START

Volume IV

0036834

Conceptual Design
for the

Waste Receiving And Processing Facility Module 2A

Conceptual Drawings

Prepared for

U.S. Department of Energy
Richland Operations Office
Richland, Washington

JUN 1994
RECEIVED
EPIC

Prepared by

United Engineers & Constructors
A Raytheon Company
Western Operations

July 1992

9227.1459

WASTE RECEIVING AND PROCESSING FACILITY
MODULE 2A PROJECT W-100

UNITED STATES DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
RICHLAND, WASHINGTON

CONCEPTUAL DESIGN DRAWING INDEX

GENERAL (1104)

H-2-140593	G-1	CONCEPTUAL DESIGN DRAWING INDEX
H-2-140594	GP-2	LEGEND AND SYMBOLS - PIPING AND EQUIPMENT
H-2-140595	GP-3	LEGEND & SYMBOLS - INSTRUMENT & CONTROL SYSTEM
H-2-140598	GP-4	BLOCK FLOW DIAGRAM - OVERALL FACILITY
H-2-140599	GP-1	OVERALL EQUIPMENT GENERAL ARRANGEMENT
H-2-140600	GP-8	PROCESS FLOW DIAGRAM-VESSEL & PROCESS OFFGAS TREATMENT (SHT. 1 OF 2)
H-2-140600	GP-8	PROCESS FLOW DIAGRAM-VESSEL & PROCESS OFFGAS TREATMENT (SHT. 2 OF 2)
H-2-140601	GP-9	VESSEL & PROCESS OFFGAS - EQUIPMENT G.A.
H-2-140602	DC-1	PROCESS FLOW DIAGRAM - DECONTAMINATION SYSTEM

STABILIZATION (1105)

GROUT FACILITY

H-2-140606	GP-5	BLOCK FLOW DIAGRAM - SHRED/GROUT FACILITY
H-2-140607	ST-3	PROCESS FLOW DIAGRAM - BULK POWDER STORAGE
H-2-140608	ST-4	PROCESS FLOW DIAGRAM - VIBRO GROUT SYSTEM
H-2-140609	ST-5	PROCESS FLOW DIAGRAM - AGITATED GROUT SYSTEM
H-2-140610	ST-8	MECHANICAL FLOW DIAGRAM - BULK POWDER STORAGE
H-2-140611	ST-9	MECHANICAL FLOW DIAGRAM - VIBRO GROUT SYSTEM
H-2-140612	ST-10	MECHANICAL FLOW DIAGRAM - AGITATED GROUT SYSTEM
H-2-140613	ST-15	BULK DRY MATERIAL STORAGE - EQPT. G.A. - PLAN
H-2-140614	ST-16	BULK DRY MATERIAL STORAGE - EQPT. G.A. - SECTION
H-2-140615	ST-17	GROUT STABILIZATION MIX AREA - EQPT. G.A. - PLAN
H-2-140616	ST-18	GROUT STABILIZATION MIX AREA - EQPT. G.A. - SECTION
H-2-140617	ST-19	GROUT STABILIZATION ENCLOSURE - EQPT. G.A. - PLAN
H-2-140618	ST-20	GROUT STABILIZATION ENCLOSURE - EQPT. G.A. - SECTIONS

POLYMER FACILITY

H-2-140619	GP-6	BLOCK FLOW DIAGRAM - POLYMER FACILITY
H-2-140620	ST-6	PROCESS FLOW DIAGRAM - POLYMER RESIN & CHEMICAL STORAGE
H-2-140621	ST-7	PROCESS FLOW DIAGRAM - POLYMER ENCAPSULATION
H-2-140622	ST-21	MECHANICAL FLOW DIAGRAM - POLYMER RESIN & CHEMICAL STORAGE (SHT. 1 OF 2)
H-2-140622	ST-21	MECHANICAL FLOW DIAGRAM - POLYMER RESIN & CHEMICAL STORAGE (SHT. 2 OF 2)
H-2-140623	ST-22	MECHANICAL FLOW DIAGRAM - POLYMER MIXING & ENCAPSULATION (SHT. 1 OF 2)
H-2-140623	ST-22	MECHANICAL FLOW DIAGRAM - POLYMER MIXING & ENCAPSULATION (SHT. 2 OF 2)
H-2-140624	ST-11	BULK POLYMER STORAGE - EQPT. G.A. - PLAN
H-2-140625	ST-12	BULK POLYMER STORAGE - EQPT. G.A. - SECTION
H-2-140626	ST-13	POLYMER ENCAPSULATION - EQPT. G.A. - PLAN
H-2-140627	ST-14	POLYMER ENCAPSULATION - EQPT. G.A. - SECTIONS

SIZE REDUCTION & REPACK

H-2-140628	SR-3	PROCESS FLOW DIAGRAM - SIZE REDUCTION & REPACK (SHT 1 OF 2)
H-2-140628	SR-3	PROCESS FLOW DIAGRAM - SIZE REDUCTION & REPACK (SHT. 2 OF 2)
H-2-140629	SR-5	MECHANICAL FLOW DIAGRAM - SIZE REDUCTION & REPACK (SHT. 1 OF 2)
H-2-140629	ST-5	MECHANICAL FLOW DIAGRAM - SIZE REDUCTION & REPACK (SHT. 2 OF 2)
H-2-140630	SR-6	MECHANICAL FLOW DIAGRAM - BOX BREAKDOWN
H-2-140631	SR-1	SIZE REDUCTION, REPACK & BOX BREAKDOWN - EQPT. G.A. - PLAN
H-2-140632	SR-2	SIZE REDUCTION, REPACK & BOX BREAKDOWN - EQPT. G.A. - SECTIONS

STABILIZATION (1105) CONT.

SAMPLING

H-2-140633	SR-4	PROCESS FLOW DIAGRAM - DRUM SAMPLING
H-2-140634	SA-1	SAMPLE MANAGEMENT - EQPT. G.A.

SPECIAL WASTE (1106)

H-2-140648	GP-7	BLOCK FLOW DIAGRAM - SPECIAL WASTE TREATMENT
H-2-140649	SP-4	PROCESS FLOW DIAGRAM - SPECIAL WASTE SIZE REDUCTION
H-2-140650	SP-5	PROCESS FLOW DIAGRAM - MERCURY PRETREATMENT
H-2-140651	SP-6	PROCESS FLOW DIAGRAM - REACTIVE METALS PRETREATMENT
H-2-140652	SP-1	SPECIAL WASTE EQPT. G.A. - PLAN
H-2-140653	SP-2	SPECIAL WASTE EQPT. G.A. - SECTIONS

SECONDARY WASTE (1107)

H-2-140657	SC-3	BLOCK FLOW DIAGRAM - OVERALL PLANT WATER BALANCE
H-2-140658	SC-4	PROCESS FLOW DIAGRAM - ACTIVE AND NON ACTIVE PLANT DRAINS
H-2-140659	SC-5	PROCESS FLOW DIAGRAM - ACTIVE AND NON ACTIVE LIQUID WASTE SYSTEMS
H-2-140660	SC-1	SECONDARY WASTE COLLECTION EQPT. G.A. - PLAN
H-2-140661	SC-2	SECONDARY WASTE COLLECTION EQPT. G.A. - SECTION

MATERIAL HANDLING (1108)

H-2-140665	MH-3	BLOCK FLOW DIAGRAM - MATERIAL HANDLING
H-2-140666	MH-1	MATERIAL HANDLING EQPT. G.A. - PLAN
H-2-140667	MH-2	AUTOMATED STORAGE RETRIEVAL - EQPT. G.A.

RECEIVING & SHIPPING (1109)

H-2-140670	RC-3	PROCESS FLOW DIAGRAM - RECEIVING & SHIPPING AREA
H-2-140671	RC-1	RECEIVING & SHIPPING - EQPT. G.A. - PLAN
H-2-140672	RC-2	RECEIVING & SHIPPING - EQPT. G.A. - SECTIONS
H-3-140673	RC-4	PROCESS FLOW DIAGRAM - DRUM NDA
H-4-140674	RC-5	NON-DESTRUCTIVE ASSAY - EQPT. G.A.

PROCESS CONTROLS (1111)

H-2-140678	I-2	PCS BLOCK DIAGRAM
H-2-140679	I-3	DMS BLOCK DIAGRAM
H-2-140680	I-4	DMS BLOCK FLOW DIAGRAM (SHT. 1 OF 3)
H-2-140680	I-4	DMS BLOCK FLOW DIAGRAM (SHT. 2 OF 3)
H-2-140680	I-4	DMS BLOCK FLOW DIAGRAM (SHT. 3 OF 3)
H-2-140681	I-5	HSE LOCATION PLAN
H-2-140682	I-1	CONTROL ROOM & COMPUTER ROOM LAYOUTS
H-2-140683	I-6	CCTV & BAR CODE READER LOCATION PLAN

UTILITIES (1112)

AQUEOUS MAKE-UP

H-2-140687	UT-10	PROCESS FLOW DIAGRAM - AMU
H-2-140688	UT-8	AMU AREA EQPT. G.A.
H-2-140689	UT-9	TRUCK LOAD & UNLOAD STATION - EQPT. G.A.

PROCESS WATER,CHILLED WATER,COMPRESSED AIR & NITROGEN

H-2-140690	UT-11	PROCESS FLOW DIAGRAM - PROCESS WATER & CHILLED WATER
H-2-140691	UT-12	PROCESS FLOW DIAGRAM - COMPRESSED AIR & NITROGEN
H-2-140692	UT-1	CHILLED WATER, COMPRESSED AIR & NITROGEN - EQPT. G.A.

POTABLE WATER & SANITARY WASTE

H-2-140693	UT-3	UTILITY FLOW DIAGRAM - POTABLE WATER
H-2-140694	UT-4	UTILITY FLOW DIAGRAM - SANITARY WASTE & VENT PLUMBING

FIRE PROTECTION

H-2-140695	UT-6	MECHANICAL FLOW DIAGRAM - FIRE PROTECTION
H-2-140696	UT-5	FIRE PROTECTION ZONE PLAN - GROUND & LOWER LEVEL
H-2-140697	UT-15	FIRE PROTECTION ZONE PLAN - UPPER LEVEL

ELECTRICAL

H-2-140698	E-1	MASTER ONE LINE DIAGRAM
H-2-140699	E-2	ONE LINE DIAGRAM - AREAS 04 & 05
H-2-140700	E-3	ONE LINE DIAGRAM - AREAS 06,07,08 & 09
H-2-140701	E-4	ONE LINE DIAGRAM - AREAS 13 & 14
H-2-140702	E-5	ONE LINE DIAGRAM - AREA 14
H-2-140703	E-6	ONE LINE DIAGRAM - AREA 14
H-2-140704	E-7	ONE LINE DIAGRAM - AREA 05

BUILDING SYSTEMS (1113)

H-2-140713	A-101	FLOOR PLAN - LOWER & GROUND LEVEL
H-2-140714	A-102	FLOOR PLAN - UPPER LEVEL
H-2-140715	A-201	BUILDING ELEVATIONS
H-2-140716	A-301	BUILDING SECTIONS
H-2-140717	A-302	BUILDING SECTIONS
H-2-140718	A-303	BUILDING SECTIONS
H-2-140719	C-1	CIVIL NOTES, LEGEND & ABBREVIATIONS
H-2-140720	C-2	LAYOUT & UTILITY PLAN
H-2-140721	C-3	GRADING PLAN

VENTILATION SYSTEMS (1114)

H-2-140726	H-1	HVAC NOTES & ABBREVIATIONS
H-2-140727	H-11	MASTER HVAC AIRFLOW DIAGRAM - PROCESS AREAS
H-2-140728	H-2	HVAC AIRFLOW DIAGRAM - PROCESS SUPPLY
H-2-140729	H-3	HVAC AIRFLOW DIAGRAM - PROCESS EXHAUST
H-2-140730	H-4	HVAC AIRFLOW DIAGRAM - ADMINISTRATION & CHANGE ROOM
H-2-140731	H-5	HVAC AIRFLOW DIAGRAM - SHIPPING/RECEIVING, COMPUTER CONTROL & MECHANICAL ROOMS
H-2-140732	H-10	FLOW DIAGRAM - HVAC CHILLED WATER PIPING
H-2-140733	H-6	HVAC ZONE PLAN - LOWER & GROUND LEVEL
H-2-140734	H-7	HVAC ZONE PLAN - UPPER LEVEL
H-2-140735	H-9	HVAC GENERAL ARRANGEMENT - LOWER LEVEL PLAN
H-2-140736	H-8	HVAC GENERAL ARRANGEMENT - UPPER LEVEL PLAN
H-2-140737	H-12	HVAC GENERAL ARRANGEMENT - SECTIONS

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	B. GREY	3/16/92
DRAWN	B. GREY	3/16/92
CHECKED	R. HOWELL	5/29/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY / FOR / DATE

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
CONCEPTUAL DESIGN
DRAWING INDEX

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0000	H-2-140593	D

SCALE: NONE | DISCIPLINE NO: G-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	R. VAN ZANTEN 7/31/92	R. HOWELL 7/31/92	R. HOWELL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON

CADFILE: 9140593A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED - NO MANUAL CHANGES ALLOWED

9411227.1460

EQUIPMENT IDENTIFICATION SYMBOLS

SYMBOL	EQUIPMENT	SYMBOL	EQUIPMENT	SYMBOL	EQUIPMENT
AL	AIRLOCK	F	FILTER	RT	REMOTE TOOL
BA	BREATHING AIR	FT	FORK TRUCK	S	SEPARATOR/CENTRIFUGE/ DEMISTER/DUST COLLECTOR
BP	BARCODE PRINTER	G	GENERATOR (ELECTRIC)	SC	SCALE
BR	BARCODE READER	GB	GLOVE BOX/ENCLOSURE	SH	SHEAR/SHREDDER
C	COMPRESSOR/BLOWER/FAN	GV	AUTOMATED GUIDED VEHICLE	SR	STRETCH WRAPPER
CH	CHILLER	H	HEATER/FURNACE	ST	SORT TABLE
CM	COMPACTOR	HD	HOOD	T	TANK/BIN/HOPPER
CR	CRANE/HOIST/STACKER	HU	HYDRAULIC POWER UNIT	TC	TRANSFER CAR
CV	CONVEYOR	LT	LIFT TABLE	TE	TERMINAL
CY	CYLINDER	M	MIXER/AGITATOR	TM	TELEVISION MONITOR
DC	DECONTAMINATION STATION	ND	NON-DESTRUCTIVE EXAMINATION/ASSAY EQUIPMENT	TR	TRANSPORTER
DH	DRUM HANDLER	OIU	OPERATOR INTERFACE UNIT	U	PACKAGED PROCESS UNIT
DO	DOOR	P	PUMP	UPS	UNINTERRUPTIBLE POWER SYSTEM
DR	DRYER	PR	PRINTER	V	VESSEL/DRUM/RECEIVER
E	HEAT EXCHANGER/ CONDENSER/COOLER	PU	PNEUMATIC CONVEYING UNIT	(V)	VENDOR FURNISHED ITEM
EJ	EJECTOR/EDUCTOR/JET			X	MISCELLANEOUS EQUIPMENT (JAR MILLS, SPRAYS, HYDROLASERS)
EM	ELECTROMECHANICAL MANIPULATOR			Y	SOLIDS FEEDER

(HVAC EQUIPMENT SYMBOLS AND NAMES ARE SHOWN ON HVAC FLOW DIAGRAM LEGEND)

EQUIPMENT IDENTIFICATION

CV-05-101 A

- A — USED TO IDENTIFY MULTIPLE IDENTICAL EQUIPMENT (A,B, etc.)
- 101 — EQUIPMENT NUMBER (FIRST)
- 05 — SYSTEM NUMBER
- CV — EQUIPMENT IDENTIFICATION SYMBOL

SPECIALITY ITEM IDENTIFICATION

SP /05-101A

- A — USED TO IDENTIFY MULTIPLE IDENTICAL EQUIPMENT (A,B, etc.)
- 101 — SEQ. NO.
- 05 — SYSTEM NUMBER
- SP — SPECIALITY ITEM

SERVICE DESIGNATION

AIR

BA	BREATHING AIR
CA	COMPRESSED AIR
IA	INSTRUMENT AIR
PA	PLANT AIR

WATER

FW	FIREWATER
PW	POTABLE WATER
RW	RAW WATER
SW	SANITARY WATER
UW	UTILITY WATER
AWW	ACTIVE WASTE WATER
NAW	NON-ACTIVE WASTE WATER

VENTS AND DRAINS

DR	CLEAN DRAIN
SS	SANITARY SEWER
V	SANITARY VENT

PRESSURIZED GAS

AR	ARGON
CO_2	CARBON DIOXIDE
N_2	NITROGEN
O_2	OXYGEN

PROCESS CHILLING

CDR	CONDENSER GLYCOL RETURN
CDS	CONDENSER GLYCOL SUPPLY
CFR	CHILLED FLUID RETURN
CFS	CHILLED FLUID SUPPLY
CGR	CHILLED GLYCOL RETURN
CGS	CHILLED GLYCOL SUPPLY
FF	REFRIGERANT

VACUUM

VAS	VACUUM AIR SAMPLING

MISCELLANEOUS

E	FOR ELECTRICAL LINES IN PROCESS ENCLOSURES (LAST LETTER)
I	FOR INSTRUMENT LINES IN PROCESS ENCLOSURES (LAST LETTER)
LO	LUBE OIL
DO	DIESEL OIL
SPR	SPARE LINES

INSULATION IDENTIFIERS

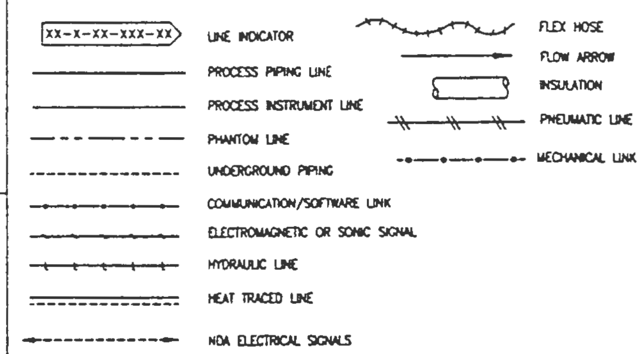
IH	HOT SERVICE
IC	COLD SERVICE
(BLANK)	NOT INSULATED

PIPE LINE IDENTIFICATION

PA-3"-NN-001-IH

- IH — INSULATION IDENTIFIER
- 001 — LINE IDENTIFICATION NUMBER
- NN — PIPING MATERIAL SPECIFICATION (SEE SPEC)
- 3" — NOMINAL PIPE SIZE (IN INCHES)
- PA — SERVICE DESIGNATION

LINE SYMBOLS IDENTIFICATION



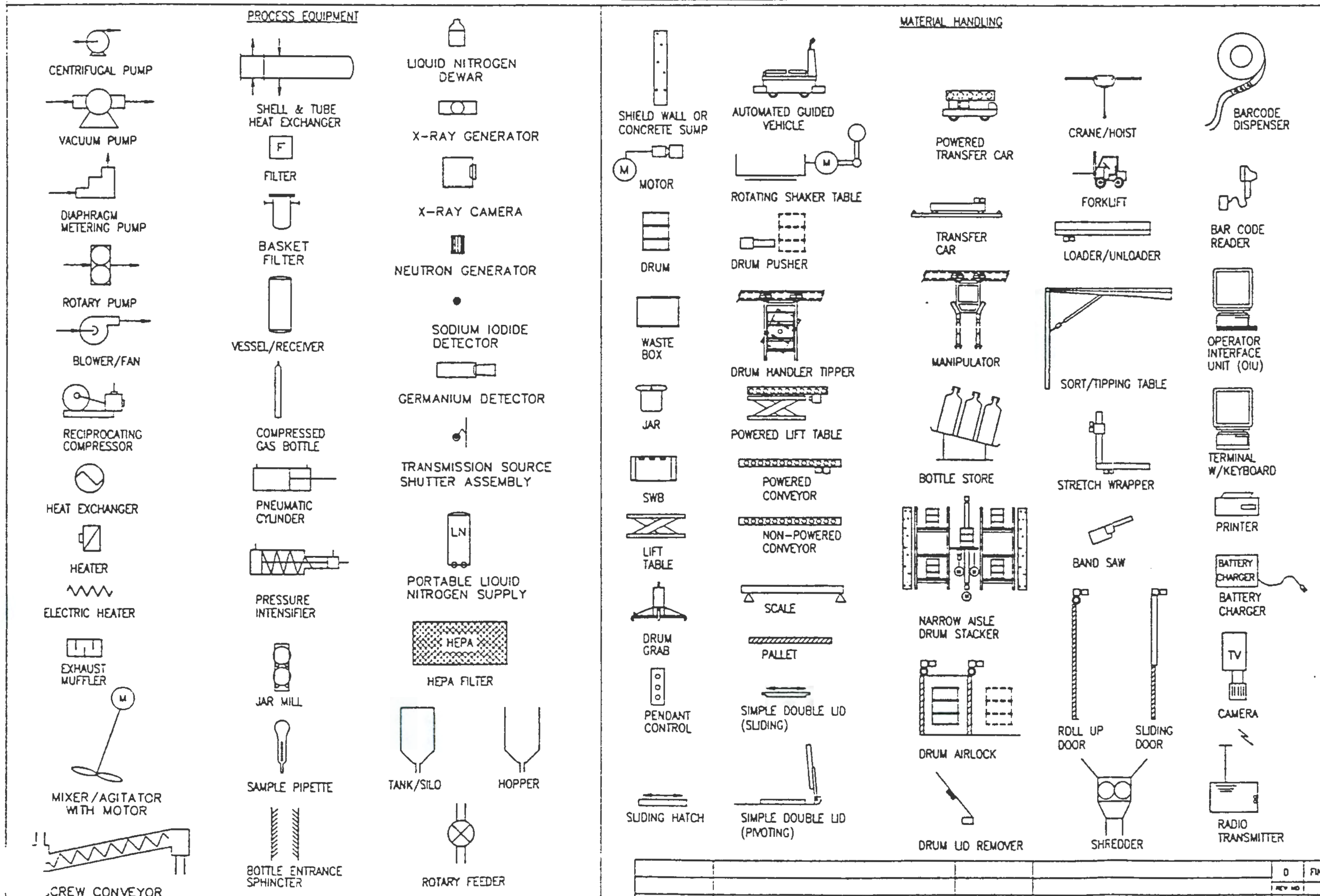
ABBREVIATIONS

ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
AMU	AQUEOUS MAKE-UP	LLL	LOW LIQUID LEVEL
AS	AUTOMATIC SPRINKLER SYSTEM (WET PIPE UNLESS NOTED)	LLLL	LOW LOW LIQUID LEVEL
ATM	ATMOSPHERE	LLW	LOW LEVEL WASTE
AVG	AVERAGE	LC	LOCK CLOSE
BD	BLOWDOWN	LO	LOCK OPEN
BFS	BLAST FURNACE SLAG	LP	LOW PRESSURE
BHP	BRAKE HORSEPOWER	LPT	LOW POINT
BL	BATTERY LIMITS	MH	MAN HOLE
BW	BUTT WELD	MMI	MAN-MACHINE INTERFACE
CA	COMPRESSED AIR	MPS	MANUAL PULL STATION
CCR	CENTRAL CONTROL ROOM	MTTR	MEAN TIME TO REPAIR
CD	CHEMICAL DRAIN	NAS	NARROW AISLE STACKER
CCTV	CLOSED CIRCUIT TV	NC	NORMALLY CLOSED
CH	CONTACT-HANDLED	NDA	NON-DESTRUCTIVE ASSAY
CO	CHAIN OPERATED	NG	NEWLY GENERATED
CPL	CRITICALITY PREVENTION LIMIT	NIC	NOT IN CONTRACT
CSC	CAR SEAL CLOSE	NILL	NORMAL INTERFACE LIQUID LEVEL
CSO	CAR SEAL OPEN	NNF	NORMALLY NO FLOW
DAC	DATA ACQUISITION AND CONTROL	NO	NORMALLY OPEN
DBA	DESIGN BASIS ACCIDENT	NLL	NORMAL LIQUID LEVEL
DBF	DESIGN BASIS FIRE	NS	NEUTRON SPECTROSCOPY
DECON	DECONTAMINATION	OIU	OPERATOR INTERFACE UNITS
DECR	DECREASING	OPC	ORDINARY PORTLAND CEMENT
EA	EACH	PAN	PASSIVE ACTIVE NEUTRON
EC	ENERGIZE CLOSE	PCS	PLANT CONTROL SYSTEM
EO	ENERGIZE OPEN	PFA	PULVERIZED FLY ASH
EXT	HAND HELD EXTINGUISHER (DRY CHEMICAL UNLESS NOTED)	PSAR	PRELIMINARY SAFETY ANALYSIS REPORT
FAP	FISSION AND ACTIVATION PRODUCT	RMW	RADIOACTIVE MIXED WASTE
FC	FAIL CLOSE-SPRING CLOSES	RO	REVERSE OSMOSIS
FD	FLEX-DISC VALVE	RPT	RADIATION PROTECTION TECHNOLOGIST
FDC	FUNCTIONAL DESIGN CRITERIA	SARP	SAFETY ANALYSIS REPORT PACKAGING
FP	FISSION PRODUCT	SC	SAMPLE CONNECTION
GEA	GAMMA ENERGY ASSAY	SD	SMOKE DETECTOR
GH	GAUGE HATCH	SDRD	SUPPLEMENTAL DESIGN REQ. DOCUMENT
GO	GEAR OPERATOR	SGS	SEGMENTED GAMMA SCANNER
GPD	GALLONS PER DAY	SO	STEAM OUT
GS	GENERAL SPARE	SP	SPECIALITY ITEM
HC	HYDROCARBON	SPC	SPECIAL PROTECTIVE COATINGS
HLL	HIGH LIQUID LEVEL	SP GR	SPECIFIC GRAVITY
HEPA	HIGH EFFICIENCY PARTICULATE AIR	SS	SOFT SEAT VALVE
HHLL	HIGH HIGH LIQUID LEVEL	S/S	SEAM TO SEAM
HP	HORSEPOWER OR HIGH PRESS.	SWB	STANDARD WASTE BOX
HVAC	HEATING, VENTILATION & AIR CONDITIONING	TBD	TO BE DETERMINED
IAS	INSTRUMENT AIR SUPPLY	TSO	TIGHT SHUT OFF
IFD	INCIPIENT FIRE DETECTION (EARLY WARNING SMOKE DETECTION)	T/T	TANGENT TO TANGENT
INC	INCREASING	UG	UNDERGROUND
IPCS	INTEGRATED PROCESS CONTROL SYSTEM	VES	VINYL ESTER STYRENE
IR	INSTRUMENT ROOM	VIB	VIBRATION
LB	POUNDS	WHC	WESTINGHOUSE HANFORD COMPANY
LETF	LIQUID EFFLUENT TREATMENT FACILITY	WRAP	WASTE RECEIVING AND PROCESSING
		XFER	TRANSFER

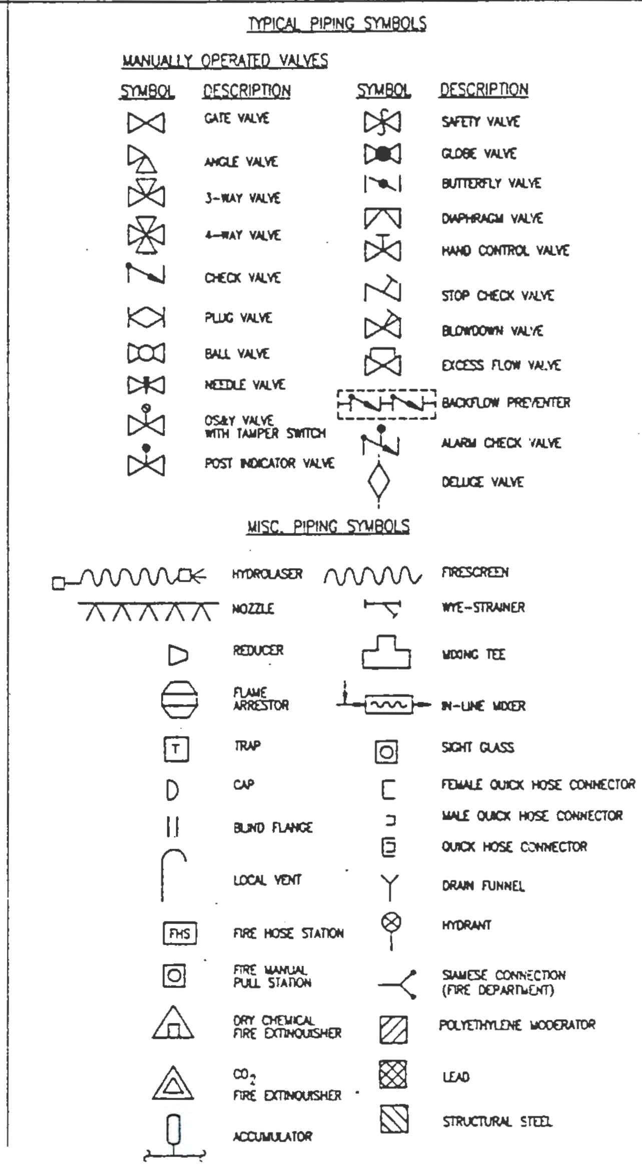
SYSTEM NUMBERS

NO.	DESCRIPTION
04	GENERAL PROCESS/OFF-GAS/DECONTAMINATION
05	STABILIZATION/SAMPLING
06	SPECIAL WASTE TREATMENT
07	SECONDARY WASTE TREATMENT
08	MATERIAL HANDLING
09	SHIPPING/RECEIVING
11	PROCESS CONTROLS
12	UTILITIES
13	BUILDING SYSTEMS
14	HVAC

EQUIPMENT SYMBOLS



PIPING SYMBOLS



NOTES:

1. PIPING SYMBOLS ILLUSTRATED ARE THOSE MOST OFTEN USED, FOR OTHERS SEE WHC STANDARD; WHC-CM-6-3
2. VESSEL TRIM, LINE NUMBER ETC. APPLIES TO VENTS, DRAINS, SC, LG, LA AND LC CONN. ON THAT PARTICULAR PIECE OF EQUIPMENT.
3. TO SIMPLIFY ROUTING OF PROCESS FLOW LINES, SOME PIECES OF EQUIPMENT MAY APPEAR IN MORE THAN ONE PLACE ON THE FLOW DIAGRAM. EQUIPMENT SO DUPLICATED WILL BE INDICATED BY DASHED LINES.
4. INSTRUMENT IDENTIFICATIONS AS ILLUSTRATED ARE BASED ON THE INSTRUMENT SOCIETY OF AMERICA STANDARD S-5.1.
5. WHEN NECESSARY, PIPING AND/OR EQUIPMENT SYMBOLS MAY BE INCLUDED AS PART OF AN INSTRUMENT LOOP.
6. PIPING COMPONENTS NOT IDENTIFIED BY INSTRUMENT OR MECHANICAL EQUIPMENT NUMBERS, ETC.; AND NOT COVERED BY THE PIPING MATERIAL SPECIFICATION, ARE IDENTIFIED BY A SPECIALTY ITEM NUMBER.
7. (*) ASTERISK DENOTES THAT A CODE LETTER MAY BE USED TO IDENTIFY ORIFICE SIZE OF RELIEF VALVE.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	K. VANZANTEN	3/31/92
DRAWN	L. RIVERA	3/31/92
CHECKED	R. HENKEL	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY FOR DATE

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN PIPING AND EQUIPMENT LEGEND AND SYMBOLS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140594	D

SCALE: NONE | DISCIPLINE NO. GP-2 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	K. VANZANTEN 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2AGP2.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1462

INSTRUMENT CODE LETTER IDENTIFICATION

INSTRUMENT FUNCTION \ PROCESS VARIABLE	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
	ANALYSIS	BURNER	CONDUCTIVITY	DENSITY	VOLTAGE	FLOW	GAGING (DIMENSIONAL)	HAND	CURRENT	POWER	TIME (PROGRAM)	LEVEL	MOISTURE HUMIDITY	BARCODE	USER'S CHOICE	PRESSURE VACUUM	QUANTITY	RADIOACTIVITY	SPEED/FREQ.	TEMPERATURE	MULTI-VARIABLE	VIBRATION	WEIGHT	(UNCLASSIFIED)	EVENT, STATE, PRESENCE	POSITION
TEST POINT	AP	BP	CP	DP	EP	FP									OP	PP		RP		TP		VP		XP		
PRIMARY ELEMENT	AE	BE	CE	DE	EE	FE	GE		IE	JE		LE	ME	NE	OE	PE	QE	RE	SE	TE		VE	WE	XE	YE	
THERMOWELL/STILLWELL				DW								LW			OW					TW				XW		
OBSERVATION GLASS		BG				FG						LG			OG									XG		
INDICATOR	AI		CI	DI	EI	FI	GI		II	JI	KI	LI	MI	NI	OI	PI	QI	RI	SI	TI	UI	VI	WI	XI	YI	ZI
INDICATOR DIFFERENTIAL															ODI	PDI			SDI	TDI			WDI	XDI		ZDI
TRANSMITTER BLIND	AT	BT	CT	DT	ET	FT			IT	JT	KT	LT	MT		OT	PT	QT	RT	ST	TT	UT	VT	WT	XT	YT	ZT
TRANSMITTER INDICATING	AIT	BIT	CIT	DIT	EIT	FIT			IIT	JIT	KIT	LIT	MIT		OIT	PIT	QIT	RIT	SIT	TIT	UIT	VIT	WIT	XIT	YIT	ZIT
RECORDER	AR	BR	CR	DR	ER	FR			IR	JR	KR	LR	MR		OR	PR	QR	RR	SR	TR	UR	VR	WR	XR	YR	ZR
RECORDER RATIO				DFR	EFR	FFR			IFR				MFR		OFR	PFR			SFR	TFR		VFR	WFR	XFR		
RECORDER DIFFERENTIAL				DDR					IDR	JDR	KDR		MDR		ODR	PDR			SDR	TDR		VDR	WDR	XDR		ZDR
CONTROLLER, BLIND	AC	BC	CC	DC	EC	FC	GC	HC	IC	JC	KC	LC	MC		OC	PC	QC	RC	SC	TC	UC	VC	WC	XC		ZC
CONTROLLER, INDICATING	AIC	BIC	CIC	DIC	EIC	FIC	GIC	HIC	IIC	JIC	KIC	LIC	MIC		OIC	PIC	QIC	RIC	SIC	TIC	UIC	VIC	WIC	XIC		ZIC
CONTROLLER, RECORDING	ARC	BRC	CRC	DRC	ERC	FRC	GRC		IRC	JRC	KRC	LRC	MRC		ORC	PRC	QRC	RRC	SRC	TRC	URC	VRC	WRC	XRC		ZRC
INTEGRATOR, TOTALIZER						FQ				JQ	KQ							RQ					WQ			
SCANNER	AJ	BJ	CJ	DJ	EJ	FJ	GJ		IJ	JJ	KJ	LJ	MJ		OJ	PJ		RJ	SJ	TJ	UJ	VJ	WJ	XJ	YJ	ZJ
BACK-UP STATION	AIK	BIK	CIK	DIK	EIK	FIK	GIK	HIK	IIK	JIK	KIK	LIK	MIK		OIK	PIK	QIK	RIK	SIK	TIK	UIK	VIK	WIK	XIK		ZIK
VALVE CONTROL	AV	BV	CV	DV		FV		HV			KV	LV	MV		OV	PV		RV	SV	TV		VV	WV	XV		
VALVE, SOLENOID	AEV	BEV	CEV	DEV		FEV	GEV				KEV	LEV	MEV		OEV	PEV		REV	SEV	TEV		VEV	WEV	XEV		
VALVE, SAFETY OR RELIEF															OSV	PSV								XSV		
RUPTURE DISK															OSE	PSE								XSE		
REGULATOR, SELF CONTAINED						FCV		HCV				LCV			OCV	PCV			SCV	TCV			WCV	XCV		
FINAL CONTROL ELEMENT		BZ				FZ		HZ							OZ	PZ	QZ	RZ	SZ	TZ		VZ	WZ	XZ		ZZ
BURNER MANAGEMENT SYSTEM		BMS																								
SWITCH, HIGH	ASH		CSH	DSH	ESH	FSH	GSH		ISH	JSH		LSH	MSH		OSH	PSH	QSH	RSH	SSH	TSH		VSH	WSH	XSH	YSH	ZSH
SWITCH, LOW	ASL		CSL	DSL	ESL	FSL	GSL		ISL	JSL		LSL	MSL		OSL	PSL	QSL	RSL	SSL	TSL		VSL	WSL	XSL		ZSL
SWITCH, BLIND	AS		CS	DS	ES	FS	GS	HS	IS	JS		LS	MS		OS	PS	QS		SS	TS		VS	WS	XS		ZS
SWITCH, INDICATING	AIS		CIS	DIS	EIS	FIS	GIS	HIS	IIS	JIS	KIS	LIS	MIS		OIS	PIS	QIS		SIS	TIS		VIS	WIS	XIS		ZIS
ALARM, HIGH	AAH	BAH	CAH	DAH	EAH	FAH	GAH		IAH	JAH		LAH	MAH		OAH	PAH	QAH	RAH	SAH	TAH	UAH	VAH	WAH	XAH		ZAH
ALARM, LOW	AAL	BAL	CAL	DAL	EAL	FAL	GAL		IAL	JAL		LAL	MAL		OAL	PAL	QAL	RAL	SAL	TAL	UAL	VAL	WAL	XAL		ZAL
ALARM, HIGH/LOW	AAHL	BAHL	CAHL	DAHL	EAHL	FAHL	GAHL		IAHL	JAHL		LAHL	MAHL		OAHL	PAHL	QAHL	RAHL	SAHL	TAHL	UAHL	VAHL	WAHL	XAHL		ZAHL
STATUS LIGHT	AL	BL	CL	DL	EL	FL	GL		IL	JL	KL	LL	ML		OL	PL	QL	RL	SL	TL	UL	VL	WL	XL		ZL
RELAY/CONVERTER	AY	BY	CY	DY	EY	FY	GY		IY	JY	KY	LY	MY	NY	OY	PY	QY	RY	SY	TY	UY	VY	WY	XY		ZY

NOTES

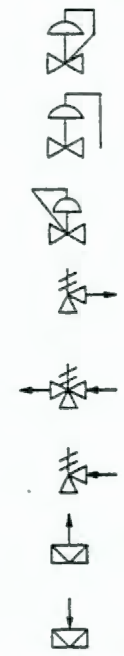
1. "A" IS USED FOR THE ANALYTICAL VARIABLES FOR EXAMPLE: O_2, H_2O, CO_2, PH, ECT., THE DESCRIPTIVE CHEMICAL SYMBOL DENOTING THE ANALYZER FUNCTION SHOULD BE NOTED ON THE P&ID NEAR THE INSTRUMENT SYMBOL. I.E. (AI) O_2
2. "R" IS USED FOR RADIATION OR RADIOACTIVITY MEASURE. THE DESCRIPTION SYMBOL: ALPHA, BETA, GAMMA OR NEUTRON DENOTING THE FUNCTION SHOULD BE NOTED ON THE P&ID NEAR THE INSTRUMENT SYMBOL. I.E. (RI) BETA
3. "N" IS A USER'S CHOICE LETTER AND IS USED ON THIS PROJECT TO IDENTIFY BAR CODE READER. "Y" IS USED TO IDENTIFY A CONVERTER; SUCH AS A BAR CODE DECODER.
4. SHADED SPACES – IMPOSSIBLE COMBINATION
   OPEN SPACES – IMPROBABLE COMBINATION
5. ANY FIRST LETTER, IF USED IN CONJUNCTION WITH MODIFYING LETTERS, "D" DIFFERENTIAL, "F" RATIO, "Q" INTEGRATE/TOTALIZE, "J" SCAN OR ANY COMBINATION OF THEM SHALL BE CONSTRUED TO REPRESENT A NEW AND SEPARATE MEASURED VARIABLE AND THE COMBINATION SHALL BE TREATED AS A FIRST LETTER ENTITY. FOR EXAMPLE
   - PDT – PRESSURE DIFFERENTIAL TRANSMITTER
   - PDC – PRESSURE DIFFERENTIAL CONTROLLER
   - WFY – WEIGHT RATIO RELAY
   - WQT – WEIGHT INTEGRATING TRANSMITTER
   - WQI – WEIGHT TOTALIZING INDICATOR
   - WQC – WEIGHT TOTALIZING CONTROLLER
   - LJT – LEVEL SCANNING TRANSMITTER
   - WQY – WEIGHT TOTALIZING RELAY
6. ABBREVIATIONS FOR DESCRIPTIVE FUNCTIONS NOTED ON THE P&ID'S NEAR THE INSTRUMENT SYMBOLS. I.E. (HS) E/R
   - E/R – EXTEND/RETRACT
   - HOA – HAND/OFF/AUTOMATIC
   - O/C – OPEN/CLOSE
   - POS – POSITION
   - R/L – RAISE/LOWER
   - ST/SP – START/STOP
   - T/R – TIP/RETURN
   - U/D – UP/DOWN
   - FWD/REV – FORWARD/REVERSE

SPECIAL PROJ. CODE LETTERS

- ZSO–POSITION SWITCH, OPEN
- ZSC–POSITION SWITCH, CLSD.
- ZLO–POSITION LIGHT, OPEN
- ZLC–POSITION LIGHT, CLSD.

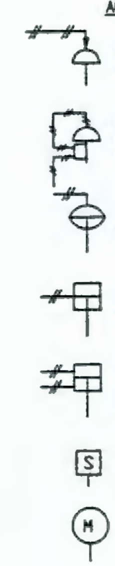
TYPICAL PIPING SYMBOLS

PRESSURE REGULATORS AND SAFETY DEVICES



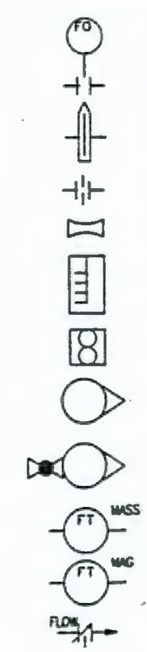
- PRESSURE REDUCING REGULATOR, SELF-CONTAINED
- PRESSURE REDUCING REGULATOR, EXTERNAL PRESSURE TAP
- BACK PRESSURE REGULATOR, SELF-CONTAINED
- PRESSURE RELIEF OR SAFETY VALVE, ANGLE PATTERN SPRING OR WEIGHT LOADED
- PRESSURE/VACUUM RELIEF OR SAFETY VALVE, SPRING OR WEIGHT
- VACUUM RELIEF ANGLE PATTERN VALVE, SPRING OR WEIGHT
- RUPTURE DISC OR SAFETY HEAD FOR PRESSURE RELIEF
- RUPTURE DISC OR SAFETY HEAD FOR VACUUM RELIEF

ACTUATORS



- PNEUMATIC DIAPHRAGM ACTUATOR
- PNEUMATIC DIAPHRAGM ACTUATOR WITH POSITIONING DEVICE
- DIAPHRAGM PRESSURE BALANCED
- PNEUMATIC CYLINDER SINGLE-ACTING
- PNEUMATIC CYLINDER DOUBLE-ACTING
- SOLENOID
- ROTARY MOTOR (NOTE 3)

FLOW ELEMENTS



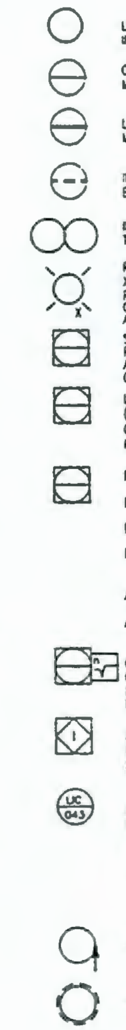
- RESTRICTION ORIFICE
- ORIFICE PLATE IN QUICK CHANGE FITTING
- ORIFICE PLATE
- VENTURI TUBE OR FLOW NOZZLE
- PITOT TUBE
- TURBINE OR PROPELLER TYPE ELEMENT
- ROTAMETER
- ROTAMETER WITH INTEGRAL THROTTLE VALVE
- MASS FLOWMETER
- MAGNETIC FLOWMETER
- MANUALLY ADJUSTED ORIFICE

INSTRUMENTATION SYMBOLS

RELAY FUNCTION DESIGNATIONS

TYPES

- ADD
- SUBTRACT
- BIAS
- EXTRACT ROOT N=2,3....N
- DIVIDE
- MULTIPLY
- HIGH SELECT
- LOW SELECT
- PROPORTIONAL
- REV – REVERSE
- E/P – POTENTIAL TO PNEUMATIC
- I/P – CURRENT TO PNEUMATIC
- E/I – POTENTIAL TO CURRENT
- PANEL MOUNTED PATCHBOARD OR MATRIX
- PURGE OR FLUSHING
- RESET FOR LATCH TYPE ACTUATOR
- RESET FOR LATCH TYPE ACTUATOR LOCAL PANEL MOUNTED
- RESET FOR LATCH TYPE ACTUATOR BEHIND LOCAL PANEL
- INTERLOCK IF ALL INPUTS EXIST
- INTERLOCK IF ANY ONE OR MORE INPUTS EXIST
- GENERALIZED FOR UNDEFINED OR COMPLEX INTERLOCK LOGIC
- (V) ITEM FURNISHED BY VENDOR
- (E) ITEM FURNISHED BY ELECTRICAL GROUP
- (P) ITEM FURNISHED BY PIPING GROUP
- PMS – PLANT MANAGEMENT SYSTEM
- PCS – PLANT CONTROL SYSTEM
- DMS – DATA MANAGEMENT SYSTEM



- LOCALLY MOUNTED INSTRUMENT
- CONTROL ROOM MOUNTED INSTRUMENT
- LOCAL PANEL MOUNTED INSTRUMENT
- INSTRUMENT MOUNTED BEHIND LOCAL PANEL
- INSTRUMENT WITH TWO FUNCTIONS
- PILOT LIGHT X=COLOR CODE R=RED G=GREEN A=AMBER
- SHARED DISPLAY (INDICATOR, RECORDER, CONTROLLER, ANNUNCIATION POINT) CONTROL ROOM
- LOCAL SHARED DISPLAY (INDICATOR, RECORDER, CONTROLLER, ANNUNCIATION POINT)
- PAH – HIGH ALARM ON MEASURED VARIABLE
- PAL – LOW ALARM ON MEASURED VARIABLE
- DP/DT – RATE OF CHANGE OF MEASURED VARIABLE
- PA – DEVIATION OF MEASURED VARIABLE FROM SET POINT ALARM
- AH – OUTPUT SIGNAL HIGH ALARM
- AL – OUTPUT SIGNAL LOW ALARM
- COMPUTATION/SIGNAL CONDITIONING (SEE RELAY FUNCTION DESIGNATIONS)
- INTERCONNECTING LOGIC (MICRO-PROCESSOR OR PROGRAMMABLE CONTROLLER)
- INSTRUMENT TAG NUMBER LIC-043 (LOOP NUMBER; INSTRUMENT IDENTIFICATION CODE)
- REQUIRES 120 VAC POWER
- HEAT TRACED INSTRUMENT

NOTES:

1. THIS INSTRUMENT IDENTIFICATION SYSTEM IS BASED ON ISA STANDARD S5.1 AS MODIFIED PER PROJECT REQUIREMENT
2. FOR ADDITIONAL NOTES AND SYMBOLS REFER TO THE "INSTRUMENT SOCIETY OF AMERICA" (ISA) INSTRUMENTATION SYMBOLS AND IDENTIFICATION STANDARD S5.1 (1984).
3. ALL ELECTRIC MOTOR DRIVES ASSUMED TO HAVE MOTOR STARTERS FURNISHED WITH MOTORS.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN INSTRUMENT AND CONTROL SYSTEM LEGEND AND SYMBOLS

	BY	DATE
DESIGNED	K. WARZANTEK	3/31/92
DRAWN	L. RIVERA	3/31/92
CHECKED	R. HONKEL	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY FOR DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140595	D

SCALE: NONE | DISCIPLINE NO: GP-3 | SHEET 1 OF 1

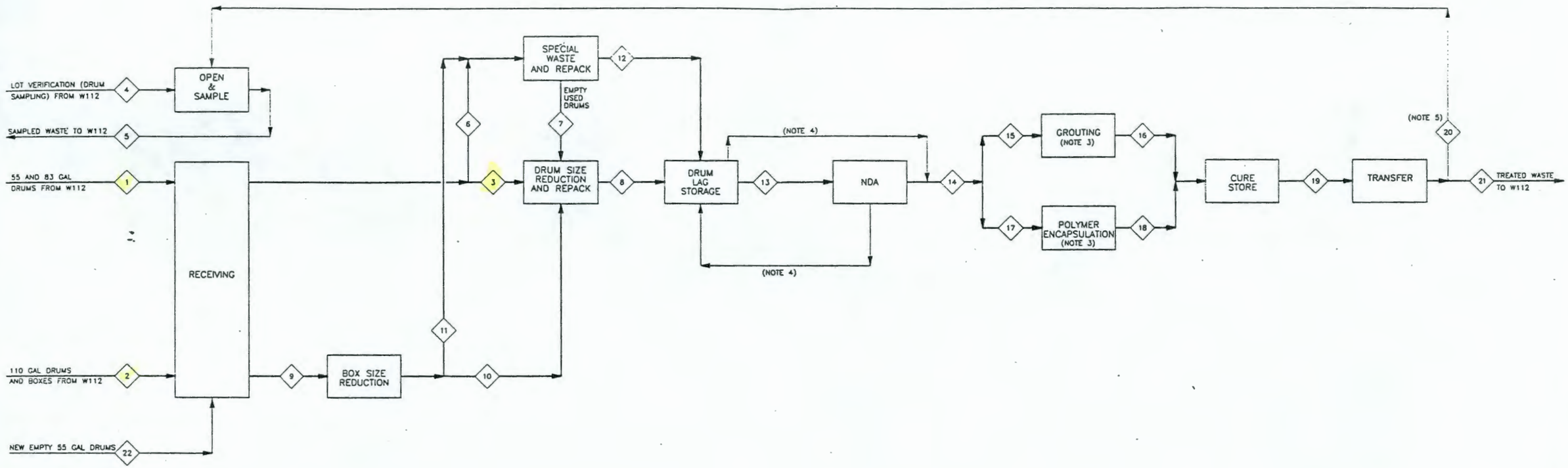
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	K. WARZANTEK 7/31/92	7/31/92	R. HONKEL 7131192

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: WR2AGP3.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
DESCRIPTION	55 AND 83 GAL DRUM FEED	110 GAL DRUM AND BOX FEED	55 AND 83 GAL DRUM FEED	WASTE TO OPEN AND SAMPLE (20%)	SAMPLED WASTE	SPECIAL PROCESS WASTE	EMPTY USED DRUMS	REPACKED DRUM WASTE	BOX SIZE REDUCTION FEED	WASTE TO BE REPACKED IN DRUMS	SPECIAL PROCESS WASTE	SPECIAL PROCESS OUTPUT	NDA FEED	TOTAL TREATMENT FEED	GROUT FEED	GROUT PRODUCT	POLYMER FEED	POLYMER PRODUCT	CURED WASTE	SAMPLED WASTE (1%)	TOTAL PRODUCT	NEW 55 GAL DRUMS
VOLUME (FT³/DAY)																						
1A – 183H SOLIDIFIED LIQUID	4.7		4.7	0.9	0.9			4.7					4.7	4.7			4.7					
1B – 183H CRYSTALLINE SOLID	7.4		7.4	1.5	1.5			7.4					7.4	7.4			7.4					
1C – 183H SLUDGE	8.0		8.0	1.6	1.6			8.0					8.0	8.0			8.0					
1D – 183H MISC CLEANUP	1.5	0.7	1.5	0.3	0.3			2.2	0.7	0.7			2.2	2.2	2.2							
2A – AMMONIUM SULFATE	59.8		59.8	12.0	12.0			59.8					59.8	59.8			59.8					
2B – ION EXCHANGE RESINS	12.2		12.2	2.4	2.4			12.2					12.2	12.2			12.2					
2C – METAL SLUDGE	17.4		17.4	3.5	3.5			17.4					17.4	17.4	17.4							
2D – RO FILTER ELEMENTS	2.0		2.0	0.4	0.4			2.0					2.0	2.0	2.0							
3 – COMPACTIBLE SOLIDS (DRY ACTIVE)	12.0		12.0	2.4	2.4			12.0					12.0	12.0	12.0							
4 – NON-COMPACTIBLE SOLIDS (C.D.)	6.6		6.6	1.3	1.3			6.6					6.6	6.6	6.6							
5A – MERCURY/MERCURY CONTAMINATED	24.6			4.9	4.9	24.6						24.6	24.6	24.6			24.6					
5B – REACTIVE METALS	0.8			0.2	0.2	0.8						0.8	0.8	0.8			0.8					
5C – LEAD/LEAD CONTAMINATED	5.0	0.1		1.0	1.0	5.0			0.1		0.1	5.1	5.1	5.1			5.1					
5D – MISC. METALS	3.5		3.5	0.7	0.7			3.5					3.5	3.5	3.5							
6 – ABSORBED CHEM./SOLIDIFIED LIQUID	9.7		9.7	1.9	1.9			9.7					9.7	9.7			9.7					
7 – ASH FOR TREATMENT	13.1		13.1	2.6	2.6			13.1					13.1	13.1	13.1							
8 – CONTAMINATED SOILS	3.9		3.9	0.8	0.8			3.9					3.9	3.9	3.9							
EMPTY USED WASTE DRUMS							5.2	22.3					22.3	22.3	22.3							
TREATED WASTE VOLUME (FT³/DAY)					3.4											122.5		219.4	341.9	3.4	341.9	
TOTAL VOLUME (FT³/DAY)	192.2	0.8	161.8	38.4	41.8	30.4	5.2	184.8	0.8	0.7	0.1	30.5	215.3	215.3	83.0	122.5	132.3	219.4	341.9	3.4	341.9	0
TOTAL DRUM/DAY	30.1	0.7	23.1	6.0	5.5	6.9	7.0	45.0	0.7	0.6	0.1	9.4	54.4	54.4	17.6	17.5	36.8	36.8	54.4	0.5	54.4	54.4

NOTES:

1. MATERIAL BALANCE BASIS IS THE WRAP 2A WASTE FEED THROUGHPUT. ONLY THE WRAP 2A WASTE FEED AND EMPTY USED DRUMS ARE INCLUDED IN THE BALANCE.
2. MAIN LOT IS A TERM THAT REPRESENTS THE MAIN BODY OF WASTE WHICH IS PROCESSED WITH THE SAMPLED WASTE AFTER THE WASTE HAS BEEN CHARACTERIZED.
3. THE VOLUME INCREASE IS DUE TO THE ADDITION OF TREATING MATERIAL TO THE WASTE. THE NUMBER OF DRUMS IS UNCHANGED BECAUSE THE WASTE IS SORTED AND REPACKED PRIOR TO TREATMENT.
4. CAPABILITY TO RETURN TO STORAGE OR BYPASS NDA IS SHOWN.
5. TREATED WASTE SAMPLED BEFORE EXITING THE FACILITY (1% OF TOTAL WASTE)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J CAVARRA	3/19/92
DRAWN	L RIVERA	3/19/92
CHECKED	K WANZANTEN	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN OVERALL FACILITY BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140598	F

SCALE: NONE | DISCIPLINE NO: CP-4 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHKD BY/DATE	APPROVALS/DATE
F	FINAL CDR SUBMITTAL	J CAVARRA 7/31/92	R. HEWETT 7/31/92	J. Heland R. HEWETT 7/31/92

REVISIONS

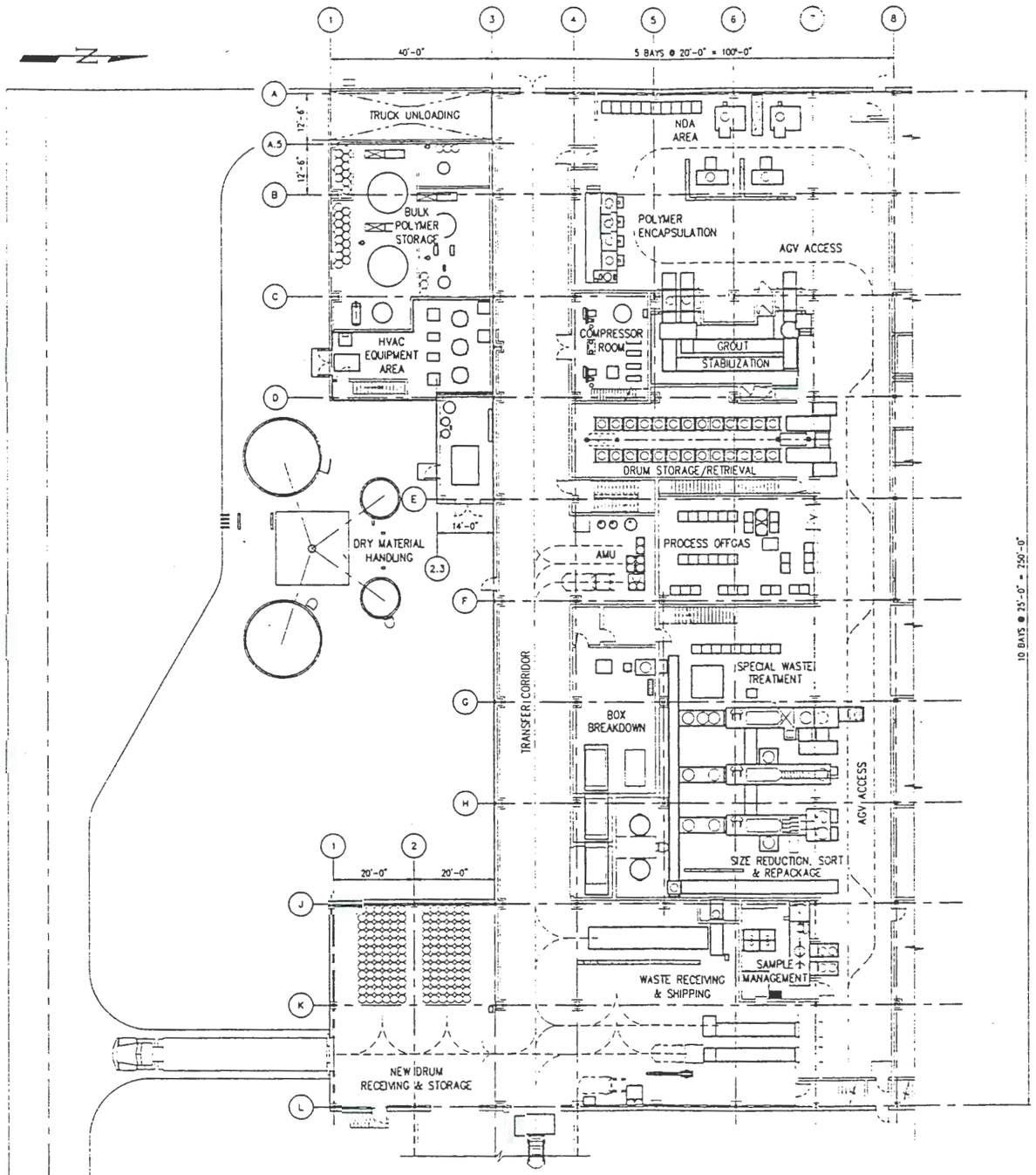
REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140598A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

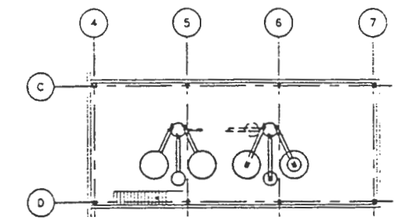
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1463



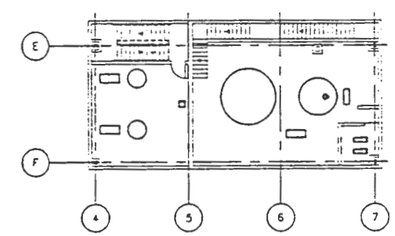
PLAN

NOM. FIN. FLR. EL. 100'-0"



PLAN – GROUT MIXING BINS

NOM. FIN. FLR. EL. 112'-0"



PLAN – SECONDARY WASTE COLLECTION AREA

NOM. FIN. FLR. EL. 77'-3"

NOTE:

1. FOR BUILDING WALL AND DOOR LOCATIONS, COMPOSITION, RATINGS, ETC. SEE ARCHITECTURAL DRAWINGS.

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	HIGHLAND	04-15-92
DRAWN	HIGHLAND	04-15-92
CHECKED	AJ ZINDEL	06-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
OVERALL
EQUIPMENT GENERAL ARRANGEMENT

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140599	D

SCALE: 1/16" = 1'-0" DISCIPLINE NO: GP-1 SHEET 1 OF 1

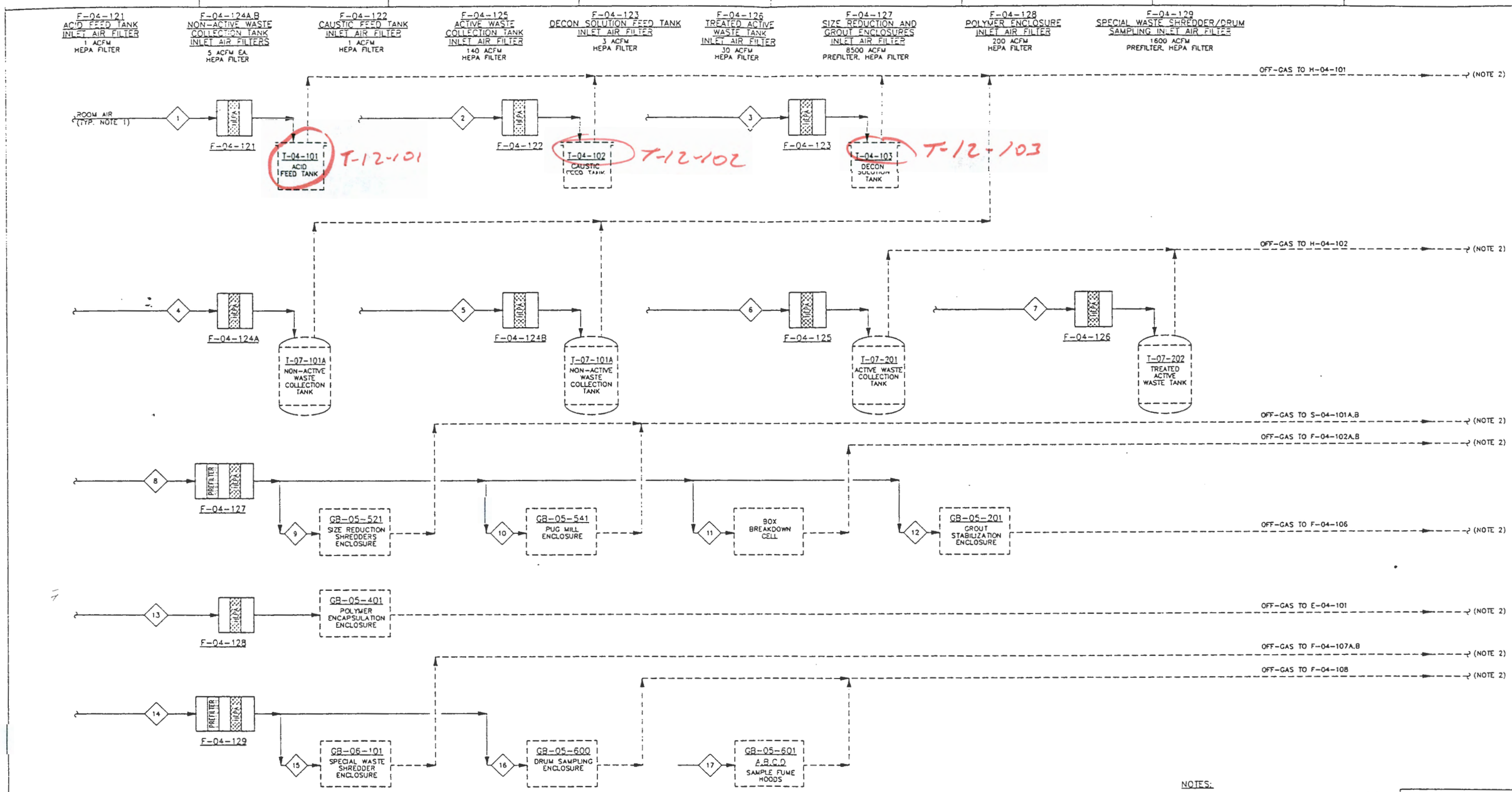
REV NO	DESCRIPTION	REV BY/DATE	FDNE BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SA SHARPE 7/31/92	A. ZINDEL 7/31/92	AJ ZINDEL 7/31/92

REFERENCE DRAWINGS

REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140599A | CADCODE: 2C:IBM:AC02:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



NOTES:

1. INLET AIR TO FILTERS IS DRAWN FROM ZONE 2 ROOM AIR IN PROCESS AREA.
2. ALL OFF-GAS STREAMS FLOW TO TREATMENT EQUIPMENT SHOWN ON H-2-140600 SHT. 2.

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DESCRIPTION	TO ACID FEED TANK	TO CAUSTIC FEED TANK	TO DECON SOLUTION TANK	TO NON-ACTIVE WASTE TANK T-07-101A	TO NON-ACTIVE WASTE TANK T-07-101B	TO ACTIVE WASTE COLLECTION TANK	TO TREATED ACTIVE WASTE TANK	TO F-04-127	SIZE REDUCTION SHREDDERS ENCLOSURE	TO PUG MILL ENCLOSURE	TO BOX BREAKDOWN CELL	TO GROUT STAB. ENCLOSURE	TO POLYMER ENCAP. ENCLOSURE	TO F-04-129	TO SPECIAL WASTE SHREDDER ENCLOSURE	TO DRUM SAMPLING ENCLOSURE	TO SAMPLE FUME HOODS
AIR FLOW (ACFM)	1	1	3	5	5	140	30	8500	1000	500	4500	2500	200	1600	1200	400	250

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	K. VANZANTEN 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140600A.DWG | CADCODE: 2C:IBM: ACD2: 11: NN

	BY	DATE
DESIGNED	K.VANZANTEN	4/27/92
DRAWN	L. RIVERA	4/30/92
CHECKED	T. SAYERS	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
VESSEL & PROCESS OFF-GAS TREAT.
(TANK/ENCLOSURE INLET AIR FILTERS)
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140600	C

SCALE: NONE | DISCIPLINE NO. GP-5 | SHEET 1 OF 2

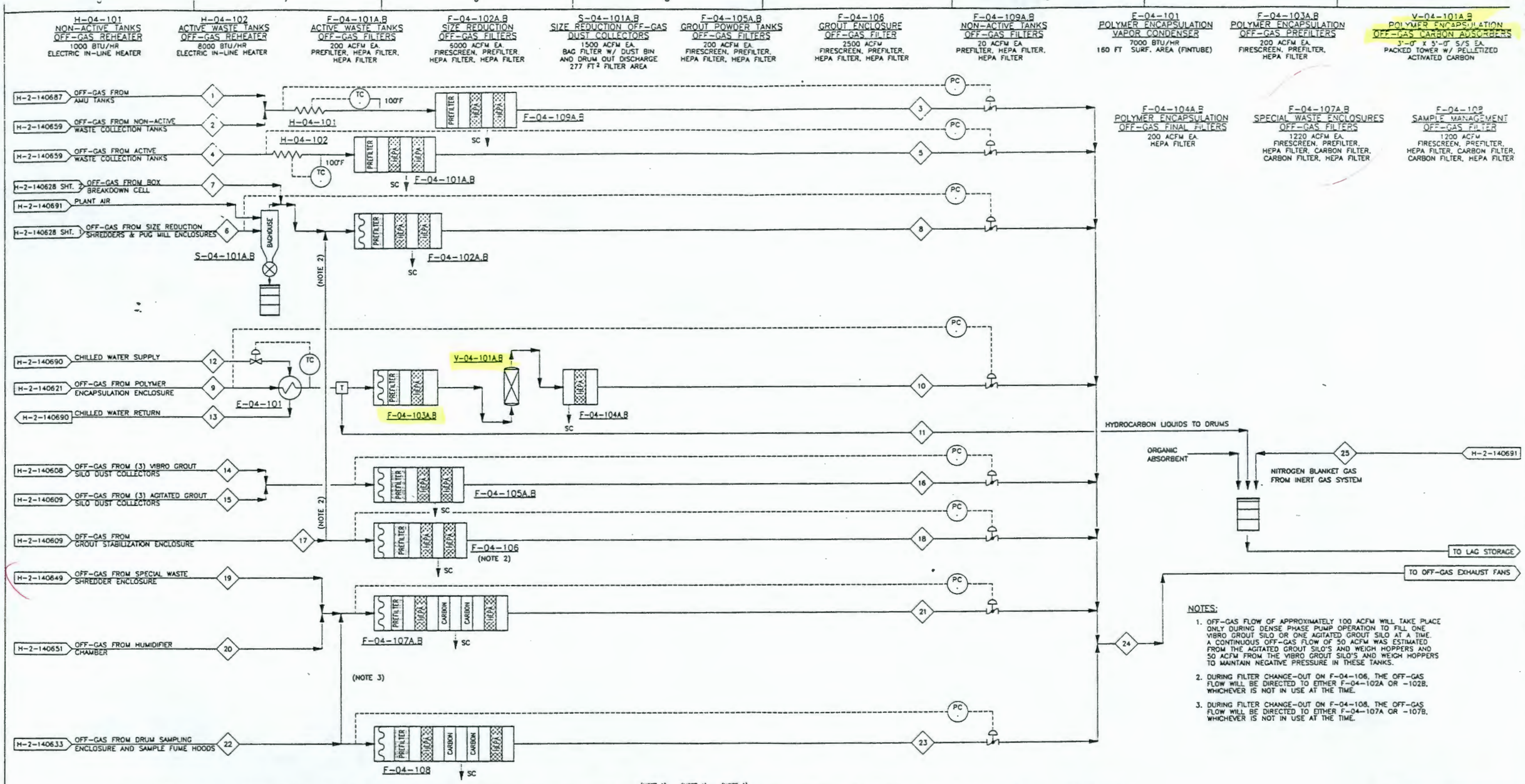
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WCD2BORD

06/11/92 BSH CAD NO: 8 R1 SCALE: 1 LPR

PEN 1 2 3 4 5 6 7 8 9 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
PAWN 5 5 0 5 5 7 7 5 5 5 5 5 5 5 1

9413227.1465



NOTES:

1. OFF-GAS FLOW OF APPROXIMATELY 100 ACFM WILL TAKE PLACE ONLY DURING DENSE PHASE PUMP OPERATION TO FILL ONE VIBRO GROUT SILO OR ONE AGITATED GROUT SILO AT A TIME. A CONTINUOUS OFF-GAS FLOW OF 50 ACFM WAS ESTIMATED FROM THE AGITATED GROUT SILO'S AND WEIGH HOPPERS AND 50 ACFM FROM THE VIBRO GROUT SILO'S AND WEIGH HOPPERS TO MAINTAIN NEGATIVE PRESSURE IN THESE TANKS.
2. DURING FILTER CHANGE-OUT ON F-04-106, THE OFF-GAS FLOW WILL BE DIRECTED TO EITHER F-04-102A OR -102B, WHICHEVER IS NOT IN USE AT THE TIME.
3. DURING FILTER CHANGE-OUT ON F-04-108, THE OFF-GAS FLOW WILL BE DIRECTED TO EITHER F-04-107A OR -107B, WHICHEVER IS NOT IN USE AT THE TIME.

