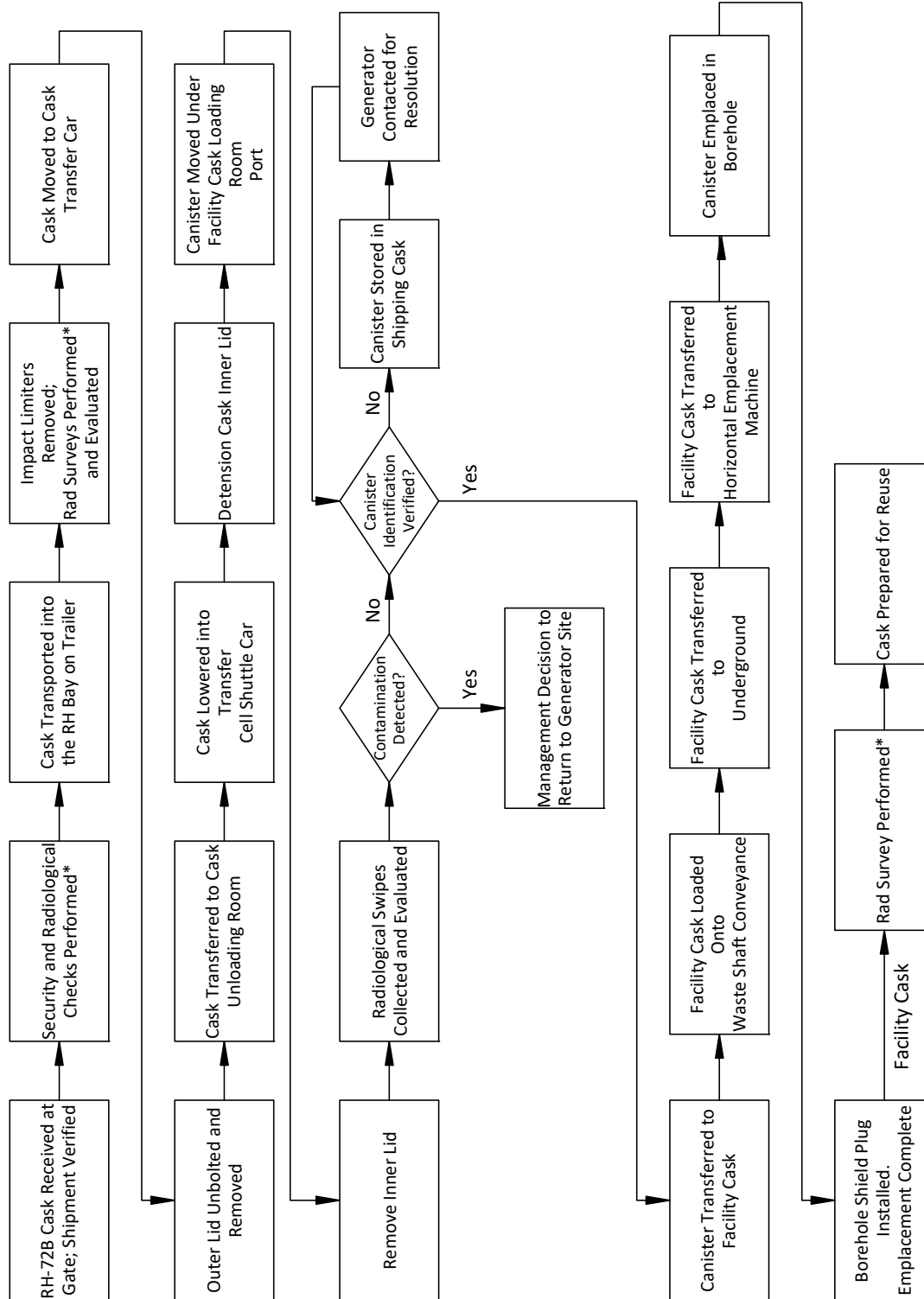


Figure M-40
Surface and Underground RH Transuranic Mixed Waste Process Flow Diagram for RH-TRU 72-B Shipping Cask

*If radiological surveys or swipes reveal cask contamination, the cask will be decontaminated.

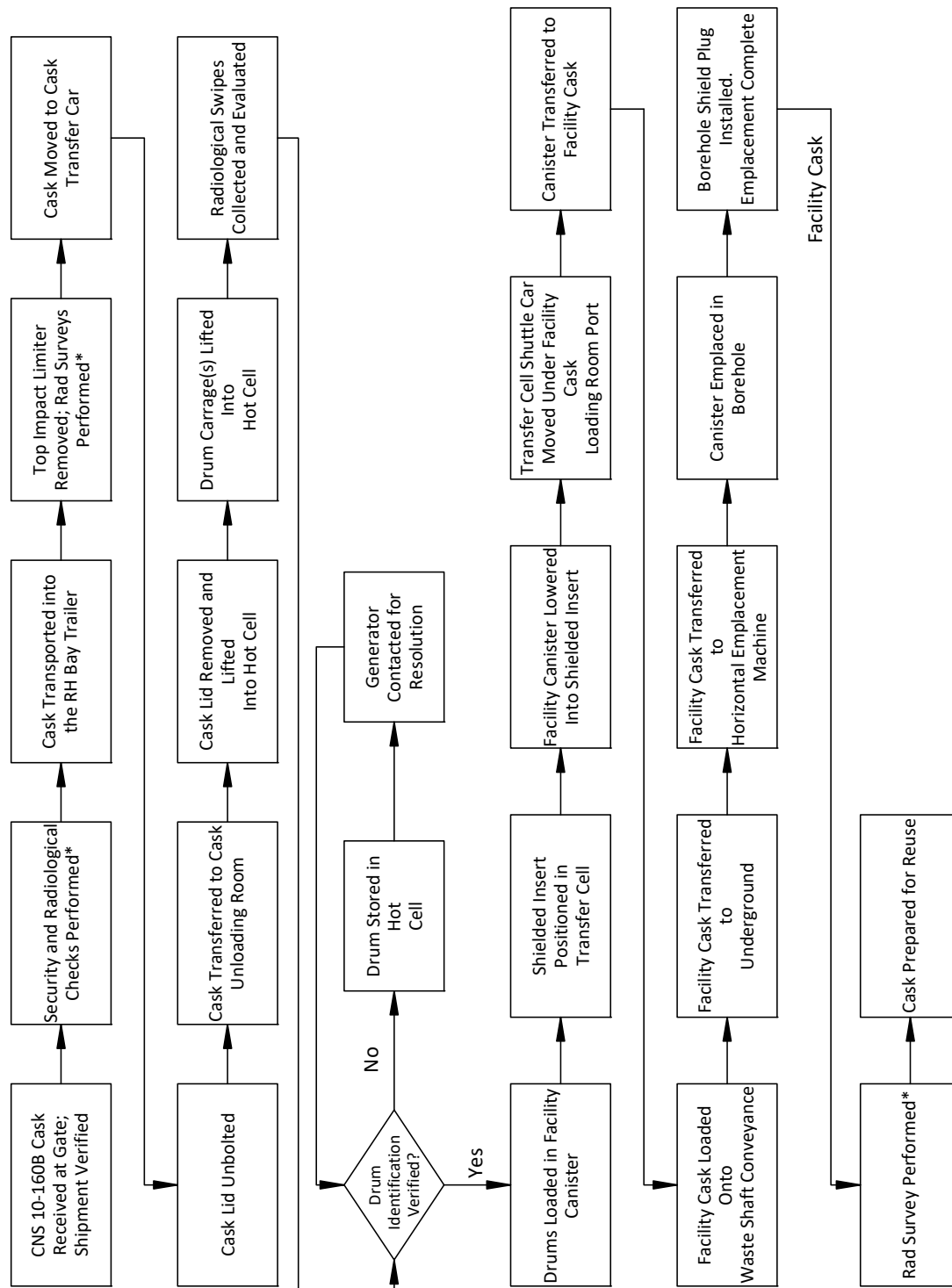


Figure M-41
Surface and Underground RH Transuranic Mixed Waste Process Flow Diagram for CNS 10-160B Shipping Cask

*If radiological surveys or swipes reveal cask contamination, the cask will be decontaminated.

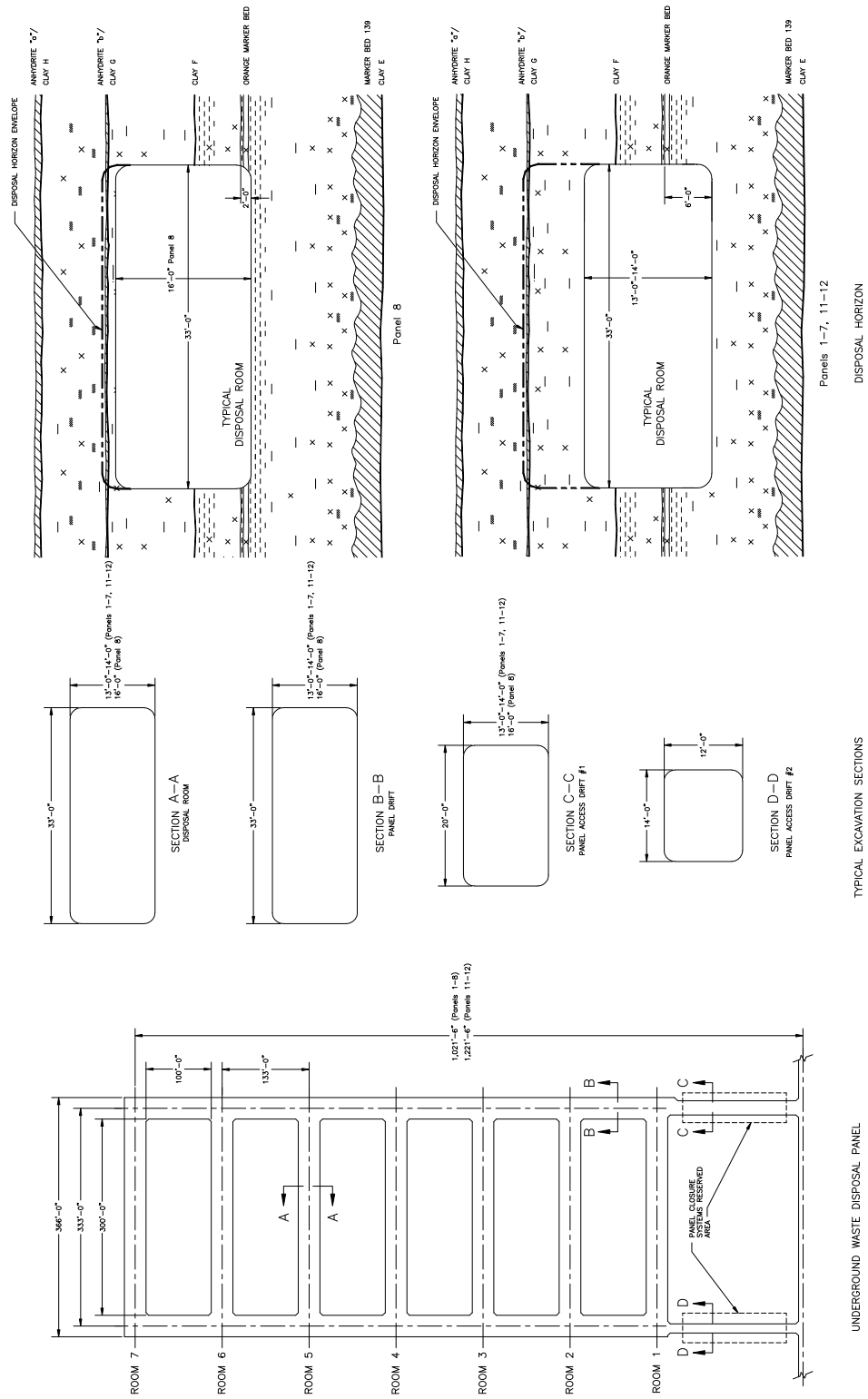


Figure M-42
Typical Disposal Panel

Waste Isolation Pilot Plant
 Hazardous Waste Facility Permit
 Attachment M
 August 15, 2023 Proposed Final Permit

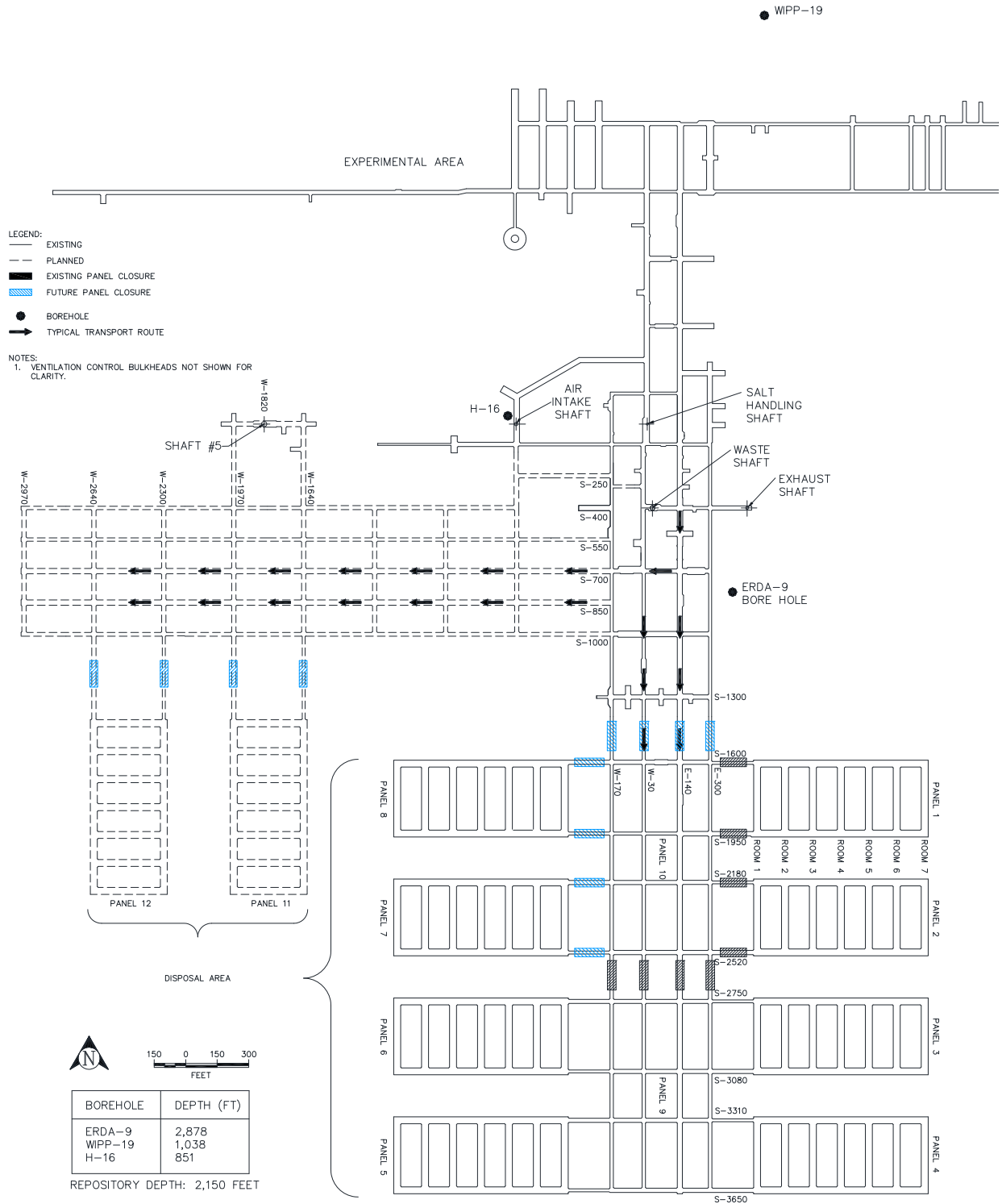


Figure M-43
Repository Horizon and Underground Waste Transport Routes

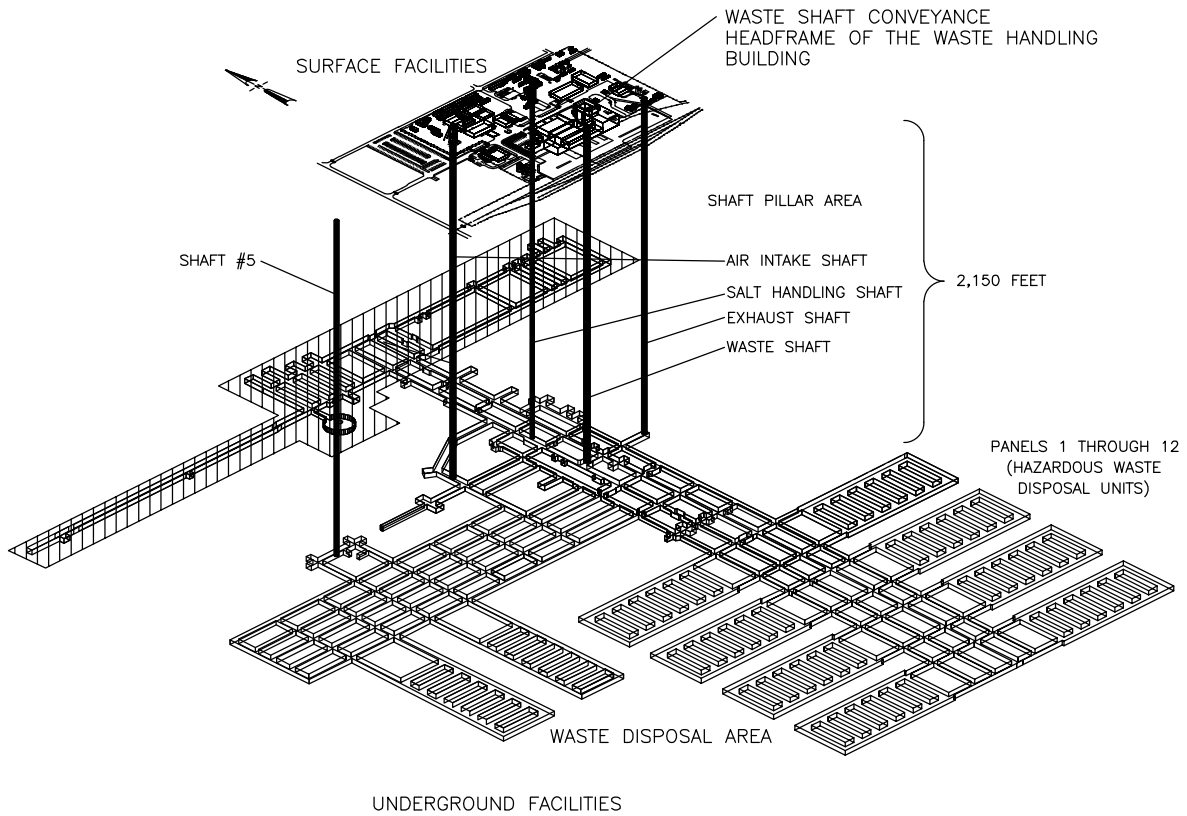


Figure M-44
Spatial View of the Miscellaneous Unit and Waste Handling Facility

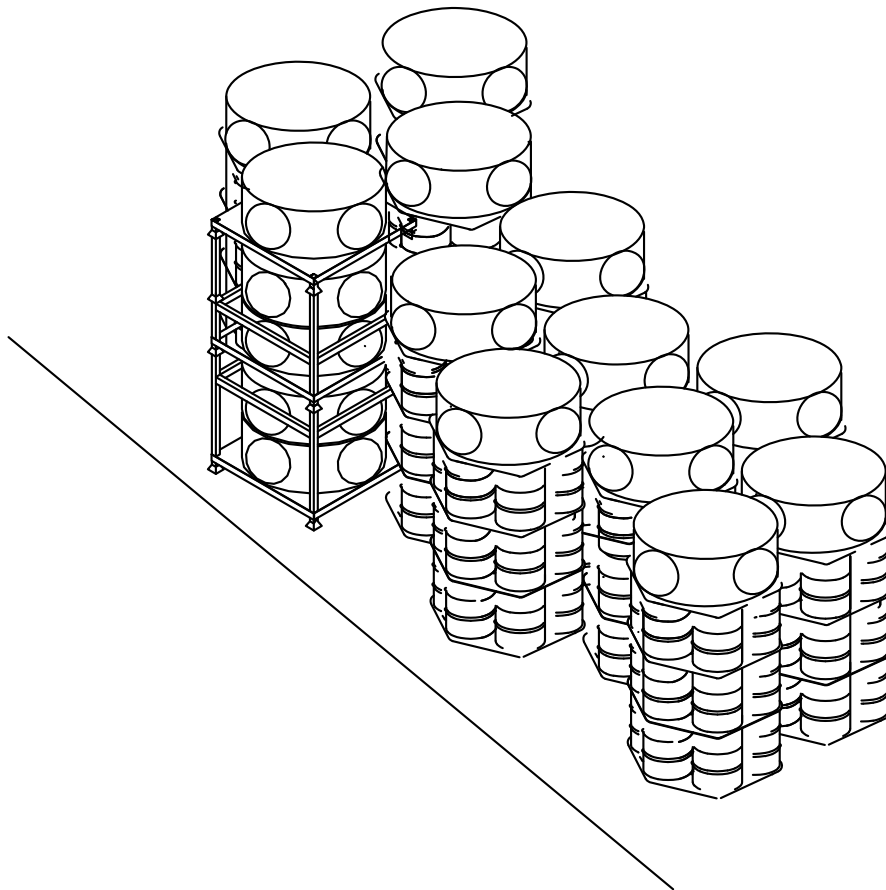
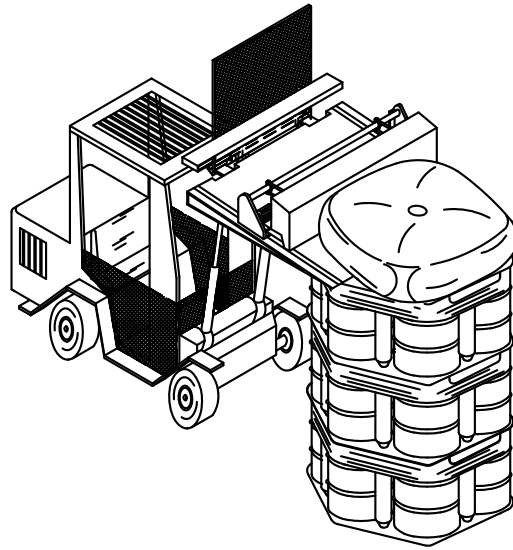


