

FIGURE 4.1
CASKS IN ROCK CAVERNS
SITE PLAN

FOR SECTIONS SEE SHEET 2.

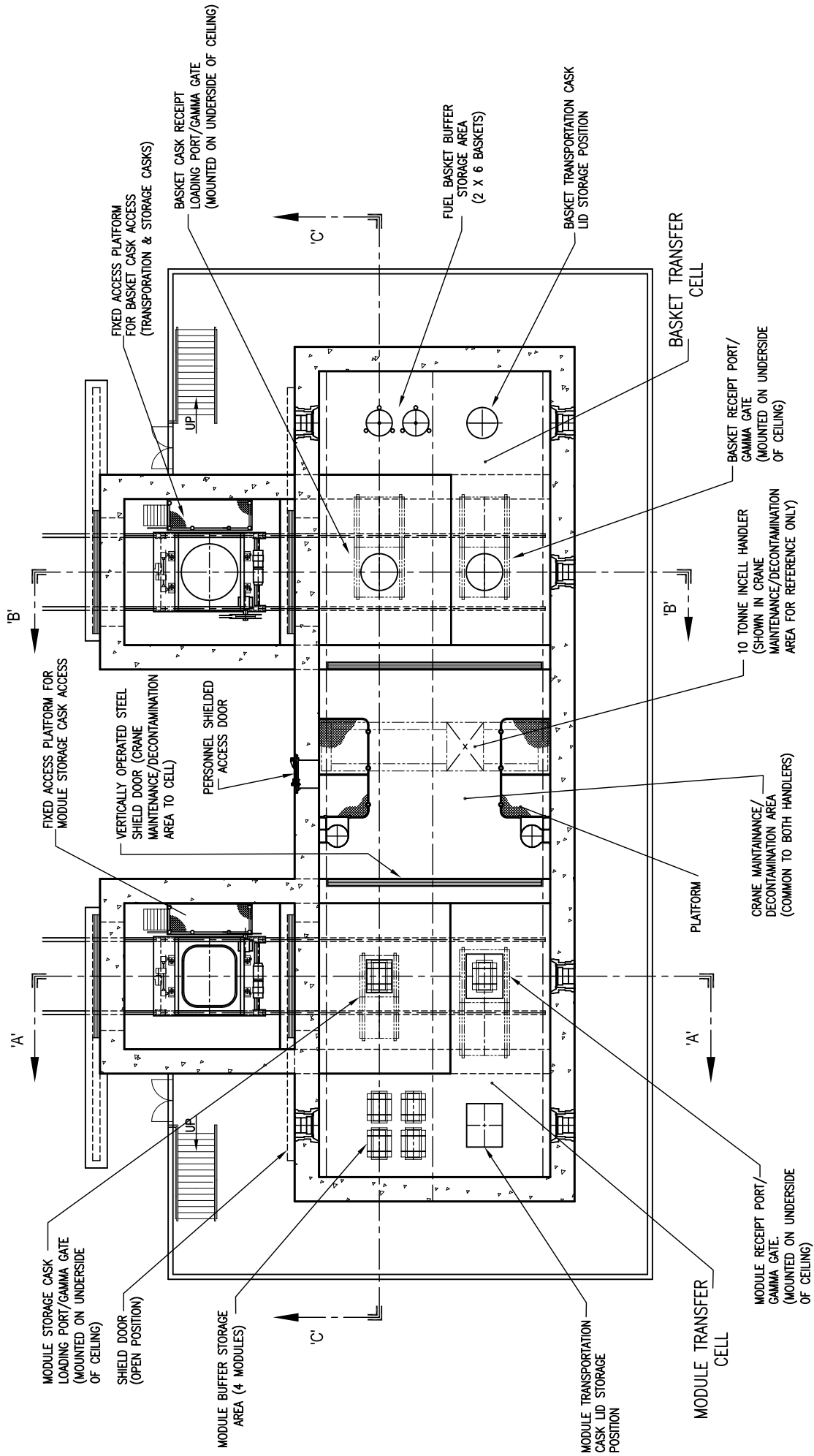
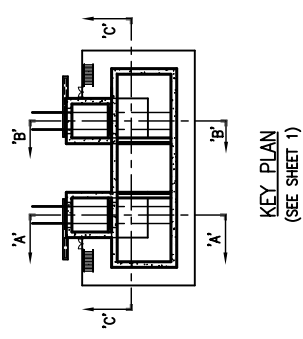
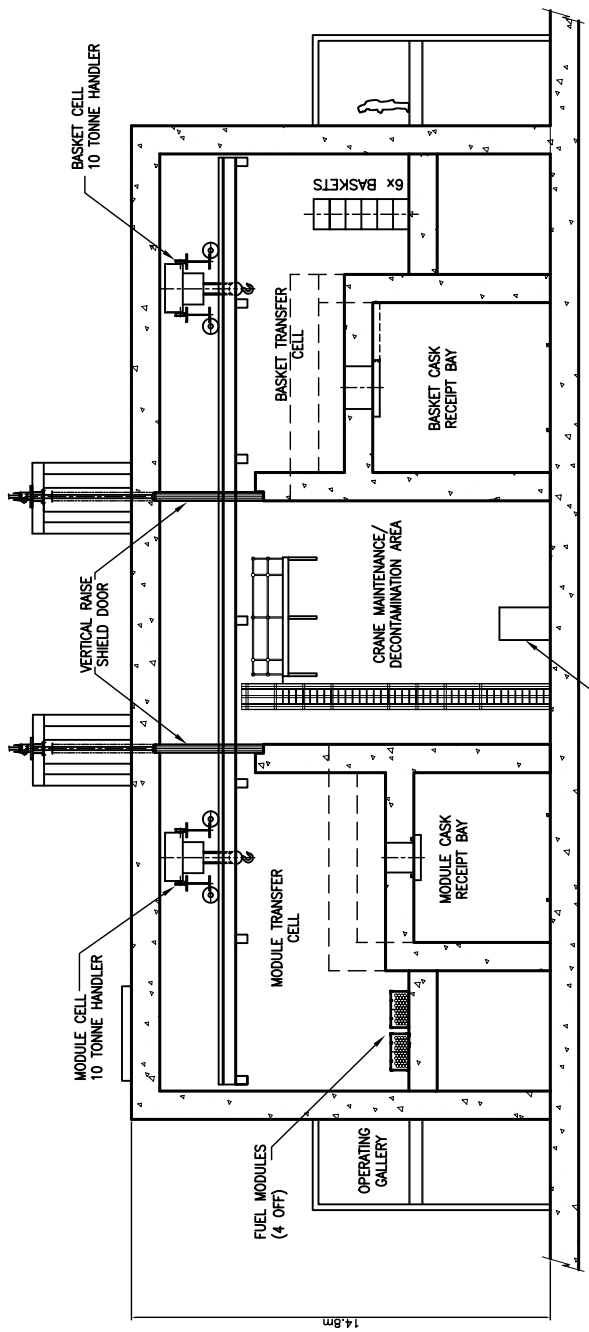
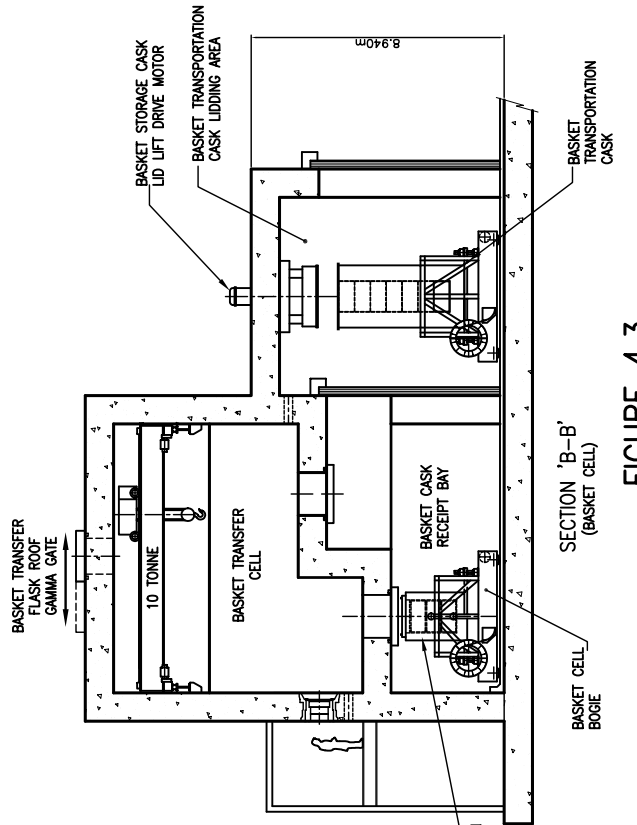


