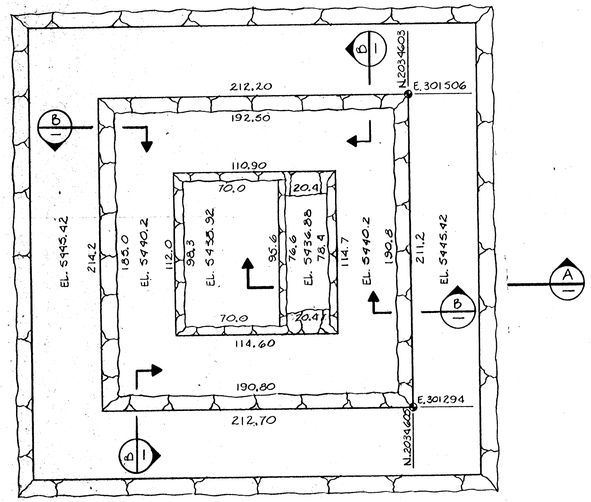
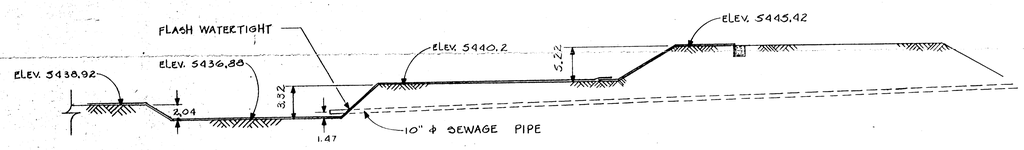
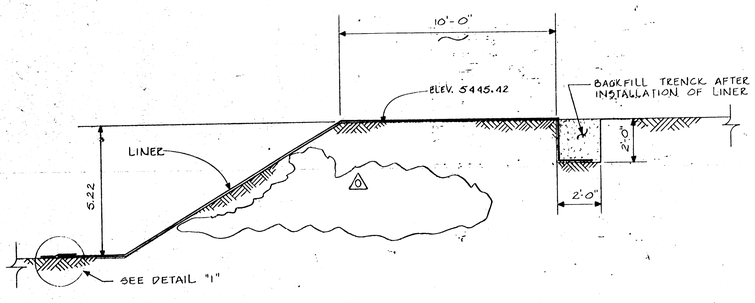


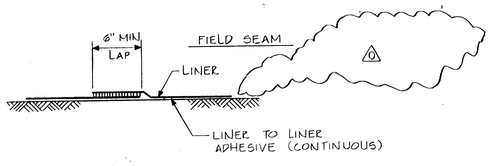
SEWER POND CAPACITY = 4.3 ACRE/FT 1' FREEBOARD



SECTION A
SCALE: 1" = 10'-0"



SECTION B
SCALE: 3/8" = 1'-0"



DETAIL 1
N.T.S.

GENERAL

1.01 SCOPE OF WORK: FURNISH AND INSTALL A FLEXIBLE MEMBRANE LINING AS SHOWN ON THE DRAWINGS. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE DRAWINGS, RELATED SPECIFICATIONS AND THE MEMBRANE LINING MANUFACTURER'S RECOMMENDATIONS.

IT IS THE INTENT OF THESE SPECIFICATIONS TO INSURE A "QUALITY FINISHED PRODUCT" AS DESCRIBED ON THE PLANS AND SPECIFICATIONS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE WHATEVER MEASURES SHALL BE DEEMED NECESSARY TO INSURE THAT THIS REQUIREMENT SHALL HAVE BEEN MET.

1.02 PRODUCTS: THE MATERIALS SUPPLIED UNDER THESE SPECIFICATIONS SHALL BE FIRST QUALITY GOODS SPECIFICALLY FORMULATED AND TESTED FOR CONTAINMENT OF THE DESIGNED EFFLUENT AS SET FORTH IN ACCOMPANING SPECIFICATIONS.

THE MATERIAL USED FOR THE LINING SHALL BE A REINFORCED DYNALOY* CHLORINATED POLYETHYLENE ALLOY (CPEA) MEMBRANE AND SHALL HAVE BEEN SATISFACTORILY DEMONSTRATED BY PRIOR USE TO BE SUITABLE AND DURABLE FOR THE PURPOSE OF THIS WORK.

THE MEMBRANE SHALL BE MANUFACTURED BY THE CALENDERING PROCESS AND SHALL BE UNIFORM IN COLOR, THICKNESS, SIZE AND SURFACE TEXTURE. THE FINISHED LINING SHALL BE A SUNLIGHT AND WEATHER RESISTANT MEMBRANE THAT IS A FLEXIBLE, DURABLE, WATERTIGHT PRODUCT FREE FROM PINHOLES, BLISTERS, AND CONTAMINENTS.

