

**ATTACHMENT G1
APPENDIX H**

DESIGN DRAWINGS

**PANEL CLOSURE SYSTEM
WASTE ISOLATION PILOT PLANT
CARLSBAD, NEW MEXICO**

Waste Isolation Pilot Plant
Hazardous Waste Permit
November 30, 2010

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**ATTACHMENT G1
APPENDIX H**

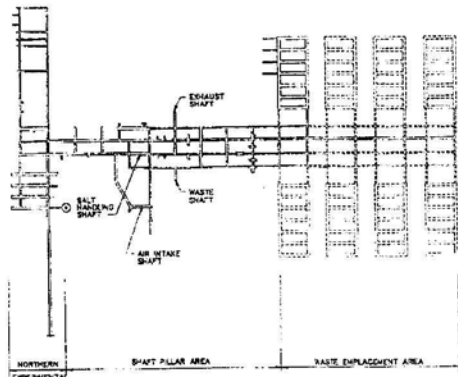
DESIGN DRAWINGS

**PANEL CLOSURE SYSTEM
WASTE ISOLATION PILOT PLANT
CARLSBAD, NEW MEXICO**

Drawing	Title
762447-E1	Panel closure system, air intake and exhaust drifts, title sheet
762447-E2	Panel closure system, underground waste emplacement panel plan
762447-E3	Panel closure system, air intake drift, construction details
762447-E4	Panel closure system, air exhaust drift, construction details
762447-E5	Panel closure system, construction and explosion walls, construction details
762447-E6	Panel closure system, air intake and exhaust drifts, grouting and miscellaneous details

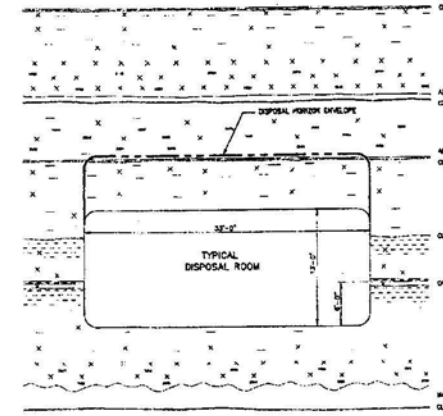
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 DATE
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UNDERGROUND REPOSITORY LAYOUT PLAN
 NTS

- 762447-E1 TITLE SHEET
- 762447-E2 UNDERGROUND WASTE DISPOSAL PANEL-PLAN
- 762447-E3 PANEL CLOSURE SYSTEM-AIR INTAKE DRIFT-CONSTRUCTION DETAILS
- 762447-E4 PANEL CLOSURE SYSTEM-AIR EXHAUST DRIFT-CONSTRUCTION DETAILS
- 762447-E5 PANEL CLOSURE SYSTEM-CONSTRUCTION AND EXPLOSION WALLS-CONSTRUCTION DETAILS
- 762447-E6 PANEL CLOSURE SYSTEM-AIR ENTRANCE AND EXHAUST DRIFT GROUTING AND MISCELLANEOUS DETAILS