FIGURE 4.2
SHIELDED CELL LAYOUT
CASKS IN ROCK CAVERNS



SECTION 'C-C'



SECTION 'A-A' (MODULE CELL)

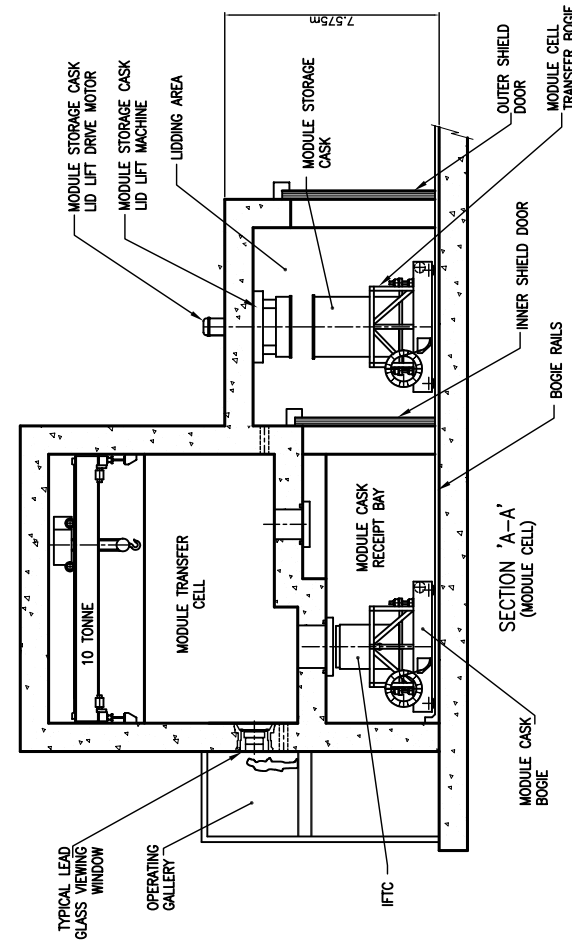
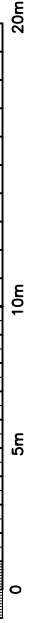


FIGURE 4.3
SHIELDED CELL - SECTIONS
CASKS IN ROCK CAVERNS



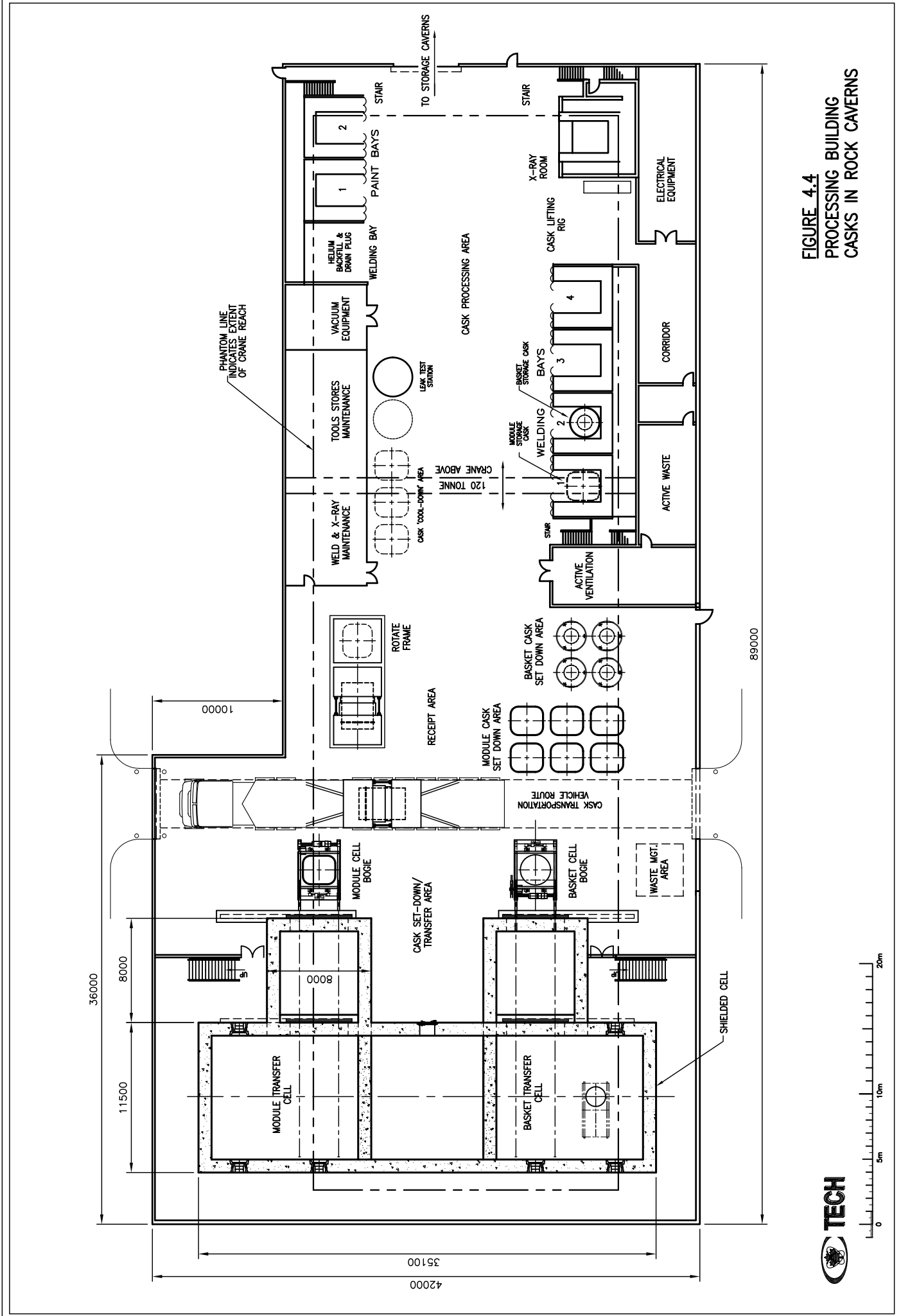


FIGURE 4.4
PROCESSING BUILDING
CASKS IN ROCK CAVERNS

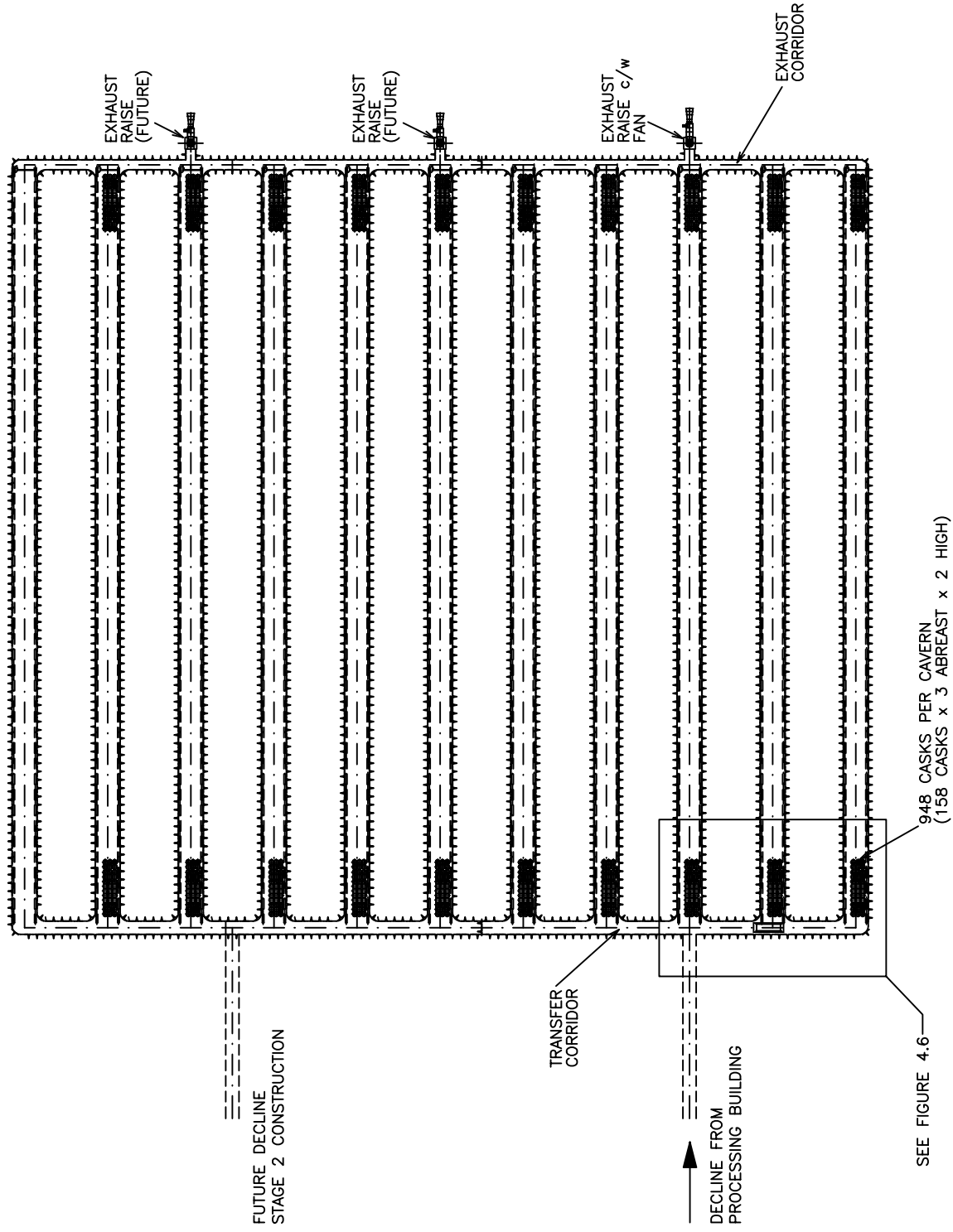
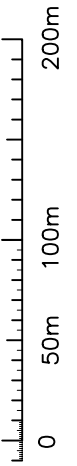