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14 (NOTE 1)	15 (NOTE 1)	16 (NOTE 1)	17	18	19	20	21	22	23	24	25
DESCRIPTION	OFF-GAS FROM AMU TANKS	OFF-GAS FROM NON-ACTIVE WASTE TANKS	FILTERED OFF-GAS FROM NON-ACTIVE TANKS	OFF-GAS FROM ACTIVE WASTE TANKS	FILTERED OFF-GAS FROM ACTIVE WASTE TANKS	OFF-GAS FROM SIZE REDUCTION ENCLOSURES	OFF-GAS FROM BOX BREAKDOWN CELL	FILTERED OFF-GAS FROM SIZE RED'N/BOX BREAKDOWN	OFF-GAS FROM POLYMER ENCAP. ENCLOSURE	FILTERED OFF-GAS FR POLYMER ENCAP. ENCLOSURE	COND. HC LIQUID FROM VAPOR CONDENSER	CHILLED WATER SUPPLY	CHILLED WATER RETURN	OFF-GAS FROM VIBRO GROUT SILOS	OFF-GAS FROM AGITATED GROUT SILOS	FILTERED OFF-GAS FROM GROUT SILOS	OFF-GAS FROM GROUT STAB.	FILTERED OFF-GAS FROM GROUT STAB.	SPECIAL WASTE SHREDDER ENCLOSURE OFF-GAS	HUMIDIFIER CHAMBER OFF-GAS	FILTERED SPECIAL WASTE ENCLOSURES OFF-GAS	OFF-GAS FROM SAMPLE MANAGEMENT	FILTERED SAMPLE MANAGEMENT OFF-GAS	TOTAL OFF-GAS	NITROGEN BLANKET GAS
GAS FLOW (ACFM)	5	10	20	170	200	1500	4500	6000	200	200	–	–	–	150 (MAX)	150 (MAX)	200 (MAX)	2500	2500	1200	20	1220	1200	1200	11,540	NNF
LIQUID FLOW (GPD)	–	–	–	–	–	–	–	–	–	–	TRACE	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C.W. FLOW (GPH)	–	–	–	–	–	–	–	–	–	–	–	110	110	–	–	–	–	–	–	–	–	–	–	–	–
TEMPERATURE (°F)	60	60	100	60	100	50	60	50	60	60	45	42	57	60	60	60	60	60	60	100	60	60	60	60	60

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	K.VANZANTEN 7/31/92	R. HENKEL 7/31/92	J. Hoefel 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140600B.DWG | CADCODE: 2C:IBM:ACC2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	K.VANZANTEN	4/03/92
DRAWN	L. RIVERA	4/04/92
CHECKED	T. SAYERS	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

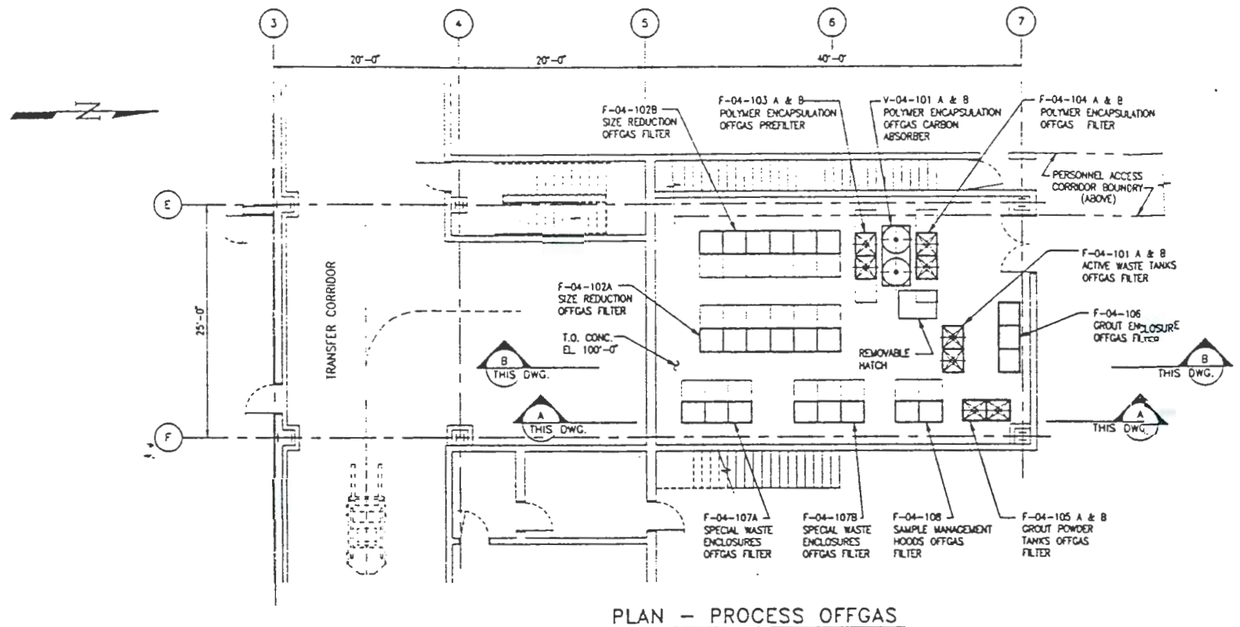
WRAP 2A CONCEPTUAL DESIGN
VESSEL & PROCESS OFF-GAS TREAT.
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140600	D

SCALE: NONE | DISCIPLINE NO: GP-8 | SHEET 2 OF 2

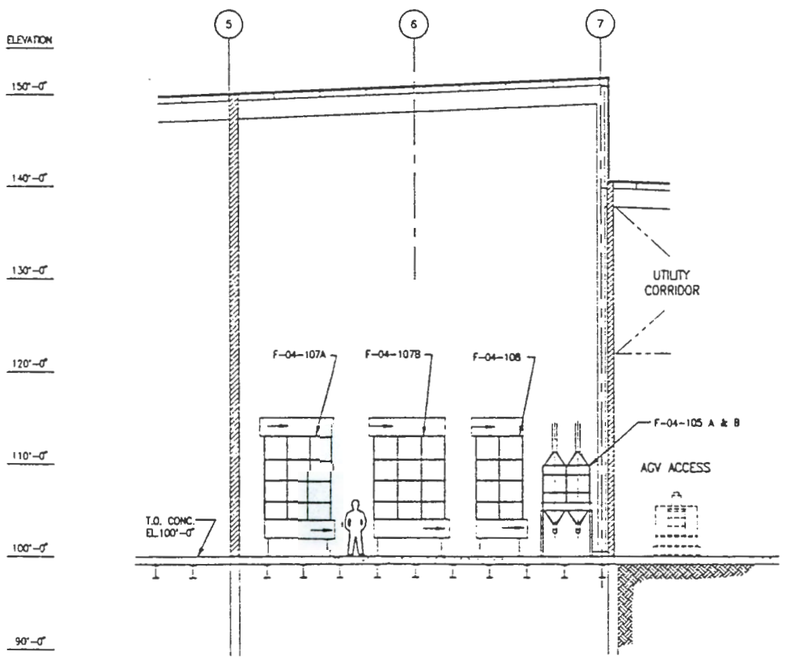
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1466



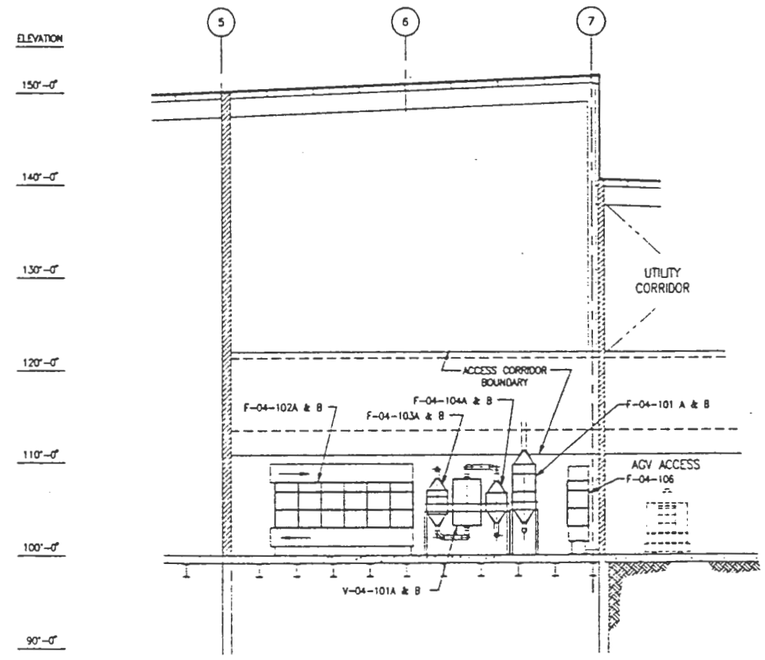
PLAN – PROCESS OFFGAS

NOM. FIN. FLR. EL. 100'-0"



SECTION "A – A"

LOOKING WEST



SECTION "B – B"

LOOKING WEST

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	B DAVIES	04-20-92
DRAWN	P. NIEGG	04-24-92
CHECKED	AJ ZIMOD.	06-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
VESSEL & PROCESS OFFGAS
EQUIPMENT GENERAL ARRANGEMENT

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140601	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: GP-9

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	B. DAVIES 7/21/92	[illegible]	7/21/92

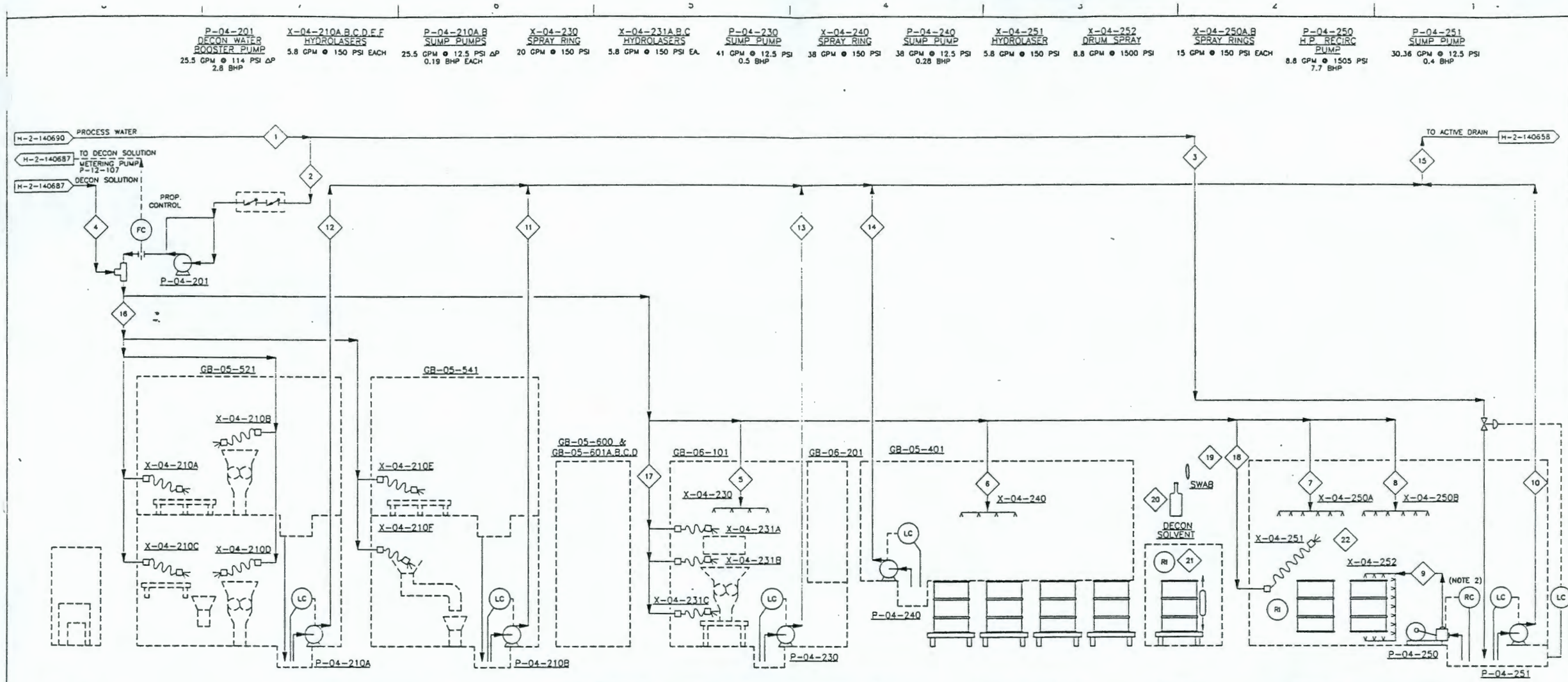
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140601A | CADCODE: 2C:IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0028ORD

07/24/92 12:22 CAD NO: B140601A.DWG COLOR
DPK 0337.008 R1 SCALE 1 = 96 PEN READ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21



NOTES:

1. MANUAL WIPING DECONTAMINATION.
2. RECIRCULATION PUMP P-04-250 IS SWITCHED OFF ON HIGH ACTIVITY READING FROM SUMP GAMMA MONITOR.

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
DESCRIPTION	PROCESS WATER TOTAL	MAIN DECON FEED	CROUT DRUM FEED	DECON SOLUTION	SPECIAL WASTE SPRAY RING	POLYMER ENCLOSURE SPRAY RING	GROUT ENCLOSURE SPRAY RING	GROUT ENCLOSURE SPRAY RING	DRUM RECIRC. SPRAY	TOTAL GROUT SUMP DRAIN	REPACKAGE AREA DRAIN (G8-05-541)	REPACKAGE AREA DRAIN (G8-05-521)	SPECIAL WASTE DRAIN	POLYMER ENCLOSURE DRAIN	TOTAL ACTIVE LIQUID	REPACKAGE AREA HYDRO-LASERS	SPECIAL WASTE HYDRO-LASER	GROUT AREA HYDRO-LASER	DRUM DECON SWABS	DECON SOLVENT	MONITORING SWABS (POLYMER)	MONITORING SWABS (GROUT)
AVERAGE FLOW (GPD)	20	20.0	NNF	NNF	0.8	1.5	0.6	0.6	NNF	3.5	4.2	9.2	1.6	1.5	20	13.4	0.3	2.3	–	NNF	–	–
NO. PER DAY	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	NNF	–	34	18

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	V. WHITE 7/31/92	R. HENKEL 7/31/92	J. H[illegible] R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140602A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

	BY	DATE
DESIGNED	Y. WHITE	3/27/92
DRAWN	L. RIVERA	3/26/92
CHECKED	K. WAGANTON	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

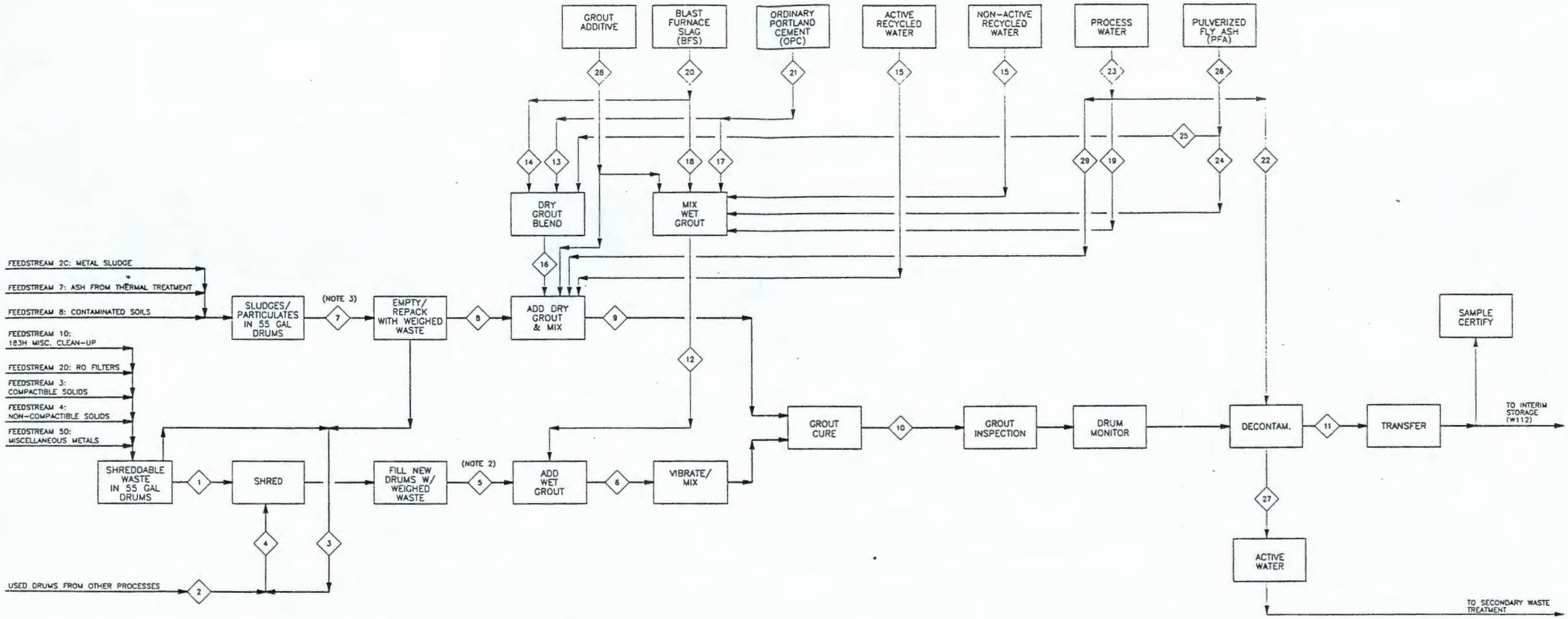
WRAP 2A CONCEPTUAL DESIGN
DECONTAMINATION SYSTEM
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140602	D

SCALE: NONE | DISCIPLINE NO. DC-1 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0025R00



STREAM NO.	1	2	3	4	5 (NOTE 2)	6	7 (NOTE 3)	8	9	10	11	12	13	14	15	16
DESCRIPTION	FEED TO SHRED	USED DRUMS FROM OTHER PROCESSES	USED DRUMS	TOTAL USED DRUMS	PRE-GROUT WASTE	GROUTED WASTE	SLUDGE WASTE	PRE-GROUT SLUDGE	GROUTED WASTE	TOTAL GROUT WASTE	SHIPPED GROUT WASTE	WET GROUT	OPC TO DRY GROUT BLEND	BFS TO DRY GROUT BLEND	RECYCLED WATER	DRY GROUT BLEND
THROUGHPUT (DRUMS/DAY)	4.69	21.21	9.36	30.57	8.32	8.32	4.67	9.34	9.34	17.66	17.66	-	-	-	-	-
MASS/DAY (LB/DAY)	2346	1272	562	1834	4180	6688	1913	1913	4261	10949	10949	2508	249	994	1105	1243
VOLUME/DAY (FT³/DAY)	26.3	-	-	-	56.9	55.7	34.4	34.4	66.0	118.3	118.3	27.9	3.1	15.7	17.7	18.8
DENSITY (LB/FT³)	67.5	-	-	-	73.5	120	62	62	64.6	84/125	64/125	90	80	60	62.4	60/80
AVE. FLOW/DAY (G.P.D.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	132.4	-

STREAM NO.	17	18	19	20	21	22	23	24 (NOTE 1)	25 (NOTE 1)	26 (NOTE 1)	27	28 (NOTE 1)	29
DESCRIPTION	OPC TO WET GROUT MIXING	BFS TO WET GROUT MIXING	PROCESS WATER TO WET GROUT MIXING	TOTAL BFS	TOTAL OPC	PROCESS WATER	PROCESS WATER	PFA TO WET GROUT MIXING	PFA TO WET GROUT MIXING	TOTAL PFA	ACTIVE WATER	GROUT ADDITIVE	PROCESS WATER
THROUGHPUT (DRUMS/DAY)	-	-	-	-	-	-	-	-	-	-	-	-	-
MASS/DAY (LB/DAY)	326	1304	878	2248	575	NNF	878	-	-	-	NNF	-	NNF
VOLUME/DAY (FT³/DAY)	4.1	21.7	14.1	37.5	7.2	NNF	14.1	-	-	-	NNF	-	NNF
DENSITY (LB/FT³)	80	60	62.4	60	80	62.4	62.4	40	40	40	62.4	-	62.4
AVE. FLOW/DAY (G.P.D.)	-	-	105.2	-	-	NNF	105.2	-	-	-	NNF	-	NNF

NOTES:

1. DATA TO BE ADDED WHEN GROUT FORMULATION HAS BEEN DECIDED.
2. STREAM 5 INCLUDES 3 DRUMS FILLED WITH SHREDDED DRUMS.
3. STREAM 7 DOES NOT INCLUDE THE MASS OF DRUMS.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S MACKAY	3/19/92
DRAWN	L. RIVERA	3/20/92
CHECKED	R.WAGNER	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
SHRED/GROUT FACILITY
BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140606	E

SCALE: NONE | DISCIPLINE NO: GP-5 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	R. WAGNER 7/31/92 / J. HENKEL	7/31/92

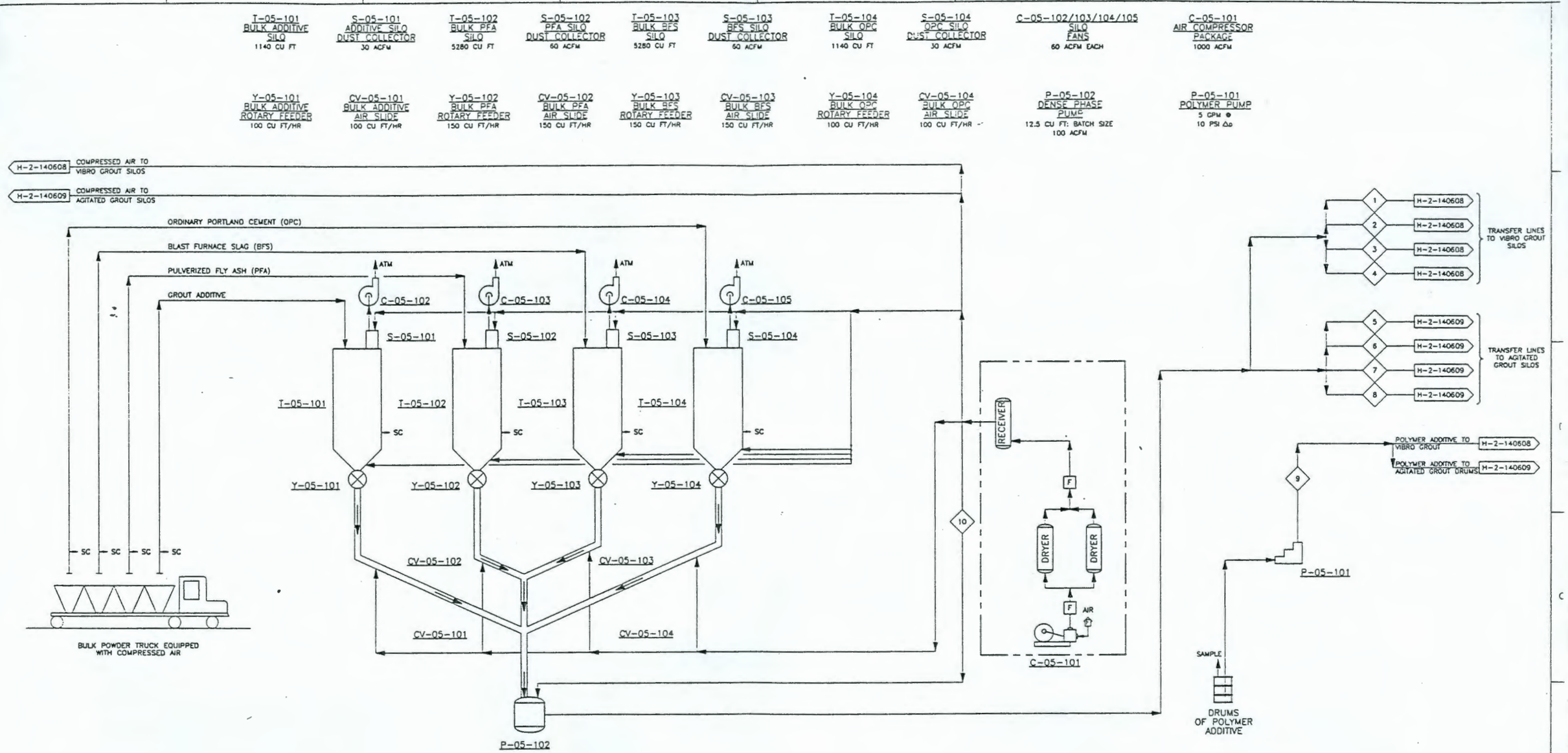
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140606A.DWG | CADCODE: 2C:1BM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1469

FORM W232D03



NOTES:

1. DATA WILL BE ADDED WHEN GROUT FORMULATION IS DECIDED.

STREAM NO.	1	2	3 (NOTE 1)	4 (NOTE 1)	5	6	7 (NOTE 1)	8 (NOTE 1)	9 (NOTE 1)	10
DESCRIPTION	OPC	BFS	PFA	GROUT ADDITIVE	OPC	BFS	PFA	GROUT ADDITIVE	POLYMER ADDITIVE	COMP. AIR TO DENSE PHASE PUMP
MASS/DAY (LB/DAY)	326	1304	–	–	249	994	–	–	–	–
VOLUME/DAY (FT3/DAY)	4.1	21.7	–	–	3.1	16.6	–	–	–	–
DENSITY (LB/FT3)	80	60	–	–	80	60	–	–	–	–
AIR FLOW (FT3/MIN)	–	–	–	–	–	–	–	–	–	100

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	S.MACKAY	3/23/92
DRAWN	L. RIVERA	3/24/92
CHECKED	K. WAGZWITH	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
BULK POWDER STORAGE
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140607	D

SCALE: NONE | DISCIPLINE NO: ST-3 | SHEET 1 OF 1

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S. MACKAY 7/31/92	R. HENKEL 7/31/92	C. HUNTER R. HENKEL 7/31/92

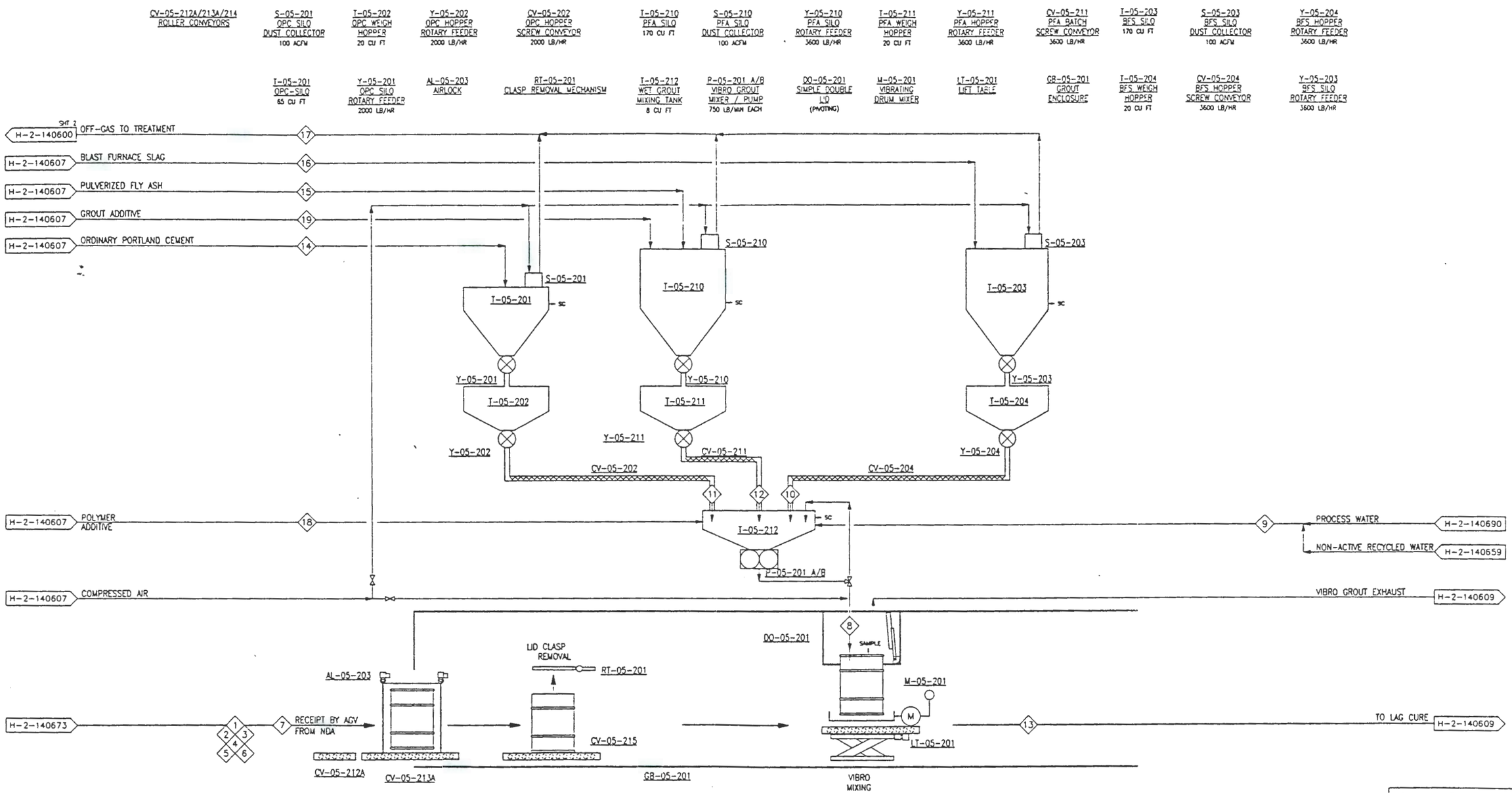
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140607A.DWG | CADCODE: 2C:fBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WCD2BORD

9413227.1470



STREAM NO.	1	2	3	4	5	6 (NOTE 2)	7 (NOTE 3)	8	9	10	11	12 (NOTE 1)	13	14	15 (NOTE 1)	16	17	18 (NOTE 1)	19 (NOTE 1)
DESCRIPTION	183-H BASIN SOLIDS (1D)	RO FILTERS (2D)	COMPACT-IBLE SOLIDS (3)	NON-COMPACT-IBLE SOLIDS (4)	MISC METALS (5C)	SHREDDED DRUMS	AVERAGE SHRED MAT'L	WET GROUT	WATER	BFS	OPC	PFA	PRODUCT TO DECON	OPC	PFA	BFS	OFF-GAS TO TREATMENT	POLYMER ADDITIVE	GROUT ADDITIVE
THROUGHPUT (DRUMS/DAY)	0.30	0.30	1.63	0.90	1.56	3.00	8.32	-	-	-	-	-	8.32	-	-	-	-	-	-
MASS/DAY (LB/DAY)	120	100	326	240	1560	1834	4180	2508	878	1304	326	-	6688	326	-	1304	-	-	-
VOLUME/DAY (FT3/DAY)	2.2	2.2	12.0	5.7	11.5	22.2	56.9	27.9	14.1	21.7	4.1	-	55.7	4.1	-	21.7	-	-	-
DENSITY (LB/FT3)	54.5	45.4	26.9	35.8	135.6	82.3	73.5	90	62.4	60	80	-	120	80	-	60	-	-	-
AVG FLOW/DAY (GPD)	-	-	-	-	-	-	-	-	105.2	-	-	-	-	-	-	-	-	-	-
OFF-GAS (FT3/MIN)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150 (MAX)	-	-

NOTES:

1. DATA WILL BE ADDED WHEN GROUT FORMULATION IS DECIDED.
2. VOLUME ASSUMES THAT 10 OLD DRUMS WILL OCCUPY 1 NEW DRUM AFTER SHREDDING.
3. AVERAGE THROUGHPUT INCLUDES SIZE REDUCED BOXES.

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S. MACKAY 7/31/92	[illegible] 7/31/92	R. HOWLETT 7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140608A.DWG | CADCODE: 2C:IBM: ACD2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	S. MACKAY	4/30/92
DRAWN	C. MOORE	4/30/92
CHECKED	R.WHZ/MTCH	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

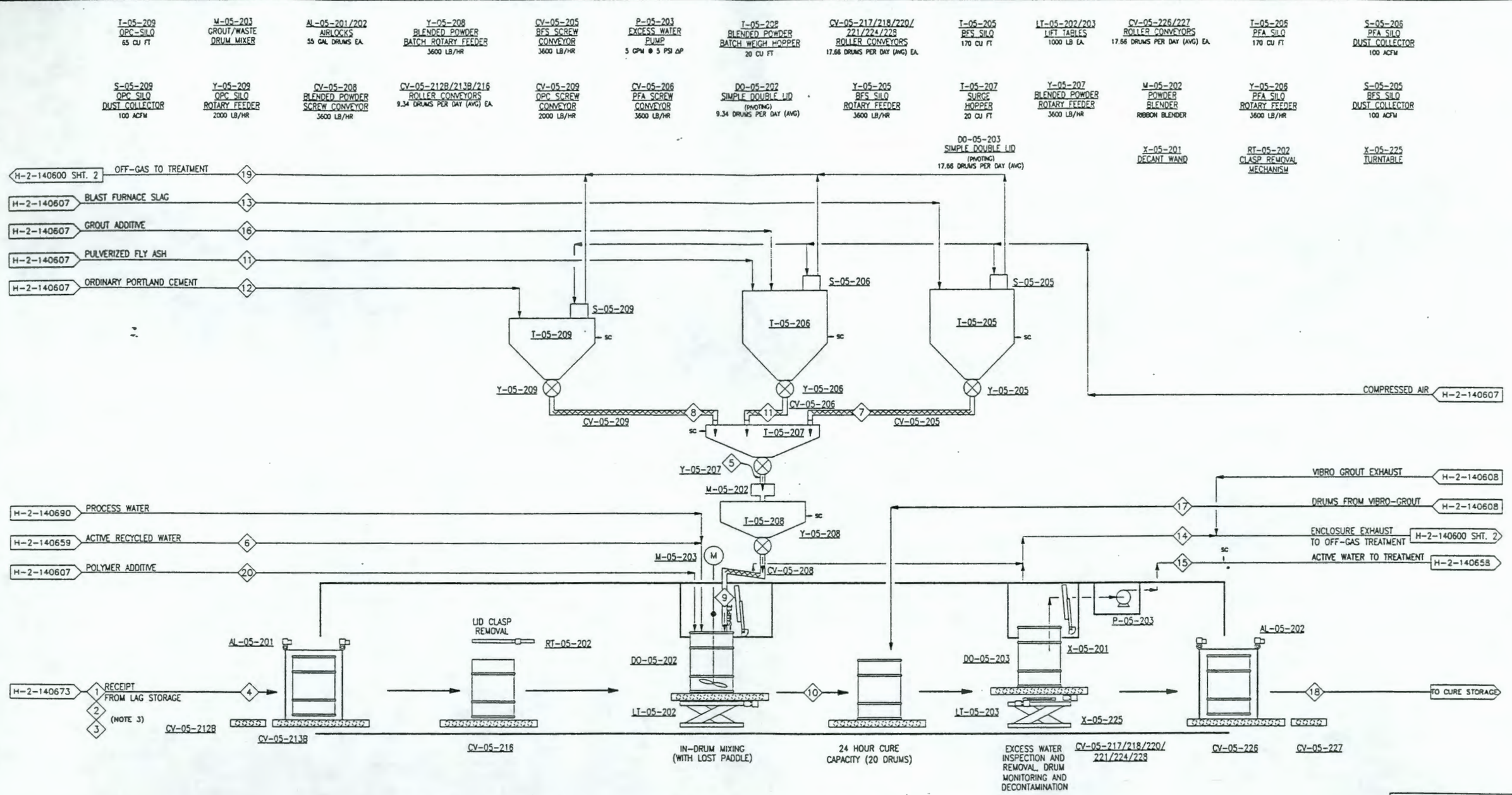
WRAP 2A CONCEPTUAL DESIGN
VIBRO GROUT SYSTEM
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140608	D

SCALE: NONE | DISCIPLINE NO: ST-4 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.147



STREAM NO.	1	2	3	4	5	6	7	8	9 (NOTE 1)	10	11 (NOTE 1)	12	13	14	15 (NOTE 2)	16 (NOTE 1)	17	18	19	20 (NOTE 1)
DESCRIPTION	METAL SLUDGE FEEDSTREAM 2C	ASH FROM THERMAL TREAT'T FEEDSTREAM 7	CONTAM SOILS FEEDSTREAM 8	AVERAGE WASTE	DRY GROUT	RECYCLED WATER	BLAST FURNACE SLAG	ORDINARY PORTLAND CEMENT	DRY BLENDED GROUT	GROUTED PRODUCT	PFA	OPC	BFS	ENCLOSURE OFF-GAS TO TREATMENT	EXCESS ACTIVE WATER	GROUT ADDITIVE	DRUMS FROM VIBRO GROUT	TOTAL GROUT OUTPUT	OFF-GAS TO TREATMENT	POLYMER ADDITIVE
THROUGHPUT (DRUMS/DAY)	2.36	1.78	0.53	9.34	–	–	–	–	–	9.34	–	–	–	–	–	–	8.32	17.66	–	–
MASS/DAY (LB/DAY)	1180	415	318	1913	1243	1105	994	249	1243	4261	–	249	994	–	NNF	–	6688	10949	–	–
VOLUME/DAY (FT 3/DAY)	17.4	13.1	3.9	34.4	19.1	17.7	16.57	3.1	19.1	66.0	–	3.1	16.6	–	NNF	–	55.7	118.3	–	–
DENSITY (LB/FT 3)	75	35	90	62	65	62.4	60	80	60/80	64.6	–	80	60	–	62.4	–	120	64/125	–	–
FLOW/DAY (GPD)	–	–	–	–	–	132.4	–	–	–	–	–	–	–	–	NNF	–	–	–	–	–
OFF-GAS (ACFM)	–	–	–	–	–	–	–	–	–	–	–	–	–	2500	–	–	–	–	150 (MAX)	–

NOTES:

1. DATA WILL BE ADDED WHEN GROUT FORMULATION IS DECIDED.
2. ABNORMAL ARISING NOT INCLUDED IN MASS BALANCE.
3. STREAMS 1, 2 AND 3 ADD TO STREAM 4.

REV NO.	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	R. HENKEL 7/31/92	J. HENKEL R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 140609ADWG | CADCODE: 2C:IBM: ACD2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S. MACKAY	4/30/92
DRAWN	C. MOORE	4/30/92
CHECKED	K.WAGNER/TCH	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

WRAP 2A CONCEPTUAL DESIGN AGITATED GROUT SYSTEM PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140609	D

SCALE: NONE | DISCIPLINE NO: ST-5 | SHEET 1 OF 1

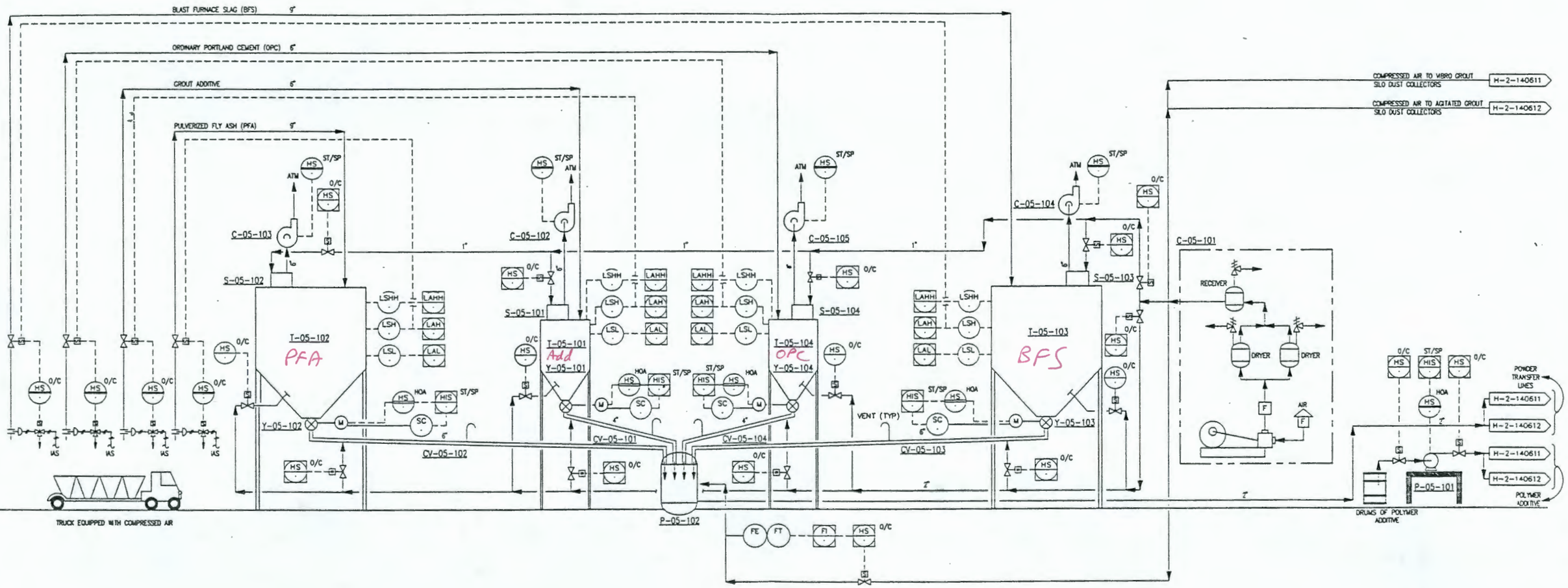
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W2300RD

9413227.1472

PEN 1 2 3 4 5 6 7 8 9 A B C D E F G H J K L M N P R S T U V W X Y Z
FROM H H H H H L L L L L L L L L
140609A.DWG
1 = 24
07/23/92 1203
LPK

CV-05-102 BULK PFA AIR SLIDE 6" WIDTH 150 CU FT/HR	Y-05-102 PFA ROTARY VALVE 6" WIDTH 150 CU FT/HR	Y-05-101 GROUT ADDITIVE ROTARY VALVE 4" WIDTH 100 CU FT/HR	T-05-101 BULK ADDITIVE SILO 1140 CU. FT. 9'-2" 5/8"ø 24' HT. MILD STEEL	Y-05-104 OPC ROTARY VALVE 4" WIDTH 100 CU FT/HR	Y-05-103 BFS ROTARY VALVE 6" WIDTH 150 CU FT/HR	T-05-103 BULK BFS SILO 5280 CU. FT. 18'-5 1/2"ø 32' HT. MILD STEEL	CV-05-101 BULK ADDITIVE AIR SLIDE 4" WIDTH 100 CU FT/HR	CV-05-103 BULK BFS AIR SLIDE 6" WIDTH 150 CU FT/HR	P-05-101 POLYMER PUMP METERING 5 GPM @ 10 PSI ΔP 0.075 BHP
S-05-102 PFA SILO DUST COLLECTOR PULSE JET 60 ACFM < 100 MESH	S-05-101 ADDITIVE SILO DUST COLLECTOR PULSE JET 30 ACFM < 100 MESH	T-05-102 BULK PFA SILO 5280 CU. FT. 18'-5 1/2"ø 32' HT. MILD STEEL	S-05-104 OPC SILO DUST COLLECTOR PULSE JET 30 ACFM < 100 MESH	S-05-103 BFS SILO DUST COLLECTOR PULSE JET 60 ACFM < 300 MESH - 1/8"	T-05-104 BULK OPC SILO 1140 CU. FT. 9'-2 5/8"ø 24' HT. MILD STEEL	P-05-102 DENSE PHASE PUMP 100 ACFM SLUG SIZE: 12 CU. FT.	CV-04-104 BULK OPC AIR SLIDE 4" WIDTH 100 CU FT/HR	C-05-102/103/104/105 SILO FANS 60 ACFM EA.	C-05-101 AIR COMPRESSOR PACKAGE 1000 CU FT/MIN. 200 HP



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S MACKAY	4/20/92
DRAWN	C MOORE	4/20/92
CHECKED	R. VANZANTEN	5/29/92
APPROVED		
C.L.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
BULK POWDER STORAGE
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140610	C

SCALE: NONE | DISCIPLINE NO: ST-8 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	R. Hewell 7/31/92	J. Franz R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140610A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

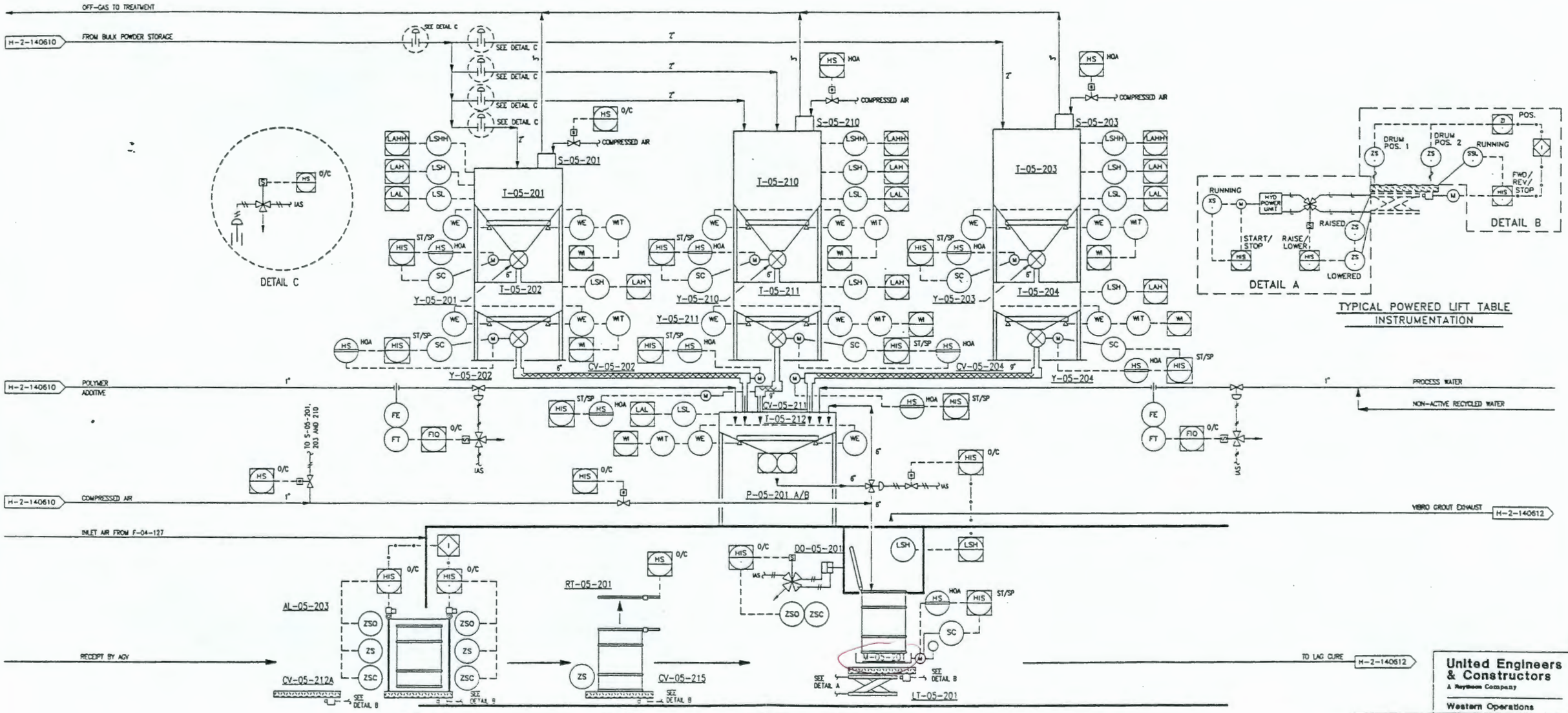
FORM 8237BORD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1473

T-05-201	S-05-201	CV-05-212A/213A/215	Y-05-202	M-05-201	P-05-201 A/B	LT-05-201	T-05-212	GB-05-201	T-05-203	Y-05-204	AL-05-203	Y-05-203	T-05-204
OPC-SILO 65 CU. FT. 3'ø, 7' HT. MILD STEEL	OPC-SILO DUST COLLECTOR PULSE JET 100 ACFM < 100 MESH	ROLLER CONVEYORS 55 GAL 23 1/2'ø x 34 1/2" 1000 LB (MAX) EA.	OPC HOPPER ROTARY FEEDER 2000 LB/HR 6" SIZE	VIBRATING DRUM MIXER 1000 LB DRUM VIBRATOR 1.6 HP	VIBRO GROUT MIXER/PUMPS LOW SHEAR MIXER 1.0 HP EA.	LIFT TABLE 55 GAL 23 1/2'ø x 34 1/2" 1000 LB (MAX)	WET GROUT MIXING TANK 8 CU. FT. 3'ø, 2'-0" HT. STAINLESS STEEL	GROUT ENCLOSURE 25' x 35'	BFS SILO 170 CU FT 6'ø, 9'-6" HT. MILD STEEL	BFS HOPPER ROTARY FEEDER 3600 LB/HR 6" SIZE	AIRLOCK 55 GAL DRUM 23 1/2'ø x 34 1/2" 1000 LB/HR	BFS SILO ROTARY FEEDER 3600 LB/HR 6" SIZE	BFS WEIGH HOPPER 20 CU FT 3'ø, 4'-9" HT. MILD STEEL

T-05-202	Y-05-201	RT-05-201	DO-05-201	CV-05-202	T-05-211	CV-05-204	CV-05-211	Y-05-211	Y-05-210	T-05-210	S-05-210	S-05-203
OPC WEIGH HOPPER 20 CU. FT. 3'ø, 4'-9" HT. MILD STEEL	OPC SILO ROTARY FEEDER 2000 LB/HR 6" SIZE	CLASP REMOVAL MECHANISM	SIMPLE DOUBLE LID (PIVOTING)	OPC BATCH SCREW CONVEYOR 2000 LB/HR 6" SIZE MILD STEEL	PFA WEIGH HOPPER 20 CU FT 3'ø, 4'-9" HT. MILD STEEL	BFS BATCH SCREW CONVEYOR 3600 LB/HR 9" SIZE MILD STEEL	PFA BATCH SCREW CONVEYOR 3600 LB/HR 9" SIZE MILD STEEL	PFA HOPPER ROTARY FEEDER 3600 LB/HR 8" SIZE	PFA HOPPER ROTARY FEEDER 3600 LB/HR 8" SIZE	PFA SILO 170 CU FT 6'ø, 9'-5" HT. MILD STEEL	PFA SILO DUST COLLECTOR PULSE JET	BFS SILO DUST COLLECTOR PULSE JET 100 ACFM < 1/8"



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S. MACKAY	4/14/92
DRAWN	C. MOORE	4/14/92
CHECKED	M. VANZANTEN	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
VIBRO GROUT SYSTEM
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140611	C

SCALE: NONE | DISCIPLINE NO. ST-9 | SHEET 1 OF 1

REV NO.	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

REFERENCE DRAWINGS — REVISIONS

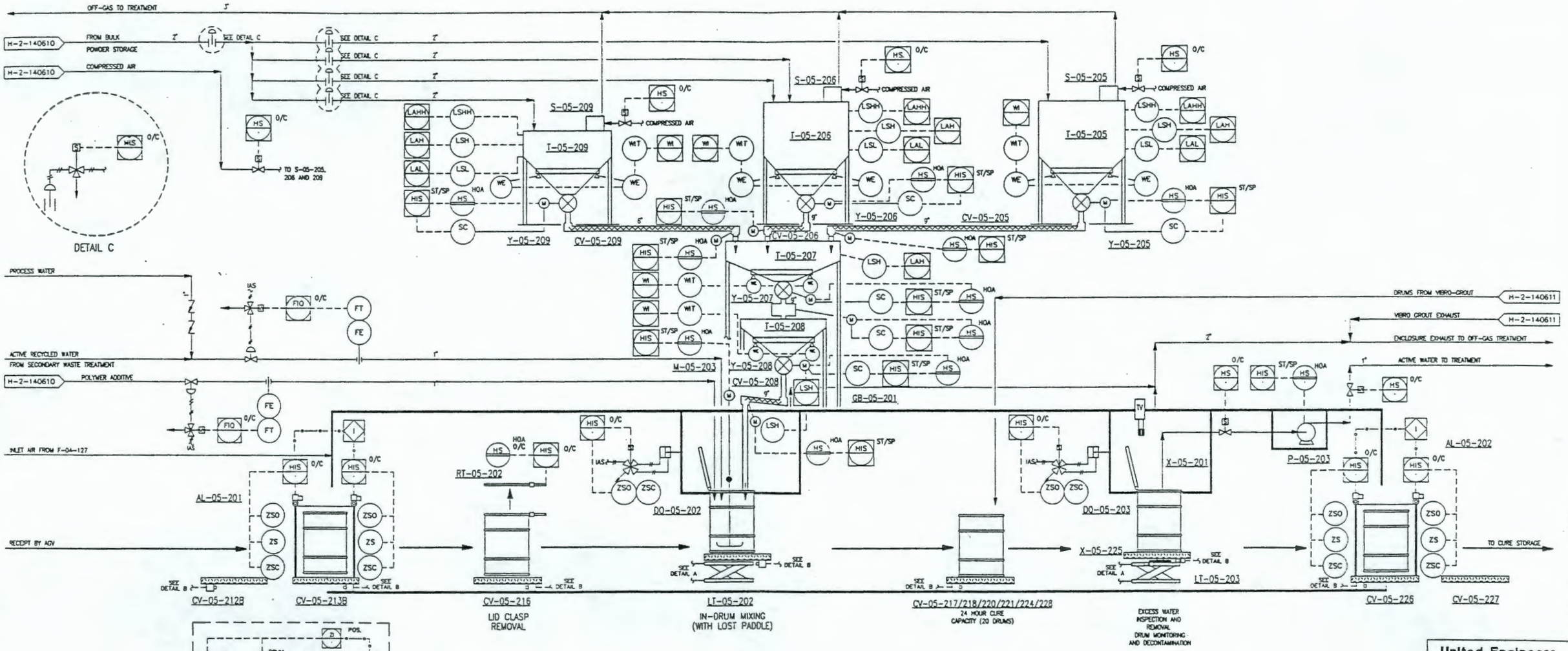
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140611A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MOD2BORD

9413227.1424

T-05-209 OPC SILO 65 CU FT 3'ø X 7' HT. MILD STEEL	S-05-209 OPC SILO DUST COLLECTOR PULSE JET 100 ACFM < 100 MESH	AL-05-202 AIRLOCK 55 GAL DRUM 23 1/2'ø X 34 1/2 HT. 1000 LB (MAX)	M-05-203 GROUT/WASTE DRUM MIXER PROP. AGITATOR MOTOR DRIVER 1.0 HP	AL-05-201 AIRLOCK 55 GAL DRUM 23 1/2'ø X 34 1/2' HT. 1000 LB (MAX)	Y-05-208 BLENDED POWDER BATCH ROTARY FEEDER 3600 LB/HR 6" SIZE < 1/8"	CV-05-205 BFS SCREW CONVEYOR 3600 LB/HR 9'ø MILD STEEL	P-05-203 EXCESS WATER PUMP CENTRIFUGAL 5 GPM @5 PSI Δp 0.05 HP.	T-05-208 BLENDED POWDER BATCH WEIGH HOPPER 20 CU FT W/ LOAD CELL 3'ø C 4'-6" HT. MILD STEEL	T-05-205 BFS SILO 170 CU FT W/ LOAD CELL 6'ø X 9' MILD STEEL	LT-05-202/203 LIFT TABLES 55 GAL DRUM 1000 LB (MAX) EA.	X-05-201 DECANT WAND	T-05-206 PFA SILO 170 CU. FT W/ LOAD CELL 6'ø X 9'-0" MILD STEEL	S-05-206 PFA SILO DUST COLLECTOR PULSE JET 100 ACFM < 100 MESH
Y-05-209 OPC SILO ROTARY FEEDER 2000 LB/HR 6" SIZE < 100 MESH	CV-05-208 BLENDED POWDER SCREW CONVEYOR 3600 LB/HR 9'ø MILD STEEL	X-05-225 TURNTABLE	CV-05-209 OPC SCREW CONVEYOR 2000 LB/HR 6'ø MILD STEEL	CV-05-206 PFA SCREW CONVEYOR 3600 LB/HR 9'ø MILD STEEL	RT-05-202 CLASP REMOVAL MECHANISM	Y-05-207 BLENDED POWDER ROTARY FEEDER 3600 LB/HR 6" SIZE < 1/8"	DO-05-202/203 SIMPLE DOUBLE DOORS (PIVOTING)	T-05-207 SURGE HOPPER 20 CU. FT. W/ LOAD CELL 3'ø X 4'-6" HT. MILD STEEL	M-05-202 POWDER BLENDER RIBBON BLENDER MOTOR DRIVEN 0.75 HP.	Y-05-206 PFA SILO ROTARY FEEDER 3600 LB/HR 6" SIZE < 100 MESH	Y-05-205 BFS SILO ROTARY FEEDER 3600 LB/HR 6" SIZE < 1/8"	S-05-205 BFS SILO DUST COLLECTOR PULSE JET 100 ACFM < 1/8"	CV-05-212B/213B/216/217 218/220/221/224 226/227/228 ROLLER CONVEYORS



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S MACKAY	4/15/92
DRAWN	C MOORE	4/15/92
CHECKED	K. VANZANTEN	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY / FOR / DATE

WRAP 2A CONCEPTUAL DESIGN
AGITATED GROUT SYSTEM
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140612	C

SCALE: NONE | DISCIPLINE NO: ST-10 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	IGNR BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

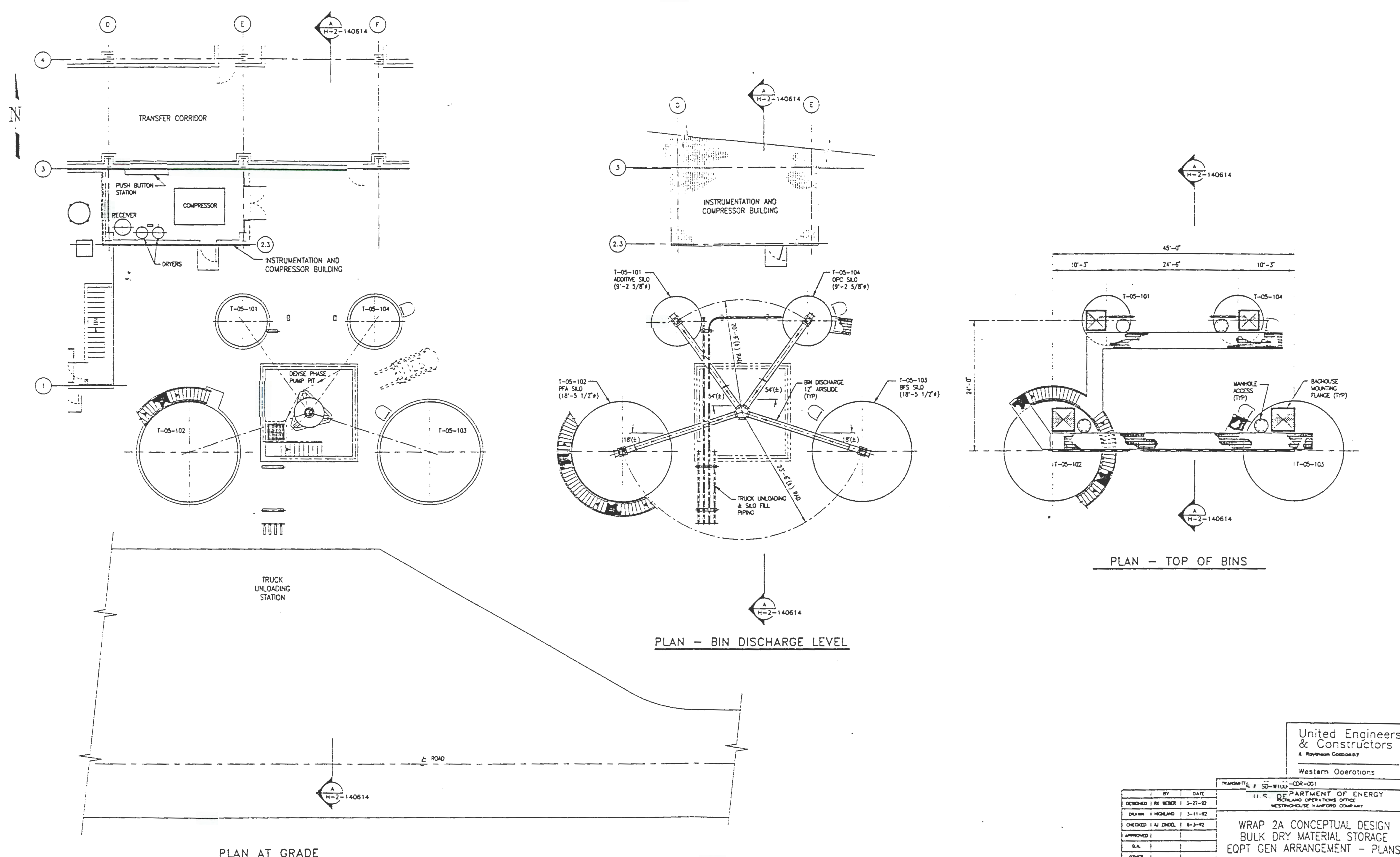
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140612A.DWG | CADCODE: 2C:IBM: ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM 4217B0RD

9413227.1475



United Engineers & Constructors
A Raytheon Company
Western Ooerotions

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
BULK DRY MATERIAL STORAGE
EQPT GEN ARRANGEMENT – PLANS

	BY	DATE
DESIGNED	RK WEBER	3-27-92
DRAWN	HIGHLAND	3-11-92
CHECKED	AJ ZINDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY FOR DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140613	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: ST-15 | SHEET 1 OF 1

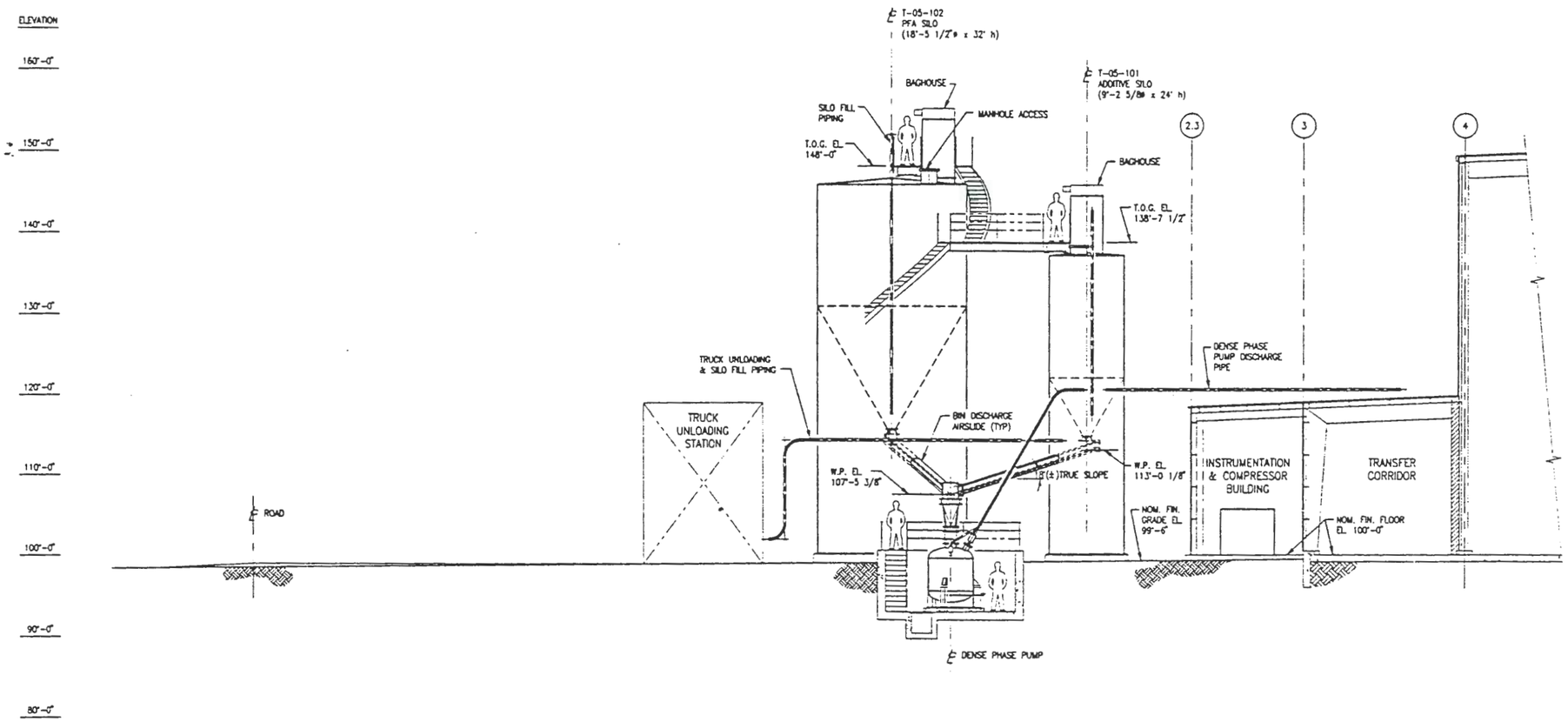
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	S MACKAY 7/31/92		7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140613A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1476



SECTION "A – A"

LOOKING WEST (DWG H-2-140613)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	RK WEBER	3-27-92
DRAWN	J HIGHLAND	3-30-92
CHECKED	AJ ZINDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
BULK DRY MATERIAL STORAGE
EQPT GEN ARRANGEMENT – SECTION

SIZE	BLDG NO	INDEX NO	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140614	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: ST-16 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK'D BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	07/31/92	7/31/92

REFERENCE DRAWINGS

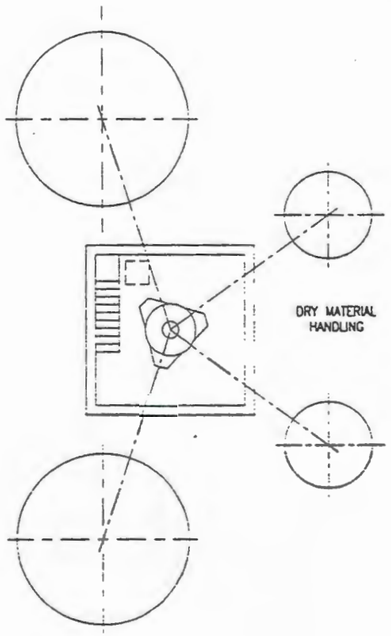
REVISIONS

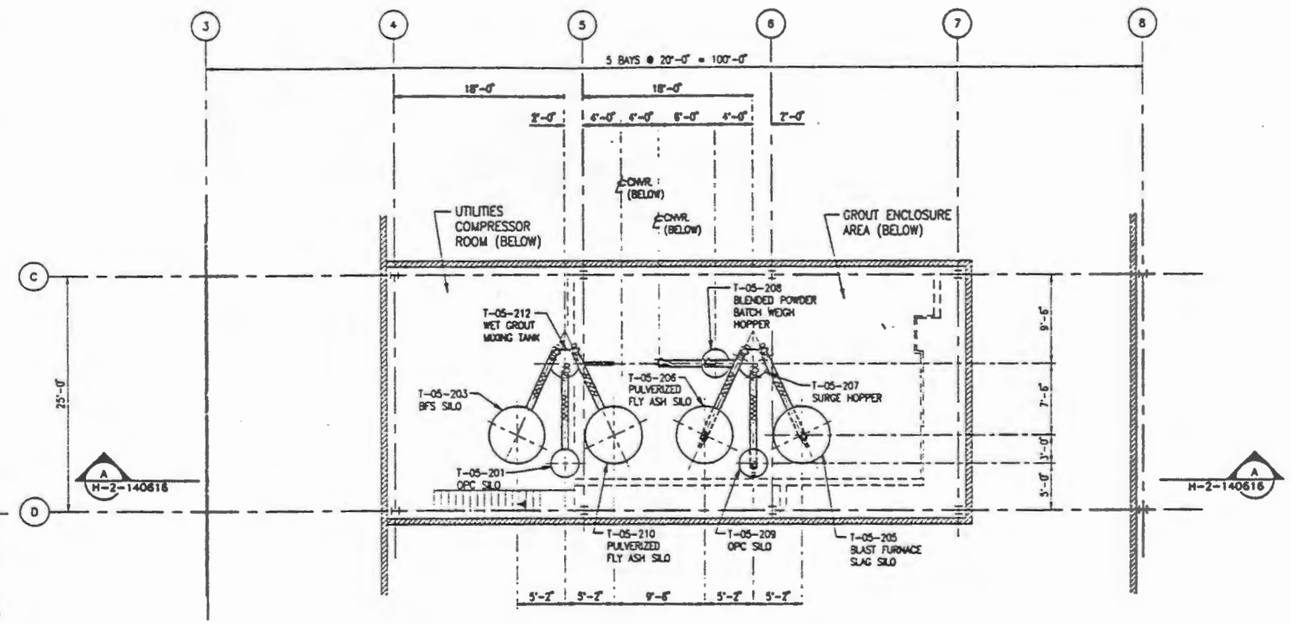
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140614A | CADCODE: 2C:IBM; ACD2.11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MCO2BORD

07/24/92 12:38 CAD NO: B140614A.DWG COLOR: PLW WIDTH
LTR 6237.006 PLT SCALE: 1 = 96





GROUT STABILIZATION MIX

NOM. FIN. FLOOR EL. 112'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	RK WEBER	4-15-92
DRAWN	E WILSON	4-15-92
CHECKED	M ZINDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
GROUT STABILIZATION MIX AREA
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140615	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: ST-17 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	NOTE BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S MACKAY 7/31/92	DJF 7/31/92	M ZINDEL 7/31/92

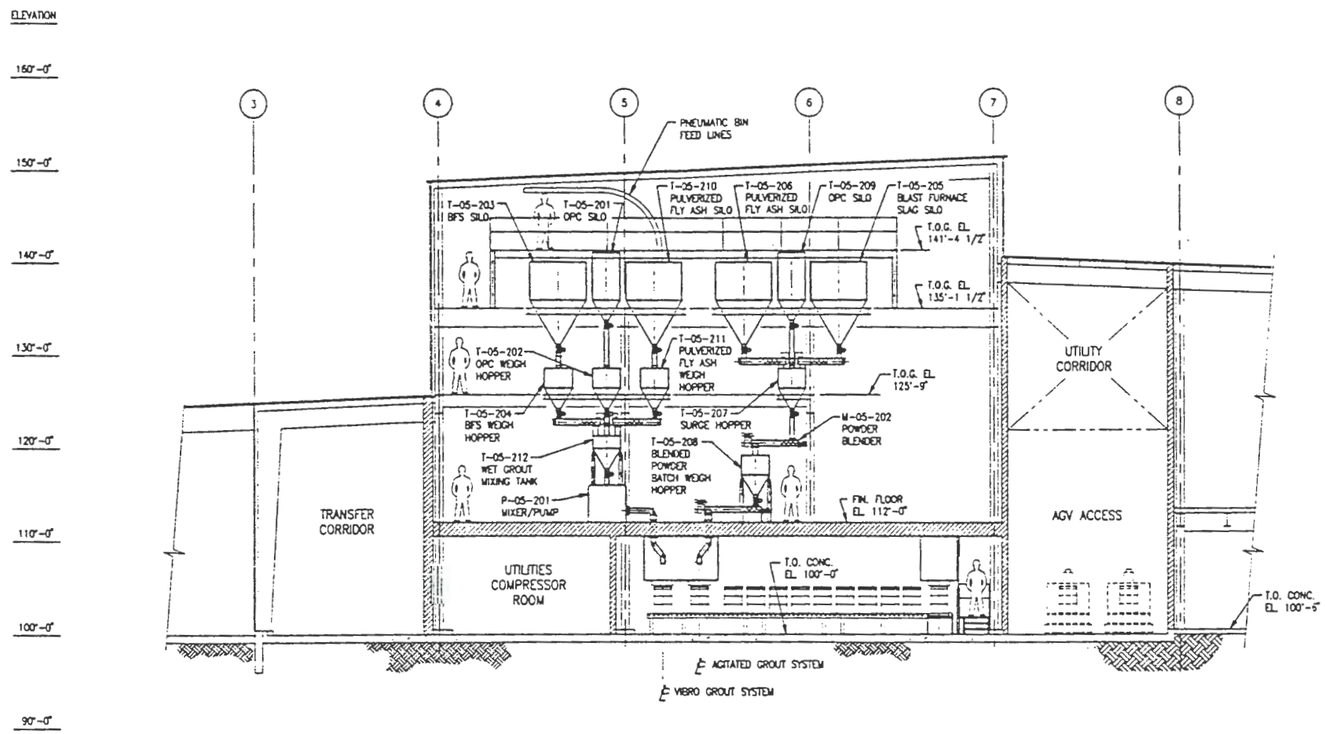
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 9140615A | CADCODE: 2C:IBM:ACD: 11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1478

07/24/92 12:40PM NO: 9140615A.DWG COLOR
LPK 03:37:00 PST SCALE 1 = 96 PEN WIDTH



SECTION "A – A"

LOOKING WEST (DWG H-2-140615)

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-T100-CR-91

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	RK WEBER	6-14-92
DRAWN	SCHLOESSLER	6-21-92
CHECKED	AJ ZIMDEL	6-23-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
GROUT STABILIZATION MIX AREA
EQPT GEN ARRANGEMENT – SECTION

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140616	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO. ST-18 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	REQ'D BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S MACKAY 7/31/92		

REFERENCE DRAWINGS — REVISIONS

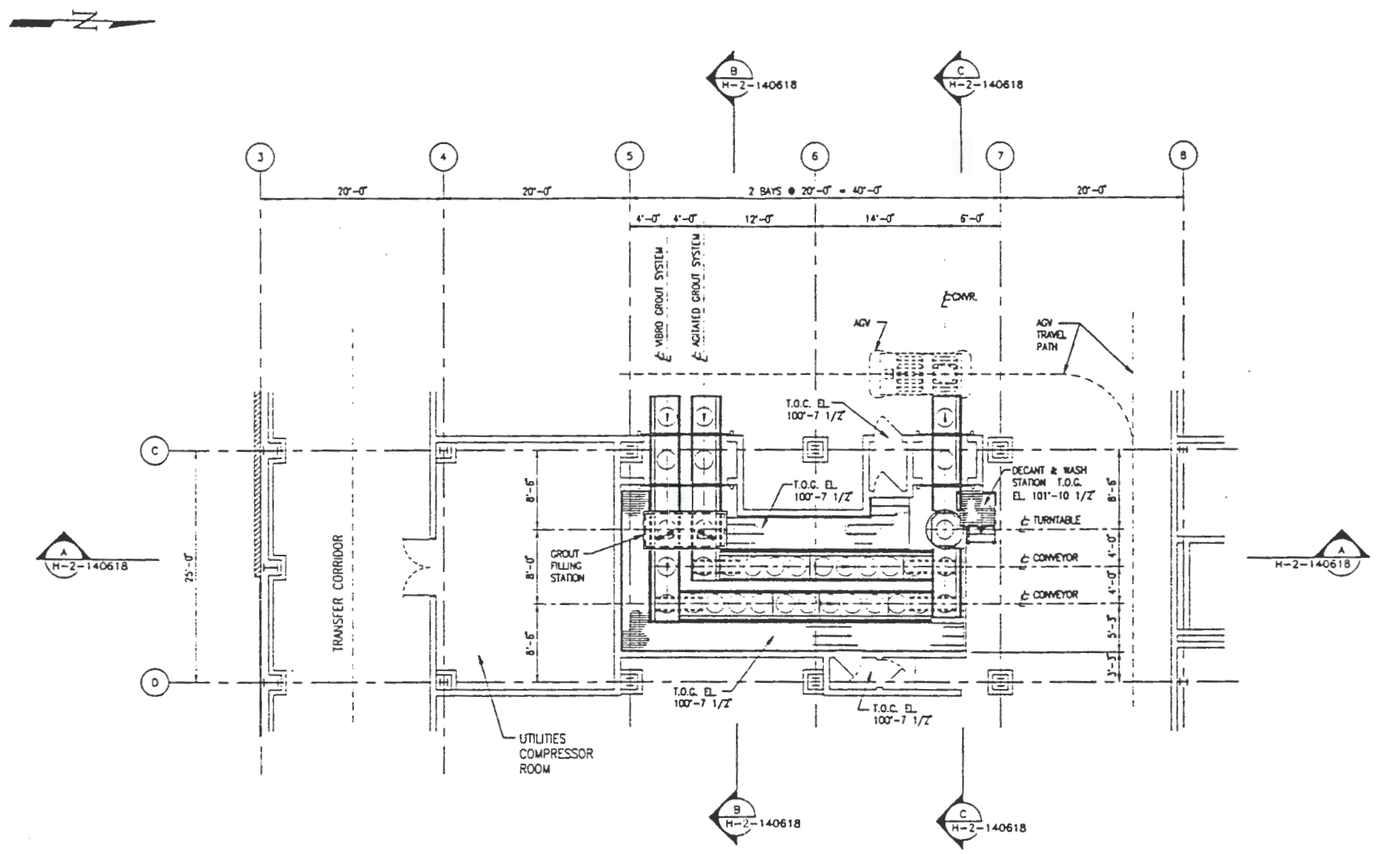
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140616A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

07/24/92 12:47 CAD: NO B140616A.DWG COLOR 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
DPK 623/008 RT SCALE: 1 = 96 PEN WEIGHT 6 2 2 2 1 3 5 3 3 4 2 1 1 2 1

FORM MOD2BORD

9411201.0479



PLAN – GROUTING ENCLOSURE

NOM. FIN. FLR. EL. 100'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	RK WEBER	4-15-92
DRAWN	SCHLOESSLIN	4-23-92
CHECKED	AJ ZNDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
GROUT STABILIZATION ENCLOSURE
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140617	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO. ST-19 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHKD BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S MACKAY 7/31/92		7/31/92

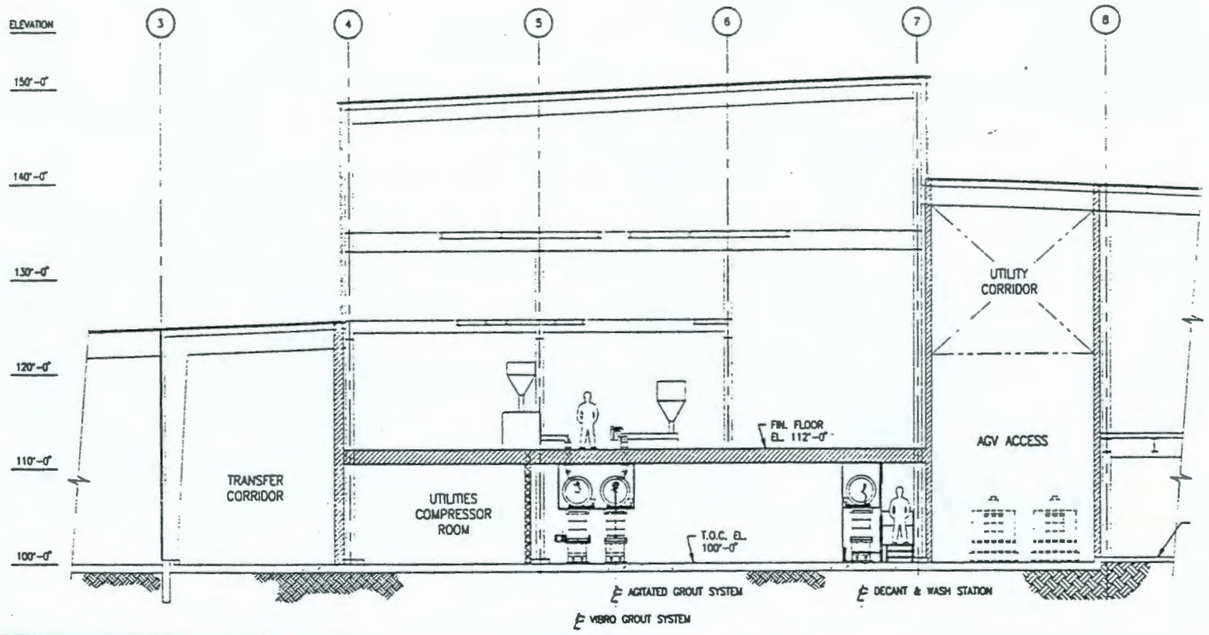
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140617A | CADCODE: 2C:1BM:ACD2:11:NN

07/24/92 12:45 CAD NO. B140617A.DWG COLOR
CAR 8337.006 RI SCALE 1 = 96 PLK WEIGHT 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
0 2 2 2 3 3 5 1 3 5 4 2 1 1 2 1

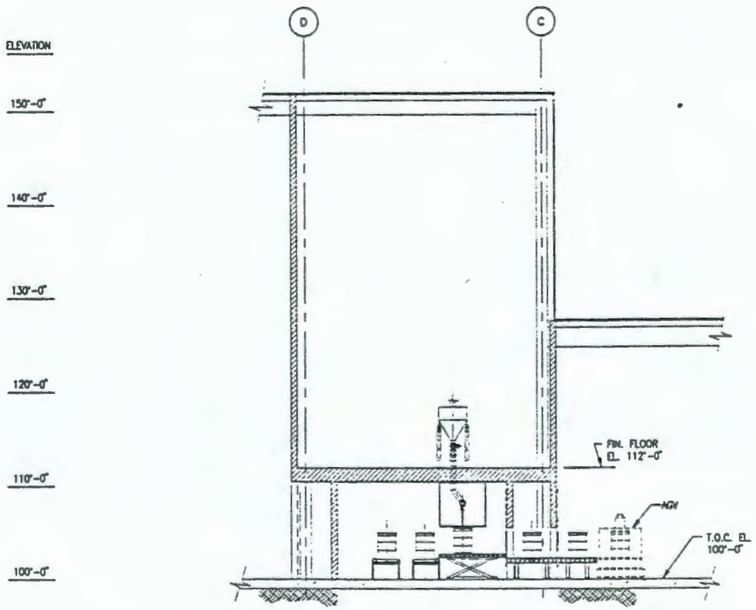
FORM MD0280RD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



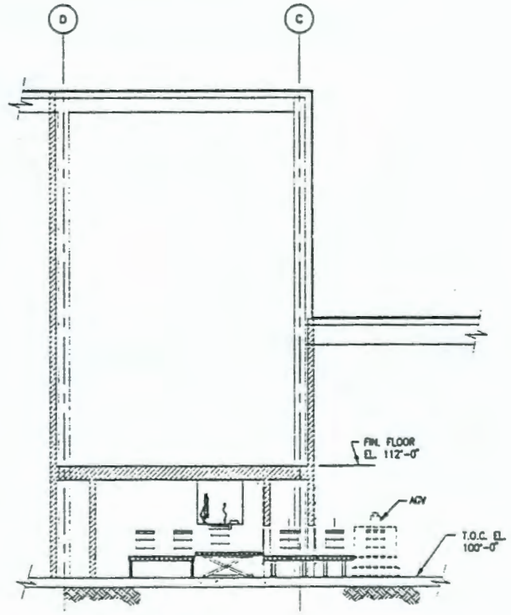
SECTION "A – A"

LOOKING WEST (DWG. H-2-140617)



SECTION "B – B"

LOOKING SOUTH (DWG. H-2-140617)



SECTION "C – C"

LOOKING SOUTH (DWG. H-2-140617)

REV NO	DESCRIPTION	REV BY/DATE	IQUR BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S MACKAY 7/31/92		7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140618A | CADCODE: 2C:IBM:ACD2.11:NN

	BY	DATE
DESIGNED	RK WEBER	6-16-92
DRAWN	SCHLOESSLER	6-30-92
CHECKED	AJ ZINDEL	6-3-92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY FOR DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
GROUT STABILIZATION ENCLOSURE
EQPT GEN ARRANGEMENT – SECTIONS

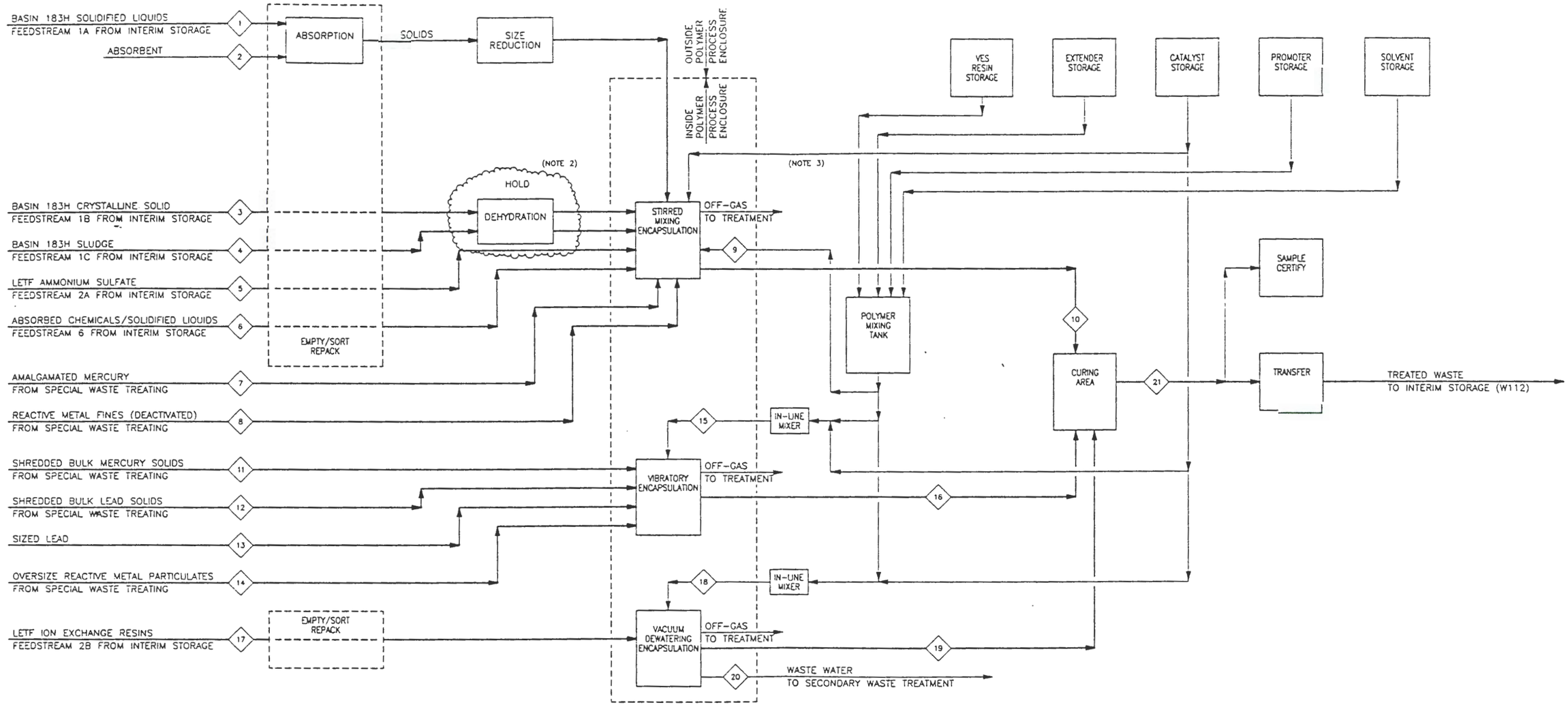
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140618	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: ST-20 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MCC2280RD

9413227.1481



NOTES:

1. TOTAL TREATED WASTE QUANTITIES ASSUME WORST CASE SIMULTANEOUS CAMPAIGNING OF SPECIAL WASTE
2. REQUIREMENT FOR DEHYDRATION OF WASTE WILL BE DETERMINED BY RESULTS OF POLYMER TREATABILITY TESTING.
3. CATALYST NORMALLY FLOWS DIRECTLY TO STIRRED DRUMS AND NOT THROUGH IN-LINE MIXER.