DETAILED STRATIGRAPHY AT THE REPOSITORY HORIZON
 NTS

WASTE ISOLATION PILOT PLANT PANEL CLOSURE SYSTEM CARLSBAD, NEW MEXICO

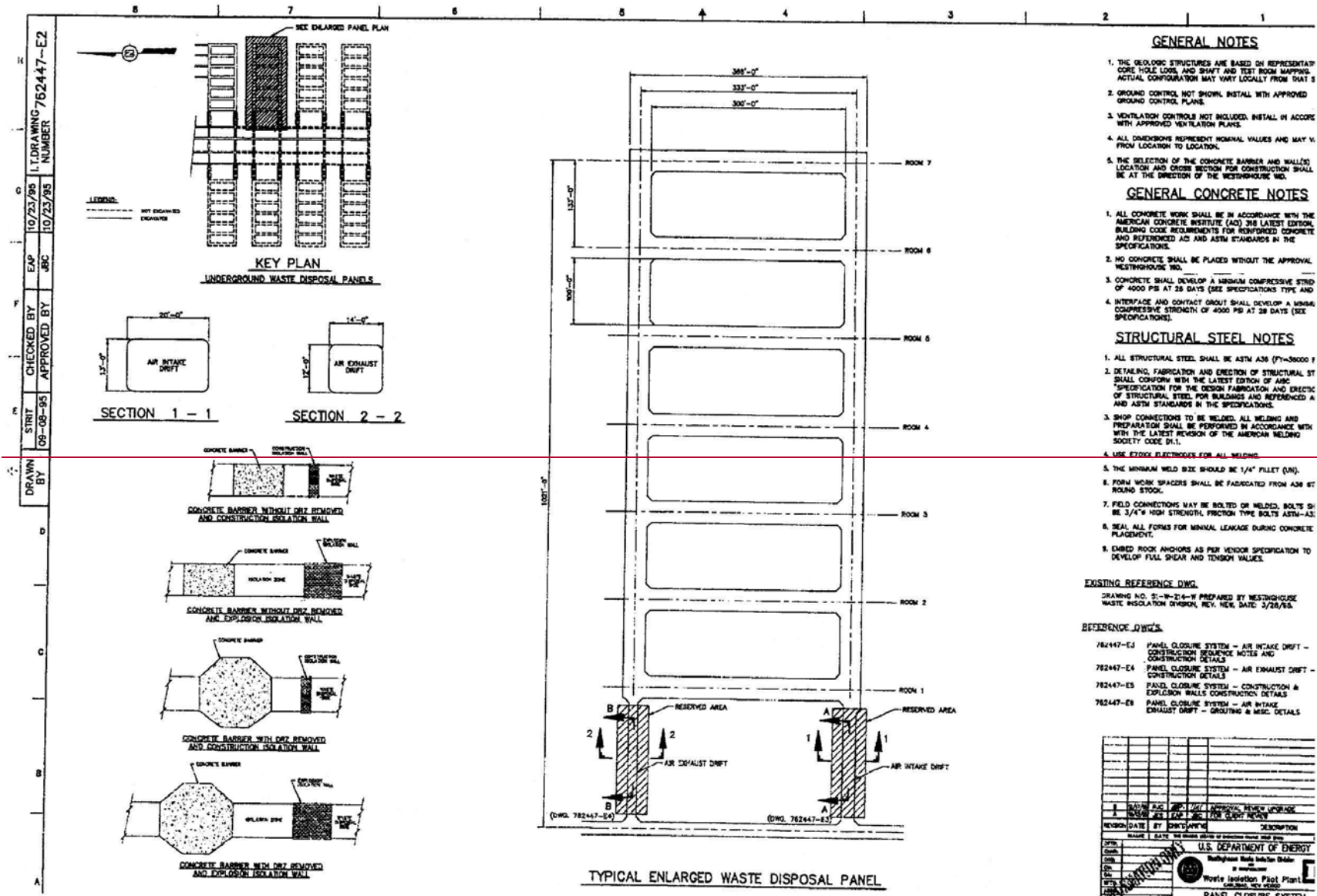
