

ABBREVIATIONS

<p>AB AGGREGATE BASE AC ASPHALTIC CONCRETE AGGR AGGREGATE AWWA AMERICAN WATER WORKS ASSOCIATION AZ AZIMUTH</p> <p>BC BEGIN CURVE BLDG BUILDING BLM BUREAU OF LAND MANAGEMENT BM BENCH MARK BOT BOTTOM OF PIPE BVC BEGIN VERTICAL CURVE</p> <p>CB CATCH BASIN CC CURB & GUTTER CIVL CIVIL CL CENTER LINE CM CORRUGATED METAL PIPE CO CLEANOUT CONC CONCRETE CONT CONTINUOUS CY CUBIC YARDS</p> <p>DA DEFLECTION ANGLE DEG DEGREE DI DUCTILE IRON DIA DIAMETER DM DROP OR DRAIN MANHOLE DRN DRAIN DWG DRAWING</p> <p>E EAST EACH EACH EC END OF CURVE ELEC ELECTRICAL ELEV/EL ELEVATION EDP END OF PROJECT EQ EQUALLY EQUIP EQUIPMENT EVC END VERTICAL CURVE EXIST EXISTING</p> <p>FG FINISHED GRADE FN FIRE HYDRANT FIN FL FINISHED FLOOR FL FLOOR LINE FM FORCE MAIN/FACILITY MUTUAL FP FIRE PROTECTION FS FINISHED SURFACE FT FEET FW FIRE WATER</p> <p>G GAS CALL CALL CB CEMENT CD CEMENT CP CEMENT CPM CALLS PER MINUTE CV CATE VALVE CS GALVANIZED STEEL</p>	<p>HORIZ HORIZONTAL HP HIGH POINT HPFL HIGH POINT FLOW LINE Hwy HIGHWAY</p> <p>IA INSTRUMENT AIR ID INSIDE DIAMETER IDS INTEGRATED DATA SYSTEM IN/ INCH INV INVERT</p> <p>L LENGTH OF CURVE LF LINEAR FEET LT LEFT</p> <p>M MANHOLE MIN MINIMUM</p> <p>N NORTH NFPA NATIONAL FIRE PROTECTION ASSOCIATION NO NUMBER</p> <p>OC ON CENTER OCEW ON CENTER EACH WAY OD OUTSIDE DIAMETER OS&Y OUTSIDE SCREW AND YOKER OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION OW OILY WATER OWM OILY WATER MANHOLE</p> <p>PE POLYETHYLENE PI POINT OF INTERSECTION PIV POINT INDICATOR VALVE PIVC POINT OF INTERSECTION VERTICAL CURVE PL PLATE PLCS PLACES POC POINT ON CURVE POVC POINT ON VERTICAL CURVE PP POWER POLE PRV PRESSURE RELIEF VALVE PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PT POINT OF TANGENCY PVI POINT OF VERTICAL INTERSECTION PVC POLYVINYL CHLORIDE PVMT PAVEMENT PW POTABLE WATER R RADIUS</p> <p>R RATE OF FLOW</p> <p>RCP REINFORCED CONCRETE PIPE REQD REQUIRED RGS RIGID GALVANIZED STEEL R RIDGE LINE R RADIUS RSN RAYTHEON SERVICES NEVADA</p>	<p>S SOUTH OR SLOPE SCN SCHEDULE SD STORM DRAIN SDMM STORM DRAIN MANHOLE SMT SHEET SPEC SPECIFICATIONS SO SQUARE SS SANITARY SEWER SSMH SANITARY SEWER MANHOLE STA STATION STD STANDARD STL STEEL SWR SUBSURFACE WASTEWATER</p> <p>T TANGENT TB THRUST BLOCK TC TOP OF CONCRETE/TOP OF CURB TCB TOP OF CATCH BASIN TDM TOP OF MANHOLE TOD TOP OF BERM T.O.P. TOP OF PIPE TR TOP OF RAIL TS TOP OF SPRING TM TOP OF WALL TYP TYPICAL</p> <p>UG UNDERGROUND UL UNDERWRITERS LABORATORY, INC.</p> <p>VAC VACUUM VC VERTICAL CURVE VERT VERTICAL</p> <p>W WATER OR WEST W/ WITH WP WORKPOINT</p> <p>YMP YUCCA MOUNTAIN PROJECT</p>
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NOTES:
 1. FOR CIVIL GENERAL NOTES, LEGEND AND SYMBOLS SEE DRAWING 20005.

ANSTEC APERTURE CARD

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 DOCUMENT AND RECORDS CENTER

NOTICE OF OPEN CHANGE DOCUMENTS			
Change Number	Issued By	Date	Status

CI.18.0000

U.S. DEPARTMENT OF ENERGY
 Yucca Mountain Site Characterization Project
 M&O Civilian Radioactive Waste Management System
 MANAGEMENT & OPERATING CONTRACTOR
 EXPLORATORY STUDIES FACILITY STANDARDS
CIVIL ABBREVIATIONS

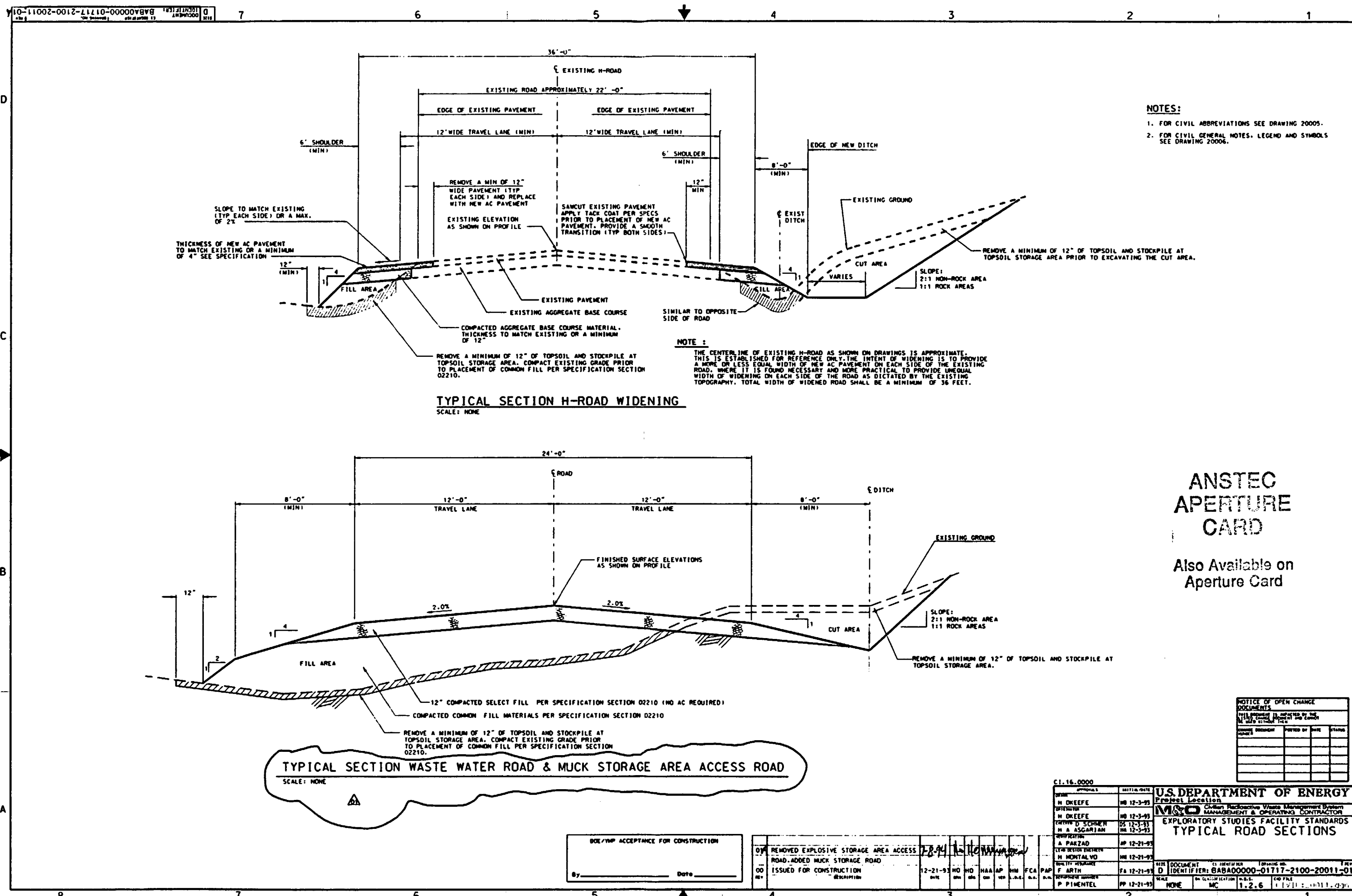
REV	DATE	BY	DESCRIPTION
01	12-31-93		ISSUED FOR CONSTRUCTION
02	11-4-93		ISSUED FOR PROCUREMENT

DOE/YMP ACCEPTANCE FOR CONSTRUCTION
 [Signature] Date 1/5/94

01	ISSUED FOR CONSTRUCTION	12-31-93	6	10															
02	ISSUED FOR PROCUREMENT	11-4-93	MO	NO															

REV D DATE 01 12/31/93 BY [Signature] DESCRIPTION ISSUED FOR CONSTRUCTION
 FILE NO. BAB000000-01717-2100-2005-01
 NO. OF SHEETS 1.2.6 OF 1.2.6
 FILE NAME CIVIL:20005.dgn

REFERENCE DOCUMENT - UNCONTROLLED



- NOTES:**
- FOR CIVIL ABBREVIATIONS SEE DRAWING 20005.
 - FOR CIVIL GENERAL NOTES, LEGEND AND SYMBOLS SEE DRAWING 20006.

NOTE 1:
THE CENTERLINE OF EXISTING H-ROAD AS SHOWN ON DRAWINGS IS APPROXIMATE. THIS IS ESTABLISHED FOR REFERENCE ONLY. THE INTENT OF WIDENING IS TO PROVIDE A MORE OR LESS EQUAL WIDTH OF NEW AC PAVEMENT ON EACH SIDE OF THE EXISTING ROAD, WHERE IT IS FOUND NECESSARY AND MORE PRACTICAL TO PROVIDE UNEQUAL WIDTH OF WIDENING ON EACH SIDE OF THE ROAD AS DICTATED BY THE EXISTING TOPOGRAPHY. TOTAL WIDTH OF WIDENED ROAD SHALL BE A MINIMUM OF 36 FEET.

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NOTICE OF OPEN CHANGE			
NO.	DESCRIPTION	DATE	BY

C.I. 16.0000		U.S. DEPARTMENT OF ENERGY	
PROJECT LOCATION		MCO	
EXPLORATORY STUDIES FACILITY STANDARDS		TYPICAL ROAD SECTIONS	
DATE	BY	DATE	BY
12-3-93	N. O'KEEFE	12-21-93	A. PARZAD
12-3-93	N. O'KEEFE	12-21-93	N. MONTALVO
12-3-93	F. ARTH	12-21-93	P. PIMENTEL

DOE/WMP ACCEPTANCE FOR CONSTRUCTION

By _____ Date _____

NO.	DESCRIPTION	DATE	BY
01	REMOVED EXPLOSIVE STORAGE AREA ACCESS ROAD. ADDED MUCK STORAGE ROAD	12-21-93	N. O'KEEFE
02	ISSUED FOR CONSTRUCTION	12-21-93	F. ARTH

LEGEND & SYMBOLS

EXISTING		NEW		EXISTING		NEW	
ASPHALTIC CONCRETE			(FUTURE)	RED ROCK LANDSCAPING			(FUTURE)
BENCH MARK, DELTA AND ANGLE POINT				RIDGE LINE			
CONCRETE				RIP RAP			
CONTOUR				SANITARY SEWER LINE			
CURB			(FUTURE)	STREAM (SEASONAL)			
CULVERT WITH END SECTIONS				SPOT ELEVATION		3305.2	
CHAIN LINK FENCE				STORM DRAIN LINE			
CATCH BASIN			CB	SUBSURFACE WASTE WATER			
CRUSHED ROCK			(FUTURE)	SURFACE GRADE			
DITCH				SLOPE LINE			
EARTH (DIRT)				SLOPE DIRECTION DOWN			
ELEC DUCT/CONDUIT				WORKING POINT			
FIRE HYDRANT				HORIZ & VERT (4:1) CUT OR FILL SLOPE			
FIRE WATER LINE							
GATE VALVE							
GUARD POST							
HEADWALL							
MANHOLE (M)							
POTABLE WATER LINE							
POST INDICATOR VALVE							

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GENERAL NOTES:

- SITE PREPARATION SHALL ENSURE THAT CONSTRUCTION ACTIVITIES MINIMIZE ALL LAND DISTURBANCE.
- FIELD VERIFY LOCATION AND DEPTHS OF EXISTING UTILITIES (WATER, COMMUNICATIONS, SEWER AND POWER) AND VALVES FOR POSSIBLE INTERFERENCE WITH NEW WORK AND CORRECT AS SHOWN WITH MINIMUM COVER OVER THE TOP OF WATER AND SUBSURFACE WASTE WATER LINES SHALL BE 36 INCHES.
- ALL BURIED VALVES SHALL BE PROVIDED WITH VALVE BOXES AND COVERS AS SHOWN IN THE DETAILS.
- UNDERGROUND GATE VALVES SHALL BE NON-RISING STEM RESILIENT WEDGE TYPE WITH MECHANICAL JOINT ENDS AND SHALL MEET THE REQUIREMENTS OF AWWA STANDARD C509.
- CONSTRUCTION LIMITS FOR WATER SUPPLY LINES SHALL BE 20 FEET ON EACH SIDE OF PIPE CENTERLINE.
- ALL THRUST BLOCKING SHALL BE CONCRETE HAVING A COMPRESSIVE STRENGTH OF NOT LESS THAN 2000 P.S.I. IN 7 DAYS AND SHALL CONFORM IN SIZE TO THE MINIMUM BEARING AREA IN SQUARE FEET AS SHOWN IN THE DETAILS. THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED SOIL OR SOIL THAT WAS PLACED AND ACCEPTED AS PART OF PACKAGE 1A.
- POTABLE WATER SYSTEM SHALL CONFORM TO THE SAFE DRINKING WATER ACT (NEVADA REVISED STATUTE 449.306)
- ALL VALVES, PIPE, AND FITTINGS FOR FIRE PROTECTION SERVICES SHALL BE UL LISTED OR FM APPROVED.
- ALL MANUFACTURER CALLOUTS ARE RECOMMENDED SOURCES ONLY. APPROVED EQUALS CAN BE USED.
- VERTICAL AND HORIZONTAL CONTROL IS BASED ON THE DATUM AS ESTABLISHED IN PACKAGE 1A. SEE DRAWING YMP-025-1-0E-101 NOTE 11.
- WHEN DRAINAGE IS SHOWN EITHER EXPLICITLY BY ARROWS AND PERCENT OR IMPLICITLY BY DIFFERENCES IN ELEVATION, DRAINAGE MUST BE MAINTAINED BY UNIFORM VARIANCE ALLOWED BY TOLERANCES, I.E. DRAINAGE MUST NOT BE DESTROYED OR ALTERED BY VARIANCES IN OPPOSITE DIRECTIONS ON EACH END OF A SLOPE.
- THE TERM "GRADE" IS "STRAIGHT GRADE," I.E. A UNIFORMLY DISTRIBUTED INCREMENT OF ELEVATION CHANGE MUST EXIST BETWEEN ANY TWO GIVEN ELEVATION STATIONS. THE GRADE IS TO BE SMOOTH AND EVEN, AND WITHOUT UNDULATIONS BETWEEN THE TWO POINTS.
- THE CONTRACTOR SHALL TAKE NO ADVANTAGE OF ANY APPARENT ERROR OR OMISSION IN THE PLANS OR SPECIFICATIONS. IN THE EVENT THE CONTRACTOR DISCOVERS SUCH AN ERROR OR OMISSION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- THREE CONSECUTIVE POINTS SET ON THE SAME SLOPE SHALL BE USED TOGETHER SO THAT ANY VARIATION FROM A STRAIGHT GRADE CAN BE DETECTED. ANY SUCH VARIATION SHALL BE REPORTED TO THE ENGINEER. IN THE ABSENCE OF SUCH REPORT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ERROR IN THE GRADE OF THE FINISHED WORK.
- UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, TOLERANCES FOR HORIZONTAL DIMENSIONS SHALL BE AS SHOWN BY THE FOLLOWING TABLE:

PLAN DIMENSION (EXAMPLE)	ACCEPTABLE AS-BUILT
94' (±0.5')	IE. 93.5' TO 94.5'
94.5' (±0.1')	IE. 94.4' TO 94.6'
94.48' (±0.02')	IE. 94.46' TO 94.50'

 DIMENSIONS SHOWN IN FEET & INCHES OR INCHES ARE ± 1/4" AND FRACTIONS ± 1/8"
- UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS, TOLERANCES FOR VERTICAL ELEVATIONS SHALL BE AS SHOWN BY THE FOLLOWING TABLE:

PLAN DIMENSION (EXAMPLE)	ACCEPTABLE AS-BUILT
3600' (±0.1')	IE. 3679.9' TO 3600.1'
3600.5' (±0.05')	IE. 3600.45' TO 3600.55'
3600.48' (±0.005')	IE. 3600.475' TO 3600.485'

 DIMENSIONS SHOWN IN FEET & INCHES OR INCHES ARE ± 1/4" AND FRACTIONS ± 1/8"
- ALL REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III/WALL C.
- BASED ON FORTHCOMING REQUIREMENTS BY THE STATE OF NEVADA, DRAINAGE PATTERNS MAY BE ALTERED TO CONVEY AND OR TREAT STORM WATER FROM THE ESF CONSTRUCTION AREA IN AN ENVIRONMENTALLY ACCEPTABLE MANNER.
- FOR ALL SANITARY SEWER MANHOLES, STORM SEWER MANHOLES, CATCH BASINS AND WATER METER VALVES OVER 4 FEET DEEP, A CONFINED SPACE ACCESS PERMIT IS REQUIRED FOR ACCESS DURING AND AFTER CONSTRUCTION OF THE MANHOLE. THE CONTRACTOR SHALL SUBMIT A PROCEDURE TO THE YMPD SAFETY THAT MEETS ALL APPLICABLE SAFETY REQUIREMENTS.
- WHERE POTABLE WATERLINES (PW) CROSS SANITARY SEWERS (SS), THE PW SHALL PASS 2 FEET ABOVE THE SEWER. WHERE INSUFFICIENT COVER PRECLUDES SUCH VERTICAL SEPARATION THE SEWER SHALL BE DUCTILE IRON PIPE OR SHALL BE FULLY ENCASED IN CONCRETE FOR A MINIMUM DISTANCE OF 10 FEET TO EACH SIDE OF THE WATERLINE CROSSING. JOINTS SHALL NOT BE LOCATED WITHIN 3 FEET OF SUCH CROSSING.
- FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.