(NOTE 1)

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
DESCRIPTION	BASIN 183H SOLID LIQUID FEEDSTREAM 1A	ABSORBENT	BASIN 183H CRYST SOLIDS FEEDSTREAM 1B	BASIN 183H SLUDGE FEEDSTREAM 1C	LETF AMMON. SULFATE FEEDSTREAM 2A	ABSORBED CHEMICALS FEEDSTREAM 6	AMALGAMATED MERCURY	REACTIVE METAL FINES	POLYMER RESIN TO STIRRED DRUMS	TREATED WASTE FROM STIRRED DRUMS	SHREDDED BULK MERCURY SOLIDS	SHREDDED BULK LEAD SOLIDS	SIZED LEAD	OVERSIZE REACTIVE METALS	POLYMER RESIN TO VIBRATED DRUM	TREATED WASTE FROM VIBRATED DRUM	LETF ION EXCH RESINS FEEDSTREAM 2B	POLYMER RESIN TO VAC DEWATER DRUM	TREATED WASTE FROM VACUUM DRUM	WASTE WATER TO SECONDARY TREATMENT	TREATED WASTE
THROUGHPUT (DRUMS/DAY)	0.54	–	1.01	1.09	8.08	1.32	–	–	–	27.28	–	–	–	–	–	7.82	1.66	–	1.66	–	36.76
MASS/DAY (LB/DAY)	355	40	448	557	5262	779	732	84	5579	13936	528	1.77	3434	84	1810	5033	676	279	414	541	20383
VOLUME/DAY (FT3/DAY)	4.7	3.3	7.5	9.1	59.8	8.8	1.8	0.4	86.6	181.9	13.2	0.5	4.9	0.4	28.1	47.1	12.1	4.3	7.7	8.7	236.8
DENSITY (LB/FT3)	75	12	60	59	88	90	408	200	64.4	76.6	40	354	708	200	64.4	128.1	55	64.4	53.6	62.4	86.1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	J. M. [illegible] 7/31/92	J. H. [illegible] R. HENKEL 7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST — NEXT USED ON: — CADFILE: WRQAGP5.DWG — CADCODE: 2C:IBM:AC02:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

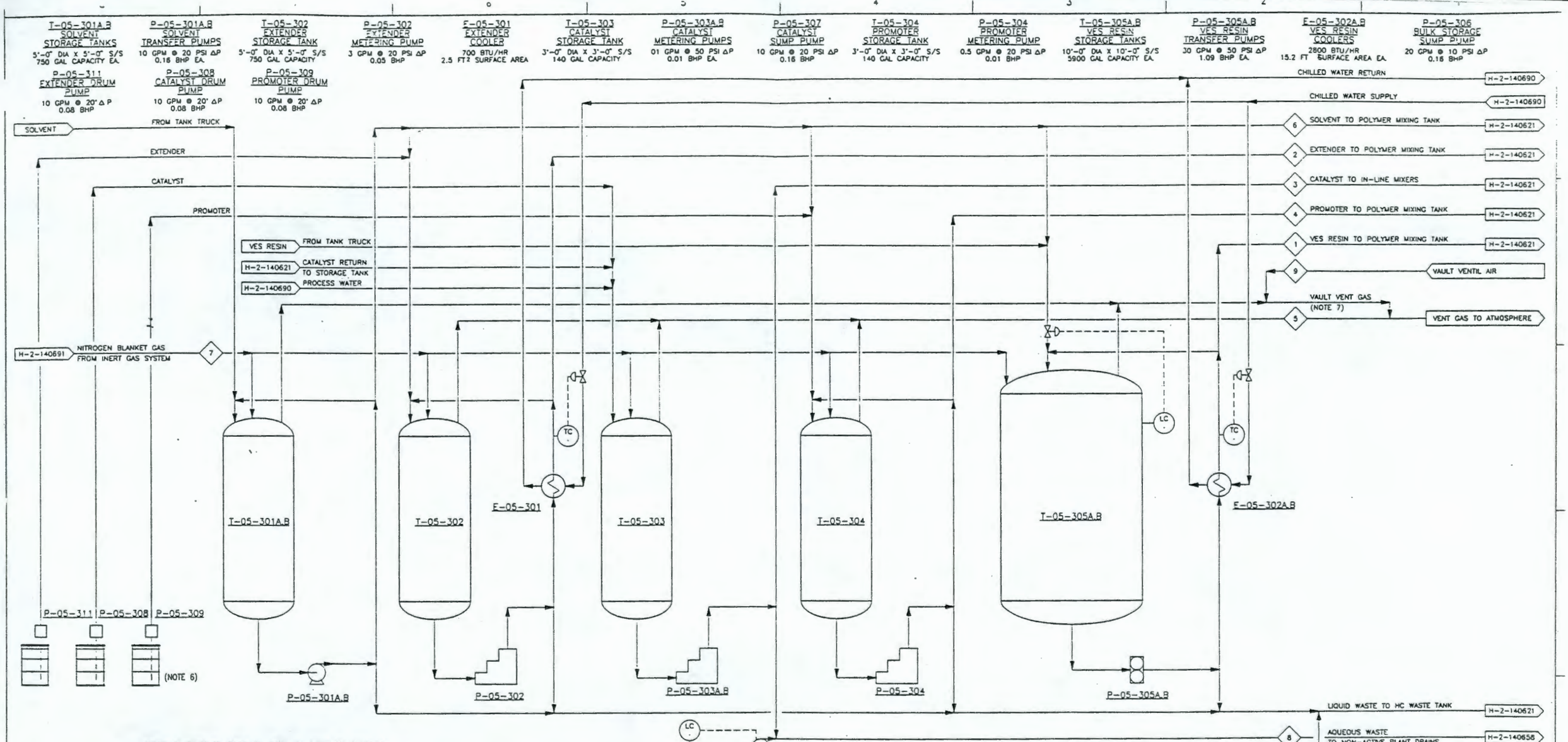
	BY	DATE
DESIGNED	R. HENKEL	3/12/92
DRAWN	L. HIGHLAND	3/18/92
CHECKED	K. WAGLAND	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
POLYMER FACILITY
BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140619	E

SCALE: NONE — DISCIPLINE NO. GP-5 — SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



(NOTE 1) (NOTE 2) (NOTE 3) (NOTE 4) (NOTE 5) (NOTE 4)

STREAM NO.	1	2	3	4	5	6	7	8	9
DESCRIPTION	VES RESIN TO MIX TANK	EXTENDER TO MIX TANK	CATALYST TO MIX TANK	PROMOTER TO IN-LINE MIXERS	VENT GAS FROM TANKS	SOLVENT TO MIXING TANK	NITROGEN BLANKET GAS	AQUEOUS WASTE	VAULT VENTIL AIR
VES RESIN (LB/DAY)	7,010	-	-	-	-	-	-	-	-
EXTENDER (LB/DAY)	-	561	-	-	-	-	-	-	-
CATALYST (LB/DAY)	-	-	53	-	-	-	-	-	-
PROMOTER (LB/DAY)	-	-	-	44	-	-	-	-	-
TOTAL (LB/DAY)	7,010	561	53	44	-	-	-	-	-
TOTAL (FT3/DAY)	108.9	10.0	0.7	0.7	-	-	-	-	-
AQUEOUS WASTE (GAL/DAY)	-	-	-	-	-	-	-	NNF	-
SOLVENT (GAL/DAY)	-	-	-	-	-	NNF	-	-	-
VENT GAS (FT3/MIN)	-	-	-	-	NNF	-	-	-	700
NITROGEN (FT3/DAY)	-	-	-	-	-	-	NNF	-	-

NOTES:

1. EXTENDER ADDED AT 8.0 WT % OF VES RESIN.
2. CATALYST ADDED AT 0.75 WT % OF VES RESIN.
3. PROMOTER ADDED AT 0.63 WT % OF VES RESIN.
4. NITROGEN BLANKET GAS AND VENT GAS TO ATMOSPHERE HAVE NORMALLY NO FLOW EXCEPT DURING LIQUID TRANSFER.
5. SOLVENT TO MIXING TANK HAS NO NORMAL FLOW EXCEPT DURING PERIODIC FLUSHING.
6. DRUM STORAGE AREA SERVICED BY OUTDOOR SUMP.
7. SEE DWG. H-2-140622 FOR STORAGE TANK VAULT VENTILATION EQUIPMENT.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R. HENKEL	3/23/92
DRAWN	L. RIVERA	3/26/92
CHECKED	R.VANKAMTEN	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN POLYMER RESIN & CHEMICAL STORAGE PROCESS FLOW DIAGRAM

SIZE	BLDG NO	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140620	D

SCALE: NONE | DISCIPLINE NO: ST-6 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	SM Mahony 7/31/92	R. HENKEL 7/31/92

REVISIONS

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

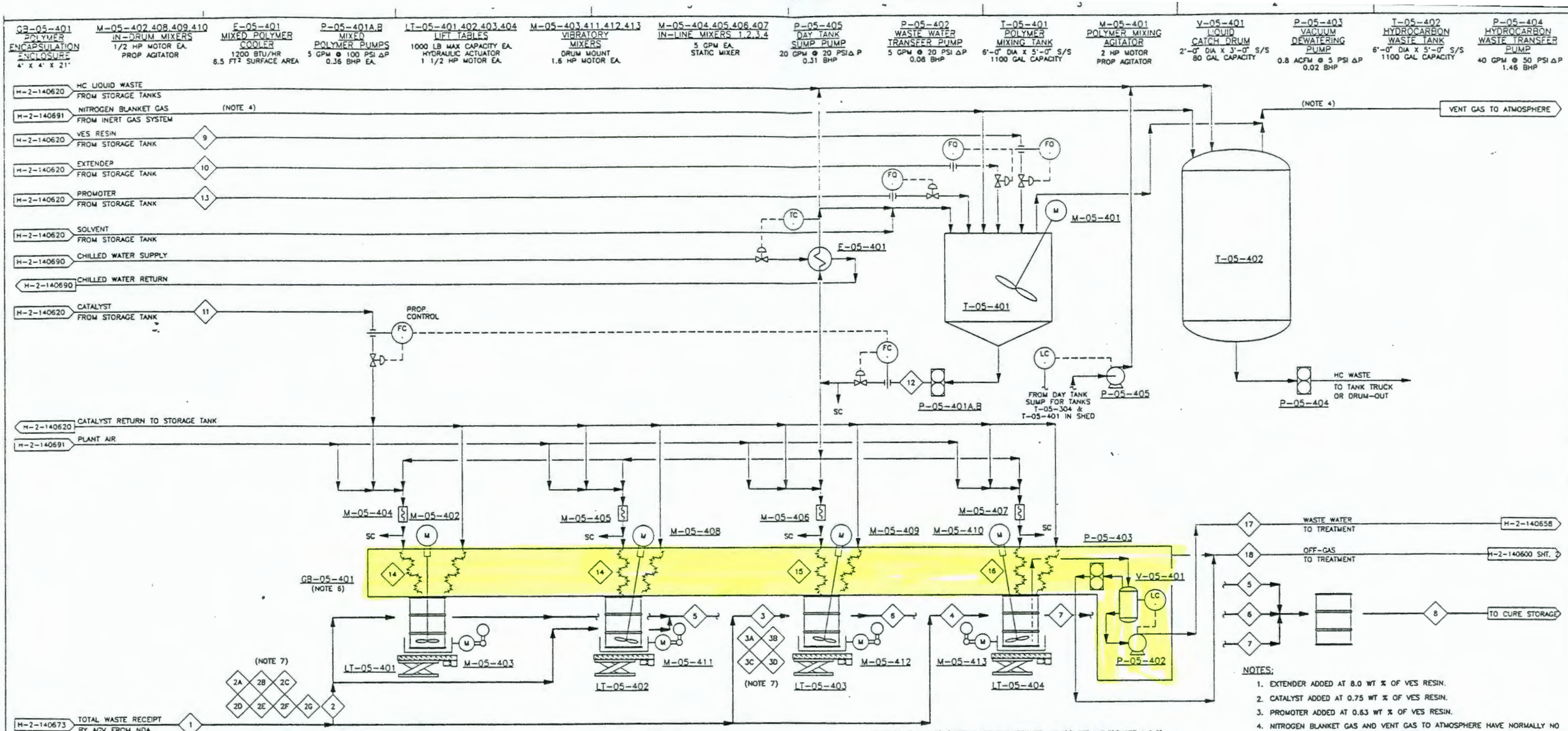
CADFILE: WR2AST6.DWG | CADCODE: 2C:IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WCD2BORD

PEW 1333957555885551
PRNM 1333957555885551
WG
CAD NO.:
RV SCALE:
07/23/92 903
EVR

9413227.1483



NOTES:

1. EXTENDER ADDED AT 8.0 WT % OF VES RESIN.
2. CATALYST ADDED AT 0.75 WT % OF VES RESIN.
3. PROMOTER ADDED AT 0.63 WT % OF VES RESIN.
4. NITROGEN BLANKET GAS AND VENT GAS TO ATMOSPHERE HAVE NORMALLY NO FLOW EXCEPT DURING LIQUID TRANSFER.
5. PLANT AIR TO INLINE MIXER HAS NO NORMAL FLOW EXCEPT DURING PERIODIC FLUSHING.
6. THE CAPABILITY OF USING 4 STATIONS IN GB-05-401 FOR STIRRER OR VIBRATING ENCAPSULATION SHALL BE PROVIDED BASED UPON WASTE CAMPAIGNING REQUIREMENTS.
7. STREAMS 2A THROUGH 2G ADD TO STREAM 2. STREAMS 3A THROUGH 3D ADD TO STREAM 3.

STREAM NO.	1	2A	2B	2C	2D	2E	2F	2G	3A	3B	3C	3D	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
													(NOTE 1)			(NOTE 2)	(NOTE 1,3)	(NOTE 3)	(NOTE 1,2,3)			(NOTE 1,2,3)		(NOTE 1,2,3)		
DESCRIPTION	TOTAL WASTE FEED	PRETREATED BASIN 18J SOLIDIFIED LIQUIDS	BASIN 18J CRYST SLDS FEEDSTREAM 1B	BASIN 18J SLUDGE FEEDSTREAM 1C	LETF AMMONI SULFATE FEEDSTREAM 2A	ABSORBED CHEMICALS FEEDSTREAM 6	AMALGAM MERCURY	DEACTIVATED METAL FINES	RETORTED WASTE	SHREDDED BULK LEAD	SIZED LEAD	COARSE DEACTIVATED METALS	LETF ION EXCH RESINS FDSTRM 2B	TREATED WASTE FROM STG DRUMS	TREATED WASTE FROM VIB DRUMS	TREATED WASTE FROM VAC DEWATER'G	TOTAL TREATED WASTE	VES RESIN TO MIX TANK	EXTENDER TO MIX TANK	CATALYST TO DRUMS	MIXED POLYMER TO DRUMS	PROMOTER TO MIX TANK	POLYMER TO STIRRED DRUMS	POLYMER TO VIBRATED DRUMS	POLYMER TO VACUUM DEWATERED DRUMS	WASTE WATER TO TREATMENT	OFF-GAS TO TREATMENT
DRUMS/DAY	36.76	1.82	1.82	2.07	17.13	2.83	1.41	0.20	2.51	0.25	4.91	0.15	1.66	27.28	7.82	1.66	36.76	–	–	–	–	–	–	–	–	–	–
VOLUME/DAY (FT³/DAY)	126.6	8.1	7.5	8.1	59.8	9.8	1.8	0.4	13.2	0.5	4.9	0.4	12.3	181.9	47.1	7.7	236.8	–	–	–	–	–	–	–	–	–	–
DENSITY (LB/FT³)	104.70	49.00	60.00	69.00	88.00	90.00	408.00	200.00	40.00	354.00	708.00	200.00	55.00	76.60	128.10	53.60	86.10	–	–	–	–	–	–	–	–	–	–
MASS/DAY (LB/DAY)	13,256	395	448	557	5,262	879	732	84	528	177	3,434	84	676	13,936	6,033	414	20,383	–	–	–	–	–	–	–	–	–	–
VOLUME/DRUM (FT³/DRUM)	3.44	4.43	4.11	3.89	3.49	3.45	1.27	2.17	5.26	1.98	0.99	2.86	7.49	6.67	2.86	4.65	6.44	–	–	–	–	–	–	–	–	–	–
MASS/DRUM (LB/DRUM)	361	217	247	268	307	311	518	434	210	700	700	572	407	511	771	249	554	–	–	–	–	–	–	–	–	–	–
VES RESIN (LB/DAY)							–	–	–	–	–	–	–	–	–	–	–	7,010	–	–	7,010	–	5,100	1,655	255	–	–
EXTENDER (LB/DAY)							–	–	–	–	–	–	–	–	–	–	–	–	561	–	561	–	408	132	21	–	–
CATALYST (LB/DAY)							–	–	–	–	–	–	–	–	–	–	–	–	–	53	–	–	39	13	1	–	–
PROMOTER (LB/DAY)							–	–	–	–	–	–	–	–	–	–	–	–	–	–	44	44	32	10	2	–	–
TOTAL (LB/DAY)							–	–	–	–	–	–	–	–	–	–	–	7,010	561	53	7,615	44	5,579	1,810	279	541	–
TOTAL (FT³/DAY)							–	–	–	–	–	–	–	–	–	–	–	108.9	10.0	0.7	118.4	0.7	86.6	28.1	4.3	–	–
WASTE WATER (GAL/DAY)							–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	55	–
OFF-GAS (FT³/MIN)							–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	200

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R HENKEL	3/23/92
DRAWN	L. RIVERA	3/26/92
CHECKED	K.VANZANTEN	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

WRAP 2A CONCEPTUAL DESIGN
POLYMER ENCAPSULATION
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140621	D

SCALE: NONE | DISCIPLINE NO: ST-7 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	J.M. Hawley 7/31/92	L.J. Hawley 7/31/92 R. HENKEL

REFERENCE DRAWINGS | REVISIONS

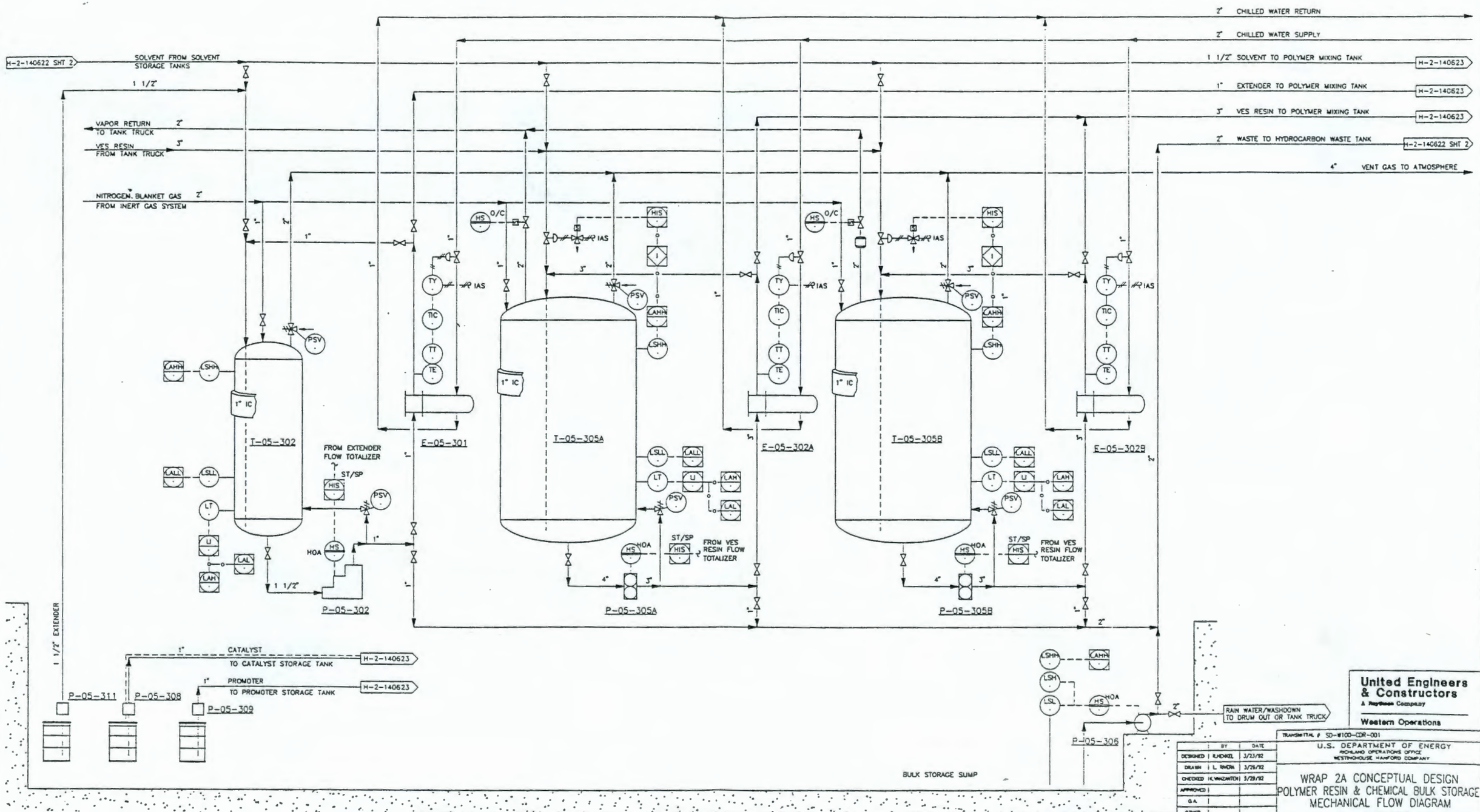
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2AST7.DWG | CADCODE: 2C:IBM: ACD2:11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MCD2BKORD

9413227.1484

P-05-308 CATALYST DRUM PUMP	P-05-309 PROMOTER DRUM PUMP	P-05-311 EXTENDER DRUM PUMP	T-05-302 EXTENDER STORAGE TANK	P-05-302 EXTENDER METERING PUMP	E-05-301 EXTENDER COOLER	T-05-305A,B VES RESIN STORAGE TANKS	P-05-305A,B VES RESIN TRANSFER PUMPS	E-05-302A,B VES RESIN COOLERS	P-05-306 BULK STORAGE SUMP PUMP
10 GPM @ 20' ΔP 1/3 HP MOTOR	10 GPM @ 20' ΔP 1/3 HP MOTOR	10 GPM @ 20' ΔP 1/3 HP MOTOR	5'-0" DIA X 5'-0" S/S 750 GAL CAPACITY	3 GPM @ 20 PSI ΔP 3/4 HP MOTOR	700 BTU/HR 2.5 FT² SURFACE AREA	10'-0" DIA X 10'-0" S/S 5900 GAL CAPACITY EA.	30 GPM @ 50 PSI ΔP 1 1/2 HP MOTOR EA.	2800 BTU/HR 15.2 FT² SURFACE AREA EA.	20 GPM @ 10 PSI ΔP 1/4 HP MOTOR



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R.HENKEL	3/23/92
DRAWN	L. RHODA	3/26/92
CHECKED	H.WAGENTON	3/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
POLYMER RESIN & CHEMICAL BULK STORAGE
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	SHEET NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140622	C

SCALE: NONE | DISCIPLINE NO. S1-21 | SHEET 1 OF 2

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	R. HENKEL 7/31/92	J. H. 7/31/92

REVISIONS

REFERENCE DRAWINGS

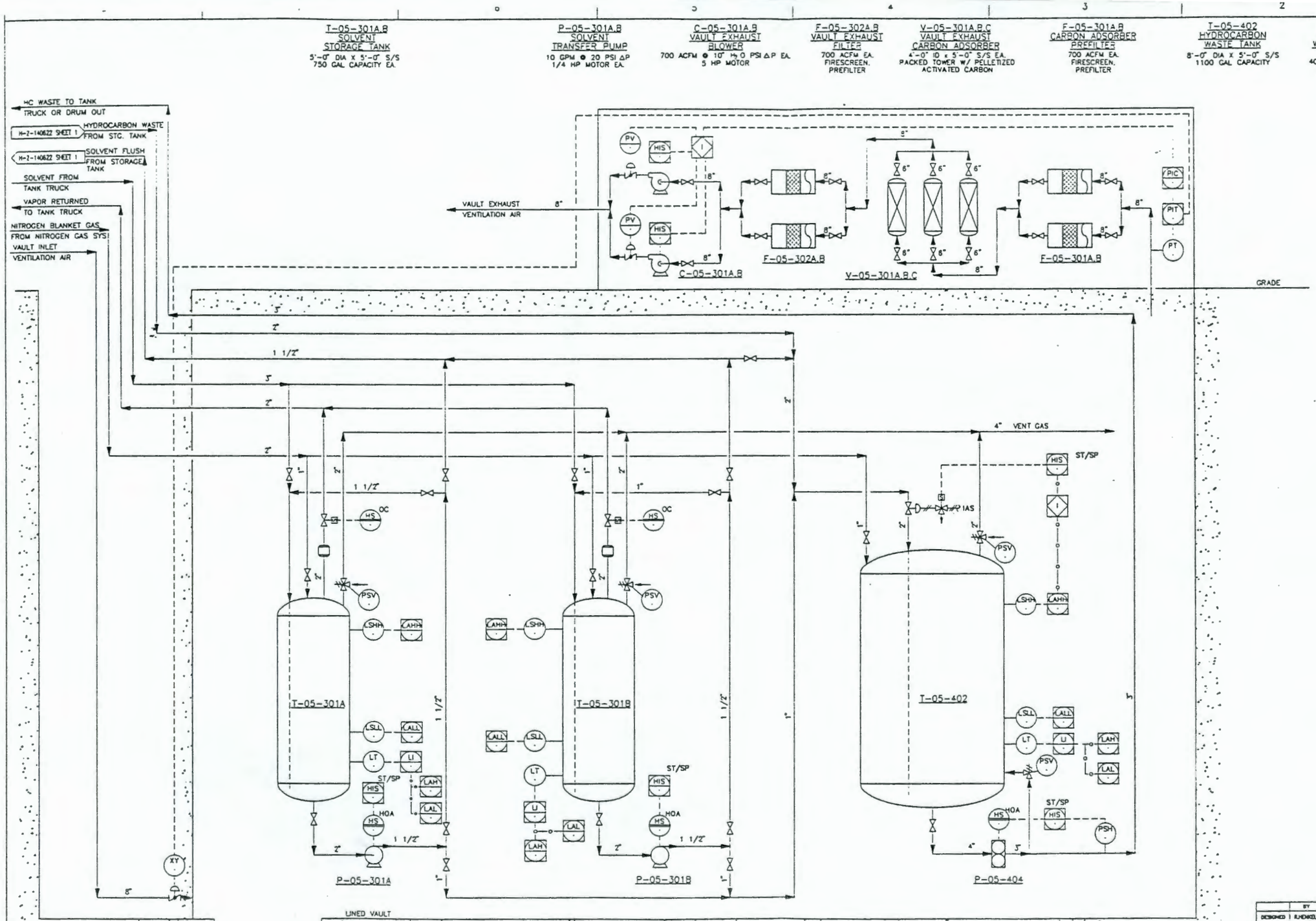
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140622A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM NUCDRAWG

9413227.1485



United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R.HENKEL	7/9/92
DRAWN	L. RIVERA	7/10/92
CHECKED	S.M. Vandenberg	7/31/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
POLYMER RESIN & CHEMICAL BULK STORAGE
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140622	A
SCALE: NONE		DISCIPLINE NO: ST-21	SHEET 2 OF 2	

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
A	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	S.M. Vandenberg 7/31/92	J. M. Hall R. HENKEL 7/31/92

REVISIONS

REFERENCE DRAWINGS

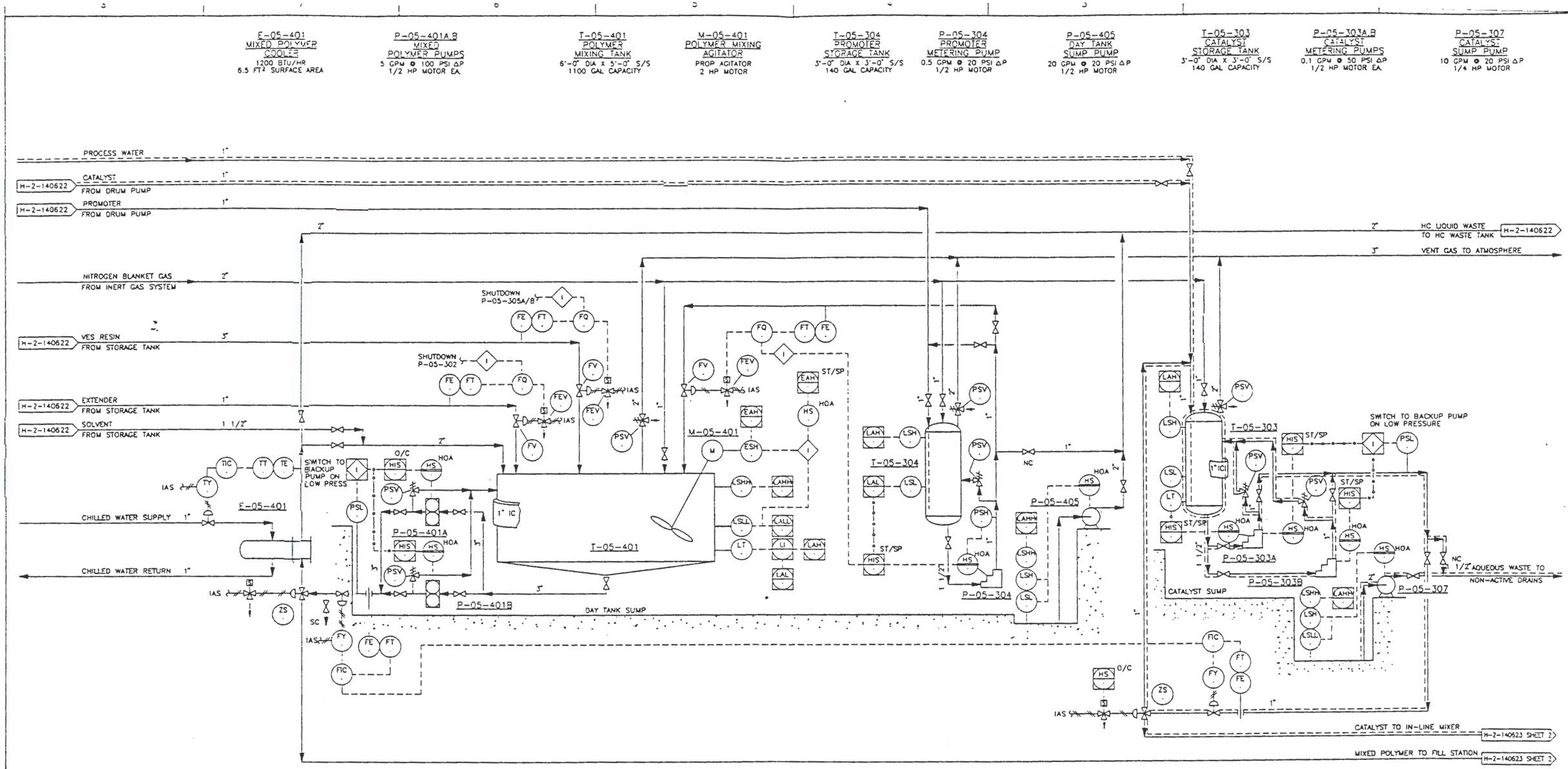
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140622A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

FORM WCC2BORD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1486



United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R. HENKEL	3/23/92
DRAWN	P. NEDIC	4/28/92
CHECKED	E. VANZANTEN	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
POLYMER MIXING & ENCAPSULATION
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140623	C

SCALE: NONE | DISCIPLINE NO. ST-27 | SHEET 1 OF 2

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	7/31/92	7/31/92

REFERENCE DRAWINGS

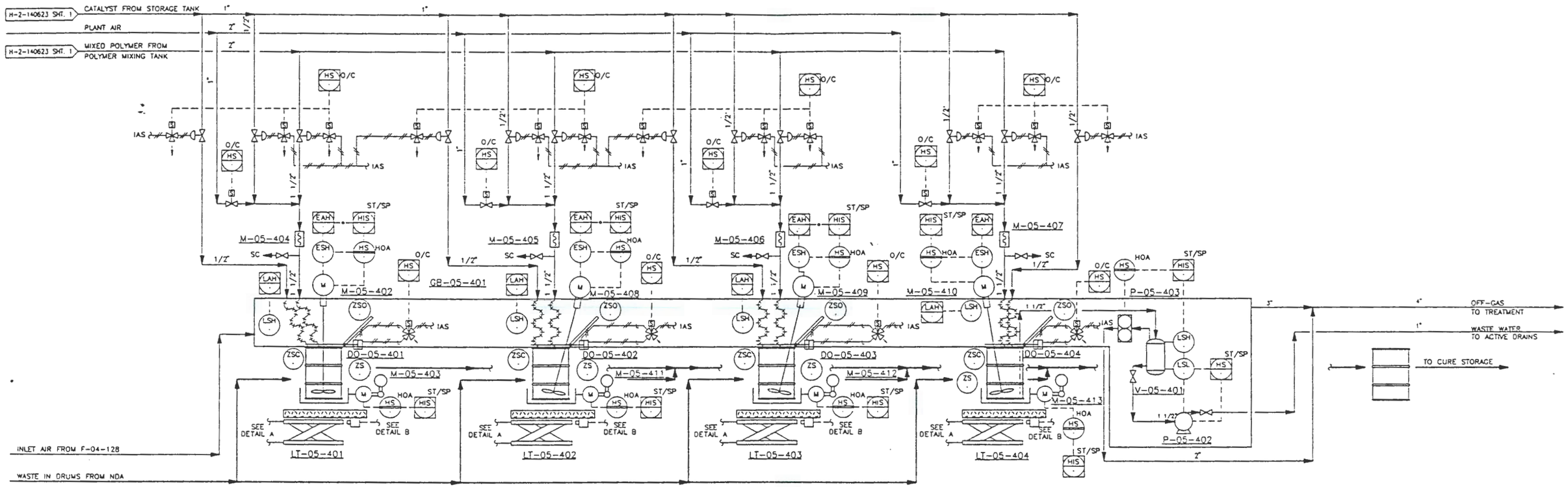
REVISIONS

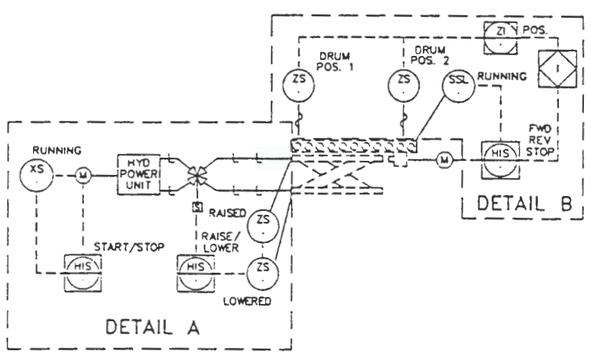
DRAWING TRACEABILITY LIST | NEXT ISSUED ON: | CADFILE: B140623A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

FORM WCD2BORD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

M-05-402,408,409,410 IN-DRUM MIXERS	DO-05-401,402,403,404 SIMPLE DOUBLE LID	GB-05-401 POLYMER ENCAPSULATION ENCLOSURE	LT-05-401,402,403,404 LIFT TABLES	M-05-403,411,412,413 VIBRATORY MIXERS	M-05-404,405,406,407 IN-LINE MIXERS 1,2,3,4	P-05-402 WASTE WATER TRANSFER PUMP	P-05-403 VACUUM DEWATERING PUMP	V-05-401 LIQUID CATCH DRUM
PROP AGITATOR 1/2 HP MOTOR EA.	28"ø EA.	5' X 5' X 20'	1000 LB MAX CAPACITY EA. HYDRAULIC ACTUATOR 1 1/2 HP MOTOR EA.	DRUM MOUNT 1.6 HP MOTOR EA.	STATIC MIXER 5 GPM EA.	5 GPM @ 20 PSI ΔP 1/4 HP MOTOR	0.8 ACFM @ 5 PSI ΔP 1/2 HP MOTOR	2'-0" DIA X 3'-0" S/S 80 GAL CAPACITY





TYPICAL POWERED LIFT TABLE INSTRUMENTATION

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R. HENKEL	3/23/92
DRAWN	P. ABLOG	4/23/92
CHECKED	K. VANZANTEN	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
POLYMER MIXING & ENCAPSULATION
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140623	A

SCALE: NONE | DISCIPLINE NO: ST-Z2 | SHEET 2 OF 2

REV NO	DESCRIPTION	REV BY/DATE	KOHR BY/DATE	APPROVALS/DATE
A	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	7/31/92 R. HENKEL	7/31/92

REFERENCE DRAWINGS | REVISIONS

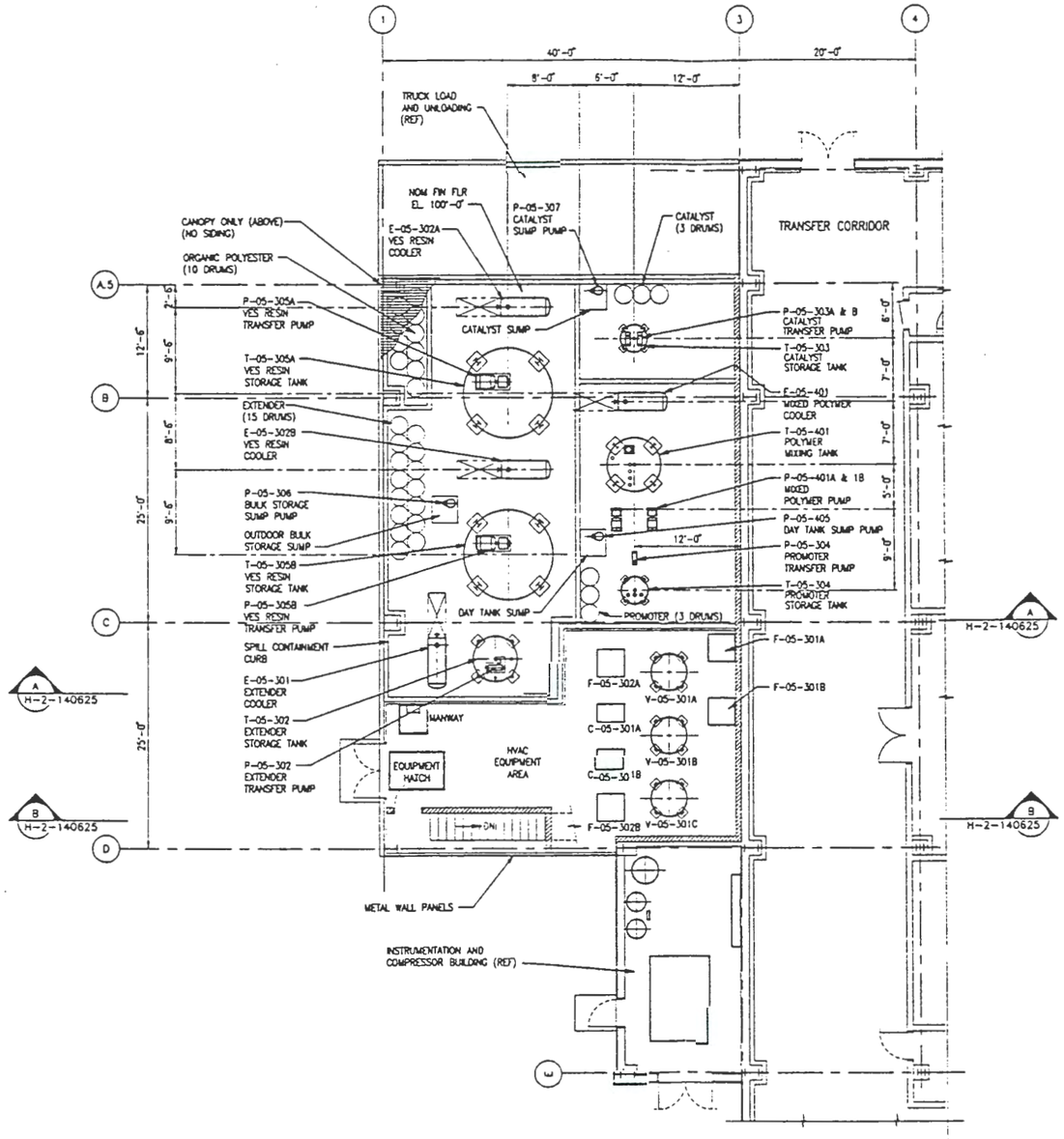
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 914062.SBL.DWG | CADCODE: 2C:IBM:ACD2:11:NN

APPROVED FOR DETAILED DESIGN BY FOR DATE

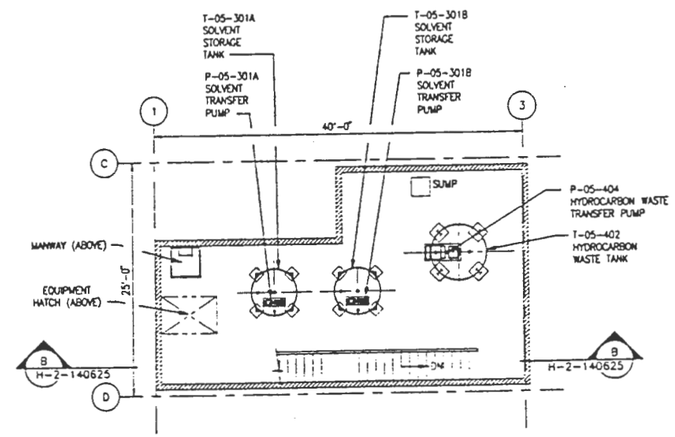
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MOD2BORD



PLAN – BULK POLYMER STORAGE

NOM SLAB H.P. EL. 100'-0"



PLAN – SOLVENT & WASTE TANK VAULT

NOM. FIN. FLR. EL. 84'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	AJ ZINDEL	04-01-92
DRAWN	EA WILSON	04-06-92
CHECKED	AJ ZINDEL	07-24-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
BULK POLYMER STORAGE
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140624	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: ST-11 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY (DATE)	CHK BY (DATE)	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SP MATHAN 7/31/92	A.C. 7/31/92	AJ 7/31/92 7/31/92

REVISIONS

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

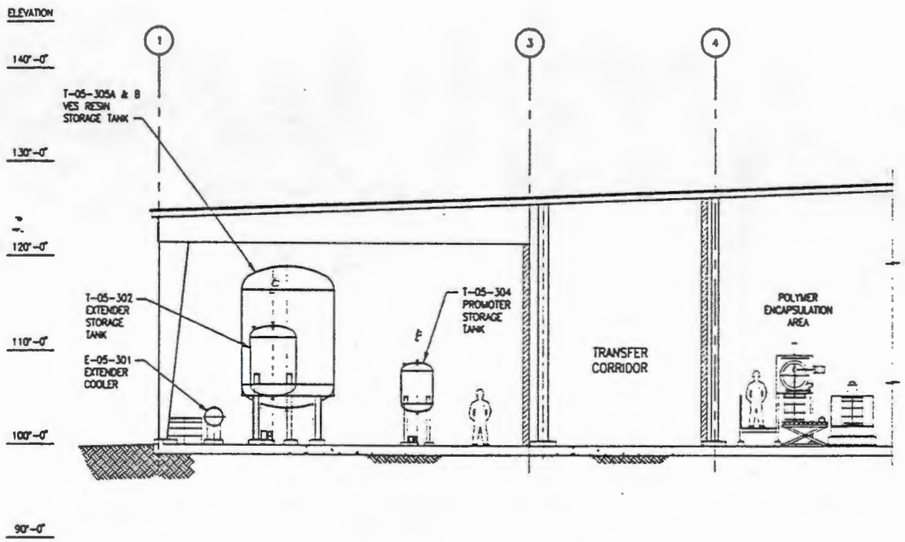
REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140624A | CADCODE: 2C:IBM: ACD2:11:NN

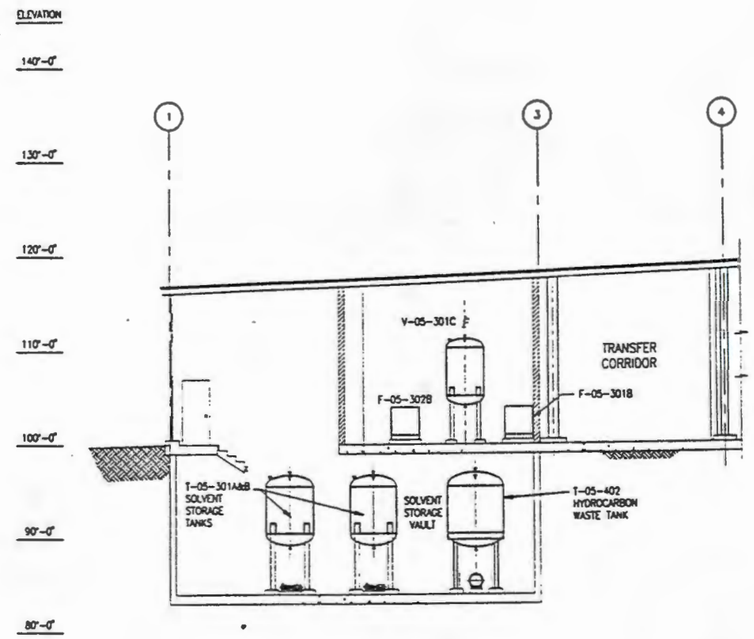
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

07/27/92 10:39 8140624A.DWG COLOR
EXM 2337-009 R1 SCALE 1 = 96 PLOT WEIGHT

FORM W0020R0



SECTION "A – A"
LOOKING WEST (DWG H-2-140624)



SECTION "B – B"
LOOKING WEST (DWG H-2-140624)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	AJ ZINDEL	04-01-92
DRAWN	EA WILSON	04-07-92
CHECKED	AJ ZINDEL	07-23-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
BULK POLYMER STORAGE
EQPT GEN ARRANGEMENT – SECTION

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140625	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: ST-12 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	SP NATHAN 7/31/92	[illegible] 7/31/92	AJ ZINDEL 7/31/92

REVISIONS

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140625A

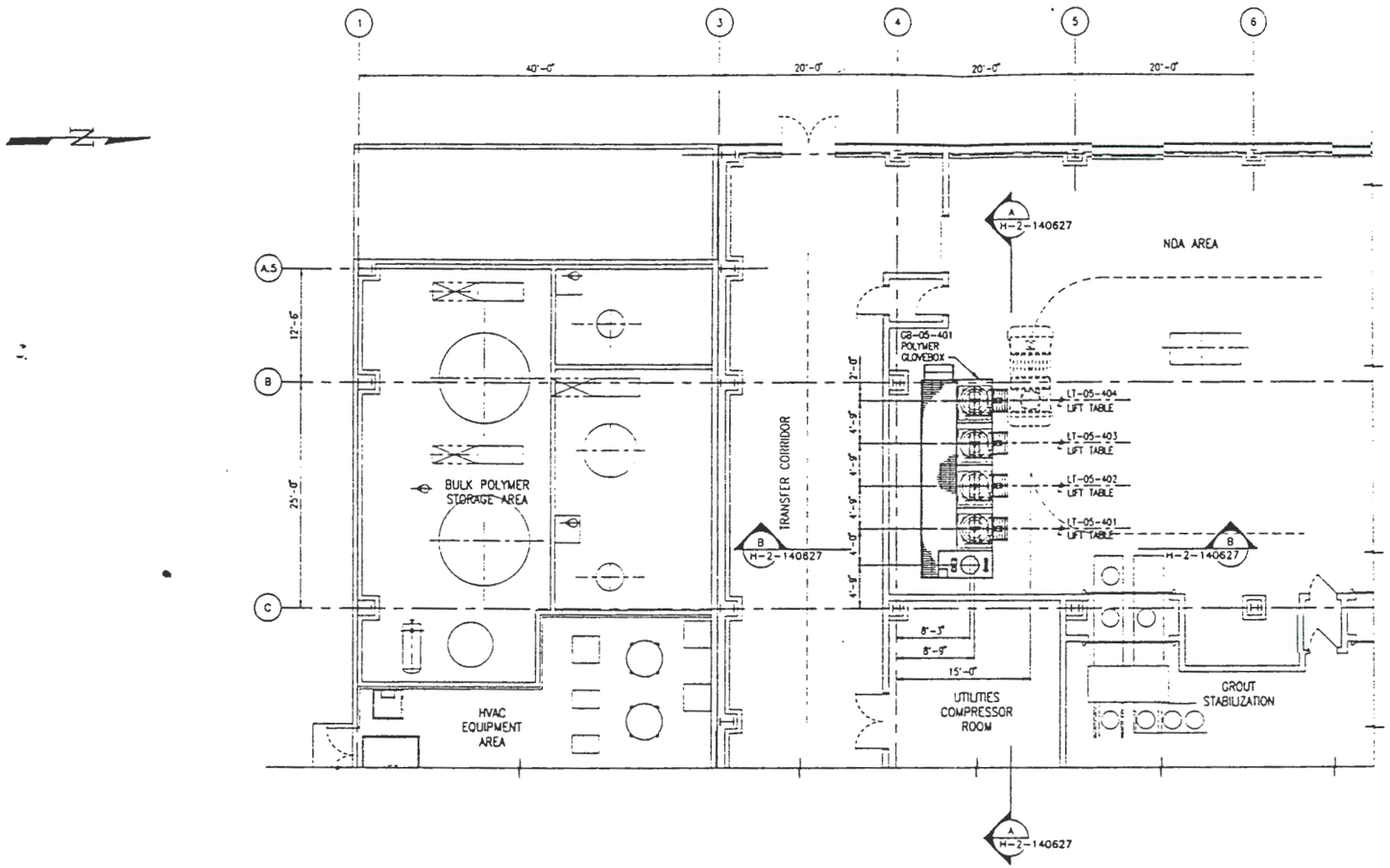
CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WCD2BORD

9413227.1490

07/27/92 10:16CW:WD: B140625A.DWG COLOR
CAD 0237/DGN PLT SCALE 1 = 96 FOR MODEL 0 2 2 2 1 3 5 7 9 2 1 1 2 1



PLAN – POLYMER ENCAPSULATION

NOM FIN FLR EL. 100'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	AJ ZINDEL	FEB/31-92
DRAWN	EA WILSON	04-07-92
CHECKED	AJ ZINDEL	06-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
POLYMER ENCAPSULATION
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140626	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO. ST-13 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SP MATHAN 7/31/92		

REFERENCE DRAWINGS | REVISIONS

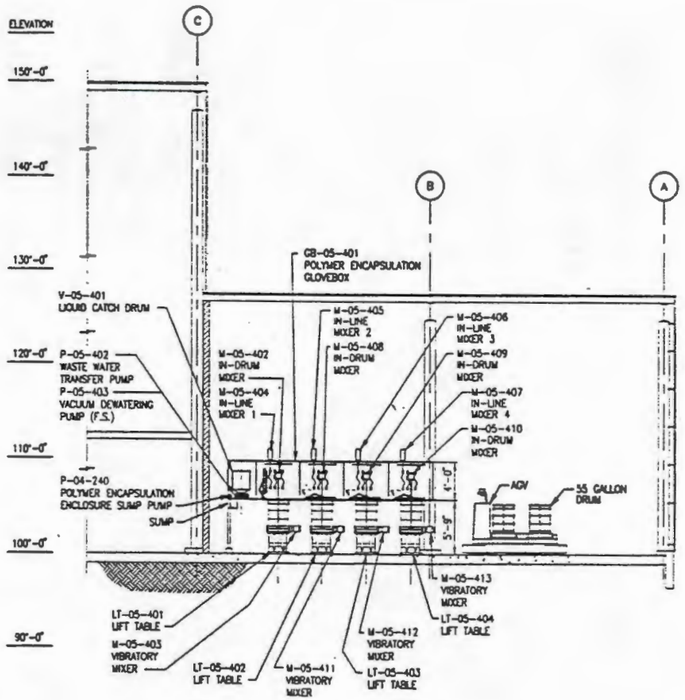
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140626A | CADCODE: 2C:1BM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WCD2SORD

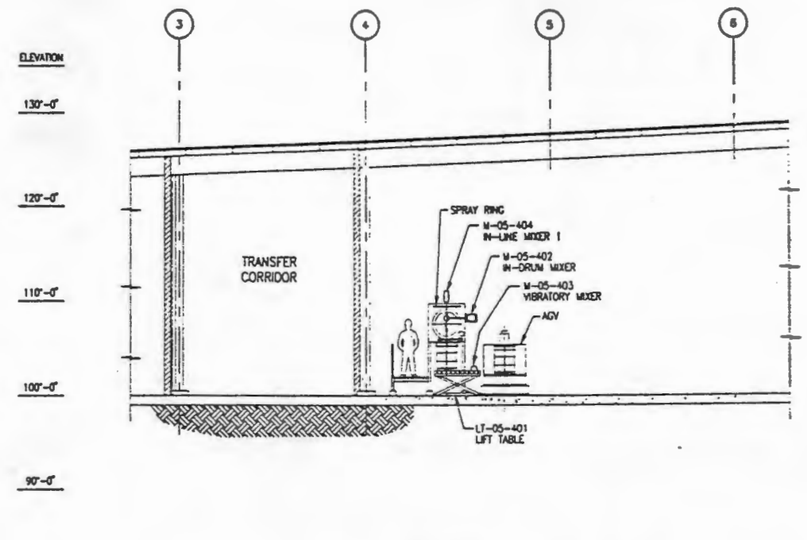
07/27/92 20:06 CAD NO: w140626A.DWG COLOR: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
EAW 9337.006 PLT SCALE: 1" = 96 PEN WEIGHT: 6 2 2 2 1 3 5 1 3 4 2 1 1 2 1

9117027.1491



SECTION "A – A"

LOOKING SOUTH (DWG H-2-140626)



SECTION "B – B"

LOOKING WEST (DWG H-2-140626)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
POLYMER ENCAPULATION
EQPT GEN ARRANGEMENT – SECTIONS

	BY	DATE
DESIGNED	AJ ZINDEL	04-01-92
DRAWN	EA WILSON	04-08-92
CHECKED	AJ ZINDEL	08-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140627	D
SCALE: 1/8" = 1'-0"	DISCIPLINE NO. ST-14		SHEET 1 OF 1	

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SP NATHAN 7/31/92		

REFERENCE DRAWINGS | REVISIONS

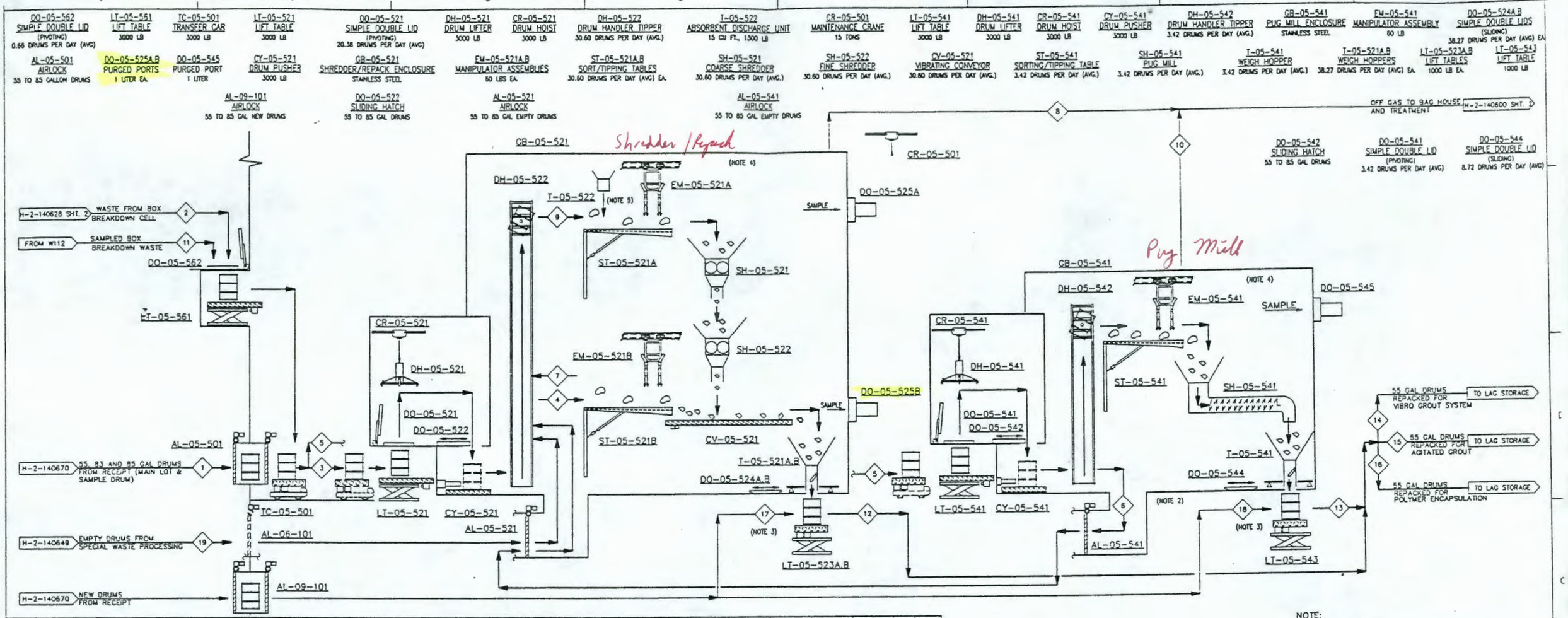
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140627A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MOODBOARD

07/24/92 13:30 CAD NO: B140627A.DWG CO:DD
DPR 0337.006 PLT SCALE: 1=96 PLN WIDTH 6 2 2 2 1 3 1 3 5 2 1 1 2 1

9411327.1492



DESCRIPTION	1 55, 83 OR 85 GAL DRUMS FR RECEIPT	2 WASTE FROM BOX BREAKDOWN	3 DRUMS TO SHRED/ REPACK ENCLOSURE	4 DRUMS FOR REPACK	5 DRUMS FOR PUG MILL PROCESSING	6 EMPTY DRUMS FOR SHREDDING	7 EMPTY DRUMS FOR SHREDDING	8 OFF-GAS TO BAG-HOUSE & TREATMENT	9 DRUMS FOR SHREDDING	10 OFF GAS TO BAG-HOUSE & TREATMENT	11 SAMPLED BROKEN DOWN BOXES	12 DRUMS FROM SHRED & REPACK	13 DRUMS FROM PUG MILL	14 55 GAL DRUMS TO VIBRO GROUT	15 55 GAL DRUMS TO AGITATED GROUT	16 55 GAL DRUMS TO POLYMER	17 NEW DRUMS FOR SHRED & REPACK	18 NEW DRUMS FOR PUG MILL	19 EMPTY DRUMS FROM SPECIAL WASTE
VOLUME (DRUMS/DAY)																			
1A - 183H SOLIDIFIED LIQUID	0.64		0.64						0.64			1.82				1.82			
1B - 183H CRYSTALLINE SOLID	1.01				1.01								1.82			1.82			
1C - 183H SLUDGE	1.09				1.09								2.07			2.07			
1D - 183H MISC CLEANUP	0.30		0.30						0.30			0.30		0.30					
2A - AMMONIUM SULFATE	8.08		8.08	8.08								17.13				17.13			
2B - ION EXCHANGE RESINS	1.56		1.66	1.66								1.56				1.66			
2C - METAL SLUDGE	2.36		2.36	2.36								4.72			4.72				
2D - RO FILTER ELEMENTS	0.27		0.27						0.27			0.27		0.27					
3 - COMPACTIBLE SOLIDS (DRY ACTIVE)	1.63		1.63						1.63			1.63		1.63					
4 - NON-COMPACTIBLE SOLIDS (C.D.)	0.90		0.90						0.90			0.90		0.90					
5A - MERCURY/MERCURY CONTAMINATED																			
5B - REACTIVE METALS																			
5C - LEAD/LEAD CONTAMINATED																			
5D - MISC. METALS	1.56		1.56						1.56			1.56		1.56					
6 - ABSORBED CHEM./SOLIDIFIED LIQUID	1.32				1.32								2.83			2.83			
7 - ASH FOR TREATMENT	1.78		1.78	1.78								3.56			3.56				
8 - CONTAMINATED SOILS	0.53		0.53	0.53								1.06			1.06				
USED DRUMS						3.42	14.41		24.64			3.00		3.00					
NEW DRUMS																	38.27	6.72	6.81
BROKEN DOWN BOXES		0.53	0.66						0.66		0.13	0.66		0.66					
TOTAL DRUM/DAY	23.13	0.53	20.37	14.41	3.42	3.42	14.41		30.60		0.13	38.27	5.72	8.32	9.34	27.33	38.27	6.72	6.81
OFF-GAS (ACFM)								1000		500									

NOTE:

1. WASTE TO BE PROCESSED IN CAMPAIGNED LOTS.
2. EMPTY DRUMS FROM PUG MILL ENCLOSURE TRANSFERRED TO SHREDDER/REPACK ENCLOSURE THROUGH CONTAINMENT ENCLOSURE.
3. DRUMS ARE PREPARED ON RECEIPT TO LIFT TABLE i.e. PADDLES FITTED INTO DRUMS. WASTE ANTI-FLOATATION PLATES ARE LOCATED IN THE DRUM PRIOR TO BEING RE-LIDDED USING SIMPLE DOUBLE LID. DRUM CLAMP BAND REMOVED PRIOR TO DRUM BEING LOADED WITH WASTE AND REPLACED AFTER BEING LOADED WITH WASTE.
4. ITEMS WHICH CANNOT BE PROCESSED BY SHREDDERS/PUG MILL, ARE REMOVED FROM THE SORT/TIPPING TABLES USING THE MANIPULATORS AND LOADED INTO NEW DRUMS VIA A SIMPLE DOUBLE LID. NORMALLY THIS IS ZERO FLOW AND IS NOT SHOWN TO ASSIST CLARITY OF THE DRAWING.
5. ABSORBENT ADDED TO FEEDSTREAM 1A ASSUMED TO BE 40 LB/DAY FOR MATERIAL BALANCE.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S.SHARPE	3/31/92
DRAWN	L.DIMERA	4/2/92
CHECKED	H.WINZWATCH	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN SIZE REDUCTION AND REPACK PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	MODE NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140628	D

SCALE: NONE | DISCIPLINE NO: SR-3 | SHEET 1 OF 2

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	S.SHARPE 7/31/92	R. NEWKEL 7/31/92	J. Hazen R. NEWKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

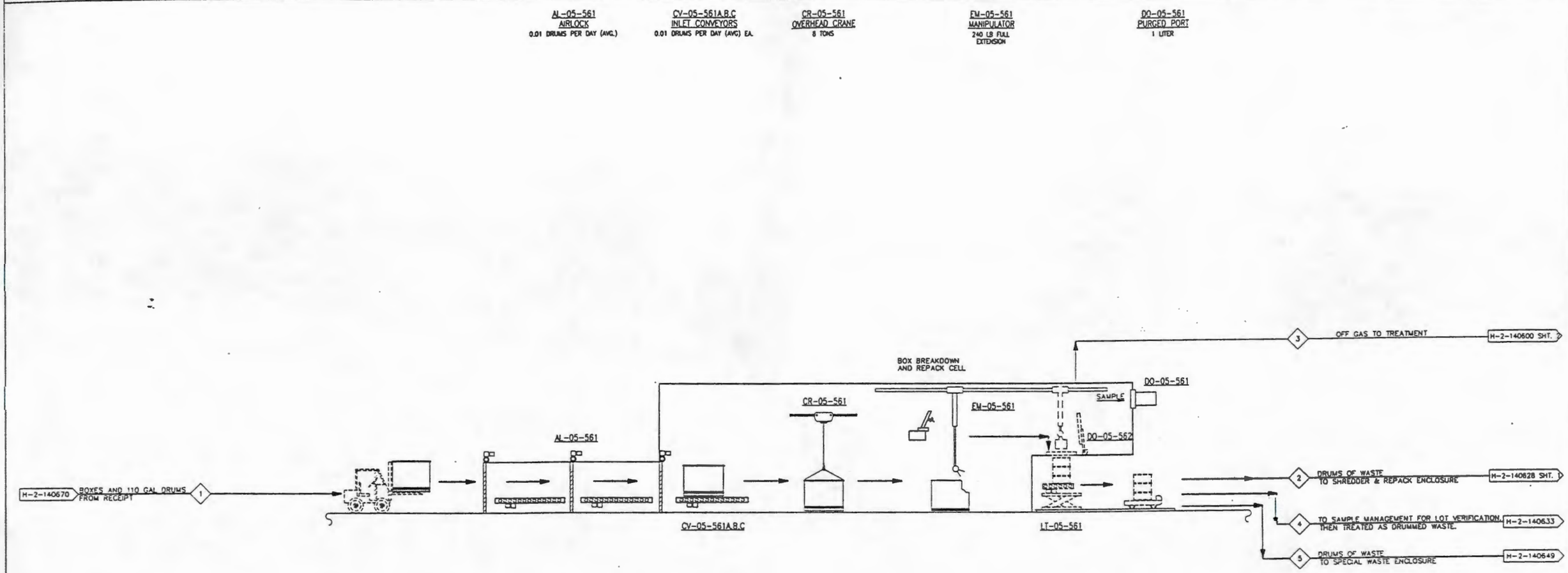
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140628A.DWG | CADCODE: 2C:19M: ACD2:11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WCC2BORD

9413227.1493



NOTES:

1. MATERIAL BALANCE BASED ON 34 EXISTING BOXES OF WASTE. EQUIPMENT IN THE BOX BREAKDOWN AREA HAS THE CAPABILITY TO PROCESS ONE ADDITIONAL BOX PER MONTH AS REQUIRED.

STREAM NO.	1	2	3	4	5
DESCRIPTION	BOXES & 110 GAL DRUMS FR RECEIPT	DRUMS TO SR AND REPACK CELL	OFF GAS TO TREATMENT	DRUMS TO SAMPLE MANAGEMENT	DRUMS TO SPECIAL WASTE
VOLUME (BOX/DAY)	0.01	–	–	–	–
VOLUME (DRUMS/DAY) EQV.	–	0.53	–	0.13	0.1
OFF-GAS (FT^3/MIN)	–	–	4500	–	–

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	S.SHARPE 7/31/92	R. HEWERT 7/31/92	L. HOWARD/ R. HEWERT 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B1406288.DWG | CADCODE: 2C:IBM:ACD2:11:NN

	BY	DATE
DESIGNED	SA SHARPE	3/31/92
DRAWN	L.HAWORA	4/2/92
CHECKED	R.HAWKZWITCH	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
SIZE REDUCTION & REPACK (BOX BREAKDOWN)
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140628	D

SCALE: NONE | DISCIPLINE NO. SR-3 | SHEET 2 OF 2

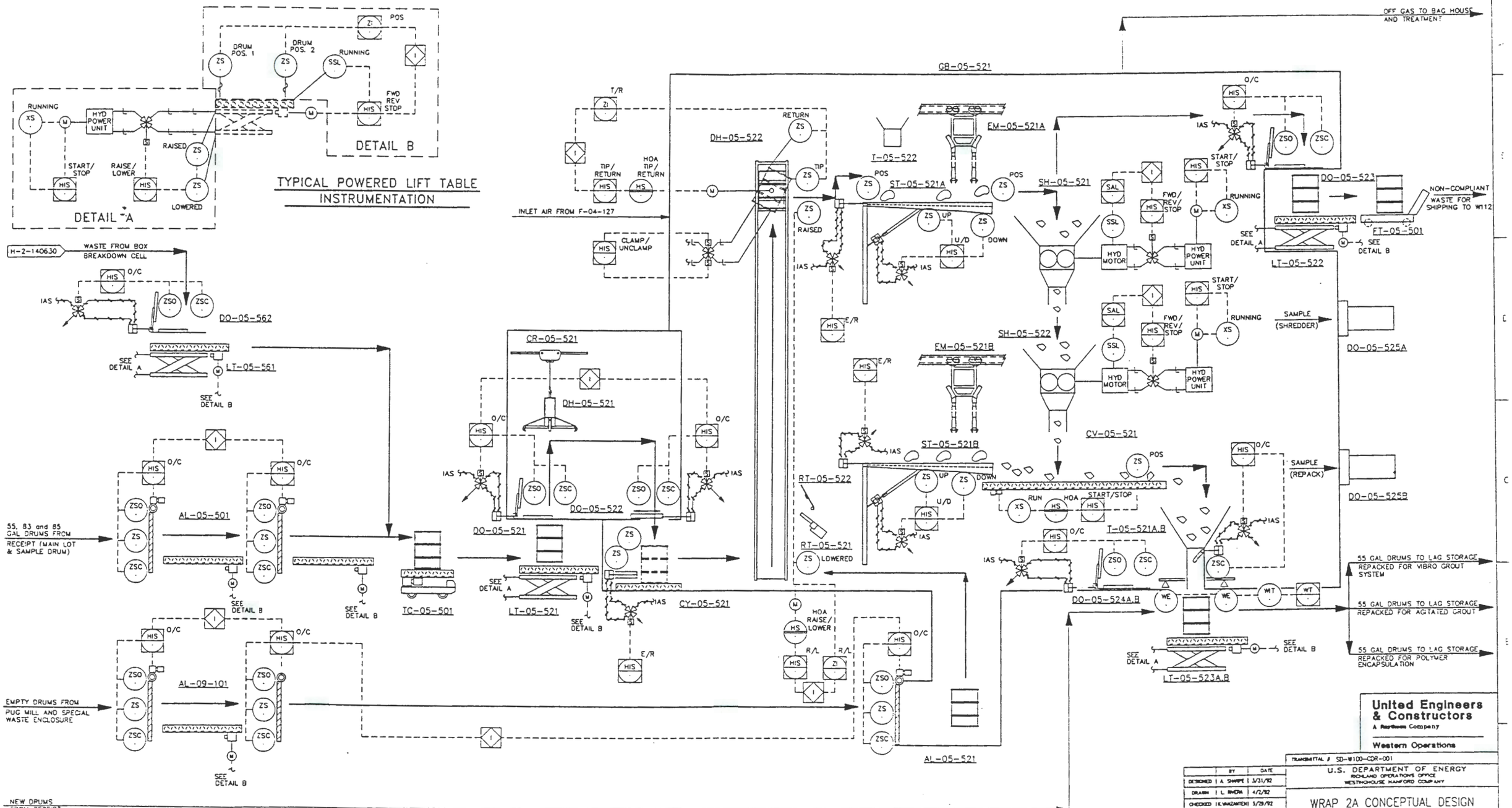
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MOODBORD

9413227.1494

09/10/92 9:34 CAD NK COLOR 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
0337.008 RIT SCALE: 1 - 1 0 DWG PEN WEIGHT 5 6 5 3 5 3 4 5 3 3 2 1

DO-05-562 SIMPLE DOUBLE LID (PIVOTING) 55 TO 85 GAL DRUMS	LT-05-561 LIFT TABLE 3000 LB 1.83 HP	TC-05-501 TRANSFER CAR 3000 LB 10 HP	LT-05-521 LIFT TABLE 3000 LB 1.83 HP	DO-05-521 SIMPLE DOUBLE LID (PIVOTING) 55 TO 85 GAL DRUMS	DH-05-521 DRUM LIFTER 3000 LB	CR-05-521 DRUM HOIST 3000 LB 2 HP	DH-05-522 DRUM HANDLER TIPPER 55 TO 85 GAL DRUMS 10.5 HP	T-05-522 ABSORBENT DISCHARGE UNIT 15 CU FT, 3000 LB	EM-05-521A, B MANIPULATOR ASSEMBLIES 60 LB 5 HP EA.	ST-05-521A, B SCRT/TIPPING TABLES 3000 LB EA.	SH-05-521 COARSE SHREDDER 300 HP	SH-05-522 FINE SHREDDER 150 HP	CV-05-521 VIBRATING CONVEYOR 3000 LB 2 HP	T-05-521A,B WEIGH HOPPERS 15 CU FT, 1000 LB 3.5 HP EA.	DO-05-524A,B SIMPLE DOUBLE LIDS (SLIDING) 55 GAL DRUMS EA.
AL-05-501 AIRLOCK 55 TO 85 GAL DRUMS	AL-09-101 AIRLOCK 55 GAL NEW DRUMS		RT-05-521 BAND SAW 0.25 HP	RT-05-522 DRUM LID REMOVER 55 TO 85 GAL DRUMS	CY-05-521 DRUM PUSHER 3000 LB	DO-05-522 SLIDING HATCH 55 TO 85 GAL DRUMS	GB-05-521 SHREDDER/REPACK ENCLOSURE STAINLESS STEEL	DO-05-523 SIMPLE DOUBLE LID (PIVOTING) 55 GAL DRUMS	LT-05-522 LIFT TABLE 1000 LB 1.83 HP	AL-05-521 AIRLOCK 55 TO 85 GAL EMPTY DRUMS	FT-05-501 PALLET TRUCK 1000 LB		LT-05-523A,B LIFT TABLES 1000 LB 1.83 HP EA.	DO-05-525A,B PURGED PORTS 1 LITER EA.	