Figure M-45
Typical MgO Backfill Sacks Emplaced on Drum Stacks and Emplacement Configurations

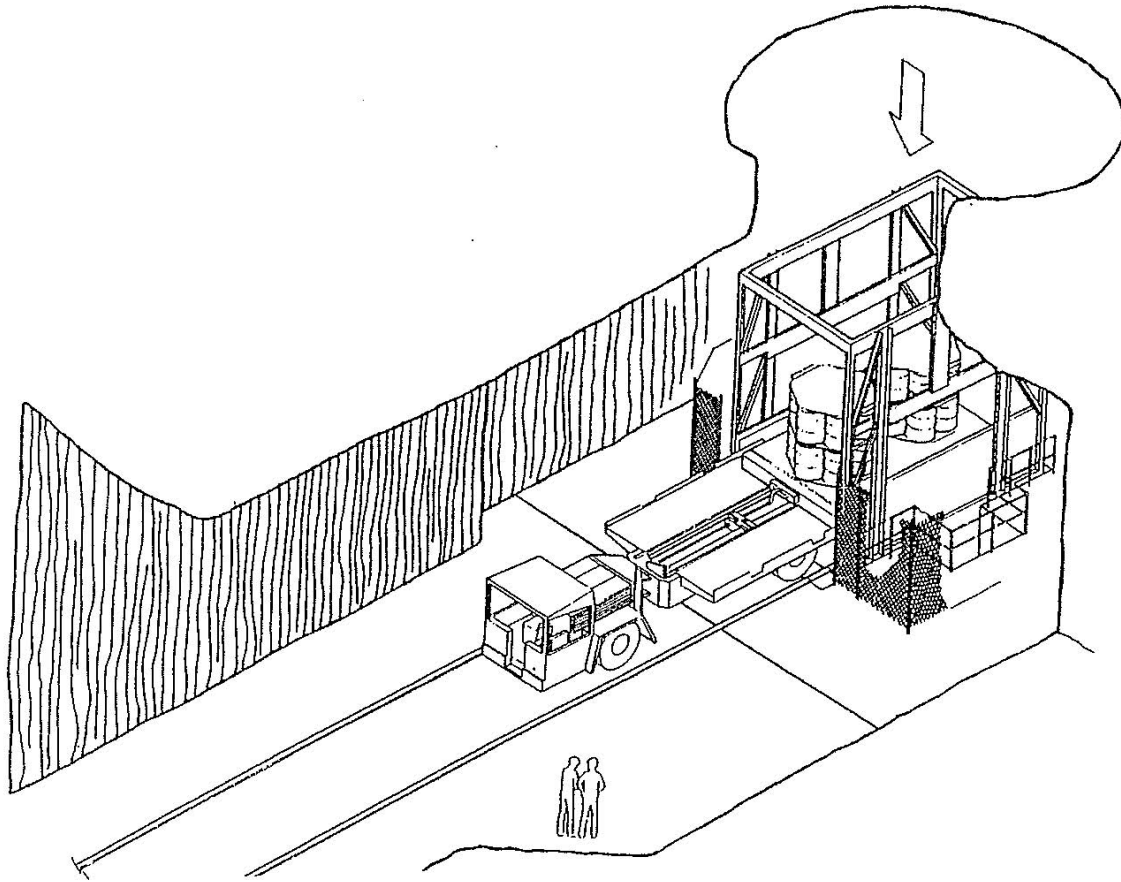
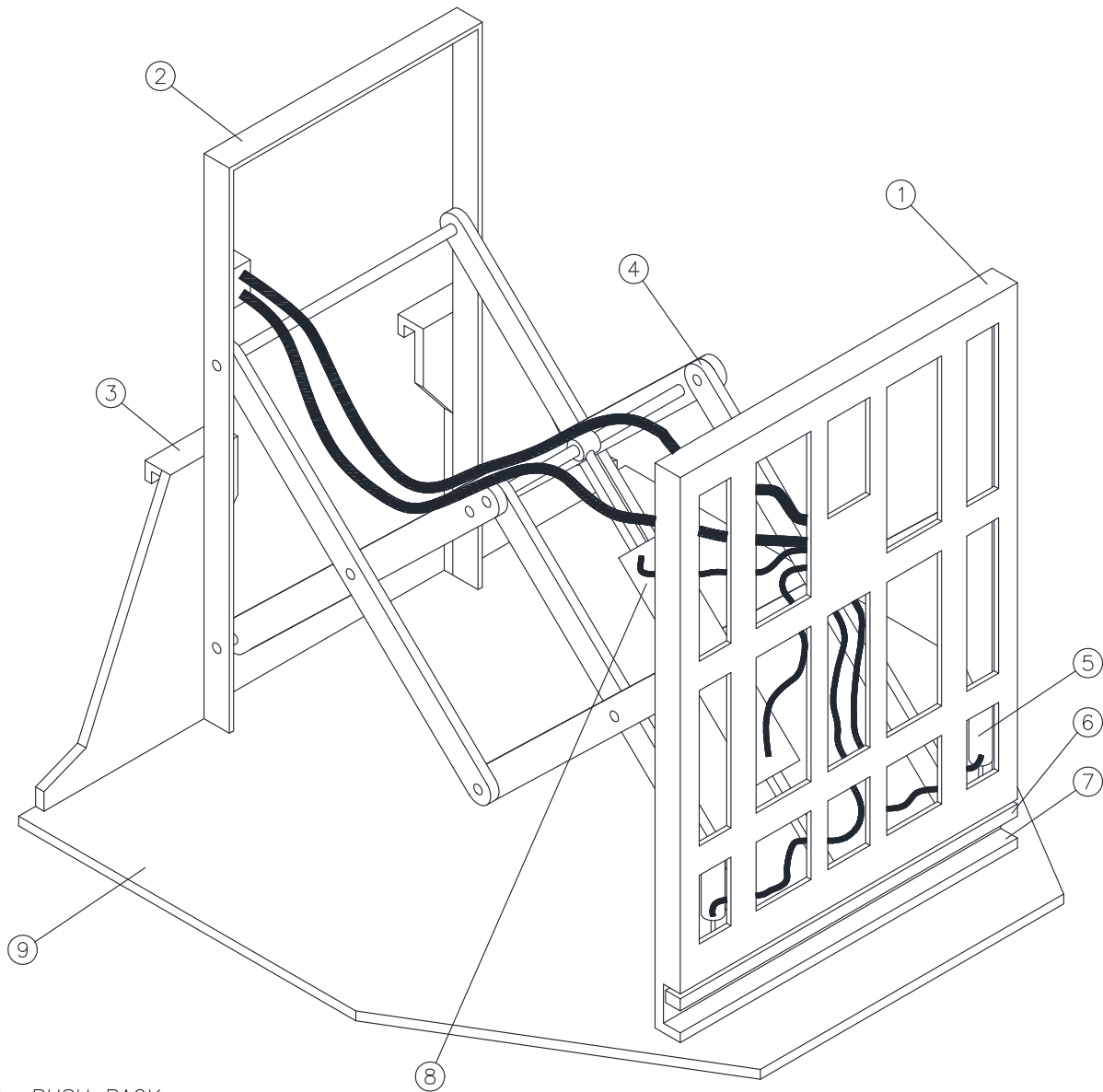
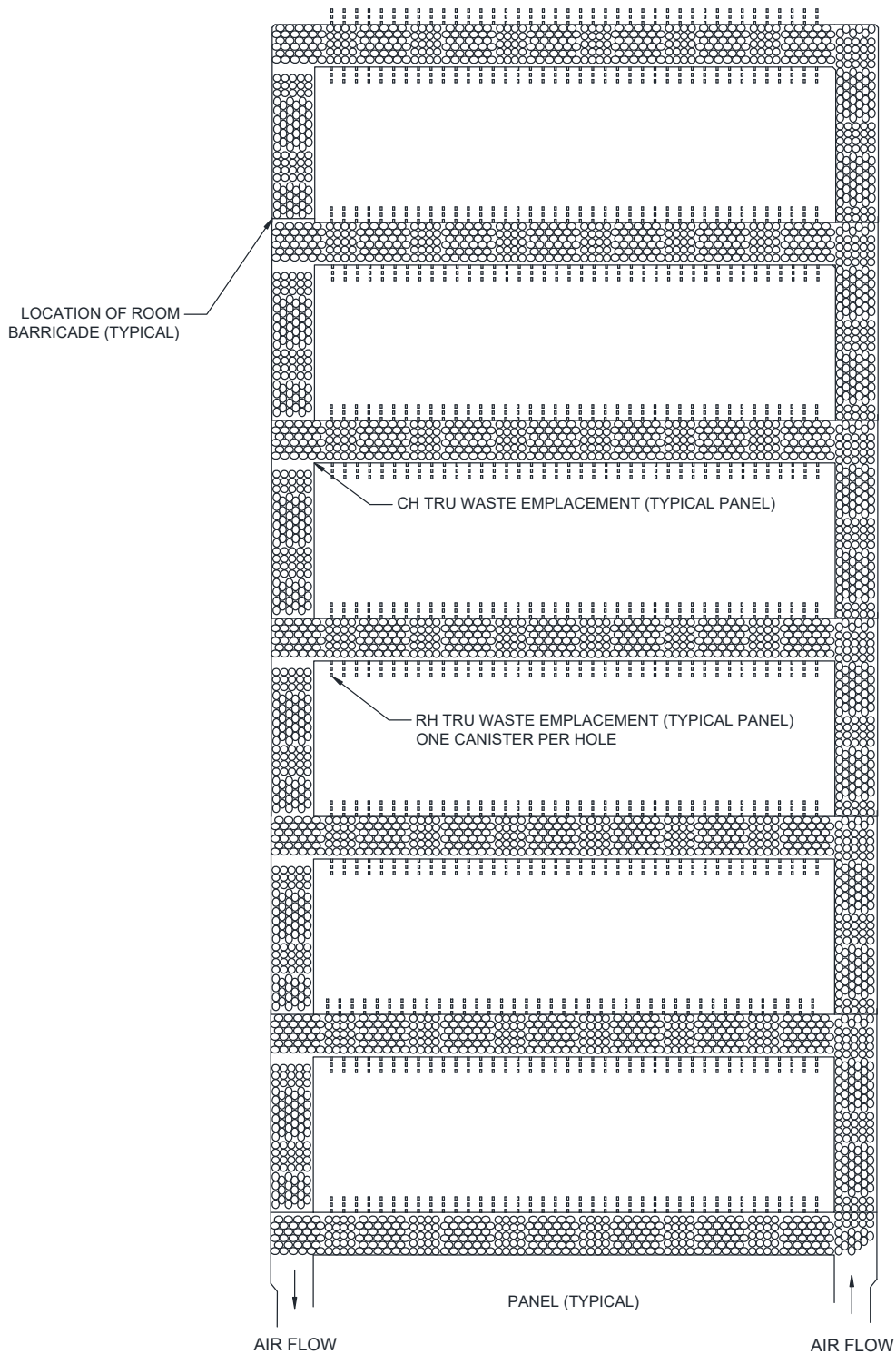


Figure M-46
Waste Transfer Cage to Transporter



1. PUSH RACK
2. BASE ASSEMBLY
3. UPPER RETAINER
4. LINKAGE ASSEMBLY
5. GRIPPER CYLINDER
6. GRIPPER BAR
7. GRIPPER JAW
8. PUSH CYLINDER
9. PLATFN

Figure M-47
Push-Pull Attachment to Forklift to Allow Handling of Waste Containers



NOTE: MgO will be emplaced as necessary

Figure M-48
Typical RH and CH TRU Mixed Waste Container Disposal Configuration

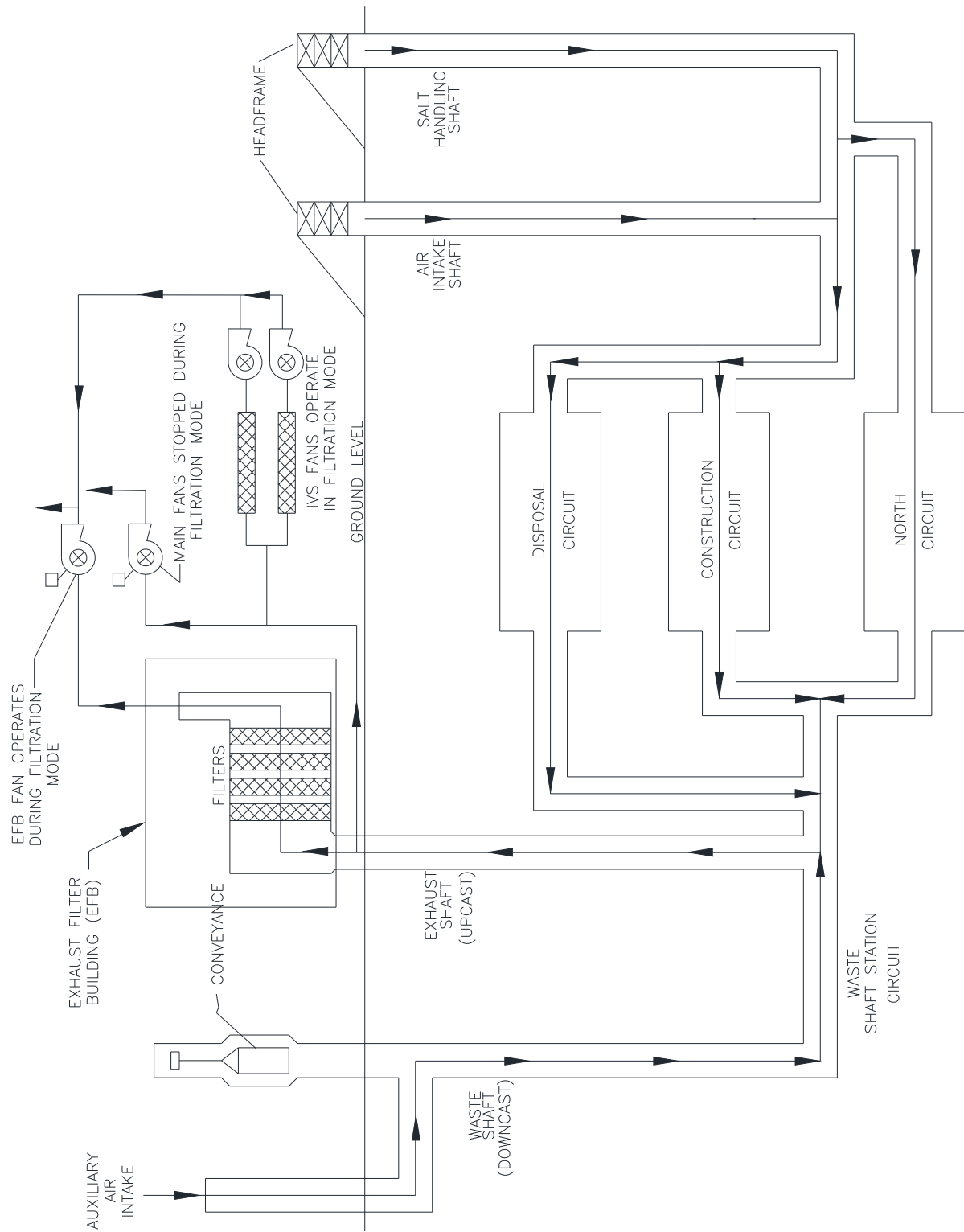


Figure M-49
Underground Ventilation System Airflow

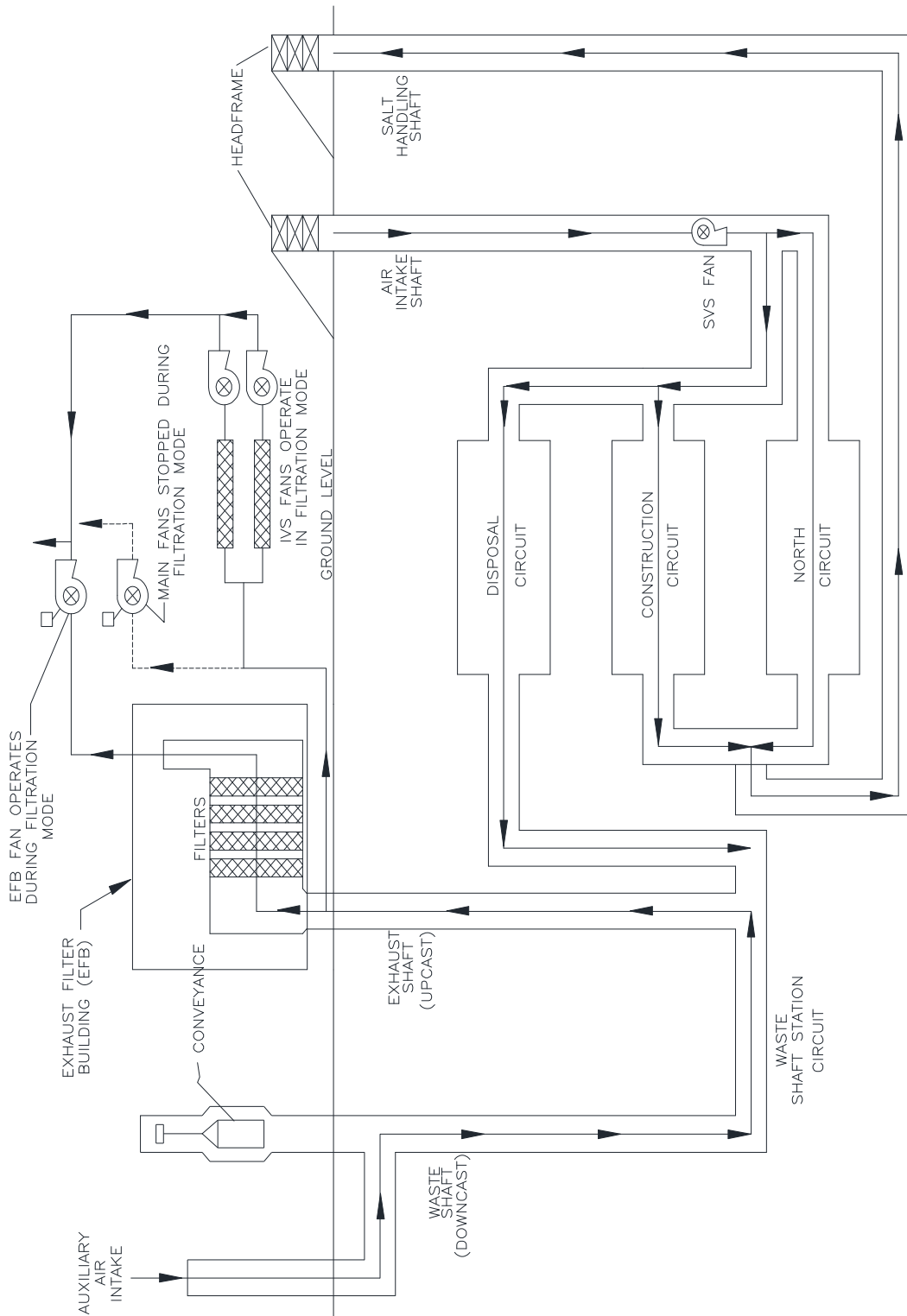


Figure M-50
Underground Ventilation System Airflow (with SVS)