FIGURE 4.5
CASKS IN ROCK CAVERNS
STORAGE COMPLEX - PLAN

SEE FIGURE 4.6
 948 CASKS PER CAVERN
 (158 CASKS x 3 ABREAST x 2 HIGH)



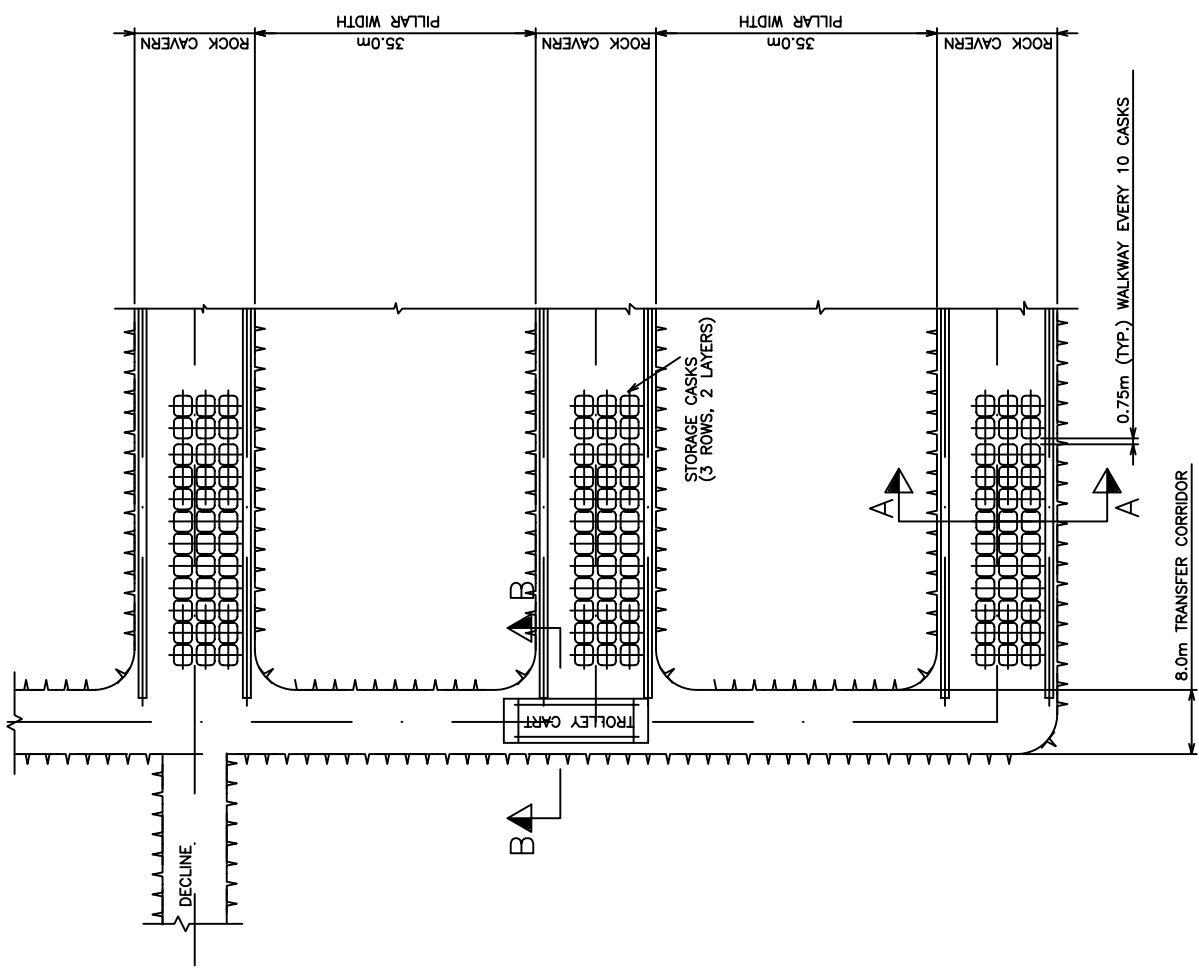


FIGURE 4.6
CASKS IN ROCK CAVERNS
STORAGE CAVERNS – PART PLAN
(FROM FIGURE 4.5)