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	A. SHARPE	3/31/92
DRAWN	L. RIVERA	4/2/92
CHECKED	K. VANZANTEN	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

WRAP 2A CONCEPTUAL DESIGN SIZE REDUCTION AND REPACK MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140629	C

SCALE: NONE | DISCIPLINE NO: SR-5 | SHEET 1 OF 2

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	A. SHARPE 7/31/92	R. HENKEL / J. HALLK / R. HENKEL	7/31/92

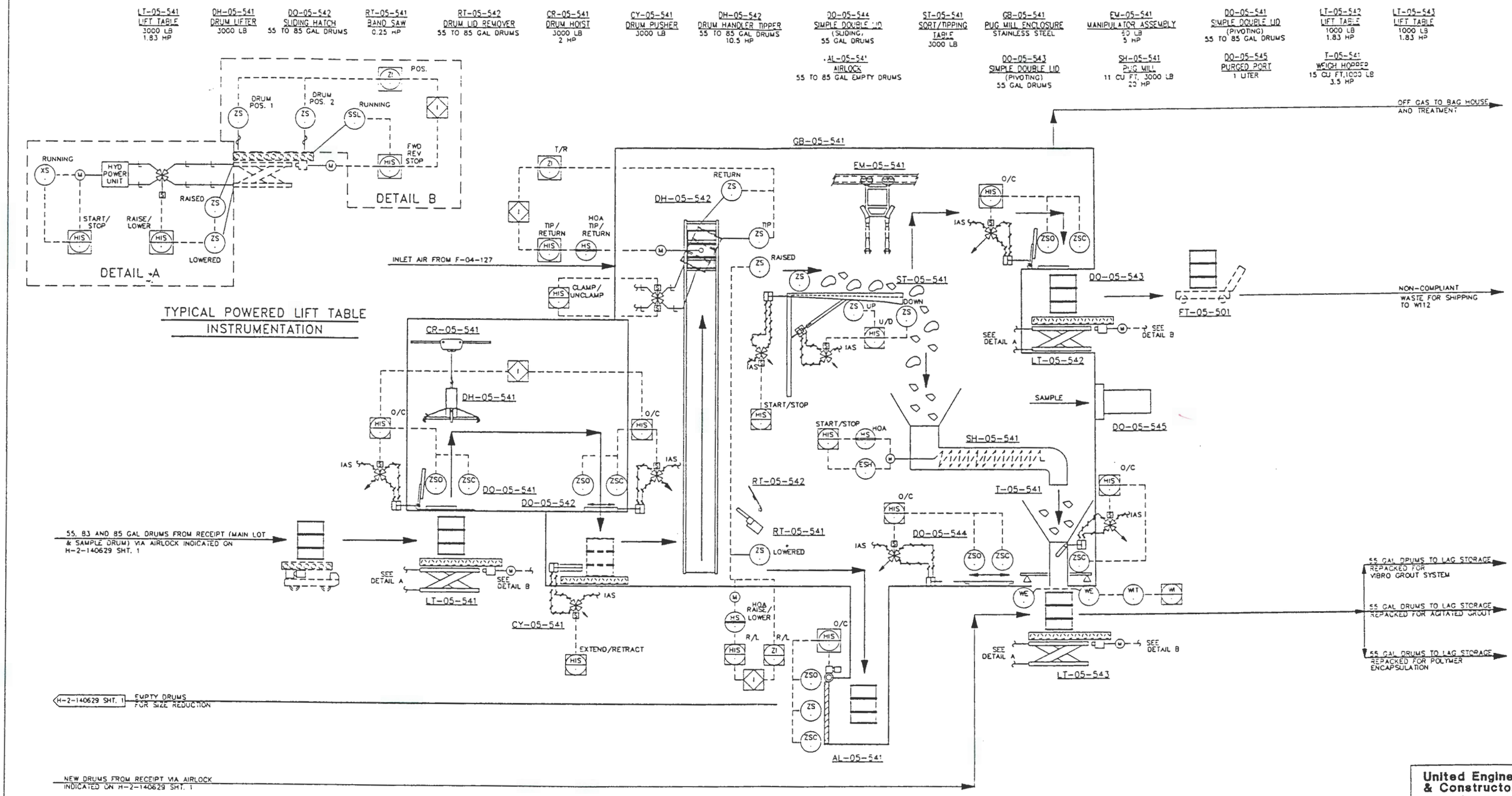
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 9140629A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0028KRD

08/10/92 7:27 CAD NO: 9140629A.DWG COLOR
PLM 8237008 PLT SCALE: 1 = 1 PEN WEIGH



United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	E. SHARPE	3/31/92
DRAWN	P. ABEGG	3/4/92
CHECKED	K. VANZANTEN	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN SIZE REDUCTION & REPACK(PUG MILL) MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140629	C

SCALE: NONE | DISCIPLINE NO: SR-5 | SHEET 2 OF 2

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	S. SHARPE 7/31/92	[illegible]	7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B1406298.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM 3C0280RD

06/10/92 9:41 CAD NO: 1 PC COLOR
LPR 8237.006 PLT SCALE: 1 - 1 PLW WEIGHT

9413227.1496

AL-05-561
AIRLOCK
5'X5'X9' BOXES
22.5 HP

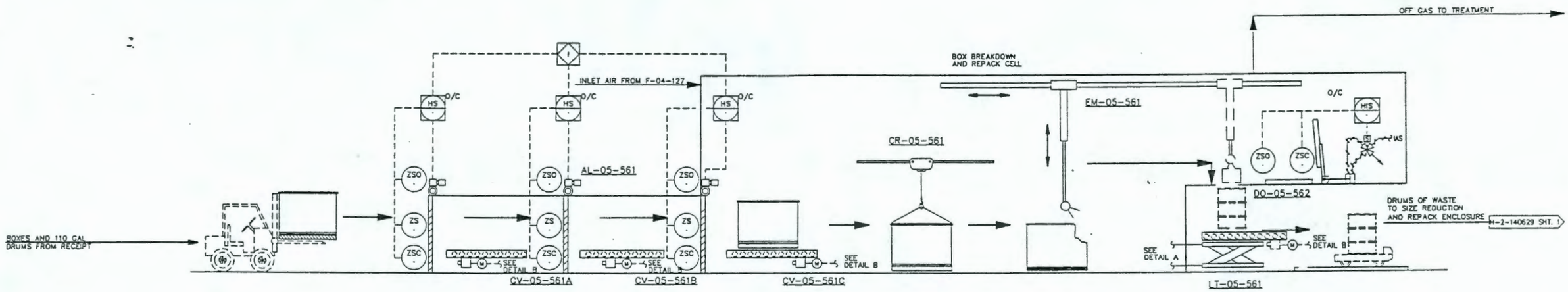
CV-05-561A,B,C
INLET CONVEYORS
8.5 HP EA.

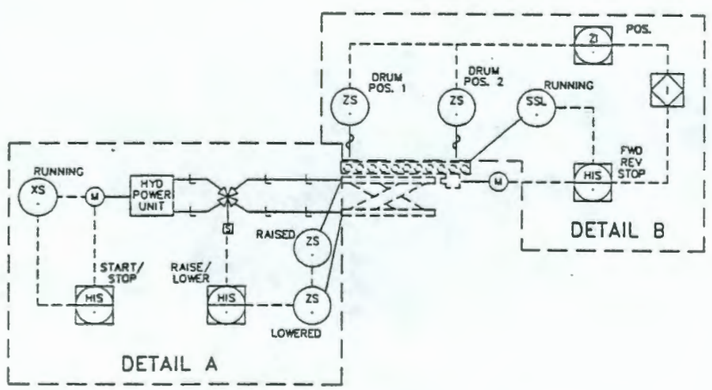
CR-05-561
OVERHEAD CRANE
8 TONS
13 HP

EM-05-561
POWER MANIPULATOR
240 LB AT FULL EXTENSION
14.5 HP

LT-05-561
LIFT TABLE
1000 LB
1.83 HP

DO-05-562
SIMPLE DOUBLE LID
(PIVOTING)
55 GAL DRUM





TYPICAL POWERED LIFT TABLE
INSTRUMENTATION

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	S. SHARPE	3/31/92
DRAWN	L. RIVERA	4/2/92
CHECKED	K.WANZWITCH	5/29/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
SIZE REDUCTION AND REPACK
(BOX BREAKDOWN)
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7004	H-2-140630	C

SCALE: NONE | DISCIPLINE NO: SR-6 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	S. SHARPE 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

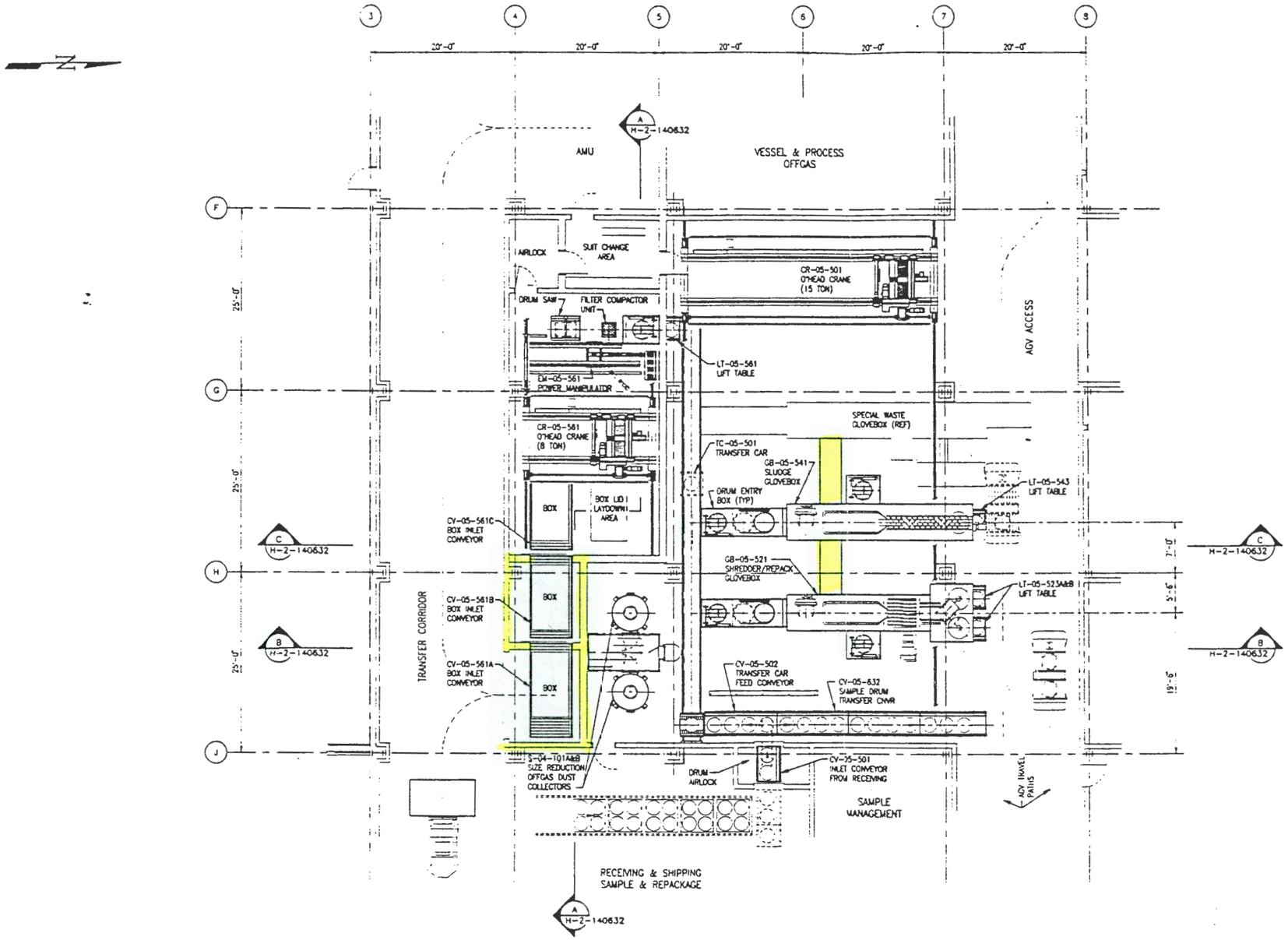
REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS
CADFILE: 8140630A.DWG | CADCODE: 2C:IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM 10022RCRD

9413227.1197



PLAN – SIZE REDUCTION & REPACK

NOM. FIN. FLR. EL. 100'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-6100-CDR-001

	BY	DATE
DESIGNED	SA SHARPE	4-13-92
DRAWN	E WILSON	4-14-92
CHECKED	AJ ZIMDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
SIZE RDCN, REPACK & BOX BRKDOWN
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140631	D

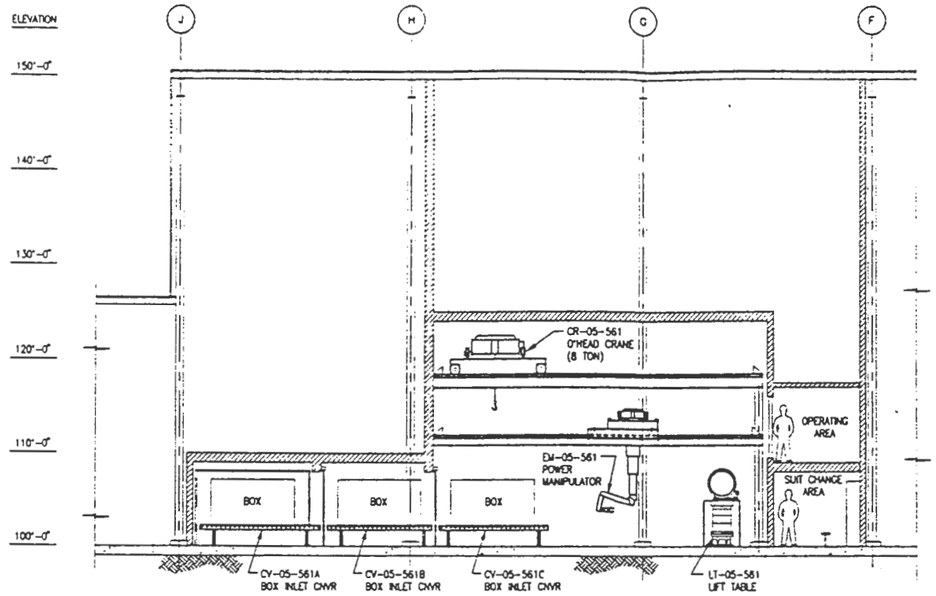
SCALE: 1/8" = 1'-0" | DISCIPLINE NO. SR-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SA SHARPE 7/31/92		

REFERENCE DRAWINGS | REVISIONS

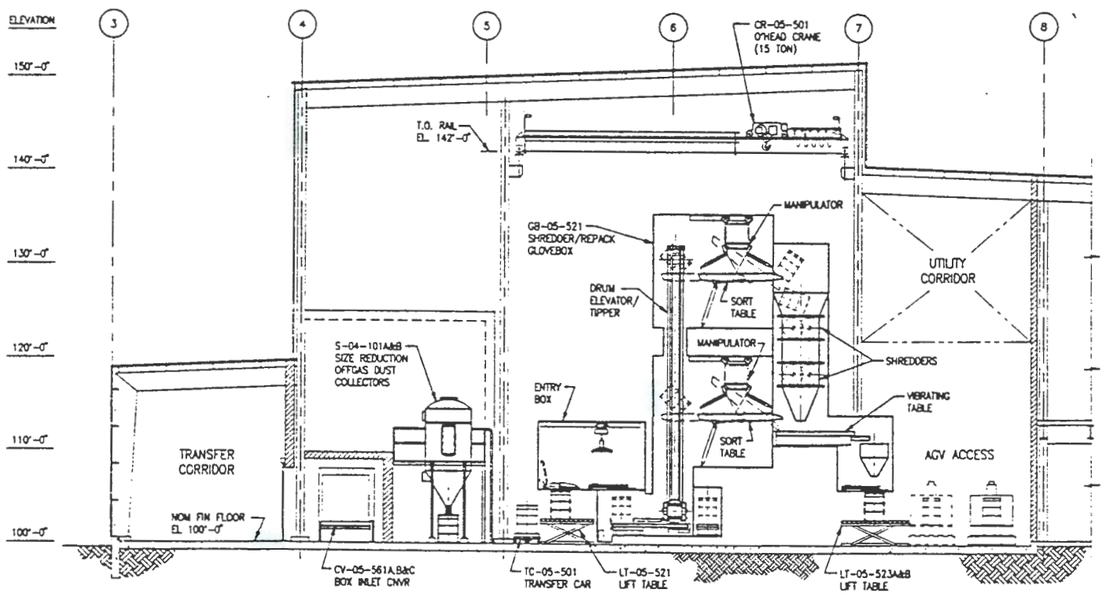
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140631A | CADCODE: 2C:1Bm:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



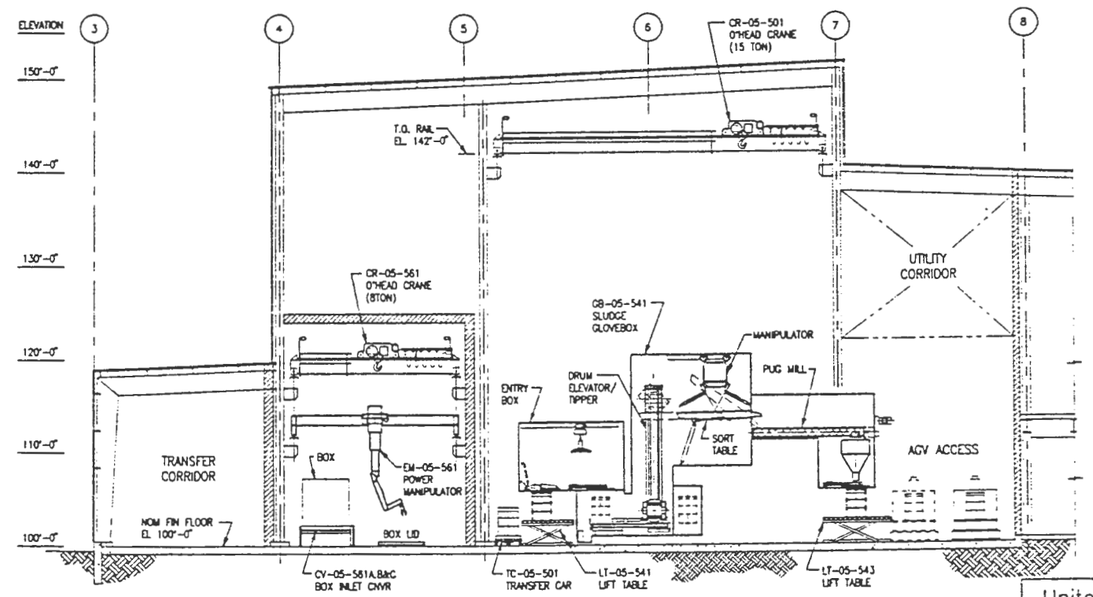
SECTION "A – A"

LOOKING SOUTH (DWG. H-2-140631)



SECTION "B – B"

LOOKING WEST (DWG H-2-140631)



SECTION "C – C"

LOOKING WEST (DWG H-2-140631)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-WI100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	SA SHARPE	6-13-92
DRAWN	HIGHLAND	6-30-92
CHECKED	AJ ZIMDEL	8-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
SIZE RDCN, REPACK & BOX BRKDOWN
EQPT GEN ARRANGEMENT – SECTIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140632	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO SR-2 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	KOM BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SA SHARPE 7/31/92		

REFERENCE DRAWINGS

REVISIONS

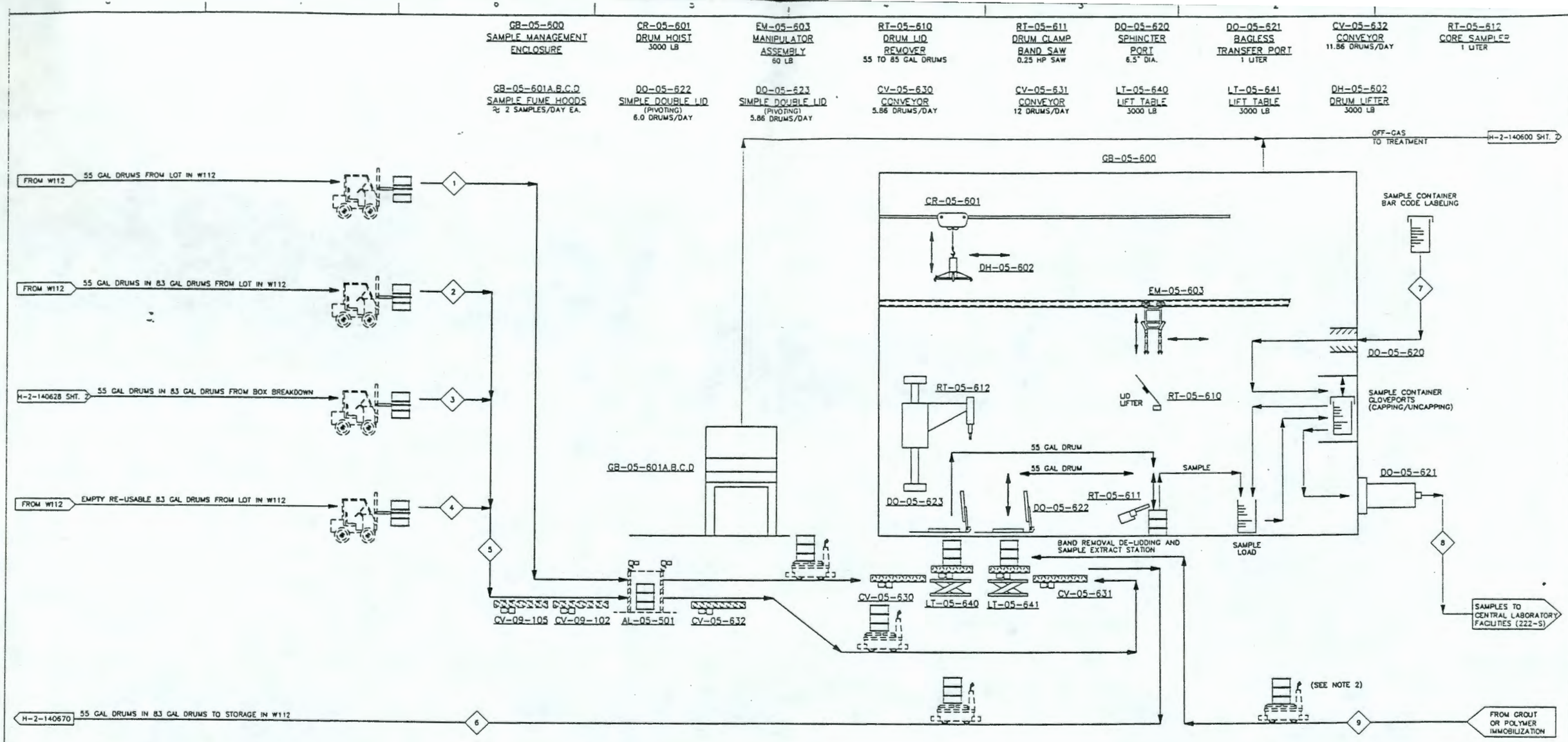
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140632A | CADCODE: 2C:IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM NCD2B2R0

07/31/92 13:25 CAD NO: B140632A.DWG COLOR
LAN 8237.SAB PLT SCALE 1 = 96 PEN WIDTH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15



NOTES:

1. THROUGHPUTS ARE BASED ON 20% OF INCOMING WASTE DRUMS.
2. PROVISION MADE FOR CORE SAMPLING OF WASTE PRODUCT DRUMS.

STREAM NO.	1	2	3	4	5	6	7	8	9
DESCRIPTION	55 GAL DRUMS FROM RECEIPT	83 GAL DRUMS FROM RECEIPT	83 GAL DRUMS FROM BOX BREAKDOWN	EMPTY RE-USABLE 83 GAL DRUMS	TOTAL 83 GAL DRUM RECEIPT	TOTAL 83 GAL DRUM DISPATCH	EMPTY SAMPLE CONTAINERS	FILLED SAMPLE CONTAINERS	WASTE DRUMS FOR CORE SAMPLING
THROUGHPUT (DRUMS/DAY)	5.56	0.01	0.13	5.56	6.00	6.00	-	-	-
SAMPLES/DAY (1 LITER)	-	-	-	-	-	-	6.00	6.00	-

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	V. WHITE 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140633A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	V. WHITE	4/6/92
DRAWN	L. RAMONA	4/8/92
CHECKED	R.VANZANTEN	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

WRAP 2A CONCEPTUAL DESIGN
DRUM SAMPLING
PROCESS FLOW DIAGRAM

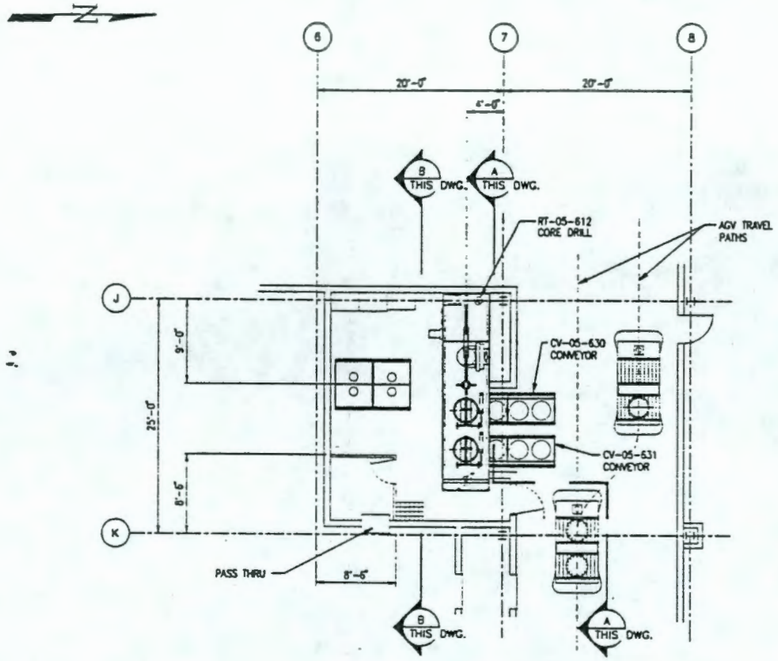
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140633	C

SCALE: NONE | DISCIPLINE NO: SR-4 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

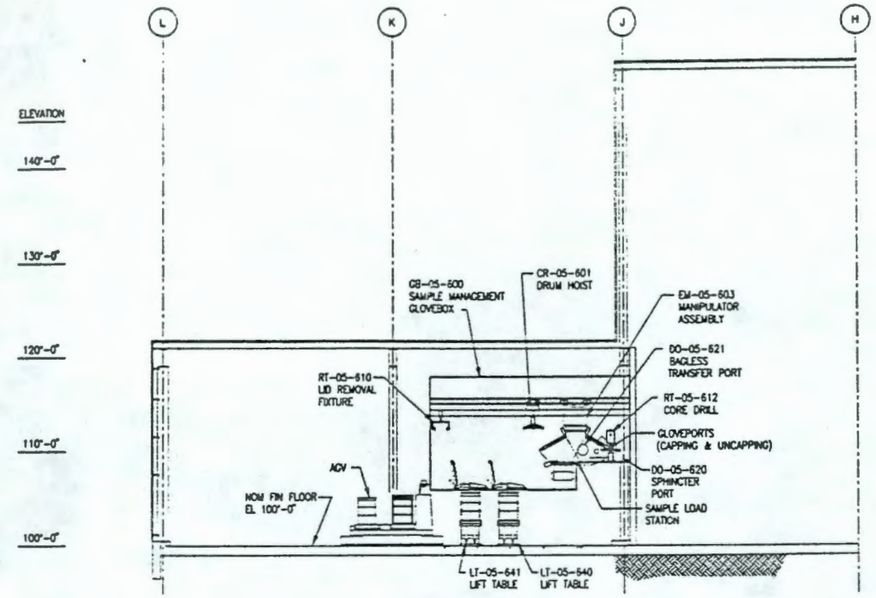
FORM W0028ORD

9413227.1500



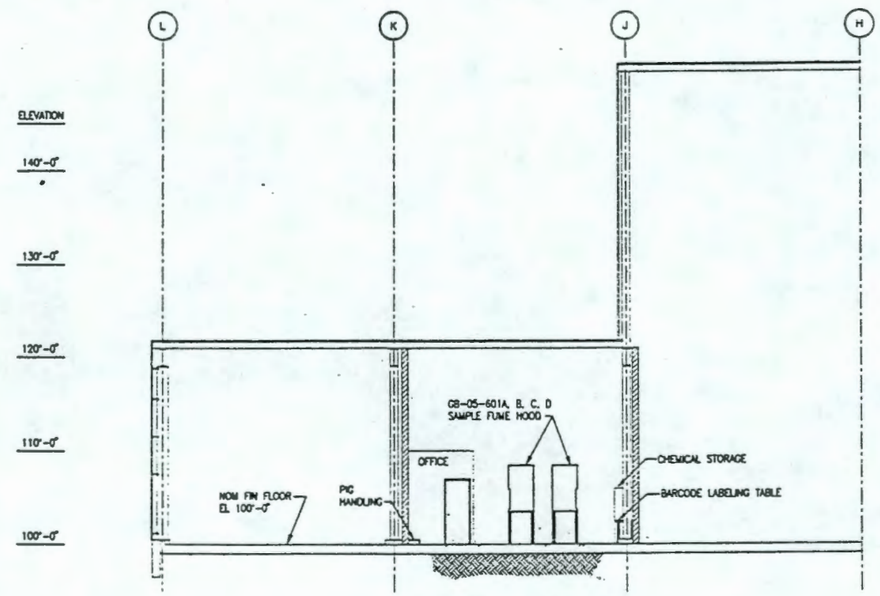
PLAN – SAMPLE MANAGEMENT

NOM. FIN. FLOOR EL. 100'-0"



SECTION "A – A"

LOOKING SOUTH



SECTION "B – B"

LOOKING SOUTH

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	V WHITE	04-08-92
DRAWN	C MOORE	05-13-92
CHECKED	AJ ZINDEL	06-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

WRAP 2A CONCEPTUAL DESIGN
SAMPLE MANAGEMENT
EQUIPMENT GENERAL ARRANGEMENT

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140634	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO. SA-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	V WHITE 7/31/92	[illegible]	7/31/92

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

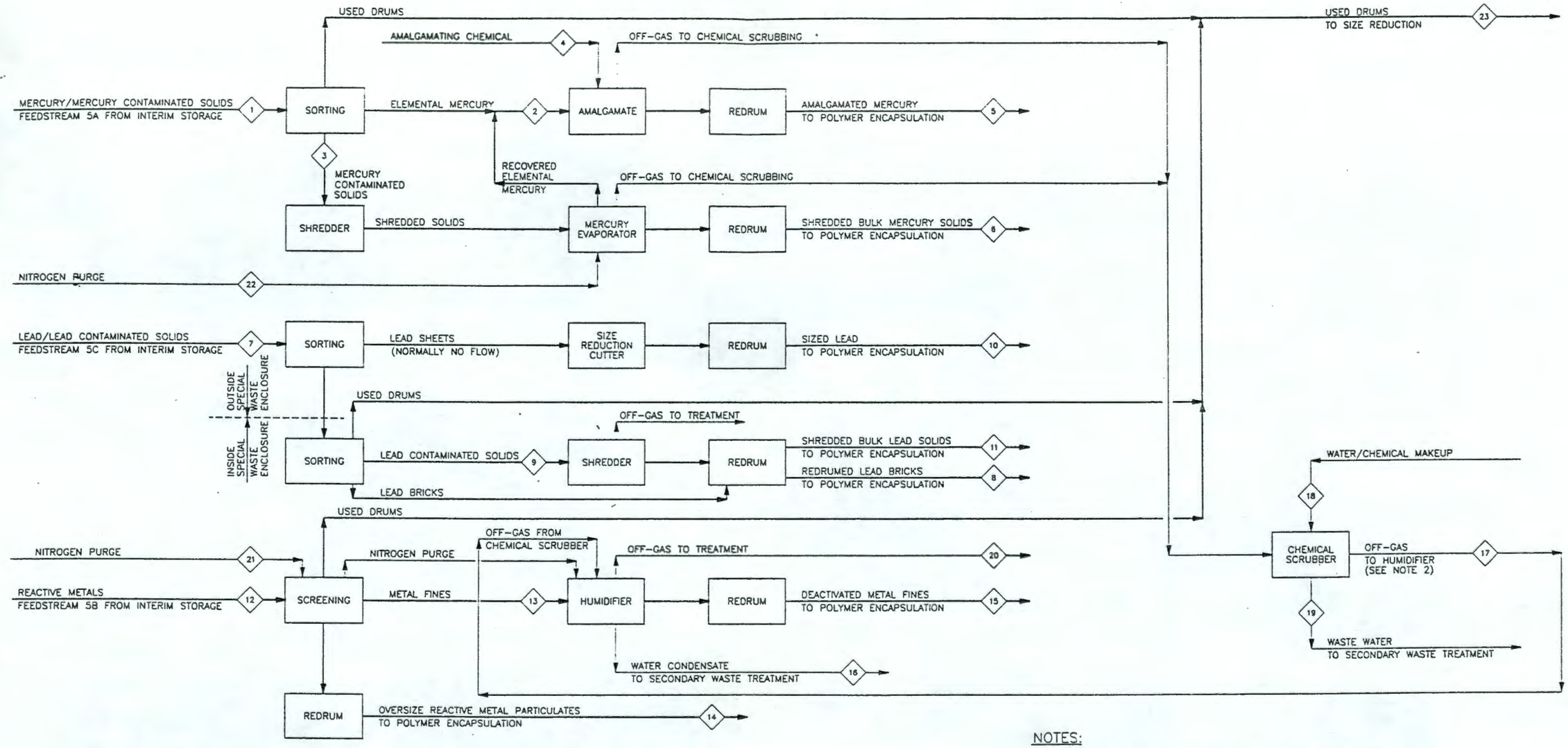
CADFILE: 9140634A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

07/24/92 1239 CAD NO: 9140634A.DWG COLOR 1 2 3 4 5 6 7 8 9 10 11 12 13 14
LPK 6237.008 R1 SCALE 1 = 96 PEN WIDTH 0 2 2 2 1 3 5 1 3 4 2 1 1 2 1

FORM WCD2BORD

9413227.1501



NOTES:

1. AVERAGE OF 0.01 BOXES/DAY ALSO INCLUDED IN FEEDSTREAM 5C
2. OFF-GAS VIA CHEMICAL SCRUBBING ASSUMES 15 AIR CHANGES PER HOUR FOR 2 PROCESS GLOVEBOXES.
3. SIZED LEAD FROM LEAD SHEETS ASSUMED TO BE INTERMITTENT FLOW.

STREAM NO.	1	2	3	4	5	6	7 (NOTE 1)	8	9	10 (NOTE 3)	11	12	13	14	15	16	17	18	19	20	21	22	23 (NOTE 1)
DESCRIPTION	MERCURY WASTE FEEDSTREAM 5A	ELEMENTAL MERCURY	MERCURY CONTAMINATED SOLIDS	AMALGAMATING CHEMICAL	AMALGAMATED MERCURY	BULK MERCURY	LEAD WASTE FEEDSTREAM 5C	LEAD BRICKS	LEAD CONTAMINATED SOLIDS	SIZED LEAD	SHREDDED BULK LEAD	REACTIVE METALS FEEDSTREAM 5B	REACTIVE METAL FINES	OVERSIZE REACTIVE METALS	DEACTIVATED METAL FINES	WATER CONDENSATE	SCRUBBER OFF-GAS TO HUMIDIFIER	WATER/ CHEMICAL MAKEUP	WASTE WATER TO TREATMENT	OFF-GAS TO TREATMENT	NITROGEN PURGE	NITROGEN PURGE	USED DRUMS TO SHRED/ GROUT SYSTEM
THROUGHPUT (DRUMS/DAY)	3.33	–	–	–	–	–	3.46	–	–	–	–	0.17	–	–	–	–	–	–	–	–	–	–	6.96
MASS/DAY (LB/DAY)	737	209	538	523	732	528	3611	3434	177	NNF	177	168	84	84	84	8	1367	413	408	1724	365	54	418
VOLUME/DAY (FT³/DAY)	24.6	0.3	24.0	2.3	1.8	13.2	5.1	4.9	0.3	NNF	0.5	0.8	0.4	0.4	0.4	0.1	19000.0	5.5	6.5	23800.0	4800.0	720.0	–
DENSITY (LB/FT³)	30	849	22	231	408	40	706	708	708	NNF	354	200	200	200	200	62.40	0.07	52.40	62.40	0.07	0.08	0.08	–
CAMPAIGN DURATION	3 YR	3 YR	3 YR	3 YR	3 YR	3 YR	14 YR	14 YR	14 YR	14 YR	14 YR	3 YR	3 YR	3 YR	3 YR	3 YR	–	–	–	–	–	–	–

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R HENKEL	3/12/92
DRAWN	L HICHUMO	3/17/92
CHECKED	B.WAGNITCH	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

WRAP 2A CONCEPTUAL DESIGN
SPECIAL WASTE TREATMENT
BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140648	E

SCALE: NONE | DISCIPLINE NO: GP-7 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	R HENKEL 7/31/92	7/31/92 R HENKEL	7/31/92

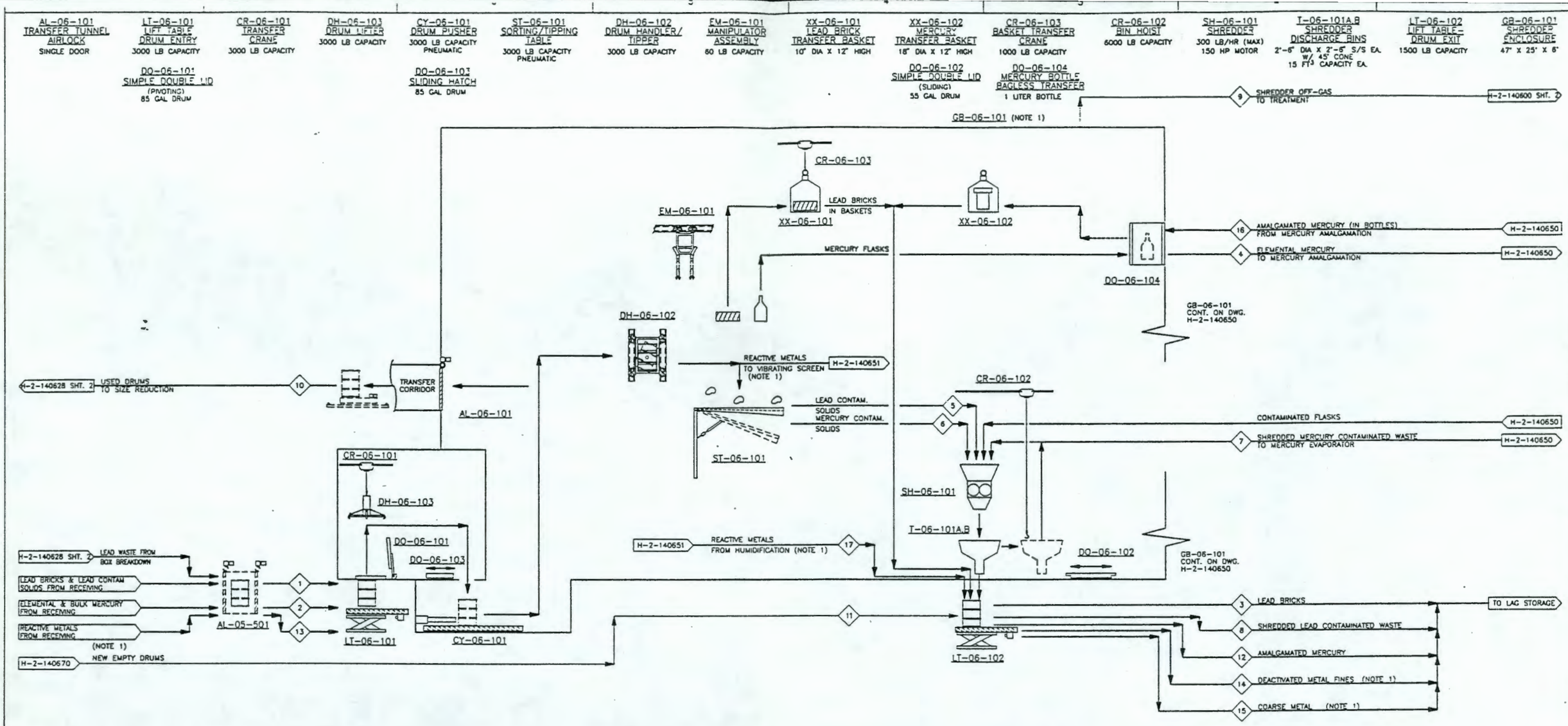
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2AGP7.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM 10000BORD

9413227.1502



DESCRIPTION		1 LEAD BRICKS & CONTAM WASTE	2 ELEM MERC & MERCURY CONTAM WASTE	3 LEAD BRICKS	4 ELEM MERCURY	5 LEAD CONTAM SOLIDS	6 MERCURY CONTAM SOLIDS	7 SHREDDED MERCURY CONTAM SOLIDS	8 SHREDDED LEAD CONTAM WASTE	9 SHREDDER OFF-GAS TO TREATMENT	10 USED DRUMS	11 NEW EMPTY DRUMS	12 AMALGAMATED MERCURY (REDRUMMED)	13 REACTIVE METALS	14 DEACTIVATED METAL FINES	15 COARSE METALS	16 AMALGAMATED MERCURY	17 REACTIVE METALS
		(NOTE 2)												(NOTE 1)	(NOTE 1)	(NOTE 1)		
WASTE/TREATED WASTE																		
DRUMS/DAY		3.48	3.33	4.91	–	–	–	–	0.25	–	6.98	5.51	1.41	0.17	0.20	0.15	–	–
VOLUME/DAY	(FT3/DAY)	5.1	24.6	4.9	0.3	0.3	24.3	13.3	0.5	–	–	–	1.8	0.8	0.4	0.4	1.8	0.8
DENSITY	(LB/FT3)	708	30	708	849	708	22	40	354	–	–	–	408	200	200	200	408	200
MASS/DAY	(LB/DAY)	3611	737	3434	204	177	533	533	177	–	–	–	732	168	84	84	732	168
VOLUME/DRUM	(FT3/DRUM)	1.47	7.38	–	–	–	–	–	1.98	–	–	–	1.27	4.94	2.17	2.86	1.27	4.94
MASS/DRUM	(LB/DRUM)	1095	221	–	–	–	–	–	700	–	–	–	518	988	434	572	518	988
GAS FLOW	(FT3/MIN)	–	–	–	–	–	–	–	–	1200	–	–	–	–	–	–	–	–

NOTES:

1. REACTIVE METALS PROCESSING EQUIPMENT TO BE INSTALLED IN SHREDDER ENCLOSURE (GB-06-101) TO ALLOW CAMPAIGNING OF REACTIVE METALS, IF REQUIRED. LEAD AND/OR MERCURY PROCESSING EQUIPMENT WILL BE REMOVED AS REQUIRED TO ALLOW SPACE.
2. STREAM 1 CONTAINS 0.1 DRUM/DAY OF LEAD WASTE FROM BOX BREAKDOWN.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R HENKEL	4/02/92
DRAWN	L. RIVERA	4/03/92
CHECKED	K.WARZANTICH	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN SPECIAL WASTE-SIZE REDUCTION PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140649	D

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

SCALE: NONE | DISCIPLINE NO: SP-4 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	S.M. Hawley 7/31/92	J. Henkel R. HENKEL 7/31/92

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

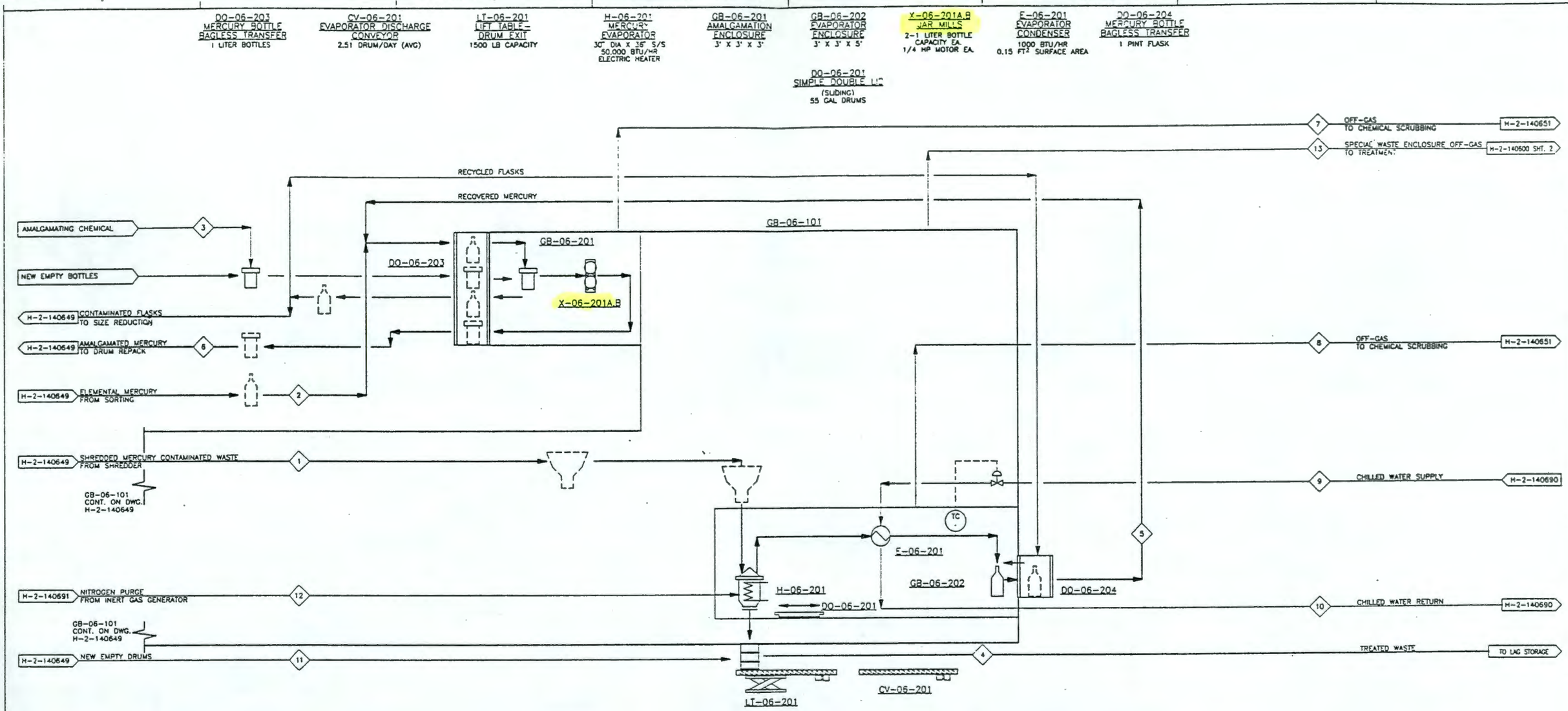
CADFILE: WR2ASP4.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM M0020R0R0

9413227.1503

07/24/92 9:21 CAD NO: D1G0E9A.DWG COLOR
21 LPW 023/004 R/S SCALE: 1 = 1 PEN WIDTH



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13
DESCRIPTION	SHREDDED MERCURY CONTAM WASTE	SORTED ELEMENTAL MERCURY	AMALGAM-ATING CHEMICAL	TREATED WASTE	RECOVERED MERCURY	AMALGAM-ATED MERCURY	AMALGAM-ATING OFF-GAS	EVAPORATOR OFF-GAS	CHILLED WATER SUPPLY	CHILLED WATER RETURN	NEW EMPTY DRUMS	NITROGEN PURGE	OFF-GAS TO TREATMENT
WASTE/TREATED WASTE													
DRUMS/DAY	–	–	–	2.51	–	–	–	–	–	–	3.92	–	–
VOLUME/DAY (FT³/DAY)	13.3	0.3	2.3	13.2	0.01	1.8	–	–	–	–	–	–	–
DENSITY (LB/FT³)	40	849	231	40	849	408	–	–	–	–	–	–	–
MASS/DAY (LB/DAY)	533	204	523	528	5	732	–	–	–	–	–	–	–
VOLUME/DRUM (FT³/DRUM)	–	–	–	5.3	–	1.3	–	–	–	–	–	–	–
MASS/DRUM (LB/DRUM)	–	–	–	210	–	518	–	–	–	–	–	–	–
GAS FLOW (LB/DAY)	–	–	–	–	–	–	681	681	–	–	–	54	–
GAS FLOW (FT³/MIN)	–	–	–	–	–	–	7	7	–	–	–	0.5	1200
LIQUID FLOW (LB/DAY)	–	–	–	–	–	–	–	–	100	100	–	–	–
LIQUID FLOW (GAL/DAY)	–	–	–	–	–	–	–	–	12	12	–	–	–

NOTES:

1. MERCURY EVAPORATOR OPERATION BASED UPON 1 CYCLE PER 8 HR SHIFT.
2. OFF-GAS VENTILATION BASED UPON 24 HR/DAY OPERATION.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R. HENKEL	4/02/92
DRAWN	L. RIVERS	4/03/92
CHECKED	R.L.WHIZANTEN	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN MERCURY PRETREATMENT PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140650	D

SCALE: NONE | DISCIPLINE NO: SP-5 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	7/31/92	R. HENKEL 7/31/92

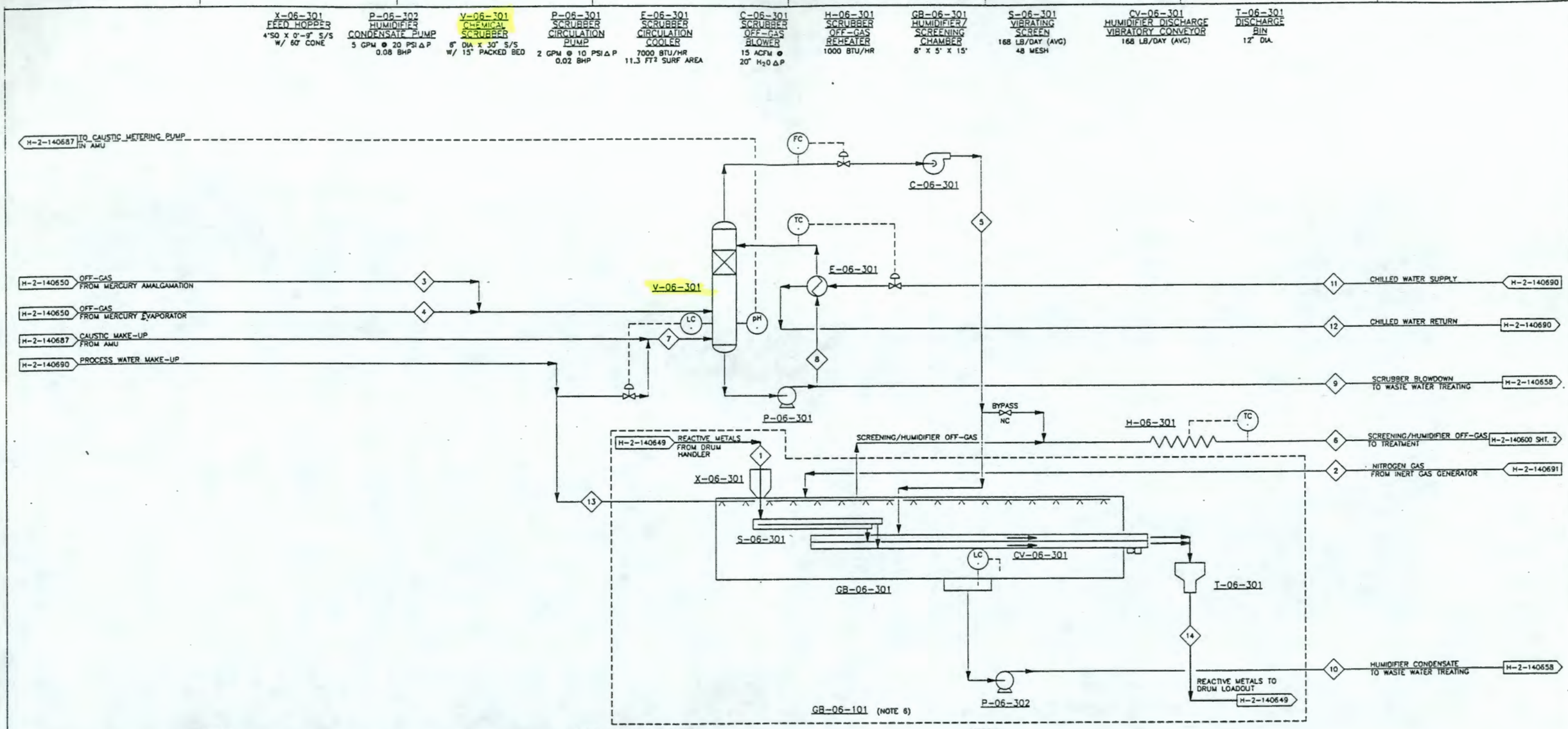
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2ASP5.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0230R0

9413227.1504



STREAM NO.	(NOTE 1) 1	2	3	4	5	6	7	8	9	10	(NOTE 2) 11	(NOTE 2) 12	(NOTE 5) 13	14
DESCRIPTION	REACTIVE METALS	NITROGEN GAS MAKE-UP	MERCURY AMALGAMATION OFF-GAS	MERCURY EVAPORATOR OFF-GAS	SCRUBBER OFF-GAS TO HUMIDIFIER	OFF-GAS TO TREATING	SCRUBBER RECIRC MAKE-UP	SCRUBBER LIQUID RECIRC	SCRUBBER BLOWDOWN	HUMIDIFIER CONDENSATE	CHILLED WATER SUPPLY	CHILLED WATER RETURN	WATER SPRAY	DEACTIVATED METALS
WASTE/TREATED WASTE														
DRUMS/DAY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VOLUME/DAY (FT³/DAY)	0.8	-	-	-	-	-	-	-	-	-	-	-	-	0.8
DENSITY (LB/FT³)	200	-	-	-	-	-	-	-	-	-	-	-	-	200
MASS/DAY (LB/DAY)	168	-	-	-	-	-	-	-	-	-	-	-	-	168
VOLUME/DRUM (FT³/DRUM)	4.9	-	-	-	-	-	-	-	-	-	-	-	-	4.9
MASS/DRUM (LB/DRUM)	988	-	-	-	-	-	-	-	-	-	-	-	-	988
GAS FLOW (LB/DAY)	-	365	681	581	1367	1724	-	-	-	-	NNF	NNF	-	-
GAS FLOW (FT³/MIN)	-	3.3	7	7	13	17	-	-	-	-	NNF	NNF	-	-
LIQUID FLOW (LB/DAY)	-	-	-	-	-	-	413	13,611	408	8	-	-	NNF	-
LIQUID FLOW (GAL/DAY)	-	-	-	-	-	-	50	1634	49	1	-	-	NNF	-

NOTES:

1. NITROGEN MAKE-UP TO SCREENING ROOM BASED ON 1 CHANGE/HR, 24 HR/DAY.
2. CHILLED WATER REQUIRED ONLY IF OFF-GAS TEMPERATURE FROM RETORTING VENT HOOD IS VERY HIGH.
3. OFF-GAS SCRUBBING & HUMIDIFIER OPERATION BASED ON 24 HR/DAY.
4. SATURATED AIR FEED TO HUMIDIFIER EQUAL TO 2 CHANGES/HR.
5. WATER SPRAY FOR HEAT REMOVAL IN SCREENING OR HUMIDIFICATION CHAMBER.
6. REACTIVE METALS PROCESSING EQUIPMENT TO BE INSTALLED IN SHREDDER ENCLOSURE (GB-06-101) TO ALLOW CAMPAIGNING OF REACTIVE METALS, IF REQUIRED. LEAD AND/OR MERCURY PROCESSING EQUIPMENT WILL BE REMOVED AS REQUIRED TO ALLOW SPACE.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R HENKEL	4/02/92
DRAWN	L. RIVERA	4/03/92
CHECKED	H.WANGANTEN	5/29/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

WRAP 2A CONCEPTUAL DESIGN
REACTIVE METALS PRETREATMENT
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140651	D

SCALE: NONE | DISCIPLINE NO: SP-6 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	R. HENKEL 7/31/92	7/31/92 R. HENKEL	7/31/92

REFERENCE DRAWINGS | REVISIONS

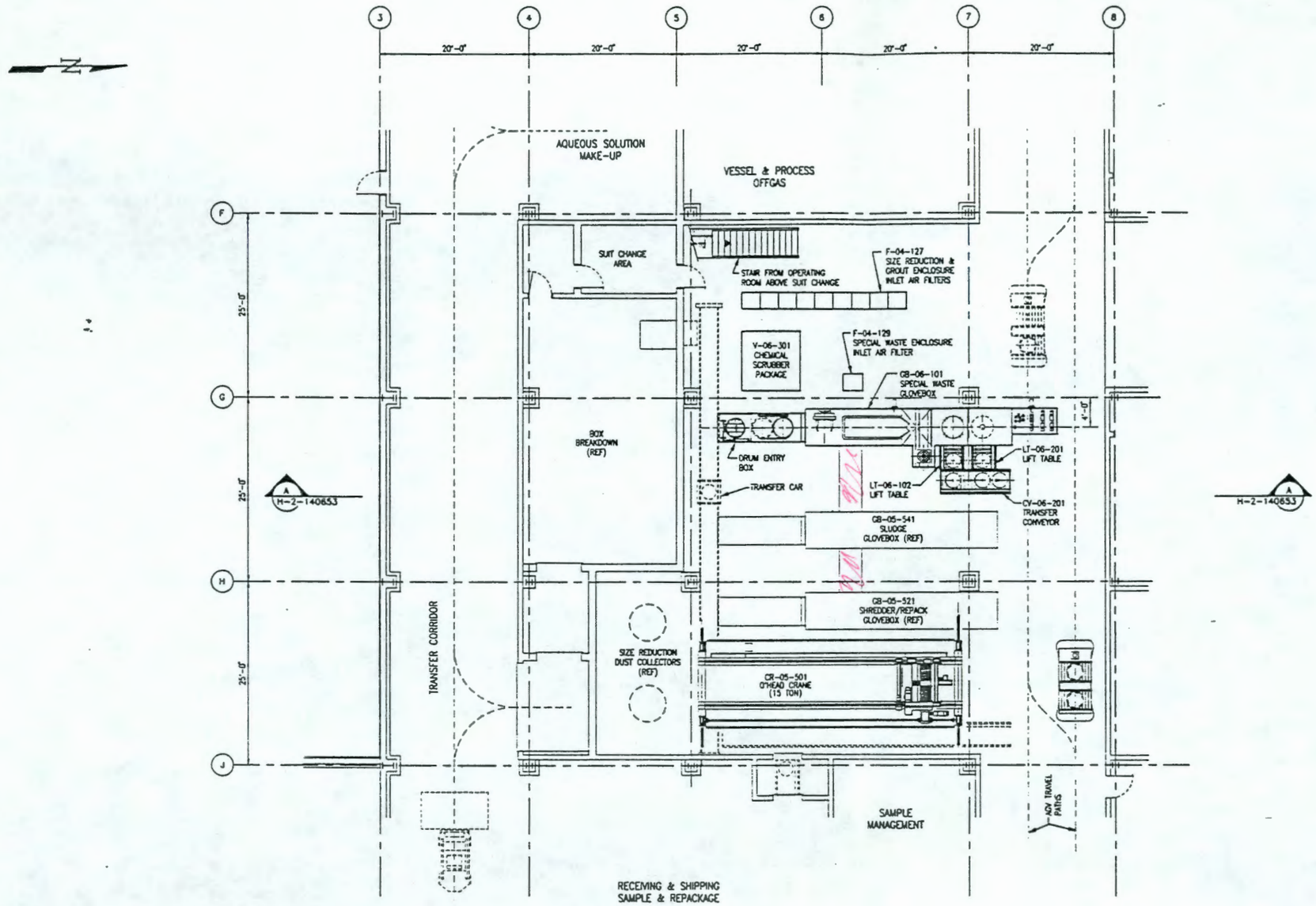
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2ASP6.DWG | CADCODE: 2C:IBM:ACD2:11:NN

FORM MOD2BORD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1505

09/10/93 7:44 CAD NO: B1M05JADWG CO OB
LPN 823.004 FIX SCALE: 1 = 1 FIX USER: 8888888888888888



PLAN – SPECIAL WASTE

NOM. FIN. FLR. EL. 100'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	AJ ZINDEL	4-03-92
DRAWN	HIGHLAND	4-05-92
CHECKED	AJ ZINDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
SPECIAL WASTE
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140652	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: SP-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	J. DAVIS 7/31/92	[illegible]	[illegible] 7/31/92

REVISIONS

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

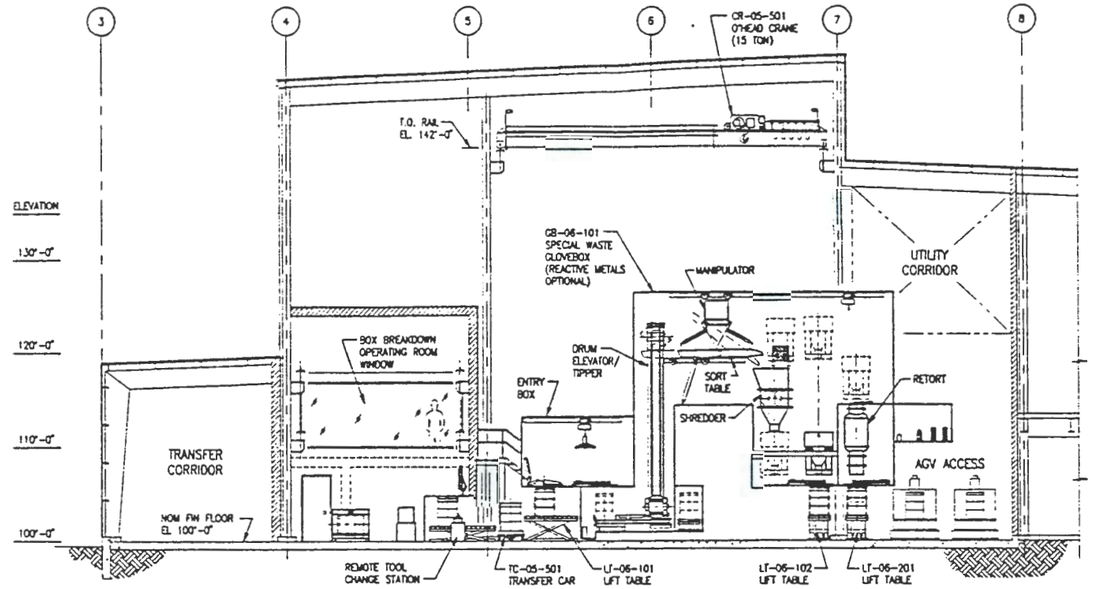
CADFILE: 8140652A | CADCODE: 2C:IBM:ACD2:11:NN

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

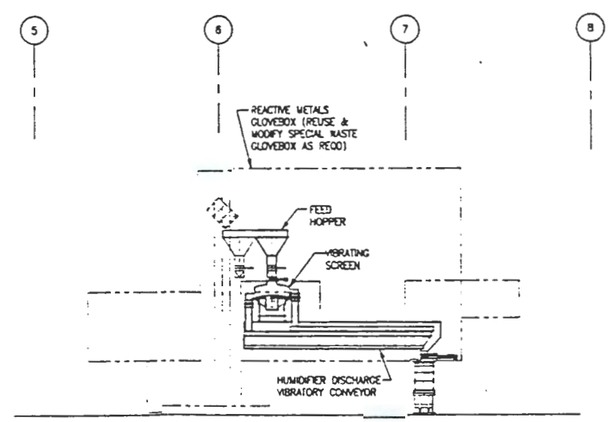
FORM MCD2BORD

9413227.1506



SECTION "A – A"

LOOKING WEST (DWG H-2-140653)



DETAIL A

PROPOSED REACTIVE METALS EQUIPMENT ARRANGEMENT

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	JB JAMES 7/31/92		7/31/92

REFERENCE DRAWINGS

REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 9140653A | CADCODE: 2C:IBM:ACD2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	N ZNDEL	04-03-92
DRAWN	HOHLAND	04-10-92
CHECKED	N ZNDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
SPECIAL WASTE
EQPT GEN ARRANGEMENT – SECTIONS

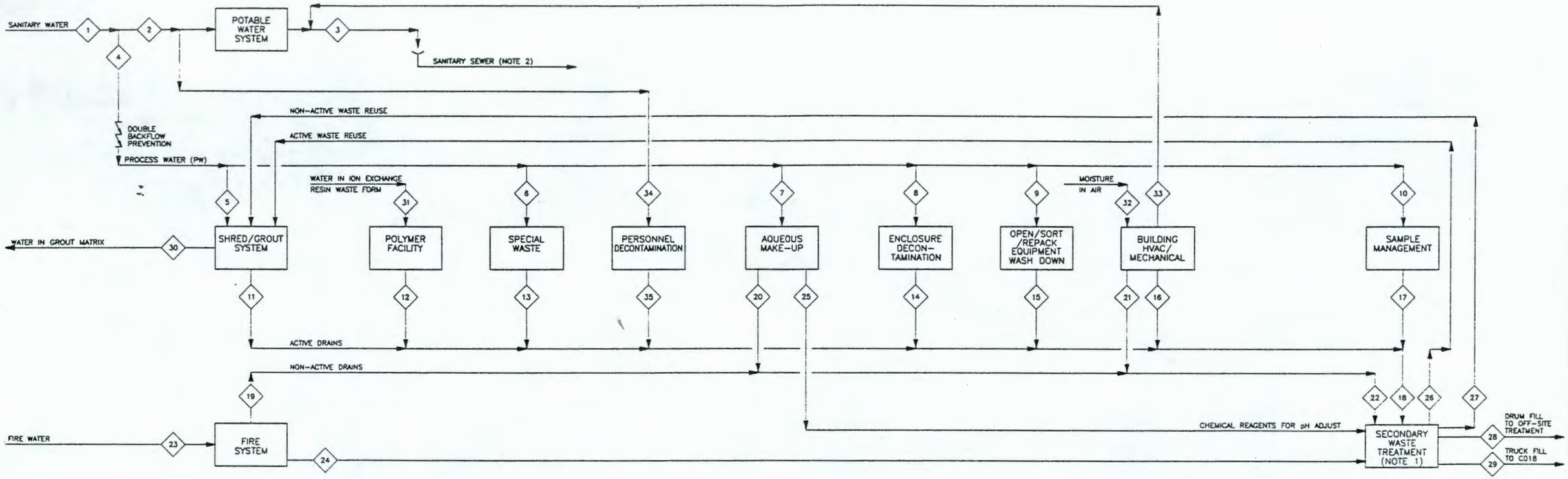
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140653	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: SP-2 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W00280RD

9413227.1507



NOTES:

1. RMW AND HAZARDOUS LIQUID WASTE WILL BE COLLECTED AND TREATED IN SEPARATE SYSTEMS TO PREVENT CROSS CONTAMINATION.
2. DISCHARGES TO SANITARY SEWER FROM CHANGE ROOMS WILL BE MONITORED.
3. ALL FLOWRATES ARE ANNUAL AVERAGES.

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DESCRIPTION	SANITARY WATER TOTAL	POTABLE WATER	SANITARY SEWER	PROCESS WTR (PW) TOTAL	PW GROUT FACILITY	PW SPECIAL WASTE	PW AQUEOUS MAKE-UP	PW ENCLOSURE DECON	PW O/S/R EQUIPMENT WASH	PW SAMPLE MGMT	GROUT FACILITY ACTIVE WASTE	RESIN WASTE WATER	SCRUBBER BLOWDOWN & HUMID. COND.	SPENT DECON.	O/S/R EQUIPMENT WASH ACTIVE	BLDG HVAC ACTIVE	SAMPLE MGMT ACTIVE WASTE
AVG FLOW/DAY (GPD)	2297.2	2100.0	2124.0	197.2	100.2	50.0	2.0	6.6	13.4	25.0	NNF	65.0	50.0	5.6	13.4	NNF	25.0

STREAM NO.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
DESCRIPTION	ACTIVE WASTE TOTAL	FIRE WATER NON-ACTIVE	AQUEOUS MAKE-UP SYSTEM FLUSH	COMPRESS. COND.	NON-ACTIVE WASTE TOTAL	FIRE WATER SUPPLY	FIRE WATER ACTIVE	AQUEOUS REAGENTS TO S.C. TREAT	LIQUID WASTE REUSE	NON-ACTIVE WASTE REUSE	NON-ACTIVE WASTE TO DRUM FILL	ACTIVE WASTE TO C018	WATER IN GROUT MATRIX	WATER WITH RESIN	MOISTURE IN AIR	BLDG HVAC CLEAN	POTABLE WATER TO PERSONNEL DECON	ACTIVE WATER FROM PERSONNEL DECON
AVG FLOW/DAY (GPD)	160.0	NNF	1.0	4.0	5.0	NNF	NNF	1.0	161.0	5.0	NNF	NNF	266.2	65.0	28.0	24.0	NNF	NNF

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	T. SAYERS 7/31/92	R. HENKEL 7/31/92	L. HOLT R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2ASC3.DWG | CADCODE: 2C:IBM: ACD2: 11: NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	T SAYERS	3/19/92
DRAWN	L. RHODA	3/20/92
CHECKED	K.WAGNER	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

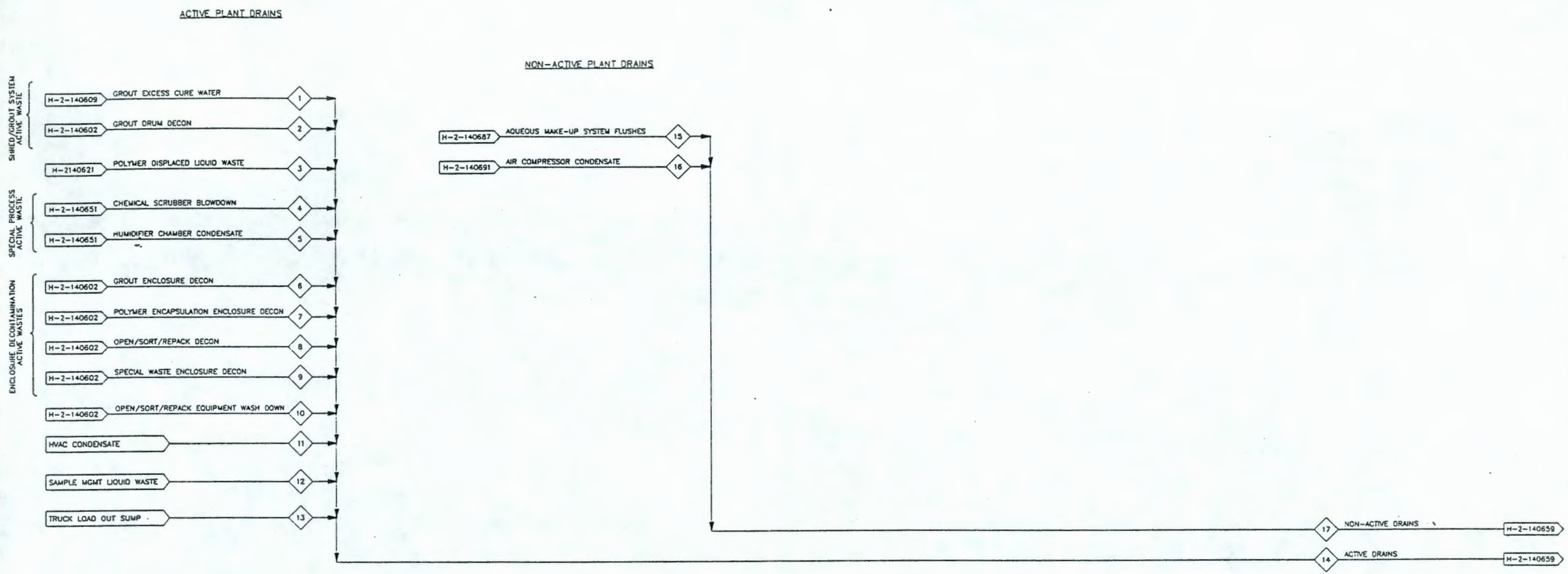
WRAP 2A CONCEPTUAL DESIGN OVERALL PLANT WATER BALANCE BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140657	E

SCALE NONE | DISCIPLINE NO: SC-3 | SHEET 1 OF 1

9413227.1508

9413227.1509



NOTE:

1. PROCESS AREA FLOORS ARE SLOPED TO SUMPS WHERE PORTABLE SUMP PUMPS ARE USED TO TRANSFER ANY COLLECTED LIQUID INTO DRUMS.

