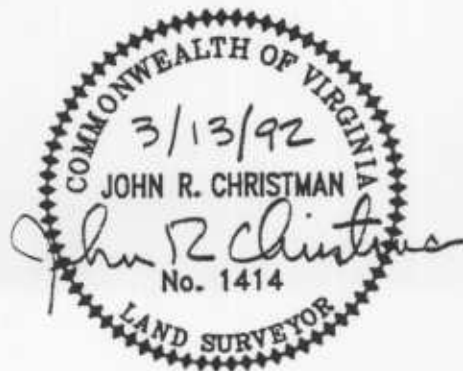


LINE	DIRECTION	DISTANCE
L1	S 80°49'05" E	159.19'
L2	N 89°53'16" E	153.78'
L3	N 88°31'51" E	103.54'
L4	N 80°48'09" E	139.56'
L5	N 75°30'03" E	90.33'
L6	N 54°05'24" E	83.19'
L7	S 71°38'27" W	122.93'
L8	S 68°50'28" W	146.81'
L9	S 85°38'37" W	186.03'
L10	S 84°35'49" W	131.31'
L11	N 81°12'54" W	126.29'

VA. STATE PLANE
COORD. SYSTEM
N
(1927 DATUM)



**ANDERSON
AND
ASSOCIATES, Inc.**

Engineers
Surveyors
Planners

Blacksburg,
Virginia

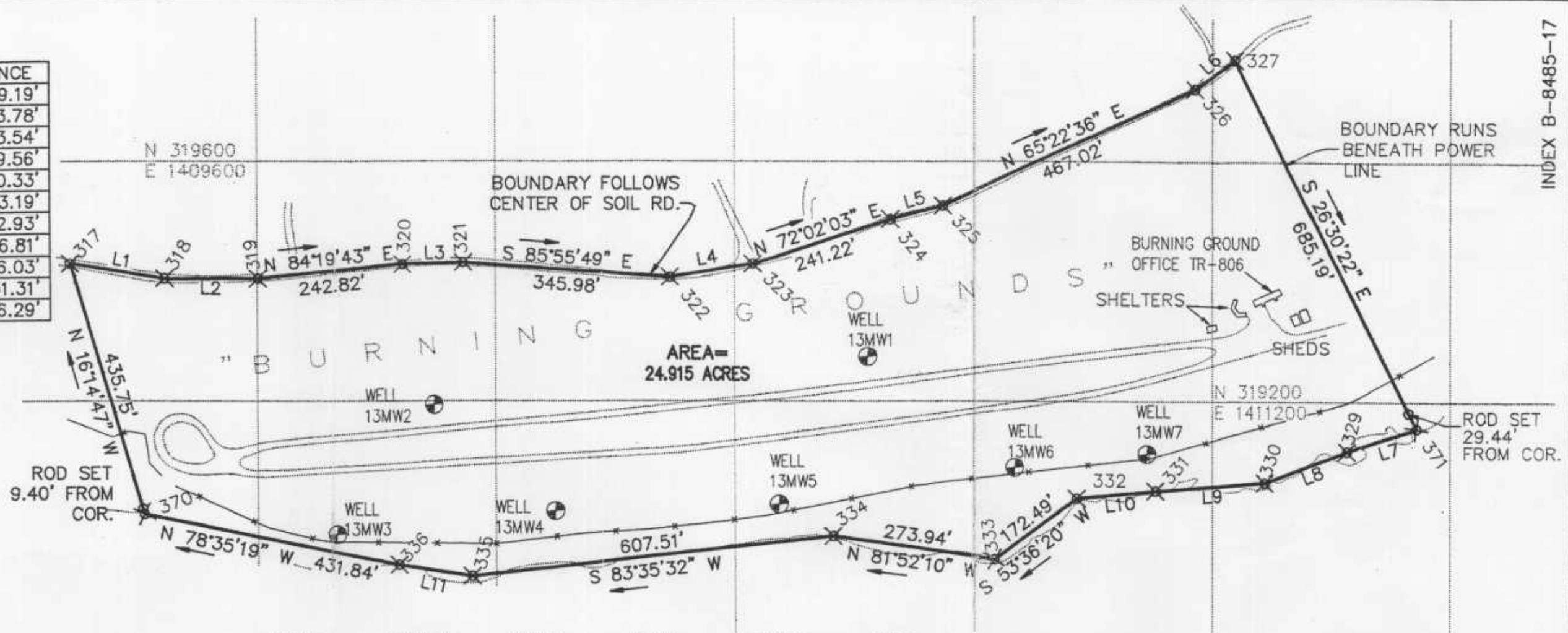
POINT	COORDS.	DESC	POINT	COORDS.	DESC
371	N 319156.01 E 1411544.15	CORNER	327	N 319769.17 E 1411238.35	ROD SET
370	N 319011.13 E 1409412.47	CORNER	326	N 319720.38 E 1411170.98	ROD SET
336	N 318925.69 E 1409835.78	POINT	325	N 319525.80 E 1410746.42	ROD SET
335	N 318906.40 E 1409960.59	POINT	324	N 319503.18 E 1410658.97	ROD SET
334	N 318974.20 E 1410564.30	POINT	323	N 319428.78 E 1410429.51	ROD SET
333	N 318935.46 E 1410835.49	POINT	322	N 319406.47 E 1410291.74	ROD SET
332	N 319037.80 E 1410974.34	POINT	321	N 319431.02 E 1409946.63	ROD SET
331	N 319050.17 E 1411105.07	POINT	320	N 319428.37 E 1409843.13	ROD SET
330	N 319064.30 E 1411290.56	POINT	319	N 319404.37 E 1409601.50	NAILSET
329	N 319117.29 E 1411427.47	POINT	318	N 319404.07 E 1409447.72	ROD SET
			317	N 319429.47 E 1409290.57	ROD SET

PLAT OF SURVEY OF
24.915 ACRES
KNOWN AS
SOLID WASTE MONITORING UNIT 13
LOCATED WITHIN
RADFORD ARMY AMMUNITION PLANT
DUBLIN MAGISTERIAL DISTRICT
PULASKI COUNTY, VIRGINIA

Scale
1"=200'