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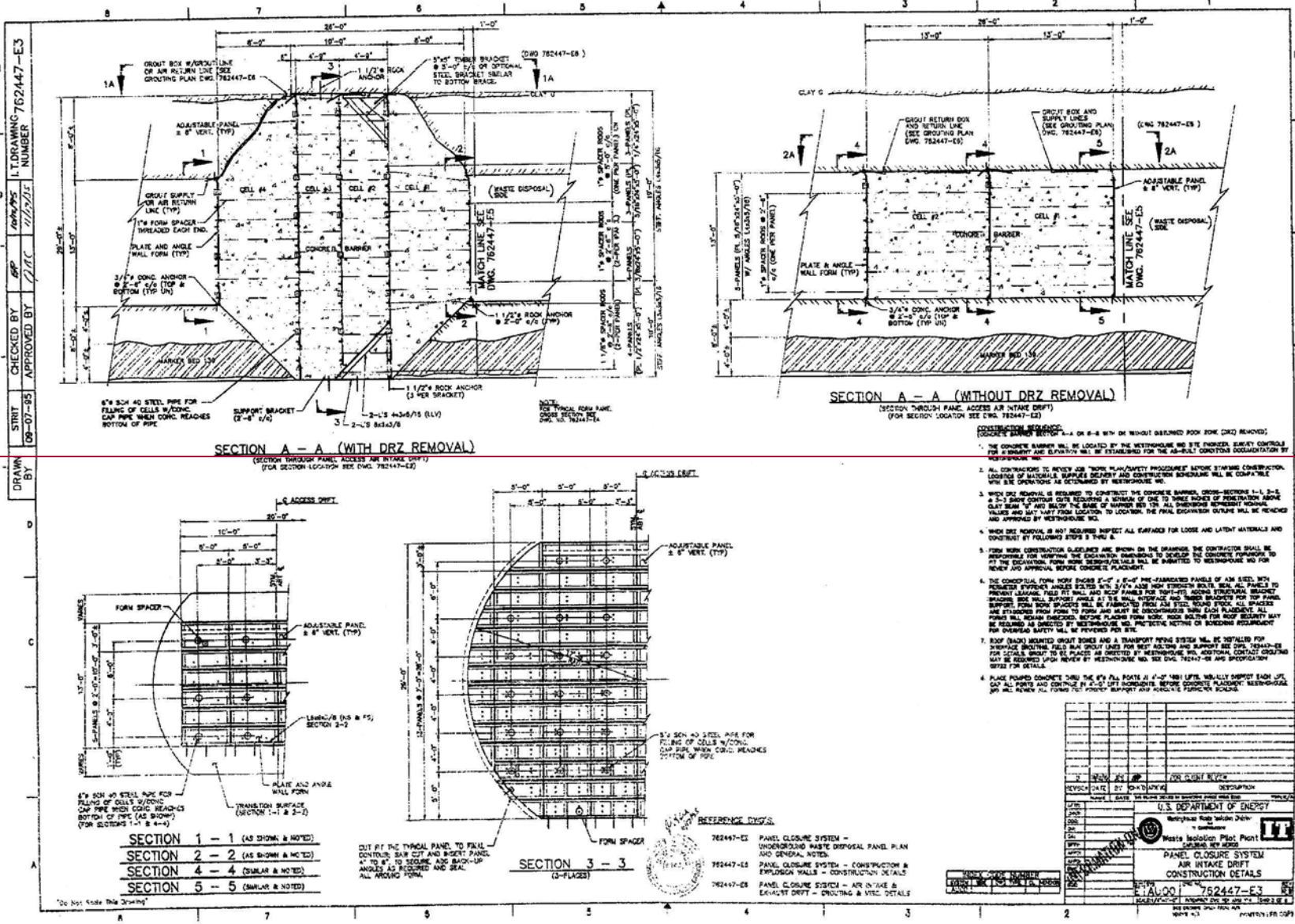
IT CORPORATION ALBUQUERQUE, NEW MEXICO



