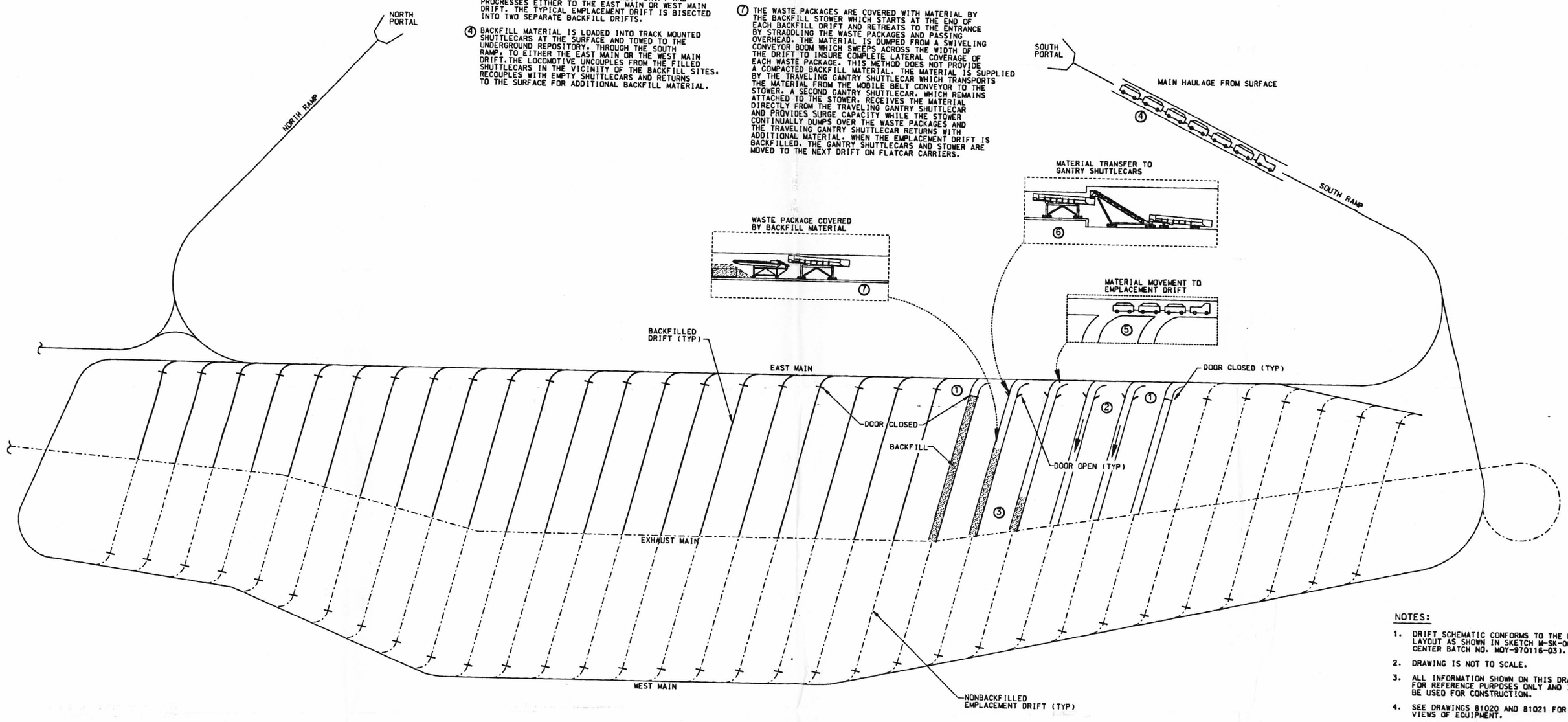
KEY NOTES:

1. ISOLATION DOORS AT THE ENTRANCE OF EACH EMPLACEMENT DRIFT REMAIN CLOSED BEFORE AND AFTER BACKFILLING.
2. ISOLATION DOORS AT THE ENTRANCE OF EMPLACEMENT DRIFTS ARE OPENED PRIOR TO BACKFILLING. VENTILATION IS DIRECTED THROUGH THESE DRIFTS TO COOL THEM PRIOR TO INTRODUCING BACKFILLING EQUIPMENT.
3. BACKFILLING MAY BE PERFORMED IN ONE OR MORE EMPLACEMENT DRIFTS SIMULTANEOUSLY. BACKFILLING STARTS AT THE MIDDLE OF THE EMPLACEMENT BLOCK NEAR THE ALIGNMENT OF THE EXHAUST DRIFT AND PROGRESSES EITHER TO THE EAST MAIN OR WEST MAIN DRIFT. THE TYPICAL EMPLACEMENT DRIFT IS BISECTED INTO TWO SEPARATE BACKFILL DRIFTS.
4. BACKFILL MATERIAL IS LOADED INTO TRACK MOUNTED SHUTTLECARS AT THE SURFACE AND TOWED TO THE UNDERGROUND REPOSITORY. THROUGH THE SOUTH RAMP, TO EITHER THE EAST MAIN OR THE WEST MAIN DRIFT. THE LOCOMOTIVE UNCOUPLES FROM THE FILLED SHUTTLECARS IN THE VICINITY OF THE BACKFILL SITES. RECOUPLES WITH EMPTY SHUTTLECARS AND RETURNS TO THE SURFACE FOR ADDITIONAL BACKFILL MATERIAL.
5. SHUTTLECARS ARE PUSHED TO THE RESPECTIVE BACKFILL DRIFTS AS NEEDED. THE SHUTTLECARS DISCHARGE THEIR LOAD AND RETURN TO THE MAIN DRIFT FOR TRAVEL TO THE SURFACE.
6. A SHUTTLECAR UNLOADS MATERIAL ONTO A TRACK MOUNTED MOBILE BELT CONVEYOR UNIT AT THE ENTRANCE OF THE BACKFILL DRIFT. THE MOBILE BELT CONVEYOR UNIT ELEVATES THE MATERIAL AND DISCHARGES INTO A TRAVELING GANTRY SHUTTLECAR LOCATED IN THE BACKFILL DRIFT. THE MOBILE BELT CONVEYOR IS TOWED FROM ONE BACKFILL DRIFT TO ANOTHER AS NEEDED.
7. THE WASTE PACKAGES ARE COVERED WITH MATERIAL BY THE BACKFILL STOWER WHICH STARTS AT THE END OF EACH BACKFILL DRIFT AND RETREATS TO THE ENTRANCE BY STRADDLING THE WASTE PACKAGES AND PASSING OVERHEAD. THE MATERIAL IS DUMPED FROM A SWIVELING CONVEYOR BOOM WHICH SWEEPS ACROSS THE WIDTH OF THE DRIFT TO INSURE COMPLETE LATERAL COVERAGE OF EACH WASTE PACKAGE. THIS METHOD DOES NOT PROVIDE A COMPACTED BACKFILL MATERIAL. THE MATERIAL IS SUPPLIED BY THE TRAVELING GANTRY SHUTTLECAR WHICH TRANSPORTS THE MATERIAL FROM THE MOBILE BELT CONVEYOR TO THE STOWER. A SECOND GANTRY SHUTTLECAR, WHICH REMAINS ATTACHED TO THE STOWER, RECEIVES THE MATERIAL DIRECTLY FROM THE TRAVELING GANTRY SHUTTLECAR AND PROVIDES SURGE CAPACITY WHILE THE STOWER CONTINUALLY DUMPS OVER THE WASTE PACKAGES AND THE TRAVELING GANTRY SHUTTLECAR RETURNS WITH ADDITIONAL MATERIAL. WHEN THE EMPLACEMENT DRIFT IS BACKFILLED, THE GANTRY SHUTTLECARS AND STOWER ARE MOVED TO THE NEXT DRIFT ON FLATCAR CARRIERS.



GENERAL REPOSITORY BACKFILL PLAN

NOTES:

1. DRIFT SCHEMATIC CONFORMS TO THE REPOSITORY LAYOUT AS SHOWN IN SKETCH M-SK-001 (RECORD CENTER BATCH NO. MOY-970116-03).
2. DRAWING IS NOT TO SCALE.
3. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR REFERENCE PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION.
4. SEE DRAWINGS 81020 AND 81021 FOR ENLARGED VIEWS OF EQUIPMENT.
5. SEE BACKFILL STRATEGY AND PRELIMINARY DESIGN ANALYSIS. CRWMS M&O DOC. NO. BCA000000-01717-0200-00006, REV 00.

REV	DESCRIPTION	DATE	DRN	CHK	VER	L.D.E.	Q.A.	D.M.
00	ISSUE FOR DOE DELIV FY97 RP120M3E	2/28/97	WG	PP	LSP	N/A	RSS	N/A

APPROVALS	INITIAL/DATE
DRAWN: W GOLIEN	2-28-97
ORIGINATOR: P PIERCE	2/28/97
CHECKED: J PETERS	2/28/97
VERIFICATION: N/A	
LEAD DESIGN ENGINEER: R SAUNDERS	2/28/97
QUALITY ASSURANCE: N/A	
DEPARTMENT MANAGER: K BHATTACHARYYA	2/28/97

U.S. DEPARTMENT OF ENERGY
Yucca Mountain Site Characterization Project
M&O Civilian Radioactive Waste Management System MANAGEMENT & OPERATING CONTRACTOR

REPOSITORY DESIGN

BACKFILLING FLOW DIAGRAM

SIZE D | DOCUMENT IDENTIFIER: BCAH00000-01717-2700-81019-00 | REV

SCALE: NONE | QA CLASSIFICATION: N/A | W.B.S.: 1.2.4 | CAD FILE: R1MINE:81019

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