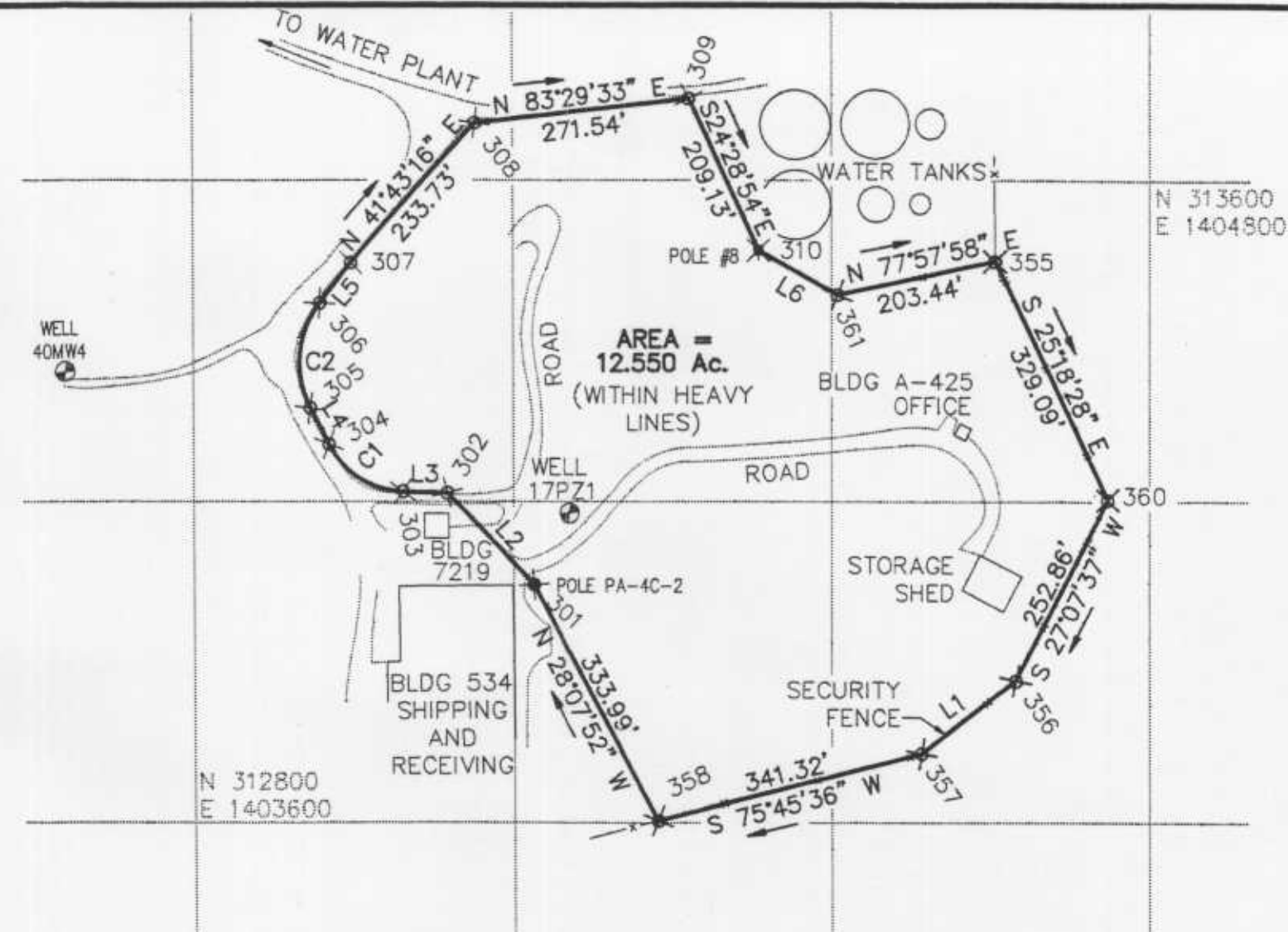
Date
MAR. 04, 1992

INDEX B-8485-17
Drawing No.
08485017



Point	BOUNDARY COORDINATES		Desc.
	Coordinates		
358	N 312801.91 E 1404182.60	ROD IN FNC	
301	N 313096.45 E 1404025.13	POLE	
302	N 313210.57 E 1403918.04	ROD SET	
303	N 313211.95 E 1403863.45	ROD SET	
304	N 313270.75 E 1403769.60	ROD SET	
305	N 313315.91 E 1403746.27	ROD SET	
306	N 313446.46 E 1403758.32	ROD SET	
307	N 313497.15 E 1403797.73	ROD SET	
308	N 313671.61 E 1403953.28	ROD SET	
309	N 313702.39 E 1404223.07	ROD SET	
310	N 313512.06 E 1404309.73	POLE	
361	N 313456.62 E 1404407.53	POST	
355	N 313499.04 E 1404606.50	POST	
360	N 313201.53 E 1404747.18	POST	
356	N 312976.49 E 1404631.88	POST	
315	N 312885.87 E 1404513.44	POST	

VA. STATE PLANE
COORD. SYSTEM
(1927 DATUM)



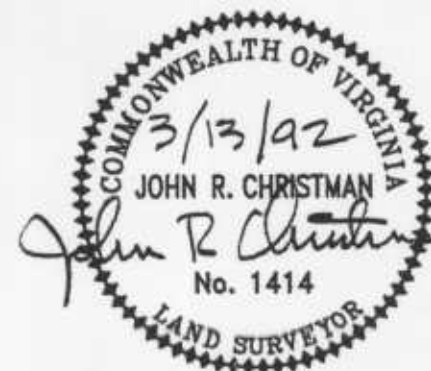
INDEX B-8485-16

BOUNDARY LINE TABLE

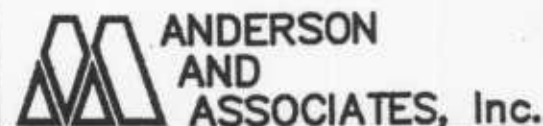
LINE	DIRECTION	DISTANCE
L1	S 52°34'57" W	149.13'
L2	N 43°10'46" W	156.50'
L3	N 88°32'43" W	54.61'
L4	N 27°18'59" W	50.83'
L5	N 37°51'37" E	64.22'
L6	S 60°27'00" E	112.41'

BOUNDARY CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD	BEARING
C1	108.74'	116.20'	110.75'	N 57°55'51" W
C2	121.70'	138.44'	131.10'	N 05°16'19" E



PLAT OF SURVEY OF
12.550 ACRES
KNOWN AS
SOLID WASTE MONITORING UNIT 17
LOCATED WITHIN
RADFORD ARMY AMMUNITION PLANT
PRICES FORK MAGISTERIAL DISTRICT
MONTGOMERY COUNTY, VIRGINIA



Engineers
Surveyors
Planners

Blacksburg,
Virginia

Scale
1"=200'