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DESCRIPTION	GROUT EXCESS CURE WATER	GROUT DRUM DECON	POLYMER DISPLACED LIQUID WASTE	CHEMICAL SCRUBBER BLOWDOWN	HUMIDIFIER CHAMBER CONDENSATE	GROUT ENCLOSURE DECON	POLYMER ENCAPSUL. ENCLOSURE DECON	OPEN/ SORT/ REPACK DECON	SPECIAL WASTE ENCLOSURE DECON	EQUIPMENT WASH DOWN	HVAC COND	SAMPLE MANAGEMENT LIQUID WASTE	TRUCK LOAD OUT SUMP	ACTIVE LIQUID WASTE TOTAL	AQUEOUS MAKE-UP SYSTEM FLUSH	AIR COMPRESSOR CONDENSATE	NON-ACTIVE LIQUID WASTE TOTAL
AVG FLOW/DAY (GPD)	NNF	NNF	55.0	49.0	1.0	3.5	1.5	NNF	1.6	13.4	NNF	25.0	NNF	160.0	1.0	4.0	5.0

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	T. SAYERS 7/31/92	R. HENKEL	7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST — NEXT USED ON: — CADFILE: WR2ASC4.DWG — CADCODE: 2C:IBM:ACD2:11:NN

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	T. SAYERS	3/30/92
DRAWN	L. RHODA	3/24/92
CHECKED	R. HAZLWOOD	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

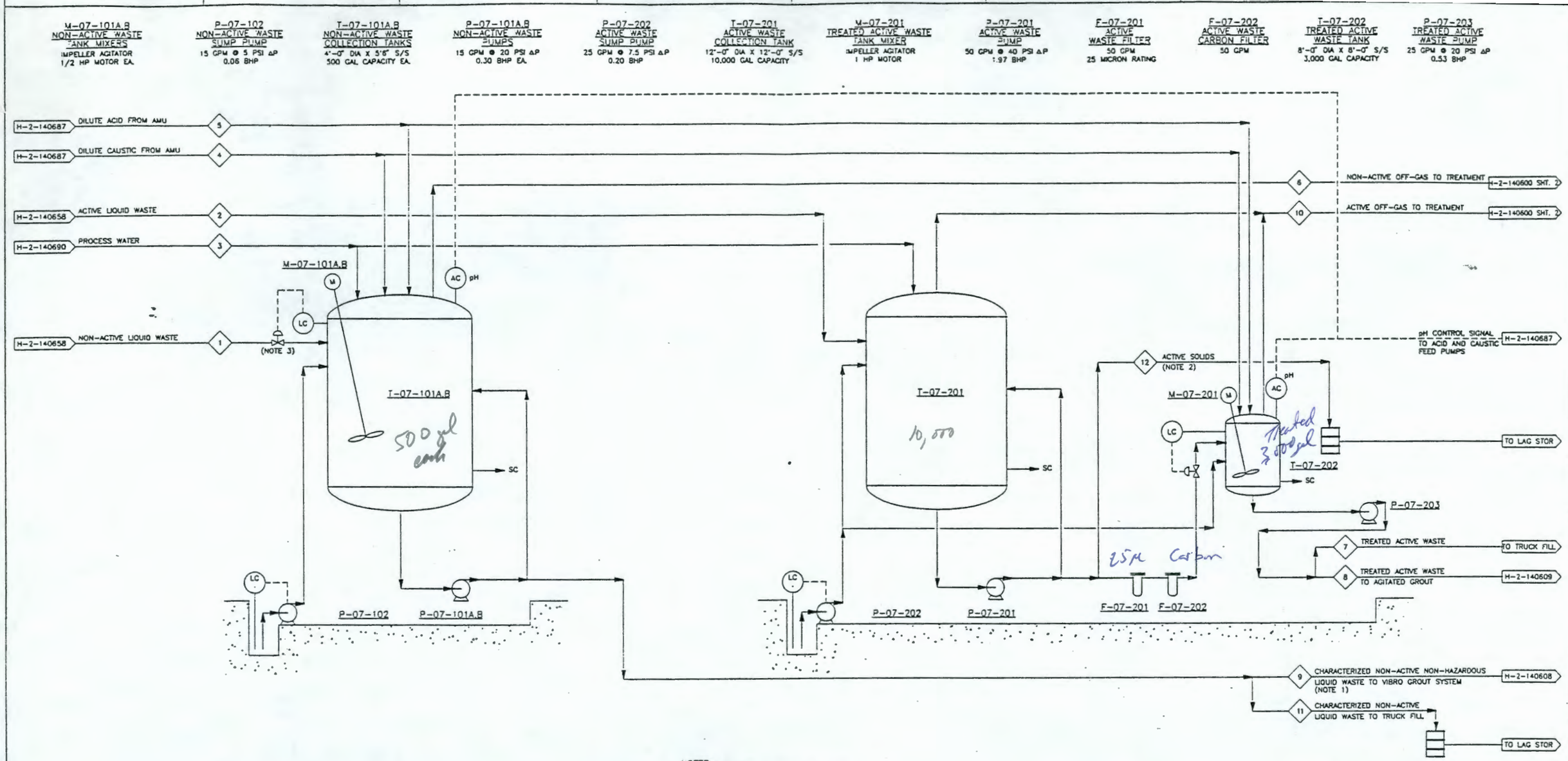
WRAP 2A CONCEPTUAL DESIGN
ACTIVE & NON-ACTIVE PLANT DRAINS
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140658	D

SCALE: NONE — DISCIPLINE NO. SC-4 — SHEET 1 OF 1

FORM W0025R0

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



NOTES:

1. WATER WHICH HAS BEEN SAMPLED AND CHARACTERIZED AS NON-HAZARDOUS AND NON-ACTIVE WILL BE RECYCLED TO THE VIBRO GROUT FACILITY.
2. LIQUID WASTE WITH A HIGH SOLIDS CONTENT WILL BE SLURRIED TO DRUMS.
3. HIGH LEVEL INDICATION IN ONE TANK DIVERTS THE FLOW TO THE ALTERNATE TANK FOR OVERFLOW PROTECTION.
4. INSTRUMENTATION FOR LOCAL AND REMOTE DETECTION AND ALARMS FOR LIQUID LEVEL, LEAKS, TEMPERATURE AND PRESSURE SHALL BE PROVIDED.

STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12
DESCRIPTION	NON-ACTIVE LIQUID WASTE	ACTIVE LIQUID WASTE	PROCESS WATER	DILUTE CAUSTIC	DILUTE ACID	NON-ACTIVE OFF-GAS TO TREAT.	TREATED ACTIVE WASTE TO TRUCK FILL	TREATED ACTIVE WASTE TO GROUT	CHARACTERIZED NON-ACTIVE WASTE TO VIBRO GROUT SYSTEM	ACTIVE OFF-GAS TO TREAT.	NON-ACTIVE WASTE TO DRUM FILL	ACTIVE SOLIDS TO DRUM FILL
ACTIVE LIQUID (GPD)	-	160	-	-	-	-	NNF	161	-	-	-	NNF
NON-ACTIVE LIQUID (GPD)	5	-	-	0.5	0.5	-	-	-	5	-	NNF	-
SUSPENDED SOLIDS	TRACE	TRACE	-	-	-	-	-	-	-	-	-	-
TOTAL ORGANICS	TRACE	TRACE	-	-	-	-	-	-	-	-	-	-
PROCESS WATER (GPD)	-	-	NNF	-	-	-	-	-	-	-	-	-
OFF-GAS (ACFM)	-	-	-	-	-	10	-	-	-	170	-	-

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	T.SAYERS	3/23/92
DRAWN	L.RMORA	3/25/92
CHECKED	R.VANZANTEN	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR / DATE		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
ACTIVE & NON-ACTIVE LIQ. WST SYS
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140659	D

SCALE: NONE | DISCIPLINE NO: SC-5 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	T.SAYERS 7/31/92	R. HENKEL 7/31/92	R. HENKEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

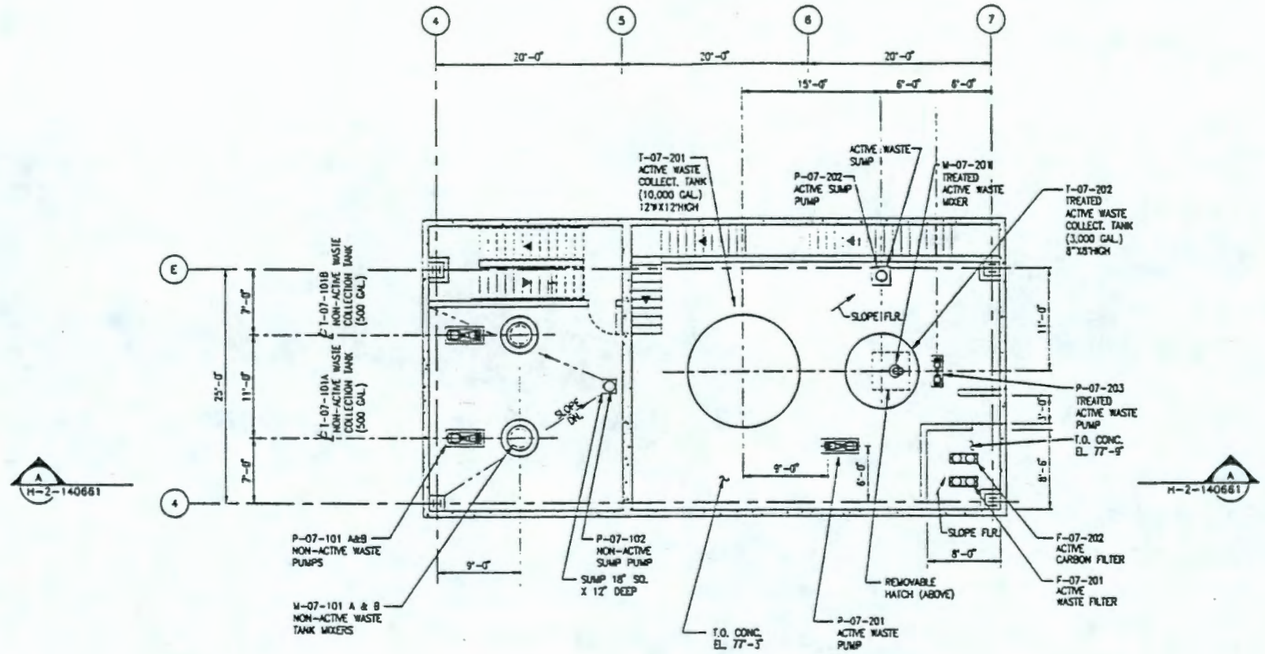
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2ASCS.DWG | CADCODE: 2C:IBM: ACD2:11:NN

FORM W0028DRD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1510

9413227.1511



PLAN – SECONDARY WASTE COLLECTION

NOM. FIN. FLR. EL. 77'-3"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-#100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	GB DAMES	04-03-92
DRAWN	SCHLOESSLER	04-08-92
CHECKED	AJ ZADEL	06-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
SECONDARY WASTE COLLECTION
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	2502	H-2-140660	D

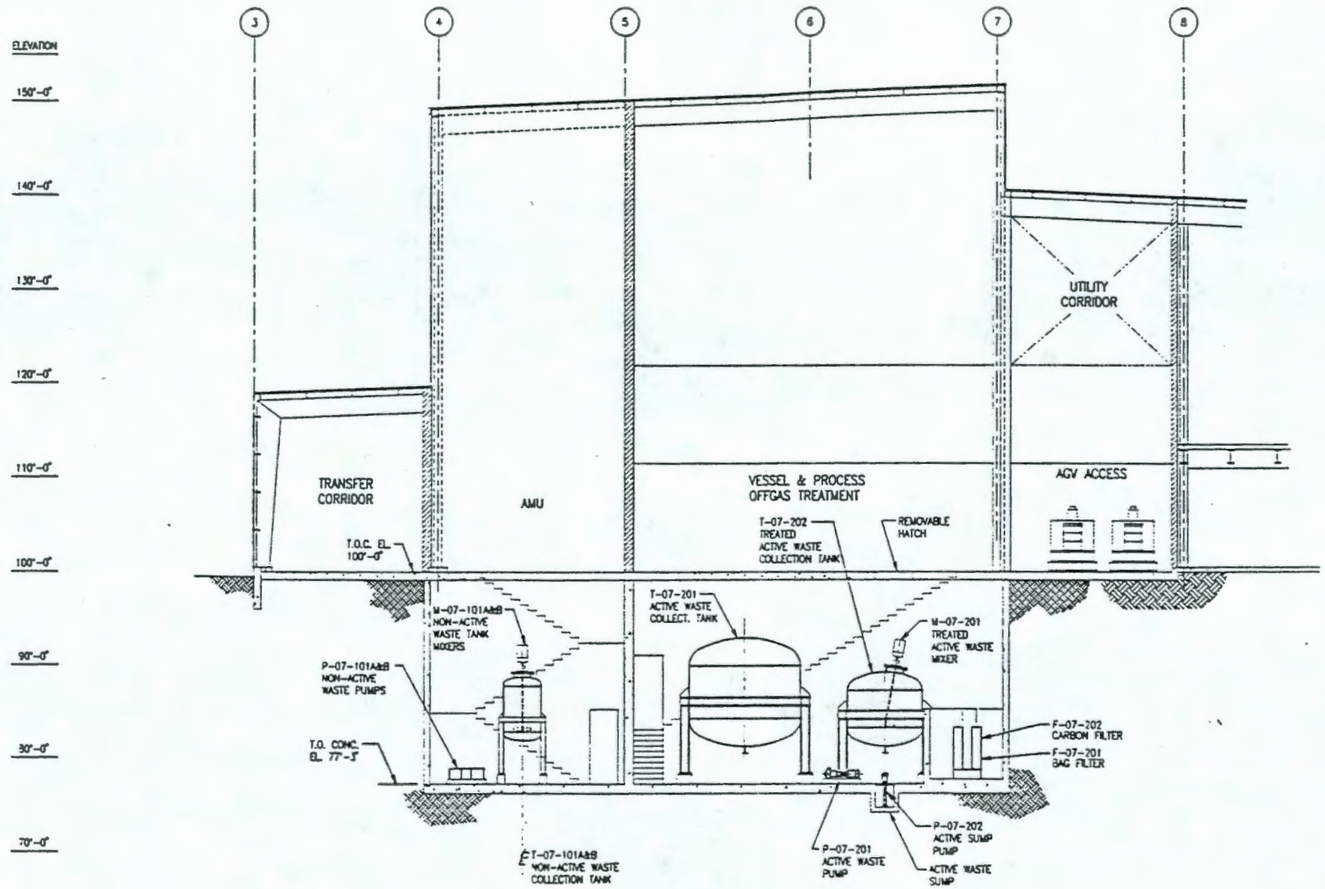
SCALE: 1/8" = 1'-0" | DISCIPLINE NO SC-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	GB DAMES 7/31/92		1/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140660A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



SECTION "A – A"

LOOKING WEST (DWG. H-2-140660)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # 50-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
SECONDARY WASTE COLLECTION
EQPT GEN ARRANGEMENT – SECTION

	BY	DATE
DESIGNED	GB DAVIES	04-03-92
DRAWN	SCHLOESSLER	04-07-92
CHECKED	AJ ZINDEL	6-15-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	2502	H-2-140661	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: SC-2 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	GB DAVIES 7/31/92	[illegible] 7/31/92	[illegible] 7/31/92

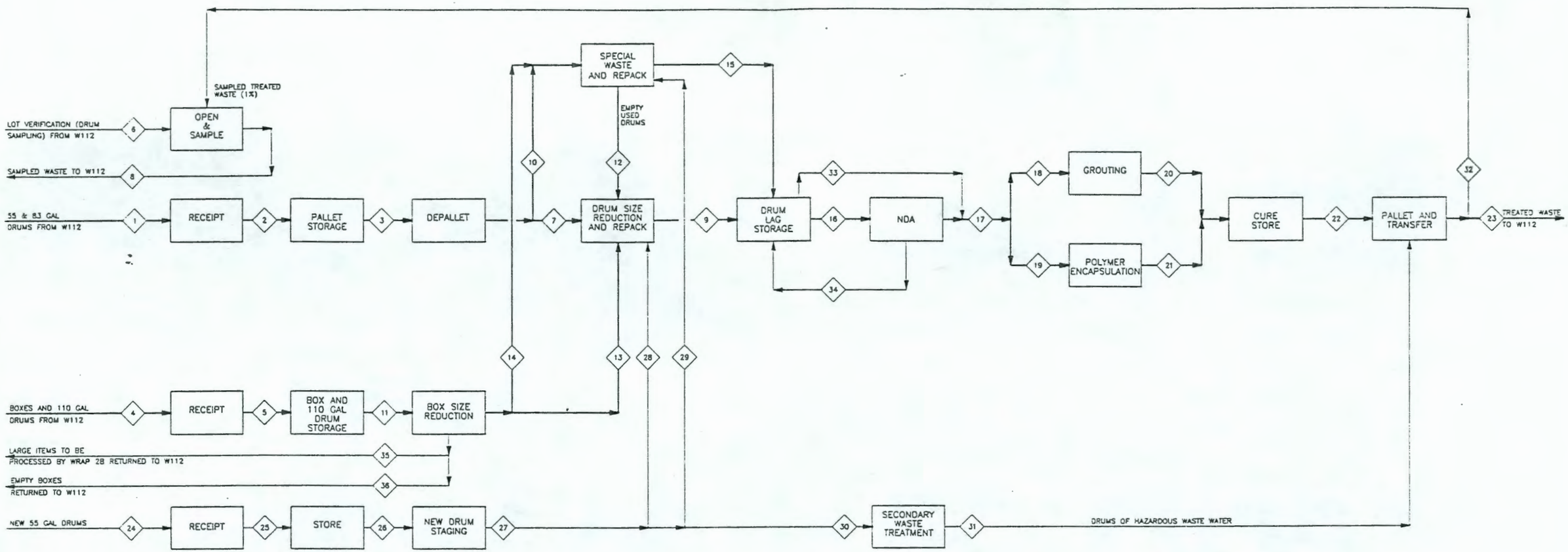
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140661A | CADCODE: 2C.IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0228OR

9413227.1512



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
MATERIAL HANDLING EQUIPMENT	FORK LIFT	CONVEYOR	CONVEYOR	FORKLIFT	FORKLIFT	FORKLIFT	CONVEYOR	FORKLIFT	AGV	CONVEYOR	FORKLIFT	AGV	CONVEYOR	CONVEYOR	AGV	AGV	AGV	AGV	AGV
THROUGHPUT (55 GAL DRUMS/DAY)	30.1	30.1	30.1	0.01 BOX/DAY	0.01 BOX/DAY	5.0	23.1	5.5	45.0	6.9	0.01 BOX/DAY	7.0	0.6	0.1	9.4	54.4	54.4	17.6	36.8
THROUGHPUT (FT³/DAY)	192.2	192.2	192.2	0.8	0.8	38.4	161.8	41.8	184.8	30.4	0.8	5.2	0.7	0.1	30.5	215.3	215.3	80.6	132.3

STREAM NO.	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
MATERIAL HANDLING EQUIPMENT	AGV	AGV	AGV	CONVEYOR/ FORKLIFT	FORK LIFT	FORK LIFT	FORK LIFT	AGV	AGV	AGV	AGV	AGV	AGV	AGV	AGV	FORKLIFT	FORKLIFT
THROUGHPUT (55 GAL DRUMS/DAY)	17.6	36.8	54.4	53.9	54.4	54.4	54.4	54.4	45.0	2.4	0.0	3.0	0.5	0.0	3.0	0.0	3.0
THROUGHPUT (FT³/DAY)	122.5	219.4	341.9	338.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.4	0.0	0.0	0.0	0.0

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
F	FINAL CDR SUBMITTAL	S.SHARPE 7/31/92	R. [illegible]	S. [illegible] 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 3140665A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

APPROVED FOR DETAILED DESIGN
BY | FOR | DATE

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # 50-#100-CDR-001

	BY	DATE
DESIGNED	S. SHARPE	3/19/92
DRAWN	L. RIVERA	3/19/92
CHECKED	R. WAZAWITCH	3/29/92
APPROVED		
D.A.		
OTHER		
OTHER		
OTHER		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
MATERIAL HANDLING
BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140665	F

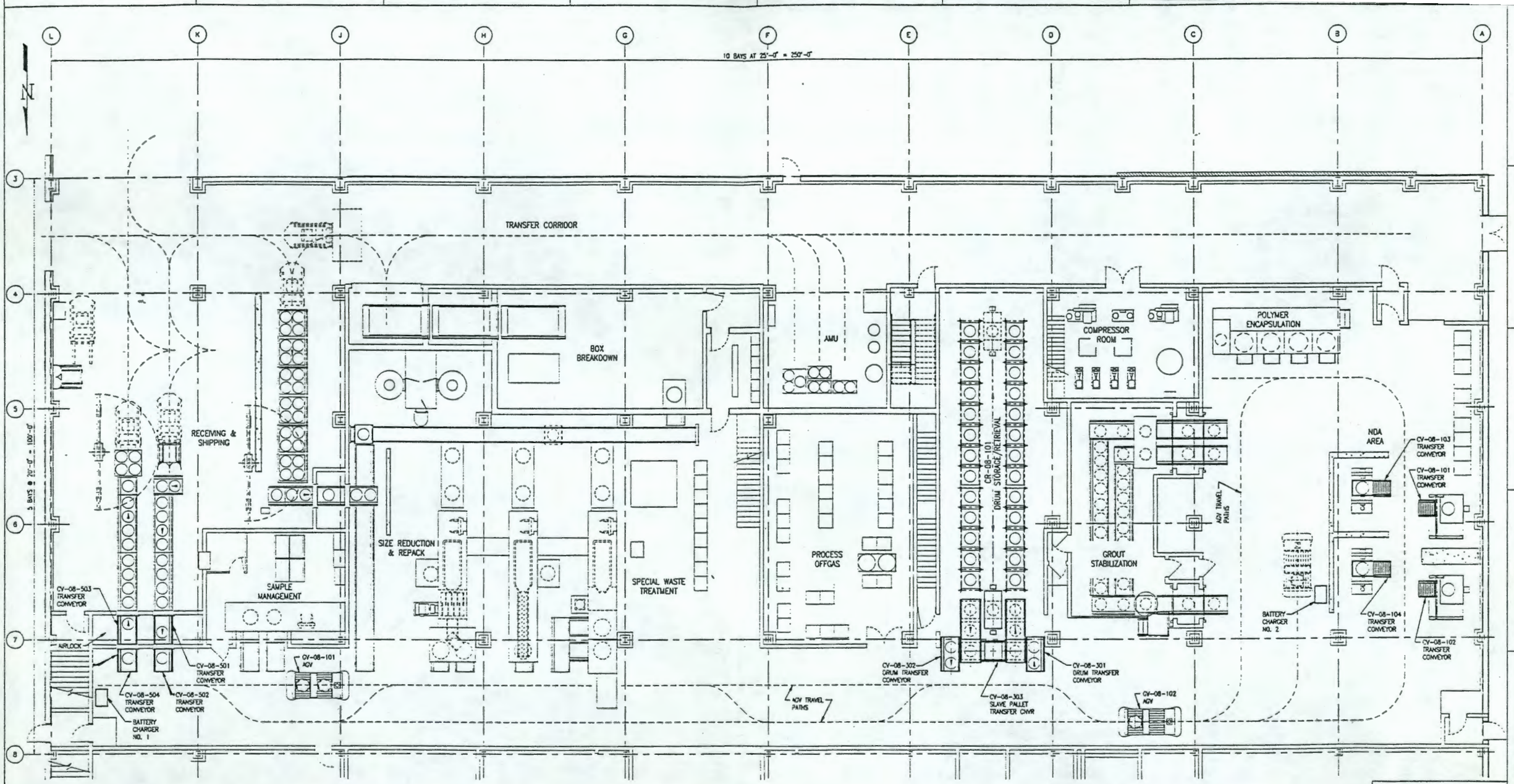
SCALE: NONE | DISCIPLINE NO: MH-3 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0028ORD

9413227.1513

9413227.1514



PLAN – MATERIAL HANDLING

NOM. FIN. FLOOR EL. 100'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	J CAMARA	05-01-92
DRAWN	HIGHLAND	05-05-92
CHECKED	M ZIKOEL	6-3-92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
MATERIAL HANDLING
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140666	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: MH-1 | SHEET 1 OF 1

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

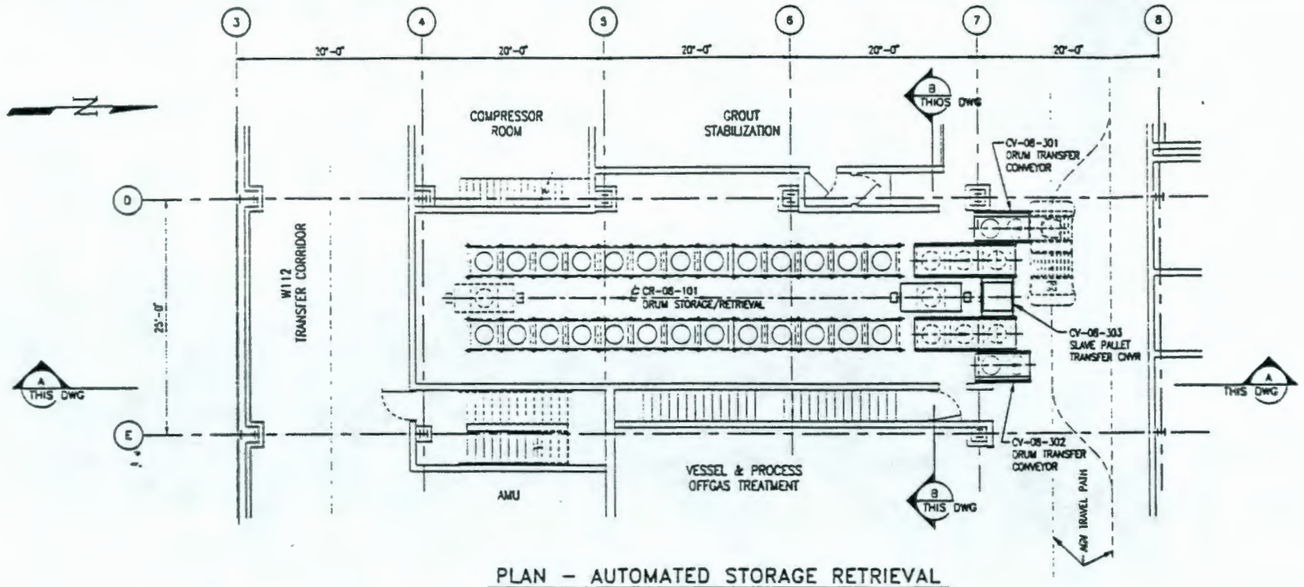
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	J CAMARA 7/31/92	M ZIKOEL 7/31/92	M ZIKOEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140666A | CADCODE: 2C:IBM:ACD2:11:NN

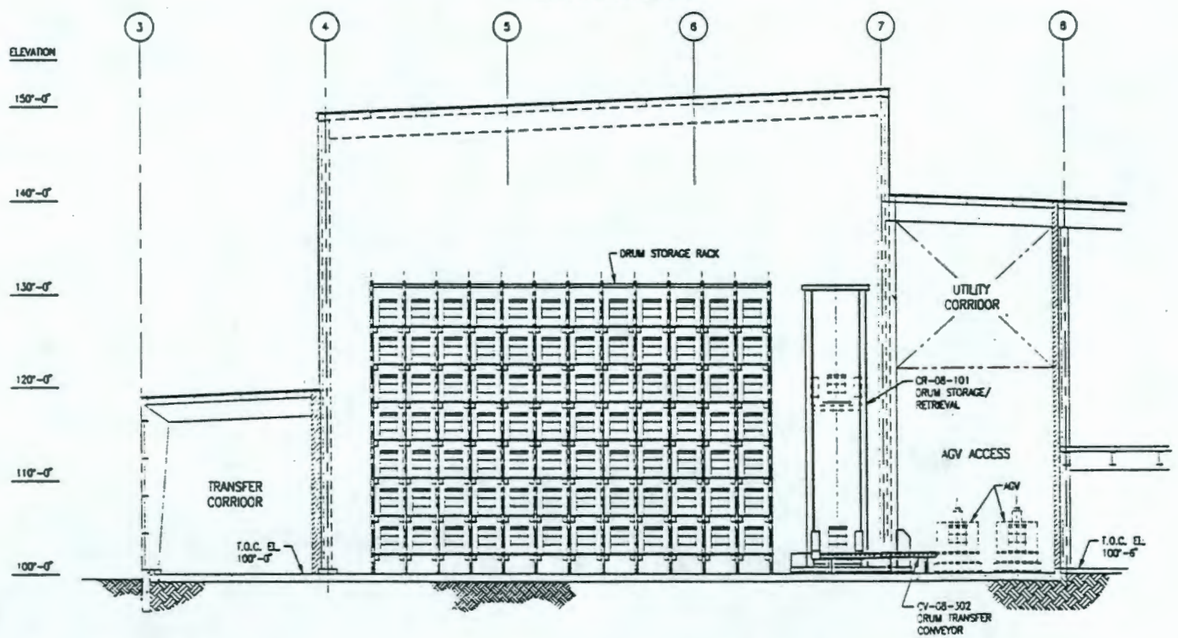
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WORZBORD



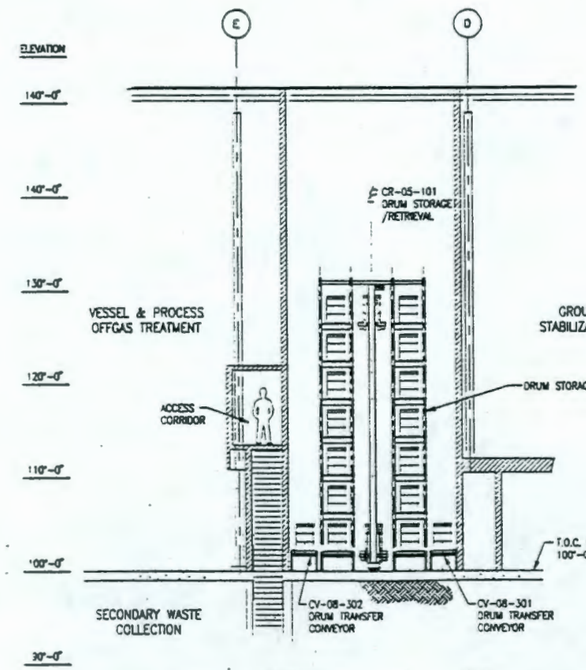
PLAN – AUTOMATED STORAGE RETRIEVAL

NOM. FIN. FLR. EL. 100'-0"



SECTION "A – A"

LOOKING WEST



SECTION "B – B"

LOOKING SOUTH

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J CAMARA	04-22-92
DRAWN	C MOORE	04-24-92
CHECKED	AJ ZINDEL	05-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

WRAP 2A CONCEPTUAL DESIGN
AUTOMATED STORAGE RETRIEVAL
EQUIPMENT GENERAL ARRANGEMENT

SIZE	BLDG NO.	HOOK NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140667	D

SCALE: 1/8"=1'-0" DISCIPLINE NO. MM-2 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHECKED BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	J CAMARA 7/31/92		AJ ZINDEL 7/31/92

REFERENCE DRAWINGS

REVISIONS

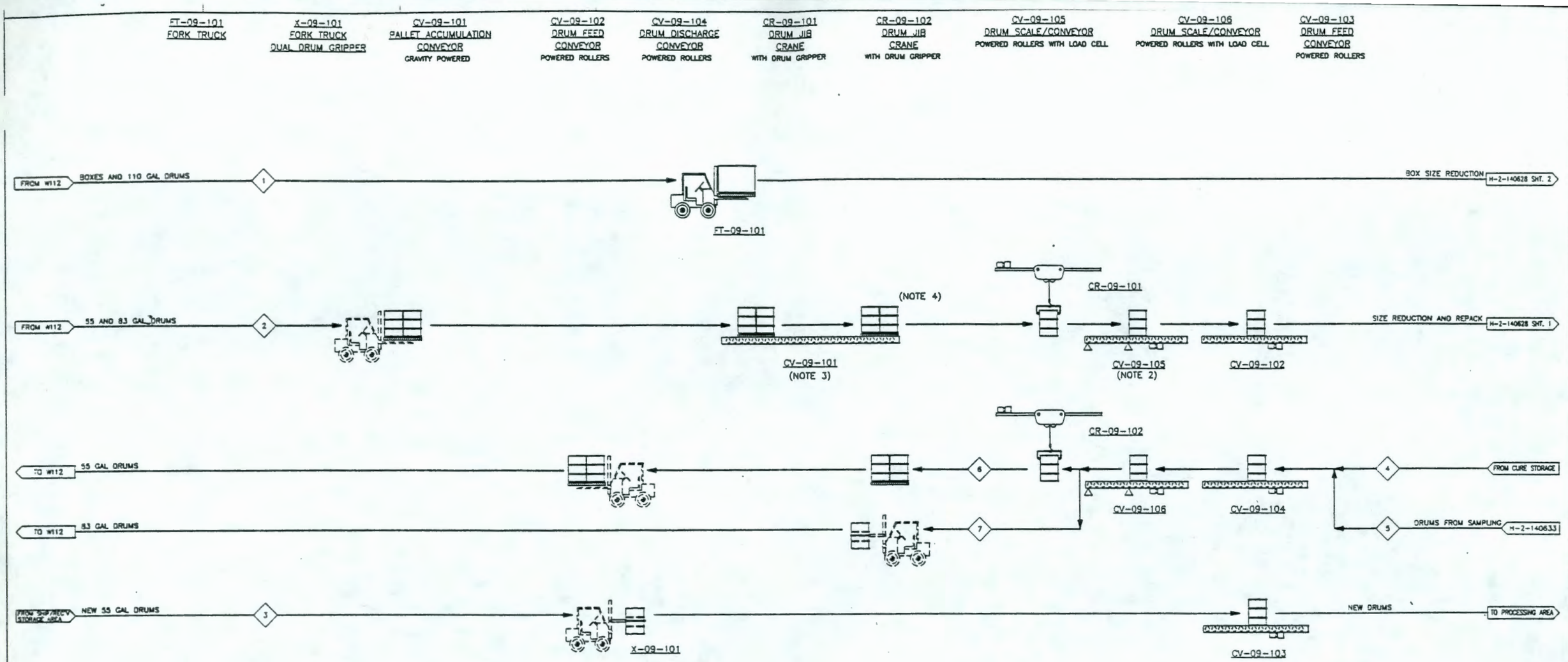
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 9140667A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1515

FORM W0028RD



NOTE:

1. THE NUMBER OF BOXES ENTERING WRAP 2A IS 0.01 BOXES/DAY, WHICH IS EQUIVALENT TO 0.7 55 GAL. DRUMS/DAY.
2. DRUMS ARE BARCODE LABELED AND THE LABEL IS READ BEFORE THE DRUM IS WEIGHED.
3. CONVEYOR CV-09-101 ACCUMULATES DRUMS FOR THE REQUIRED ONE DAYS STORAGE.
4. DRUMS ARE DEPALLETIZED AND REMOVED FROM THE PALLET BY JIB CRANE CR-09-101.

(NOTE 1)

STREAM NO.	1	2	3	4	5	6	7
DESCRIPTION	BOXES AND 110 GAL DRUMS FROM W112 TO SIZE REDUCTION	55 AND 83 GAL DRUMS FROM W112	NEW 55 GAL DRUMS TO PROCESS AREAS	55 GAL DRUMS FROM PROCESS AREAS	55 GAL DRUMS FROM SAMPLING	55 GAL DRUMS TO W112	SAMPLED DRUMS TO W112
VOLUME (BOXES/DAY)	0.01	-	-	-	-	-	-
VOLUME (DRUMS/DAY)	-	30.1	54.4	54.4	5.0	54.4	5.0

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	J.CAVARRA 7/31/92	R. HEUBERT	R. HEUBERT 7/31/92

REFERENCE DRAWINGS

REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: WR2ARC3.DWG | CADCODE: 2C:IBM:ACD2:11:NN

	BY	DATE
DESIGNED	J.CAVARRA	3/30/92
DRAWN	L. RIVERA	3/31/92
CHECKED	H.VANZANTEN	3/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN RECEIVING/SHIPPING AREA PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140670	D

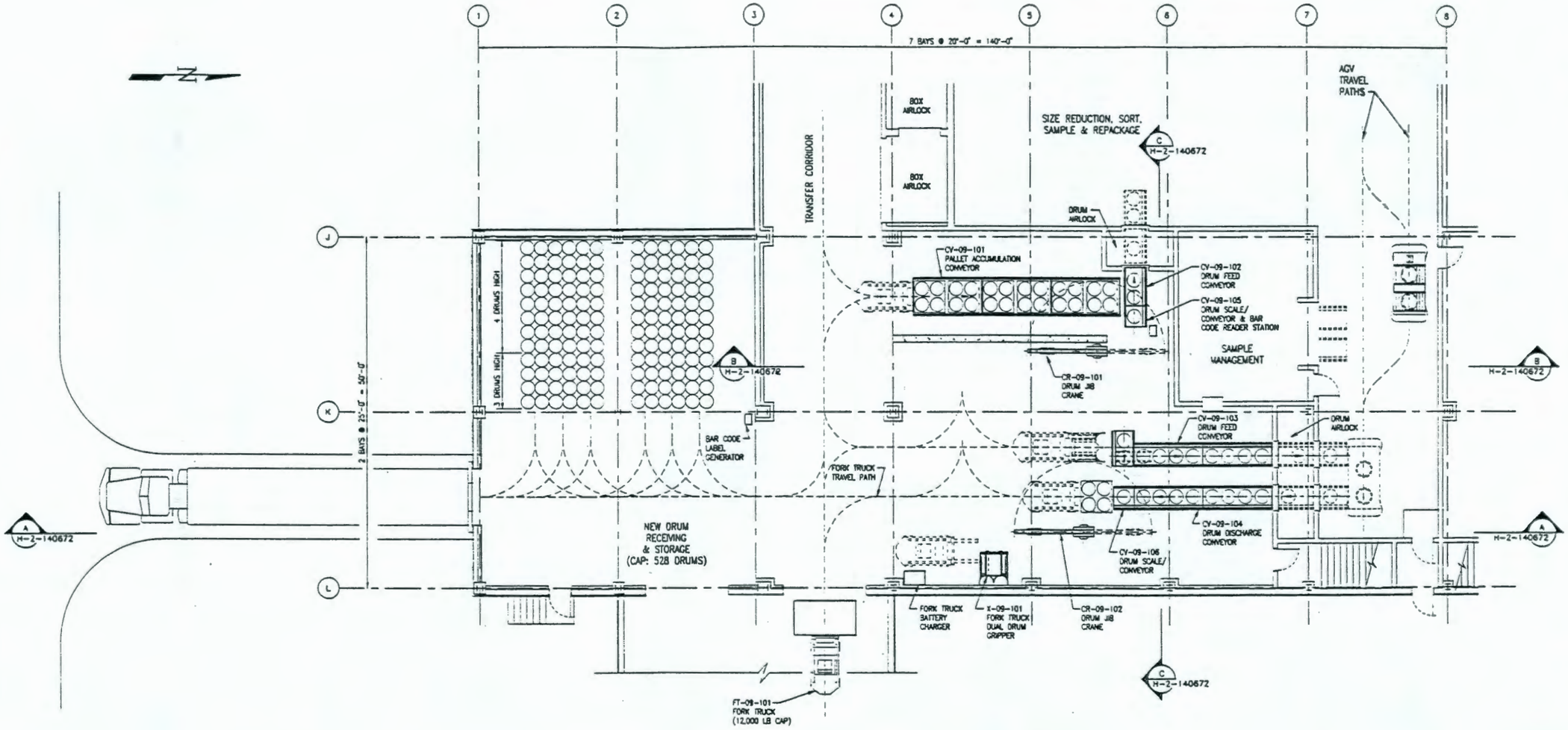
SCALE: NONE | DISCIPLINE NO: RC-3 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W0028010

9413227.1516

9413227.1517



PLAN – RECEIVING & SHIPPING

NOM. FIN. FLR. EL. 100'-0"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J CAMARA	3-31-92
DRAWN	HIGHLAND	4-03-92
CHECKED	AJ ENGEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
RECEIVING & SHIPPING
EQPT GEN ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	3902	H-2-140671	D

SCALE 1/8" = 1'-0" | DISCIPLINE NO. RC-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	J CAMARA 7/31/92	G B DANIELS 7/31/92	AJ ENGEL 7/31/92

REVISIONS

REFERENCE DRAWINGS

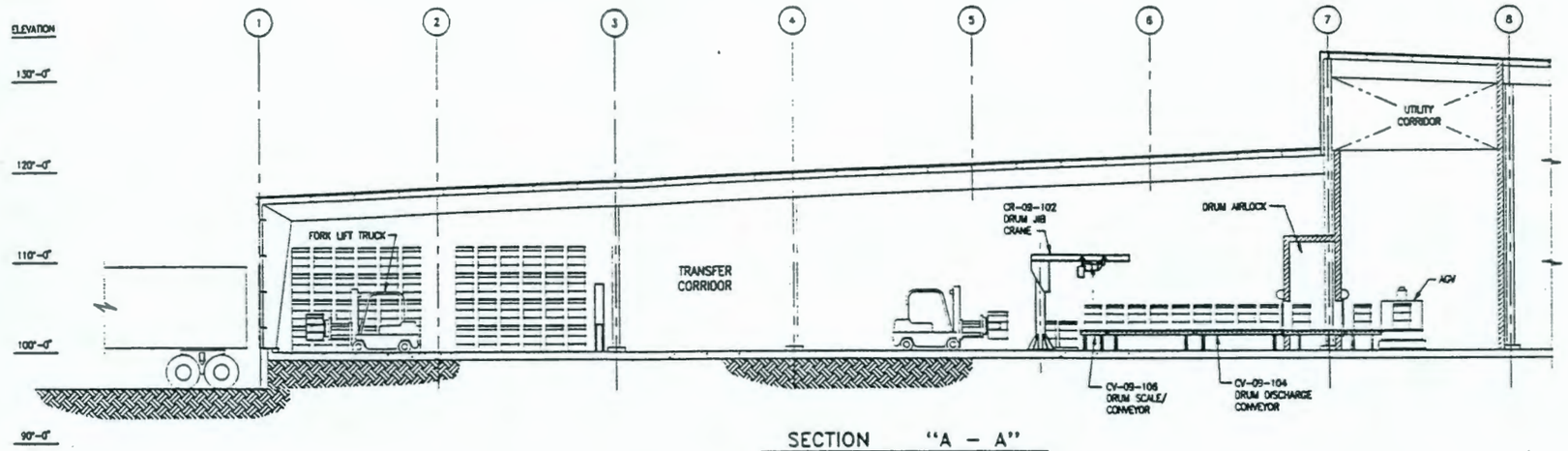
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140671A | CADCODE: 2C:IBM:ACD2:11:NN

APPROVED FOR DETAILED DESIGN
BY | FOR | DATE

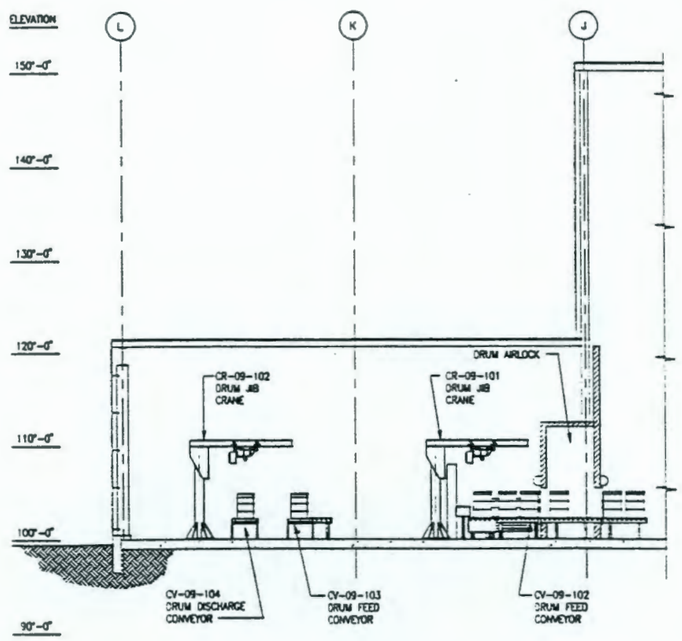
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1518



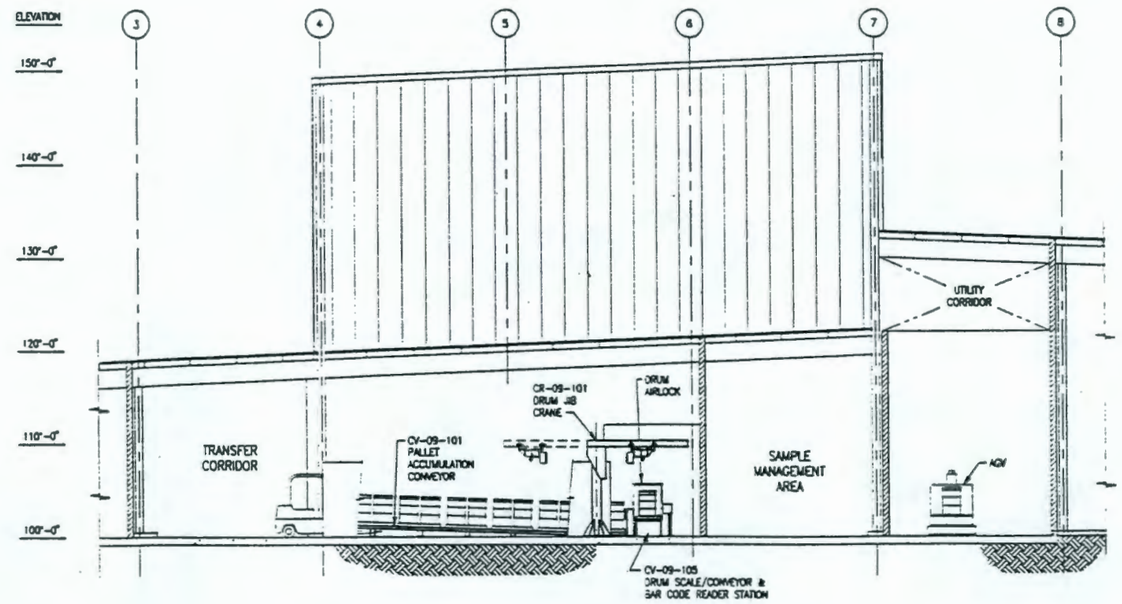
SECTION "A – A"

LOOKING WEST (DWG. H-2-140671)



SECTION "C – C"

LOOKING SOUTH (DWG. H-2-140671)



SECTION "B – B"

LOOKING WEST (DWG. H-2-140671)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J CANAMA	3-31-92
DRAWN	L WILSON	05-04-92
CHECKED	AJ ZINDEL	6-3-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
RECEIVING & SHIPPING
EQPT GEN ARRANGEMENT – SECTIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	3902	H-2-140672	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: RC-2 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	J CANAMA 7/31/92	G B Davis(?) 7/31/92	7/31/92

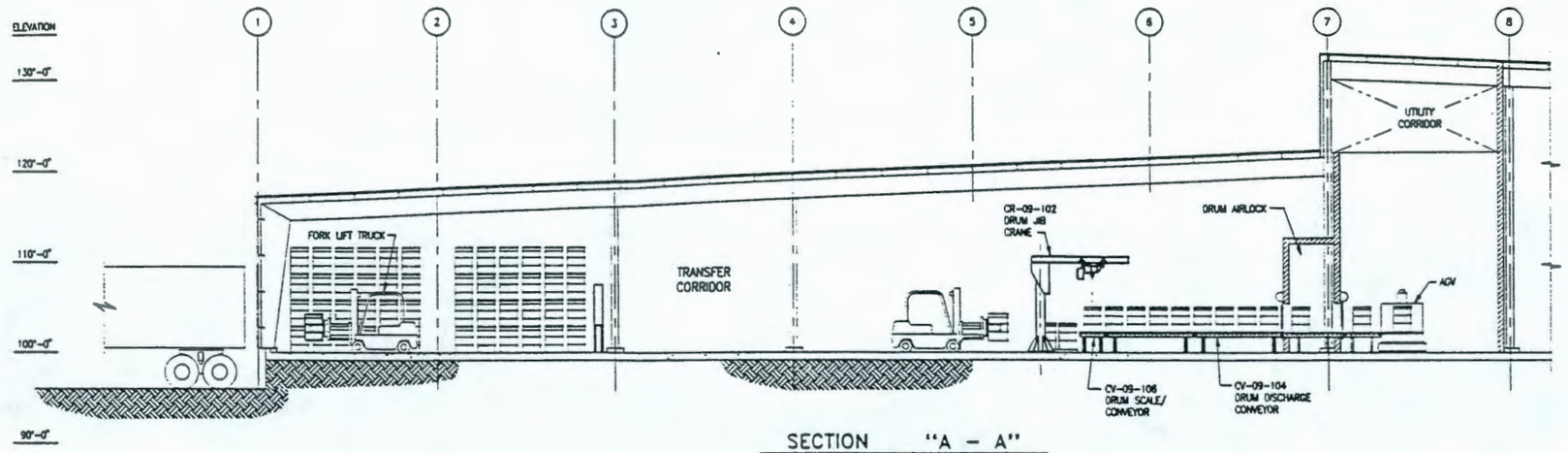
REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 3140672A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

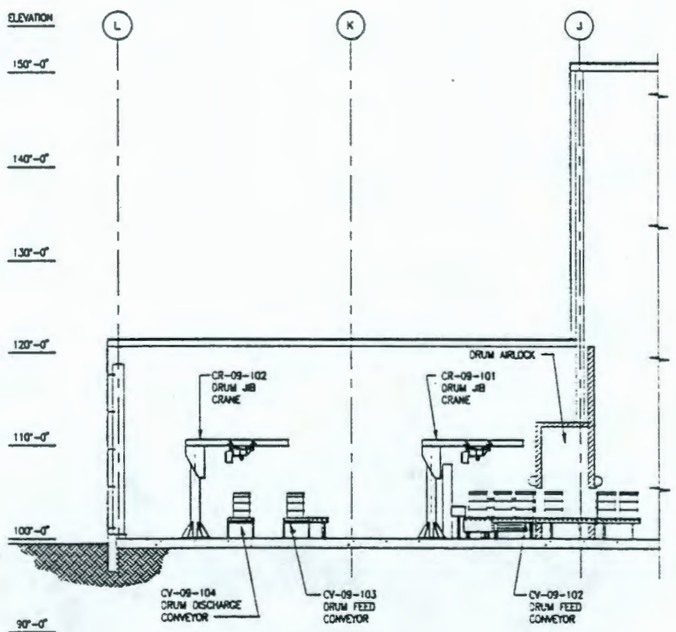
FORM W022B0R0

9413227.1519



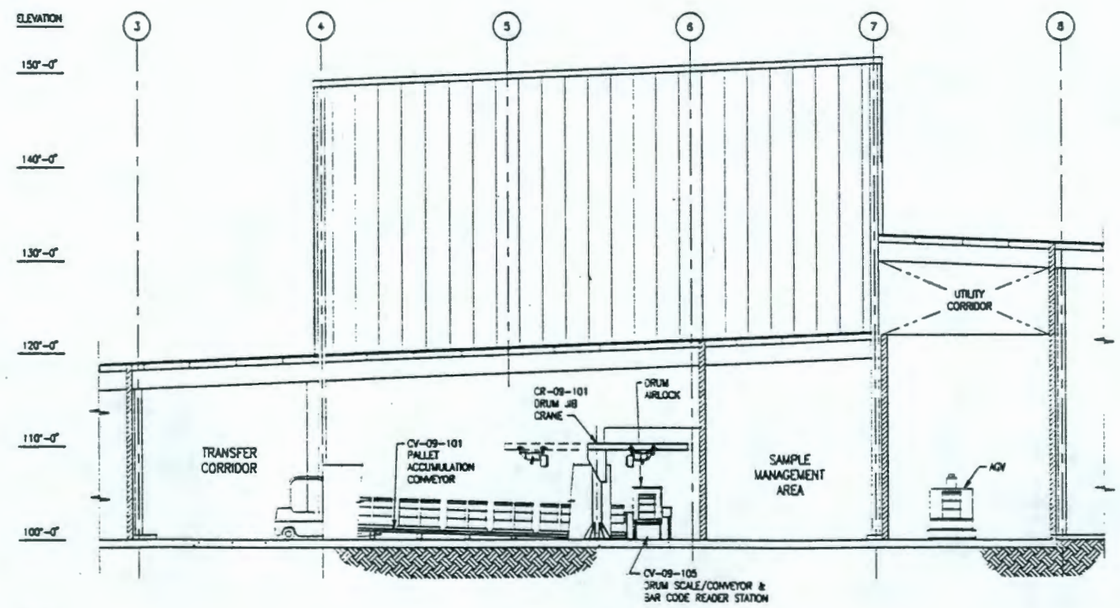
SECTION "A – A"

LOOKING WEST (DWG. H-2-140671)



SECTION "C – C"

LOOKING SOUTH (DWG. H-2-140671)



SECTION "B – B"

LOOKING WEST (DWG. H-2-140671)

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J CAMARA	3-31-92
DRAWN	E. WILSON	05-04-92
CHECKED	AJ ZIMDEL	6-3-92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
RECEIVING & SHIPPING
EQPT GEN ARRANGEMENT – SECTIONS

SIZE	BLDG NO.	MODX NO.	DRAWING NUMBER	REV
D	2337-W	3902	H-2-140672	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO. RC-2 | SHEET 1 OF 1

REV NO.	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	J. CAMARA 7/31/92	G.B. DAVIES 7/31/92	7/31/92

REFERENCE DRAWINGS

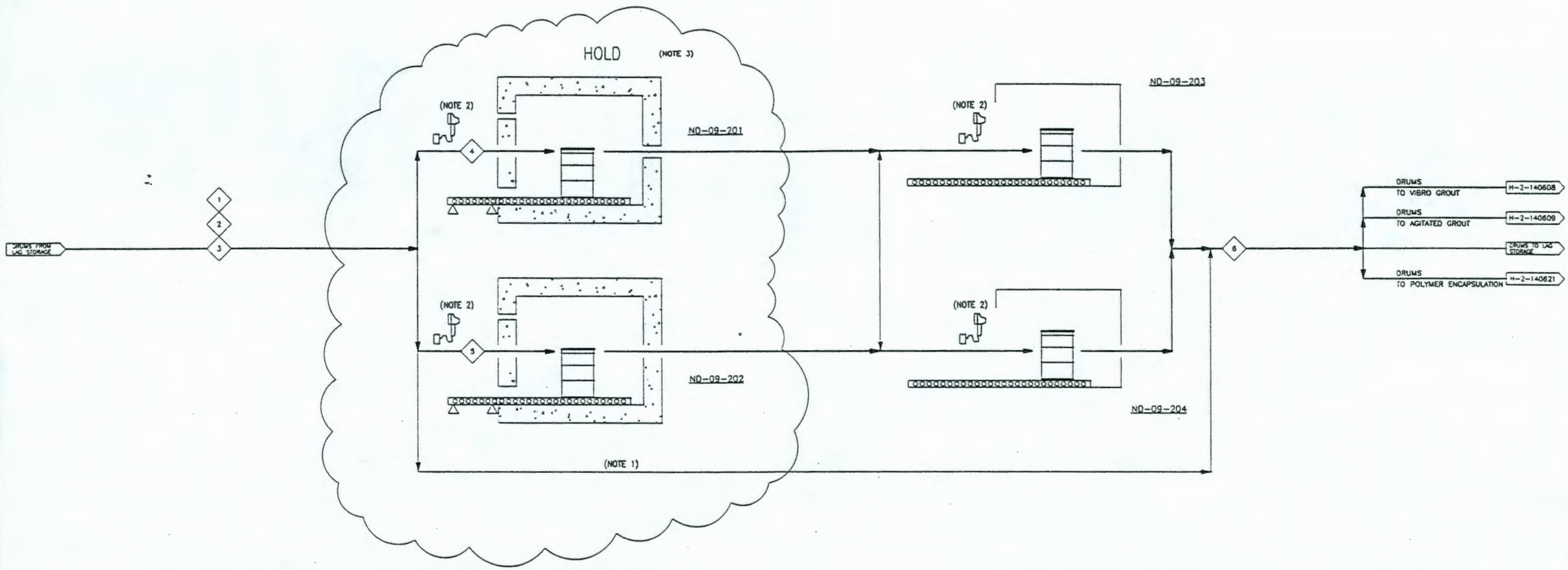
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

CADFILE: B140672A | CADCODE: 2C.IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM W02280RD



NOTES:

1. INFREQUENT BY-PASS ROUTE FOR WASTE WHICH HAS ALREADY BEEN ASSAYED.
2. BARCODE READER.
3. PAN EQUIPMENT IS UNDER REVIEW FOR USE ON WRAP 2A.

STREAM NO.	1	2	3	4	5	6
DESCRIPTION	WASTE FOR POLYMER ENCAP-SULATION	WASTE FOR GROUT STAB-ILIZATION	COMBINED WASTE	WASTE TO NDA	WASTE TO NDA	WASTE TO STORAGE OR PROCESS
THROUGHPUT (DRUMS/DAY)	36.76	17.66	54.42	27.21	27.21	54.42
MASS/DAY (LB/DAY)	13256	6093	19349	–	–	19349
VOLUME/DAY (FT^3/DAY)	126.6	83.0	209.6	–	–	209.6
DENSITY (LB/FT^3)	104.7	54/125	–	–	–	–

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	S. MCKAY 7/31/92	R. Hewell (Hewell)	J. Henkel R. HENKEL 7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 9140673A.DWG | CADCODE: 2C:IBM: ACD2: 11: NN

	BY	DATE
DESIGNED	S.MCKAY	3/23/92
DRAWN	L. RIVERA	3/24/92
CHECKED	K.WAGNAYDEN	3/23/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

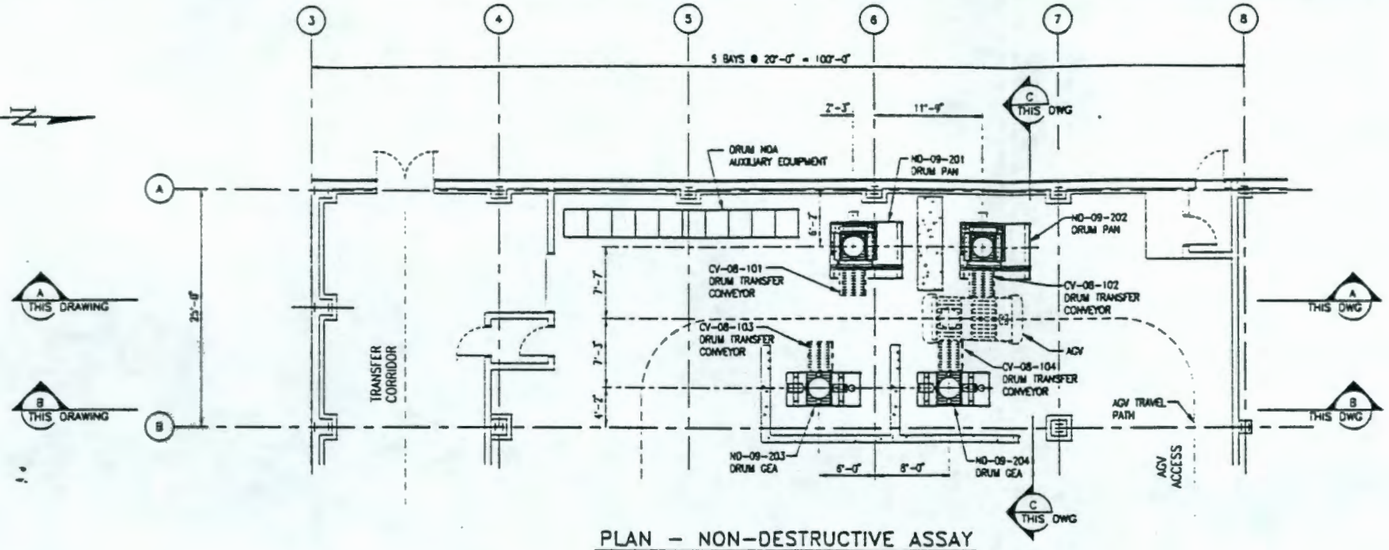
WRAP 2A CONCEPTUAL DESIGN
DRUM NDA
PROCESS FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140673	D

SCALE: NONE | DISCIPLINE NO. RC-4 | SHEET 1 OF 1

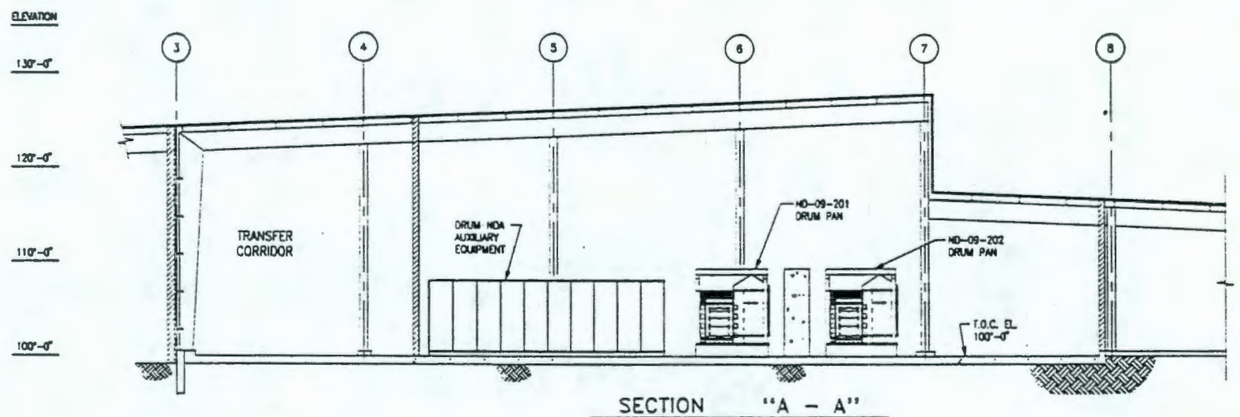
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1520



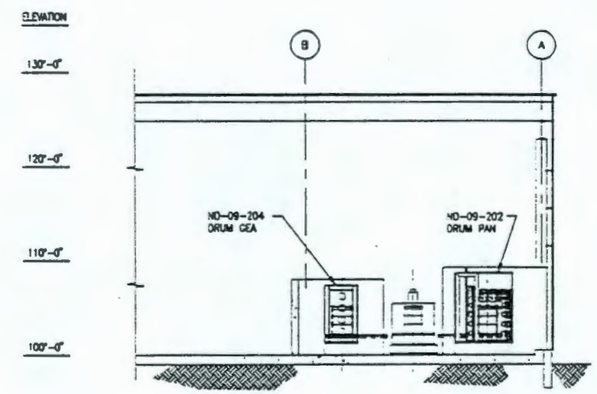
PLAN – NON-DESTRUCTIVE ASSAY

NOM. FIN. FLR. EL. 100'-0"



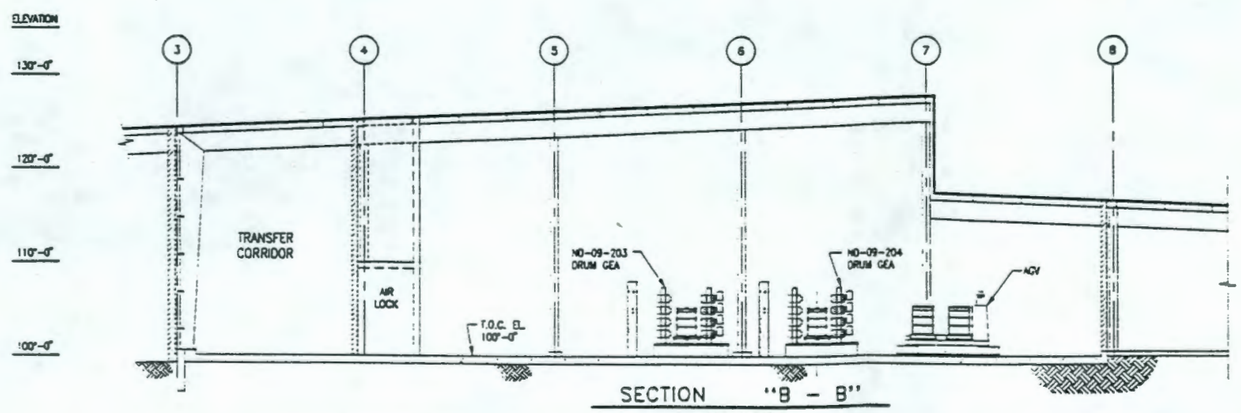
SECTION "A – A"

LOOKING WEST



SECTION "C – C"

LOOKING SOUTH



SECTION "B – B"

LOOKING WEST

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	AH WATSON 7/31/92	7/31/92	7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 3140674A | CADCODE: 2C:19M: ACD2:11: NN

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	AJ ZINDEL	03-31-92
DRAWN	HIGHLAND	04-22-92
CHECKED	AJ ZINDEL	06-05-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
NON-DESTRUCTIVE ASSAY
EQUIPMENT GENERAL ARRANGEMENT

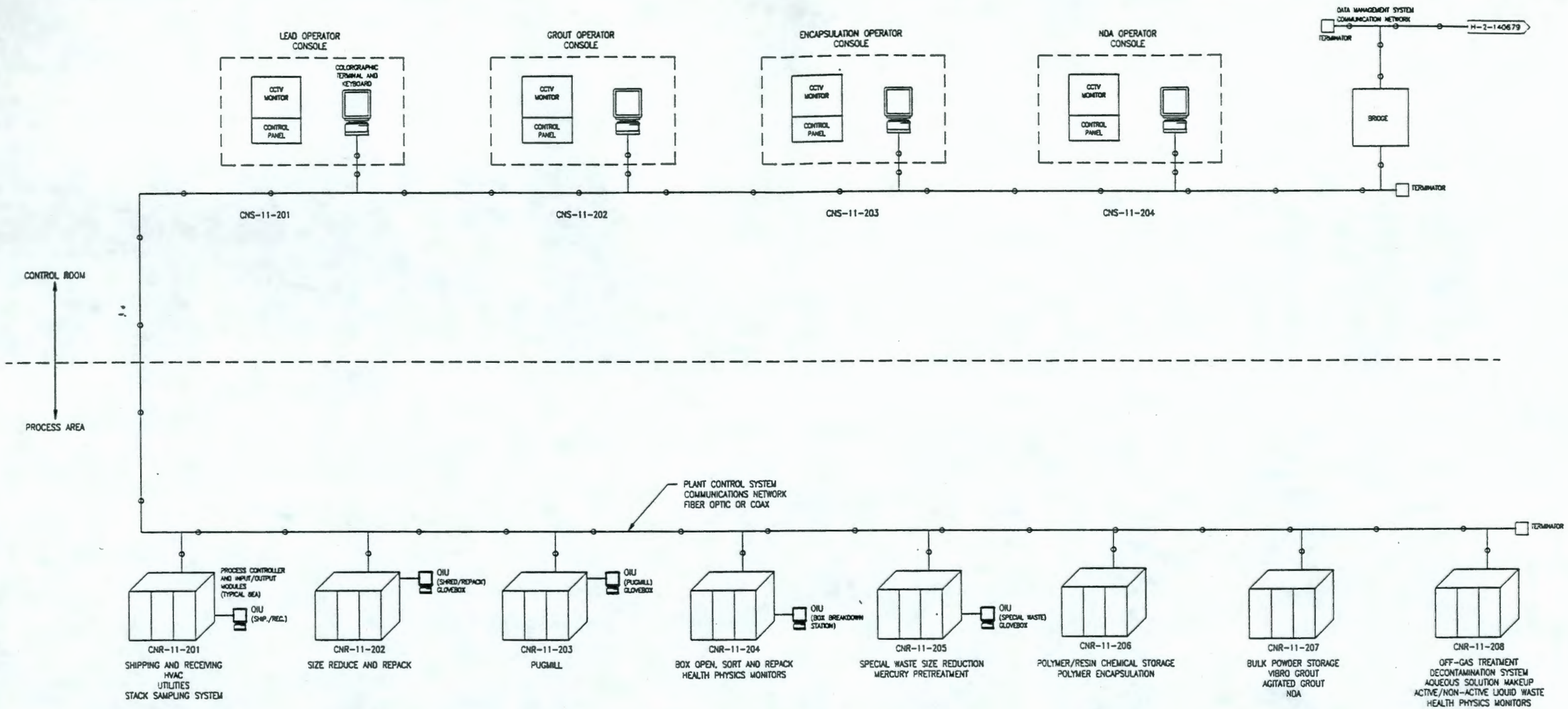
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140674	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: RC-5 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WD02B0R0

9413227.1521



APPROX I/O

	DI	DO	AI	AO	TOTAL
CNR-11-201	160	112	40	24	336
CNR-11-202	96	80	8	0	184
CNR-11-203	96	80	8	0	184
CNR-11-204	96	32	32	8	168
CNR-11-205	192	112	8	8	320
CNR-11-206	160	96	16	16	288
CNR-11-207	240	112	8	8	368
CNR-11-208	144	32	48	24	248

ABBREVIATION:

AI = ANALOG INPUT
AO = ANALOG OUTPUT
DI = DIGITAL INPUT
DO = DIGITAL OUTPUT
I/O = INPUT/OUTPUT
OIU = OPERATOR INTERFACE UNIT

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SO-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	W. CEPEDA	4/30/92
DRAWN	C MOORE	5/4/92
CHECKED	WADERMOTT	5/19/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
PLANT CONTROL SYSTEM
BLOCK DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5908	H-2-140678	E

SCALE: NONE | DISCIPLINE NO: 1-2 | SHEET 1 OF 1

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CEPEDA 7/31/92	WADERMOTT 9/21/92	W. CEPEDA 9/11/92

REFERENCE DRAWINGS | REVISIONS

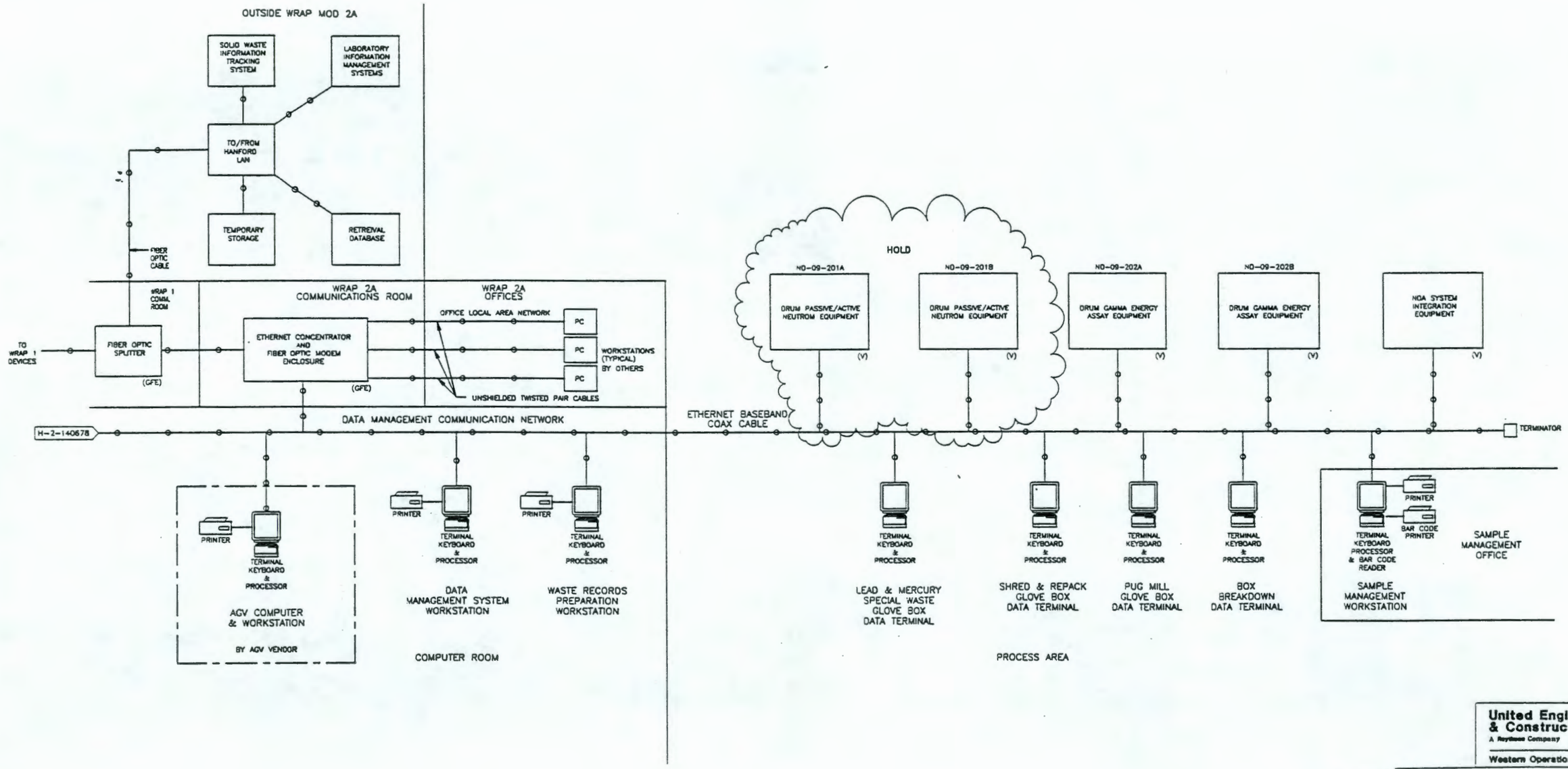
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 3140678A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1522

FORM W0728DRD

9413227.1523



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
DATA MANAGEMENT SYSTEM
BLOCK DIAGRAM

	BY	DATE
DESIGNED	W. CEPEDA	4/30/92
DRAWN	C MOORE	5/4/92
CHECKED	McDERMOTT	5/19/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY FOR		DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5908	H-2-140679	E

SCALE: NONE | DISCIPLINE NO. 1-3 | SHEET 1 OF 1

REV NO.	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CEPEDA 7/31/92	McDERMOTT 8/11/92	W. CEPEDA 7/31/92

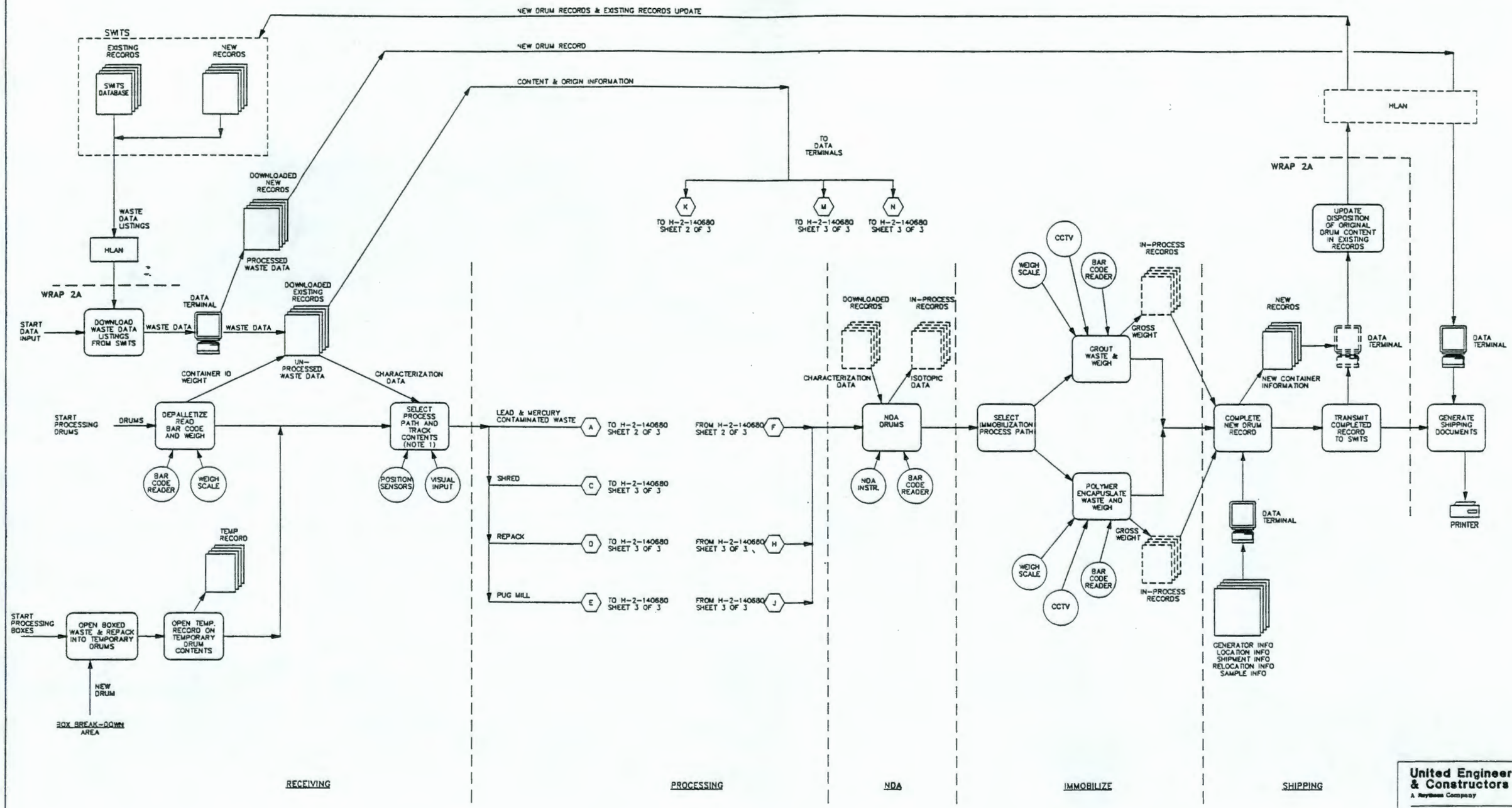
REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140679A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM MOD2BORD