GENERAL LOCATION MAP
 NTS

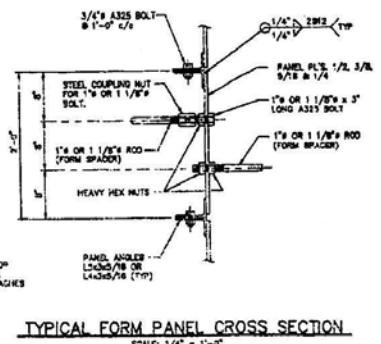
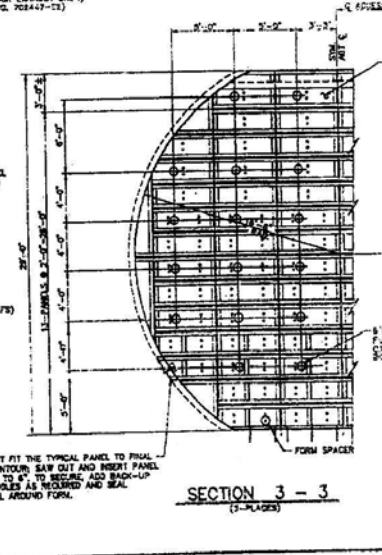
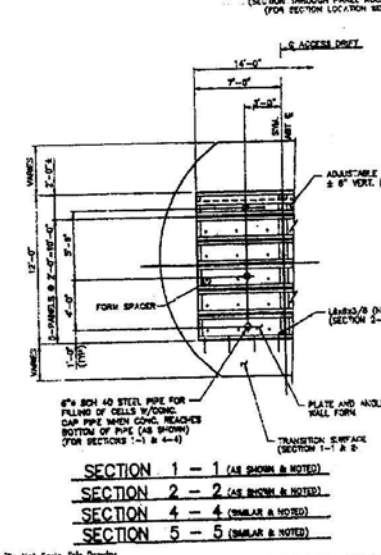
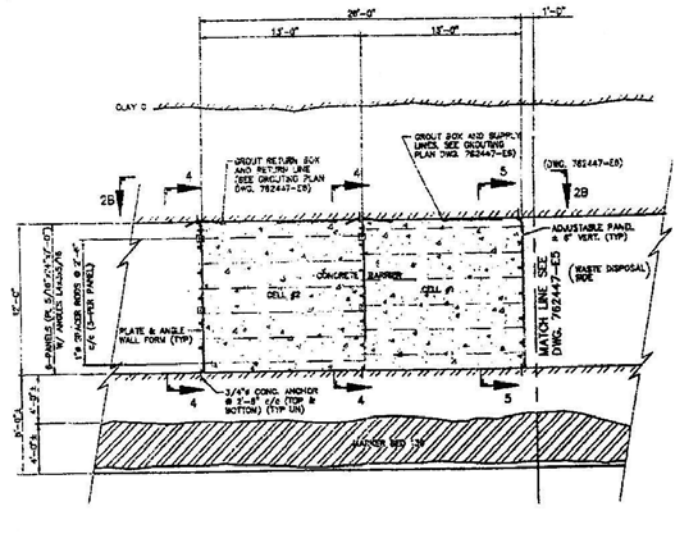
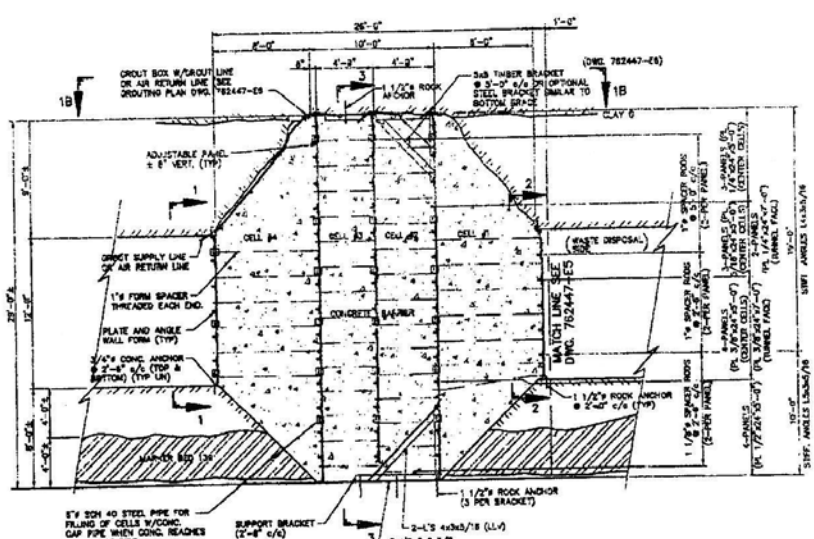
INDEX	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10
A REVIEW AS PER 201 FOR CLIENT REVIEW REVISIONS BY DATE U.S. DEPARTMENT OF ENERGY Waste Isolation Pilot Plant CARLSBAD, NEW MEXICO PANEL CLOSURE SYSTEM AIR INTAKE AND EXHAUST TITLE SHEET DATE: 12 AUG 01 SHEET NO. 762										