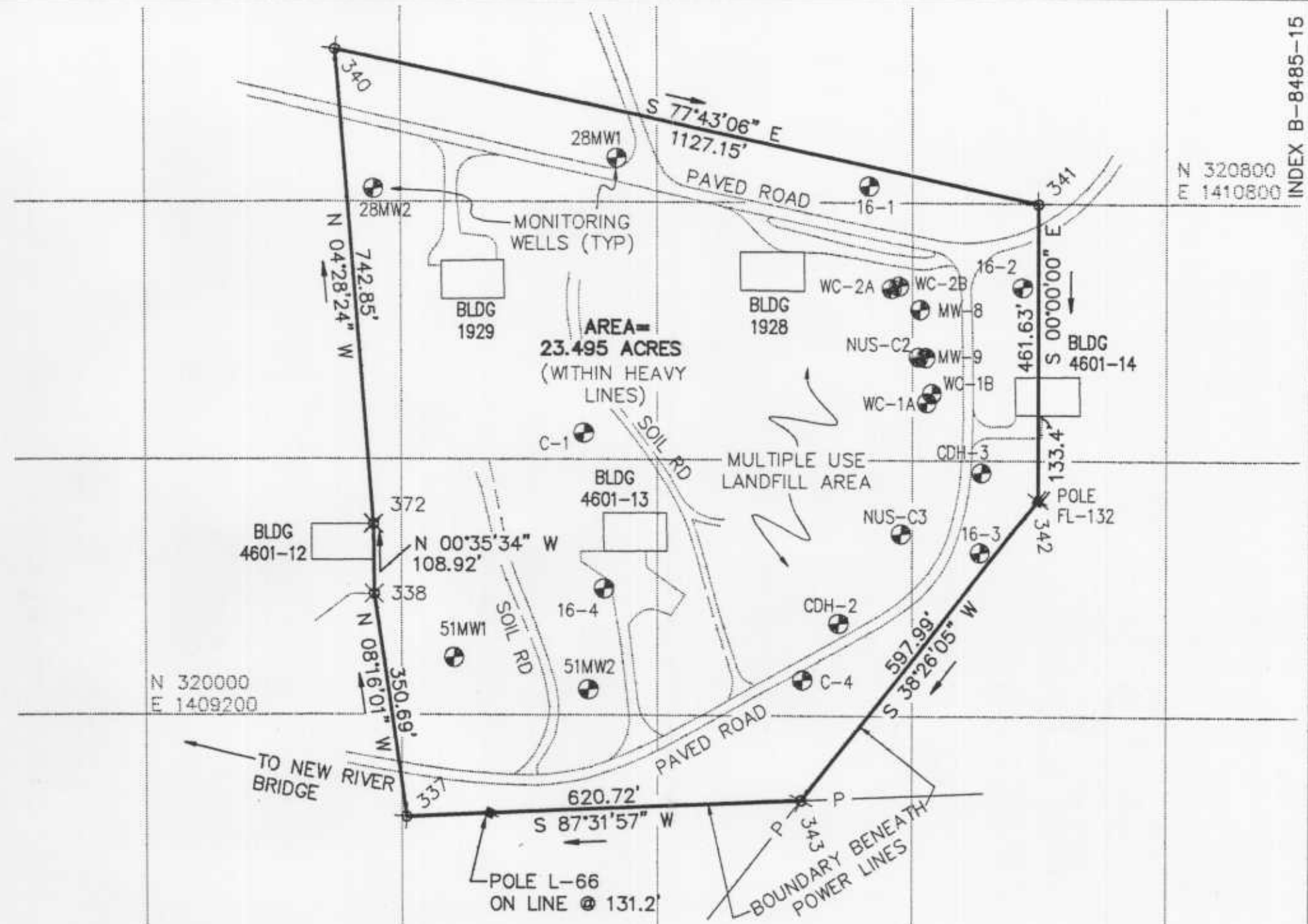
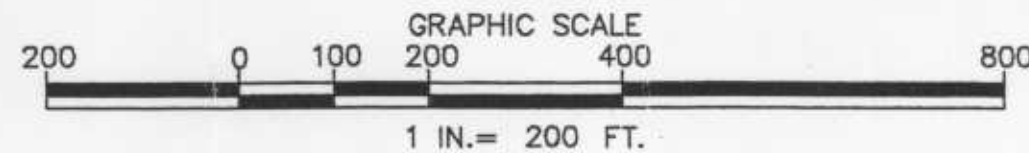
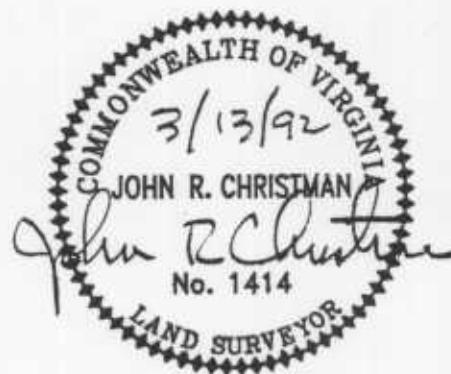
Date
MAR. 04, 1992

Drawing No.
08485016

INDEX B-8485-16

VA. STATE PLANE
COORDINATE SYSTEM
(1927 DATUM)