FIRST SUBMITTAL

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NOTICE OF OPEN CHANGE DOCUMENTS			
NO.	DESCRIPTION	DATE	STATUS

CL16.0000

APPROVAL	DATE	BY
	11-11-03	
	11-11-03	
	11-11-03	
	11-11-03	

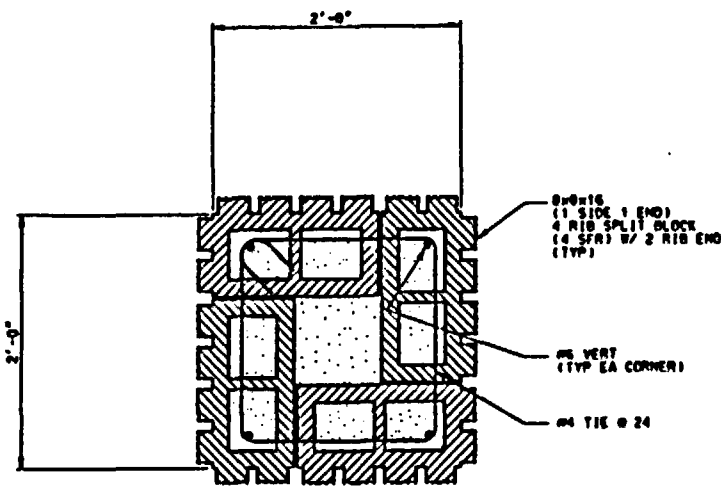
U.S. DEPARTMENT OF ENERGY
Nuclear Energy Research Center
Civil Engineering Division
MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY STANDARDS
CIVIL
GENERAL NOTES
LEGEND & SYMBOLS

NO.	DATE	BY	DESCRIPTION
01	11-11-03		ISSUED FOR CONSTRUCTION
02	11-11-03		ISSUED FOR PROCUREMENT

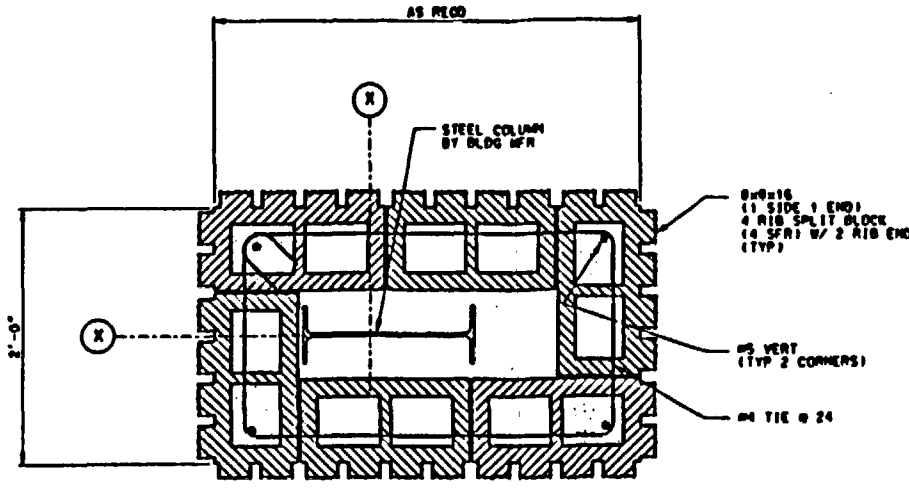
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SCALE: NONE
DATE: 1.2.6
FILE: CIVIL120006.dgn

DATE/TIME ACCEPTANCE FOR CONSTRUCTION
By: Date: 1/5/04

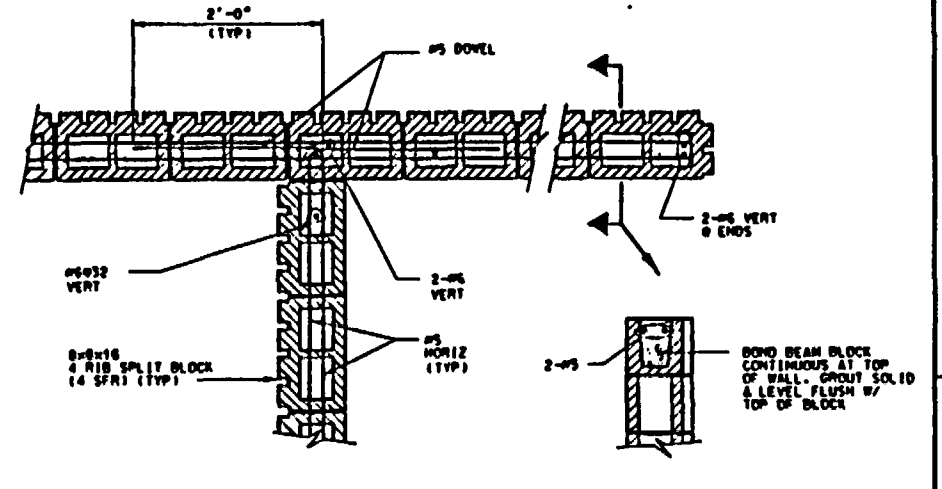
NO.	DATE	BY	DESCRIPTION
01	11-11-03		ISSUED FOR CONSTRUCTION
02	11-11-03		ISSUED FOR PROCUREMENT



COLUMN ①
SCALE: 1/2" = 1'-0"

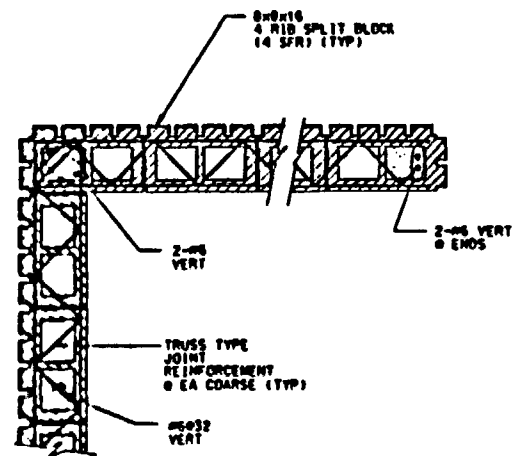


BLDG COLUMN FURRING ②
SCALE: 1/2" = 1'-0"

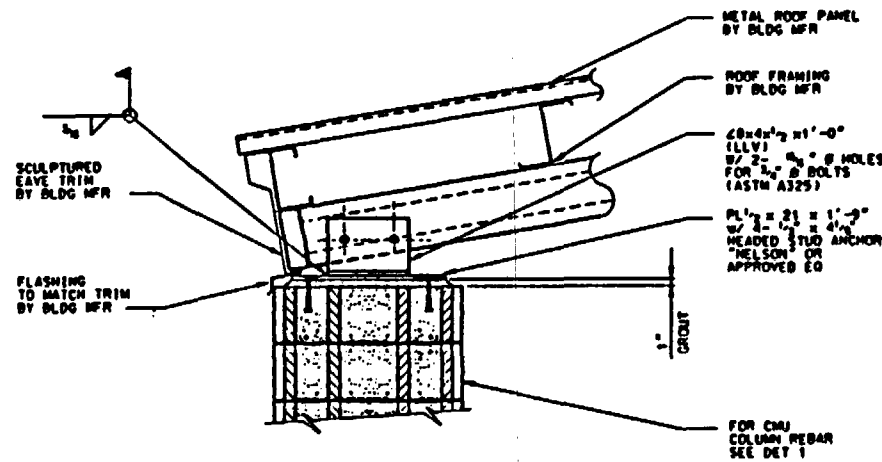


TOP @ FREE STANDING WALL ③
SCALE: 1" = 1'-0"

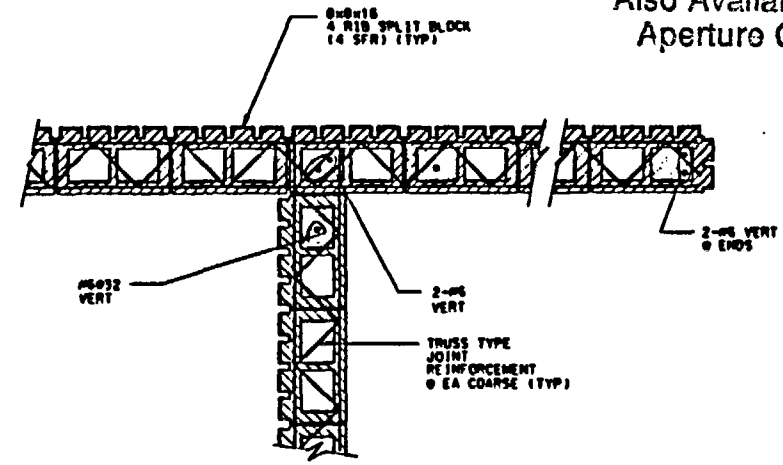
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CORNER ④
SCALE: 1" = 1'-0"



WALKWAY ROOF ATTACHMENT ⑤
SCALE: 1" = 1'-0"



INTERSECTION ⑥
SCALE: 1" = 1'-0"

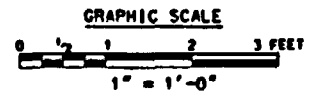
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NO.	DATE	BY	REMARKS

NOTE:
1. FOR ARCHITECTURAL SYMBOLS, ABBREVIATIONS, & GENERAL NOTES SEE DRAWING 22000.



DOE/EMP ACCEPTANCE FOR CONSTRUCTION
BY: [Signature] DATE: 1/5/94

NO.	DESCRIPTION	DATE	BY
00	ISSUED FOR CONSTRUCTION	12-21-93	[Signature]

U.S. DEPARTMENT OF ENERGY
Yucca Mountain Site Characterization Project
M&O Division Radioactive Waste Management System
MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY STANDARDS
**ARCHITECTURAL
CONCRETE MASONRY UNIT
STANDARD DETAILS**

PROJECT NO. BABBAD000-01717-2100-22004-00
DATE: 1-2-94
SCALE: AS NOTED
REV: 1.2.6
ARCH: 22004.dgn

ABBREVIATION INDEX

Table with 4 columns: Abbreviation, Description, Abbreviation, Description. Includes terms like AB, ALT, B TO B, BC, BL, etc.

GENERAL NOTES:

- 1. FOR ADDITIONAL TYP REINFORCING DETAILS SEE DWG'S 23001 & 23002.
2. FORMING DIMENSIONS AND ANCHOR BOLT LOCATIONS SHOWN IN PLAN ARE SYMMETRICAL ABOUT CENTERLINES UNLESS NOTED OTHERWISE.

MATERIALS

- CONCRETE: ALL CAST IN PLACE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAY TESTING.
REINFORCING: REINFORCING BARS SIZE #4 OR GREATER SHALL BE ASTM A615, GRADE 60.

GENERAL WELDING NOTES

- 1. ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY(AWS) STANDARD PRACTICES.
2. USE CLASS E70XX SERIES ELECTRODES FOR SHIELDED METAL ARC WELDING & CLASS F7X-EXXX SERIES ELECTRODES FOR SUBMERGED ARC WELDING.

GENERAL STEEL NOTES

- 1. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2-BOLTS UNLESS NOTED OTHERWISE.
2. HOLES FOR BOLTS SHALL BE 1/8" LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE.

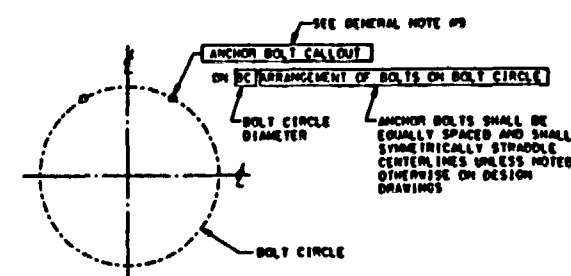
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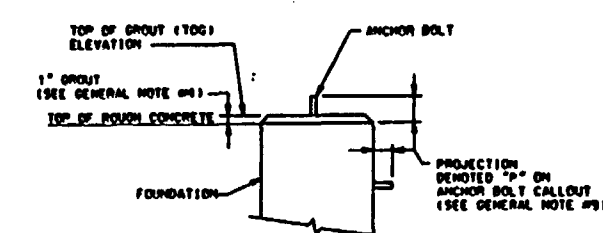
DOCUMENT AND RECORDS CENTER

Table with 4 columns: Date, Description, Status, Initials. Includes 'NOTICE OF OPEN CHANGE DOCUMENTS'.

U.S. DEPARTMENT OF ENERGY logo and title block for 'STANDARD NOTES DETAILS & ABBREVIATIONS'.



ANCHOR BOLT CIRCLE DETAIL



GROUT AND ANCHOR BOLT PROJECTION DETAILS

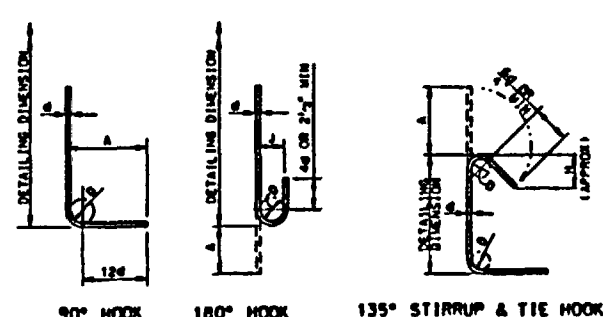
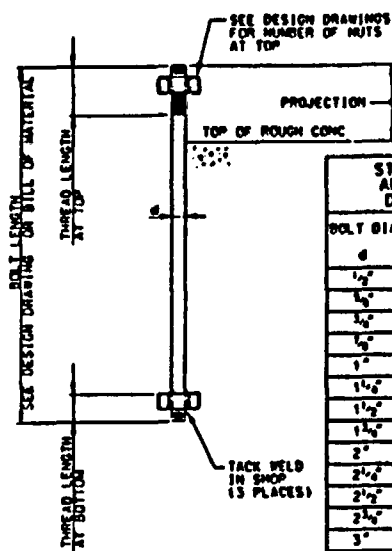


Table for Rebar Hook Details with columns for Hook Type, Bar Size, and Dimensions (A, B, J, A, D, A, B).

REBAR HOOK DETAILS (GRADES 60 - 50 - 60 ksi)

Standard 'H' Anchor Bolt Data Table with columns for Bolt Dia, Thread Length, and dimensions at bottom/top.



ANCHOR BOLT DETAILS

ANCHOR BOLT NOTES

- 1.0 SPECIFICATIONS
1.1 BOLTS SHALL CONFORM TO ASTM A36 OR A307 WITH UNC-2A THREADS.
1.2 NUTS SHALL CONFORM TO ASTM A563, AMERICAN STANDARD, HEAVY HEX WITH UNC-2B THREADS.

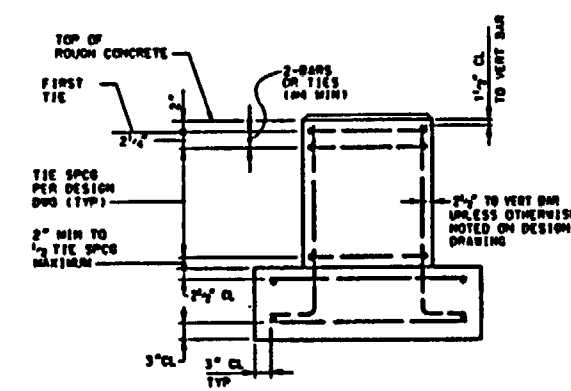
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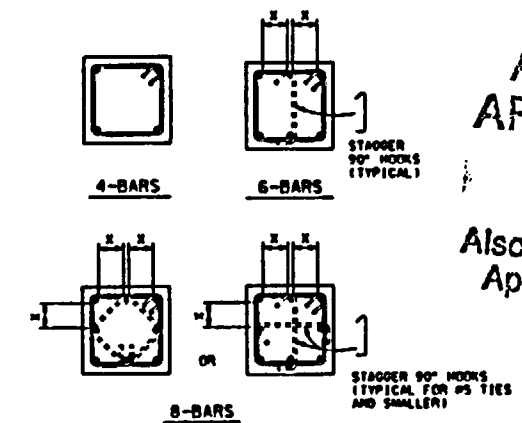
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REINFORCING NOTES:

1. FOR CONCRETE GENERAL NOTES AND TYPICAL DETAILS SEE DRAWING 23000.
2. ALL REINFORCING IN FLOOR SLABS SHALL BE LOCATED AT MID DEPTH, UNLESS NOTED OTHERWISE.
3. ALL LAP SPLICES SHALL CONFORM TO ACI 318 LATEST EDITION.



REINFORCEMENT CLEARANCES, TIE SPACING & ARRANGEMENT



NOTE 1:
TIES SHOWN BY DOTTED LINES ARE REQUIRED IF "X" DIMENSION EXCEEDS 6"

DETAIL 10
SCALE: NONE

NOTES:
1. FOR STRUCTURAL GENERAL NOTES, ABBREVIATIONS AND LEGEND SEE DRAWING 23000.

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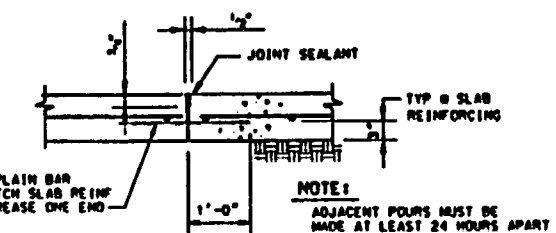
NOTICE OF OPEN CHANGE DOCUMENTS			
NO.	DESCRIPTION	DATE	BY

CL 18.3000

DATE	BY	DESCRIPTION
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12-15-93		
01-07-94		
01-21-94		
02-02-94		
02-16-94		
02-23-94		
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03-09-94		
03-16-94		
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12-21-94		
12-28-94		

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MANAGEMENT & OPERATIONS CONTRACTOR
EXPLORATORY STUDIES FACILITY STANDARDS
STRUCTURAL
STANDARD DETAILS
SHEET 1

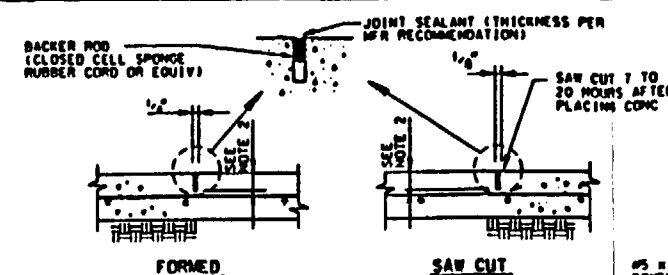
ISSUED FOR CONSTRUCTION
DATE: 11-21-93
BY: [Signature]



NOTE:
ADJACENT POURS MUST BE MADE AT LEAST 24 HOURS APART

CONSTRUCTION JOINT SLAB ON GRADE

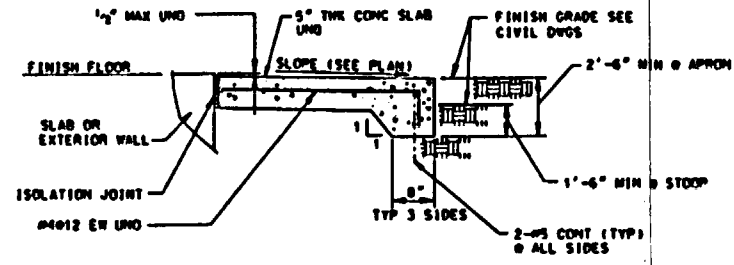
DETAIL 3
SCALE: NONE



- NOTES:**
1. MAXIMUM CONTROL JOINT SPACING TO BE 30'-0" UNLESS OTHERWISE SHOWN ON DESIGN DRAWINGS.
 2. 1" FOR SLABS LESS THAN 9" THICK & 2" FOR SLABS GREATER THAN 9" THICK
 3. FOR PREPARATION OF SOIL PRIOR TO CONCRETE PLACEMENT SEE EXCAVATION & BACKFILL SPECIFICATION.