THE MEMBRANE SHALL BE MANUFACTURED FROM A COMPOSITION OF HIGH QUALITY INGREDIENTS, SPECIFICALLY COMPOUNDED FOR USE IN HYDRAULIC STRUCTURES. ONLY DOMESTIC RESINS SHALL BE USED. REPROCESSED MATERIALS WILL NOT BE ACCEPTABLE OTHER THAN CLEAN REWORK MATERIALS OF THE SAME VIRGIN INGREDIENTS GENERATED FROM THE MANUFACTURER"S OWN PRODUCTION.

THE FINISHED MEMBRANE LINER SHALL CONSIST OF TWO CALENDERED 16-MIL THICKNESSESS OF DYNALOY* CPEA SYNTHETIC MEMBRANE LAMINATED OVER ONE PLY OF POLYESTER REINFORCING FABRIC. THE REINFORCING FABRIC SHALL BE A 10 X 10 - 1000 DENIER WOVEN POLYESTER OR ENGINEER APPROVED EQUAL.

1.03 THE INDIVIDUAL WIDTHS OF CALENDERED DYNALOY* SHALL BE FACTORY FABRICATED INTO LARGE SHEETS CUSTOMED DESIGNED FOR THIS PROJECT SO AS TO MINIMIZE FIELD SEAMING. ALL FACTORY SEAMS SHALL PROVIDE A BOND BETWEEN THE SHEETS SUFFICIENTLY STRONG TO MEET THE TEST REQUIREMENTS OF THESE SPECIFICATIONS. THE FACTORY SEAMING SHALL BE ACCOMPLISHED BY USE OF DIELECTRIC FUSION WELDING EQUIPMENT WHICH SHALL PROVIDE A FILM TEARING BOND. THE DIELECTRIC WELD SHALL BE A ONE INCH WIDE, FABRIC TO FABRIC, CONTINUOUS BOND. FINISHED PANELS SHALL BE AS FABRICATED BY PALCO LININGS, INCORPORATED, STANTON, CALIFORNIA OR ENGINEER APPROVED EQUAL.

1.04 PANEL PACKAGING AND STORAGE: FACTORY FABRICATED DYNALOY* PANELS SHALL BE ACCORDIAN FOLDED ONTO A STURDY WOODEN PALLET DESIGNED TO BE MOVED BY A FORKLIFT OR SIMILAR EQUIPMENT. EACH FACTORY FABRICATED PANEL SHALL BE PROMINENTLY AND INDELIBLY MARKED WITH PANEL SIZE. FACTORY FABRICATED PANELS SHALL BE PACKAGED IN HEAVY, WATER RESISTANT CARDBOARD, FULLY ENCLOSED AND PROTECTED TO PREVENT DAMAGE TO THE PANEL DURING SHIPMENT. THE OUTSIDE OF EACH CONTAINER SHALL BE PROMINENTLY MARKED WITH THE PANEL SIZE.

PACKAGED FACTORY FABRICATED PANELS WHICH HAVE BEEN DELIVERED TO THE PROJECT SITE SHALL BE STORED IN THEIR ORIGINAL, UNOPENED CONTAINERS IN A DRY AREA AND PROTECTED FROM THE DIRECT HEAT OF THE SUN WHERE POSSIBLE, ESPECIALLY WHEN STORED FOR A LONG PERIOD OF TIME. CONTAINERS SHALL NOT BE STACKED.

1.06 LINING BASE MATERIAL: A BASE SHALL BE PREPARED ON THE BOTTOM AND SLOPES OF THE LAGOON TO ACCEPT THE MEMBRANE LINING. BASE MATERIAL SHALL BE FREE OF ANGULAR ROCKS, ROOTS, GRASS AND VEGETATION. UNSUITABLE MATERIAL FOUND IN AREAS OF PROPOSED CONSTRUCTION SHALL BE REMOVED PRIOR TO PREPARING BASE MATERIAL.

THE BASE MATERIAL SHALL BE NATIVE MATERIALS OR MATERIALS OBTAINED FROM DESIGNATED BORROW AREAS OR FROM OTHER APPROVED SOURCES OBTAINED BY THE CONTRACTOR TO PROVIDE A FINISHED PRODUCT WHICH IS APPROVED AS SUBGRADE MATERIAL BY THE ENGINEER.