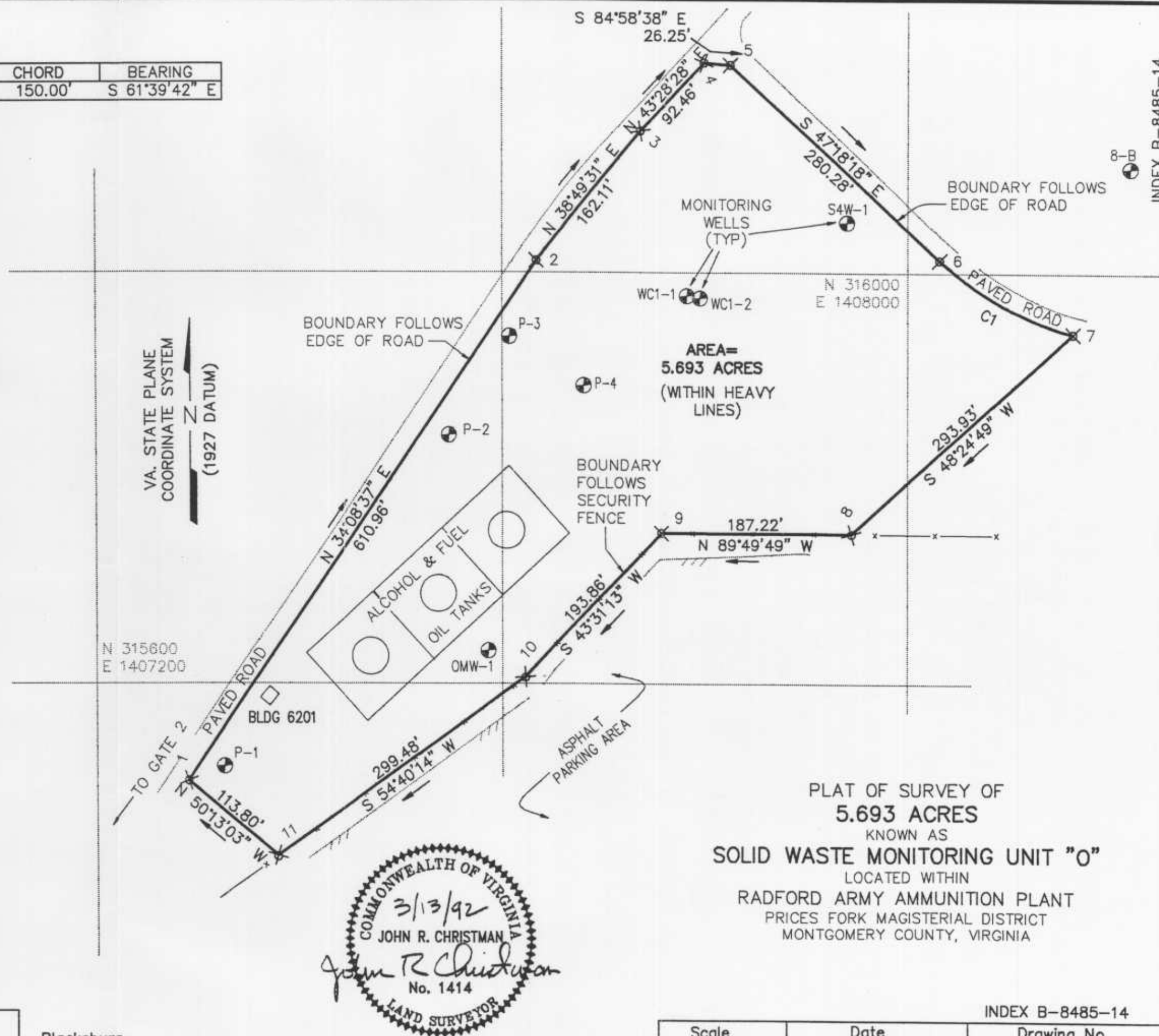
BOUNDARY COORDINATES			
Point	Coordinates		Desc
337	N E	319841.94 1409607.41	ROD SET
338	N E	320188.98 1409556.99	ROD SET
372	N E	320297.90 1409555.86	BARRICADE CORNER
340	N E	321038.48 1409497.92	ROD SET
341	N E	320798.71 1410599.28	ROD SET
342	N E	320337.08 1410599.28	POLE FL-132
343	N E	319868.66 1410227.56	ROD SET



PLAT OF SURVEY OF
23.495 ACRES
KNOWN AS
SOLID WASTE MONITORING UNIT 28/51/52
LOCATED WITHIN
RADFORD ARMY AMMUNITION PLANT
DUBLIN MAGISTERIAL DISTRICT
PULASKI COUNTY, VIRGINIA

CURVE	RADIUS	LENGTH	CHORD	BEARING
C1	302.48'	151.58'	150.00'	S 61°39'42" E

BOUNDARY COORDINATES			
Point		Coordinates	Desc
1	N E	315505.94 1407290.77	ROD SET
2	N E	316011.59 1407633.68	ROD SET
3	N E	316137.88 1407735.31	ROD SET
4	N E	316204.98 1407798.93	ROD SET
5	N E	316202.68 1407825.08	ROD SET
6	N E	316012.62 1408031.07	ROD SET
7	N E	315941.42 1408163.10	ROD SET
8	N E	315746.32 1407943.25	ROD SET
9	N E	315746.88 1407756.04	POST
10	N E	315606.30 1407622.54	POST
11	N E	315433.13 1407378.22	POST



VIRGINIA STATE PLANE
GRID COORDINATE SYSTEM

N 320,000.00
E 1,409,100.00

N 3,600,885.40
E 10,894,598.76
(VA. STATE PLANE
1983 ADJUSTMENT)

N 320,000.00
E 1,411,600.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

- LEGEND
- P

OVERHEAD POWER

P

UNDERGROUND POWER

T

OVERHEAD PHONE

O

MANHOLE

□

DROP INLET

+

UTILITY POLE

+

GUY WIRE

+

BENCH MARK

+

VALVE
- ×

12"

FIRE HYDRANT
- ×

12"

FIRE WATER
- ×

12"

DRINKING WATER
- ×

12"

MAKEUP WATER
- ×

12"

CHILLED WATER
- ×

12"

COOLING WATER
- ×

12"

RAW WATER
- ×

3"

UNDERGROUND HYDRAULIC

—

8"

"GENERAL PURPOSE" SEWER

—

8"

SANITARY SEWER

—

8"

ACID SEWER

—

15"

STORM SEWER

+

NEW MONITORING WELL

+

COVERED IGNITER CABLE REELS

+

EMERGENCY BLANKET BOX

ABBREVIATIONS

D.I.

DROP INLET

C.B.

CATCH BASIN

ABAN.

ABANDONED

M.H.

MANHOLE

C.I.P.

CAST IRON PIPE

U

UNFILTERED (WATER)

