SERIAL NO. 257756

REVISIONS			
DESCRIPTION	DRAFTING DRAWN	DATE CHECKED	APPROVAL ENG OPER SAFETY
AS-BUILT			

TROLLEY CONVEYOR SYSTEM SPEED ADJUSTABLE 2FT TO 10 FT/MIN

TROLLEY CONVEYOR DRIVE-M6-3HP

IN 1100 LBS/HR PROPELLANT

24 CONTAINERS 1100 LBS/24=46 LBS.AV. PER CONTAINER

ROLLER SWITCH LS-14

DH-1 DUMP HOPPER

M7

C-2A VIBRATING FEEDER 1 HP

OMD-1 OVERSIZE MATERIAL DETECTOR (LS-4)

CYLINDER "B"

SV-12

OVERSIZE PROPELLANT NIC

*NOT USED

METAL DETECTOR MD-1

M8 2HP APPROX.

METAL CONTAINING PROPELLANT NIC

CYLINDER "C"

SV-13

C-2B VIBRATING CONVEYOR

SUPROTEX DELUGE SYSTEM

1"PW

1 1/2"MW

V-29 RKL VALVE

V-13

3/4"MW 10 GPM

FT1 FW-5 FLOW SWITCH TO GRINDER HOPPER

1 1/2"MW 26 GPM

PLANT WATER TO DOWNSTAIRS

CHAIN OPERATED VALVE

AUTO DRAIN VALVE FAIL/OPEN

PRESS GAUGE

FAIL OPEN

FAIL SAFE TANK

DRAIN VALVE

CHECK VALVE

PRESSURE REGULATOR

H-2 GRINDER FEED HOPPER

TO SHUT GRINDER DOWN

G-1 GRINDER 150 HP MI

*NOT USED

VSF-1 VIBRA-SCREW PNEUMATIC FEEDER

SV-18A 3/4" 3/4" GLOBE VALVES

3/4"CONICAL SPRAY HEAD

SV-19 GLOBE V-34

SV-B 3/4" FLAT SPRAY HEAD

V-23 V-22 V-24

LEWC-1, LIQUID EXPLOSIVE WASTE CHUTE, SH 62

AC1-B DWG 25775

2" AN MANUAL ISOLATION

2" AN FC AUTO W/ P1

V-200 V-30 V-25 SV-4

PROPELLANT SLURRY RETURN

TO FLOOR DRAIN ON 2ND FLOOR

2" 3-WAY FAIL LEFT AUTO W/P1 PROPELLANT SLURRY SUPPLY

SV-140 V-140

2" AN MANUAL BYPASS

2" AN FC AUTO W/P1

2" AN MANUAL BYPASS V-21A V-21B

2" AN FO AUTO W/P1

2" SI FO AUTO W/P1 F-F

3" SI FO AUTO W/P1 F-F

2" SI FC AUTO W/P1 F-F

SV-11A V-500A SV-11B V-500B

SV-1 SV-7A SV-27A SV-27B SV-7B

SIGHT GLASS SG1

3"160 GPM

RAMSEY VALVE SV-400 V-400

SV-3C REMOVED GLOBE VALVE

SV-300 V-300

SV-10B SV-19B -2" AC1-A DWG 25775

TO SWECO

MAKE-UP TANK T-2 1500 GALS.

LI-T-2 *NOT USED

FLOW SWITCH V-12 2" SI MANUAL ISOLATION

2"x1 1/2"RED. P-2 (M9-7 1/2 HP) MAKE-UP WATER PUMP (1 1/2"x2")

SV-16 N.C.

3" SI FC AUTO W/P1 F-F TO SWECO UNIT

2"PSS

AIR SPARGER ST-2

P-1B (M3-10 HP) SLURRY PUMP 160 GPM 76 FT. HD.

IN MOTOR C SENSOR

SUPROTEX SYSTEM BASE FIRE ALARM CONTACTS TYP. 2 PLACES

SPRINKLER CK VALVE FW7

DELUGE VALVE V-31

V-32 LS8 LS7

STRAINER PS2

6" PIV (SUPERVISED) LS4

OS&Y GATE VALVES (SUPERVISED)

6"FPW (FIRE PROTECTION)

4"PW (BLDG WATER) LS-6

V-30 LS3

OS&Y GATE VALVES (SUPERVISED)

2"x1 1/2"RED.

2"CTR 3"CA CA

2"x1½"RED

6 TO 250PW

1 1/2"

1/4"CA

2" AN MANUAL BYPASS FT6 V-21A NC SV-11A V-500A

2" AN FC AUTO W/P1

2" SI FO AUTO W/P1 F-F

2 1/2"PW

2" AN FO AUTO W/P1

DC-1

CYLINDER "A"

SV-130A V-130A SV-130B V-130B

3" 3-WAY FAIL RIGHT AUTO W/P1

3" 3-WAY FAIL LEFT AUTO W/P1

SV-1 SV-9A SV-28A N.O. SV-28B N.O. SV-9B

2" SI FC AUTO W/P1 F-F

M4 15H.P. A1 A2

SV-20B F.C.

SV-8B SV-6B SV-17B N.O. SV-18B N.O.

1100#/HR PROPELLANT & 3300#/HR WATER

SV-6A SV-18A SV-17A SV-8A SV-20A F.C.

3"x2"

3"PSS

SV-10A V-19A SV-2

LI-T-1A 1/4"CA

1/2"CA SV-5A

M5 15 HP

FLOW FROM V-130A CAN EMPTY INTO EITHER TANK

FLOW FROM V-130B CAN EMPTY INTO EITHER TANK

SLURRY TANK T-1A

SLURRY TANK T-1B

OVERFLOW FROM SLURRY TANKS TO MAKE-UP TANK

SV-115 V-700 3" SI FC AUTO W/P1 F-F CUSTOM LENGTH N.C.