FOREIGN MATERIALS AND PROTRUSIONS SHALL BE REMOVED AND ALL CRACKS AND VOIDS SHALL BE FILLED AND THE SURFACE MADE LEVEL OR UNIFORMLY SLOPING AS INDICATED ON THE DRAWINGS. THE PREPARED SURFACE SHALL BE FREE FROM LOOSE EARTH, ROCKS, RUBBLE AND OTHER FOREIGN MATTER. THE EXCAVATED AND FILLED SURFACE SHALL BE TRIMMED TO THE ELEVATIONS AND CONTOURS SHOWN ON THE DRAWINGS AND SHALL BE SMOOTH, UNIFORM AND FREE FROM SUDDEN CHANGES IN GRADE.

1.07 FINAL SUBGRADE PREPARATION: THE SUBGRADE SHALL BE PREPARED IMMEDIATELY PRIOR TO PLACING THE LINING. THE SURFACE ON WHICH THE LINING IS TO BE PLACED SHALL BE FIRM, CLEAN, DRY AND SMOOTH. ANCHOR TRENCH EXCAVATION AND ANY STRUCTURE SEAL PREPARATION SHOULD BE COMPLETED BEFORE LINING INSTALLATION BEGINS.

1.08 LINING INSTALLATION: A CONTINUOUS DYNALOY* MEMBRANE LINING SHALL BE INSTALLED THROUGHOUT BELOW FREEBOARDS INDICATED ON THE PLANS. THE DYNALOY* LINING SHALL BE PLACED OVER THE PREPARED SURFACES TO BE LINED IN SUCH A MANNER AS TO ASSURE MINIMUM HANDLING. THE SHEETS SHALL BE OF SUCH LENGTHS AND WIDTHS AND SHALL BE PLACED IN SUCH A MANNER AS TO REDUCE FIELD SEAMING TO A MINIMUM. HORIZONTAL FACTORY AND FIELD SEAMS ON THE SLOPES SHALL BE KEPT TO A MINIMUM. ONLY THOSE SHEETS OF LINING MATERIAL WHICH CAN BE ANCHORED AND/OR SEALED TOGETHER IN ONE DAY SHALL BE UNPACKAGED AND PLACED IN POSITION.

SANDBAGS OR RUBBER TIRES MAY BE USED AS REQUIRED TO HOLD THE LINING IN POSITION DURING INSTALLATION. TIRES SHALL NOT HAVE EXPOSED CORDS OR OTHER SHARP EDGES WHICH MAY SERVE TO SNAG THE LINER. SANDBAGS SHALL BE SUFFICIENTLY CLOSE-KNIT TO PRECLUDE FINES FROM WORKING THROUGH THE BAG MATERIAL OR SEAMS OF THE BAGS.

UNDER NO CIRCUMSTANCES SHALL THE LINING BE SUBJECTED TO MATERIALS, SANDBAGS, EQUIPMENT OR OTHER ITEMS BEING DRAGGED ACROSS ITS' SURFACE NOR SHALL WORKMEN AND OTHERS SLIDE DOWN SLOPES ATOP THE LINING. ALL PARTIES WALKING OR WORKING UPON THE LINING MATERIAL SHALL WEAR SOFT-SOLE SHOES.

LINING SHEETS SHALL BE CLOSELY FIT AND SEALED AROUND INLETS, OUTLETS AND OTHER PROJECTIONS THROUGH THE LINING. LINING TO CONCRETE SEALS SHALL BE AFFECTED WITH A MECHANICAL ANCHOR OR AS SHOWN ON THE DRAWINGS. ALL PIPING, STRUCTURES AND IRREGULAR PROJECTIONS THROUGH THE LINING SHALL BE SEALED AND FLASHED WITH FABRICATED BOOTS OR OTHER APPROVED SEALING METHODS.

1.09 FIELD SEAMS: ALL SEAMING, SEALING AND HIGH-SOLIDS ADHESIVES AND MASTICS SHALL BE OF A TYPE OR TYPES RECOMMENDED AND SUPPLIED BY THE MANUFACTURER OR FABRICATOR OF THE DYNALOY PANELS AND SHALL BE DELIVERED IN ORIGINAL SEALED CONTAINERS EACH WITH AN INDELIBLE LABEL BEARING THE BRAND NAME AND COMPLETE DIRECTIONS AS TO PROPER STORAGE, USE AND APPLICATION OF THE ADHESIVE (ADHESIVES).

FIELD LAP JOINTS USED TO SEAL FACTORY-FABRICATED PANELS SHALL BE FORMED BY LAPPING THE EDGES OF PANELS A MINIMUM OF SIX (6) INCHES. THE CONTACT SURFACES OF PANELS TO BE SEAMED SHALL BE WIPED CLEAN TO REMOVE ALL DIRT, DUST, MOISTURE AND OTHER FOREIGN MATERIALS. SUFFICIENT LINER TO LINER BONDING ADHESIVE SHALL BE APPLIED TO THE JOINT AREA SO AS TO FORM A CONTINUOUS SOLVENT WELD APPROXIMATELY 2 - 3 INCHES WIDE. IN APPLYING ADHESIVE, CARE MUST BE TAKEN TO "TIE-IN" TO THE END OF THE SEAM PREVIOUSLY COMPLETED SO THAT LEAK PATHS OR WEAK POINTS IN THE SEAM DO NOT OCCUR.