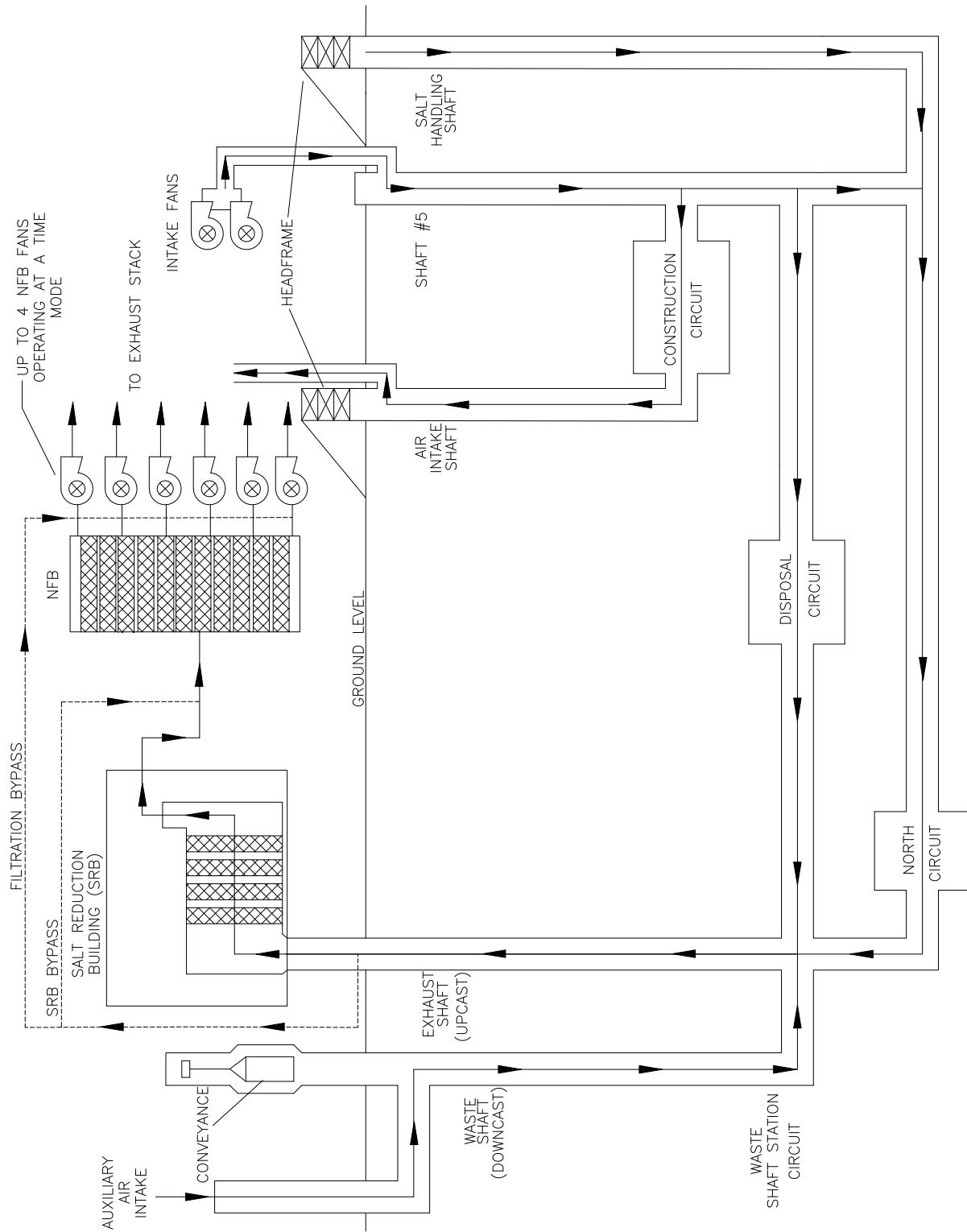


Figure M-51
Underground Ventilation System Airflow (with S#5)

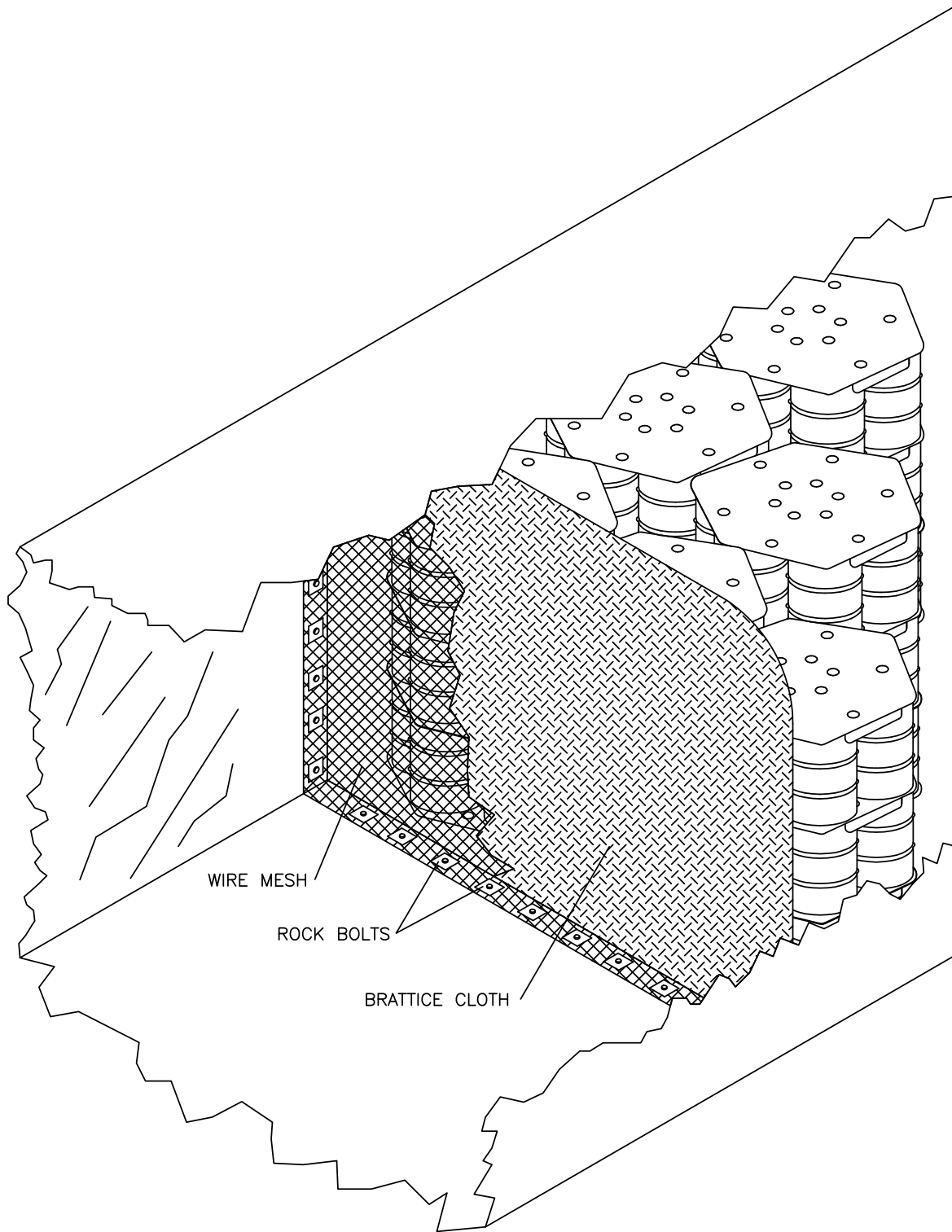


Figure M-52
Typical Room Barricade

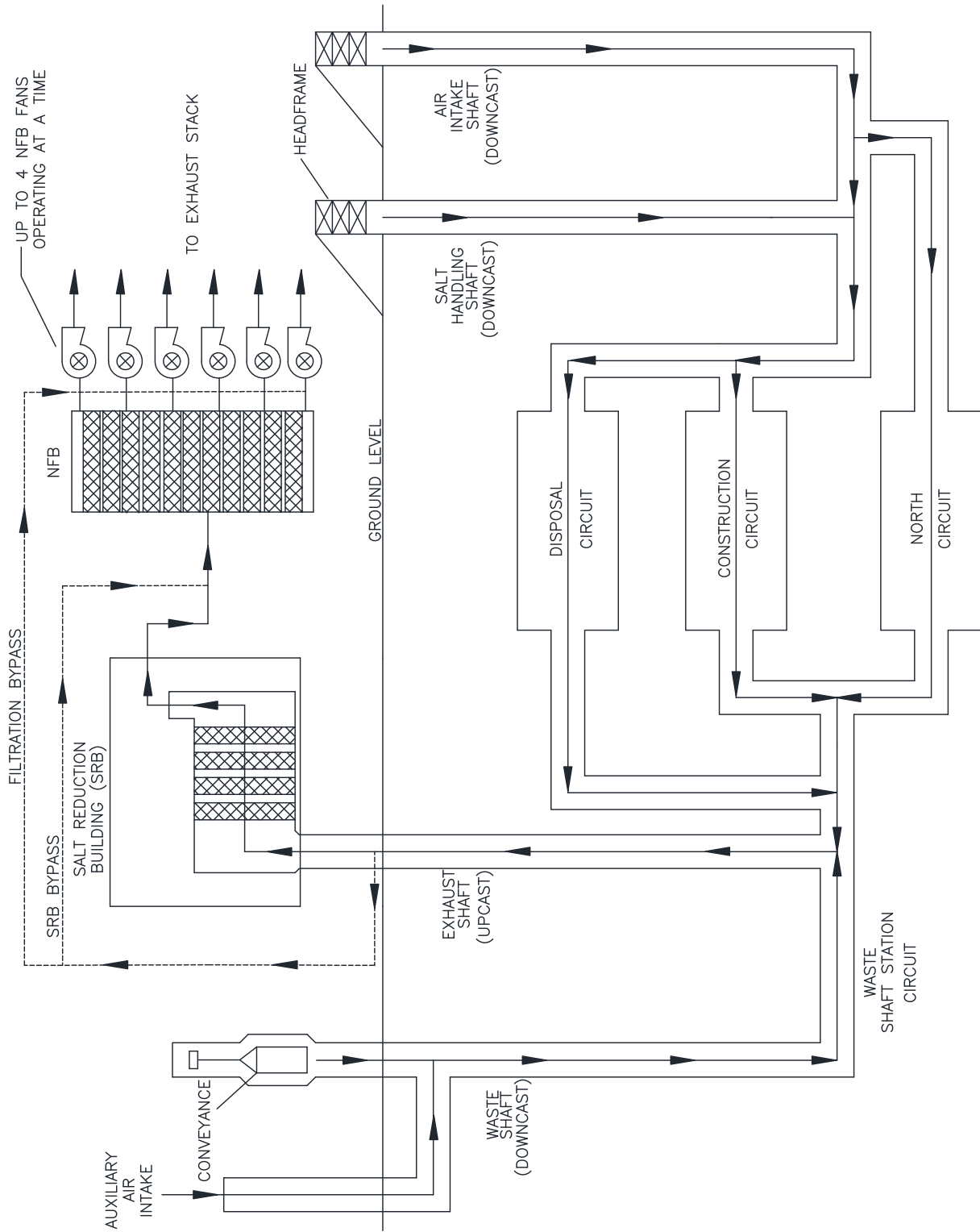


Figure M-53
Underground Ventilation System Airflow (with Building 416)

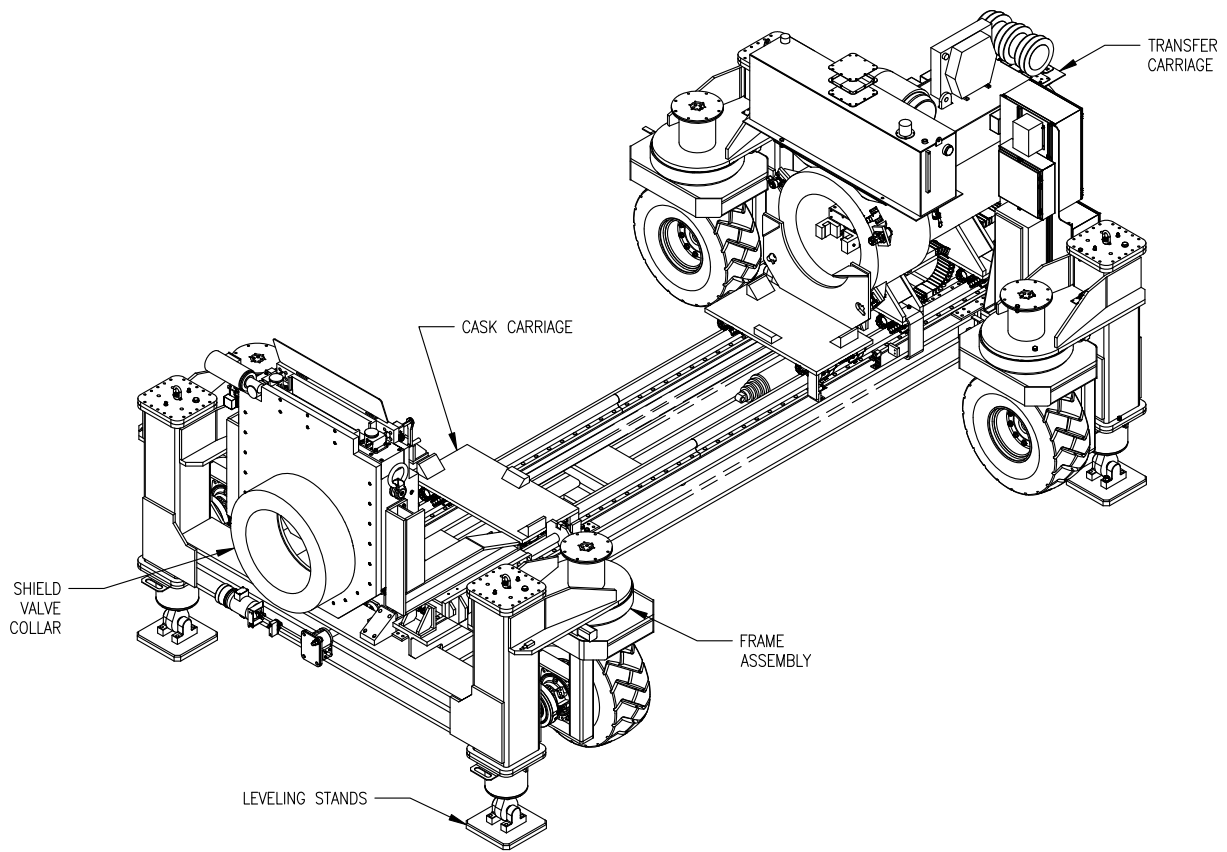


Figure M-54
Typical RH Emplacement Equipment

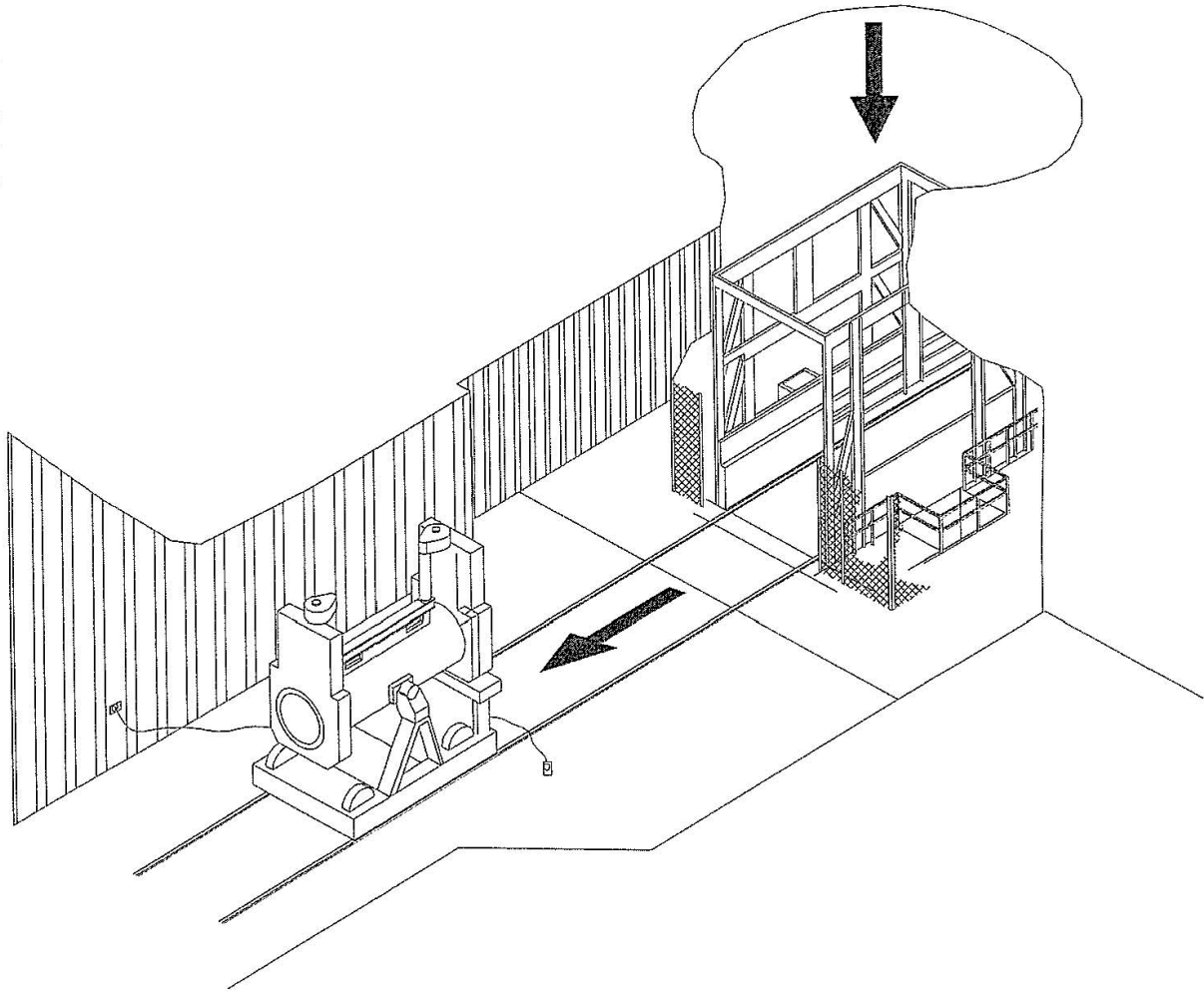


Figure M-55
RH TRU Waste Facility Cask Unloading from Waste Shaft Conveyance

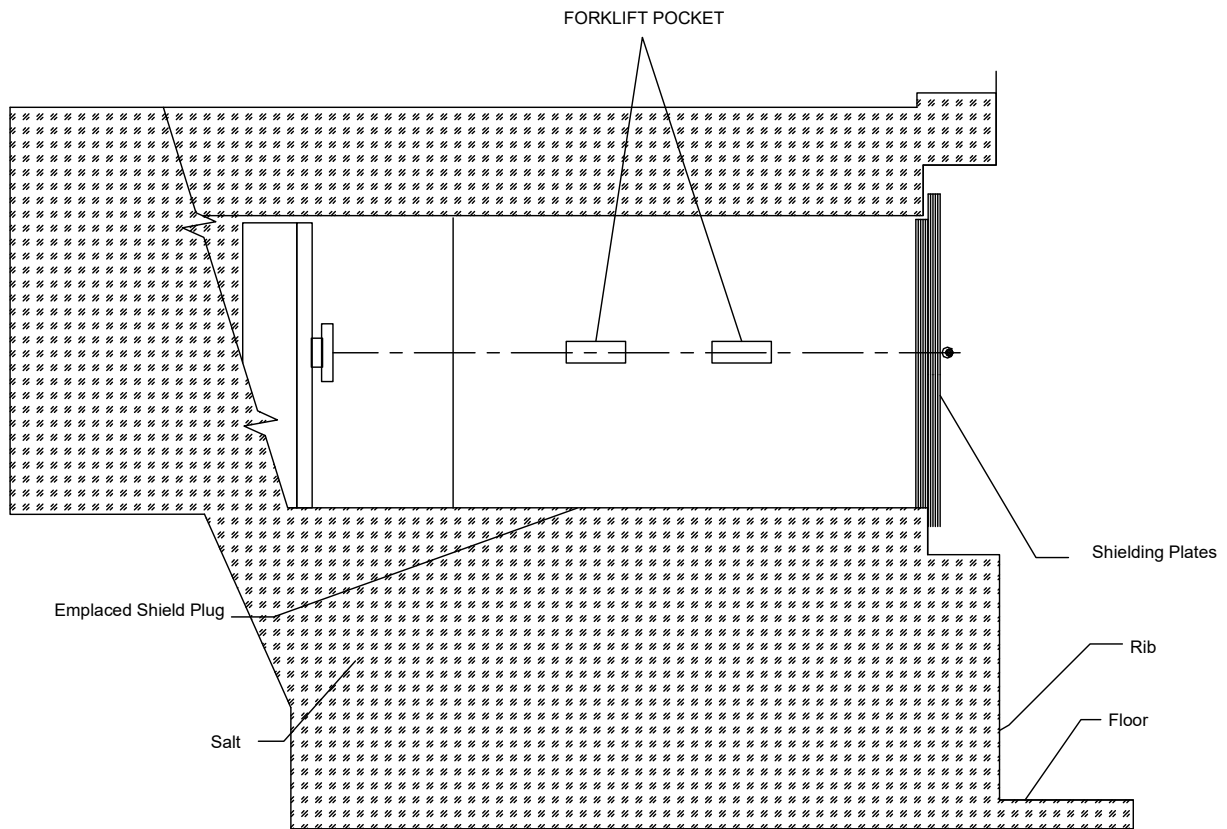


Figure M-56
Section of Borehole Showing the RH Shield Plug and Supplemental Shielding Plate(s)