GRADE

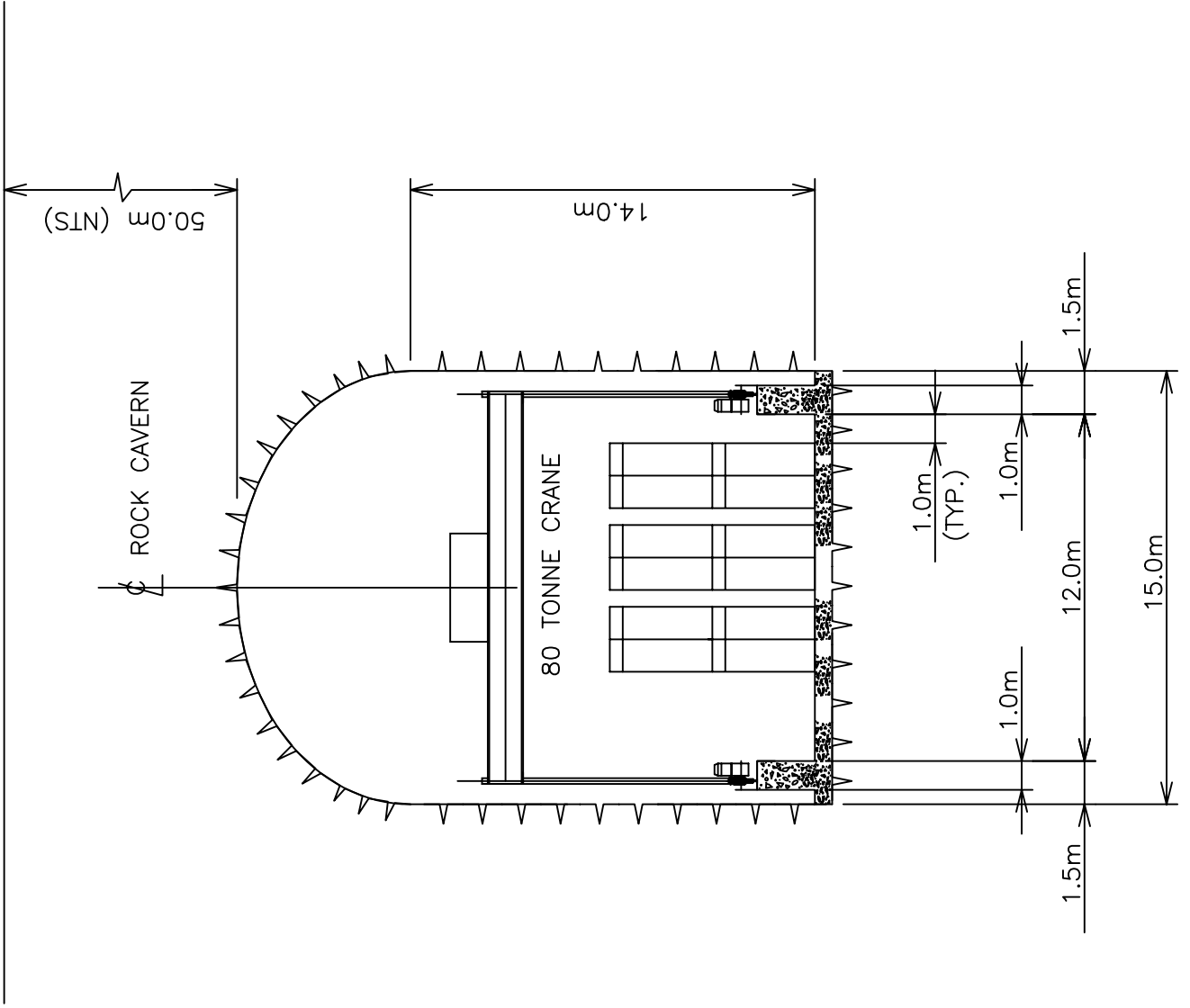


FIGURE 4.7
CASKS IN ROCK CAVERNS
SECTION A-A
(FROM FIG 4.6)

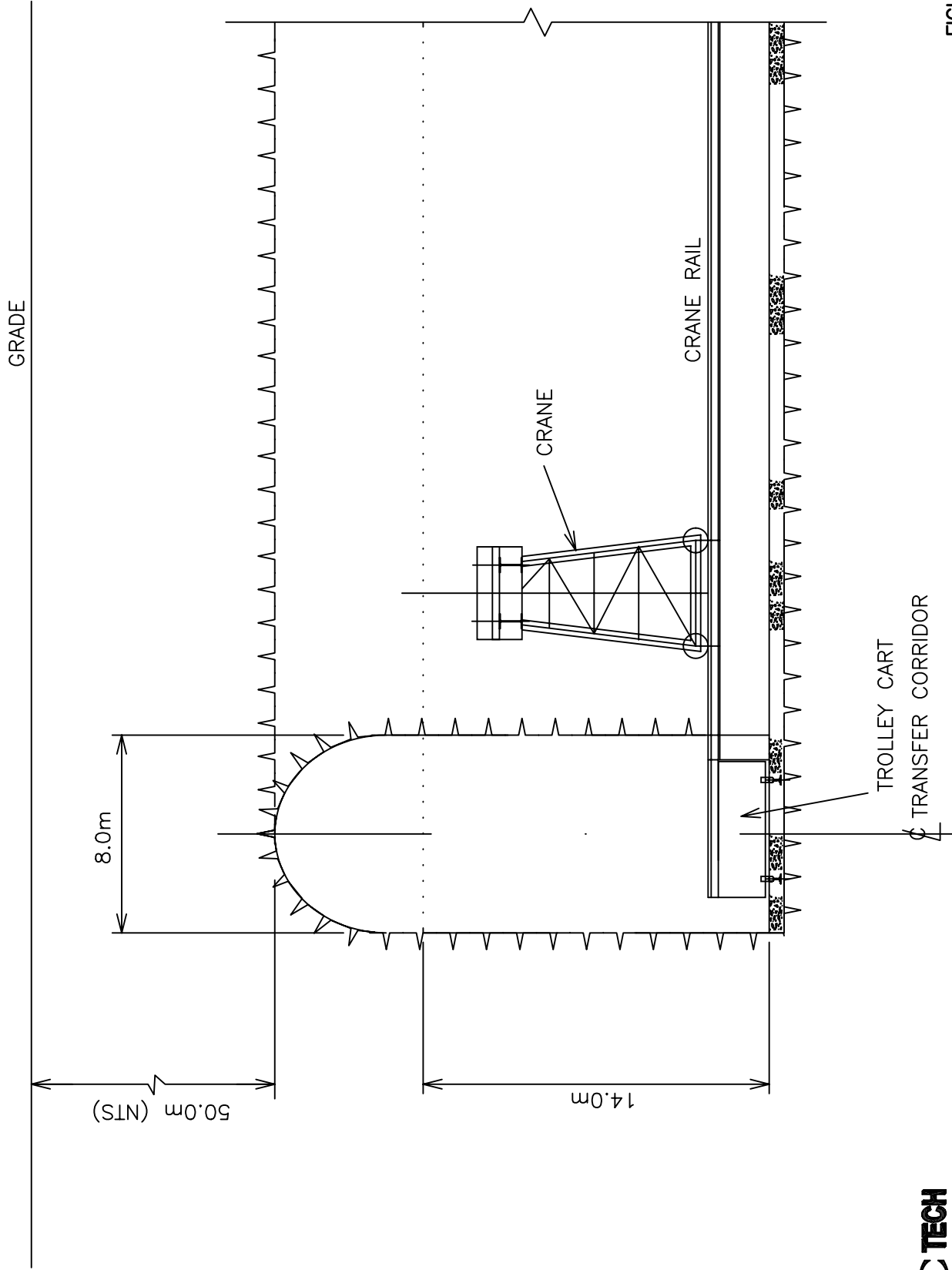
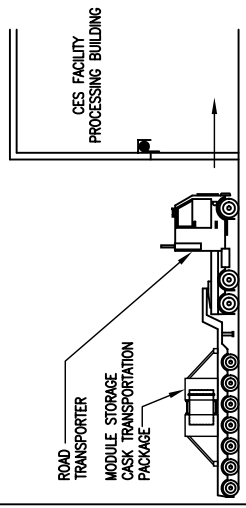
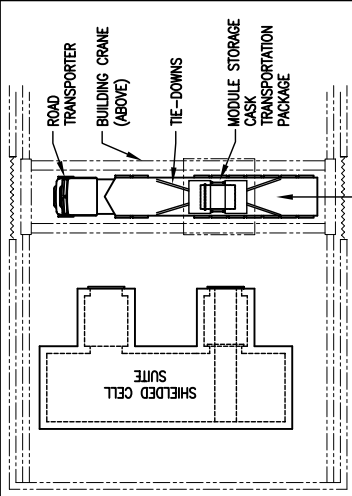


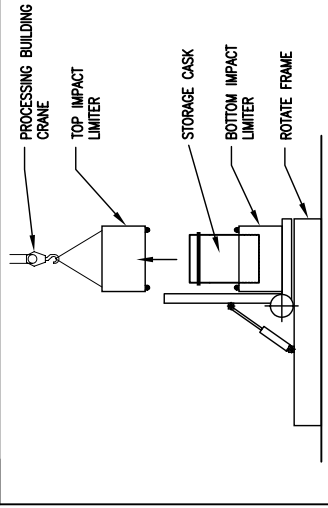
FIGURE 4.8
CASKS IN ROCK CAVERNS
SECTION B-B
(FROM FIG 4.6)



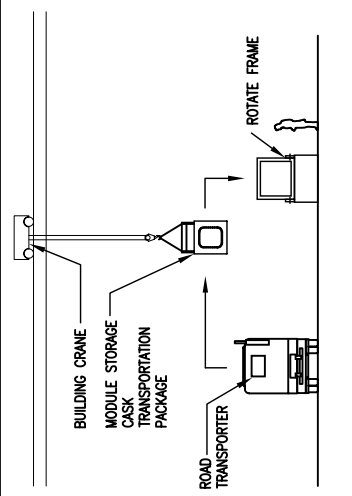
1. **RECEIVE AND VERIFY MODULE TRANSPORTATION CASK PACKAGE (INCLUDES STORAGE CASK, IMPACT LIMITERS AND TIE-DOWN EQUIPMENT)**



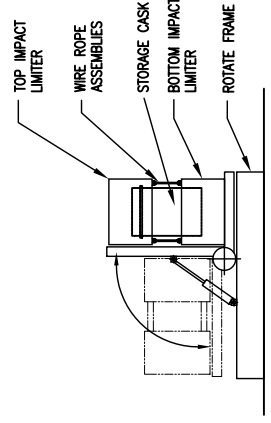
2. **POSITION TRANSPORTATION PACKAGE BELOW PROCESSING BUILDING CRANE AND RELEASE TIE-DOWNS**