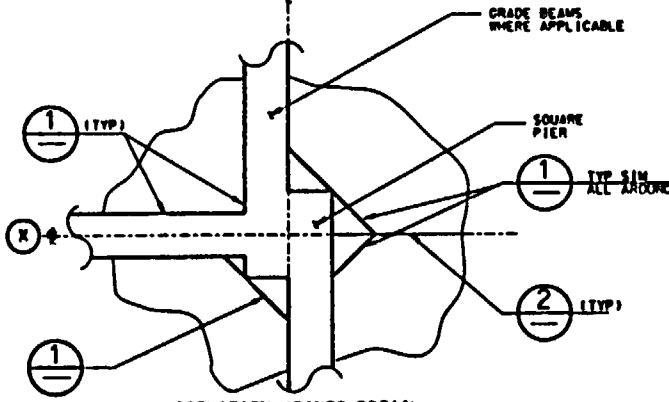
SLAB ON GRADE CONTROL JOINT

DETAIL 2
SCALE: NONE



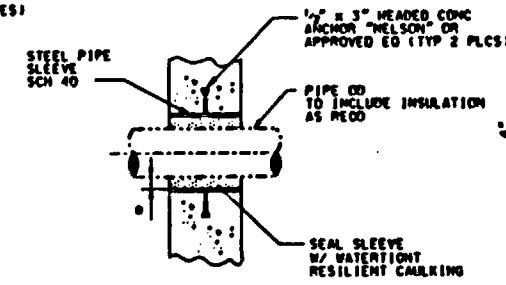
CONCRETE STOOP OR APRON SECTION

DETAIL 5
SCALE: NONE



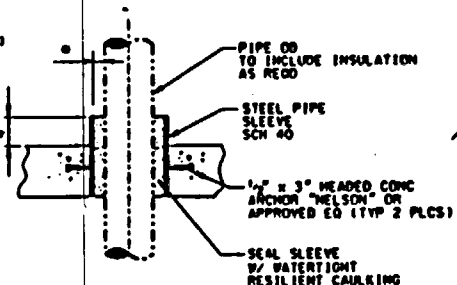
ISOLATION JOINTS DETAIL

DETAIL 6
SCALE: NONE



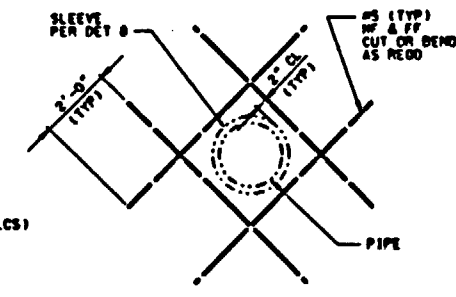
CONC WALL / GRADE BEAM PIPE SLEEVE

DETAIL 8
SCALE: NONE



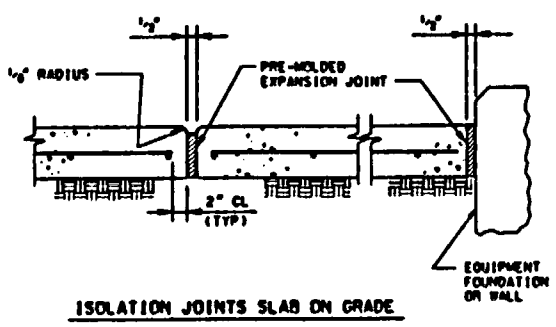
CONC FLOOR SLAB PIPE SLEEVE

• 1" MIN 2" MAX FOR PIPE LARGER THEN 4"
1/2" MIN 1" MAX FOR PIPE 4" OR LESS



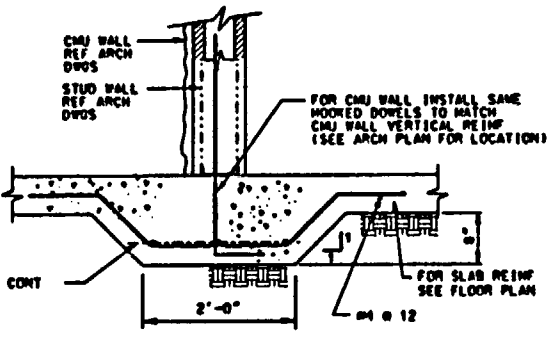
WALL REINFORCING @ PIPE OPENINGS

DETAIL 9
SCALE: NONE



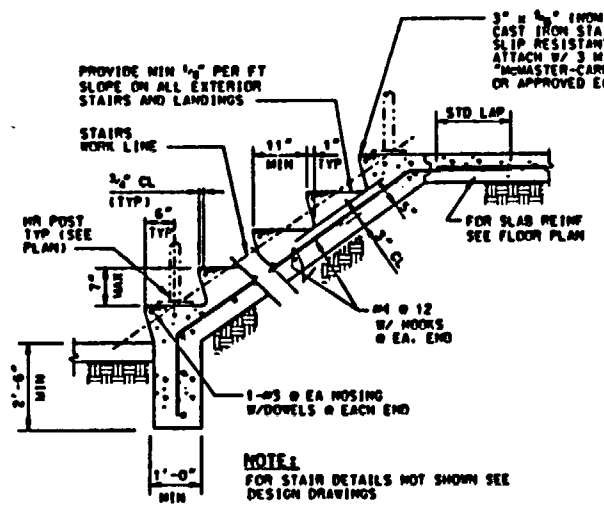
ISOLATION JOINTS SLAB ON GRADE

DETAIL 1
SCALE: NONE



INTERIOR BEARING WALL

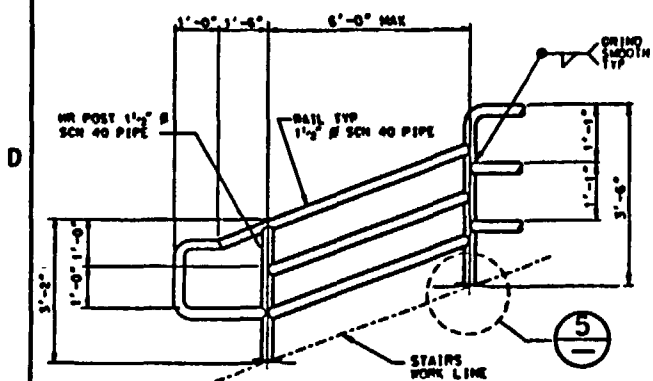
DETAIL 4
SCALE: NONE



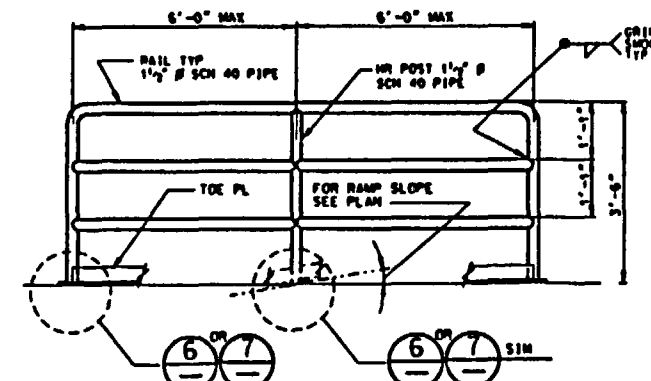
CONCRETE STAIRS ON GRADE

DETAIL 7
SCALE: NONE

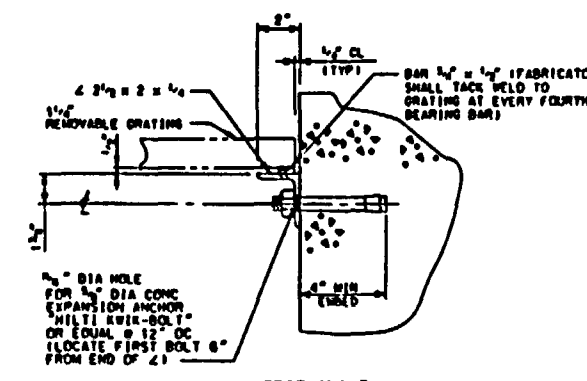
DOE/EMP ACCEPTANCE FOR CONSTRUCTION
DATE: 11-21-93
BY: [Signature]



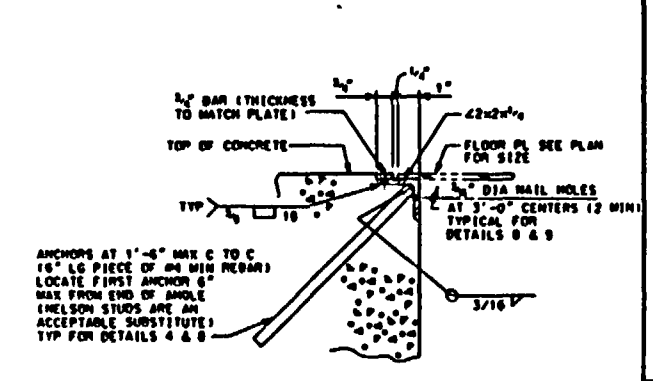
CONCRETE STAIRS HANDRAIL
DETAIL 1
 SCALE: NONE



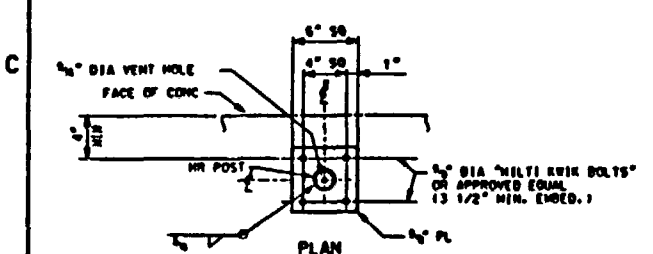
RAMP & PLATFORM HANDRAIL (GUARDRAIL)
DETAIL 2
 SCALE: NONE



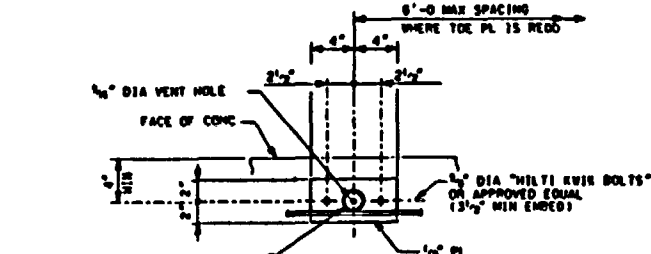
SEAT ANGLE
DETAIL 3
 SCALE: NONE



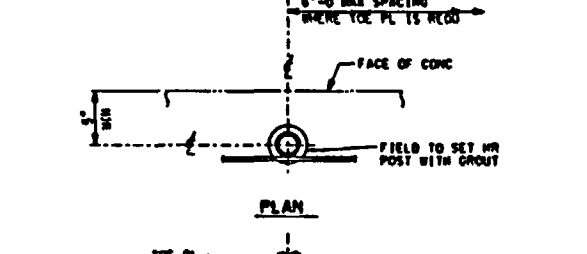
CURB ANGLE
DETAIL 4
 SCALE: NONE



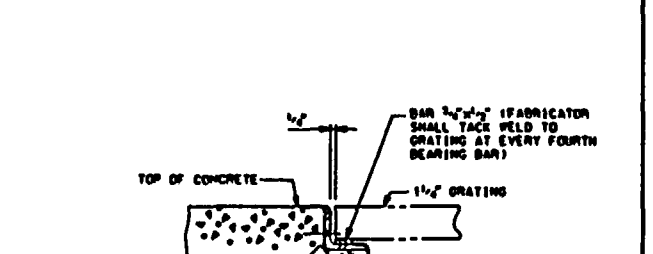
DETAIL 5
 SCALE: NONE



DETAIL 6
 SCALE: NONE



DETAIL 7
 SCALE: NONE

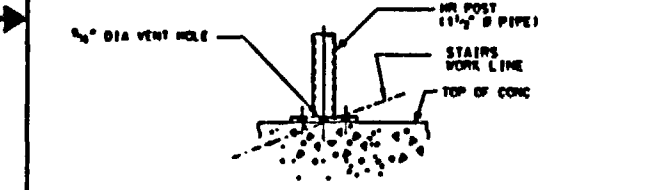


DETAIL 8
 SCALE: NONE

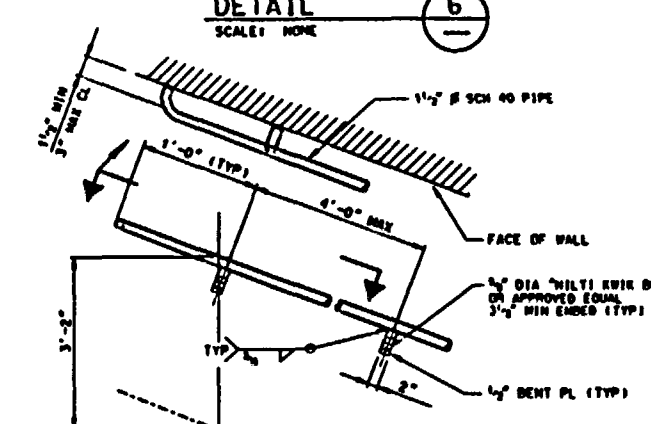
ANSTEC APERTURE CARD

Also Available on Aperture Card

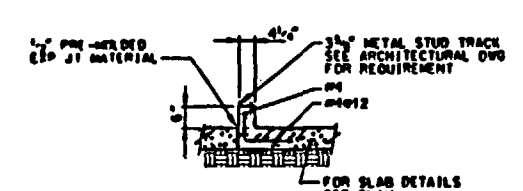
NOTES:
 1. FOR STRUCTURAL GENERAL NOTES, ABBREVIATIONS AND LEGEND SEE DRAWING 23000.



DETAIL 9
 SCALE: NONE



DETAIL 10
 SCALE: NONE



DETAIL 9
 SCALE: NONE

DOE/EP acceptance for construction
 Date: 1/5/94

ISSUED FOR CONSTRUCTION	11-11-93	BY: [Signature]	FOR: [Signature]
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FIRST SUBMITTAL:
 REVIEWED
 JAN 07 1994
 DOCUMENT AND RECORDS SECTION

NO.	DATE	BY	REVISION

U.S. DEPARTMENT OF ENERGY
 Yucca Mountain Site Characterization Project
 M&O
 EXPLORATORY STUDIES FACILITY STANDARDS
STRUCTURAL STANDARD DETAILS SHEET 2

CL 18.3000

DATE: 11-11-93

BY: [Signature]

FOR: [Signature]

NO. 18.3000-011717-2100-23002-00

REV. 1.2.6

STRU:23002.dgn

ELECTRICAL ABBREVIATIONS

GENERAL NOTES:

- 1. FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.
- 2. FOR ELECTRICAL SYMBOLS, REFER TO DRAWING 24001 AND 24002.

ANSTEC
APERTURE
CARD

Also Available on
Aperture Card

A OR AMP	AMPERE
AC	ALTERNATING CURRENT, AIR CONDITIONING
ACB	AIR CIRCUIT BREAKER
A/E	ARCHITECTURAL/ENGINEERING
AF	AMPERE FRAME
AFB	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AG	ABOVE GROUND
AH	AMPERE-HOUR
AL	ALUMINUM
ALT	ALTERNATOR OR ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATELY
APVD	APPROVED
AS	AMMETER SWITCH
ASSY	ASSEMBLY
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BAT	BATTERY
BC	BARE COPPER
BFD	BASIS FOR DESIGN
BM	BOREHOLE
BIL	BASIC IMPULSE LEVEL
BKR	BREAKER
BLDG	BUILDING
BO	BOTTOM OF
BOC	BOTTOM OF CONCRETE
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
C	COIL, CLOSE, CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL	CENTER LINE
CLF	CURRENT LIMITING FUSE
CLG	CEILING
CND	CONDUITS
COL	COLUMN
COMM	COMMUNICATION
COMP	COMPRESSOR
CON	CONDUIT
CONN	CONNECTION OR CONNECTED
CON SPEC	CONSTRUCTION SPECIFICATION
CONSTR	CONSTRUCTION
CONT	CONTINUE, CONTINUED
CONV	CONVENIENCE
COORD	COORDINATE
CRT	CATHODE RAY TUBE
CT	CURRENT TRANSFORMER
CU	COPPER
CUR	CURRENT
CV	COOL WHITE
DB	DIRECT BURIAL
DC	DIRECT CURRENT
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGRAM
DIFF	DIFFERENTIAL
DISC	DISCONNECT
DISTR	DISTRIBUTION
DM	DEMAND METER
DOE	DEPARTMENT OF ENERGY
DPS	DIFFERENTIAL PRESSURE SWITCH
DWG	DRAWING
E	EAST
EA	EACH
E/G	ENGINE GENERATOR
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDMENT
EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
ENCL	ENCLOSURE

EOD	EDGE OF DUCT
EOT	ETCETERA
ETC	EDGE OF TRENCH
EUM	ELECTRIC UNIT HEATER
EW	ELECTRIC WATER COOLER
EMW	ELECTRIC WATER HEATER
EXC	EXCITATION OR EXCITER
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERIOR
FACP	FIRE ALARM CONTROL PANEL
FCM	FOOTCANDLES MAINTAINED
FDN	FOUNDATION
FDR	FEEDER
FN	FIRE HYDRANT
FIN GR	FINISHED GRADE
FLA	FULL-LOAD AMPERES
FLD	FIELD
FLEX	FLEXIBLE
FLR	FLOOR
FM	FACTORY MUTUAL
FS	FINISHED SURFACE
FREQ	FREQUENCY
FTG	FITTING
FU	FUSE
FUT	FUTURE
FVC	FULL VOLTAGE CONTACTOR
FVWR	FULL VOLTAGE NON-REVERSING
FW	FIREWATER
FXTR	FIXTURE
GALV	GALVANIZED
GEN	GENERATOR
GENL	GENERAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GNNG	GROUNDING
GS	GROUND SENSOR
HD	HEAD
HEX	HEXAGON
HGT	HEIGHT
HH	HANDHOLE
HI	HIGH
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPFS	HIGH POINT FINISHED SURFACE
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HT	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
IA	INSTRUMENT AIR
ID	INSIDE DIAMETER
IDS	INTEGRATED DATA SYSTEM
IF	INSIDE FROSTED
IMC	INTERMEDIATE METALLIC CONDUIT
INT	INSTANTANEOUS
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KD	KNOCKOUT
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
KWHD	KILOWATT-HOUR DEMAND
LA	LIGHTNING ARRESTER
LCS	LATCH-CHECKING SWITCH
LG	LENGTH
LD	LOW
LP	LIGHTING PANEL
LS	LEVEL SWITCH
LTC	LOAD TAP CHANGER
LTC	LIGHTING
LTFMC	LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
LV	LOW VOLTAGE

M	OPERATING MOTOR
MAG	MAGNETIC
MATL	MATERIAL
MAINT	MAINTENANCE
MAX	MAXIMUM
MBA	MAIN BREAKER BUS "A"
MBB	MAIN BREAKER BUS "B"
MBLV	MAIN BREAKER LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	HANDHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MNL	MANUAL
MPP	MAIN POWER PANEL
MPR	MOTOR PROTECTOR RELAY
MR	MULTI RATIO
MS	MANUAL STARTER
MTD	MOUNTED
MTG	MOUNTING
MVA	MEGAVOLT AMPERE
MVAR	MEGAVOLT AMPERE REACTIVE
MW	MEGAWATT
N	NORTH
NA	NON-AUTOMATIC
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT	NEUTRAL
NF	NON-FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NFSS	NON-FUSED SAFETY SWITCH
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN OR NUMBER
NOM	NOMINAL
NORM	NORMAL
NPSB	NONSEGREGATED PHASE BUS
NTS	NEVADA TEST SITE
OC	ON CENTER
OCB	OIL CIRCUIT BREAKER
OD	OUTSIDE DIAMETER
ODGW	OVERHEAD GROUND WIRE
OL	OVERHEAD LINE
OL	OVERLOAD
OW	OILY WATER
%	PERCENT
P	POLE
PA	PUBLIC ADDRESS/PAGING
PB	PULL BOX, PUSH BUTTON
PED	PEDESTAL
PF	POWER FACTOR
PFC	POWER FACTOR CORRECTION
PH OR ⚡	PHASE
PIV	POST INDICATOR VALVE
PMD	PAD MOUNTED DISCONNECT SWITCH
PNL	PANEL
PP	POWER PANEL
PRELIM	PRELIMINARY
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER, POWER TRANSFORMER
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
PWR	POWER
QTY	QUANTITY
R	RADIUS
RBH	RADIAL BOREHOLE
RBT	RADIAL BOREHOLE TEST
RCPT	RECEPTACLE
REF	REFERENCE
REL	RELAY
REQ'D	REQUIRED
RES	RESISTOR
REV	REVISION
RM	ROOM
RS	RAPID START
RSG	RIGID STEEL GALVANIZED

SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCH	SCHEDULE
SD	STORM DRAIN
SG OR SWGR	SWITCHGEAR
SH	SHEET
SIM	SIMILAR
S/N	SOLID NEUTRAL
SP	SPARE OR SPACE
SPEC	SPECIFICATION
SS	SANITARY SEWER
SO	SQUARE
ST	SHUNT TRIP
STA	STATION
STD	STANDARD
STRU	STRUCTURAL
SUB	SUBSTATION
SUPV	SUPERVISORY
SW	SWITCH
SWBD	SWITCHBOARD
SWC	SWITCHING
SWW	SUBSURFACE WASTE WATER
SYM	SYMMETRICAL
SYS	SYSTEM
T	THERMOSTAT, TRIP
TB	TERMINAL BOX
TBD	TO BE DETERMINED
TBM	TUNNEL BORING MACHINE
TBV	TO BE VERIFIED
TC	TRIP COIL
TELCO	TELEPHONE COMPANY
TEMP	TEMPERATURE
TDC	TOP OF CONCRETE
TDD	TOP OF DUCT
TOP	TOP OF PIPE
TTB	TELEPHONE TERMINAL BACKBOARD
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES, INC
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VA	VOLT-AMPERE
VAC	VOLTS ALTERNATING CURRENT
VD	VOLTAGE DROP
W	WATT OR WIRE
WH	WATTHOUR
WHD	WATTHOUR DEMAND
WP	WEATHERPROOF
W/	WITH
W/O	WITHOUT
WR	WELDING RECEPTACLE
WT	WEIGHT
XFR OR T	TRANSFORMER
Y	ANTI-PUMP DEVICE
YMPD	YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
Z	IMPEDANCE
1/C	ONE CONDUCTOR
1ST	FIRST
2ND	SECOND
#	NUMBER

DOE/YMP ACCEPTANCE FOR CONSTRUCTION By _____ Date _____	OIC REVISED NOTE 1 OIB ISSUED FOR PRELIMINARY DESIGN REVIEW OIA ISSUED FOR INTERDISCIPLINARY REVIEW OO ISSUED FOR CONSTRUCTION	12-21-93 RCG AT WF KK BHM FCA PP DATE SHE DATE SHE DATE SHE DATE SHE DATE SHE DATE SHE DATE SHE DATE SHE DATE SHE	APPROVALS R GUTIERREZ RCG 12-08-93 AT A TUMA 12-08-93 WF W FRENCH 12-08-93 KK K KOVALL 12-21-93 BHM B BHALDAR 12-21-93 FCA F ARTH 12-21-93 PP P PIMENTEL 12-21-93	INITIAL DATE RCG 12-08-93 AT 12-08-93 WF 12-08-93 KK 12-21-93 BHM 12-21-93 FCA 12-21-93 PP 12-21-93	U.S. DEPARTMENT OF ENERGY Project Location M&O Civilian Radioactive Waste Management System MANAGEMENT & OPERATING CONTRACTOR EXPLORATORY STUDIES FACILITY STANDARDS ELECTRICAL ABBREVIATIONS AND GENERAL NOTES	NOTICE OF OPEN CHANGE DOCUMENTS THIS DOCUMENT IS ISSUED BY THE U.S. DEPARTMENT OF ENERGY AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION.
	U.S. DEPARTMENT OF ENERGY Project Location M&O Civilian Radioactive Waste Management System MANAGEMENT & OPERATING CONTRACTOR EXPLORATORY STUDIES FACILITY STANDARDS ELECTRICAL ABBREVIATIONS AND GENERAL NOTES	IDENTIFIER: BABB00000-01717-2100-24000-010 CLASSIFICATION: NONE EDITION: 1.2.6 DATE: 12-21-93				