- CONSTRUCTION REQUIREMENTS:**
- THE CONCRETE NUMBER SHALL BE LOCATED BY THE WESTHOUSE AND SITE ENGINEER. EXACT CONTROL FOR A QUALITY AND DURABLE WALL BY ESTABLISHING FOR THE ACCEPTED CONSTRUCTION BY WESTHOUSE.
 - ALL CONTRACTORS TO REVIEW JOB "TRIPLE PLAN/QUALITY PROGRAM" BEFORE STARTING CONSTRUCTION. LOCATION OF REBAR, SUPPLY DELAY AND CONSTRUCTION SCHEDULE WILL BE COORDINATED WITH SITE OPERATIONS AS DETERMINED BY WESTHOUSE.
 - WHEN DRZ REMOVAL IS REQUIRED TO CONTRACT THE CONCRETE BARRIER, CROSS-SECTIONS 1-1, 2-2 & 3-3 SHALL BE CONSTRUCTED FIRST, FOLLOWING A MINIMUM OF ONE TO THREE INCHES OF PENETRATION ABOVE CLAY BED AND SHALL BE THE SAME AS SHOWN ON THE DRAWING. THE FINAL EXHAUST OUTLINE WILL BE REVIEWED AND APPROVED BY WESTHOUSE.
 - WHEN DRZ REMOVAL IS NOT REQUIRED IMPACT ALL EXHAUST FOR LOOSE AND LATENT MATERIALS AND CONCRETE BY FOLLOWING SEPS 3 & THRU 6.
 - FORM WORK CONSTRUCTION QUALITIES ARE SHOWN ON THE DRAWING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE DIMENSIONS TO SCALE. THE CONCRETE FORMWORK TO BE AT THE LOCATION FROM WORK DEMONSTRATIONS WILL BE SUBMITTED TO WESTHOUSE 90 DAYS BEFORE CONCRETE PLACEMENT.
 - THE CONCRETE FORM WORK SHALL BE 3'-0" x 8'-0" x 8'-0" PRE-FABRICATED PANELS OF AN STEEL WITH REINFORCED ANGLE BOLTS WITH 3/4" x 1/2" ANGLE HIGH STRENGTH BOLTS. ALL PANELS TO PREVENT LEAKAGE. FILL SET WALL AND TOP PANELS FOR TOP-TIGHT. ADDITIONAL BRACKET BRACKETS SHALL SUPPORT ANGLE AT 3" WALL INTERFACE AND BRACKETS FOR TOP PANEL SUPPORT FROM FORM SPACERS SHALL BE FABRICATED FROM 1/2" STEEL TYPICAL. ALL BRACKETS ARE STRIPPED FROM FORM TO FORM AND MUST BE DISCONTINUED WITH EACH PLACEMENT. ALL PANELS WILL BEWELD CHECKED BEFORE PLACING FORM WORK. ROCK BOLTS FOR ROCK REINFORCEMENT MAY BE REQUIRED AS DIRECTED BY WESTHOUSE. NO PROTECTIVE NETTING OR BARRIERS REQUIREMENT FOR OVERHEAD SAFETY WILL BE PROVIDED FOR SITE.
 - ROCK BOLTS MOUNTED ABOUT BONES AND A TRANSPORT PILING SYSTEM WILL BE INSTALLED FOR SHORING BRACKETING FIELD. ROCK BOLTS FOR WEST HOUSE AND SUPPORT SET DRZ. 762447-E8 FOR DETAILS. DRIFT TO BE PLACED AS DIRECTED BY WESTHOUSE. NO. ADDITIONAL CONTACT DRIFTING MAY BE REQUIRED UPON REVIEW BY WESTHOUSE. NO. SEE DWG. 762447-E8 AND SPECIFICATION SET FOR DETAILS.
 - PLACE FORMED CONCRETE OVER THE 6" x 6" ALL ROSTER 2' x 2' x 18" LIPS. MINIMUM DRIFT EACH SET. CAP ALL PORTS AND CONTINUE IN 2'-0" DRIFT BORDERS. BEFORE CONCRETE PLACEMENT. WESTHOUSE WILL REVIEW ALL FORMS FOR PROTECTIVE SUPPORT AND ANCHORS. FABRICATE BONES.