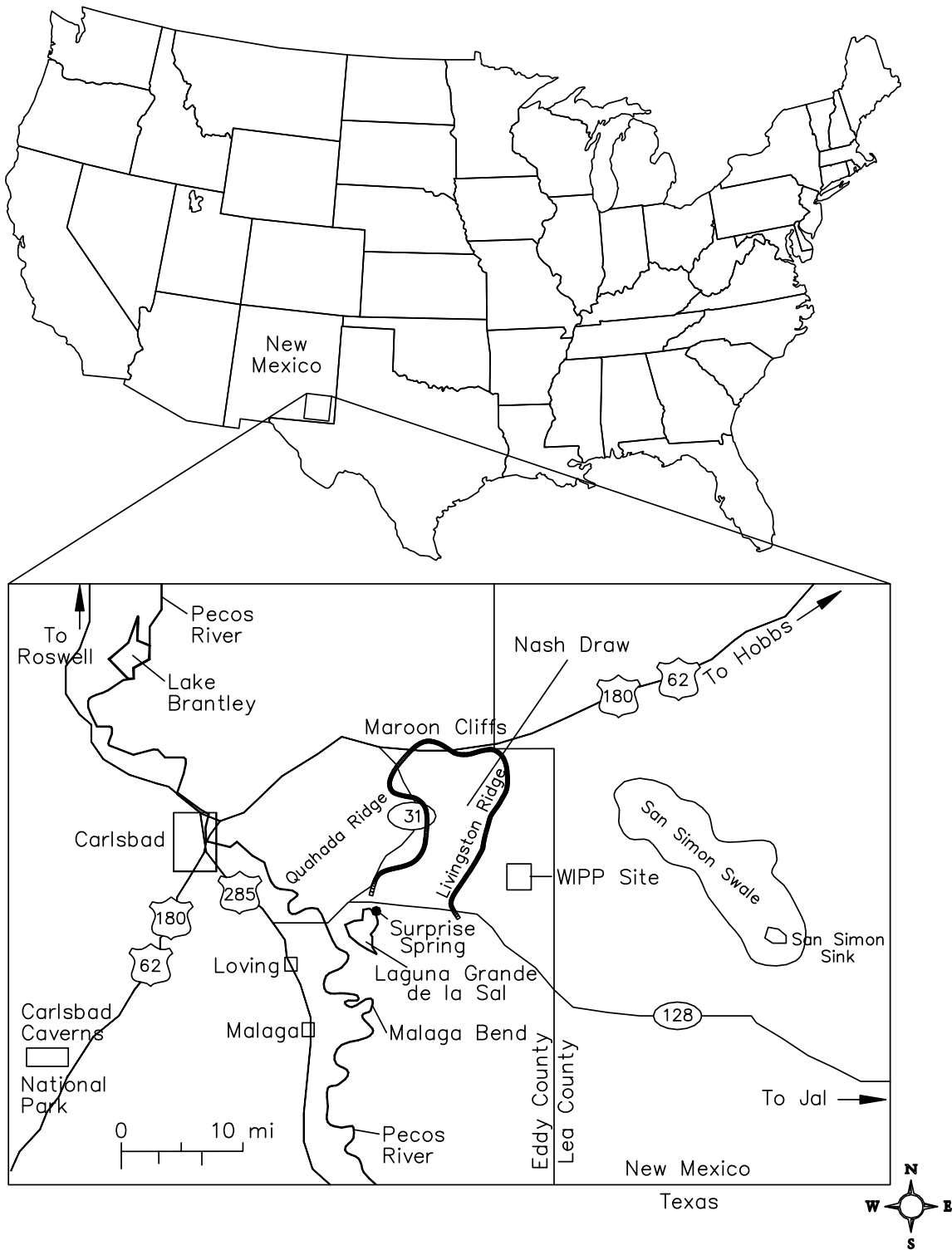
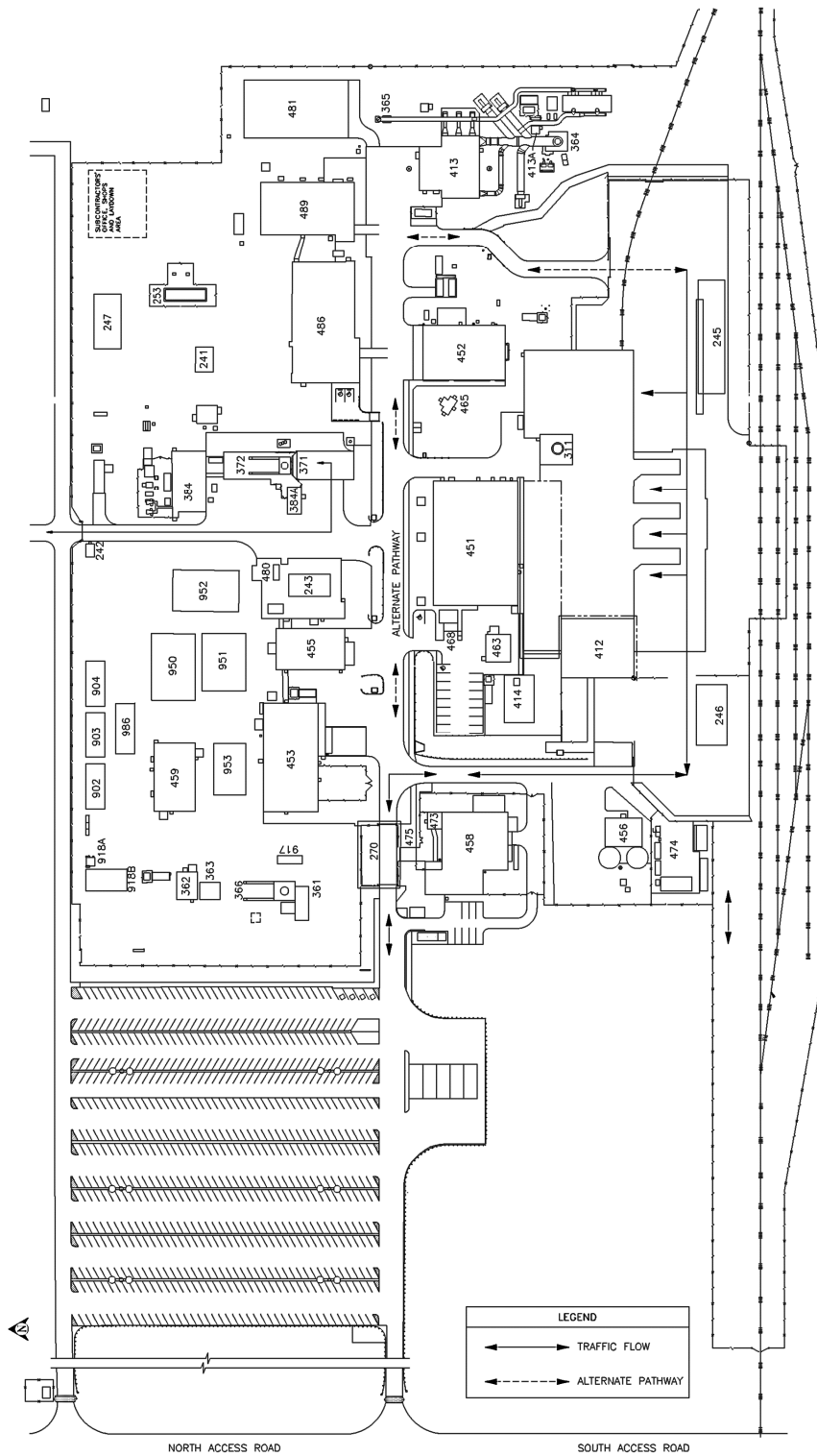
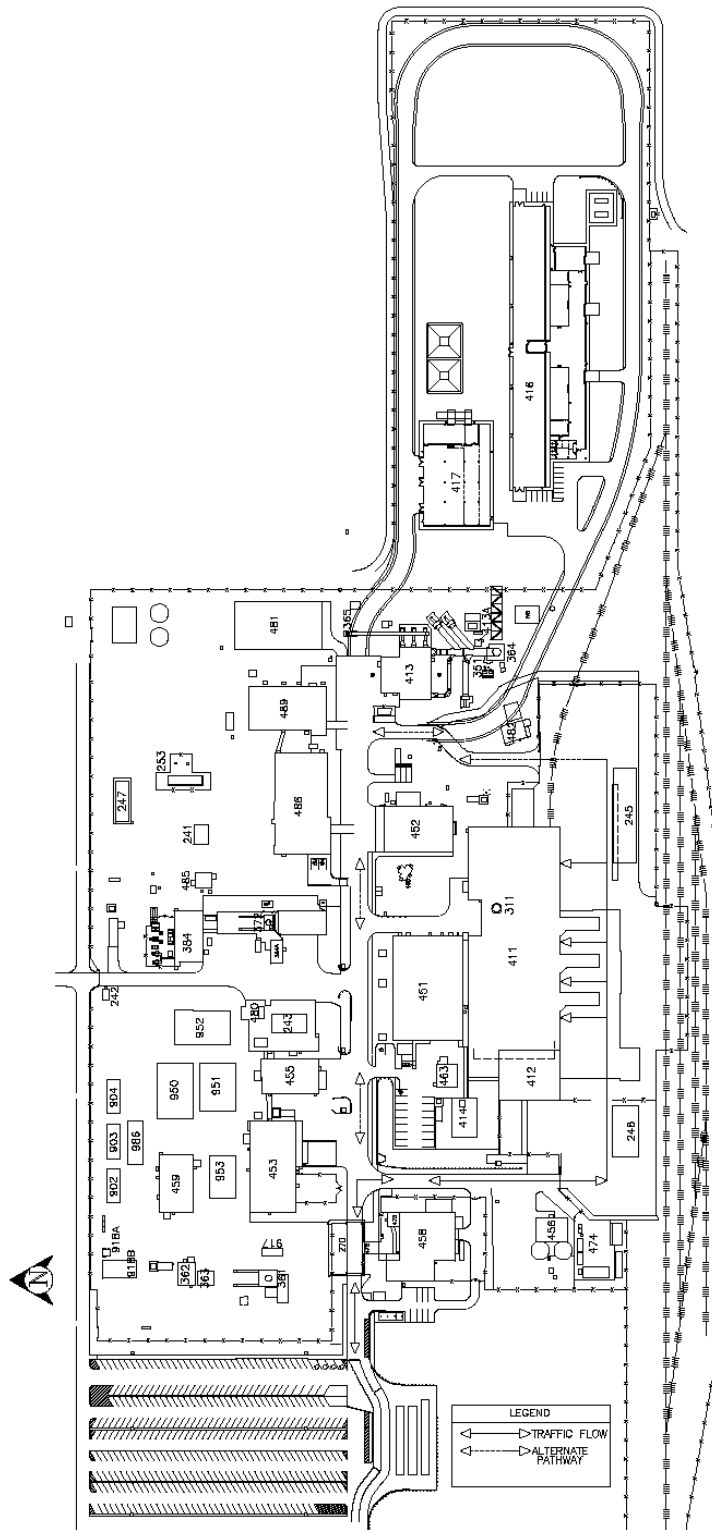


Figure M-57
General Location of the WIPP Facility



(see Figure D-1 for legend of the surface buildings)

Figure M-58
WIPP Traffic Flow Diagram



(see Figure D-1-NFB for legend of the surface buildings)

Figure M-59
WIPP Traffic Flow Diagram with Building 416

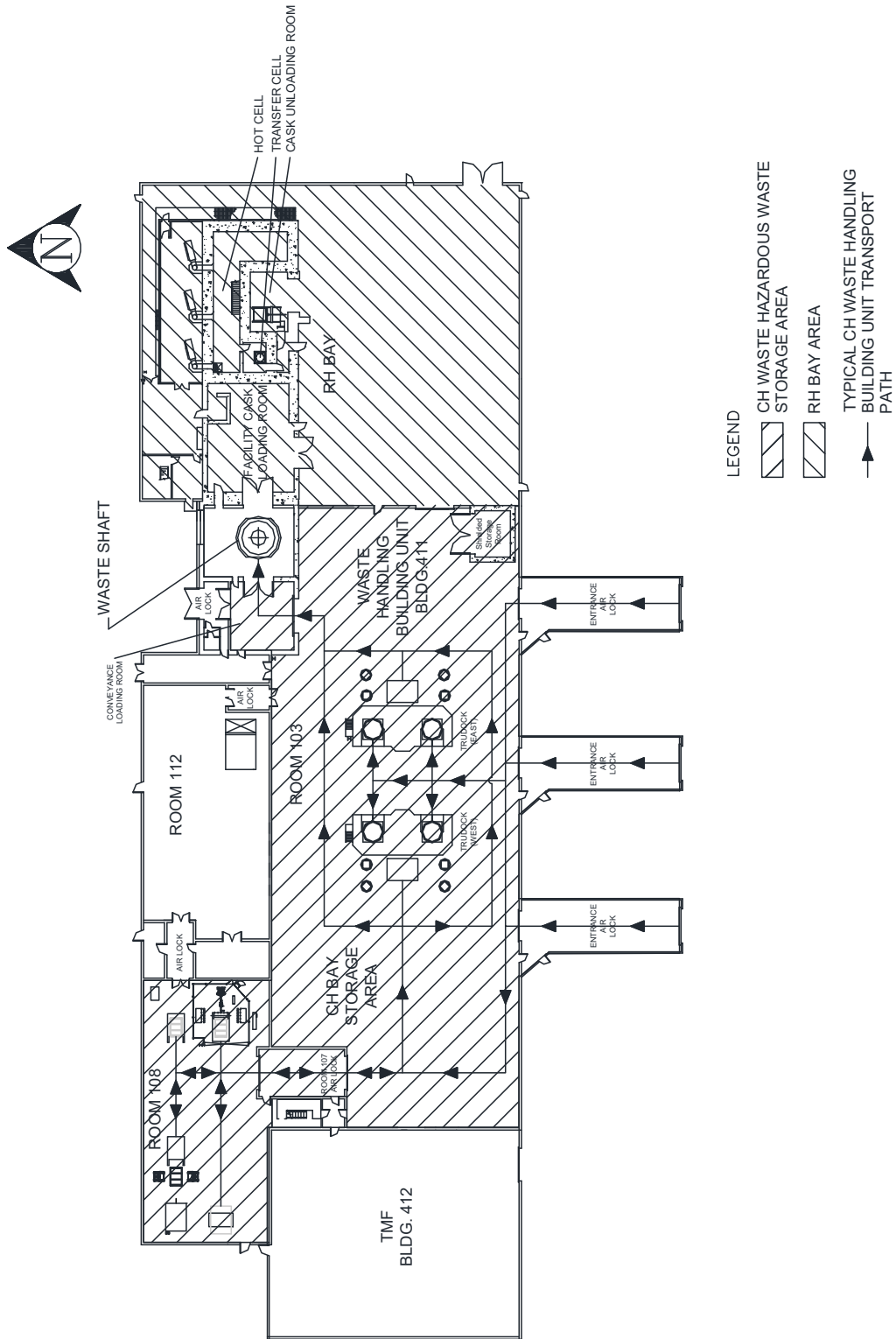


Figure M-60
Typical CH Mixed Waste Transport Routes in Waste Handling Building - Container Storage Unit