REFERENCE DOCUMENT - UNCONTROLLED
 PRELIMINARY

LIGHTING, POWER AND SYSTEMS SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONDUIT RUN CONCEALED IN WALLS OR ABOVE CEILING. CONDUIT RUN EXPOSED IN UNFINISHED AREAS OR WHERE NOTED.		FIXTURE, FLUORESCENT, (PENDANT, CEILING OR FLUSH MOUNTED) 1' x 4'		SWITCH, TOGGLE, THREE WAY, 20A, 125/277VAC, 4'-0" AFF. UNO, HUBBELL #1223-1 OR EQUAL		EXIT LIGHT - CEILING MOUNTED, DIRECTIONAL ARROWS AS INDICATED
	CONDUIT RUN CONCEALED IN OR BELOW FLOOR SLAB OR BELOW GRADE		CIRCUIT AND WALL SWITCH DESIGNATION		SWITCH, TOGGLE, FOUR WAY, 20A, 125/277VAC, 4'-0" AFF. UNO, HUBBELL #1224-1 OR EQUAL		EXIT LIGHT - WALL MOUNTED
	CONDUIT TURNING UP OR TOWARD VIEWER		FIXTURE, FLUORESCENT, WALL MOUNTED		SWITCH, TOGGLE, "P" INDICATES RED PILOT LIGHT HANDLE HUBBELL #1221-PL OR EQUAL		DESK TELEPHONE, 1'-0" AFF
	CONDUIT TURNING DOWN OR AWAY FROM VIEWER		CIRCUIT AND WALL SWITCH DESIGNATION		SWITCH, TOGGLE, PILOT LIGHT TYPE WITH WEATHERPROOF BUBBLE HUBBELL #1221-PL WITH #1795 PLATE, OR EQUAL		WALL TELEPHONE OUTLET, 4'-6" AFF. UNO
	DOT INDICATES CONDUIT FITTING		CIRCUIT AND WALL SWITCH DESIGNATION (NORMAL POWER)		SWITCH, MANUAL MOTOR STARTER, 20A, 125/277VAC, 4'-0" AFF. UNO		MULTIMEDIA OUTLET, 1'-0" AFF. UNO
	CONDUIT CAPPED		FIXTURE, FLUORESCENT, EMERGENCY (MULTI-LAMP) 1' x 4'		SWITCH, SPEAKER VOLUME CONTROL, 120VAC, 4'-0" AFF. UNO		UNDERGROUND CONCRETE ENCASED DUCTBANK
	CONDUIT FILL: SHORT LINE - PHASE CONDUCTOR LONG LINE - NEUTRAL DOT - GROUND CONDUCTOR		CIRCUIT AND WALL SWITCH DESIGNATION (NORMAL POWER)		SWITCH, SAFETY - NUMERAL DENOTES AMP RATING, VOLTAGE AS REQUIRED		UNDERGROUND DIRECT BURIAL CABLE
	CONDUIT NONE RUN TO PANEL OR AS INDICATED		FIXTURE, INCANDESCENT OR HID, CEILING MOUNTED		PUSHBUTTON STATION		EXPOSED GROUND CABLE SUPPORT
	FLEX CONDUIT CONNECTION		FIXTURE, HID WITH QUARTZ EMERGENCY LAMP		PUSHBUTTON STATION FOR SHUNT TRIP OPERATION OF BUILDING MAIN CIRCUIT BREAKER		DUCT/UNIT HEATER
	GROUND CABLE - EXPOSED		FIXTURE, INCANDESCENT OR HID, WALL MOUNTED		MOTOR CONNECTION - NUMERAL DENOTES HORSEPOWER, FINAL CONNECTION WITH FLEX CONDUIT		RADIANT HEATER
	GROUND CABLE - DIRECT BURIAL		FIXTURE, HID WALL PACK		DAMPER MOTOR		DUCTBANK SECTION CALLOUT "AZ" INDICATES SECTION VIEW "2" LOOKING TOWARD MANHOLE "A". LOWER NUMBER (24076) DENOTES DRAWING WHERE SECTION VIEW IS SHOWN FOR STANDARD "NON-DUCTBANK" CALLOUTS, SEE DRAWING 20002.
	GROUND TAPS OR GROUND CONNECTIONS		DUPLEX GROUNDING TYPE RECEPTACLE, 20A, 125VAC, 1'-0" AFF. UNO HUBBELL #5362-1/PS OR EQUAL		MANUAL ALARM BOX (PULL STATION)		FIRE ALARM CONTROL PANEL
	GROUND TEST BAR		DUPLEX GROUNDING TYPE RECEPTACLE, 20A, 125VAC, MOUNT 6" ABOVE COUNTER OR BACKSPASH, UNO HUBBELL #5362-1/PS OR EQUAL		THERMOSTAT, 4'-0" AFF. UNO		ELECTRICAL ENCLOSURE AS NOTED
	GROUND ROD		DUPLEX GROUNDING TYPE RECEPTACLE, "WP" DENOTES WEATHERPROOF, 125VAC, 20A, WITH GROUND FAULT CIRCUIT INTERRUPTER, 2'-0" AFF OR AFG, HUBBELL #GFI-5362-1/PP-26 OR EQUAL		FLUSH MOUNT CEILING SPEAKER		SPEAKER/HORN, WALL MOUNT
	GROUND TEST WELL		DUPLEX GROUNDING TYPE RECEPTACLE, 20A, 125VAC, 1'-0" AFF. UNO WITH GROUND FAULT CIRCUIT INTERRUPTER, HUBBELL #5362-1/PJ-26 OR EQUAL		BI-DIRECTIONAL HORN TYPE SPEAKER, BRACKET INDICATES WALL MOUNT		JUNCTION BOX - CEILING MOUNTED
	AIR TERMINAL (LIGHTNING ROD)		DOUBLE DUPLEX GROUNDING TYPE RECEPTACLE, 20A, 125VAC, MOUNT 6" ABOVE COUNTER OR BACKSPASH, UNO HUBBELL #5362-1/21/P82 OR EQUAL		JUNCTION BOX - CONCEALED		JUNCTION BOX - WALL MOUNTED
	GROUND		PEDESTAL TYPE FLOOR OUTLET, DUPLEX GROUNDING TYPE, 15A, 125VAC HUBBELL #B-2436/5C-3091 OR EQUAL		CONDUITS FROM BUILDINGS		
	GROUND BUS		POWER OUTLET, 250VAC, AS NOTED				
	TRANSFORMER, AS NOTED		POWER OUTLET, 600VAC, AS NOTED				
	PANELBOARD, 277/480V		SWITCH, TOGGLE, SINGLE POLE, 20A, 125/277VAC, 4'-0" AFF. UNO HUBBELL #1221-1 OR EQUAL				
	PANELBOARD, 120/208V OR 120/240V		SWITCH, TOGGLE, DOUBLE POLE, 20A, 125/277VAC, 4'-0" AFF. UNO HUBBELL #1222-1 OR EQUAL				
	UNINTERRUPTIBLE POWER SUPPLY SYSTEM						
	SOLID NEUTRAL						
	LIGHTING FIXTURE CALLOUT, TOP NUMBER INDICATES FIXTURE TYPE, "S" INDICATES "EMERGENCY" BATTERY BACKUP POWER, BOTTOM NUMBER INDICATES TOTAL INPUT WATTS						
	FIXTURE, FLUORESCENT, (PENDANT, CEILING OR FLUSH MOUNTED) 2' x 4'						
	CIRCUIT AND WALL SWITCH DESIGNATION						
	FIXTURE, FLUORESCENT, EMERGENCY (MULTI-LAMP) 2' x 4'						
	CIRCUIT AND WALL SWITCH DESIGNATION (NORMAL POWER)						

ANSTEC APERTURE CARD
Also Available on Aperture Card

- NOTES:**
- FOR FIRE ALARM AND DETECTION DEVICE REQUIREMENTS, REFER TO SPECIFICATION 16721.
 - FOR COMMUNICATIONS SYSTEMS DEVICE REQUIREMENTS, REFER TO SPECIFICATION 16740.
 - UNLESS NOTED OTHERWISE, WALL MOUNTED SPEAKERS, ALARM HORNS & LIGHTS SHALL BE LOCATED 7'-0" AFF TO CENTERLINE OF DEVICE.
 - FOR ELECTRICAL ABBREVIATIONS AND GENERAL NOTES, SEE DRAWING 24000.
 - FOR FIXTURE SCHEDULES, SEE DRAWING 24003 & 24004.

DATE	BY	REASON

U.S. DEPARTMENT OF ENERGY
Project Location
M&O Civilian Radioactive Waste Management System
MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY STANDARDS
ELECTRICAL LIGHTING, POWER AND SYSTEMS SYMBOLS

APPROVAL	INITIAL DATE
W SHOEMAKER	12-4-93
R NEARM	12-8-93
W FRENCH	12-8-93
K ROVELL	12-21-93
R HONELL	12-21-93
F ARTH	12-21-93
P PIMENTEL	12-21-93

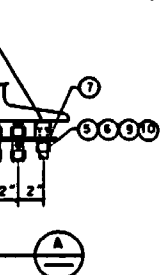
DOE/EP acceptance for construction

By _____ Date _____

9408020214-58

ANSTEC APERTURE CARD

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MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	GROUND ROD, 3/4" X 10'-0", COPPER CLAD STEEL
2	EA	CONCRETE ELECTRICAL UTILITY BOX
3	EA	BOX COVER, GALV STEEL OR CAST IRON PLATE, TRAFFIC, WITH FINGER HOLE
4	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)
5	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/0 AWG
6	EA	GRADE RING GALV STEEL OR CAST IRON (HEIGHT AS REQ'D)
7	EA	CONCRETE EXTENSION RING (AS REQ'D)

MATERIAL NOTES:
1. A REUSABLE MOLD (CABLE TO GROUND ROD), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.

DETAIL 1
SCALE: NONE
GROUND TEST WELL WITH TWO CONNECTIONS

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	GROUND ROD, 3/4" X 10'-0", COPPER CLAD STEEL
2	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)
3	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/0 AWG

MATERIAL NOTES:
1. A REUSABLE MOLD (CABLE TO GROUND ROD), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.

DETAIL 2
SCALE: NONE
GROUND ROD WITH TWO CONNECTIONS

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	CARTRIDGE, EXOTHERMIC, STANDARD POWDER (NOTE 1)

MATERIAL NOTES:
1. A REUSABLE MOLD (CABLE TO CABLE), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.

DETAIL 3
SCALE: NONE
GROUND CONNECTION EXOTHERMIC TAP OR X TAP

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	CONNECTOR, SERVIC POST, 1/2"-13, 1/4" #2 - #2/0 AWG
2	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 1/2"
3	EA	NUT, HEX, SILICON BRONZE, 1/2"-13
4	EA	BAR, FLAT COPPER, 1/4" X 2" X 12"
5	EA	WELD STUD, STEEL, 1/2"-13 X 3"
6	EA	WASHER, SPRING (LOCK), STAINLESS STEEL, 1/2"
7	EA	COUPLING, CONDUIT, 1 1/2", RSG
8	FT	CONDUCTOR, BARE COPPER, STRANDED, #2 AWG
9	EA	NUT, HEX, STAINLESS STEEL, 1/2"-13
10	EA	WASHER, FLAT, STAINLESS STEEL, 1/2"
11	EA	EXPANSION ANCHOR, STUD TYPE W/SINGLE PIECE THREE SECTION WEDGE, W/NUT & FLAT WASHER, STAINLESS STEEL, 1/4"-20, 1 1/8" EMBEDMENT
12	EA	WASHER, SPRING (LOCK), STAINLESS STEEL, 1/4"
13	FT	CONDUIT, PVC, SCHEDULE 80, 1"
14	EA	CLAMP, CONDUIT, ONE-HOLE W/CLAMP BACK, GALV, 1"

MATERIAL NOTES:
1. TEST BAR MAY BE MOUNTED EITHER HORIZONTALLY OR VERTICALLY, DEPENDING ON AVAILABLE SPACE.

DETAIL 4
SCALE: NONE
GROUND TEST BAR ON STEEL COL FLANGE MOUNT/UG

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)
2	EA	CONDUIT, PVC, SCHEDULE 80, 1"
3	EA	EXPANSION ANCHOR, STUD TYPE WITH SINGLE PIECE THREE SECTION WEDGE W/NUT AND FLAT WASHER, STAINLESS STEEL, 1/4"-20, 1 1/8" EMBEDMENT
4	EA	WASHER, SPRING (LOCK) STAINLESS STEEL, 1/4"
5	EA	CLAMP, CONDUIT, ONE HOLE W/CLAMP BACK, GALV, 1"

MATERIAL NOTES:
1. A REUSABLE MOLD (CABLE TO STEEL), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.

DETAIL 5
SCALE: NONE
STEEL COLUMN GROUNDING

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	CONNECTOR, SERVIC POST, 1/2"-13, 1/4" #2 - #2/0 AWG
2	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 1/2"
3	EA	NUT, HEX, SILICON BRONZE, 1/2"-13
4	EA	BAR, FLAT COPPER, 1/4" X 2" X 12" (DR LENGTH AS REQ'D)
5	EA	BOLT, HEX HD, STAINLESS STEEL, 1/2"-13 X 1 1/2"
6	EA	WASHER, SPRING (LOCK), STAINLESS STEEL, 1/2"
7	EA	NUT, HEX, STAINLESS STEEL, 1/2"-13
8	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/0 AWG
9	EA	BRACKET, MOUNTING, ANGLE IRON, GALV STEEL, SIZE AS REQUIRED PER INSTALLATION
10	EA	WASHER, FLAT, STAINLESS STEEL, 1/2"
11	FT	CONDUIT, PVC, SCHEDULE 80, 1"
12	EA	EXPANSION ANCHOR, STUD TYPE WITH SINGLE PIECE THREE SECTION WEDGE W/NUT AND FLAT WASHER, STAINLESS STEEL, 1/4"-20, 1 1/8" EMBEDMENT
13	EA	CLAMP, CONDUIT, ONE HOLE WITH CLAMP BACK, GALV, 1"
14	EA	WASHER, SPRING (LOCK) STAINLESS STEEL, 1/4"
15	EA	CONNECTOR, SERVIC POST, 3/4"-11, 1/4" #1-#4/0 AWG
16	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 3/4"
17	EA	NUT, HEX, SILICON BRONZE, 3/4"

NOTE:
1. QUANTITY OF SERVIC POSTS MAY VARY DEPENDING ON AVAILABLE SPACE ON FLAT BAR.

DETAIL 6
SCALE: NONE
GND TEST BAR ON STEEL COL WEB MOUNT/UG

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	CARTRIDGE, EXOTHERMIC, STANDARD POWDER (NOTE 1)

MATERIAL NOTES:
1. A REUSABLE MOLD (CABLE TO CABLE), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.

DETAIL 7
SCALE: NONE
GROUND CONNECTION EXOTHERMIC SPLICE

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)
2	EA	CONDUIT, PVC, SCHEDULE 80, 1"
3	EA	EXPANSION ANCHOR, STUD TYPE WITH SINGLE PIECE THREE SECTION WEDGE W/NUT AND FLAT WASHER, STAINLESS STEEL, 1/4"-20, 1 1/8" EMBEDMENT
4	EA	WASHER, SPRING (LOCK) STAINLESS STEEL, 1/4"
5	EA	CLAMP, CONDUIT, ONE HOLE W/CLAMP BACK, GALV, 1"
6	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 2)

MATERIAL NOTES:
1. A REUSABLE MOLD (CABLE TO STEEL), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.
2. A REUSABLE MOLD (CABLE TO CABLE), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.

DETAIL 8
SCALE: NONE
STEEL COLUMN AND CABLE TO CABLE GROUNDING

NOTICE OF OPEN CHANGE DOCUMENTS

Change Document	Issued by	Date	Status

APPROVALS	DATE
W SHOEMAKER	12-16-93
W FRENCH	12-16-93
A TUNA	12-16-93
K KOVALL	12-21-93
R HOWELL	12-21-93
B R JUSTICE	12-21-93
P PIMENTEL	12-21-93

U.S. DEPARTMENT OF ENERGY
Project Location: **MCO** Civilian Radioactive Waste Management System MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY STANDARDS
ELECTRICAL STANDARD DETAILS SHEET 1

DOC ID: BABBAA000-01717-2100-24005-02A
SCALE: NONE
REV: 1.2.6
DATE: 12-21-93

MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION
1	EA	CABLE GLAND WITH LOCKNUT, SEALING GASKET, GLAND NUT & NEOPRENE BUSHING	1	EA	CONNECTOR, SERVID POST, 1/2"-13, 1/C #2-#2/D AWG	1	EA	CONNECTOR, SERVID POST, 1/2"-13, 1/C #12-#2/D AWG	1	EA	BOLT, HEX HD, STEEL, 3/8"-16 X 1"
2	FT	CONDUCTOR, COPPER, STRANDED, TYPE THWN, #2 AWG (NOTE 1)	2	EA	STRUT NUT, W/SPRING, GALV, 1/2"-13	2	EA	WASHER, SPRING (LOCK), STAINLESS STEEL, 1/2"	2	EA	NUT, HEX, STAINLESS STEEL, 3/8"-16
3	EA	TERMINAL, 1-HOLE, COPPER, #2 AWG, CRIMP TYPE, 3/4" BOLT HOLE	3	EA	STRUT FLAT PLATE, GALV, 1/2" HOLE	3	EA	NUT, HEX, STAINLESS STEEL, 1/2"-13	3	EA	WASHER, SPRING (LOCK), STAINLESS STEEL, 3/8"
4	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 3/8"	4	FT	CONDUCTOR, BARE COPPER, STRANDED, #2 AWG	4	EA	WASHER, FLAT STAINLESS STEEL, 1/2"	4	EA	WASHER, FLAT, STAINLESS STEEL, 3/8"
5	EA	NUT, HEX, SILICON BRONZE, 3/8"-16				5	FT	CONDUCTOR, BARE COPPER, STRANDED, #2 AWG	5	EA	TERMINAL, 1-HOLE, NON-INSULATED, CRIMP TYPE, 3/4" BOLT HOLE
6	EA	WASHER, FLAT, SILICON BRONZE, 3/8"									

MATERIAL NOTES:		
1. FOR TRANSFORMERS 45 KVA AND LARGER USE #2 AWG AND FOR TRANSFORMERS 30 KVA AND SMALLER USE #6 AWG.		
FOR INTERNAL CONNECTIONS		

DETAIL 9
SCALE: NONE

TRANSFORMER & PANELBOARD GROUNDING

DETAIL 10
SCALE: NONE

EQUIPMENT SUPPORT GROUNDING WITH SERVID POST

DETAIL 11
SCALE: NONE

EQUIPMENT ENCLOSURE GROUNDING WITH SERVID POST

DETAIL 12
SCALE: NONE

EQUIPMENT STRUCTURE GROUNDING WITH WELDED BOLT

MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION
1	EA	CONNECTOR, SERVID POST, 5/8"-11, #2-#4/D AWG	1	EA	CONDUCTOR, BARE COPPER, STRANDED, #8 AWG	1	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)	1	EA	CONDUCTOR, BARE COPPER, STRANDED, #2/D AWG
2	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 5/8"	2	EA	TERMINAL, 1-HOLE, COPPER, #8 AWG, CRIMP TYPE, 3/4" BOLT HOLE	2	FT	CONDUCTOR, BARE COPPER, STRANDED, #2/D AWG	2	FT	CONDUCTOR, BARE COPPER, STRANDED, #2/D AWG
3	EA	NUT, HEX, SILICON BRONZE, 5/8"-11									
4	EA	CONNECTOR, SERVID POST, 1/2"-13, 1/C #2-#2/D AWG									
5	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 1/2"									
6	EA	NUT, HEX, SILICON BRONZE, 1/2"-13									
7	EA	BAR, FLAT COPPER, 1/4" X 2" X 15"									
8	EA	BOLT, HEX HD, STAINLESS STEEL, 1/2"-13 X 3"									
9	EA	WASHER, SPRING (LOCK), STAINLESS STEEL, 1/2"									
10	EA	COUPLING, CONDUIT 1 1/2" RSG									
11	FT	STRUT, CHANNEL, SINGLE, GALV, 1 5/8" X 1 5/8" X 26" LONG									
12	EA	NUT, STRUT, W/SPRING, STAINLESS STEEL, 1/2"-13									
13	EA	BOLT, HEX HD, STAINLESS STEEL, 1/2"-13 X 1"									
14	EA	FITTING, "U" SHAPE, STRUT, GALV, 1/2" HOLE									
15	EA	SCREW, HEX, SLOTTED WASHER HEAD, SELF TAPPING, TYPE A, STAINLESS STEEL, #12 X 1 1/2"									
16	EA	WASHER, FLAT, STAINLESS STEEL, 5/16"									
17	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/D AWG									
18	EA	WASHER, FLAT, STAINLESS STEEL, 1/2"									
19	EA	FITTING, PLATE, FLAT, STRUT, GALV, 1 5/8" SQUARE									

MATERIAL NOTES:		
1. A REUSABLE MOLD (CABLE TO PIPE), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.		