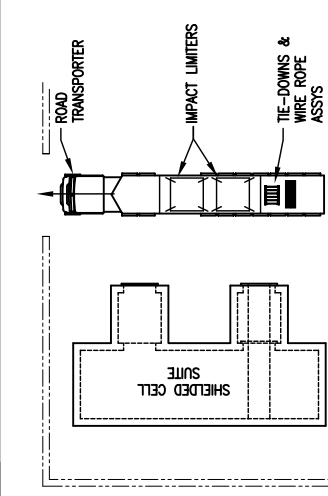
3. **RELEASE IMPACT LIMITER WIRE ROPE SECURING ASSEMBLIES AND REMOVE THE TOP IMPACT LIMITER**



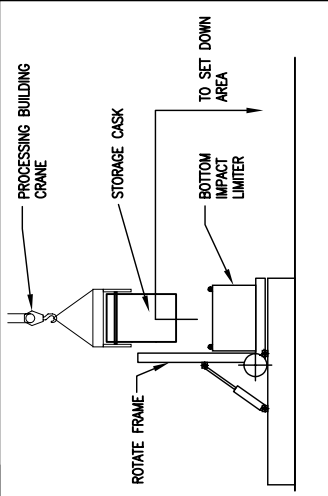
4. **RAISE TRANSPORTATION PACKAGE FROM TRANSPORTER AND LOCATE AND SECURE INTO ROTATE FRAME**



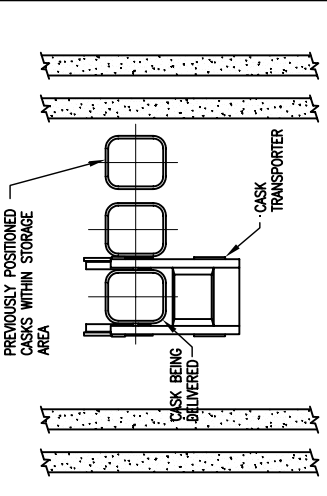
5. **ROTATE TRANSPORTATION PACKAGE THROUGH 90° TO RETURN STORAGE CASK TO ITS CORRECT ORIENTATION**



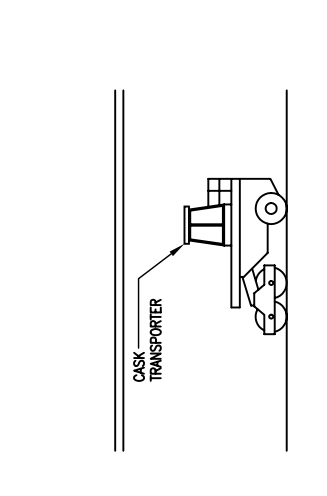
6. **RETURN IMPACT LIMITERS, WIRE ROPE ASSEMBLIES AND TIE-DOWN EQUIPMENT TO THE DONOR SITE USING THE ROAD TRANSPORTER**



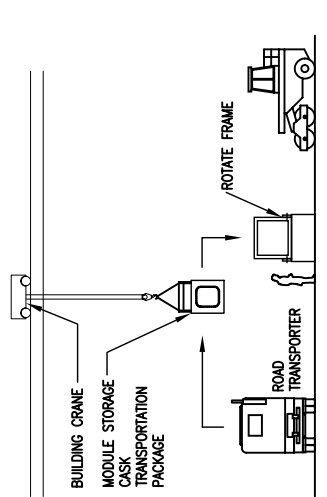
7. **LIFT THE STORAGE CASK OUT OF THE BOTTOM IMPACT LIMITER AND PARK IN THE SET-DOWN AREA USING THE PROCESS BUILDING CRANE**



8. **CASK TRANSPORTER POSITIONS FINAL CASK ON LOWER TIER OF ROW**



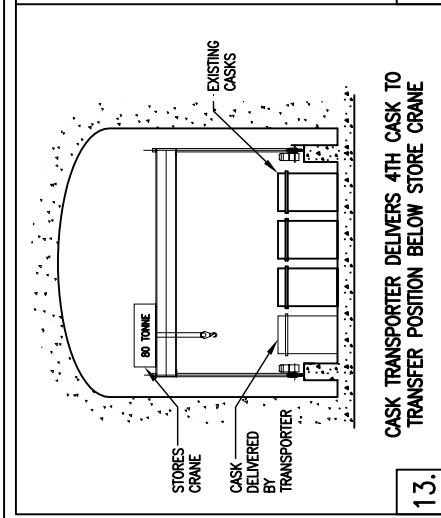
9. **RETURN CASK TRANSPORTER TO PROCESS AREA AWAITING RECEIPT OF NEXT STORAGE CASK**



10. **NEXT MODULE TRANSPORTATION CASK PACKAGE ARRIVES IN PROCESSING BUILDING. REPEAT UNLOADING/ROTATION PROCESS & COLLECT CASK WITH CASK TRANSPORTER**

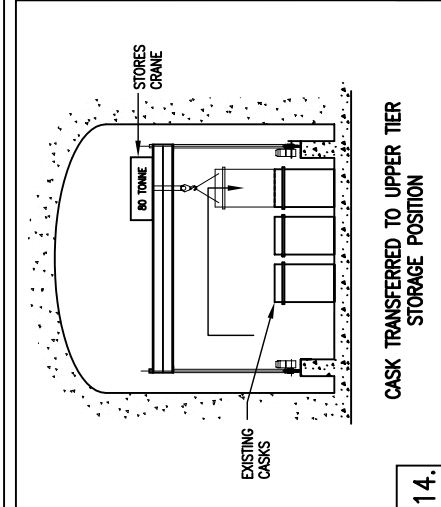
FIGURE 4.9 (SHEET 1 OF 2)
SEQUENCE DIAGRAM
CASKS IN ROCK CAVERNS
EXISTING CASK RECEIPT AND EMPLOYMENT





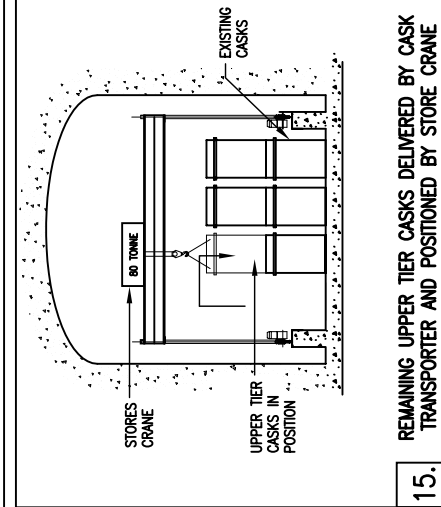
13.

CASK TRANSPORTER DELIVERS 4TH CASK TO TRANSFER POSITION BELOW STORE CRANE



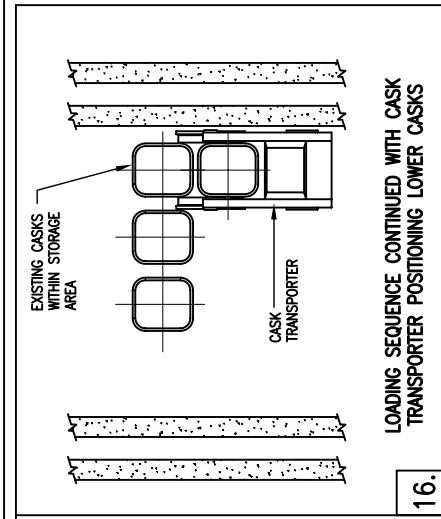
14.

CASK TRANSFERRED TO UPPER TIER STORAGE POSITION



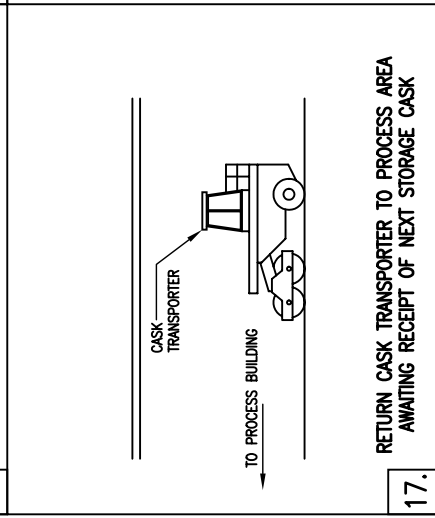
15.

REMAINING UPPER TIER CASKS DELIVERED BY CASK TRANSPORTER AND POSITIONED BY STORE CRANE



16.