9413227.1524



NOTES

1. DECISION ABOUT PROCESS PATH MADE HERE WILL INCLUDE BOTH PRETREATMENT AND IMMOBILIZATION STEPS.

LEGEND:

SWITS – SOLID WASTE INFORMATION TRACKING SYSTEM

HLAN – HANOFORD LOCAL AREA NETWORK

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SO-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	W COPEDA	4/24/92
DRAWN	L RHODA	4/27/92
CHECKED	McDERMOTT	5/19/92
APPROVED		
QA		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
DATA MANAGEMENT SYSTEM
BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5908	H-2-140680	E

SCALE: NONE | DISCIPLINE NO: 1-4 | SHEET 1 OF 3

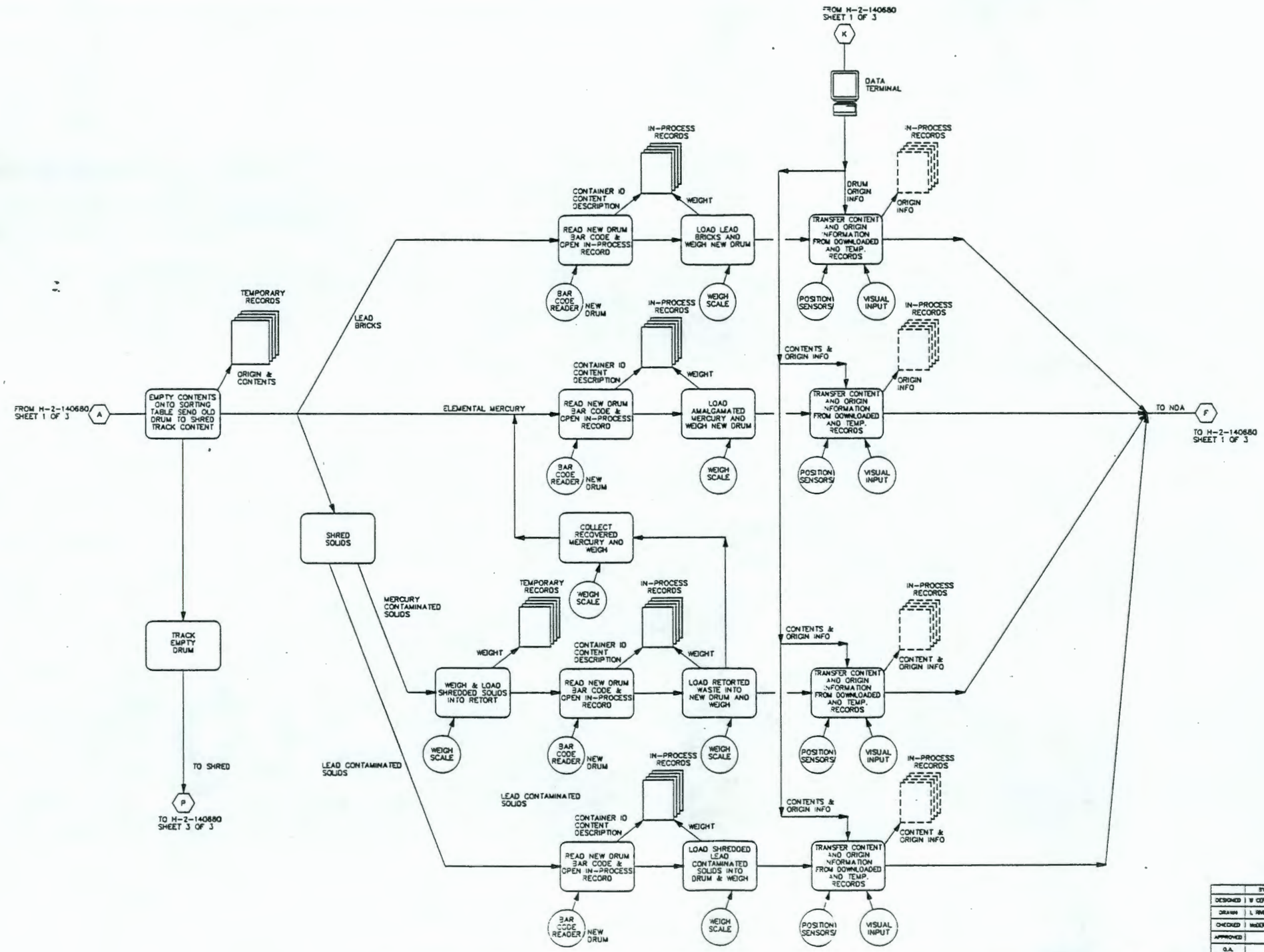
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CEPEDA 7/31/92	[illegible] 7/31/92	W. L. Cole 7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 9140680A | CADCODE: 2C:IBM:AC02:11:NN

FORM WCD2BORD

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



REV NO	DESCRIPTION	REV BY/DATE	ICHE BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CEPEDA 7/31/92	8/21/92	7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B1406808 | CADCODE: 2C:IBM:ACD2:11:NN

	BY	DATE
DESIGNED	V CEPEDA	4/24/92
DRAWN	L RIVERA	4/27/92
CHECKED	McDERMOTT	5/19/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

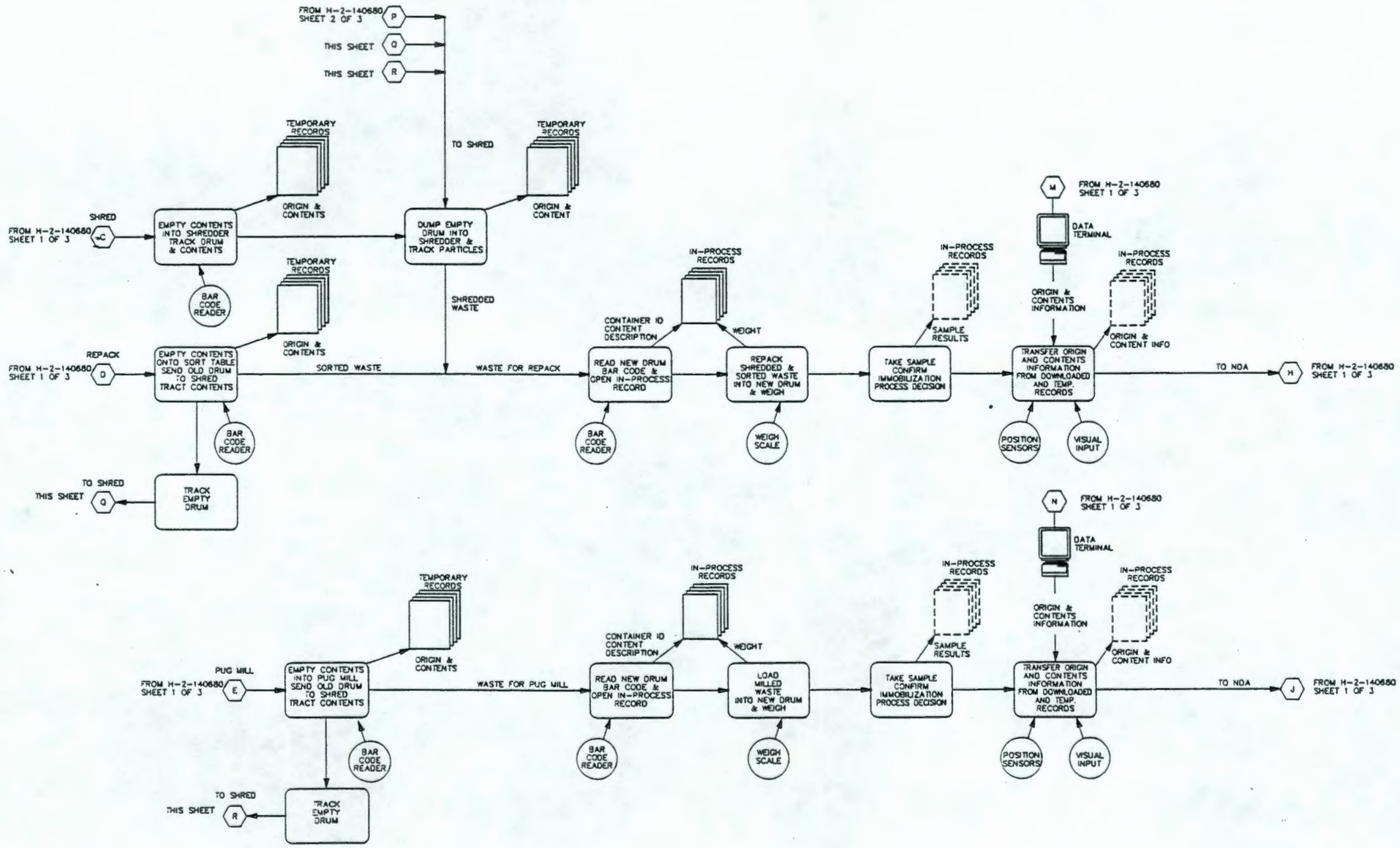
WRAP 2A CONCEPTUAL DESIGN DATA MANAGEMENT SYSTEM BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5908	H-2-140680	E

SCALE: NONE | DISCIPLINE NO: 1-4 | SHEET 2 OF 3

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1525



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	B CEPEDA	4/24/92
DRAWN	L RIVERA	4/27/92
CHECKED	McDERMOTT	5/19/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN DATA MANAGEMENT SYSTEM BLOCK FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5908	H-2-140680	E

SCALE: NONE | DISCIPLINE NO: H-6 | SHEET 3 OF 3

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CEPEDA 7/31/92	McDERMOTT 8/31/92	7/31/92

REFERENCE DRAWINGS | REVISIONS

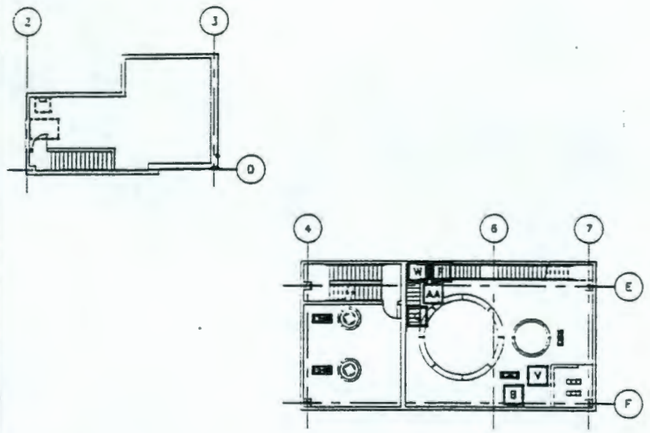
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 3140680C | CADCODE: 2C: IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

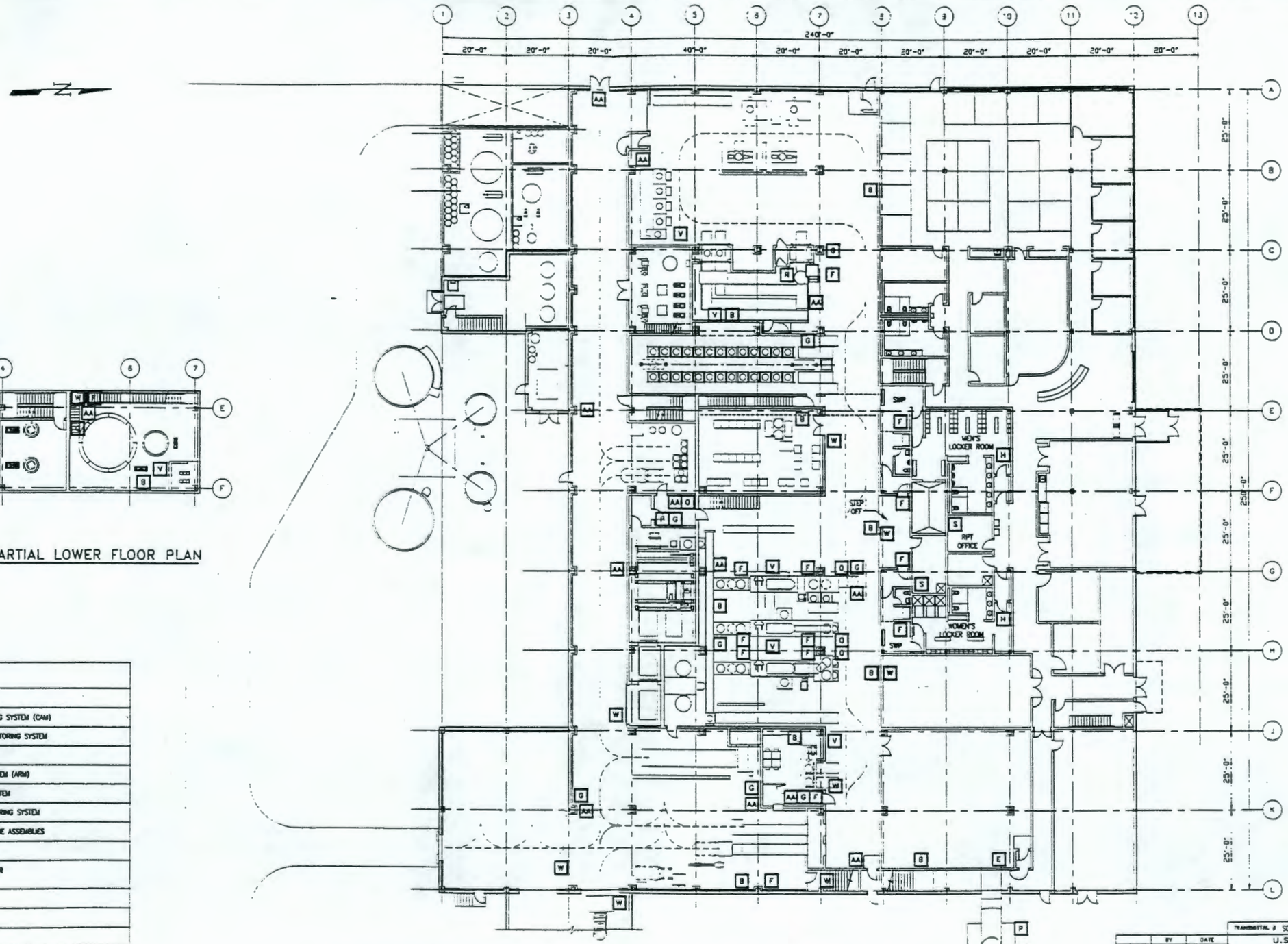
FORM WCD2BORD

9413227.1526

9413227.1527



PARTIAL LOWER FLOOR PLAN



FLOOR PLAN – GROUND LEVEL

LEGEND	
SYMBOL	DESCRIPTION
B	BETA CONTINUOUS AIR MONITORING SYSTEM (CAM)
E	ISOKINETIC STACK EFFLUENT MONITORING SYSTEM
F	BETA/GAMMA "FRISKER" SYSTEM
G	AREA RADIATION MONITORING SYSTEM (ARM)
H	HAND AND FOOT MONITORING SYSTEM
O	OPERATOR BREATHING AIR MONITORING SYSTEM
P	ISOKINETIC STACK EFFLUENT PROBE ASSEMBLIES
S	BETA/GAMMA SMEAR/ANALYZER
V	VENTILATION DUCT CONTINUOUS AIR MONITORING SYSTEM (CAM)
W	ENTRANCE WARNING SIGN
AA	ALARM/ANNUNCIATOR
R	N-LINE GAMMA MONITOR

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-6100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	MCDERMOTT	4/4/92
DRAWN	CALLONDER	4/6/92
CHECKED	W.CAPEDA	5/18/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY:		
FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
HSE
LOCATION PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5901	H-2-140681	D

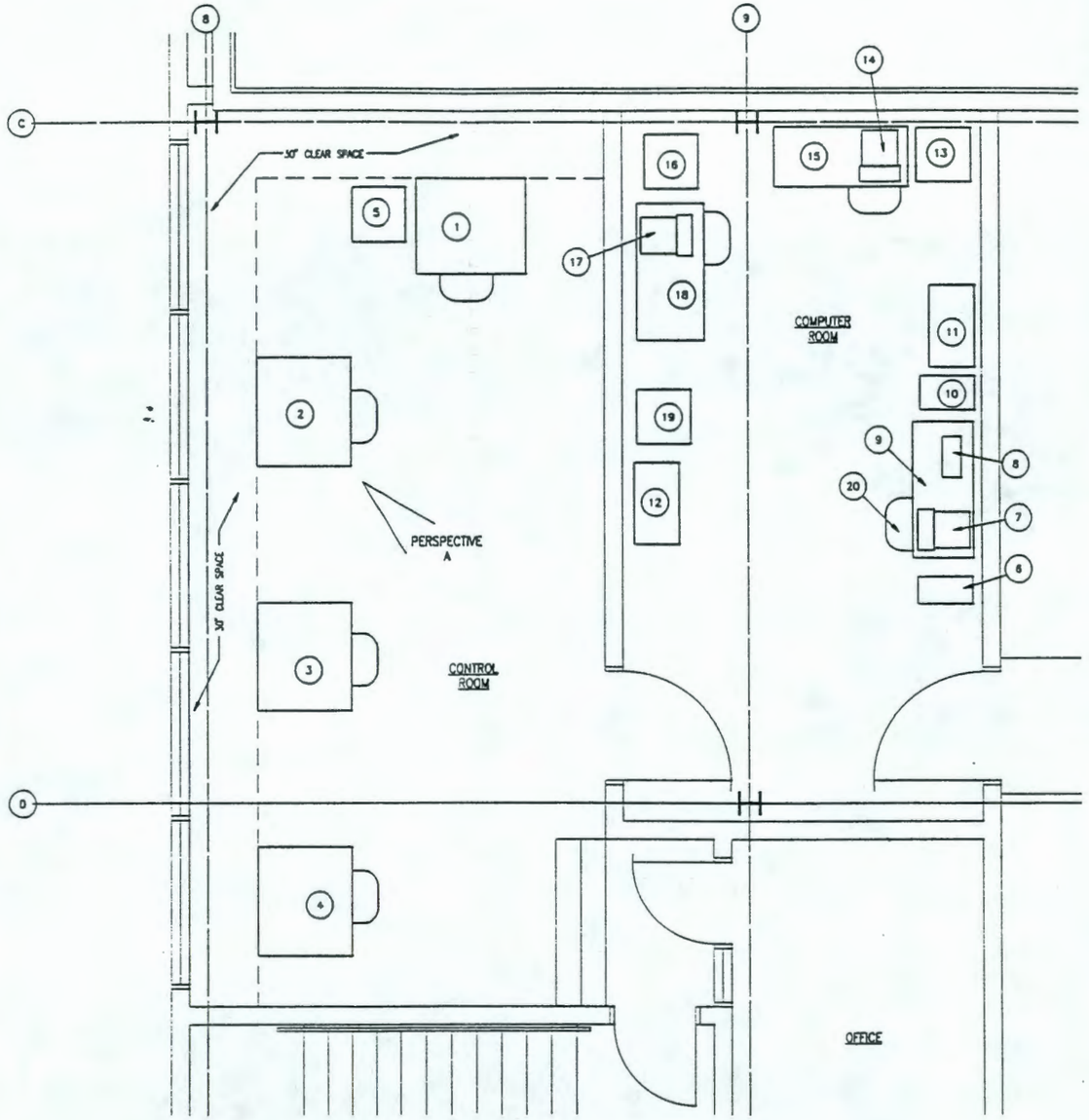
SCALE: 1/16"=1'-0" | DISCIPLINE NO: 1-5 | SHEET 1 OF 1

REV NO	DESCRIPTION	CALLONDER 7/31/92	W.Capeda 7/31/92	R. CEPEDA	7/31/92
D	FINAL CDR SUBMITTAL				

REFERENCE DRAWINGS | REVISIONS

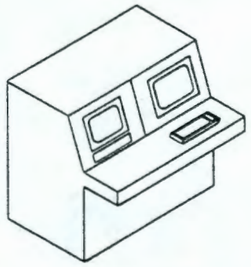
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140681A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

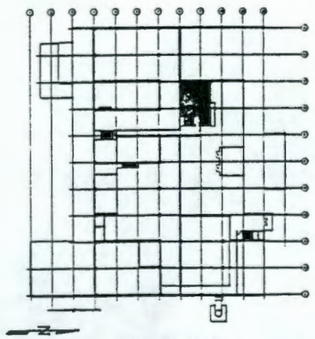


EQUIPMENT LIST

1	CNS-11-201	LEAD OPERATOR CONSOLE
2	CNS-11-202	GROUT OPERATOR CONSOLE
3	CNS-11-203	ENCAPSULATION OPERATOR CONSOLE
4	CNS-11-204	NDA CONSOLE
5	PR-11-210	PLANT CONTROL SYSTEM PRINTER
6	CPU-08-202	AGV CONTROL SYSTEM COMPUTER
7	TE-08-202	AGV CONTROL SYSTEM TERMINAL & KEYBOARD
8	PR-08-202	AGV CONTROL SYSTEM PRINTER
9	–	AGV DESK
10	–	FILE CABINET
11	–	DISK STORAGE CABINET
12	–	BOOKCASE
13	PR-11-209	DMS PRINTER
14	CPU-11-209	DMS WORKSTATION
15	–	DMS DESK
16	PR-11-208	WASTE RECORDS PREPARATION PRINTER
17	CPU-11-208	WASTE RECORDS PREPARATION WORKSTATION
18	–	WASTE RECORDS PREPARATION DESK
19	CAB-11-211	CCTV INTERFACE CABINET
20	–	OPERATOR CHAIR (TYP. 7 EA.)



PERSPECTIVE A



KEY PLAN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R. CERDA	4/31/92
DRAWN	C MOORE	5/4/92
CHECKED	McDERMOTT	5/19/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
CONTROL/COMPUTER ROOM
GENERAL ARRANGEMENT – PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5908	H-2-140682	D

SCALE: NONE | DISCIPLINE NO: I-1 | SHEET 1 OF 1

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	CERDA 7/31/92	McDERMOTT 5-11-92 / R. CERDA	7/31/92

REFERENCE DRAWINGS | REVISIONS

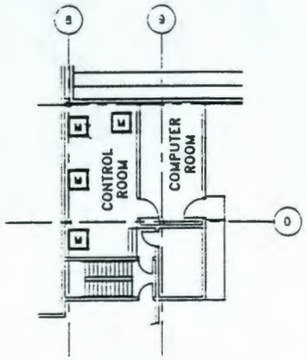
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: B140682A | CADCODE: 2C: IBM: ACD2: 11: NIN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

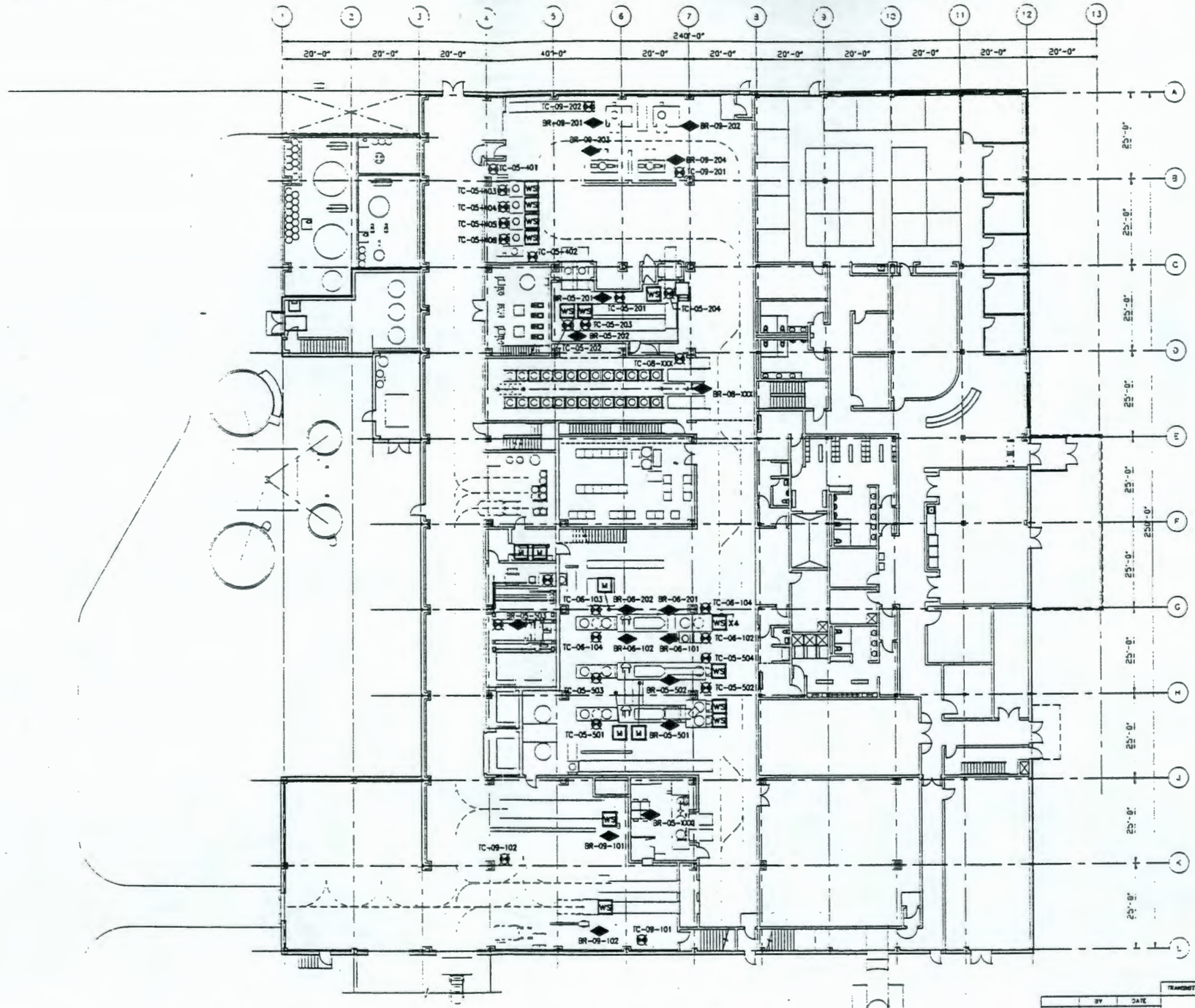
FORM WOODSFORD

9413227.1528

9413227.1529



PARTIAL UPPER FLOOR PLAN



FLOOR PLAN – GROUND LEVEL

1/16"=1'-0"

LEGEND

- CCTV CAMERA
- INSTRUMENT LOCATION (BAR CODE READERS)
- CCTV MONITOR
- WEIGH SCALE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	WADEWORTH	4/4/92
DRAWN	CALLENDER	4/5/92
CHECKED	W COPEDA	5/19/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
CCTV & BAR CODE READER
LOCATION PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	5901	H-2-140683	E

SCALE: 1/16"=1'-0" | DISCIPLINE NO: 1-6 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CALLENDER 7/31/92	W. Copeda 7/31/92	W. Copeda 7/31/92

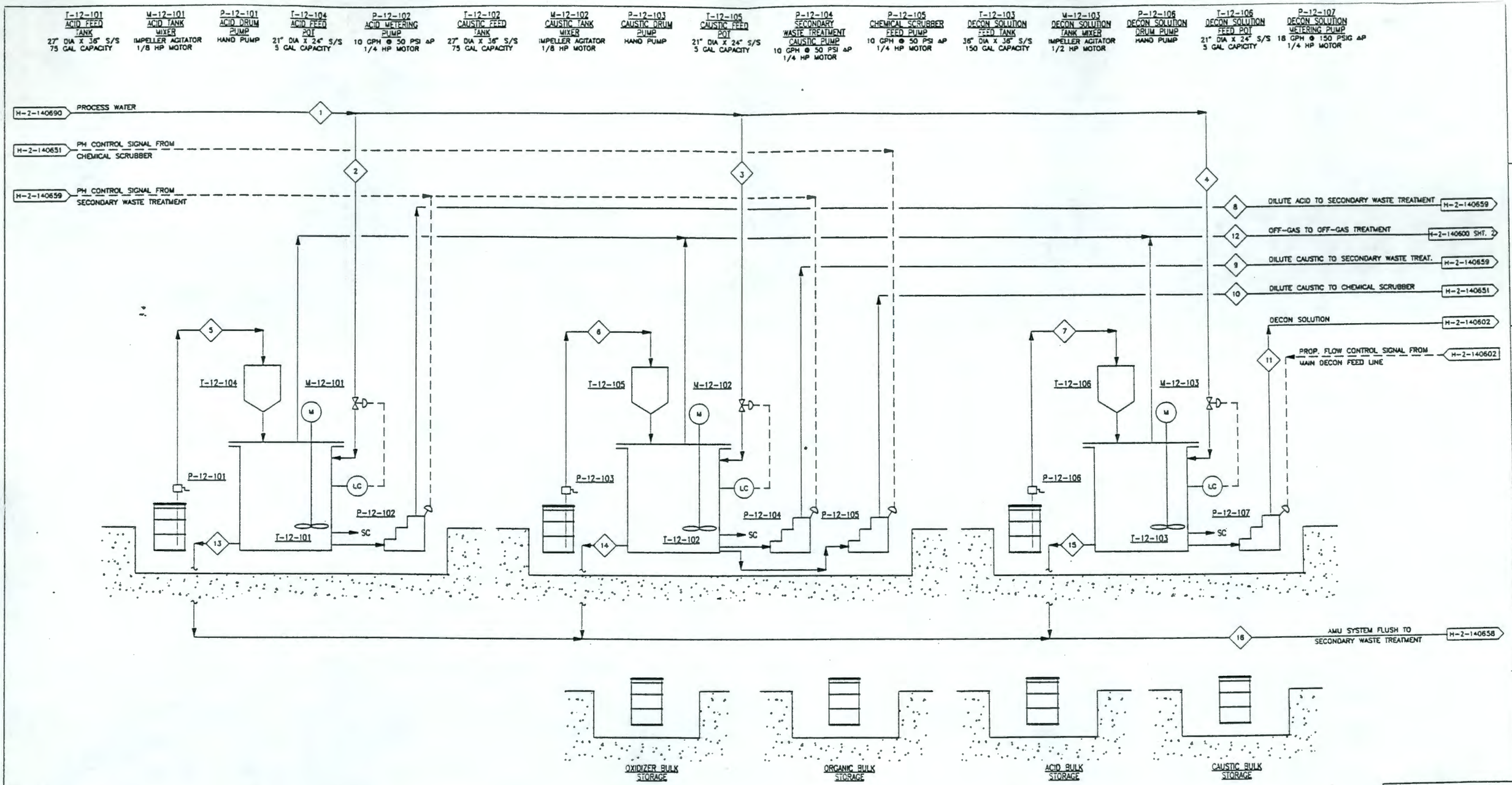
REVISIONS

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 8140683A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DESCRIPTION	PROCESS WATER TOTAL	PROCESS WATER TO ACID TANK	PROCESS WATER TO CAUSTIC TANK	PROCESS WATER DECON DILUTION TANK	CONC. ACID	CONC CAUSTIC	CONC. DECON SOLUTION	DILUTE ACID TO WASTE TREATMENT	DILUTE CAUSTIC TO WASTE TREATMENT	DILUTE CAUSTIC TO CHEMICAL SCRUBBER	DECON SOLUTION	OFF-GAS TO TREATMENT	ACID SYSTEM FLUSH	CAUSTIC SYSTEM FLUSH	DECON SYSTEM FLUSH	AMU SYSTEM FLUSH TOTAL
AVG FLOW/DAY (GPD)	2	1	1	0	0.01	0.01	NNF	0.5	0.5	NNF	NNF	5 ACFM	0.5	0.5	NNF	1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	T.SAYERS 7/31/92	R. HENKEL 7/31/92	K.H. CASEY R. HENKEL 7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: WR2AUT10.DWG | CADCODE: 2C:IBM:ACD2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	T.SAYERS	4/3/92
DRAWN	L.RIVERA	4/4/92
CHECKED	K.WALLINGTON	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN AQUEOUS SOLUTION MAKE-UP PROCESS FLOW DIAGRAM

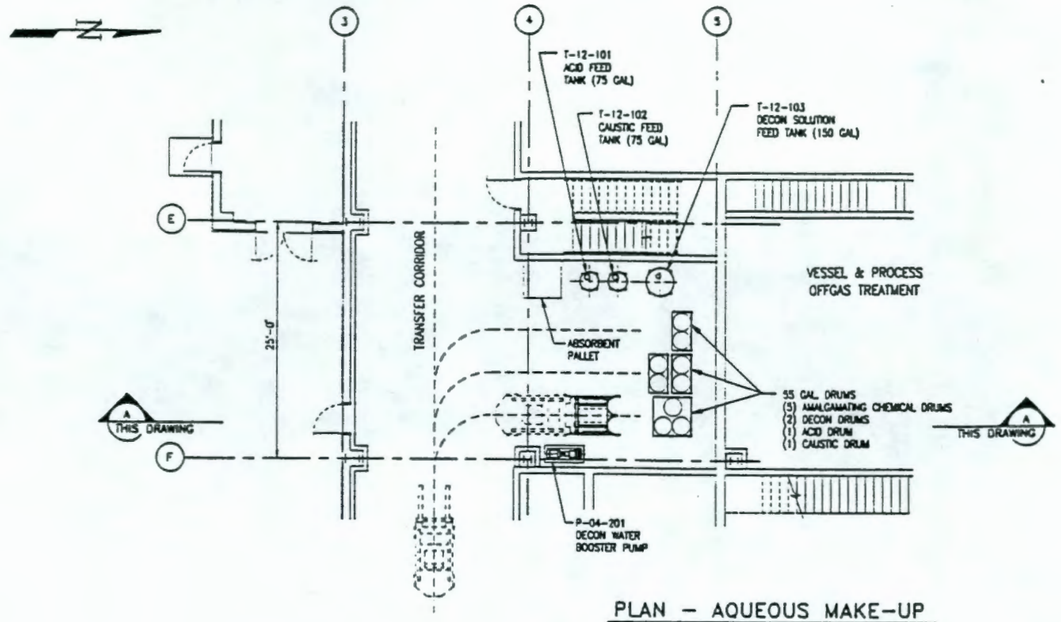
SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140687	D

SCALE: NONE | DISCIPLINE NO: UT-10 | SHEET 1 OF 1

FORM W0023010

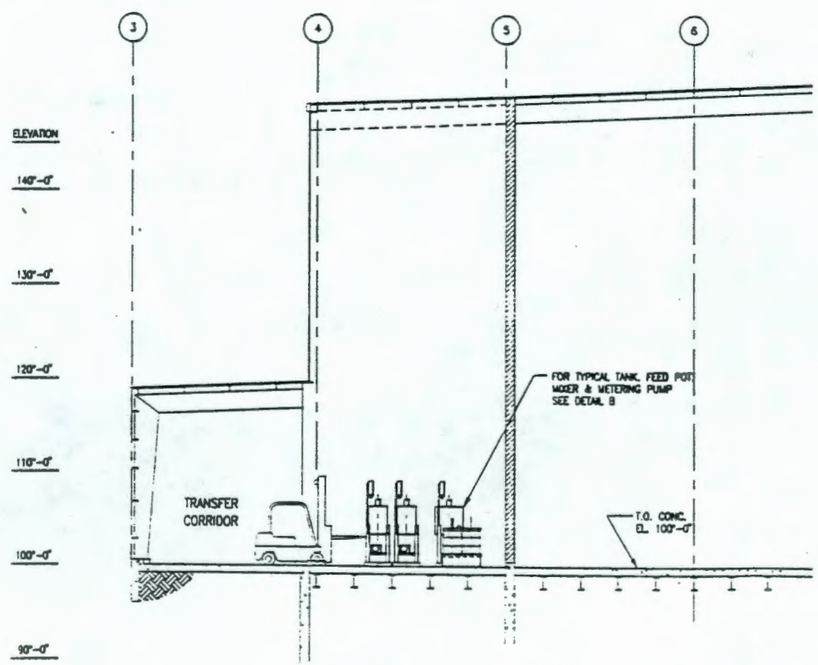
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1530



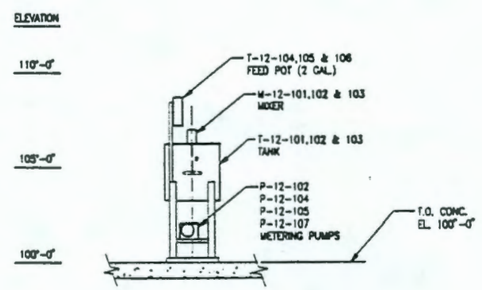
PLAN – AQUEOUS MAKE-UP

NOM. FIN. FLOOR EL. EL. 100'-0"



SECTION 'A – A"

LOOKING WEST



DETAIL "B"

SCALE 1/4"=1'-0" (TYP 3 PLACES)

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	SP NATHAN	04-07-92
DRAWN	SCHLOESSLIN	04-08-92
CHECKED	AJ ZIKOEL	06-03-92
APPROVED		
D.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
AQUEOUS MAKE-UP AREA
EQUIPMENT GENERAL ARRANGEMENT

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140688	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: UT-8 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SP NATHAN 7/31/92		

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

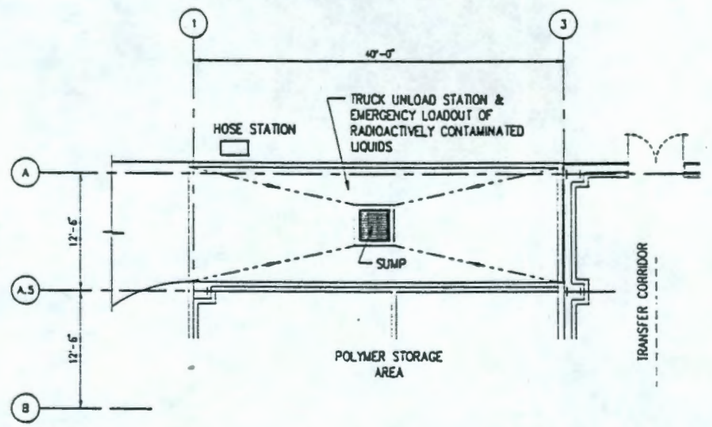
REVISIONS

CADFILE: 3140688A | CADCODE: 2C:IBM:ACD2:11:NN

9413227.1531

FORM W0028010

9413227.1532



PLAN – TRUCK LOAD & UNLOAD STATION

NOM. FIN. FLR. EL. 100'-0"

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-#100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
TRUCK LOAD & UNLOAD STATION
EQUIPMENT GENERAL ARRANGEMENT

	BY	DATE
DESIGNED	AJ ZIMDEL	03-11-92
DRAWN	HIGHLAND	03-13-92
CHECKED	AJ ZIMDEL	06-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	JP NATHAN 7/31/92	[illegible]	7/31/92

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

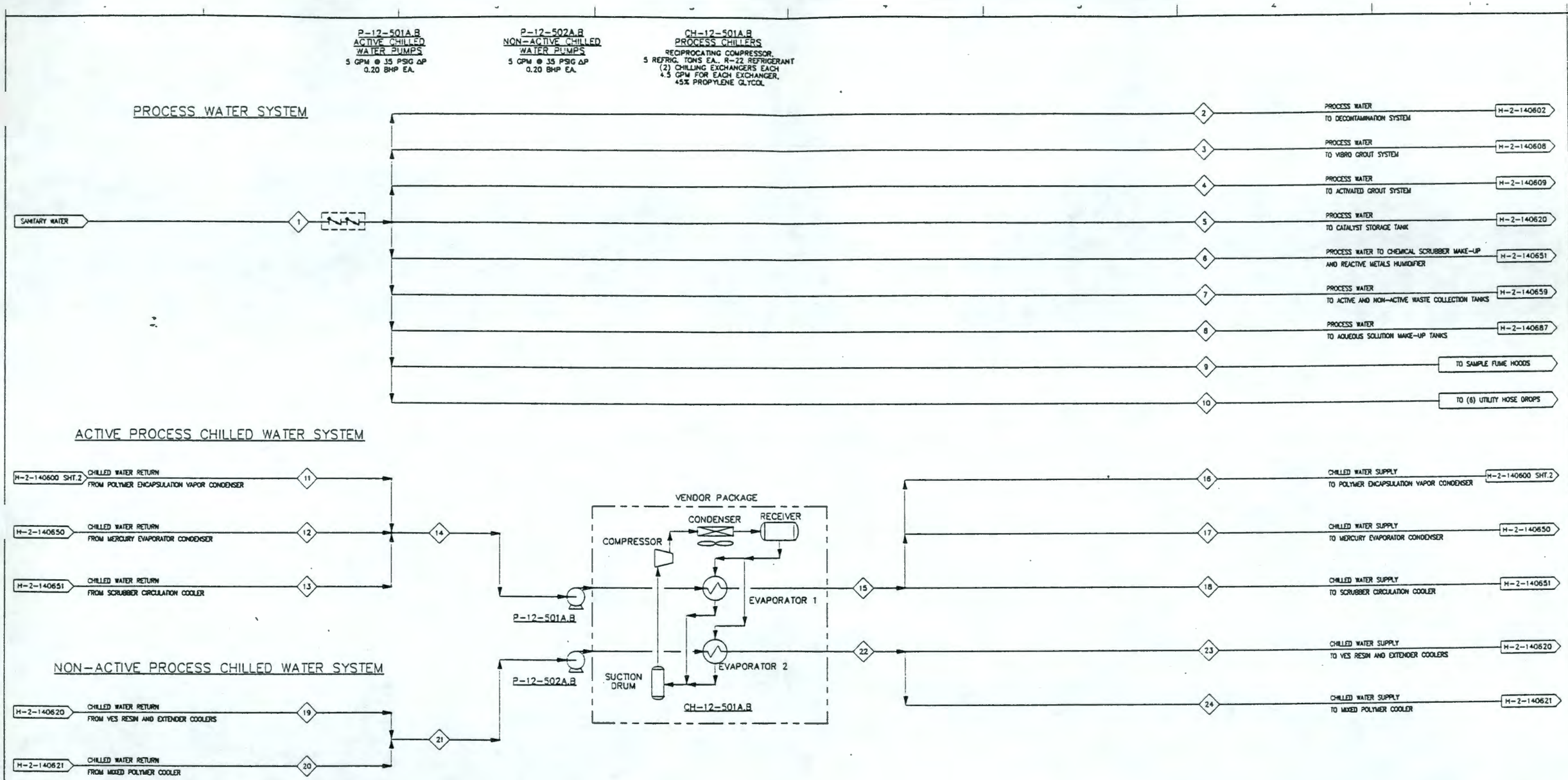
REVISIONS

CADFILE: 3140689A | CADCODE: 2C:IBM:ACD2:11:NN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140689	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: UT-9 | SHEET 1 OF 1

FORM 400280R0



STREAM NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
DESCRIPTION	PROCESS WATER TOTAL	PROCESS WATER TO DECON SYSTEM	PROCESS WATER TO VIBRO GROUT	PROCESS WATER TO AGITATED GROUT	PROC WTR TO CATALYST STORAGE TANK	PROC WTR TO CHEM. SCRUBBER MAKE-UP	PROC WTR TO WASTE COLLECT. TANKS	PROCESS WATER TO AMU TANKS	PROCESS WATER TO SAMPLE MGMT.	PROCESS WATER TO HOSE DROPS	CWR FROM POLYMER ENC. VAPOR COND.	CWR FROM MERCURY EVAP. COND	CWR FROM SCRUBBER CIRC. COOLER	ACTIVE C.W. RETURN	ACTIVE C.W. SUPPLY	CWS TO POLYMER ENC. VAPOR COND.	CWS TO MERCURY EVAP. COND.	CWS TO SCRUBBER CIRC. COOLER	CWR FROM VES RESIN & EXTENDER COOLERS	CWR FROM MIXED POLYMER COOLER	NON-ACTIVE CW RETURN	NON-ACTIVE CW SUPPLY	CWS TO VES RESIN & EXTENDER COOLERS	CWS TO MIXED POLYMER COOLER
WATER FLOW (GPD)	197.2	20.0	100.2	NNF	NNF	50.0	NNF	2.0	25.0	NNF	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C.W. FLOW (GPM)	-	-	-	-	-	-	-	-	-	-	110	9	54	183	183	110	9	54	50	11	71	71	50	11
TEMP., °F	60	50	50	50	50	50	60	50	60	50	57	57	57	57	42	42	42	42	57	57	57	42	42	42

REV NO	DESCRIPTION	REV BY/DATE	KCHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	K.VANZANTEN 7/31/92	R.HERRERA 7/31/92	L.J. HENKEL 7/31/92

REFERENCE DRAWINGS

REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140690A.DWG | CADCODE: 2C.IBM: ACD2:11:NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	K.VANZANTEN	4/20/92
DRAWN	L. RIVERA	4/21/92
CHECKED	R. HENKEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
PROCESS WATER & CHILLED WATER
PROCESS FLOW DIAGRAM

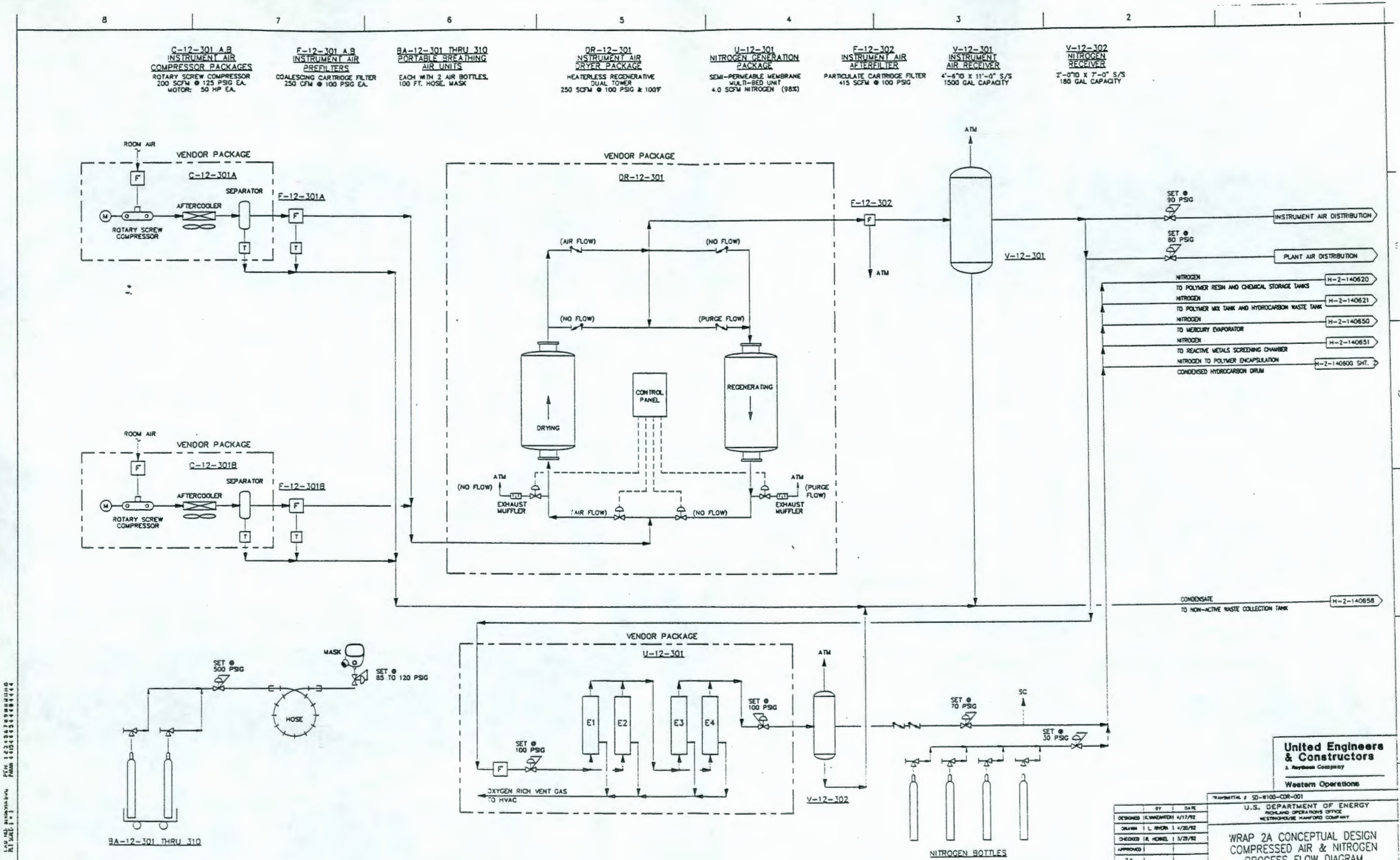
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140690	C

SCALE: NONE | DISCIPLINE NO: UT-11 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

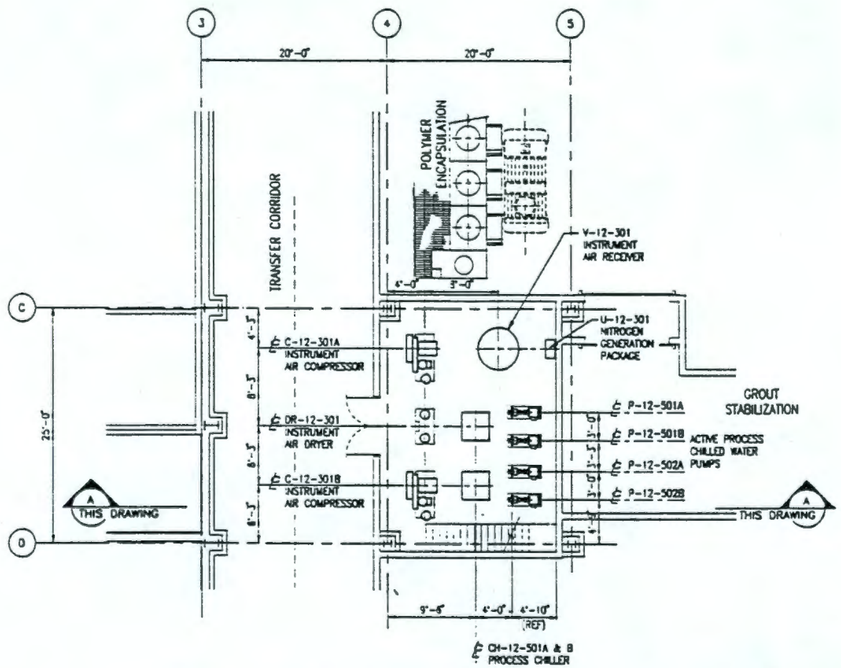
FORM NO.0300-00

9413227.1533



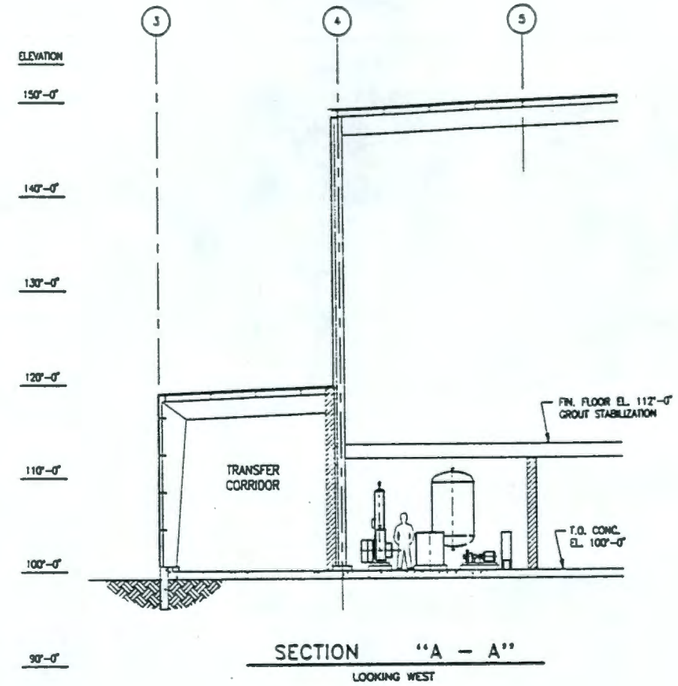
9413227.1534

9413227.1535



PLAN – CHILLED WATER, COMPRESSED AIR & NITROGEN

NOM FIN FLR EL. 100'-0"



SECTION "A – A"

LOOKING WEST

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	AJ ZINDEL	06-24-92
DRAWN	EA WILSON	6-27-92
CHECKED	AJ ZINDEL	08-03-92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
CHILLED WTR, COMPR AIR & NITROGEN
EQUIPMENT GENERAL ARRANGEMENT

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140692	D

SCALE: 1/8" = 1'-0" | DISCIPLINE NO: UT-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	SP WATHAN 7/31/92	7/31/92	7/31/92

REFERENCE DRAWINGS

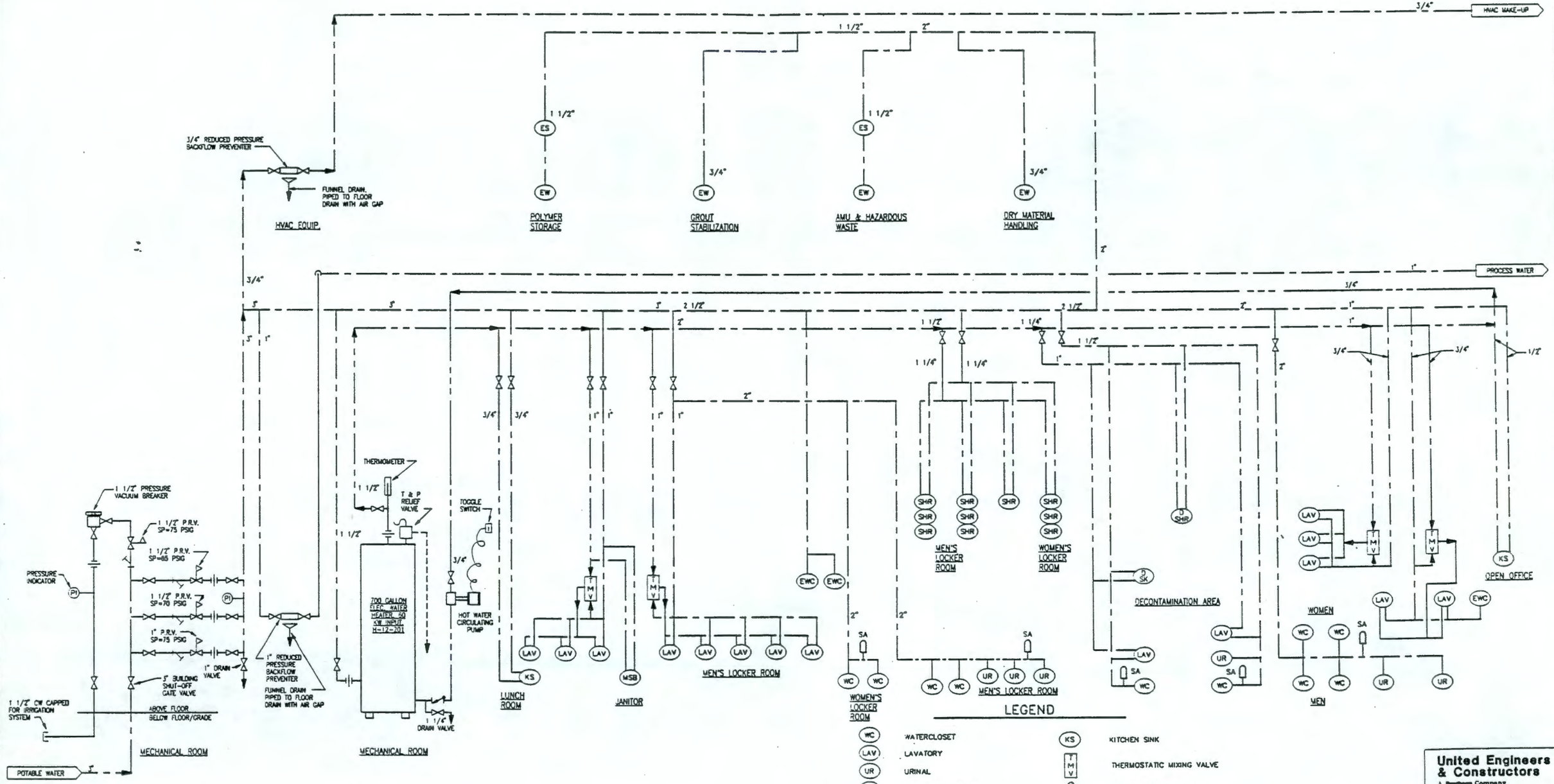
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

CADFILE: 3140692A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1536



REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	L. FOST 7/31/92		7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 3140693A | CADCODE: 2C:IBM:ACD2:11:NN

	BY	DATE
DESIGNED	L. FOST	4/28/92
DRAWN	L. RIVERA	5/11/92
CHECKED	A. ZIMDEL	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

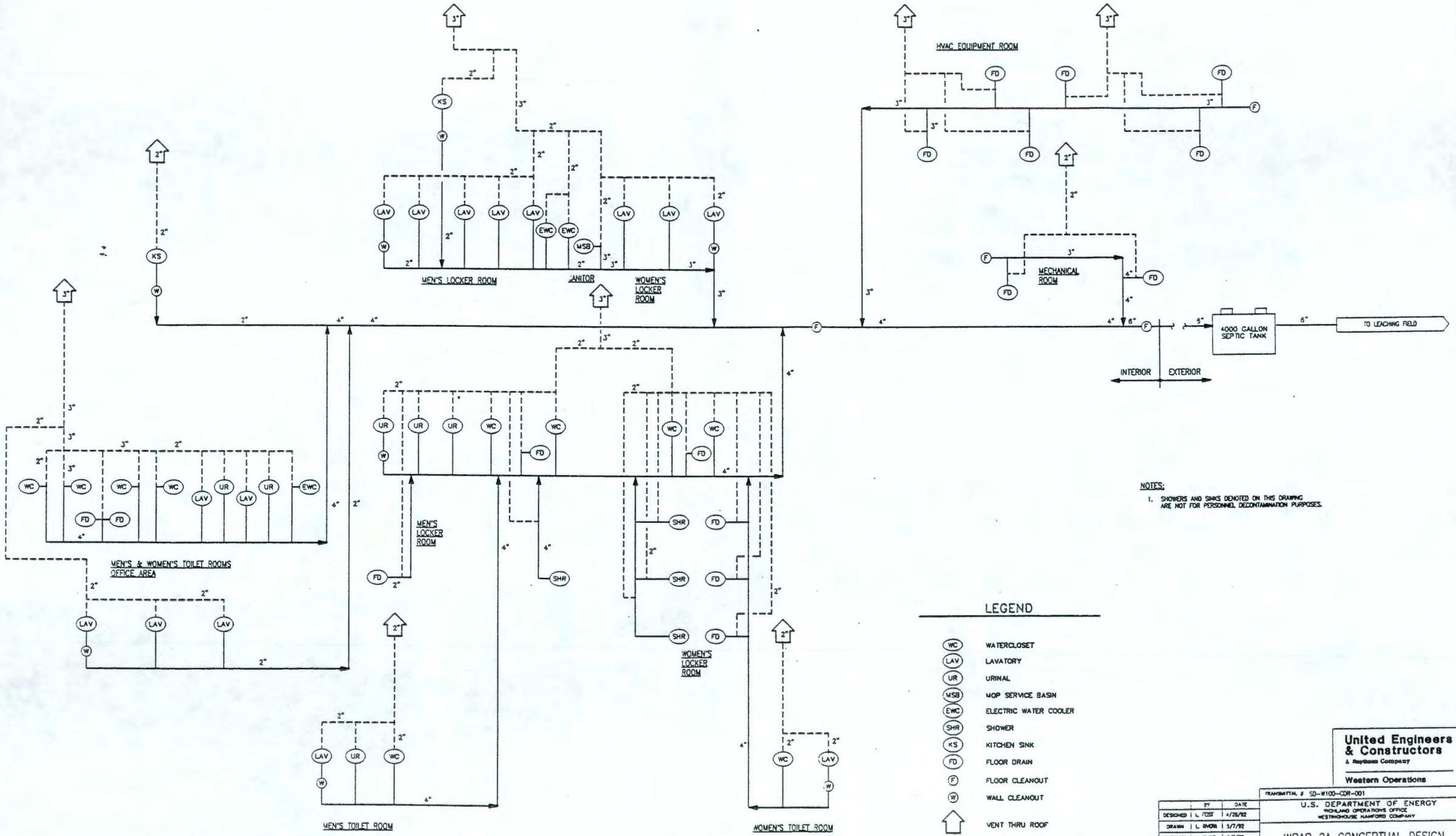
WRAP 2A CONCEPTUAL DESIGN POTABLE WATER UTILITY FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140693	D

SCALE: NONE | DISCIPLINE NO: UT-3 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1537



NOTES:

1. SHOWERS AND SINKS DENOTED ON THIS DRAWING ARE NOT FOR PERSONNEL DECONTAMINATION PURPOSES.

LEGEND

WC	WATERCLOSET
LAV	LAVATORY
UR	URINAL
MSB	MOP SERVICE BASIN
EWC	ELECTRIC WATER COOLER
SHR	SHOWER
KS	KITCHEN SINK
FD	FLOOR DRAIN
F	FLOOR CLEANOUT
W	WALL CLEANOUT
	VENT THRU ROOF
	SANITARY DRAINAGE PIPING
	SANITARY VENT PIPING

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	L. TOST	4/28/92
DRAWN	L. RHODA	5/7/92
CHECKED	A. ZINDEL	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

WRAP 2A CONCEPTUAL DESIGN SANITARY WASTE AND VENT UTILITY FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-40694	D

SCALE: NONE | DISCIPLINE NO: UT-4 | SHEET 1 OF 1

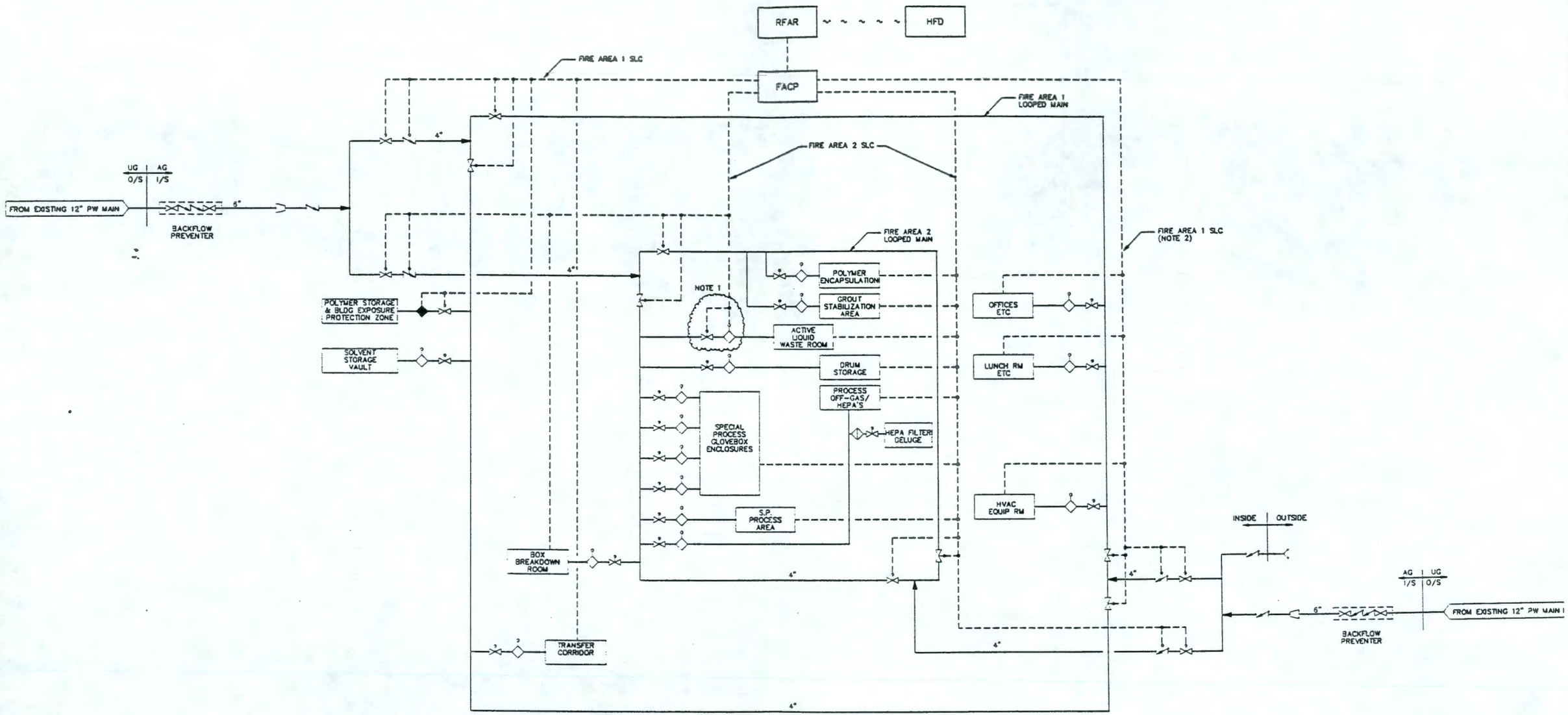
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	L. TOST 7/31/92		7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140694A | CADCODE: 2C:IBM:ACD2:11:NN

FORM W0028D0

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



LEGEND

- CHECK VALVE
- ALARM CHECK VALVE
- OS & Y VALVE W/TAMPER SWITCH
- WATERFLOW SWITCH
- FIRE DEPT CONNECTION
- DRY PIPE VALVE
- DELUGE VALVE

NOTES:

1. TYPICAL FOR ALL SPRINKLER ZONES.
2. SLC = SIGNALING LINE CIRCUIT
3. POTABLE WATER SUPPLY:
   1400 GPM
   120 PSI STATIC
   90 PSI RESIDUE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-COR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	F. TAGGE	5/11/92
DRAWN	L. RIVERA	5/13/92
CHECKED	A. ZINDEL	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

WRAP 2A CONCEPTUAL DESIGN
FIRE PROTECTION
MECHANICAL FLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140695	D

SCALE: NONE | DISCIPLINE NO: UT-6 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL COR SUBMITTAL	F. TAGGE 7/31/92	[illegible]	J. ZINDEL 7/31/92

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST | NEXT USED ON:

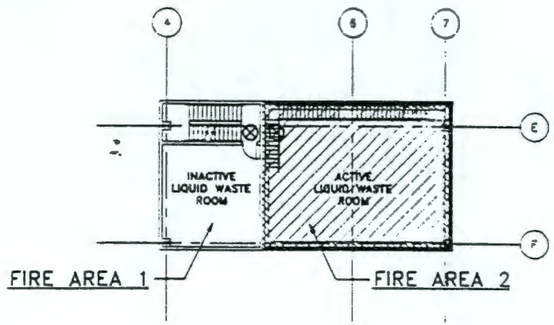
REVISIONS

CADFILE: 8140695A | CADCODE: 2C:IBM:ACD2:11:NN

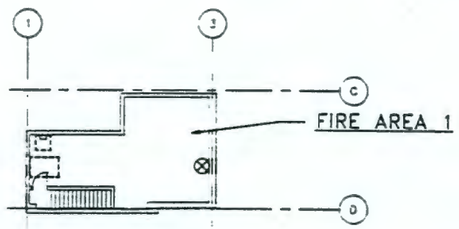
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1538

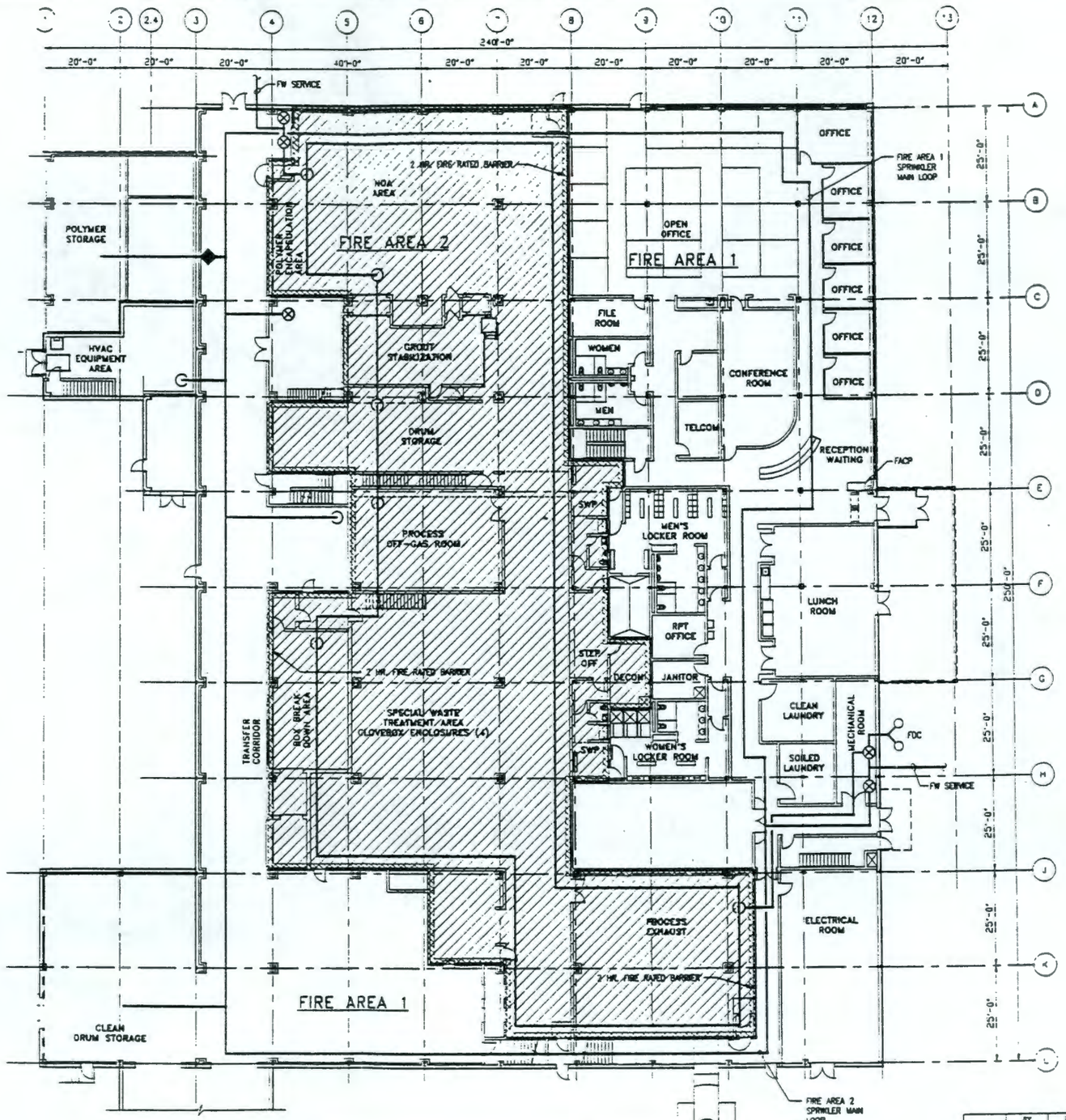
9413227.1539



FIRE PROTECTION ZONE PLAN – LOWER LEVEL



FIRE PROTECTION ZONE PLAN – SOLVENT STORAGE VAULT



FIRE PROTECTION ZONE PLAN – GROUND LEVEL

LEGEND

AS	AUTO WET PIPE SPRINKLER SYSTEM
SD	SMOKE DETECTOR
TD	THERMAL (HEAT) DETECTOR
EXT	DRY CHEMICAL MANUAL EXTINGUISHER
MPS	MANUAL PULL STATION
FHS	FIRE HOSE STATION
FACP	FIRE ALARM CONTROL PANEL
DP	AUTO DRY PIPE SPRINKLER SYSTEM

SYMBOLS

⊗ SPRINKLER RISER

◆ DRY PIPE VALVE

NOTES

1. ONLY SPRINKLER SYSTEM LOOPED MAIN IS SHOWN.
2. UNLESS A ZONE IS SPECIFICALLY DESCRIBED IN THE TABLE, ITS PROTECTION DETECTION IS AS NOTED UNDER "GENERAL".
3. ALL AREAS WILL BE PROVIDED WITH EITHER AS OR DP PROTECTION.