DETAIL 13
SCALE: NONE

GROUND TEST BAR ON GYPSUM BOARD WALL

DETAIL 14
SCALE: NONE

COMPUTER RAISED FLOOR GROUNDING

DETAIL 15
SCALE: NONE

METAL UNDERGROUND WATER PIPE GROUNDING

DOE/THP ACCEPTANCE FOR CONSTRUCTION		BY: W. SHUEMAKER		DATE: 12-16-93	
BY: M. FRENCH		DATE: 12-16-93		BY: A. TURNER	
DATE: 12-16-93		BY: K. ROVELL		DATE: 12-16-93	
BY: B. MALJUDAR		DATE: 12-21-93		BY: F. ARTH	
DATE: 12-21-93		BY: P. PIMENTEL		DATE: 12-21-93	

01	ISSUED FOR CONSTRUCTION AND REMOVED TBV 129	12-21-93	WS	WF	AT	KK	BHM	FCA	PP
00	ISSUED FOR PROCUREMENT ONLY	12-1-93	WS	WF	AT	N/A	REM	BRJ	PP
REV	DESCRIPTION	DATE	BY	CHK	APP	APP	APP	APP	APP

U.S. DEPARTMENT OF ENERGY		PROJECT LOCATION	
M&O Civilian Radioactive Waste Management System		MANAGEMENT & OPERATING CONTRACTOR	
EXPLORATORY STUDIES FACILITY STANDARDS			
ELECTRICAL STANDARD DETAILS SHEET 2			
DATE: 12-21-93	BY: TBV 128	SCALE: 1:2.6	DATE: 12-21-93

MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION	ITEM	UNIT	DESCRIPTION
1	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)	1	EA	COPPER CLAD SECTION GND ROD, THOMPSON #TL101D S	1	EA	BOLT, HEX HD, SILICON BRONZE, 1/2"-13 x 1"	1	EA	CARTRIDGE WELD METAL, STANDARD POWDER (NOTE 1)
2	EA	GROUND ROD, 3/4" X 10'-0", COPPER CLAD STEEL	2	EA	BRONZE COUPLER FOR COPPER CLAD RODS, THOMPSON #80 C	2	EA	NUT, HEX, SILICON BRONZE, 1/2"-13	2	FT	CONDUCTOR, BARE COPPER, STRANDED (NOTE 2)
3	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/0 AWG				3	EA	WASHER, SPRING (LOCK), SILICON BRONZE, 1/2"	MATERIAL NOTES: 1. A REUSEABLE MOLD (CABLE TO REBAR), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION. 2. SEE PLAN DRAWING FOR CONDUCTOR SIZE.		
MATERIAL NOTES: 1. A REUSEABLE MOLD (CABLE TO GROUND ROD), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION.			MATERIAL NOTES: 1. A REUSEABLE MOLD (CABLE TO REBAR), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION. 2. SEE PLAN DRAWING FOR CONDUCTOR SIZE.			MATERIAL NOTES: 1. A REUSEABLE MOLD (CABLE TO REBAR), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION. 2. SEE PLAN DRAWING FOR CONDUCTOR SIZE.			MATERIAL NOTES: 1. A REUSEABLE MOLD (CABLE TO REBAR), HANDLE AND IGNITER IS REQUIRED TO PERFORM THE EXOTHERMIC CONNECTION. 2. SEE PLAN DRAWING FOR CONDUCTOR SIZE.		
<p>DETAIL 16 SCALE: NONE MANHOLE GROUNDING</p>			<p>DETAIL 17 SCALE: NONE LIGHTNING PROTECTION DETAIL</p>			<p>DETAIL 18 SCALE: NONE EQUIPMENT GROUND BUS GROUNDING</p>			<p>DETAIL 19 SCALE: NONE FOUNDATION REBAR GROUNDING</p>		
MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS			MATERIAL DESCRIPTIONS		
1	EA	BOLT, #4 HD, STAINLESS STEEL, 3/8"-16 X 1 1/4"	1	EA	AIR TERMINAL, 1/2" X 24", SOLID COPPER, TAPERED POINT, THREADED END, HEAVY #HB23-C OR EQUAL	1	EA	CONDUIT, SCHEDULE 80, PVC, 1"	MATERIAL NOTES: 1. TOTAL LENGTH OF REBAR CONNECTED TO GROUND SHALL BE A MINIMUM OF 20'-0". MINIMUM DIA OF REBAR SHALL BE 1/2" (#4). 2. IF SLAB CONTAINS LESS THAN 20'-0" OF REBAR, THE LONGEST CONTINUOUS BAR SHALL BE GROUNDING.		
2	EA	#4/0 BC, STAINLESS STEEL, 3/8"-16	2	EA	AIR TERMINAL BASE, COPPER ADHESIVE, PRESSURE TYPE CABLE CONNECTION, HEAVY #HB23-C OR EQUAL	2	EA	CLAMP, CONDUIT, GALVANIZED, ONE HOLE W/ CLAMP BACK, 1"	MATERIAL NOTES: 1. TOTAL LENGTH OF REBAR CONNECTED TO GROUND SHALL BE A MINIMUM OF 20'-0". MINIMUM DIA OF REBAR SHALL BE 1/2" (#4). 2. IF SLAB CONTAINS LESS THAN 20'-0" OF REBAR, THE LONGEST CONTINUOUS BAR SHALL BE GROUNDING.		
3	EA	#4/0 BC, SPRING (LOCK), STAINLESS STEEL, 3/8"				3	EA	SCREW, SHEET METAL, STAINLESS STEEL (AS REQUIRED)	MATERIAL NOTES: 1. TOTAL LENGTH OF REBAR CONNECTED TO GROUND SHALL BE A MINIMUM OF 20'-0". MINIMUM DIA OF REBAR SHALL BE 1/2" (#4). 2. IF SLAB CONTAINS LESS THAN 20'-0" OF REBAR, THE LONGEST CONTINUOUS BAR SHALL BE GROUNDING.		
4	EA	TERMINAL, 1-HOLE, NON-INSULATED, CRIMP TYPE, #2/0 AWG 1/8" BOLT HOLE				4	EA	CLAMP, CABLE, ONE HOLE, GALV, 1/2"	MATERIAL NOTES: 1. TOTAL LENGTH OF REBAR CONNECTED TO GROUND SHALL BE A MINIMUM OF 20'-0". MINIMUM DIA OF REBAR SHALL BE 1/2" (#4). 2. IF SLAB CONTAINS LESS THAN 20'-0" OF REBAR, THE LONGEST CONTINUOUS BAR SHALL BE GROUNDING.		
5	FT	#2/0 BC, BARE COPPER, STRANDED, #2/0 AWG				5	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/0 AWG	MATERIAL NOTES: 1. TOTAL LENGTH OF REBAR CONNECTED TO GROUND SHALL BE A MINIMUM OF 20'-0". MINIMUM DIA OF REBAR SHALL BE 1/2" (#4). 2. IF SLAB CONTAINS LESS THAN 20'-0" OF REBAR, THE LONGEST CONTINUOUS BAR SHALL BE GROUNDING.		
6	EA	WASHER, FLAT, STAINLESS STEEL, 3/8"							MATERIAL NOTES: 1. TOTAL LENGTH OF REBAR CONNECTED TO GROUND SHALL BE A MINIMUM OF 20'-0". MINIMUM DIA OF REBAR SHALL BE 1/2" (#4). 2. IF SLAB CONTAINS LESS THAN 20'-0" OF REBAR, THE LONGEST CONTINUOUS BAR SHALL BE GROUNDING.		
<p>DETAIL 20 SCALE: NONE METAL STAIRS GROUNDING</p>			<p>DETAIL 21 SCALE: NONE LIGHTNING PROTECTION AIR TERM ON METAL ROOF</p>			<p>DETAIL 22 SCALE: NONE LIGHTNING PROTECTION DOWN CONDUCTOR ON METAL SIDING</p>			<p>DETAIL 23 SCALE: NONE LIGHTNING CABLE HOLDER</p>		

ANSTEC APERTURE CARD

Also Available on Aperture Card

NOTICE OF OPEN CHANGE DOCUMENTS

NO.	DATE	BY	REASON

APPROVALS	INITIAL DATE	U.S. DEPARTMENT OF ENERGY
W SHOEMAKER	12-16-93	Project Location
W FRENCH	12-16-93	M&O Civilian Radioactive Waste Management System MANAGEMENT & OPERATING CONTRACTOR
A TUMA	12-16-93	EXPLORATORY STUDIES FACILITY STANDARDS
K KOVALL	12-21-93	ELECTRICAL STANDARD DETAILS SHEET 3
R HONELL	12-21-93	REVISIONS
F ARTH	12-21-93	SIZE IDENTIFIER: BABB0000-011717-2100-24007-02A
P PIMENTEL	12-21-93	SCALE: NONE, IDENTIFICATION: TBV 128, 1.2.6

DOE/TYP ACCEPTANCE FOR CONSTRUCTION

By _____ Date _____

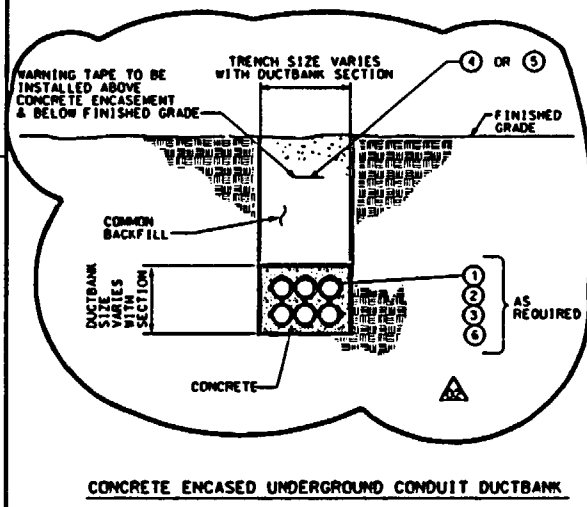
02A ADDED DETAIL 17.

01 ISSUED FOR CONSTRUCTION AND REMOVED TBV 129

00 ISSUED FOR PROCUREMENT ONLY

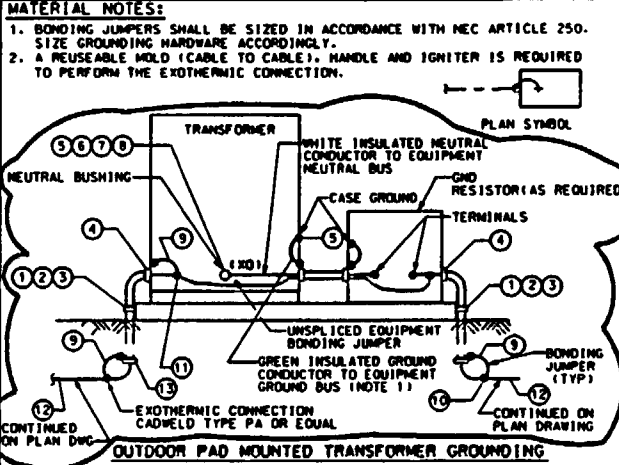
NOTES:
1. FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS AND SYMBOLS, SEE DRAWINGS 24000, 24001 & 24002.

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	3" SPACER - 2 WAY UNIT FOR 3" CONDUIT
2	EA	3" SPACER - 2 WAY UNIT FOR 4" CONDUIT
3	EA	3" SPACER - 2 WAY UNIT FOR 5" CONDUIT
4	FT	TAPE, UNDERGROUND WARNING SYSTEM, 4 MIL POLYETHYLENE, MIN 6" WIDE, RED FOR ELECTRICAL POWER CONDUIT
5	FT	TAPE, UNDERGROUND WARNING SYSTEM, 4 MIL POLYETHYLENE, MIN 6" WIDE, ORANGE FOR COMMUNICATION CONDUIT
6	EA	3" SPACER - 2 WAY UNIT FOR 6" CONDUIT



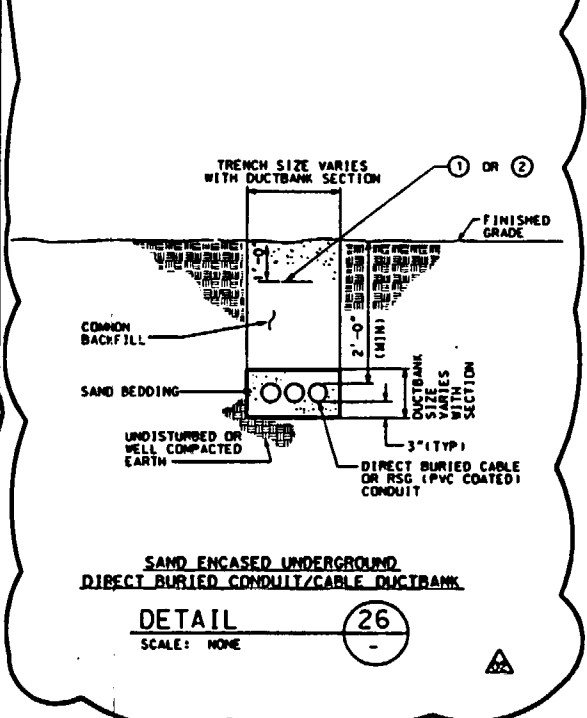
DETAIL 24 SCALE: NONE

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	FT	CONDUIT, RSG, 1"
2	EA	CLAMP, CONDUIT, 1-HOLE W/CLAMP BACK, GALV, 1"
3	EA	EXPANSION ANCHOR STUD TYPE WITH SINGLE PIECE THREE SECTION WEDGE, NUT & FLAT WASHER, STAINLESS STEEL, 1/4" - 20 x 1 1/2" EMBEDMENT
4	EA	CONDUIT HUB, GROUNDING TYPE, WEATHERPROOF, GALV, 1"
5	EA	TERMINAL, 1-HOLE, COPPER, CRIMP TYPE (NOTE 1)
6	EA	WASHER, SPRING (LOCK), SILICON BRONZE (NOTE 1)
7	EA	NUT, HEX, SILICON BRONZE (NOTE 1)
8	EA	WASHER, FLAT, SILICON BRONZE (NOTE 1)
9	FT	CONDUCTOR, BARE COPPER, STRANDED (NOTE 1)
10	EA	CARTRIDGE, EXOTHERMIC, STANDARD POWDER (NOTE 2)
11	EA	CONNECTOR, SERVIC, COPPER (NOTE 1)
12	FT	CONDUCTOR, BARE COPPER, STRANDED (SIZE PER PLAN DWG)
13	EA	BUSHING, CONDUIT, GROUNDING TYPE, GALV, 1"



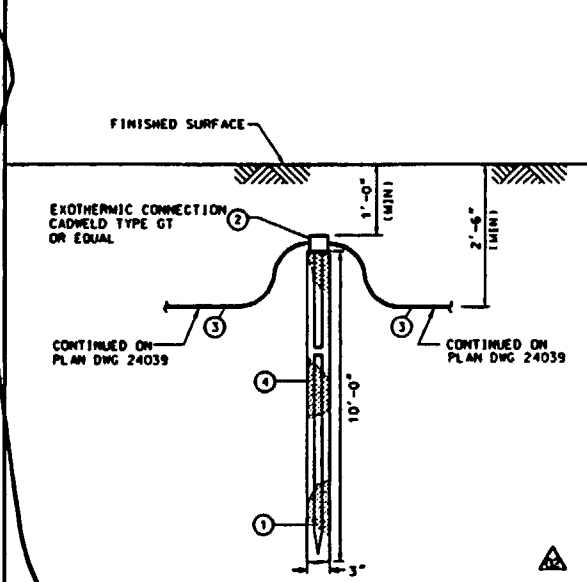
DETAIL 25 SCALE: NONE

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	FT	TAPE, UNDERGROUND WARNING SYSTEM, 4 MIL POLYETHYLENE, MIN 6" WIDE, RED FOR ELECTRICAL POWER CONDUIT
2	FT	TAPE, UNDERGROUND WARNING SYSTEM, 4 MIL POLYETHYLENE, MIN 6" WIDE, ORANGE FOR COMMUNICATION CONDUIT



DETAIL 26 SCALE: NONE

MATERIAL DESCRIPTIONS		
ITEM	UNIT	DESCRIPTION
1	EA	GROUND ROD, 3/4" x 10'-0", COPPER CLAD STEEL
2	EA	CARTRIDGE WELD METAL, STANDARD POWDER
3	FT	CONDUCTOR, BARE COPPER, STRANDED, #4/0 AWG
4		GEN HYDRAULIC CARBON CEMENT BACKFILL



DETAIL 27 SCALE: NONE

DOE/YMP ACCEPTANCE FOR CONSTRUCTION
By _____ Date _____

02A	INCORPORATED FCR 94/130 & FCR 94/139.																			
01	ISSUED FOR CONSTRUCTION AND REMOVED TBV 129																			
00	ISSUED FOR PROCUREMENT ONLY																			

NOTICE OF OPEN CHANGE DOCUMENTS
THIS DOCUMENT IS CONTROLLED BY THE U.S. DEPARTMENT OF ENERGY

REV	DESCRIPTION	DATE	BY	CHKD

APPROVALS

NAME	DATE
R. GUTIERREZ	12-16-93
A. TUNA	12-16-93
W. FRENCH	12-16-93
R. KOVALL	12-21-93
B. MAJUMDAR	12-21-93
F. ARTH	12-21-93
P. PIMENTEL	12-21-93

U.S. DEPARTMENT OF ENERGY
Project Location: **M&O** Civilian Radioactive Waste Management System
MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY STANDARDS
ELECTRICAL STANDARD DETAILS SHEET 4

REV. D IDENTIFIER: BABA0000-01717-2100-24008-02A
SCALE: NONE
BY: TBV 128
DATE: 12-21-93
REV. 1.2.6
FILE: ELEC 24008-02A

ANSTEC APERTURE CARD

Also Available on Aperture Card

NOTES:

- FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWINGS BABB0000-01717-2100-24000, BABB0000-01717-2100-24001, BABB0000-01717-2100-24002.

- KEYED NOTES:**
- TERMINATE CONDUIT FLUSH WITH CABLE TRENCH WALL AND FLOOR SLOT UNDER SWGR. SEAL PLUG FLUSH FOR FUTURE USE.
 - STUB-UP CONDUITS 6" AFF AND CAP FOR FUTURE EXTENSION.
 - ALL EMBEDDED CONDUITS EXTENDING FROM BUILDING ARE TO HAVE PIPE THREADS PROTECTED DURING CONSTRUCTION AND ARE TO BE CAPPED FOR FUTURE EXTENSIONS.
 - EMBEDDED CONDUIT SHALL BE FLUSH W/FINISHED FLOOR AS REFERENCED PER DETAIL 2, DWG EL127. SEAL PLUG FLUSH FOR FUTURE USE.
 - EMBEDDED CABLE PULLING IRON SEE DETAIL ON STRUCTURAL DWG YMP-025-1-7007-ST101.
 - CABLE SLOT DETAIL SEE STRUCTURAL DWG YMP-025-1-7007-ST101.
 - THE ELECTRICAL UNDERGROUND DUCTBANKS SHALL COMPLY WITH THE REQUIREMENTS OF SPECIFICATION YMP-025-1-SP03-16112.

FOR REFERENCE DRAWINGS & ASSOCIATED SPECS SEE DWG YMP-025-1-SUPT-GE109
 FOR DRAWING INDEX SEE DRAWINGS YMP-025-1-SUPT-GE103 & GE104
 FOR ALL APPLICABLE DESIGN INPUTS SEE RSN-BFD-001

SWITCHGEAR BLDG No. 7007 HAS BEEN CHANGED TO BLDG 5010.
 IDENTIFICATION NUMBERS SHOWN IN BODY OF DRAWING WILL REMAIN AS 7007.

9408020214-64

REVISION	DATE	DESCRIPTION	DESIGN	CHKD	APP'D	ENV	SAF	QA	TRNG	INSTR		
1	11/16/92	REVISED FOR ADDITIONAL ELECTRICAL EQUIPMENT, INCORPORATED FCR 94/138 AND FCR 94/153.	NSF	GES	JAN	BTS	N/A	AS	RL	PHN	RLB	ENP
2		THE MGD IS THE A/E OF RECORD AS OF 12-1-92. REVISED DUCTBANKS	AT	RCC	REH	PP	WR	N/A	N/A	BRJ	N/A	N/A
3		REVISED PER ECR #92-022	NSF	GES	JAN	BTS	N/A	AS	RL	PHN	RLB	ENP

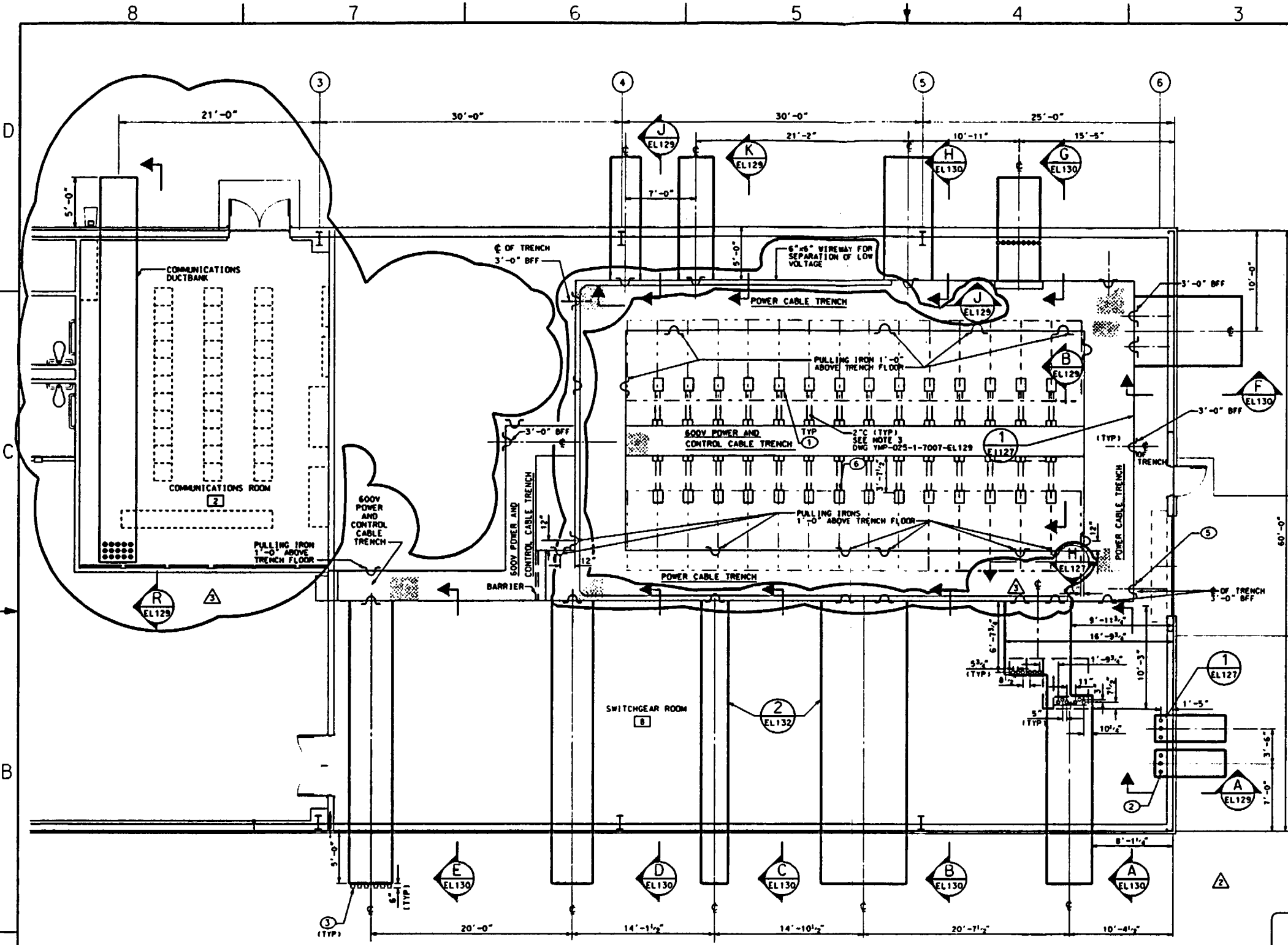
U.S. DEPARTMENT OF ENERGY
 YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE
 LAS VEGAS, NEVADA

RSN Raytheon Services Nevada
 LAS VEGAS, NEVADA

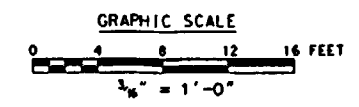
EXPLORATORY STUDIES FACILITY
 PACKAGE 1A
 ELECTRICAL SWITCHGEAR BLDG 5010
 EMBEDDED CONDUIT PLAN

DESIGN	NSF	DATE	9-25-92
DRAWN	NSF	DATE	9-25-92
CHECKED	JAN	DATE	9-25-92
DESIGN MANAGER	BTS	DATE	9-25-92
VERIFICATION	N/A	DATE	9-25-92
ENV SAF	AS RL	DATE	9-25-92
QUALITY ASSURANCE	PAUL B. HALE	DATE	9-25-92
SCALE	1:2.6	DATE	11-9-92
PROJECT NO.	16.2000	DATE	11-9-92

APPROVED BY: D. L. LOCKWOOD
 DATE: 9-25-92
 PROJECT NO.: YMP-025-1-7007-EL109
 SHEET NO.: 03A



EMBEDDED CONDUIT PLAN
 SCALE: 3/8" = 1'-0"



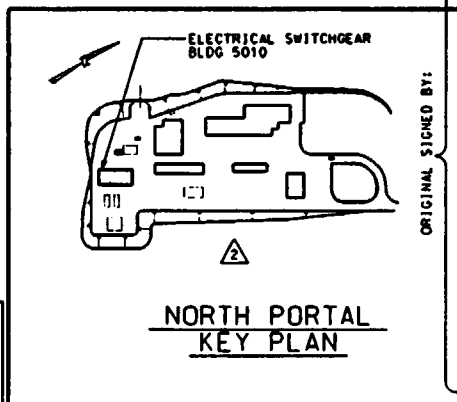
NOTICE OF OPEN CHANGE DOCUMENTS

THIS DOCUMENT IS SUPERSEDED BY THE LATEST CHANGE. REVISIONS AND CHANGES WILL BE USED WITHIN THE DOCUMENT.