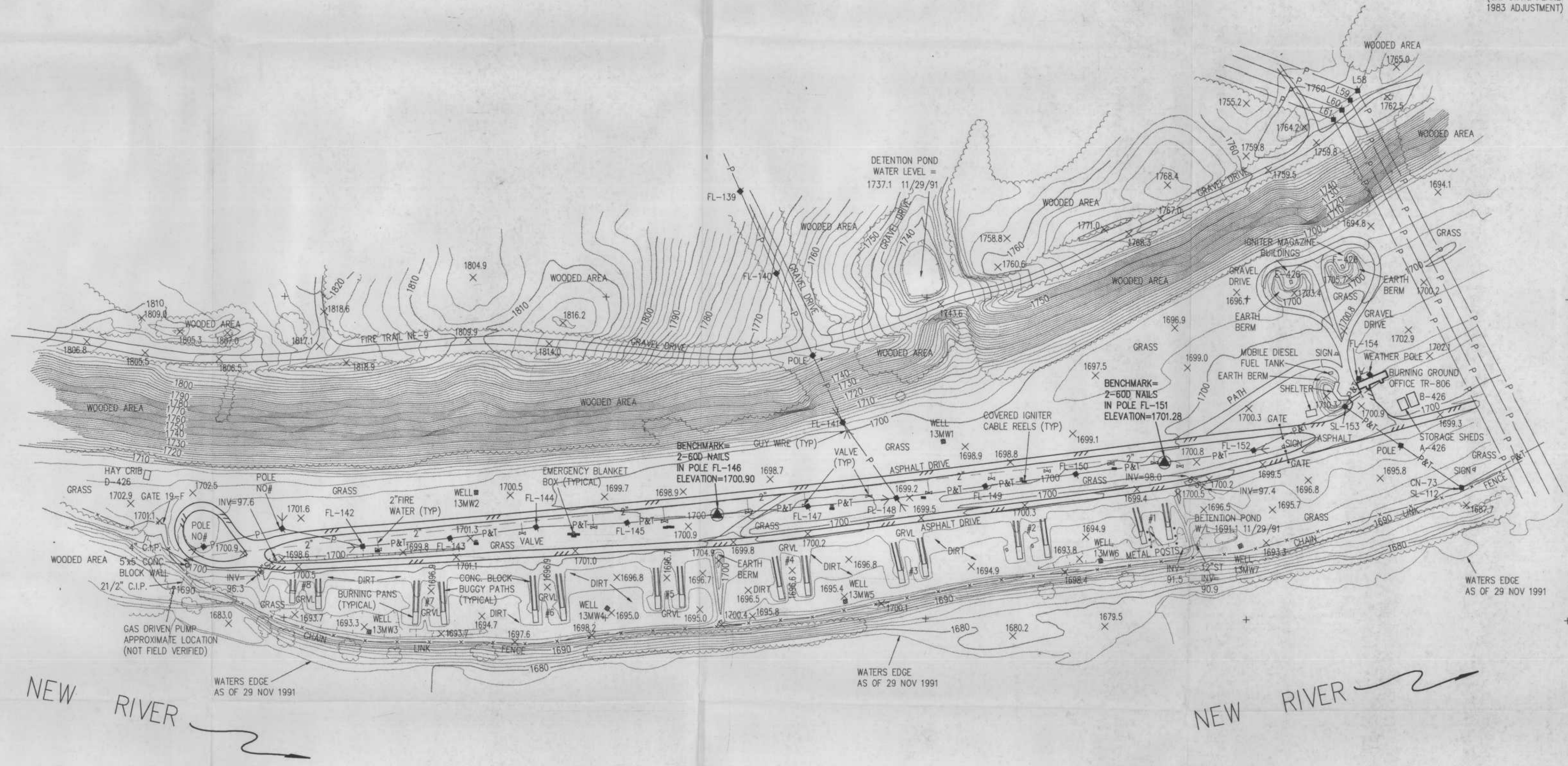
F

FILTERED (WATER)

M

MAKEUP (WATER)

D

DRINKING (WATER)NOTE: WATER LINES DENOTED BY SIZE ONLY
ARE FIRE WATER.

N 3,599,385.40
E 10,892,096.76
(VA. STATE PLANE
1983 ADJUSTMENT)

N 318,500.00
E 1,409,100.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

N 318,500.00
E 1,411,600.00

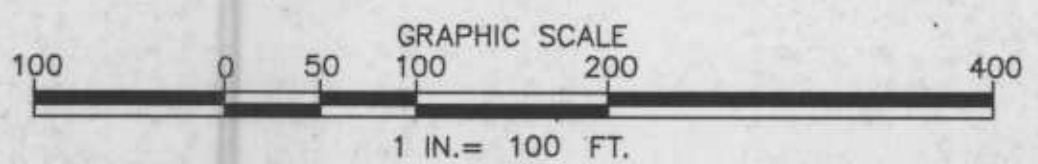
- NOTES:
1. ELEVATIONS ARE BASED ON U.S.G.S. VERTICAL DATUM.

2. CONTOUR INTERVAL = 2'

3. LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE BASED ON AVAILABLE ABOVE-GROUND STRUCTURES (VALVES, MANHOLES, ETC.) AND RAAP UTILITY MAPPING.

4. THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY FLOWN NOVEMBER 29, 1991 AND FIELD ANNOTATION.

6. COORDINATE SYSTEM AS SHOWN HEREON IS THE VA. STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. (ADJUSTMENT OF 1927) TRANSLATION REFERENCES ARE GIVEN TO THE NAD 1983 COORDINATE SYSTEM. THESE REFERENCES ARE APPROXIMATE AND ARE PRODUCED USING "CORPSCON" COORDINATE TRANSFORMATION PROGRAM.