FIRE AREA	DESCRIP	FIRE ZONE	DESCRIP	PROTECTION AREA	DESIGN BASIS
1	ADMIN & SUPPORT		GENERAL	AS, SD, EXT, MPS, FHS	OH, GR 1, 0.15 OVER 1500 S.F.
		1.1	POLYMER STORAGE	DP, TD, EXT, MPS	OH, GR 2, 0.20 OVER 1500 S.F.
2	PROCESS		GENERAL	AS, FHS, TD, EXPOSURE PROT. SPRINKLERS	OH, GR 2, 0.15 OVER 1500 S.F.
		2.1	GLOVEBOX ENCLOSURES (TYPICAL)	AS, TD, EXTERNAL MANUAL DRY CHEM EXTINGUISHER	OH, GR 2, 0.20 GPM OVER ENTIRE AREA

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	F.DAGE 7/31/92		

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140696A | CADCODE: 2C: IBM: ACD2: 11: NN

	BY	DATE
DESIGNED	F DAGE	4/3/92
DRAWN	CALLENDER	4/8/92
CHECKED	A.ZINDEL	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-8100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

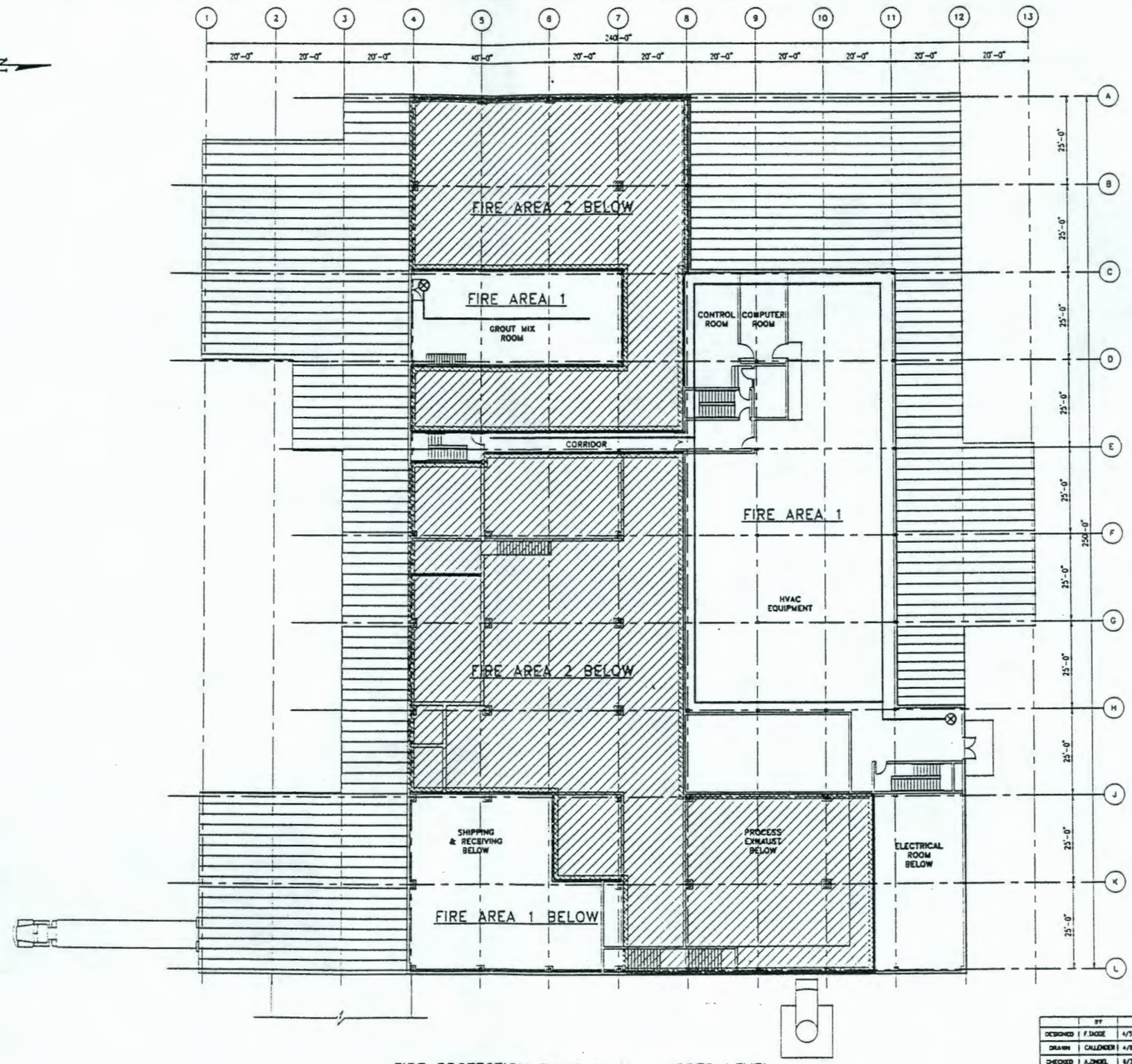
WRAP 2A CONCEPTUAL DESIGN
FIRE PROTECTION ZONE PLAN
GROUND & LOWER LEVELS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140696	D

SCALE: 1/16"=1'-0" | DISCIPLINE NO: UT-5 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1540



FIRE PROTECTION ZONE PLAN – UPPER LEVEL

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
FIRE PROTECTION ZONE PLAN
UPPER LEVEL

	BY	DATE
DESIGNED	F.TAGGE	4/3/92
DRAWN	CALLENDER	4/3/92
CHECKED	A.ZINDEL	4/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	1575	H-2-140697	D
SCALE: 1/16"=1'-0"		DISCIPLINE NO. UT-15	SHEET 1 OF 1	

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	F.TAGGE 7/31/92	A. Zindel	7/31/92

REFERENCE DRAWINGS

REVISIONS

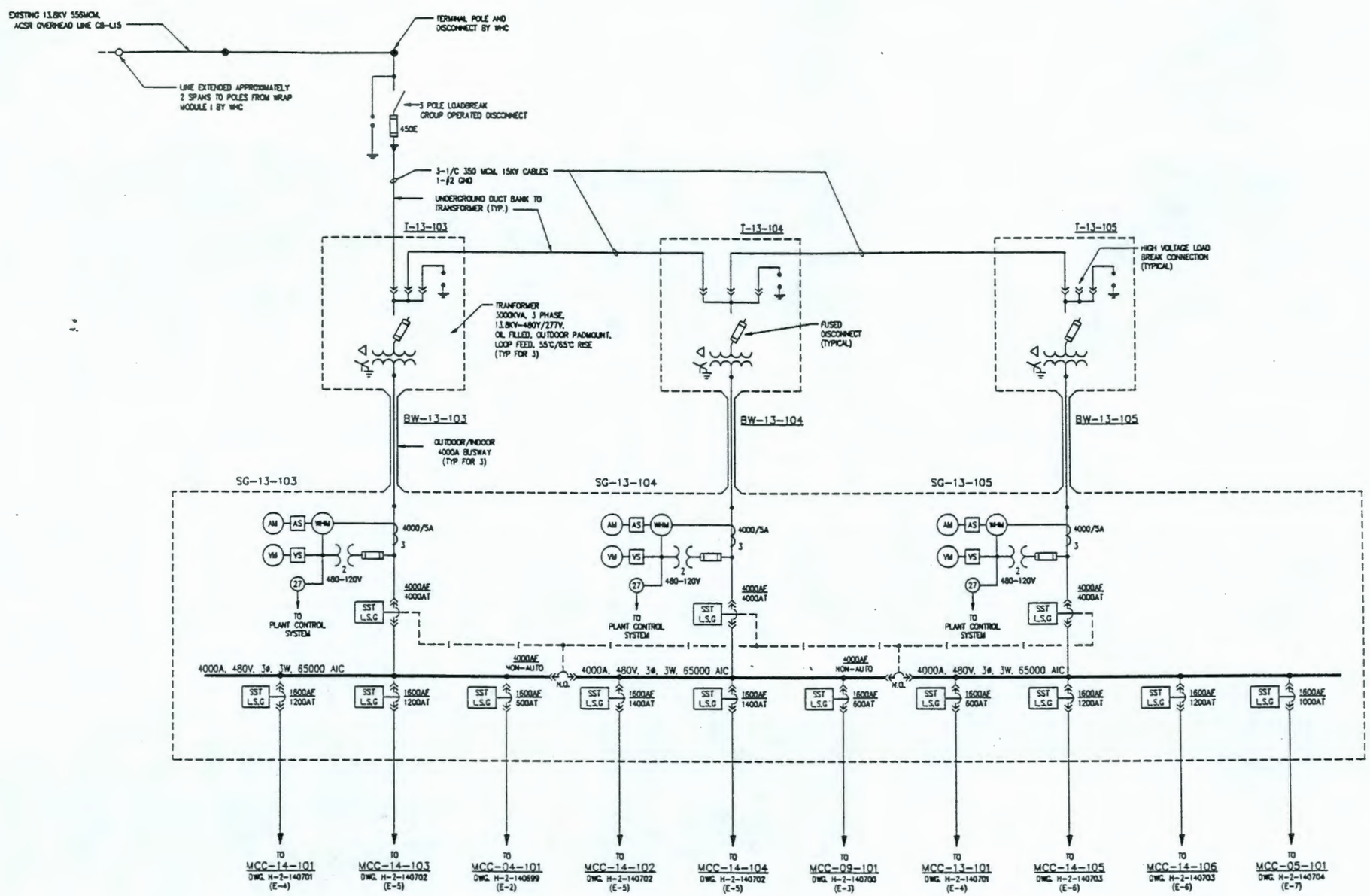
DRAWING TRACEABILITY LIST

NEXT USED ON:

CADFILE: 9140697A

CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



LEGEND:

- POWER TRANSFORMER DELTA PRIMARY, GROUNDED WYE SECONDARY
- FUSE
- 3 POLE LOADBREAK GROUP OPERATED DISCONNECT, FUSED
- LIGHTNING ARRESTOR
- VOLTAGE TRANSFORMER
- CURRENT TRANSFORMER
- AM — AMMETER
- VM — VOLTMETER
- WHM — WATTHOUR METER
- AS=AMMETER SWITCH VS=VOLTMETER SWITCH
- STRESS CONE
- SST L.S.G.I — SOLID STATE TRIP UNIT. L=LONG TIME. S=SHORT TIME, G=GROUND, I=INSTANTANEOUS
- FRAME SIZE / TRIP RATING — DRAWOUT AIR CIRCUIT BREAKER; N.O.-NORMALLY OPEN
- EXISTING LINE & POLE
- NEW LINE & POLE
- N — MOTOR, HP OR KW INDICATED
- N — PACKAGE LOAD, HP OR KW INDICATED
- 27 — UNDERVOLTAGE RELAY (LOSS OF POWER)
- MOTOR STARTER
- MCP OR CIRCUIT BREAKER
- N — NEMA SIZE
- MOTOR OVERLOADS
- BATTERY
- 2 SPEED STARTER
- I — KEY INTERLOCK SUCH THAT ONLY ONE XFMR BREAKER MAY MAY BE CLOSED AT ONE TIME WHEN TE BREAKER IS CLOSED CONNECTING TWO BUSSES. ELECTRICAL LOADS MUST BE SHED BEFORE ALTERING CONFIGURATION

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	E KOPPLOW	5/12/92
DRAWN	L RHODA	5/14/92
CHECKED	G.CHAMBERS	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN MASTER ONE-LINE DIAGRAM

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	A.OSTWALD 7/31/92		7/31/92

REFERENCE DRAWINGS: DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS: CADFILE: 8140698A | CADCODE: 2C:IBM:ACD2:11:NN

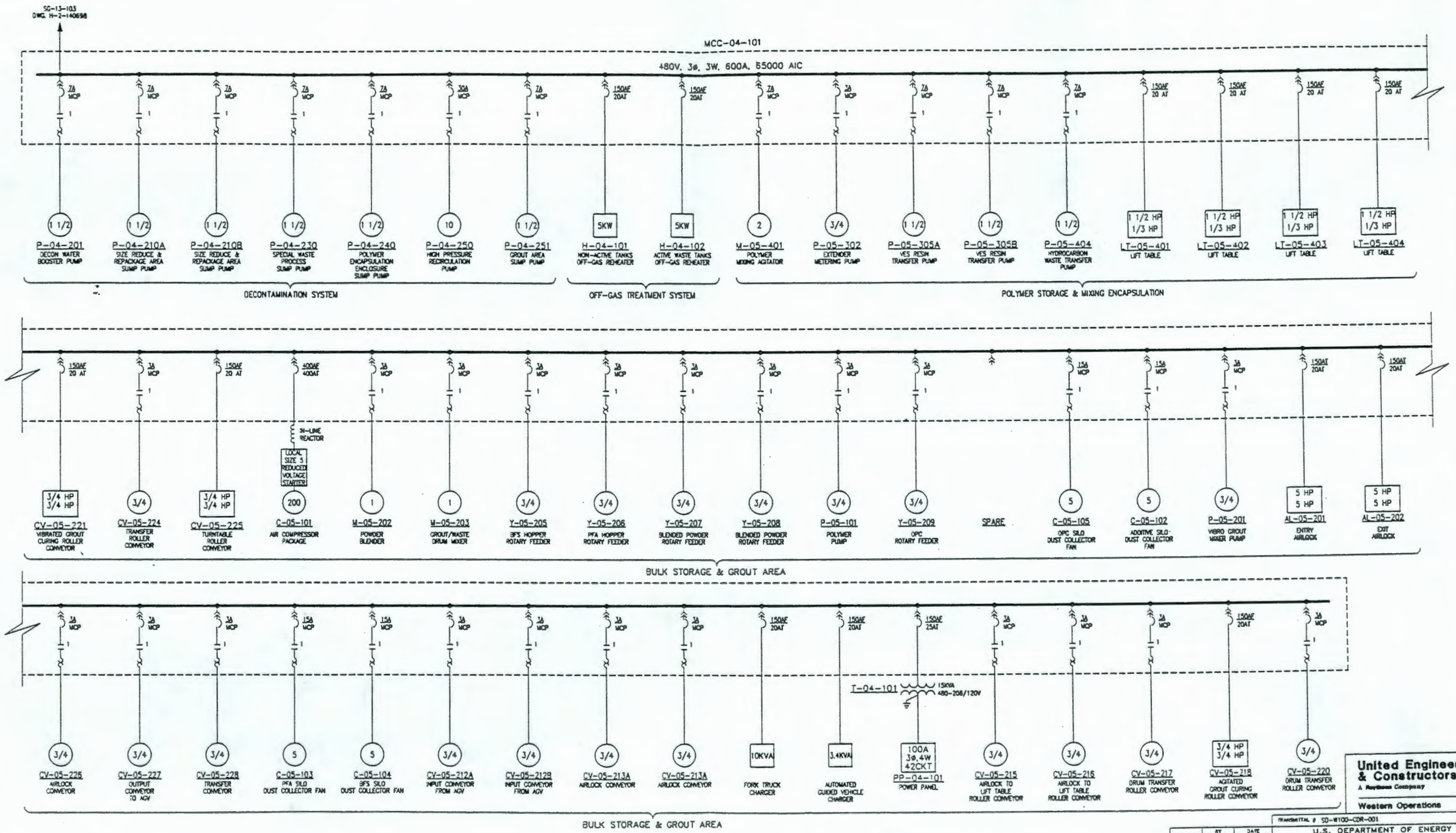
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140698	B

SCALE: NONE | DISCIPLINE NO: E-1 | SHEET 1 OF 1

FORM M002B0R0

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1541



NOTES:

1. INSTALLED MOTOR SIZES OF 3/4HP AND ABOVE ARE SHOWN UNLESS PART OF A PACKAGED UNIT. HEATER LOADS, EQUIVALENT TO 2 HP ARE SHOWN ON MCC'S. SMALLER LOADS WILL BE POWERED FROM LOCAL POWER PANELS.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	E. KOPYLOV	5/12/92
DRAWN	L. RINDA	5/14/92
CHECKED	G. CHAMBERS	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

WRAP 2A CONCEPTUAL DESIGN
ONE-LINE DIAGRAM
AREA 04 & 05

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140699	B

SCALE: NONE | DISCIPLINE NO: E-2 | SHEET 1 OF 1

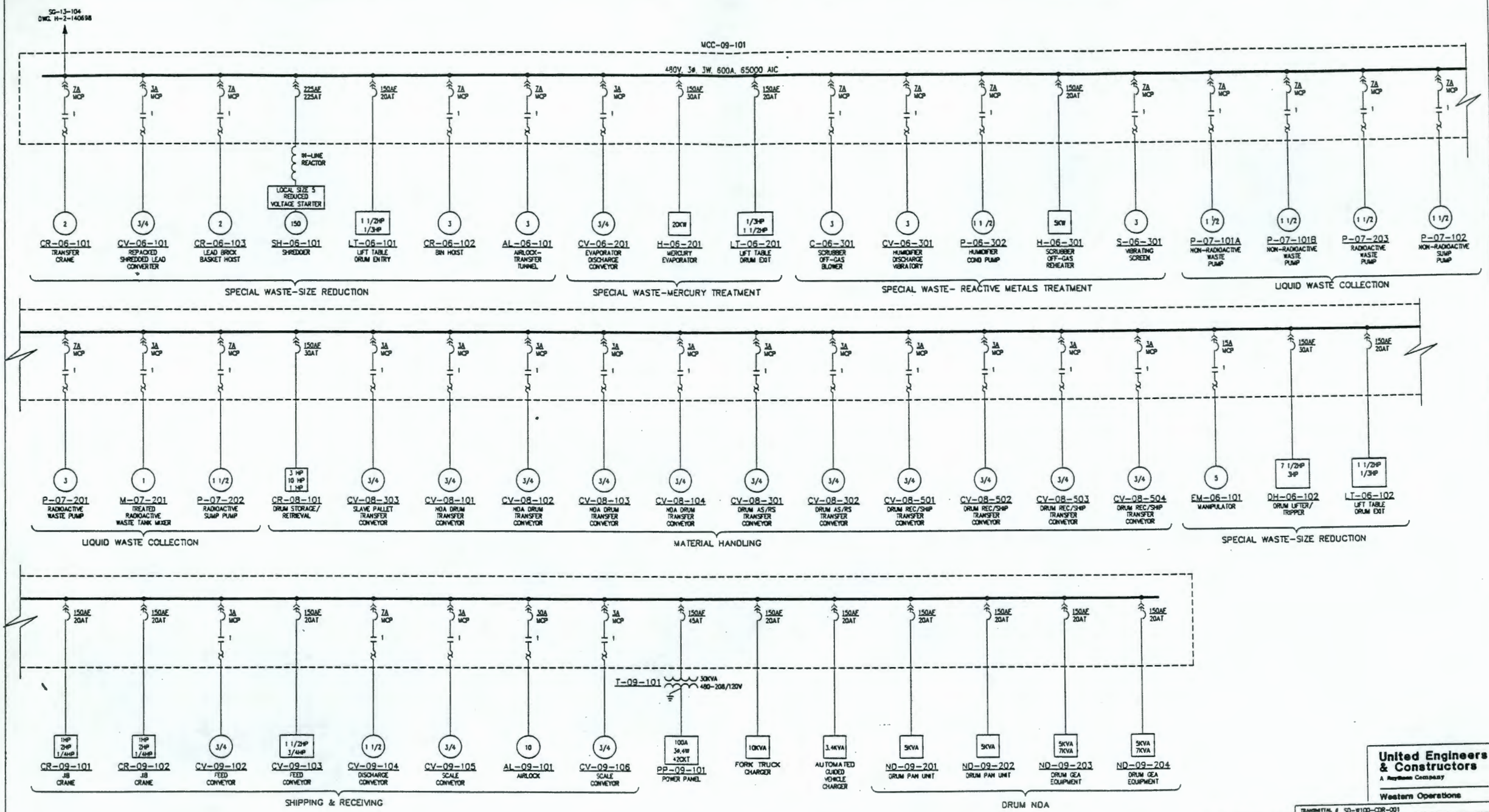
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	A.OSTWALD 7/31/92	7/31/92	7/31/92

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS
CADFILE: B140699A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1542



NOTES:

1. INSTALLED MOTOR SIZES OF 3/4HP AND ABOVE ARE SHOWN UNLESS PART OF A PACKAGED UNIT. HEATER LOADS, EQUIVALENT TO 2 HP ARE SHOWN ON MCC'S. SMALLER LOADS WILL BE POWERED FROM LOCAL POWER PANELS.

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
8	FINAL CDR SUBMITTAL	A.COSTWALD 7/31/92	[illegible] 7/31/92	7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 9140700A | CADCODE: 2C:IBM: ACD2: 11: NN

	BY	DATE
DESIGNED	E KOPYLOV	5/12/92
DRAWN	L RIVERA	5/12/92
CHECKED	G.CHAMBERS	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
ONE-LINE DIAGRAM
AREAS 06, 07, 08 & 09

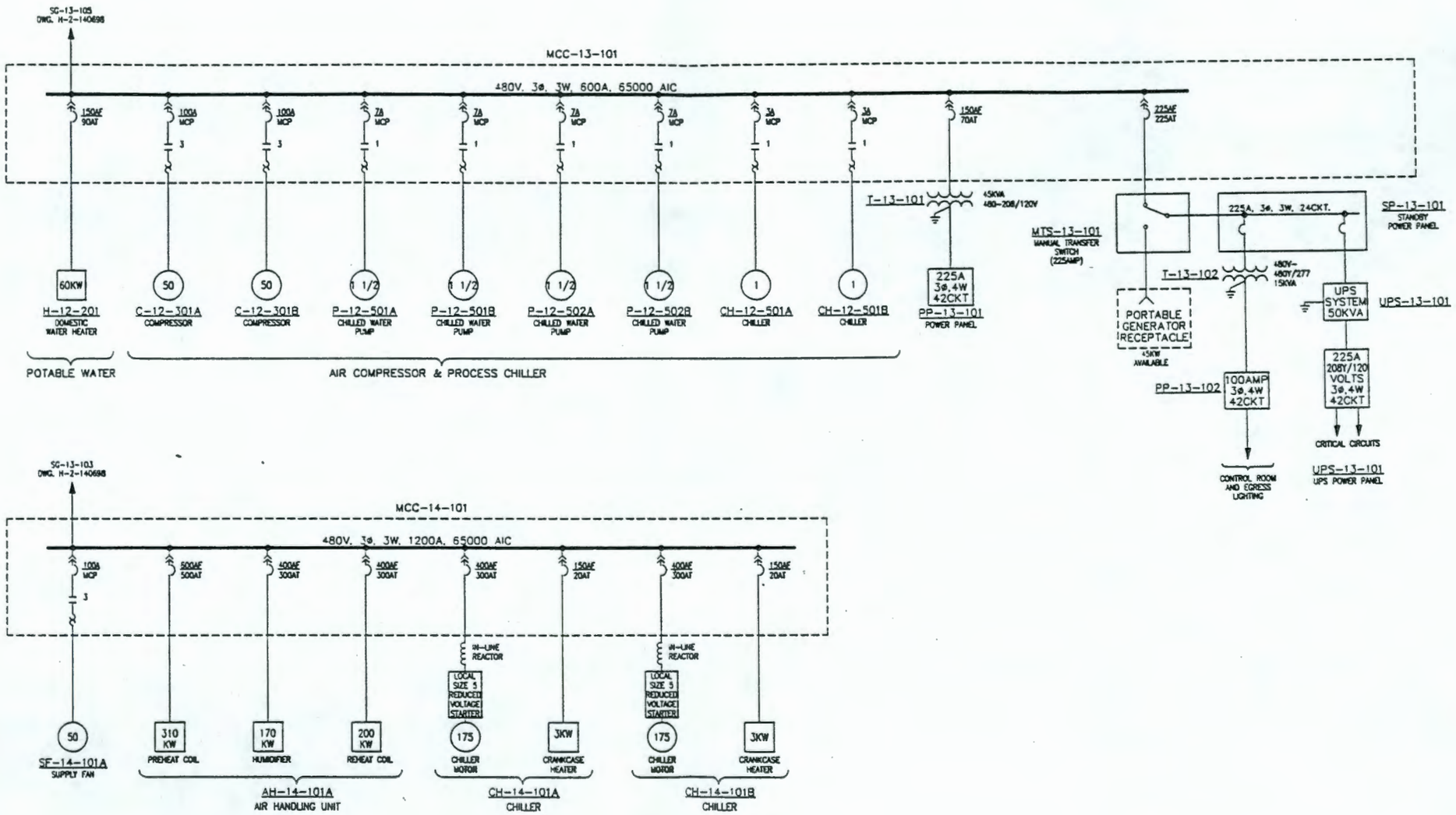
SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140700	B

SCALE: NONE | DISCIPLINE NO: E-3 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM M0220R03

9413227.1543



NOTES:

1. INSTALLED MOTOR SIZES OF 3/4HP AND ABOVE ARE SHOWN UNLESS PART OF A PACKAGED UNIT. HEATER LOADS, EQUIVALENT TO 2 HP ARE SHOWN ON MCC'S. SMALLER LOADS WILL BE POWERED FROM LOCAL POWER PANELS.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	E. KOPTILOV	5/12/92
DRAWN	L. RIVERA	5/14/92
CHECKED	G.DOWNEBER	6/3/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
ONE-LINE DIAGRAM
AREAS 13 & 14

SIZE	SLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140701	B

SCALE: NONE | DISCIPLINE NO: E-4 | SHEET 1 OF 1

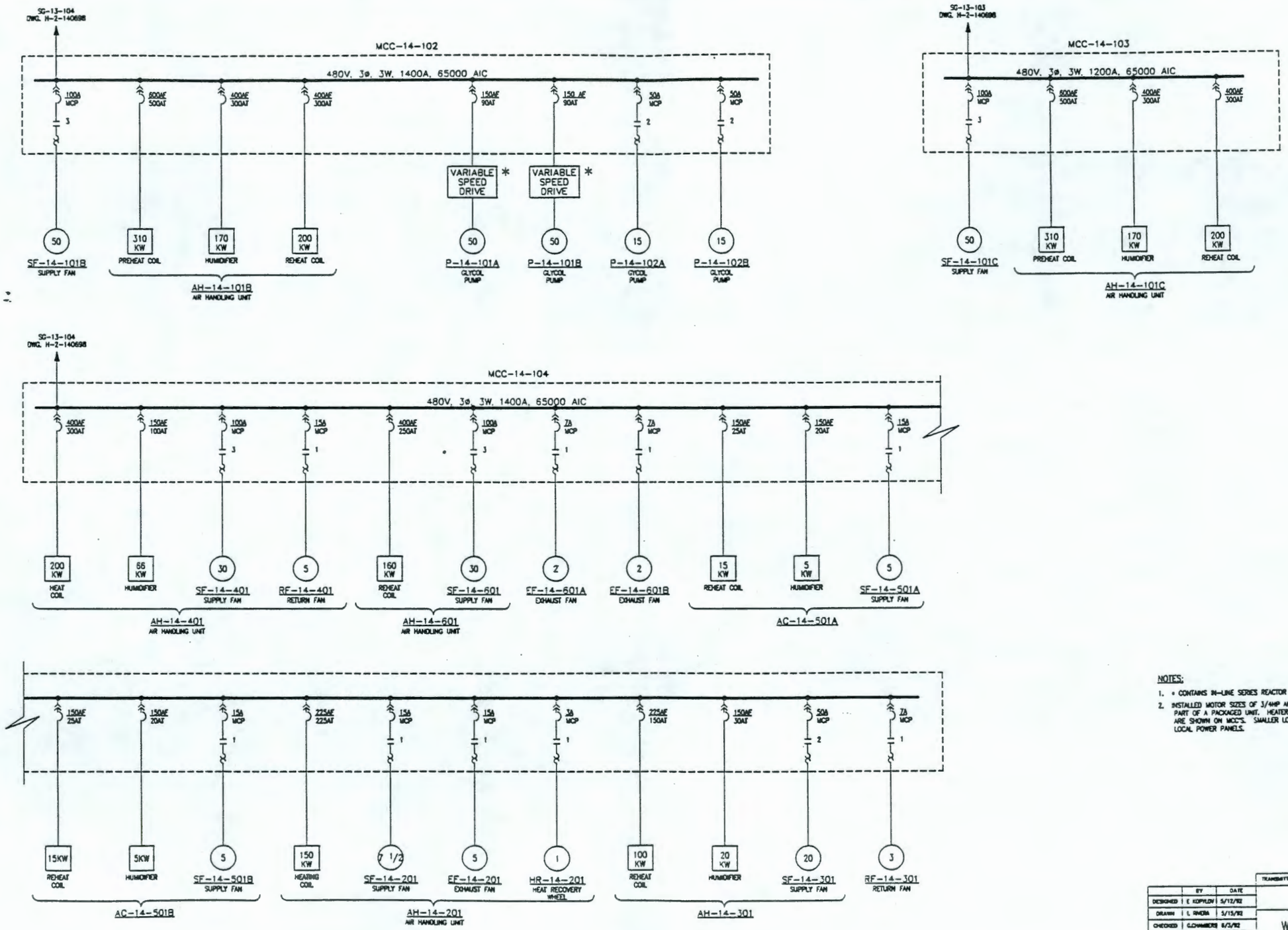
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	A.OSTRALD 7/31/92	[illegible]	[illegible]

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140701A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1544



NOTES:

1. * CONTAINS IN-LINE SERIES REACTOR TO REDUCE HARMONICS.
2. INSTALLED MOTOR SIZES OF 3/4HP AND ABOVE ARE SHOWN UNLESS PART OF A PACKAGED UNIT. HEATER LOADS, EQUIVALENT TO 2 HP ARE SHOWN ON MCC'S. SMALLER LOADS WILL BE POWERED FROM LOCAL POWER PANELS.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	E KOPYLOV	5/12/92
DRAWN	L RHODA	5/15/92
CHECKED	G.CHAMBERS	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
ONE-LINE DIAGRAM
AREA 14

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140702	B

SCALE: NONE | DISCIPLINE NO: E-5 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	A.OSTWALD 7/31/92	[illegible]	7/31/92

REVISIONS

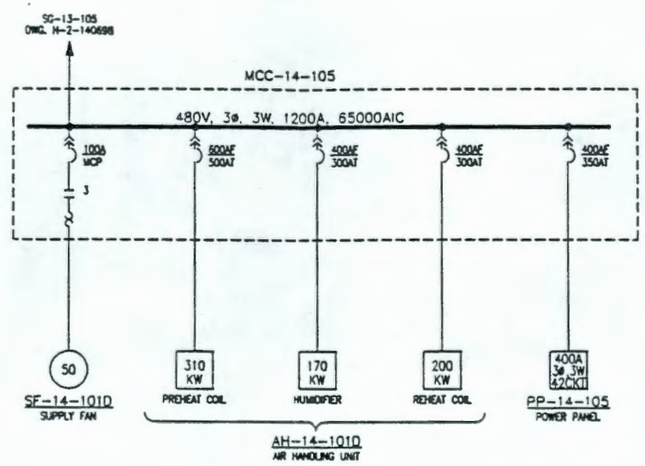
REFERENCE DRAWINGS

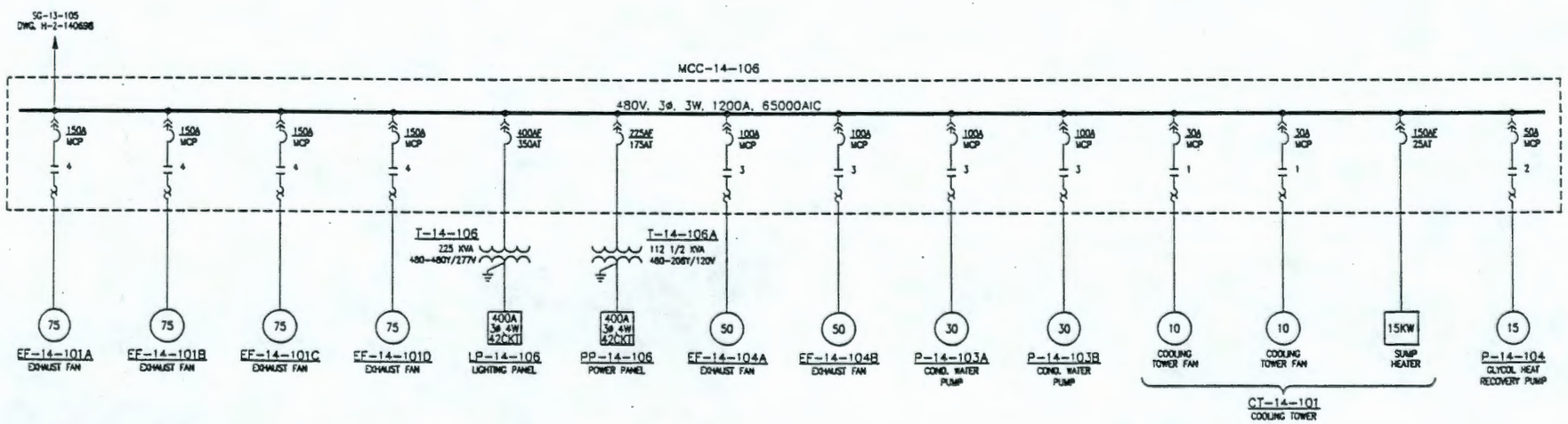
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140702A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

94132271.1545





NOTES:

1. INSTALLED MOTOR SIZES OF 3/4HP AND ABOVE ARE SHOWN UNLESS PART OF A PACKAGED UNIT. HEATER LOADS, EQUIVALENT TO 2 HP ARE SHOWN ON MCC'S. SMALLER LOADS WILL BE POWERED FROM LOCAL POWER PANELS.

	BY	DATE
DESIGNED	C. KOPYLOV	5/12/92
DRAWN	L. RIVERA	5/15/92
CHECKED	G.CHAMBERS	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
8	FINAL CDR SUBMITTAL	A.OSTWALD 7/31/92	[illegible]	[illegible]

REFERENCE DRAWINGS
REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 3140703A | CADCODE: 2C:IBM:ACD2:11:NN

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

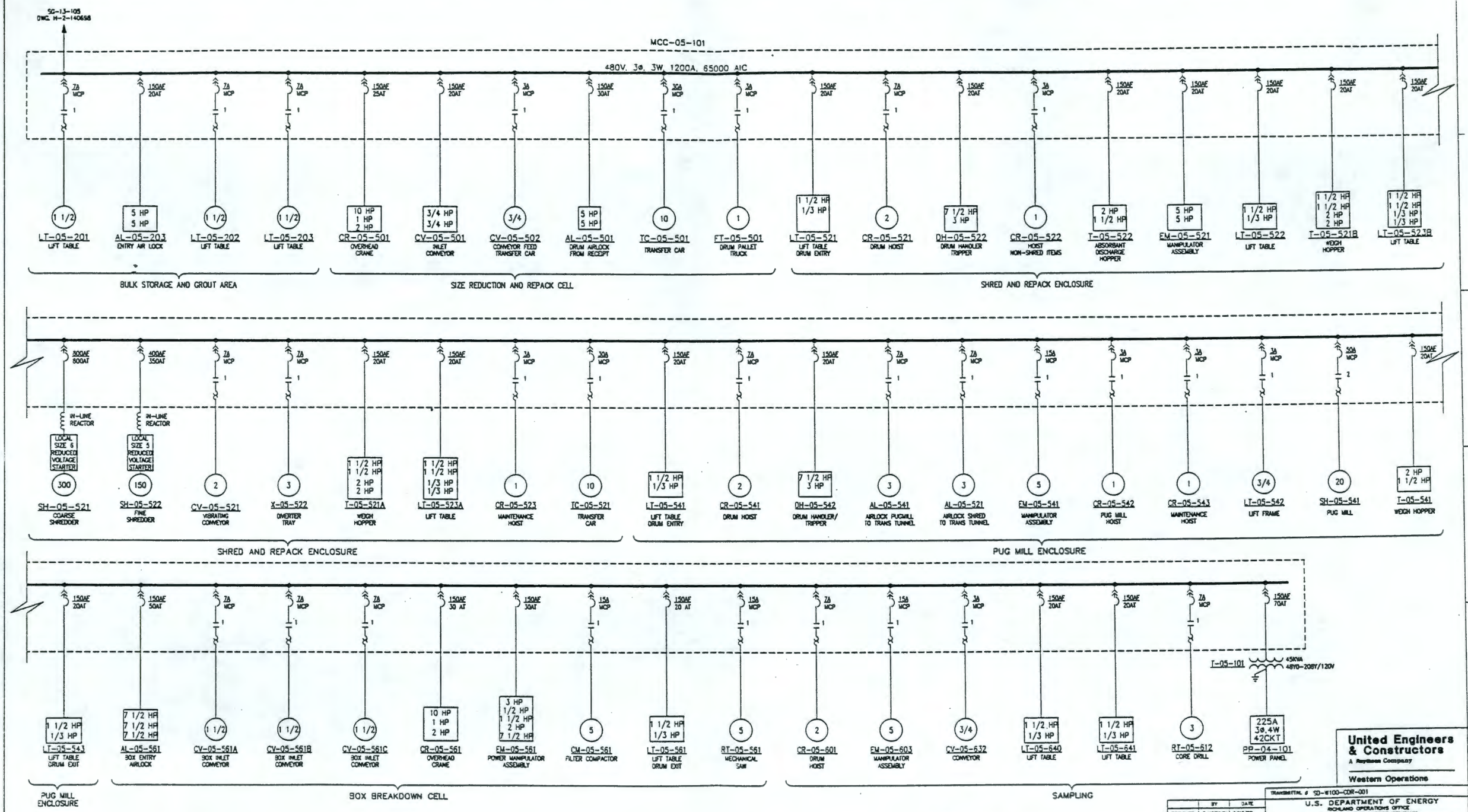
WRAP 2A CONCEPTUAL DESIGN
ONE-LINE DIAGRAM
AREA 14

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140703	8

SCALE: NONE | DISCIPLINE NO: E-6 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1546



NOTES:

1. INSTALLED MOTOR SIZES OF 3/4HP AND ABOVE ARE SHOWN UNLESS PART OF A PACKAGED UNIT. HEATER LOADS, EQUIVALENT TO 2 HP ARE SHOWN ON MOC'S. SMALLER LOADS WILL BE POWERED FROM LOCAL POWER PANELS.

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	A.OSTWALD 7/31/92	[illegible]	7/31/92

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

CADFILE: B140704A | CADCODE: 2C:IBM:ACD2:11:NN

	BY	DATE
DESIGNED	E KOPKOW	5/12/92
DRAWN	C MOORE	5/29/92
CHECKED	G.CHAMBERS	6/3/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

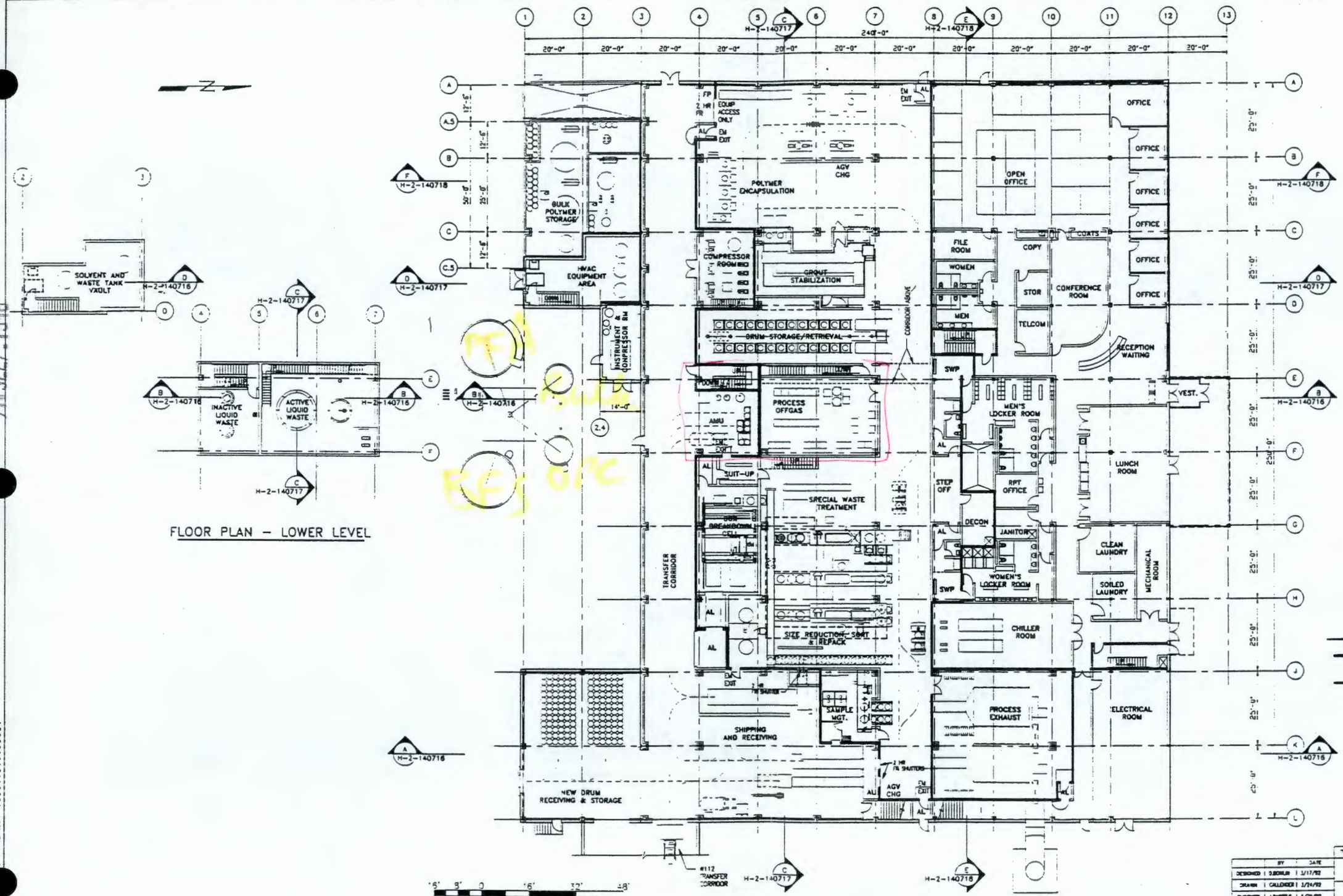
WRAP 2A CONCEPTUAL DESIGN
ONE-LINE DIAGRAM
AREA 05

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140704	B

SCALE: NONE | DISCIPLINE NO E-7 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1547



FLOOR PLAN – LOWER LEVEL

FLOOR PLAN – GROUND LEVEL

LEGEND

▬▬▬	INDICATES 2 HOUR FIRE WALL
▬▬▬	INDICATES 1 HOUR FIRE WALL
FP	FIRE WATER ENTRY

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
ARCHITECTURAL FLOOR PLAN
GROUND & LOWER LEVEL

	BY	DATE
DESIGNED	S.BORUR	3/17/92
DRAWN	C.ALLENDER	3/24/92
CHECKED	J.SMITH	5/29/92
APPROVED		
S.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-41	0800	H-2-140713	F

SCALE: 1/16"=1'-0" | DISCIPLINE NO. A101 | SHEET 1 OF 1

REV NO	DESCRIPTION	CALLENDER	REV BY/DATE	KOHL BY/DATE	APPROVALS/DATE
F	FINAL CDR SUBMITTAL	7/31/92	7/31/92		7/31/92

REFERENCE DRAWINGS

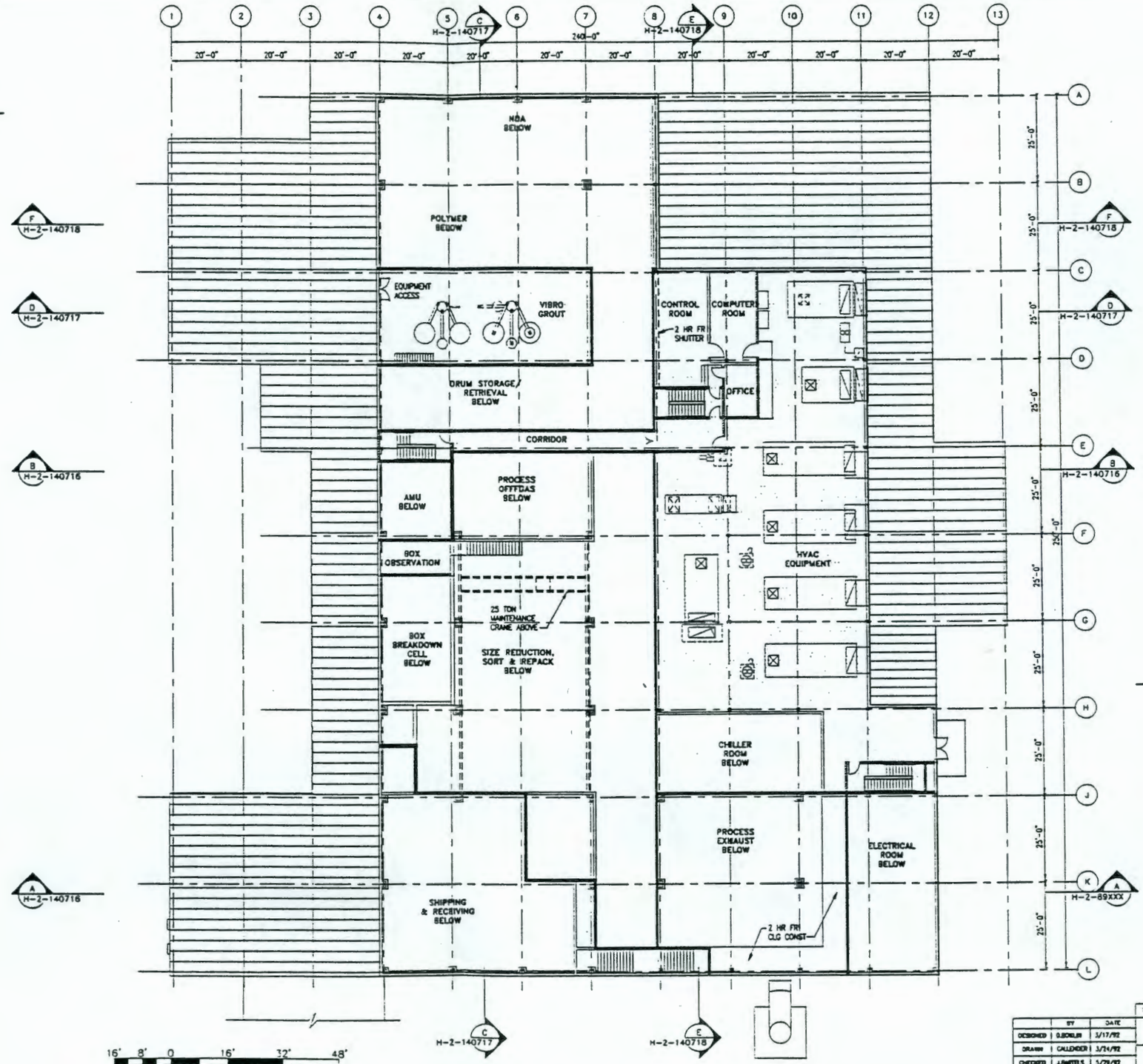
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

CADFILE: 8140713A | CADCODE: 2C:1BM:ACD2:11:NN

8913227.1548

9413227.1549



FLOOR PLAN – UPPER LEVEL

LEGEND

INDICATES UPPER FLOOR LEVEL

INDICATES 2 HOUR FIRE WALL

INDICATES 1 HOUR FIRE WALL

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-WT00-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	D.BOWLIN	3/17/92
DRAWN	CALLENDER	3/24/92
CHECKED	J.SMITELS	3/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
ARCHITECTURAL FLOOR PLAN
UPPER LEVEL

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0800	H-2-140714	E

SCALE: 1/16"=1'-0" DISCIPLINE NO: A102 SHEET 1 OF 1

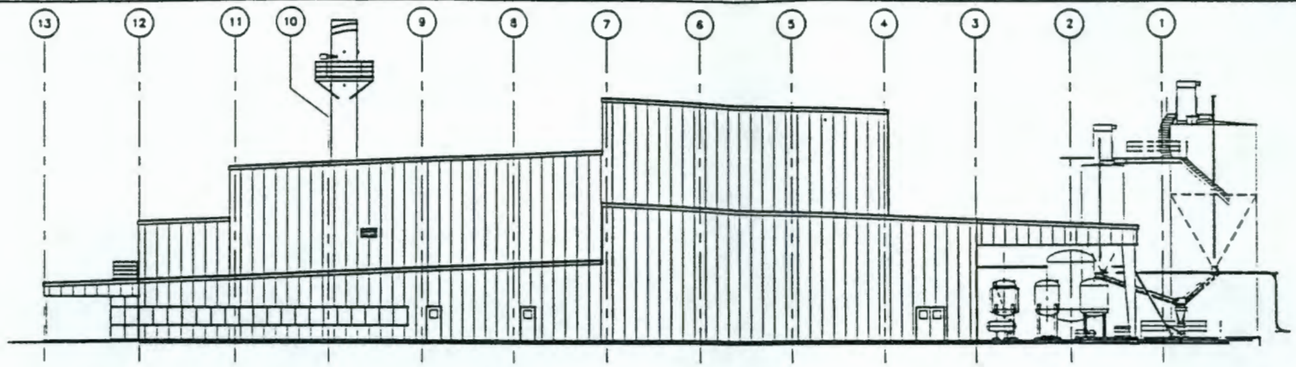
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	CALLENDER 7/31/92	BOWLIN 7/31/92	7/31/92

REFERENCE DRAWINGS — REVISIONS

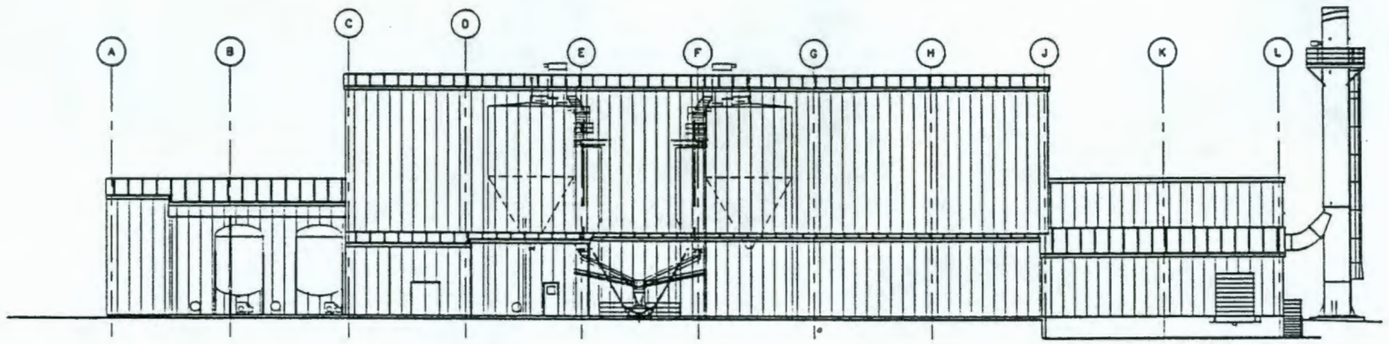
DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140714A | CADCODE: 2C:IBM:ACD2:11:NH

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

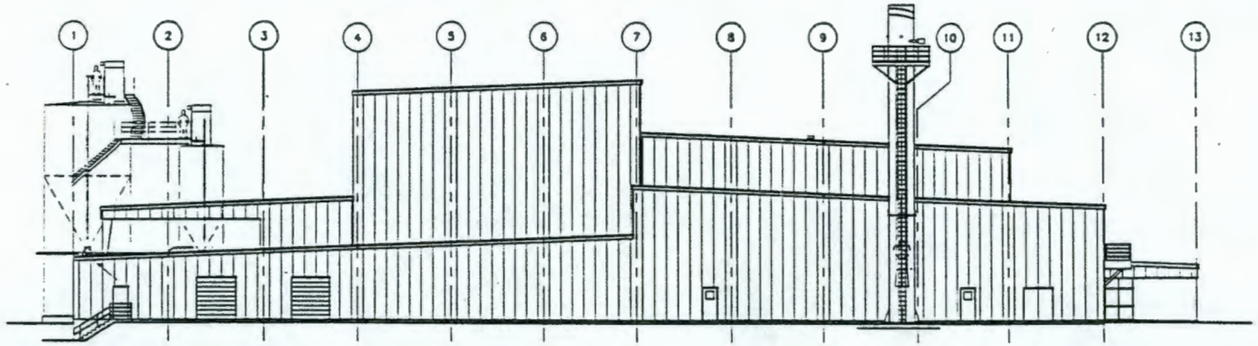
9413227.1550



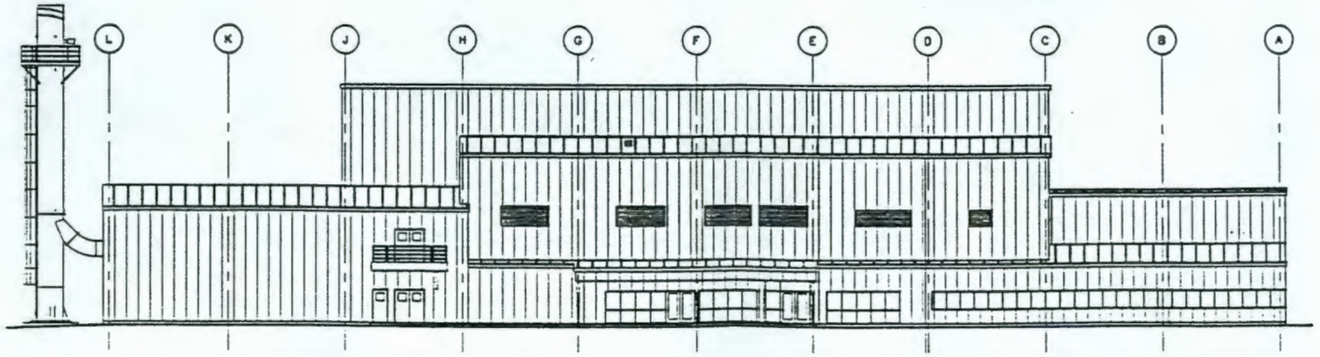
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

United Engineers & Constructors
A Raytheon Company

Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	D.BOWLIN	4/25/92
DRAWN	M.OSMANI	4/29/92
CHECKED	J.SMITELS	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
BUILDING ELEVATIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0801	H-2-140715	C

SCALE: 1/16"=1'-0" DISCIPLINE NO: A201 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
C	FINAL CDR SUBMITTAL	CALLINGER 7/31/92	BOWLIN 7/31/92	7/31/92

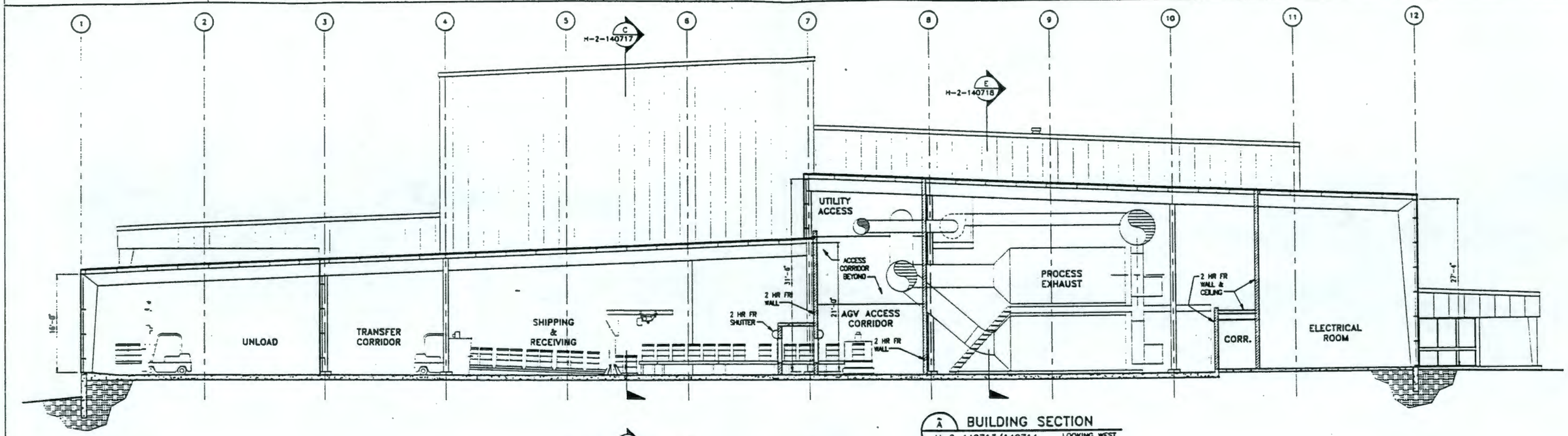
REFERENCE DRAWINGS

REVISIONS

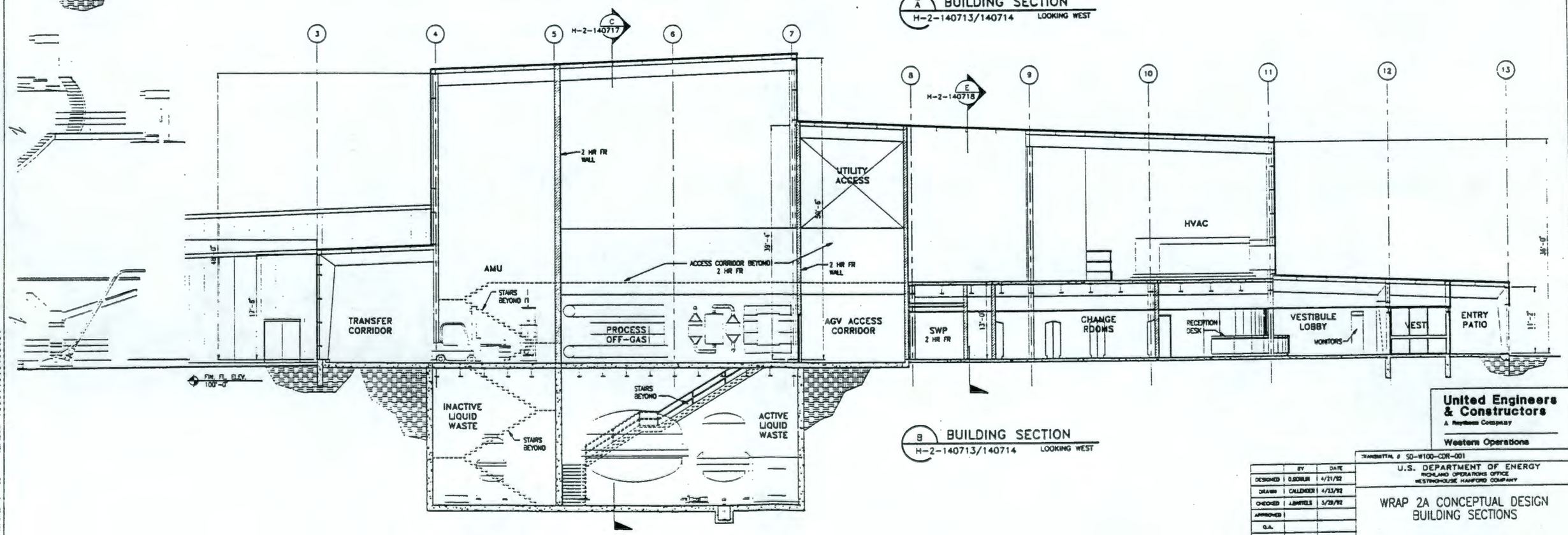
DRAWING TRACEABILITY LIST	NEXT USED ON:	CADFILE: 8140715A	CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1551



A BUILDING SECTION
H-2-140713/140714 LOOKING WEST



B BUILDING SECTION
H-2-140713/140714 LOOKING WEST

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
BUILDING SECTIONS

	BY	DATE
DESIGNED	D.BORUN	4/21/92
DRAWN	CALLINDER	4/23/92
CHECKED	J.BINFIELD	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0801	H-2-140716	D
SCALE: 1/8"=1'-0"		DISCIPLINE NO: A301		SHEET 1 OF 1

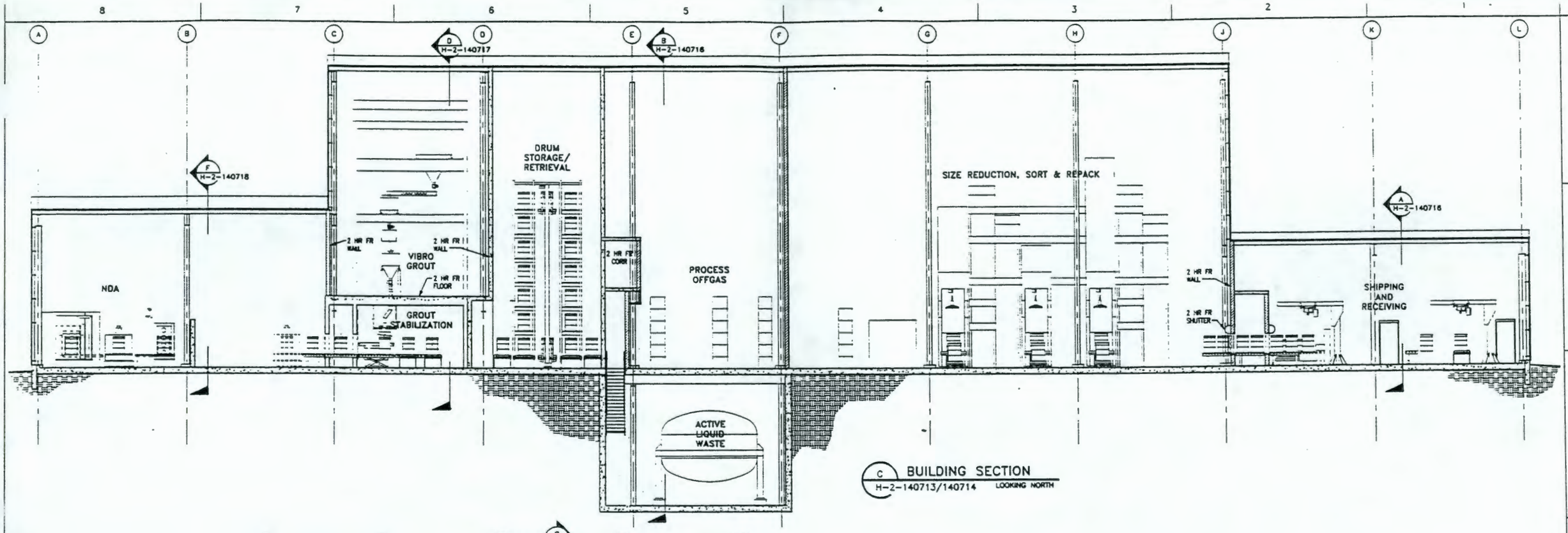
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	CALLINDER 7/31/92		7/31/92

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST | NEXT USED ON:

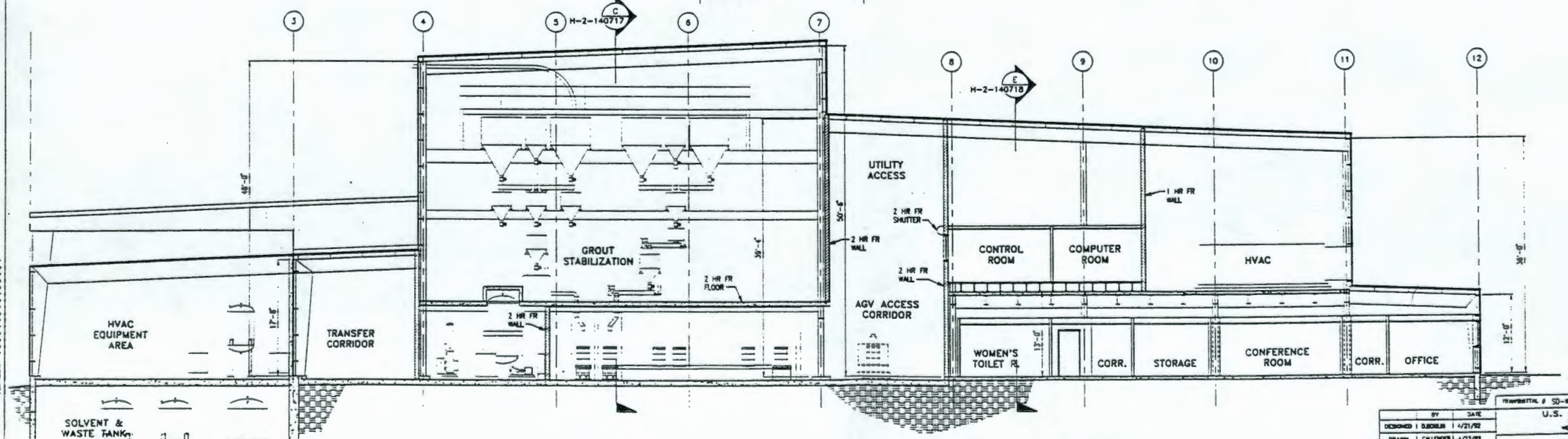
REVISIONS
CADFILE: 8140716A | CADCODE: 2C:IBM: ACD2: 11: NN

CONVERTED, CREATED: NO MANUAL CHANGES ATTACHED

9413227.1552



C BUILDING SECTION
H-2-140713/140714 LOOKING NORTH



D BUILDING SECTION
H-2-140713/140714 LOOKING WEST

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	D.BOSLER	4/21/92
DRAWN	CALLENDER	4/23/92
CHECKED	J.BRITELS	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
BUILDING SECTIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0801	H-2-140717	D

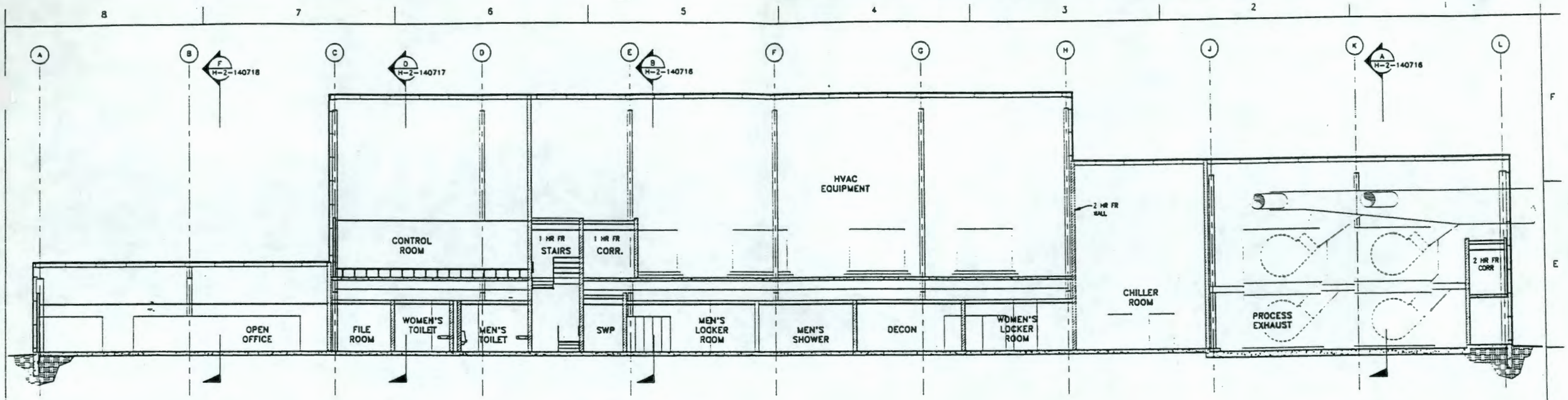
SCALE: 1/8"=1'-0" DISCIPLINE NO. A302 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
D	FINAL CDR SUBMITTAL	CALLENDER 7/31/92		

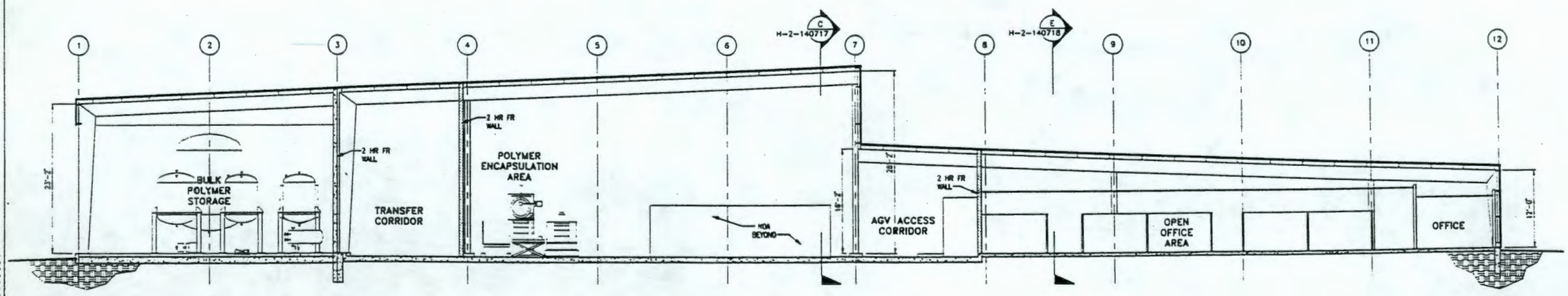
REFERENCE DRAWINGS
REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140717A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED



E BUILDING SECTION
H-2-140713/140714 LOOKING NORTH



F BUILDING SECTION
H-2-140713/140713 LOOKING WEST

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	O.BORLIN	4/21/92
DRAWN	CALLENDER	4/23/92
CHECKED	J.SHIFELS	5/29/92
APPROVED		
G.A.		
OTHER		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
BUILDING SECTIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0801	H-2-140718	D

SCALE: 1/8"=1'-0" DISCIPLINE NO: A303 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	CALLENDER 7/31/92	[illegible]	7/31/92

REFERENCE DRAWINGS | REVISIONS

DRAWING TRACEABILITY LIST | NEXT USED ON: | CADFILE: 8140718A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1553

ABBREVIATIONS

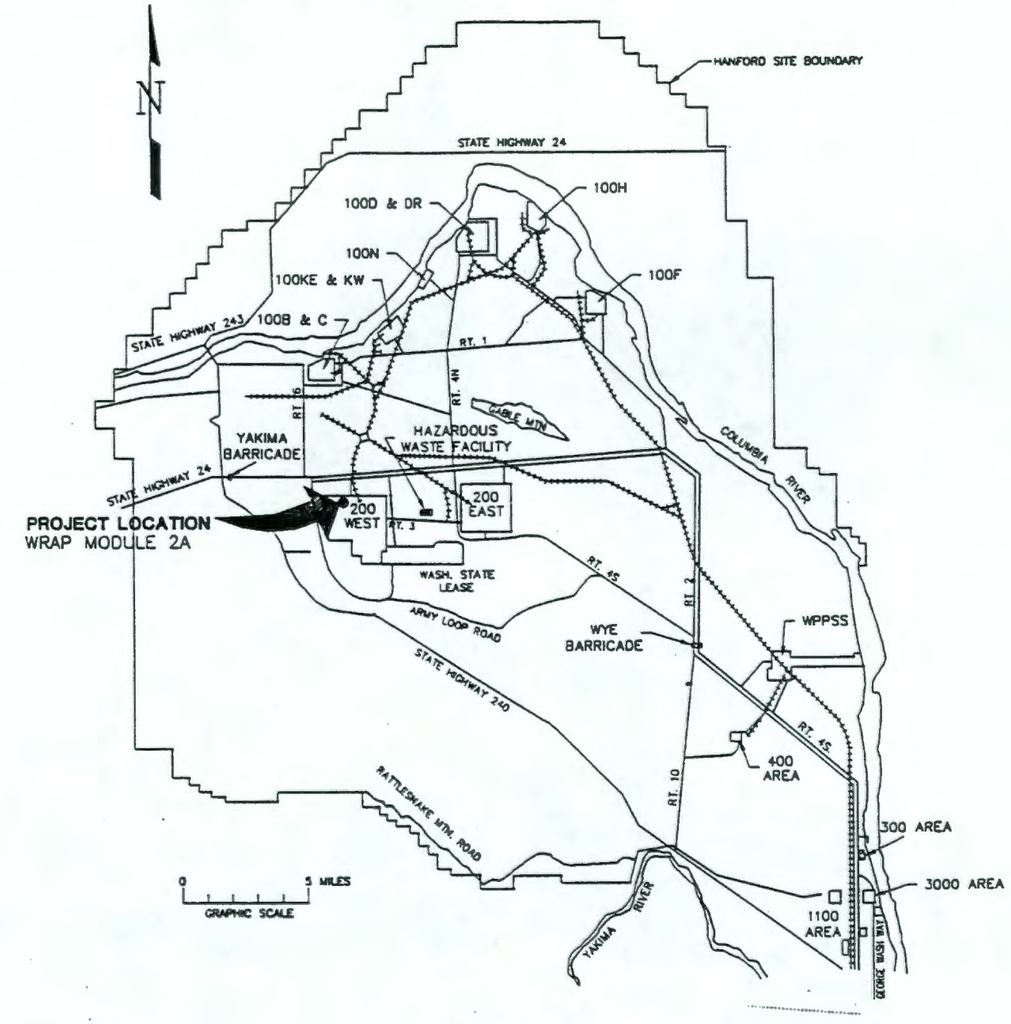
BLDG.	BUILDING
C.S.P.	CORRUGATED STEEL PIPE
℄	CENTERLINE
E	EAST
EL.	ELEVATION
GA.	GAGE
GAL.	GALLON
N	NORTH
P.I.	POINT OF INTERSECTION
R	RADIUS
RD.	ROAD
S	SOUTH
TYP.	TYPICAL
W	WEST

LEGEND

	EXISTING	NEW
CONTOURS	00	00
SPOT ELEVATIONS		00.00
FLOW LINE		
VALVE AND VALVE BOX		
WATER LINE		
FIRE HYDRANT		
POST INDICATOR VALVE	P.I.V.	P.I.V.
SANITARY SEWER	S	S
STORM SEWER		
OVERHEAD POWER LINE	E	E
POWER POLE		
UNDERGROUND ELECTRICAL DUCT BANK	UG	UG
FENCE		
STRIPED NO PARKING AREA		
LOCATION NUMBER DESIGNATION		00
GRAVEL		
PAVEMENT AREA		

NOTES

1. WATER LINES SHALL HAVE 4 FOOT MINIMUM COVER.
2. HORIZONTAL CONTROL IS BASED ON THE HANFORD AREA COORDINATE SYSTEM.
3. ELEVATIONS ARE BASED ON THE HANFORD AREA VERTICAL DATUM.
4. MARKING FOR PARKING LOT SHALL BE PAINTED 4 INCH WIDE YELLOW STRIPES.
5. CULVERTS SHALL BE INSTALLED WITH FLARED END SECTIONS.