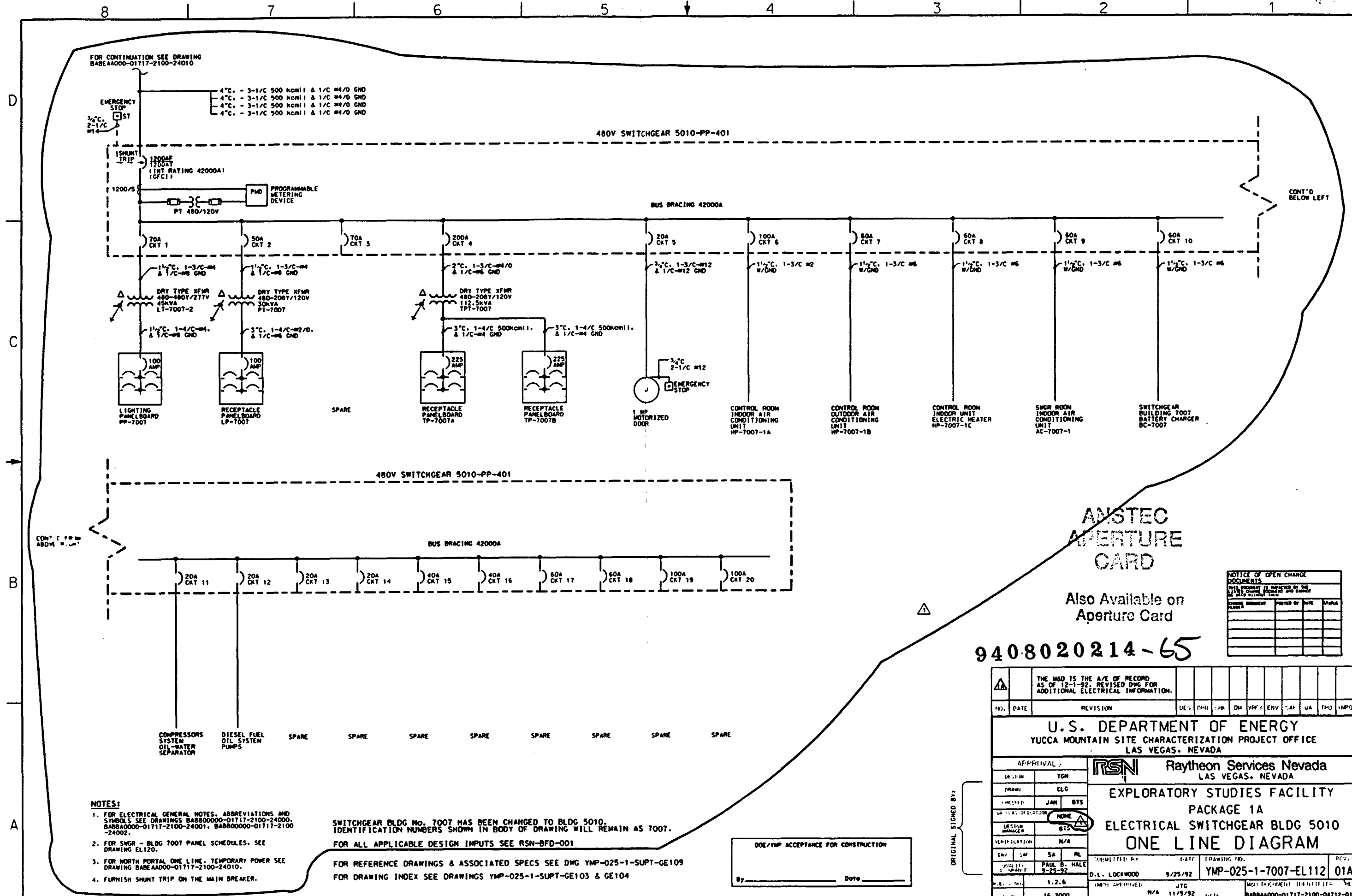
CHANGE NUMBER	POSTED BY	DATE	STATUS

DOE/YMP ACCEPTANCE FOR CONSTRUCTION

By _____ Date _____



PRELIMINARY



FOR CONTINUATION SEE DRAWING BABEA000-01717-2100-24010

EMERGENCY STOP
3/4" C. 2-1/2" #14

4" C. - 3-1/2" 500 kcmil & 1/2" #4/GND
4" C. - 3-1/2" 500 kcmil & 1/2" #4/GND
4" C. - 3-1/2" 500 kcmil & 1/2" #4/GND
4" C. - 3-1/2" 500 kcmil & 1/2" #4/GND

480V SWITCHGEAR 5010-PP-401

1200/5
1200/5
1200/5
1200/5
1200/5
1200/5
1200/5
1200/5
1200/5
1200/5

PT 480/120V
PROGRAMMABLE METERING DEVICE

BUS BRACING 42000A

70A CKT 1

50A CKT 2

70A CKT 3

200A CKT 4

20A CKT 5

100A CKT 6

60A CKT 7

60A CKT 8

60A CKT 9

60A CKT 10

1 1/2" C. 1-3/4" #4 & 1/2" #6 GND
DRY TYPE XFMR 480-480Y/277V 45KVA LT-7007-2

1 1/2" C. 1-3/4" #4 & 1/2" #6 GND
DRY TYPE XFMR 480-208Y/120V 30KVA PT-7007

2" C. 1-3/4" #4/D & 1/2" #6 GND
DRY TYPE XFMR 480-208Y/120V 112.5KVA TPT-7007

3" C. 1-4/4" 500kcmil & 1/2" #4 GND

3" C. 1-4/4" 500kcmil & 1/2" #4 GND

100 AMP
LIGHTING PANELBOARD PP-7007

100 AMP
RECEPTACLE PANELBOARD LP-7007

225 AMP
RECEPTACLE PANELBOARD TP-7007A

225 AMP
RECEPTACLE PANELBOARD TP-7007B

3/4" C. 2-1/2" #12
EMERGENCY STOP

CONTROL ROOM INDOOR AIR CONDITIONING UNIT HP-7007-1A

CONTROL ROOM OUTDOOR AIR CONDITIONING UNIT HP-7007-1B

CONTROL ROOM INDOOR AIR ELECTRIC HEATER UNIT HP-7007-1C

SWGR ROOM INDOOR AIR CONDITIONING UNIT AC-7007-1

SWITCHGEAR BUILDING 7007 BATTERY CHARGER BC-7007

480V SWITCHGEAR 5010-PP-401

BUS BRACING 42000A

20A CKT 11

20A CKT 12

20A CKT 13

20A CKT 14

40A CKT 15

40A CKT 16

60A CKT 17

60A CKT 18

100A CKT 19

100A CKT 20

COMPRESSORS SYSTEM OIL-WATER SEPARATOR

DIESEL FUEL OIL SYSTEM PUMPS

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

NOTES:

- FOR ELECTRICAL GENERAL NOTES, ABBREVIATIONS AND SYMBOLS SEE DRAWINGS BAB800000-01717-2100-24000, BAB80000-01717-2100-24001, BAB800000-01717-2100-24002.
- FOR SWGR - BLDG 7007 PANEL SCHEDULES, SEE DRAWING EL120.
- FOR SWGR - BLDG 7007 TEMPORARY POWER SEE DRAWING BABEA000-01717-2100-24010.
- FURNISH SHUNT TRIP ON THE MAIN BREAKER.

SWITCHGEAR BLDG NO. 7007 HAS BEEN CHANGED TO BLDG 5010. IDENTIFICATION NUMBERS SHOWN IN BODY OF DRAWING WILL REMAIN AS 7007.

FOR ALL APPLICABLE DESIGN INPUTS SEE RSN-BFD-001

FOR REFERENCE DRAWINGS & ASSOCIATED SPECS SEE DWG YMP-025-1-SUPT-GE109

FOR DRAWING INDEX SEE DRAWINGS YMP-025-1-SUPT-GE103 & GE104

DOE/YMP ACCEPTANCE FOR CONSTRUCTION
By _____ Date _____

ANSTEC APERTURE CARD

Also Available on Aperture Card

9408020214-65

NOTICE OF OPEN CHANGE DOCUMENTS			
CHANGE NUMBER	ISSUED BY	DATE	STATUS

THE M&D IS THE A/E OF RECORD AS OF 12-1-92. REVISED DWG FOR ADDITIONAL ELECTRICAL INFORMATION.											
NO.	DATE	REVISION	DES	CHK	APP	ENV	QA	UAT	TRD	IMP	
U.S. DEPARTMENT OF ENERGY YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT OFFICE LAS VEGAS, NEVADA											
APPROVALS			Raytheon Services Nevada LAS VEGAS, NEVADA								
DESIGN	YGN		EXPLOATORY STUDIES FACILITY								
DRAWN	CLG		PACKAGE 1A								
CHECKED	JAM	BTS	ELECTRICAL SWITCHGEAR BLDG 5010								
QUAL. INSPECTION	NONE		ONE LINE DIAGRAM								
DESIGN MANAGER	BTS										
VERIFICATION	N/A										
ENV	SA	RL									
ISSUED BY	PAUL B. HALE		SUBMITTED BY		DATE		DRAWING NO.		REV.		
	9-25-92		D.L. LOCKWOOD		9/25/92		YMP-025-1-7007-EL112		01A		
	1.2.6										
	16.2000										

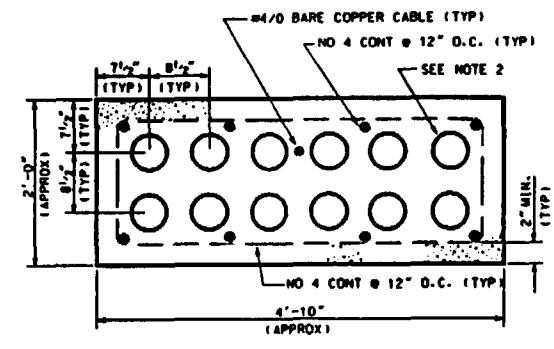
PRELIMINARY

ANSTEC APERTURE CARD

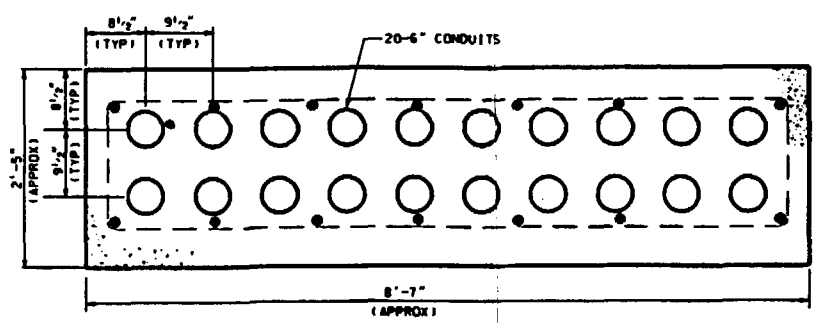
Also Available on Aperture Card

REFERENCE DOCUMENT - UNCONTROLLED

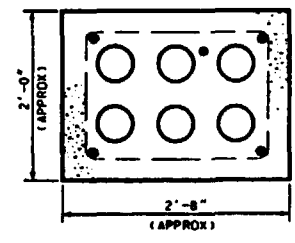
PRELIMINARY



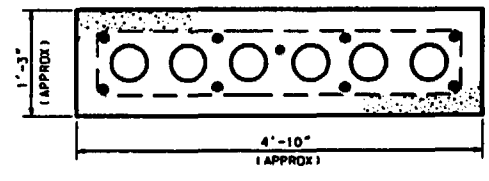
SECTION A
SCALE: 1"=1'-0"
EL130



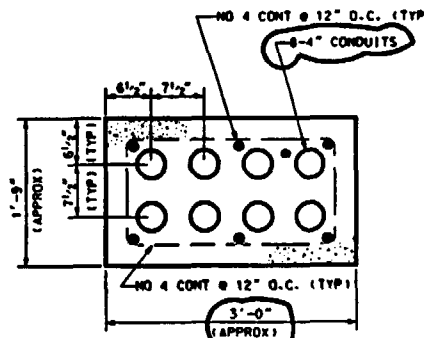
SECTION B
SCALE: 1"=1'-0"
EL130



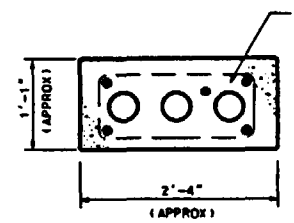
SECTION C
SCALE: 1"=1'-0"
EL130



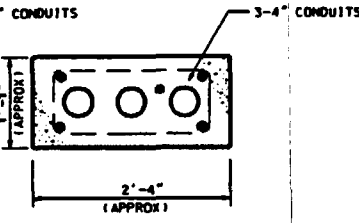
SECTION D
SCALE: 1"=1'-0"
EL130



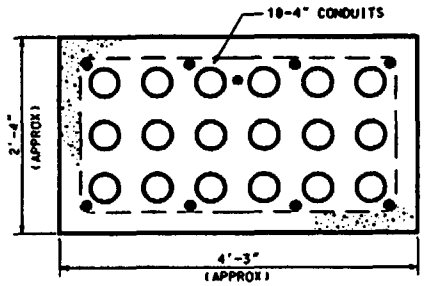
SECTION E
SCALE: 1"=1'-0"
EL130



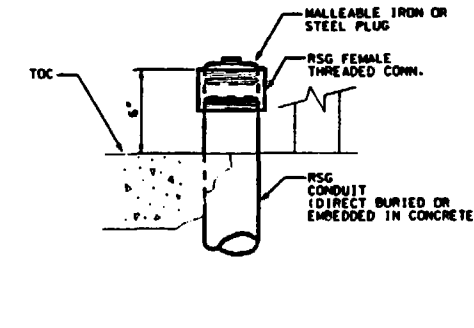
SECTION F
SCALE: 1"=1'-0"
EL130



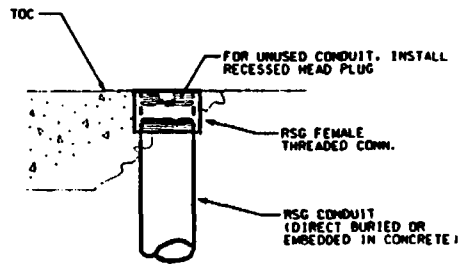
SECTION G
SCALE: 1"=1'-0"
EL130



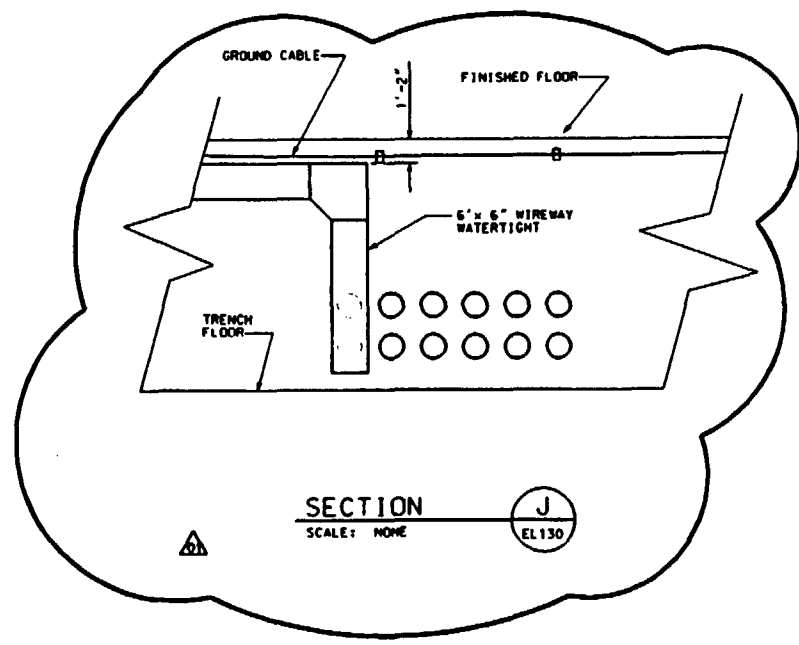
SECTION H
SCALE: 1"=1'-0"
EL130



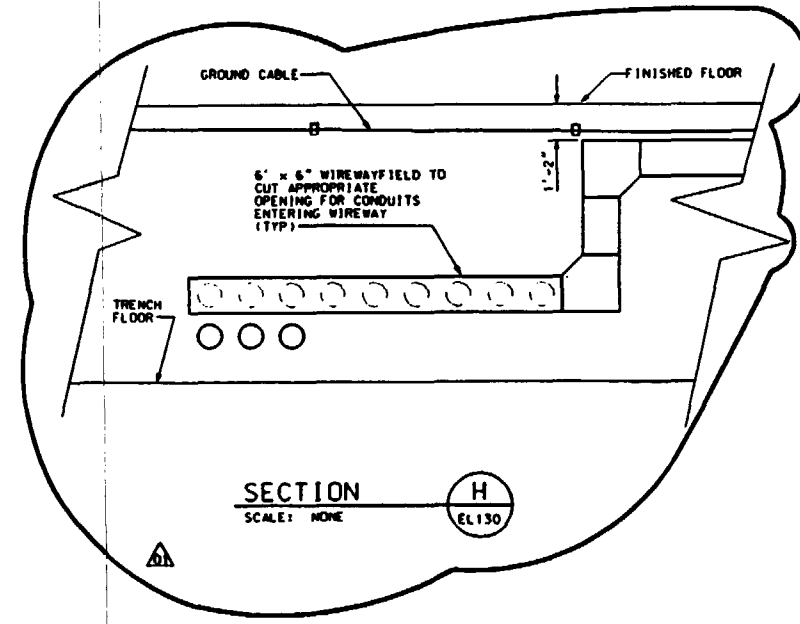
DETAIL 1
SCALE: NONE
EL109



DETAIL 2
SCALE: NONE
EL109



SECTION J
SCALE: NONE
EL130



SECTION H
SCALE: NONE
EL130

- NOTES:**
- SECTION A DIMENSIONS ARE TYPICAL FOR DUCTBANKS WITH 5" DIAMETER CONDUITS & SECTION E DIMENSIONS ARE TYPICAL FOR DUCTBANKS WITH 4" DIAMETER CONDUITS
 - ALL CONDUITS ARE 5" DIAMETER EXCEPT AS NOTED
 - UNDERGROUND WARNING TAPE, TO BE PLACED OVER CONCRETE DUCTBANK 24" WIDE OR LESS. ADD ANOTHER TAPE FOR EVERY 18" OF ADDITIONAL DUCT. PLACE RED TAPE OVER ELECTRICAL DUCTBANK AND ORANGE TAPE OVER COMMUNICATION DUCTBANK.
 - FOR GENERAL EQUIPMENT LIST SEE DWG YMP-025-1-ELEC-GE106

FOR REFERENCE DRAWINGS & ASSOCIATED SPECS SEE DWG YMP-025-1-SUPT-GE109
 FOR DRAWING INDEX SEE DRAWINGS YMP-025-1-SUPT-GE103 & GE104
 FOR ALL APPLICABLE DESIGN INPUTS SEE RSN-8FD-001

SWITCHGEAR BLDG No. 7007 HAS BEEN CHANGED TO BLDG 5010. IDENTIFICATION NUMBERS SHOWN IN BODY OF DRAWING WILL REMAIN AS 7007.