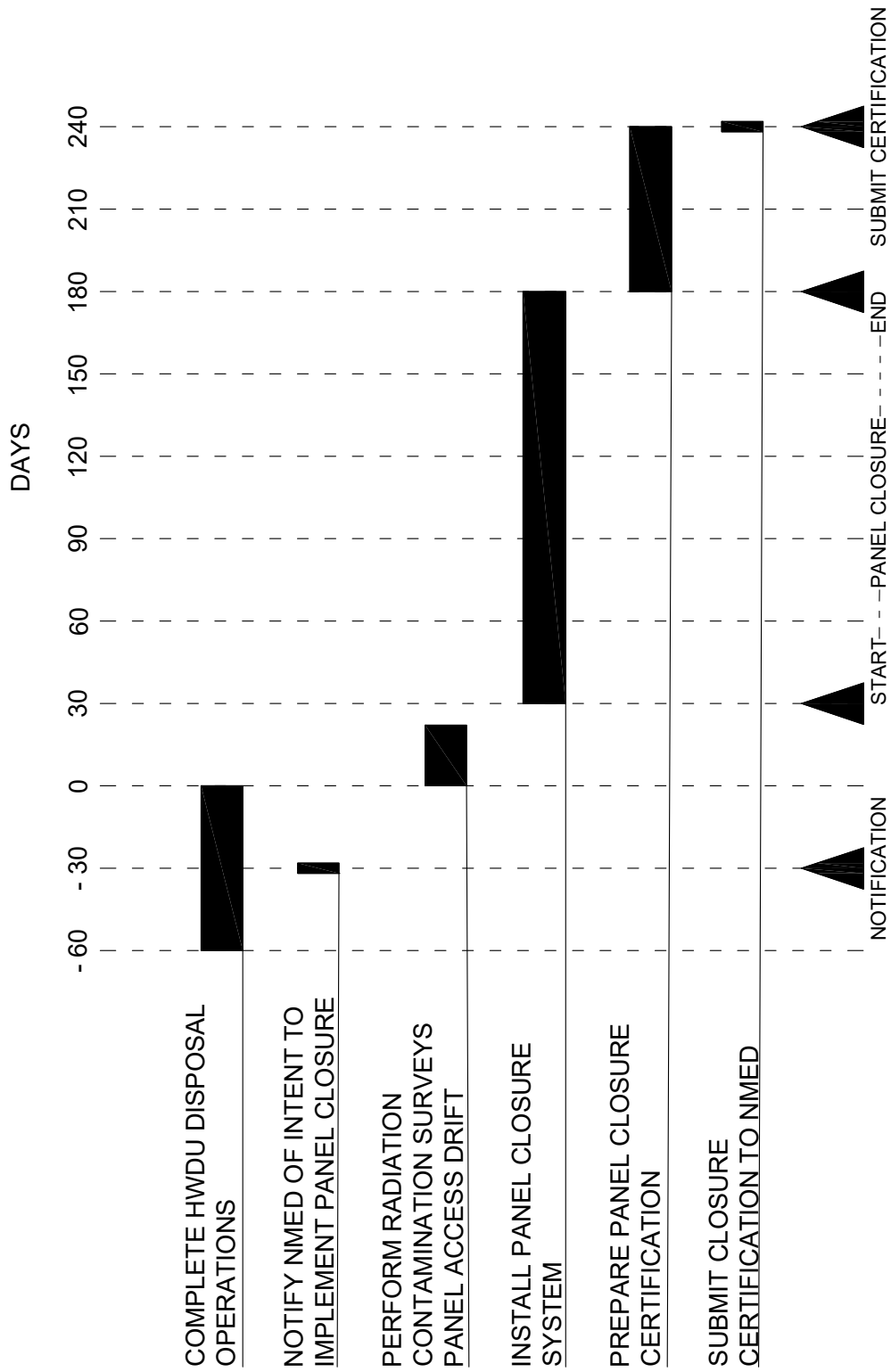


Figure M-61
WIPP Panel Closure Schedule

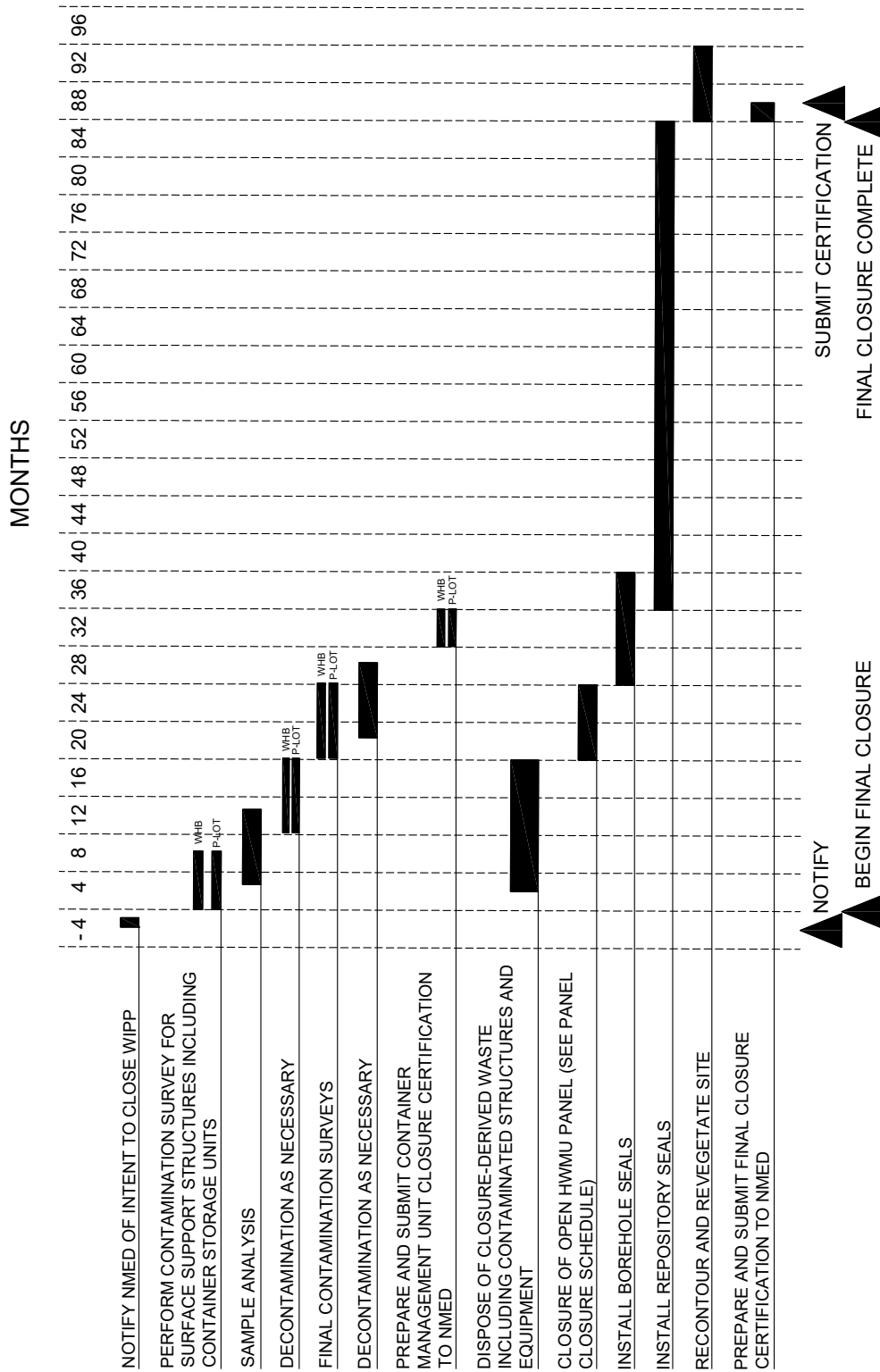
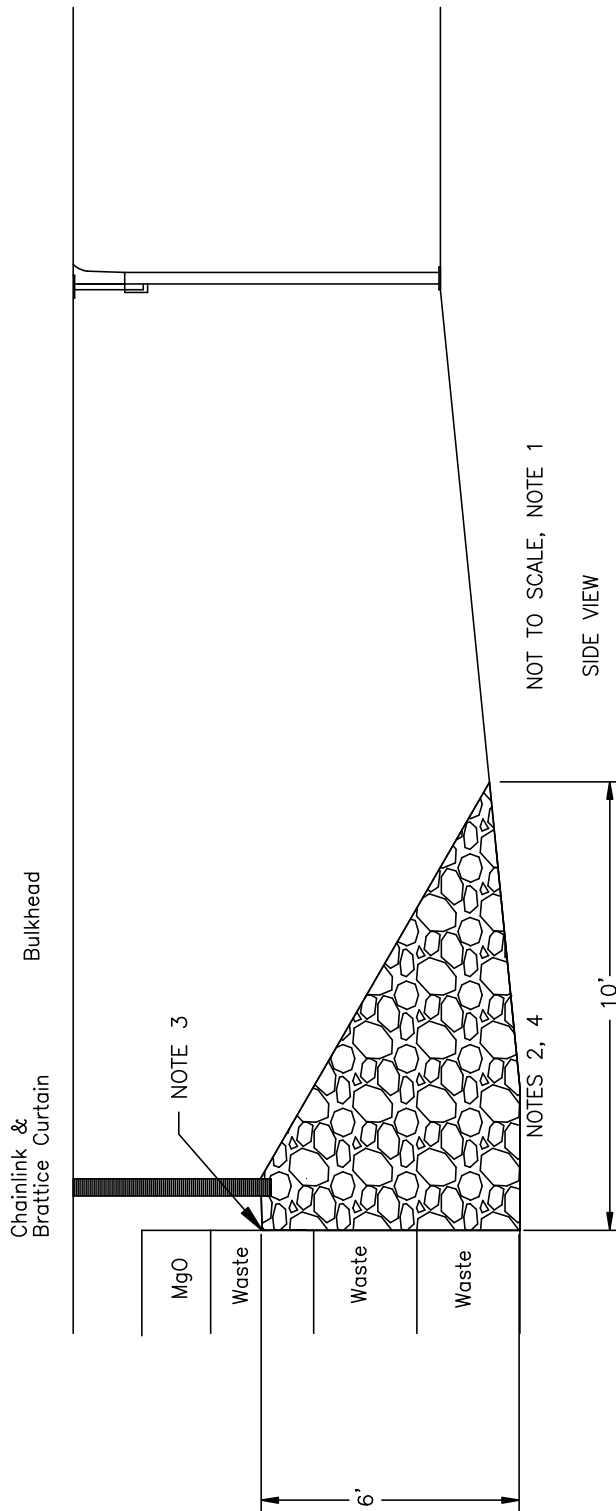


Figure M-62
WIPP Facility Final Closure 84-Month Schedule



NOTES

1. CONFIGURATION AND PLACEMENT OF THE SUBSTANTIAL BARRIER AND THE BULKHEAD DICTATED BY AS-FOUND (FIELD) CONDITIONS, AS DESIGNATED BY THE COGNIZANT ENGINEER.
2. SUBSTANTIAL BARRIER MATERIAL WILL CONSIST OF RUN-OF-MINE SALT OR OTHER SUITABLE NON-FLAMMABLE MATERIAL AS DESIGNATED BY THE COGNIZANT ENGINEER.
3. SUBSTANTIAL BARRIER MATERIAL SHOULD BE AGAINST THE WASTE FACE. THE HEIGHT OF THE SUBSTANTIAL BARRIER NEAR THE WASTE WILL BE AT LEAST EQUAL TO THE HEIGHT OF THE BOTTOM OF THE TOP ROW OF WASTE.
4. DIMENSIONS INDICATED ARE MINIMUMS. THE HEIGHT OF THE SUBSTANTIAL BARRIER IS MEASURED AT THE WASTE FACE. THE LENGTH OF THE SUBSTANTIAL BARRIER IS MEASURED FROM THE BOTTOM OF THE WASTE FACE TO THE TOE OF THE SUBSTANTIAL BARRIER MATERIAL.

Figure M-63
Typical Substantial Barrier and Bulkhead

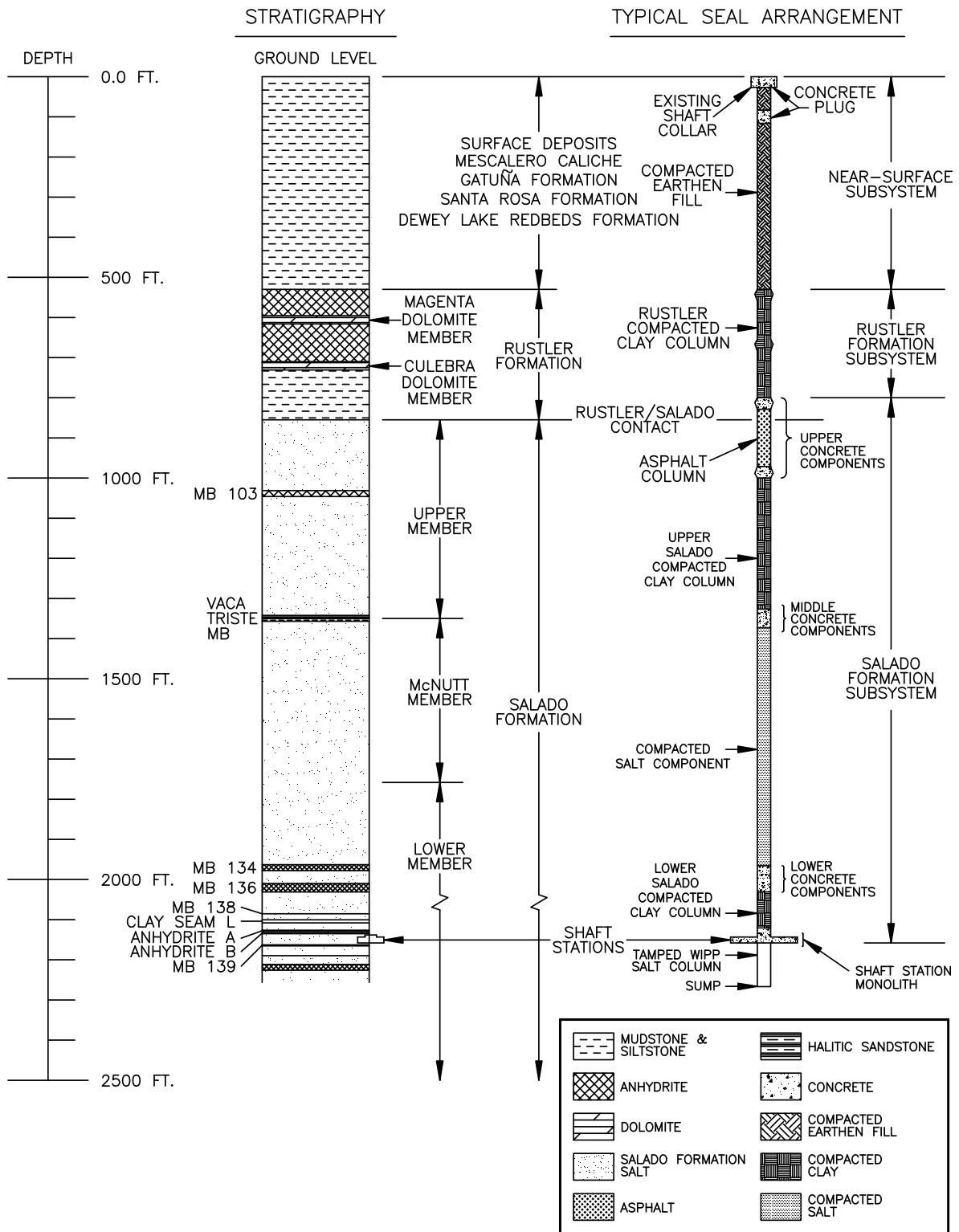


Figure M-64
Typical Shaft Sealing System

Waste Isolation Pilot Plant
 Hazardous Waste Facility Permit
 Attachment M
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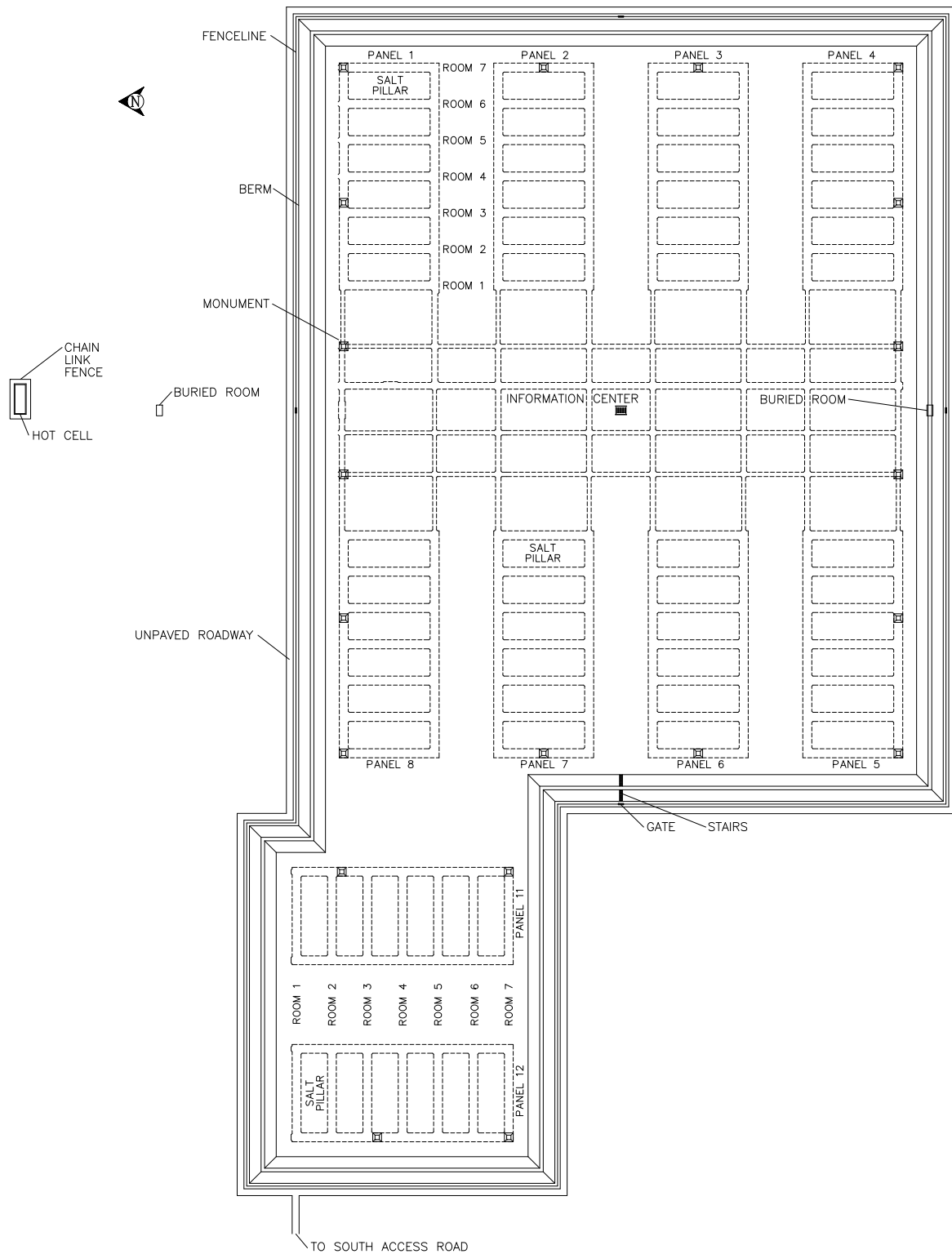


Figure M-65
Perimeter Fenceline and Roadway

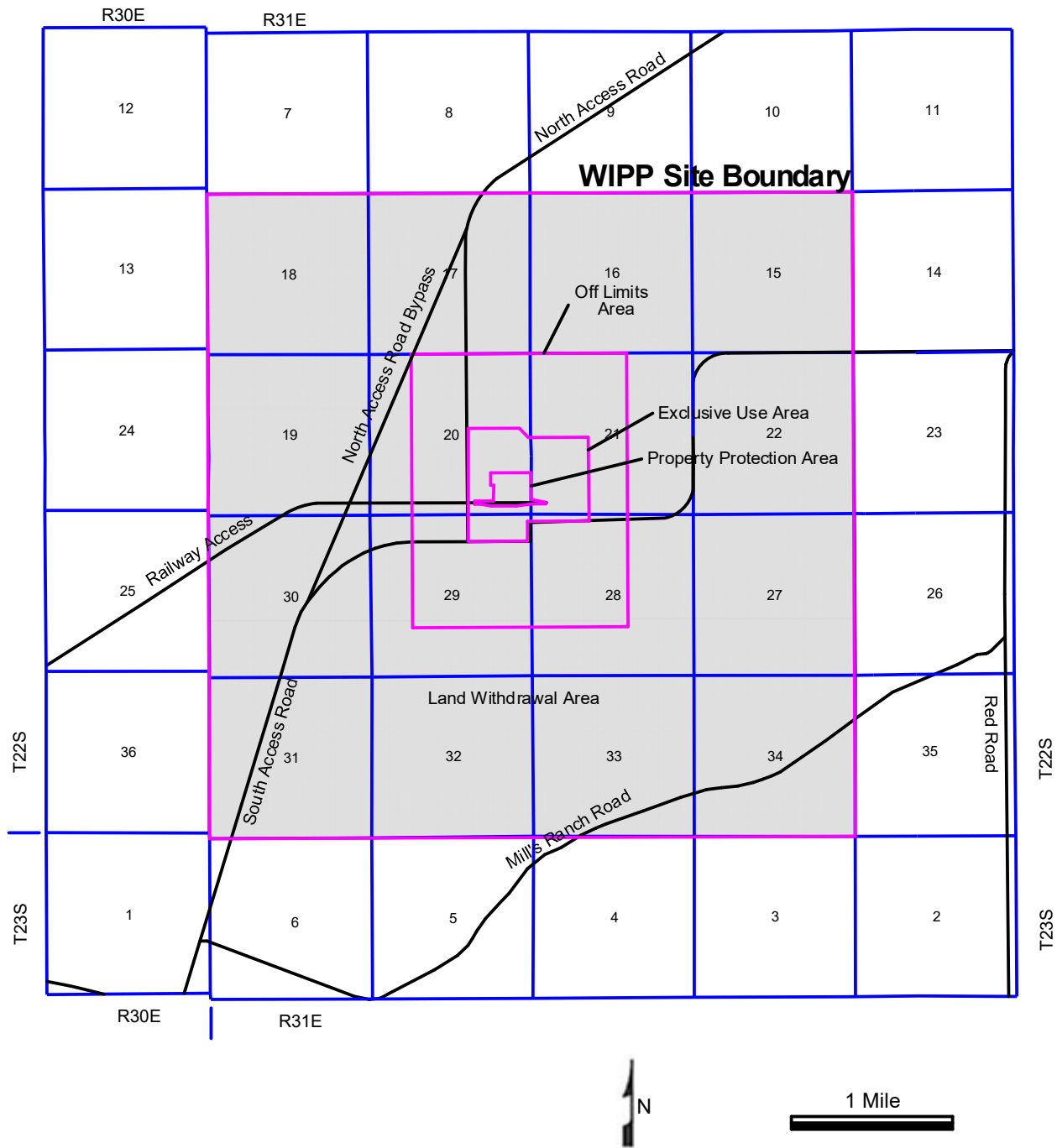


Figure M-66
WIPP Facility Boundaries Showing 16-square-Mile Land Withdrawal Boundary