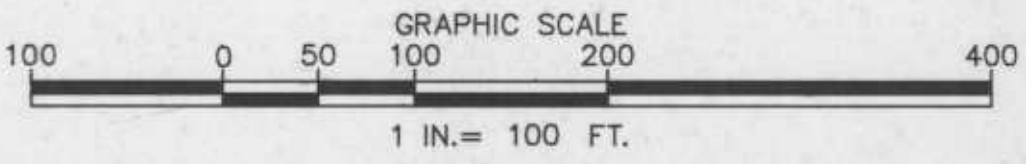
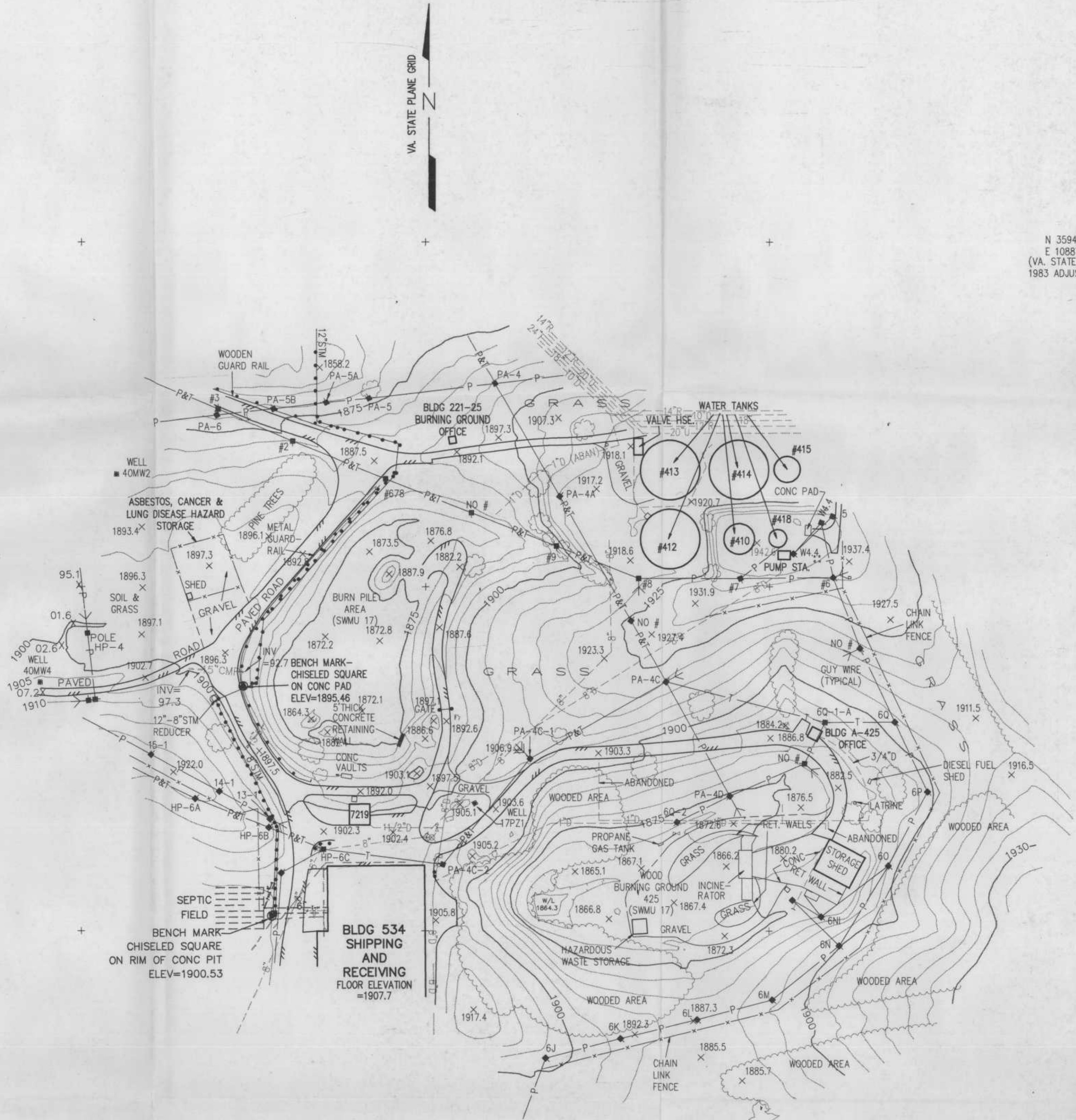
INDEX NO. E-8485-9			
REV.	DATE		
DESCRIPTION			
BY			
APP.			
ANDERSON & ASSOCIATES 100 AREMORE ST., BLACKSBURG, VA 24060 JH 5485			
DEPARTMENT OF THE ARMY NORFOLK DISTRICT, CORPS OF ENGINEERS NORFOLK, VA			
DESIGNED: PDS/CBK	RADFORD ARMY AMMUNITION PLANT RFI SWMU 13 INSERT 3 TOPOGRAPHIC SURVEY		
DRAWN: CADD/KJD			
CHECKED: ROC			
SUBMITTED:			
SCALE: 1"=100'	TO ACCOMPANY SPECIFICATION NO.	PROJECT NO.	SHEET NO.
DATE 03 JAN 92		DRAWING NO. 08485009	4 of 12

+ N 314000.00
E 1403000.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

N 3594885.14 + N 314000.00
E 10887996.59 E 1405000.00
(VA. STATE PLANE (STATE PLANE SYSTEM
1983 ADJUSTMENT) 1927 ADJUSTMENT)

N 3593385.14 + N 312500.00
E 10865996.59 E 1403000.00
(VA. STATE PLANE (STATE PLANE SYSTEM
1983 ADJUSTMENT) 1927 ADJUSTMENT)

+ N 312500.00
E 1405000.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)



- NOTES:
1. ELEVATIONS ARE BASED ON U.S.G.S. VERTICAL DATUM.
 2. CONTOUR INTERVAL = 5'
 3. LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE BASED ON AVAILABLE ABOVE-GROUND STRUCTURES (VALVES, MANHOLES, ETC.) AND RAAP UTILITY MAPPING.
 4. THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY FLOWN NOVEMBER 29, 1991 AND FIELD ANNOTATION.
 5. COORDINATE SYSTEM AS SHOWN HEREON IS THE VA. STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. (ADJUSTMENT OF 1927) TRANSLATION REFERENCES ARE GIVEN TO THE NAD 1983 COORDINATE SYSTEM. THESE REFERENCES ARE APPROXIMATE AND ARE PRODUCED USING "CORPSCON" COORDINATE TRANSFORMATION PROGRAM.

LEGEND	
—	CENTERLINE
—2"G—	EXISTING GAS LINE
—P—	OVERHEAD POWER
—T—	OVERHEAD TELEPHONE
---E---	UNDERGROUND ELECTRIC
---T---	UNDERGROUND TELEPHONE
---TV---	TELEVISION CABLE
—12"ST—	STORM SEWER
—12"—	SANITARY SEWER
—12"GP—	GENERAL PURPOSE SEWER
○	MANHOLE
□	DROP INLET
■	UTILITY POLE
—	GUY WIRE
⊗	VALVE
⊗	FIRE HYDRANT
—12"—	12" FIRE WATER
—12"F---	12" FILTERED WATER
—12"D---	12" DRINKING WATER
—12"M---	12" MAKEUP WATER
—12"C---	12" CHILLED WATER
—12"CL---	12" COOLING WATER
—12"RAW---	12" RAW WATER
●	BENCH MARK
—+—	FENCE
—	CREEK
—	DITCH
⊗	NAIL
⊗	BORE HOLE
—	PAVEMENT
---	GRAVEL ROAD

REV.	DATE	DESCRIPTION	BY	APP.