NOTICE OF OPEN CHANGE DOCUMENTS			
NO.	DESCRIPTION	DATE	STATUS

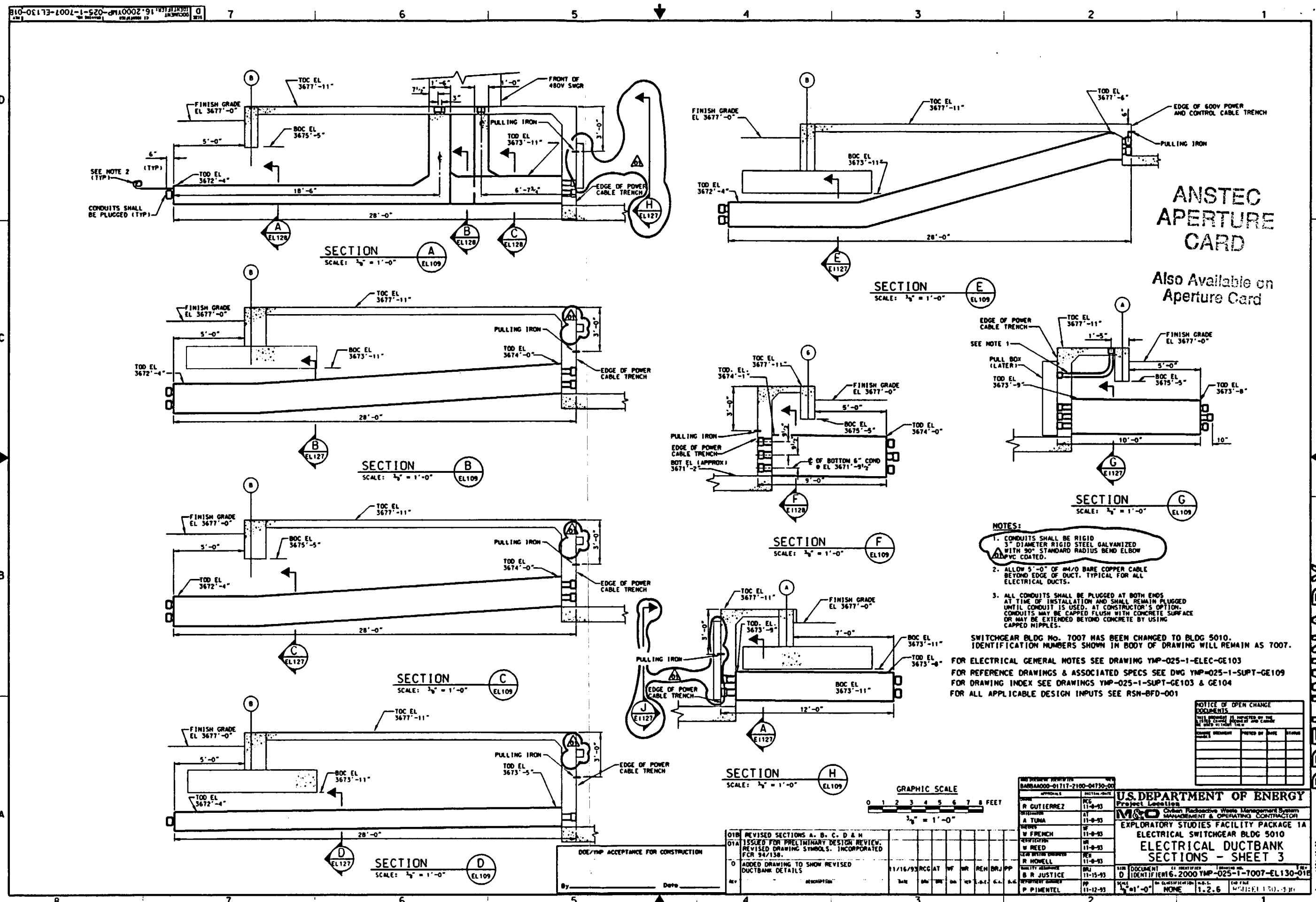
NO.	DATE	BY	CHKD BY	DESCRIPTION

U.S. DEPARTMENT OF ENERGY	
Project Location	
Civilian Radioactive Waste Management System	
MANAGEMENT & OPERATIONS CONTRACTOR	
MCS	
EXPLORATORY STUDIES FACILITY PACKAGE 1A	
ELECTRICAL SWITCHGEAR BLDG 5010	
ELECTRICAL DUCTBANK SECTIONS AND DETAILS	
DATE	ISSUED BY
11-15-94	B. R. JUSTICE
11-2-94	P. PIMENTEL

DOE/YMP ACCEPTANCE FOR CONSTRUCTION
 By _____ Date _____

REVISED SECTIONS H & J.
 ISSUED FOR PRELIMINARY DESIGN REVIEW.
 ADDED DRAWING TO SHOW REVISED DUCTBANK DETAILS

NO.	DATE	BY	CHKD BY	DESCRIPTION



AIR COMPRESSOR SCHEDULE

EQUIPMENT NUMBER	MANUFACTURER	MODEL NO.	NTS TAG NO.	ALTITUDE (FT)	INLET TEMPERATURE (°F)		AIR DELIVERY (INLET)		DISCHARGE PRESSURE (PSIG)	DISCHARGE TEMPERATURE (°F)	MOTOR HP		ELECTRICAL				OPERATING WEIGHT (LBS)	REMARKS	
					MAX	MIN	STANDARD (SCFM)	ACTUAL (CFM)			COMPRESSOR	FAN	AMPS COMP.	FAN	VOLTS	PHASE			FREQUENCY
CM-001	INGERSOL RAND	SSR-2000-1500M	33416	3680	108 DB 66 WB	-14 WB	1365	1300	150	120	392	15	53	22	4160	3	60	10,000	SEE NOTE 1 & 5
CM-002	INGERSOL RAND	SSR-2000-1500M	33417	3680	108 DB 66 WB	-14 WB	1365	1300	150	120	392	15	53	22	4160	3	60	10,000	SEE NOTE 1 & 5
CM-003	QUINCY	0-1500	30239	3680	108 DB 66 WB	-14 WB	1365	1300	150	120	350	25	46	29.5	4160	3	60	10,000	SEE NOTE 1 & 5
CM-004	QUINCY	0-1500	---	3680	108 DB 66 WB	-14 WB	1365	1300	150	120	350	25	46	---	4160	3	60	10,000	FUTURE
CM-005	QUINCY	0-1500	---	3680	108 DB 66 WB	-14 WB	1365	1300	150	120	350	25	46	---	4160	3	60	10,000	FUTURE
CM-006	QUINCY	0-1500	---	3680	108 DB 66 WB	-14 WB	1365	1300	150	120	350	25	46	---	4160	3	60	10,000	FUTURE

- NOTES:**
1. GOVERNMENT FURNISHED EQUIPMENT (GFE), CAPACITY AND PRESSURE SHOWN ARE BASED ON REFLURISHED UNITS. SEE SPECIFICATION SECTION 15400.
 2. FOR MATERIALS AND CONSTRUCTION, REFER TO SPECIFICATION SECTION 15400.
 3. FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.
 4. PER DDP TEST METHOD
 5. INCLUDES 4160V TO 480V TRANSFORMER MOUNTED ON SKID.
 6. ITEMS SPECIFIED OR REFERENCED BY MANUFACTURER AND MODEL NUMBER REPRESENT AN ACCEPTABLE LEVEL OF QUALITY. THE INTENT IS TO USE THE INFORMATION FOR COST ESTIMATING PURPOSES AND NOT TO EXCLUDE EQUAL ITEMS OFFERED BY OTHER MANUFACTURERS.
 7. ALL EQUIPMENT NUMBERS ARE PREFIXED BY BABDF000.
 8. FOR MECHANICAL ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES, SEE DRAWING 29000.

AFTERCOOLER SCHEDULE

EQUIPMENT NUMBER	MFR./MODEL	TYPE	NOMINAL CAPACITY (SCFM)	ACTUAL CAPACITY (CFM)	TEMPERATURE (°F)		PRESSURE DROP (PSIA)	HP	ELECTRICAL			OPERATING WEIGHT (LBS)	REMARKS
					INLET	OUTLET			VOLTS	PHASE	FREQUENCY		
AC-001	HIROSS/A75503T000	AIR-COOLED	1500	1300	120	111	1.0 MAX	201-1/2	460	3	60	1600	SEE NOTE 2
AC-002	HIROSS/A75503T000	AIR-COOLED	1500	1300	120	111	1.0 MAX	201-1/2	460	3	60	1600	SEE NOTE 2
AC-003	HIROSS/A75503T000	AIR-COOLED	1500	1300	120	111	1.0 MAX	201-1/2	460	3	60	1600	SEE NOTE 2
AC-004	HIROSS/A75503T000	AIR-COOLED	1500	1300	120	111	1.0 MAX	201-1/2	460	3	60	1600	FUTURE
AC-005	HIROSS/A75503T000	AIR-COOLED	1500	1300	120	111	1.0 MAX	201-1/2	460	3	60	1600	FUTURE
AC-006	HIROSS/A75503T000	AIR-COOLED	1500	1300	120	111	1.0 MAX	201-1/2	460	3	60	1600	FUTURE

RECEIVER SCHEDULE

EQUIPMENT NUMBER	CAPACITY (GAL)	NATIONAL BOARD NO.	MAXIMUM WORKING PRESSURE (PSIG)	DIAMETER (INCH)	LENGTH (INCH)	ORIENTATION	OPERATING WEIGHT (LBS.)	REMARKS
VE-001	1060	ASME	175	48	144	HORIZONTAL	8000	SEE NOTE 2
VE-002	1060	ASME	175	48	144	HORIZONTAL	8000	SEE NOTE 2
VE-003	1060	ASME	175	48	144	HORIZONTAL	8000	SEE NOTE 2
VE-004	1060	ASME	175	48	144	HORIZONTAL	8000	FUTURE
VE-005	1060	ASME	175	48	144	HORIZONTAL	8000	FUTURE
VE-006	1060	ASME	175	48	144	HORIZONTAL	8000	FUTURE

FILTER SCHEDULE

EQUIPMENT NUMBER	MANUFACTURER	TYPE	FILTRATION EFFICIENCY (NOTE 4)	PRESSURE DROP (PSIA)	ACTUAL CAPACITY (CFM)	OPERATING WEIGHT (LBS)	REMARKS
FL-001	DELTECH	COALESCING	99.9999% @ 0.01 MICRONS	7 (MAX)	1300	500	REMOVE PARTICULATES, WATER & OIL MISTS. SEE NOTE 2
FL-002	DELTECH	COALESCING	99.9999% @ 0.01 MICRONS	7 (MAX)	1300	500	REMOVE PARTICULATES, WATER & OIL MISTS. SEE NOTE 2
FL-003	DELTECH	COALESCING	99.9999% @ 0.01 MICRONS	7 (MAX)	1300	500	REMOVE PARTICULATES, WATER & OIL MISTS. SEE NOTE 2
FL-004	DELTECH	COALESCING	99.9999% @ 0.01 MICRONS	7 (MAX)	1300	500	FUTURE
FL-005	DELTECH	COALESCING	99.9999% @ 0.01 MICRONS	7 (MAX)	1300	500	FUTURE
FL-006	DELTECH	COALESCING	99.9999% @ 0.01 MICRONS	7 (MAX)	1300	500	FUTURE

MOISTURE SEPARATOR SCHEDULE

EQUIPMENT NUMBER	SCFM	WORKING PRESSURE (PSIG)	PRESSURE DROP (PSIA)	EFFICIENCY	MANUFACTURER	MODEL NUMBER	OPERATING WEIGHT (LBS.)	REMARKS
MS-001	1500	150	1.2 (MAX)	99%	HIROSS	SOSHAMHO	150	EQUIPPED WITH 115VAC ELECTRONIC DRAIN SEE NOTE 2.
MS-002	1500	150	1.2 (MAX)	99%	HIROSS	SOSHAMHO	150	EQUIPPED WITH 115VAC ELECTRONIC DRAIN SEE NOTE 2.
MS-003	1500	150	1.2 (MAX)	99%	HIROSS	SOSHAMHO	150	EQUIPPED WITH 115VAC ELECTRONIC DRAIN SEE NOTE 2.
MS-004	1500	150	1.2 (MAX)	99%	HIROSS	SOSHAMHO	150	FUTURE
MS-005	1500	150	1.2 (MAX)	99%	HIROSS	SOSHAMHO	150	FUTURE
MS-006	1500	150	1.2 (MAX)	99%	HIROSS	SOSHAMHO	150	FUTURE

ANSTEC APERTURE CARD

Also Available on Aperture Card

NO. OF CHANGES	DATE	BY	REASON

DOE/WHP ACCEPTANCE FOR CONSTRUCTION
By _____ Date _____

ISSUED FOR CONSTRUCTION

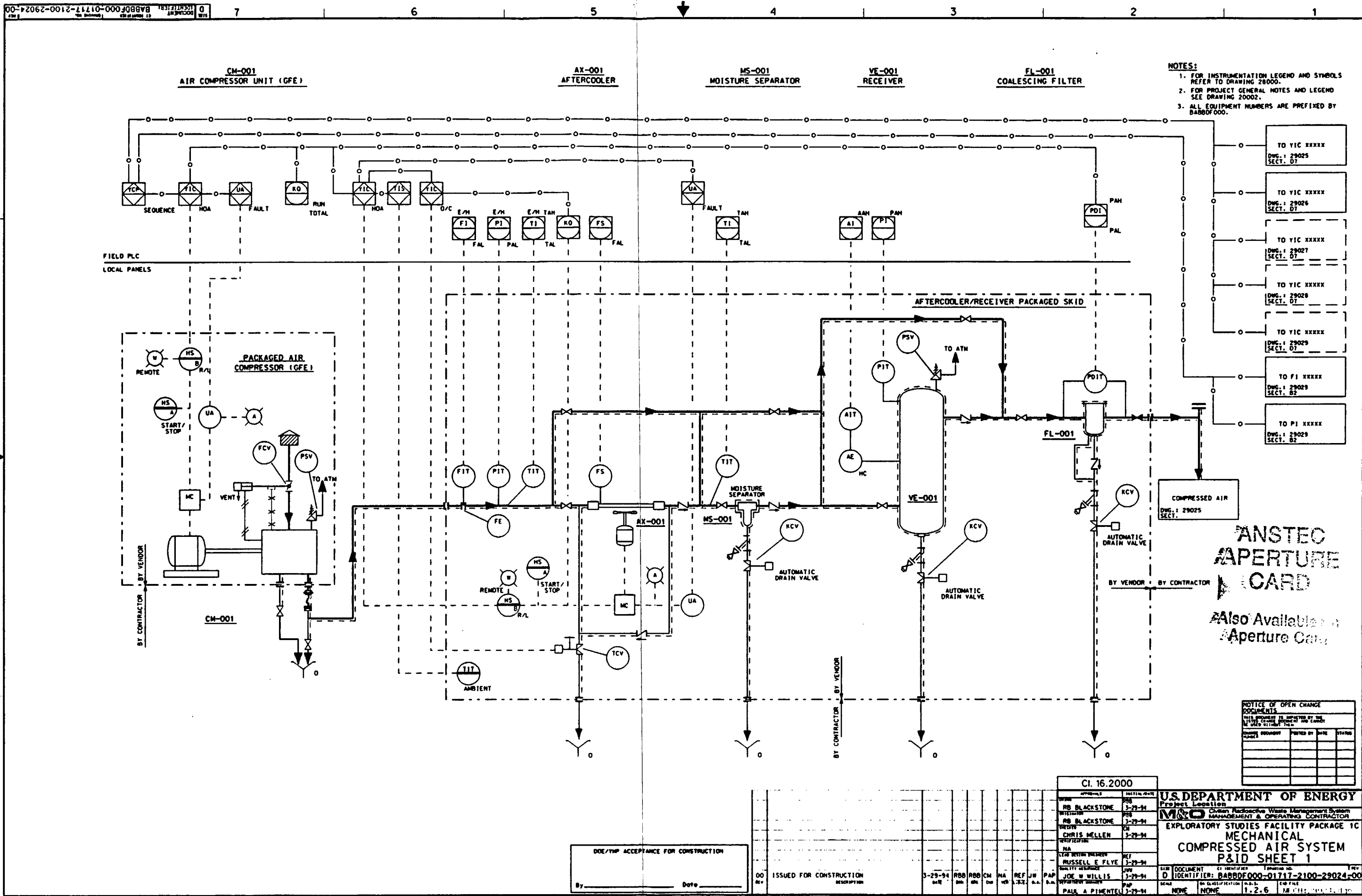
APPROVAL	DATE
RD BLACKSTONE	3-22-94
RD BLACKSTONE	3-22-94
C. MELLE	3-22-94
LEAD WORK ENGINEER	3-22-94
RUSSELL E FLYE	3-22-94
FRED ARTH	3-22-94
PAUL A. PIMENTEL	3-22-94

U.S. DEPARTMENT OF ENERGY
Project Location
M&O Civilian Radioactive Waste Management System
MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY PACKAGE 1C
MECHANICAL COMPRESSED AIR SYSTEM EQUIPMENT SCHEDULES

DOC IDENTIFIER: BABDF000-01717-2100-29020-00
REV: 1.2.6

REFERENCE DOCUMENT - UNCONTROLLED

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z



- NOTES:**
1. FOR INSTRUMENTATION LEGEND AND SYMBOLS REFER TO DRAWING 28000.
 2. FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.
 3. ALL EQUIPMENT NUMBERS ARE PREFIXED BY BABDF000.

- TO VIC XXXX
DWG.: 29025
SECT. D7
- TO VIC XXXX
DWG.: 29026
SECT. D7
- TO VIC XXXX
DWG.: 29027
SECT. D7
- TO VIC XXXX
DWG.: 29028
SECT. D7
- TO VIC XXXX
DWG.: 29029
SECT. D7
- TO F1 XXXX
DWG.: 29029
SECT. B2
- TO P1 XXXX
DWG.: 29029
SECT. B2

ANSTEC APERTURE CARD
Also Available in Aperture Card

NOTICE OF OPEN CHANGE DOCUMENTS			
DATE	DESCRIPTION	ISSUED BY	STATUS

CI. 16.2000		U.S. DEPARTMENT OF ENERGY	
DRWN	RD BLACKSTONE	DATE	3-29-94
BY	RD BLACKSTONE	DATE	3-29-94
CHKD	CHRIS MELLEN	DATE	3-29-94
APPV	NA	DATE	
REV	RUSSELL E FLYE	DATE	3-29-94
REV	JOE W WILLIS	DATE	3-29-94
REV	PAUL A PIMENTEL	DATE	3-29-94

ISSUED FOR CONSTRUCTION

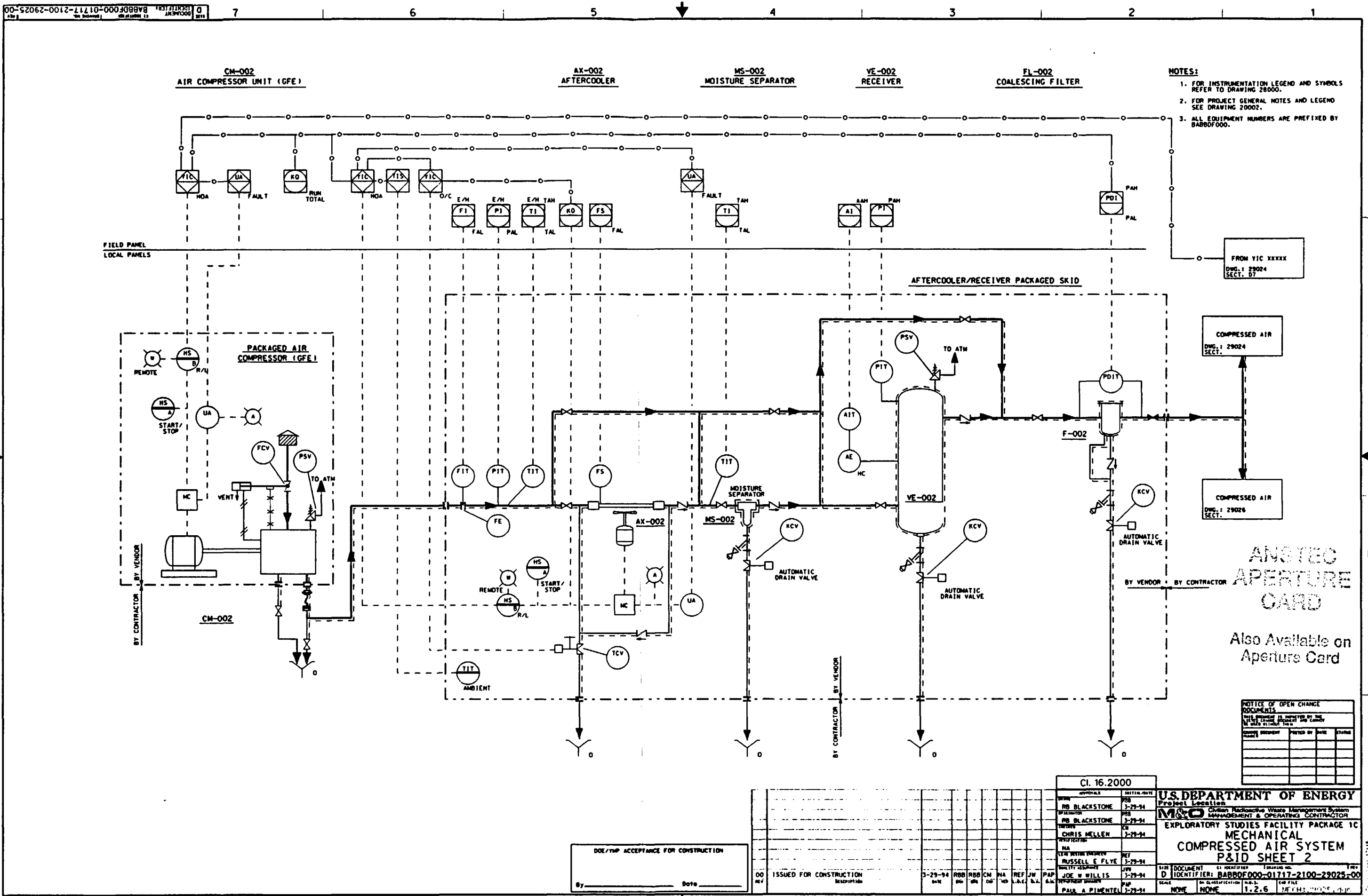
DOE/EMP ACCEPTANCE FOR CONSTRUCTION
By _____ Date _____

9408020214-69

REFERENCE DOCUMENT - UNCONTROLLED

A B C D

01717-2100-29024-00
BABDF000-01717-2100-29024-00



- NOTES:**
1. FOR INSTRUMENTATION LEGEND AND SYMBOLS REFER TO DRAWING 28000.
 2. FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.
 3. ALL EQUIPMENT NUMBERS ARE PREFIXED BY BABBD000.