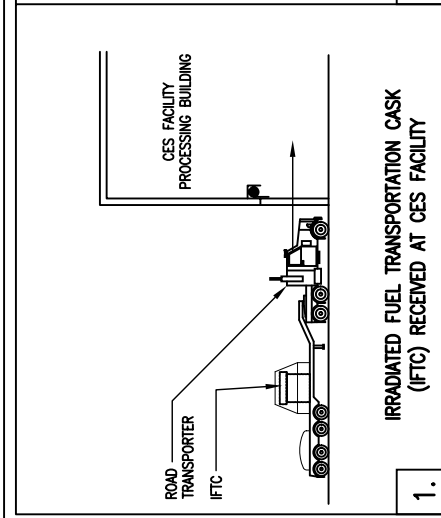
LOADING SEQUENCE CONTINUED WITH CASK TRANSPORTER POSITIONING LOWER CASKS



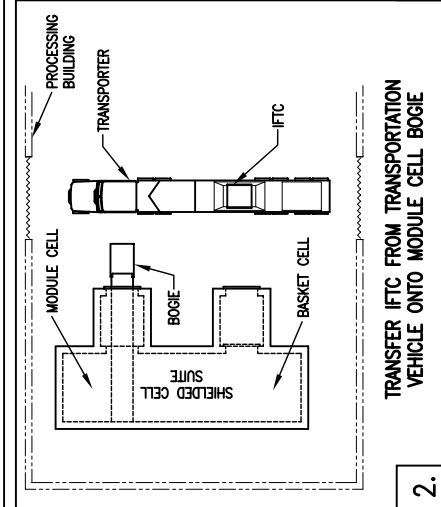
17.

RETURN CASK TRANSPORTER TO PROCESS AREA AWAITING RECEIPT OF NEXT STORAGE CASK

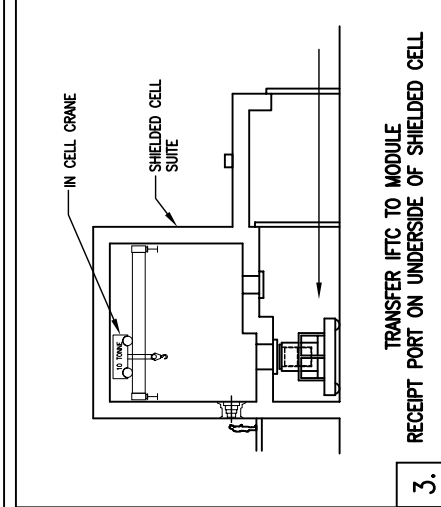
FIGURE 4.9 (SHEET 2 OF 2)
SEQUENCE DIAGRAM
CASKS IN ROCK CAVERNS
EXISTING CASK RECEIPT AND EMPLACEMENT



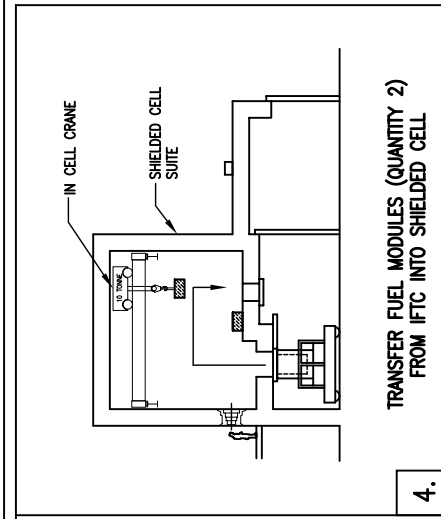
1. IRRADIATED FUEL TRANSPORTATION CASK (IFTC) RECEIVED AT CES FACILITY



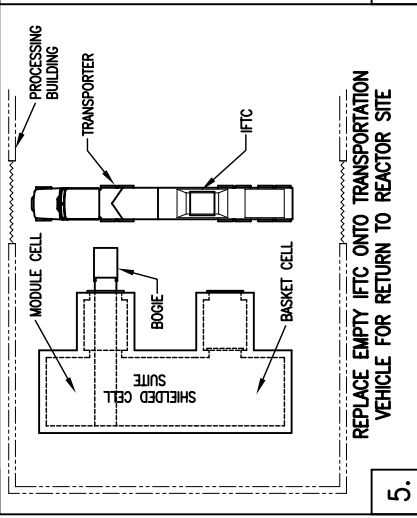
2. TRANSFER IFTC FROM TRANSPORTATION VEHICLE ONTO MODULE CELL BOGIE



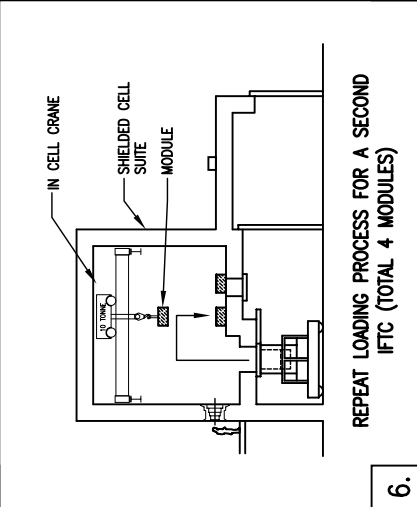
3. RECEIPT PORT ON UNDERSIDE OF SHIELDED CELL



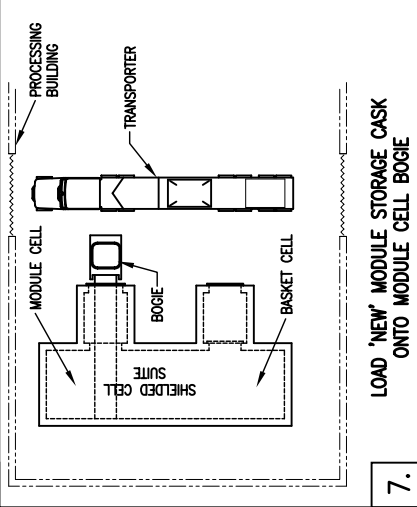
4. TRANSFER FUEL MODULES (QUANTITY 2) FROM IFTC INTO SHIELDED CELL



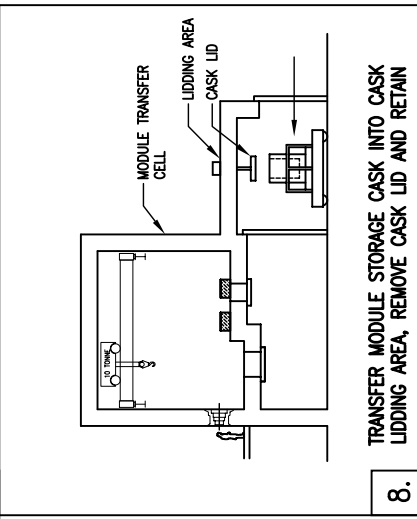
5. REPLACE EMPTY IFTC ONTO TRANSPORTATION VEHICLE FOR RETURN TO REACTOR SITE



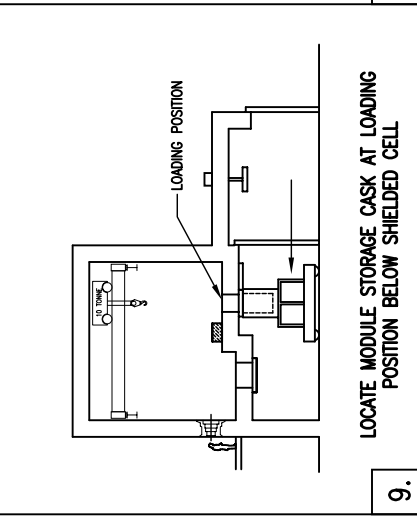
6. REPEAT LOADING PROCESS FOR A SECOND IFTC (TOTAL 4 MODULES)