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SYSTEM	SERIES	GROUP	FORMATION	MEMBER
RECENT	RECENT		SURFICIAL DEPOSITS	
QUATERNARY	PLEISTOCENE		MESCALERO CALICHE	
			GATUÑA	
TERTIARY	MID-PLIOCENE		OGALLALA	
TRIASSIC		DOCKUM	SANTA ROSA	
PERMIAN	OCHOAN		DEWEY LAKE REDBEDS	
			RUSTLER	FORTY-NINER
				MAGENTA DOLOMITE
				TAMARISK
				CULEBRA DOLOMITE
				LOS MEDAÑOS
			SALADO	UPPER
	MCNUTT POTASH			
	LOWER			
	CASTILE			
	GUADALUPIAN	DELAWARE MOUNTAIN	BELL CANYON	
			CHERRY CANYON	
			BRUSHY CANYON	

Figure M-67
Site Geologic Column

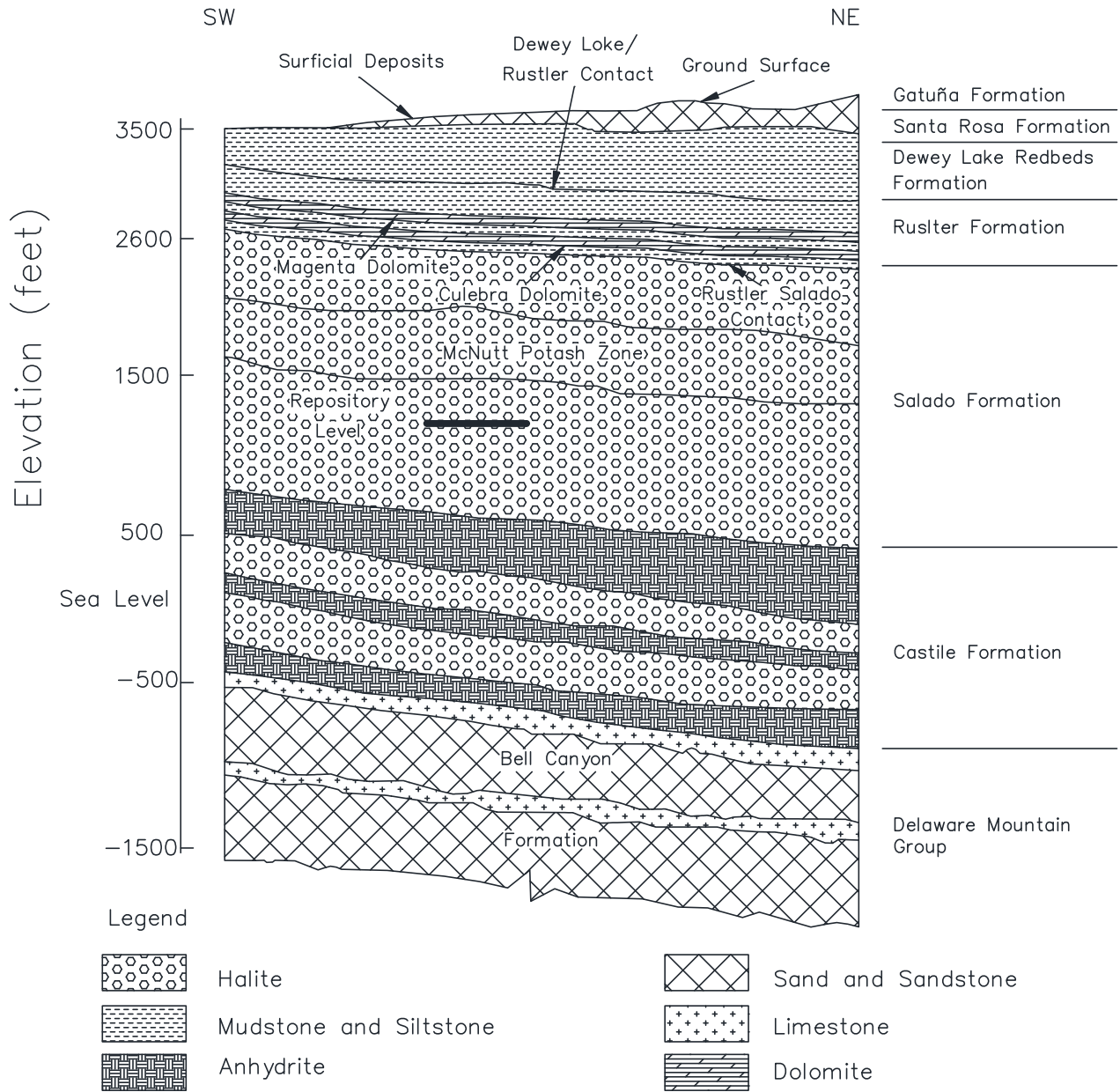
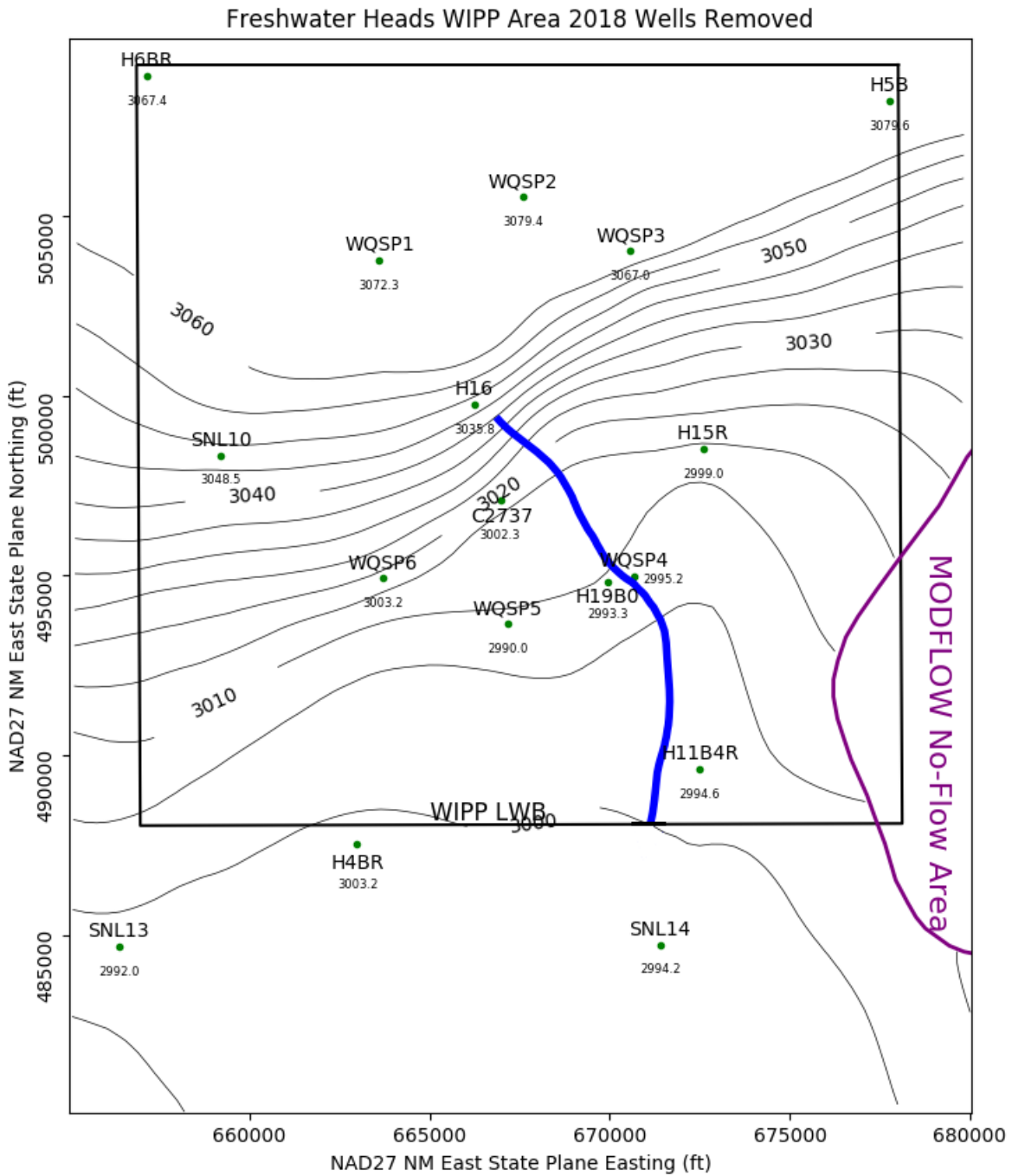


Figure M-68
Generalized Stratigraphic Cross Section above the Bell Canyon Formation at the WIPP Site



Model generated September 2019 utilizing May 2018 freshwater head contours with observed heads (ft) listed at each well. Contours are at 5 ft intervals with the blue line particle track from the waste handling shaft to the WIPP Land Withdrawal Boundary. The purple line is a constant head boundary representing the Rustler halite margin.

Figure M-69
Culebra Freshwater-Head Potentiometric Surface

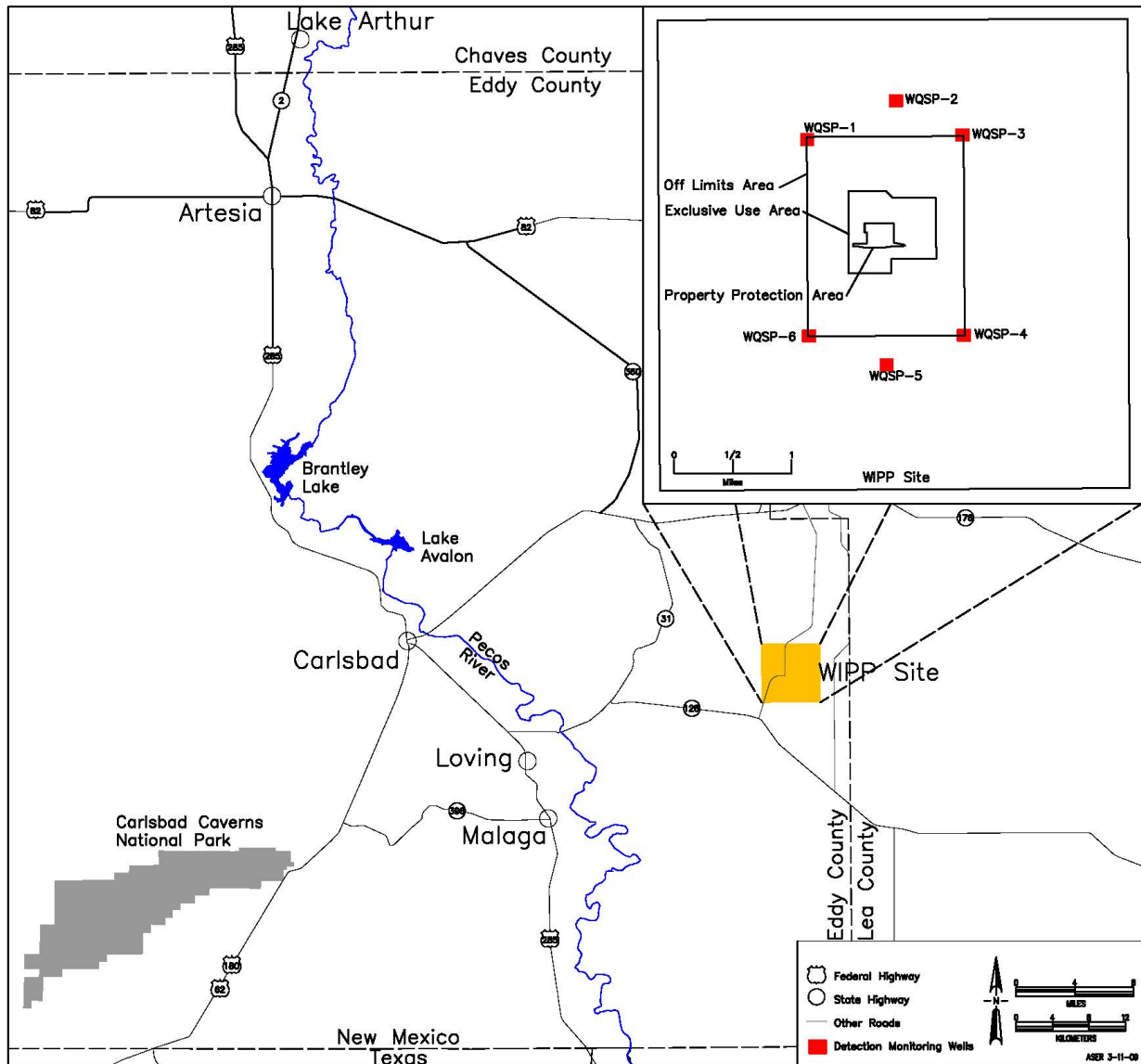
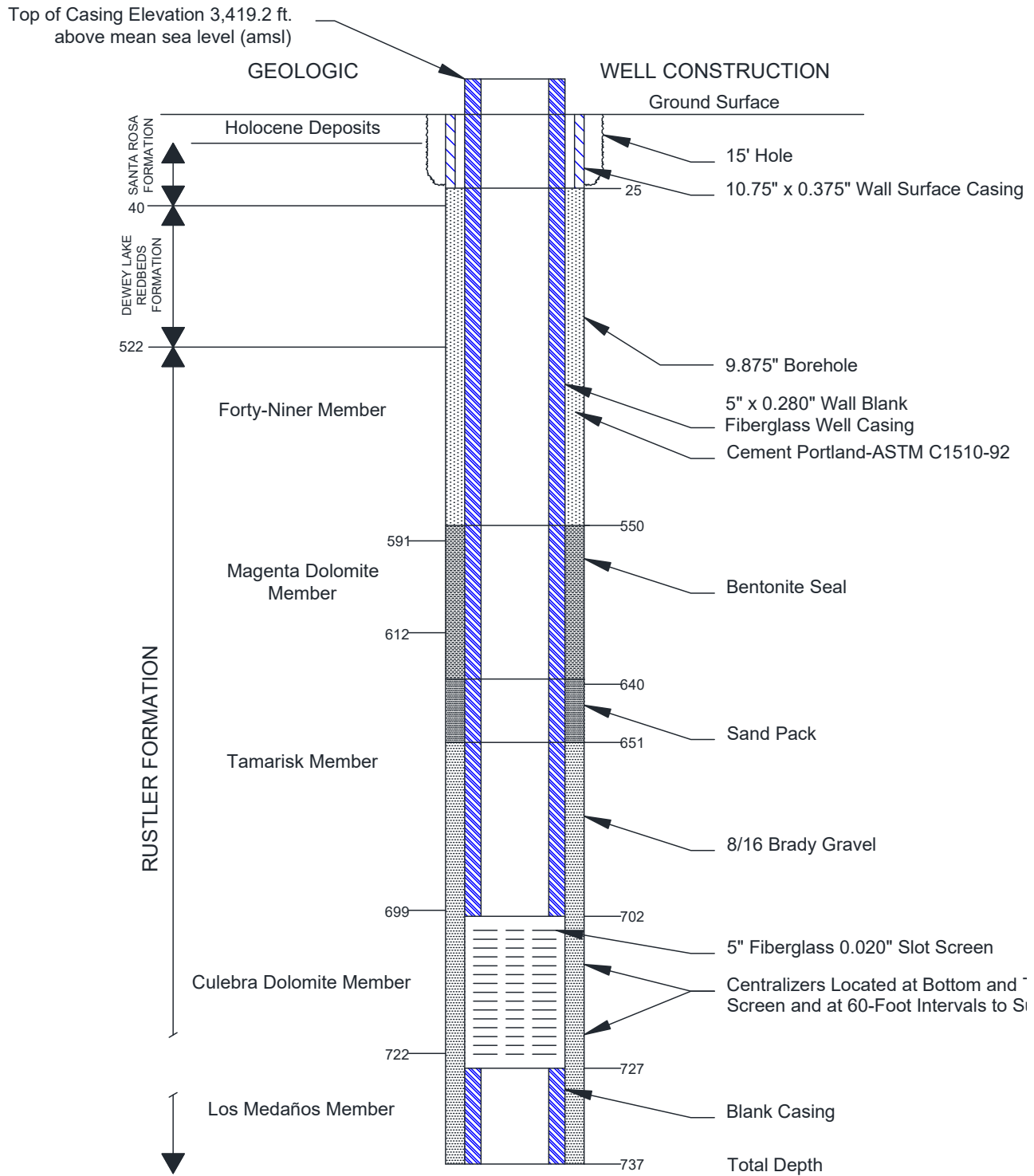
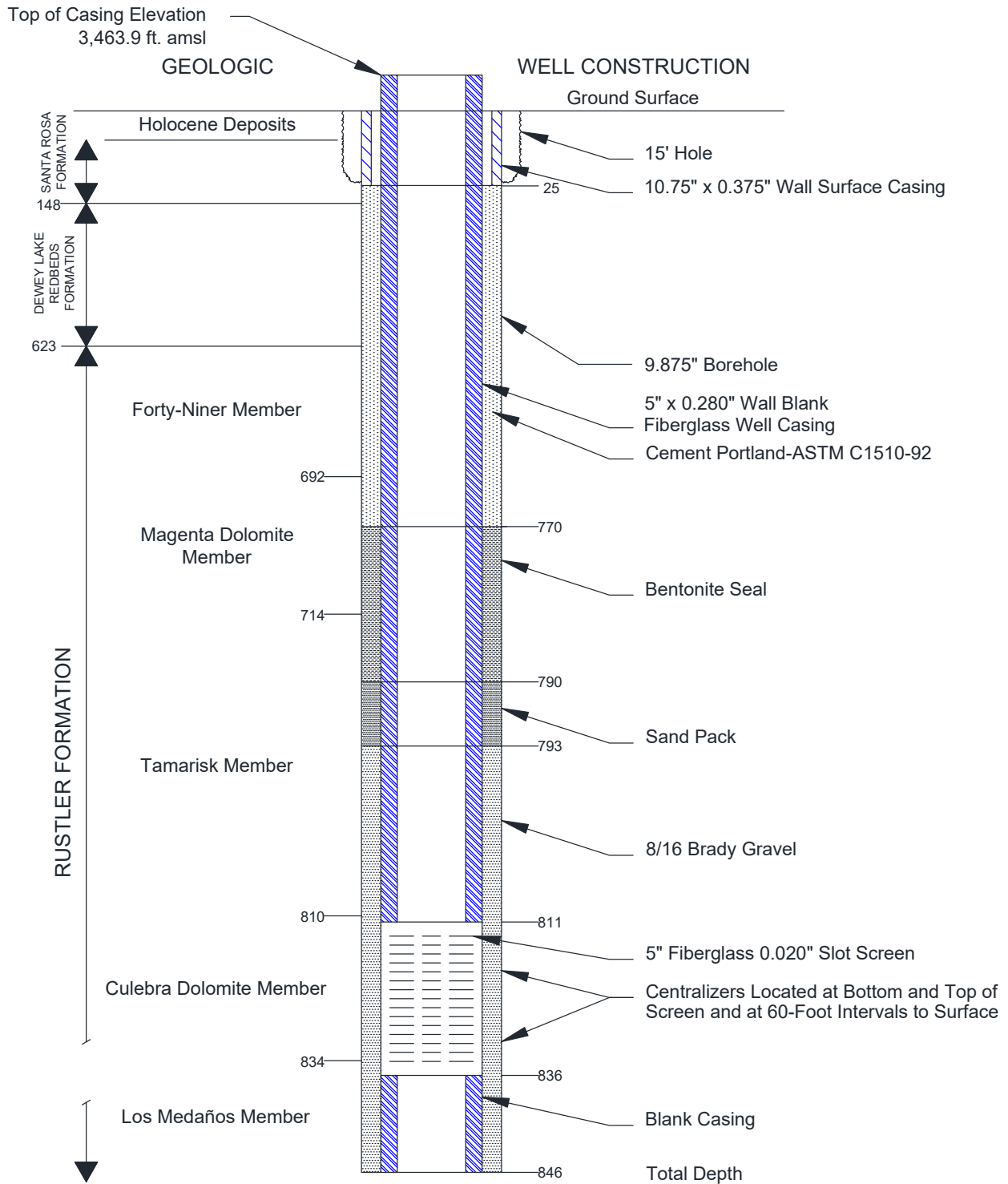