ANDERSON & ASSOCIATES		DEPARTMENT OF THE ARMY	
100 ARDMORE ST., BLACKSBURG, VA 24060		NORFOLK DISTRICT, CORPS OF ENGINEERS	
JN 8485		NORFOLK, VA.	
DESIGNED: PDS/CBK	RADFORD ARMY AMMUNITION PLANT SOLID WASTE MONITORING UNIT 17		
DRAWN: CADD/ROC			
CHECKED: ETC			
SUBMITTED:			
INSERT 4 TOPOGRAPHIC SURVEY			
SCALE: 1"=100'	TO ACCOMPANY SPECIFICATION NO.	PROJECT NO.	SHEET NO.
DATE: 09 JAN 92	DRAWING NO. 08485008	3 of 12	

VIRGINIA STATE PLANE
GRID COORDINATE SYSTEM

+ N 321,200.00
E 1,409,000.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

N 3,602,085.42
E 10,893,996.75
(VA. STATE PLANE
1983 ADJUSTMENT)

+ N 321,200.00
E 1,411,000.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

LEGEND

— P —

OVERHEAD POWER

— P —

UNDERGROUND POWER

— T —

OVERHEAD PHONE

○

MANHOLE

□

DROP INLET

—

UTILITY POLE

—

GUY WIRE

—

BENCH MARK

—

VALVE

— 12" —

— 12" F —

— 12" D —

— 12" M —

— 12" C —

— 12" CL —

— 12" RAW —

— 3" X —

— 8" GP —

— 8" —

— 8" —

— 15" ST —

—

"GENERAL PURPOSE" SEWER

—

SANITARY SEWER

—

ACID SEWER

—

STORM SEWER

—

NEW MONITORING WELL

—

EXISTING MONITORING WELLS

—

FIRE HYDRANT

—

FIRE WATER

—

FILTERED WATER

—

DRINKING WATER

—

MAKEUP WATER

—

CHILLED WATER

—

COOLING WATER

—

RAW WATER

—

UNDERGROUND HYDRAULIC

ABBREVIATIONS

- D.I. DROP INLET
- C.B. CATCH BASIN
- ABAN. ABANDONED
- M.H. MANHOLE
- U UNFILTERED (WATER)
- F FILTERED (WATER)
- M MAKEUP (WATER)
- D DRINKING (WATER)

NOTE: WATER LINES DENOTED BY SIZE ONLY
ARE FIRE WATER.

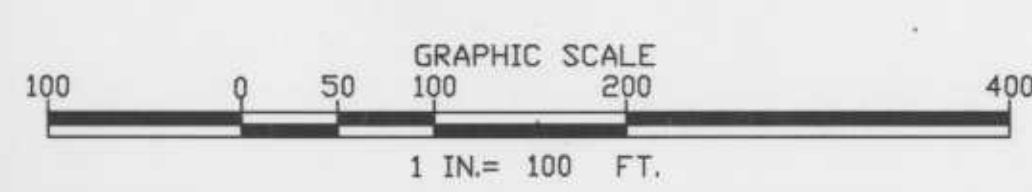


N 3,600,595.42
E 10,981,996.75
(VA. STATE PLANE
1983 ADJUSTMENT)

+ N 319,700.00
E 1,409,000.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

+ N 319,700.00
E 1,411,000.00
(STATE PLANE SYSTEM
1927 ADJUSTMENT)

- NOTES:
- ELEVATIONS ARE BASED ON U.S.G.S. VERTICAL DATUM.
 - CONTOUR INTERVAL = 2'.
 - LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE BASED ON AVAILABLE ABOVE-GROUND STRUCTURES (VALVES, MANHOLES, ETC.) AND RAAP UTILITY MAPPING.
 - THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY FLOWN NOVEMBER 29, 1991 AND FIELD ANNOTATION.
 - THE LANDFILL'S AND DISPOSAL AREA BOUNDARIES SHOWN ON THIS SHEET ARE IN THEIR APPROXIMATE LOCATIONS.
 - COORDINATE SYSTEM AS SHOWN HEREON IS THE VA. STATE PLANE COORDINATE SYSTEM, SOUTH ZONE. (ADJUSTMENT OF 1927) TRANSLATION REFERENCES ARE GIVEN TO THE NAD 1983 COORDINATE SYSTEM. THESE REFERENCES ARE APPROXIMATE AND ARE PRODUCED USING "CORPSCON" COORDINATE TRANSFORMATION PROGRAM.