SV-5B

LI-T-1B 1/2"CA

1/4"CA

3" SI FC AUTO W/P1 F-QD

V-14 N.C. V-15 N.C.

SV-100 V-100 3" SI FC AUTO W/P1 QD-QD N.C.

CROSSOVER PIPE SPOOL TO BE INSTALLED AS NEEDED

CROSSOVER PIPE SPOOL TO BE INSTALLED AS NEEDED

8500 GAL/DAY CAUSTIC WASTE IN

NEUTRALIZED CAUSTIC WASTE TANK T-3A 5000 GAL

NEUTRALIZED CAUSTIC WASTE TANK T-3B 5000 GAL

INTERCONNECTING OVERFLOW

L1-T3A L1 L1-T3B P1

FM-6

V-10 V-9 SV-15 V-20

SV-2 V-11

3" NCW 2"NCW 2"NCW 2"NCW

2"x1½"RED

1 1/2"NCW

V-5 V-4 V-1 V-2 V-3 V-7 V-6

P-3A M10 P-3B M11

3"x2½"xRED.

AIR SPARGER ST-3A AIR SPARGER ST-3B

NEUTRALIZED CAUSTIC WASTE PUMPS

*NOT USED

*NOT USED

3"PSS KR FT3 FSC 3"x1½" RED

P-1A (M2-10 HP) SLURRY PUMP 160 GPM 76 FT HD

SV-5A

1/2"CA 2"PW

1 1/4"NCW

2"E 1 1/2"E

SV-16 SV-17

FLOAT SWITCH

SUMP PUMP P-4-B SUMP PUMP P-4-A

2"CA TO INCINERATORS

3"CA CA

OIL FILTER

2"CTR

2"CA 2"CA 3"CA

MOISTURE INDICATOR

AIR DRYERS 60 CFM @100 PSI 100°F-INLET

PACKAGED AIR COMPRESOR UNIT 400 CFM @ 100 PSIG OPERATING PRESSURE 90-100 PSIG

SEE PLATE 62 FOR COMPRESSED AIR SYSTEMS

LEVEL CONTROL P-5B

CATCH TANK 8B

TO OPEN WHENEVER PUMP IS ENERGIZED

1/2" 1/4" SV

⅛"PIPE

PROVIDE 2 TO 3 GPM OF FRESH WATER TO SEAL ON ALL GALIGHER PUMPS (TYP)

QCH	EVENT CONTROL HIGH
QCL	EVENT CONTROL LOW
JS	POWER SWITCH
M	MOTOR
QCS	EVENT CONTROL SWITCH
TTS	TEMPERATUR TRANSMITTER SWITCH
II	AMPERE INDICATOR
FT	FLOW TRANSMITTER
FSC	FLOW SWITCH CONTROL
PYT	PRESSURE CONVERTER TRANSMITTER
PI	PRESSURE INDICATOR
LAH	LEVEL ALARM HIGH
PIT	PRESSURE INDICATING TRANSMITTER
*NOT USED	
CHANGES IN RED	

LTU	LEVEL TRANSMITTER MULTIFUNCTION
LIL	LEVEL INDICATOR LOW
LTV	LEVEL TRANSMITTER VALVE
YAS	METAL ALARM SWITCH
	LIGHT
VB	VIBRATION MONITOR
	ALARM HORN
LS	LIMIT SWITCH
PS	PRESSURE SWITCH
LIH	LEVEL INDICATOR HIGH
FC	FAIL CLOSED
FO	FAIL OPEN
PI	POSITION INDICATION
F-F	FLANGE AT BOTH ENDS
F-QD	FLANDED 1 END, TRI-CLAMP 1 END
QD-QD	TRI-CLAMP BOTH ENDS
KR	K-RAY DENSITY METER

L MARTIN
ENVIRONMENTAL APPROVAL

REDRAWN FROM ORIGINAL USING SAME NUMBER

DCN
ENGR. G KANTOR

TYPE
CLASS

DO NOT SCALE DRAWING

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMAL ± —
FRACTIONAL ± —
ANGULAR ± —

APPROVED FOR GENERAL DESIGN AND SPECIFICATIONS
FOR ALLIANT TECHSYSTEMS
B.GREFE ENGINEERING DEPT. 3/14/12 DATE
FOR U. S. GOVERNMENT
DATE
DATE

NO. TITLE
REFERENCE DRAWINGS

RADFORD ARMY AMMUNITION PLANT
U. S. ARMY
RADFORD, VIRGINIA
ALLIANT TECHSYSTEMS

BUILDING GRIND HOUSE NO. 442
AREA W OF 4601-7 DEPT. PROPELLANT

TITLE
GRINDER BUILDING PROCESS FLOW DIAGRAM

SCALE: NTS DATE: 5/22/2009
DRAWN BY: CLL / JES CHECKED BY: GK
APPROVALS
G. KANTOR — K. MEUER — DEPT. SUPT.
B. GREFE 3/14/12 — R. MARTIN 3/13/12 — SAFETY DEPT.

THIS DRAWING SHALL NOT BE USED OR REPRODUCED EITHER WHOLLY OR IN PART EXCEPT WHERE AUTHORIZED IN CONNECTION WITH PROCUREMENT FOR THE UNITED STATES GOVERNMENT

PROJ CONTRACT NO. DAAA09-86-Z-0003

0	4	4	2	0	0	2	5	7	5	6	F	3	0	1	0	2

ACCOUNT NO | SERIAL NO | CLASS CODE | REV

Attachment III.1.A, Figure III.1.A.3