Figure M-70
Detection Monitoring Well Locations



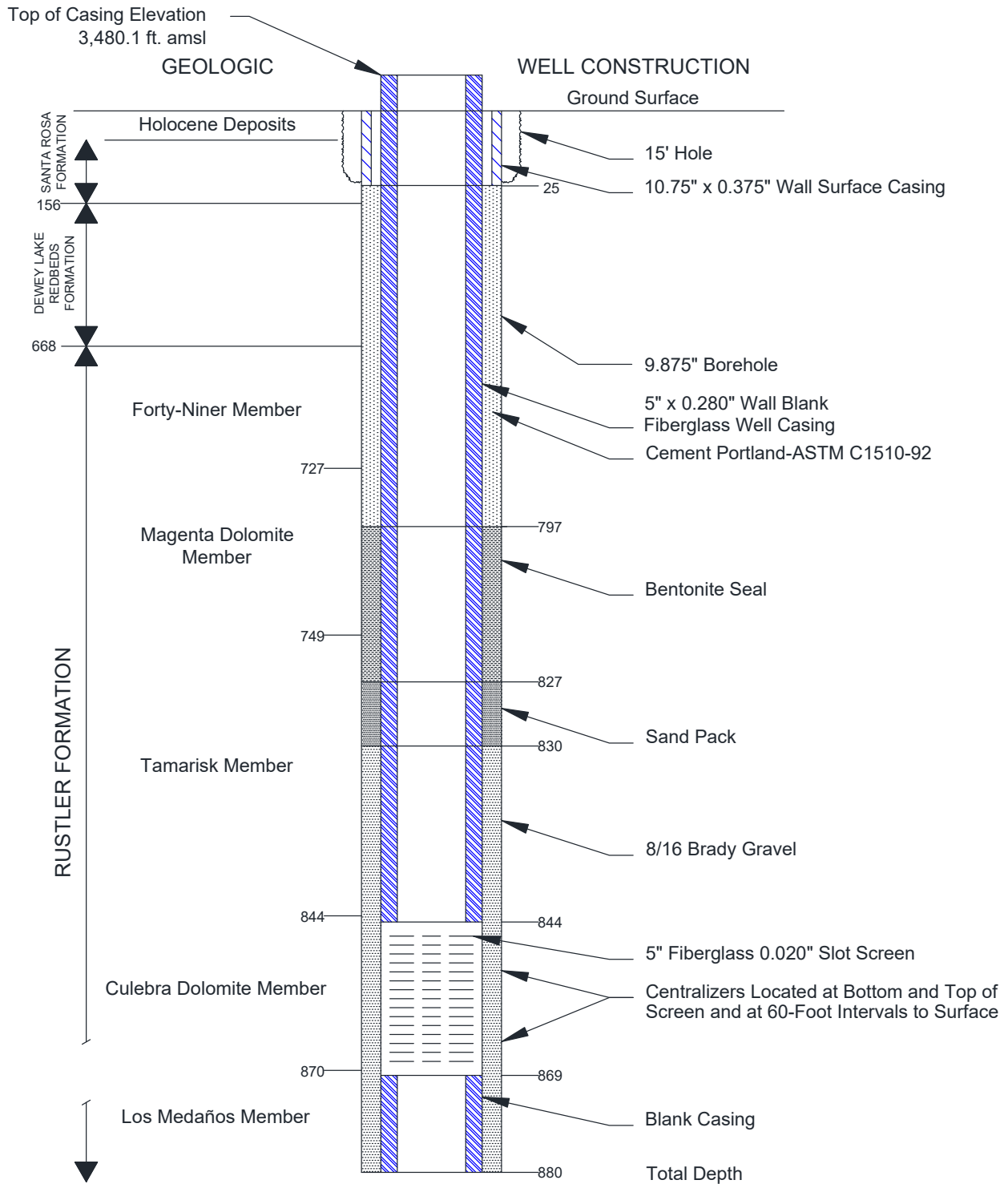
Note: Depths in feet below ground surface (bgs) approximate.

Figure M-71
As-Built Configuration of Well WQSP-1



Note: Depths in feet bgs approximate.

Figure M-72
As-Built Configuration of Well WQSP-2



Note: Depths in feet bgs approximate.

Figure M-73
As-Built Configuration of Well WQSP-3

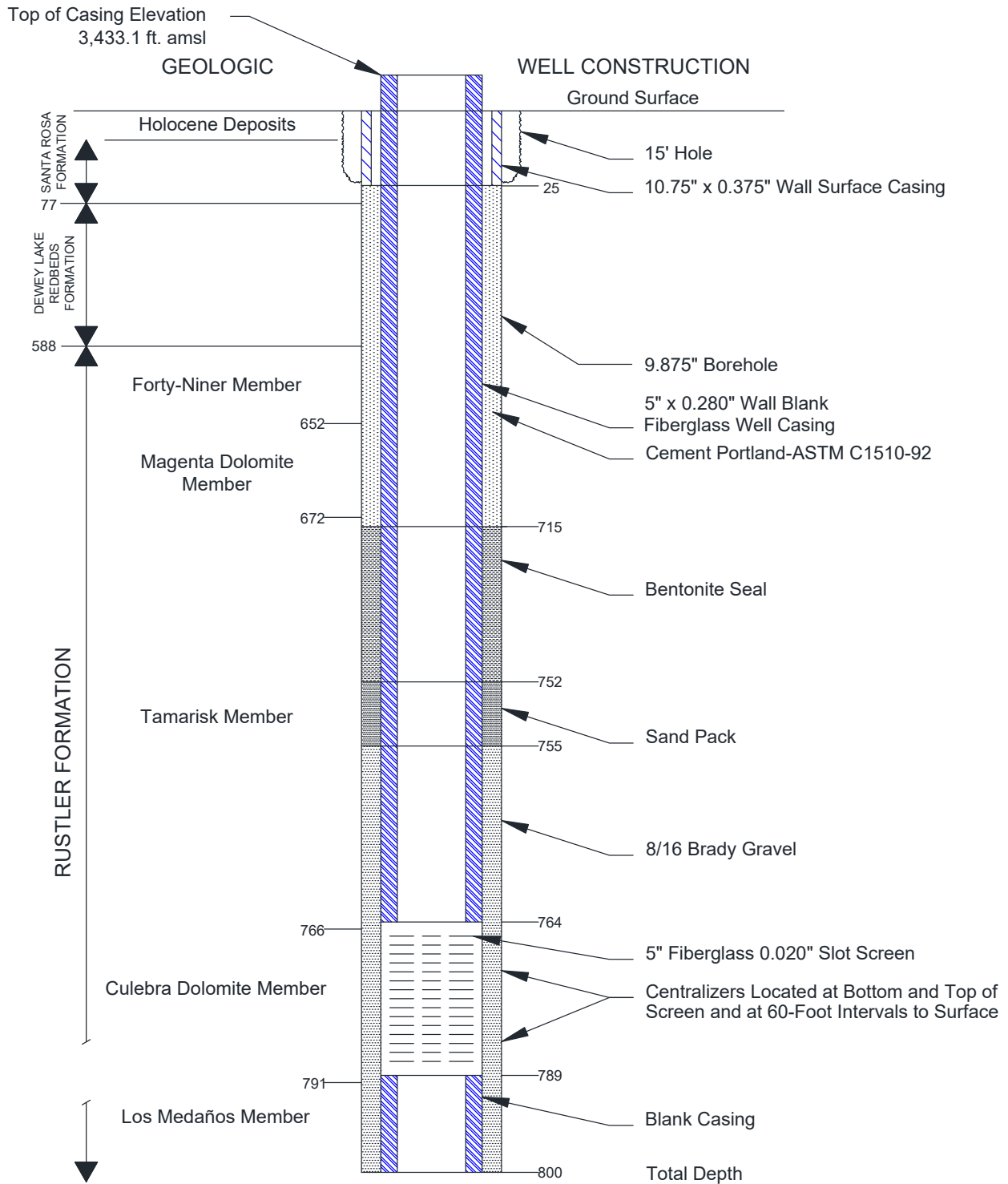
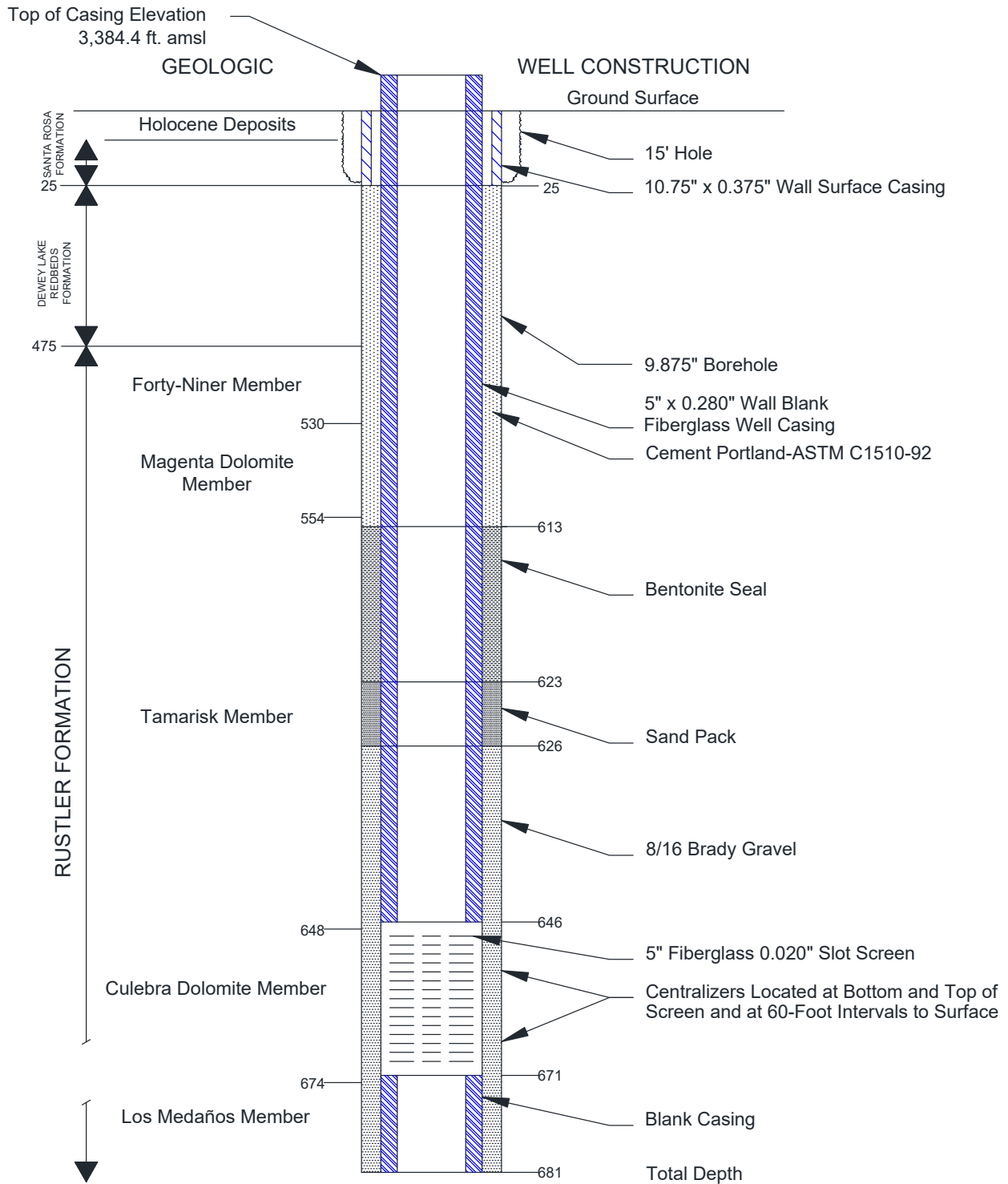
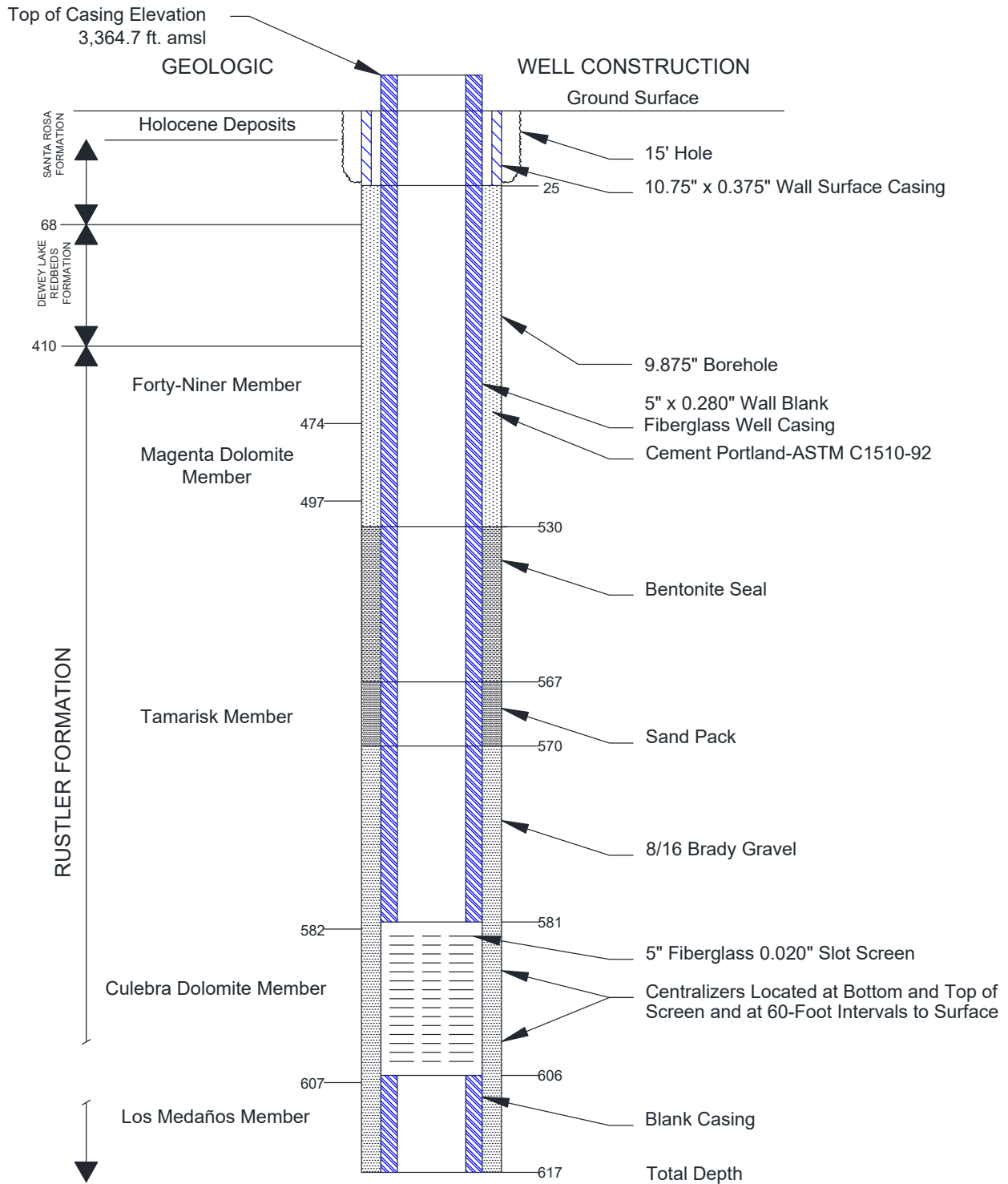


Figure M-74
As-Built Configuration of Well WQSP-4



Note: Depths in feet bgs approximate.

Figure M-75
As-Built Configuration of Well WQSP-5



Note: Depths in feet bgs approximate.