VICINITY MAP

SCALE: 1" = 3 MILES

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	A. FOTT	5/15/92
DRAWN	A. FOTT	5/15/92
CHECKED	S. CAST	5/28/92
APPROVED	T. TRIMBELL	6/15/92
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
CIVIL NOTES, LEGEND
AND ABBREVIATIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0101	H-2-140719	D

SCALE: AS SHOWN | DISCIPLINE NO: C-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	A. FOTT 7/31/92	S. CAST 07-31-92	T. Trimbell 7/31/92 T. S. TRIMBELL

REFERENCE DRAWINGS

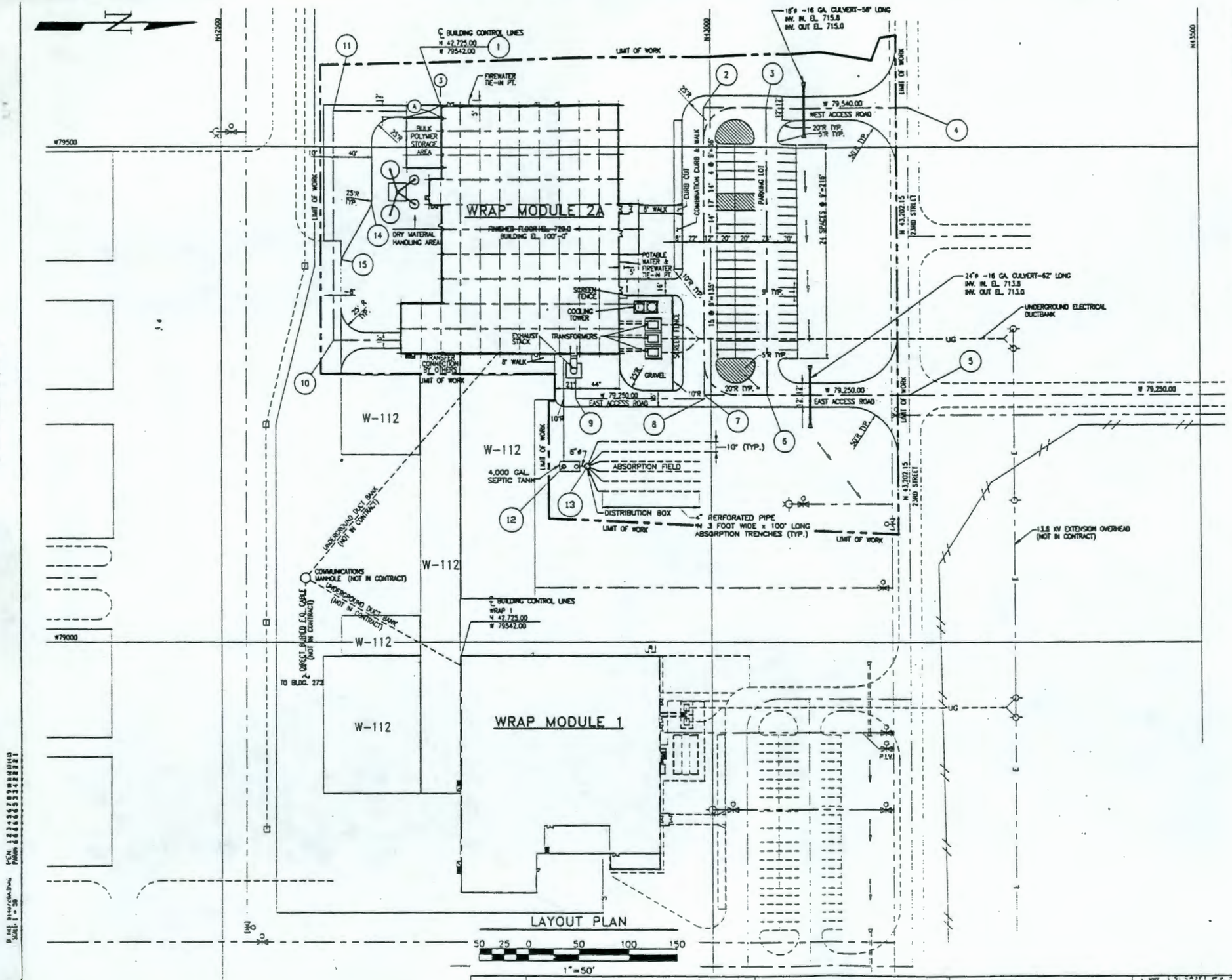
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

CADFILE: B140719A | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1551



LOCATION TABLE

NO.	N COORDINATE	W COORDINATE	DESCRIPTION
1	N 42,725.00	W 79,542.00	BUILDING CONTROL LINES 3 AND A
2	N 42,993.00	W 79,540.00	PARKING LOT CONTROL = ℄ WEST ACCESS RD.
3	N 43,057.00	W 79,540.00	PARKING LOT CONTROL = ℄ WEST ACCESS RD.
4	N 43,202.15	W 79,540.00	℄ 23RD STREET = ℄ WEST ACCESS ROAD
5	N 43,202.15	W 79,250.00	℄ 23RD STREET = ℄ EAST ACCESS ROAD
6	N 43,057.00	W 79,250.00	PARKING LOT CONTROL = ℄ EAST ACCESS ROAD
7	N 42,993.00	W 79,250.00	PARKING LOT CONTROL = ℄ EAST ACCESS ROAD
8	N 42,993.00	W 79,246.00	℄ EAST ACCESS ROAD
9	N 42,861.00	W 79,246.00	℄ EAST ACCESS ROAD
10	N 42,815.00	W 79,305.00	℄ REAR ACCESS APRON
11	N 42,815.00	W 79,537.00	℄ REAR ACCESS APRON
12	N 42,849.00	W 79,178.00	P.I. SANITARY TEE AND ℄ SEPTIC TANK
13	N 42,872.44	W 79,178.00	℄ DISTRIBUTION BOX
14	N 42,655.00	W 79,442.00	POINT OF INTERSECTION
15	N 42,623.00	W 79,368.57	POINT OF INTERSECTION

NOTES:

1. FOR NOTES SEE DRAWING H-2-104719.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-8100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	A. POTT	4/28/92
DRAWN	A. POTT	4/28/92
CHECKED	S. CAST	5/26/92
APPROVED	T.S.TRUMBELL	6/15/92
Q.A.		
OTHER		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
LAYOUT AND UTILITY
PLAN

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	0110	H-2-140720	E

SCALE: 1"=50' DISCIPLINE NO: C-2 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	ICRR BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	A. POTT 7/31/92	S. CAST 7-31-92	T.S. Trumbell T. S. TRUMBELL 7/31/92

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST
NEXT USED ON:

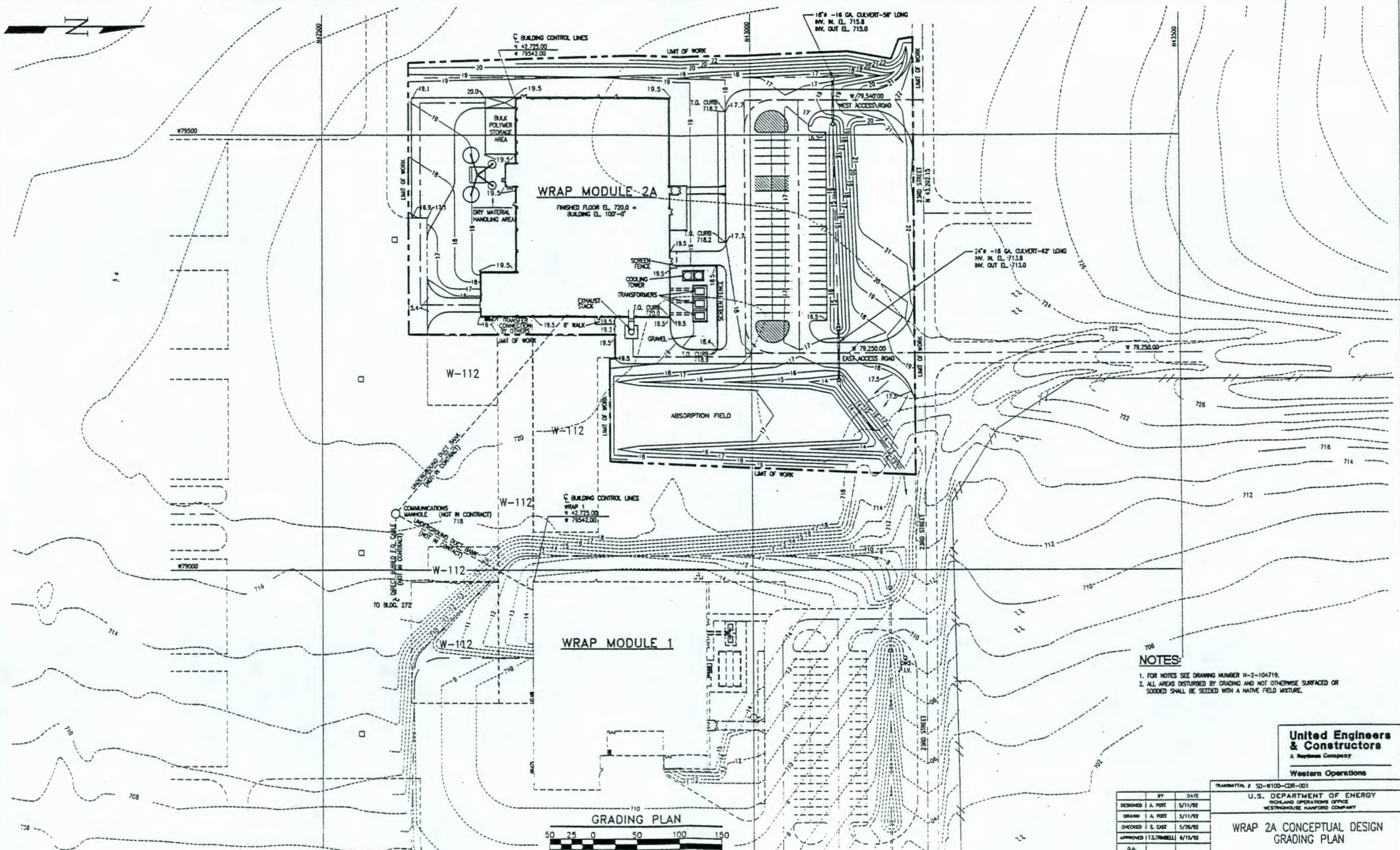
REVISIONS

CADFILE: 8140720A
CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1555

9413227.1556



NOTES:

1. FOR NOTES SEE DRAWING NUMBER H-2-104719.
2. ALL AREAS DISTURBED BY GRADING AND NOT OTHERWISE SURFACED OR SODDED SHALL BE SEEDED WITH A NATIVE FIELD MIXTURE.

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	A. FORT	5/11/92
DRAWN	A. FORT	3/11/92
CHECKED	S. CAST	5/26/92
APPROVED	T.S.TRIMBELL	6/15/92
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

WRAP 2A CONCEPTUAL DESIGN GRADING PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	0111	H-2-140721	E

SCALE: 1"=50' | DISCIPLINE NO: C-3 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
E	FINAL CDR SUBMITTAL	A. FORT 7/31/92	S. CAST 07-31-92 / T.S. TRIMBELL 7/31/92	

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST	NEXT USED ON:

REVISIONS

CADFILE: B140721A | CADCODE: 2C:IBM: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WRAP3DGR

GAITE VALVE

BALL VALVE

VALVE WITH LEVER OPERATOR

VALVE WITH CHAIN GEAR OPERATOR

3-WAY VALVE W/ OPERATOR

SOLENOID OPERATED VALVE

MOTOR OPERATED VALVE

DIAPHRAGM OPERATED VALVE

100/30 PRESSURE REDUCING VALVE WITH INLET/OUTLET PRESSURE (PSIG)

180 PRV PRESSURE RELIEF VALVE WITH RELIEF PRESSURE (PSIG)

100/30 PRESSURE REGULATOR W/ INTERNAL SENSING & INLET/ OUTLET PRESSURE (PSIG)

100/30 PRESSURE REGULATOR W/ INTERNAL SENSING & INLET/ OUTLET PRESSURE (PSIG)

PLUG VALVE

FLOW METER, WATER

Y-STRAINER & DRAIN VALVE

MANUAL ACTUATOR

PNEUMATIC ACTUATOR

ELECTRIC MOTOR ACTUATOR

PNEUMATIC PISTON ACTUATOR

BUTTERFLY DAMPER

OPPOSED BLADE DAMPER, MANUAL

PARALLEL BLADE DAMPER, MANUAL

BACKDRAFT AIR DAMPER

UNION

ECCENTRIC REDUCER

CONCENTRIC REDUCER

SCREWED PIPE FITTING (ELBOW)

FLANGED PIPE FITTING (ELBOW)

WELDED PIPE FITTING (ELBOW)

PIPE TURN UP

PIPE TURN DOWN

PIPE ELBOW

TEE SIZE INDICATED

PITOT ARRAY AIR FLOWMETER

SINGLE PORT PITOT

OPEN FUNNEL DRAIN

TW 00 TEMPERATURE ELEMENT W/ WELL

PRESSURE SENSING TIP

T ROOM THERMOSTAT

H ROOM HUMIDSTAT

SUPPLY AIRFLOW DIRECTION

RETURN OR EXHAUST AIRFLOW DIRECTION

FD FIRE DAMPER W/ ACCESS DOOR

FLEXIBLE PIPE CONNECTION

FLEXIBLE DUCT CONNECTION

SUPPLY AIR DUCT - TURN UP

RETURN AIR DUCT- TURN DOWN

PIPE ANCHOR

PIPE SLEEVE

PIPE EXPANSION JOINT

DUCT OR PIPE INSULATION

AXIAL FLOW FAN WITH BELT & MOTOR DRIVE

CENTRIFUGAL FAN W/ INLET VANE DAMPER WITH MOTOR DRIVE

CENTRIFUGAL FAN WITH MOTOR DRIVE

PUMP WITH MOTOR DRIVE

CABINET HEATER UNIT

WALL OR ROOF POWER VENTILATOR WITH BACKDRAFT DAMPER

ROOF MOUNTED AIR EXHAUST HOOD (ELEVATION)

ROOF MOUNTED ROOF VENT (PLAN VIEW)

OUTSIDE AIR INTAKE AIR LOUVER

WIRE MESH BIRD SCREEN

FIRE SCREEN

HEPA FILTER

PRE-FLTR PREFILTER

CC/GL COIL-UPPER TEXT KEY: CC-COOLING COIL
HC-HEATING COIL
HR-HEAT RECOVERY COIL
PH-PREHEAT COIL
RH-REHEAT COIL
LOWER TEXT KEY: E-ELECTRICAL
GL-GLYCOL

MXB MIXING BOX

PLN PLENUM

H HUMIDIFIER

EXHAUST STACK

NOTE: REFER TO INSTRUMENT AND CONTROL SYSTEM LEGEND & SYMBOLS. SEE REFERENCE DRAWINGS BELOW.

EQUIPMENT IDENTIFICATION

CV-11-101A

- SEQUENTIAL NUMBER (FIRST NO IS SYSTEM IDENTIFIER, ALPHA SUFFIX IS SERIES OF IDENTICAL EQUIPMENT
- AREA (14 IS VENTILATION)
- EQUIPMENT NOMENCLATURE

R — INDICATOR LIGHT & COLOR
R = RED (DANGER)
A = AMBER (CAUTION)
W = WHITE (INFORMATION)

ABBREVIATIONS & ACRONYMS:

ACAM - ALPHA CONTINUOUS AIR MONITOR
ADM - ADMINISTRATION
ALARA - AS LOW AS REASONABLY ACHIEVABLE
AL - AIRLOCK
AMS - AIR MONITORING SYSTEM
AMU - AQUEOUS MAKEUP
ATM - ATMOSPHERE
BD - BACKDRAFT
CAM - CONTINUOUS AIR MONITOR
CC - COOLING COIL
CCTV - CLOSED CIRCUIT TELEVISION
CD - CONDENSATE DRAIN
CFM - CUBIC FEET PER MINUTE
CGS - CHILLED GLYCOL SUPPLY
CGR - CHILLED GLYCOL RETURN
CH - CONTACT HANDLED
COND - CONDENSATE
CW - COLD WATER
DBA - DESIGN BASIS ACCIDENT
DECON - DECONTAMINATION
DMS - DATA MANAGEMENT SYSTEM
ES - EMERGENCY SHOWER
EWC - ELECTRIC WATER COOLER
FC - FAIL CLOSED
FO - FAIL OPEN
FCO - FLOOR CLEAN OUT
GAL - GALLON
GB - GLOVEBOX
GCO - GRADE CLEANOUT
GPM - GALLONS PER MINUTE
H - HUMIDIFIER
HCWC - HANFORD CENTRAL WASTE COMPLEX
HEPA - HIGH EFFICIENCY PARTICULATE AIR FILTER
HLAN - HANFORD LOCAL AREA NETWORK
HOA - HAND OFF AUTO SWITCH
HRX - HEAT RECOVERY EXCHANGER
HVAC - HEATING,VENTILATION, AND AIR CONDITIONING
HW - HOT WATER
INF - INFILTRATION
ISO - ISOLATION
L - LAVATORY
LETF - LIQUID EFFLUENT TREATMENT FACILITY
LLW - LOW LEVEL WASTE
LV - WALL AIR LOUVER
MBX - MIXING BOX
MSB - MOP SERVICE BASIN
N - NORMAL
NC - NORMALLY CLOSED (IN DEENERGIZED POSITION)
NEG - NEGATIVE
NDA - NON-DESTRUCTIVE ANALYSIS
NDE - NON-DESTRUCTIVE EXAMINATION
NO - NORMALLY OPEN (IN DEENERGIZED POSITION)
NPSH - NET POSITIVE SUCTION HEAD
OAI - OUTSIDE AIR INTAKE
OB - OPPOSED BLADE
PB - PARALLEL BLADE
PC - PRESSURE CONTROL
PCC - PRECOOLING COIL
PFA - PULVERIZED FLY ASH
PRF - PREFILTER
PLN - PLENUM
PMS - PLANT MANAGEMENT SYSTEM
PW - POTABLE WATER
RG - RETURN AIR GRILLE
RR - RETURN AIR REGISTER
RMW - HAZARDOUS AND RADIOACTIVE MIXED WASTE
SA - SHOCK ABSORBER
SD - SMOKE DETECTOR
SHR - SHOWER
SG - SUPPLY AIR GRILLE
SR - SUPPLY AIR REGISTER
SWP - SPECIAL WORK PERMIT
TBD - TO BE DETERMINED
TLV - THRESHOLD LIMIT VALUE
TRU - TRANSURANIC
UR - URINAL
VES - VINYL ESTER STYRENE
VIV - VARIABLE INLET VANE
VTR - VENT THROUGH ROOF
VSD - ELECTRONIC VARISPEED DRIVE
WC - WATER CLOSET
WIPP - WASTE ISOLATION PILOT PLANT
WRAP - WASTE RECEIVING AND PROCESSING
WT - WEIGHT
XFMR - TRANSFORMER

HVAC EQUIPMENT IDENTIFICATION LEGEND

AC - COMPUTER ROOM AIR COND. UNIT
AH - AIR HANDLING UNIT
AS - AIR SEPARATOR
AT - AIR FILTER TRAIN
BL - BLOWER
CB - CABINET HEATER
CF - CHEMICAL FEED TANK
CH - CHILLER
CT - COOLING TOWER
DP - DAMPER
EF - EXHAUST FAN
EH - UNIT HEATER, ELECTRIC
ET - EXPANSION TANK
FC - FLOW CONTROL VALVE
H - HUMIDIFIER
HR - HEAT RECOVERY UNIT
HX - HEAT EXCHANGER
LV - WALL LOUVER
MA - MAKE UP AIR UNIT
MV - DISCHARGE VALVE
P - CHILLED GLYCOL PUMPS
RC - HEAT RECOVERY COIL
SF - SUPPLY FAN
(V) - VENDOR
VA - VARIABLE AIR SUPPLY BOX
XS - EXHAUST AIR STACK

PLUMBING LEGEND

DOMESTIC COLD WATER (CW)
DOMESTIC HOT WATER (HW)
DOMESTIC HOT CIRCULATING WATER(HWC)
SANITARY SEWER ABOVE FLOOR OR GRADE
SANITARY SEWER BELOW FLOOR OR GRADE
SANITARY VENT
DIRECTION OF FLOW
DIRECTION OF PITCH
CONDENSATE OR EQUIPMENT DRAIN
PRESSURE REGULATING VALVE
REDUCED PRESSURE BACKFLOW PREVENTER
ELBOW TURNED UP
ELBOW TURNED UP
TEE TURNED UP
TEE TURNED DOWN
WALL HYDRANT (FREEZE PROOF)
FLOOR CLEANOUT (FCO)
GRADE CLEANOUT (GCO)
CLEANOUT AT BASE OF STACK
CLEANOUT PLUG
FLOOR DRAIN
THERMOMETER
SHOCK ABSORBER
PI PRESSURE INDICATOR
I.W. INDIRECT WASTE
I.E. INVERT ELEVATION
W.H. WALL HYDRANT (EXTERIOR)
H.B. HOSE BIBB (INTERIOR)
C.I. CAST IRON
R.I. ROUGH-IN
T.M.V. THERMOSTATIC MIXING VALVE
EWH ELECTRIC WATER HEATER

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J.JOSSER	4/3/92
DRAWN	CALLENDER	4/8/92
CHECKED	M.PATEL	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
HVAC NOTES AND ABBREVIATIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140726	00

SCALE: NONE | DISCIPLINE NO: H-1 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
0	FINAL CDR SUBMITTAL	J. JOSSER 7/31/92	M.PATEL 7/31/92	M.PATEL 7/31/92

REVISIONS

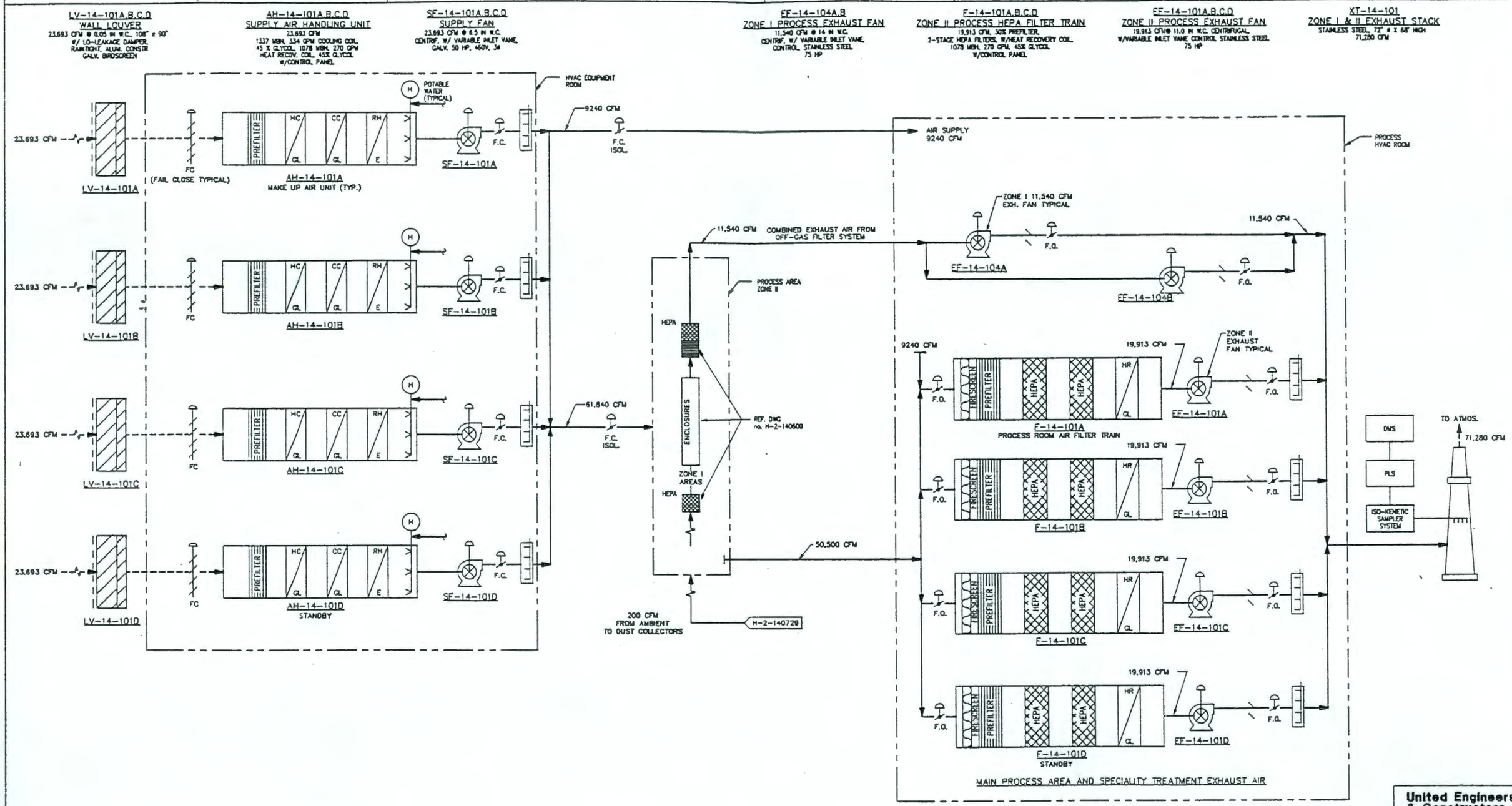
REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 8140726A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1557



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	J. KOSER	4/13/92
DRAWN	L. RAMIRA	4/15/92
CHECKED	M. PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN PROCESS AREA MASTER HVAC AIRFLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2237-W	7000	H-2-140727	B

SCALE: NONE | DISCIPLINE NO: H-11 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
a	FINAL CDR SUBMITTAL	J. KOSER 7/31/92		M. PATEL 7/31/92

REVISIONS

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 8140727A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

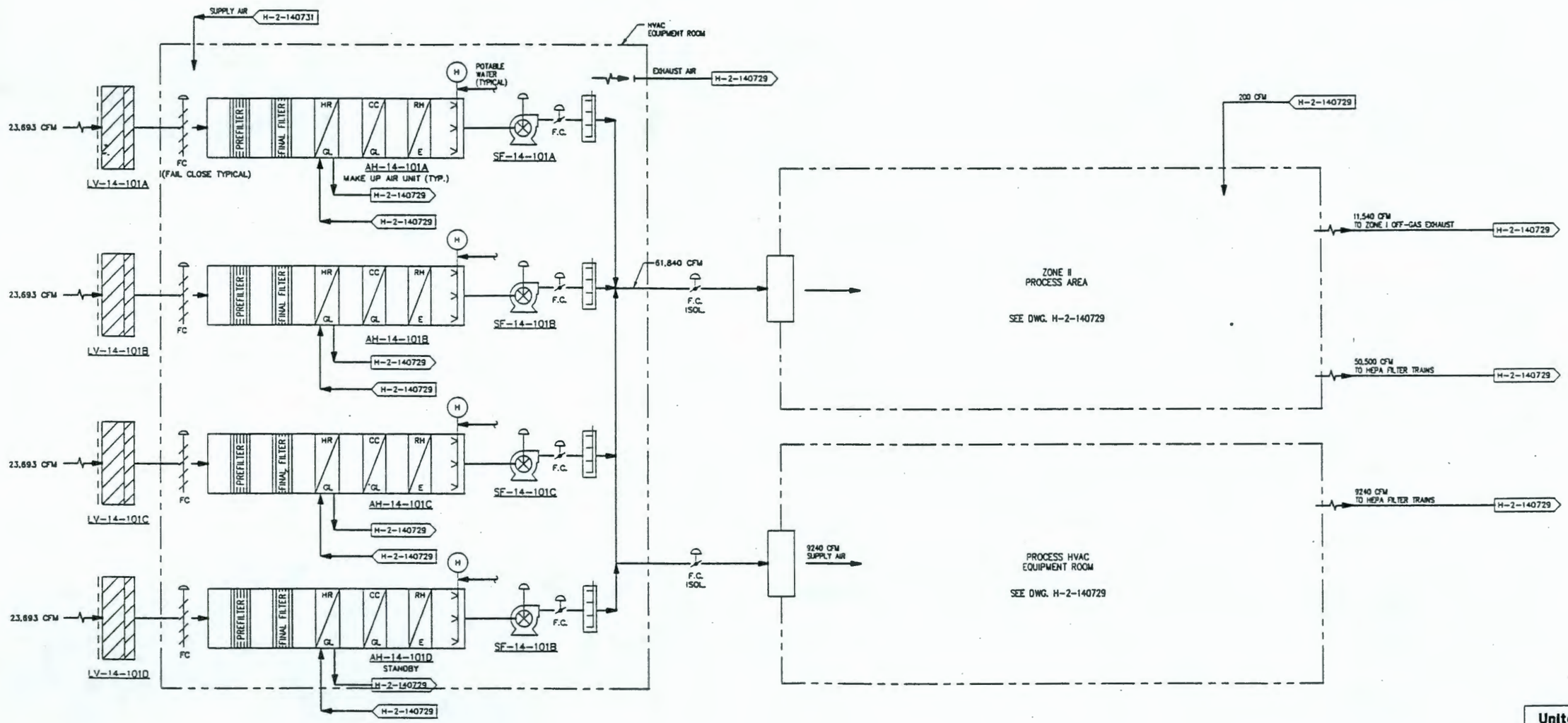
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1558

LV-14-101A,B,C,D
WALL LOUVER
23,693 CFM @ 0.05 IN W.C. 108" x 90"
w/ LO-LEAKAGE DAMPER,
RAIN TIGHT, ALUM. CONSTR
GALV. BIRDSCREEN

AH-14-101A,B,C,D
SUPPLY AIR HANDLING UNIT
23,693 CFM
1,337 MBH, 334 GPM COOLING COIL
45 % GLYCOL, 1078 MBH, 270 GPM
HEAT RECOV. COIL, 45% GLYCOL
#/CONTROL PANEL

SF-14-101A,B,C,D
SUPPLY FAN
23,693 CFM @ 6.5 IN W.C.
CENTRIF. W/ VARIABLE INLET VANE,
GALV. 50 HP, 460V, 3Ø



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

	BY	DATE
DESIGNED	A. KEISER	5/5/92
DRAWN	L. RIVERA	5/5/92
CHECKED	N. PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
PROCESS SUPPLY
HVAC AIRFLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140728	B

SCALE: NONE | DISCIPLINE NO. H-2 | SHEET 1 OF 1

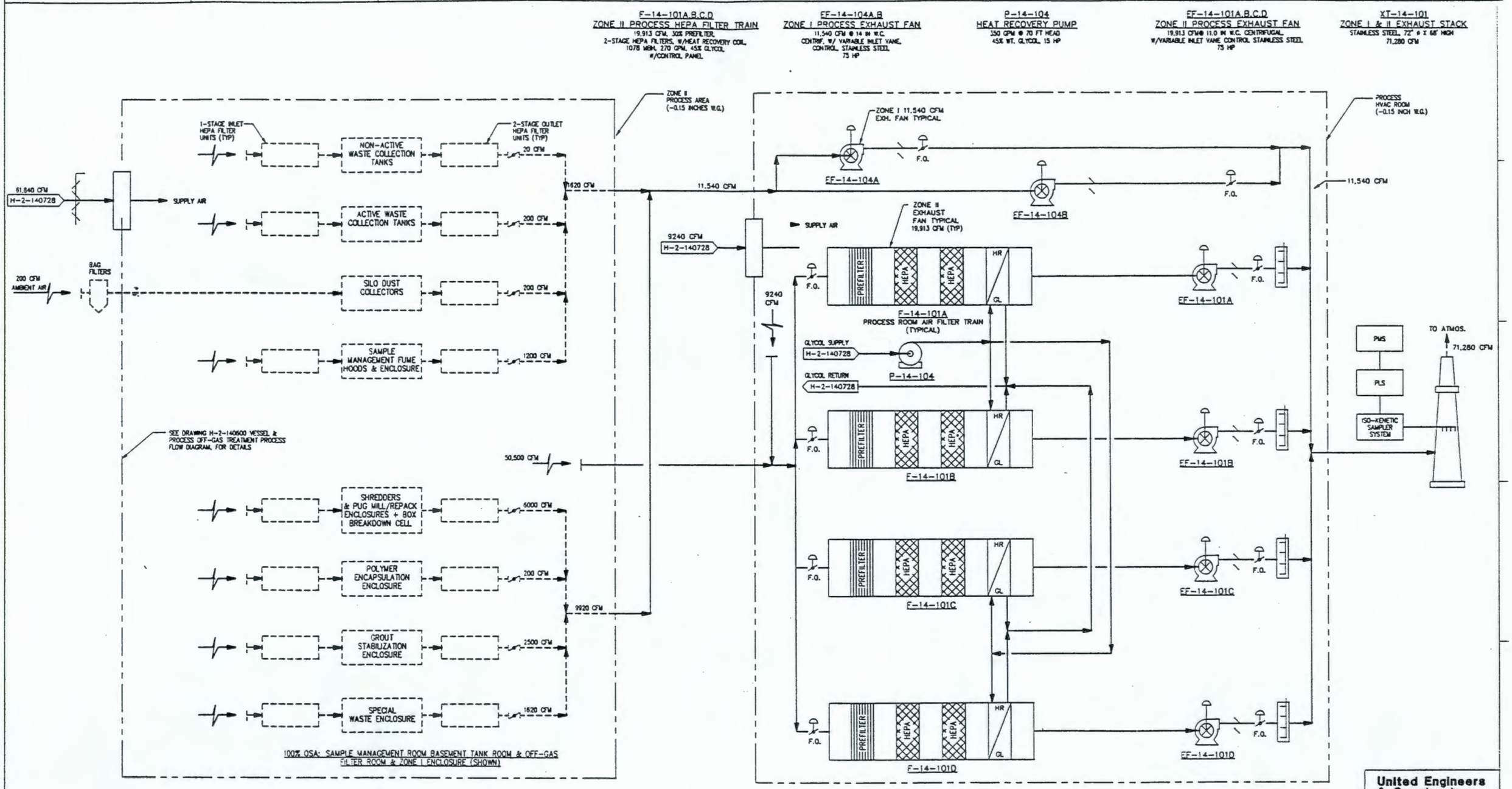
REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	A. KEISER 7/31/92	[illegible]	N. PATEL [illegible]

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS
CADFILE: 8140725A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1559



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J. KEISER	5/8/92
DRAWN	L. RHOMA	5/8/92
CHECKED	N. PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY FOR DATE

WRAP 2A CONCEPTUAL DESIGN PROCESS EXHAUST HVAC AIRFLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140729	B

SCALE: NONE | DISCIPLINE NO: H-3 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
3	FINAL CDR SUBMITTAL	J. KEISER 7/31/92	7/31/92 N.PATEL	7/31/92

REVISIONS

REFERENCE DRAWINGS

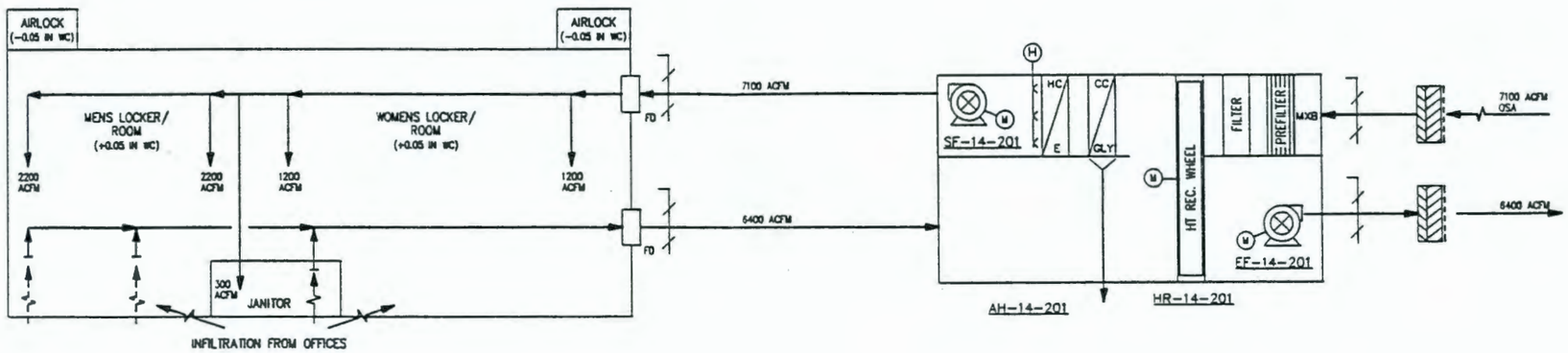
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 8140729A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

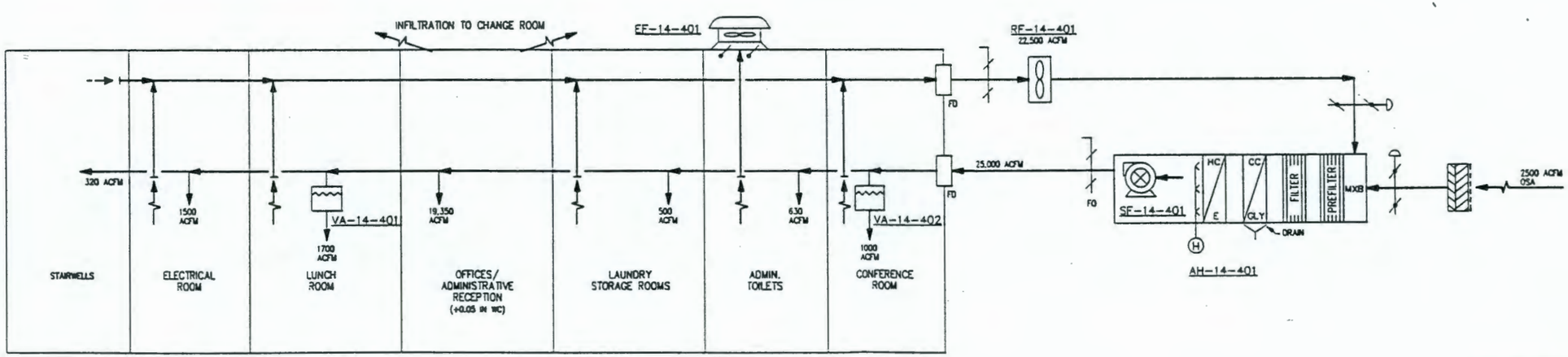
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1560

VA-14-401 VARIABLE AIR VOLUME BOX, LUNCH ROOM	FF-14-401 TOILET EXHAUST FAN	VA-14-402 VARIABLE AIR VOLUME BOX, CONFERENCE ROOM	RF-14-401 RETURN AIR FAN	AH-14-401 AIR HANDLING UNIT, ADMIN. AREA	SF-14-401 SUPPLY FAN	AH-14-201 AIR HANDLING UNIT, LOCKER ROOM	SF-14-201 SUPPLY FAN	HR-14-201 HEAT RECOVERY WHEEL	EF-14-201 EXHAUST FAN
1700 ACFM @ 1/2 IN W.C. 8 KW HEATING COIL	1000 ACFM @ 1/4 IN W.C. 1/2 HP HEATING COIL BACKDRAFT DAMPER	1000 ACFM @ 1/2 IN W.C. 5 KW HEATING COIL	22,500 ACFM @ 3.5 IN W.C. 5 HP FAN MOTOR	25,000 ACFM 30% PREFILTER 80% FINAL FILTER 200 KW HEATING COIL 56 KW HUMIDIFIER 460 MESH, 115 GPM, COOLING COIL	(MOUNTED INSIDE AH-14-401) 25,000 ACFM @ 0.5 IN W.C. 30 HP FAN MOTOR	7100 ACFM 30% PREFILTER 80% FINAL FILTER 150 KW HEATING COIL 200 MESH, 50 GPM, GLYCOL COOLING COIL	(MOUNTED INSIDE AH-14-201) 7100 ACFM @ 4 IN W.C. 7.5 HP FAN MOTOR	(MOUNTED INSIDE AH-14-201) 330 MESH, 70% EFFICIENT 1 HP WHEEL MOTOR	(MOUNTED INSIDE AH-14-201) 8400 ACFM @ 2.5 IN W.C. 5 HP FAN MOTOR



LOCKER ROOM AIRFLOW DIAGRAM



ADMINISTRATIVE AREA AIRFLOW DIAGRAM

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J. KOSER	5/11/92
DRAWN	L.LIMERA	5/13/92
CHECKED	M.PATEL	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY / FOR		DATE

WRAP 2A CONCEPTUAL DESIGN
ADMINISTRATION & LOCKER ROOMS
HVAC AIRFLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140730	B

SCALE: NONE | DISCIPLINE NO: H-4 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	KOHL BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	J. KOSER 7/31/92	[illegible] 7/31/92	M.PATEL 7/31/92

REVISIONS

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140730A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WD72BORD

9413227.1561

EF-14-601A/B
ROOF EXHAUST FAN
10,500 CFM @ 1/2 IN W.C.
2 HP, 460V, 3ø
BACKDRAFT DAMPER
BIRDSCREEN

AC-14-501A/B
COMPUTER ROOM
AIRCONDITIONER
PACKAGE 7 1/2 TON, COOLING COIL
30% PREFILTER, 80% FINAL FILTER
15 KW REHEAT COIL
5 KW HUMIDIFIER
5 HP FAN, 460V, 3ø

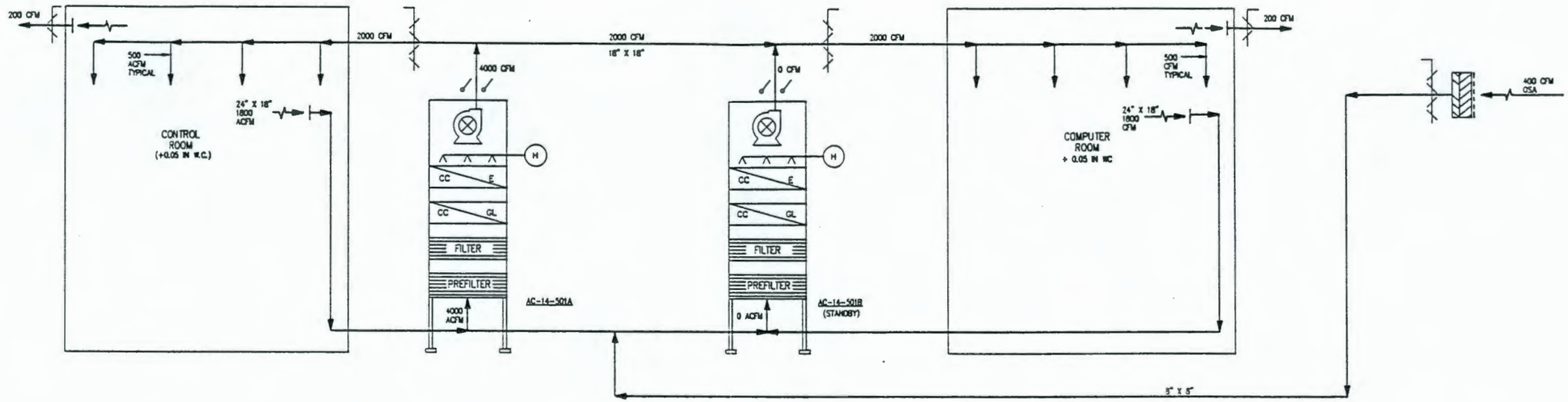
AH-14-601
AIR HANDLING UNIT
HVAC EQUIP. ROOM VENTILATION
PACKAGE 12,000-21,000 CFM @ 3 IN W.C.
30% PREFILTER, 60% FINAL FILTER
160 KW HEATING COIL

SF-14-601
SUPPLY FAN
(MOUNTED INSIDE AH-14-601)
PACKAGE 12,000-21,000 CFM @ 3 IN W.C.
VARIABLE INLET VANE DAMPER
30 HP FAN MOTOR

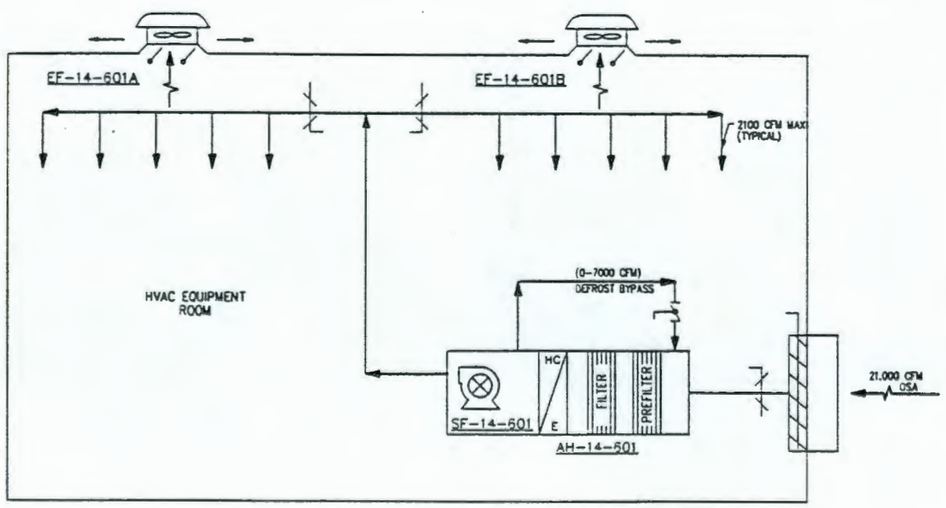
AH-14-301
AIR HANDLING UNIT
SHIPPING & TRANSFER AREAS
PACKAGE 18,000 CFM @ 3 IN W.C.
30% PREFILTER, 80% FINAL FILTER
400 MBH, 100 GPM, 45% GLYCOL COOLING COIL
100 KW ELECTRIC HEATER
20 KW ELECTRIC HUMIDIFIER
W/CONTROL PANEL

SF-14-301
SUPPLY FAN
18,000 CFM @ 3 IN W.C.
20 HP FAN MOTOR

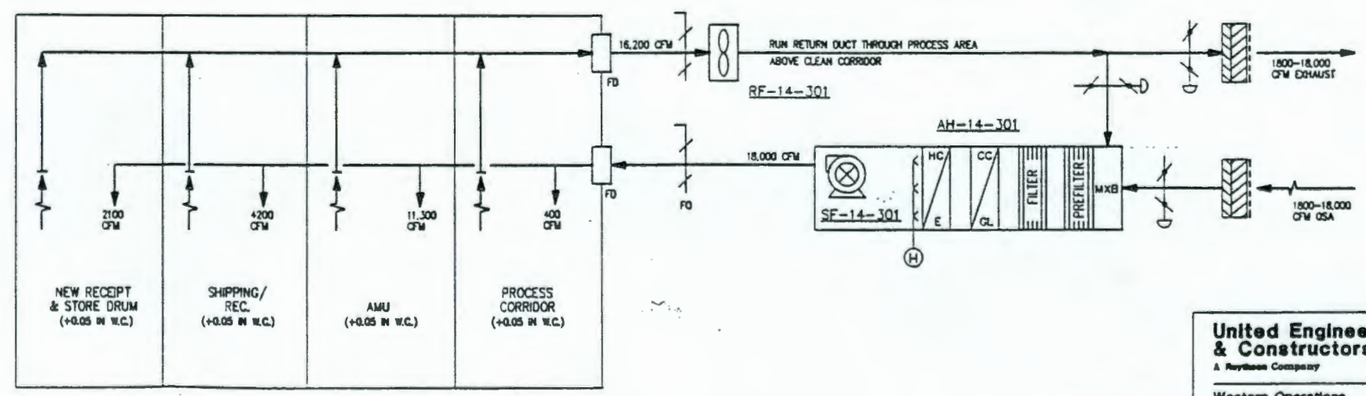
RF-14-301
RETURN FAN
18,000 CFM @ 1/2 IN W.C.
3 HP FAN MOTOR



COMPUTER & CONTROL ROOM AIRFLOW DIAGRAM



MECHANICAL ROOM (HVAC EQUIPMENT) AIRFLOW DIAGRAM



NOA, SHIPPING/RECEIVING AIRFLOW DIAGRAM

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J. KEISER	5/11/92
DRAWN	LURMER	5/13/92
CHECKED	M.PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

WRAP 2A CONCEPTUAL DESIGN
SHIPPING/RECEIVING, COMPUTER, CONTROL & MECHANICAL ROOMS
HVAC AIRFLOW DIAGRAM

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140731	B

SCALE: NONE | DISCIPLINE NO: H-5 | SHEET 1 OF 1

APPROVED FOR DETAILED DESIGN
BY | FOR | DATE

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	J.KEISER 7/31/92	M.PATEL 7/31/92	7/31/92

REVISIONS

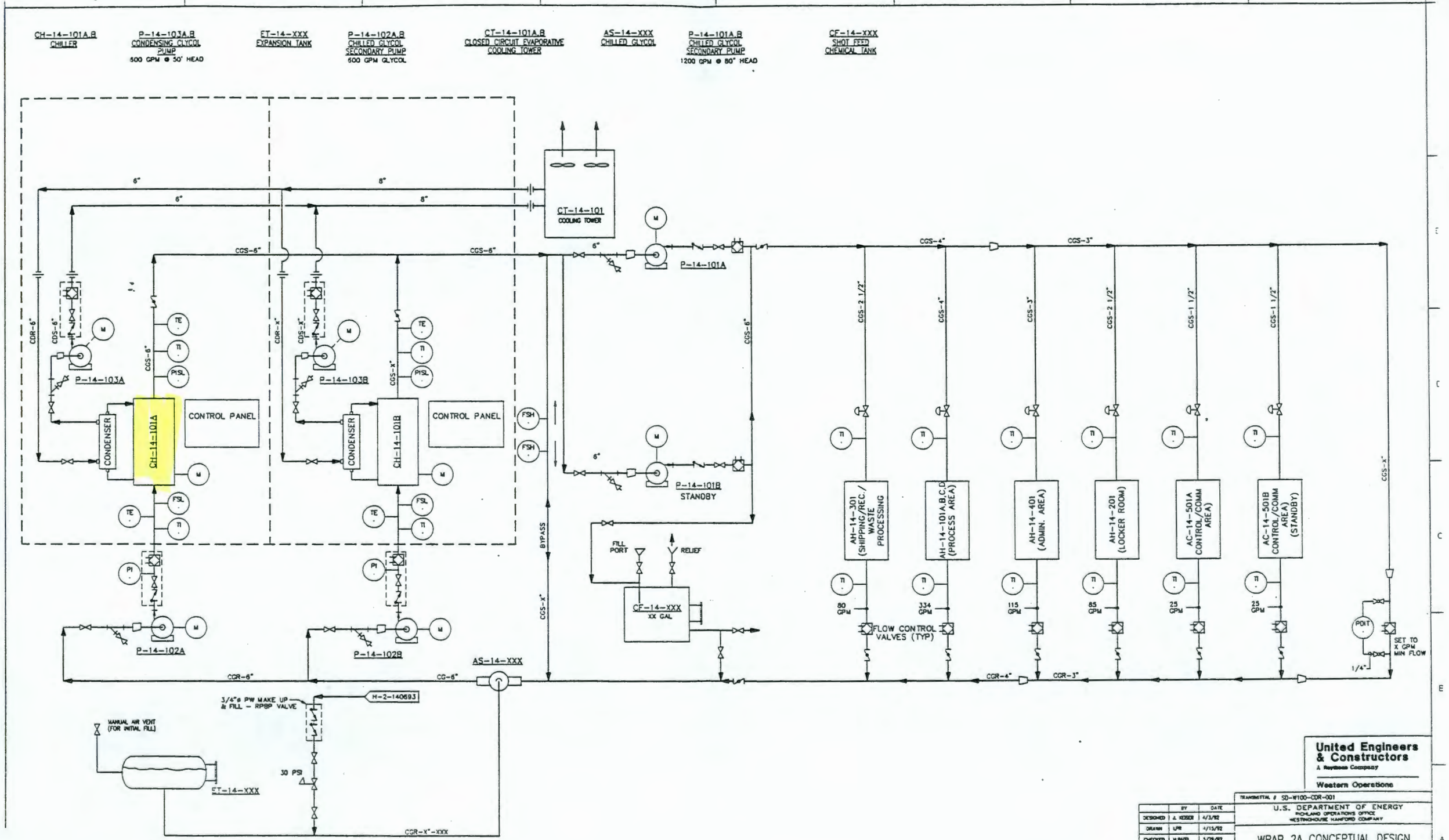
REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140731A.DWG | CADCODE: 2C:18M: ACD2: 11: NN

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1562



United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J. KOSKEN	4/3/92
DRAWN	LPR	4/15/92
CHECKED	N.PATEL	5/28/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR
DATE

WRAP 2A CONCEPTUAL DESIGN HVAC CHILLED WATER PIPING FLOW DIAGRAM

SIZE	BLDG NO.	MODEL NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140732	B

SCALE: NONE | DISCIPLINE NO: H-10 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	J. KOSKEN 7/31/92	[illegible] 7/31/92	N.PATEL 7/31/92

REFERENCE DRAWINGS | REVISIONS

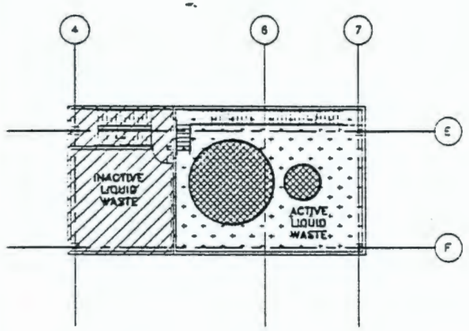
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: 8140732A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

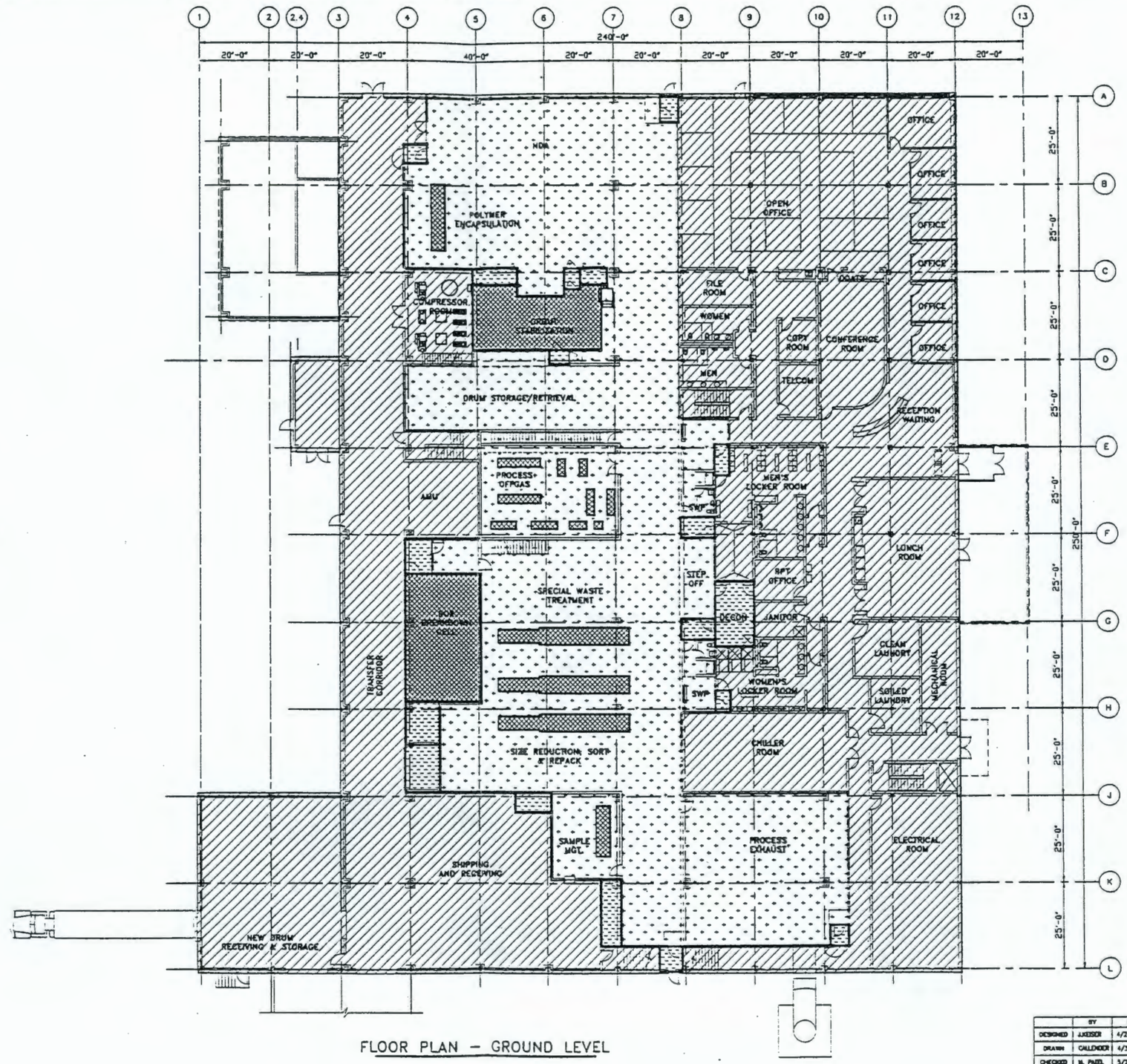
COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

FORM WD02CRD

9413227.1563



FLOOR PLAN – LOWER LEVEL



FLOOR PLAN – GROUND LEVEL

CONFINEMENT ZONE LEGEND

ROOM DIFFERENTIAL PRESSURE RELATIVE TO ATMOSPHERE

ZONE I	-1.15"
ZONE II	-0.15"
NON CONFINEMENT ZONE	+0.05"
AIRLOCK	-0.05"

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	J. KEISER 7/31/92		W. PATEL 7/31/92

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

REVISIONS

CADFILE: B140733A.DWG | CADCODE: 2C:IBM; ACD2:11:NN

APPROVED FOR DETAILED DESIGN BY / FOR / DATE

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-B100-CDR-001

	BY	DATE
DESIGNED	J.KEISER	4/24/92
DRAWN	CALLENDER	4/30/92
CHECKED	M. PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

WRAP 2A CONCEPTUAL DESIGN
HVAC ZONE PLAN
LOWER & GROUND LEVEL

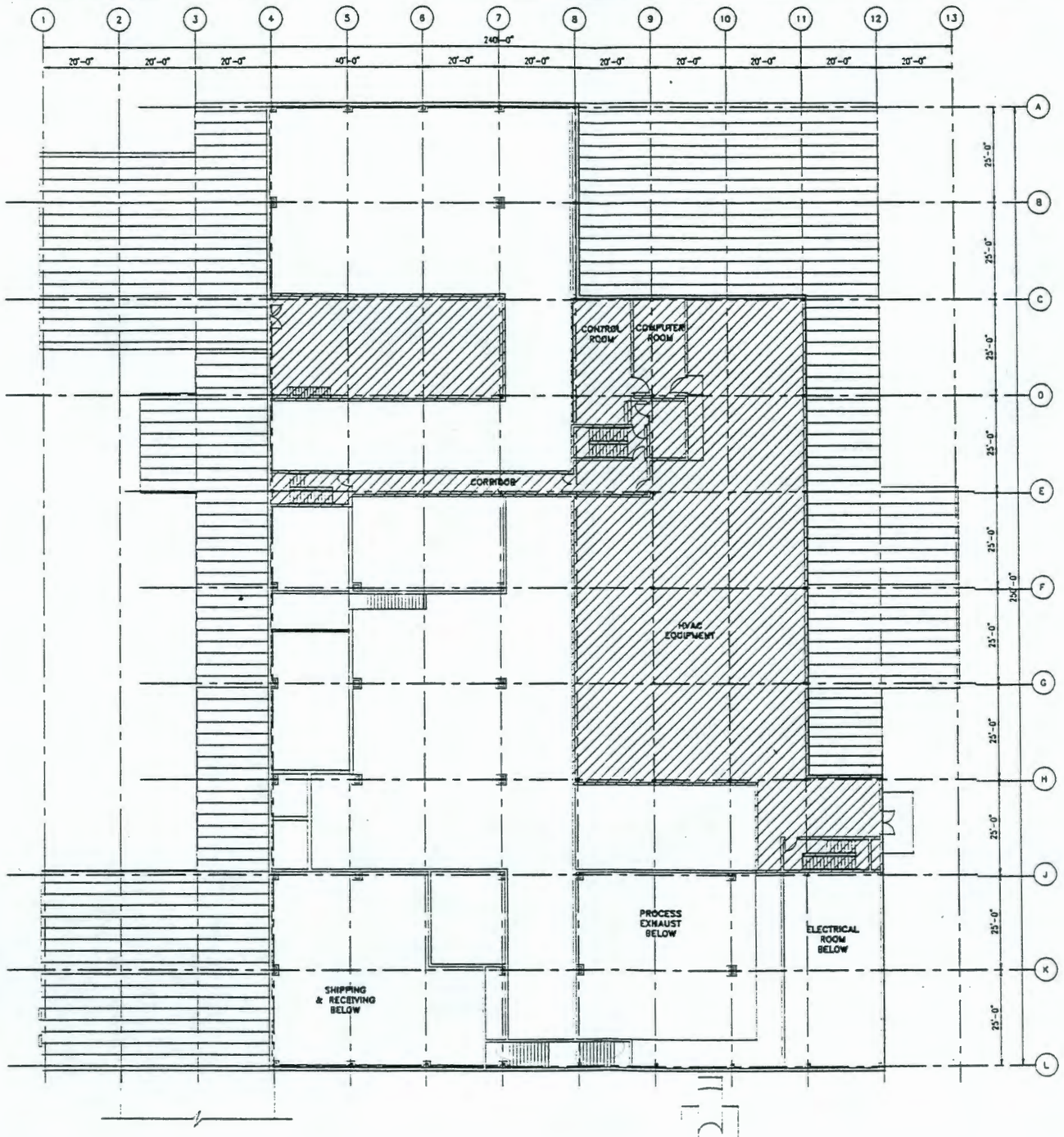
SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140733	B

SCALE: 1/8"=1'-0" | DISCIPLINE NO: H-6 | SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9113227.1564

9413227.1565



UPPER FLOOR PLAN

CONFINEMENT ZONE LEGEND

ROOM DIFFERENTIAL PRESSURE RELATIVE TO ATMOSPHERE

ZONE I	-1.15"
ZONE II	-0.15"
NON CONFINEMENT ZONE	+0.05"
AIRLOCK	-0.05"

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	J.KEISER	4/27/92
DRAWN	CALLENDER	4/30/92
CHECKED	N.PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY		
FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
HVAC ZONE PLAN
UPPER LEVEL

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140734	B

SCALE: 1/16"=1'-0" | DISCIPLINE NO: H-7 | SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	J. KEISER 7/31/92	N.PATEL	7/31/92

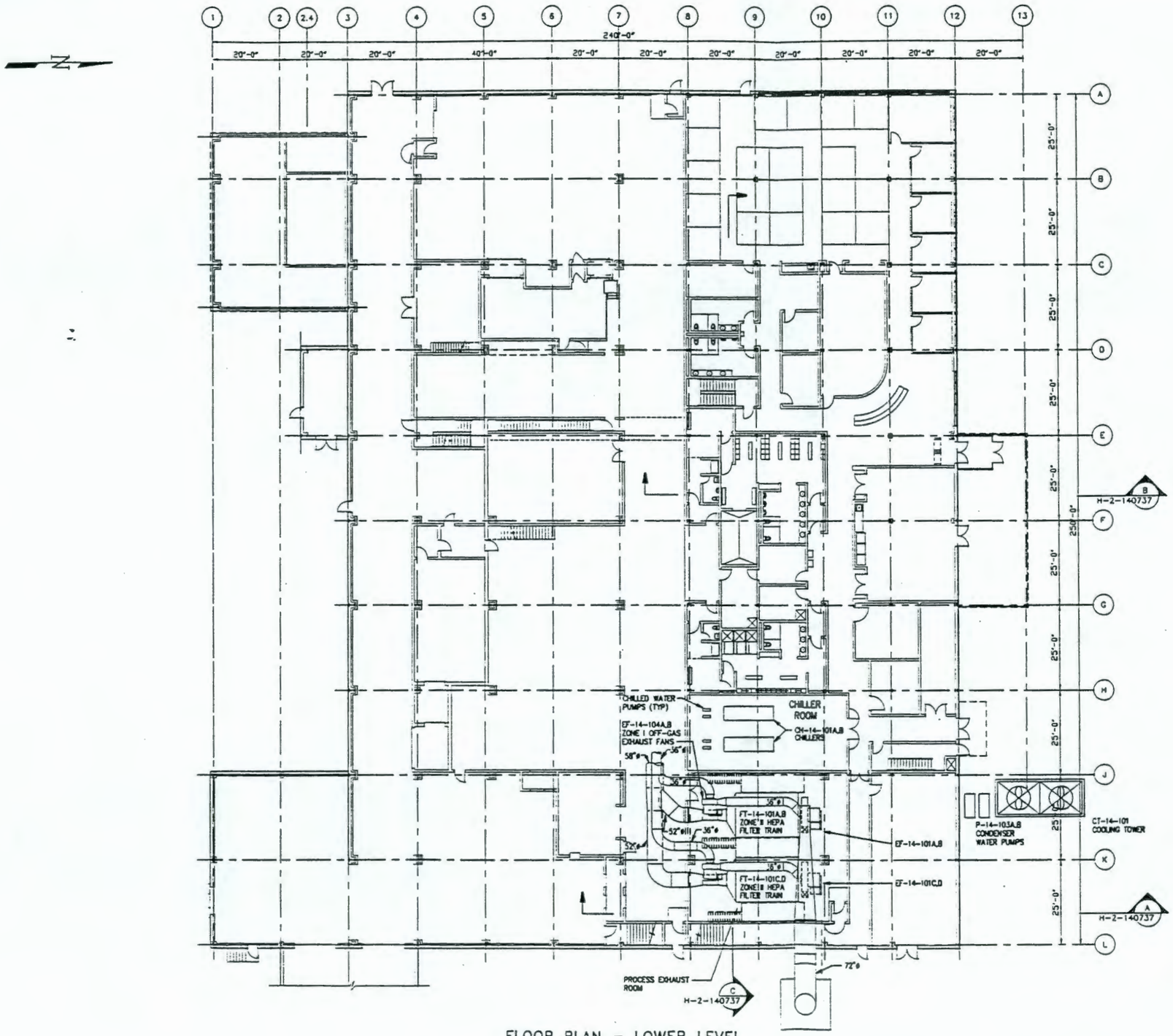
REVISIONS

REFERENCE DRAWINGS

DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140734A.DWG | CADCODE: 2C:IBM:ACD2:11:NN

9413227.1566



FLOOR PLAN - LOWER LEVEL

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R. KOOKOI	4/27/92
DRAWN	L. RIVERA	5/12/92
CHECKED	N.PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		
APPROVED FOR DETAILED DESIGN BY FOR	DATE	

WRAP 2A CONCEPTUAL DESIGN
HVAC GENERAL ARRANGEMENT
LOWER LEVEL PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140735	B

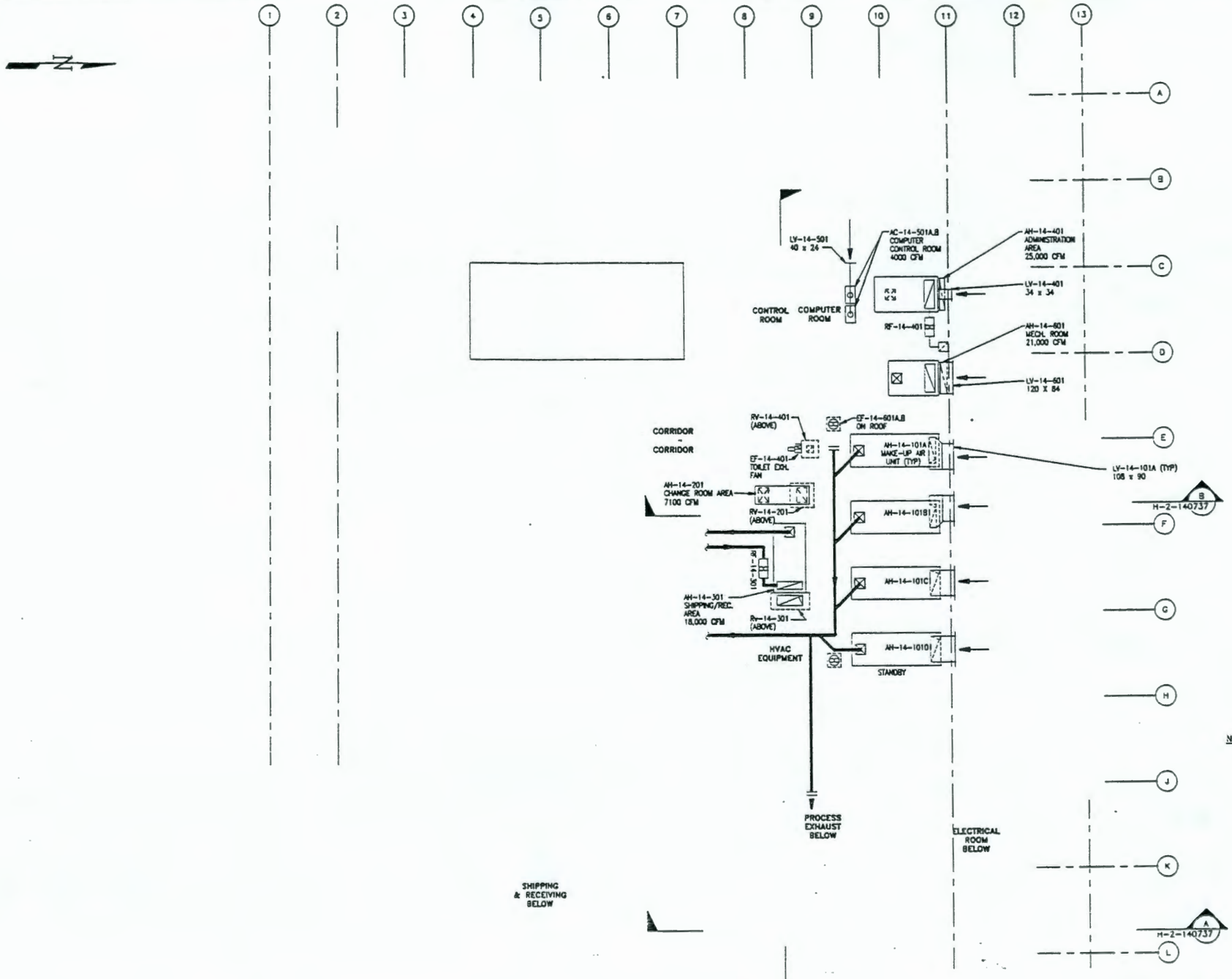
SCALE: 1/16" = 1'-0" DISCIPLINE NO: H-9 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	R. KOOKOI 7/31/92	7/31/92 N.PATEL	7/31/92

REFERENCE DRAWINGS
DRAWING TRACEABILITY LIST
NEXT USED ON:

REVISIONS
CADFILE: 8140735A.DWG
CADCODE: 2C:IBM:ACD2:11:NN

FORM W000R0R0



NOTES:

1. ALL DUCT PENETRATIONS AT 2 HOUR FIRE WALLS SHALL HAVE FIRE DAMPERS.

FLOOR PLAN – UPPER LEVEL

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R.KOOKEN	4/27/92
DRAWN	L. RIVERA	5/12/92
CHECKED	N.PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
HVAC GENERAL ARRANGEMENT
UPPER LEVEL PLAN

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140736	B

SCALE: 1/16"=1'-0" DISCIPLINE NO: H-8 SHEET 1 OF 1

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	R. KOOKEN 7/31/92	N.PATEL	7/31/92

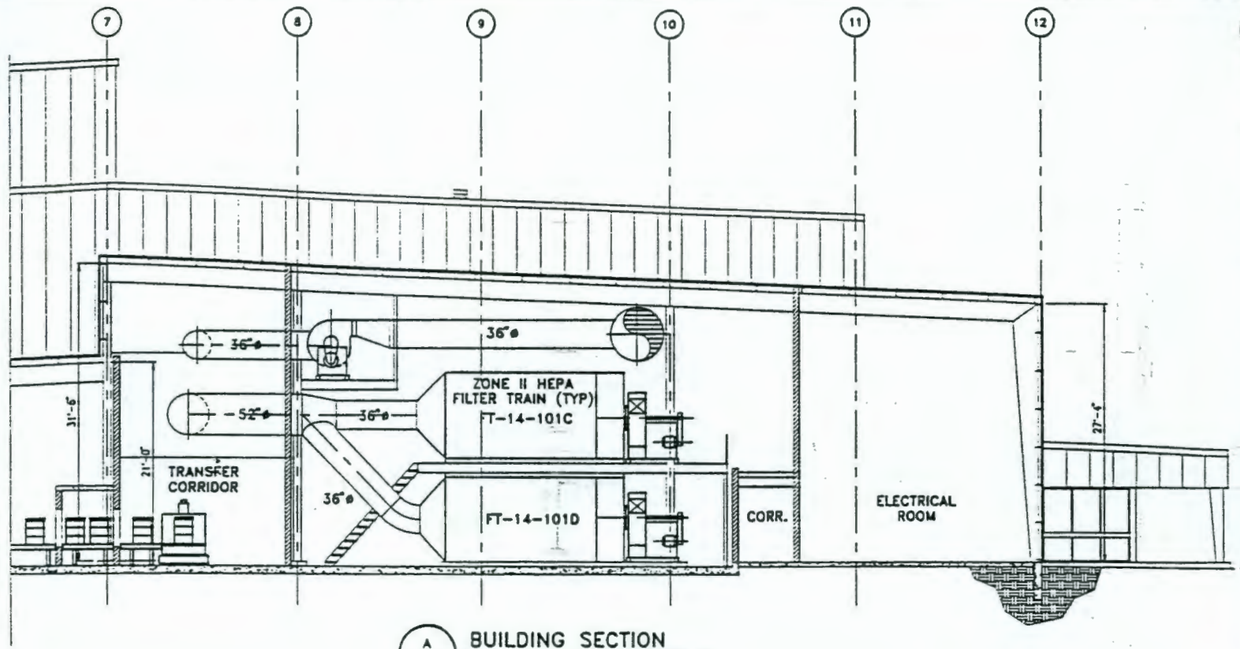
REFERENCE DRAWINGS

REVISIONS

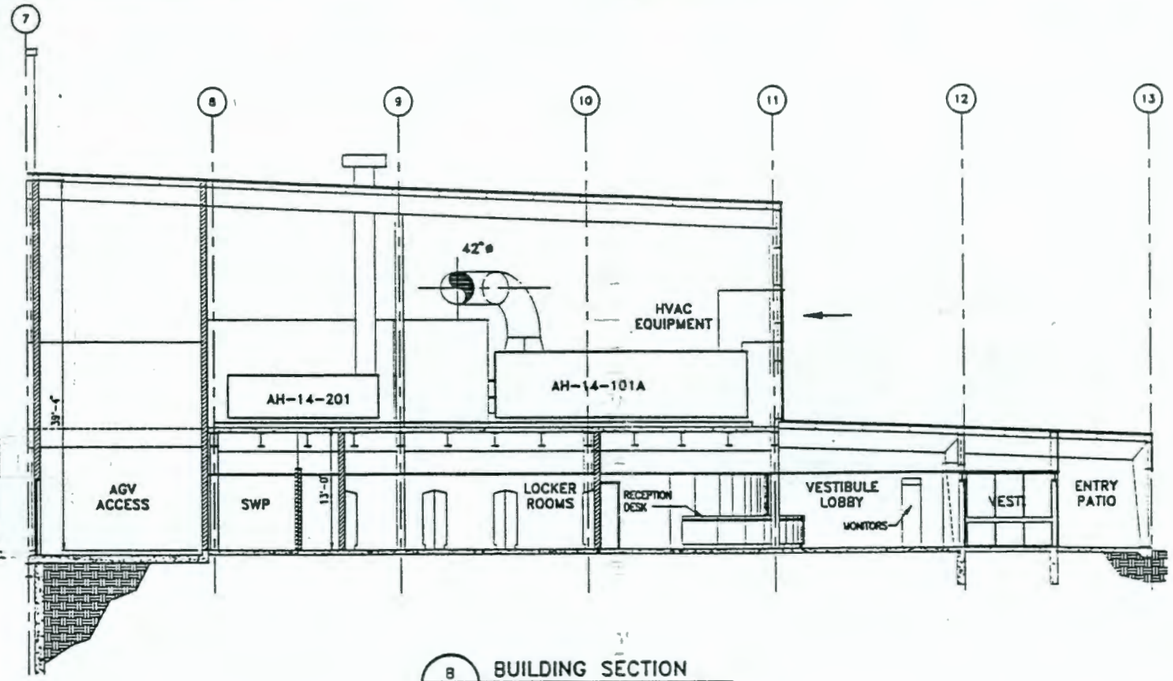
DRAWING TRACEABILITY LIST | NEXT USED ON:

CADFILE: B140736A.DWG CADCODE: 2C:IBM:ACD2:11:NN

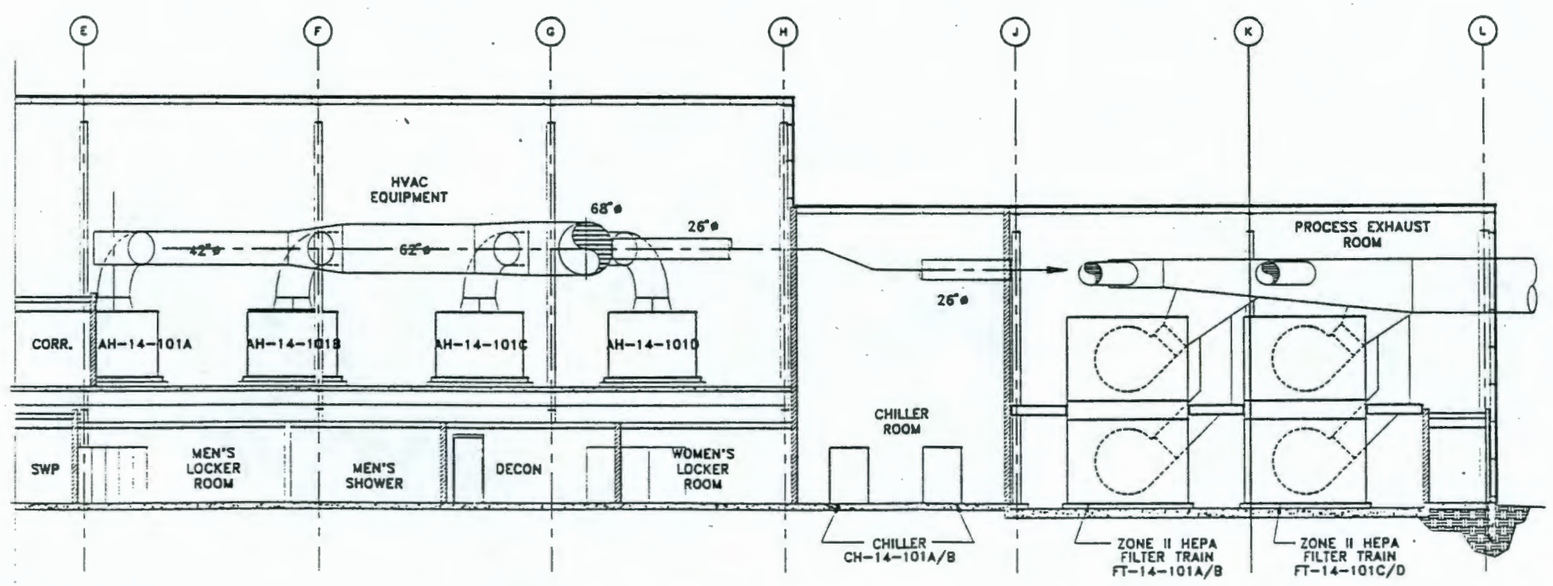
9413227.1567



A BUILDING SECTION
H-2-140735 LOOKING WEST



B BUILDING SECTION
H-2-140736 LOOKING WEST



C BUILDING SECTION
H-2-140735 LOOKING NORTH

REV NO	DESCRIPTION	REV BY/DATE	CHK BY/DATE	APPROVALS/DATE
B	FINAL CDR SUBMITTAL	R.KOCKEN 7/31/92	7/31/92	K.PATEL 7/31/92

REFERENCE DRAWINGS — REVISIONS

DRAWING TRACEABILITY LIST — NEXT USED ON: — CADFILE: B140737A.DWG — CADCODE: 2C:IBM: ACD2: 11: NN

United Engineers & Constructors
A Raytheon Company
Western Operations

TRANSMITTAL # SD-W100-CDR-001

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
WESTINGHOUSE HANFORD COMPANY

	BY	DATE
DESIGNED	R.KOCKEN	4/29/92
DRAWN	P.MEDIS	4/23/92
CHECKED	K.PATEL	5/29/92
APPROVED		
Q.A.		
OTHER		
OTHER		
OTHER		

APPROVED FOR DETAILED DESIGN
BY
FOR DATE

WRAP 2A CONCEPTUAL DESIGN
HVAC GENERAL ARRANGEMENT
BUILDING SECTIONS

SIZE	BLDG NO.	INDEX NO.	DRAWING NUMBER	REV
D	2337-W	7000	H-2-140737	B

SCALE: 1/8"=1'-0" DISCIPLINE NO: H-12 SHEET 1 OF 1

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

9413227.1568