FROM VIC XXXXX
DWG.: 29024
SECT.: D7

COMPRESSED AIR
DWG.: 29024
SECT.:

COMPRESSED AIR
DWG.: 29026
SECT.:

ANSTEC APERTURE CARD

Also Available on Aperture Card

NOTICE OF OPEN CHANGE DOCUMENTS			
Change Number	Proposed By	Date	Status

CI. 16.2000	
APPROVALS	DATE
RD BLACKSTONE	3-29-94
RD BLACKSTONE	3-29-94
CHRIS MELLEN	3-29-94
LEW WESTON ENGINEER	3-29-94
RUSSELL E FLYE	3-29-94
JOE W WILLIS	3-29-94
PAUL A PIMENTEL	3-29-94

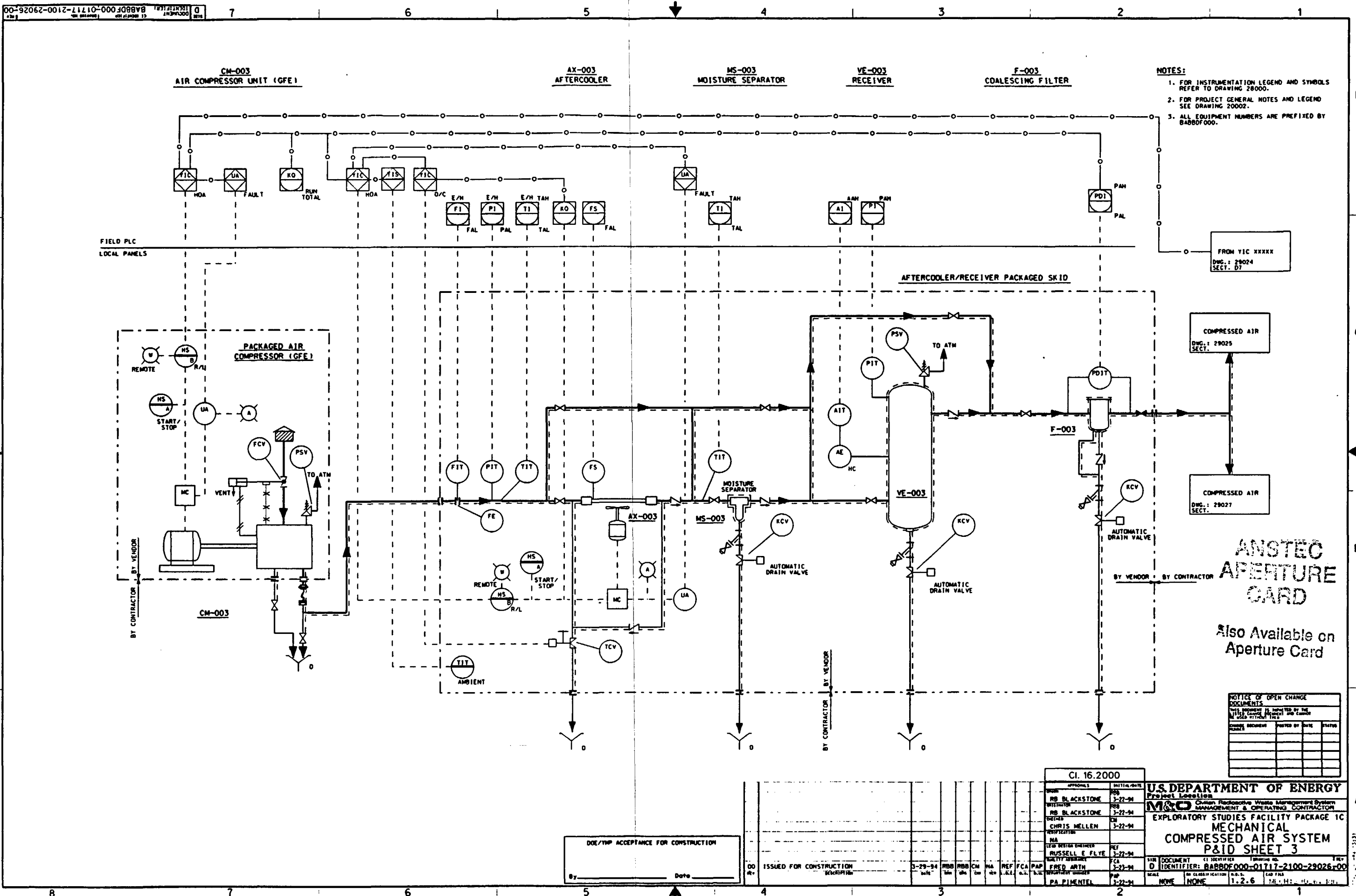
U.S. DEPARTMENT OF ENERGY
Project Location
M&O Civilian Radioactive Waste Management System
MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY PACKAGE 1C
MECHANICAL COMPRESSED AIR SYSTEM P&ID SHEET 2

SCALE: NONE
NO. OF SHEETS: 1.2.6
SHEET NO.: MECH: 29025-002

DOE/THP ACCEPTANCE FOR CONSTRUCTION
By _____ Date _____

ISSUED FOR CONSTRUCTION

REV	DATE	BY	CHKD	APP	DESCRIPTION



0 IDENTIFIER: BABBDF000-01717-2100-29026-00

- NOTES:**
1. FOR INSTRUMENTATION LEGEND AND SYMBOLS REFER TO DRAWING 28000.
 2. FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.
 3. ALL EQUIPMENT NUMBERS ARE PREFIXED BY BABBDF000.

FROM VIC XXXXX
DWG. 29024
SECT. D7

COMPRESSED AIR
DWG. 29025
SECT.

COMPRESSED AIR
DWG. 29027
SECT.

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NOTICE OF OPEN CHANGE DOCUMENTS

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NO.	DESCRIPTION	DATE	BY	STATUS

CI. 16.2000

NO.	DESCRIPTION	DATE	BY	STATUS
1	ISSUED FOR CONSTRUCTION	3-29-94	RBB	CM
2				
3				
4				
5				
6				
7				
8				

U.S. DEPARTMENT OF ENERGY
Project Location: **Clinton Radiological Waste Management System**
M&O MANAGEMENT & OPERATING CONTRACTOR
EXPLORATORY STUDIES FACILITY PACKAGE 1C
MECHANICAL
COMPRESSED AIR SYSTEM
P&ID SHEET 3

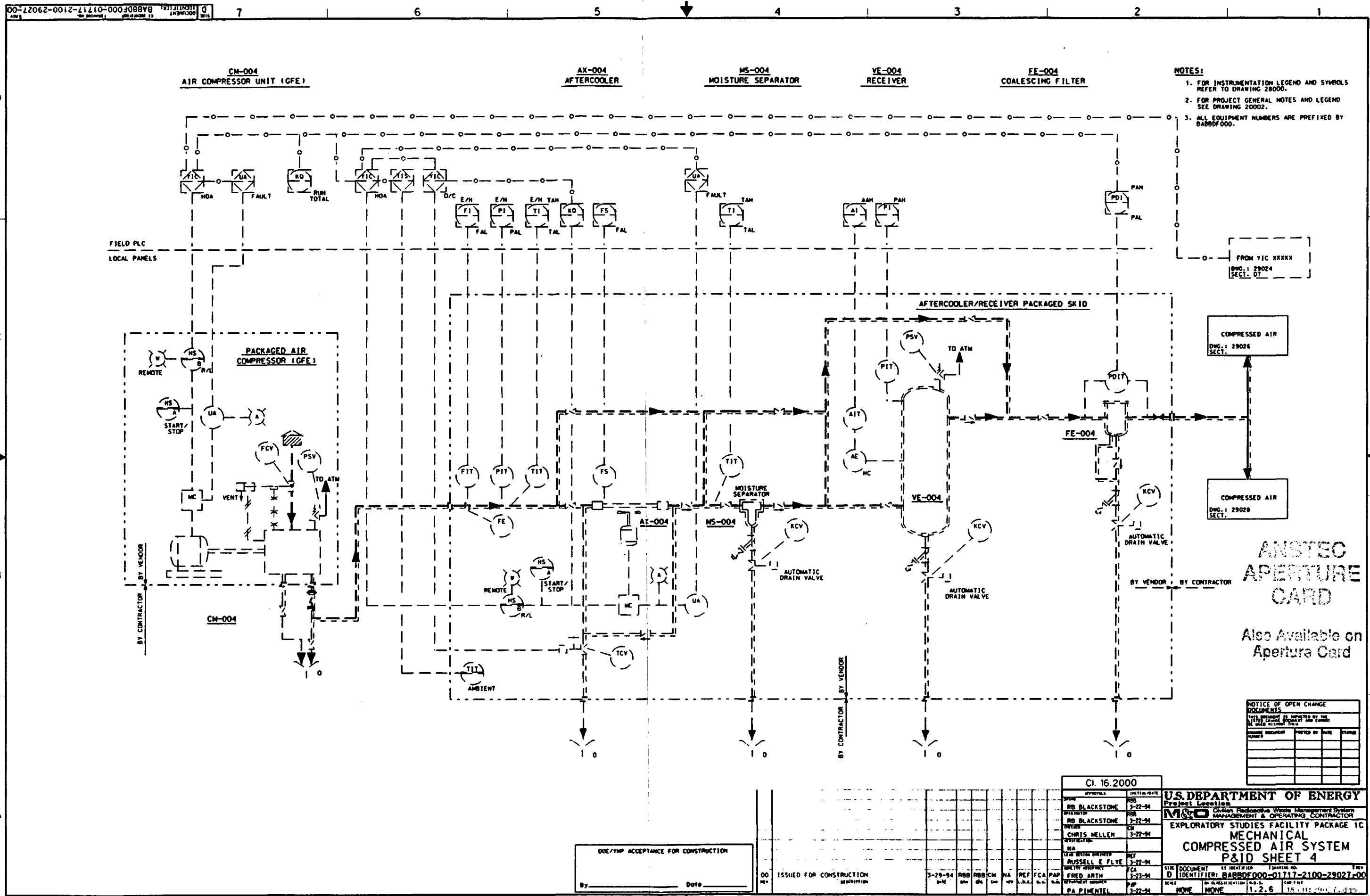
DOCUMENT IDENTIFIER: BABBDF000-01717-2100-29026-00

SCALE: NONE
DATE: 3-22-94
BY: PA PIMENTEL

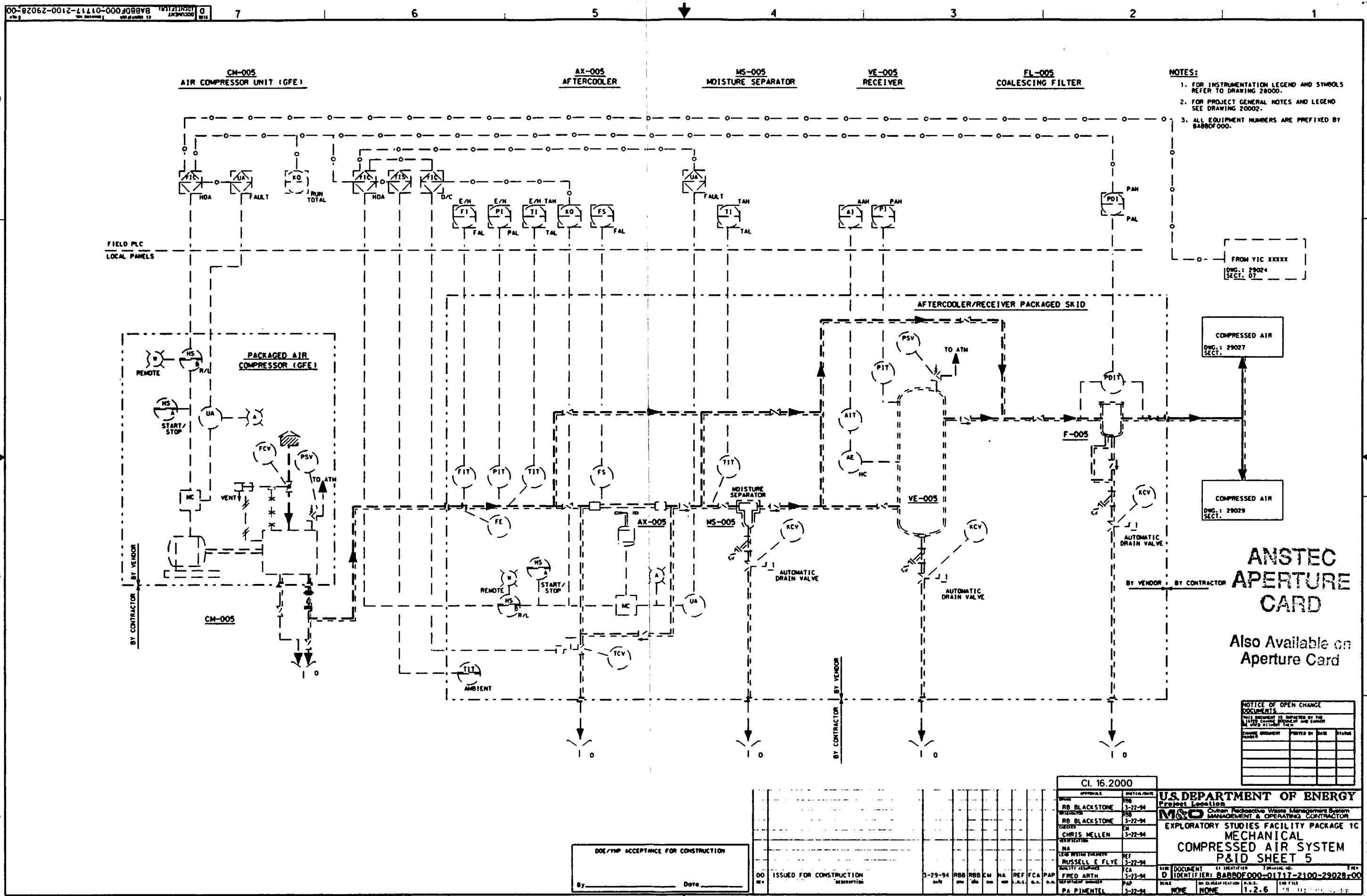
DOE/YMP ACCEPTANCE FOR CONSTRUCTION

By _____ Date _____

9408020214-71



9408020214-72



- NOTES:**
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NOTICE OF OPEN CHANGE				
DOCUMENTS				
THIS DOCUMENT IS IMPACTED BY THE LISTING CHANGE NUMBER AND CHANGE DATE OF THE FOLLOWING ITEMS				
Change Number	Issued By	Date	Status	

Cl. 16.2000		U.S. DEPARTMENT OF ENERGY	
APPROVALS	DATE	Project Location	
RB BLACKSTONE	3-22-94	M&O Civilian Radioactive Waste Management System	
WRIGLEY	3-22-94	MANAGEMENT & OPERATING CONTRACTOR	
RB BLACKSTONE	3-22-94	EXPLORATORY STUDIES FACILITY PACKAGE 1C	
CREATED	EN	MECHANICAL	
CHRIS MELLEN	3-22-94	COMPRESSED AIR SYSTEM	
REVISION	NA	P&ID SHEET 5	
LEAD DESIGN ENGINEER	REF	SHEET NUMBER	
RUSSELL E FLYE	3-22-94	PROJECT NUMBER	
QUALITY ASSURANCE	FCA	PROJECT IDENTIFIER: BABDF000-01717-2100-29028-00	
FRED ARTH	3-22-94	SCALE	
DEPARTMENT MANAGER	PAP	NONE	
PA PIMENTEL	3-22-94	NONE	

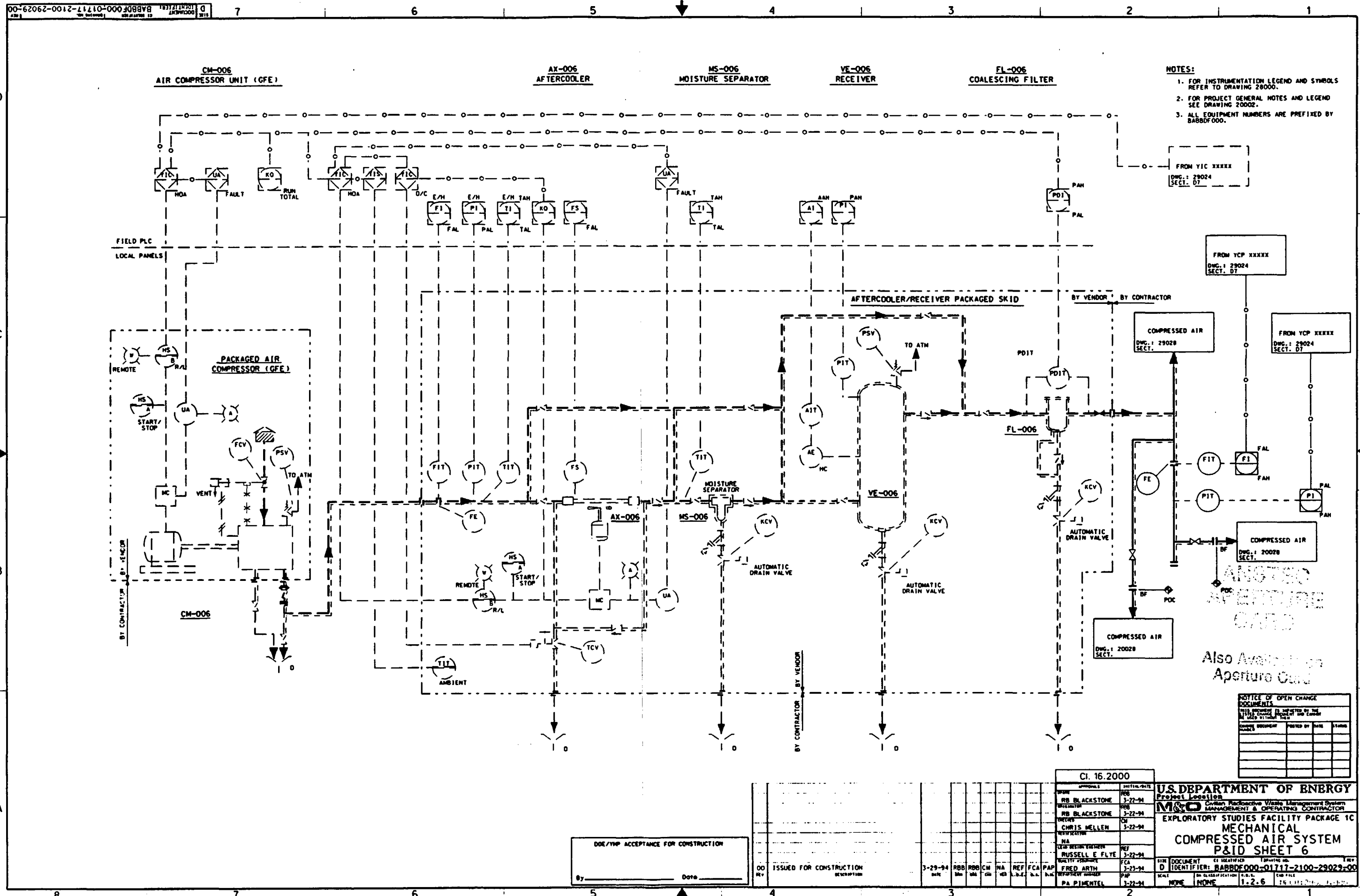
DOE/YNP ACCEPTANCE FOR CONSTRUCTION

By _____ Date _____

ISSUED FOR CONSTRUCTION

DESCRIPTION

3-29-94 RBB RBB CM NA REF FCA PAP



NOTES:

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2. FOR PROJECT GENERAL NOTES AND LEGEND SEE DRAWING 20002.
3. ALL EQUIPMENT NUMBERS ARE PREFIXED BY BABDF000.

FROM YIC XXXXX
DWG.: 29024
SECT. D7

FROM YCP XXXXX
DWG.: 29024
SECT. D7

COMPRESSED AIR
DWG.: 29028
SECT.

COMPRESSED AIR
DWG.: 29028
SECT.

COMPRESSED AIR
DWG.: 29028
SECT.

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NOTICE OF OPEN CHANGE DOCUMENTS

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ISSUE NUMBER	DATE	STATUS

CI. 16.2000	
APPROVAL:	DATE:
RB BLACKSTONE	3-22-94
RB BLACKSTONE	3-22-94
CHRIS BELLEN	3-22-94
RUSSELL E FLYE	3-22-94
FRED ARTH	3-23-94
PA PIMENTEL	3-22-94

U.S. DEPARTMENT OF ENERGY
Project Location
M&O Civilian Radioactive Waste Management System
MANAGEMENT & OPERATIONS CONTRACTOR
EXPLORATORY STUDIES FACILITY PACKAGE 1C
MECHANICAL COMPRESSED AIR SYSTEM P&ID SHEET 6

SIZE: 11x17
SCALE: NONE
DATE: 3-22-94
BY: RB

DDE/YMP ACCEPTANCE FOR CONSTRUCTION

By _____ Date _____

ISSUED FOR CONSTRUCTION

NO	REV	DATE	DESCRIPTION