Figure M-76
As-Built Configuration of Well WQSP-6

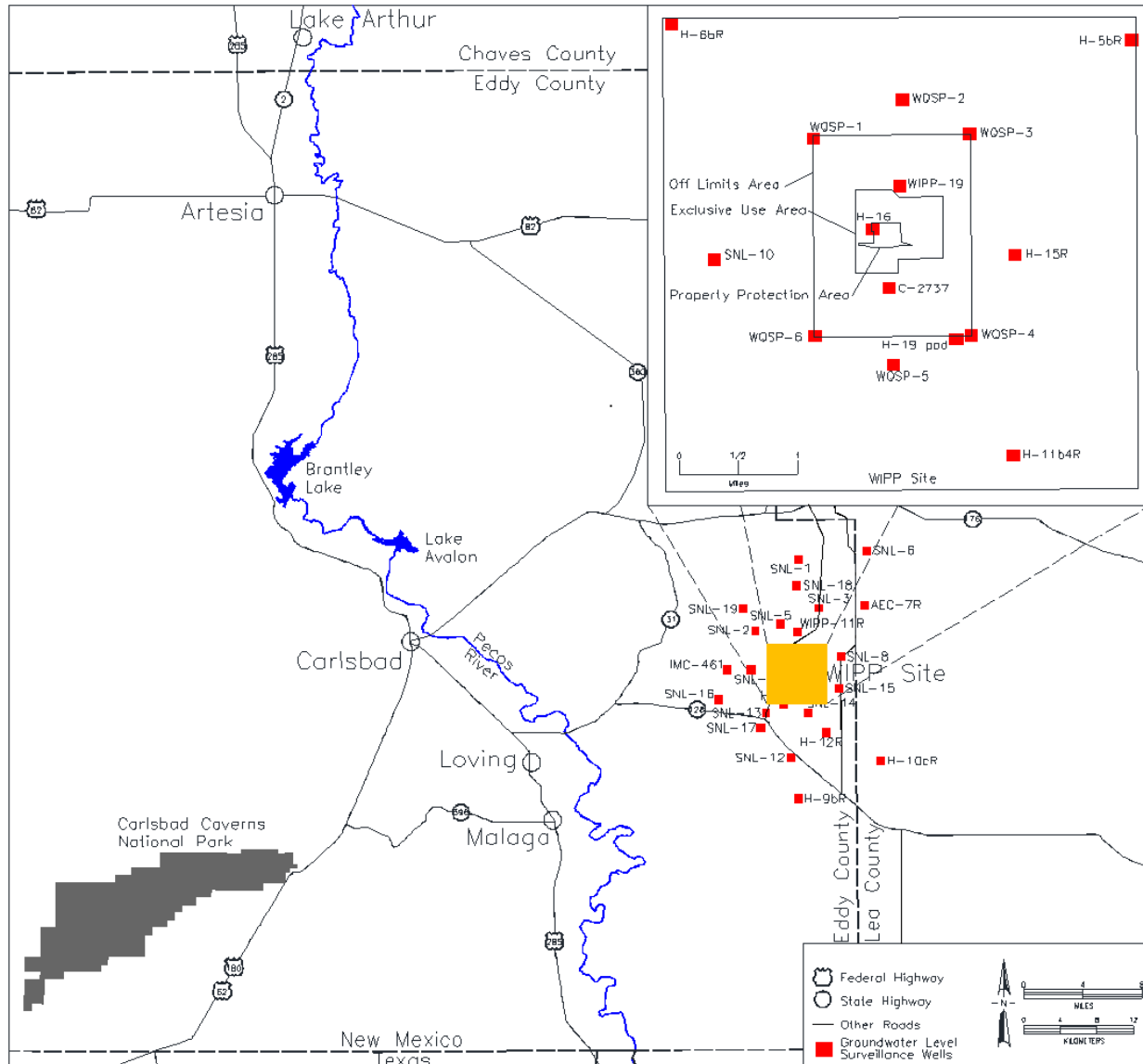
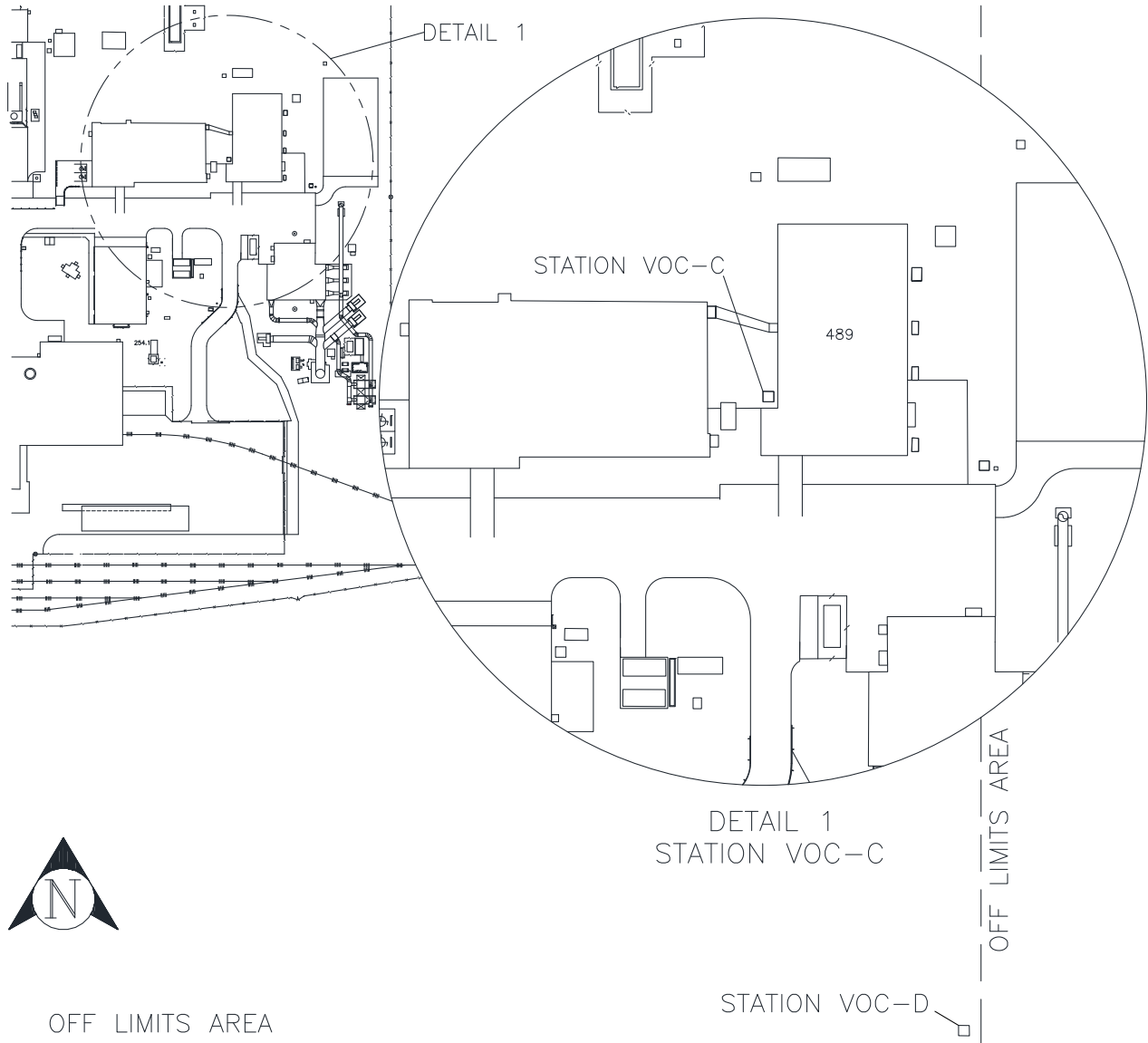


Figure M-77
Groundwater Level Surveillance Wells
 (inset represents the Groundwater Level Surveillance Wells within the WIPP Land Withdrawal Area)



(see Figure D-1 and Figure D-1a for a detailed map and legend of the surface buildings)

Figure M-78
Repository VOC Monitoring Locations

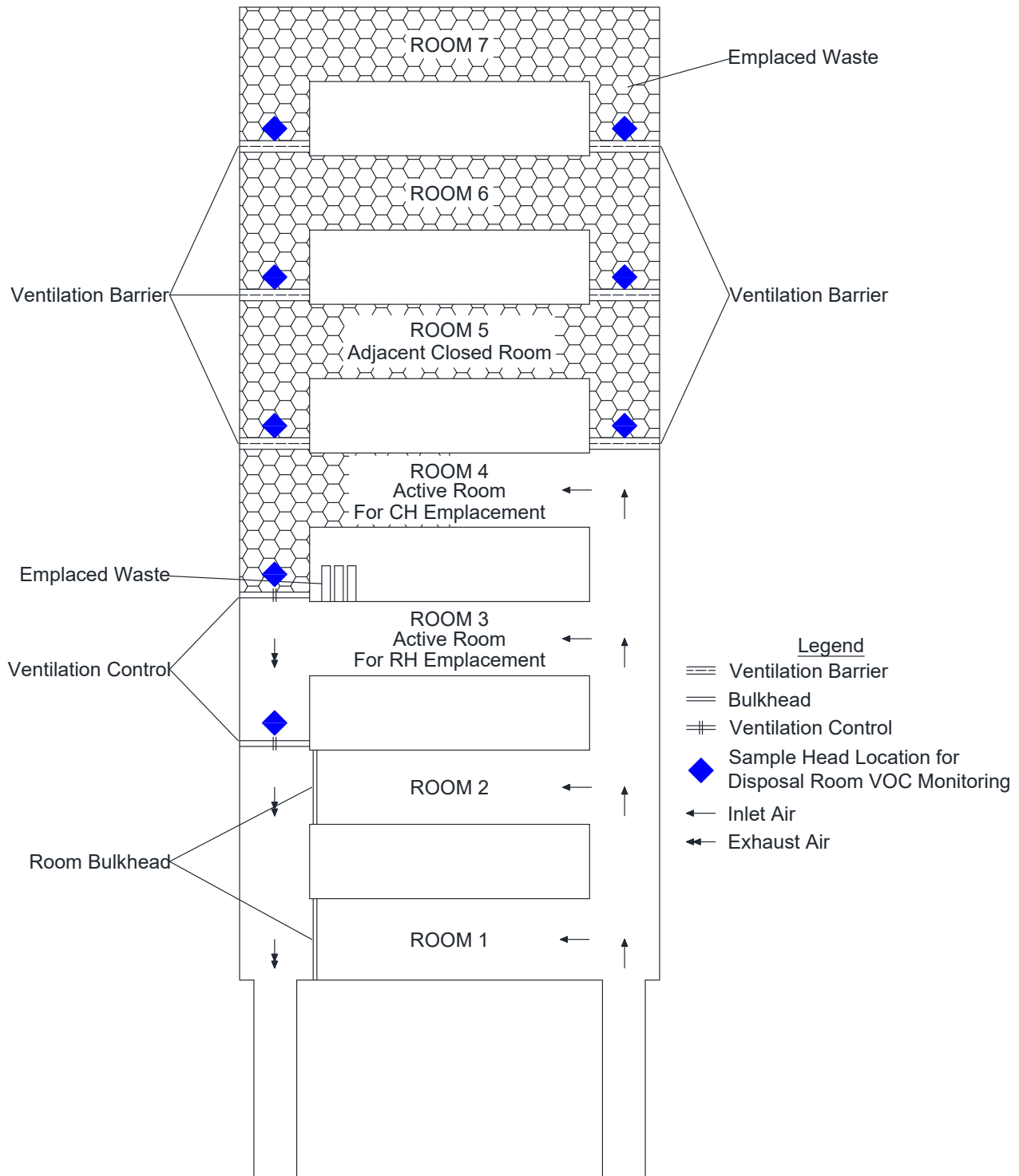


Figure M-79
Typical Disposal Room VOC Monitoring Locations

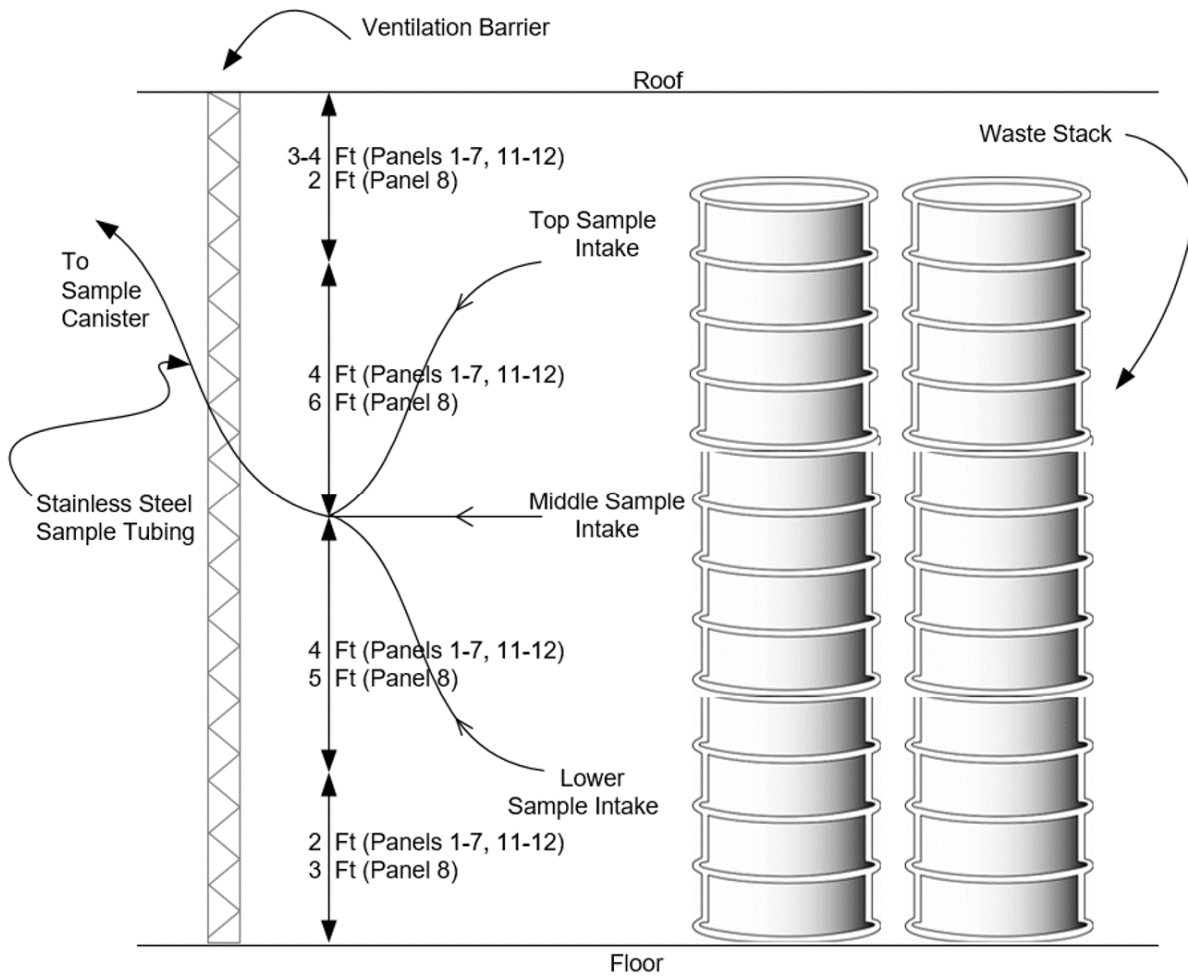
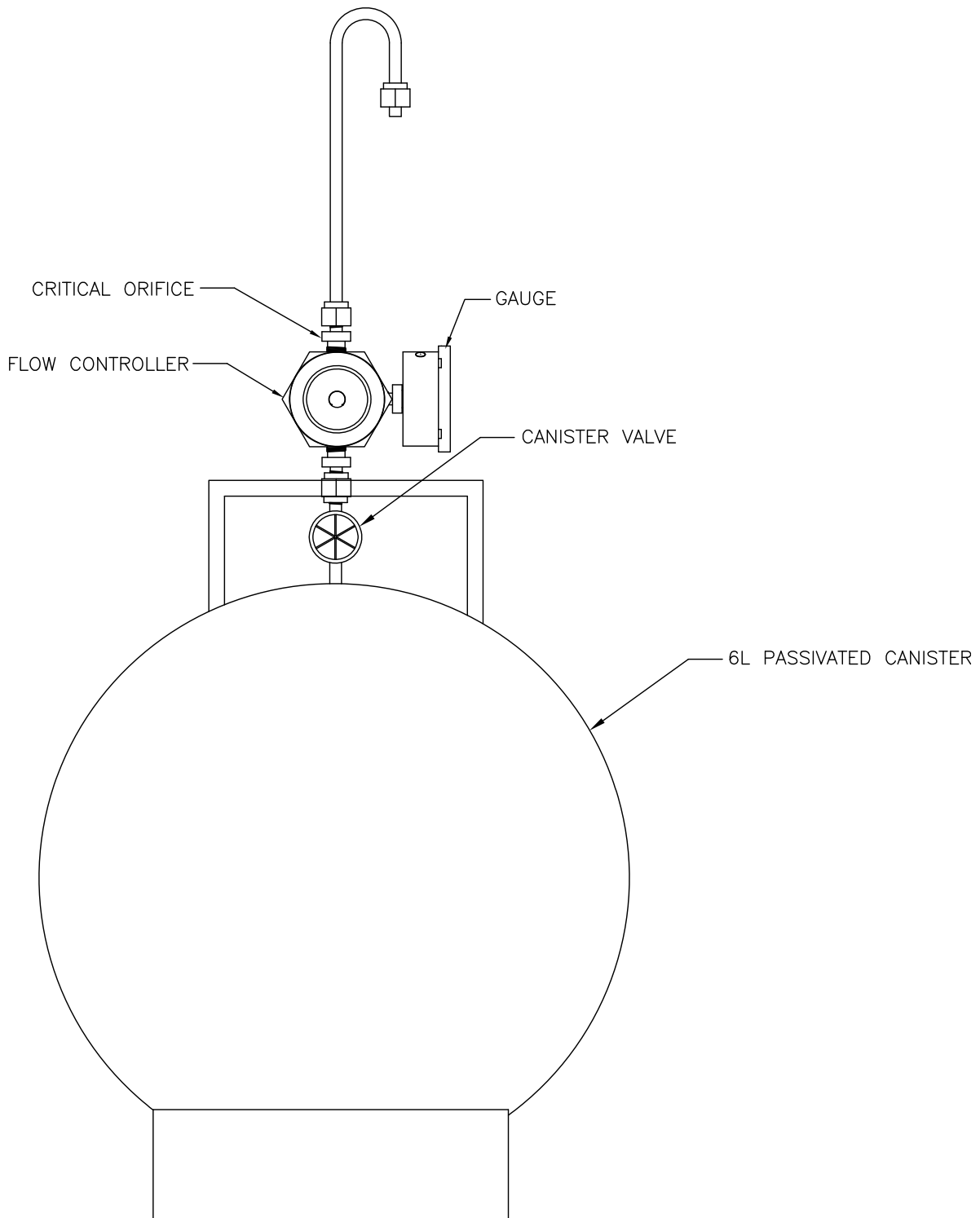
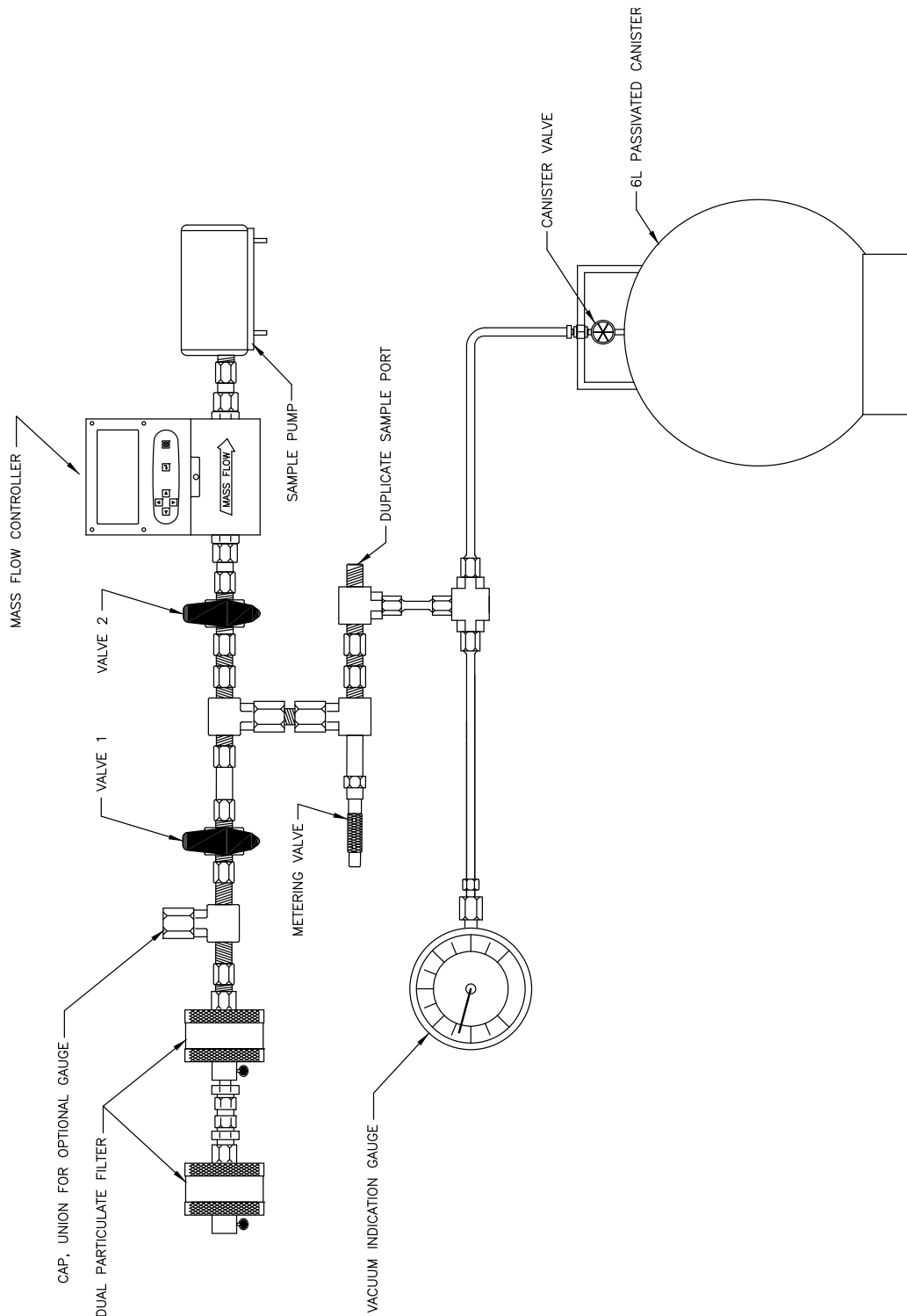


Figure M-80
Typical Disposal Room Sample Head Arrangement



TYPICAL PASSIVE AIR-SAMPLING KIT WITH CANISTER

Figure M-81
VOC Monitoring System Design



TYPICAL SUBATMOSPHERIC SAMPLING ASSEMBLY WITH CANISTER

Figure M-82
VOC Monitoring System Design (continued)