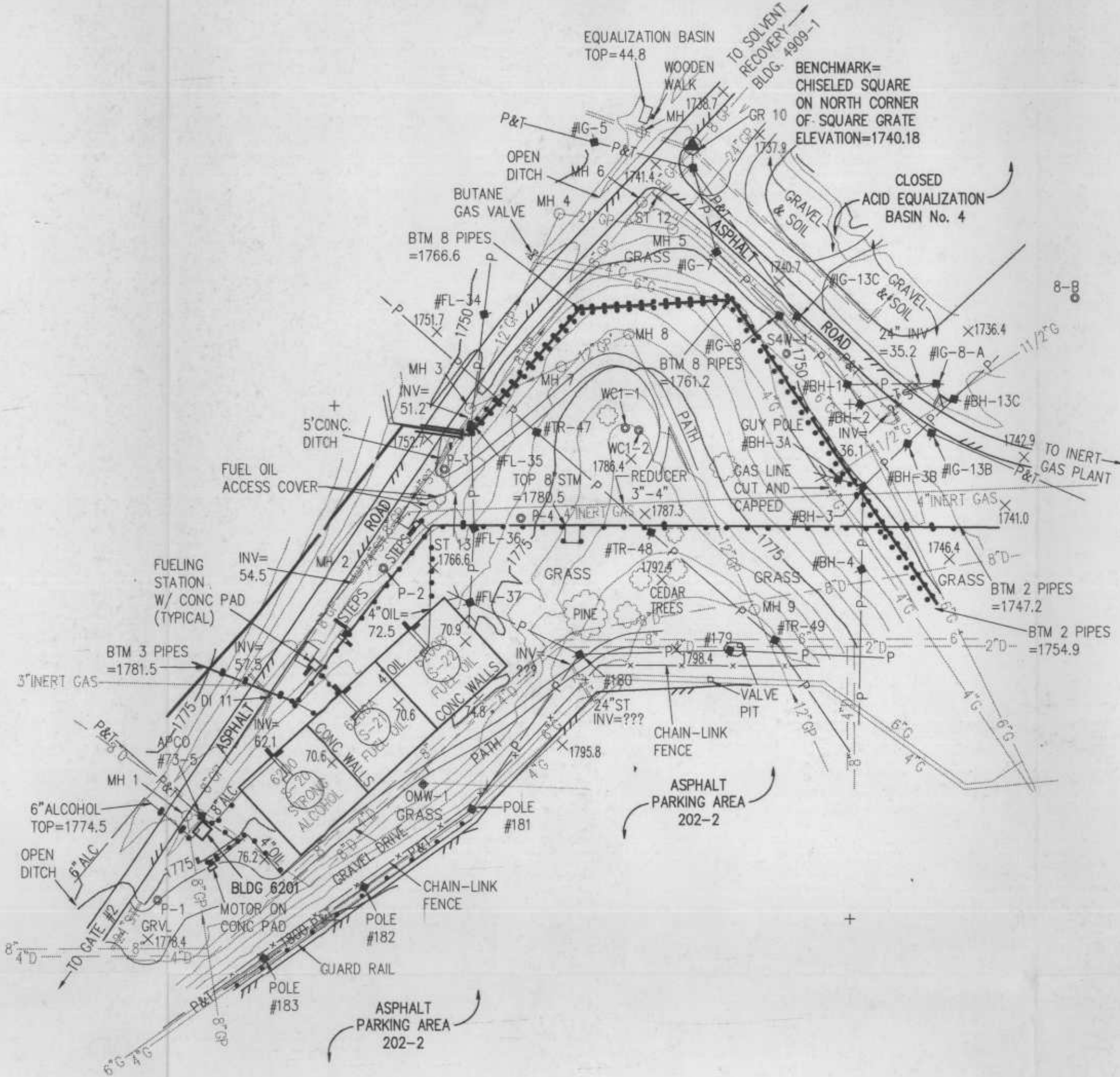


INDEX NO. E-8485-6			
DESIGNED:	PDS/CBK	MONITORING WELLS RFI SWMUs 28/51/52	
DRAWN:	CADD/KJD	INSERT 5 TOPOGRAPHIC SURVEY	
CHECKED:	ROC		
SUBMITTED:			
SCALE: 1"=100'	TO ACCOMPANY SPECIFICATION NO.	PROJECT NO.	SHEET NO.
DATE 30 DEC 91		DRAWING NO. 08485006	1 of 12

STRUCTURE	TOP ELEVATION	INVERT ELEVATION	COMMENTS
MH 1	1768.8	1762.8	8" TERRA-COTTA INV. IN
		1769.7	8" TERRA-COTTA INV. OUT
MH 2	1756.8	1752.7	8" TERRA-COTTA FLOW LINE
MH 3	1750.9	1745.0	FLOW LINE
MH 4	1745.7	1737.5	FLOW LINE
MH 5	1743.4	1735.8	21" DUCTILE IRON INV. IN
		1728.0	21" DUCTILE IRON INV. OUT
MH 6	1741.3	1728.3	8" TERRA-COTTA INV. IN
		1730.3	8" TERRA-COTTA INV. OUT
MH 7	1768.1	1769.7	12" TERRA-COTTA INV. IN
		1753.6	12" TERRA-COTTA INV. OUT
MH 8	1770.4	1765.1	12" TERRA-COTTA FLOW LINE
MH 9	1794.1	1786.1	12" TERRA-COTTA INV. IN
		1781.1	12" TERRA-COTTA INV. OUT
GR 10	1740.8	1732.2	36" ACID SEWER INV. IN
		1731.9	36" ACID SEWER INV. OUT
DI 11	1761.8	----	SEALED TOP
ST 12		1736.0	36" REINFORCED CONC. PIPE INV. IN
		1734.9	36" REINFORCED CONC. PIPE INV. OUT
ST 13		1751.3	18" CORRUGATED METAL PIPE INV. IN
		1752.8	18" CORRUGATED METAL PIPE INV. OUT

N 316,500
E 1,407,000

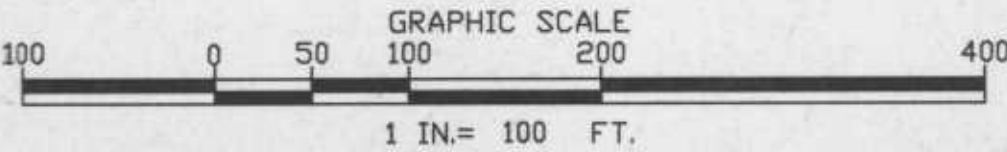
N 3,313,882.41 + N 316,500
E 10,891,496.18 + E 1,408,500
(VA. STATE PLANE) (STATE PLANE SYSTEM)
(1983 ADJUSTMENT) (1927 ADJUSTMENT)



N 3,312,382.41 + N 315,000
E 10,889,996.18 + E 1,407,000
(VA. STATE PLANE) (STATE PLANE SYSTEM)
(1983 ADJUSTMENT) (1927 ADJUSTMENT)

N 315,000
E 1,408,500

- NOTES:
- ELEVATIONS ARE BASED ON U.S.G.S. VERTICAL DATUM.
 - CONTOUR INTERVAL = 5'
 - LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE BASED ON AVAILABLE ABOVE-GROUND STRUCTURES (VALVES, MANHOLES, ETC.) AND RAAP UTILITY MAPPING.
 - THIS MAPPING IS BASED ON AERIAL PHOTOGRAPHY FLOWN NOVEMBER 29, 1991 AND FIELD ANNOTATION.
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LEGEND			
— P —	OVERHEAD POWER	— 12" —	FIRE HYDRANT
— P —	UNDERGROUND POWER	— 12" F —	FIRE WATER
— T —	OVERHEAD PHONE	— 12" D —	FILTERED WATER
○	MANHOLE	— 12" M —	DRINKING WATER
□	DROP INLET	— 12" C —	MAKEUP WATER
■	UTILITY POLE	— 12" CL —	CHILLED WATER
— GUY —	GUY WIRE	— 12" RAW —	COOLING WATER
— VALVE —	VALVE	— 3" X —	RAW WATER
— 6" G —	GAS LINE		UNDERGROUND HYDRAULIC
— 8" GP —	"GENERAL PURPOSE" SEWER		
— 8" —	SANITARY SEWER		
— 8" —	ACID SEWER		
— 15" ST —	STORM SEWER		
●	EXISTING MONITORING WELL		
■	NEW MONITORING WELL		

ABBREVIATIONS

- D.I. DROP INLET
C.B. CATCH BASIN
ABAN. ABANDONED
M.H. MANHOLE
U UNFILTERED (WATER)
F FILTERED (WATER)
M MAKEUP (WATER)
D DRINKING (WATER)

NOTE: WATER LINES DENOTED BY SIZE ONLY ARE FIRE WATER.

INDEX NO. E-8485-7			
○			
○			
○			
○			
○			
REV.	DATE	DESCRIPTION	BY APP.
ANDERSON & ASSOCIATES 100 ARDMORE ST. BLACKSBURG, VA 24060 JN 8485		DEPARTMENT OF THE ARMY NORFOLK DISTRICT, CORPS OF ENGINEERS NORFOLK, VA.	
DESIGNED: PDS/CBK	RADFORD ARMY AMMUNITION PLANT SOLID WASTE MONITORING UNIT "O"		
DRAWN: CADD/ KJD			
CHECKED: ROC			
SUBMITTED:			
SCALE: 1"=100'		PROJECT NO.	
DATE 30 DEC 91		DRAWING NO. 08485007	
		SHEET NO. 2 of 12	