THE SURFACES SHOULD BE PRESSED DOWN IMMEDIATELY AND RUBBED TOWARD LEADING EDGE OF PANEL. ANY WRINKLES SHALL BE SMOOTHED OUT. A SMALL AMOUNT OF ADHESIVE SHOULD EXTRUDE AND APPEAR AT THE EDGE OF SEAM TO INDICATE THAT SUFFICIENT ADHESIVE HAS BEEN APPLIED. AFTER THE INITIAL SEAL OF THE LAP JOINT HAS BEEN MADE, ANY UNSEALED EDGES OF THE LINING MATERIAL SHALL BE RESEALED, USING THE SAME PROCEDURE, TO ELIMINATE ALL FREE EDGES.

EXTREME CARE SHALL BE TAKEN THROUGHOUT THE WORK TO AVOID FISHMOUTHS IN THE FIELD SEAMS. WHERE FISHMOUTHS DO OCCUR, THEY SHALL BE SLIT OUT FAR ENOUGH FROM THE SEAM TO DISSIPATE THEM, LAPPED, SEAMED TOGETHER IN THE LAPPED AREA AND PATCHED.

ANY PORTION OF THE LINING DAMAGED DURING INSTALLATION, BY ANY CAUSE, SHALL BE REMOVED OR REPAIRED BY USING AN ADDITIONAL PIECE OF DYNALOY LINING AS SPECIFIED HEREINAFTER.

1.10 PATCHING: ANY NECESSARY REPAIRS TO THE DYNALOY* LINING SHALL BE PATCHED WITH THE LINING MATERIAL ITSELF AND LINER TO LINER BONDING ADHESIVE. THE PATCH MATERIAL SHALL EXTEND A MINIMUM OF FOUR (4) INCHES IN EACH DIRECTION FROM THE DAMAGED AREA. THE BONDING ADHESIVE SHALL BE APPLIED TO THE CONTACT SURFACES OF BOTH THE PATCH AND LINING TO BE REPAIRED AND THE TWO SURFACES PRESSED TOGETHER IMMEDIATELY. ANY WRINKLES SHALL BE SMOOTHED OUT.

ALL JOINTS, ON COMPLETION OF THE WORK, SHALL BE TIGHLY BONDED. ANY LINING SURFACE SHOWING INJURY DUE TO SCUFFING, PENETRATION BY FOREIGN OBJECTS, OR DISTRESS FROM ROUGH SUBGRADE SHALL, AS DIRECTED BY THE ENGINEER, BE REPLACED OR COVERED AND SEALED WITH AN ADDITIONAL LAYER OF DYNALOY OF THE PROPER SIZE IN ACCORDANCE WITH THE PATCHING PROCEDURES.

I, Ron Van Valkenburg, hereby certify changes on this drawing since the previous certification are accurate to the best of my knowledge.

AS BUILT

DATE	REVISION	DESCRIPTION	CHK'D.	APPROV.	BHP
8/20/93	3	CHANGED CO. NAME AND CHANGED EXHIBIT NO. TO 11-27	JG		

DATE	REVISION	DESCRIPTION	CHECKED	APPROVED	UTAH
11/87	4	CHANGED CO. NAME TO BHP - UT	GUSTINA	GBA	JSL
10-19-82	1	AS BUILTS	GUSTINA	DKB	
10-18-82	0	ISSUED FOR CONSTRUCTION	GUSTINA	DKB	JG
9-16-82	A	ISSUED FOR BIDDING	GUSTINA		

L.K. COMSTOCK ENGINEERING COMPANY, INC.

LKCE CONTRACT No. 7650129 CUSTOMER'S ORDER No.

BHP MINERALS INTERNATIONAL
NAVAJO MINE
FRUITLAND, NEW MEXICO

NAVAJO MINE-AREA III
SEWAGE POND PLAN & SECTION

DRAWING APPROVED BY	UTAH	PROJ. MGR.	DEPT. MGR.
	J. Adams	D. BROWN	
DATE	10-18-82	9-16-82	
DRAWN BY	G. GUSTINA	EXHIBIT II-27	
DATE	SEP. 16, 1982	PROJECT NUMBER	
CHECKED BY		DRAWING NUMBER	REVISION
DATE		UII-100-C-007	0
SCALE	AS NOTED		

30-2300-01