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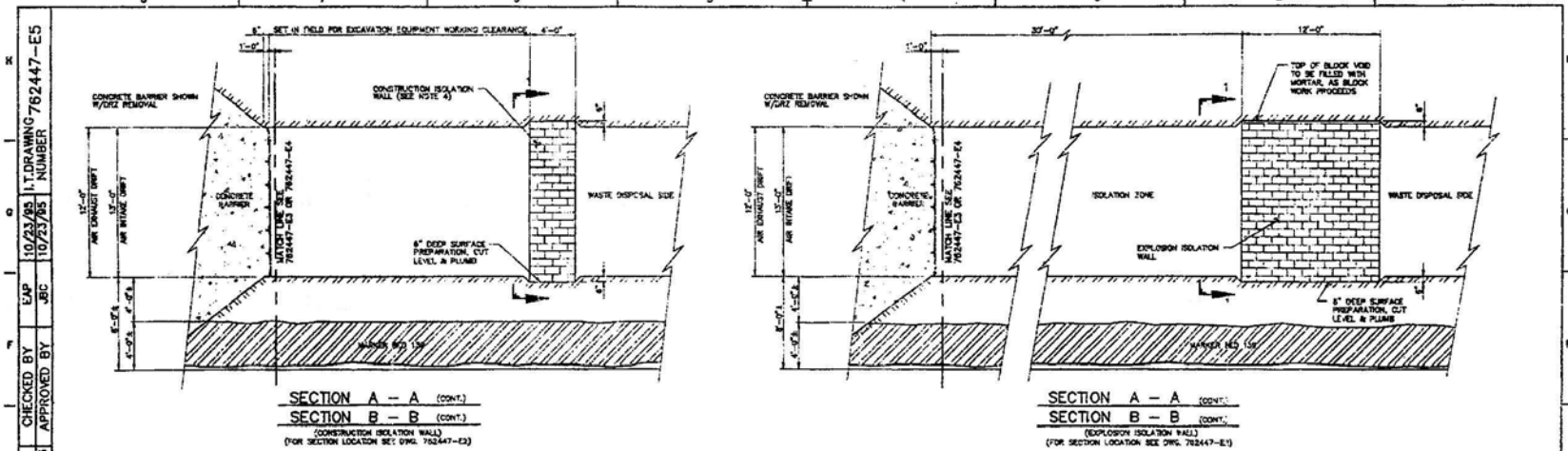
NOTE:
 FOR CONSTRUCTION SEQUENCE SEE DWG. 762447-E3

REFERENCE DWGS:

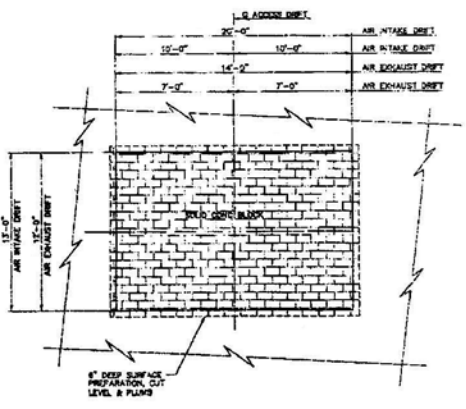
- 762447-E2 PANEL CLOSURE SYSTEM - UNDERGROUND WASTE DISPOSAL PANEL PLAN AND GENERAL NOTES
- 762447-E3 PANEL CLOSURE SYSTEM - AIR STAKE OR CONSTRUCTION DETAILS AND CONSTRUCTION SEQUENCE NOTES
- 762447-E5 PANEL CLOSURE SYSTEM - CONSTRUCTION EXPLOSION WALLS - CONSTRUCTION DETAILS
- 762447-E8 PANEL CLOSURE SYSTEM - AIR STAKE & EXHAUST DRAFT - GROUTING & INS. DETAIL