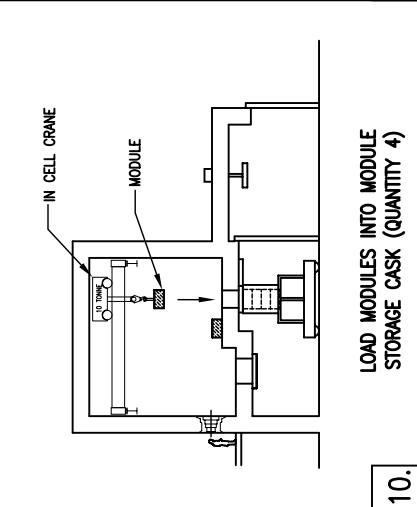
7. LOAD 'NEW' MODULE STORAGE CASK ONTO MODULE CELL BOGIE



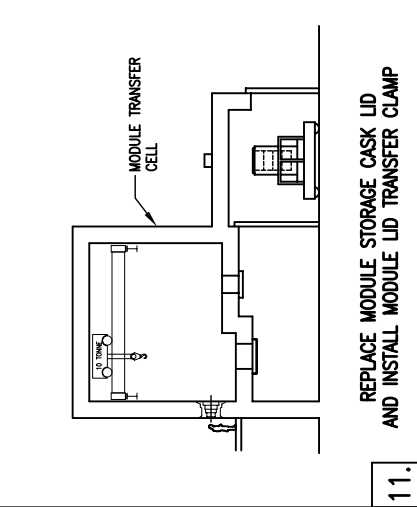
8. TRANSFER MODULE STORAGE CASK INTO CASK LIDDING AREA, REMOVE CASK LID AND RETAIN



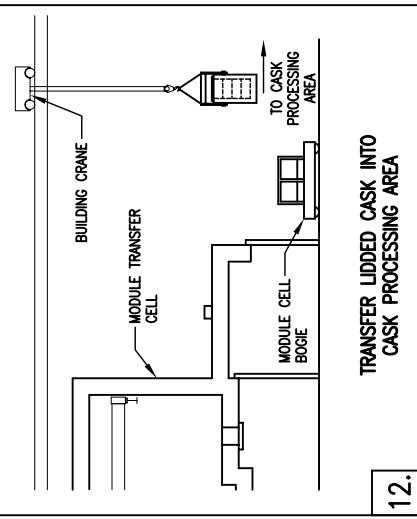
9. LOCATE MODULE STORAGE CASK AT LOADING POSITION BELOW SHIELDED CELL



10. LOAD MODULES INTO MODULE STORAGE CASK (QUANTITY 4)



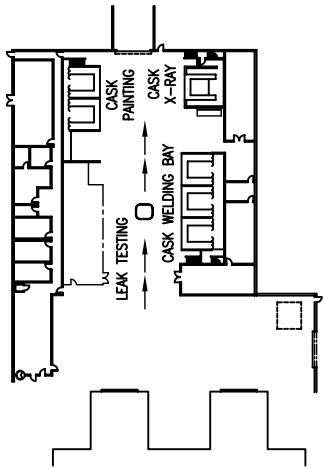
11. REPLACE MODULE STORAGE CASK LID AND INSTALL MODULE LID TRANSFER CLAMP



12. TRANSFER LIDDED CASK INTO CASK PROCESSING AREA

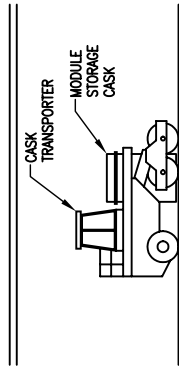
FIGURE 4.10 (SHEET 1 OF 2)
SEQUENCE DIAGRAM
CASKS IN ROCK CAVERNS
MODULE CASK LOADING AND EMPLACEMENT





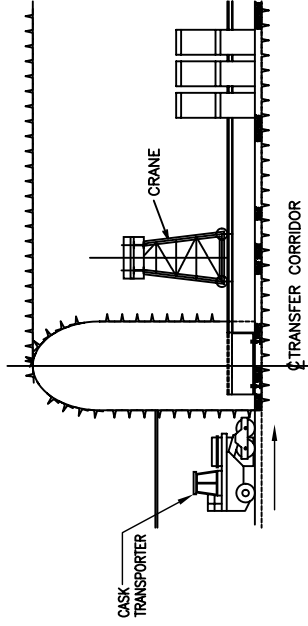
MODULE CASK PROGRESSED THROUGH CASK CLOSURE INSPECTION AND VALIDATION OPERATIONS

13.

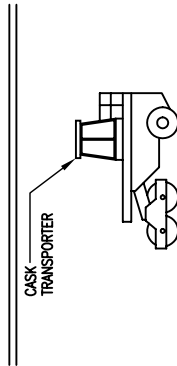


14. COMPLETED CASK COLLECTED BY CASK TRANSPORTER

15.



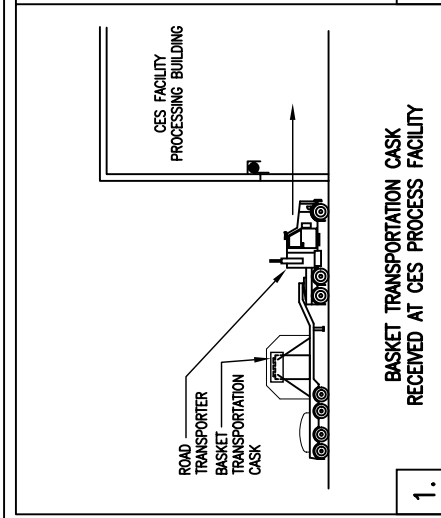
CASK POSITIONED WITHIN ROCK CAVERN



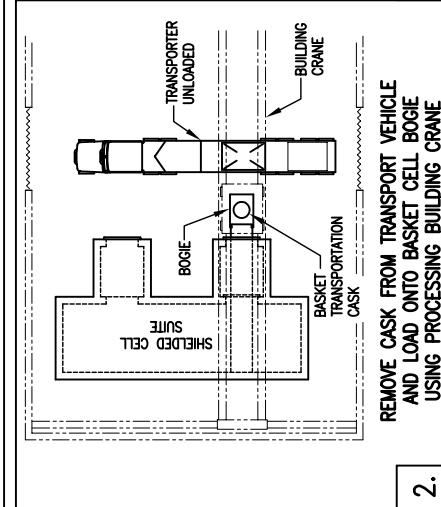
RETURN CASK TRANSPORTER TO PROCESS AREA AWAITING RECEIPT OF NEXT STORAGE CASK

16.

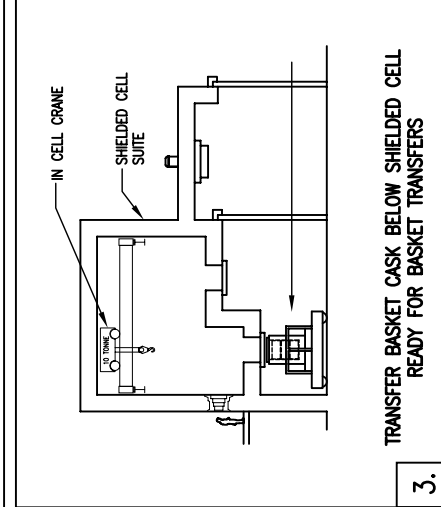
FIGURE 4.10 (SHEET 2 OF 2)
SEQUENCE DIAGRAM
CASKS IN ROCK CAVERNS
MODULE CASK LOADING AND EMPLACEMENT



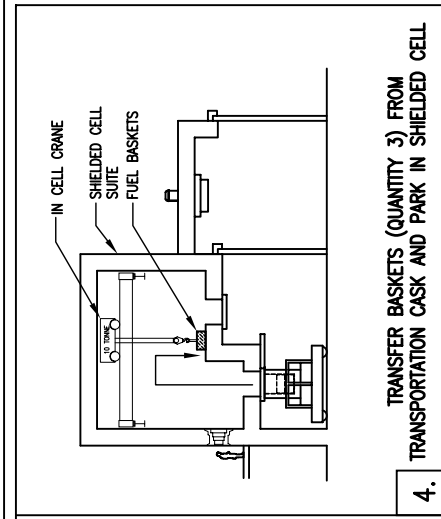
1. BASKET TRANSPORTATION CASK RECEIVED AT CES PROCESS FACILITY



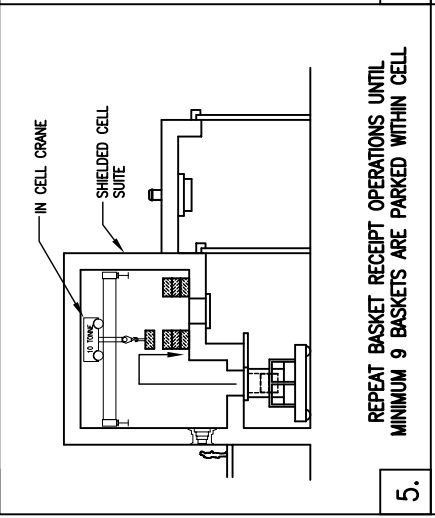
2. REMOVE CASK FROM TRANSPORT VEHICLE AND LOAD ONTO BASKET CELL BOGIE USING PROCESSING BUILDING CRANE