REV.	DATE	BY	CHKD.	DESCRIPTION

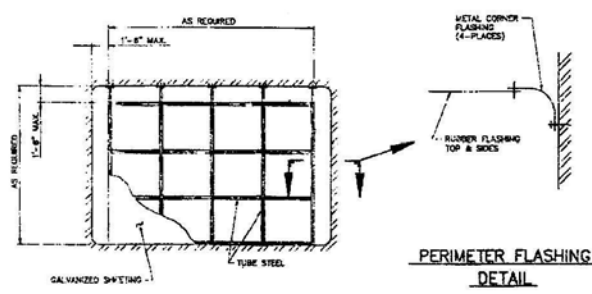
U.S. DEPARTMENT OF ENERGY
 Waste Isolation Pilot Plant
 PANEL CLOSURE SYSTEM AIR EXHAUST DRAFT
 CONSTRUCTION DETAIL
 DRAWING NUMBER: 762447-E4



DRAWING NUMBER 762447-E5
 CHECKED BY EAP
 APPROVED BY JBC
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SECTION 1 - 1



PERIMETER FLASHING DETAIL

STANDARD STEEL STOPPING (SEE NOTE 4)

- CONSTRUCTION REQUIREMENTS**
1. THE CONSTRUCTION ISOLATION & EXPLOSION ISOLATION WALLS WILL BE LOCATED BY THE BENCHMARK AND...
 2. ALL CONTRACTORS TO REVIEW JOB "WORK PLAN/SAFETY PROCEDURES" BEFORE STARTING CONSTRUCTION. LOCATION OF MATERIALS, EQUIPMENT AND CONSTRUCTION OPERATIONS WILL BE COMPATIBLE WITH SITE OPERATIONS AS DETERMINED BY THE BENCHMARKING...
 3. PREPARE ALL SURFACES BY REMOVING SIX (6) INCHES OF MATERIAL. ALL-ROUND OPENING TO SOLID AND LEVEL FOR BLOCK LAYING. TYPE A BRICK FOR NORTH BRICK WILL BE USED TO LEVEL THE FIRST COURSE. ALL BLOCK WALLS ARE CONSTRUCTED WITH SOLID (NO Voids) HIGH-STRENGTH CONCRETE MASONRY LITE (TYPE 3000 TO TYPE 40) USING COMPACTIBLE TYPE N MORTAR, SIDE WALL (SB) AND ROOF (SR) TO BLOCK WILL BE MORTAR SEALED.
 4. THE PURPOSE OF THE CONSTRUCTION ISOLATION WALL IS TO PREVENT THE STACKED WASTE CONTAINERS FROM ACCIDENTAL CONTACT BY CONSTRUCTION/EQUIPMENT DURING INSTALLATION OF THE CONCRETE JOE BARRIER. ITS CONSTRUCTION MAY BE OF VARIOUS MATERIALS TYPICALLY USED AT THE WPP FOR THIS PURPOSE. SOLID CONCRETE MASONRY BRICK MAY BE USED AS WELL AS LIGHT WEIGHT FLUSH BLOCKS OR THE WPP STANDARD STEEL STOPPING, AS APPROPRIATE AT THE TIME.
- HANDY NOTES:**
1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH U.S.C. (LATEST EDITION).
 2. ALL CONCRETE MASONRY SHALL MEET ASTM C-90 GRADE II, HIGH STRENGTH BLOCK WITH A STRENGTH OF 2800 PSI (MIN.).
 3. ALL MORTAR AND MASONRY BRICK SHALL MEET ASTM-C670 (TYPE N) WITH F=2500 PSI MIN. AT 28 DAYS.
- NOTES:**
- FOR THE CONCRETE BARRIER CONSTRUCTION SEE DWG. 762447-E3
- REFERENCE DWGS:**
- 762447-E3 PANEL CLOSURE SYSTEM - AIR INTAKE DRAFT - CONSTRUCTION DETAILS
 - 762447-E4 PANEL CLOSURE SYSTEM - AIR EXHAUST DRAFT - CONSTRUCTION DETAILS
 - 762447-E9 PANEL CLOSURE SYSTEM - AIR INTAKE & EXHAUST - GROUNDING & WEIC. DETAILS

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