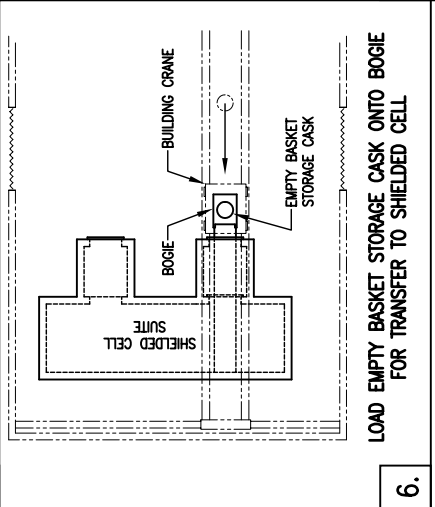
3. TRANSFER BASKET CASK BELOW SHIELDED CELL READY FOR BASKET TRANSFERS



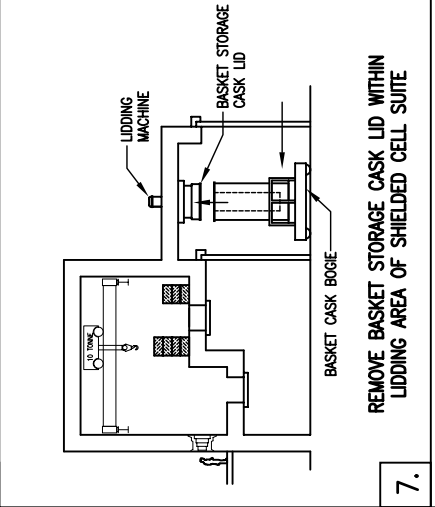
4. TRANSFER BASKETS (QUANTITY 3) FROM TRANSPORTATION CASK AND PARK IN SHIELDED CELL



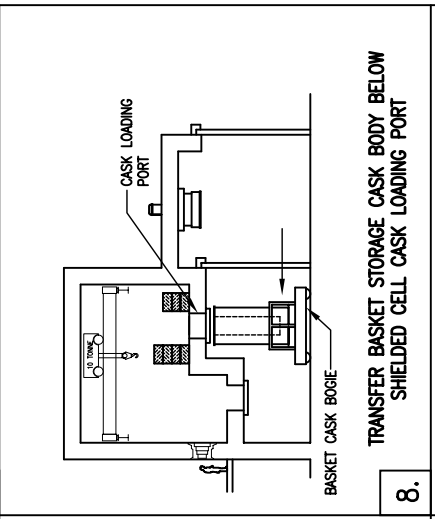
5. REPEAT BASKET RECEIPT OPERATIONS UNTIL MINIMUM 9 BASKETS ARE PARKED WITHIN CELL



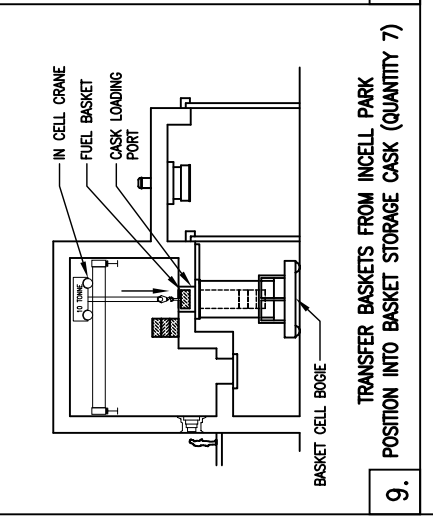
6. LOAD EMPTY BASKET STORAGE CASK ONTO BOGIE FOR TRANSFER TO SHIELDED CELL



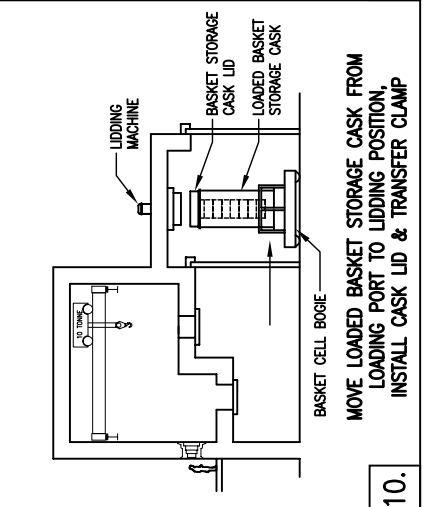
7. REMOVE BASKET STORAGE CASK LID WITHIN LIDDING AREA OF SHIELDED CELL SUITE



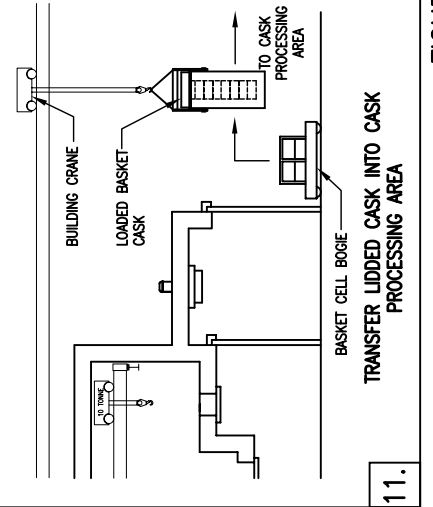
8. TRANSFER BASKET STORAGE CASK BODY BELOW SHIELDED CELL CASK LOADING PORT



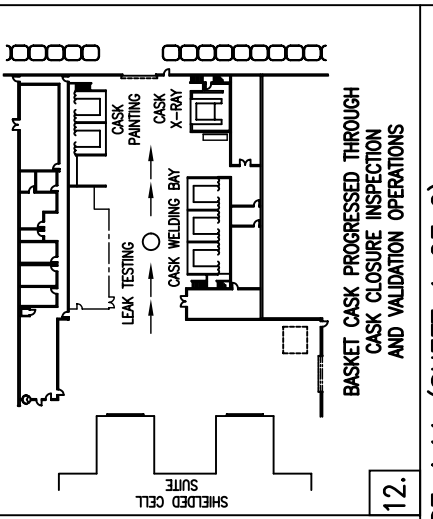
9. TRANSFER BASKETS FROM INCELL PARK POSITION INTO BASKET STORAGE CASK (QUANTITY 7)



10. MOVE LOADED BASKET STORAGE CASK FROM LOADING PORT TO LIDDING POSITION, INSTALL CASK LID & TRANSFER CLAMP



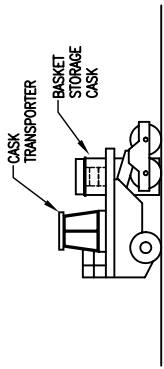
11. TRANSFER LIDDED CASK INTO CASK PROCESSING AREA



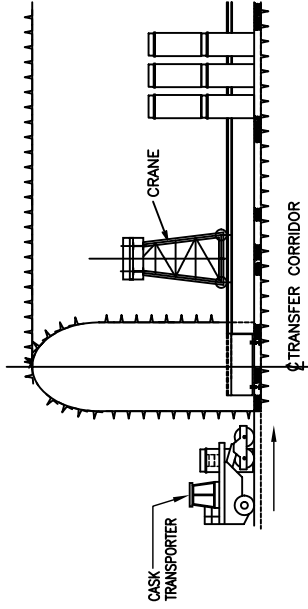
12. BASKET CASK PROCESSED THROUGH CASK CLOSURE INSPECTION AND VALIDATION OPERATIONS

FIGURE 4.11 (SHEET 1 OF 2)
SEQUENCE DIAGRAM
CASKS IN ROCK CAVERNS
BASKET CASK LOADING AND EMPLACEMENT

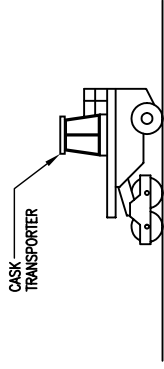




13. COMPLETED CASK COLLECTED BY CASK TRANSPORTER



14. CASK POSITIONED WITHIN ROCK CAVERN



15. RETURN CASK TRANSPORTER TO PROCESS AREA
AWAITING RECEIPT OF NEXT STORAGE CASK

FIGURE 4.11 (SHEET 2 OF 2)
SEQUENCE DIAGRAM
CASKS IN ROCK CAVERNS
BASKET CASK LOADING AND EMPLACEMENT